

**Date**

August 10, 2023

**Owner**

Terrebonne Parish Consolidated Government  
P O Box 2768  
Houma LA 70361

**Addendum Number One**

**For**

**Project Specifications for**

**AMERICAN LEGION POST 31 PHASE 3 HVAC RENOVATION**

603 Legion Avenue Houma, LA 70360

**Parish President**

Gordon E. Dove

**Terrebonne Parish Council Members**

John Navy (District 1)

Carl Harding (District 2)

Gerald Michel (District 3)

John Amedee (District 4)

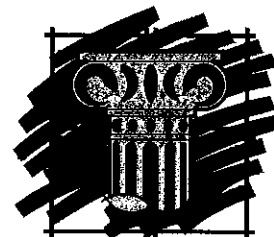
Jessica Domangue (District 5)

Darrin Guidry (District 6)

Daniel Babin (District 7)

Dirk Guidry (District 8)

Steve Trosclair (District 9)



**Architect**

Craig C. Hebert, Architect  
A Professional Architectural Corporation  
P.O. Box 3447  
Houma, LA 70361

**Parish Project Number**

**19-BLDG-30**

**Architectural Project Number**

**2019-01b**

**GENERAL REQUIEMENTS:**

1. The provisions of the Contract Documents are hereby made a part of this Addendum.
2. This Addendum modifies the Original Contract Documents; Drawings dated April 25, 2023, and Specifications dated April 20, 2023.
3. All Bidders must acknowledge, in their bid, receipt of this Addendum in the designated area of the Bid Form. (*See Bidding Requirements – Bid Form, in the Contract Specifications*)
4. Attached to this project Addendum is a copy of the Non-Mandatory Pre-Bid Sign-In sheet.

**ARCHITECTURAL:**

**A. Project Manual – Modifications, Additions, Deletions and Corrections:**

1. Section 08100 – Hollow Metal Door Frame and Hollow Metal Doors

**B. Project Drawings – Modifications, Additions, Deletions, and Corrections:**

1. **ADD** – Architectural Drawing Sheet A-1.1

**C. No Prior Approvals:**

**STRUCTURAL:** (*No additions or modifications, as per this Addendum.*)

**MECHANICAL:**

**A. Project Manual – Modifications, Additions, Deletions and Corrections:**

1. Section 08100 – Hollow Metal Door Frame and Hollow Metal Doors
2. Section 15150 – Plumbing Demolition see attached
3. Section 15250 – HVAC Demolition see attached
4. Section 15870 – Adjustable Frequency Drive see attached

**B. Project Drawings – Modifications, Additions, Deletions, and Corrections:**

1. **ADD** – Architectural Drawing Sheet A-1.1
2. **REPLACE** – Sheet AC-1 with revised sheet M-1 Revision 1.
3. **REPLACE** – Sheet AC-2 with revised sheet M-2 Revision 1.
4. **REPLACE** – Sheet AC-3 with revised sheet M-3 Revision 1.
5. Pertaining to sheet AC-4
  - a. Make necessary changes to provided controls schematic to accommodate indoor unit changes to HP-2.



**C. No. Prior Approvals:**

**ELECTRICAL:**

**A. Project Manual – Modifications, Additions, Deletions and Corrections:**

1. Section 08100 – Hollow Metal Door Frame and Hollow Metal Doors
2. Section 15150 – Plumbing Demolition see attached
3. Section 15250 – HVAC Demolition see attached
4. Section 15870 – Adjustable Frequency Drive see attached

**B. Project Drawings – Modifications, Additions, Deletions, and Corrections:**

1. **ADD** – Architectural Drawing Sheet A-1.1
2. **REPLACE** – Sheet E-1 with revised sheet E-1 Revision 1.
3. **REPLACE** – Sheet E-2 with revised sheet E-2 Revision 1.
4. **REPLACE** – Sheet E-3 with revised sheet E-3 Revision 1.

**C. No. Prior Approvals:**

**Contractor Questions:**

- Q:** Claude Thompson Jr.: Please see attached. Drawing AC-2 shows ONE (1) AHU in each mechanical room, but the unit schedule lists TWO (2) AHUs for each mechanical room. So, is there supposed to be ONE (1) 20-ton AHU in each mechanical room or TWO (2) 10-ton units in each mechanical room?
- A:** Taylor LeBlanc: Each Mech Room shall have One DOAS Unit and one AHU. The indoor unit schedule refers to the required LEV kits to use the VRF heat pumps with an AHU. Each AHU will require two LEV kits (10-ton). Please refer to the Air Handler schedule on AC-3 for Air Handler Specifications.

**End of Addendum Number One**



## **SECTION 08100 - METAL DOORS AND FRAMES**

### **PART 1 - GENERAL**

#### **1.1 Description**

- A. Work included: Provide metal doors, and metal door frames, where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.
- B. Related work:
  - 1. General Conditions and Sections in Division 1 of these Specifications
  - 2. Section 08100 – Metal Doors and Frames
- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- B. Unless specifically otherwise approved by the Architect, provide all products of this Section from a single manufacturer.
- C. Conform to Requirements of SDI 100 and ADAAG.

#### **1.3 References**

- A. ASTM A525 - Steel Sheet, Zinc Coated (Galvanized) by the Hot-Dip Process.
- B. ASTM E152 - Methods of Fire Tests of Door Assemblies
- C. DHI - Door Hardware Institute
- D. NFPA 80 - Fire Doors and Windows
- E. NFPA 252 - Fire Tests for Door Assemblies
- F. SDI 100 - Standard Steel Doors and Frames
- G. UL 10B - Fire Tests of Door Assemblies
- H. ADAAG - Americans with Disabilities Act Accessibility's Guidelines

#### **1.4 Submittals**

- A. Comply with pertinent provisions of Section 01340 – Submittals and Substitutions.



- B. Product data: Within 30 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
1. Materials list of items proposed to be provided under this Section.
  2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.
  3. Shop Drawings showing details of each frame type, elevations of door designs, details of openings, and details of construction, installation, and anchorage.
  4. Manufacturer's recommended installation procedures which, when approved by the Architect, will become the basis for accepting or rejecting actual installation procedures used on the Work. Based on Manufacturer testing, lab to verify system is approved for installation in this project.

### 1.5 Product Handling

- A. Comply with pertinent provisions of Section 01640 – Product Handling.

## PART 2 - PRODUCTS

### 2.1 Metal Doors

- A. Type and design:
1. Door Mark #1
    - a. Hollow Metal 1 3/4" Legion (LP) Polystyrene Core Doors shall be 16 Gauge Galvanized Steel SDI-100 Grade III for exterior doors, Extra Heavy Duty by The Ceco Corporation or approved equal in the dimensions and shape shown on the drawings.
    - b. Door #1 (a pair door unit) with one (1) 3'-0" active leaf and one (1) inactive 2'-0" leaf. Contractor to provide standard storage room hardware astragal on 2'-0" door leaf. Contractor to provide all necessary seals to prevent air infiltration into mechanical room. Hardware to be continue gear hinge both leaves.
- B. Finish:
1. Pre-clean and shop prime each door for finish painting which will be performed at the job site under Section 09900 of these Specifications.
- C. Acceptable products:
1. The Ceco Corp., Amweld Division of American Welding and Manufacturing Company, and Steelcraft Manufacturing Co.
  2. Equal Products of other manufacturer when approved in accordance with Section 01340, 1.2 Quality Assurance, Item C, of the Contract Specifications.



## 2.2 Metal Frames

- A. Door frames shall be 14-gauge galvanized steel for exterior/interior doors, Hollow Metal Frames, factory-assembled with bonderized, baked-on prime coat on all accessible surfaces; sizes and shapes as detailed and required; metal stud, anchors system.
- B. Cased opening frames shall be 14 ga. Galvanized steel for interior cased openings, Hollow Metal Frames, factory-assembled with bonderized, baked-on prime coat on all accessible surfaces; size and shape as detailed and required, including metal stud anchors system.
- C. Double Egrees 2 Hr. Rated Door Frame shall be 14 ga. Galvanized steel frame for Interior door (door mark # 2), factory-assembled with bonderized, baked-on prime coat on all accessible surfaces; sizes and shapes as detailed and required; metal stud anchors system.
- D. Doorframes shall have 5" x 10" x 7-gauge reinforcement for butts, 12 gauge reinforcement for strikes, overhead door holders, closers, and all other items of hardware. Frames over 42" wide shall have 12 gauge formed continuous channel full width of frame at head.
- E. Frames shall be saw-mitered and continuously welded at the return, face, rabbet and stop. Doorframes shall be punched in at least 2 places in each jamb for both door and transom panels to receive G-J 64 rubber silencers. Provide double temporary spreaders and a minimum of 2 holes in floor anchors. Knockdown type frames are not acceptable.
- F. Provide sinkages or mortises in accordance with detailed Hardware Schedule and templates supplied by hardware supplier. Form accurately to template so hardware will fit neatly into depressions with member flush unless otherwise indicated.
- G. Provide angle frame supports as needed.
- H. Jamb Anchors: Furnish as required to secure frames to adjacent construction, formed of not less than 18-gauge galvanized steel.
  - 1. Stud Partitions: Insert type with notched clip to engage metal stud, welded to back of frames. Provide at least 4 anchors for each jamb up to 7'-6" door height.
- I. Plaster Guards: Provide 24-gauge steel plaster guards or dust cover boxes welded to frame at back of finish hardware cutouts where mortar or other materials might obstruct hardware installation.
- J. Provide temporary wood spreaders in all door frames to prevent bending, warping or distorting of frames.



- K. Fabricate frames to suit masonry wall coursing with 4-inch head member.

### **2.3 Shop Painting**

- A. Clean galvanized surfaces of mill scale, rust, oil, grease, dirt and other foreign matter.
- B. Pretreat cleaned surface in accordance with SSPC-PT2, PT3, or PT4.
- C. Apply smooth, uniform coat of primer not less than 2.0 mils dry film thickness.

### **2.4 Finish Hardware**

- A. Secure templates from the finish hardware supplier, and accurately install, or make provision for, all finish hardware at the factory.

## **PART 3 - EXECUTION**

### **3.1 Surface Conditions**

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

### **3.2 Installation**

- A. Placing frames:
  - 1. Where practicable, place frames prior to construction of enclosing walls and ceilings.
  - 2. Set frames accurately into position, plumbed, aligned, and braced securely until permanent anchors are set.
  - 3. After wall construction is completed, remove temporary braces and spreaders, leaving surfaces smooth and undamaged.
  - 4. At in-place construction, set frames and secure to adjacent construction with machine screws and suitable anchorage devices. Provide "Z" fillers at each screw location.
  - 5. When installed in prepared openings in concrete construction, provide sealant between frame and concrete in accordance with provisions of Section 07920 – Sealants and Caulking of these Specifications.
- B. Placing Doors:
  - 1. Install doors in accordance with SDI-100 and DHI.
  - 2. Coordinate installation of doors with installations of frames and finish hardware specified in Section 08710 – Finish Door Hardware.
  - 3. Touch-up factory primed doors with primer prior to applying finish coats.



### **3.3 Adjust and Clean**

- A. Final adjustments:
1. Check and readjust operating finish hardware items in hollow metal work just prior to final inspection.
  2. Leave work in complete and proper operating condition.
  3. Remove defective work and replace it with work complying with the specified requirements.

**END OF SECTION**





## **SECTION 15150 - PLUMBING DEMOLITION**

### **PART 1 - GENERAL**

#### **1.1 WORK INCLUDES**

- A. Plumbing Contractor shall provide ALL labor, materials, equipment, and services necessary or incidental to the completion of all work of this section, as shown on the drawings, herein specified, or otherwise required.
  - 1. Mechanical demolition.
  - 2. Cutting and Patching.

### **PART 2 - PRODUCTS**

#### **2.1 MATERIALS AND EQUIPMENT**

- A. Materials and equipment shall be as specified in individual Sections.

### **PART 3 - EXECUTION**

#### **3.1 EXAMINATION**

- A. THE DRAWINGS ARE INTENDED TO INDICATE THE GENERAL SCOPE OF WORK AND DO NOT SHOW EVERY PIPE, DUCT, OR PIECE OF EQUIPMENT THAT MUST BE REMOVED. THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY CONDITIONS PRIOR TO SUBMITTING A BID.
- B. Where walls, ceilings, etc., are shown as being removed on general drawings, the Contractor shall remove all mechanical equipment, devices, fixtures, piping, ducts, systems, etc., from the removed area.
- C. Where ceilings, walls, partitions, etc., are temporarily removed and replaced by others, This Contractor shall remove, store, and replace equipment, devices, fixtures, pipes, ducts, systems, etc.
- D. Verify that abandoned utilities serve only abandoned equipment or facilities. Extend services to facilities or equipment that shall remain in operation following demolition.
- E. Coordinate work with all other Contractors and the Owner. Schedule removal of equipment to avoid conflicts.



- F. This Contractor shall verify all existing equipment sizes and capacities where equipment is scheduled to be replaced or modified, prior to ordering new equipment.
- G. Bid submittal shall mean the Contractor has visited the project site and verified existing conditions and scope of work.

### 3.2 PREPARATION

- A. Disconnect plumbing systems in walls, floors, and ceilings scheduled for removal or modification.
- B. Provide temporary connections to maintain existing systems in service during construction. When work must be performed on operating equipment, use personnel experienced in such operations.
- C. Existing Plumbing System: Maintain service to all plumbing fixtures until new piping is installed. Obtain permission from Owner and Engineer at least 72 hours before shutting down system for any reason. Make any changeover to new piping with minimum outage.

### 3.3 DEMOLITION AND EXTENSION OF EXISTING MECHANICAL WORK

- A. Demolish and extend existing plumbing work under provisions of Division 2 and this Section.
- B. Remove, relocate, and extend existing installations to accommodate new construction.
- C. Remove abandoned piping to source of supply and/or main lines.
- D. Remove exposed abandoned pipes, including abandoned pipes above accessible ceilings. Cut pipes above ceilings, below floors and behind walls. Cap remaining lines. Repair building construction to match original. Remove all clamps, hangers, supports, etc. associated with pipe and duct removal.
- E. Disconnect and remove mechanical devices and equipment serving equipment that has been removed.
- F. Repair adjacent construction and finishes damaged during demolition and extension work.
- G. Extend existing installations using materials and methods compatible with existing installations, or as specified.
- H. Remove unused sections of domestic water piping back to mains and cap. Capped pipe shall be less than 2 feet from main to prevent "dead legs".



- I. Temporarily cap all openings to the sanitary and vent system to prevent odor from entering the work area and building.

### 3.4 CUTTING AND PATCHING

- A. This Contractor is responsible for all penetrations of existing construction required to complete the work of this project. Refer to Section 22 05 29 for additional requirements.
- B. Penetrations in existing construction should be reviewed carefully prior to proceeding with any work.
- C. Penetrations shall be neat and clean with smooth and/or finished edges. Core drill where possible for clean opening.
- D. Repair existing construction as required after penetration is complete to restore to original condition. Use similar materials and match adjacent construction unless otherwise noted or agreed to by the Architect/Engineer prior to start of work.
- E. Floor slabs may contain conduit systems. This Contractor is responsible for taking any measures required to ensure no conduits or other services are damaged. This includes x-ray or similar non-destructive means.
- F. This Contractor is responsible for all costs incurred in repair, relocations, or replacement of any cables, conduits, or other services if damaged without proper investigation.

### 3.5 CLEANING AND REPAIR

- A. Clean and repair existing materials and equipment which remain or are to be reused.
- B. Clean all systems adjacent to project which are affected by the dust and debris caused by this construction.
- C. Plumbing items removed and not relocated remain the property of the owner. Contractor shall place items retained by the owner in a location coordinated with the owner. The contractor shall dispose of material the owner does not want to reuse or retain for maintenance purposes. Care shall be taken by the Contractor in removing items to be retained by the Owner to prevent any damage to the item (s).

### 3.6 SPECIAL REQUIREMENTS

- A. Review locations of all new penetrations in existing floor slabs or walls. Determine construction type and review for possible interferences. Bring all concerns to the attention of the Architect/Engineer before proceeding.



**END OF SECTION 15150**



## **SECTION 15250 - HVAC DEMOLITION**

### **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 DESCRIPTION OF WORK**

- A. Prior to submitting a bid, the Mechanical Contractor shall perform a detailed walk-through field inspection, to review the existing structures and premises, to determine all existing conditions, equipment/ductwork/piping locations, etc. and shall make all necessary allowances for all required mechanically related demolition and relocation work. This pre-bid inspection by the Mechanical Contractor shall include inspection of all applicable accessible ceiling cavity, areas, etc.
- B. Should the Mechanical Contractor take any exceptions to providing any related demolition or relocation work, such exceptions shall be stated in detail within the Prime Contractor's bid. No subsequent allowance to the contract cost shall be made for any insufficient allowances made by the Mechanical Contractor during bidding which may result from the Mechanical Contractor's failure to visit the job site and review drawings.
- C. Some HVAC demolition work will have to be phased due to ongoing work at the site that is under separate contract. HVAC equipment must remain operational and cannot be removed until HVAC equipment under separate contract is operational to replace the areas served by the equipment to be removed.
- D. The Mechanical Contractor shall protect the existing HVAC systems from damage and shall be responsible for any damage to these systems during demolition and construction. The Mechanical Contractor shall be responsible for turning these existing systems back over to the owner in the same operating condition as the contractor received it. The mechanical contractor shall be responsible for repairing or replacing any malfunctioning systems, components or deficient systems that are damaged due to this Contracts work. Repairs/replacements required from damage shall be done to the satisfaction of the Owner.
- E. Demolition related work may not be specifically indicated on drawings but shall be included under base bid. All mechanically related demolition, relocation, etc. work, including work described herein, shall be under base bid.
- F. It is not the intent of these contract documents that existing conditions be accurately shown. Existing mechanical work is shown to a limited extent on drawings and is



shown for general planning reference only. Such locations, etc. have been located from portions of contract documents which were prepared for previously installed work (not from "as-builts") and from site visits.

- G. The existing ductwork systems may be utilized only to the extent indicated herein or on drawings and/or as directed by Owner's representative in field.

## **PART 2 - PRODUCTS**

### **2.1 NOT USED**

## **PART 3 - EXECUTION**

### **3.1 EFFECT ON ADJACENT OCCUPIED AREAS**

- A. Locate, identify, and protect existing mechanical services passing through demolition areas and serving other areas outside the demolition limits. Maintain services to areas outside demolition limits. When services must be interrupted, install temporary services (including proper filtration) for affected areas. There is other work ongoing at the site and demolition shall be coordinated with that work. Some work of the HVAC demolition shall be delayed until a new hvac system is installed under that work and contract. No additional cost will be allowed for delay for this phasing of demolition.
- B. It is recognized that there may be some ductwork and/or piping systems rendered inactive by demolition, causing disconnection of "downstream" terminals, equipment, etc. which serve occupied areas. It shall be the responsibility of the Mechanical Contractor to investigate these types of conditions (for all systems) prior to demolition. Provide all necessary corrective mechanical work prior to demolition to ensure that such "downstream" work remain permanently active throughout demolition, new construction and after project completion.
- C. All work and system shutdowns shall be carefully coordinated in advance with owner's representative and all affected trades so that normal building activities and other construction trades are minimally affected. All required mechanical related demolition and/or new construction work, which will affect any and all occupied areas (including those which are located outside the immediate area of project work) shall be performed at special times if/as directed by Owner's representative in field.
- D. All existing systems and components shall remain fully operational in all occupied spaces during all occupied periods.
- E. Provide and maintain temporary partitions or dust barriers adequate to prevent the spread of dust and dirt to adjacent finished areas and/or other system components. During cutting and patching operations, protect adjacent installations. Remove protection and barriers after demolition operations are complete.



### 3.2 WORK IN EXISTING SPACES

- A. General: Care shall be taken when working in existing spaces so as not to damage existing walls and ceilings where work is being performed.
- B. Existing Ceilings: Where work is being performed above ceilings, and the architectural drawings do not indicate ceiling modifications by the General Contractor, it shall be the responsibility of this contractor to remove and replace existing ceilings where work is being performed. In those instances, all repair and installation of new grid, ceiling panels, etc shall be the responsibility of this contractor. Match existing finishes.
- C. New Ceilings: Where existing air outlets are to remain, and the architectural drawings indicate replacement of the ceilings, this contractor shall temporarily remove air outlets, clean and store temporarily. This contractor shall support existing run outs to structure to facilitate replacement of ceiling. This contractor shall re-install existing air outlets at previous locations and extend run outs to air outlets after new ceiling is installed. Refer to architectural drawings for all required ceiling replacements. Coordinate with all trades prior to re-installation.
- D. Walls & Floors: It shall be the responsibility of this contractor to patch existing walls and floors and match existing finishes where work is being removed or installed and patching is being performed, unless noted otherwise on the architectural drawings.
- E. HVAC Units: Replace all air filters in all HVAC equipment serving renovated space prior to turning space over to owner.
- F. If asbestos, PCB's, or other hazardous materials are encountered in the course of the work, stop work in the vicinity of such materials and report their presence to the Owner. Owner will arrange for proper removal and disposal of hazardous materials.

### 3.3 GENERAL DEMOLITION

- A. Provide complete mechanical demolition as required for all systems throughout all project areas not indicated to be salvaged or saved. Unless specifically noted otherwise on plans or determined otherwise during this contractor's pre-demolition survey, all abandoned existing mechanical work in the project areas shall be disconnected and removed in its entirety by the Mechanical Contractor. All related work shall comply with the notes specified herein.
- B. Provide demolition work as required to clear and remove all existing mechanical work to be abandoned and as required to accommodate all new work of all trades. In general, remove existing related ductwork, piping, control media, etc. back to nearest concealed accessible terminal or take-off "upstream". Extend ductwork, piping, etc. as required to accommodate new or relocated mechanical work.



- C. Remove abandoned, inactive and obsolete equipment, ductwork, piping, etc. Abandoned work embedded in floors, walls, and ceilings may remain if such materials do not interfere with new installations. Remove all abandoned materials above accessible ceilings.
- D. Perform cutting and patching required for demolition in accordance with the contract documents.
- E. All abandoned ductwork or piping shall be removed and capped back to respective sources, even if sources are outside of the confines of the project area. Coordinate all work carefully with Owner prior to beginning any mechanical demolition work.
- F. All ductwork, piping, etc. conflicting with construction related work of any and all trades shall be removed and/or relocated by the Mechanical Contractor as necessary and/or as directed by Owner's representative in the field. Mechanical disconnections (and/or reconnections) for equipment to be removed (and/or relocated) shall be by the Mechanical Contractor. This shall apply to all existing mechanical work whether shown on drawings or not.
- G. All refrigerant evacuations and reclaim shall be required for demolished or relocated equipment.
- H. Disposal and Cleanup: Remove from the site and legally dispose of demolished materials and equipment not indicated to be salvaged.
- I. Provide new work as required to accommodate relocations, etc. Routing of all new ductwork in existing buildings shall be held tight to structure above wherever possible and shall be approved by owner's representative prior to installation.

### 3.4 DISPOSITION OF REMOVED EQUIPMENT & MATERIALS

- A. Except where specifically noted otherwise herein or on drawings, all mechanical work shown on new work plans shall be new.
- B. If required to accommodate construction related activities, remove and reinstall any conflicting fixtures, devices or equipment that are to remain.
- C. All abandoned materials removed during demolition and thereafter shall be referred to the Owner's representative for disposal instructions. All materials which the Owner elects to retain shall be neatly stored at the site by the Mechanical Contractor as designated by the Owner's representative. All materials which the Owner elects not to retain shall be disposed of by the Mechanical Contractor in a lawful manner.
- D. All fixtures, devices or equipment designated for salvage (removal and reuse, or for turning over to Owner) shall be disconnected and removed undamaged. Disconnect all





pigtails, etc. from equipment terminal points and carefully transport and neatly store same to a protected on-site storage location as directed in field.

- E. Components to be reused shall be cleaned (inside and out) and reinstalled where indicated on drawings. Modify and/or extend related existing ductwork and/or piping as required.
- F. Components turned over to Owner shall be neatly stored as groups by system type.

### **3.5 PRE-EXISTING CODE VIOLATIONS**

- A. All existing work which is accessed and/or used under this project shall be inspected and brought into compliance with current codes and standards by the Mechanical Contractor. This shall apply only to the extent that such work is uncovered in the immediate project areas affected by demolition and/or new construction and only to the limited extent that it applies to pre-existing general installation methods (i.e. a missing hanger/support, a missing seal and other minor incidental work.
- B. If more extensive code or safety violations are discovered by the Mechanical Contractor, they shall be immediately brought to the attention (detailed in writing) of the Owner's representative along with the contractors proposed cost for corrections.

### **3.6 INTERIM LIFE SAFETY WORK**

- A. Provide interim fire protection work in all demolition and construction areas for full code coverage. Further definition will be provided in field if required.

### **3.7 INTERIM INDOOR AIR QUALITY (IAQ) WORK**

- A. All requirements of this IAQ subsection shall be implemented prior to commencement of any demolition/construction activities.
- B. No airborne dust or particulate matter shall be permitted to enter any occupied spaces or any air intakes to existing systems.
- C. Become familiar with all affected HVAC systems to ensure that positive pressure can be maintained, relative to construction areas, in all areas adjacent to construction areas. This shall include all possible operational sequences of all systems such, including operation of smoke control, fire dampers, etc.
- D. All return air and exhaust air terminals within all demolition/construction spaces shall be covered and properly sealed until construction is complete.



- E. All air filters shall be checked at the beginning and end of each work shift and shall be changed in-kind as required to permit free airflow at all times.
- F. Provide temporary exhaust throughout all demolition/construction spaces to ensure proper negative pressure is maintained relative to adjacent areas, including allowances for normal construction traffic through all access doors. Ensure that no windows or doors are left open which could upset the desired negative pressure.
- G. Designate a dedicated qualified person to be on site to monitor all IAQ requirements, including checking filters three to four times per shift, checking for any breeches (by any contractor) such as drilled/cut openings in walls/floors, open windows, etc. Ensure that openings through walls and floors (by any contractor) are made immediately prior to installation of work and properly/permanently sealed immediately thereafter.

**END OF SECTION 15250**



## SECTION 15870 - MECHANICAL - ADJUSTABLE FREQUENCY DRIVES

### PART 1 GENERAL

#### 1.1 SCOPE

- A. This specification describes the electrical, mechanical, environmental, agency and reliability requirements for three-phase, Adjustable Frequency Drives (AFD) as specified herein as shown on the contract drawings.

#### 1.2 REFERENCES

- A. The adjustable frequency drives and all components shall be designed, manufactured and tested in accordance with the latest applicable standards.
1. Institute of Electrical and Electronic Engineers (IEEE)
    - a) IEEE 519-1992: Guide for harmonic content and control
  2. Underwriters Laboratories (UL508C: Power Conversion Equipment)
    - a) UL
    - b) CUL
  3. National Electrical Manufacturer's Association (NEMA)
    - a) ICS 7.0: Industrial Controls & Systems for AFD.
  4. IEC 61800-2 and -3. EN 50082-1 and -2
    - a) Fulfill all EMC immunity requirements.
- B. In case of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.

#### 1.3 SUBMITTALS FOR REVIEW/APPROVAL

- A. The following information shall be submitted to the Engineer.
1. Dimensioned outline drawing.
  2. Control Schematic diagram.
  3. Power and control connection diagram(s).



- B. Submit at least five (5) copies of the above information

#### 1.4 SUBMITTALS FOR INFORMATION

- 1. Product bulletins
- 2. Technical product data sheets
- 3. Harmonic analysis result

#### 1.5 SUBMITTAL FOR COSE-OUT

- A. The following information shall be submitted for record purposes prior to final payment.
  - 1. Final as-built drawings and information for items listed in Section 1.04.1.
  - 2. Installation information.

#### 1.6 QUALIFICATIONS

- A. The supplier of the assembly shall be the manufacturer of the electromechanical power components used within the assembly, such as bypass contactors, power distribution circuit breakers, when specified. These parts, when specified, shall have a commonality with other manufacturer's products.
- B. For the equipment specified herein, the manufacturer shall be ISO 9001 certified. All equipment shall have been tested and listed by UL as complying with the requirements of UL508C.
- C. The supplier of this equipment shall have produced similar electrical equipment for a minimum period of ten (10) years. When requested by the Engineer, an acceptable list of installations with similar equipment shall be provided demonstrating compliance with this requirement.

#### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Equipment shall be handled and stored in accordance with the manufacturer's instructions. One (1) copy of these instructions shall be included with the equipment at time of shipment.

#### 1.8 OPERATION AND MAINTENANCE MANUALS

- A. Three (3) copies of the equipment operation and maintenance manuals shall be provided.



- B. Operation and maintenance manuals shall include the following information:
1. Instruction books
  2. Recommended renewal parts list.
  3. Drawings and information required by Section 1.03

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Prior Approval of vendors is required. Proposed suppliers shall submit brochures and other documentation to the Engineer sufficient to show that their equipment meets these specifications.

### 2.2 ADJUSTABLE FREQUENCY DRIVES (AFD)

- A. Where shown on the drawings, adjustable frequency drives shall have the following features:
1. The AFD shall provide microprocessor based control for three-phase induction motors. The controller's full load output current rating shall be based on Variable Torque application at 40° C ambient and 1-16 kHz switching frequency.
  2. The AFD shall be of the Pulse Width Modulated (PWM) design converting the utility input voltage and frequency to a variable voltage and frequency output via a two-step operation. Adjustable Current Source AFDs are not acceptable. Insulated Gate Bipolar Transistors (IGBT's) shall be used in the inverter section. Bipolar Junction Transistors, GTO's or SCR's are not acceptable. The AFD shall run at the above listed switching frequencies.
  3. The AFD shall have an efficiency at full load and speed that exceeds 95% for AFD below 15 HP and 97% for drive 15 HP and above. The efficiency shall exceed 90% at 50% speed and load.
  4. The AFD shall maintain a minimum line side displacement power factor of 0.96, regardless of speed and load.
  5. The AFD shall have a one (1) minute overload current rating of 110% for variable torque applications.
  6. The AFD shall be capable of operating any NEMA design B squirrel cage induction motor, regardless of manufacturer, with a horsepower and current rating within the capacity of the AFD.



7. The AFD shall have an integral EMI/RFI filter as standard.
8. The AFD shall limit harmonic distortion reflected onto the utility system to voltage and current levels as defined by IEEE 519-1992 for general systems applications, by utilizing the standard 3% nominal impedance integral AC three-phase line reactor. DC link chokes are not acceptable.
9. Any harmonic calculations shall be done based on the kVA capacity, X/R ratio and the impedance of the utility transformer feeding the installation, as noted on the drawings, and the total system load. The calculations shall be made with the point of common coupling (PCC) being the point where the utility feeds multiple customers.
10. Total harmonic distortion shall be calculated under worst case conditions in accordance with the procedure outlined in IEEE 519-1992. Copies of these calculations are to be made available upon request. The contractor shall provide any needed information to the AFD supplier three (3) weeks prior to requiring harmonic calculations.
11. The system containing the AFD shall comply with the 5% level of total harmonic distortion of line voltage and the line current limits as defined in IEEE 519-1992. If the system cannot meet the harmonic levels with the AFD provided with the standard input line reactor or optional input isolation transformer, the AFD manufacturer shall supply an eighteen pulse, multiple bridge rectifier AC to DC conversion section with phase shifting transformer for all drives above 75 HP. This eighteen pulse rectifier converter shall result in a multiple pulse current waveform that will more nearly approximate a true sinewave to reduce voltage harmonic content on the utility line. The phase shifting transformer shall be of a single winding type to optimize its KVA rating and harmonic cancellation capability. Harmonic filters are not accepted above 75 HP.
12. The AFD shall be able to start into a spinning motor. The AFD shall be able to determine the motor speed in any direction and resume operation without tripping. If the motor is spinning in the reverse direction, the AFD shall start into the motor in the reverse direction, bring the motor to a controlled stop, and then accelerate the motor to the preset speed.
13. Control Functions
  - a) Frequently accessed AFD programmable parameters shall be adjustable from a digital operator keypad located on the front of the AFD. The AFD shall have a 3 line alphanumeric programmable display with status indicators. Keypads must use plain English words for parameters, status, and diagnostic messages. Keypads



that are difficult to read or understand are not acceptable, and particularly those that use alphanumeric code and tables. Keypads shall be adjustable for contrast with large characters easily visible in normal ambient light.

- b) The keypad shall include a Hand-Off-Auto membrane selection and an Inverter/Bypass membrane selection. When in “Hand” the AFD will be started and the speed will be controlled from the up/down arrows. When in “Off”, the AFD will be stopped. In “Auto”, the AFD will start via an external contact closure or a communication network and the AFD speed will be controlled via an external speed reference.
- c) The keypad shall have copy/paste capability.
- d) Upon initial power up of the AFD, the keypad shall display a start up guide that will sequence all the necessary parameter adjustments for general start up.
- e) Standard advanced programming and trouble-shooting functions shall be available by using a personal computer’s RS-232 port and Windows™ based software. In addition the software shall permit control and monitoring via the AFD’ RS232 port. The manufacturer shall supply a CD-ROM with the required software. An easily understood instruction manual and software help screens shall also be provided. The computer software shall be used for modifying the drive setup and reviewing diagnostic and trend information as outlined in this section through Section 18.
- f) The operator shall be able to scroll through the keypad menu to choose between the following:
  - 1. Parameter Menu
  - 2. Keypad Control
  - 3. System Menu
  - 4. Expander Boards
  - 5. Monitoring Menu
  - 6. Operate Menu
- g) The following setups and adjustments, at a minimum, are to be available:
  - 1. Start command from keypad, remote or communications port
  - 2. Speed command from keypad, remote or communications port
  - 3. Motor direction selection
  - 4. Maximum and minimum speed limits



5. Acceleration and deceleration times, two settable ranges
  6. Critical (skip) frequency avoidance
  7. Torque limit
  8. Multiple attempt restart function
  9. Multiple preset speeds adjustment
  10. Catch a spinning motor start or normal start selection
  11. Programmable analog output.
14. The AFD shall have the following system interfaces:
- a) Inputs - A minimum of six (6) programmable digital inputs, two (2) analog inputs and serial communications interface shall be provided with the following available as a minimum:
    1. Remote manual/auto
    2. Remote start/stop
    3. Remote forward/reverse
    4. Remote preset speeds
    5. Remote external trip
    6. Remote fault reset
    7. Process control speed reference interface, 4-20m Adc
    8. Potentiometer or process control speed reference interface, 0-10 Vdc
    9. RS-232 programming and operation interface port.
  - b) Outputs - A minimum of two (2) discrete programmable digital outputs, one (1) programmable open collector output, and one (1) programmable analog output shall be provided, with the following available at minimum.
    1. Programmable relay outputs with one (1) set of Form C contacts for each, selectable with the following available at minimum:
      - i. Fault
      - ii. Run
      - iii. Ready
      - iv. Reversing
      - v. Jogging
      - vi. At speed
      - vii. In torque limit
      - viii. Motor rotation direction opposite of commanded
      - ix. Over-temperature
    2. Programmable open collector output with available 24 Vdc power supply and selectable with the following available at minimum:
      - i. Fault
      - ii. Run





- iii. Ready
  - iv. Reversing
  - v. Jogging
  - vii. In torque limit
  - viii. Motor rotation direction opposite of commanded
  - ix. Over-temperature
3. Programmable analog output signal, selectable with the following available at minimum:
- i. Output frequency
  - ii. Frequency reference
  - iii. Motor speed
  - iv. Output current
  - v. Motor torque
  - vi. Motor power
  - vii. Motor voltage
  - viii. DC link voltage
  - ix. PID controller reference value
  - x. PID controller actual value 1
  - xi. PID controller actual value 2
  - xii. PID controller error value
  - xiii. PID controller output
- c). Capability of two additional expandable I/O interface cards. Upon installation, software shall automatically identify the interface card and activate the appropriate parameters. This should be done without adding any new software.

15. Monitoring and Displays

- a) The AFD display shall be an LCD type capable of displaying three (3) lines of text and the following thirteen (13) status indicators:
- 1. Run
  - 2. Forward
  - 3. Reverse
  - 4. Stop
  - 5. Ready
  - 6. Alarm
  - 7. Fault
  - 8. Input/Output (I/O) Terminal
  - 9. Keypad
  - 10. Bus/communication
  - 11. Hand
  - 12. Auto
  - 13. Off



- b. The AFD keypad shall be capable of displaying the following monitoring functions at a minimum:
  - 1. Motor Speed (RPM and %)
  - 2. Frequency reference
  - 3. Output frequency
  - 4. Motor current
  - 5. Motor torque
  - 6. Motor power
  - 7. Motor voltage
  - 8. DC-link voltage
  - 9. Heatsink temperature
  - 10. Motor run time (resettable)
  - 11. Total operating days counter
  - 12. Operating hours (resettable)
  - 13. Total megawatt hours
  - 14. Megawatt hours (resettable)
  - 15. Voltage level of analog input
  - 16. Current level of analog input
  - 17. Digital inputs status
  - 18. Digital and relay outputs status
  - 19. Motor temperature rise
  - 20. PID references

16. Protective Functions

- a) The AFD shall include the following protective features at minimum:
  - 1. Over-current
  - 2. Over-voltage
  - 3. System fault
  - 4. Under-voltage
  - 5. Input line supervision
  - 6. Output phase supervision
  - 7. Under-temperature
  - 8. Over-temperature
  - 9. Motor stalled
  - 10. Motor over temperature
  - 11. Motor under-load
  - 12. Logic voltage failure
  - 13. Microprocessor failure
  - 14. Brake chopper supervision
  - 15. DC Injection braking
  
- b) The AFD shall provide ground fault protection during power-up, starting, and running. AFDs with no ground fault protection during running are not acceptable.



17. Diagnostic Features
- a) Active Faults
  - b) The last 10 faults shall be recorded and stored in sequential order
  - c) Fault code and description of fault shall be displayed on the keypad.
  - d) Fault or alarm LED shall blink
  - e) Display drive data at time of fault
  - f) In the event several faults occur simultaneously, the sequence of active faults shall be viewable.
  - g) During a fault, the drive must be able to identify the following:
    - 1. Drive Speed
    - 2. Running hours
    - 3. Running Days
    - 4. Amps during fault
    - 5. Motor Power
    - 6. Motor Torque
    - 7. DC bus Voltage
    - 8. Drive Temperature
  - h) Fault History
    - 1. The last 30 faults shall be recorded and stored in sequential order.
    - 2. Display drive data at time of fault
18. Additional features included in the AFD:
- a) The following indicating lights shall be provided on the keypad.
    - 1. Drive Ready
    - 2. Drive Run
    - 3. Drive Fault
  - b) The current withstand rating of the drive shall be 100,000 AIC. The rating of the complete drive assembly shall be UL tested and listed at 65kAIC.
  - c) Communication card for interface with NEMA 1 enclosure. Packaging of the drive shall be designed and manufactured by the manufacturer of the drive for quality assurance.



- d) The AFD shall have complete front accessibility with easily removable assemblies.
- e) Cable entry shall be bottom entry.

19. Options

- a) Hand-Off-Auto with Inverter-Bypass selector switch, and Inverter/Bypass pilot lights shall be packaged with the AFD. The unit shall be set up for manual bypass operation upon an AFD trip. The Controls Contractor shall provide monitoring of the output of the active AFD and, upon failure, automatically switch the inactive AFD/pump on, operating at the appropriate speed.
- b) Two contactor bypass shall include a drive input disconnect, bypass contactor and an AFD output contactor that is electrically and mechanically interlocked with the bypass contactor. This circuit shall include control logic, status lights and motor overcurrent relays. This complete bypass (Hand-Off-Auto with Inverter-Bypass) selector switch, and Inverter/Bypass pilot lights shall be packaged with the AFD. The unit shall be set up for manual bypass operation upon an AFD trip.

20. The AFD manufacturer shall maintain, as part of a national network, engineering service facilities within 250 miles of project to provide start-up service, emergency service calls, repair work, service contracts, maintenance and training of customer personnel.

PART 3 EXECUTION

3.1 EXAMINATION

3.2 FACTORY TESTING

- A. The following standard factory tests shall be performed on the equipment provided under this section. All tests shall be in accordance with the latest version of UL and NEMA standards.
- 1. All printed circuit boards shall be functionally tested via automatic test equipment prior to unit installation.
  - 2. All final assemblies shall be tested at full load with application of line-to-line and line-to-ground bolted faults. The Adjustable Frequency Drive shall trip electronically without device failure.
  - 3. After all tests have been performed, each AFD shall undergo a burn-in test.



The drive shall be burned in at 100% inductive or motor load without an unscheduled shutdown.

4. After the burn-in cycle is complete, each AFD shall be put through a motor load test before inspection and shipping.
- B. The manufacturer shall provide three (3) certified copies of factory test report.
  - C. All testing and manufacturing procedures shall be ISO 9001 certified.

### 3.3 INSTALLATION

### 3.4 FIELD QUALITY CONTROL

- A. Provide the services of a qualified manufacturer's employed Field Service Engineer or authorized service representative to assist the Contractor in installation and start-up of the equipment specified under this section. Field Service personnel shall be factory trained with periodic updates and have experience with the same model of AFD's on the job site. Sales representatives will not be accepted to perform this work. The manufacturer's service representative shall provide technical direction and assistance to the Contractor in general assembly of the equipment, installation as specified in manufacturer's installation instructions, wiring, application dependent adjustments, and verification of proper AFD operation.
- B. The following minimum work shall be performed by the Contractor under the technical direction of the manufacturer's service representative.
  1. Inspection and final adjustments
  2. Operational and functional checks of AFDs and spare parts.
  3. The contractor shall certify that he has read the drive manufacturer's installation instructions and has installed the AFD in accordance with those instructions.
- C. The Contractor shall provide three (3) copies of the manufacturer's field start-up report before final payment is made.

### 3.5 MAINTENANCE/WARRANTY SERVICE

- A. Warranty shall be twelve (12) months from the date of start-up and shall cover factory repair or replacement of the defective unit, including parts, labor, and travel time.

### 3.6 FIELD TESTING



- A. The AFD manufacturer shall perform harmonic measurements at the point where the utility feeds multiple customers (PCC) to verify compliance with IEEE 519-1992. A report of the voltage THD and current TDD shall be sent to the engineer. The contractor shall provide labor, material, and protection as needed to access the test points. The readings shall be taken with all drives and all other loads at full load, or as close as field conditions allow.

### 3.7 TRAINING

- A. The Contractor shall provide a training session for up to two normal workdays with a maximum of two trips to the job site location as determined by the owner. Training and instruction time shall be in addition to that required for start-up service.
- B. The training shall be conducted by the manufacturer's qualified representative.
- C. The training program shall consist of the following:
  - 1. Instructions on the proper operation of the equipment.
  - 2. Instructions on the proper maintenance of the equipment.

**END OF SECTION**



**Pre-Bid Sign-In Sheet**

PROJECT: American Legion Post 31 Phase 3  
HVAC Renovation

OWNER PROJECT NUMBER: 19-4106-30  
ARCHITECT PROJECT NO.: 2019-015

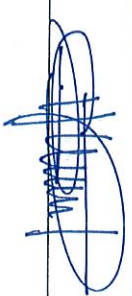
NON-MANDATORY PRE-BID CONFERENCE:  
Thursday, July 20, 2023 @ 10:00 AM  
206 Government Street, Gray LA 70359

OWNER:  
Terrebonne Parish Consolidated Government  
Government Tower  
8025 Main Street, Suite 700  
Houma LA 70360

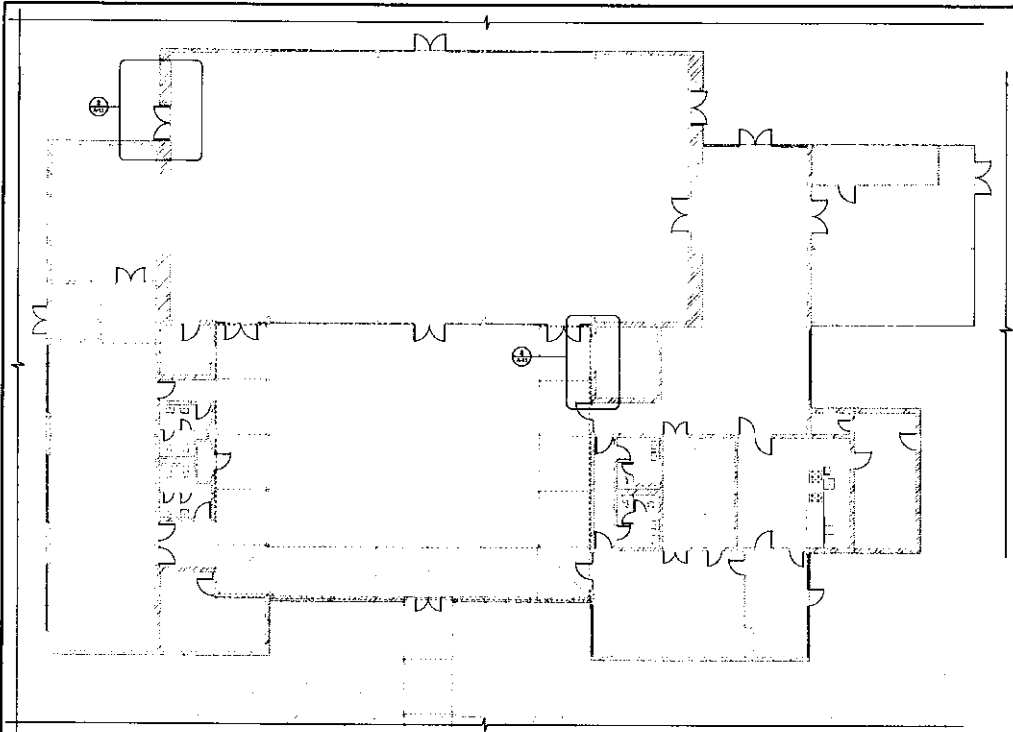
ARCHITECT:  
Craig C. Hebert, Architect  
A Professional Architectural Corporation  
P.O. Box 3447  
Houma, LA 70361

Name	Company	La. Contractors Lic. No.	Company Phone No.	Email Address	Time (In)	Time (Out)
STEFAN RBT	TRACER GROUP	516568	225-644-3643	<del>STEFAN@TRACERGROUP.COM</del> STEFAN@TRACERGROUP.COM		
Daryl McGill	Door Group	516568	225-644-3643	rdm@doorgroup.com		
Robert S. Utley	CGU Engineers, LLC	---	(85) 876-4200	robert@cuengineers.com	9:57	
Brad Carter	CGU Engineers LLC	---	"	brad@cuengineers.com		
Rob D Thompson	Volate Inc	29842	985-876-6187	brad@volate.com		
Claude Thompson Sr.	Volate Inc	29848	985-876-6187	cl@volate.com		
MARLENE TABIN	TPC		(985) 873-6723	marlene@tpc.org		
Spale. C. Hebert	CH ARCH		(985) 873-7707	chebert@hallsouth.net		

Certified for Authenticity  
Craig C. Hebert, AIA  
Architect/President



07.20.2023  
Date



**1 EXISTING FLOOR PLAN**  
SCALE: 1/4" = 1'-0"



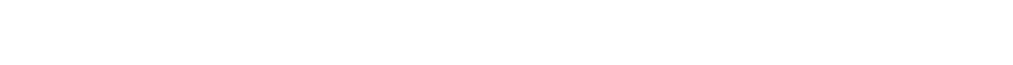
**2 DEMOLITION/REVISED ENLARGED PLAN DETAILS**  
SCALE: 1/4" = 1'-0"



**3 DEMOLITION/REVISED ENLARGED PLAN DETAILS**  
SCALE: 1/4" = 1'-0"



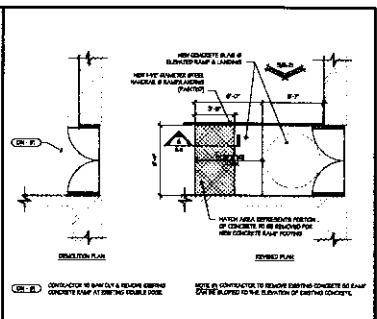
**4 NEW DOOR ELEVATION**  
SCALE: 1/4" = 1'-0"



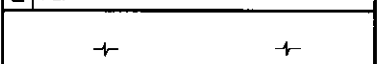
**5 NEW RAMP ELEVATION**  
SCALE: 1/4" = 1'-0"



**6 SECTION @ NEW CONCRETE RAMP**  
SCALE: 1/4" = 1'-0"



**7 NEW CONCRETE BLADE ELEVATION**  
SCALE: 1/4" = 1'-0"



**8 NEW CONCRETE BLADE SECTION**  
SCALE: 1/4" = 1'-0"



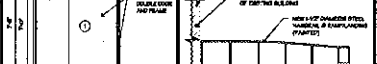
**9 NEW CONCRETE BLADE SECTION**  
SCALE: 1/4" = 1'-0"



**10 NEW CONCRETE BLADE SECTION**  
SCALE: 1/4" = 1'-0"



**11 NEW CONCRETE BLADE SECTION**  
SCALE: 1/4" = 1'-0"



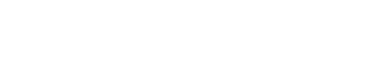
**12 NEW CONCRETE BLADE SECTION**  
SCALE: 1/4" = 1'-0"



**13 NEW CONCRETE BLADE SECTION**  
SCALE: 1/4" = 1'-0"



**14 NEW CONCRETE BLADE SECTION**  
SCALE: 1/4" = 1'-0"



**15 NEW CONCRETE BLADE SECTION**  
SCALE: 1/4" = 1'-0"



**16 NEW CONCRETE BLADE SECTION**  
SCALE: 1/4" = 1'-0"



**17 NEW CONCRETE BLADE SECTION**  
SCALE: 1/4" = 1'-0"

**AMERICAN LEGION POST 31  
PHASE 3 HVAC RENOVATION**

602 LEGION AVE  
HOUMA, LA 70364

**Craig C. Hebert  
Architect**  
A Professional Architectural  
Corporation  
838 Palmetto Street  
Houma, LA 70360  
P. O. Box 3437  
Houma, LA 70361  
Tel: (888) 875-7761  
(888) 875-7761  
1118 Breaux Boulevard

APPENDIX #1  
A-II





**GENERAL NOTES - HVAC PLAN**

1. ALL HEAT PUMPS SHALL BE CONNECTED TO CENTRAL CONTROLLER AS SHOWN. COORDINATE CONTROL WIRE ROUTING WITH ELECTRICAL.
2. INSTALL EACH AND EVERY HEAT PUMP ON ONE RATED 1 1/2" HON STAND TO MEET THE MIN. LOAD. PRINCE OVEN PAINT FOR EXPOSED SURF. OF HEAT PUMP AND THE STAND TO PROTECT FROM DAMAGE. STAND SHALL BE BUILT WITH 4x4-14 SHAW DOCK BUILT CONDENSING UNIT STAND OF 2x4.
3. COORDINATE LOCATION OF HEAT PUMP UNITS AND ASSOCIATED LINE SETS WITH ELECTRICAL TO ENSURE PROPER CLEARANCE FOR NEC AT ALL PANELS, DISCONNECTS, ETC.
4. COORDINATE PUMP SHALL BE 1" HIGH OVER ONE UNIT OR MATCH BRAN POINT PROVIDED IS LARGER. CONDENSATE PIPING SHALL BE 1" WITH SLOPE 1/8" PER FOOT.

**GENERAL NOTES - HVAC PLAN**

1. SUPPORT ALL NEW CEILING MOUNTED AC UNITS FROM STRUCTURE ABOVE. SEE CEILING MOUNTED HANGERS DETAIL ON SHEET AC-4.
2. ROUTE REFRIGERANT PIPING ABOVE CEILING FROM HEAT PUMP UNITS TO CONDENSING UNIT SUPPORT PIPES FROM STRUCTURE.
3. COORDINATE AC UNIT LOCATIONS WITH LIGHTING FIXTURES AND PATCH AND PAINT ALL EXISTING UNPAINTED WALL PENETRATIONS TO MATCH FINISHES.
4. PROVIDE AIR METAL DAMPERS AND LINE PENETRATIONS ADDED AT EACH AND EVERY HEAT PUMP UNIT.
5. WHERE HVAC UNITS ARE CONCEALED ABOVE CEILING, PROVIDE PERMITTED LABEL ON CEILING AND BELOW UNIT TO IDENTIFY UNIT LOCATION ABOVE.

**GENERAL NOTES - HVAC PLAN**

1. ALL HEAT PUMPS SHALL BE CONNECTED TO CENTRAL CONTROLLER AS SHOWN. COORDINATE CONTROL WIRE ROUTING WITH ELECTRICAL.
2. INSTALL EACH AND EVERY HEAT PUMP ON ONE RATED 1 1/2" HON STAND TO MEET THE MIN. LOAD. PRINCE OVEN PAINT FOR EXPOSED SURF. OF HEAT PUMP AND THE STAND TO PROTECT FROM DAMAGE. STAND SHALL BE BUILT WITH 4x4-14 SHAW DOCK BUILT CONDENSING UNIT STAND OF 2x4.
3. COORDINATE LOCATION OF HEAT PUMP UNITS AND ASSOCIATED LINE SETS WITH ELECTRICAL TO ENSURE PROPER CLEARANCE FOR NEC AT ALL PANELS, DISCONNECTS, ETC.
4. COORDINATE PUMP SHALL BE 1" HIGH OVER ONE UNIT OR MATCH BRAN POINT PROVIDED IS LARGER. CONDENSATE PIPING SHALL BE 1" WITH SLOPE 1/8" PER FOOT.

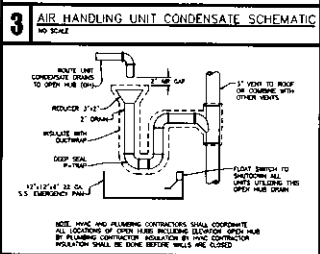
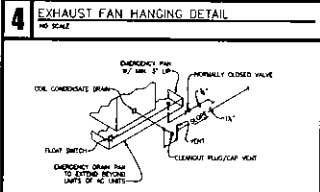
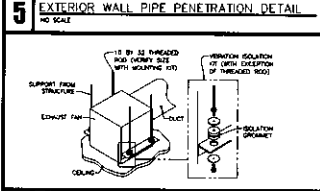
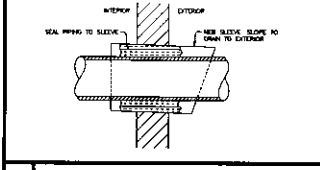
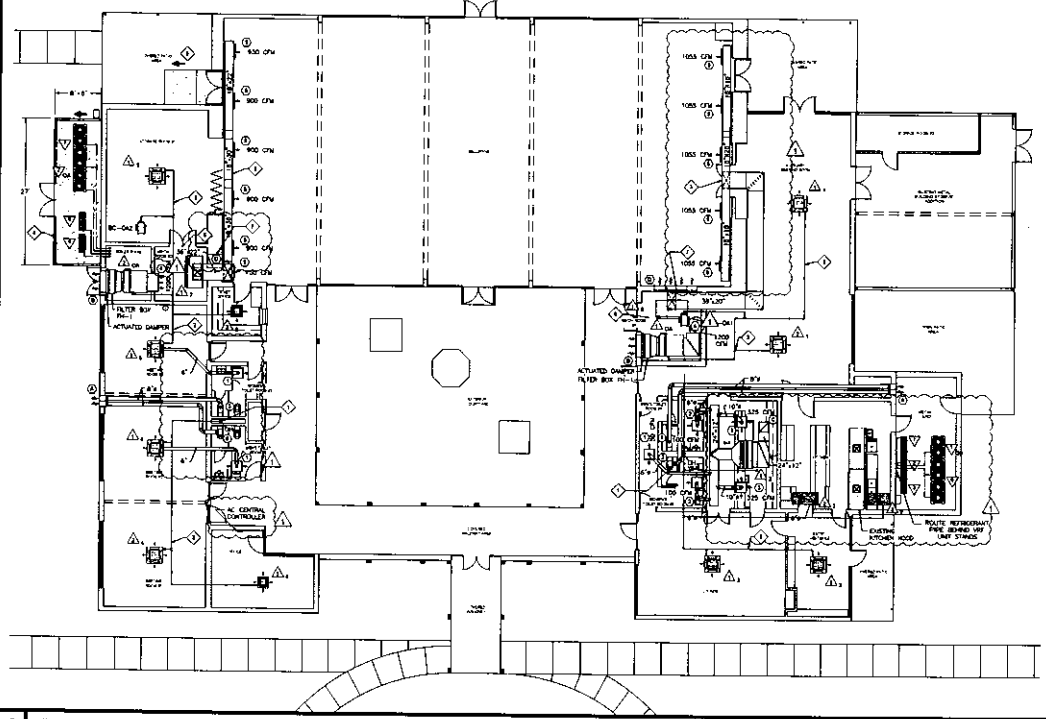
**GENERAL NOTES - HVAC PLAN**

1. SUPPORT ALL NEW CEILING MOUNTED AC UNITS FROM STRUCTURE ABOVE. SEE CEILING MOUNTED HANGERS DETAIL ON SHEET AC-4.
2. ROUTE REFRIGERANT PIPING ABOVE CEILING FROM HEAT PUMP UNITS TO CONDENSING UNIT SUPPORT PIPES FROM STRUCTURE.
3. COORDINATE AC UNIT LOCATIONS WITH LIGHTING FIXTURES AND PATCH AND PAINT ALL EXISTING UNPAINTED WALL PENETRATIONS TO MATCH FINISHES.
4. PROVIDE AIR METAL DAMPERS AND LINE PENETRATIONS ADDED AT EACH AND EVERY HEAT PUMP UNIT.
5. WHERE HVAC UNITS ARE CONCEALED ABOVE CEILING, PROVIDE PERMITTED LABEL ON CEILING AND BELOW UNIT TO IDENTIFY UNIT LOCATION ABOVE.

**GENERAL NOTES - HVAC PLAN**

1. SUPPORT ALL NEW CEILING MOUNTED AC UNITS FROM STRUCTURE ABOVE. SEE CEILING MOUNTED HANGERS DETAIL ON SHEET AC-4.
2. ROUTE REFRIGERANT PIPING ABOVE CEILING FROM HEAT PUMP UNITS TO CONDENSING UNIT SUPPORT PIPES FROM STRUCTURE.
3. COORDINATE AC UNIT LOCATIONS WITH LIGHTING FIXTURES AND PATCH AND PAINT ALL EXISTING UNPAINTED WALL PENETRATIONS TO MATCH FINISHES.
4. PROVIDE AIR METAL DAMPERS AND LINE PENETRATIONS ADDED AT EACH AND EVERY HEAT PUMP UNIT.
5. WHERE HVAC UNITS ARE CONCEALED ABOVE CEILING, PROVIDE PERMITTED LABEL ON CEILING AND BELOW UNIT TO IDENTIFY UNIT LOCATION ABOVE.

DATE	ISSUE
04/25/2023	CONSTRUCTION DOCUMENTS
08/10/2023	REVISION 1
10/16/2023	REVISION 2
11/27/2023	REVISION 3
12/15/2023	REVISION 4
01/10/2024	REVISION 5
02/05/2024	REVISION 6
03/01/2024	REVISION 7
03/28/2024	REVISION 8
04/05/2024	REVISION 9
04/12/2024	REVISION 10
04/19/2024	REVISION 11
04/26/2024	REVISION 12
05/03/2024	REVISION 13
05/10/2024	REVISION 14
05/17/2024	REVISION 15
05/24/2024	REVISION 16
06/01/2024	REVISION 17
06/08/2024	REVISION 18
06/15/2024	REVISION 19
06/22/2024	REVISION 20
06/29/2024	REVISION 21
07/06/2024	REVISION 22
07/13/2024	REVISION 23
07/20/2024	REVISION 24
07/27/2024	REVISION 25
08/03/2024	REVISION 26
08/10/2024	REVISION 27
08/17/2024	REVISION 28
08/24/2024	REVISION 29
09/01/2024	REVISION 30
09/08/2024	REVISION 31
09/15/2024	REVISION 32
09/22/2024	REVISION 33
09/29/2024	REVISION 34
10/06/2024	REVISION 35
10/13/2024	REVISION 36
10/20/2024	REVISION 37
10/27/2024	REVISION 38
11/03/2024	REVISION 39
11/10/2024	REVISION 40
11/17/2024	REVISION 41
11/24/2024	REVISION 42
12/01/2024	REVISION 43
12/08/2024	REVISION 44
12/15/2024	REVISION 45
12/22/2024	REVISION 46
12/29/2024	REVISION 47
01/05/2025	REVISION 48
01/12/2025	REVISION 49
01/19/2025	REVISION 50
01/26/2025	REVISION 51
02/02/2025	REVISION 52
02/09/2025	REVISION 53
02/16/2025	REVISION 54
02/23/2025	REVISION 55
03/01/2025	REVISION 56
03/08/2025	REVISION 57
03/15/2025	REVISION 58
03/22/2025	REVISION 59
03/29/2025	REVISION 60
04/05/2025	REVISION 61
04/12/2025	REVISION 62
04/19/2025	REVISION 63
04/26/2025	REVISION 64
05/03/2025	REVISION 65
05/10/2025	REVISION 66
05/17/2025	REVISION 67
05/24/2025	REVISION 68
06/01/2025	REVISION 69
06/08/2025	REVISION 70
06/15/2025	REVISION 71
06/22/2025	REVISION 72
06/29/2025	REVISION 73
07/06/2025	REVISION 74
07/13/2025	REVISION 75
07/20/2025	REVISION 76
07/27/2025	REVISION 77
08/03/2025	REVISION 78
08/10/2025	REVISION 79
08/17/2025	REVISION 80
08/24/2025	REVISION 81
09/01/2025	REVISION 82
09/08/2025	REVISION 83
09/15/2025	REVISION 84
09/22/2025	REVISION 85
09/29/2025	REVISION 86
10/06/2025	REVISION 87
10/13/2025	REVISION 88
10/20/2025	REVISION 89
10/27/2025	REVISION 90
11/03/2025	REVISION 91
11/10/2025	REVISION 92
11/17/2025	REVISION 93
11/24/2025	REVISION 94
12/01/2025	REVISION 95
12/08/2025	REVISION 96
12/15/2025	REVISION 97
12/22/2025	REVISION 98
12/29/2025	REVISION 99
01/05/2026	REVISION 100



**1 NEW HVAC PLAN**  
SCALE 1/8" = 1'-0"

**2 OPEN HUB DETAIL**  
NO SCALE

**CUSTOM'S**  
SUSANOVIC  
ARCHITECTS  
P.L.L.C.

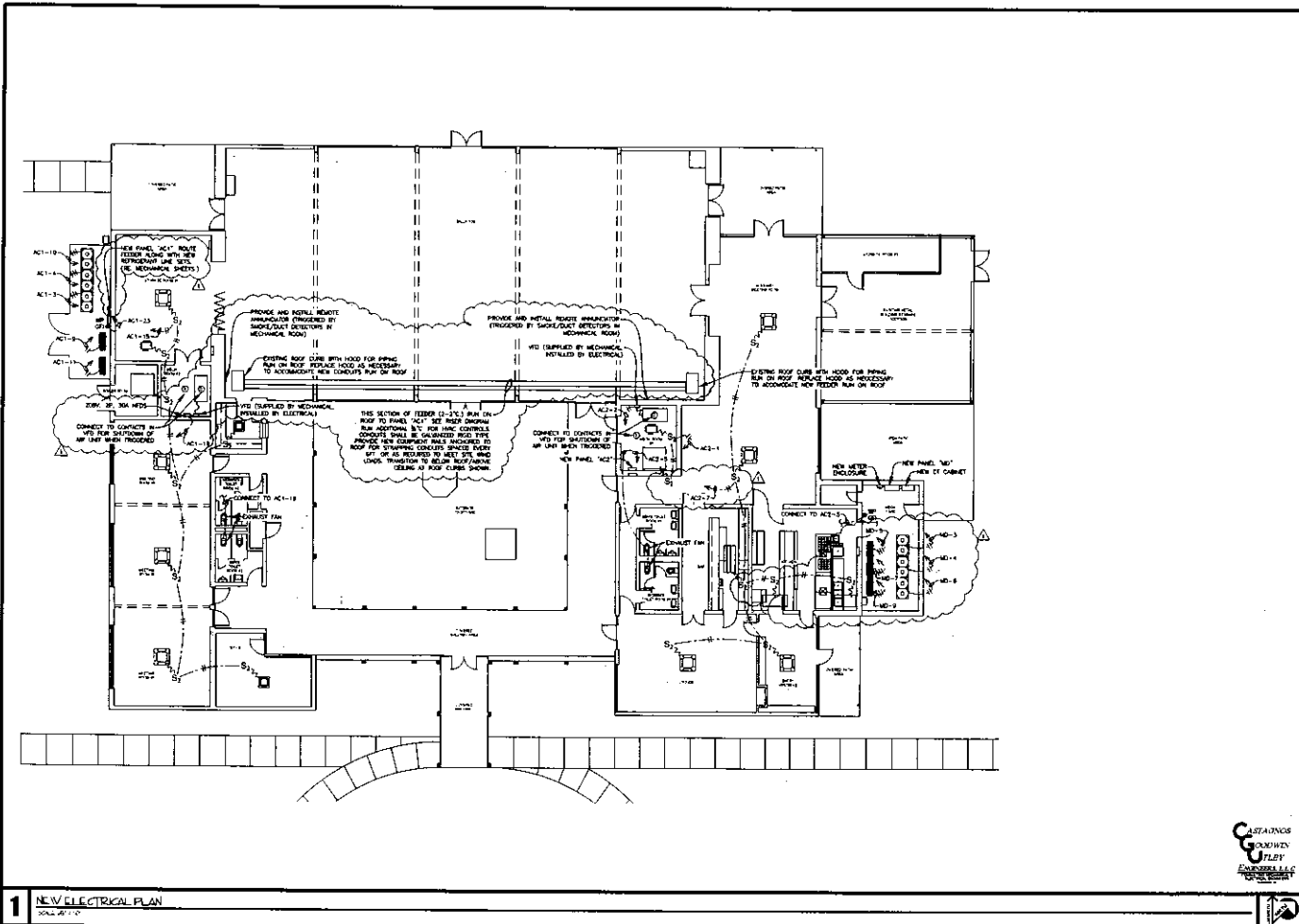
**AMERICAN LEGION POST 31**  
PHASE 3 HVAC RENOVATION  
802 LEGION AVE  
HOUMA, LA 70304

**Greg C. Hebert**  
Architect  
A Professional Architectural Corporation  
216 BARKDALE STREET  
HOUMA, LA 70304  
P.O. BOX 1327  
HOUMA, LA 70304  
TEL: (888) 875-7707  
FAX: (888) 875-7707  
EMAIL: GHEBERT@GHEBERTARCHITECTS.COM

**M-2**







**REVISIONS**

NO.	DATE	DESCRIPTION
01	04-25-2023	CONSTRUCTION
02	06-15-2023	REVISION
03	08-01-2023	REVISION
04	08-01-2023	REVISION
05	08-01-2023	REVISION
06	08-01-2023	REVISION
07	08-01-2023	REVISION
08	08-01-2023	REVISION
09	08-01-2023	REVISION
10	08-01-2023	REVISION
11	08-01-2023	REVISION
12	08-01-2023	REVISION
13	08-01-2023	REVISION
14	08-01-2023	REVISION
15	08-01-2023	REVISION
16	08-01-2023	REVISION
17	08-01-2023	REVISION
18	08-01-2023	REVISION
19	08-01-2023	REVISION
20	08-01-2023	REVISION

DATE: 04-25-2023  
 PROJECT: AMERICAN LEGION POST 31  
 PHASE 3 HVAC RENOVATION  
 833 LEGION AVE  
 HOUMA, LA 70364

**AMERICAN LEGION POST 31  
 PHASE 3 HVAC RENOVATION**  
 833 LEGION AVE  
 HOUMA, LA 70364

**Craig C. Habert  
 Architect**  
 A Professional Architectural  
 Corporation  
 833 Balthasar Street  
 Houma, LA 70364  
 P.O. Box 5447  
 Houma, LA 70364  
 Tel: (889) 875-7701  
 Fax: (889) 875-7701  
 csh@cchabert.com

**CASTAINOS  
 GOODWIN  
 TILBY  
 ENGINEERS L.L.C.**

**E-2**

**1 NEW ELECTRICAL PLAN**  
 SCALE: AS SHOWN

PANEL "MD" 120/208V, 3Ø, 4W									
CIRCUIT NO.	CIRCUIT TYPE	WIRE SIZE	CIRCUIT LOAD	CIRCUIT LOAD		CIRCUIT LOAD		CIRCUIT LOAD	
				WIRE SIZE	WIRE TYPE	WIRE SIZE	WIRE TYPE	WIRE SIZE	WIRE TYPE
1	3-200	300	PANEL "AC1"			PANEL "AC1"	1	3-125	2"
2	3-30	8	HP-01			HP-4 MODULE 1	8	3-40	4"
3	3-40	8	HP-1			HP-4 MODULE 2	8	3-40	6"
4	3-40	8	HP-2						
5	3-30	10	HP-3			PANEL "N"	1	3-40	8"
6	3-100	-	SPACE			PANEL "N"	1	3-20	12"
7	3-40	8	SPD #1			PANEL "L"	1	3-30	14"

PANEL "AC1" 120/208V, 3Ø, 4W									
CIRCUIT NO.	CIRCUIT TYPE	WIRE SIZE	CIRCUIT LOAD	CIRCUIT LOAD		CIRCUIT LOAD		CIRCUIT LOAD	
				WIRE SIZE	WIRE TYPE	WIRE SIZE	WIRE TYPE	WIRE SIZE	WIRE TYPE
1	3-30	8	HP-02			HP-7 MODULE 1	8	3-40	4"
2	3-40	8	HP-4			HP-7 MODULE 2	8	3-40	10"
3	3-40	8	HP-5						
4	3-15	2-15	INDOOR AIR UNITS			SPACE		3-125	14"
5	3-18	2-25	AIR HANDLER			SPACE			20"
6	3-25	1-20	EXTENSION OF 3			EXTENSION OF 3			24"
7	3-25	-	SPACE						28"
8	3-25	-	SPACE						30"

PANEL "AC2" 120/208V, 3Ø, 4W									
CIRCUIT NO.	CIRCUIT TYPE	WIRE SIZE	CIRCUIT LOAD	CIRCUIT LOAD		CIRCUIT LOAD		CIRCUIT LOAD	
				WIRE SIZE	WIRE TYPE	WIRE SIZE	WIRE TYPE	WIRE SIZE	WIRE TYPE
1	3-15	2-15	INDOOR AIR UNITS			AIR HANDLER	10	2-25	2"
2	3-30	8	EXTENSION OF 3			SPACE		1-25	4"
3	3-30	8	EXTENSION OF 3			SPACE			8"
4	3-30	8	EXTENSION OF 3			SPACE			10"
5	3-30	8	EXTENSION OF 3			SPACE			12"
6	3-30	8	EXTENSION OF 3			SPACE			14"
7	3-30	8	EXTENSION OF 3			SPACE			16"
8	3-30	8	EXTENSION OF 3			SPACE			18"
9	3-30	8	EXTENSION OF 3			SPACE			20"
10	3-30	8	EXTENSION OF 3			SPACE			22"
11	3-30	8	EXTENSION OF 3			SPACE			24"
12	3-30	8	EXTENSION OF 3			SPACE			26"
13	3-30	8	EXTENSION OF 3			SPACE			28"
14	3-30	8	EXTENSION OF 3			SPACE			30"

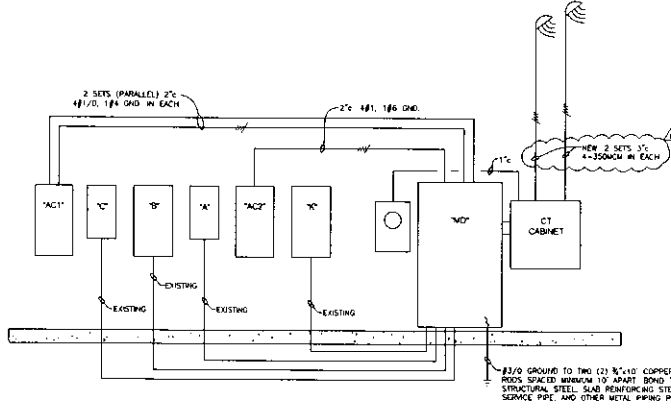
1. REUSE EXISTING FEEDER CONDUCTORS, NEWLY EXISTING CONDUCTORS CAN ACCOMMODATE SPECIFIED BREAKER CAPACITY RATING PRIOR TO OVERTIGHT EQUIPMENT.

2. SURGE PROTECTION DEVICE MOUNTED INTERNALLY SQUARE D TYPE SPS200-10 (100A, 208/120V, 3Ø, 4W, TYPE 1) OF APPROVED EQUAL.

1. SURGE PROTECTION DEVICE MOUNTED EXTERNALLY SQUARE D TYPE SPS200-10 (100A, 208/120V, 3Ø, 4W, TYPE 1) OF APPROVED EQUAL.

1. SURGE PROTECTION DEVICE MOUNTED EXTERNALLY SQUARE D TYPE SPS200-10 (100A, 208/120V, 3Ø, 4W, TYPE 1) OF APPROVED EQUAL.

**1** PANEL SCHEDULES



**2** Riser DIAGRAM

**AMERICAN LEGION POST 31**  
**PHASE 3 HVAC RENOVATION**  
 8022 LEGION AVE  
 HOUMA, LA 70304

**Craig C. Hebert**  
 Architect  
 A Professional Architectural Corporation  
 222 Belmont Street  
 Houma, LA 70309  
 P.O. Box 2117  
 Houma, LA 70301  
 Tel: (850) 871-1700  
 Fax: (850) 871-7700  
 crah@cchc.com

**E-3**