ARTICLE XIV. MISCELLANEOUS PROVISIONS

14.1. GOVERNING LAW; COMPLIANCE WITH LAWS AND REGULATIONS

14.1.1. This Contract shall be governed by the laws and case decisions of the State of Texas, without regard to conflict of law or choice of law principles of Texas or of any other state.

14.1.2. This Contract is entered into subject to and controlled by all applicable laws, rules and regulations of the State of Texas and the Government of the United States of America. Contractor shall, during the performance of the Work, comply with all applicable orders, codes and ordinances, as amended, and all applicable State of Texas and Federal laws, rules and regulations, as amended.

14.2. SUCCESSORS AND ASSIGNS

WEBB COUNTY and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to the promises, covenants, terms, conditions and obligations contained in the Contract Documents. Contractor shall not assign, transfer or convey its interest or rights in the Contract, in part or as a whole, without the written consent of WEBB COUNTY. If Contractor attempts to make an assignment, transfer or conveyance without WEBB COUNTY's written consent, Contractor nevertheless shall remain legally responsible for all obligations under the Contract Documents. WEBB COUNTY shall not assign any portion of the Contract Sum due or to become due under this Contract without the written consent of Contractor, except where assignment is compelled by court order, other operation of law or the terms of these General Conditions.

14.3. WRITTEN NOTICE

Any notice, payment, statement or demand required or permitted to be given under this Contract by either Party to the other may be effected by personal delivery in writing or by facsimile transmission, email or by mail, postage prepaid, or by overnight delivery to an officer, management level employee or other designated representative of either Party. Mailed or email notices shall be addressed to the Parties at an address designated by each Party, but each Party may change its address by written notice in accordance with this section. Mailed notices shall be deemed received as of three (3) calendar days after mailing.

14.4. RIGHTS AND REMEDIES; NO WAIVER OF RIGHTS BY WEBB COUNTY

14.4.1. The duties and obligations imposed on Contractor by the Contract Documents and the rights and remedies available to WEBB COUNTY under the Contract Documents shall be in addition to, and not a limitation of, any duties, obligations, rights and remedies otherwise imposed or made available by law.

14.4.2. No action or failure to act by WEBB COUNTY shall constitute a waiver of a right afforded WEBB COUNTY under the Contract Documents, nor shall any action or failure to act by WEBB COUNTY constitute approval of or

acquiescence in a breach of the Contract by Contractor, except as may be specifically agreed in writing by Change Order, Amendment or Supplemental Agreement.

14.5. INTEREST

WEBB COUNTY shall not be liable for interest on any progress or final payment to be made under the Contract Documents, except as may be provided by the applicable provisions of the Prompt Payment Act, Chapter 2251, Texas Government Code, as amended, subject to **Article IX** of these General Conditions. **Contractor agrees that Contractor cannot recover any of its attorney's fees in enforcing any violation of the Prompt Payment Act**.

14.6. INDEPENDENT MATERIALS TESTING AND INSPECTION

In some circumstances, WEBB COUNTY shall retain, independent of Contractor, the inspection services, the testing of construction materials engineering and the verification testing services necessary for acceptance of the Project by WEBB COUNTY. Such Consultants shall be selected in accordance with Section 2254.004 of the Government Code. The professional services, duties and responsibilities of any independent Consultants shall be described in the agreements between WEBB COUNTY and those Consultants. The provision of inspection services by WEBB COUNTY shall be for Quality Assurance and shall not reduce or lessen Contractor's responsibility for the Work or its duty to establish and implement a thorough Quality Control Program to monitor the quality of construction and guard WEBB COUNTY against defects and deficiencies in the Work, as required herein. Contractor fully and solely is responsible for constructing the Project in strict accordance with the Construction Documents.

14.7. OFFICERS OR EMPLOYEES OF WEBB COUNTY NOT TO HAVE FINANCIAL INTEREST IN ANY CONTRACT OF WEBB COUNTY

Contractor acknowledges the Purchasing Code of Ethics Policy of WEBB COUNTY and its Ethics Code prohibits a WEBB COUNTY elected official, officer or employee, from having a financial interest in any contract with WEBB COUNTY or any WEBB COUNTY agency, such as WEBB COUNTY owned utilities. An elected official, officer or employee has a "prohibited financial interest" in a contract with WEBB COUNTY or in the sale to WEBB COUNTY of land, materials, supplies or service, if any of the following individual(s) or entities is a Party to the contract or sale:

(1) a WEBB COUNTY elected official, officer or employee; his parent, child or spouse;

(2) a business entity in which the elected official, officer or employee, or his parent, child or spouse owns ten (10) percent or more of the voting stock or shares of the business entity, or ten (10) percent or more of the fair market value of the business entity;

(3) a business entity in which any individual or entity above listed is a Subcontractor on a WEBB COUNTY contract, or

(4) a partner or a parent or subsidiary business entity.

Pursuant to this **Article XIV**, Contractor warrants and certifies, and this Contract is made in reliance thereon, that it, its officers, employees and/or agents are neither officers nor employees of WEBB COUNTY. Except with WEBB COUNTY's low-bid contract awards, Contractor warrants and certifies that it has tendered to WEBB COUNTY a Conflict of Interest Disclosure in compliance with WEBB COUNTY's Ethics Policy. Any violation of this **Section 14.7**, with the knowledge, express or implied, of the person, persons, partnership, company, firm, association or corporation contracting with WEBB COUNTY may render a Contract voidable by WEBB COUNTY Commissioners Court.

14.8. VENUE

This Contract is performed in Webb County, Texas, and if legal action is necessary to enforce this Contract, exclusive venue shall lie in the State Courts of Webb County, Texas.

14.9. INDEPENDENT CONTRACTOR

In performing the Work under this Contract, the relationship between WEBB COUNTY and Contractor is Contractor is and shall remain an independent contractor. Contractor shall exercise independent judgment in performing the Work and solely is responsible for setting working hours, scheduling and/or prioritizing the Work flow and determining the means and methods of performing the Work, subject only to the requirements of the Contract Documents. No term or provision of this Contract shall be construed as making Contractor an agent, servant or employee of WEBB COUNTY or making Contractor or any of Contractor's employees, agents or servants eligible for the fringe benefits, such as retirement, insurance and worker's compensation which WEBB COUNTY provides to its employees.

14.10. NON-DISCRIMINATION

As a Party to this Contract Contractor shall not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation, gender identity, veteran status, age or disability, unless Contractor is exempted by state or federal law, or as otherwise established herein. Contractor covenants that it shall take all necessary actions to insure that, in connection with any Work under this Contract, Contractor and its Subcontractor(s) shall not discriminate in the treatment or employment of any individual or groups of individuals on the grounds of race, color, religion, national origin, sex, sexual orientation, gender identity, veteran status, age or disability, either directly, indirectly or through contractual or other arrangements. Contractor also shall comply with all applicable requirements of the Americans with Disabilities Act, 42 U.S.C.A. §§12101-12213, as amended.

14.11. GIFTS TO PUBLIC SERVANTS

14.11.1. WEBB COUNTY may terminate this Contract immediately if Contractor has offered, conferred or agreed to confer any benefit on a WEBB COUNTY employee or official that the employee or official is prohibited by law from accepting.

14.11.2. For purposes of this Article, "benefit" means anything reasonably regarded as pecuniary gain or pecuniary advantage, including benefit to any other person in whose welfare the beneficiary has a direct or substantial interest, but does not include a contribution or expenditure made and reported in accordance with law.

14.11.3. Notwithstanding any other legal remedies, WEBB COUNTY may require Contractor to remove any employee of Contractor, a Subcontractor or any employee of a Subcontractor from the Project who has violated the restrictions of this **Article XIV** or any similar State or Federal law and WEBB COUNTY may obtain reimbursement for any expenditures made to Contractor as a result of an improper offer, an agreement to confer or the conferring of a benefit to a WEBB COUNTY employee or official.

ARTICLE XV. AUDIT

15.1 RIGHT TO AUDIT CONTRACTOR'S RECORDS

By execution of the Contract, Contractor grants WEBB COUNTY the right to audit, examine, inspect and/or copy, at WEBB COUNTY's election at all reasonable times during the term of this Contract and for a period of four (4) years following the completion or termination of the Work, all of Contractor's written and electronically stored records and billings relating to the performance of the Work under the Contract Documents. The audit, examination or inspection may be performed by a WEBB COUNTY designee, which may include its internal auditors or an outside representative engaged by WEBB COUNTY. Contractor agrees to retain its records for a minimum of four (4) years following termination of the Contract, unless there is an ongoing dispute under the Contract, then, such retention period shall extend until final resolution of the dispute, with full access allowed to authorized representatives of WEBB COUNTY upon request, for purposes of evaluating compliance with this and other provisions of the Contract.

15.1.1 As used in these General Conditions, "Contractor written and electronically stored records" shall include any and all information, materials and data of every kind and character generated as a result of the work under this Contract. Example of Contractor written and electronically stores records include, but are not limited to: accounting data and reports, billings, books, general ledgers, cost ledgers, invoices, production sheets, documents, correspondences, meeting notes, subscriptions, agreements, purchase orders, leases, contracts, commitments, arrangements, notes, daily diaries, reports, drawings, receipts, vouchers, memoranda, time sheets, payroll records, policies, procedures, Subcontractor agreements, Supplier agreements, rental equipment proposals, federal and state tax filings for any issue in question, along with any and all other agreements, sources of information and matters that may, in WEBB COUNTY's sole judgment, have any bearing on or pertain to any matters, rights, duties or obligations under or covered by any Contract Documents.

15.1.2 WEBB COUNTY agrees that it shall exercise the right to audit, examine or inspect Contractor's records only during regular business hours. Contractor

agrees to allow WEBB COUNTY and/or WEBB COUNTY's designee access to all of the Contractor's Records, Contractor's facilities and current or former employees of Contractor, deemed necessary by WEBB COUNTY or its designee(s), to perform such audit, inspection or examination. Contractor also agrees to provide adequate and appropriate work space necessary for WEBB COUNTY or its designees to conduct such audits, inspections or examinations.

15.1.3 Contractor shall include this **Article XV** in any Subcontractor, supplier or vendor contract.

ARTICLE XVI. ATTORNEY FEES

The Parties hereto expressly agree, in the event of litigation, all Parties waive rights to payment of attorneys' fees that otherwise might be recoverable, pursuant to the Texas Civil Practice and Remedies Code Chapter 38, Texas Local Government Code §271.153, the Prompt Payment Act, common law or any other provision for payment of attorney's fees.

Special Conditions for Horizontal (i.e. Road) Projects

3.2.5 Differing Site Conditions (Adds this Section 3.2.5 to GENERAL CONDITIONS FOR WEBB COUNTY CONSTRUCTION CONTRACTS)

Contractor promptly shall, before such discovered conditions and/or structures are disturbed, notify WEBB COUNTY in writing of differing site conditions. Differing site conditions are defined as subsurface or latent physical and/or structural conditions at the Site differing materially from those indicated in the Plans, Specifications and other Contract Documents or newly discovered and previously unknown physical conditions at the Site of an unusual nature differing materially from those geophysical conditions typically encountered in the type Work being performed and generally being recognized as not indigenous to the Webb County, Texas environs.

WEBB COUNTY and/or Design Consultant promptly shall investigate the reported physical and/or structural conditions and shall determine whether or not the physical and/or structural conditions do materially so differ and thereby cause an increase or decrease in Contractor's cost of and/or time required for performance of any part of the Work under this Contract. In the event WEBB COUNTY reasonably determines the physical and/or structural conditions materially so differ, a negotiated and equitable adjustment shall be made to the Contract Time and/or Contract Sum and a Change Order promptly shall be issued by WEBB COUNTY.

(1) No claim of Contractor under this **Section 3.2.5** shall be allowed unless Contractor has given the written notice called for above, prior to disturbing the discovered conditions and/or structures.

(2) No Contract adjustment shall be allowed under this **Section 3.2.5** for any effects caused

on unchanged work.

3.4.7 Material Testing (Added to Section 3.4.7 of GENERAL CONDITIONS FOR WEBB COUNTY CONSTRUCTION CONTRACTS)

Materials not meeting Contract requirements or do not produce satisfactory results shall be rejected by WEBB COUNTY, unless WEBB COUNTY or Design Consultant approves corrective actions. Upon rejection, Contractor immediately shall remove and replace rejected materials. If Contractor does not comply with these requirements, WEBB COUNTY may remove and replace defective material and all costs incurred by WEBB COUNTY for testing, removal and replacement of rejected materials shall be deducted from any money due or owed to Contractor.

The source of supply of each of the materials shall be approved by WEBB COUNTY or Design Consultant before delivery is started and, at the option of WEBB COUNTY, may be sampled and tested by WEBB COUNTY for determining compliance with the governing Specifications before delivery is started. If it is found after trial sources of supply previously approved do not produce uniform and satisfactory products, or if the product from any source proves unacceptable at any time, Contractor shall furnish materials from other approved sources. Only materials conforming to the requirements of the Contract documents and approved by WEBB COUNTY shall be used by Contractor in the work. All materials being used by Contractor are subject to inspection or test at any time during preparation or use. Any material which has been tested and accepted at the source of supply may be subjected to a check test after delivery and all materials which, when retested, do not meet the requirements of the Specifications shall be rejected. No material which, after approval, has in any way become unfit for use shall be used in the Work.

If, for any reason, Contractor selects a material which is approved for use by WEBB COUNTY or Design Consultant by sampling, testing or other means, and Contractor decides to change to a different material requiring additional sampling and testing by WEBB COUNTY for approval, Contractor shall pay for any expense incurred by WEBB COUNTY for such additional sampling and testing and the costs incurred by WEBB COUNTY shall be deducted from any money due or owed to Contractor.

4.3.8 Change in Unit Prices (Added to Section 4.3.8 of GENERAL CONDITIONS FOR WEBB COUNTY CONSTRUCTION CONTRACTS)

Unit prices established in the Contract documents only may be modified when a Change Order or Field Work Directive causes a material change in quantity to a Major Bid Item. A Major Bid Item is defined as a single bid item constituting a minimum of five percent (5%) of the total contract value. A material change in quantity is defined as an increase or decrease of twenty five percent (25%) or more of the units of an individual bid item or an increase or decrease of twenty five percent (25%) or more of the dollar value of a lump sum bid item. Revised unit pricing only shall apply to the quantity of a major bid item in excess of a twenty five percent (25%) increase or decrease of the original Contract

quantity.

7.2.5 Allowable Markups (Added to Section 7.2.5 of GENERAL CONDITIONS FOR WEBB COUNTY CONSTRUCTION CONTRACTS)

Maximum allowable markups for Change Order pricing, when said pricing is not determined through unit prices, are established as follows:

7.2.5.1 Labor

Contractor shall be allowed the documented payroll rates for each hour laborers and foremen actually shall be engaged in the Work. Contractor shall be allowed to receive an additional twenty five percent (25%) as compensation, based on the total wages paid said laborers and foremen. No charge shall be made by Contractor for organization or overhead expenses. For costs of premiums on public liability and workers compensation insurance(s), Social Security and unemployment insurance taxes, an amount equal to fifty five percent (55%) of the sum of the labor cost, excluding the twenty five percent (25%) documented payroll rate compensation allowed herein, shall be the established maximum allowable labor burden cost. No charge for superintendence shall be made unless considered necessary and approved by WEBB COUNTY or a Change Order includes an extension of the Contract Time.

7.2.5.2 Materials

Contractor shall be allowed to receive the actual cost, including freight charges, for materials used on such Work, including an additional twenty five percent (25%) of the actual cost as compensation. When material invoices indicate an available discount, the actual cost shall be determined as the invoiced price less the available discount.

7.2.5.3 Equipment

For Contractor-owned machinery, trucks, power tools or other equipment, necessary for use on Change Order work, the Rental Rate Blue Book for Construction Equipment (hereafter referred to as "Blue Book") rate, as modified by the following, shall be used to establish Contractor's allowable hourly rental rates. Equipment used shall be at the rates in effect for each section of the Blue Book at the time of use. The following formula shall be used to compute the hourly rates:

$$H = \frac{M \times R1 \times R2}{176} + OP$$

Where H = Hourly Rate M = Monthly Rate
R1 = Rate Adjustment Factor
R2 = Regional Adjustment Factor OP = Operating Costs

If Contractor-owned machinery and/or equipment is not available and equipment is rented from an outside source, the hourly rate shall be established by dividing the actual

invoice cost by the actual number of hours the equipment is involved in the Work. WEBB COUNTY reserves the right to limit the hourly rate to comparable Blue Book rates. When the invoice specifies the rental rate does not include fuel, lubricants, repairs and servicing, the Blue Book hourly operating cost shall be allowed to be added for each hour the equipment operates. The allowable equipment hourly rates shall be paid for each hour the equipment is involved in the Work and an additional maximum of fifteen percent (15%) may be added as compensation.

7.2.5.4 Subcontractor Markups

Contractor shall be allowed administrative cost only when extra Work, ordered by WEBB COUNTY, is performed by a Subcontractor or Subcontractors. The maximum allowable payment for administrative cost shall not exceed five percent (5%) of the total Subcontractor work. Off-duty peace officers and patrol cruisers shall be considered as Subcontractors, with regard to consideration of allowable contractor markups.

7.3.9 Field Work Directive Allowable Markups (Adds this Section 7.3.9 to GENERAL CONDITIONS FOR WEBB COUNTY CONSTRUCTION CONTRACTS)

Maximum allowable markups for Field Work Directives shall follow the allowable markups established in **Section 7.2.5** herein.

8.2.2 Standby Equipment Costs (Added to Section 8.2.2 of GENERAL CONDITIONS FOR WEBB COUNTY CONSTRUCTION CONTRACTS)

Contractor shall be entitled to standby costs only when directed to standby in writing by WEBB COUNTY. Standby costs may include actual documented Project overhead costs of Contractor, consisting of administrative and supervisory expenses incurred at the Project Site. Standby equipment costs shall not be allowed during periods when the equipment would otherwise have been idle.

For Projects not affecting WEBB COUNTY traffic, a determination made solely by WEBB COUNTY on a project-by- project basis, Contractor is working a five (5) day work week, with a Working Day measured from sunrise to sundown Monday through Friday, no more than eight (8) hours of standby time shall be paid during a 24-hour day, no more than forty (40) hours shall be paid per week for standby time and no more than one hundred and seventy six (176) hours per month shall be paid of standby time. Standby time shall be computed at fifty percent (50%) of the rates found in the Rental Rate Blue Book for Construction Equipment and shall be calculated by dividing the monthly rate found in the Blue Book by 176, then multiplying that total by the regional adjustment factor and the rate adjustment factor. Operating costs shall not be charged by Contractor.

For Projects affecting WEBB COUNTY traffic, a determination made solely by WEBB COUNTY on a project-by-project basis, and Contractor is working a six (6) day work week, with a Working Day measured from sunrise to sundown Monday through Saturday, no more than eight (8) hours of standby time shall be paid during a 24-hour

day, no more than forty eight (48) hours shall be paid per week for standby time and no more than two hundred and eight (208) hours per month shall be paid of standby time. Standby time shall be computed at fifty percent (50%) of the rates found in the Rental Rate Blue Book for Construction Equipment and shall be calculated by dividing the monthly rate found in the Blue Book by 208, then multiplying that total by the regional adjustment factor and the rate adjustment factor. Operating costs shall not be charged by Contractor.

10.11 Road Closures and Detour Routes (Adds this Section 10.11 to GENERAL CONDITIONS FOR WEBB COUNTY CONSTRUCTION CONTRACTS)

Contractor shall not begin construction of the Project or close any streets until adequate barricades and detour signs have been provided, erected and maintained in accordance with the detour route and details shown on the Project Plans. Contractor shall notify WEBB COUNTY forty-eight (48) hours in advance of closing any street to through traffic. Local traffic shall be permitted the use of streets under construction whenever feasible.

10.12 Use of WEBB COUNTY Streets (Adds this Section 10.12 to GENERAL CONDITIONS FOR WEBB COUNTY CONSTRUCTION CONTRACTS)

Contractor shall confine the movements of all steel-tracked equipment to the limits of the Project Site and any such equipment shall not be allowed use of WEBB COUNTY's streets unless being transported on pneumatic-tired vehicles. Any damage to WEBB COUNTY's streets caused by Contractor and/or Contractor's equipment, either outside the limits of the Project site or within the limits of the Project site but not within the limits of the current phase then being constructed, shall be repaired by Contractor at its own expense and as prescribed by WEBB COUNTY's Specifications and direction. If Contractor cannot or refuses to repair street damage caused by Contractor and/or Contractor's equipment, WEBB COUNTY may perform the repairs and all expenses incurred by WEBB COUNTY in performing the repairs shall be deducted for any money due or owed to Contractor.

10.13 Maintenance of Traffic (Adds this Section 10.13 to GENERAL CONDITIONS FOR WEBB COUNTY CONSTRUCTION CONTRACTS)

In accordance with the approved traffic control plan and as specified in the Contract, Contractor shall:

(1) keep existing roadways open to traffic or construct and maintain detours and temporary structures for safe public travel;

(2) maintain the Work in passable condition, including proper drainage, to accommodate traffic;

(3) provide and maintain temporary approaches and crossings of intersecting roadways in a

safe and passable condition;

(4) construct and maintain necessary access to adjoining property as shown in the Plans or as directed by WEBB COUNTY; and

(5) furnish, install and maintain traffic control devices in accordance with the Contract.

The cost of maintaining traffic shall be subsidiary to the Project and shall not directly be paid for by WEBB COUNTY, unless otherwise stated in the Plans and Specifications. WEBB COUNTY shall notify Contractor if Contractor fails to meet the above traffic requirements. WEBB COUNTY may perform the work necessary for compliance, but any action n by WEBB COUNTY shall not change the legal responsibilities of Contractor, as set forth in the Contract Documents. Any costs incurred by WEBB COUNTY for traffic maintenance shall be deducted from money due or owed to Contractor.

10.14 Abatement and Mitigation of Excessive or Unnecessary Construction Noise (Adds this Section 10.14 to GENERAL CONDITIONS FOR WEBB COUNTY CONSTRUCTION CONTRACTS)

Contractor shall ensure abatement and mitigation of excessive or unnecessary construction noise to the satisfaction of WEBB COUNTY and as prescribed by all applicable state and local laws.

10.15 Incidental Work, Connections, and Passageways (Adds Section 10.15 to GENERAL CONDITIONS FOR WEBB COUNTY CONSTRUCTION CONTRACTS)

Contractor shall perform all incidental Work necessary to complete and comply with this Contract including, but not limited to the following:

(1) Contractor shall make and provide all suitable reconnections with existing improvements (generally excluding new connections with or relocation of utility services, unless specifically provided for otherwise in the Contract Documents) as are necessarily incidental to the proper completion of the Project;

(2) Contractor shall provide passageways or leave open such thoroughfares in the Work Site as may be reasonably required by WEBB COUNTY; and

(3) Contractor shall protect and guard same at its own risk and continuously shall maintain the Work Site in a clean, safe and workmanlike manner.

EXHIBIT "C"

12.22.21

DIVISION 23 – HEATING VENTILATION & AIRCONDITIONING

23 01 00	HEATING, VENTILATION AND AIR-CONDITIONING (HVAC)
23 05 10	COMMON WORK RESULTS FOR HVAC
23 23 00	REFRIGERANT PIPING
23 26 00	CONDENSATE DRAIN PIPING
23 73 12	DX SPLIT SYSTEM HEAT PUMP AIR CONDTIONING UNITS
23 74 10	PACKAGED ROOFTOP DX HEAT PUMP AIR CONDITIONING UNITS

EXHIBIT "C"

SECTION 23 00 00

HEATING, VENTILATION AND AIR-CONDITIONING (HVAC)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. The following Summary of Work is intended as an aid to achieve an understanding of the various elements of work included in the project, as is not intended to be all-inclusive. Detailed descriptions of work and requirements are given in drawings and specifications.

B. Mechanical Contract Documents were prepared for the Project by:

Trinity MEP Engineering, LLC
3533 Moreland Dr. Ste. A
Weslaco, Texas 78596
Phone Number: (956) 973-0500
Contact Person: Leonardo Munoz, P.E.

C. General Scope of Work:

1. Install AC equipment and ductwork as shown on the contract documents. Refer to drawings for schedule of equipment that will be installed. After installing equipment, connect power to unit.
2. HVAC: Provide all materials and labor associated with a complete operational installation of new HVAC systems including, but not limited to:

- DX Split & Roof Top Air Conditioning Units
- Sheet metal, Ductwork
- Air Test and Balance
-

1.3 COORDINATION

A. All mechanical work shall be done under sub-contract to a General Contractor. Mechanical Contractor shall coordinate all work through General Contractor, even in areas where only mechanical work is to take place.

B. Coordination between all trades shall take place on a regular basis to avoid conflicts between disciplines and equipment clearances.

C. Work shall take place with minimal disruption to Owner's operations in areas surrounding the new building.

D. Cooperate fully with other contractors so that work under those contracts may be carried out smoothly, without interfering with or delaying work under this Contract.

E. Fully coordinate with electrical contractor for providing power to mechanical equipment.

F. Mechanical Contractor is responsible for all control wiring including thermostat(s). This includes all conduit, wire, and accessories both low voltage and source voltage for the controls' system. Mechanical Contractor will provide all the necessary actuators, relays, software, hardware, and all necessary accessories required for a fully functional controls' system.

1.4 UTILITIES

1. Coordinate with power, water, telephone, cable and gas utilities to locate all utilities prior to digging in any area.
2. Obtain any approvals required from utilities to relocate utilities.
3. Cost of relocating or bypassing utilities indicated on drawings shall be included in Base Bid.

1.5 CONTRACTOR USE OF PREMISES

A. Use of the Site: Limit use of the premises to work in areas indicated. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.

1. Owner Occupancy: Allow for Owner occupancy and use by the public.
2. Driveways and Entrances: Keep driveways and entrances serving the premises, clear and available to the Owner, the Owner's employees, and emergency vehicles at all time. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

B. Site Safety: Take every precaution to ensure the site does not present a threat to the safety of occupants and/or workers. Minimal safety requirements include, but are not limited to the following:

1. Temporary fencing around construction areas.
2. Yellow caution tape and construction barricades along open trenches during the day. Trenches shall be covered at night and warning lights provided on construction barricades.
3. Temporary fencing around equipment while site work is in progress.

1.6 SUBMITTALS

1. To extradite the submittal process more efficiently, DO NOT piece-meal the submittals. Submit entire mechanical or plumbing in a bound enclosure. This will eliminate delays in the submittal process.

END OF SECTION

EXHIBIT "C"

SECTION 23 05 00

COMMON WORK RESULTS FOR HVAC

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1.2 SUMMARY

A. This Section includes the following basic mechanical materials and methods to complement other Sections.

1. Piping materials and installation instructions common to most piping systems.
2. Concrete base construction requirements.
3. Escutcheons.
4. Dielectric fittings.
5. Flexible connectors.
6. Mechanical sleeve seals.
7. Equipment nameplate data requirements.
8. Nonshrink grout for equipment installations.
9. Field-fabricated metal and wood equipment supports.
10. Installation requirements common to equipment specification sections.
11. Cutting and patching.
12. Touchup painting and finishing.

1.3 DEFINITIONS

A. Finished Spaces: Spaces other than mechanical and electrical equipment rooms, furred spaces, pipe and duct shafts, unheated spaces immediately below roof, spaces above ceilings, unexcavated spaces, crawl spaces, and tunnels.

B. Exposed, Interior Installations: Exposed to view indoors. Examples include finished occupied spaces and mechanical equipment rooms.

C. Exposed, Exterior Installations: Exposed to view outdoors, or subject to outdoor ambient temperatures and weather conditions. Examples include rooftop locations.

D. Concealed, Interior Installations: Concealed from view and protected from physical contact by building occupants. Examples include above ceilings and in duct shafts.

E. Concealed, Exterior Installations: Concealed from view and protected from weather conditions and physical contact by building occupants, but subject to outdoor ambient temperatures. Examples include installations within unheated shelters.

F. The following are industry abbreviations for plastic materials:

G. PVC: Polyvinyl chloride plastic.

H. The following are industry abbreviations for rubber materials:

1. EPDM: Ethylene propylene diene terpolymer rubber.

1.4 SUBMITTALS

A. Product Data: For dielectric fittings, flexible connectors, mechanical sleeve seals, and identification materials and devices.

B. Coordination Drawings: Detail major elements, components, and systems of mechanical equipment and materials in relationship with other systems, installations, and building components. Show space requirements for installation and access. Indicate if sequence and coordination of installations are important to efficient flow of the Work. Include the following:
   1. Planned piping layout, including valve and specialty locations and valve-stem movement.
   2. Clearances for servicing and maintaining equipment, accessories, and specialties, including space for disassembly required for periodic maintenance.
   3. Sizes and location of required concrete pads and bases.
   4. Floor plans, elevations, and details to indicate penetrations in floors, walls, and ceilings and their relationship to other penetrations and installations.
   5. Reflected ceiling plans to coordinate and integrate installation of air outlets and inlets, light fixtures, communication system components, sprinklers, and other ceiling-mounted items.

1.5 QUALITY ASSURANCE

A. Comply with ASME A13.1 for lettering size, length of color field, colors, and viewing angles of identification devices.

B. Equipment Selection: Equipment of higher electrical characteristics, physical dimensions, capacities, and ratings may be furnished provided such proposed equipment is approved in writing and connecting mechanical and electrical services, circuit breakers, conduit, motors, bases, and equipment spaces are increased. Additional costs shall be approved in advance by appropriate Contract Modification for these increases. If minimum energy ratings or efficiencies of equipment are specified, equipment must meet design and commissioning requirements.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver pipes and tubes with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent pipe end damage and prevent entrance of dirt, debris, and moisture.

B. Protect stored pipes, ductwork, equipment, and tubes from moisture and dirt. Elevate above grade. Do not exceed structural capacity of floor, if stored inside.

C. Protect flanges, fittings, and piping specialties from moisture and dirt.

D. Store plastic pipes protected from direct sunlight. Support to prevent sagging and bending.

1.7 SEQUENCING AND SCHEDULING

A. Coordinate mechanical equipment installation with other building components.

B. Arrange for pipe spaces, chases, slots, and openings in building structure during progress of construction to allow for mechanical installations.

C. Coordinate installation of required supporting devices and set sleeves in poured-in-place concrete and other structural components, as they are constructed.

D. Sequence, coordinate, and integrate installations of mechanical materials and equipment for efficient flow of the Work. Coordinate installation of large equipment requiring positioning before closing in building.

E. Coordinate connection of mechanical systems with exterior underground and overhead utilities and services. Comply with requirements of governing regulations, franchised service companies, and controlling agencies.

F. Coordinate requirements for access panels and doors if mechanical items requiring access are concealed behind finished surfaces. Access panels and doors are specified in architectural section.

G. Coordinate installation of identifying devices after completing covering and painting, if devices are applied to surfaces. Install identifying devices before installing acoustical ceilings and similar concealment.

1.8 OPERATION PRIOR TO ACCEPTANCE

A. When any equipment is operable, and it is to the advantage of the Contractor to operate the equipment, he may do so provided that he properly supervises the operation, and retains full responsibility for the equipment operated.

B. Regardless of whether or not the equipment has or has not been operated, the Contractor shall clean the equipment properly, make required adjustments, and complete punch list items before final acceptance by the Owner.

C. The date of acceptance by the Engineer, for beneficial use by the Owner, shall be the beginning date of the warranty period.

1.9 SPACE AND EQUIPMENT ARRANGEMENT

A. The size of each item of mechanical equipment shown on the Drawings is based on the dimensions of a particular manufacturer as indicated. While other manufacturers may be acceptable, it shall be the responsibility of the Contractor to determine whether or not the equipment he proposes to furnish will fit into the space. Shop drawings shall be prepared when required by the engineer to indicate a suitable arrangement.

B. Install equipment in a manner to permit access to all surfaces. Install valves, motors, drives, lubricating devices, filters, and other accessory items in a position to allow removal for service without requiring the disassembly of another part.

C. Provide access panels acceptable to the Engineer for equipment that is concealed above ceiling space.

D. Large equipment assemblies or components which will be installed in the building, and which are too large to permit access through doorways, stairways or shafts, shall be brought to the site and placed in the appropriate spaces before the enclosing structure is completed. Provisions shall be implemented by the Contractor to insure that the equipment will not be damaged in any way during the associated construction procedures.

1.10 START-UP OF EQUIPMENT AND SYSTEMS

A. Whenever the manufacturer of a particular item of equipment or a particular system makes available a start-up service after completion of the installation, such manufacturer's start-up service (rendered by the manufacturer or his authorized representative) shall be provided.

B. Witnessing and explanations of start-up services shall be included as part of the "Instruction of Owner's Personnel" as specified below.

1.11 INSTRUCTION OF OWNER'S PERSONNEL

A. Provide the services of competent engineers or technicians acceptable to the Engineer to instruct representatives of the Owner in complete and detailed operation and maintenance of each item of equipment, and each system. These instructions shall be provided for whatever periods may be necessary to accomplish the desired results. Upon completion of these instructions, the Contractor shall obtain a letter of release, acknowledged by the Owner or his authorized representative, stating the dates on which the various kinds of instruction were given, and the personnel to whom the instructions were given.

B. The Contractor shall be fully responsible for proper maintenance of equipment and systems until the instructions have been given to the Owner's personnel and the letter of release acknowledged.

C. In providing the instructions to the Owner's personnel, the written operating and maintenance manuals shall be followed in all instances, and the Owner's personnel shall be familiarized with such manuals. Operating and maintenance manuals used for instructions shall include piping diagrams, valve identification charts, control and interlocking wiring diagrams, manufacturers' operation and maintenance manuals, parts lists (with sources identified), and other data as appropriate for each system, and as required elsewhere in the Specifications to be furnished to the Owner prior to final acceptance of the project.

D. Provide the Owner with three (3) complete sets of all maintenance manuals, pamphlets, brochures or instructions. This material shall be catalogued, indexed and bound into books.

1.12 ACCEPTABLE MANUFACTURERS

A. A. Provide equipment and materials from listed manufacturers listed within this specification. Deviations from this specification will not be acceptable. When one manufacturer is listed, alternate materials and equipment may be provided "equal to" the listed. When more than one manufacturer is listed, equipment and material must be provided by one of the listed manufacturers.

PART 2 - PRODUCTS

2.1 STANDARD PRODUCTS

A. Each item of equipment furnished under this Division of the Specifications shall be essentially the standard product of the manufacturer. Where two or more units of the same kind or class of equipment are required, these shall be the products of a single manufacturer; however, the component parts of the equipment need not be the products of one manufacturer.

B. Materials and equipment shall be of the base quality normally used in good commercial practice, and shall be the products of reputable domestic manufacturers unless otherwise specified. Each major component shall bear a nameplate giving the name and address of the manufacturer, and the catalog number or designation of the component.

2.2 QUALITY AND CLASSIFICATION OF MATERIALS

A. Materials and equipment shall be new and of the quality specified, and shall be free from defects at the time of installation. Materials or equipment damaged in shipment or otherwise damaged prior to installation shall not be repaired at the job site, but shall be replaced with new materials or equipment identical with those damaged.

B. Wherever a UL standard has been established for a particular type of material or equipment, each such material or equipment provided on this project shall meet the requirements of the UL standard in every way and shall be UL listed and labeled.

2.3 LOCAL PARTS AND SERVICE

A. Each item of equipment furnished on this project shall have local representation, factory-authorized service, and an adequate stock of repair parts. "Local" shall be defined, for this purpose, as "within 50 miles of the project site."

2.4 FLAME SPREAD PROPERTIES OF MATERIALS

A. Materials used for insulation, acoustical linings, adhesives, jackets and coatings, and combinations of these materials, shall each have a flame spread rating of 25 or less, and a smoke developed rating of 50 or less, as determined by an independent testing laboratory in accordance with NFPA-255.

2.5 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Dielectric Unions:

a. Watts Industries, Inc.; Water Products Div.
b. Zurn Industries, Inc.; Wilkins Div.

2. Mechanical Sleeve Seals:
a. Calpico, Inc.
b. Metraflex Co.
c. Thunderline/Link-Seal.

2.6 MECHANICAL SLEEVE SEALS

A. Description: Modular design, with interlocking rubber links shaped to continuously fill annular space between pipe and sleeve. Include connecting bolts and pressure plates.

2.7 PIPING SPECIALTIES

A. Sleeves: The following materials are for wall, floor, slab, and roof penetrations:
1. Steel Sheet Metal: 0.0239-inch minimum thickness, galvanized, round tube closed with welded longitudinal joint.
2. Steel Pipe: ASTM A 53, Type E, Grade A, Schedule 40, galvanized, plain ends.
3. Cast Iron: Cast or fabricated "wall pipe" equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop, unless otherwise indicated.
4. Stack Sleeve Fittings: Manufactured, cast-iron sleeve with integral clamping flange. Include clamping ring and bolts and nuts for membrane flashing.
a. Underdeck Clamp: Clamping ring with set screws.

B. Escutcheons: Manufactured wall, ceiling, and floor plates; deep-pattern type if required to conceal protruding fittings and sleeves.
1. ID: Closely fit around pipe, tube, and insulation of insulated piping.
2. OD: Completely cover opening.
3. Cast Brass: One piece, with set screw.
a. Finish: Rough brass.
b. Finish: Polished chrome-plate.

4. Cast-Iron Floor Plate: One-piece casting.

2.8 GROUT

A. Nonshrink, Nonmetallic Grout: ASTM C 1107, Grade B.
1. Characteristics: Post-hardening, volume-adjusting, dry, hydraulic-cement grout, nonstaining, noncorrosive, nongaseous, and recommended for interior and exterior applications.
2. Design Mix: 5000-psig, 28-day compressive strength.
3. Packaging: Premixed and factory packaged.

PART 3 - EXECUTION

3.1 PIPING SYSTEMS - COMMON REQUIREMENTS

A. General: Install piping as described below, unless piping Sections specify otherwise. Individual Sections specify unique piping installation requirements.

B. General Locations and Arrangements: Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations. Install piping as indicated, unless deviations to layout are approved on Coordination Drawings.

C. Install piping at indicated slope.

D. Install components with pressure rating equal to or greater than system operating pressure.

EXHIBIT "C"

E. Install piping in concealed interior and exterior locations, except in equipment rooms and service areas.
F. Install piping free of sags and bends.
G. Install exposed interior and exterior piping at right angles or parallel to building walls. Diagonal runs are prohibited, unless otherwise indicated.
H. Install piping tight to slabs, beams, joists, columns, walls, and other building elements. Allow sufficient space above removable ceiling panels to allow for ceiling panel removal.
I. Install piping to allow application of insulation plus 1-inch clearance around insulation.
J. Locate groups of pipes parallel to each other, spaced to permit valve servicing.
K. Install fittings for changes in direction and branch connections.
L. Install couplings according to manufacturer's written instructions.
M. Install pipe escutcheons for pipe penetrations of concrete and masonry walls, wall board partitions, and suspended ceilings according to the following:
    1. Chrome-Plated Piping: Cast brass, one piece, with set screw, and polished chrome-plated finish.
    2. Uninsulated Piping Wall Escutcheons: Cast brass or stamped steel, with set screw.
    3. Uninsulated Piping Floor Plates in Utility Areas: Cast-iron floor plates.
    4. Insulated Piping: Cast brass or stamped steel; with concealed hinge, spring clips, and chrome-plated finish.
    5. Piping in Utility Areas: Cast brass or stamped steel, with set-screw or spring clips.
N. Sleeves are not required for core drilled holes.
O. Install sleeves for pipes passing through concrete and masonry walls, and concrete floor and roof slabs.
P. Install sleeves for pipes passing through concrete and masonry walls, gypsum-board partitions, and concrete floor and roof slabs.
    1. Cut sleeves to length for mounting flush with both surfaces.
        a. Exception: Extend sleeves installed in floors of mechanical equipment areas or other wet areas 2 inches above finished floor level. Extend cast-iron sleeve fittings below floor slab as required to secure clamping ring if ring is specified.
    2. Build sleeves into new walls and slabs as work progresses.
    3. Install sleeves large enough to provide 1/4-inch annular clear space between sleeve and pipe or pipe insulation. Use the following sleeve materials:Steel Pipe Sleeves: For pipes smaller than 6-inch NPS.
        b. Steel, Sheet-Metal Sleeves: For pipes 6-inch NPS and larger, penetrating gypsum-board partitions.
    4. Except for underground wall penetrations, seal annular space between sleeve and pipe or pipe insulation, using elastomeric joint sealants.
    5. Use Type S, Grade NS, Class 25, Use O, neutral-curing silicone sealant, unless otherwise indicated.
Q. Aboveground, Exterior-Wall, Pipe Penetrations: Seal penetrations using sleeves and mechanical sleeve seals. Size sleeve for 1-inch annular clear space between pipe or pipe insulation and sleeve for installing mechanical sleeve seals.
    1. Install steel pipe for sleeves smaller than 6 inches in diameter.
    2. Install cast-iron "wall pipes" for sleeves 6 inches in diameter and larger.
    3. Assemble and install mechanical sleeve seals according to manufacturer's written instructions. Tighten bolts that cause rubber sealing elements to expand and make watertight seal.
R. Underground, Exterior-Wall, Pipe Penetrations: Install cast-iron "wall pipes" for sleeves. Seal pipe penetrations using mechanical sleeve seals. Size sleeve for 1-inch annular clear space between pipe and sleeve for installing mechanical sleeve seals.

1. Assemble and install mechanical sleeve seals according to manufacturer's written instructions. Tighten bolts that cause rubber sealing elements to expand and make watertight seal.

S. Fire-Barrier Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at pipe penetrations. Seal pipe penetrations with firestopping materials.

T. Verify final equipment locations for roughing-in.

U. Refer to equipment specifications in other Sections of these Specifications for roughing-in requirements.

V. Piping Joint Construction: Join pipe and fittings as follows and as specifically required in individual piping specification Sections:

1. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.
2. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.
3. Soldered Joints: Construct joints according to AWS's "Soldering Manual," Chapter "The Soldering of Pipe and Tube"; or CDA's "Copper Tube Handbook."
4. Brazed Joints: Construct joints according to AWS's "Brazing Handbook," Chapter "Pipe and Tube."
5. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:
   a. Note internal length of threads in fittings or valve ends, and proximity of internal seat or wall, to determine how far pipe should be threaded into joint.
   b. Apply appropriate tape or thread compound to external pipe threads, unless dry seal threading is specified.
   c. Align threads at point of assembly.
   d. Tighten joint with wrench. Apply wrench to valve end into which pipe is being threaded.
   e. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds.
6. Welded Joints: Construct joints according to AWS D10.12, "Recommended Practices and Procedures for Welding Low Carbon Steel Pipe," using qualified processes and welding operators according to "Quality Assurance" Article.
7. Flanged Joints: Align flange surfaces parallel. Select appropriate gasket material, size, type, and thickness for service application. Install gasket concentrically positioned. Assemble joints by sequencing bolt tightening to make initial contact of flanges and gaskets as flat and parallel as possible. Use suitable lubricants on bolt threads. Tighten bolts gradually and uniformly using torque wrench.
8. Plastic Piping Solvent-Cement Joints: Clean and dry joining surfaces by wiping with clean cloth or paper towels. Join pipe and fittings according to the following:
   a. Comply with ASTM F 402 for safe-handling practice of cleaners, primers, and solvent cements.
   b. PVC Nonpressure Piping: ASTM D 2855.
   c. PVC to ABS Nonpressure Transition Fittings: Procedure and solvent cement according to ASTM D 3138.
9. Plastic Piping Heat-Fusion Joints: Clean and dry joining surfaces by wiping with clean cloth or paper towels. Join according to ASTM D 2657 procedures and manufacturer's written instructions.
   a. Plain-End Pipe and Fittings: Use butt fusion.
   b. Plain-End Pipe and Socket Fittings: Use socket fusion.

W. Piping Connections: Make connections according to the following, unless otherwise indicated:

1. Install unions, in piping 2-inch NPS and smaller, adjacent to each valve and at final connection to each piece of equipment with 2-inch NPS or smaller threaded pipe connection.
2. Install flanges, in piping 2-1/2-inch NPS and larger, adjacent to flanged valves and at final connection to each piece of equipment with flanged pipe connection.
3. Dry Piping Systems: Install dielectric unions and flanges to connect piping materials of dissimilar metals.
4. Wet Piping Systems: Install dielectric coupling and nipple fittings to connect piping materials of dissimilar metals.

3.2 EQUIPMENT AND MATERIAL INSTALLATION - COMMON REQUIREMENTS

A. Install equipment and material to provide maximum possible headroom, if mounting heights are not indicated.
B. Install equipment according to approved submittal data. Portions of the Work are shown only in diagrammatic form. Refer conflicts to Architect.
C. Install equipment level and plumb, parallel and perpendicular to other building systems and components in exposed interior spaces, unless otherwise indicated.
D. Install mechanical equipment to facilitate service, maintenance, and repair or replacement of components. Connect equipment for ease of disconnecting, with minimum interference to other installations. Extend grease fittings to accessible locations.
E. Install equipment and ductwork giving right of way to piping installed at required slope.
F. Install flexible connectors on equipment side of shutoff valves, horizontally and parallel to equipment shafts if possible.

3.3 PAINTING AND FINISHING

A. Refer to paint materials, surface preparation, and application of paint.
B. Do not paint piping specialties with factory-applied finish.
C. Damage and Touchup: Repair marred and damaged factory-painted finishes with materials and procedures to match original factory finish.

3.4 CONCRETE BASES

A. Construct concrete bases of dimensions indicated, but not less than 4 inches larger in both directions than supported unit. Follow supported equipment manufacturer's setting templates for anchor bolt and tie locations. Use 3000-psig, 28-day compressive-strength concrete and reinforcement or as specified.

3.5 ERECTION OF METAL SUPPORTS AND ANCHORAGE

A. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor mechanical materials and equipment.
B. Field Welding: Comply with AWS D1.1, "Structural Welding Code--Steel."

3.6 CUTTING AND PATCHING

A. Cut, channel, chase, and drill floors, walls, partitions, ceilings, and other surfaces necessary for mechanical installations. Perform cutting by skilled mechanics of trades involved.
B. Repair cut surfaces to match adjacent surfaces.

3.7 GROUTING

A. Install nonmetallic, nonshrink, grout for mechanical equipment base bearing surfaces, pump and other equipment base plates, and anchors. Mix grout according to manufacturer's written instructions.
B. Clean surfaces that will come into contact with grout.
C. Provide forms as required for placement of grout.
D. Avoid air entrapment during placing of grout.

E. Place grout, completely filling equipment bases.
F. Place grout on concrete bases to provide smooth bearing surface for equipment.
G. Place grout around anchors.
H. Cure placed grout according to manufacturer's written instructions.

END OF SECTION

EXHIBIT "C"

SECTION 23 23 00

REFRIGERANT PIPING

PART 1 - GENERAL

1.1 SUMMARY

A. Includes But Not Limited To:

1. Furnish and install piping and specialties for refrigeration systems as described in Contract Documents.

B. Products Installed But Not Furnished Under This Section:

1.2 REFERENCES

A. Association Publications:

1. Federal Emergency Management Agency (FEMA) / Vibration Isolation and Seismic Control Manufacturers Association (VISCMA) / American Society of Civil Engineers (ASCE):
   a. FEMA 412, 'Installing Seismic Restraints For Mechanical Equipment' (December 2002).
2. Vibration Isolation and Seismic Control Manufacturers Association (VISCMA):
   a. VISCMA 101-12, 'Seismic Restraint Specification Guidelines for Mechanical, Electrical, and Plumbing Systems'.
   b. VISCMA 102-12, 'Vibration Isolation Specification Guidelines for Mechanical, Electrical, and Plumbing Systems'.

B. Definitions:

1. Refrigerant: Absorbs heat by a change of state (evaporation) from liquid to a gas, and releases heat by a change of state (condenses) from gas back to a liquid.
2. Vibration Isolation: Vibration reduction in which an isolation system is placed between the source of unwanted vibration and an item which needs to be shielded from the vibration.

C. Reference Standards:

1. American National Standards Institute (ANSI) / American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE):
   a. ANSI/ASHRAE Standard 15-2010, 'Safety Standard for Refrigeration Systems'.
   b. ANSI/ASHRAE Standard 34-2010, 'Designation and Classification of Refrigerants'.
2. American National Standards Institute / American Welding Society:
   a. ANSI/AWS A5.8M/A5.8-2011, 'Specification for Filler Metals for Brazing and Braze Welding'.
3. American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE):
   a. '2011 ASHRAE Handbook - HVAC Applications'.
      1) Chapter 48, 'Noise and Vibration Control'.
4. ASTM International:
   a. ASTM A36/A36M-08, 'Standard Specification for Carbon Structural Steel'.
   b. ASTM B280-08, 'Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service'.

5. National Fire Protection Association / American National Standards Institute:
   a. NFPA 90A-2012, 'Installation of Air Conditioning and Ventilating Systems'.
6. Underwriters Laboratories:
   a. UL 2182, 'Refrigerants' (2nd Edition).

1.3 SUBMITTALS

A. Action Submittals:
   1. Shop Drawings: Show each individual equipment and piping support.
B. Informational Submittals:
   1. Qualification Statements: Technician certificate for use of HFC and HCFC refrigerants.

1.4 QUALITY ASSURANCE

A. Regulatory Agency Sustainability Approvals:
   1. Refrigerants:
      a. Underwriters Laboratories / Underwriters Laboratories of Canada:
         1) Comply with requirements of UL 2182.
B. Qualifications. Section 01 4301 applies, but is not limited to the following:
   1. Installer: Refrigerant piping shall be installed by refrigeration contractor licensed by State and by technicians certified in use of HFC and HCFC refrigerants.

PART 2 - PRODUCTS

2.1 COMPONENTS

A. Manufacturers:
   1. Manufacturer Contact List:
      a. Airtec,
      b. Cush-A-Clamp by ZSI Manufacturing,
      c. Elkhart Products Corp,.
      d. Emerson Climate Technologies,
      e. Handy & Harman Products
      f. Harris Products Group,
      g. Henry Valve Co,
      h. Hilti Inc,
      i. Hydra-Zorb Co,
      j. JB Industries,
      k. Mueller Steam Specialty,
      l. Nibco Inc,
      m. Packless Industries, Parker Corp,
      n. Sporlan Valve Co.
      o. Sherwood Valves,.
      p. Thomas & Betts,
      q. Unistrut, Div of Atkore International, Inc.
      r. Universal Metal Hose.
      s. Vibration Mountings & Controls,
      t. Virginia KMP Corp,
B. Materials:
   1. Refrigerant Piping:
      a. Meet requirements of ASTM B280, hard drawn straight lengths. Soft copper tubing not permitted.

b. Do not use pre-charged refrigerant lines.

2. Refrigerant Fittings:
   a. Wrought copper with long radius elbows.
   b. Category Four Approved Manufacturers. See Section 01 6200 for definitions of Categories:
      1) Mueller Streamline.
      2) Nibco Inc.
      3) Elkhart.
3. Suction Line Traps:
   a. Manufactured standard one-piece traps.
   b. Category Four Approved Manufacturers. See Section 01 6200 for definitions of Categories:
      1) Mueller Streamline.
      2) Nibco Inc.
      3) Elkhart.
4. Tee Access:
   a. Brass:
      1) Category Four Approved Manufacturers. See Section 01 6200 for definitions of Categories:
         a) JB Industries: Part #A3 Series with Factory Cap and Valve Core.
5. Connection Material:
   a. Brazing Rods in accordance with ANSI/AWS A5.8M/A5.8:
      1) Copper to Copper Connections:
         a) Classification BCuP-4 Copper Phosphorus (6 percent silver).
         b) Classification BCuP-5 Copper Phosphorus (15 percent silver).
      2) Copper to Brass or Copper to Steel Connections: Classification BAg-5 Silver (45 percent silver).
      3) Do not use rods containing Cadmium.
   b. Flux:
      1) Type Two Acceptable Products:
         a) Stay-Silv White Brazing Flux by Harris Products Group.
         b) High quality silver solder flux by Handy & Harmon.
         c) Equal as approved by Architect before use. See Section 01 6200.
6. Valves:
   a. Expansion Valves:
      1) For pressure type distributors, externally equalized with stainless steel diaphragm, and same refrigerant in thermostatic elements as in system.
      2) Size valves to provide full rated capacity of cooling coil served. Coordinate selection with evaporator coil and condensing unit.
      3) Category Four Approved Manufacturers. See Section 01 6200 for definitions of Categories:
         a) Emerson Climate Technologies.
         b) Henry.
         c) Mueller.
         d) Parker.
         e) Sporlan.
   b. Manual Refrigerant Shut-Off Valves:
      1) Ball valves designed for refrigeration service and full line size.

2) Valve shall have cap seals.
3) Valves with hand wheels are not acceptable.
4) Provide service valve on each liquid and suction line at compressor.
5) If service valves come as integral part of condensing unit, additional service valves shall not be required.
6) Category Four Approved Manufacturers. See Section 01 6200 for definitions of Categories:
   a) Henry.
   b) Mueller.
   c) Sherwood.
   d) Virginia.

7. Filter-Drier:
   a. On lines 3/4 inch (19 mm) outside diameter and larger, filter-drier shall be replaceable core type with Schraeder type valve.
   b. On lines smaller than 3/4 inch (19 mm) outside diameter, filter-drier shall be sealed type with brazed end connections.
   c. Size shall be full line size.
   d. Category Four Approved Manufacturers. See Section 01 6200 for definitions of Categories:
      1) Emerson Climate Technologies.
      2) Mueller.
      3) Parker.
      4) Sporlan.
      5) Virginia.
8. Sight Glass:
   a. Combination moisture and liquid indicator with protection cap.
   b. Sight glass shall be full line size.
   c. Sight glass connections and sight glass body shall be solid copper or brass, no copper-coated steel sight glasses allowed.
   d. Category Four Approved Product. See Section 01 6200 for definitions of Categories:
      1) HMI by Emerson Climate Technologies.
9. Flexible Connectors:
   a. Designed for refrigerant service with bronze seamless corrugated hose and bronze braiding.
   b. Category Four Approved Products. See Section 01 6200 for definitions of Categories:
      1) Vibration Absorber Model VAF by Packless Industries.
      2) Vibration Absorbers by Virginia KMP Corp.
      3) Anaconda 'Vibration Eliminators' by Universal Metal Hose.
      4) Style 'BF' Spring-flex freon connectors by Vibration Mountings.
10. Refrigerant Piping Supports:
   a. Base, Angles, And Uprights: Steel meeting requirements of ASTM A36.
   b. Securing Channels:
      1) At Free-Standing Pipe Support:
         a) Class One Quality Standard: P-1000 channels by Unistrut.
         b) Acceptable Manufacturers: Hilti, Thomas & Betts.
         c) Equal as approved by Architect before installation. See Section 01 6200.
      2) At Wall Support:

a) Class One Quality Standard: P-3300 channels by Unistrut.
b) Acceptable Manufacturers: Hilti, Thomas & Betts.
c) Equal as approved by Architect before installation. See Section 01 6200.

3) At Suspended Support:
a) Class One Quality Standard: P-1001 channels by Unistrut.
b) Acceptable Manufacturers: Hilti, Thomas & Betts.
c) Equal as approved by Architect before installation. See Section 01 6200.

4) Angle Fittings:
a) Class One Quality Standard: P-2626 90 degree angle by Unistrut.
b) Acceptable Manufacturers: Hilti, Thomas & Betts.
c) Equal as approved by Architect before installation. See Section 01 6200.

c. Pipe Clamps:
1) Type Two Acceptable Manufacturers:
a) Hydra-Zorb.
b) ZSI Cush-A-Clamp.
c) Hilti Cush-A-Clamp.
d) Equal as approved by Architect before installation. See Section 01 6200.

d. Protective Cover: 18 ga (1.2 mm) steel, hot-dipped galvanized.

11. Locking Refrigerant Cap:
a. Provide and install on charging valves:
1) Class One Quality Standard: 'No Vent' locking refrigerant cap.
2) Acceptable Manufacturers: Airtec.
3) Equal as approved by Architect before installation. See Section 01 6200.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Refrigerant Lines:
1. Install as high in upper mechanical areas as possible. Do not install underground or in tunnels.
2. Slope suction lines down toward compressor one inch/10 feet (25 mm in 3 meters). Locate traps at vertical rises against flow in suction lines.

B. Connections:
1. Refrigeration system connections shall be copper-to-copper, copper-to-brass, or copper-to-steel type properly cleaned and brazed with specified rods. Use flux only where necessary. No soft solder (tin, lead, antimony) connections will be allowed in system.
2. Braze manual refrigerant shut-off valve, sight glass, and flexible connections.
3. Circulate dry nitrogen through tubes being brazed to eliminate formation of copper oxide during brazing operation.

C. Specialties:
1. Install valves and specialties in accessible locations. Install refrigeration distributors and suction outlet at same end of coil.
2. Install thermostatic bulb as close to cooling coil as possible. Do not install on vertical lines.
3. Install equalizing line in straight section of suction line, downstream of and reasonably close to thermostatic bulb. Do not install on vertical lines.
4. Provide flexible connectors in each liquid line and suction line at both condensing unit and evaporator on systems larger than five tons. Anchor pipe near each flexible connector.

D. Refrigerant Supports:
   1. Support Spacing:
      a. Piping 1-1/4 inch (32 mm) And Larger: 8 feet (2.450 m) on center maximum.
      b. Piping 1-1/8 inch (28.5 mm) And Smaller: 6 feet (1.80 m) on center maximum.
      c. Support each elbow.
   2. Isolate pipe from supports and clamps with Hydrozorb or Cush-A-Clamp systems.
   3. Run protective cover continuous from condensing units to risers or penetrations at building wall.

3.2 FIELD QUALITY CONTROL

A. Field Tests:
   1. Make evacuation and leak tests in presence of Architect's Engineer after completing refrigeration piping systems. Positive pressure test will not suffice for procedure outlined below.
      a. Draw vacuum on each entire system with two stage vacuum pump. Draw vacuum to 300 microns using micron vacuum gauge capable of reading from atmosphere to 10 microns. Do not use cooling compressor to evacuate system nor operate it while system is under high vacuum.
      b. Break vacuum with nitrogen and re-establish vacuum test. Vacuum shall hold for 30 minutes at 300 microns without vacuum pump running.
      c. Conduct tests at 70 deg F (21 deg C) ambient temperature minimum.
      d. Do not run systems until above tests have been made and systems started up as specified. Inform Owner's Representative of status of systems at time of final inspection and schedule start-up and testing if prevented by outdoor conditions before this time.
      e. After testing, fully charge system with refrigerant and conduct test with Halide Leak Detector.
      f. Recover all refrigerant in accordance with applicable codes. Do not allow any refrigerant to escape to atmosphere.

B. Non-Conforming Work:
   1. If it is observed that refrigerant lines are being or have been brazed without proper circulation of nitrogen through lines, all refrigerant lines installed up to that point in time shall be removed and replaced at no additional cost to Owner.

END OF SECTION

2.2 INDOOR UNITS 5 TONS OR LESS

A. Evaporator-Fan Components: An assembly including cabinet, filter, chassis, coil, drain pan, fan, and motor in draw-through configuration with direct-expansion heat pump cooling coil, and electric heating coil where noted.

B. Cabinet: Covers and access panels shall be manufactured of double wall composite formed panels. Cabinet walls shall have insulated panels, fabricated to allow removal for access to internal parts and components without requirement of tools. Units shall be designed and equipped for installation indoors.

1. Insulation: Standard insulation or minimum 1/2", whichever is greater.

C. Refrigerant Coil: Aluminum tube, with mechanically bonded aluminum fins, complying with ARI 210/240, and with thermal-expansion valve.

D. Electric Coil: If scheduled, helical, nickel-chrome, resistance-wire heating elements with refractory ceramic support bushings; automatic-reset thermal cutout; built-in magnetic contactors; manual-reset thermal cutout; airflow proving device; and one-time fuses in terminal box for over-current protection.

E. Fan Motors: Comply with requirements in Division 23 Section "Common Motor Requirements for HVAC Equipment."
1. Special Motor Features: Multi-tapped, multi-speed with internal thermal protection and permanent lubrication.
2. Comply with NEMA designation, temperature rating, service factor, enclosure type, and efficiency requirements specified in Division 23 Section "Common Motor Requirements for HVAC Equipment."
3. Enclosure Type: ODP, fan cooled.
4. NEMA Premium (TM) efficient motors as defined in NEMA MG 1.
5. Controllers, Electrical Devices, and Wiring: Comply with requirements for electrical devices and connections specified in Division 26 Sections.
6. Disconnect switches by Div. 26.

F. Airstream Surfaces: Surfaces in contact with the airstream shall comply with requirements in ASHRAE 62.1-2004.

G. Condensate Drain Pans:
1. Fabricated with slope in at least two planes to collect condensate from cooling coils (including coil piping connections, coil headers, and return bends) and humidifiers, and to direct water toward drain connection.

1) Length: Extend drain pan downstream from leaving face to comply with ASHRAE 62.1-2004.
2) Depth: A minimum of **1 inch** deep.

b. Stainless-steel sheet or non-corrosive plastic, insulated.
c. Drain Connection: Located at lowest point of pan and sized to prevent overflow. Terminate with threaded nipple on one end of pan.

2. Air Filtration Section:

a. General Requirements for Air Filtration Section:

1) Comply with NFPA 90A.
2) Minimum Arrestance: According to ASHRAE 52.1 and MERV according to ASHRAE 52.2.

EXHIBIT "C"

SECTION 23 26 00

CONDENSATE DRAIN PIPING

PART 1 - GENERAL

1.1 SUMMARY

A. Includes But Not Limited To:

1. Coordinate installation of condensate drain piping with Section 22 0501 as described in Contract Documents.

1.2 REFERENCES

A. Reference Standards:

1. ASTM International:

a. ASTM B88-09, 'Standard Specification for Seamless Copper Water Tube'.

b. ASTM D1785-12, 'Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120'.

PART 2 - PRODUCTS

2.1 SYSTEMS

A. Materials:

1. Condensate Drains:

a. Exterior And Interior Lines: Type M copper meeting requirements of ASTM B88, unless otherwise noted.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Condensate Drains:

1. Support piping and protect from damage.

END OF SECTION

EXHIBIT "C"

SECTION 23 73 12

DX SPLIT SYSTEM HEAT PUMP AIR CONDITIONING UNITS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes split-system air-conditioning heat pump units consisting of separate evaporator-fan and compressor-condenser components.

1.3 SUBMITTALS

A. Product Data: Include rated capacities, operating characteristics, and furnished specialties and accessories. Include performance data in terms of capacities, outlet velocities, static pressures, sound power characteristics, motor requirements, and electrical characteristics.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

1. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
2. Wiring Diagrams: For power, signal, and control wiring.

C. Field quality-control reports.

D. Operation and Maintenance Data: For split-system air-conditioning units to include in emergency, operation, and maintenance manuals.

1.4 QUALIY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. ASHRAE Compliance:

1. Fabricate and label refrigeration system to comply with ASHRAE 15, "Safety Standard for Refrigeration Systems."
2. ASHRAE Compliance: Applicable requirements in ASHRAE 62.1-2004, Section 4 - "Outdoor Air Quality," Section 5 - "Systems and Equipment," Section 6 - " Procedures," and Section 7 - "Construction and System Start-Up."

C. ASHRAE/IESNA Compliance: Applicable requirements in ASHRAE/IESNA 90.1-2004.

D. International Building Code and TDI Compliance: Licensed Professional Engineer shall certify that the listed items are designed for and will withstand wind speed for the location of the project, per the relevant edition of International Building Code, ASCE Std 7, Texas Department of Insurance requirements.
1. Equipment curb/attachment for exterior and roof mounted equipment such as RTUs, ACCU, fans.
2. Attachment of equipment to curb/pad.
3. Attachment of curb/pad to building structure.

1.5 COORDINATION

A. Coordinate sizes and locations of concrete bases with actual equipment provided. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork are specified in Division 03 Section "Cast-in-Place Concrete."

1.6 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of split-system air-conditioning units that fail in materials or workmanship within specified warranty period. Warranty period to commence from the date of equipment start-up.

1. Warranty Period:

a. For Compressor: **Five** year(s) from date of Substantial Completion.
b. For Parts and Labor: **One** year(s) from date of Substantial Completion.

1.7 EXTRA MATERIALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Filters: **One** set for each air-handling unit.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Trane.
2. Carrier Corporation
3. RUUD OR RHEEM.

3) Filter-Holding Frames: Arranged for flat or angular orientation, with access doors on both sides of unit. Filters shall be removable from one side or lifted out from access plenum.

b. Filters:

1) Factory-fabricated, viscous-coated, flat-panel type.
2) Thickness: **2 inches**.
3) Merv according to ASHRAE 52.2: 8.
4) Media: Interlaced glass fibers sprayed with nonflammable adhesive and antimicrobial agent.
5) Frame: Galvanized steel, with metal grid on outlet side, steel rod grid on inlet side, and hinged; with pull and retaining handles.

2.3 OUTDOOR UNITS (5 TONS OR LESS)

A. Air-Cooled, Compressor-Condenser Components:

1. Casing: Corrosion free pre-painted steel cabinet, finished with baked enamel, with removable panels for access to controls, weep holes for water drainage, and mounting holes in base. Provide brass service valves, fittings, and gage ports on exterior of casing.
2. Compressor: Hermetically sealed with crankcase heater and mounted on vibration isolation device. Compressor motor shall have thermal- and current-sensitive overload devices, start capacitor, relay, and contactor.

a. Compressor Type: Scroll, mounted on rubber mounts for vibration isolation.
b. Single-stage or two-stage (where scheduled) compressor motor with manual-reset high-pressure switch and automatic-reset low-pressure switch.
c. Refrigerant Charge: R-410A.
d. Refrigerant Coil: Copper tube, with mechanically bonded aluminum fins or microchannel and liquid subcooler. Comply with ARI 210/240.
e. Internal excessive current and temperature protection.

3. Fan: Aluminum-propeller type, directly connected to motor.
4. Motor: Permanently lubricated, with integral thermal-overload protection.

2.4 CONTROLS

1. Provide with new programmable thermostat.
2. See controls sequences/specifications.

2.5 ACCESSORIES

A. Other:

1. Direct driven ECM fan motor, and with built in dehumidification sequence option for indoor units.
2. Low Ambient Controller: Cycles condenser fan to permit operation down to 55 deg F with time-delay relay to bypass low-pressure switch.
3. Package with refrigerant circuit suction and discharge gauges, and service valves.
4. Automatic-reset timer to prevent rapid cycling of compressor.
5. Site glass, filter-dryer.
6. High-Pressure Switch: Automatic-reset switch cycles compressor off on high refrigerant pressure.
7. Low-Pressure Switch: Automatic-reset switch cycles compressor off on low refrigerant pressure.
8. Thermostatic expansion valve to match with existing Evaporator Coil, if existing is incompatible.
9. Time-Delay Relay: Continues operation of evaporator fan after compressor shuts off.
10. Evaporator defrost controller.

11. Liquid line solenoid valves, electric unloaders, factory/field installed accumulators to accomplish stages of unloading.
12. See drawing schedules.

B. Unit Casing: Galvanized steel, finished with paint finish with removable panels for access to controls, weep holes for water drainage, and mounting holes in base. Mount service valves, fittings, and gage ports on exterior of casing.

1. Condenser coil hail guard to protect coil from physical damage.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install units level and plumb.

B. Install evaporator-fan components using manufacturer's standard mounting devices securely fastened to building structure.

C. Install ground-mounted, compressor-condenser components on 4-inch- thick, reinforced concrete base that is 4 inches larger, on each side, than unit. Concrete, reinforcement, and formwork are specified in Division 03 Section "Cast-in-Place Concrete." Coordinate anchor installation with concrete base.

D. Install and connect refrigerant tubing to component's quick-connect fittings. Install tubing to allow access to unit.

E. Provide auxiliary drain pans with float switches to disable fans. Provide drain piping with stop valves from pans to floor drains.

3.2 CONNECTIONS

A. Piping installation requirements are specified in other Division 23 Sections. Drawings indicate general arrangement of piping, fittings, and specialties.

B. Where piping is installed adjacent to unit, allow space for service and maintenance of unit.

C. Duct Connections: Duct installation requirements are specified in Division 15 Section "Metal Ducts." Drawings indicate the general arrangement of ducts. Connect supply and return ducts to split-system air-conditioning units with flexible duct connectors. Flexible duct connectors are specified in Division 15 Section "Duct Accessories."

D. Ground equipment according to Division 16 Section "Grounding and Bonding."

E. Electrical Connections: Comply with requirements in Division 16 Sections for power wiring, switches, and motor controls.

3.3 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.

B. Tests and Inspections:

1. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
2. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.
3. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

C. Remove and replace malfunctioning units and retest as specified above.

D. Prepare test and inspection reports.

END OF SECTION

EXHIBIT "C"

SECTION 23 74 10

PACKAGED ROOFTOP DX HEAT PUMP AIR CONDITIONING UNITS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Package roof top unit.

B. Heat exchanger.

C. Refrigeration components.

D. Unit operating controls.

E. Roof curb.

F. Electrical power connections.

G. Operation and maintenance service.

1.02 RELATED SECTIONS

A. Section 15170 - Motors.

B. Section 15242 - Vibration Isolation.

C. Section 15290 - Ductwork Insulation.

D. Section 15885 - Air Cleaning.

E. Section 15952 - Controls and Instrumentation.

F. Section 16180 - Equipment Wiring Systems.

1.03 REFERENCES

A. NFPA 90 A & B - Installation of Air Conditioning and Ventilation Systems and Installation of Warm Air Heating and Air Conditioning Systems.

B. ANSI/ASHRAE 15 - Safety Code for Mechanical Refrigeration.

C. AHRI 340/360-2015 - Commercial and Industrial Unitary Air Conditioning Equipment testing and rating standard.

D. ANSI/ASHRAE 37 - Testing Unitary Air Conditioning and Heat Pump Equipment.

E. ANSI/ASHRAE/IESNA 90.1 - Energy Standard for New Buildings Except Low-Rise Residential Buildings.

F. ANSI Z21.47/UL1995 - Unitary Air Conditioning Standard for safety requirements and testing requirements for commercial warm air furnaces.

G. California Energy Commission Administrative Code - Title 20/24 -

H. AHRI 210/240 - 2019 - Unitary Air-Conditioning Equipment and Air- Source Heat Pump Equipment.

I. AHRI 270 - Sound Rating of Outdoor Unitary Equipment.

J. AHRI 370 - Sound Rating of Large Outdoor Refrigerating and Air Conditioning Equipment.

1.04 SUBMITTALS

A. Submit unit performance data including: capacity, nominal and operating performance.

B. Submit Mechanical Specifications for unit and accessories describing construction, components and options.

C. Submit shop drawings indicating overall dimensions as well as installation, operation and services clearances. Indicate lift points and recommendations and center of gravity. Indicate unit shipping, installation and operating weights including dimensions.

D. Submit data on electrical requirements and connection points. Include recommended wire and fuse sizes or MCA, sequence of operation, safety and start-up instructions.

E. Shop drawings submitted for approval shall be accompanied by a copy of the purchase agreement between the Contractor and an authorized service representative of the manufacturer for check, test and start up and first year service.

1.05 DELIVERY, STORAGE and HANDLING

A. Comply with manufacturer's installation instructions for rigging, unloading, and transporting units.

B. Protect units from physical damage. Leave factory-shipping covers in place until installation.

1.06 WARRANTY

A. Provide parts warranty (excluding refrigerant) for one year from start-up or 18 months from shipment, whichever occurs first.

B. Provide five-year extended warranty for compressors.

1.07 MAINTENANCE SERVICE

A. All work on units shall be accomplished by OEM factory trained and authorized servicing technicians.

1.08 REGULATORY REQUIREMENTS

A. Unit shall conform to ANSI Z21.47/UL1995 for construction of packaged air conditioner.

1. In the event the unit is not UL approved, the manufacturer must, at his expense, provide for a field inspection by a UL representative to verify conformance to UL standards. If necessary, contractor shall perform modifications to the unit to comply with UL, as directed by the UL representative, at no additional expense to the Owner.

1.09 EXTRA MATERIALS

A. Provide 1 set of filters.

B. Furnish a complete set of fan motor drive belts.

PART 2 PRODUCTS

2.01 SUMMARY

A. The contractor shall furnish and install package rooftop unit(s) as shown and scheduled on the contract documents. The unit(s) shall be installed in accordance with this specification and perform at the specified conditions as scheduled.

B. APPROVED MANUFACTURERS

1. Trane

2. Carrier

3. RUUD OR RHEEM

2.02 GENERAL UNIT DESCRIPTION

A. Unit(s) furnished and installed shall be Heat Pump packaged rooftop (s) as scheduled on contract documents and these specifications. Cooling capacity ratings shall be based on AHRI Standard. Unit(s) shall consist of insulated weather-tight casing with compressor(s), air-cooled condenser coil, condenser fans, evaporator coil, return-air filters, supply motors and unit controls.

B. Unit(s) shall be 100% factory run tested and fully charged with R-410A.

C. Unit(s) shall have labels, decals, and/or tags to aid in the service of the unit and indicate caution areas.

D. Units shall be convertible airflow design as manufactured.

E. Wiring internal to the unit shall be colored and numbered for identification.

2.03 UNIT CASING

A. Cabinet: Galvanized steel with baked enamel finish. Structural members with access doors and removable panels shall be a minimum 22 gauge.

B. Unit's cabinet surface shall be tested 672 hours in salt spray test in compliance with ASTM B117.

C. Cabinet construction shall allow for all service/ maintenance from one side of the unit.

D. Cabinet top cover shall be one piece construction or where seams exits, it shall be double-hemmed and gasket-sealed.

E. Access Panels: Water- and air-tight panels with handles shall provide access to filters, heating section, return air fan section, supply air fan section, evaporator coil section, and unit control section.

F. Unit's base pan shall have a raised 1 1/8 inch high lip around the supply and return openings for water integrity.

G. Provide ½ inch foil faced, fire retardant permanent, odorless glass fiber material. All edges must be captured so that there is no insulation exposed in the air stream.

H. The base pan shall have no penetrations within the perimeter of the curb other that the raised 1 1/8 inch high down flow supply/return openings to provide and added water integrity precaution.

I. Provide openings either on side of unit or through the base for power, control, condensate, and gas connections.

J. The base of the unit shall have 3 sides for forklift provisions. The base of the units shall have rigging/lifting holes for crane maneuvering.

2.04 AIR FILTERS

A. Air Filters: Factory installed filters shall mount integral within the unit and shall be accessible through access panels. Two-inch thick glass fiber disposable media filters shall be provided.

B. Two inch MERV 8 and MERV 13 media filters shall be available option.

2.05 FANS AND MOTORS

A. Provide evaporator fan section with forward curved, double width, double inlet, centrifugal type fan.

B. Provide self-aligning, grease lubricated, ball or sleeve bearings with permanent lubrication fittings.

C. Outdoor and Indoor Fans shall be permanently lubricated and have internal thermal overload protection.

D. Outdoor fans shall be direct drive, statically and dynamically balanced, draw through in the vertical discharge position.

E. Provide shafts constructed of solid hot rolled steel, ground and polished, with key-way, and protectively coated with lubricating oil.

2.6 ELECTRIC HEATING SECTION

F. Provide heavy duty nickel chromium heating elements internally Delta connected for 240V, wye connection for 480V and 600V. Each heater package shall have automatically reset high limit control operating through heating element contactors. Backup protection is also provided via non-resettable single operation limits connected directly to high voltage. All heaters shall be individually fused from the factory, where required, and shall meet all NEC and CEC requirements when properly installed. Power assemblies shall provide single point connection. Electrical heat modules shall be cULus listed.

G. Heater shall be factory installed internal to unit cabinet.

H. Heater shall be UL and CSA listed and approved and provide single point power connection.

2.06 EVAPORATOR COIL & SECTION

A. Evaporator coil shall be constructed of copper tubes, mechanically bonded to aluminum fins.

A. Provide an independent expansion device for each refrigeration circuit. Factory pressure tested at 600 psig and leak tested at 465 psig.

B. Provide a removable, reversible, cleanable double sloped drain pan for base of evaporator coil constructed of PVC.

2.08 CONDENSER SECTION

A. Provide vertical discharge, direct drive fans with aluminum blades. Fans shall be statically balanced. Motors shall be permanently lubricated, with integral thermal overload protection in a weather tight casing.

B. Condenser coil shall be copper tubes mechanically bonded to aluminum fins.

C. Provide tool-less factory installed corrosion resistant louvered hail/vandalism guards to protect condenser coils from hail or physical damage.

2.09 REFRIGERATION SYSTEM

A. All units shall have direct drive hermetic, scroll type compressors with centrifugal type oil pumps. Motor shall be suction gas cooled and shall have a voltage utilization range of plus or minus 10 percent of unit nameplate.

B. Provide with thermostatic temperature motor winding control for protection against excessive temperatures caused by over/under voltage operation or loss of charge. Also provide high and low pressure switches.

C. Thermal Expansion valves are standard for all models.

D. Units shall have cooling capabilities down to 0 degree F as standard with microprocessor controls (40 degrees F with electromechanical controls. For field-installed low ambient accessory, the manufacturer shall provide a factory-authorized service technician that will assure proper installation and operation.

E. For heat pump units, provide reversing valve, discharge muffler, flow control check valve, and electronic adaptive demand defrost control on all units.

2.10 OUTDOOR AIR SECTION

A. Provide Fault Detection and Diagnostics (FDD) control.

B. Provide economizer with comparative enthalpy control.
C. Provide adjustable minimum position control located in the economizer section of the unit.
D. Provide spring return motor for outside air damper closure during unit shut down or power interruption.
E. Provide Remote Potentiometer for minimum position setting of the economizer

2.11 OPERATING CONTROLS

A. General: Microprocessor controls shall be provided for all 24 volt control functions. The resident control algorithms shall make all heating, cooling and ventilation decisions in response to electronic signals from sensors measuring indoor and outdoor temperatures. The control algorithm maintains accurate temperature control, minimizes drift from setpoint and provides better building comfort. A centralized microprocessor shall provide anti-short cycle timing and time delay between compressors to provide a higher level of machine protection.

B. SZ VAV: Provide all necessary controls to operate a rooftop unit based on maintaining two temperature setpoints: discharge air and zone. During one zone vav cooling, the unit will maintain zone cooling setpoint by modulating the supply fan speed more or less to meet zone load demand; and the unit will maintain discharge temperature to the discharge cooling setpoint by modulating economizer if available and staging dx cooling.

C. Ventilation Override: Provide factory installed, tested and commissioned ventilation override controls. Binary input from independent fire/life safety panel shall cause unit to override standard operation and assume one of two factory preset ventilation sequences: Purge or pressurization.

I. Provide factory-installed indoor evaporator defrost control to prevent compressor slugging by interrupting compressor operation.

2.12 CONTROLS

2. Provide programmable THREMOSTAT.

PART 3 EXECUTION

3.01 EXAMINATION

A. Contractor shall verify that proper power supply is available.

3.02 INSTALLATION

A. Contractor shall install in accordance with manufacturer's instructions.

B. Mount units on factory built roof mounting frame providing watertight enclosure to protect ductwork and utility services. Install roof mounting curb level.

END OF SECTION

EXHIBIT "C"

GENERAL NOTES - MECHANICAL:

(1) THE MECHANICAL CONTRACTOR IS FULLY RESPONSIBLE FOR PERFORMING THE WORK IN FULL COMPLIANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL CODES UNDER THIS SECTION OF THE CONTRACT. IF THE CONTRACTOR DETERMINES THAT THE CONTRACT DOCUMENTS AND PLANS ARE NOT IN COMPLIANCE WITH THE APPLICABLE LOCAL CODES, HE/SHE SHALL INFORM THE ENGINEER PRIOR TO CONSTRUCTION START FOR DIRECTION. FAILURE TO DO SO SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO MEET APPLICABLE LOCAL CODES, AND RE-WORK SHALL BE AT CONTRACTOR'S EXPENSE.

(2) MOUNT ALL THERMOSTATS (SENSORS) 48" ABOVE THE FINISHED FLOOR LEVEL. THERMOSTATS SHOWN SHALL BE IN CONTROL OF THE ZONE SYSTEM WHICH IS SUPPLYING AIR TO THE AREA WHERE THE THERMOSTAT IS LOCATED. CONTRACTOR SHALL SUPPLY AND INSTALL ALL CONTROL VOLTAGE WIRING AND CONDUIT FOR THERMOSTAT (DDC CONTROL) INSTALLATION.

MECHANICAL SYMBOL LEGEND

Symbol	Description
TAG, NECK SIZE	CFM, QUANTITY, OPPOSED BLADE DAMPER
	CONICAL DUCT SPIN TAP, FLEXIBLE DUCT, ROUND SHEET-METAL DUCT, BALANCING DAMPER
	DETAIL NUMBER, SHEET NUMBER
	PERFORATED INNER METAL LINER, WHERE INDICATED (DOUBLE WALL); HIDDEN DUCT (FOR CLARITY)
	SUPPLY AIR GRILLE
	SUPPLY AIR GRILLE-SLOT DIFFUSER
	RETURN AIR GRILLE ALL RETURN AIR DUCT DROPS TO INCLUDE A MANUAL DAMPER
T, S, O	THERMOSTAT TEMPERATURE SENSOR TEMPERATURE OVERRIDE SENSOR/SWITCH
FD, FSD	FIRE DAMPER FIRE/SMOKE DAMPER
	FLOW DIRECTION
	PIPE DROP
	PIPE RISE
	RETURN AIR DUCT RISE/DROP
	SUPPLY AIR DUCT RISE/DROP
	WALL OR FLOOR SLEEVE
	CHILLED WATER SUPPLY/RETURN PIPING
SQUARE / ROUND	SQUARE TO ROUND DUCT TRANSITION

MECHANICAL ABBREVIATIONS

A/C	AIR CONDITIONED	MAX	MAXIMUM
AD	ACCESS DOOR	MBD	MANUAL BALANCING DAMPER
AFF	ABOVE FINISHED FLOOR	MD	MOTORIZED DAMPER
AHU	AIR HANDLING UNIT	MECH	MECHANICAL
APPROX	APPROXIMATE	MIN	MINIMUM
ARCH	ARCHITECTURAL	MS	MOTOR STARTER
BDD	BACK DRAFT DAMPER	NA	NOT APPLICABLE
BHP	BRAKE HORSEPOWER	NC	NORMALLY CLOSED
BTU	BRITISH THERMAL UNIT	NIC	NOT IN CONTRACT
CFM	CUBIC FEET PER MINUTE	NO	NORMALLY OPEN
CH	CHILLER	NTS	NOT TO SCALE
CHP	CHILLED WATER PUMP	OA	OUTSIDE AIR
CLG	CEILING	OAH	OUTSIDE AIR INTAKE HOOD
CWP	CONDENSER WATER PUMP	OBD	OPPOSED BLADE DAMPER
CO	CLEANOUT	OC	ON CENTER
CT	COOLING TOWER	P	PUMP
CU	CONDENSING UNIT	PBD	PARALLEL BLADE DAMPER
CW	COLD WATER	PP	PRIMARY CHILLED WATER PUMP
CL	CENTER LINE	PRESS	PRESSURE
DB	DRY BULB	PRV	PRESSURE REDUCING VALVE
DIA	DIAMETER	PSIG	POUNDS PER SQUARE INCH (GAUGE)
DN	DOWN	R	RETURN (AIR DEVICE)
DWG	DRAWING	RA	RETURN AIR
DX	DIRECT EXPANSION	RE: AM7.01	REFER TO DETAIL 4, SHEET M7.01
EAT	ENTERING AIR TEMPERATURE	RET	RETURN
EDH	ELECTRIC DUCT HEATER	RH	RELATIVE HUMIDITY
EF	EXHAUST FAN	RHD	RELIEF HOOD
ELEC	ELECTRICAL	RPM	REVOLUTIONS PER MINUTE
ELEV	ELEVATION	RTU	ROOF TOP UNIT
F	DEGREES FAHRENHEIT	S	SUPPLY (AIR DEVICE)
FC	FAN COIL	SA	SUPPLY AIR
FD	FIRE DAMPER	SCH	SCHEDULE
FLEX	FLEXIBLE	SCHP	SECONDARY CHILLED WATER PUMP
FLG	FLANGE	SD	SMOKE DAMPER
FLR	FLOOR	SEC	SECOND
FPM	FEET PER MINUTE	SF	SUPPLY FAN
FT	FEET, FOOT	SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
FS	FLOW SWITCH	SP	STATIC PRESSURE
GAL	GALLON	SPEC	SPECIFICATION
GALV	GALVANIZED	SF	SQUARE FOOT
GPM	GALLONS PER MINUTE	STD	STANDARD
HB	HOSE BIBB	TEMP	TEMPERATURE
HP	HORSEPOWER	TSTAT	THERMOSTAT
HR	HEAT PUMP (WATER SOURCE)	TYP	TYPICAL
HR	HOUR	UF	UNDER FLOOR
HVAC	HEATING/VENTILATING/AIR CONDITIONING	UH	UNIT HEATER
HWP	HOT WATER PUMP	UL	UNDERWRITERS LABORATORIES
HZ	HERTZ	VEL	VELOCITY
ID	INSIDE DIAMETER	VENT	VENTILATE
IE	INVERT ELEVATION (FLOW LINE)	VF	VENTILATION FAN
IN	INCHES	VOL	VOLUME
INSUL	INSULATION	VOLT	VOLTAGE
IN WG	INCHES OF WATER	W	WIDE, WIDTH
KW	KILOWATT(S)	W/	WITH
LAT	LEAVING AIR TEMPERATURE	WB	WET BULB
LB	POUND	W/O	WITHOUT
L	LOUVER		

TESTING, ADJUSTING & BALANCING

A.	**Air Handlers & Roof Top Units:**	
	1.	Test Data: Include design and actual values for the following:
	a.	Total airflow rate in CFM.
B.	**Fan Test:**	
	No work done to existing exhaust fans.	
C.	**Room Grilles, Registers, or Diffusers:**	
	No work done to existing air devices.	

INDEX OF SHEETS

H.V.A.C. SYSTEM — SECTION 15500

THE WORK INCLUDES PROVIDING THE HVAC SYSTEMS, INCLUDING DUCTWORK, DIFFUSERS AND GRILLES, INSULATION, CONTROLS, AND ALL OTHER EQUIPMENT NECESSARY FOR A COMPLETE FUNCTIONING SYSTEM. HVAC SYSTEM SHALL INCLUDE BUT IS NOT LIMITED TO THE FOLLOWING:

- HEATING, VENTILATION, AND AIR CONDITIONING (HVAC) UNITS.
- SUPPLY AND RETURN DUCTWORK SYSTEMS WITH GRILLES, DIFFUSERS, FILTERS, AND DAMPERS.
- TEMPERATURE CONTROL SYSTEM INCLUDING LOW VOLTAGE WIRING AND CONDUIT.
- DUCT, PIPING, AND EQUIPMENT INSULATION, WHERE INDICATED HEREIN.
- CONTROLS AND WIRING FOR CONNECTION TO LANDLORD'S FIRE-SMOKE ALARM SYSTEM (WHERE APPLICABLE).

THE CONTRACTOR SHALL COORDINATE ALL NEW DUCTWORK INCLUDING DUCTWORK INSULATION AND REINFORCING WITH EXISTING DUCTWORK AND DUCTWORK ANGLE BRACING SUCH THAT THE NEW DUCTWORK WILL FIT WITHIN THE SPACE LIMITATIONS OF THE PROJECT.

THE DESIGN, SELECTION, SPACING AND APPLICATION OF HORIZONTAL PIPE HANGERS, SUPPORTS, RESTRAINTS, ANCHORS AND GUIDES SHALL BE IN ACCORDANCE WITH THE STANDARD CODE FOR PRESSURE PIPING ANSI B31.1 AND THE LATEST EDITION OF THE MANUFACTURERS' STANDARDIZATION SOCIETY STANDARDS MSS SP-69, "PIPE HANGERS AND SUPPORTS--SELECTION AND APPLICATION".

PROVIDE PIPE COVERING PROTECTION SHIELDS AND SADDLES FOR ALL INSULATED PIPING AT THE LOCATIONS OF ALL SUPPORTS. THE PROTECTION SHIELD LENGTH AND GAUGE THICKNESS FOR USE AT EACH CLEVIS HANGER SHALL BE AS SPECIFIED FOR TYPE 40 PROTECTION SHIELDS IN THE CURRENT EDITION OF MSS SP-69. PROTECTION SHIELDS SHALL BE GALVANIZED AND SHALL BE ARRANGED TO COVER ONE-HALF OF THE CIRCUMFERENCE OF THE INSULATION AND SHALL BE MOUNTED ON THE OUTSIDE OF THE INSULATION WITH INSULATION BLOCKING BETWEEN THE PIPE AND SADDLE TO PREVENT CRUSHING OF THE INSULATION. INSULATION BLOCKING SHALL BE UPJOHN 2 POUND HIGH DENSITY MOLDED URETHANE OR SEGMENTED MACHINERY CORK DIPPED IN HOT ASPHALT VAPOR SEAL OF NOT LESS THAN THE SAME LENGTH AND CIRCUMFERENCE AS THE PIPE PROTECTION SHIELD.

ALL HANGERS, HARDWARE, RODS, CLAMPS, CHANNELS, BASE PLATES, ANGLES, BOLTS, NUTS AND OTHER FACTORY-BUILT OR SHOP FABRICATED PIPE SUPPORT DEVICES SHALL BE GALVANIZED OR CADMIUM PLATED UNLESS NOTED OTHERWISE ON THE DRAWINGS. ALL SHOP FABRICATED AND WELDED STEEL SUPPORTS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.

FIELD VERIFY THE EXACT SIZES AND LOCATIONS OF ALL EXISTING DUCTWORK AND PIPING PRIOR TO DEMOLITION OF ANY EXISTING WORK. THE DEMOLITION WORK SHALL BE COORDINATED WITH THE NEW WORK TO ASSURE PROPER LIMITS OF DEMOLITION.

WARRANTY: PROVIDE LABOR AND MATERIALS TO REPAIR OR REPLACE DEFECTIVE PARTS AND MATERIALS AS REQUIRED FOR ONE YEAR AFTER SUBSTANTIAL COMPLETION OR OWNER ACCEPTANCE OF THE COMPLETED PROJECT. PROVIDE A SEPARATE LINE ITEM DEDUCT AMOUNT ON THE PROPOSAL FORM TO DELETE WARRANTY SERVICE, AT THE OWNER'S OPTION.

DRAWINGS FOR HVAC WORK ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, LAYOUT, AND EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENTS. REFER TO MANUFACTURER'S STANDARD INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS, AS REQUIRED. PROVIDE ALL DUCTWORK, CONNECTIONS, ACCESSORIES, OFFSETS, AND MATERIALS NECESSARY TO FACILITATE THE SYSTEM FUNCTIONING AS INDICATED BY THE DESIGN AND THE EQUIPMENT INDICATED. THE WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES OR ORDINANCES AND SUBJECT TO INSPECTION.

COORDINATE WITH THE WORK OF OTHER SECTIONS, EQUIPMENT FURNISHED BY OTHERS, REQUIREMENTS OF THE LANDLORD, AND WITH THE CONSTRAINTS OF THE EXISTING CONDITIONS OF THE PROJECT SITE.

EXTRA STOCK: PROVIDE TWO SETS OF REPLACEMENT FILTERS PER EACH INSTALLED FOR ALL THE ROOFTOP UNITS, AND OTHER EQUIPMENT AND DEVICES, AND PROVIDE AN ITEMIZED LIST OF THE NUMBER, TYPE REQUIRED, AND WHERE USED. OBTAIN RECEIPT FROM OWNER THAT THESE ITEMS HAVE BEEN DELIVERED AND ACCEPTED BY THE OWNER'S REPRESENTATIVE.

PROVIDE WHERE APPLICABLE, DUCT MOUNTED SUPPLY AND/OR RETURN AIR PHOTOELECTRIC TYPE UL LISTED SMOKE DETECTORS. DETECTORS SHALL BE LISTED FOR THE AIR VELOCITIES ENCOUNTERED. PROVIDE INTERLOCK WIRING AND RELAYS FOR UNIT SHUT DOWN. ON ACTIVATION OF ANY DETECTOR, ALL HVAC UNIT FANS SHALL STOP.

TEST AND ADJUST EACH PIECE OF EQUIPMENT AND EACH SYSTEM AS REQUIRED TO ASSURE PROPER BALANCE AND OPERATION. TEST AND BALANCE SHALL BE PERFORMED BY AN INDEPENDENT NEBB OR AABC REGISTERED CONTRACTOR. ELIMINATE NOISE AND VIBRATION, AND ASSURE PROPER FUNCTION OF ALL CONTROLS, MAINTENANCE OF TEMPERATURE, AND OPERATION. BALANCE MECHANICAL SYSTEM, AND SUBMIT COMPLETED TEST.

EXPOSED ROUND (SPIRAL) DUCT TO BE INTERNALLY LINED. SUPPLY DUCTWORK SHALL BE LINED W/1" INSULATION. RETURN/EXHAUST/VENTILATION DUCT TO BE LINED W/1/2" INSULATION. CONCEALED ROUND DUCT TO BE EXTERNALLY INSULATED. USING R-5 INSULATION MIN FOR CONDITIONED SPACES (WHERE PLENUM RETURN IS USED) OR R-8 INSULATION MIN FOR UNCONDITIONED SPACES.

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12/22/2021
STATE OF TEXAS
Wilford L. McGee III
121838

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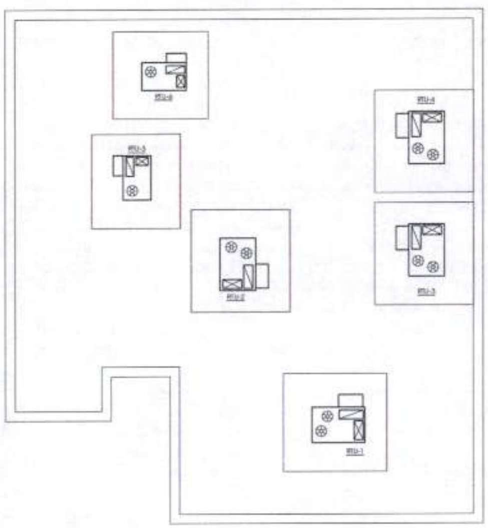
WEBB COUNTY MECHANICAL RETROFIT

LAREDO — J.P. PRECINT 2 PLACE 2 / CASA ORTIZ — TEXAS

MG01

EXHIBIT "C"



JP PRECINCT 2, PL.1 & PL.2 DEMOLITION PLAN (A)
SCALE : 1/8" = 1'-0

PLAN NORTH

GENERAL DEMOLITION NOTES

A. REMOVE EXISTING RTUS AND DISCARD. AFTER RTUS HAVE BEEN REMOVED, ROOF CURB OPENINGS SHALL BE COVERED UNTIL NEW UNITS/CURBS ARE INSTALLED.

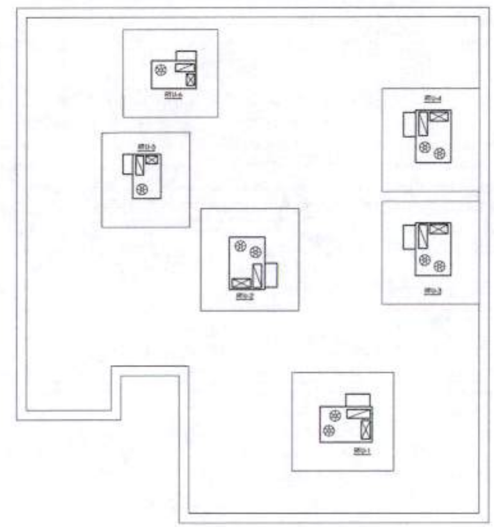
B. REMOVE CONDENSATE LINES AND DISCARD. CONDENSATE HEADERS SHALL STAY IN PLACE.

C. ANY DAMAGES CAUSED TO THE FACILITY DURING THE DEMOLITION OR REINSTALLATION OF THE SCOPE SHALL BE REPLACED AT CONTRACTORS EXPENSE.

D. THE EXTENT OF DEMOLITION WORK IS INDICATED ON THESE DRAWINGS AND BY THE REQUIREMENTS OF THIS SECTION. A VISIT TO THE SITE WILL BE REQUIRED TO PROPERLY BID THE DEMOLITION WORK.

E. PROVIDE ALL DEMOLITION WORK REQUIRED FOR THE REMOVAL AND/OR RELOCATION OF HVAC FIXTURES AND EQUIPMENTS AND ASSOCIATED SERVICES TO PROVIDE A COMPLETE AND OPERABLE SYSTEM UPON COMPLETION OF THE PROJECT.

F. WHERE EXISTING EQUIPMENT IS TO BE RELOCATED, BE CAUTIOUS TO PREVENT DAMAGE DURING THE REMOVAL AND REINSTALLATION. WHERE DAMAGE OCCURS, THE EQUIPMENT SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION AND APPROVAL OF THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER.



JP PRECINCT 2, PL.1 & PL.2 ROOF MECHANICAL PLAN (B)
SCALE : 1/8" = 1'-0

PLAN NORTH

GENERAL NOTES:

(1) ELECTRICAL DISCONNECTS SHALL BE REMOVED, SALVAGED AND RECONNECTED, REFER TO ELECTRICAL SHEETS FOR FURTHER INFORMATION. ALL MATERIAL AND LABOR REQUIRED FOR REINSTALLATION SHALL BE INCLUDED IN BID. EXISTING DISCONNECTS SHALL BE PROVIDED WITH A TAG IDENTIFYING THE UNIT IT SERVES AS WELL AS THE PANEL/CIRCUIT IT'S BEING FED FROM.

(2) PROVIDE NEW COPPER CONDENSATE LINES AND P-TRAPS FROM UNIT TO EXISTING MAIN CONDENSATE LINE.

(3) NEW EQUIPMENT SHALL BE INTEGRATED TO EXISTING SCHNEIDER HVAC CONTROLS SYSTEM.

(4) CONTRACTOR SHALL PROVIDE ALL DUCTWORK MODIFICATIONS/EXTENSIONS NEEDED FOR EXISTING DUCTWORK TO CONNECT TO NEW ROOF CURBS.

(5) IF NEW EQUIPMENT HAS OUTSIDE AIR INTAKE CLOSER THAN 10 FEET FROM ANY EXISTING SANITARY SEWER VENTS, VENTS SHALL BE REROUTED ABOVE ROOF FURTHER THAN 10 FEET AWAY.

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STATE OF TEXAS
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121938

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WEBB COUNTY MECHANICAL RETROFIT

J.P. PRECINT 2 PLACE 2 / CASA ORTIZ

LAREDO TEXAS

MP01

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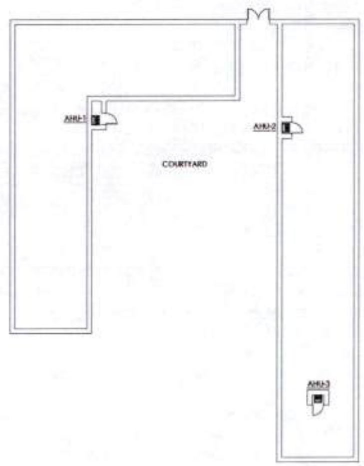
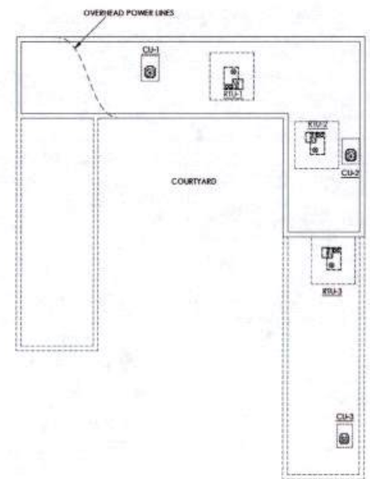


PLAN NORTH

(A) CASA ORTIZ MECHANICAL 1ST FLOOR DEMO PLAN
SCALE : 1/16" = 1'-0



PLAN NORTH

(B) CASA ORTIZ MECHANICAL ROOF DEMO PLAN
SCALE : 1/16" = 1'-0

GENERAL DEMOLITION NOTES

A. REMOVE EXISTING RTUS, AIR HANDLERS AND CONDENSER UNITS AND DISCARD. AFTER RTUS HAVE BEEN REMOVED, DUCT OPENINGS SHALL BE COVERED UNTIL NEW UNITS/CURBS ARE INSTALLED. GAS HEATER FLUE STACKS SHALL BE REMOVED FROM UNIT TO TERMINATION POINT. ALL OPENINGS LEFT AFTER REMOVAL SHALL BE CAPPED.

B. REMOVE CONDENSATE LINES AND DISCARD.

C. ANY DAMAGES CAUSED TO THE FACILITY DURING THE DEMOLITION OR REINSTALLATION OF THE SCOPE SHALL BE REPLACED AT CONTRACTORS EXPENSE.

D. THE EXTENT OF DEMOLITION WORK IS INDICATED ON THESE DRAWINGS AND BY THE REQUIREMENTS OF THIS SECTION. A VISIT TO THE SITE WILL BE REQUIRED TO PROPERLY BID THE DEMOLITION WORK.

E. PROVIDE ALL DEMOLITION WORK REQUIRED FOR THE REMOVAL OF HVAC EQUIPMENT AND ASSOCIATED SERVICES TO PROVIDE A COMPLETE AND OPERABLE SYSTEM UPON COMPLETION OF THE PROJECT.

F. WHERE EXISTING EQUIPMENT IS TO BE RELOCATED, BE CAUTIOUS TO PREVENT DAMAGE DURING THE REMOVAL AND REINSTALLATION. WHERE DAMAGE OCCURS, THE EQUIPMENT SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION AND APPROVAL OF THE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER.

G. ELECTRICAL DISCONNECTS SHALL BE REMOVED, SALVAGED AND RECONNECTED. ALL MATERIAL AND LABOR REQUIRED FOR REINSTALLATION SHALL BE INCLUDED IN BID. EXISTING DISCONNECTS SHALL BE PROVIDED WITH A TAG IDENTIFYING THE UNIT IT SERVES AS WELL AS THE PANEL/CIRCUIT ITS BEING FED FROM.

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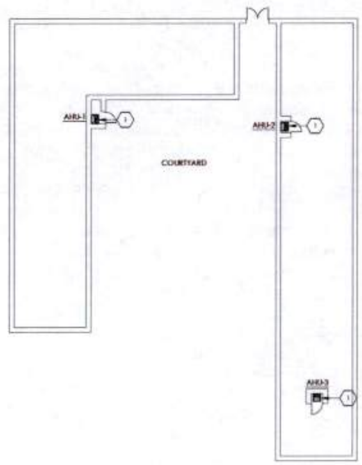
WEBB COUNTY MECHANICAL RETROFIT

LAREDO J.P. PRECINT 2 PLACE 2 / CASA ORTIZ TEXAS

MP02

EXHIBIT "C"



PLAN NORTH

(A) CASA ORTIZ MECHANICAL 1ST FLOOR PLAN
SCALE : 1/16" = 1'-0

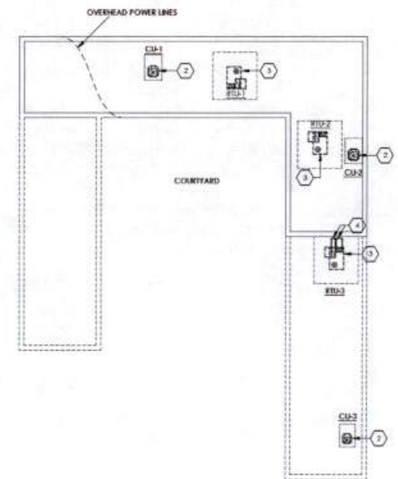
KEYED NOTES: MECHANICAL

(1)
- MOUNT AIR HANDLING UNIT OVER THE EXISTING DUCTWORK PLENUM. PROVIDE ALL DUCT MODIFICATIONS REQUIRED TO PROPERLY MOUNT/CONNECT UNIT TO EXISTING SUPPLY AND RETURN DUCTWORK.
- PROVIDE NEW CONDENSATE DRAIN LINE AND P-TRAP (PVC MATERIAL) AND CONNECT TO EXISTING DRAIN LINE.
- PROVIDE UNIT WITH NEW 7-DAY PROGRAMMABLE THERMOSTAT AND ALL NEW WIRING.
- EXTEND EXISTING REFRIGERANT LINES TO NEW UNIT AS NEEDED.
- PROVIDE NEW REFRIGERANT LINE INSULATION FOR ENTIRE LENGTH OF EXISTING AND NEW LINES. EXTERIOR INSULATION SHALL BE PROVIDED WITH WHITE UV RESISTANT PAINT. PROVIDE TREATED TIMBER REFRIGERANT LINE SUPPORTS AT EVERY 5 FEET.
- NEW AHU SHALL BE PLACED SUCH THAT ALL UNITS' MAINTENANCE CLEARANCES ARE PROVIDED.
- EXISTING MECHANICAL CLOSET SHALL BE THOROUGHLY CLEANED.
- AIR HANDLING UNIT SHALL BE PROVIDED WITH A PLASTIC TAG.

(2)
- NEW CONDENSING UNIT SHALL BE RELOCATED AT LEAST 10 FEET AWAY FROM OVERHEAD ELECTRICAL SERVICE. (NOTE APPLICABLE TO CU-1 ONLY).
- PLACE NEW CONDENSING UNIT OVER (2) 4"X4" TREATER TIMBERS. UNIT SHALL BE ANCHORED TO TIMBERS WITH MINIMUM ½" WOOD SCREWS. TIMBERS SHALL EXTEND 12 INCHES PASSED EACH SIDE OF THE CONDENSER.
- NEW CONDENSING UNIT SHALL BE PLACED SUCH THAT ALL UNIT'S MAINTENANCE CLEARANCES ARE PROVIDED.
- SOLDERING FOR REFRIGERANT LINES SHALL BE DONE CORRECTLY TO AVOID ANY FOREIGN MATERIAL FROM ENTERING LINES. DRY NITROGEN MUST BE USED WHEN BRAZING REFRIGERANT COPPER LINES. WHEN LINES ARE CUT, THEY SHALL BE SEALED ON BOTH CONDENSER AND AIR HANDLER SIDES.
- ALL EXISTING FILTER DRYERS SHALL BE REMOVED AND PROVIDE WITH NEW ONES.
- CONDENSING UNIT SHALL BE PROVIDED WITH A PLASTIC TAG.

(3)
- PROVIDE UNIT WITH NEW 7-DAY PROGRAMMABLE THERMOSTAT AND ALL NEW WIRING.
- PLACE PACKAGE UNIT OVER (2) 4"X4" TREATER TIMBERS. UNIT SHALL BE ANCHORED TO TIMBERS WITH MINIMUM ½" WOOD SCREWS. TIMBERS SHALL EXTEND 12 INCHES PASSED EACH SIDE OF THE UNIT.
- PROVIDE NEW CONDENSATE DRAIN LINE AND P-TRAP (COPPER MATERIAL) AND CONNECT TO EXISTING ROOF DRAIN SYSTEM. CONDENSATE LINE SHALL BE INSULATED AND PAINTED WITH WHITE UV RESISTANT PAINT.
- NEW UNIT SHALL BE PLACED SUCH THAT ALL UNIT'S MAINTENANCE CLEARANCES ARE PROVIDED. ADDITIONALLY, UNIT SHALL BE AT LEAST 5 FEET AWAY FROM THE EDGE OF ROOF.
- PROVIDE DUCT EXTENSION PIECES TO CONNECT SUPPLY AND RETURN DUCTS TO NEW UNIT. FINAL CONNECTION TO UNIT SHALL HAVE A FLEXIBLE DUCT WITH MATERIAL RATED FOR OUTDOOR USED. NEW DUCT EXTENSION SHALL BE INTERNALLY LINES WITH FIBERGLASS INSULATION.
- EXISTING EXTERIOR DUCTS SHALL BE PROVIDED WITH NEW DUCT MASTIC OVER ALL EXISTING JOINTS.
- UNIT SHALL BE PROVIDED WITH A PLASTIC TAG.

(4)
- EXISTING DUCTS RUNNING OVER ROOF SHALL BE REPLACED.



PLAN NORTH

(B) CASA ORTIZ MECHANICAL ROOF PLAN
SCALE : 1/16" = 1'-0

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WEBB COUNTY MECHANICAL RETROFIT

LAREDO J.P. PRECINT 2 PLACE 2 / CASA ORTIZ TEXAS

MP03

EXHIBIT "C"

AIR HANDLING UNIT SCHEDULE

PROJECT	CASA ORTIZ		
TAG	AHU-1	AHU-2	AHU-3
TYPE	SNGL ZN VAV	SNGL ZN VAV	SNGL ZN VAV
FLOW CONFIGURATION	VERTICAL	VERTICAL	VERTICAL
AREA SERVED			
INDOOR UNIT FAN			
SUPPLY CFM	2000	1200	800
MIN. OUTSIDE AIR (CFM)	300	200	150
EXT. STATIC INCHES WC	0.5	0.5	0.5
MIN FAN POWER	1.0 HP - ECM	1.0 HP - ECM	1.0 HP - ECM
INDOOR UNIT COOLING COIL			
ENTERING AIR DB/WB (°F)	80/67	80/67	80/67
LEAVING AIR DB/WB (°F)	59.5/57.5	57.7/56.9	58/56.8
MIN. TOTAL/SENSIBLE CAPACITY (MBH)	57.9/43.6	36.8/28.4	24.9/18.7
DESIGN RETURN AIR DB/WB (°F)	73/61	73/61	73/61
DESIGN OUTSIDE AIR DB/WB (°F)	108/80	108/80	108/80
INDOOR UNIT HEATING SELECTION			
HEATER TYPE/AMBIENT DESIGN DB (°F)	HEAT PUMP/47	HEAT PUMP/47	HEAT PUMP/47
HEAT INPUT/STAGES	55 MBH/1	32.8 MBH/1	24 MBH/1
ENTERING/LEAVING DB (°F)	65/91	65/91	65/93
AUXILIARY ELECTRIC HEAT	7.2 KW	7.2 KW	5A
DETAILS AND ACCESSORIES			
VOLTAGE/PHASE	208/3	208/3	208/1
MCA/MOCP	30/35	30/30	25/25
MANUFACTURER	TRANE	TRANE	TRANE
MODEL	TEM6A0C60	TEM6A0C36	TEM6A0B24
NOMINAL UNIT SIZE TONNAGE	5.0 TONS	3.0 TONS	2.0 TONS
MAX WEIGHT (lbs)	175 lbs	175 lbs	175 lbs
NOTES	ALL	ALL	ALL

CONDENSING UNIT SCHEDULE

TAG	CU-1	CU-2	CU-3
OUTDOOR UNIT ELECTRICAL			
VOLTAGE/PHASE	208/3	208/3	208/1
MCA/MOCP	22/35	15/25	15/25
DETAILS AND ACCESSORIES			
MIN COOL/HEAT EFFICIENCY	16.5 SEER/-	17.5 SEER/-	17 SEER/-
COMPRESSOR QTY/STAGE QTY	1/2	1/2	1/2
COOL/HEAT AMBIENT DB (°F)	108/47	108/47	108/47
MANUFACTURER	TRANE	TRANE	TRANE
MODEL	4TWA7060	4TWA7036	4TTR7024
NOMINAL UNIT SIZE TONNAGE	5.0 TONS	3.0 TONS	2.0 TONS
MAX WEIGHT	325 lbs	325 lbs	250 lbs
NOTES	ALL	ALL	ALL

NOTES:
01. MECHANIC ADJUSTINGAL CONTRACTOR TO PROVIDE ADDITIONAL BELTS & PULLEYS AS NECESSARY SUCH THAT TESTING & BALANCING CAN BE PERFORMED TO THE DESIGN AIR VOLUMES SPECIFIED IN SCHEDULE ABOVE.
02. PROVIDE W/ SINGLE POINT PWR.
03. ACCEPTABLE MANUFACTURERS TO BE: CARRIER, RUUD, TRANE.
04. PROVIDE W/ SINGLE ZONE VAV CONTROL.
05. PROVIDE CONDENSER W/ FACTORY HAIL GUARDS.
06. PROVIDE WITH NEW THERMOSTATS.

DX PACKAGED UNIT SCHEDULE

PROJECT	JUSTICE OF THE PEACE			CASA ORTIZ	
TAG	RTU-1-4	RTU-5	RTU-6	RTU-1,2	RTU-3
TYPE	SNGL ZN VAV	SNGL ZN VAV	SNGL ZN VAV	SNGL ZN VAV	SNGL ZN VAV
DISCHARGE CONFIGURATION	DOWNFLOW	DOWNFLOW	DOWNFLOW	DOWNFLOW	DOWNFLOW
AREA SERVED					
FAN DATA					
SUPPLY CFM	2000	1600	1600	1200	800
MIN. OUTSIDE AIR (CFM)	300	250	250	200	200
EXT. STATIC INCHES WC	0.5	0.5	0.5	0.5	0.5
MIN FAN POWER	1.0 HP - ECM	0.75 HP - ECM	0.75 HP - ECM	0.75 HP - ECM	1/3 HP - ECM
COOLING COIL					
ENTERING AIR DB/WB (°F)	80/67	80/67	80/67	80/67	80/67
LEAVING AIR DB/WB (°F)	57.94/57.85	57.93/57.85	57.93/57.85	57.23/57.15	58.6/57.5
MIN. TOTAL/SENSIBLE CAPACITY (MBH)	56.63/47.11	44.95/37.36	44.95/37.36	33.55/26.55	23.2/18
DESIGN RETURN AIR DB/WB (°F)	73/61	73/61	73/61	73/61	73/61
DESIGN OUTSIDE AIR DB/WB (°F)	108/80	108/80	108/80	108/80	108/80
HEATING SELECTION					
HEAT TYPE/AMBIENT DB (°F)	HEAT PUMP/47	HEAT PUMP/47	HEAT PUMP/47	HEAT PUMP/47	HEAT PUMP/47
HEAT INPUT/STAGES	55.84 MBH/1	42.77 MBH/1	42.77 MBH/1	31.22 MBH/1	22.5 MBH/1
ENTERING/LEAVING DB (°F)	65/91	65/90	65/90	65/89	65/91
AUXILIARY ELECTRIC HEAT	13.5 KW	9 KW	4.5 KW	4.5 KW	5.76 KW
DETAILS AND ACCESSORIES					
MIN COOL/HEAT EFFICIENCY	16.4 SEER/-	16.5 SEER/-	16.5 SEER/-	16 SEER/-	14 SEER/-
COMPRESSOR QTY/COOL STAGE QTY	1/1	1/1	1/1	1/1	1/1
VOLTAGE/PHASE	208/3	208/3	208/3	208/3	208/1
MCA/MOCP	77/80	60/60	45/50	39/45	23/25
MOUNTING	14" TDI CURB	14" TDI CURB	14" TDI CURB	14" TDI CURB	14" TDI CURB
MANUFACTURER	TRANE	TRANE	TRANE	TRANE	TRANE
MODEL	WHC060	WHC048	WHC048	WHC036	4WCC4024
NOMINAL UNIT SIZE TONNAGE	5.0 Tons	4.0 TONS	4.0 TONS	3.0 TONS	2.0 TONS
MAX WEIGHT	1000 lbs	1000 lbs	1000 lbs	800 lbs	600 lbs
NOTES	1-5	1-5	1-5	1-4,6	1-4,6

NOTES:
01. PROVIDE W/ MOTORIZED OA DAMPER, DIFF ENTH ECON, & BARR RELIEF DAMPER.
02. CARRIER, RUUD, TRANE, APPROVED AS MANUFACTURERS.
03. UNIT TO HAVE SINGLE ZONE VAV CONTROL.
04. MECHANICAL CONTRACTOR TO PROVIDE ADDITIONAL BELTS & PULLEYS AS NECESSARY SUCH THAT TESTING ADJUSTING & BALANCING CAN BE PERFORMED TO THE DESIGN AIR VOLUMES SPECIFIED IN SCHEDULE ABOVE.
05. PROVIDE W/ CURB ADAPTERS.
06. PROVIDE W/ NEW THERMOSTATS.

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WEBB COUNTY MECHANICAL RETROFIT

LAREDO J.P. PRECINT 2 PLACE 2 / CASA ORTIZ TEXAS

12/22/2021

STATE OF TEXAS
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EXHIBIT "C"

ELECTRICAL ABBREVIATIONS:

ABBV:	DESCRIPTION	ABBV:	DESCRIPTION
AFF	ABOVE FINISHED FLOOR	MFR.	MANUFACTURER
BFC	BELOW FINISHED CEILING	(S.C.)	SHARE CIRCUIT
C	CONDUIT	QRCP(S)	QUAD RECEPTACLE(S)
CB	CIRCUIT BREAKER	RCPT(S)	DUPLEX RECEPTACLE(S)
EC	EMPTY CONDUIT	IGRCP(S)	I.G. RECEPTACLE(S)
EX	EXISTING	QGRCP(S)	QUAD I.G. RECEPTACLE(S)
F	FUSE	PNL	PANEL
G	GROUND (EQUIPMENT)	SO (S.O.)	SPACE ONLY
GFI	GROUND FAULT INTERRUPTER	SP	SPARE
MTD	MOUNTE OR MOUNTED	ST (S.T.)	SHUNT TRIP
NF	NONFUSED	SW	SWITCH
NIC	NOT IN CONTRACT	UF	UNDERFLOOR
HD	HEAVY DUTY	UG	UNDERGROUND
NL	NIGHT LIGHT	UNO (U.N.O.)	UNLESS NOTED OTHERWISE
AC	ABOVE COUNTER	WG	WIRE GUARD
HT	HEIGHT	WP	WEATHERPROOF
MTG	MOUNTING	XFMR	TRANSFORMER
FDR	FEEDER	MB	MAIN BREAKER
CKT	CIRCUIT	MLO	MAIN LUGS ONLY
LTG	LIGHTING	RMC	RIGID METAL CONDUIT
LC	LIGHTING CONTACTOR	RNC	RIGID NONMETALLIC CONDUIT
IG	ISOLATED GROUND	EMT	ELECTRICAL METALLIC TUBING CONDUIT
EA	EACH	S/N	SOLID NEUTRAL
N1	NEMA-1	AC	ABOVE COUNTER
N3R	NEMA-3R	AHJ	AUTHORITY HAVING JURISDICTION
N4X	NEMA-4X		
SS	STAINLESS STEEL		

NOTES:
1.) 48" AFF INDICATES TO TOP OF DEVICE.
15" AFF INDICATES TO BOTTOM OF DEVICE.
ALL OTHER MOUNTING HEIGHTS REFER TO CENTERLINE OF DEVICE.
AC INDICATES 6" ABOVE COUNTER TO BOTTOM OF DEVICE.

GENERAL ELECTRICAL NOTES:

1. ALL SYMBOLS AND ABBREVIATIONS SHOWN ON THIS LEGEND MAY NOT APPEAR ON THE SET OF DRAWINGS.
2. USE DIRECTIONAL ARROW ON EXIT SIGNS AS REQUIRED.
3. SEE STANDARD C37.2-1991, ELECTRICAL POWER SYSTEM DEVICE FUNCTION NUMBERS.
4. CONTRACTOR SHALL NOT INSTALL MORE THAN THREE CURRENT CARRYING CONDUCTORS IN A COMMON RACEWAY. IF CONTRACTOR IS PLANNING ON GROUPING MULTIPLE CIRCUITS IN A SINGLE RACEWAY, THE CONTRACTOR MUST SUBMIT ALL DERATING CALCULATIONS FOR THE PROPOSED INSTALLATION IN ACCORDANCE WITH NEC ARTICLE 310.15 (B) (3) FOR APPROVAL PRIOR TO INSTALLATION. NON APPROVED INSTALLATIONS WILL BE REMOVED AND REINSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH THE NEC AT NO ADDITIONAL COST TO THE OWNER.
5. THERE SHALL NOT BE MORE THAN THE EQUIVALENT OF THREE 90° BENDS (270 DEGREES TOTAL) BETWEEN PULL POINTS. WHERE THERE ARE MORE THAN THREE QUARTER BENDS, CONTRACTOR SHALL PROVIDE PULL BOXES AS SPECIFIED AND SIZED IN ACCORDANCE WITH NEC.
6. COMPLY WITH NEC REQUIREMENTS FOR ELECTRICAL INSTALLATIONS. ALL ELECTRICAL EQUIPMENT AND MATERIAL TO BE APPROVED, LISTED, LABELED, IDENTIFIED AND INSTALLED PER RECOGNIZED ELECTRICAL TESTING LABORATORY.
7. ALL RECEPTACLES, SWITCHES AND JUNCTION BOXES SERVED BY EMERGENCY BRANCH CIRCUITS SHALL BE "RED" IN COLOR. COVERPLATES SHALL BE LABELED IN ACCORDANCE WITH SPECIFICATIONS TO INDICATE PANELBOARD AND CIRCUIT NO. (IE. EP1LA-5).

ELECTRICAL LEGEND-GENERAL

—ALL SYMBOLS SHOWN MAY NOT APPEAR IN ALL DRAWINGS. SYMBOLS ARE SHOWN SCHEMATIC AND MAY NOT BE TO SCALE.

SYMBOL	DESCRIPTION
	HEAVY DUTY DISCONNECT SWITCH FUSED
	HEAVY DUTY DISCONNECT SWITCH NONFUSED
	SWITCH LEG
	ELECTRICAL CONDUIT
	UNDERGROUND COMMUNICATION CONDUIT
	UNDERGROUND ELECTRICAL CONDUIT
X,X,X	MULTIPOLE DEVICE CIRCUIT NUMBERS
X/X/X	THREE SINGLE POLE DEVICE CIRCUIT NUMBERS
A-1	CONDUIT AND WIRE HOMERUN TO PANEL.
A-1	UNDERGROUND CONDUIT AND WIRE HOMERUN TO PANEL.
J	JUNCTION BOX. SIZE & MOUNTING AS REQUIRED. VERIFY CONDITIONS PRIOR TO ORDERING ANY BOX.

ELECTRICAL SYSTEM GENERAL NOTES

THE ELECTRICAL WORK INCLUDES PROVIDING NEW MATERIALS, FIXTURES, DEVICES AND ACCESSORIES NECESSARY FOR A COMPLETE FUNCTIONING ELECTRICAL SYSTEM. THE WORK ALSO INCLUDES FINAL CONNECTIONS TO EQUIPMENT ITEMS PROVIDED BY OTHERS. ALL WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES OR ORDINANCES AND SUBJECT TO INSPECTION.

THE INTENT OF THE DRAWINGS IS TO INDICATE THE GENERAL EXTENT OF WORK REQUIRED FOR THE PROJECT. THE DRAWINGS FOR ELECTRICAL WORK ARE DIAGRAMMATIC, SHOWING THE LOCATION, TYPE DEVICES AND EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENTS. PROVIDE ALL FIXTURES, LAMPS, DEVICES, ACCESSORIES, OFFSETS AND MATERIALS NECESSARY TO FACILITATE THE SYSTEMS FUNCTIONING AS INDICATED BY THE DESIGN AND THE EQUIPMENT INDICATED.

COORDINATE WITH THE WORK OF OTHER SECTIONS. VERIFY EXISTING SITE CONDITIONS BEFORE BIDDING. MAKE ALL CONNECTIONS TO EQUIPMENT FURNISHED BY OTHERS. COMPLY WITH THE CONSTRAINTS OF THE EXISTING CONDITIONS OF THE PROJECT SITE.

ALL WORK SHALL COMPLY WITH LOCAL LAWS GOVERNING ELECTRICAL INSTALLATIONS, AND THE MOST RECENT EDITION OF THE "NATIONAL ELECTRIC CODE". REFER TO REFERENCE STANDARDS. PROVIDE CODE REQUIRED CLEARANCES AROUND ALL ELECTRICAL EQUIPMENT. OBTAIN ALL PERMITS RELATING TO ELECTRICAL WORK.

1.1 REFERENCE STANDARDS

INDEX OF SHEETS

EG01	ELECTRICAL LEGEND
EP01	JUSTICE OF PEACE DEMO/REMODEL PLAN
EP02	CASA ORTIZ DEMO PLAN
EP03	CASA ORTIZ REMODEL PLAN

TRINITY MEP ENGINEERING

12/22/2021

PROJECT #:
DATE:
CHECKED BY: LM
REVISION:

WEBB COUNTY MECHANICAL RETROFIT

LAREDO J.P. PRECINT 2 PLACE 2 / CASA ORTIZ TEXAS

EG01

EXHIBIT "C"

GENERAL DEMOLITION NOTES (TO ALL SHEETS)

A. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC ONLY. THE CONTRACTOR IS RESPONSIBLE TO REFER TO OTHER DOCUMENTS SUBMITTED BY THE OWNER TO REFERENCE SCALE MEASUREMENTS AND COMPARE TO THE ELECTRICAL DOCUMENTS. ANY DISCREPANCIES SHALL BE BROUGHT UP THE ENGINEER ATTENTION PRIOR TO BID DATE. FAILURE TO DO THIS THE CONTRACTOR IS RESPONSIBLE TO MAKE THE NECESSARY ADJUSTMENTS FOR THIS BID.

B. ALL WIRING SHALL BE COPPER.

C. ALL SLEEVES, PENETRATIONS, ETC. SHALL BE SEALED SOLID NON-SHRINKING MATERIAL IMMEDIATELY UPON FILLING OF THE OPENING WITH PIPE OR CONDUIT.

D. ALL ELECTRICAL EQUIPMENT OUTDOORS SHALL BE RATED TYPE NEMA 3R UNLESS OTHERWISE NOTED.

E. CONTRACTOR SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES. ALL WORK SHALL CONFORM TO NATIONAL ELECTRICAL CODES AND ALL OTHER AUTHORITY HAVING JURISDICTION. OBTAIN PERMITS AND PAY ALL FEES. PERFORM MODIFICATIONS TO MEET CODE AND ORDINANCE REQUIREMENTS AT NO ADDITIONAL COST TO OWNER OR ENGINEER. VERIFY PRIOR TO BID DATE.

F. VERIFY AT JOB SITE THE EXACT LOCATIONS OF STRUCTURAL MEMBERS SUCH AS BEAMS, COLUMNS, ETC. TO LOCATE EQUIPMENT CONDUIT, PANELS AND DEVICES. IF DEVIATIONS FROM THE DRAWING ARE NECESSARY TO MEET STRUCTURAL CONDITIONS MAKE DEVIATIONS WITHOUT ADDITIONAL COST, TO OWNER OR ENGINEER.

G. IN COOPERATION WITH OTHER CONTRACTORS, DETERMINE THE EXACT LOCATION OF EQUIPMENT AND DEVICES AND CONNECTIONS THERETO BY REFERENCE TO THE SUBMITTALS AND ROUGH-IN DRAWINGS, AND BY MEASUREMENTS AT THE SITE. REFER TO ALL OTHER TRADES SUBMITTAL FOR ELECTRICAL INFORMATION.

H. GROUND ENTIRE ELECTRICAL SYSTEM IN STRICT ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.

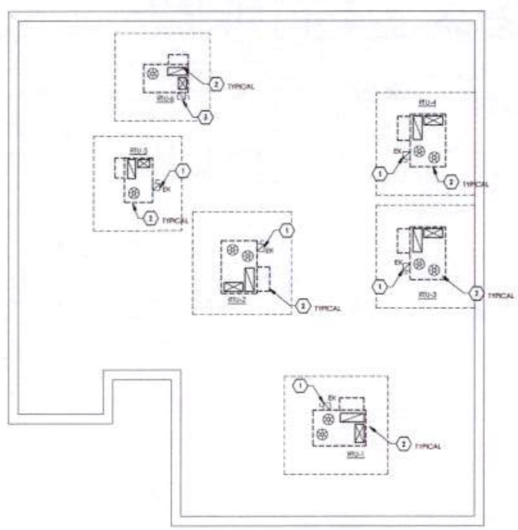
I. VERIFY AT JOB SITE GENERAL WORK TO BE DONE AS SPECIFIED, AS NOTED, OR AS REQUIRED FOR INSTALLATION ELECTRICAL SYSTEMS PRIOR TO SUBMISSION OF BIDS.

J. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND EQUIPMENT TO BE REMOVED AND REPLACED BEFORE SUBMITTING HIS BID.

K. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND SMALL SCALE ONLY. THEY CONVEY THE INTENT OF THE WORK BUT DO NOT SHOW DETAIL SUCH AS JUNCTION AND PULL BOXES REQUIRED BY THE SPECIFICATIONS AND THE NATIONAL ELECTRICAL CODE(NEC). PROVIDE ALL MATERIALS AND METHODS CALLED FOR IN THE SPECIFICATIONS AND AS REQUIRED IN THE NEC TO PROVIDE A COMPLETE INSTALLATION OF ALL WORK.

KEYED NOTES: DEMOLITION

1. EXISTING ELECTRICAL DISCONNECTS SHALL BE REMOVED TEMPORARY AND REINSTALL ONCE THE NEW HVAC UNIT IS IN PLACE. FIELD VERIFY EXISTING CONDITIONS AND REFER TO MECHANICAL DOCUMENTS.
2. EXISTING RTUS TO BE REMOVED AND DISCARDED. REFER TO MECHANICAL DOCUMENTS.
3. REPLACE EXISTING DISCONNECTS WITH NEW, REFER TO DETAIL#8 IN THIS SHEET.



PLAN NORTH

A JP PRECINCT 2, PL.2 ROOF ELECTRICAL DEMOLITION PLAN
SCALE : 1/8" = 1'-0

GENERAL NOTES: POWER

A. ELECTRICAL CONTRACTOR SHALL MAKE FINAL CONNECTION TO H.V.A.C EQUIPMENT, PLUMBING EQUIPMENT, REFER TO PANEL SCHEDULE FOR WIRE SIZE.

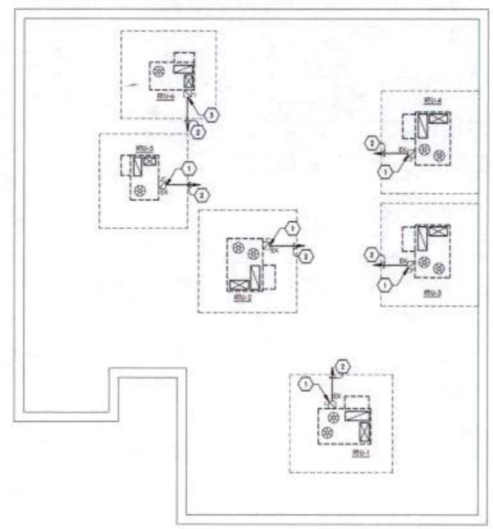
B. COORDINATE EXACT LOCATION OF ALL MECHANICAL EQUIPMENT IN ACCORDANCE W/MECHANICAL DRAWINGS TO MEET ELECTRICAL AND MECHANICAL REQUIRED CLEARANCE BY THE LATEST CODE.

C. CONTRACTOR SHALL REFER TO EQUIPMENT SUBMITTAL FOR ALL ELECTRICAL REQUIREMENTS PRIOR TO COMMENCING ANY WORK.

F. ELECTRICAL CONTRACTOR SHALL PROVIDE J-BOX AND CONDUIT FOR H.V.A.C CONTROLS AND THERMOSTATS. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.

KEYED NOTES: POWER

1. EXISTING ELECTRICAL DISCONNECT SHALL BE REUSE FOR RECONNECTION. FIELD VERIFY EXISTING CONDITIONS.
2. CONNECT TO EXISTING ELECTRICAL CIRCUIT SERVING HVAC UNIT. FIELD VERIFY EXISTING CONDITIONS. PROVIDE NEW WIRE(3#3,1#8G, 1.5"C) TO MATCH EXISTING WIRE SIZE TO CONNECT TO NEW UNIT.
3. CONTRACTOR SHALL REPLACE EXISTING DISCONNECT WITH NEW 60AMP, 208V, 3PHASE, 4WIRE, NEMA-3R, HEAVY DUTY, FUSED DISCONNECT, FUSED AT 60AMPS.



PLAN NORTH

B JP PRECINCT 2, PL.2 ROOF ELECTRICAL EQUIPMENT PLAN
SCALE : 1/8" = 1'-0

TRINITY
MEP ENGINEERING

12/22/2021

STATE OF TEXAS

PROJECT # : - - - - -
DATE: - - - - - - -
CHECKED BY: LM

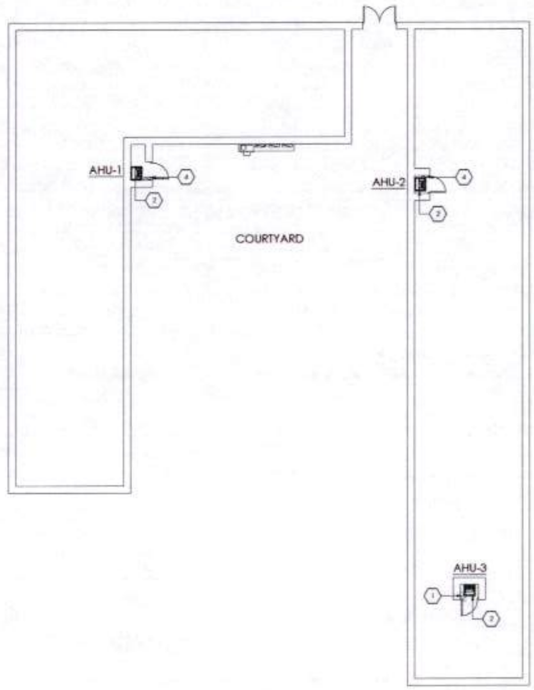
REVISION:

WEBB COUNTY MECHANICAL RETROFIT

LAREDO J.P. PRECINT 2 PLACE 2 / CASA ORTIZ TEXAS

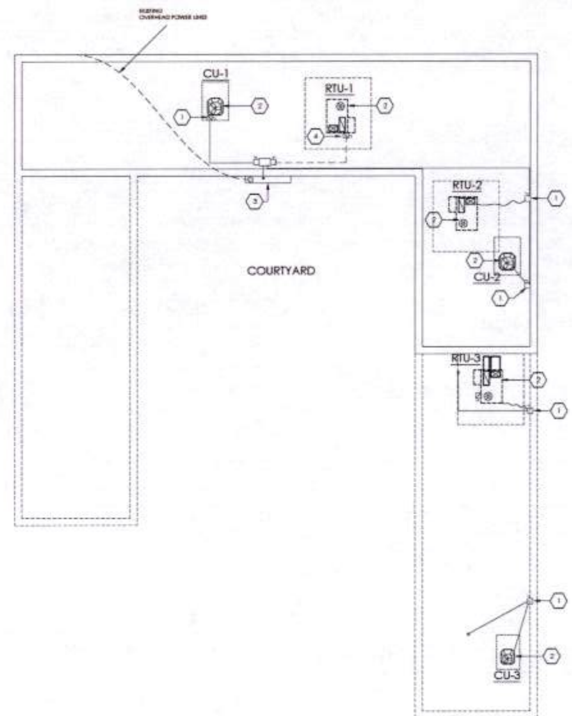
EP01

EXHIBIT "C"



A CASA ORTIZ 1ST FLOOR ELECTRICAL DEMOLITION PLAN
SCALE : 3/32" = 1'-0

PLAN NORTH



B CASA ORTIZ ROOF ELECTRICAL DEMOLITION PLAN
SCALE : 3/32" = 1'-0

PLAN NORTH

GENERAL DEMOLITION NOTES (TO ALL SHEETS)

A. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC ONLY. THE CONTRACTOR IS RESPONSIBLE TO REFER TO OTHER DOCUMENTS SUBMITTED BY THE OWNER TO REFERENCE SCALE MEASUREMENTS AND COMPARE TO THE ELECTRICAL DOCUMENTS. ANY DISCREPANCIES SHALL BE BROUGHT UP THE ENGINEER ATTENTION PRIOR TO BID DATE. FAILURE TO DO THIS THE CONTRACTOR IS RESPONSIBLE TO MAKE THE NECESSARY ADJUSTMENTS FOR THIS BID.

B. ALL WIRING SHALL BE COPPER.

C. ALL SLEEVES, PENETRATIONS, ETC. SHALL BE SEALED SOLID NON-SHRINKING MATERIAL IMMEDIATELY UPON FILLING OF THE OPENING WITH PIPE OR CONDUIT.

D. ALL ELECTRICAL EQUIPMENT OUTDOORS SHALL BE RATED TYPE NEMA 3R UNLESS OTHERWISE NOTED.

E. CONTRACTOR SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES. ALL WORK SHALL CONFORM TO NATIONAL ELECTRICAL CODES AND ALL OTHER AUTHORITY HAVING JURISDICTION. OBTAIN PERMITS AND PAY ALL FEES. PERFORM MODIFICATIONS TO MEET CODE AND ORDINANCE REQUIREMENTS AT NO ADDITIONAL COST TO OWNER OR ENGINEER. VERIFY PRIOR TO BID DATE.

F. VERIFY AT JOB SITE THE EXACT LOCATIONS OF STRUCTURAL MEMBERS SUCH AS BEAMS, COLUMNS, ETC. TO LOCATE EQUIPMENT CONDUIT, PANELS AND DEVICES. IF DEVIATIONS FROM THE DRAWING ARE NECESSARY TO MEET STRUCTURAL CONDITIONS MAKE DEVIATIONS WITHOUT ADDITIONAL COST, TO OWNER OR ENGINEER.

G. IN COOPERATION WITH OTHER CONTRACTORS, DETERMINE THE EXACT LOCATION OF EQUIPMENT AND DEVICES AND CONNECTIONS THERETO BY REFERENCE TO THE SUBMITTALS AND ROUGH-IN DRAWINGS, AND BY MEASUREMENTS AT THE SITE. REFER TO ALL OTHER TRADES SUBMITTAL FOR ELECTRICAL INFORMATION.

H. GROUND ENTIRE ELECTRICAL SYSTEM IN STRICT ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.

I. VERIFY AT JOB SITE GENERAL WORK TO BE DONE AS SPECIFIED, AS NOTED, OR AS REQUIRED FOR INSTALLATION ELECTRICAL SYSTEMS PRIOR TO SUBMISSION OF BIDS.

J. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND EQUIPMENT TO BE REMOVED AND REPLACED BEFORE SUBMITTING HIS BID.

K. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND SMALL SCALE ONLY. THEY CONVEY THE INTENT OF THE WORK BUT DO NOT SHOW DETAIL SUCH AS JUNCTION AND PULL BOXES REQUIRED BY THE SPECIFICATIONS AND THE NATIONAL ELECTRICAL CODE(NEC). PROVIDE ALL MATERIALS AND METHODS CALLED FOR IN THE SPECIFICATIONS AND AS REQUIRED IN THE NEC TO PROVIDE A COMPLETE INSTALLATION OF ALL WORK.

KEYED NOTES: DEMOLITION

(1) EXISTING ELECTRICAL DISCONNECTS SHALL BE REMOVED TEMPORARY AND REINSTALL ONCE THE NEW HVAC UNIT IS IN PLACE. FIELD VERIFY EXISTING CONDITIONS AND REFER TO MECHANICAL DOCUMENTS.

(2) EXISTING HVAC UNIT TO BE REMOVED AND DISCARDED. REFER TO MECHANICAL DOCUMENTS.

(3) EXISTING ELECTRICAL SERVICE EQUIPMENT, EXISTING A/C PANEL AND 2 OTHER PANEL LOCATIONS. FIELD VERIFY EXISTING CONDITIONS.

(4) EXISTING HVAC UNIT DISCONNECT OR BREAKER AND RELATED CONDUIT TO BE REMOVED.

TRINITY
MEP ENGINEERING

12/22/2021

PROJECT # : - - - - -
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REVISION:

WEBB COUNTY MECHANICAL RETROFIT

LAREDO — J.P. PRECINT 2 PLACE 2 / CASA ORTIZ — TEXAS

EP02

EXHIBIT "C"

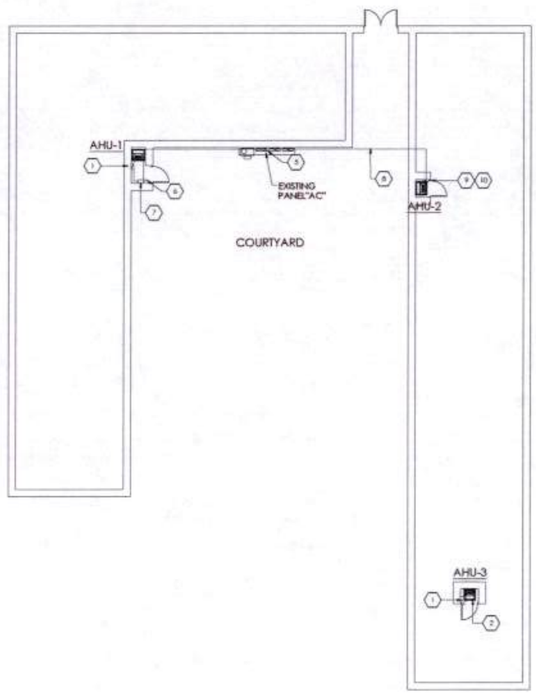
PROJECT # : - - - - -
DATE: - - - - - - -
CHECKED BY: LM

REVISION:

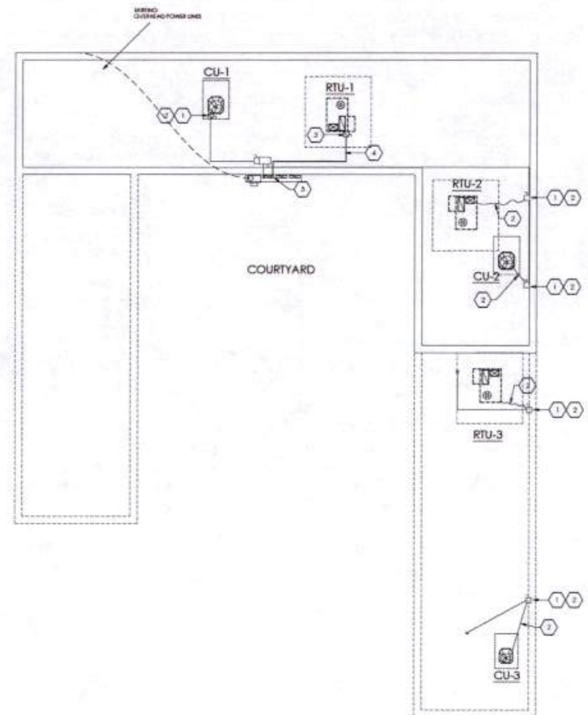
WEBB COUNTY MECHANICAL RETROFIT

J.P. PRECINT 2 PLACE 2 / CASA ORTIZ

LAREDO TEXAS



PLAN NORTH (A) CASA ORTIZ 1ST FLOOR ELECTRICAL EQUIPMENT PLAN
SCALE : 3/32" = 1'-0



PLAN NORTH (B) CASA ORTIZ ROOF ELECTRICAL EQUIPMENT PLAN
SCALE : 3/32" = 1'-0

GENERAL NOTES: POWER

A. ELECTRICAL CONTRACTOR SHALL MAKE FINAL CONNECTION TO H.V.A.C. EQUIPMENT, PLUMBING EQUIPMENT. REFER TO PANEL SCHEDULE FOR WIRE SIZE.

B. COORDINATE EXACT LOCATION OF ALL MECHANICAL EQUIPMENT IN ACCORDANCE W/MECHANICAL DRAWINGS TO MEET ELECTRICAL AND MECHANICAL REQUIRED CLEARANCE BY THE LATEST CODE.

C. CONTRACTOR SHALL REFER TO EQUIPMENT SUBMITTAL FOR ALL ELECTRICAL REQUIREMENTS PRIOR TO COMMENCING ANY WORK.

F. ELECTRICAL CONTRACTOR SHALL PROVIDE J-BOX AND CONDUIT FOR H.V.A.C. CONTROLS AND THERMOSTATS. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.

G. ALL NEW CONDUIT ELECTRICAL CONDUIT SHALL BE CONCEALED AS MUCH AS POSSIBLE.

KEYED NOTES: POWER

(1) EXISTING ELECTRICAL DISCONNECT SHALL BE REUSE FOR RECONNECTION. FIELD VERIFY EXISTING CONDITIONS.

(2) CONNECT TO EXISTING ELECTRICAL CIRCUIT SERVING HVAC UNIT. FIELD VERIFY EXISTING CONDITIONS. PROVIDE NEW WIRE TO MATCH EXISTING WIRE SIZE TO CONNECT TO NEW UNIT. FIELD VERIFY EXISTING WIRING PRIOR TO BID.

(3) CONTRACTOR SHALL PROVIDE NEW CIRCUIT IN EXISTING PANCEL-AC. PROVIDE NEW 1-45AMP 3-POLE BREAKER IN SPACE AVAILABLE. CIRCUIT WIRING SHALL BE 3#4, 1#8G, 1.25"C.

(4) CONTRACTOR SHALL PROVIDE NEW CONDUIT ROOF SUPPORTS AT EVERY 10'MIN. ROOF SUPPORTS SHALL BE EQUAL TO MFR. MIRO INDUSTRIES B-BASE STRUT-5 SERIES. PROVIDE TO MATCH CONDUIT SIZE.

(5) PROVIDE NEW CONDUIT DOWN TO EXISTING PANEL-"AC" LOCATION. SEAL AROUND CONDUIT OPENING WITH WEATHER PROOF SEALANT.

(6) CONTRACTOR SHALL PROVIDE NEW CIRCUIT IN EXISTING PANCEL-AC. PROVIDE NEW 1-35AMP 2-POLE BREAKER IN SPACE AVAILABLE. CIRCUIT WIRING SHALL BE 2#8, 1#10G, 1"C.

(7) PROVIDE NEW DISCONNECT, 60AMP, 240V, SINGLE PHASE, 3WIRE, NEMA-3R, HEAVY DUTY, FUSED DISCONNECT, FUSED AT 35AMPS.

(8) SUPPORT CONDUIT TO SURFACE. FIELD VERIFY EXISTING CONDITIONS.

(9) CONTRACTOR SHALL PROVIDE NEW CIRCUIT IN EXISTING PANCEL-AC. PROVIDE NEW 1-30AMP 2-POLE BREAKER IN SPACE AVAILABLE. CIRCUIT WIRING SHALL BE 2#10, 1#10G, 3/4"C.

(10) PROVIDE NEW DISCONNECT, 30AMP, 240V, SINGLE PHASE, 3WIRE, NEMA-3R, HEAVY DUTY, FUSED DISCONNECT, FUSED AT 30AMPS.

TRINITY
MEP ENGINEERING

12/22/2021

EP03

STATUTORY PAYMENT BOND
Bond No. _____
Pursuant to Vernon's Texas Government Code
Title 10, Chapter 2253, as amended

(Penalty of this Bond must be 100% of Contract Amount)

THE STATE OF TEXAS §
§ KNOW ALL MEN BY THESE RESENTS:
COUNTY OF WEBB §

That we, **Temprite Mechanical, Inc.**, as Principal, and _____, as Surety, are hereby held and firmly bound unto the Webb County, Texas, hereinafter called Obligee, for the sole use, benefit, and protection of all claimants supplying public work labor and material (as hereinafter defined) in the prosecution of the work provided for in the written Contract hereinafter referred to, in the penal sum of **One Hundred Twenty-Seven Thousand One Hundred Dollars ($127,100.00)**, which is the full amount of Principal's contract with the named Obligee, for the payment of which sum the said Principal and Surety bind themselves, their heirs, executors, administrators, and successors, jointly and severally firmly by these presents.

WHEREAS, the Principal has entered into a written contract dated_____, with the Obligee named, to do and perform certain construction work as provided in said contract, to wit: **Webb County Justice of the Peace Precinct 2, Place 2 HVAC Upgrades**, the related plans, specifications, general conditions, and other contract documents, all of which are by reference made a part hereof.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH that if the Principal shall promptly make payment to all claimants supplying labor and material (as hereinafter defined) in the prosecution of the work provided for in said contract, the related plans, specifications, general conditions, and other contract documents, then this obligation shall be void, otherwise it shall remain in full force and effect.

PROVIDED HOWEVER, this Payment Bond is given and furnished by the Principal herein in compliance with Chapter 2253 of the Texas Government Code, as amended, and this Bond shall be solely for the protection and use of all claimants supplying public labor work or material (as hereinafter defined), and shall be solely for the protection and use of said claimants who have a direct contractual relationship with the Principal herein, or a subcontractor (as hereinafter defined) to supply public work labor or material.

Surety, for value received, stipulates and agrees that not change, extension of time, or other waiver or amendment of the terms of the Contract or the work thereunder, or any change in the method or amount of payment stipulated to be made by Obligee under the Contract, shall relieve Surety of its obligations hereunder, and Surety hereby waives notice of any such change, extension of time, waiver or amendment of the terms of the Contract, shall relieve Surety of its obligations hereunder, and Surety hereby waives notice of any such change, extension of time, wavier or amendment of the terms of the Contract or to the work thereunder. The bond shall be automatically extended in time, without formal and separate amendment, to cover full and faithful performance of the Contract in the event of modification of the Contract, regardless of the length of time involved.

The undersigned corporate surety does by the execution of this Bond solemnly warrant and represent that it is duly authorized to do business in Texas.

IN WITNESS THEROF, Principal and Surety have signed and sealed this instrument on the _____ day of _____, 2022.

Temprite Mechanical, Inc.
Principal

By: _____

Printed Name: _____

Title: _____

_____
Surety

By: _____

Printed Name: _____

Title: _____

Mailing Address: _____

_____

Physical Address: _____

_____

Approved as to form:

_____
Attorney for Obligee

Telephone No.:(____) _____

NOTE: If Contractor is Partnership, all Partners should execute Bond.

NOTE:

(1) "Prime Contractor" as used herein means a person, firm, or corporation that makes a public work contract with a governmental entity. Tex. Govt. Code §2253.001(3).

(2) "Subcontractor" as used herein means a person, firm, or corporation that provides public work labor or material to fulfill an obligation to a prime contractor or to a contractor of the prime contractor for the performance and installation of any of the work required by a public work contract. Tex. Govt. Code §2253.001(9).

(2) "Public work labor" as used herein means labor used directly to carry out a public work. Tex. Govt. Code §2253.001(5).

(3) "Public work material" as used herein means: (A) material used, or ordered and delivered for use, directly to carry out a public work; (B) specially fabricated material; (C) reasonable rental and actual running repair costs for construction equipment used, or reasonably required and delivered for use, directly to carry out work at the project site; or (D) power, water, fuel, and lubricants used, or ordered and delivered for use, directly to carry out a public work. Tex. Govt. Code §2253.001(6).

(4) "Specially fabricated material" as used herein means material ordered by a prime contractor or subcontractor that is: (A) specially fabricated for use in a public work; and (B) reasonably unsuitable for another use. Tex. Govt. Code §2253.001(8).

(5) This Bond must be furnished before any work is commenced.

(6) This Payment Bond is required for all public works contracts in excess of $25,000 involving a contract for construction, alteration, or repair of any public building or the completion or prosecution of any public work.

(7) The Surety must be a corporate surety duly authorized to do business in Texas.

(8) This Payment Bond must be in the amount of the contract.

(9) The Power of Attorney from the corporate surety should be attached to this Payment Bond.

STAUTORY PERFORMANCE BOND

Bond No. _____

Pursuant to Vernon's Texas Government Code
Title 10, Chapter 2253, as amended

(Penalty of this Bond must be 100% of Contract Amount)

THE STATE OF TEXAS §
§ KNOW ALL MEN BY THESE PRESENTS:
COUNTY OF WEBB §

That we, Temprite Mechanical, Inc., as Principal, and _____ as Surety, are hereby held and firmly bound unto the Webb County, Texas, hereinafter called Obligee, in the penal sum of **One Hundred Twenty-One Thousand One Hundred Dollars ($121,100.00)**, which is the full amount of Principal's contract with the named Obligee, for the payment of which sum the said Principal and Surety bind themselves, their heirs, executors, administrators, and successors, jointly and severally firmly by these presents.

WHEREAS, the principal has entered into a written contract date_____, with Obligee named, to do and perform certain construction work as provided in said contract, to wit: **Webb County Justice of the Peace Precinct 2, Place 2 HVAC Upgrades**, and the related plans, specifications, general conditions, and other contract documents, all of which are by reference made a part hereof.

NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION IS SUCH that if the Principal shall faithfully perform all of the work in accordance with the plans, specifications, general conditions, and contract documents, and shall faithfully perform each, every, and all other obligations incumbent upon him under the terms of said written contract referred to, and shall fully indemnify and save harmless the Obligee from all costs, expense, and damage which it may suffer or incur because of the Principal's default, or failure to do so, then this Obligation shall be void, otherwise it shall remain in full force and effect.

In the event Principal shall default in the faithful performance of the work called for by said written contract, plans, specifications, and contract documents, the Surety shall, within 15 days of the determination of default (determined as provided in said contract, general conditions and contract documents), take over and assume completion of said contract, or within such 15-day period make other arrangements satisfactory with the Obligee for completion of the contract, and said Surety shall become entitled thereupon to the payment or benefit of the balance of the contract price as the same matures according to its terms.

The Surety, for the protection of the Obligee herein, waives notice of, and hereby consents to any subsequent modification or alteration both in the work to be performed by the Principal, and the consequent price or sums to be paid by the Obligee, as well as any other change or amendment, addition, or deletion in the contract documents during the progress of the work, including, but not limited to, all extensions of time or other indulgences permitted the Principal.

Notwithstanding any other provision, the liability of the surety on this Bond shall never exceed the penal sum stated in the first paragraph.

This Performance Bond is given and furnished by the Principal herein in compliance with Chapter 2253 of the Texas Government Code, as amended, and all liabilities on this bond shall be determined in accordance with the provisions of this Chapter, to the same extent as if it were copied at length herein and is solely for the protection of the Obligee herein.

The undersigned corporate surety does, by the execution of this Bond, solemnly warrant and represent that it is duly authorized to do business in Texas.

IN WITNESS THEREOF, Principal and Surety have signed and sealed this instrument on the _____day of _____, 2022.

Temprite Mechanical Control, Inc.
Principal

By: _____

Printed Name:_____

Title:_____

_____
Surety

By:_____

Printed Name:_____

Title: _____

Mailing address:_____

_____

Physical Address:_____

_____

Telephone No.: (____) _____

Approved as to form:

_____
Attorney for Obligee

NOTE:

(1) This Performance Bond is required for all contracts in excess of $100,000 involving a contract for construction, alteration, or repair of any public building or the completion or prosecution of any public work.
(2) This bond must be payable to the awarding authority, Webb County, as the named Obligee, and it must be approved as to form by such awarding authority.
(3) This Bond must be furnished before any work is commenced.
(4) Surety must be a corporate surety duly authorized to do business in Texas.
(5) This Performance Bond must be in the full amount of the contract which it secures.
(6) Power of Attorney from corporate surety should be attached to this Performance Bond.

Exhibit "G"

NOTICE TO PROCEED

Date: _____

To: _____

Project: Webb County HVAC Upgrades J.P. Precinct 2, Place 2 Buildings

In accordance with the construction contract dated 23rd day of May, 2022, you are hereby notified to commence work on _____. Contract time is _____ Calendar (___) Calendar Days.

The above NOTICE TO PROCEED is hereby acknowledged by

_____

this the _____ day of 2022.

_____
Authorized Signature

_____
Typed Name:
Title: _____