

**AMENDMENT A00002: RFI RESPONSES/CLARIFICATIONS for SOLICITATION**

**VA257-12-R-0057 – NEW WACO ENERGY CENTER PROJECT**

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**Attachment Part 1 of 2**

## RFI Responses

### Set #1 Jackie Manatt; TL Services

1.1.1 On Drawing 225EP1.1, Room 104 breakroom, please identify the circuit of the outlet nearest the door with the label of EDF-8.

**[ORA Engineers]** Circuit 6.

1.1.2 There appears not to be a schedule for wireway or panel shma/shmb. Please provide unless these are furnished by others.

**[ORA]** Newly issued schedules for Wireways "SHMA" and "SHMB" are attached.

1.1.3 Are panels SHMA and SHMB to be included with Alternate 1 and Alternate 4?

**[ORA]** Wireways "SHMA" and "SHMB" are to be provided under Base Bid. Refer to boxed notes, lower left, on Sheet 225-EP1.1, reading in part: "THE INTENT OF THE CONTRACT DOCUMENTS ..." which describe extent of work to be provided under Base Bid. (See Item 11.1 below for minor revision to the language of these notes.)

Transformers 225A and 225B are not shown to be provided under this contract. Are these transformers provided by others?

**[ORA]** NO. Medium voltage padmount transformers are a specified item of material under Specification Section 26 12 19 – Pad-Mounted, Liquid-Filled, Medium-Voltage Transformers. The transformers are indicated as new work at numerous locations on the Drawings. We are not aware of any indication in the Contract Documents that these transformers are other than Contractor-furnished, Contractor-installed items of material.

1.1.4 If these are to be provided under this division, please provide a schedule for both transformers 225A and 225B, including a kva rating.

**[ORA]** On Sheet 225-EP3.2, add the following notation adjacent to both transformers: "'T-225A' and 'T-225B': '2500 KVA 12,470V DELTA to 480/277V WYE TRANSFORMERS PER SPECIFICATION SECTION 26 12 19.'"

1.1.5 On Drawing EL2.1, Rooms 106 and 107, the two lighting fixture types in question are not shown on the lighting fixtures schedule of EE5.3. Please advise.

**[ORA]** See Amendment 1.

1.1.6 On Drawing EL2.1, Room 102, there are two lighting fixtures labeled as Type P3. Please confirm that these are indeed a Type P3D fixture.

**[ORA]** See Amendment 1.

1.1.7 On Drawing ES1.1, please indicate the size and type of pullboxes PB-C1, PB-C2, PB-C3 and PB-C4.

**[ORA]** 48" clear inside dimensions in all directions.

1.1.8 E1.1 shows the communication duct bank extending outward to buildings 189, 17 (exist laundry) and 221 resident engineer. Where are the final terminations to this duct bank or conduit within the buildings shown?

**[ORA]** See Item 11.5 below.

1.1.9 Section 26 41 00 indicates requirements for lightning protection. There are no documents pertaining to the new lightning protection system. Is it the intent that this be designed by the contractor per the provided specifications?

**[ORA]** Final design is to be provided as part of Shop Drawing process by trade contractor qualified under the requirements of Specification Section 26 41 00 - Facility Lightning Protection.

1.1.10 Drawing EP1.1 at PB-C1 shows that duct bank "D" turns to enter the building along with DB-E. Drawing ES1.1 shows (2) 4" conduit from PB-C1. Are these two of the same duct banks?

**[ORA]** Only in the sense that they are combined in a common ditchline and envelope for portions of their respective lengths. Per "DUCTBANK/CONDUIT RUN SCHEDULE," Sheet 225-EP1.1, DB-E provides power and controls to the southwest gate operator.

EP1.0 shows a new 3" conduit going to PB-C4. Is this the entry point at which this duct bank penetrates the new building?

**[ORA]** No. DBs D, E, F, G and H enter the building as depicted on Sheet 225-EP1.0. The two 3" conduits per EP1.0 are a separate requirement.

1.1.11 On Drawing EE.5.3, the generator set schedule shows several items served by each ATS with a 0 kva demand. Is there any required demand for these items to ensure the generator size is correct?

**[ORA]** No.

1.1.12 On 225-EP1.1, the duct bank for the tank farm power & controls depicted as DB-"G" does not show any conduit sizes. The "miscellaneous conduit schedule" on 225-EP3.3 also does not give this conduit size. Please indicate the quantity and size of conduits for duct bank "G." Also please indicate the origination and final destination of these conduits. Specification 26 05 41, 2.03, A, refers us to the Drawings for sizes.

**[ORA]** See revised attached Miscellaneous Conduit Schedule.

1.1.13 On 225-EP1.1, the duct bank for the brine tank controls depicted as DB-"H" does not show any conduit sizes. The "miscellaneous conduit schedule" on 225-EP3.3 also does not give this conduit size. Please

indicate the quantity and size of conduits for duck bank "H." Also please indicate the origination and final destination of these conduits. Specification 26 05 41, 2.03, A, refers us to the Drawings for sizes.

**[ORA]** See revised attached Miscellaneous Conduit Schedule.

1.1.14. Alternate Bid Item No.6 calls for the addition of a steam trap monitoring system for all steam traps. Is this system limited to the traps installed in the new energy center or does it include all traps throughout the campus?

**[ORA]** As per Section 23 21 11, 2.24, G, steam trap monitoring system under Alternate No. 6 is only for all steam traps within the Energy Center.

1.1.15. In the pre-bid site visit, it was stated that there would be no need for temporary chillers during chilled water shutdowns. Drawing #225-MS2.1 states the need for four temporary chillers. Should the project be bid with temporary chillers included?

**[ORA]** Temporary chillers are required per the Contract Documents.

1.1.16. The specifications call for a Schneider Electric INET 2012 build 2089 DOC system. Is it required that all controls must be Schneider Electric INET proprietary? If so, will the government be providing controls pricing from Schneider for the project?

**[ORA]** Per Owner directive, the existing Schneider Electric INET will be modified and expanded to serve the new Energy Center. The Government will not be providing controls pricing from Schneider Electric.

1.2.1: Is the fiber optic cable running from the existing Laundry to the vault located southwest of building 189 to be removed or relocated. If it is to be relocated where will the new location and what responsibility will the contractor have for reconnections?

**[Arch Edge]** Fiber Optic Lines to remain. Refer to sheet 225-ES1.0.

1.2.2: Is the electrical line that is running from the electrical vault at the southwest corner of building 221 to the electrical vault at the southwest corner of building 189 to be removed? If this is removed, does the removal require building 221 to have a new electrical service?

**[Arch Edge]** Electrical line relocation is shown on 225-ES1.0 and 225-ES1.1

1.2.3: Will removal of the existing sanitary sewer from the southwest corner of building 221 require that a new sanitary sewer service be installed for building 221? Is this line currently in use for any other buildings on the site?

**[Arch Edge]** Sanitary sewer service to Building 221 will be relocated to run west approximately 80' towards Beverly Drive to hit an existing North-South 6" SS line. Route is better shown on revised 225-GS3.0.

1.2.4: Is the electrical service that runs from the southwest corner of building 189 to the center of the open area (Energy building location) and its associated electrical vault to be removed?

**[Arch Edge]** Electrical line relocation is shown on 225-ES1.0 and 225-ES1.1

1.2.5: Is the fiber optic cable that runs between buildings 105 and 106 of a sufficient depth that it will not be affected by the required street and curb work?

**[Arch Edge]** Fiber optic line that serves the new laundry and runs between demolished buildings 105 & 106 is currently being installed under the Laundry project. The depth will be well documented and well below paving requirements.

1.3.1 In Section 02 82 11 of the specification, section 1.1.2 states that the existing boiler plant has tested positive for ACM's in pipe wraps and joint fittings. The asbestos inspection documents included in the section list asbestos content in the pump room and corridor. Is there any requirements for work in these areas that would disturb the existing asbestos containing materials?

**[Arch Edge]** Demolition in the Boiler Building is throughout Corridor 1A and Pump Room 2 where asbestos has been documented. Much of the demolition will directly remove or be close enough to disturb the ACMs. Contractor should plan for full abatement of all ACMs in these two rooms.

1.3.2 The SOW indicates that the contractor is to remove the boiler burners and boiler controls for use in the new facility. The asbestos inspection documents do not indicate the presence of asbestos in these areas. Is there any know asbestos containing materials in burner packages or the boiler control panels or systems that would be disturbed upon removal of these components.

**[Arch Edge]** No asbestos is known to exist on the existing burner systems on controls.

1.3.3 As part of the bid alternates, the contractor would move the existing chillers to the new facility. Is there any asbestos abatement required as part of this work?

**[Arch Edge]** No asbestos abatement is required as a part of any chiller relocation.

1.3.4. The existing chillers currently have reversing valves. Are these valves to be relocated with the chillers to the new facility?

**[ORA]** No. As shown on the plans.

## **Set #2 Steve Steckler; Greenland Enterprises**

2.1 On Sheet 225-GS 4.3 Detail A & B show a fence with concrete footing and concrete wall. Is that to be included in the bid? The plans do not show where it starts and stops. Please provide additional information.

**[Belton Engineering]** The fence detailed is to be included in the bid. For detail "A" it begins 1.0' north of the existing truck drive, then proceeds in a southerly direction and turns westerly to a note showing "End Concrete Fence Base". This total length equals 55 l.f.. Additionally the conc. fence base is also along the east side of the detention pond, paralleling the main drive along the west of the proposed bldg. This total equals 82 l.f. - Detail "B" occurs along the 25' long concrete apron only.

2.2 The fuel containment pad (225-GS 4.3 – Detail C) shows a curb/beam condition. Please provide further info on the beam that is cut off.

**[Belton Engineering]** Detail "C" was provided as a reference only, for visualization. The specific details for the construction of said pad are within the structural sheets of this set.

2.3 Please locate the pier reinforcing schedule; should casing be included in the base bid?

**[360 Eng]** Pier reinforcing schedule is located at detail 7/225-SS 3.0. Using pier casing is considered a means and methods. Soils testing was included in the specifications for contractor's reference.

2.4. Section 23 09 11, pages 6 & 7, 2.01.B and 2.01 C, describes several control types, multiple loop controllers and controllers with touch screens. Touch-screen systems are the current standards for the Department; shall touch-screen systems be supplied?

**[ORA]** Yes.

2.5. Does the project require new burners and burner management systems for the three new boilers? If not, do the existing burners and burner management systems meet the current VHA Boiler Plant Safety Device Requirements? New burners should be installed in order to meet current standards and match the new boiler requirements.

**[ORA]** The existing burners shall be relocated. A new burner management system shall be provided as specified.

2.6. Section 23 09 11, Page 20, 2.03, A, and Drawing 225-MP7.1: Specification and Drawing show different values for the annunciator. Is the Drawing the basis for the design?

**[ORA]** The Specification.

2.7. Drawing 225-MP7.1 and Section 23 09 11, Page 22, 2.03, A. Does the Main Panel need to provide the controls for the DA and condensate tank level? Does the Main Panel need to control the fuel oil and feed water pumps?

**[ORA]** Yes and yes.

- 2.8. Section 23 09 11, Page 37, 2.05, D, states: "Sensors and Transmitters: Provide as necessary to satisfy programming requirements." Section 23 09 11, beginning Page 34, 2.05, C, 18, to Page 37, 2.05, D, 22, lists the report and display values. Are all of the instruments required per these sections or just the ones shown on the Specification Drawings?  
**[ORA]** Incomprehensible question.
- 2.9. Section 23 09 11, Page 38, 2.07, A, vortex flow meters. What vortex flow meters are required and what are the line sizes and flow rates?  
**[ORA]** See Drawings.
- 2.10. Section 23 09 11, page 39, 2.07, B, water flow meters. What water flow meters are required and what are the line sizes and flow rates?  
**[ORA]** See Drawings.
- 2.11. Section 23 09 11, Page 40, 2.07, C, oil flow rates. What oil flow meters are required?  
**[ORA]** See Drawings.
- 2.12. Section 23 09 11, Page 39, 2.07, D. What natural gas flow meters are required?  
**[ORA]** See Drawings.
- 2.13. Section 23 09 11, Page 40, 2.08, pressure sensors and transmitters. What pressure sensors and transmitters are required and how many?  
**[ORA]** See Specifications.
- 2.14. Section 23 09 11, Page 41, 2.10, temperature sensors and transmitters. What temperature sensors and transmitters are required and how many?  
**[ORA]** See Specifications.
- 2.15. Section 23 09 11, Page 50, 3.07, 3.08 and 3.09: Startup and Commissioning Services. How much time should be included with the quotation do to this task?  
**[ORA]** As appropriate for this installation.
- 2.16: The joist depth and slab thickness was changed in addendum #1. The joist are called out in the schedule to be 20.5" and the slab was changed to 5.5".  $20.5 - 5.5 = 15"$  Our pan depths range from 8, 10, 12, 14, 16, 18, 20, and 24". A 15" deep pan cannot be rented. Please advise.  
**[360 Engineering]** Change all joists depths to 21.5" and change Mezzanine beam depths from 20.5" to 21.5"
- 2.17 The specifications on how to perform the asbestos abatement and the asbestos survey is included in the specifications. The quantity to

remove and in what areas is not included. Will there be any quantities of asbestos to be removed given?

**[Arch Edge]** No additional quantities will be provided for ACM abatement purposes.

**Set #3 Keith Dundasy; All-Tech Fuel Systems**

3.1. Can you tell us whose scope the pumps are as referenced in 26 32 13? The electricians or the fuel oil vendor?

**[ORA]** No. All decisions regarding division of work for purposes of either material purchasing or installation rest with the (prime) Contractor. The Engineer has no contractual responsibility regarding the division of work among the various trades, suppliers or subcontractors.

**Set #4 Bill Guerry; AMX Companies**

4.1. VA WACO CUP Specs

1.01 A.2 The direct-digital control system(s) shall be Schneider Electric INET 2012 build 2089.

1.01 F.1 Upgrade the existing direct-digital control system's ECC to include all new controls required by the Contract Documents. The upgraded ECC shall continue to communicate with the existing direct-digital control system's devices. The upgraded ECC shall communicate directly with the new devices over the existing control system's communications network without the use of a gateway.

1.01. G.1 This campus has standardized on an existing Schneider Electric INET Control System supported by a preselected controls service company.

Will the VA except a non-proprietary control system that is able to meet the specifications shown above? Johnson Controls' Metasys Extended Architecture can be installed and integrated into the existing CSI/TAC/Schneider Electric Control System, giving the VA the ability to move away from the current proprietary protocol. The new Johnson Controls Metasys ECC will have the ability to communicate with existing DDC control devices through integration and will also have the ability to meet all requirements in the specifications.

**[ORA]** Per Owner directive, the existing Schneider Electric INET will be modified and expanded to serve the new Energy Center.

4.2. Sheet EE5.1: Panel NH1A is shown to be 800 amp. Panel NH1B is shown to be 400 amp. Are these correct?

**[ORA]** No. Please see attached corrected schedule for Panel "NH1B" as well as for corresponding feeder breaker located in Switchboard "225B."

4.3. Sheet EE5.1: Wireway NHMA, NHMB and WW-G1. Are these wireway or panelboards with breakers feeding loads?

**[ORA]** Wireways with fused safety switches.



- 4.4. Sheet EE5.2: Panel Schedule NMLA and NMLB are listed 277/480 but they are fed from 120/208 volt panels. These panels are listed as 4X. Where at outdoors, are these panels located?  
**[ORA]** Please see attached revised schedules for Panels "NMLA" and "NMLB" for corrected voltage. See Keyed Note 948, Sheet 225-EP1.1 for locations.
- 4.5. Sheet EP 1.1: At the tank farm wireway SHMA/SHMB. Are these panel? Is there a panel schedule for them?  
**[ORA]** Wireways with fused safety switches. Schedules attached.
- 4.6. Sheet E3.1: Transformer schedule. What are the KVA ratings for the 6 transformers listed?  
**[ORA]** See revised schedule issued with Amendment 1.
- 4.7. Sheet EP1.0: Key Note 931 says to see detail on Sheet EP2.1. I don't see this sheet on my CD.  
**[ORA]** Correct reference should be Section 3 on Sheet 225-EP1.2 (not 2.1).
- 4.8. Are the conduits in the crawl space to be encased in concrete?  
**[ORA]** No.
- 4.9. Are the exterior rigid conduits to be PVC coated? Is PVC acceptable below grade?  
**[ORA]** Refer to applicable Specification Sections 26 05 41 and 26 05 33. If ambiguity appears to exist, please provide specific related questions/ examples for resolution.
- 4.10. Other fixtures not on fixture schedule are: WB4, P3, A2P???  
**[ORA]** See Amendment 1.
- 4.11. Are any of the VFDs going to be provided with the equipment?  
**[ORA]** Yes. Please see attached newly issued schedule titled "Motor Controller Schedule" for tabulation of additional VFDs to be provided under Specification Section 26 29 11 – Motor Starters. Also please see related Item 11.2 below.
- 4.12. Sheet EL2.0 Fixture wb8 is not on the fixture schedule. Please provide part #.  
**[ORA]** See Amendment 1.
- 4.13. Is it intended for all of the conduit on this job to be rigid?  
**[ORA]** Refer to applicable Specification Sections 26 05 41 and 26 05 33. If ambiguity appears to exist, please provide specific related questions/ examples for resolution.
- 4.14: Is the fence between the VA property and Beverly drive included in the project?

**[Arch Edge]** The fence between the project and Beverly Drive is existing, and no work is included to modify it in this scope of work.

4.15: Can a Storm Water Pollution Prevention Plan be used in lieu of the Environmental Protection Plan referenced by Specification section 01 57 19 so long as the SWPPP covers all of the items required by the specification?

**[Belton Eng]** Storm Water Pollution Prevention Plan can be used in lieu of the Environmental Protection Plan, as long as the SWPPP covers all of the items required by the specifications.

4.16 Repeat of 4.15

4.17. Will the Government directly contract with the Commissioning Firm for the Commissioning Agent and commissioning of the building?

**[ORA]** Yes.

4.18 What is the existing FOC line shown by drawing GS 3.0?

**[Belton Eng]** FOC = Fiber Optic Cable underground, contractor is to use extreme caution, and hand dig, to locate actual depth of cable, before construction begins. The contractor shall bear all liability if cable is ruptured.

4.19 Does the existing fence demolition include all of the fencing around the greenhouses and buildings 105, 106, and 107?

**[Arch Edge]** Existing fencing around the greenhouses and building 105, 106, & 107 are construction fences related to the current Laundry project. Prior to this project kickoff, they will be removed by the Laundry contractor.

4.20

**(by VA)** All offerors will be required to prepare and submit a complete proposal package in accordance with the proposal preparation instructions within this solicitation. Packages shall include completed SF 1442 found on pages 1 and 2; completed Section B Price Proposal found on pages 8 through 11 and completed Evaluation Factors to include Exhibits A, B, and C found on pages 16 through 23. The offeror shall submit a detailed technical proposal that addresses subfactors and past performance factors; each response shall address each factor in sequence and clearly identify which element is being addressed. This is not intended to restrict answering in as much detail as the offeror seems necessary to adequately represent and address each element in the proposal.

## **Set #5 Jackie Manatt; TL Services**

5.6: **[Arch Edge]** This question was addressed by the "Miscellaneous Changes" described in question #5 of the first Addendum.

**Set #6 Ryan McBee; RW Engineering**

- 6.1. Plan 225 - MH1.1; Keynote 436 refers to Alternate Bid #1: Provide chiller CH3, CH4, CT1 & CT2 and CWP1 and CWP2. Keynote 435 is actually located adjacent to CHP1 and CHP2. Should keynote read CHP1 and CHP2?

**[ORA]** Yes. See revised Sheet 225-MH1.1.

**Set #7 Francie Miranda; C-CAP**

- 7.1 **[Arch Edge]** Product Substitution: Firestone Ultraply 60mil Membrane roofing and assorted accessories is accepted as a substitution for this project. See attachment.

**Set #8 Bill Guerry; AMX Companies**

- 8.1 Will wall tile be installed behind the lockers in the shower area?  
**[Arch Edge]** Wall tile in Shower 109 will be full height and extend behind the lockers.

- 8.2 Will all stained concrete areas have a polished finish and if so, what grit diamond will they be finished to?

**[Arch Edge]** All areas with polished concrete as shown by F2 designation in Finish schedule to have a Uniform semi-gloss sheen using 1500 grit polishing heads. Some stained areas will not be polished.

- 8.3 Please specify a concrete sealer to be used in the Basement 110, Storage 201, Mechanical 202, and Electrical 203?

**[Arch Edge]** Concrete sealer to be equal to Sherwin Williams H&C Concrete Sealer Wet Look Water Based, Clear (100% clear acrylic).

- 8.4. Drawing 225-EL2.0; at column lines C.6/1.0, there is a quantity of one (1) light fixture Type "WB8." This fixture type does NOT appear on the Light Fixture Schedule shown on Drawing Sheet 225-EE5.3. Please provide.

**[ORA]** See Amendment 1.

- 8.5. Drawing 225-EL2.1; at Column lines C.6/1.6, there is a quantity of one (1) light fixture Type "WB4." This fixture type does NOT appear on the Light Fixture Schedule shown on Drawing Sheet 225-EE5.3. Please provide.

**[ORA]** See Amendment 1.

- 8.6. Drawing 225-EL2.1; at Column lines D.5/2.8, there is a quantity of two (2) light fixtures Type "A2P." This fixture type does NOT appear on the Light Fixture Schedule shown on Drawing Sheet 225-EE5.3. Please provide.

**[ORA]** See Amendment 1.

8.7. Drawing 225-EL2.0; at Column lines D.5/1.1, there is a quantity of two (2) light fixtures Type "P3." This fixture type does NOT appear on the Light Fixture Schedule shown on Drawing Sheet 225-EE5.3. Please provide.

**[ORA]** See Amendment 1.

8.8. Drawing 225-EP3; in the "Transformer Schedule," Column "KVA Rating" is blank for all transformers. Please provide the KVA rating for each.

**[ORA]** See Amendment 1.

8.9 Are CAD drawings available prior to the project's bid date?

**[Arch Edge]** No CAD drawings will be released to contractors prior to award of bid.

### **Set #9 Nathan McQuillian; Ranger Contracting**

9.1. Need KVA size and voltage of the medium voltage transformers.

**[ORA]** See previous answer under Item 1.4 above.

9.2. There are numerous shown on the fixture schedule 225-EE5.3 that cannot be found on the corresponding lighting sheets. Example A1, A3, A4, A6, A1P, A3P, A4P. 225- EL2.1 shows AP2 for (2) but are not listed on fixture schedule. Also on EL2.0 there is WPB for (1) also not on fixture schedule. Are all fixtures listed going to be used on this project?

**[ORA]** Not necessarily.

9.3. KVA ratings of the transformers, N1A, N1B, N2A, N2B, S2A, S2B.

**[ORA]** See Amendment 1.

9.4. Number and size of conduits to gate controllers.

**[ORA]** See revised attached Miscellaneous Conduit Schedule.

9.5. Keynote 967 on 225-EP1.1 shows <50K. What does this represent?

**[ORA]** Delete erroneous references to <50K.

Also the note states to run (2) 2" conduits from wireway to PB-3. Is it their intent to run (2) 2" conduits from each 4000 series wireway and from both 6000 series wireways to PB-3 or is it only from the 6000 series? Please advise.

**[ORA]** Only from the 6000 series wireways.

### **Set #10 Bill Guerry; AMX Companies**

10.1. Can JCI Central Plant Optimization 30 (CPO 30) be approved as an equivalent to Optimum Energy?

**[ORA]** Yes.

10.2. How will the Central Plant Optimization software be evaluated? Will there be a specification given with requirements of the Optimization package?

**[ORA]** See attached new Specification Section 23 09 20 and revised and reissued Specification Section 23 09 23 – Direct-Digital System for HVAC.

### **Set #11 Sherman Griffith; Nufab Arrowhead**

11.1A. What is the reinforcing for the 24" diameter piers at the Cooling Towers? Plan says "Ref. to Schedule" - with none in plan set. Based on the steel/conc. ratio, would detail 7/SS3.0 work using 8-#6 verts?

**[360 Eng]** Yes

11.1B. At Column Line C/3.1 there is a MEP Sump Pit. Plan says "Ref. to MEP" - No details found in MEP. Need a detail for the concrete & reinforcing for this Sump Pit.

**[360 Eng]** Detail is 05/SS3.1. Reinforcing is #4 @ 12: o.c.e.w.

11.1C. Electrical Pad at Column Line F1/5 - The dimension 31'-3 1/2" does not match the dimension of 37'-0" shown on AS1.2. Which is the correct dimension?

**[360 Eng]** the 37'-0" on AS1.2

11.2A. In the Floor Beam Schedule [1/SS6.0] - What Stirrup Type and Spacings to use?

**[360 Eng]** Type F and Type B at 8" o.c.

11.2B. In the Mezz. Beam Schedule [1/SS6.0] - What Stirrup Type and Spacings to use?

**[360 Eng]** Type F and Type B at 8" o.c.

11.2C. In the Roof Beam Schedule [1/SS6.0] - What Stirrup Type and Spacings to use?

**[360 Eng]** Type F and Type B at 8" o.c

11.3A Curb & Gutter Detail [1/GS4.1] - Are there any Rebar running continuous in these curbs?

**[Belton Eng]** All the rebar is continuous in these curbs, with additional 2' long smooth dowels installed as indicated on general note number 2 on this detail.

11.3B Are all walks [7/GS4.1] non-reinforced? Expansion Joints too?

**[Belton Eng]** No reinforcing is designed in the sidewalks, the expansion joints shall be constructed as shown on detail. (7/GS4.1)

11.4A The Retaining Wall at "DETAIL A" [A/4.3] - What is this wall length? Does this wall turn and go southwest? If so, what is this wall length?

**[Belton Eng]** Answered by item 2.1 this addendum.

### **Set #12 Tommy Young; Hensel Electric**

12.1. The duct bank schedule on 225-EP1.1: It describes what it goes to but does not tell us what size or number of conduits are needed: Example CR-H shows to be brine pump controls; what size is this and is it an empty conduit. It's not listed on the Misc Conduit Schedule.

**[ORA]** Additional conduits have been added to the attached Miscellaneous Conduit Schedule.

12.2. Need pipe and wire size for P08, P09, P10 on Sheet 225-EP3.3; these are not in the Misc. Conduit Schedule.

**[ORA]** Additional conduits have been added to the attached Miscellaneous Conduit Schedule. Conductors for these runs are to be provided under other than Division 26.

12.3. On plan Sheet 225-EP1.2, Key Note 916, Detail 1 refers to a Junction Box and we are to label it PB-IOL. On 225-EP3.3 there is no mention of this J-Box. What is the purpose of this box and is it possible it was mislabeled?

**[ORA]** Please make the following changes to provide consistency in junction box tags between Detail 1/EP3.3 and Details 1, 2 and 3, Sheet EP1.2.

- a) Sheet EP1.2, Keyed Note 916, revise "PB-10L" to read "PB-6."
- b) Sheet EP3.3, Detail 1, revise "PB-0" to read "PB-3."
- c) Sheet EP3.3, Detail 1, revise "PB-2" to read "PB-6."
- d) See attached revised Misc. Conduit Schedule reflecting the consistent designations. Also note that Conduits P08, P09 and P10 previously not scheduled have been added to the schedule.

12.4 On Sheet 225-EP3.3: Whereabouts in basement is PB-O going and what size is required for this pull box?

**[ORA]** Please see Item 12.3 above.

**DRAWINGS:**

- Item #1 – Sheet 225-GS 1-1 Replace with attached to show changes to water services and routes.
- Item #2 – Sheet 225-AS 1-1 Replace with attached to show changes to scope of demolition.
- Item #3 – Sheet 225-MS-1.2: Replace Sheet to show new concrete trench to Bldg. 15, revised concrete trench to Bldg. 14 and deletion of SMH-8.
- Item #4 – Sheet 225-MS-1.3: Replace to show deletion of SMH-8.
- Item #5 – Sheet 225-MS-1.4: Replace Sheet to revise notes 3 & 4 of Detail 2.
- Item #6 – Sheet 225-MS-1.5: Replace Sheet to delete SMH-8 Detail and revise SMH-11 Detail.
- Item #7 – Sheet 225-MS-1.6: Replace Sheet to coordination of miscellaneous site distribution revisions.
- Item #8 – Sheet 225-MS-1.8: Replace Sheet revising Plan Views 2 and 3 of Existing Building 14 to show revised piping arrangements.
- Item #9 – Sheet 225-MS-1.9: Replace Sheet to show revised steam trench profiles
- Item #10 – Sheet 225-MS-2.1: Replace Sheet to delete of chilled water valves and revise Phasing Plan.
- Item #11 – Sheet 225-MS-2.2: Replace Sheet to delete Keyed Note 5.
- Item #12 – Sheet 225-MS-2.3: Replace Sheet to delete Detail 3 – Chilled Water Isolation Valve Detail.
- Item #13 – Sheet 225-MH-1.1: Replace Sheet to revise Alternate Bid Notes.
- Item #14 – Sheet 225-MH-6.4: Replace Sheet to revise Chiller Schedule.
- Item #15 – Sheet 225-MH-7.2: Replace Sheet to add Chiller Plant Optimization in the Sequence of Operation.
- Item #16 – Sheets 225-EE-5.1, 225-EE-5.2 and 225-EE-5.3: Revise miscellaneous panel schedules as per attached 8-1/2 by 11 pages.

**SPECIFICATIONS:**

- Item #17 – Section 01 00 00 – General Requirements: **Replace** sheet 2.
- Item #18 – Section 23 09 20 – Central Plant Optimization (CPO) System: **Add** new Section.
- Item #19 – Section 23 09 23 – Direct-Digital Control System for HVAC: **Replace** section in its entirety.
- Item #20 – Section 23 10 10 – Advanced Utility Metering System: **Add** the following paragraph 2.08 FUEL OIL
  - A. The contractor shall provide all fuel oil required during the boiler start up and commissioning phases.
  - B. After startup and commissioning, the contractor shall transfer and filter up to 40,000 gallons of diesel fuel from the existing diesel tanks on site to the new diesel tanks on site.

**CLARIFICATION / EMPHASIS:**

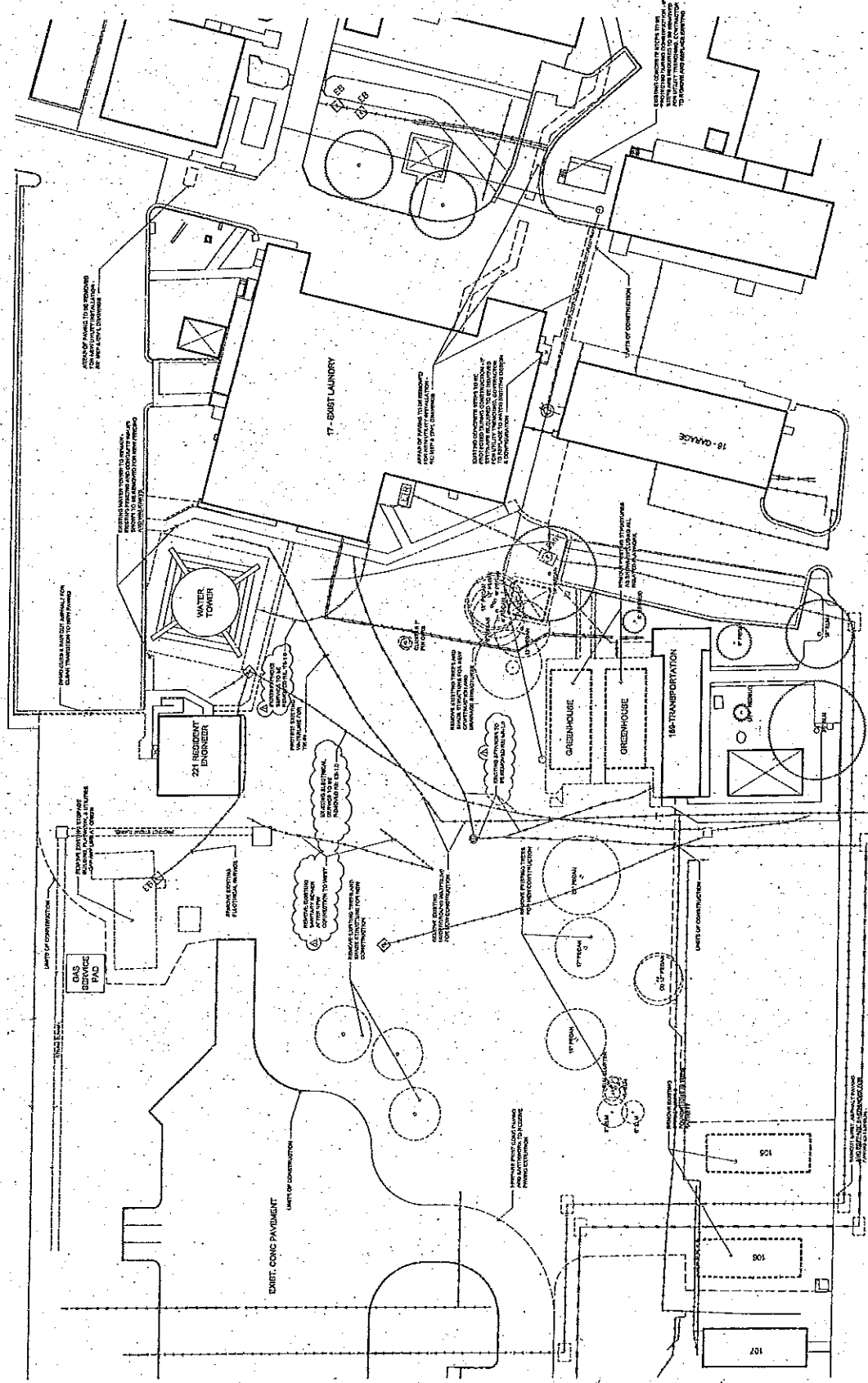
- Item #21 – The attached responses to Requests for information contain additional or revised information to be incorporated into the construction documentation.

Item #22 – Additional Clarifications

1. The gas service pad (provided by the gas service) location shown on the plans is approximate in nature. The exact location (as determined by the VA) may vary by approximately 50 feet.
2. The contractor shall provide 3D Coordination Drawings for conflict resolution. The Drawings shall include all fire protection, plumbing, mechanical and structural items. Additionally, the Drawings shall include all electrical equipment, lighting, racks of conduits, and all individual conduits 2 inches and over.
3. Revise boxed notes on Sheets 225-EP1.0 and 225-EP1.1, beginning "THE INTENT OF THE CONTRACT DOCUMENTS ..." to delete the word "Chillers." Extent of Base Bid work related to chillers is addressed by Keyed Notes 801, 803, 804 and 805 on Sheet 225-EP1.1.
4. Revise Specification Section 26 29 11, 1.01, A, to read "Enclosed motor starters and variable speed motor controllers, excluding those furnished integral with equipment or otherwise specified under other sections to be furnished with specific motor driven items of equipment."
5. Please see attached revised schedules for Motor Control Centers "NH2A," "NH2B," "SH2A" and "SH2B."
6. Please make the following changes to provide consistency in junction box tags between Detail 1/EP3.3 and Details 1, 2 and 3, Sheet EP1.2.
  - a) Sheet EP1.2, Keyed Note 916, revise "PB-10L" to read "PB-6."
  - b) Sheet EP3.3, Detail 1, revise "PB-0" to read "PB-3."
  - c) Sheet EP3.3, Detail 1, revise "PB-2" to read "PB-6."
  - d) See attached revised Misc. Conduit Schedule reflecting the consistent designations. Also note that Conduits P08, P09 and P10 previously not scheduled have been added to the schedule.
7. On Sheet 225-ES1.1, in table titled "Outside Plant Communications Cabling," revise General Note to read "Contractor shall base his bid on an estimated pull length of 400 feet from MH 'C1' to termination point within Building 90. Contractor shall also include an allowance of 100 feet additional cable length per building from outside wall to termination points within buildings 17, 189, 221 and 225.
8. Sheet EP1.1, Keyed Notes 947 and 948: Detail reference should be 9/EP4.1.
9. Sheet EP1.1: Revise Pull Box Designation PB "CB" to PB "C1."



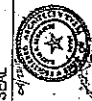




**SITE DEMOLITION PLAN**

**CONSULTANTS:**

**DEAI**



ARCHITECT / ENGINEERS:

**Architectural Edge Inc.**  
3010 South Blvd. Suite 102  
Tampa, FL 33634  
254.7125418 254.7732141F

SCALE: 1" = 10' - 0"

SITE PLAN - DEMOLITION

WACO ENERGY CENTER

674A4-12-705

Office of

**GENERAL NOTES:**

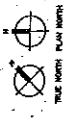
1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE MECHANICAL CODES AND STANDARDS.
2. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE MECHANICAL CODES AND STANDARDS.
3. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE MECHANICAL CODES AND STANDARDS.
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10. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE MECHANICAL CODES AND STANDARDS.

**KEYED NOTES:**

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE MECHANICAL CODES AND STANDARDS.
2. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE MECHANICAL CODES AND STANDARDS.
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7. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE MECHANICAL CODES AND STANDARDS.
8. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE MECHANICAL CODES AND STANDARDS.
9. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE MECHANICAL CODES AND STANDARDS.
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**LEGEND**

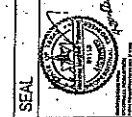
- EXISTING TO REMAIN
- NEW WORK



**1 MECHANICAL SITE - STEAM**

DATE	BY	REVISION
10/10/2018	WJL	1
10/10/2018	WJL	2
10/10/2018	WJL	3
10/10/2018	WJL	4
10/10/2018	WJL	5
10/10/2018	WJL	6
10/10/2018	WJL	7
10/10/2018	WJL	8
10/10/2018	WJL	9
10/10/2018	WJL	10

**ENGINEER:**  
WILLIAM J. LEE  
Professional Engineer  
No. 10000000000000000000

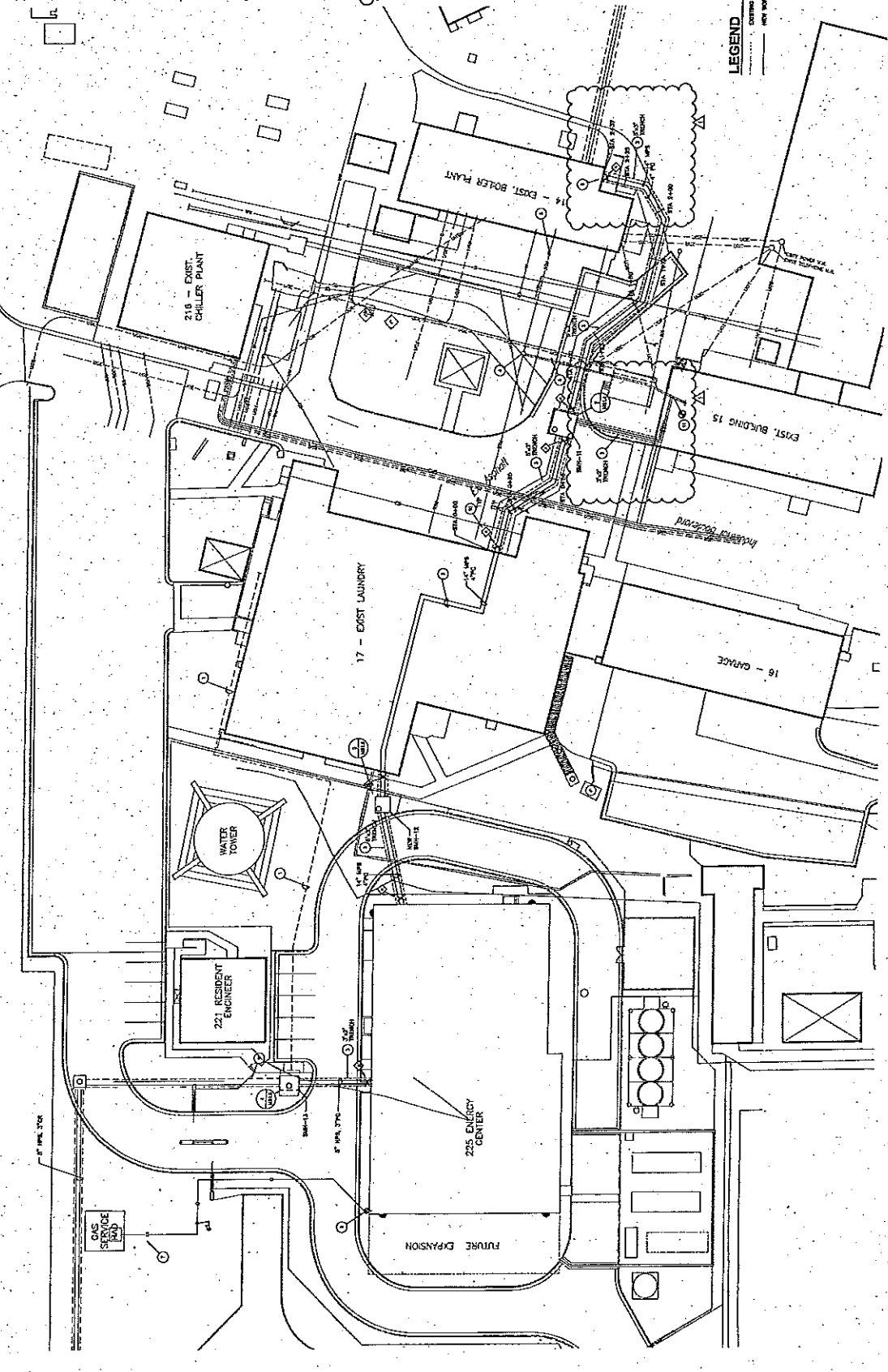


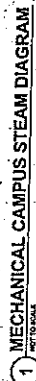
**SEAL**

**ARCHITECT**  
**Architectural Edge Inc.**  
10000000000000000000  
254.773.2618  
254.773.2618

**MECHANICAL STEAM SITE PLAN**  
WACO ENERGY CENTER  
Waco VAMC  
Paul Cherry  
254.773.2618

**Office of Construction and Facilities Management**  
225-MS1.2  
225-MS1.2  
225-MS1.2



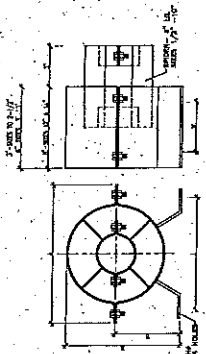


### LEGEND

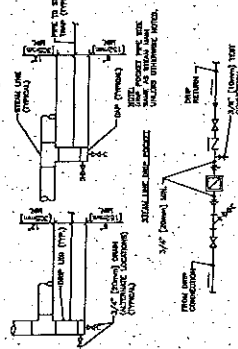
ARMED & DANGEROUS

CONFIDENTIAL NO DISSEM TO CIA, DOD, DIA  
 DATE 11-11-80 BY 10450  
 10450

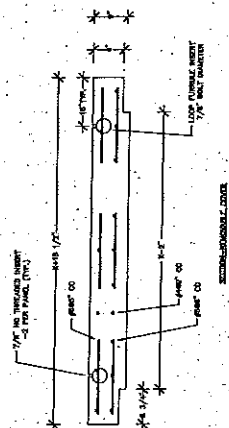
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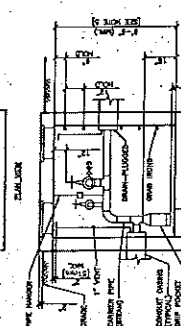
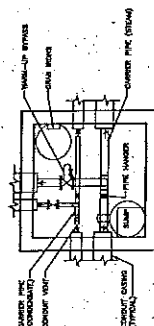
**5** TYP. PIPE GUIDES  
NOT TO SCALE



**STEAM- LINE DRIP POCKET**  
**STEAM TRAP ASSEMBLY**

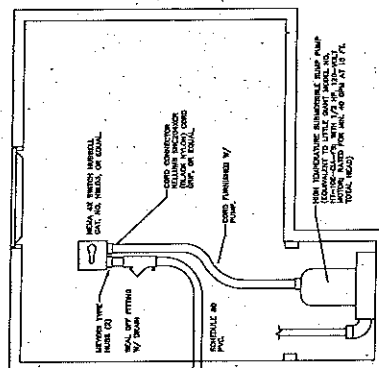


PERMANENT COVER PANEL SHALL BE CAST IN PLACE  
SECTIONS OF 2'-6" LONG MAX.

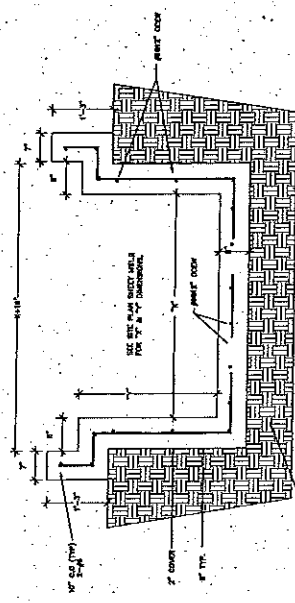


1. DIMENSIONS AND MATERIALS UNLESS OTHERWISE NOTED.
2. PROVIDE STRUCTURAL DESIGN SUITABLE FOR SITE LOCATION.
3. FOR AESTHETIC REASON, DETAILS INCLUDING STRUCTURE, VENTILATION, AND CLIMATE CONTROL, MEET TECHNICAL MANUAL, THE 2-8-80 EDITION.
4. MINIMUM FLOOR SPACE IS 800 SQ. FT. FOR EACH PERSON.
5. REFER TO SPECIFICATIONS FOR MATERIALS FOR MATERIALS, FINISHES, AND CONSTRUCTION DETAILS.

### CONCRETE STEAM MANHOLE WITH TYPICAL PIPING



**3** MAN HOLE SECTION

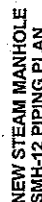
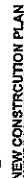
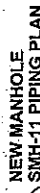


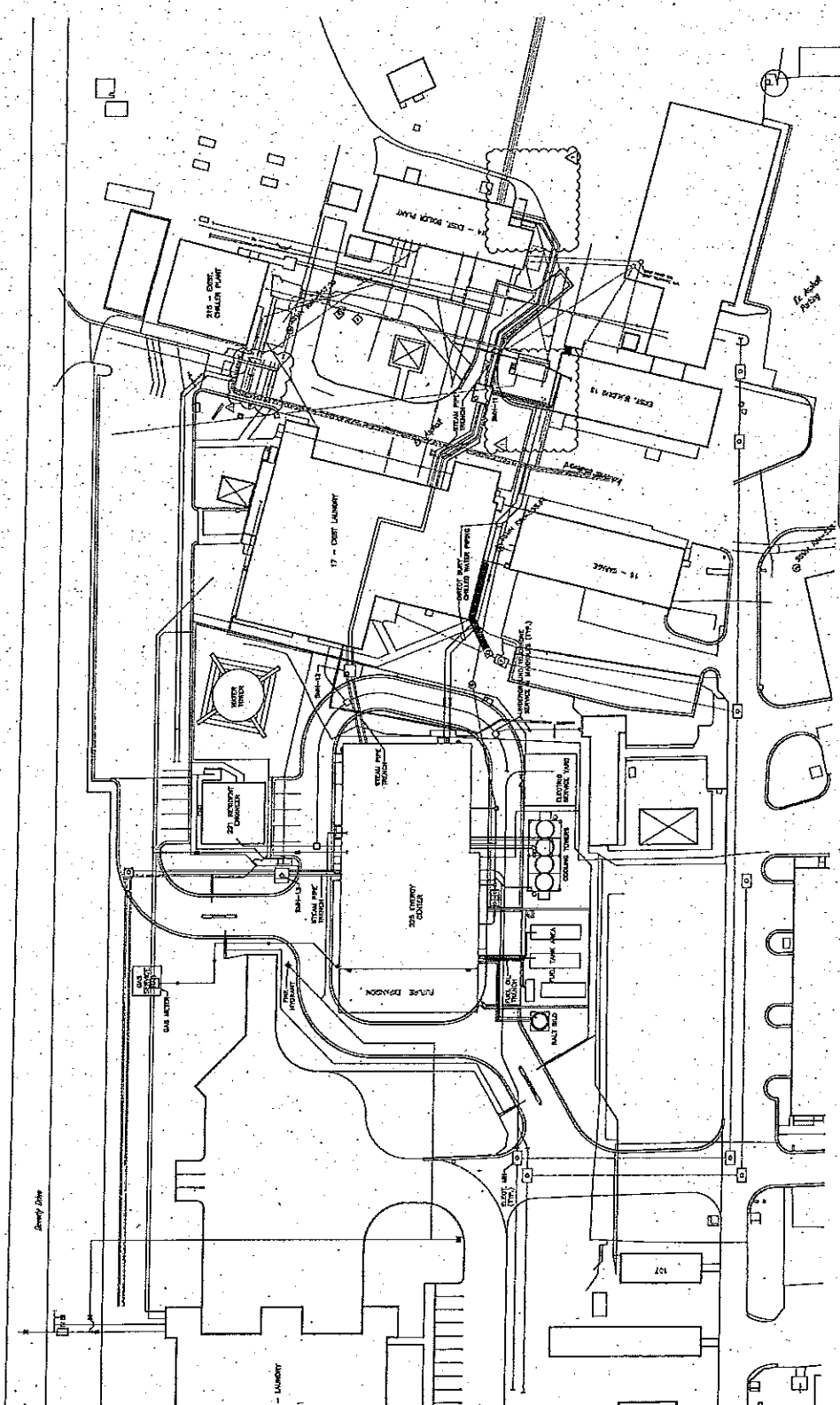
1. CONCRETE PIPE TRENCH WITH REMOVABLE COVER

[illegible]

REFS TO SHEET LABEL FOR GENERAL MECHANICAL NOTES THAT SHALL APPLY TO ALL SHEETS IN THIS SET UNLESS NOTED OTHERWISE IN THE REVED NOTES

1. CONSIDER THE PROBLEM AND PLAN YOUR LOGIC BEFORE YOU START WRITING.
2. CONSIDER THE ORDER OF YOUR LOGIC. SHOULD YOU START WITH THE EASY PARTS OR THE HARD PARTS?
3. CONSIDER THE ORDER OF YOUR LOGIC. SHOULD YOU START WITH THE EASY PARTS OR THE HARD PARTS?
4. CONSIDER THE ORDER OF YOUR LOGIC. SHOULD YOU START WITH THE EASY PARTS OR THE HARD PARTS?
5. CONSIDER THE ORDER OF YOUR LOGIC. SHOULD YOU START WITH THE EASY PARTS OR THE HARD PARTS?
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8. CONSIDER THE ORDER OF YOUR LOGIC. SHOULD YOU START WITH THE EASY PARTS OR THE HARD PARTS?
9. CONSIDER THE ORDER OF YOUR LOGIC. SHOULD YOU START WITH THE EASY PARTS OR THE HARD PARTS?
10. CONSIDER THE ORDER OF YOUR LOGIC. SHOULD YOU START WITH THE EASY PARTS OR THE HARD PARTS?

[illegible]



THE INFORMATION SHOWN ON THIS SHEET IS PRESENTED FOR COORDINATION PURPOSES OF THE ENERGY CENTER BUILDING AND IS NOT TO BE USED FOR ANY OTHER PURPOSES. THE INFORMATION IS NOT TO BE USED FOR ANY OTHER PURPOSES. THE INFORMATION IS NOT TO BE USED FOR ANY OTHER PURPOSES.

**COMBINED UTILITY SITE PLAN**  
Scale: 1" = 40'  
DATE: 11/11/11  
TIME: 10:00 AM  
PLAN NORTH

<b>ENGINEER</b> [Signature] [Stamp]		<b>ARCHITECT</b> [Signature] [Stamp]		<b>Architectural Edge, Inc.</b> 3010 South Hwy. Suite 100 Dallas, TX 75243 Tel: 214.771.2554 P Fax: 214.771.2554 F		<b>COMBINED UTILITY SITE PLAN</b> DATE: 11/11/11 TIME: 10:00 AM PLAN NORTH		<b>WACO ENERGY CENTER</b> Waco VAMC 10001 10001		<b>Office of Construction and Facilities Management</b> 8/14/13/15 225 725-MS1.6	
---	--	--	--	--	--	---	--	--	--	---	--

REFER TO SHEET NO. 1 FOR GENERAL MECHANICAL NOTES THAT SHALL APPLY TO ALL SHEETS IN THIS SET UNLESS NOTED OTHERWISE IN THE NOTED NOTES.

[illegible]

DISCOUNT AND SELECTIVELY DEMO WARE TO THESE  
EXISTING PRICES OF EQUIPMENT.

DISCOUNT AND SELECTIVELY DEMO WARE TO  
EXISTING PRICES AND COUNTERLINE

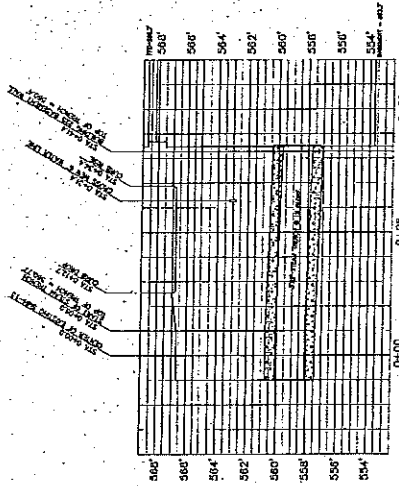
[illegible]

- 1 UTILIZE EXISTING CIRCUIT AT THE LOCATION TO BE LOCATED TO PROVIDE POWER TO THE NEWLY INSTALLED TV AND AUDIO EQUIPMENT.
- 2 UTILIZE EXISTING CIRCUIT CURRENTLY PROVIDING POWER TO THE EXISTING TV AND AUDIO EQUIPMENT.

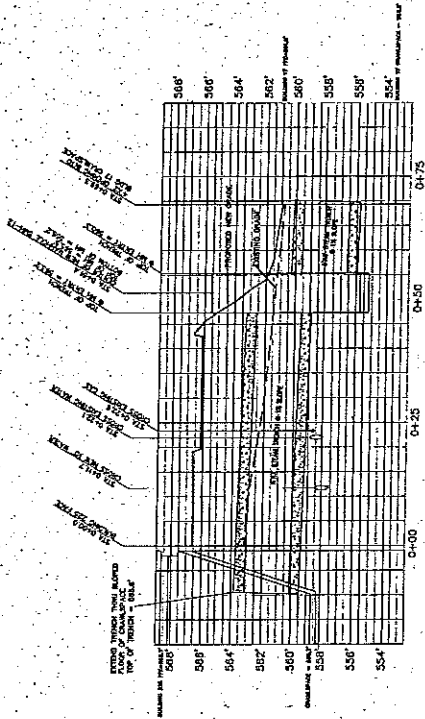
TO BE RETURNED  
EXISTING TO DONOR  
SPEC. NEW

[illegible]

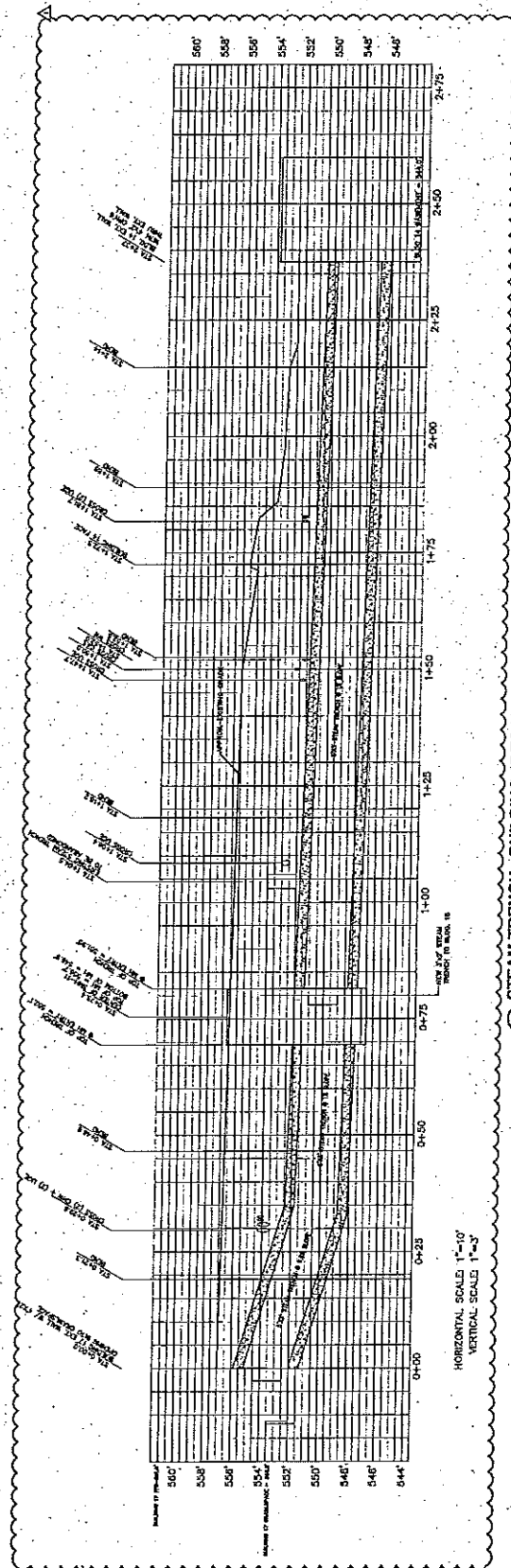




1 STEAM TRENCH - MANHOLE SMH-13 TO BUILDING 225  
HORIZONTAL SCALE 1"=10'  
VERTICAL SCALE 1"=3'  
SCALE: 1"=10'



2 STEAM TRENCH - BUILDING 225 TO BUILDING 17  
HORIZONTAL SCALE 1"=10'  
VERTICAL SCALE 1"=3'  
SCALE: 1"=10'



3 STEAM TRENCH - BUILDING 17 TO MANHOLE SMH-8  
HORIZONTAL SCALE 1"=10'  
VERTICAL SCALE 1"=3'  
SCALE: 1"=10'

<b>ENGINEER</b> [Signature] [Stamp]		<b>ARCHITECT</b> [Stamp]		<b>SEAL</b> [Stamp]		<b>Office of Construction and Facilities Management</b> Project No. 0744-12-715 Project Name 225 Project Number 225-MS1.9	
<b>MECHANICAL STEAM TRENCH PROFILES</b> Paul Cherry Date 08/01/11 Check Date 08/01/11 Check By PM		<b>WACO ENERGY CENTER</b> Location Waco VAMC Date 08/01/11 Check Date 08/01/11 Check By PM		<b>WACO ENERGY CENTER</b> Location Waco VAMC Date 08/01/11 Check Date 08/01/11 Check By PM		<b>Office of Construction and Facilities Management</b> Project No. 0744-12-715 Project Name 225 Project Number 225-MS1.9	



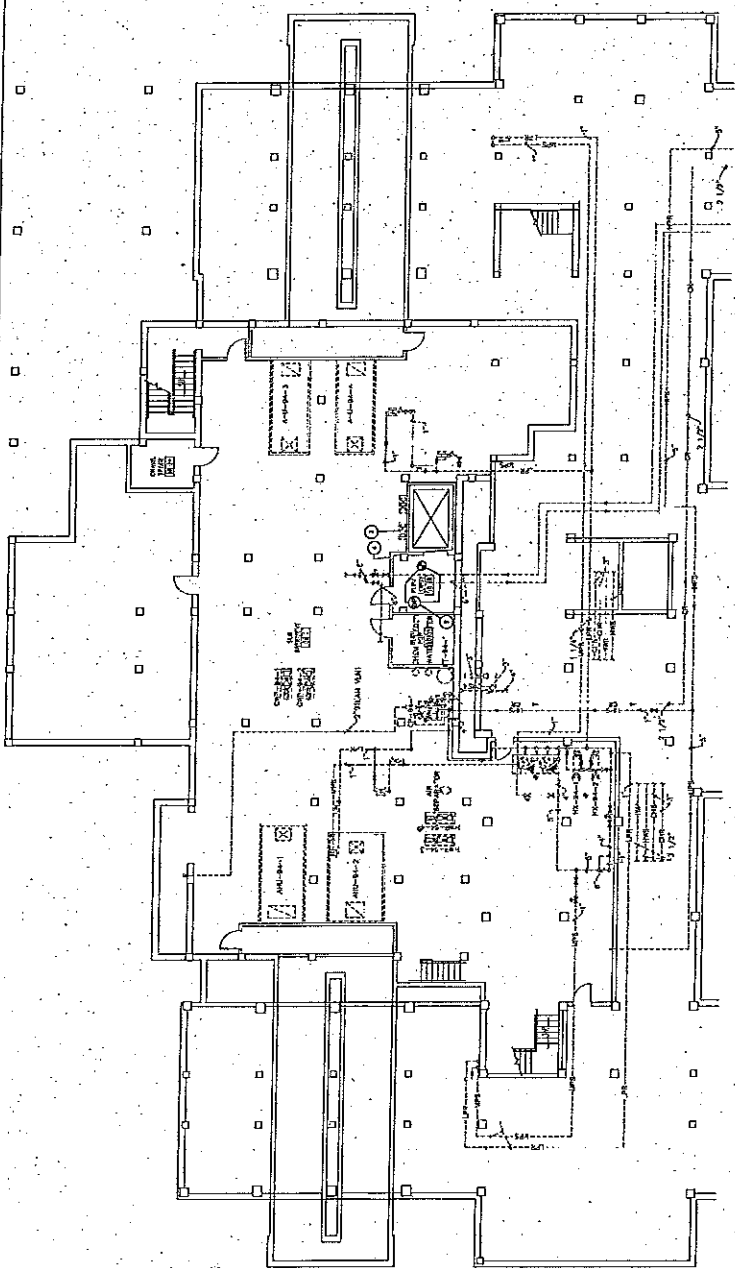


**KEYED NOTES:**

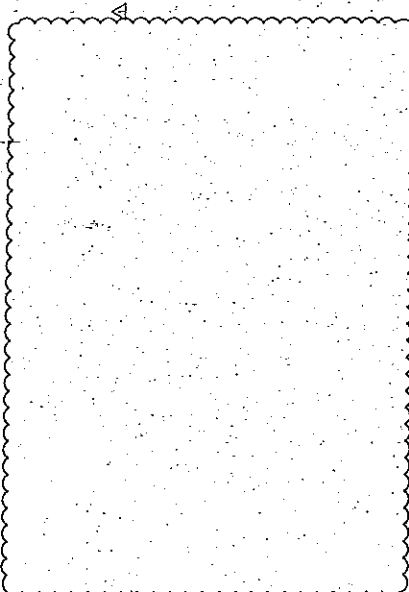
- 1. EXISTING PIPING SHALL BE REMOVED.
- 2. EXISTING PIPING SHALL BE REMOVED AND REPLACED WITH NEW PIPING IN CRAWL SPACE. SEE DETAIL 2 FOR CONNECTION TO EXISTING PIPING.
- 3. NEW PIPING SHALL BE 1/2" DIA. GALV. STEEL PIPE WITH 1/2" DIA. GALV. STEEL FLANGES.
- 4. NEW PIPING SHALL BE 1/2" DIA. GALV. STEEL PIPE WITH 1/2" DIA. GALV. STEEL FLANGES.
- 5. NEW PIPING SHALL BE 1/2" DIA. GALV. STEEL PIPE WITH 1/2" DIA. GALV. STEEL FLANGES.

**LEGEND**

EXISTING TO REMAIN  
NEW WORK



1 BUILDING 94 CRAWLSPACE AND BASEMENT PLAN - CHILLED WATER PIPING






2 CHILLED WATER DETAIL - CONNECTION TO EXISTING LOOP


<b>ARCHITECT</b> <b>Architectural Edge, Inc.</b> 2015 5000 Hwy. 100, Ste. 100 264.773.3541 F		<b>MECHANICAL CHILLED WATER SITE</b> -DETAILS DATE: 10/1/10 DRAWN BY: Paul Cherry		<b>WACO ENERGY CENTER</b> PROJECT NO.: 67444-12-705 DRAWING NO.: 225 PROJECT NAME: Waco VAMC		<b>Office of Construction and Facilities Management</b> PROJECT NO.: 67444-12-705 DRAWING NO.: 225-MS2.3	
<b>ENGINEER</b> [Stamp] [Signature]		<b>SEAL</b> [Stamp]		<b>ARCHITECT</b> [Stamp]		<b>Office of Construction and Facilities Management</b> PROJECT NO.: 67444-12-705 DRAWING NO.: 225-MS2.3	

[illegible]

① CHILLER PLANT MAIN LEVEL - OVERALL

<b>PROJECT NAME</b> MECHANICAL CHILLER PLANT MAIN LEVEL - OVERALL		<b>ARCHITECT:</b> <div style="text-align: center;">   <b>Architectural Edge Inc.</b>          3018 Scott Blvd. Suite 102          Irvine, CA 92618          (949) 254-7733       </div>		<b>SEAL</b> <div style="text-align: center;">   <b>Michael J. Friedman</b>          Professional Engineer          State of California          License No. 45678       </div>		<b>ENGINEER</b> <div style="text-align: center;">   <b>Michael J. Friedman Engineering</b>          10000 Wilshire Blvd. Suite 1000          Los Angeles, CA 90024          (310) 551-1000       </div>		<b>DATE</b> 10/1/2011	
<b>PROJECT NO.</b> 6744A-12-T05		<b>OFFICE OF</b> CONSTRUCTION AND FACILITIES MANAGEMENT		<b>DATE</b> 10/1/2011		<b>PROJECT NO.</b> 6744A-12-T05		<b>OFFICE OF</b> CONSTRUCTION AND FACILITIES MANAGEMENT	
<b>LOCATION</b> WACO VAMC		<b>DATE</b> 10/1/2011		<b>PROJECT NO.</b> 6744A-12-T05		<b>OFFICE OF</b> CONSTRUCTION AND FACILITIES MANAGEMENT		<b>DATE</b> 10/1/2011	
<b>DATE</b> 10/1/2011		<b>PROJECT NO.</b> 6744A-12-T05		<b>OFFICE OF</b> CONSTRUCTION AND FACILITIES MANAGEMENT		<b>DATE</b> 10/1/2011		<b>PROJECT NO.</b> 6744A-12-T05	

[illegible][illegible][illegible]

	<b>ARCHITECT</b>  <b>Architectural Edge Inc.</b> 3010 South Blvd., Suite 222 Temple, Texas 76788 254-771-2324 P 254-773-3144 F	Drawing Title <b>MECHANICAL CHILLER PLANT SCHEDULES</b>	Project Title <b>WACO ENERGY CENTER</b>	Project Number <b>67444-12-715</b>	Client Name <b>Waco Energy</b>	Client Address <b>225 MI-H6.4</b>
		Designer <b>Paul Cherry</b>	Designer Title <b>Waco VAMC</b>	Designer Address <b>Waco VAMC</b>	Designer Phone <b>254-771-2324</b>	Designer Email <b>254-773-3144</b>

## 2 BUILDING 225S CHILLED WATER SYSTEM CONTROL SEQUENCE

A. THE CHILLED WATER SYSTEM SHALL BE CONTROLLED BY THE BUILDING 225S CHILLED WATER SYSTEM CONTROLLER (CWS) WHICH SHALL BE INSTALLED IN THE BUILDING 225S CHILLED WATER SYSTEM CONTROL ROOM. THE CWS SHALL BE RESPONSIBLE FOR THE FOLLOWING:

1. MONITORING THE CHILLED WATER SYSTEM OPERATING PARAMETERS AND ALARMS.
2. CONTROLLING THE CHILLED WATER PUMP OPERATION.
3. CONTROLLING THE CHILLED WATER VALVE OPERATION.
4. CONTROLLING THE CHILLED WATER FLOW RATE.
5. CONTROLLING THE CHILLED WATER TEMPERATURE.
6. CONTROLLING THE CHILLED WATER PRESSURE.
7. CONTROLLING THE CHILLED WATER QUALITY.
8. CONTROLLING THE CHILLED WATER SYSTEM SECURITY.
9. CONTROLLING THE CHILLED WATER SYSTEM LOGGING.
10. CONTROLLING THE CHILLED WATER SYSTEM REPORTING.
11. CONTROLLING THE CHILLED WATER SYSTEM BACKUP.
12. CONTROLLING THE CHILLED WATER SYSTEM MAINTENANCE.
13. CONTROLLING THE CHILLED WATER SYSTEM SHUTDOWN.
14. CONTROLLING THE CHILLED WATER SYSTEM STARTUP.
15. CONTROLLING THE CHILLED WATER SYSTEM RESET.
16. CONTROLLING THE CHILLED WATER SYSTEM TEST.
17. CONTROLLING THE CHILLED WATER SYSTEM CALIBRATION.
18. CONTROLLING THE CHILLED WATER SYSTEM TROUBLESHOOTING.
19. CONTROLLING THE CHILLED WATER SYSTEM OPTIMIZATION.
20. CONTROLLING THE CHILLED WATER SYSTEM PERFORMANCE.
21. CONTROLLING THE CHILLED WATER SYSTEM EFFICIENCY.
22. CONTROLLING THE CHILLED WATER SYSTEM RELIABILITY.
23. CONTROLLING THE CHILLED WATER SYSTEM SAFETY.
24. CONTROLLING THE CHILLED WATER SYSTEM COMPLIANCE.
25. CONTROLLING THE CHILLED WATER SYSTEM DOCUMENTATION.
26. CONTROLLING THE CHILLED WATER SYSTEM TRAINING.
27. CONTROLLING THE CHILLED WATER SYSTEM SUPPORT.
28. CONTROLLING THE CHILLED WATER SYSTEM IMPROVEMENT.
29. CONTROLLING THE CHILLED WATER SYSTEM INNOVATION.
30. CONTROLLING THE CHILLED WATER SYSTEM FUTURE.

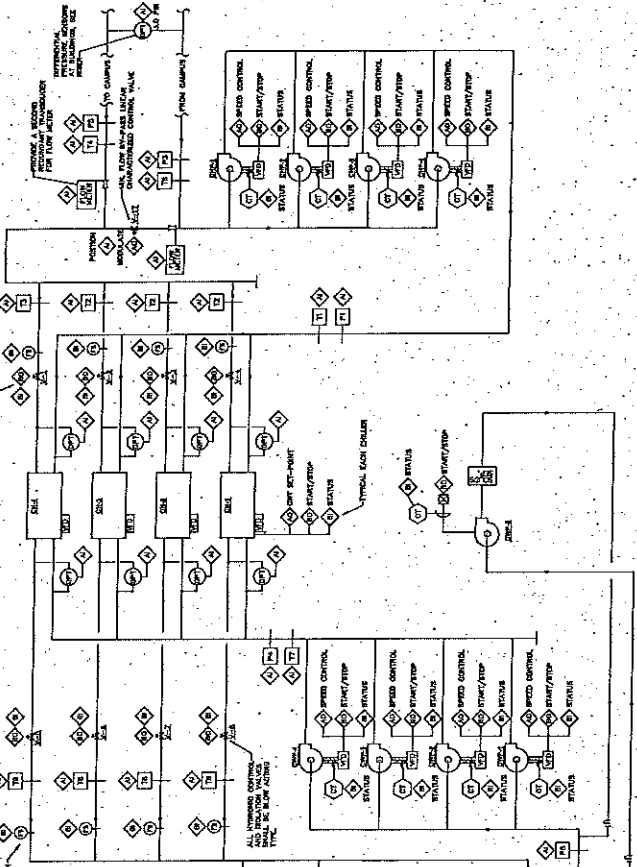
B. THE CHILLED WATER SYSTEM SHALL BE CONTROLLED BY THE BUILDING 225S CHILLED WATER SYSTEM CONTROLLER (CWS) WHICH SHALL BE INSTALLED IN THE BUILDING 225S CHILLED WATER SYSTEM CONTROL ROOM. THE CWS SHALL BE RESPONSIBLE FOR THE FOLLOWING:

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3. CONTROLLING THE CHILLED WATER VALVE OPERATION.
4. CONTROLLING THE CHILLED WATER FLOW RATE.
5. CONTROLLING THE CHILLED WATER TEMPERATURE.
6. CONTROLLING THE CHILLED WATER PRESSURE.
7. CONTROLLING THE CHILLED WATER QUALITY.
8. CONTROLLING THE CHILLED WATER SYSTEM SECURITY.
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17. CONTROLLING THE CHILLED WATER SYSTEM CALIBRATION.
18. CONTROLLING THE CHILLED WATER SYSTEM TROUBLESHOOTING.
19. CONTROLLING THE CHILLED WATER SYSTEM OPTIMIZATION.
20. CONTROLLING THE CHILLED WATER SYSTEM PERFORMANCE.
21. CONTROLLING THE CHILLED WATER SYSTEM EFFICIENCY.
22. CONTROLLING THE CHILLED WATER SYSTEM RELIABILITY.
23. CONTROLLING THE CHILLED WATER SYSTEM SAFETY.
24. CONTROLLING THE CHILLED WATER SYSTEM COMPLIANCE.
25. CONTROLLING THE CHILLED WATER SYSTEM DOCUMENTATION.
26. CONTROLLING THE CHILLED WATER SYSTEM TRAINING.
27. CONTROLLING THE CHILLED WATER SYSTEM SUPPORT.
28. CONTROLLING THE CHILLED WATER SYSTEM IMPROVEMENT.
29. CONTROLLING THE CHILLED WATER SYSTEM INNOVATION.
30. CONTROLLING THE CHILLED WATER SYSTEM FUTURE.

## 3 ALTERNATE BID CONTROLS

A. THE CHILLED WATER SYSTEM SHALL BE CONTROLLED BY THE BUILDING 225S CHILLED WATER SYSTEM CONTROLLER (CWS) WHICH SHALL BE INSTALLED IN THE BUILDING 225S CHILLED WATER SYSTEM CONTROL ROOM. THE CWS SHALL BE RESPONSIBLE FOR THE FOLLOWING:

1. MONITORING THE CHILLED WATER SYSTEM OPERATING PARAMETERS AND ALARMS.
2. CONTROLLING THE CHILLED WATER PUMP OPERATION.
3. CONTROLLING THE CHILLED WATER VALVE OPERATION.
4. CONTROLLING THE CHILLED WATER FLOW RATE.
5. CONTROLLING THE CHILLED WATER TEMPERATURE.
6. CONTROLLING THE CHILLED WATER PRESSURE.
7. CONTROLLING THE CHILLED WATER QUALITY.
8. CONTROLLING THE CHILLED WATER SYSTEM SECURITY.
9. CONTROLLING THE CHILLED WATER SYSTEM LOGGING.
10. CONTROLLING THE CHILLED WATER SYSTEM REPORTING.
11. CONTROLLING THE CHILLED WATER SYSTEM BACKUP.
12. CONTROLLING THE CHILLED WATER SYSTEM MAINTENANCE.
13. CONTROLLING THE CHILLED WATER SYSTEM SHUTDOWN.
14. CONTROLLING THE CHILLED WATER SYSTEM STARTUP.
15. CONTROLLING THE CHILLED WATER SYSTEM RESET.
16. CONTROLLING THE CHILLED WATER SYSTEM TEST.
17. CONTROLLING THE CHILLED WATER SYSTEM CALIBRATION.
18. CONTROLLING THE CHILLED WATER SYSTEM TROUBLESHOOTING.
19. CONTROLLING THE CHILLED WATER SYSTEM OPTIMIZATION.
20. CONTROLLING THE CHILLED WATER SYSTEM PERFORMANCE.
21. CONTROLLING THE CHILLED WATER SYSTEM EFFICIENCY.
22. CONTROLLING THE CHILLED WATER SYSTEM RELIABILITY.
23. CONTROLLING THE CHILLED WATER SYSTEM SAFETY.
24. CONTROLLING THE CHILLED WATER SYSTEM COMPLIANCE.
25. CONTROLLING THE CHILLED WATER SYSTEM DOCUMENTATION.
26. CONTROLLING THE CHILLED WATER SYSTEM TRAINING.
27. CONTROLLING THE CHILLED WATER SYSTEM SUPPORT.
28. CONTROLLING THE CHILLED WATER SYSTEM IMPROVEMENT.
29. CONTROLLING THE CHILLED WATER SYSTEM INNOVATION.
30. CONTROLLING THE CHILLED WATER SYSTEM FUTURE.



## 1 CHILLED WATER AND CONDENSER WATER CONTROL DIAGRAM

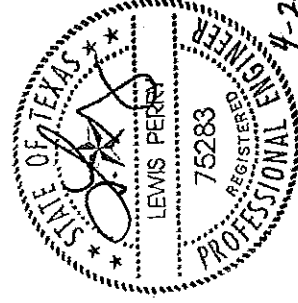
<b>ENGINEER:</b> ARCHITECTURAL EDGE INC. 300 SOUTH BAY, SUITE 100 TAMPA, FL 33609 TEL: 813.271.1111 FAX: 813.271.1112		<b>ARCHITECT:</b> ARCHITECTURAL EDGE INC. 300 SOUTH BAY, SUITE 100 TAMPA, FL 33609 TEL: 813.271.1111 FAX: 813.271.1112		<b>MECHANICAL CHILLER PLANT CONTROLS:</b> WACO ENERGY CENTER 225S 19001 NP		<b>Office of Construction and Facilities Management:</b> 225S-MHT.2 225S-MHT.2	
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<b>ARCHITECT:</b> ARCHITECTURAL EDGE INC. 300 SOUTH BAY, SUITE 100 TAMPA, FL 33609 TEL: 813.271.1111 FAX: 813.271.1112		<b>MECHANICAL CHILLER PLANT CONTROLS:</b> WACO ENERGY CENTER 225S 19001 NP		<b>Office of Construction and Facilities Management:</b> 225S-MHT.2 225S-MHT.2	
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SWBD		277/480 V 3PH 4W	4000 A MCB	65 KAIC	BOT FED	NEMA 1	REAR CONNECTED		
225B		REVISED FOR AMMENDMENT 2			FRONT & REAR ACCESS				
CKT NO.			LOAD TYPE	BREAKER SIZE / POLES	CIRCUIT SIZING		CONN KVA	CONN AMPS	NOTES
1	CHILLER CH-4		MOT	1600 / 3	3 SETS OF: 3-500, 4/0G, 3"C		651.8	784.0	1
2	FEEDER TO DIST PNL 'NH1B'		FDR	800 / 3	2 SETS OF: 3-500, 1/0N, 1/0G, 3"C		480.0	577.4	
3	PREPARED SPACE			800 / 3					
4	PREPARED SPACE			800 / 3					
5	SPARE			800 / 3					
6	CHILLER CH-3		MOT	1600 / 3	3 SETS OF: 3-500, 4/0G, 3"C		651.8	784.0	1
7	FEEDER TO ATS 'S2B' / MCC 'SH2B'		FDR	400 / 3	3-500, #3N, #3G, 3"C		157.8	189.8	
8	PREPARED SPACE			800 / 3					
9	PREPARED SPACE			800 / 3					
10	SPARE			1600 / 3					

NOTES:

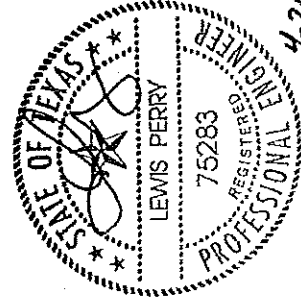
1. MOTOR CONTROLS FOR CHILLER WILL BE FURNISHED WITH EQUIPMENT.





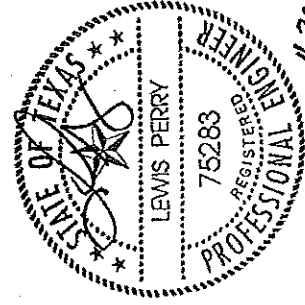
DIST PNL		277/480 V		3PH 4W	800A	MLO	65 KAIC	SURF MTD NEMA 1	REVISED FOR AMMENDMENT 2	
NH1B		LOCATION:								
		LOAD DESCRIPTION				TYPE	BREAKER SIZE / POLES	CIRCUIT SIZING	NOTES	
CKT NO.										
1		CHILLED WATER PUMP 'CHP-3'				MOT	200 / 3	3-1/0, #4G, 2"C		
2		CHILLED WATER PUMP 'CHP-4'				MOT	200 / 3	3-1/0, #4G, 2"C		
3		FEEDER TO PNL 'NH0B'				FDR	400 / 3	3-500, #3N, #3G, 3"C		
4		FEEDER TO WIREWAY 'NHMB'				FDR	200 / 3	3-3/0, #3N, #3G, 2"C		
5		FEEDER TO XFMR 'N1B'				FDR	40 / 3	3#8, #10G, 3/4"C		
6		FEEDER TO MCC 'NH2B'				FDR	100 / 3	3#3, #8N, #8G, 1 1/4"C		
7		LIGHTING				LTG	20 / 1			
8		PREPARED SPACE					100 / 3			
9		PREPARED SPACE					100 / 3			
10		PREPARED SPACE					100 / 3			
11		PREPARED SPACE					100 / 3			
12		PREPARED SPACE					100 / 3			
NOTES:										

NOTES:



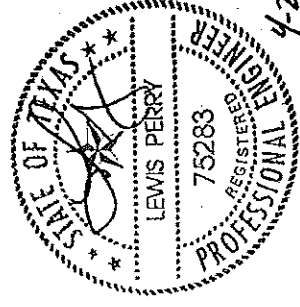
MCC		277/480 V	3PH 4W	800 A	MLO	65 KAIC	NEMA 1			REVISED FOR AMMENDMENT 2				
NH2A		LOCATION: ELECT RM 203				FED FROM:	NH1A							
CKT NO	LOAD DESCRIPTION	LOAD TYPE	UNIT TYPE	NEMA SIZE	MOT HP	OCPD TYPE	OCPD RATING	CIRCUIT SIZING	NOTES					
1	FDR TO XFMR 'N2A'	FDR	FDR			FUSE	40A	3#8, #10G, 3/4" C						
2	EF-13 CHILLER PLANT - (THROUGH VFD)	MOT	FDR			FUSE	15A	3#12, #12G IN 3/4" C						
3	EF-11 CRAWL SPACE VENTILATION	MOT	FVNR	1	3	FUSE	15A	3#12, #12G IN 3/4" C						
4	AHU-3	MOT	FVNR	1	1	15A		3#12, #12G IN 3/4" C						
5	AHU-5	MOT	FVNR	1	1	15A		3#12, #12G IN 3/4" C						
6	SPARE		FVNR	1										
7	SPARE		FVNR	1										
8	PREPARED SPACE		FVNR	1										
9	PREPARED SPACE		FVNR	1										
10	PREPARED SPACE		FVNR	1										

NOTES:



MCC		277/480 V	3PH 4W	800 A	MLO	65 KAIC	NEMA 1		REVISED FOR AMENDMENT 2	
NH2B		LOCATION: ELECT RM 203					FED FROM:		NH1B	
CKT NO	LOAD DESCRIPTION	LOAD TYPE	UNIT TYPE	NEMA SIZE	MOT HP	OCPD TYPE	OCPD RATING	CIRCUIT SIZING	NOTES	
1	FDR TO XFMR 'N2B'	FDR	FDR			FUSE	40A	3#8, #10G, 3/4" C		
2	SPARE		FVNR	1		FUSE				
3	EF-14 CHILLER PLANT - (THROUGH VFD)	MOT	FDR	1		FUSE	15A	3#12, #12G IN 3/4" C		
4	AHU-2		FVNR	1		FUSE	15A	3#12, #12G IN 3/4" C		
5	AHU-4		FVNR	1		FUSE	15A	3#12, #12G IN 3/4" C		
6	SPARE		FVNR	1		FUSE				
7	SPARE		FVNR	1		FUSE				
8	PREPARED SPACE		FVNR	1		FUSE				
9	PREPARED SPACE		FVNR	1		FUSE				
10	PREPARED SPACE		FVNR	1		FUSE				
NOTES:										

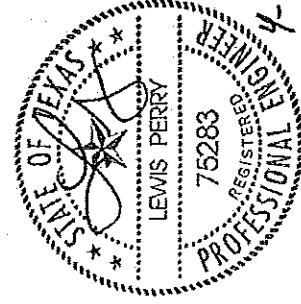
NOTES:



MCC		277/480 V	3PH 4W	400 A	MCB	65 KAIC	NEMA 1		SEE NOTE 4 FOR KIRK KEYING		REVISED FOR AMMENDMENT 2	
SH2A		LOCATION:		FED FROM:		ATS 'S2A'		NEMA 1		REVISED FOR AMMENDMENT 2		
CKT NO	LOAD DESCRIPTION	LOAD TYPE	UNIT TYPE	NEMA SIZE	MOT HP	OCPD TYPE	OCPD RATING	CIRCUIT SIZING	NOTES			
1	HEATING WATER PUMP HWP-1	MOT	FDR		15	FUSE	30A	3#10, #10G, 3/4"C				
2	FUEL OIL PUMP FOP-1	MOT	FDR		5	FUSE	15A	3#12, #10G, 3/4"C				
3	CONDENSATE TRANSFER PUMP CTP-1	MOT	FDR		5	FUSE	15A	3#12, #10G, 3/4"C				
4	BOILER BFT-4	MOT	FDR		30	FUSE	60A	3#6, #10G, 1"C				
5	BOILER BFT-3	MOT	FDR		30	FUSE	60A	3#6, #10G, 1"C				
6	FEEDER TO PNL 'SH0A'	FDR	FDR			FUSE	60A	3#6, #8N, #10G, 1"C				
7	FEEDER TO WIREWAY 'SHMA'	FDR	FDR			FUSE	60A	3#6, #8N, #10G, 1"C				
8	EF-1 BOILER PLANT	MOT	FVNR	1	2	FUSE	15A	3#12, #12G, 3/4"C				
9	EF-3 BOILER PLANT	MOT	FVNR	1	2	FUSE	15A	3#12, #12G, 3/4"C				
10	EF-5 BOILER PLANT	MOT	FVNR	1	2	FUSE	15A	3#12, #12G, 3/4"C				
11	EF-9 AHU-1 RELIEF AIR	MOT	FDR		3	FUSE	15A	3#12, #10G, 3/4"C				
12	SPARE	MOT	FVNR	2		FUSE		3#12, #10G, 3/4"C				
13	AIR HANDLER AHU-1	MOT	FDR		7.5	FUSE	20A	3#10, #10G, 3/4"C				
14	FEEDWATER PUMP FWP-3	MOT	FVNR	2	15	FUSE	40A	3#10, #10G, 3/4"C				
15	FEEDWATER PUMP FWP-4 (FUT)	MOT	FVNR	2	15	FUSE	40A	3/4" C	2			
16	FEEDER TO XFMR 'S2A'	FDR	FDR			FUSE	60A	3#6, #10G, 3/4"C				
17	LIGHTING CIRCUITS	LTG	CONT			FUSE	20A					
18	SPARE	MOT	FVNR	1		FUSE						
19	SPARE	MOT	FVNR	1		FUSE						
	TIE BREAKER TO 'SH2B'	TIE				C.B.	400A	3-500, #3N, #3G, 3"C	3, 4			

NOTES:

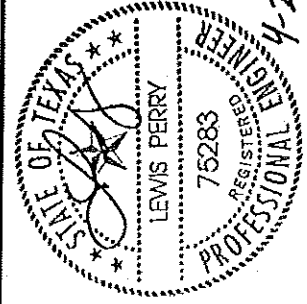
1. NOT USED
2. ROUGH-IN FOR FUTURE CONNECTION
3. LOCATE ON LEFT SIDE OF LINEUP W/ PROVISIONS FOR CABLED CONNECTION TO DUPLICATE MAIN (TIE) LUGS IN 'SH2B' BEHIND.
4. PROVIDE MAIN-TIE-MAIN KIRK KEYING ARRANGEMENT (3 LOCKS, 2 KEYS) FOR SH2A MAIN, SH2A TIE BRKR, AND SH2B MAIN.



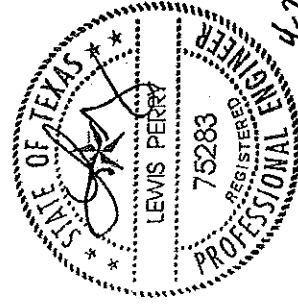
MCC		277/480 V	3PH 4W	400 A	MCB	65 KAIC	NEMA 1		SEE NOTE 4 IN SCHEDULE FOR MCC 'SH2A' FOR KIRK KEYING		REVISED FOR AMMENDMENT 2	
SH2B		LOCATION:				FED FROM:		ATS 'S2B'				
CKT NO	LOAD DESCRIPTION	LOAD TYPE	UNIT TYPE	NEMA SIZE	MOT HP	OCPD TYPE	OCPD RATING	CIRCUIT SIZING		NOTES		
1	HEATING WATER PUMP HWP-2	MOT	FDR			FUSE	30A	3#10, #10G, 3/4"C				
2	FUEL OIL PUMP FOP-2	MOT	FDR		5	FUSE	15A	3#12, #10G, 3/4"C				
3	CONDENSATE TRANSFER PUMP CTP-2	MOT	FDR		7.5	FUSE	15A	3#12, #10G, 3/4"C		1		
4	BOILER BFT-1	MOT	FDR		30	FUSE	60A	3#6, #10G, 1"C				
5	BOILER BFT-2	MOT	FDR		30	FUSE	60A	3#6, #10G, 1"C				
6	FEEDER TO PNL 'SHOB'	FDR	FDR			FUSE	60A	3#6, #8N, #10G, 1 1/4"C				
7	FEEDER TO WIREWAY 'SHMB'	FDR	FDR			FUSE	60A	3#6, #8N, #10G, 1 1/4"C				
8	EF-2 BOILER PLANT EXHAUST	MOT	FVNR	1	2	FUSE	15A	3#12, #12G, 3/4"C				
9	EF-4 BOILER PLANT EXHAUST	MOT	FVNR	1		FUSE	15A	3#12, #12G, 3/4"C				
10	EF-6 BOILER PLANT EXHAUST	MOT	FVNR	1		FUSE	15A	3#12, #12G, 3/4"C				
11	EF-7 BASEMENT EXHAUST	MOT	FVNR	1		FUSE	20A	3#12, #12G, 3/4"C				
12	FEEDWATER PUMP FWP-1	MOT	FVNR	2		FUSE	40A	3#10, #10G, 3/4"C				
13	FEEDWATER PUMP FWP-2	MOT	FVNR	2		FUSE	40A	3#10, #10G, 3/4"C				
14	FEEDER TO XFMR 'S2B'	FDR	FDR			FUSE	60A	3#6, #10G, 3/4"C				
15	F.O. SIDESTREAM UNIT 'SSF-1'	MOT	FVNR	1		FUSE	20A	3#12, #10G, 3/4"C				
16	LIGHTING CIRCUITS	LTG	CONT			FUSE	20A					
17	SPARE	MOT	FVNR	1		FUSE	30A					
18	SPARE	MOT	FVNR	1		FUSE	30A					
19	PREPARED SPACE		FVNR	1		FUSE	30A					
	LUGS FOR TIE CONNECTION TO 'SH2A'		IL		LUGS	400A	400A			3		

NOTES:

1. DUPLEX CONTROL PANEL W/ ALTERNATOR, INTEGRAL DISCONNECTING MEANS & TWO SOURCE CONNECTIONS FURNISHED WITH EQUIPMENT.
2. NOT USED.
3. LOCATE ON RIGHT SIDE OF LINEUP W/ PROVISIONS FOR CABLED CONNECTION TO TIE BREAKER IN 'SH2A' BEHIND.



WIREWAY		277/480 V		3PH 4W		NEMA 4	
SHIMA		LOCATION:		RACK AT COOLING TOWERS		ISSUED WITH AMMENDMENT 2	
CKT NO.	LOAD DESCRIPTION	LOAD TYPE	SWITCH AMPS	FUSE AMPS	POLES	CIRCUIT SIZING	NOTES
1	SUMP HEATER SH-1	OTH	30	30	3	3#10, #10G, 3/4"C	1
2	SUMP HEATER SH-3	OTH	30	30	3	3#10, #10G, 3/4"C	1
3	STORM WATER PUMP SWP-1A	MOT	30	15	3	3#12, #12G, 3/4"C	2
NOTES:							
1. IN ADDITION TO SCHEDULED DISCONNECTS, MOUNT SUMP HEATER CONTROLLERS FURNISHED WITH TOWERS ON SAME RACK / WIREWAY ASSEMBLY.							
2. PUMP PACKAGE FURNISHED WITH DUPLEX CONTROL PANEL W/ ALTERNATOR, INTEGRAL DISCONNECTING MEANS & TWO SOURCE CONNECTIONS.							



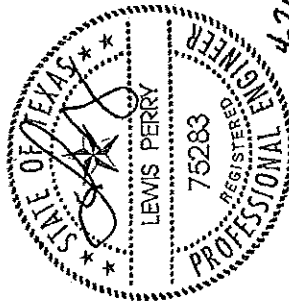
4-26-12

WIREWAY		277/480 V		3PH 4W		NEMA 4	
SHMB		LOCATION:		RACK AT COOLING TOWERS		ISSUED WITH AMMENDMENT 2	
CKT NO.	LOAD DESCRIPTION	LOAD TYPE	SWITCH AMPS	FUSE AMPS	POLES	CIRCUIT SIZING	NOTES
1	SUMP HEATER SH-2	OTH	30	30	3	3#10, #10G, 3/4"C	1
2	SUMP HEATER SH-4	OTH	30	30	3	3#10, #10G, 3/4"C	1
3	STORM WATER PUMP SWP-1A	MOT	30	15	3	3#12, #12G, 3/4"C	2

NOTES:

1. IN ADDITION TO SCHEDULED DISCONNECTS, MOUNT SUMP HEATER CONTROLLERS FURNISHED WITH TOWERS ON SAME RACK / WIREWAY ASSEMBLY.

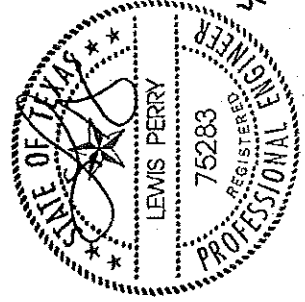
2. PUMP PACKAGE FURNISHED WITH DUPLEX CONTROL PANEL W/ ALTERNATOR, INTEGRAL DISCONNECTING MEANS & TWO SOURCE CONNECTIONS.



4-26-12

BC PNL		120/208V	3PH 4W	100 A	MLO	10 KAIC	16 CKT	1 SECT	SURF MTD	NEMA 4
NLMA		LOCATION: REVISED FOR AMENDMENT 2								
CKT NO.	LOAD DESCRIPTION	LOAD TYPE	BREAKER TRIP / POLES	CIRCUIT SIZING	NOTES	P				
1	MOTORIZED VALVES ON CT-1		15 / 1			A				
3	MOTORIZED VALVES ON CT-3		15 / 1			B				
5	RECEPT AT COOLING TWRS		20 / 1			C				
7	RECEPT AT FUEL STORAGE		20 / 1			A				
9	RECEPT AT BRINE TANK		20 / 1			B				
11	SPACE		20 / 1			C				
13	SPACE		20 / 1			A				
15	SPACE		20 / 1			B				
2	CT-1 VFD CONDITIONED CABINET		15 / 2	2#12, #12G, 3/4"C		A				
4						B				
6	CT-3 VFD CONDITIONED CABINET		15 / 2	2#12, #12G, 3/4"C		C				
8						A				
10	SPACE		20 / 1			B				
12	SPACE		20 / 1			C				
14	SPACE		20 / 1			A				
16	SPACE		20 / 1			B				

NOTES:

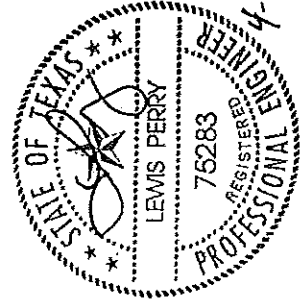


4-20-12



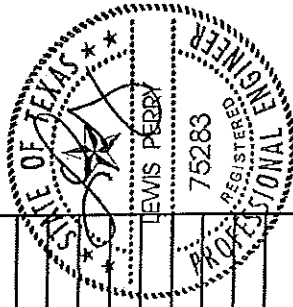
BC PNL		120/208V	3PH 4W	100 A	MLO	10 KAIC	16 CKT	1 SECT	SURF MTD NEMA 4
NLMB		LOCATION: REVISED FOR AMMENDMENT 2							
CKT NO.	LOAD DESCRIPTION	LOAD TYPE	BREAKER TRIP / POLES	FED FROM:	CIRCUIT SIZING	NOTES	P		
1	MOTORIZED VALVES ON CT-2	MOT	15 / 1				H		
3	MOTORIZED VALVES ON CT-4	MOT	15 / 1				A		
5	DDC CABINET DDC-M	OTH	20 / 1				B		
7	SPACE		20 / 1				C		
9	SPACE		20 / 1				A		
11	SPACE		20 / 1				B		
13	SPACE		20 / 1				C		
15	SPACE		20 / 1				A		
							B		
2	CT-2 VFD CONDITIONED CABINET		15 / 2		2#12, #12G, 3/4"C		A		
4									
6	CT-4 VFD CONDITIONED CABINET		15 / 2		2#12, #12G, 3/4"C		B		
8							C		
10	SPACE		20 / 1				A		
12	SPACE		20 / 1				B		
14	SPACE		20 / 1				C		
16	SPACE		20 / 1				A		
							B		
NOTES:									

NOTES:



# MISC. CONDUIT SCHEDULE REVISED FOR AMMENDMENT 2.

TAG NO	FROM	TO	DESCRIPTION	SIZE	NOTES
B01	OVS-CP	PB-6	BMCS WORKSTATION	1"	
B02	PB-6	PB-3	BMCS CONTROLS - GENERAL	2"	
B03	DDC-1A	GENERATOR ANN	GENERATOR ALARMS	3/4"	
B04	DDC-2A	DDC-2B	DDC-2B - AHU-1 & MISC CONTROLS	3/4"	
B05	PB-3	DDC-1B	DDC-1B - BOILER SYSTEM INTERFACE	1"	
B06	PB-3	DDC-0A	DDC- CWP & MISC CONTROLS	3/4"	
B07	DDC-0A	CW VFD'S	CWP VFD'S	1"	
B08	PB-3	DDC -1M	DDC-1M - COOLING TOWER / TANK AREA	1"	
B09	DDC-1M	CTF'S & SUMP HTRS	CTF'S & SUMP HTRS - COOLING TOWERS	(2) 1"	
B10	PB-3	DDC-1C	DDC-1C - CHP CONTROLS	3/4"	
B11	DDC-1C	CHP VFD'S	CHP VFD'S	1"	
B12	PB-3	DDC-1D	DDC-1D - CHILLER CONTROLS	3/4"	
B13	DDC-1D	CHILLER CONT PNLS	CHILLERS	SEE RISER	
B99	PB-6	MCC'S SH2A / SH2B	BMCS - START/STOP & ALARM INPUTS	1 1/4"	
M01	SWITCHES	PB-2A	BOILER PLANT LIGHTING CONTROL	3/4"	
M02	SWITCHES	PB-2A	CHILLER PLANT LIGHTING CONTROL	3/4"	
M03	ATS-S2A	GEN ANN PNL	TRANSFER SWITCH POSITION	3/4"	
M04	ATS-S2B	GEN ANN PNL	TRANSFER SWITCH POSITION	3/4"	
M05	GENERATOR	GEN ANN PNL	GENERATOR ALARMS	1"	
M06	GENERATOR	DAY TANK	DAY TANK ALARMS	3/4"	
M07	FOPP-2	GFP-1 STARTER	GENERATOR BULK PUMP START/STOP	3/4"	
M08	PB-3	FOT-4	FOT-4 LEVEL/LEAK MONITOR - TANK FARM	1"	
M09	PB-3	FIS-1	FUEL TREATMENT CONTROLS - TANK FARM	1"	
M10	PB-3	SWP-1	STORM WATER PUMP MONITOR - TANK FARM	1"	
M11	PB-3	PB-7/L	BRINE TANK CONTROLS - TANK FARM	1"	
M12	SWBD 225A	SW225A & B	MEDIUM VOLTAGE EQUIPMENT SUPERVISION	1"	
M13	PB-3	WWPP-1	WASTEWATER PUMP SUPERVISION	3/4"	
M14	PB-3	BRINE SYST CONT	BRINE SYSTEM CONTROL PANEL IN BASEMENT	3/4"	
M15A	PB-3	S.W. GATE CONT	GATE CONTROLS	1"	
M15B	PB-3	S.W. GATE CONT	GATE CONTROLS	1"	
M19A	PB-3	N. GATE CONT	GATE CONTROLS	1"	
M19B	PB-5	N. GATE CONT	GATE CONTROLS	1"	
P01	OVS-BP	PB-6	BOILER CONTROL WORKSTATION	1"	
P02	PB-6	PB-3	PROCESS CONTROLS - GENERAL	2"	
P03	PB-3	BIP-1	PROCESS CONTROLS - GENERAL	1 1/4"	



4-20-12



## 1.2 STATEMENT OF BID ITEM(S)

- A. ITEM I, ENERGY CENTER: Work includes general construction, selective demolition, roads, walks, grading, drainage, fencing, mechanical and electrical work, utility systems, water storage, fuel storage, necessary removal of existing structures and construction and certain other items.
- B. BASE BID: Includes all work shown in Contract Documents not specifically identified to be added to the Base Bid by Add Alternate Bids 1 through 6.
- C. ADD ALTERNATE BID NO. 1: Includes Scope of work shown in Base Bid and provide new chiller CH-3, CT-1 & CT-2, **CHP- & CHP-2**, and CWP-1 & CWP-2. Alternate No.1 shall include all ~~power~~, controls, chemical treatment, expansion tanks, make up water, ventilation, refrigerant monitor, air handling units, condenser water and chilled water headers with valves.  
  
Piping rising up from below shall be terminated @ 2'-0" above finished floor in Base Bid. Installation of all piping beyond this point in Chiller Plant 110 shall be provided in Add Alternate Bid No. 1. Provide valves at the headers for all chillers and pumps in Add Alternate Bid No. 1.
- D. ADD ALTERNATE BID NO. 2: Includes Scope of work in Add Alternate Bid No.1 and including addition of a dedicated water softener system (for the laundry), brine measuring tank, associated piping and other items as shown in Contract Documents.
- E. ADD ALTERNATE BID NO. 3: Includes Scope of work in Add Alternate Bid No. 2 and including relocation of existing chiller CCU-1 from Building 216 (renamed chiller CH-1 in new location) and related piping & cooling tower work as shown in the Contract Documents.
- F. ADD ALTERNATE BID NO. 4: Includes Scope of work in Add Alternate Bid No. 3 and including relocation of existing chiller CCU-2 from Building 216 (renamed chiller CH-2 in new location). Add Alternate Bid No.4 shall also include CT-3 & CT-4, CWP-3 & CWP-4, **and CHP-3 & CHP-4** and all associated ~~power and~~ controls, related piping and cooling tower work as shown in the Contract Documents.
- G. ADD ALTERNATE NO. 5: Includes Scope of work in Add Alternate Bid No. 4 and including a new chiller CH-4 and related piping & ~~cooling tower work~~ and other items as shown in the Contract Documents.
- H. ADD ALTERNATE NO. 6: Includes Scope of work in Add Alternate Bid No. 5 and including addition of a steam trap monitoring system for all traps, metal enclosed vacuum breaker switchgear for 'SW-225a & SW-225B' in lieu of metal clad fused interrupted switches, concrete riprap cover over the entire crawlspace, polished stained concrete as shown