MORE THAN ARCHITECTS

ADDENDUM NO. 01

TO THE DRAWINGS AND THE PROJECT MANUAL

PROJECT NAME: 2025 Multi-Campus Chiller Replacement

CLIENT NAME: Cypress-Fairbanks ISD

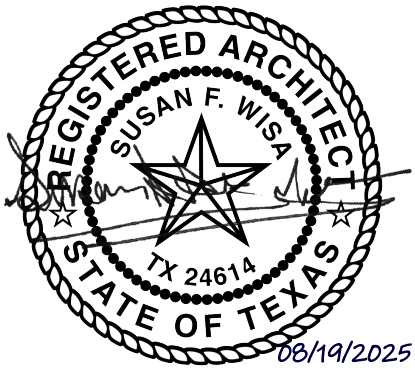
LOCATION: Cypress, Texas

PROJECT NUMBER: 01818-08-01, 02, 03, & 04

PROPOSAL DATE: Tuesday, August 26 , 2025, Time: 2:00 PM

ADDENDUM DATE: Tuesday, August 19, 2025

For additional information regarding this project, contact Susan Wisa at 800.687.1229



THIS ADDENDUM INCLUDES:

Civil Items	--
Landscape Items	--
Structural Items	--
Architectural Items	21 Page
Foodservice Items	--
Plumbing Items	--
Mechanical Items	--
Electrical Items	--
Technology Items	--
Audio/ Visual	28 Pages

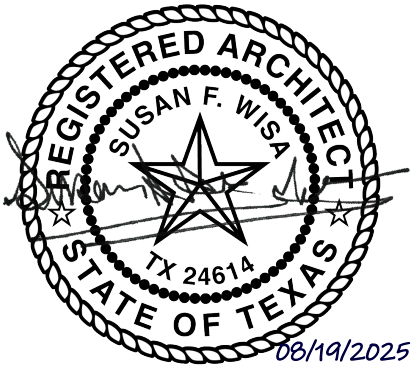
AND ALL ATTACHED REVISED DRAWING REFERENCES IN THE ADDENDUM

Huckabee

Huckabee

a MOREgroup brand

Project Name: 2025 Multi-Campus Chiller Replacement
Client: Cypress-Fairbanks ISD
Location: Cypress, Texas
Project Number: 01818-08-01, 02, 03, & 04



ARCHITECTURAL ITEMS FOR ADDENDUM NO. 1

NOTICE TO PROPOSERS:

A. This Addendum shall be considered part of the contract documents for the above-mentioned project as though it had been issued at the same time and incorporated integrally therewith. Where provisions of the following supplementary data differ from those of the original contract documents, this Addendum shall govern and take precedence.
B. Proposers are hereby notified that they shall make any necessary adjustments in their estimate on account of this Addendum. It will be construed that each Proposer's proposal is submitted with full knowledge of all modifications and supplemental data specified therein. Acknowledge receipt of this addendum in the space provided on the proposal form. Failure to do so may subject Proposer to disqualification.

REFERENCE IS MADE TO THE DRAWINGS AND THE PROJECT MANUAL AS NOTED:

PROJECT MANUAL:

AD No 1, Arch. Item 1: Attached Pre-Proposal Conference Minutes and Sign in Sheet are issued in their entirety

AD No 1, Arch. Item 2: **To the Project Manual, Section AC, "Proposal Forms"**
To paragraph I of Alternate Proposals, revise the list of alternates per the revised spec section.

AD No 1, Arch. Item 3: **To the Project Manual, Section CB, "Supplementary Conditions,"**
To paragraph 1.1.11 #3, revise the MEP address per the revised spec section.

AD No 1, Arch. Item 4: **To the Project Manual, Section 01 10 00, "Summary of Work"**
To paragraph 3.1 Construction Schedule, revise the list of rooms to receive dehumidification at the Berry Center per the revised spec section.

AD No 1, Arch. Item 5: **To the Project Manual, Section 01 23 00, "Alternates"**
To paragraph 3.1 Alternates, remove alternates 2-5 per the revised spec section.

DRAWINGS:

AD No 1, Arch. Item 6: **To the Drawings, Sheet G2.01-BC - "MASTER SITE PHASING PLAN"**
1) Revise the list of rooms to receive dehumidification at the Berry Center per the revised sheet

END OF ARCHITECTURAL ADDENDUM

Project Name: 2025 Multi-Campus Chiller Replacement
Client: Cypress-Fairbanks ISD
Location: Cypress, Texas
Project Number: 1818-08-01,02,03,04

MECHANICAL ITEMS FOR ADDENDUM NO. 01

NOTICE TO PROPOSERS:

A. This Addendum shall be considered part of the contract documents for the above-mentioned project as though it had been issued at the same time and incorporated integrally therewith. Where provisions of the following supplementary data differ from those of the original contract documents, this Addendum shall govern and take precedence.
B. Proposers are hereby notified that they shall make any necessary adjustments in their estimate on account of this Addendum. It will be construed that each Proposer's proposal is submitted with full knowledge of all modifications and supplemental data specified therein. Acknowledge receipt of this addendum in the space provided on the proposal form. Failure to do so may subject Proposer to disqualification.

REFERENCE IS MADE TO THE DRAWINGS AND THE PROJECT MANUAL AS NOTED:

PROJECT MANUAL:

AD No 2, Mech. Item 1: **To the Project Manual, Section 23 0548, "Vibration Isolation,"**
a. Part 2 Products, Article 2.3 Isolator Application, Chiller (Berry Center Only), Revise Minimum Deflection to be 3.0

DRAWINGS:

AD No 2, Mech. Item 2: **To the Drawings, Sheet M0.01-BC, "MECHANICAL DEMO ENLARGED PLAN – SECOND FLOOR – SERVICE YARD"**
a. Refer to attached drawing for revised decoupler.

AD No 2, Mech. Item 3: **To the Drawings, Sheet M2.01-BC, "MECHANICAL ENLARGED PLAN – SECOND FLOOR – SERVICE YARD"**
a. Refer to attached drawing for revised decoupler.

AD No 2, Mech. Item 4: **To the Drawings, Sheet M3.01-BC, "MECHANICAL PIPING DIAGRAM"**
a. Refer to attached drawing for revised decoupler.

AD No 2, Mech. Item 5: **To the Drawings, Sheet M4.01-BC, "MECHANICAL SCHEDULES, LEGENDS, AND DETAILS"**
a. Refer to attached drawing for revised WATER COOLED CHILLER – MAGNETIC CENTRIFUGAL WITH VFD SCHEDULE.

END OF MECHANICAL ADDENDUM

Huckabee

Project Name: 2025 Multi-Campus Chiller Replacement
Client: Cypress-Fairbanks ISD
Location: Cypress, Texas
Project Number: 1818-08-01,02,03,04

ELECTRICAL ITEMS FOR ADDENDUM NO. 01

NOTICE TO PROPOSERS:

A. This Addendum shall be considered part of the contract documents for the above-mentioned project as though it had been issued at the same time and incorporated integrally therewith. Where provisions of the following supplementary data differ from those of the original contract documents, this Addendum shall govern and take precedence.
B. Proposers are hereby notified that they shall make any necessary adjustments in their estimate on account of this Addendum. It will be construed that each Proposer's proposal is submitted with full knowledge of all modifications and supplemental data specified therein. Acknowledge receipt of this addendum in the space provided on the proposal form. Failure to do so may subject Proposer to disqualification.

REFERENCE IS MADE TO THE DRAWINGS AND THE PROJECT MANUAL AS NOTED:

PROJECT MANUAL:

AD No 2, Elec. Item 1: **None**

DRAWINGS:

AD No 2, Elec. Item 2: **To the Drawings, Sheet E1.01-JV, "E1.01-JV - ELECTRICAL DEMO ENLARGED PLAN - SERVICE YARD"**

a. Refer to attached drawing for disconnect of existing refrigerant monitoring.

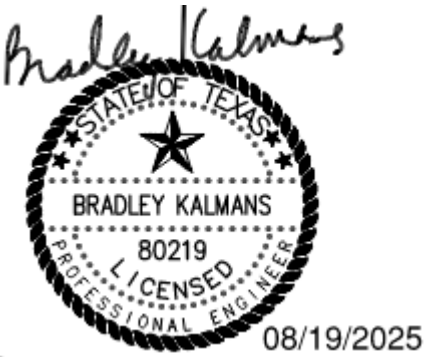
AD No 2, Elec. Item 3: **To the Drawings, Sheet E2.01-JV, "E2.01-JV - ELECTRICAL ENLARGED PLAN - SERVICE YARD"**

a. Refer to attached drawing for connection of refrigerant monitoring.

END OF ELECTRICAL ADDENDUM

Huckabee

Project Name: 2025 Multi-Campus Chiller Replacement
Client: Cypress-Fairbanks ISD
Location: Cypress, Texas
Project Number: 1818-08-01,02,03,04



TECHNOLOGY ITEMS FOR ADDENDUM NO. 01

NOTICE TO PROPOSERS:

A. This Addendum shall be considered part of the contract documents for the above-mentioned project as though it had been issued at the same time and incorporated integrally therewith. Where provisions of the following supplementary data differ from those of the original contract documents, this Addendum shall govern and take precedence.
B. Proposers are hereby notified that they shall make any necessary adjustments in their estimate on account of this Addendum. It will be construed that each Proposer's proposal is submitted with full knowledge of all modifications and supplemental data specified therein. Acknowledge receipt of this addendum in the space provided on the proposal form. Failure to do so may subject Proposer to disqualification.

REFERENCE IS MADE TO THE DRAWINGS AND THE PROJECT MANUAL AS NOTED:

PROJECT MANUAL:

AD No 1, Tech. Item 1: **To the Project Manual, Section 28 4602, "Expansion of Existing Fire Detection and Alarm System,"**

A. Add this section in its entirety.

DRAWINGS:

AD No 1, Tech. Item 2: **None**

END OF TECHNOLOGY ADDENDUM

MORE THAN ARCHITECTS

SIGN IN SHEET

Project Name: 2025 Campbell MS, Cy Ranch & Jersey Village HS and Berry ESC Chiller Replacements

Client: Cypress-Fairbanks ISD

Location: Houston, TX

Project No: 1818-08-01,02,03&04

CFISD Proposal Number: 25-03-5755-R-RFP

Meeting Subject: Pre-Proposal Conference

Date of Meeting: August 18th, 2025

Time of Meeting: 02:00 PM

Place of Meeting: Cypress-Fairbanks ISD

Facilities, Planning & Construction Office

PLEASE PRINT

NAME	COMPANY	EMAIL	PHONE
Marcos Segovia	Lecs Electrical	marcos@Lecs.net	713-298-8460
MARK Derryberry	Derryberry's Mech.	MD@Derryberrys.com	281-222-5709
Luis Pieraldi	E Contractors	rfp@econtractors.com	346-681-8426
Jeff Schafer	ICI Construction Inc	bids@iciconstructioninc.com	281-355-5451
RAUL CALDERA	NASH INDUSTRIES	BIDS@NASHINDUSTRIESINC.com	281-829-9815
KEVIN CHRISTIE	LETSOS	Kchristie@LETSOS.com	484-844-0493
Danny Gonzalez	letsos	dgonzalez@letsos.com	832-544-0139
Jacob Smee	Letsos	JSmee@letsos.com	832 309-4515
Garrett Robertson	ERS-Cet	Garrett.Robertson@ERS-Cet.com	713-502-4159
Craig Reed	Gregory-Edwards	CREED@GEIMECH	713-523-6618
Amy HAYES	CFISD	amy.hayes@CFISD.Net	
Joseph Taylor	Brandt	joseph.taylor@brandt.us	210-517-9663
Chris Roberson	Brandt	Christopher.Roberson@Brandt.US	281-723-7046
BILLY GREGORY	GEI	BGregory@GEImech.com	713-523-6618
DAN GROSZ	CFISD		
PHILLIP CANO	PRIME CONTRACTORS	estimating@primecontractorsinc.com	281 999 0875
Brandon Watson	DivisionOne Construction	bid@d1construction.com	713-688-7330

Sean Hooper	SALAS OBRIEN	sean.hooper@salasobrien.com	281 664 1900
Trevor Cullen	Salas O'Brien	trevor.cullen@salasobrien.com	2816641900
Gio Castilla	CFISD	giovanni.castilla-e@cfisd.net	—
Bill Penny	GURRY MEP	Bill.Penny@GurryMEP.com	713-203-6453
Shannon Thompson	CFISD		
Alan Penn	SalasO'Brien		
Tiffany Banks	CFISD	tiffany.banks2@cfisd.net	562-302-7931
Robert Jimenez	CFISD	robert.jimenez@cfisd.net	(832) 797-7451
Patricia Reed	Huckabee	Patricia.Reed@Huckabee-Inc.com	8322100 46
Susan Wisa	HUCKABEE	susan.wisa@Huckabee-Inc.com	

MORE THAN ARCHITECTS

MEETING MINUTES

PRE-PROPOSAL MEETING

Project Name:	2025 CAMPBELL MS, CY RANCH & JERSEY VILLAGE HS AND BERRY ESC CHILLER REPLACEMENTS	**Date of Meeting**: 08/18/2025
Owner:	Cypress-Fairbanks ISD	**Time of Meeting**: 02:00PM
Location:	11430-B Perry Road, Houston, Texas 77064	
Place of Meeting:	Facilities & Construction Conference Room	
Project No:	01818-07-01, 02, 03 & 04 / CFISD Proposal Number: 25-03-5755-R-RFP	
Meeting Subject:	PRE-PROPOSAL MEETING	

- **INTRODUCTION OF TEAM, INCLUDING DISTRICT REPRESENTATIVES, AND HUCKABEE REP**

- **PROPOSAL INFORMATION**

Project: 2025 Campbell MS, Cy Ranch & Jersey Village HS And Berry ESC Chiller Replacements; Cypress-Fairbanks I.S.D. Proposal Number: 25-03-5755-R-RFP
Who: Proposal addressed to: Mr. Jesse Clayburn, Assistant Supt. of Facilities and Construction
Where: Facilities, Planning & Construction; 11430-B Perry Road, Houston, Texas 77064
When: Bid Date: Tuesday, August 26, 2025; Base Bid Time: 2:00pm; Alternate Bid Time: 3:00pm.

- **ITEMS:**

1 Document AB - Instructions to Offerors
   a. Contractor Information and Experience Statement (AIA Document A305TM).
      By 5:00P.M. on Tuesday, August 19, 2025 – Submitted by email to Huckabee, no faxes will be accepted.
   b. References - refer to Exhibit A on page AB-9

2 Substitutions of Materials and Equipment
   a. Requests can be made via email by sending a Substitution Request form at least 5 days prior to the date of proposal.
   b. Approvals only by Addendum
   c. No substitutions after Contract Award

3 Performance & Payment Bonds:
   Each Offeror shall include in his base proposal the premium costs for 100% Performance Bond and 100% Payment Bond.

4 Submission of Additional Proposal Information
   a. Submit with Alternate Proposals – Proposal Form AC Alternates:
   b. An experience profile (resumes) of the proposed superintendent(s) and project manager(s).
      i. The firm names of the major subcontractors and/or suppliers requested on the Alternate Proposal form AF.
      ii. Signed and Notarized Special Owner Requirements Sections 01 35 23 and 01 35 23.1.

5 Felony Conviction Notification – Form AE – within sealed envelope with Base Proposal

6 Proposal Evaluation Waiver – Form AG - within sealed envelope with Base Proposal

7 Affidavit of Non-Discriminatory Employment – Form AH - within sealed envelope with Base Proposal

8 Conflict of Interest Questionnaire – Form AN - within sealed envelope with Base Proposal

9 Proposal Security – Proposal Bond - Form AD - amount shall be not less than ten percent (10%) of the greatest amount proposed (considering alternates, if any). - submitted within the sealed envelope containing Alternate Proposals.

10 Submission of Post Proposal Information – **(AB Article 1, page AB-1)** submit, *by 5:00P.M. on* ***Tuesday, August 26, 2025***.

a. A bar-chart construction schedule
b. Offeror's proposed management concept
c. Work to be self-performed
d. Fully executed Contractor Qualification Statement Form, AIA A305
e. Any voluntary Value Engineering items
f. The selected Offeror shall execute Form AL, Certification of Project Compliance, and submit at Project Closeout.
g. The selected Offeror shall execute and submit Form AP, Certification of Criminal History Record Information within 10 days after receipt of Notice to Proceed and prior to commencement of Work.

11 All documents can be obtained from www.moregroup-inc.com/construction/

12 ALL QUESTIONS MUST BE SENT IN WRITING TO Patrick Reid and Susan Wisa, email to patrick.reid@huckabee-inc.com and susan.wisa@huckabee-inc.com. **Verbal responses are not considered binding.**

13 All Addenda will be posted to Huckabee's website.

- **SCHEDULE:**

Board Meeting award: ~~October 16, 2025~~ September 8th, 2025
Notice to proceed: The Owner or the Architect, on behalf of the Owner, will issue a written Notice to Proceed 10 days following Board Award.
Substantial completion: Berry Center: July 15, 2026
Campbell MS: SCD July 15, 2026
Jersey Village & Cy Ranch: December 31, 2026
Proposed Construction Phasing: see SECTION 01 10 00 SUMMARY OF WORK Extremely vital document
Refer to CFISD Academic & Testing Calendars for the 2025-2026 school year.

- **SCOPE:**

The Project(s) consists of but is not limited to:
Replace water cooled chillers, replace condenser water pumps, replace refrigerant monitoring system, replace condenser water treatment at 4 locations.

- **BUDGET:** $ 10,000,000.00

- **ALTERNATES: (SECTION 01 23 00)**

    1. Alternate Number 1 **Base Bid Adjustment –** Adjustments to the GC's Base Proposal submitted at 2:00pm, if necessary.
    2. Addenda is planned to place all chillers in Base Bid. Alternate Number 2A to 5B to be removed.

- **ALLOWANCES:** (Section 01 21 00)

    Owner's Betterment Allowance: $1,604,400.00 to be included in proposal amount

    Scopes to be funded from this allowance may include, but are not limited to:

    - Temporary Freezer Box (Berry Center)
    - BMCS (Campbell MS, JVHS, Cy Ranch HS, Berry Center)
    - Landscape Restoration (Berry Center)
    - Cooling Tower Refurbishment (Cy Ranch HS)

    No Overhead & Profit shall be included in CPR pricing.

- **LIQUIDATED DAMAGES:** (AIA-A201, 8.4.1)

    Middle Schools: $2,000.00/Calendar Day
    High Schools: $3,000.00/Calendar Day
    Miscellaneous Facilities: $1,000.00/Calendar Day

- **CAMPUS TOURS:**

    Site walks will be offered following this pre-proposal meeting, at 3:00 pm in the following order:

    1. Berry Center Arena, 8877 Barker Cypress Rd, Cypress, TX 77433
    2. Cypress Ranch High School, 10700 Fry Rd, Cypress, TX 77433
    3. Jersey Village High School, 7600 Solomon St, Jersey Village, TX 77040
    4. Campbell Middle School, 11415 Bobcat Rd, Houston, TX 77064

END OF PRE-PROPOSAL CONFERENCE

FORM AC
COMPETITIVE SEALED PROPOSAL FORM - BASE PROPOSAL

2025 Campbell MS, Cy Ranch & Jersey Village HS and Berry ESC Chiller Replacements
Cypress-Fairbanks Independent School District
Cypress-Fairbanks I.S.D. Proposal Number: 25-03-5755-R-RFP
Attn: Mr. Jesse Clayburn, Asst. Superintendent of Facilities & Construction

Submitted by:_____

Date:_____ Phone No.:_____

To: Board of Trustees
Cypress-Fairbanks Independent School District
Facilities and Construction
11430-B Perry Road
Houston, Texas 77064

Having examined Proposal and Contract Documents prepared by **Huckabee Architects** dated **August 11, 2025,** and having examined site conditions, the undersigned proposes to furnish all labor, equipment and materials and perform all work for the completion of the above-named project for the sum indicated below.

In submitting his Proposal, the undersigned agrees to the following:

1. Hold Base Proposal open for acceptance sixty (60) days.
2. Accept right of Owner to reject any or all proposals, to waive formalities and to accept proposal which Owner considers most advantageous.
3. Enter into and execute the contract, if awarded, for the Base Proposal and accepted Alternate Proposals.
4. Complete work in accordance with the Contract Documents within the stipulated contract time.
5. By signing, the undersigned affirms that, to the best of his knowledge, the Proposals have been arrived at independently and is submitted without collusion with anyone to obtain information or gain any favoritism that would in any way limit competition or give an unfair advantage over respondents in the award of this proposal.

I. BASE PROPOSAL

A. Undersigned agrees to complete the Work for the lump sum amount of:

_____Dollars $_____
(Amount written in words governs) (Amount in figures)

II. ALLOWANCES

Undersigned certifies that the allowances specified in Section 01 21 00 are included in the Base Proposal and agrees that unexpended balance of allowance sums will revert to Owner in the final settlement of the contract.

III. CONTRACT TIME

By submittal of this proposal, the undersigned stipulates that the Base Proposal includes all costs necessary to attain Substantial Completion of the Work on or before the date stipulated in AIA Document A101™–2017.

THIS PAGE OF PROPOSAL FORM MUST BE SUBMITTED BY 2:00 PM, August 26, 2025

IV. ADDENDA

Undersigned acknowledges receipt of Addenda Nos._____ dated

_____, _____.

V. CHANGES IN THE WORK

Undersigned understands that changes in the work shall be performed in accordance with the Supplementary Conditions.

VI. LIQUIDATED DAMAGES

By submittal of this proposal, the undersigned stipulates an agreement that if Substantial Completion of the Work is not attained on or before the date stipulated in AIA Document A101™–2017, the undersigned and his Surety shall be liable for and shall pay the Owner the sums stipulated as Liquidated Damages as defined in AIA Document A201™–2017.

It is understood that the right is reserved by the Owner to reject any or all proposals, or waive any informalities in the proposal process.

_____
Authorized Signature

_____
Printed Name

_____
Title

(Seal, if a Corporation)
State whether Corporation,
Partnership or Individual

_____
Name of Contracting Firm

_____
Address

_____
Telephone

_____
Date

FORM AC
COMPETITIVE SEALED PROPOSAL FORM - ALTERNATE PROPOSALS

2025 Campbell MS, Cy Ranch & Jersey Village HS and Berry ESC Chiller Replacements
Cypress-Fairbanks Independent School District
Cypress-Fairbanks I.S.D. Proposal Number: 25-03-5755-R-RFP
Attn: Mr. Jesse Clayburn, Asst. Superintendent of Facilities & Construction

Submitted by:_____

Date:_____ Phone No.:_____

To: Board of Trustees
Cypress-Fairbanks Independent School District
Facilities and Construction
11430-B Perry Road
Houston, Texas 77064

Having examined Proposal and Contract Documents prepared by ***Huckabee Architect***, dated **August 11, 2025,** and having examined site conditions, the undersigned proposes to furnish all labor, equipment and materials and perform all work for the completion of the above-named project for the sum indicated below.

In submitting his Proposal, the undersigned agrees to the following:

1. Hold Alternate Proposal open for acceptance one hundred twenty (120) days.
2. Accept right of Owner to reject any or all proposals, to waive formalities and to accept proposal which Owner considers most advantageous.
3. Enter into and execute the contract, if awarded, for the Base Proposal and accepted Alternate Proposals.
4. Complete work in accordance with the Contract Documents within the stipulated contract time.
5. By signing, the undersigned affirms that, to the best of his knowledge, the Proposals have been arrived at independently and is submitted without collusion with anyone to obtain information or gain any favoritism that would in any way limit competition or give an unfair advantage over respondents in the award of this proposal.

I. ALTERNATES

If the Owner accepts any or all of the Alternates, the undersigned agrees to modify the Base Proposal as stipulated below:

A. Alternate Number 1 – ***Base Bid Adjustment***

ADD/DEDUCT_____ Dollars $_____
(Amount written in words governs) (Amount in figures)

THIS PAGE OF PROPOSAL FORM MUST BE SUBMITTED BY 3:00 PM, August 26, 2025

III. CONTRACTOR'S PROJECT TEAM MEMBERS

The undersigned proposes the following project team members (include resumes):

Project Manager _____

Superintendent _____

Asst. Superintendent(s) _____

Project Engineer _____

It is understood that the right is reserved by the Owner to reject any or all proposals, or waive any informalities in proposal process.

_____
Authorized Signature

_____
Printed Name

_____
Title

(Seal, if a Corporation)
State whether Corporation,
Partnership or Individual

_____
Name of Contracting Firm

_____
Address

_____
Telephone

_____
Date

END OF FORM

SECTION CB

SUPPLEMENTARY CONDITIONS TO THE

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION AS AMENDED

Add the following Subparagraph:

1.1.11 DESCRIPTION OF PARTIES

The following definitions apply to parties named in the Contract Documents.

1.	Owner:	Cypress-Fairbanks Independent School District Facilities & Construction Department 11430-B Perry Road Houston, Texas 77064 Phone: (281) 897-4057 Representative: Jesse Clayburn, Asst. Superintendent of Facilities & Construction
2.	Architect:	Huckabee, Inc. 1700 City Plaza Dr. City Place 1, Suite 125 Spring, Texas 77389 Phone: (281) 520-4995
3.	MEP Engineer:	Salas O'Brien 10930 W. Sam Houston Parkway., Suite 900 Houston, Texas 77064 Phone: (281) 664-1900

Include additional consultants as needed

2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

Add the following Subparagraph:

2.2.6 The Contractor will be furnished, free of charge, **one (1) set** sets of drawings, specifications, and addenda, for pickup by the Contractor from the office of the Architect.

15.1 PREVAILING WAGE RATES

15.1.3 Prevailing Wage Rate Determination Information follows on the *next page*.

15.1 PREVAILING WAGE RATES

Prevailing Wage Rate Determination Information

The following information is from Chapter 2258 Texas Government Code:

Sec. 2258.021. Right to be Paid Prevailing Wage Rates.

(a) *A worker employed on a public work by or on behalf of the state or a political subdivision of the state shall be paid:*
  (1) *not less than the general prevailing rate of per diem wages for work of a similar character in the locality in which the work is performed; and*
  (2) *not less than the general prevailing rate of per diem wages for legal holiday and overtime work.*

(b) *Subsection (a) does not apply to maintenance work.*

(c) *A worker is employed on a public work for the purposes of this section if the worker is employed by a contractor or subcontractor in the execution of a contract for the public work with the state, a political subdivision of the state, or any officer or public body of the state or a political subdivision of the state.*

Sec. 2258.023. Prevailing Wage Rates to be paid by Contractor and Subcontractor; Penalty.

(a) *The contractor who is awarded a contract by a public body or a subcontractor of the contractor shall pay not less than the rates determined under Section 2258.022 to a worker employed by it in the execution of the contract.*

(b) *A contractor or subcontractor who violates this section shall pay to the state or a political subdivision of the state on whose behalf the contract is made, $60 for each worker employed for each calendar day or part of the day that the worker is paid less than the wage rates stipulated in the contract. A public body awarding a contract shall specify this penalty in the contract.*

(c) *A contractor or subcontractor does not violate this section if a public body awarding a contract does not determine the prevailing wage rates and specify the rates in the contract as provided by Section 2258.022.*

(d) *The public body shall use any money collected under this section to offset the costs incurred in the administration of this chapter.*

(e) *A municipality is entitled to collect a penalty under this section only if the municipality has a population of more than 10,000.*

Sec. 2258.051. Duty of Public Body to Hear Complaints and Withhold Payment.

A public body awarding a contract, and an agent or officer of the public body, shall:

(1) *take cognizance of complaints of all violations of this chapter committed in the execution of the contract; and*

(2) *withhold money forfeited or required to be withheld under this chapter from the payments to the contractor under the contract, except that the public body may not withhold money from other than the final payment without a determination by the public body that there is good cause to believe that the contractor has violated this chapter.*

Prevailing Wage Rates – School Construction Trades

June 2, 2025

Texas Gulf Coast Area

CLASSIFICATION	2025 HOURLY RATE
ASBESTOS WORKER	$27.20
BRICKLAYER; MASON	$24.90
CARPENTER; CASEWORKER	$23.13
CARPET LAYER; FLOOR INSTALLER	$26.20
CONCRETE FINISHER	$23.83
DATA COMM/TELE COMM	$24.33
DRYWALL INSTALLER; CEILING INSTALLER	$24.33
ELECTRICIAN	$29.86
ELEVATOR MECHANIC	$39.78
FIREPROOFING INSTALLER	$22.99
GLAZIER	$23.25
HEAVY EQUIPMENT OPERATOR	$22.17
INSULATOR	$21.95
IRONWORKER	$26.50
LABORER, HELPER	$19.81
LATHERER; PLASTERER	$22.75
LIGHT EQUIPMENT OPERATOR	$28.75
METAL BUILDING ASSEMBLER	$24.00
PAINTER; WALL COVERING INSTALLER	$20.17
PIPEFITTER	$29.82
PLUMBER	$27.98
ROOFER	$22.50
SHEET METAL WORKER	$29.96
SPRINKLER FITTER	$23.00
STEEL ERECTOR	$26.00
TERRAZZO WORKER	$22.75
TILE SETTER	$22.00
WATERPROOFER; CAULKER	$24.00

Prevailing Wage Rates
Worker Classification Definition Sheet

CLASSIFICATION	DEFINITION
ASBESTOS WORKER	Worker who removes and disposes of asbestos materials.
BRICKLAYER; MASON	Craftsman who works with masonry products, stone, brick, block, or any material substituting those materials and accessories.
CARPENTER; CASEWORKER	Worker who build wood structures or structures of any material which has replaces wood. Includes rough and finish carpentry, hardware and trim.
CARPET LAYER; FLOOR INSTALLER	Worker who installs carpets and /or floor coverings, vinyl tile.
CONCRETE FINISHER	Worker who floats, trowels, and finishes concrete.
DATA COMM/TELE COMM	Worker who installs data/telephone and television cable and associate equipment and accessories.
DRYWALL; CEILING INSTALLER	Worker who installs metal framed walls and ceiling, drywall coverings, ceiling grids, and ceilings.
ELECTRICIAN	Skilled craftsman who installs or repairs electrical wiring and devices. Includes fire alarm systems and HVAC electrical controls.
ELEVATOR MECHANIC	Craftsman skilled in the installation and maintenance of elevators.
FIREPROOFING INSTALLER	Worker who sprays or applies fire proofing materials.
GLAZIER	Worker who installs glass, glazing, and glass framing.
HEAVY EQUIPMENT OPERATOR	Includes but not limited to: all CAT tractors, all derrick-powered, all power operated cranes, back-hoes, back-fillers, power operated shovels, winch trucks, and all trenching machines.
INSULATOR	Worker who applies, sprays, or installs insulation.
IRONWORKER	Skilled craftsman who erects structural steel framing, and installs structural concrete Rebar.
LABORER, HELPER	Worker qualified for only unskilled or semi-skilled work. Lifting, carrying materials or tools, hauling, digging, clean up.
LATHERER; PLASTERER	Worker who installs metal framing and lath. Worker who applies plaster to lathing and installs associated accessories.
LIGHT EQUIPMENT OPERATOR	Includes but not limited to , air compressors, truck crane drivers, flex planes, building elevators, form graders, concrete mixers less than 14cf), conveyers.
METAL BUILDING ASSEMBLER	Worker who assembles pre-made metal buildings.
PAINTER; WALL COVERING INSTALLER	Worker who prepares wall surfaces and applies paint and/or wall coverings, tape, and bedding.
PIPEFITTER	Trained worker who installs piping systems, chilled water piping and hot water (boiler) piping, pneumatic tubing controls, chillers, boilers, and associated mechanical equipment.
PLUMBER	Skilled craftsman who installs domestic hot and cold water piping, waste piping, storm system piping, water closets, sinks, urinals, and related work.
ROOFER	Worker who installs roofing materials, Bitumen (asphalt and coal tar) felts, flashings, all types of roofing membranes, and associated products.
SHEET METAL WORKER	Worker who installs sheet metal products, Roof metal, flashings and curbs, ductwork, mechanical equipment, and associated metals.
SPRINKLER FITTER	Worker who installs fire sprinklers systems and fire protectant equipment.
STEEL ERECTOR	Worker who erects and dismantles structural steel frames of buildings and other structures.
TERRAZZO WORKER	Craftsman who places and finishes Terrazzo
TILE SETTER	Worker who prepares wall and/or floor surfaces and applies ceramic tiles to these surfaces.
WATERPROOFER; CAULKER	Worker who applies water proofing material to buildings. Products include sealant, caulk, sheet membranes, and liquid membranes, sprayed, rolled or brushed.

END OF DOCUMENT

SECTION 01 10 00

SUMMARY OF WORK

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

A. Project, **2025 Campbell MS, Cy Ranch & Jersey Village HS and Berry ESC Chiller Replacements**, with campus locations at the following addresses:

- **Campbell MS – 11415 Bobcat Rd., Houston 77064**
- **Cy Ranch HS – 10700 Fry Rd., Cypress 77433**
- **Jersey Village HS – 7600 Solomon St., Houston 77040**
- **Berry ESC – 8877 Barker Cypress Rd., Cypress 77433**

for the Cypress-Fairbanks Independent School District.

B. The Project(s) consists of but is not limited to:
Replace water cooled chillers, replace condenser water pumps, replace refrigerant monitoring system, replace condenser water treatment.

C. Project Schedule:

1. Substantial Completion date:
   - Berry Center: August 15, 2026
   - Campbell MS: July 15, 2026
   - Jersey Village & Cy Ranch: December 31, 2026

2. General phasing requirements refer to Part 3.1.B below.
   - **Berry Center** – Coordination with Berry Center staff and Food Service regarding kitchen walk-in cooler/freezer content arrangements.
   - **Campbell MS** – CFISD may be agreeable to certain scope beginning before school year concludes.
   - **Jersey Village & Cy Ranch** – Begin construction October 1, 2026, preferably chillers swap out over Winter Break 2026, pending CFISD academic calendar GC will be required to maintain central plant operations and conditioned air at all times.
     - These campuses are under construction and any work that may interrupt current construction will need to be coordinated with Owner and GC.

1.2 CONTRACTS AND USE OF SITE

A. Contractor Use of Premises:
1. Confine operations at site to areas permitted by law, permits, and Contract Documents, or as required to maintain campus operations (as approved by Owner).
2. Do not unreasonably encumber site with materials or equipment. Refer to Contractor lay-down areas indicated on plans. If not indicated on plans provided, Contractor to submit for approval proposed Contractor designated areas, including but not limited to: lay-down, staging, parking, restroom, trailer, dumpster, field office, etc.
3. Assume full responsibility for protection and safekeeping of products stored on premises.
4. Obtain and pay for use of additional storage or work areas as needed for operations.

5. Contractor shall establish secured staging area for work and coordinate and provide for safe passage and exit from existing building areas during construction, in compliance with all applicable codes and requirements of Owner.
6. During phased construction, Contractor shall provide maps of building to Owner for each phase, showing construction area and impact to other areas of the building.
7. Contractor shall coordinate all construction activities with school district officials.
8. Owner reserves the right to perform construction operations with its own forces or to employ separate contractors on portions of the Project. General Contractor shall coordinate with Owner-performed work in terms of providing site access, workspace, and storage space, cooperation of work forces, scheduling, and technical requirements.
9. Noise Control: Contractor shall coordinate equipment locations and timing of work activities so as to avoid conflict with the building occupants and/or avoid interference with facility meetings, events, or other activities.
10. Utilities. The contractor is to coordinate all utilities permanent and temporary and make arrangements for installation for any service easements once the Owner provides information that a blanket or final easement exists.
11. Project Fencing:
    a. Upon mobilization, the contractor shall build a wire mesh fence (or other type) as directed by Owner, at least six (6) feet high as shown on site plan and/or discussed during the pre-construction meeting.
    b. Site fencing shall include emergency service and trucking gated in locations shown on the site plan and/or discussed during the pre-construction meeting.
    c. Contractor shall properly maintain fencing and gates until Substantial Completion and only remove with concurrence from the Owner.

B. Owner Occupancy:
1. Refer to AIA Document A201™–2017, as amended.

C. Owner-Furnished/Owner-Installed Items:
1. The Owner reserves the right to place and install equipment in construction areas of the building prior to Substantial Completion, provided that such occupancy does not interfere with completion of the Work. Such placing of equipment shall not constitute acceptance of the total Work. Contractor shall protect Owner's property.

D. Owner-Furnished/Contractor-Installed Items:
1. The Owner may provide items to the Contractor for installation in accordance with manufacturer's recommendation and instructions.
2. The Owner will arrange and pay for delivery of Owner-furnished items in accordance with the Contractor's Construction Schedule and will inspect deliveries for damage.
3. If Owner-furnished items are damaged, defective or missing, through no fault of the Contractor, the Owner will arrange for replacement.
4. The Contractor is responsible for designating the delivery dates of Owner-furnished items in the Contractor's Construction Schedule and for receiving, unloading and handling Owner-furnished items at the site. The Contractor is responsible for protecting Owner-furnished items from damage, including damage from exposure to elements, and to repair or replace items damaged as a result of his operations.

PART 2 - PRODUCTS

2.1 MATERIALS
A. Refer to Specification Sections.

PART 3 - EXECUTION

3.1 CONSTRUCTION SCHEDULE

A. GENERAL DESCRIPTION OF WORK TO BE PERFORMED UNDER THIS CONTRACT
The Work to be performed under this contract shall commence on Notice to Proceed and shall be Substantially Complete as stipulated by AIA Document A101™–2017, as amended.

B. GENERAL CONSTRUCTION PHASING REFERENCING CFISD NEEDS BELOW, SHALL BE INCORPORATED INTO THE CONTRACT, INCLUDING BUT NOT LIMITED TO:

Campbell MS

The existing chilled water plant consists of (2) water cooled chillers, 250 tons each and (1) 191-ton air cooled chiller.

The project scope at Campbell MS includes replacement of (1) 250 ton water cooled chillers. The remaining operating plant capacity is 441 tons and has shown to deliver adequate cooling to the building to maintain the district's standard temperature and humidity setpoints of 75°F and 50-55% RH.

In addition, the project also includes replacing the (1) condenser water pump associated with chiller being replaced, adding main supply and return chilled water manual shut off valves and adding supply and return piping taps with valves and flanges for temporary chiller connections should the district need them in the future. Refer to the drawings for additional scope included in the project.

The chilled water plant, excluding the chiller being replaced, shall remain in **FULL** operation throughout the entire duration of the project and maintain the district's cooling and dehumidification setpoints (listed above) in the entire campus.

If a plant shutdown is required to execute any portion of the project scope, the shutdown of the plant at this campus is restricted to periods of time when the building is UNOCCUPIED in its entirety. Refer to the district's academic calendar. Shutdowns shall be coordinated, scheduled, and accepted by the Owner, Architect, and Engineer a minimum of 1 week prior to the plant being disabled.

During any plant shutdown greater than 8 hours in duration , the contractor shall provide and install temporary cooling and dehumidification equipment to maintain 80°F and 60% RH in the following locations:

1. Library
2. Competition Gymnasium
3. Auxiliary Gymnasium
4. Locker Rooms
5. Band
6. Choir
7. Orchestra FU
8. Administration (Complete Suite)
9. Science Classroom (Each)

In addition, during periods of time when the plant is shut down and utilizing temporary cooling and dehumidification equipment, the contractor shall monitor and log building temperature and humidity every 2 hours for each location listed. Digital logs shall be provided to Owner, Architect and Engineer upon completion of each scheduled plant shut for review and acceptance.

Jersey Village HS

The existing chilled water plant consists of (3) water cooled chillers, (2) 650 ton machines and (1) 211 ton machine.

The project scope at Jersey Village HS includes the replacement of all (3) water cooled chillers. In addition, the project scope includes replacing the (3) condenser water pumps, (3) primary chilled water pumps, adding main supply and return chilled water manual shut off valves and adding supply and return piping taps with valves and flanges for temporary chiller connections for the use with the rental chillers and for future use should the district need them. Refer to the drawings for additional scope included in the project.

The campus will be occupied and fully utilized throughout the chiller replacement project. Therefore, the project shall include rental air cooled chillers, temporary pumps, temporary hoses with means to manifold piping into a single tap in central plant, temporary electrical wiring, any other equipment, and components required to deliver a fully functioning temporary chilled water plant including installation of all rental equipment. The rental equipment shall have a minimum delivered capacity of **1,500 tons** to ensure the entire building is maintained at the district's standard temperature and humidity setpoints of 75°F and 50-55% RH.

The first phase of the chiller replacement project shall include the installation of the main supply and return chilled water manual shut off valves and the installation of the chilled water supply and return piping taps with valves and flanges for temporary chiller connections.

The second phase of the chiller replacement project shall include the installation of all rental chilled water equipment. The existing chilled water equipment shall NOT be disconnected or removed prior to demonstrating the rental chilled water equipment is functioning and capable of maintaining building setpoints for a period of 48 hours. Upon completion of the 48 hour demonstration period the contractor shall request acceptance of the rental chilled water plant's performance from the Owner, Architect and Engineer prior to proceeding with replacing any of the existing equipment. Any of the existing chilled water equipment shall not be removed prior to receiving the new chilled water equipment at the job site. Location of the rental chilled water equipment shall be reviewed and approved by the owner prior to installation.

The third phase of the chiller replacement project shall include the installation of new chilled water system equipment.

The fourth phase of the chiller replacement project shall include a demonstration that the new chilled water equipment is functioning and capable of maintaining the building setpoints for a period of a one (1) week. Upon completion of the one (1) week demonstration period the contractor shall request acceptance of the new chilled water equipment's performance from the Owner, Architect and Engineer prior to proceeding to the next phase.

The last phase of the chiller replacement project shall include the removal of rental chilled water equipment from the site.

If a plant shutdown is required to prepare for rental chiller connection to the building and its operation or to execute any portion of the project scope, the shutdown of the plant at this campus is restricted to periods of time when the building is UNOCCUPIED in its entirety. Shutdowns shall be coordinated, scheduled, and accepted by the Owner, Architect, and Engineer a minimum of 1 week prior to the plant being disabled.

During any plant shutdown greater than 8 hours in duration, the contractor shall provide and install temporary cooling and dehumidification equipment to maintain 80°F and 60% RH in the following locations:

1. Library
2. Competition Gymnasium
3. Auxiliary Gymnasium

4. Locker Rooms
5. Band
6. Choir
7. Orchestra
8. Administration (Complete Suite)
9. Science Classroom (Each)

In addition, during periods of time when the plant is shut down and utilizing temporary cooling and dehumidification equipment, the contractor shall monitor and log building temperature and humidity every 2 hours for each location listed. Digital logs shall be provided to Owner, Architect and Engineer upon completion of each scheduled plant shut for review and acceptance.

Berry Center

The existing chilled water plant consists of (3) water cooled chillers, (2) 525 ton machines and (1) 375 ton machine.

The project scope at the Berry Center includes the replacement of all (3) water cooled chillers. In addition, the project scope includes replacing the (3) primary chilled water pumps, adding main supply and return chilled water manual shut off valves and adding supply and return piping taps with valves and flanges for temporary chiller connections for the use with the rental chillers and for future use should the district need them. Refer to the drawings for additional scope included in the project.

The facility will be occupied and fully utilized throughout the chiller replacement project. Therefore, the project shall include rental air cooled chillers, temporary pumps, temporary hoses with means to manifold piping into a single tap in central plant, temporary electrical wiring, any other equipment, and components required to deliver a fully functioning temporary chilled water plant including installation of all rental equipment. The rental equipment shall have a minimum delivered capacity of **1,500 tons** to ensure the entire building is maintained at the district's standard temperature and humidity setpoints of 75°F and 50-55% RH.

The first phase of the chiller replacement project shall include the installation of the main supply and return chilled water manual shut off valves and the installation of the chilled water supply and return piping taps with valves and flanges for temporary chiller connections. In addition, this phase shall include removal and reinstallation of new refrigerant lines associated with existing cooler and freezer system.

The second phase of the chiller replacement project shall include the installation of all rental chilled water equipment. The existing chilled water equipment shall NOT be disconnected or removed prior to demonstrating the rental chilled water equipment is functioning and capable of maintaining building setpoints for a period of 48 hours. Upon completion of the 48 hour demonstration period the contractor shall request acceptance of the rental chilled water plant's performance from the Owner, Architect and Engineer prior to proceeding with replacing any of the existing equipment. Any of the existing chilled water equipment shall not be removed prior to receiving the new chilled water equipment at the job site. Location of the rental chilled water equipment shall be reviewed and approved by the owner prior to installation.

The third phase of the chiller replacement project shall include the installation of new chilled water system equipment.

The fourth phase of the chiller replacement project shall include a demonstration that the new chilled water equipment is functioning and capable of maintaining the building setpoints for a period of a one (1) week. Upon completion of the one (1) week demonstration period the contractor shall request acceptance of the new chilled water equipment's performance from the Owner, Architect and Engineer prior to proceeding to the next phase.

The last phase of the chiller replacement project shall include the removal of rental chilled water equipment from the site.

If a plant shutdown is required to prepare for rental chiller connection to the building and its operation or to execute any portion of the project scope, the shutdown of the plant at this campus is restricted to periods of time when the building is UNOCCUPIED in its entirety. Refer to the district's academic calendar. Shutdowns shall be coordinated, scheduled, and accepted by the Owner, Architect, and Engineer a minimum of 1 week prior to the plant being disabled.

During any plant shutdown greater than 8 hours in duration, the contractor shall provide and install temporary cooling and dehumidification equipment to maintain 80°F and 60% RH in the following locations:

1. AV Storage RM 1528
2. RM 1717
3. RM 1118
4. All Rooms in 2100 & Theater Booth Room 2105 and 2102
5. Show Power RM 1519
6. Conference B RM 1716
7. Zone 3606
8. Kitchen RM 1304
9. Kitchen RM 1307
10. IDF E – Catwalk (North Side)
11. IDF F – West Landing
12. IDF G

In addition, during periods of time when the plant is shut down and utilizing temporary cooling and dehumidification equipment, the contractor shall monitor and log building temperature and humidity every 2 hours for each location listed. Digital logs shall be provided to Owner, Architect and Engineer upon completion of each scheduled plant shut for review and acceptance.

Cy Ranch HS

The existing chilled water plant consists of (4) water cooled chillers, (3) 1,100 ton machines and (1) 300 ton machine. Currently two of the 1,100 water cooled chillers are not operational, CH-1 and CH-3. While the connected campuses are functioning on the reduced capacity of 1,400 tons, the existing chilled water system struggles at times to maintain supply water temperature. The existing chilled water central plant supplies cooling to Cy Ranch H.S., Smith M.S. and Warner E.S.

The project scope at the Cy Ranch HS Central Plant includes the replacement of all (4) water cooled chillers. In addition, the project scope includes replacing the (4) primary chilled water pumps, (3) vertical turbine condenser water pumps, adding main supply and return chilled water manual shut off valves and adding supply and return piping taps with valves and flanges for temporary chiller connections for the use with the rental chillers and for future use should the district need them. Refer to the drawings for additional scope included in the project.

The (3) campuses connected to this chilled water central plant will be occupied and fully utilized throughout the chiller replacement project. Therefore, the project shall include rental air cooled chillers, temporary pumps, temporary hoses with means to manifold piping into a single tap in central plant, temporary electrical wiring, any other equipment, and components required to deliver a fully functioning temporary chilled water plant including installation of all rental equipment. The rental equipment shall have a minimum delivered capacity of **1,500 tons** to ensure the all facilities connected to this plant are maintained at the district's standard temperature and humidity setpoints of 75°F and 50-55% RH.

The first phase of the chiller replacement project shall include the installation of the main supply and return chilled water manual shut off valves and the installation of the chilled water supply and return piping taps with valves and flanges for temporary chiller connections.

The second phase of the chiller replacement project shall include the installation of all rental chilled water equipment. The existing chilled water equipment shall NOT be disconnected or removed prior to demonstrating the rental chilled water equipment is functioning and capable of maintaining building setpoints for a period of 48 hours. Upon completion of the 48 hour demonstration period the contractor shall request acceptance of the rental chilled water plant's performance from the Owner, Architect and Engineer prior to proceeding with replacing any of the existing equipment. Any of the existing chilled water equipment shall not be removed prior to receiving the new chilled water equipment at the job site. Location of the rental chilled water equipment shall be reviewed and approved by the owner prior to installation.

The third phase of the chiller replacement project shall include the installation of the new CH-1 and CH-3 and associated primary pumps. In addition, this phase shall include the replacement of the (3) condenser water pumps. Upon completion of the installation of all equipment in this phase, the new chillers CH-1 and CH-3 shall be put in service to deliver additional cooling capacity to the (3) connected campuses. The rental chilled water equipment shall remain connected and in use.

The fourth phase of the chiller replacement project shall include the installation of the new CH-2 and CH-4 and associated primary pumps.

The fifth phase of the chiller replacement project shall include a demonstration that all the new chilled water equipment is functioning and capable of maintaining the building setpoints for a period of one (1) week. Upon completion of the one (1) week demonstration period the contractor shall request acceptance of the new chilled water equipment's performance from the Owner, Architect and Engineer prior to proceeding to the next phase.

The last phase of the chiller replacement project shall include the removal of rental chilled water equipment from the site.

If a plant shutdown is required to prepare for rental chiller connection to the building and its operation or to execute any portion of the project scope, the shutdown of the plant at this campus is restricted to periods of time when the building is UNOCCUPIED in its entirety. Shutdowns shall be coordinated, scheduled, and accepted by the Owner, Architect, and Engineer a minimum of 1 week prior to the plant being disabled.

During any plant shutdown greater than 8 hours in duration, the contractor shall provide and install temporary cooling and dehumidification equipment to maintain 80°F and 60% RH at Cy Ranch H.S., Smith M.S. and Warner E.S. in the following locations:

1. Library
2. Competition Gymnasium
3. Auxiliary Gymnasium
4. Locker Rooms
5. Band
6. Choir
7. Orchestra
8. Administration (Complete Suite)
9. Science Classroom (Each)

In addition, during periods of time when the plant is shut down and utilizing temporary cooling and dehumidification equipment, the contractor shall monitor and log building temperature and humidity every 2 hours

for each location listed. Digital logs shall be provided to Owner, Architect and Engineer upon completion of each scheduled plant shut for review and acceptance.

END OF SECTION

SECTION 01 23 00

ALTERNATES

PART 1 - GENERAL

1.1 ALTERNATE PRICES

A. Contractor shall state, in the spaces provided in the proposal form, Alternate Prices for the work described below. The responsibility of determining quantity of Alternates rests with the Contractor. Base Proposal and Alternates shall include cost of all supporting elements required, so that no matter what combination of Base Proposal and Alternates are accepted, that portion shall be a complete entity. Work for all Alternates shall be in strict accordance with the specification sections noted and applicable to the specific work.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.1 ALTERNATES

A. **Alternate Number 1:** ***Base Bid Adjustment***
This alternate shall establish the adjustments to the General Contractor's Base Proposal submitted at 2:00 pm, if necessary. This alternate shall be accepted whether it is an add or a deduct and will be used as part of the evaluation process to determine the best value for the District.

3.2 GENERAL NOTES

A. Unless otherwise indicated, scope of work for each alternate shall include material and labor, general conditions and all other costs associated with completing the work described.

B. Alternates are not listed in any order of priority.

C. Acceptance of alternates shall be the sole discretion of the Owner.

D. See Section AB for alternate pricing timelines.

END OF SECTION

SECTION 28 4602
EXPANSION OF EXISTING FIRE DETECTION AND ALARM SYSTEM

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Provide all detailed engineering, documentation, materials and devices, installation, calibration, software programming and check-out necessary for a complete and fully operational fire detection and alarm system in accordance with the full intent and meaning of the drawings and specifications including, but not limited to, the following:
   1. Supply, install and connect all hardware necessary to provide a complete and operational fire detection and alarm system.
   2. Supply, install and wire all field hardware, power supplies, power circuits, alarm initiating devices, audible and visual alarm devices, auxiliary control relays, signal initiating and signaling devices, conduits, wires, fittings and all accessories required for the system to perform as specified as required. Use and expand the existing fire alarm control panel.
   3. Supply, install, debug and test all software required to provide all software functions described in accordance with the full intent and meaning of the drawings and specifications.
   4. Coordinate the work specified under this Section with other trades and contractors to assure a complete and fully operational system.

B. The intent of fire detection and alarm system work is specified in this section and indicated on the drawings. The installing contractor shall design and provide a complete system, meeting the requirement of this section. The Contractor shall provide all fire alarm and initiation devices in new and renovated areas required for a complete system acceptable to all governing authorities. Provide proper spacing and coverage of all devices.

C. Contractor is to expand the existing fire alarm system in the areas affected by construction.

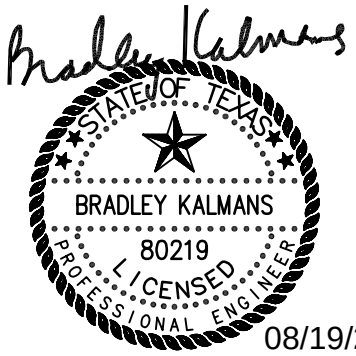
D. Contractor shall provide appropriate devices for area of construction, to maintain proper coverage during construction, without allowing false alarms.

E. Fire alarm system shall be fully active and monitored during construction.

1.2 RELATED SECTIONS

A. Divisions 22, 23 and 26

B. Fire Suppression Systems



08/19/2025

1.3 CODES / STANDARDS / REFERENCES (LATEST EDITIONS)

A. National Fire Protection Association (NFPA):

1.	NFPA1	Fire Code
2.	NFPA 13	Systems, Installation
3.	NFPA 17	Dry Chemical Extinguishing Systems
4.	NFPA 70	National Electrical Code
5.	NFPA 72	National Fire Alarm and Signaling Code.
6.	NFPA 80	Fire Doors and Fire Windows
7.	NFPA 90A	Standard for the Installation of Air Conditioning and Ventilating Systems.
8.	NFPA 92A	Smoke Control Systems
9.	NFPA 101	Life Safety code.
10.	NFPA 105	Smoke Control Door Assemblies
11.	NFPA 1221	Standard for the Installation, Maintenance and Use of Emergency Services Communications Systems.
12.	NFPA 2001	Fire Extinguishing Systems, Clean Agent

B. UL: Underwriters Laboratories, Inc.
   1. 217 Single and Multiple Station Smoke Detectors.
   2. 268 Smoke Detectors for Fire Protective Signaling Services.
   3. 864 Control Units for Fire Protective Signaling Services.
   4 864 Transient protection
   5. 1480 Speakers for Fire Protective Signaling Systems
   6. UL Fire Protection Equipment Directory.
   7. UL Electrical Construction Materials Directory.

C. Factory Mutual P7825 Approval Guide

D. American National Standards Institute (ANSI).

E. National Electrical Manufacturer's Association (NEMA).

F. Institute of Electrical and Electronic Engineers (IEEE).

G. Electronic Industries Association (EIA-232-C): Interface between Data Terminal Equipment and Data Communication Equipment Employing Serial Binary Data Interchange.

H. Requirements of American Disabilities Act (Public Law 101-336).

I. Local Accessibility Standards, Codes, and Ordinances

J. State Fire Marshall or Requirements of Local Authorities having Jurisdiction

K. State Insurance Code.

L. National Building Code.

M. International Building and Fire Code adopted by Local Authority Having Jurisdiction

N. Uniform Building Code.

O. Local & State Building Codes.

P. In addition the above requirements, comply with all local codes. Where discrepancies exist between codes, drawings or specifications, the more stringent requirement shall prevail. Installation shall be subject to approval, inspection and test of applicable regulatory agencies.

1.4 MANUFACTURER'S, PLANNER'S AND INSTALLER'S QUALIFICATIONS

A. The manufacturer shall regularly and presently produce, as the manufacturer's principle products, the equipment and material of the type and design specified for this project, and shall have manufactured the item for at least 5 years. All components of the system shall be UL compatible with the existing main fire alarm control panel. Manufacturer of all components shall match existing manufacturers of similar or same type components unless otherwise specified or noted on the drawings.

B. The installing contractor shall have been actively engaged in the business of designing, selling, installing, and servicing fire alarm systems for at least ten (10) years.

C. The entire Fire Detection and Alarm System shall be installed by a factory authorized representative of the existing main fire alarm control panel and certified by the manufacturer to distribute, sell, and install the specified fire alarm and smoke detection system. Include all components, elements, and testing and acceptance procedures.

D. If the submitted system is being supplied by an authorized distributor of the equipment manufacturer, the distributor shall have been actively engaged in the sale, installation and service of the type of system proposed for this project for a minimum of 10 years.

E. Any proposed installer who cannot show evidence of such qualifications may be rejected. The services of a technician provided and certified by the equipment manufacturer shall be provided to supervise the installation and tests of the system.

F. Furnish evidence there is an experienced and effective service organization, which carries a stock of repair parts for the system to be furnished.

G. The installing contractor shall be licensed by the State Fire Marshall to design, sell, install, and service fire alarm systems as required by the State Insurance Code.

H. The installing contractor shall have on his staff a minimum of two (2) Fire Alarm Planning Superintendent (APS) licensed by the State Fire Marshall's office for such purpose and

under whose supervision installation, final connections, and check out will take place as required by the State Insurance Code.

I. The APS shall be a certified NICET Level III state licensed fire alarm planner under whose supervision system design shall take place. In lieu of a NICET certified state licensed fire alarm planner, the contractor or supplier may provide design supervision by a registered professional engineer, who regularly engages in the design of fire alarm systems.

J. The installing contractor shall provide 24-hour, 365 days per year emergency service with factory trained, state licensed service technicians.

K. Material shall be new and in perfect condition when installed.

L. Electrical or electronic equipment provided under this Division which has been damaged, exposed to weather, or is, in the opinion of the Architect/Engineer otherwise unsuitable because of improper fabrication, storage, or installation, shall be removed and replaced with new equipment, at no additional cost to the owner.

1.5 COORDINATION

A. It shall be the responsibility of the installing contractor to coordinate all requirements surrounding installation of the fire alarm system with all other trades.

1.6 DEFINITIONS

A. General: Wherever mentioned in this specification or on the drawings, the equipment, devices and functions shall be defined as follows:

1. Alarm Signal: A signal, which signifies a state of emergency requiring immediate action and immediate notification of the Fire Department. These are signals such as:
   a. The operation of a manual station.
   b. The operation of a fire suppression system switch.
2. Pre-Alarm Signal: A signal, which indicates a detection device, has operated. These signals require and immediate response, but do not require immediate notification of the Fire Department.
3. Supervisory Signal: A signal, which signifies the impairment of fire protection system, which may prevent its normal operation.
4. Trouble Signal: A signal, which indicates that a fault, such as an open circuit or ground, has occurred in the system.
5. Alarm Zone: An alarm initiating device or combination of devices connected to a single alarm initiating device circuit.
6. Pre-Alarm Zone: A detector or group of detectors connected to a single detector circuit, which can send an alarm to the central control panel.
7. Supervision Zone: A supervisory signal initiating device or combination of such devices connected to a single supervisory signal circuit.
8. Communication Zone: A fire alarm indicating device or series of devices arranged to visually and/or audibly indicate a fire alarm signal.

1.7 SUBMITTALS

A. Before the shop drawings are submitted to Architect / Engineer, submit drawings to the Authority Having Jurisdiction for approval. All approvals shall be noted on the drawings or by letter from the Authority Having Jurisdiction. Submit copies of the Authority Having Jurisdiction approved shop drawings to the Architect for review.

B. Fire alarm submittal shall be bound and separate from all other submittals. The installing contractor and/or equipment supplier shall provide complete and detailed shop drawings and include:

1. Provide a complete written, item-by-item, line-by-line, specification review stating compliance or deviation in full description.

2. Complete point-to-point wiring diagrams of new equipment.
3. Complete floor plan drawings locating all new system devices and existing panels used for expansion.
4. Complete system bill of material.
5. Detailed system operational description. Any specification differences and deviations shall be clearly noted and marked.
6. Provide a complete description of system operation.
7. Manufacturer’s installation instruction.
8. Bound form with contractor's name, supplier's name, project name, state fire alarm license, Fire Alarm Planning Superintendent license and all Technician(s) license adequately identified.
9. Submittal sheets sequentially numbered with the format: sheet number of number total. For example: 1 of 3.
10. Complete set of manufacturer’s operating instructions, circuit diagrams and the information necessary for proper installation, operation and maintenance.
11. Field and factory wiring diagrams of all new systems and for typical devices showing all connections with all terminals and interconnections identified.
12. Complete schematic circuit diagrams for all new equipment, including panel modules.
13. Floor plan drawings including all existing main and new panel and device locations, conduit sizes between devices and panels; number, size and type of conductors between devices and panels; walls, doors and graphic room numbers; exact power requirements and conduit routing with the location of all junction boxes and exact locations of devices and equipment. Submit a floor plan drawing circuiting/zoning shall be identified on the drawings.
14. Complete wiring, routing, and schematic diagrams, software descriptions, and details required to demonstrate that the system has been coordinated and will function as a system.
15. Manufacturers catalog cut sheets shall be provide for each piece of equipment with the appropriate model or part number highlighted in cases where multiple model numbers or part numbers are shown.
16. Detailed list of all hardware components, which are included.
17. Installation details for each type of field mounted device installed under this contract.
18. Point-to-point termination schedules with cable identification numbers and terminal strip numbers.
19. New fire detection and alarm system’s panel configuration complete with peripheral devices, batteries, power supplies, and interconnection diagrams.
20. Submit a riser diagram of trunk wiring and device-to-device wiring and device to fire alarm control panel wiring. Riser shall show:
    a. Conduit sizes and types.
    b. Number, size and type of conductors.
    c. Fire detection and alarm devices arranged in the required circuiting/zoning, as defined in the specifications and on the drawing.
    d. Battery calculations to show compliance with the requirements of the specifications for both alarm and supervisory mode.
21. Indicate visual alarm device candela setting required for coverage.
22. Sample of proposed graphic/text annunciation.

1.8 OPERATION AND MAINTENANCE MANUALS

A. Submit complete sets of operation and maintenance manuals. Manual, less as-builts, and sign-off sheets, shall be provided upon completion of the work. Approval of the manual will be required prior to substantial completion.

B. The Operation and Maintenance Manual shall consist of the following:
   1. The manual shall include the names, addresses and telephone numbers of each Contractor installing products, and of the nearest service representative for each product. The manual shall have a Table of Contents and tab sheets. Update manuals to include modifications made during installation, checkout and acceptance. The manual shall include the sections described in the following paragraphs.
   2. The Functional Design Section shall identify the operational requirements for the system and explain the theory of operation, design philosophy, and specific functions. Hardware and software functions, interfaces, and requirements shall be provided for system operating modes.
   3. The Hardware Section shall describe equipment provided, including general description and specifications, installation and checkout procedure, electrical schematics and layout drawings. Alignment and calibration procedures, manufacturer's repair parts list indicating source of supply, interface definition, signal identification and wiring diagrams. Also, include a complete parts list of all components as well as a list of recommended spare parts. The spare parts list shall include, for each item, the manufacturer's name, the model of the part, and serial number, if appropriate, and a physical and electrical description of the part.
   4. The Software Section shall describe programming and testing, starting with a system overview and proceeding to a detailed description of each software module, to instruct the user on programming or reprogramming any portion of the system and other information necessary to enable proper system usage.
   5. The Operation Section shall provide instructions for operation of the system, including system start-up procedures, use of system and applications software, alarm presentation (where applicable), failure and recovery procedures, preventive maintenance schedule, parameter schedules and sequence definition, and system access requirements.
   6. The Maintenance Section shall provide descriptions of maintenance for equipment including inspection, periodic preventive maintenance, fault diagnosis, and repair or replacement of defective components.
   7. The Shop Drawings section shall include copies of all approved shop drawings and submittal materials updated to "AS BUILT".

1.9 AS-BUILT DRAWINGS

A. Prepare and submit detailed "As-Built" drawings. The drawings shall include certified test of the system, testing and acceptance sign-off sheets, and other items specified elsewhere to be performed after initial submission of operation and maintenance manuals, complete wiring diagrams showing connections between all devices and equipment, both factory and field wired. Include a riser diagram and drawings showing the as built location of all devices and equipment. The drawings shall show the system as installed, including all deviations from both the project drawings and the approved shop drawings. The drawings shall be prepared on uniform sized sheets, the same size as the project drawings. The plan drawings shall be 11x17 inch and inserted in the specified Operations and Maintenance Manuals. Provide electronic copies in PDF and Autocad.dwg format.

1.10 WARRANTY

A. All new fire alarm devices, new panels, new equipment and new accessories, including labor and material, shall be free from defects in workmanship and materials, under normal use and service, for a period of one year from the date of substantial completion. Any equipment or workmanship shown to be defective shall be repaired, replaced or adjusted during normal working hours at no cost to the owner within 4-hour notification.

B. Repair services and replacement parts for the system to be furnished under this Contract shall be available for a period of ten years after the date of final acceptance. Service during the warranty period shall be provided within four hours after notification and all repairs shall be corrected within 24 hours after notification throughout the warranty specified in this section.
C. The installing contractor shall provide 24 hour, 365 days per year emergency service with factory trained, state licensed service technicians.
D. The equipment manufacturer shall be represented by a local service organization and the name of such shall be furnished to the Owner, Architect, and Engineer.
E. Provide a certified fire alarm test of the complete system at the end of the warranty period and correct any and all items located in the area of renovation to bring the system to an approved status at no cost to the Owner. Clean all smoke detectors and replace all defective parts within the area of renovation at no cost to the Owner.
F. Guarantee labor, materials, and equipment provided under this contract against all defects for a period of one year after the date of final acceptance and receipt and approval of “As-Built” drawings and schematics of all equipment.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Manufacturers acceptable contingent upon Products’ compliance with the specifications:
1. Match Existing main fire alarm panel manufacturer.

2.2 SYSTEM DESCRIPTION

A. System shall be a fully functional fire detection and alarm system, tested and left in first class operating condition. Voice evacuation systems where required or specified shall have voice alarm notification wherever audible notification is required.
B. The system shall provide communication with initiating and control devices individually. All of these devices shall be individually annunciated at the fire alarm control panel. Annunciation shall include the following conditions for each point:
1. Alarm
2. Trouble.
3. Open
4. Short
5. Device missing/failed.
C. System circuits shall be wired as follows: Initiating device circuit (IDCs) shall be Style B, indicating appliance circuit (IACs) shall be Style Y, and signal line circuit (SLCs) shall be Style 4 as describe in NFPA 72.
D. The system shall contain independently supervised initiating device circuits. The alarm activation of any initiation circuit shall not prevent the subsequent alarm operation of any other initiation circuit.
E. There shall be supervisory service initiation device circuits for connection of all sprinkler water flow switches and valves. Device activation shall cause a general alarm at the fire alarm control panel. Each flow and tamper switch shall have an individual address.
F. There shall be independently supervised and independently fused indicating appliance circuits for all alarm signaling devices. Disarrangement conditions of any circuit shall not affect the operation of other circuits.
G. Auxiliary manual controls shall be supervised so that an “off normal” position of any switch shall cause an “off normal” system trouble.

H. The incoming power to the system shall be supervised so that any power failure must be audibly and visually indicated at the fire alarm control panel. A green “power on” LED shall be displayed continuously while incoming power is present at the building fire alarm control panel.

I. The system batteries shall be supervised so that a low battery condition or disconnection of the battery shall be audibly and visually indicated at the building fire alarm control panel.

J. The system modules shall be electrically supervised for module placement. Should a module become disconnected, the system trouble indicator shall illuminate and the audible trouble signal shall sound.

K. The system shall have provisions for disabling and enabling all circuits individually for maintenance or testing purposes.

L. The system shall be provided with sufficient battery capacity to operate the entire system upon loss of normal 120 VAC power in a normal or supervisory mode for a period of 24 hours with 20 minutes of alarm operation at the end of this period as a minimum. The system shall automatically transfer to the standby batteries upon power failure. All battery charging and recharging operations shall be automatic. If batteries are fully discharged, the charger shall recharge them back to full charge in four hours.

M. All external circuits requiring system operating power shall be 24 VDC and shall be individually fused at the respective fire alarm control panel.

N. All addressable devices shall have the capability of being disabled or enabled individually from the fire alarm control panel.

O. A maximum of 90 addressable devices shall be multi-dropped from a single pair of wires. Systems that require factory reprogramming to add or delete devices within the capability of the designed system are unacceptable. Expansion of the designed system shall be accomplished by factory reprogramming.

P. The communication format to the addressable devices shall be a completely digital poll/response protocol to allow t-tapping of the circuit wiring. A high degree of communication reliability must be obtained by using parity data bit error checking routines for address codes and check sum routines for the data transmission portion of the protocol.

Q. Each addressable device must be uniquely identified by an address code. The system must verify that proper type device is in place and matches the desired software configuration. All remote or external panels shall have an individual address for monitoring.

R. Wiring type, distances, survivability, and wiring configuration types shall be approved by the equipment manufacturer. The system shall allow a line distance of up to 2,500 feet to the furthest addressable device on a Style Y circuit. Fire alarm cable shall have an outer jacket insulation color of red. Minimum wire size shall be #18 AWG.

S. Each panel extender shall have an individual address.

2.3 FIRE ALARM CONTROL PANEL (FACP)

A. Existing to remain.

B. The fire alarm control panel shall be left with 25% spare initiating point and battery capacity for future use.

C. New power supplies (if required) shall provide all control panel and peripheral power needs with filtered power as well as unregulated 24VDC power for external audio-visual devices. The audio-visual power shall be increased as needed by adding additional modular expansion power supplies. All power supplies shall be designed to meet UL and NFPA requirements for POWER LIMITED operation on all external signaling lines, including initiating circuits and indicating circuits. Design the system power supplies and power trunk wiring for all annunciation devices required, and to add a minimum of two (2) 110cd visual devices in the future. Individual circuit design loading shall not exceed 70%

of power supply and system wiring capacity when including the additional spare capacity for the 110cd visual devices

1. Input power shall be 120VAC 60Hz. The power supply shall provide internal supervised batteries and automatic charger. The power supply shall provide positive and negative ground fault supervision, battery/charger fail condition, and AC power fail indicators. The power supply shall also provide supervision of modular expansion power supplies as may be required.
2. Surge protection shall be integral to the control panels.
3. Each power supply shall be monitored and have an individual address.

2.4 DIGITAL FIRE ALARM COMMUNICATOR

A. Existing to remain.

2.5 EMERGENCY VOICE ALARM COMMUNICATION SYSTEM

A. Existing to remain and be expanded.
B. Compatible and UL listed with existing fire alarm system.

2.6 NEW FIELD DEVICES WHERE REQUIRED

A. All devices shall be supervised for trouble conditions. The fire alarm control panel shall be capable of displaying the type of trouble condition (open, short, device missing/failed). Should a device fail, it shall not hinder the operation of other system devices.
B. Visual Signals
   1. Strobe lights shall be low profile and operate on 24 VDC. The strobe light shall be capable of producing 75 candela on axis to comply with ADA and UL 1638 requirements, and 15, 30, or 110 candela to comply with UL 1971 requirements. Visual signals in common areas of illumination shall have synchronized flash. Provide white with red letters.
   2. All wall mounted strobe units installed in student's toilets, gymnasiums, corridors, student locker/dressing rooms shall have a protective cover.
C. Combination Alarm Signal and High Intensity Visual Signals
   1. Strobe lights shall operate on 24 VDC. The strobe light shall be capable of producing 75 candela on axis to comply with ADA requirements, and 15, 30 or 110 candela to comply with UL 1971 requirements. Visual signals in common areas of illumination shall have synchronized flash. Each unit shall provide a Code 3 Temporal tone. The horn shall be capable of an output of 95dB at 10', and intensity adjusted accordingly for the area of coverage. Electronic Mini-Sounder or horn set on low setting shall be provided in interior rooms 900 square feet or less. Mini-sounder shall not be used in any corridors, mechanical electrical rooms and similar large spaces and areas of high ambient noise level. Provide white with red letters.
   2. All wall mounted combination units installed in student toilets, gymnasiums, corridors, student locker/dressing rooms shall have a protective cover
   3. The audible emergency alarms shall produce a sound that exceeds the prevailing sound level in the room or space by at least 15 dba or shall exceed any maximum sound level with a duration of 60 seconds by 5 dba, whichever is louder. Sound levels for alarm signals shall not exceed 110 dba at the minimum hearing distance from the audible appliance.
D. Exterior Audible Signal:
   1. Semi-flush mounted, molded of high impact red thermoplastic and listed for weatherproof locations.
E. Combination Voice Signal and High Intensity Visual Signals (where indicated or required by local AHJ):
   1. Strobe lights shall operate on 24 VDC. The strobe light shall be capable of

producing 75 candela on axis to comply with ADA requirements, and 15, 30 or 110 candela to comply with UL 1971 requirements. Visual signals in common areas of illumination shall have synchronized flash.

2. All combination units installed in student toilets, gymnasiums, student locker / dressing rooms shall have a protective cover.
3. The visual signal lens housing shall be white with red lettered FIRE or as approved by Architect. The speaker and visual signal shall be mounted to a common white speaker baffle. The visual signal shall flash at a rate of minimum of 1 Hz and maximum of 3 Hz, and shall use a strobe type lamp or other high intensity long life light source. The lamp intensity shall be a minimum of 75 candela.
4. The speaker shall be UL 1480 compatible with the control equipment. Unit shall operate within a temperature range of 150°F to -30°F. High output speakers, UL minimum 87dB at 10 feet with speaker taps of .33.66/1.25/2.5 watts. Standard output speakers, UL 75-81 dB at 10 feet with speaker taps of .5/1/1.75/2.75 watts. Capacitor for line supervision.

F. Ceiling mounted recessed mounted speakers (where indicated or required by local AHJ) shall be UL 1480 compatible with the control equipment. Unit shall operate within a temperature range of 150°F to -30°F. UL minimum 78-87 dB at 10 feet with speaker taps of .25, .5/1.0/2.0 watts. Round, white baffle or 2x2 lay-in grid with UL enclosure, tile bridge supports when recessed in lay-in ceiling tiles (where indicated or required by local AHJ) and capacitor for line supervision.

G. Surface mounted speakers (where indicated or required by local AHJ) shall be UL 1480 compatible with the control equipment. Unit shall operate within a temperature range of 150°F to -30°F UL minimum 100 dB at 15 watts at 10 feet. Speaker taps via 7-position selector switch, 25-vol., .48/.94/1.8/7.5/15 watts. Fully enclosed wiring terminals. Capacitor for line supervision.

H. Addressable Manual Pull Stations:

1. The manual station shall provide address-setting means using rotary decimal switches. No binary coding shall be required.
2. Manual stations shall be designed for semi-flush mounting on standard electrical box. The station shall be constructed of hi-impact red molded Lexan with instructions for station operation in raised white letters. Stations shall be of the dual action type.
3. Install Stopper STI1100 series covers with horns on all manual pull stations, except the one at the FACP and Remote Annunciator.
4. At renovation: Remove all manual pull stations except one at main fire alarm panel and one at remote annunciator panel, unless otherwise called for by code.
5. At new construction: Install only two manual pull stations; one at main fire alarm panel and one at remote annunciator panel, unless otherwise called for by code.
6. Do not specify or use ionization only type detectors unless reviewed and approved by CFISD. Multi-criteria detectors that include ionization detection as one of the criteria to initiate and alarm are acceptable.

I. Intelligent Multi-Criteria Photoelectric Smoke Detectors

1. The intelligent multi-criteria detection device shall include the ability to combine the signal of the thermal sensor with the signal of the photoelectric signal in an effort to react hastily in the event of a fire situation. It shall also include the inherent ability to distinguish between a fire condition and a false alarm condition by examining the characteristics of the thermal and smoke sensing chambers and comparing them to a database of actual fire and deceptive phenomena.
2. The detectors shall use the photoelectric principal to measure smoke density and

shall, on command from the control panel, send data to the panel representing the ANALOG level of smoke density. The detector shall provide automatic sensitivity "drift" compensation. The detector shall also provide a "maintenance alert" feature whereby the detector shall initiate a trouble condition should the unit's sensitivity approach the outside limits of the normal sensitivity window.

3. The detectors shall provide address setting means electronically and automatically at the control panel.
4. The detectors shall provide operational status and alarm state LED. Under normal conditions, the LED shall flash, indicating the detector is operational and in regular communication with the control panel. An output connection shall also be provided in the base for connecting an external remote alarm LED.
5. The detector shall be semi-flush ceiling mounted and be provided with modular detector head with twist lock base. No radioactive material shall be used.
6. Voltage and RF transient suppression techniques shall be employed as well as smoke signal verification circuit and an insect screen.

J. Intelligent Photoelectric Smoke Detectors
1. The detectors shall use the photoelectric principal to measure smoke density and shall, on command from the control panel, send data to the panel representing the ANALOG level of smoke density. The detector shall provide automatic sensitivity "drift" compensation. The detector shall also provide a "maintenance alert" feature whereby the detector shall initiate a trouble condition should the unit's sensitivity approach the outside limits of the normal sensitivity window.
2. The detectors shall provide address setting means electronically and automatically at the control panel.
3. The detectors shall provide operational status and alarm state LED. Under normal conditions, the LED shall flash, indicating the detector is operational and in regular communication with the control panel. An output connection shall also be provided in the base for connecting an external remote alarm LED.
4. The detector shall be semi-flush ceiling mounted and be provided with modular detector head with twist lock base. No radioactive material shall be used.
5. Voltage and RF transient suppression techniques shall be employed as well as smoke signal verification circuit and an insect screen.

K. Duct photoelectric smoke detectors:
1. Detectors shall be analog addressable type.
2. To minimize nuisance alarms, detectors shall have an insect screen and be designed to ignore invisible airborne particles or smoke densities that are below the factory set alarm point. No radioactive material shall be used.
3. Removal of the detector head shall interrupt the supervisory circuit of the fire alarm detection loop and cause a trouble signal at the control panel.
4. Voltage and RF transient suppression techniques shall be employed as well as smoke signal verification circuit and an insect screen.
5. Remote alarm/power LED indicator with test switch shall be provided. Unit shall be wall or ceiling mounted in readily visible and accessible area near the location of detector; exact location of unit to be approved by the Architect/Engineer.
6. Detectors shall operate on the same principles and exhibit the same basic characteristics as area type photoelectric smoke sensors. The detector shall operate in air velocities of 300 FPM to 4,000 FPM. Each detector shall interface directly to the system SLC loop without the requirement of interface zone modules.
7. The unit shall consist of a clear molded plastic enclosure (or remote mounted LED status indicator shall be provided next to the smoke detector) with integral conduit knockouts to provide visual viewing of detector/sensor for monitoring sensor operation and chamber condition. The duct housing shall be provided with

gasket seals to insure proper seating of the housing to the associated ductwork. Each unit's sampling tubes shall extend the width of the duct and be provided with porosity filters to reduce sensor/chamber contamination.

8. The detectors shall provide alarm and power status indication by LED. Under normal conditions, the LED shall flash, indicating the detector is operational and in regular communication with the control panel. Steady illumination of the LED shall indicate that the control panel has detected and verified an alarm condition. An output connection shall also be provided in the base for connecting an external remote alarm LED.
9. The detectors shall provide address setting means electronically and automatically from the control panel.

L. Intelligent Thermal Detectors
1. The detectors shall use dual electronic thermostats to measure temperature levels in its chamber and shall, on command from the control panel, send data to the panel representing the analog temperature level.
2. The detectors shall provide address setting means electronically and automatically at the control panel.
3. The detectors shall provide operational status and alarm state LED. Under normal conditions, the LED shall flash, indicating the detector is operational and in regular communication with the control panel. An output connection shall also be provided in the base for connecting an external remote alarm LED.
4. The detector shall be semi-flush ceiling mounted and be provided with modular detector head with twist lock base.
5. Thermal Detectors shall be combination rate-of-rise and fixed temperature- rated at 135°F for areas where ambient temperatures do not exceed 100°F and shall be 200°F for areas where ambient temperatures exceed 100°F but not 150°F. The fixed temperature element shall consist of a fusible alloy retainer and actuator shaft. Detectors shall have a smooth ceiling rating of 2,500 square feet. Detectors shall be located as shown on the drawings and where required by local code authority.
6. Provide fixed temperature 190°F detector in kitchen and kiln room in lieu of combination rate-of-rise / fixed-temperature type.

M. Auxiliary AHU Relays: Air Products model MR-101C relays shall be provided for HVAC and AHU control and interface. Relays shall be heavy-duty type with contacts rated up to 10 amps at 120V AC, 60 HZ. Relays shall be provided with NEMA I dust cover assembly and be provided with DPDT contacts as well as activated LED indicator.

N. Voltage sensing relays: Addressable control modules for voltage sensing relay interface shall be FCM-1.

O. Monitor Module:
1. Addressable monitor modules shall be provided where required to interface to contact alarm devices. The monitor module shall be used to connect a supervised zone of conventional initiating devices to an intelligent SLC loop.
2. The monitor module shall provide address setting means electronically and automatically at the control panel. A status/alarm LED shall be provided which shall indicate that the monitor module is operational and in regular communication with the control panel, and indicate detection of an alarm condition.

P. Control Module
1. Control/relay modules shall be provided where required to provide audible alarm interface and/or relay control interface. The control module shall be used to connect a supervised zone of conventional indicating devices to an intelligent loop. The zone may be wired class A or class B - field selected. The control

module may be optionally wired as dry contact (form C) relay.

2. The control module shall provide address setting means electronically and automatically at the control panel. A status/alarm LED shall be provided which shall indicate that the control module is operational and in regular communication with the control panel and indicate when the device is actuated via the fire alarm control panel.

Q. Auxiliary Interface Points: All auxiliary input points (kitchen hoods, water flow, tamper switches, fire extinguishing systems etc.) shall be connected as required, and addressed as a separate initiating point of annunciation at the fire alarm panel and any remote annunciator as required.

R. Water flow switches / Valve supervisory switches shall be provided and installed by the fire protection contractor and connected by the fire alarm contractor. Wiring of these field devices to the fire alarm system shall be the responsibility of the fire alarm contractor. It is the responsibility of this contractor to ensure the proper function of the system. Each fire protection zone (flow switch) and (Valve switch) shall be addressed electronically and automatically at the control panel as a separate point of annunciation at the fire alarm panel. Coordinate exact location with fire protection contractor and civil drawings.

S. Beam detectors:

1. Microprocessor based beam detectors, consisting of a separate transmitter and matching receiver.
2. Coverage up to 350 ft. X 60 ft.
3. LED status indicators for normal (green), alarm (red), and trouble (yellow).
4. The detectors shall provide address setting means electronically and automatically at the control panel.

2.7 MAGNETIC DOOR HOLDERS, AUTOMATIC FIRE DOORS / SHUTTERS, AND SECURITY GRILLES AND INTERIOR SPACE CONTROLLED ACCESS EGRESS DOORS WITH AUTOMATIC EMERGENCY EGRESS ELECTRIC LOCK EMERGENCY RELEASE

A. Magnetic fire door hold open devices, interface for automatic roll down fire doors/shutters, and interface for security grilles and controlled access egress doors with emergency egress shall be provided. Coordinate with Division 8 and Architectural Drawings for exact location.

B. The operation of any alarm in the fire alarm system shall cause the following:

1. Release of the magnetic fire door holding devices, permitting the fire doors to be closed by the door closer.
2. Permit the automatic roll down fire doors/shutters to close automatically.
3. Permit the security grilles with emergency egress to open automatically.
4. Unlock the electrically controlled access doors in all interior spaces.

C. The magnetic door holders, automatic roll down fire doors/shutters, security grilles, and interior electrically controlled access doors with emergency egress, shall be associated with two smoke detectors located on the ceiling with one on either side of the fire door/shutter, security grille opening, or interior egress path electrically controlled door. The operation of either of these detectors shall also cause the magnetic holder to release the fire door, the automatic fire door/shutter to close, and the security grille with emergency egress to open.

D. The operation of smoke detectors associated with a magnetic door holder, automatic roll down fire door, security grille, or electrically controlled access door shall transmit a pre-alarm signal to the fire alarm panel.

2.8 REMOTE PAGING UNIT

A. Remote all-call paging unit or to activate one of the pre-recorded messages over the speaker circuits.

2.9 REMOTE ALPHANUMERIC DISPLAY ANNUNCIATORSA. (Where indicated or required by Local Authority Having Jurisdiction) Remote alpha-numeric annunciator(s) to annunciate all system events and duplicate the displayed status at the main FACP. The annunciator(s) shall be an 80-character display similar to the main FACP and operate via the system RS485 or RS232 serial output terminal from the main FACP. The unit shall operate from FACP 24VDC power and function during system power failure while the system resides on standby batteries. The remote annunciator(s) shall include:

1. Integral time/date clock
2. System reset
3. System silence
4. System acknowledge
5. Display/step switch
6. Integral trouble buzzer
7. LCD contrast adjust
8. Fire Drill Operation
9. Owner's list of additional remote annunciator control buttons.

B. Annunciator shall upon command display the first system alarm, last alarm, and system alarm count. The following primary controls shall be visible through a front access panel:

1. 80 character alphanumeric display, LCD, LED, or gas plasma
2. Individual red system alarm LED
3. Individual yellow supervisory service LED
4. Individual yellow trouble LED
5. Green "POWER ON" LED
6. Alarm acknowledge key
7. Trouble acknowledge key
8. Alarm silence key
9. System reset key
10. LED test
11. Additional control buttons as directed by Owner.

2.10 AUXILIARY EQUIPMENT MONITORING

A. The fire alarm system shall monitor for alarm, supervisory, and trouble conditions; and annunciate the status of the following equipment when provided, or is existing to remain, as part of this project. A failed status shall activate the trouble alarm.

1. Emergency Generator: Run Status
2. Emergency Generator: Trouble Signal
3. Fire Pump: Run Status
4. Fire Pump: Trouble Signal
5. Emergency Service Communications Systems, as required by NFPA 72 and NFPA 1221.

PART 3 - EXECUTION

3.1 EXPANSION OF EXISTING SYSTEM

A. Testing of existing systems:

1. Provide complete operational test of existing fire alarm system prior to any demolition or construction. Verify operation of each device, control panel, distribution equipment and associated accessories.
2. Provide a complete written report to the Architect, indicating any deficiencies of the existing system in relation to each component's intended function. In addition, provide deficiencies of the existing system with regard to current Code, ADA, and Local Accessibility Standards requirements. Provide the written report 14 days prior to any work related to the expansion of the existing system.

3. Testing of the existing system shall include all areas and all buildings served by the existing system.

B. Expand the existing system in all expansion or renovation areas to include requirement specified and as required by the local authority having jurisdiction. Verify compatibility of new equipment with existing system.

C. Provide smoke detectors in the following locations in addition or renovated areas:
   1. All paths of egress and adjoining spaces within the same envelope including but not limited to: corridors, hallways, stairs, lobbies, and elevator landings.
   2. At each electrical room, telecommunications/data room, elevator machine room, kiln room, and mechanical room not subject to un-treated or un-filtered outside air.
   3. At each computer lab/room.
   4. At each library or book storage room.
   5. At each storage room, stock room, or warehouse space.
   6. At each pre-K and kindergarten classrooms.
   7. At nurse's area/clinic and patient care/cot areas.
   8. At each special needs, life skills, adaptive behavior, developmental classrooms or similar designated areas without food preparation or cooking equipment.
   9. At each student toilet/restroom. Provide STI protective covers. Do not locate over plumbing fixtures or near partitions.

D. Provide heat/thermal detectors in the following locations in addition or renovated areas:
   1. At each mechanical room subject to un-treated or un-filtered outside air.
   2. At each janitor's closets and laundry rooms.
   3. At each commercial kitchen and adjoining storage rooms; at each food preparation area.
   4. At each employee break room.
   5. At each vocational shop.
   6. At each science, physics, chemistry, or biology classroom and their associated preparation and storage rooms.
   7. At each special needs, life skills, adaptive behavior, developmental classrooms or similar designated areas with food preparation or cooking equipment.

E. Provide carbon monoxide detection and smoke detection devices in all areas designated as day-care for minors.

F. Provide duct smoke detectors in all air handling units with air volumes of 2,000 cfm or larger.
   1. Where duct smoke detectors are installed above ceilings, provide external remote status/alarm LED mounted flush with ceiling in close proximity to the duct detector location. If space is open without ceiling, wall mount remote status/alarm LED in close proximity to the detector between 96 and 108-inches AFF, or as directed by Owner.

G. Provide duct smoke detectors on outside air units only as required by local Code and / or AHJ.

H. Provide VESDA type detectors at the following locations when appropriate:
   1. Atriums to avoid exposed conduits.
   2. High ceiling areas 25 feet and higher where maintenance of spot type detectors will be difficult.
   3. Skylights to avoid exposed conduits.
   4. Coolers/Freezers 200 square feet and larger.

I. Provide manual pull stations at FACP and FAA panel locations only. If no pull station is installed at FACP and FAA contractor to provide and install a new manual pull station.

J. Provide weatherproof exterior audio/visual alarm devices mounted on the building at the exact location as directed by Architect:
   1. Main entry.

2. Courtyards and outdoor assembly areas adjacent to the building.
3. Mechanical yards adjacent to the building.
4. Covered playgrounds or covered assembly areas adjacent to the building.
5. Additional locations where indicated on drawings.
6. Outdoor paved play areas.

K. Provide audio and visual alarm devices in all areas normally occupied by students or minors and all common use areas.

L. Provide beam type detectors at the following locations when appropriate:
1. Atriums.
2. High ceiling corridors where maintenance of spot type detectors may be difficult.
3. Areas with skylights.

N. Provide carbon monoxide detection and smoke detection devices in all areas designated as day-care for minors.

O. Provide carbon monoxide detection in classrooms and other instructional spaces served by a fuel-burning appliance, fuel-burning HVAC equipment (including roof mounted equipment), or with gas fuel outlets for connection to portable fuel-burning space heaters and appliances such as Bunsen burners which are typically used in laboratories or science classrooms.

3.2 GENERAL REQUIREMENTS

A. Installation shall include the delivery, storage, setting in place, fastening to the building structure, interconnection of the system components, alignment, adjustment and all other work, whether or not expressly specified, which is necessary to result in a tested and operational system.

B. All installation practices shall be in accordance with, but not limited to, the specifications and drawings. Installation shall be performed in accordance with the applicable standards, requirements and recommendations of NFPA 72 and the National Electrical Code and any authorities having jurisdiction. Proper protection against corrosion shall be provided on all electrical equipment in accordance with the requirements of the National Electrical Code. The installation shall conform to all manufacturers' recommendations.

C. All equipment shall be firmly secured in place unless requirements of portability dictate otherwise. Fastenings and support shall be adequate to support their loads with a safety factor of at least three.

D. All boxes, equipment, etc., shall be plumb and square. The contractor must take such precautions as are necessary to prevent and guard against electrostatic hum, to supply adequate ventilation, and to install the equipment to provide reasonable safety for the operator.

E. Visual displays, GUIs, or other indicators for main fire alarm panel and all remote annunciators shall be at maximum 66 inches AFF.

F. All remote booster and associated equipment panels shall be mounted with top of enclosure maximum 66 inches AFF.

G. In the installation of equipment and cables, coordinate with Architectural drawings for possible conflicts with millwork, casework, marker boards, furniture, lockers, etc., and notify the architect of any discrepancies. Verify modifications before proceeding with installation.

H. Mount end-of-line resistor for each box circuit in backbox located at the last manual alarm station or automatic initiating device in a circuit. Mark device accordingly in the field.

I. Provide three dedicated Cat 6 cables from MDF/IDF to fire alarm panel. Cable shall be installed in 3/4" conduit. Two cables for phone POT lines and one Ethernet data connection.

J. Upright and/or Wall Post-Indicating Valve: Provide conduit and wiring from fire alarm control panel to post-indicating valve if electronically supervised, coordinate exact location of PIV with fire sprinkler contractor prior to rough-in. Coordinate final location

with Civil Drawings and Fire Protection Contractor. Where equipment is located inside a vault, stub required conduit inside vault, turn up and cap.

K. Contractor shall submit on completion of system verification, a point-by-point check list indicating the date and time of each item inspected and issue a certificate confirming that the inspection has been completed and the system is installed and functioning in accordance with the Specifications prior to date of substantial completion.

L. Provide remote alphanumeric display annunciators in the administrative area in constantly attended area, as required by the Local AHJ, and additional annunciators where indicated on the drawings, as directed by Owner / Architect.

M. Alarm devices shall be ceiling mounted unless indicated specifically otherwise. Alarm devices in Mechanical, Electrical, Communications, IDF / MDF Rooms and Central Plant shall be wall mounted and coordinated with other equipment, piping and ductwork.

N. Provide combination speaker strobes. Provide strobe only alarms when additional speaker placement will compromise voice intelligibility. Provide horn/strobes in coolers and freezers.

O. Detectors shall be installed per NFPA 90A and be listed with the fire alarm control panel.

P. Auxiliary Equipment Monitoring Wiring and connection to equipment shall be the responsibility of the fire alarm contractor.

Q. Power for magnetic door holders shall be provided from the nearest receptacle circuit wired through fire alarm relay.

R. Smoke detectors shall be mounted to a 4-inch octagon box with hanger bar or with box secured to building structure.

S. Provide power via 120-volt, 20-Amp dedicated circuits with lock-on provisions at the respective circuit breaker for each new main fire alarm control panel, each new panel extender and each new remote power supply at no additional cost to the Owner. The complete fire alarm system shall be powered under emergency power when emergency life safety power is available at the project site. When emergency life safety power is not available at the project site, power shall originate from the nearest available 120-volt panel, or as indicated.

3.3 CABLE AND BOXES INSTALLATION

A. All circuits shall be protected to avoid interruption of service due to short-circuiting or other conditions, which might adversely affect the connected devices. Each individual signaling circuit shall be classified as a circuit pair.

B. All cabling in racks, cabinets and junction boxes shall be neatly strapped, dressed and adequately supported. Cable installation shall conform to good engineering practices and to the standards of the National Electrical Code.

C. Cables shall be terminated with the proper connector required for the associated operation of the equipment to which it is connected. Screw terminal blocks shall be furnished for all cables, which interface with racks, cabinets, consoles or equipment modules.

D. All cables within a rack, console or junction box shall be grouped according to the signals being carried to reduce signal contamination.

E. Where shielded conductors enter a panel or enclosure, and where power wiring exists, provision shall be made to provide physical isolation of signal and power conductors.

F. Supply and install all fittings and accessories whether or not they are specified, required for proper, safe and reliable operation of the system.

G. All wire shall be installed in an approved conduit/raceway system (except where permitted by NEC and the local authority having jurisdiction). Maximum conduit fill shall not exceed 40%.

H. Minimum conduit size shall be 3/4" EMT with insulated bushings. Install conduit per engineered shop drawings.

I. Systems utilizing open wiring techniques with low smoke plenum cable shall provide

conduit in all inaccessible locations, inside concealed walls, all mechanical/electrical rooms, or other areas where wiring might be exposed to view and or subject to damage.

J. All vertical wiring and all main trunk/riser wiring shall be installed in a complete raceway/conduit system. All riser boxes shall be adequately sized for the number of conductors transversing the respective box as well as the number of terminations required.

K. All junction boxes containing fire alarm wiring are to be painted red.

L. All plenum wiring is to be installed parallel and perpendicular to the building structure. Cable shall be bundled with cable ties on a maximum of 2'-6". Install cables in D-ring hangers secured to the structure at a maximum of 5' on center. Cable shall not lie on ceiling grid or ceiling tiles, light fixtures, piping, ductwork or foreign equipment.

M. The system ground is to be connected to the local ground bus. Under no conditions shall the AC neutral either in a power panel or in receptacle outlets be used for a reference ground.

N. All wiring shall be in accordance with NFPA 72, the National Electrical Code, and Local Codes. All wiring sizes shall conform to recommendations of the equipment manufacturer, and as indicated on the engineered shop drawings.

O. All wire shall be UL Listed FPL for limited energy (300V) and fire alarm applications and shall be installed in conduit. Limited energy FPLP or MPP wire may be run open in return air ceiling plenums provided such wire is UL Listed for such applications and is of the low smoke producing fluorocarbon type and complies with NEC Article 760 and approved by the local authority having jurisdiction.

P. No other wiring shall be run in the same conduit as fire alarm wiring.

Q. All fire alarm wiring to be red. All fire alarm circuits shall be identified at each termination and at each 25 feet between terminations.

R. Copper wiring leaving or entering main building shall be protected on both ends with surge suppression; otherwise use fiber-optic cabling.

3.4 ALARM SYSTEM SEQUENCE OF OPERATION

A. General:

1. All fire alarm circuits shall be electrically supervised.
2. Automatic response functions shall be accomplished by the first device initiated. Alarm functions resulting from initiation by the first device shall not be altered by subsequent alarms. An alarm signal shall be the highest priority. A pre-alarm signal shall have second priority and supervisory or trouble signals shall have third and fourth level priority. Signals of a higher level priority shall take precedence over signals of lower priority even though the lower priority condition occurred first.

B. Fire alarm operating sequences shall be as follows:

1. Activation of any automatic detector, manual station, fire suppression system, sprinkler flow switch or any other system required by NFPA 72 to be monitored to initiate an alarm condition shall cause the location of the alarm to be identified in an audible and visual manner at the building fire alarm control panel (FACP), and shall initiate the following events:
   a. The system common alarm LED on the CPU Module shall flash. The internal audible trouble device shall sound. Acknowledging the alarm condition shall silence the audible trouble device and revert the flashing common alarm LED to a steady state.
   b. The 80-character display shall indicate all applicable information associated with the alarm condition including: zone, device type, device location based on actual room graphic name and number (not architectural plan names and numbers), and time of alarm. Location and zoning messages shall be custom field programmed to respective

premises.

c. Any remote or local annunciator LED's associated with the alarm point shall be illuminated as herein specified.

d. The remote signaling connection shall be activated relaying the alarm signal to an approved central station (central station connection and service provided by Owner). Point ID and descriptor must be sent and received.

e. All automatic events programmed to the alarm point shall be executed and the associated indicating devices and/or outputs activated.

f. De-activate local sound reinforcement systems that are not UL listed nor integrated with the fire alarm system control panel for providing fire alarm or mass notification instructions. Building wide public address systems shall remain active only for manual mass notification. Public address system auxiliary audio inputs used for background music or other remote non-emergency audio sources shall be silenced to only allow priority level manual mass notification using the public address system.

g. Activate all audible/visual alarm devices. Where prerecorded voice announcement is required or specified, the prerecorded announcement shall be preceded with attention tone(s), followed by the approved prerecorded announcement and continue in a cycle until the system is reset. Manual voice announcement shall interrupt the prerecorded cycle and the prerecorded cycle shall resume automatically after three minutes.

h. De-activate all HVAC systems including low speed high volume (LSHV) circulating blade type fans.

i. De-energize the kitchen hood supply/exhaust fans as required by local authority having jurisdiction.

j. Close all related smoke dampers.

k. Close all related smoke/fire dampers.

l. Release all magnetic door hold open devices.

m. Release the electric strike, unlocking, but not unlatching, locked doors controlled by an access control system.

n. Release Counter Shutters and hold-open devices on all fire and smoke doors.

o. Open all security grilles with emergency egress.

p. Activate to close all related fire and smoke doors and shutters.

q. Activate signaling connection to the elevator as required by the local authority having jurisdiction.

r. Signal the building automation system and Owner’s security / police personnel as directed by Owner / Architect. The audible alarms shall be inhibited from being silenced for a period of 3 minutes after commencing operation unless alarm is acknowledged, and appropriate action has been taken.

s. Activate automatic recall operation of elevators as required by local authority having jurisdiction.

t. Record all events on the system printer.

2. Activation of duct mounted smoke detector on the HVAC equipment, or a smoke detector mounted in the return/supply air stream of any fan shall shut down all units as required by NFPA. The activation of one of these detectors shall initiate the Alarm Sequence of Operation.

3. Activation of a control valve supervisory switch shall initiate the following events:

a. The activation of any sprinkler valve supervisory (tamper) switch shall activate the system supervisory service audible signal and illuminate the

LED at the building fire alarm control panel (FACP). Differentiation between valve tamper activation and opens and/or grounds on the initiation circuit wiring shall be provided.

b. Activation of a sprinkler system control valve supervisory switch shall not prevent the events listed under Article 3.4.

c. Restoring the valve to the normal position shall cause the supervisory service audible signal to pulse, indicating the restoration to normal position. The supervisory service reset key shall be provided to silence the audible signal.

4. Activation of the smoke detector and heat detector in the elevator machine room and at top of elevator shaft shall cause the elevators' controllers to be tripped by way of the shut trip breaker, and shall also initiate the events listed under Article 3.4.

5. Any subsequent fire alarm shall reactivate the alarm indicating appliances and activate the respective control sequences described above.

6. Upon silencing the alarm, all visible alarm devices shall remain active until system reset, and all local sound reinforcement systems de-activated by the fire alarm system shall resume normal operation.

7. Upon reset of the fire alarm control panel, HVAC units shall be capable of being started, and resume normal operation.

C. Activation of the manual evacuation pull (drill) switch shall operate the alarm indicating appliances and de-activate local sound reinforcement system without causing other control circuits to be activated. However, should true alarm occur, all alarm functions should occur as described.

D. ALARM VERIFICATION shall be field programmed for each respective detector. Global verification will not be acceptable. The verification sequence is activated after a "check" procedure and the panel will wait a field programmable delay period (0-50 seconds) then proceed to re-sample the detector for continued presence of smoke. If the alarm condition still exists or a non-verified device is actuated during the verification period, the system will then initiate all alarm sequences specified herein. The system shall incorporate the ability to log in memory the number of verification events that have occurred for each selected device.

3.5 EQUIPMENT IDENTIFICATION

A. Each new panel or equipment enclosure shall be provided with a permanently engraved or embossed or silkscreen identification tag. The tag shall include the following information:

1. Name of manufacturer.
2. Manufacturer's equipment description.
3. Serial number and model number.
4. Voltage and current rating.

3.6 SPARE PARTS AND TOOLS

A. Interchangeable Parts: All spare parts furnished shall be directly interchangeable with the corresponding components of the installed system. Spare parts shall be packaged and identified by nameplate, tagging, or stamping. Spare parts shall be delivered to the site in unopened cartons for storage as directed by the Owner.

B. Spare Parts: Provide minimum of one, or 5% of renovation area total, whichever is greater unless noted otherwise.

1. Spare shut down modules
2. Spare detectors of each type in the system
3. Spare alarm indicating devices of each type in the system
4. Spare manual pull stations

5. Spare protective covers of each type in the system.
6. Spare relays/controls required for connection to smoke and fire/smoke dampers
7. Devices listed above are to be installed as directed by Architect/Engineer or local code authorities at no additional cost to the Owner. Unused spare parts are to be parts for Owner's cabinet.

C. Provide one smoke, heat and carbon monoxide detector testing kit. SDfire #TF2823 with Solo Testfire #2001 tester with 15-foot access pole and three 4-foot pole extensions, detector removal tool, and carrying bag.

D. Provide two copies of the final software programmed into the fire alarm system.

E. Parts list: Furnish a list, in duplicate, of all other parts and accessories the manufacturer of the system recommends to be stocked for maintenance.

3.7 KEYS

A. Keys and locks for all equipment shall be identical to the existing building master key for the fire alarm system.

3.8 SMOKE DAMPERS AND FIRE/SMOKE DAMPERS

A. Smoke dampers and combination fire/smoke dampers shall be controlled by an automatic alarm initiating device. Smoke dampers installed to isolate the air handling system shall be arranged to close automatically when the system is in alarm.

B. Coordinate motor operator voltage with supplier.

C. Open all dampers prior to starting air handling equipment.

D. Provide 120V power from nearest general purpose 20A receptacle circuit as required, or as noted otherwise.

3.9 GRAPHIC FLOOR PLANS FOR AHJ SITE PERMITTING INSPECTION AND OWNER USE

A. It is the intent of these specifications that the fire alarm system shall pass AHJ inspection on the first try. The fire alarm system shall be fully functional, commissioned, and mapped both on fire alarm graphic maps and fire alarm annunciator device descriptions to fully and correctly described the device type and detailed location. Provide color coded floor plans detailed with actual room names, actual graphic room numbers as directed by the Owner and adequate information to direct people to the fire alarm devices in alarm and to exits with non-fading floor plan media. Do not use architectural plan room names and numbers. Fire alarm maps shall include all relevant building information and fire alarm device information as required for the local AHJ permitting site walk-through inspection.

B. Each plan shall clearly relate the room numbers on the annunciator to the area description on the floor plan. All fire alarm devices located to correspond with the annunciator.

C. Provide two color coded floor plans for Owner use that shall be solvent welded in acrylic plastic.
1. Mount in an extruded aluminum frame next to the main fire alarm control panel.

D. Install graphic floor plans as directed by Architect/Owner prior to substantial completion. Each area or room designation shall be verified with the fire alarm device during testing.

3.10 ADDITIONAL REQUIREMENTS

A. Coordinate with Owner for appropriate off-site monitoring service and communication technology to be used. Provide all necessary programming for interfacing with the Owner's on-site and off-site remote signaling receiving station, including programming of descriptors and addresses at the receiving station.

B. The contractor is to ensure all areas of the renovation and new construction are covered with visual and audio alarm devices for occupant notification of a fire alarm including remote portable or temporary buildings.

C. Coordinate door hold devices with door and door hardware.
D. Provide interface with and coordinate shunt-trip circuit breakers and control devices with kitchen hood fire control systems (where new kitchen hood fire control systems are provided) and elevator equipment (where new elevators are provided).
E. Alarm circuit power supplies and circuiting shall be designed and installed to accept an additional five (2) 110cd visual devices for future expansion. The initial design shall not exceed 70% of the rated power supply and circuit capability with the two additional 110cd devices installed.
F. Provide programming or re-programming of all hot keys as directed by Owner including, but not limited to, fire drill, AHU shutdown bypass, horn/strobe disable, elevator test.

3.11 COMMISSIONING THE SYSTEM

A. The installing contractor shall be responsible for verifying that each new or relocated component of the system is fully operational and in conformity with the specifications. He shall also be responsible for insuring that all elements function together as a system in accordance with the specifications.
B. A state licensed and factory trained technical representative of the manufacturer with NICET Level 3 minimum certification shall supervise the final control panel connections and testing of the system. Upon completion of the acceptance tests, the owner and/or his representatives shall be instructed in the proper operation of the system.
C. The installing contractor shall functionally test each and every device in the entire system for proper operation and response. Any new or relocated items located within the construction or renovation area found not properly installed or non-functioning shall be replaced or repaired and retested. The final test indicating a fully functional fire alarm system shall be recorded; electronic Excel and printed copy submitted to the Architect, Engineer and Owner.
D. The installing contractor shall provide a complete written report and printout of the functional test of the entire system after all existing deficiencies of the existing system have been corrected by the Owner, or as directed by the Owner. The test report shall be signed and dated by the licensed fire alarm superintendent responsible for supervising the final system test and checkout. This test shall be completed and accepted by the Owner prior to testing for the local Fire Marshall.
E. The installing contractor's fire alarm superintendent shall test the entire system in the presence of the local authorities having jurisdiction. The contractor shall be responsible for making any changes, adjustments, or corrections, as may be required by the local authorities. The Contractor shall affix his certification label and installation certificate to the interior of the main fire alarm control panel.
F. The testing and acceptance shall be performed within 30 days after the fire alarm installation is completed. The test shall be performed by a minimum of two qualified fire alarm system technicians acceptable to the authority having jurisdiction. The test which is a comprehensive 100 percent inspection and test of all fire alarm system equipment shall include the following:
    1. Fire alarm control equipment: a visual and functional test of the fire alarm control and auxiliary control equipment.
    2. A visual inspection shall be conducted to establish that all electrical connections and equipment, as required, are properly installed and operating.
    3. A functional fault simulation test shall be conducted on all relevant field wiring terminations to ensure that wiring is properly supervised as required.
    4. Indicators shall be tested to ensure proper function and operation.
    5. Control panel auxiliary functions shall be functionally tested to verify proper operation.
    6. Control panel supervisory and alarm current readings shall be taken to verify that the control panel has the appropriate power supplies and standby batteries to

operate the system as required. A three-minute general alarm stress test, both under AC power and standby power, shall be conducted to further ensure complete operation of the system.

7. Fire alarm peripheral devices; All fire alarm peripheral devices shall be functionally tested and the location and testing information recorded for each device.
8. Manual initiating devices:
   a. Each manual fire alarm station shall be functionally tested for alarm operation.
   b. Each manual fire alarm station shall be functionally tested for proper wiring supervision.
9. Automatic initiating devices:
   a. Each automatic initiating device shall be activated in accordance with manufacturer's instructions to ensure proper operation.
   b. Each automatic initiating device shall be functionally tested for proper wiring supervision.
   c. Each automatic initiating device shall be inspected to ensure proper placement and mounting as required by specifications.
10. Alarm signaling devices:
   a. Each alarm signaling device shall be tested and decibel reading taken at 10' from the device and recorded to ensure proper operation. Each area's voice alarm signaling devices shall be tested for intelligibility.
   b. Each alarm signaling device shall be functionally tested for proper wiring supervision.
   c. Decibel reading shall be taken to ensure that the alarm signal level can be clearly heard in all areas of the facility.
   d. All visual alarm indicators shall be functionally tested to ensure proper operation and that they are clearly visible.
11. Elevators: Each elevator shall be tested and automatic recall function verified.
12. Reporting: Upon completion of the initial verification audit, a report shall be sent to the Architect/Engineer indicating that all fire alarm equipment has been tested and is in 100 percent operation. The report shall also contain the audit testing information as to the location and operational status of each peripheral device. The 100 percent audit shall be performed by a factory-trained representative. The report shall include the voice intelligibility performance in each area and indicate compliance with NFPA and local AHJ requirements.

G. It is the intent of these specifications and of the Architect/Engineer that a continued program of system maintenance will be provided by the Owner in compliance with NFPA 72. It is mandatory that the installing Contractor provide such services and make available these services to the Owner upon completion of the project.

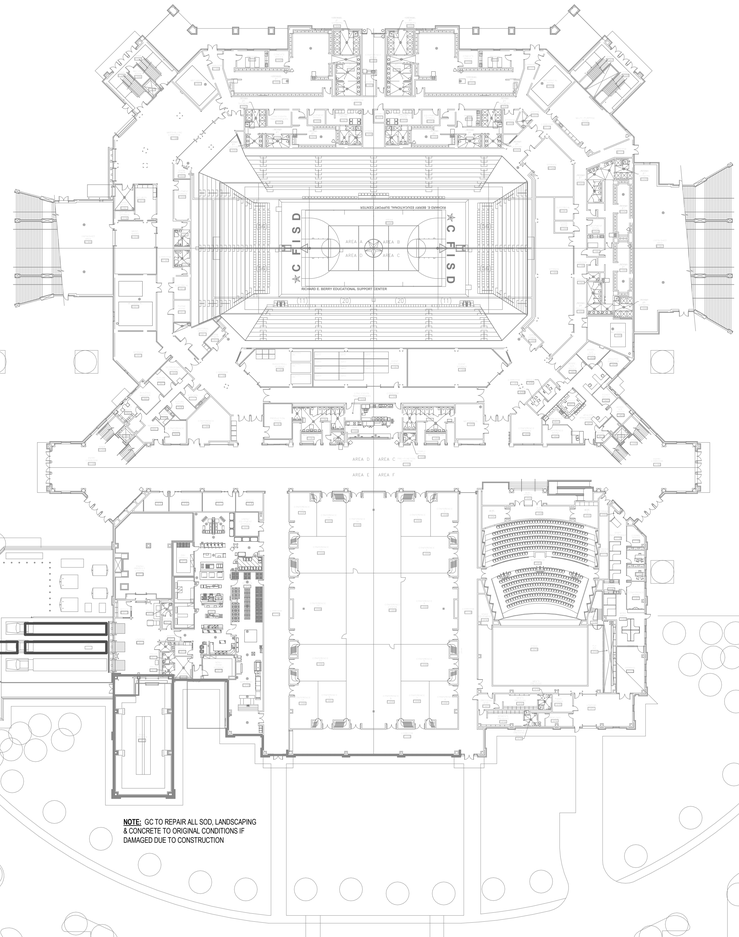
H. Upon completion of installation and full acceptance testing, submit NFPA 72 certificate of compliance that the total fire alarm system, including any subsystems, is fully functional and that the components are UL listed for function intended.

3.12 SUBSTANTIAL COMPLETION

A. Final acceptance of the FIRE ALARM SYSTEM by the owner, local code authorities and Occupancy Permit has been issued.

B. All fire alarm system shop drawings, operating and maintenance manuals, maps and as-built drawings shall be submitted to and accepted by the Architect / Owner prior to date of substantial completion.

END OF SECTION



NOTE: LOADING DOCK IS SLOPED. GC TO ENSURE TRAILERS ARE LEVEL

NOTE: GC TO REPAIR ALL SOD, LANDSCAPING & CONCRETE TO ORIGINAL CONDITIONS IF DAMAGED DUE TO CONSTRUCTION

GC LAYDOWN SPACE AND OFFICE. GC TO RETURN SPACE TO ORIGINAL CONDITIONS AFTER CONSTRUCTION

BERRY CENTER

1. THE EXISTING CHILLED WATER PLANT CONSISTS OF (3) WATER COOLED CHILLERS, (2) 525 TON MACHINES AND (1) 375 TON MACHINE.
2. THE PROJECT SCOPE AT THE BERRY CENTER INCLUDES THE REPLACEMENT OF ALL (3) WATER COOLED CHILLERS. IN ADDITION, THE PROJECT SCOPE INCLUDES REPLACING THE (3) PRIMARY CHILLED WATER PUMPS, ADDING MAIN SUPPLY AND RETURN CHILLED WATER MANUAL SHUT OFF VALVES AND ADDING SUPPLY AND RETURN PIPING TAPS WITH VALVES AND FLANGES FOR TEMPORARY CHILLER CONNECTIONS FOR THE USE WITH THE RENTAL CHILLERS AND FOR FUTURE USE SHOULD THE DISTRICT NEED THEM. REFER TO THE DRAWINGS FOR ADDITIONAL SCOPE INCLUDED IN THE PROJECT.
3. THE FACILITY WILL BE OCCUPIED AND FULLY UTILIZED THROUGHOUT THE CHILLER REPLACEMENT PROJECT. THEREFORE, THE PROJECT SHALL INCLUDE RENTAL AIR COOLED CHILLERS, TEMPORARY PUMPS, TEMPORARY HOSES WITH MEANS TO MANIFOLD PIPING INTO A SINGLE TAP IN CENTRAL PLANT, TEMPORARY ELECTRICAL WIRING, ANY OTHER EQUIPMENT, AND COMPONENTS REQUIRED TO DELIVER A FULLY FUNCTIONING TEMPORARY CHILLED WATER PLANT INCLUDING INSTALLATION OF ALL RENTAL EQUIPMENT. THE RENTAL EQUIPMENT SHALL HAVE A MINIMUM DELIVERED CAPACITY OF **1,500 TONS** TO ENSURE THE ENTIRE BUILDING IS MAINTAINED AT THE DISTRICT'S STANDARD TEMPERATURE AND HUMIDITY SETPOINTS OF 75°F AND 50-55% RH.
4. **PHASE 1:** INSTALLATION OF THE MAIN SUPPLY AND RETURN CHILLED WATER MANUAL SHUT OFF VALVES AND THE INSTALLATION OF THE CHILLED WATER SUPPLY AND RETURN PIPING TAPS WITH VALVES AND FLANGES FOR TEMPORARY CHILLER CONNECTIONS. IN ADDITION, THIS PHASE SHALL INCLUDE REMOVAL AND REINSTALLATION OF NEW REFRIGERANT LINES ASSOCIATED WITH EXISTING COOLER AND FREEZER SYSTEM.
5. **PHASE 2:** INSTALLATION OF ALL RENTAL CHILLED WATER EQUIPMENT. THE EXISTING CHILLED WATER EQUIPMENT SHALL NOT BE DISCONNECTED OR REMOVED PRIOR TO DEMONSTRATING THE RENTAL CHILLED WATER EQUIPMENT IS FUNCTIONING AND CAPABLE OF MAINTAINING BUILDING SETPOINTS FOR A PERIOD OF 48 HOURS. UPON COMPLETION OF THE 48 HOUR DEMONSTRATION PERIOD THE CONTRACTOR SHALL REQUEST ACCEPTANCE OF THE RENTAL CHILLED WATER PLANT'S PERFORMANCE FROM THE OWNER, ARCHITECT AND ENGINEER PRIOR TO PROCEEDING WITH REPLACING ANY OF THE EXISTING EQUIPMENT. ANY OF THE EXISTING CHILLED WATER EQUIPMENT SHALL NOT BE REMOVED PRIOR TO RECEIVING THE NEW CHILLED WATER EQUIPMENT AT THE JOB SITE. LOCATION OF THE RENTAL CHILLED WATER EQUIPMENT SHALL BE REVIEWED AND APPROVED BY THE OWNER PRIOR TO INSTALLATION.
6. **PHASE 3:** INSTALLATION OF NEW CHILLED WATER SYSTEM EQUIPMENT.
7. **PHASE 4:** DEMONSTRATION THAT THE NEW CHILLED WATER EQUIPMENT IS FUNCTIONING AND CAPABLE OF MAINTAINING THE BUILDING SETPOINTS FOR A PERIOD OF A ONE (1) WEEK. UPON COMPLETION OF THE ONE (1) WEEK DEMONSTRATION PERIOD THE CONTRACTOR SHALL REQUEST ACCEPTANCE OF THE NEW CHILLED WATER EQUIPMENT'S PERFORMANCE FROM THE OWNER, ARCHITECT AND ENGINEER PRIOR TO PROCEEDING TO THE NEXT PHASE.
8. **PHASE 5:** REMOVAL OF RENTAL CHILLED WATER EQUIPMENT FROM THE SITE.
9. IF A PLANT SHUTDOWN IS REQUIRED TO PREPARE FOR RENTAL CHILLER CONNECTION TO THE BUILDING AND ITS OPERATION OR TO EXECUTE ANY PORTION OF THE PROJECT SCOPE. SHUTDOWNS SHALL BE COORDINATED, SCHEDULED, AND ACCEPTED BY THE OWNER, ARCHITECT, AND ENGINEER A MINIMUM OF 1 WEEK PRIOR TO THE PLANT BEING DISABLED.
10. DURING ANY PLANT SHUTDOWN GREATER THAN 8 HOURS IN DURATION, THE CONTRACTOR SHALL PROVIDE AND INSTALL TEMPORARY COOLING AND DEHUMIDIFICATION EQUIPMENT TO MAINTAIN 80°F AND 60% RH IN THE FOLLOWING LOCATIONS:

MAIN BLDG:
A. **AV STORAGE RM 1528**
B. **RM 1717**
C. **RM 1118**
D. **ALL ROOMS IN 2100 & THEATER BOOTH RM 2105 & 2102**
E. **SHOW POWER RM 1519**
F. **CONFERENCE B RM 1716**
G. **ZONE 3606**
H. **KITCHEN RM 1304**
I. **KITCHEN RM 1307**
J. STADIUM (NOT SHOWN)
K. **IDF E - CATWALK (NORTH SIDE)**
L. **IDF F - WEST LANDING**
M. **IDF G**

11. IN ADDITION, DURING PERIODS OF TIME WHEN THE PLANT IS SHUT DOWN AND UTILIZING TEMPORARY COOLING AND DEHUMIDIFICATION EQUIPMENT, THE CONTRACTOR SHALL MONITOR AND LOG BUILDING TEMPERATURE AND HUMIDITY EVERY 2 HOURS FOR EACH LOCATION LISTED. DIGITAL LOGS SHALL BE PROVIDED TO OWNER, ARCHITECT AND ENGINEER UPON COMPLETION OF EACH SCHEDULED PLANT SHUT FOR REVIEW AND ACCEPTANCE.

NOTES - GENERAL PHASING SCOPE SUMMARY
12" = 1'-0"

TEMPORARY CHILLER TRAILER

LEGEND - PHASING ANNOTATIONS
1/4" = 1'-0"

PLAN N

1 MASTER SITE PHASING PLAN
1" = 40'-0"

Revision /	Date	
1	08/19/2025	ADDENDUM 01

Project: 2025 MULTI-CAMPUS CHILLER REPLACEMENT
FOR
CYPRESS-FAIRBANKS ISD
BERRY CENTER
8877 BARKER CYPRESS RD, CYPRESS, TEXAS 77433

REGISTERED ARCHITECT
SUSAN F. WISE
24614
STATE OF TEXAS
08/19/2025

Huckabee
AUSTIN • DALLAS • FORT WORTH
HOUSTON • SAN ANTONIO • WACO
www.huckabee-inc.com
800.6871229

MASTER SITE PHASING PLAN

Job No.	Sheet No.
01818-08-04	G2.01-BC
Drawn By: PR	
Date: 08/11/2025	

8/19/2025 2:14:43 PM
Autodesk Docs://CYPRESS-FAIRBANKS ISD - CHILLER REPLACEMENTS CAMPBELL MS/01818-08-04_Berry Center Chiller_ARCH_v23.rvt

CONTRACTOR SHALL PROVIDE DEHUMIDIFICATION DURING THE ENTIRE CONSTRUCTION SCHEDULE. THE SCOPE IS TO MAINTAIN ACCEPTABLE HUMIDITY LEVELS WITHIN THE BUILDING. THE REMOVAL OF EXCESS HUMIDITY FROM THE AIR THROUGHOUT THE BUILDING. PROVIDE MOISTURE CONTROL RENTAL EQUIPMENT AND SOLUTION FOR PREVENTING THE LONG-TERM EFFECTS OF MOISTURE LEVELS THAT CAN DAMAGE INTERIOR BUILDING MATERIALS, BOOKS, AND ELECTRONIC EQUIPMENT.

CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL REQUIRED POWER GENERATING EQUIPMENT.

Salas O'Brien
salasobrien.com 281-664-1900
Houston
10930 W. Sam Houston Pkwy North, Suite 900
Houston, TX 77064

Registration: F-4111
Project No: 2550-00809-00

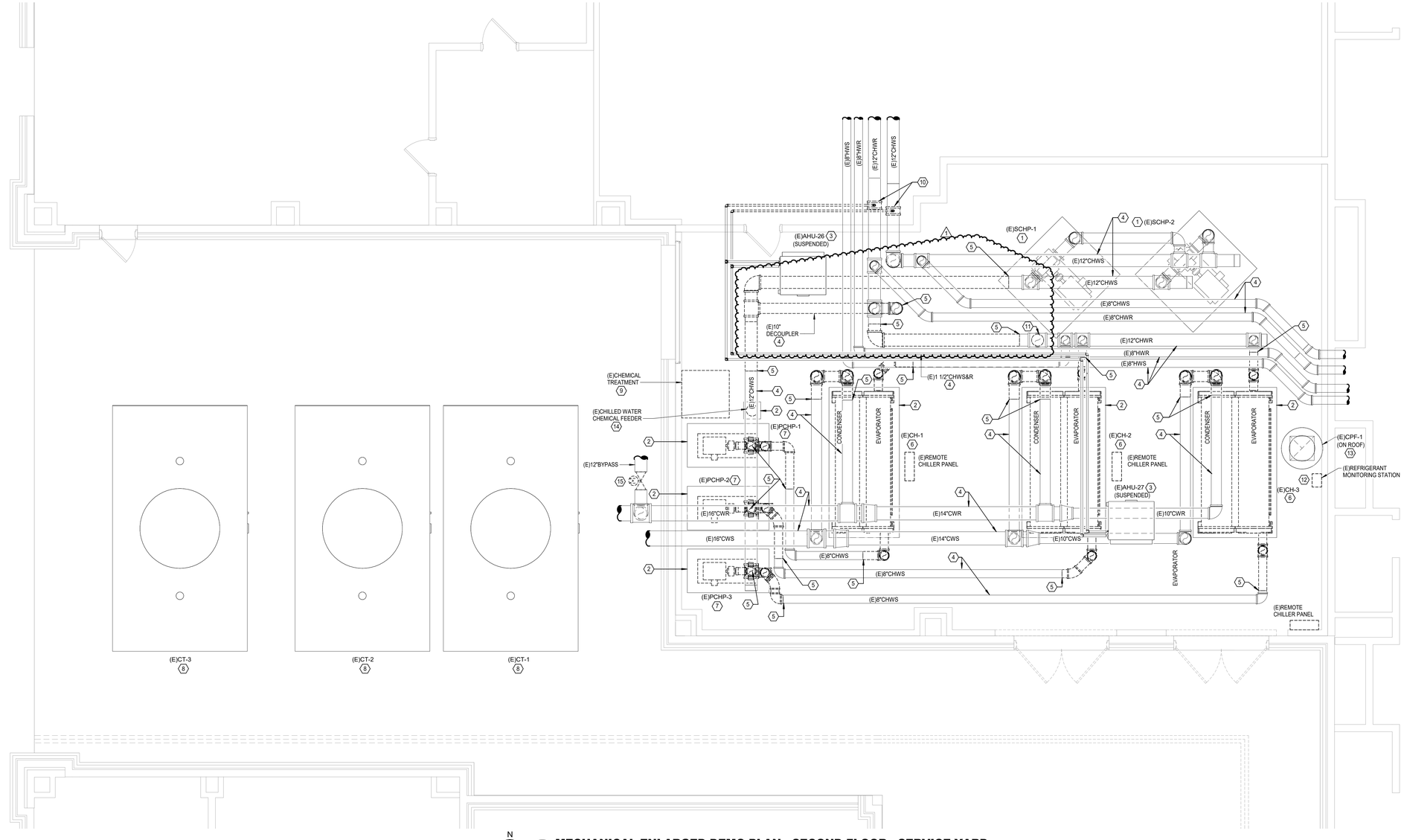
SYMBOL LEGEND	
⌖	POINT OF CONNECTION TO EXISTING
▭	ITEM TO REMAIN
[ ]	ITEM TO BE REMOVED

MECHANICAL DEMOLITION GENERAL NOTES

1	OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL HVAC EQUIPMENT BEING REMOVED FROM THIS PROJECT. THIS INCLUDES BUT NOT LIMITED TO CHILLERS, VALVES, CONTROLS, AND PUMPS.
2	THESE CONSTRUCTION DRAWINGS ARE DIAGRAMMATIC AND DO NOT NECESSARILY REFLECT ACTUAL DIMENSIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD-VERIFY ALL DIMENSIONS AND COORDINATE PLACEMENT OF ALL EQUIPMENT AND ROUTING OF ALL PIPING AND/OR DUCT SYSTEMS.
3	ALL MECHANICAL SYSTEMS SHOWN ARE FROM EXISTING DRAWINGS AND PRELIMINARY FIELD WORK. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL LOCATIONS AND SIZES OF MECHANICAL SYSTEMS PRIOR TO START OF WORK.
4	REMOVE ALL UNUSED OR ABANDONED HANGER AND SUPPORTS OF DEMOLISHED EQUIPMENT AND MATERIAL.
5	CONTRACTOR SHALL UPDATE BMCS GRAPHICS FOR ALL MECHANICAL EQUIPMENT BEING REMOVED FROM PROJECT.

MECHANICAL KEYED NOTES

1	EXISTING PUMP, CONTROLS, AND ALL ASSOCIATED APPURTENANCES TO REMAIN.
2	EXISTING CONCRETE HOUSEKEEPING PAD TO REMAIN.
3	EXISTING AIR HANDLING UNIT AND ALL ASSOCIATED APPURTENANCES TO REMAIN.
4	EXISTING PIPING TO REMAIN.
5	REMOVE EXISTING PIPING AND ALL ASSOCIATED APPURTENANCES BACK TO POINT INDICATED.
6	REMOVE EXISTING WATER COOLED CHILLER, CONTROLS, AND ALL ASSOCIATED APPURTENANCES.
7	REMOVE EXISTING PUMP, CONTROLS, INTERIA BASE, AND ALL ASSOCIATED APPURTENANCES.
8	EXISTING COOLING TOWER, CONTROLS, AND ALL ASSOCIATED APPURTENANCES TO REMAIN.
9	REMOVE EXISTING COOLING TOWER CHEMICAL TREATMENT.
10	REMOVE EXISTING PIPING AND ALL ASSOCIATED APPURTENANCES BACK TO POINT INDICATED. PATCH, SEAL, AND INSULATE MAIN PIPING AS SPECIFIED.
11	EXISTING TEMPORARY CHILLER TAP TO REMAIN. CONTRACTOR SHALL REMOVE EXISTING FLANGE.
12	REMOVE EXISTING REFRIGERANT MONITORING STATION AND ALL ASSOCIATED APPURTENANCES.
13	EXISTING EXHAUST PURGE FAN, CONTROLS, DUCTWORK, AND ALL ASSOCIATED APPURTENANCES TO REMAIN.
14	REMOVE EXISTING CHEMICAL FEEDER AND ALL ASSOCIATED APPURTENANCES.
15	REMOVE EXISTING COOLING TOWER MOTORIZED BYPASS VALVE.



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1 **MECHANICAL ENLARGED DEMO PLAN - SECOND FLOOR - SERVICE YARD**
Scale: 1/4" = 1'-0"

Revision /	Date	
1	08/19/2025	ADDENDUM 1

Project:
2025 MULTI-CAMPUS CHILLER REPLACEMENT
FOR
CYPRESS-FAIRBANKS ISD
BERRY CENTER
8877 BARKER CYPRESS RD, CYPRESS, TEXAS 77433

BRADLEY KALMANS — LICENSED PROFESSIONAL ENGINEER — STATE OF TEXAS — 80219 — 08/19/25

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MECHANICAL DEMO ENLARGED PLAN - SECOND FLOOR - SERVICE YARD

Job No. 01818-08-04	Sheet No. M0.01-BC
Drw By: BB / Chk By: VP	
Date: 08/11/2025	

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CONTRACTOR SHALL PROVIDE DEHUMIDIFICATION DURING THE ENTIRE CONSTRUCTION SCHEDULE. THE SCOPE IS TO MAINTAIN ACCEPTABLE HUMIDITY LEVELS WITHIN THE BUILDING. THE REMOVAL OF EXCESS HUMIDITY FROM THE AIR THROUGHOUT THE BUILDING. PROVIDE MOISTURE CONTROL RENTAL EQUIPMENT AND SOLUTION FOR PREVENTING THE LONG-TERM EFFECTS OF MOISTURE LEVELS THAT CAN DAMAGE INTERIOR BUILDING MATERIALS, BOOKS, AND ELECTRONIC EQUIPMENT.

CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL REQUIRED POWER GENERATING EQUIPMENT.

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Houston
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Registration: F-4111
Project No: 2550-00809-00

TEPORARY BMCS CONNECTION:

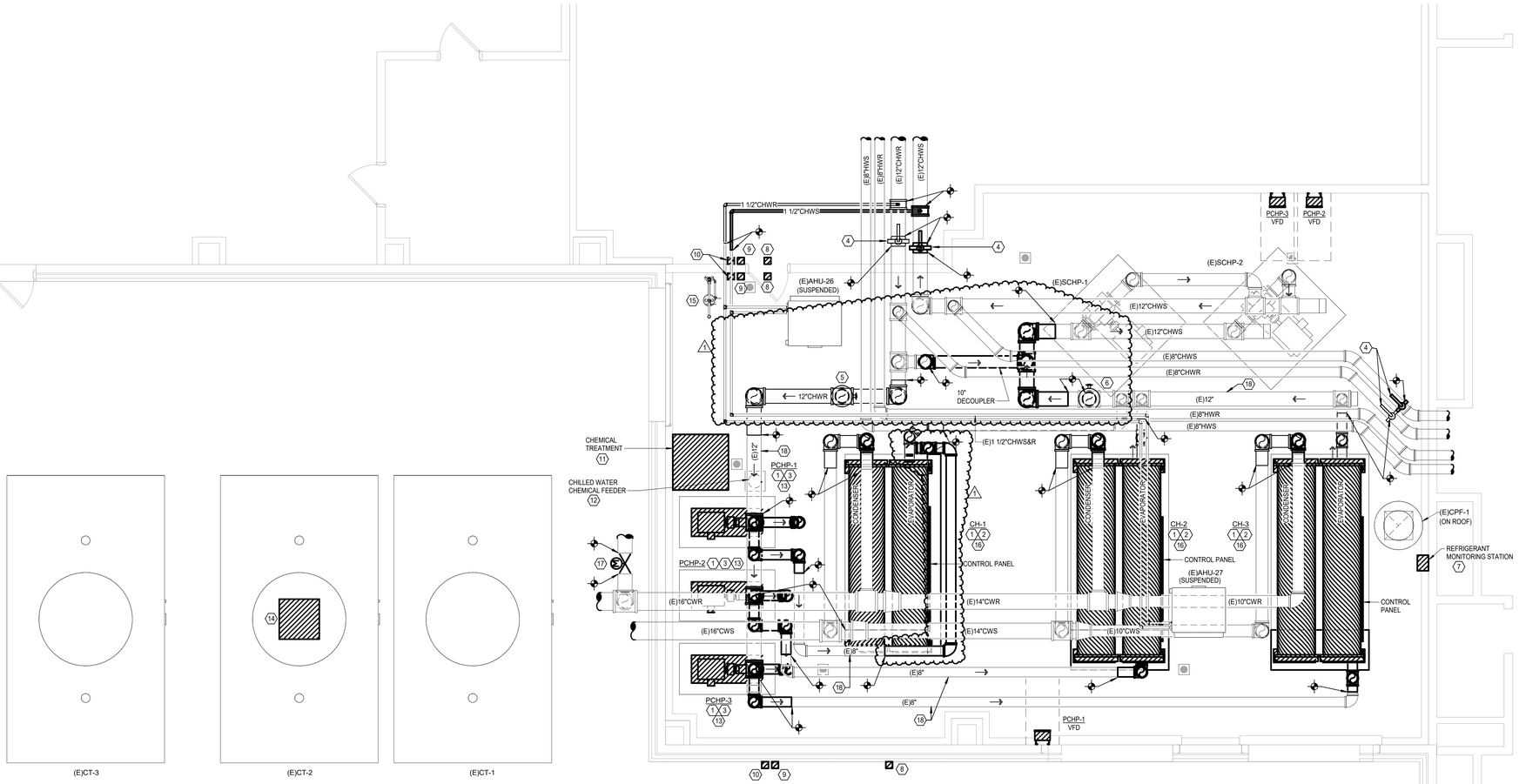
CONTRACTOR SHALL PROVIDE TEMPORARY BMCS CONNECTION FOR TEMPORARY CHILLERS. CONTRACTOR SHALL COORDINATE TEMPORARY BMCS CONNECTION LOCATION WITH OWNER AND ENGINEER PRIOR TO INSTALLATION.

MECHANICAL GENERAL NOTES

1	THESE CONSTRUCTION DRAWINGS ARE DIAGRAMMATIC, AND DO NOT NECESSARILY REFLECT ACTUAL DIMENSIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD-VERIFY ALL DIMENSIONS AND COORDINATE PLACEMENT OF ALL EQUIPMENT AND ROUTING OF ALL PIPING AND/OR DUCT SYSTEMS.
2	MECHANICAL CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL POWER REQUIREMENTS.

MECHANICAL KEYED NOTES

1	VERIFY SERVICE CLEARANCES WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADE NOT TO OBSTRUCT.
2	PROVIDE COPPER REFRIGERANT RELIEF PIPING FROM CHILLER PRESSURE RELIEF VALVES THROUGH THE ROOF. FOLLOW EXISTING ROUTING AND REUSE EXISTING PENETRATION. SIZE RELIEF PIPE AS RECOMMENDED BY MANUFACTURER. REFER TO DETAIL.
3	PROVIDE WITH INERTIA BASE. REFER TO SPECIFICATIONS.
4	PROVIDE ISOLATION VALVE AT LOCATION SHOWN.
5	PROVIDE 12" ISOLATION VALVE AND BLIND FLANGE FOR TEMPORARY CONNECTION.
6	PROVIDE NEW 12" ISOLATION VALVE AND BLIND FLANGE FOR EXISTING TEMPORARY CONNECTION.
7	PROVIDE NEW REFRIGERANT MONITORING STATION TO MONITOR ANY AND ALL REFRIGERANTS UTILIZED IN CENTRAL. ESTABLISH CONTROLS REQUIRED FOR AUDIO/VISUAL ALARMS AND EMERGENCY PURGE VENTILATION TO ACTIVATE ALL CHILLERS TO SHUT DOWN UPON DETECTION OF REFRIGERANT LEAKS. REFER TO SPECIFICATIONS FOR MORE INFORMATION.
8	PROVIDE AUDIO/VISUAL ALARM ABOVE DOOR.
9	PROVIDE BREAK-GLASS TYPE OFF-ONLY EMERGENCY CONTROL BUTTON.
10	PROVIDE BREAK-GLASS TYPE EMERGENCY PURGE VENTILATION BUTTON.
11	PROVIDE NEW CHEMICAL TREATMENT FOR COOLING TOWER. REFER TO SPECIFICATIONS FOR MORE INFORMATION.
12	PROVIDE CHEMICAL FEEDER SUPPORT. REFER TO DETAIL.
13	PROVIDE WITH PUMP PAN. REFER TO DETAIL.
14	CONTRACT SHALL REPAIR LEAK AT COOLING TOWER OUTLET FLANGE. CONTRACTOR SHALL REMOVE REQUIRED PIPING TO REPAIR LEAK. EXISTING GASKET AND FLANGE SHALL BE REPLACED. CONTRACTOR SHALL REINSTALL ALL REMOVED PIPING.
15	REMOVE AND REINSTALL EMERGENCY SHOWER AS NEEDED FOR CHILLER REMOVAL AND REPLACEMENT.
16	MODIFY EXISTING CONCRETE HOUSEKEEPING PAD TO ACCOMMODATE NEW WATER COOLED CHILLER.
17	PROVIDE NEW COOLING TOWER BYPASS VALVE AT LOCATION SHOWN. MODIFY EXISTING PIPING AS REQUIRED TO ACCOMMODATE NEW VALVE.
18	REFER TO PIPING DIAGRAM FOR PIPE SIZES AND FLOW OF EXISTING PIPING.



1 **MECHANICAL ENLARGED PLAN - SECOND FLOOR - SERVICE YARD**
Scale: 1/4" = 1'-0"

Revision /	Date	
1	08/19/2025	ADDENDUM 1

Project:
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MECHANICAL ENLARGED PLAN - SECOND FLOOR - SERVICE YARD

Job No. 01818-08-04	Sheet No. M2.01-BC
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Date: 08/11/2025	

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salasobrien.com 281-664-1900
Houston
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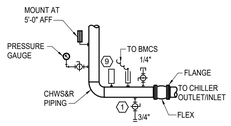
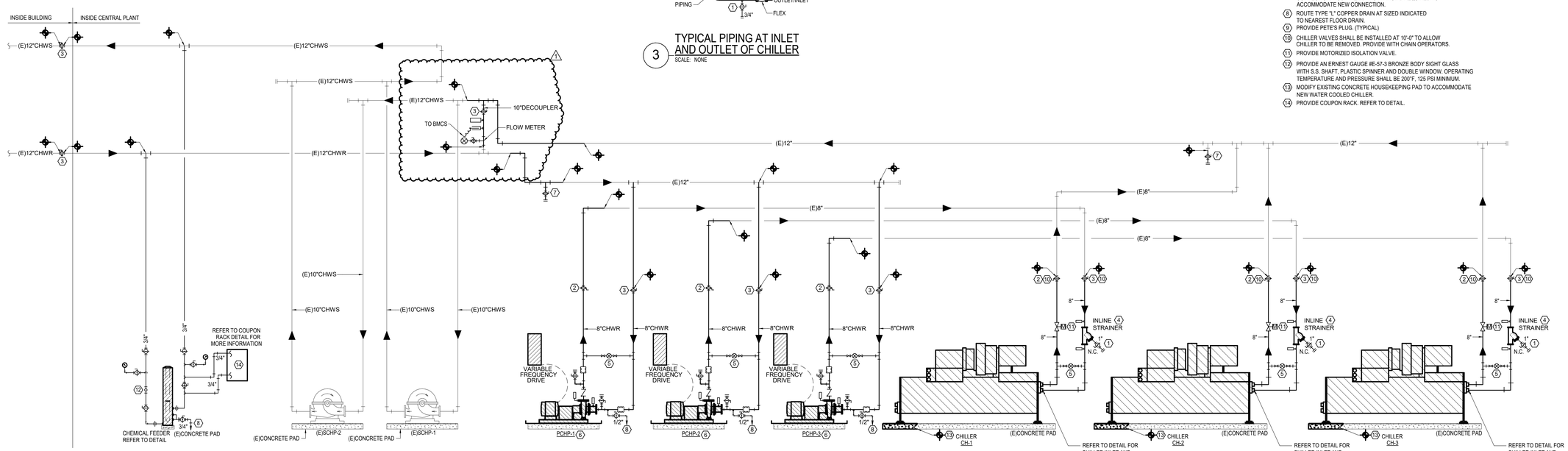
Project No: 2550-00809-00

MECHANICAL KEYED NOTES

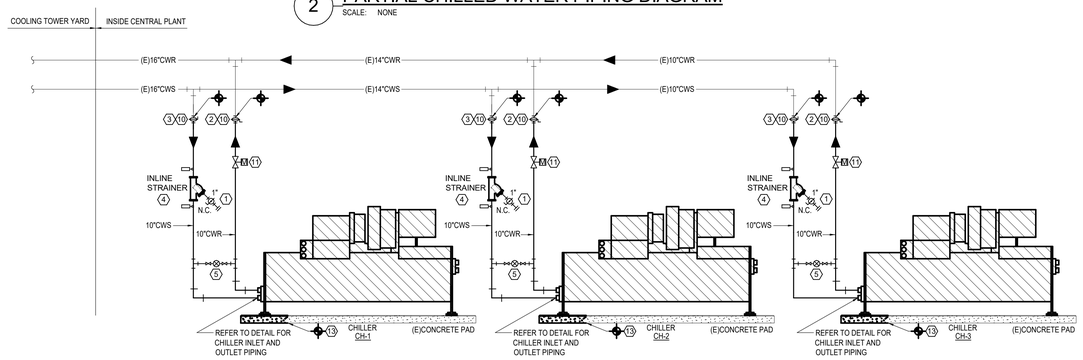
1. PROVIDE BALL VALVE WITH HOSE THREAD ADAPTER AT FULL SIZE OR AT SIZED INDICATED.
2. BALANCING VALVE TO BE PROVIDED WITH INFINITE POSITION CRANK OR MEMORY STOP FOR BALANCING SERVICE. REFER TO SPECIFICATIONS.
3. PROVIDE ISOLATION VALVE.
4. PROVIDE NEW INLINE STRAINER AT LOCATION SHOWN.
5. PROVIDE DIFFERENTIAL PRESSURE SWITCH.
6. PROVIDE PUMP PAN. REFER TO DETAIL.
7. PROVIDE 12" ISOLATION VALVE AND BLIND FLANGE FOR TEMPORARY CONNECTION. MODIFY EXISTING PIPING AS REQUIRED TO ACCOMMODATE NEW CONNECTION.
8. ROUTE TYPE "L" COPPER DRAIN AT SIZED INDICATED TO NEAREST FLOOR DRAIN.
9. PROVIDE PETE'S PLUG. (TYPICAL)
10. CHILLER VALVES SHALL BE INSTALLED AT 10'-0" TO ALLOW CHILLER TO BE REMOVED. PROVIDE WITH CHAIN OPERATORS.
11. PROVIDE MOTORIZED ISOLATION VALVE.
12. PROVIDE AN ERNEST GAUGE #E-57-3 BRONZE BODY SIGHT GLASS WITH S.S. SHAFT, PLASTIC SPINNER AND DOUBLE WINDOW. OPERATING TEMPERATURE AND PRESSURE SHALL BE 200°F, 125 PSI MINIMUM.
13. MODIFY EXISTING CONCRETE HOUSEKEEPING PAD TO ACCOMMODATE NEW WATER COOLED CHILLER.
14. PROVIDE COUPON RACK. REFER TO DETAIL.



3 TYPICAL PIPING AT INLET AND OUTLET OF CHILLER
SCALE: NONE



2 PARTIAL CHILLED WATER PIPING DIAGRAM
SCALE: NONE



1 PARTIAL CONDENSER WATER PIPING DIAGRAM
SCALE: NONE

Revision / 1 — Date 08/19/2025 — ADDENDUM 1

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MECHANICAL PIPING DIAGRAMS

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Date: 08/11/2025	

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SYMBOL LEGEND

SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
GENERAL	
(#)	KEY NOTE TAG
(#)	REVISION TAG
	NEW EQUIPMENT
PIPING	
–CWS&R–	CONDENSER WATER SUPPLY & RETURN (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
–CWS–	CONDENSER WATER SUPPLY
–CWR–	CONDENSER WATER RETURN
–CHWS&R–	CHILLED WATER SUPPLY & RETURN (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
–CHWS–	CHILLED WATER SUPPLY
–CHWR–	CHILLED WATER RETURN
–HWS&R–	HOT WATER FOR HYDRONIC HEATING SUPPLY & RETURN (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
–HWS–	HOT WATER FOR HYDRONIC HEATING SUPPLY
–HWR–	HOT WATER FOR HYDRONIC HEATING RETURN
—D—	CONDENSATE DRAIN LINE
—AD—	AUXILIARY CONDENSATE DRAIN LINE
—RLR—	REFRIGERANT LIQUID & GAS RECIRCULATION LINE (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—RL—	REFRIGERANT LIQUID LINE
—HG—	REFRIGERANT HOT GAS LINE
—RS—	REFRIGERANT SUCTION LINE
	ELBOW UP
	ELBOW DOWN
	90° ELBOW
	45° ELBOW
	TEE
	TEE DOWN
	TEE UP
	TOP BRANCH CONNECTION
	BOTTOM BRANCH CONNECTION
	FLANGE
	CAP
	CONTINUATION
	FLOOR DRAIN (REFER TO PLUMBING DRAWINGS)
	GATE VALVE
	GLOBE VALVE
	CHECK VALVE
	BUTTERFLY VALVE
	BUTTERFLY VALVE WITH OPERATOR
	PLUG VALVE
	TWO-WAY CONTROL VALVE
	THREE-WAY CONTROL VALVE
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE
	BALL VALVE
	STRAINER
	UNION
	THERMOMETER WELL
	PETE'S PLUG
	PRESSURE GAUGE
	TEMPERATURE SENSOR IN PIPE
	VENTURI FLOW METER
	FLOW SWITCH
FM	FLOW MEASURING STATION
	EXPANSION JOINT
	FLEXIBLE CONNECTION
G.C.	GAUGE COCK
	SITE GLASS
	DIFFERENTIAL PRESSURE SENSOR
	TURBINE FLOW METER
	ANCHOR
	PIPE GUIDE
SUBSCRIPTS AND ABBREVIATIONS	
AFF	ABOVE FINISHED FLOOR
BBS	BELOW BOTTOM OF STRUCTURE
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
CA	COMBUSTION AIR
CFM	CUBIC FEET PER MINUTE
EA	EXHAUST AIR
FPM	FEET PER MINUTE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
OA	OUTSIDE AIR
RA	RETURN AIR
SA	SUPPLY AIR
RENOVATIONS	
	POINT OF CONNECTION FROM NEW TO EXISTING
	ITEM TO REMAIN
	ITEM TO BE REMOVED

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salasobrien.com 281-664-1900
Houston
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WATER COOLED CHILLER - MAGNETIC CENTRIFUGAL WITH VFD

MARK	ACTUAL CAPACITY (TONS)	EVAPORATOR (FF=0.0001) LEAVING WATER TEMP.(°F)	EVAPORATOR (FF=0.0001) GPM	EVAPORATOR (FF=0.0001) PRESSURE DROP (FT.)	CONDENSER (FF=0.00025) ENTERING WATER TEMP.(°F)	CONDENSER (FF=0.00025) GPM	CONDENSER (FF=0.00025) PRESSURE DROP (FT.)	CURRENT CHARAC. V	CURRENT CHARAC. P	CURRENT CHARAC. F	MANUFACTURER	MINIMUM KW/TON	MINIMUM NPLV	REMARKS
CH-1	375	42	640	20.0	86	1,125	20.0	480	3	60	DAIKIN	0.6479	0.36	(1,2,3,4,5,6,7)
CH-1											TRANE	0.6016	0.3604	-
CH-2	525	42	900	20.0	86	1,575	20.0	480	3	60	DAIKIN	0.6024	0.3431	(1,2,3,4,5,6,7)
CH-3	525	42	900	20.0	86	1,575	20.0	480	3	60	DAIKIN	0.6024	0.3434	(1,2,3,4,5,6,7)

REMARKS:
1. CHILLER SHALL MEET OR EXCEED BOTH ABOVE SCHEDULED FULL-LOAD AND PART-LOAD DESIGN EFFICIENCIES, AND MINIMUM AHRI STANDARDIZED FULL-LOAD AND PART-LOAD EFFICIENCIES INDICATED IN IECC 2015. COMPLY BY PATH A OR BY PATH B AS REQUIRED BY IECC 2015.
2. CHILLERS SHALL MEET OR EXCEED CAPACITY AT SCHEDULED WATER TEMPERATURES.
3. PROVIDE WITH VARIABLE FREQUENCY DRIVE.
4. PROVIDE CHILLER WITH SPRING ISOLATORS. REFER TO SPECIFICATIONS.
5. PROVIDE CONDENSER WITH HINGED BARREL HEAD.
6. PROVIDE 3 PASSES ON THE EVAPORATOR. REFER TO DRAWINGS.
7. PROVIDE 2 PASSES ON THE CONDENSER. REFER TO DRAWINGS.
8. PROVIDE 2 PASSES ON THE EVAPORATOR. REFER TO DRAWINGS.

WATER COOLED CHILLER - CENTRIFUGAL WITH VFD

MARK	ACTUAL CAPACITY (TONS)	EVAPORATOR (FF=0.0001) LEAVING WATER TEMP.(°F)	EVAPORATOR (FF=0.0001) GPM	EVAPORATOR (FF=0.0001) PRESSURE DROP (FT.)	CONDENSER (FF=0.00025) ENTERING WATER TEMP.(°F)	CONDENSER (FF=0.00025) GPM	CONDENSER (FF=0.00025) PRESSURE DROP (FT.)	CURRENT CHARAC. V	CURRENT CHARAC. P	CURRENT CHARAC. F	MANUFACTURER	MINIMUM KW/TON	MINIMUM NPLV	REMARKS
CH-2	525	42	900	20.0	86	1,575	20.0	480	3	60	TRANE	0.6091	0.3819	(1,2,3,4,5,6,7)
CH-3	525	42	900	20.0	86	1,575	20.0	480	3	60	TRANE	0.0691	0.3819	-

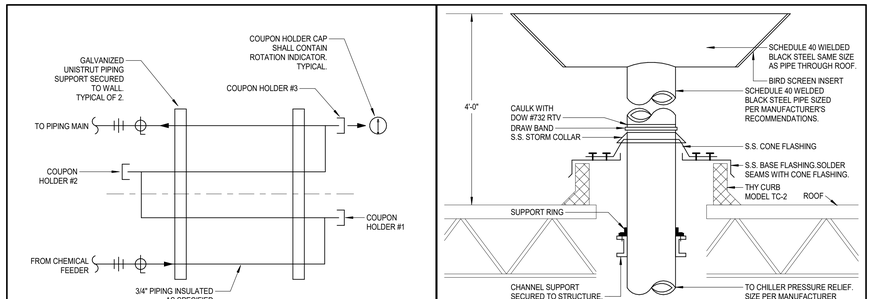
REMARKS:
1. CHILLER SHALL MEET OR EXCEED BOTH ABOVE SCHEDULED FULL-LOAD AND PART-LOAD DESIGN EFFICIENCIES, AND MINIMUM AHRI STANDARDIZED FULL-LOAD AND PART-LOAD EFFICIENCIES INDICATED IN IECC 2015. COMPLY BY PATH A OR BY PATH B AS REQUIRED BY IECC 2015.
2. CHILLERS SHALL MEET OR EXCEED CAPACITY AT SCHEDULED WATER TEMPERATURES.
3. PROVIDE WITH VARIABLE FREQUENCY DRIVE.
4. PROVIDE CHILLER WITH SPRING ISOLATORS. REFER TO SPECIFICATIONS.
5. PROVIDE CONDENSER WITH HINGED BARREL HEAD.
6. PROVIDE 3 PASSES ON THE EVAPORATOR. REFER TO DRAWINGS.
7. PROVIDE 2 PASSES ON THE CONDENSER. REFER TO DRAWINGS.

PUMP

TAG	SERVICE	TYPE	GPM	HEAD (FT.)	MOTOR HORSE POWER	MAX. RPM	CURRENT CHARAC. V	CURRENT CHARAC. P	CURRENT CHARAC. F	MANUFACTURER	MODEL NUMBER	REMARKS
PCHP-1	CHILLED WATER	HORIZONTAL END SUCTION	640	60.00	15	1800	480	3	60	ARMSTRONG	4030	(1,2,3)
PCHP-2	CHILLED WATER	HORIZONTAL END SUCTION	900	60.00	25	1800	480	3	60	ARMSTRONG	4030	(1,2,3)
PCHP-3	CHILLED WATER	HORIZONTAL END SUCTION	900	60.00	25	1800	480	3	60	ARMSTRONG	4030	(1,2,3)

GENERAL NOTES:
1. PUMP IS TO HAVE A NON-OVERLOADING MOTOR.
2. MINIMUM RECOMMENDED CLEARANCE AROUND A PUMP IS 24 INCHES. MAINTAIN MINIMUM CLEARANCES AS REQUIRED FOR SERVICE, MAINTENANCE, AND INSPECTION.

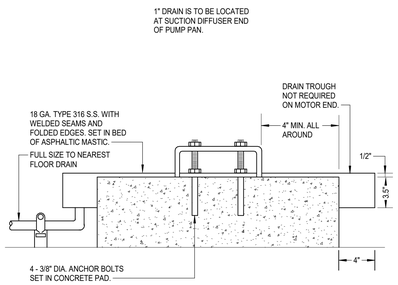
REMARKS:
1. PROVIDE WITH VARIABLE FREQUENCY DRIVE.
2. PROVIDE SUCTION DIFFUSER AT PUMP INLET.
3. PROVIDE WITH BACK PULL OUT.



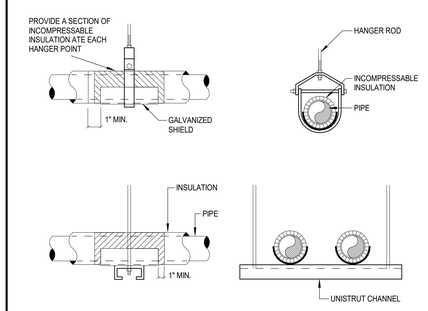
4 **COUPON RACK DETAIL**
SCALE: NONE

NOTES:
1. PROVIDE A 2" COPPER PIPE FROM THE 3/4" REFRIGERANT PRESSURE RELIEF VALVES LOCATED ON THE CHILLERS THROUGH THE EXTERIOR WALL. THE DICHARGE POINT SHALL BE 15 FEET ABOVE GRADE AND 20 FEET FROM ANY OPENING INTO THE BUILDING.
2. PROVIDE DRAIN AT LOWEST END OF RELIEF PIPING AT CHILLER

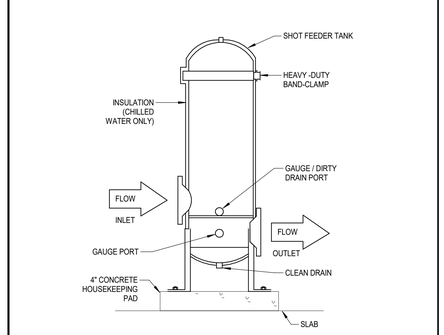
2 **CHILLER PRESSURE RELIEF PIPE**
SCALE: NONE



5 **PUMP PAN**
SCALE: NONE



3 **PIPE HANGERS**
SCALE: NONE



CHILLED AND HOT WATER CHEMICAL FEEDER TANK SUPPORT

1 SCALE: NONE

Revision /	Date
1	08/19/2025 ADDENDUM 2

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MECHANICAL SCHEDULES, LEGENDS, AND DETAILS

Job No.	Sheet No.
01818-08-04	M4.01-BC
Drw By: BB Chk By: VP	
Date: 08/11/2025	

ELECTRICAL DEMOLITION GENERAL NOTES

1. CONTRACTOR SHALL VISIT THE SITE BEFORE SUBMITTING A BID AND VERIFY EXISTING CONDITIONS. ANY MODIFICATIONS REQUIRED CONTRARY TO THESE DOCUMENTS FOR A COMPLETE AND OPERATING SYSTEM SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
2. PROTECT EXISTING EQUIPMENT/DEVICES TO REMAIN IN PLACE. MAINTAIN EXISTING POWER CONNECTIONS. ALL EXISTING EQUIPMENT/DEVICES SHALL REMAIN FULLY FUNCTIONAL.
3. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATIONS OF EQUIPMENT AND SCHEDULES.
4. ALL EXISTING DISTRIBUTION PANELS AND BREAKERS TO REMAIN UNLESS SPECIFICALLY NOTED OTHERWISE.
5. ALL EQUIPMENT WITH THE SUBSCRIPT OR TAGGING '(E)' ARE EXISTING TO REMAIN.
6. VERIFY ALL DEMOLITION WORK WITH ARCHITECT/OWNER PRIOR TO COMMENCEMENT OF WORK.
7. ELECTRICAL WORK OR MATERIAL RENDERED OBSOLETE SHALL BE ABANDONED WHERE CONCEALED AND REMOVED WHERE EXPOSED. OLD UNUSED WIRING AND DEVICES SHALL BE REMOVED FROM THE ABANDONED (CONCEALED) CONDUITS. OUTLETS SHALL BE PROVIDED WITH BLANK COVERS. ANY CONDUITS OUT OF MASONRY SURFACE SHALL BE CUT INTO SURFACE AND PATCHED.

OWNER HAS THE RIGHT TO KEEP POSSESSION OF ANY DEMOLISHED EQUIPMENT/DEVICES. CONTRACTOR TO NOTIFY THE OWNER OF DEMOLISHED EQUIPMENT/DEVICES FOR REUSE OR KEEP AS SPARE PARTS PRIOR TO REMOVAL OFFSITE.

EXISTING RACEWAYS AND LOCATION OF ELECTRICAL BOXES/OUTLETS ON EXISTING WALLS TO REMAIN SHALL BE RE-USED AS WHERE POSSIBLE FOR NEW EQUIPMENT/DEVICES AS PART OF NEW WORK.

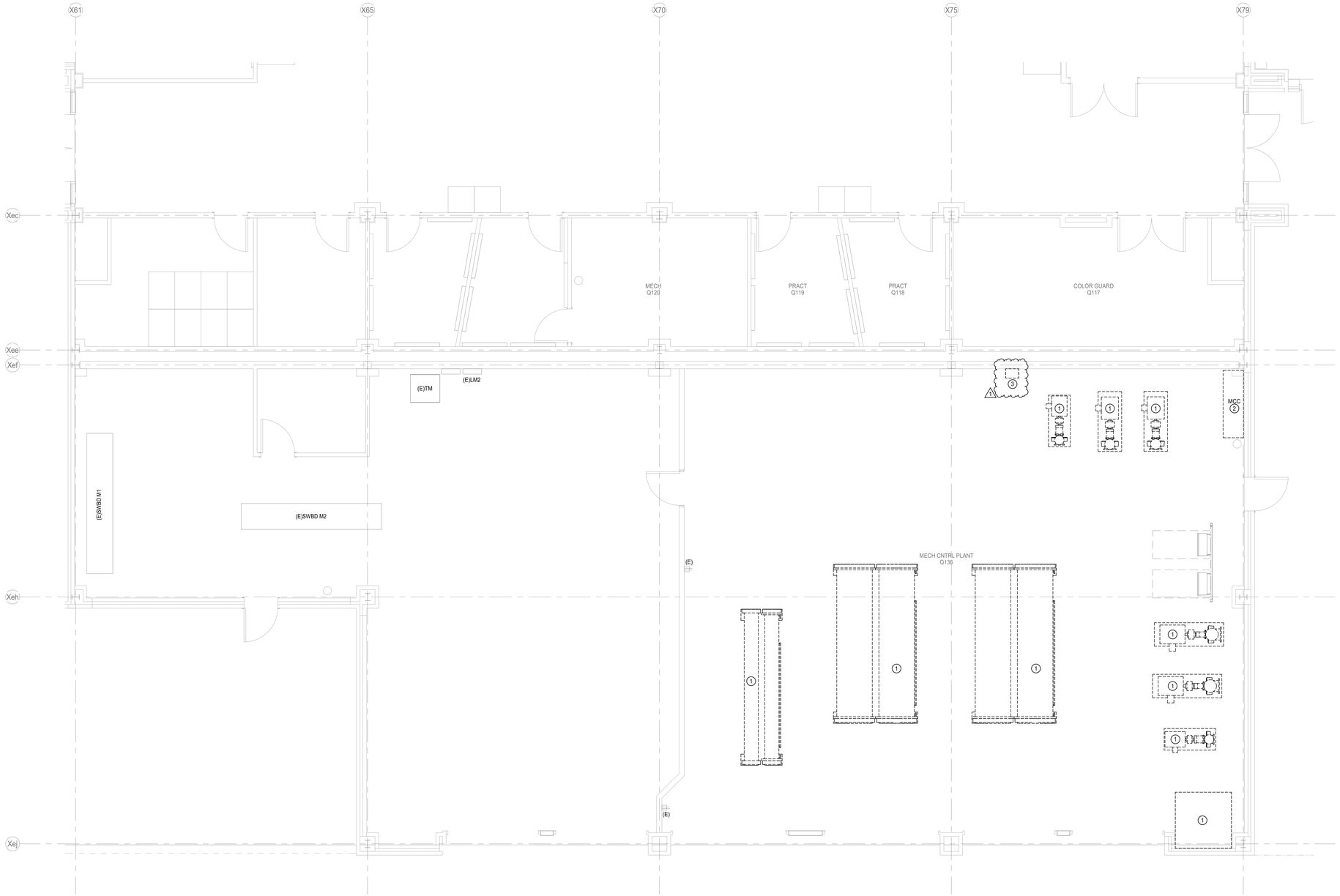
DEMOLITION / EXISTING DRAWINGS ARE BASED ON CASUAL FIELD OBSERVATION AND, WHEN AVAILABLE, EXISTING RECORD DOCUMENTS. REPORT DISCREPANCIES TO ARCHITECT BEFORE DISTURBING ANY INSTALLATION AND IMMEDIATELY AFTER SUCH DISCREPANCIES ARE DISCOVERED. CONTRACTOR TO VERIFY EXISTING CONDITIONS ON FIELD AND NOTIFY ENGINEER IF THERE ARE ANY CONFLICTS BETWEEN EXISTING CONDITIONS AND DRAWINGS PRIOR TO COMMENCEMENT OF WORK AS CALLED FOR ON THE DRAWINGS OR AS REQUIRED TO CLEAR THE AREAS OF NEW CONSTRUCTION. OWNER OR ITS REPRESENTATIVE SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED FROM THIS PROJECT. CONTRACTOR SHALL NOTIFY THE DISTRICT'S REPRESENTITIVE PRIOR TO DEMOLITION WORK TO DISCUSS ALL RETURNED ITEMS TO DISTRICT.

ELECTRICAL KEYED NOTES - E1.01

1	DISCONNECT EXISTING EQUIPMENT TO BE DEMOLISHED. PULL CONDUCTORS AND CONDUIT BACK TO SOURCE. DISCONNECT AND REMOVE ASSOCIATED DISCONNECTS, STARTERS, OR VFDS. FLIP BREAKER OFF AND INDICATE AS SPARE.
2	DISCONNECT AND REMOVE EXISTING MOTOR CONTROL CENTER 'MCC'. FIELD VERIFY EXISTING BRANCH CIRCUITS TO REMAIN ACTIVE AND EXTEND CONDUIT/WIRE TO NEW PANEL 'HCP'.
3	DISCONNECT EXISTING REFRIGERATION MONITOR TO BE DEMOLISHED. PRESERVE EXISTING CONDUIT AND CONDUCTORS FOR REUSE.

LINE TYPE LEGEND

	EXISTING ITEM TO REMAIN
	NEW ITEM
	ITEM TO BE REMOVED



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1 **ELECTRICAL DEMO ENLARGED PLAN - SERVICE YARD**
Scale: 1/4" = 1'-0"

Salas O'Brien
salasobrien.com 281-664-1900
Houston
10930 W. Sam Houston Pkwy North, Suite 900
Houston, TX 77064
Registration: F-4111
Project No: 2550-00809-00

Revision / 1
Date 08/19/2025
ADDENDUM 01

Project:
2025 MULTICAMPUS CHILLER REPLACEMENT
FOR
CYPRESS-FAIRBANKS ISD
JERSEY VILLAGE HIGH SCHOOL CHILLER
7600 Solomon St, Jersey Village, TX 77040

BRADLEY KALMANS
80219
LICENSED
08/19/25

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ELECTRICAL DEMO ENLARGED PLAN - SERVICE YARD

Job No. 01818-08-02	Sheet No. E1.01-JV
Drw By: AW / Chk By: JZ	
Date: 08/11/2025	

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Autodesk Docs://CYPRESS-FAIRBANKS ISD - CHILLER REPLACEMENTS CAMPBELL MS/CFISD - JVHS_MEPT_R23.rvt

ELECTRICAL KEYED NOTES - E2.01

1	CONNECT NEW CHEMICAL TREATMENT SYSTEM TO EXISTING CIRCUIT PRESERVED DURING DEMOLITION. EXTEND CONDUIT/WIRE AND MAKE FINAL CONNECTION.
2	PROVIDE A NEW UNISTRUT RACK AND MOUNT NEW VFD TO NEW UNISTRUT RACK. REFER TO UNISTRUT MOUNTED RACK DETAIL FOR MORE INFORMATION.
3	EXTEND NEW 2#10 AND 1#10G. FROM EXISTING RECEPTACLE TO NEW RECEPTACLE.
4	ROUTE 2"C WITH PULLSTRING ALONG HOMERUN BACK TO BMCS SYSTEM. COORDINATE FINAL ROUTING WITH DIVISION 26.
5	CONNECT NEW REFRIGERANT MONITOR TO PRESERVE EXISTING CONDUIT AND CONDUCTORS.

ELECTRICAL GENERAL NOTES

1. CONTRACTOR SHALL VISIT THE SITE BEFORE SUBMITTING A BID AND VERIFY EXISTING CONDITIONS. ANY MODIFICATIONS REQUIRED CONTRARY TO THESE DOCUMENTS FOR A COMPLETE AND OPERATING SYSTEM SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
2. PROTECT EXISTING EQUIPMENT/DEVICES TO REMAIN IN PLACE. MAINTAIN EXISTING POWER CONNECTIONS. ALL EXISTING EQUIPMENT/DEVICES SHALL REMAIN FULLY FUNCTIONAL.
3. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATIONS OF EQUIPMENT AND SCHEDULES.
4. ALL EXISTING DISTRIBUTION PANELS AND BREAKERS TO REMAIN UNLESS SPECIFICALLY NOTED OTHERWISE.
5. ALL EQUIPMENT WITH THE SUBSCRIPT OR TAGGING '(E)' ARE EXISTING TO REMAIN.

EXISTING RACEWAYS AND LOCATION OF ELECTRICAL BOXES/OUTLETS ON EXISTING WALLS TO REMAIN SHALL BE RE-USED AS WHERE POSSIBLE FOR NEW EQUIPMENT/DEVICES AS PART OF NEW WORK.

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LINE TYPE LEGEND

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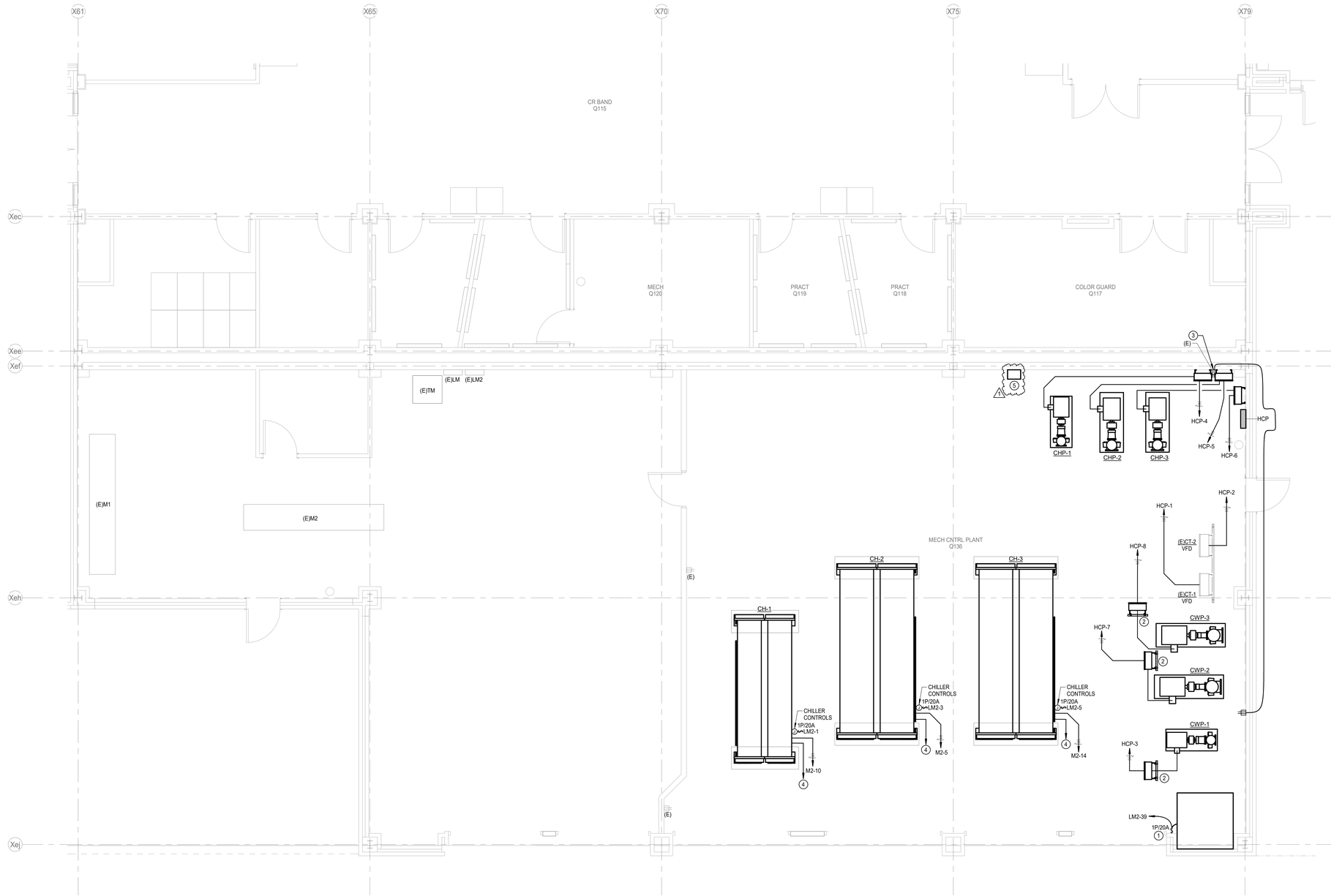
	NEW ITEM
	ITEM TO BE REMOVED



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1	08/19/2025	ADDENDUM 01

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ELECTRICAL ENLARGED PLAN - SERVICE YARD

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