

February 01, 2019

## Addendum #01 - ADDENDUM 01

### ATTHS-Silsbee CO Chiller Replacement-Reno Project #171936

#### Package #150010 - Mechanical

#### Package #160010 - Electrical

The following item(s) shall be included in your proposal:

1. Addendum #01 issued by Dabhi Engineering dated Feb 1, 2019.
2. Beck prebid meeting minutes dated Jan 29, 2019

The following documents have been added or revised as part of this Addendum:

01) Drawings	Document Title	Revision #	Revision Date
E1.01	FIXTURE SCHEDULES, ABBREVIATIONS, SYMBOLS, GENERAL NOTES AND SPECIFICATION	1	02/01/2019

**End of Addendum # 01**

# **DABHI ENGINEERING ASSOCIATES INC.**

19310 Kessington Lane; Houston, Texas 77094

TEL (281) 492-6885; FAX (281) 492-8626

AT&T-Silsbee C.O

Replacement of existing Chiller and Chilled water pumps

## **ADDENDUM #1 (02/01/2019)**

Addendum #1 consists of the following comments/revisions to the bid drawings. Addendum #1 in its entirety shall be incorporated into contractors' bids:

1. Temporary chiller with chilled water pumps and accessories shall be provided as specified in bid documents. It shall remain at jobsite, in normal working conditions, a minimum of 1 week after new chiller and chilled water system is placed in normal working conditions.
2. Replacement of the existing cold water (cw) make up line located in the corner of the front mechanical room serving the existing chilled water system: The existing 1" cw line with pipe fittings, valves, pipe supports, etc shall be removed and replaced with new 1" Type-L copper line with wrought copper fittings, valves, etc. This line shall be replaced between the existing gate valve located in the incoming line under roof deck and the union located in outgoing line located approximately 3' above finished floor. The existing back flow preventer shall be replaced with new 1" Watts back flow preventer model-909 with a built in strainer and stop valves. The existing pressure reducing valve shall be removed and replaced with new B&G pressure reducing station which shall include pressure reducing and pressure relief valves with a bypass line. The pressure at new PRV shall selected and set to allow automatic flow of makeup water in the chilled water system.
3. New BAS conduit and cables: BAS contractor shall furnish and install new 1" EMT conduit between the existing BAS controllers located in the Mechanical room and the existing J-box located in the main electrical room under the roof deck, exact length shall be field determined by BAS contractor. All existing BAS cables shall be removed and replaced with all new cables to serve new chiller and chilled water pumps as specified in bid documents.
4. New Chiller Controls: Chiller shall be controlled by chiller installed microprocessor control system and shall be factory wired and programmed to automatically change lead/lag operations of the compressors and their associated condenser fans for even wear and tear of the compressors and condenser fans. The lag compressor(s) with their condenser fan(s) shall automatically start and run if lead compressor(s) and their condenser fans fail to start. Alarm signals of failure of the compressor and fans shall be generated and sent to chiller's control panel.
5. DWG. E1.02: Plan Keyed note-21: shall be revised. The existing chilled water pump motor starters shall be removed and replaced with new VFDs as specified in revised DWG. E1.01.
6. DWG. E1.03:
  - A. Revised Plan Keyed note-18: Remove and replace existing CHP motor starters with new specified VFDs.

- B. Revise plan keyed note-19: Add new sections of conduits, j-boxes, wires, etc as required to connect new line and load side wires to new VFDs.

END

**PRE-BID MEETING MINUTES**  
**AT&T SILSBEE CO CHILLER REPLACEMENT**  
**JOB #171936**  
Tuesday, Jan 29, 2019

**1. AT&T Requirements**

- Every person working on an AT&T facility must obtain an AT&T / Beck identification badge prior to the commencement of work. These badges are obtained by attending a (4) hour training session at Beck's office. A (7) year background check and drug tests are required to obtain these ID badges. Please contact Wendy Gonzales at 713-567-7383 or at [wendygonzales@beckgroup.com](mailto:wendygonzales@beckgroup.com) for scheduling and any other badging information. The cost for training is **\$100.00 plus tax** per person.
- The owner has a Minority – Owned or Woman – owned Business Enterprise (MWBE) requirement participation for each project. Subcontractor must make a good faith effort to help the GC and Owner to achieve this requirement. The subcontractor will be required to provide written documentation confirming MWBE status. To qualify, firms must meet the Owner's requirements for the MWBE certification. These requirements are available upon request. ALL Contractor's should provide a **minimum of 30% minority** participation.
- There are no payment or performance bonds required on this project.

**2. Site Logistics**

- Access to building site – must have badge to enter the building
- Parking – No designated parking lot for building, subcontractor shall coordinate with the city for using public parking spaces.
- Restrooms – Subcontractor can use building restroom, must keep clean. If complains heard from ATT, subcontractor will have to provide portable toilet for the job.
- Trash removal/clean up – daily

**3. Bid Package & Beck Requirements**

- Bid Package, addendum(s) and any additional information will be emailed to all contractors.
- Bid Packages must be completely filled out and signed – no incomplete bid packages will be accepted.
- Provide a letter annotating any exclusions you may have.
- AT&T Standard Specifications shall be included in you bid –available upon request
- Statewide ZAP (Zero Accident Plan) to be acknowledged by all bidders
- This project is considered renovation work. Sales tax on incorporated materials ***IS NOT*** to be included in your bid. Successful bidder will receive a job specific resale certificate along with their contract.
- Beck payment term-30 day, 1% discount

**4. Schedule**

- Questions, comments, or clarifications requests are due to Beck no later than **Friday, Feb 1<sup>st</sup>, 2019 at 2:00pm**
- Bids are due **on Wed, Feb 13<sup>th</sup>, 2019 at 2 PM**

**5. Construction Documents Review (AT&T/Roof Consultant)**

- Dabhi engineering will issue addendum #1 to cover additional scope: adding drives for pumps, replacing make up water assembly, etc.

**6. Clarifications**

- Permits – Subcontractor to procure their own permits as required

- Subcontractor shall include all the crane rental, hoisting, temporary rental, street closure permit, street rental, etc. as required for their scope of work
- Mechanical contractor to include temporary chiller rental in the base bid
- Mechanical contractor to include orange fence rental around the chiller.
- Mechanical contractor shall include the cost to replace all the roof chilled water pipe insulation and jackets.
- Subcontractor to add alternate price if the job get pushed to next year.
- Beck will install roof protection
- Beck will get a price from Liquatech to rework the chilled water pipe roof penetration to facilitate the insulation replacement.
- Proper PPE and Hard Hats, reflected vests, gloves and Safety Glasses at all times.
- Manpower – Man the job as required by the schedule. One Superintendent or foreman must be CPR certified, have first aid training and must have a minimum of 11-Hour OSHA Training.



VARIABLE FREQUENCY DRIVE (VFD) SCHEDULE						
MARK	SERVICE EQUIPMENT	ELECTRICAL				REMARKS
		VOLT	PH	HZ	HP	
(N) VFD-1	(N) CHP-1	208	3	60	7.5	ABB SERIES ACH-550 WITH NEMA-1 TYPE ENCLOSURE
(N) VFD-2	(N) CHP-2	208	3	60	7.5	ABB SERIES ACH-550 WITH NEMA-1 TYPE ENCLOSURE

**NOTES:**

- (N) VARIABLE FREQUENCY DRIVE (VFD) VFD SHALL BE FACTORY FURNISHED, INSTALLED, WIRED, TESTED WITH
  - 2 MECHANICALLY INTERLOCKED, IEC RATED, SIZED FOR THE SPECIFIED FULLY LOADED MOTOR HP CONTACTORS. THE CONTACTORS SHALL BE RATED TO OPERATE CONTINUOUSLY, 24 HOURS A DAY, 7 DAYS A WEEK, 365 DAYS A YEAR.
  - 3% PERCENT INPUT LINE REACTOR.
  - A MAIN FUSIBLE DISCONNECT SWITCH AND A PROPERLY SIZED INVERTOR INPUT ISOLATION DISCONNECT SWITCH OR CKT BRKR TO CONTROL AC POWER TO VFD COMPONENTS (DURING REPAIR AND TESTING) WHILE THE MOTOR IS RUNNING IN THE BYPASS MODE.
  - SHALL HAVE FACTORY INSTALLED NEMA-1 ENCLOSURE.
  - 4 POSITION FACTORY FURNISHED, INSTALLED, WIRED, AND TESTED MANUAL DRIVE-OFF-TEST-BYPASS SWITCH.
  - JOB SITE START UP SERVICES, INCLUDING PROGRAMMING OF VFDs SHALL BE PROVIDED AND ALL COSTS SHALL BE INCLUDED IN THE BID. EACH VFD SHALL BE FULLY FACTORY WARRANTED FOR A PERIOD OF 1 YEAR.
  - SHALL BE UL LISTED AND COMPLY WITH ALL REQUIREMENTS OF UL 508 AND LATEST NEC.
  - THIS VFDs SHALL CONTROL SPEED OF (N) CHPs TO PROVIDE CHILLED WATER FLOWS AND SCHEDULED PRESSURE.

**GENERAL ELECTRICAL NOTES (FOR ALL ELEC DWGS):**

- ALL NEW CONDUITS SHALL BE A MIN OF 3/4" DIA UNLESS NOTED OTHERWISE.
- ALL ELECTRICAL INSTALLATIONS SHALL BE AS PER REQUIREMENTS OF LATEST NEC, LOCAL CODES, AND BID DOCUMENTS.
- E.C SHALL COORDINATE ALL HIS/HER WORK WITH OTHER BLDG TRADES TO AVOID CONFLICTS AND DELAYS. E.C SHALL ALSO REFER TO MECHANICAL BID DOCUMENTS FOR HIS/HER PART OF WORK AND FOR EXACT LOCATIONS OF ALL EQUIP PROVIDED BY THEM AND PROVIDE AC POWER AND FINAL CONNECTIONS AS REQUIRED.
- ALL NEW DISCONNECT SWITCHES SHALL BE HEAVY DUTY BY GE OR APPROVED EQUAL SQUARE-D, EATON, OR SIEMENS. ALL INDOOR DISCONNECT SWITCHES SHALL BE NEMA-1 AND OUTDOOR SWITCHES SHALL BE NEMA-3R.
- ALL NEW FUSES SHALL BE BUSSMAN DUAL ELEMENT, TIME DELAY, CLASS RK1 TYPE UNLESS SPECIFIED OTHERWISE.
- ALL EQUIPMENT GROUND WIRES SHALL BE COPPER AND SIZED AS PER LATEST NEC ART. 250-122 UNLESS SPECIFIED OTHERWISE IN BID DOCUMENTS.
- ALL (N) DEDICATED RECEPTACLES SERVED BY A 20 AMP CIRCUIT SHALL BE RATED FOR 20 AMP.
- CONTRACTOR SHALL APPLY FOR AND OBTAIN ALL REQUIRED PERMITS. ALL PERMIT FEES AND OTHER ASSOCIATED CHARGES SHALL BE INCLUDED IN BID. CONTRACTOR SHALL ALSO PROVIDE ALL REQUIRED COST ESTIMATES TO CITY AND OTHER AUTHORITIES HAVING JURISDICTIONS (A.H.J.) TO DETERMINE PERMIT FEES, WHEN REQUIRED.
- ALL ELECTRICAL INSTALLATIONS SHALL BE COORDINATED WITH INSPECTORS FOR AT&T. THE INSTALLATIONS SHALL BE CARRIED OUT DURING AT&T'S MAINTENANCE WINDOWS WHICH MAY BE AFTER 5 P.M DURING WEEKDAYS AND OR OVER WEEKENDS. WORK REQUIRING INTERRUPTION OF ELECTRICAL POWER SHALL BE COORDINATED WITH AT&T IN ADVANCE AND SHALL BE PERFORMED DURING THE TIME PERIODS ALLOWED BY AT&T. CONTRACTORS SHALL INCLUDE IN THEIR BIDS ALL COSTS TO COMPLY WITH THIS REQUIREMENTS.
- IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO FURNISH AND INSTALL ALL ELECTRICAL SYSTEMS AS PER REQUIREMENTS OF BID DOCUMENTS. ALL INSTALLATIONS SHALL BE CARRIED OUT SAFELY AND PROPERLY WITHOUT ANY INJURY TO THEIR EMPLOYEE AND OR TO VENDORS. ALL WORK SHALL BE PERFORMED IN FULL COMPLIANCE WITH ALL REQUIREMENTS OF LOCAL CODES, OSHA, AND NEC. THE CONSULTING ENGINEER WILL NOT BE HELD RESPONSIBLE AND OR LIABLE FOR ANY INJURY AND OR DAMAGES TO CONTRACTORS' AND OR VENDORS' EMPLOYEES AND OR EQUIPMENT BECAUSE OF POOR INSTALLATION PRACTICES, NON COMPLIANCE WITH CODES, AND SAFETY NEGLIGENCE.
- EXTRA SAFETY PRE-CAUTIONS SHALL BE TAKEN, AS REQUIRED BY OSHA, WHILE WORKING NEAR ELECTRICALLY ENERGIZED AC CKTS, FEEDERS, COMPONENTS OF THE (E) AND OR (N) ELEC EQUIPMENT IN THE BLDG AND OR ON THE SITE. ARRANGEMENTS SHALL BE MADE WITH AT&T TO TEMPORARILY DE-ENERGIZE POWER TO (E) FEEDERS, AC CKTS, AND ELEC EQUIP BEFORE OR EQUIP AND OR WIRING IS CONNECTED TO IT.
- DURING CONSTRUCTION CARE SHALL EXERCISED BY THE CONTRACTORS NOT TO DAMAGE ANY PART OF THE BLDG OR BLDG EQUIP AND OR SYSTEMS. ANY AND ALL DAMAGES DONE TO THE BLDG OR BLDG EQUIP AND OR SYSTEMS SHALL BE REPAIRED OR REPLACED TO BLDG OWNER'S SATISFACTION AT NO COST.
- CHECK AND INSTALL PROPER SIZE OVERLOAD RELAYS AT ALL (E) MAGNETIC MOTOR STARTERS.
- ALL (N) WIRES, CABLES, AND CONDUCTORS IN (E) AND (N) PNL BOARDS, SWBDs, ETC SHALL BE NEATLY INSTALLED, LACED, AND HARNESSED. WIRE BENDING RADIUS SHALL NOT EXCEED MAXIMUM BENDING RADIUS RECOMMENDED BY WIRE MFR AND LATEST NEC.
- ALL (N) ELECTRICAL FEEDERS AND BRANCH CIRCUITS SHALL BE INSTALLED WITH CU GREEN GROUND CONDUCTORS AS PER REQUIREMENTS OF LATEST NEC UNLESS NOTED OTHERWISE.
- ALL (E) BRANCH CKTS, WHICH ARE TO BE RE-ROUTED, SHALL BE FIELD TRACED BEFORE RELOCATIONS. TEMPORARY DE-ENERGIZING OF POWER SHALL BE FIELD COORDINATED WITH AT&T.
- LOCATIONS OF ALL (E) EQUIP SHOWN IN BID DWGS ARE APPROX AND SHALL BE FIELD VERIFIED BEFORE INSTALLATIONS.
- EXACT LOCATIONS AND ELEV'S OF (N) COND'S SHALL BE FIELD COORDINATED, BEFORE INSTALLATIONS, AND ADJUSTED WITH ALL (E) AND (N) PIPING, COND'S, STEEL PLATFORM, CANOPY COLS, WTR LINES, ETC) TO AVOID CONFLICTS AT NO EXTRA COST.
- FURNISH AND INSTALL COND BODIES, ADDITIONAL PBs, AND J-BOXES AS REQUIRED, AT NO ADDITIONAL COST, FOR PROTECTION AND EASE OF PULLING CONDUCTORS. ALL OUTDOOR COND BODIES AND PBs SHALL BE NEMA-3R.
- ALL NEUT AND GND CONDUCTORS SHALL BE PROPERLY CONNECTED TO NEUT AND GND BUS OF (E) SWBD, PNL BOARDS, AND OTHER (E) AND (N) ELEC EQUIP AS APPLICABLE.
- ALL (N) INDOOR COND'S, EXPOSED TO THE WEATHER, SHALL BE PROPERLY SUPPORTED FROM (N) PIPE HANGERS AND CHILLER PLATFORM USING S.S UNISTRUT AND OTHER REQUIRED S.S HARDWARE.
- ALL (N) INDOOR PULL BOXES AND SPLICE BOXES SHALL BE GALV STEEL WITH ACCESSIBLE COVERS. ALL (N) OUTDOOR PULL BOXES SHALL BE NEMA-3R CONSTRUCTION FACTORY PAINTED WITH ACCESSIBLE GASKETED COVERS.
- WHERE (N) CBS ARE INSTALLED IN (E) PNL AND OR DISTRIBUTION BOARDS, NEW BRKRS SHALL BE OF THE SAME MFR, SAME TYPE AND RATED FOR THE SAME OR HIGHER SHORT CKT RATING.
- ALL (E) AND (N) BRANCH CKTS SERVING CHILLED WTR PUMPS AND CHILLER FEEDER SHALL BE TESTED USING RECENTLY CALIBRATED (IN LESS THAN 6 MONTHS) BIDDLE MEGGER TESTING INSTRUMENT OF NOT LESS THAN 1000 VOLT D.C RANGE. TESTING SHALL BE WITNESSED BY "BECK". ALL CONDUCTORS SHALL BE FREE OF SHORTS AND GROUND AND HAVE MIN RESISTANCE PHASE TO PHASE AND PHASE TO GROUND OF AT LEAST 10 MEGA-OHMS. ANY CONDUCTOR THAT DOES NOT EXCEED THIS INSULATION RESISTANCE VALUE SHALL BE REMOVED AND REPLACED WITH NEW CONDUCTOR AT CONTRACTOR'S EXPENSE.
- FINAL CONNECTIONS OF POWER, CONTROL WIRES, AND CABLES TO EQUIP SUCH AS CHP MOTORS, CHILLER ETC. SHALL BE MADE AS PER MFR'S INSTRUCTIONS. EXACT LOCATIONS OF CONNECTION POINTS SHALL BE FIELD OBTAINED AND REQUIRED MODIFICATIONS TO (N) FEEDER AND BRANCH CKTS SHALL BE MADE AT NO EXTRA COST.
- ALL (N) COND'S SHALL BE PROPERLY SUPPORTED FROM ROOF STRUC, AND PORTABLE COND'S SUPPORT RACKS ON THE ROOF.
- ALL (N) FEEDERS AND BRANCH CKT CONDUCTORS SHALL BE PROPERLY CONNECTED TO LOAD SIDES OF ASSIGNED OVER CURRENT PROTECTION DEVICES.
- ALL (E) CONDUCTORS SHALL BE CAREFULLY REMOVED UP TO POINTS AS NOTED ON BID DWGS, NOT REQUIRED LENGTHS OF CONDUCTORS SHALL BE CUT OFF.
- WHEN CONNECTING (N) FEEDER WIRES TO (E) EQUIP, CONTRACTOR SHALL TAKE PHASE ROTATION READING (PHASE ROTATION "A", "B", "C") CLOCKWISE OR COUNTER CLOCKWISE AND MAKE PROPER CHNG.
- ALL (N) INDOOR PULL BOXES AND SPLICE BOXES SHALL BE GALV STEEL WITH ACCESSIBLE COVERS. ALL (N) OUTDOOR PULL BOXES SHALL BE NEMA-3R CONSTRUCTION FACTORY PAINTED WITH ACCESSIBLE GASKETED COVERS.

**GENERAL NOTES FOR TRACING (E) CKTS AND DE-ENERGIZING POWER:**

- E.C SHALL FIELD LOCATE ALL OVER CURRENT PROTECTION DEVICES, LOCATED AT POWER SOURCES, FOR EQUIP TO BE TEMPORARILY DE-ENERGIZED IN ADVANCE OF THE SCHEDULED POWER OUTAGE.
- E.C SHALL ASSURE HIM/HER SELF USING ACCURATE POWER TESTING INSTRUMENTS THAT NORMAL AND EMERGENCY POWER TO THE EQUIP SCHEDULED TO BE WORKED ON HAVE BEEN DE-ENERGIZED BEFORE ANY WORK MUST BE PERFORMED.

**PERFORMANCE SPECIFICATIONS FOR 3 PHASE, 60 HZ, NOMINAL 1800 RPM, AC MOTORS:**

- MOTOR SHALL BE PREMIUM EFFICIENCY, TOTALLY ENCLOSED, FAN COOLED (TEFC), SEVERE DUTY, INVERTER GRADE FULLY COMPLYING WITH REQUIREMENTS OF NEMA-1, PART 31.40.42.
- MOTOR SHALL BE NEMA DESIGN "B", CLASS "F" INSULATION. THE INSULATION SHALL BE SUITABLE FOR TROPICAL CONDITIONS WITH FUNGUS GROWTH PREVENTION.
- SERVICE FACTOR SHALL BE MINIMUM 1.15.
- MOTOR SHALL HAVE MOISTURE RESISTANT WINDINGS AND SUITABLE FOR OUTDOOR INSTALLATION IN RAIN.
- MOTOR FRAME, STATOR CASING, END SHIELDS, AND FAN COVER SHALL BE OF CAST IRON (C.I.).
- MOTOR SHALL HAVE OVER SIZE C.I. CONDUIT BOX WITH A THREADED CONDUIT CONNECTION AND CORROSION RESISTANT EPOXY FINISH.
- RPM SLIP SHALL BE BETWEEN 1.5 AND 3 PERCENT.
- MOTOR SHALL HAVE A SHAFT SLINGER, LIFTING LUGS, INTERNAL SHAFT SEAL, AND UL LISTED AUTOMATIC RESET TYPE THERMAL OVER LOAD PROTECTION. MOTOR SHALL BE HORIZONTAL MOUNT UNLESS SPECIFIED OTHERWISE.
- MOTOR SHALL BE FURNISHED AND INSTALLED WITH SHAFT GROUNDING RING TO PREVENT FLUTING DAMAGE TO MOTOR SHAFT.
- MOTOR FRAME SIZE SHALL BE AS PER LATEST NEMA STANDARDS.
- MOTOR SHALL HAVE ANTI-FRICTION, FIELD REGREASABLE, MINIMUM 100,000 HOURS LIFE BALL BEARINGS. THE BALL BEARINGS SHALL FULLY COMPLY WITH THE LATEST REQUIREMENTS OF "AFBMA" STANDARDS.
- MOTOR SHALL BE FACTORY TESTED AS PER REQUIREMENTS OF THE LATEST NEMA STANDARDS. IT SHALL BE FREE FROM VIBRATION AND MECHANICAL AND ELECTRICAL DEFECTS.
- MOTOR SHALL BE CAPABLE OF STRATING AND SERVING A DRIVE LOAD SUCCESSFULLY WITH A 20 PERCENT VOLTAGE VARIATION AND A 5 PERCENT FREQUENCY VARIATION WHEN CONNECTED TO A DRIVEN EQUIPMENT.
- MOTOR SHALL MEET OR EXCEED THE LOCKED ROTOR (STARTING AMPS) AND BREAKDOWN MAXIMUM TORQUES AS SPECIFIED IN NEMA STANDARDS.
- MOTOR SHALL BE FULLY WARRANTED FOR A PERIOD OF THREE YEARS FROM THE DATE OF INSTALLATION AT A JOB SITE.
- MOTOR SHALL BE MANUFACTURED BY ONE OF THE FOLLOWING MANUFACTURERS:  
MARATHON ELECTRIC  
TOSHIBA  
US MOTORS AS MANUFACTURED BY EMERSON MOTOR TECHNOLOGIES.

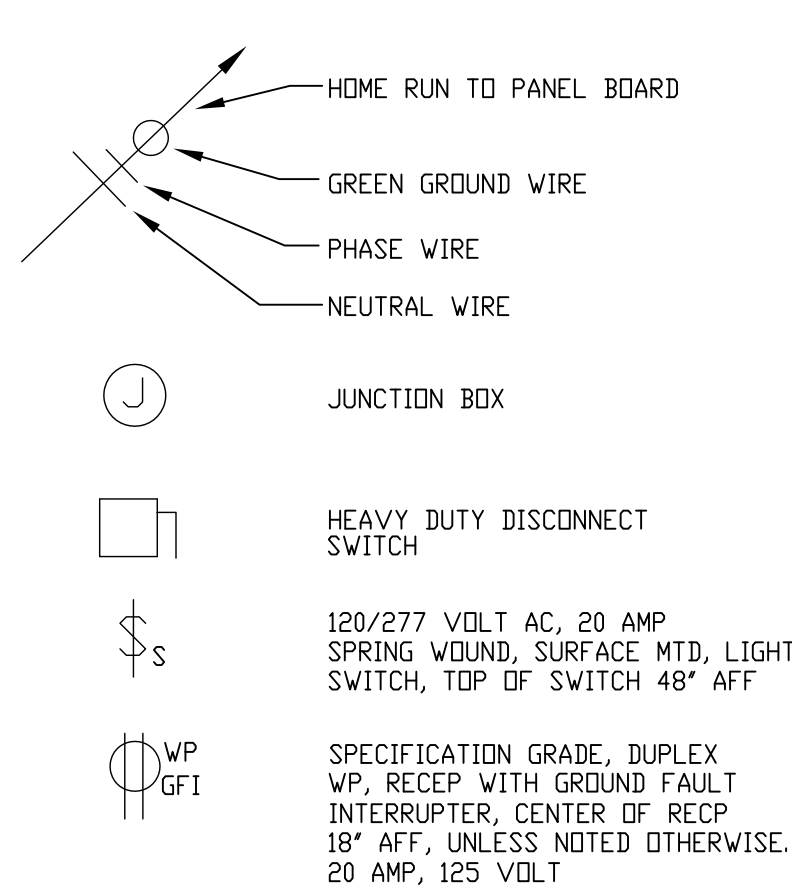
**ELECTRICAL SPECIFICATIONS:**

- COMPLY WITH THE FOLLOWING AT&T STANDARD SPECIFICATIONS WITH REVISIONS AS NOTED:
- 26 00 00 - GENERAL REQUIREMENTS FOR ELECTRICAL WORK
    - SUB-SECTIONS:
      - 3.2 H PROVIDE SUBMITTALS FOR NEW VFDs, IF VFDs ARE SPECIFIED.
      - 3.10 NEW MOTOR STARTERS SHALL BE FURNISHED AND INSTALLED BY ELEC CONTRACTOR.
  - 26 05 00 - COMMON WORK RESULTS FOR ELECTRICAL
    - 26 05 19 - LOW VOLTAGE ELECTRICAL POWER CONDUCTORS
      - SUB-SECTIONS:
        - 3.1 B ALL BRANCH CKT CONDUCTORS SHALL BE STRANDED TYPE, SOLID CONDUCTORS ARE NOT ACCEPTABLE.
        - 3.3 O SHARED NEUTRAL CONDUCTORS ARE NOT ACCEPTABLE.
    - 26 05 26 - GROUNDING AND BONDING FOR ELEC SYSTEMS
    - 26 05 29 - HANGERS AND SUPPORTS FOR ELEC SYSTEMS
      - SUB-SECTIONS:
        - ADD SUB-SECTION 2.1G WHICH SHALL READ "ALL HANGERS AND SUPPORT MEMBERS, TO BE INSTALLED INDOOR, SHALL BE PRE-GALVANIZED OR ZINC PLATED MALLEABLE IRON STL.
    - 26 05 33 - RACEWAYS AND BOXES FOR ELEC SYSTEMS
      - SUB-SECTIONS:
        - 2.1 F 7: INSTALLATION OF FORMED AND DR DIE CAST STEEL SET SCREW TYPE COUPLINGS ARE NOT ALLOWED.
        - 2.1 J PVC COATED IMC NOT ALLOWED.
    - 26 05 44 - SLEEVE AND SLEEVE SEALS FOR ELEC RACEWAYS AND CABLES.
    - 26 05 53 - IDENTIFICATION OF ELEC SYSTEMS
    - 26 27 26 - WIRING DEVICES
    - 26 28 13 - FUSES
    - 26 28 16 - ENCLOSED SWITCHES AND CIRCUIT BREAKERS
    - 26 80 00 - LAMPS AND BALLAST DISPOSAL
      - SUB-SECTIONS:
        - 3.1 B 1: SITE LOCATION FOR HOUSTON AREA WILL BE PROVIDED BY AT&T.

**ELECTRICAL ABBREVIATIONS**

AFF	ABOVE FINISHED FLOOR	GALV	GALVANIZED
AC	ALTERNATE CURRENT	G.C	GENERAL CONTRACTOR
AG	ABOVE GRADE	GND	GROUND
AL	ALUMINUM	HP	HORSE POWER
AMP	AMPERE	HZ	HERTZ
ARCH	ARCHITECTURAL	HDA	HAND-OFF-AUTO
BAS	BUILDING AUTOMATION SYSTEM	INSTN	INSTRUMENT
BETWN	BETWEEN	J-BOX	JUNCTION BOX
BLDG	BUILDING	LTG	LIGHTING
BDC	BOTTOM OF CONDUIT	MB	MAIN BREAKER
BRKR	BREAKER	MAX	MAXIMUM
C.I	CAST IRON	MDP	MAIN DISTRIBUTION PANEL
C.B	CIRCUIT BREAKER	MFR	MANUFACTURER
CT	CURRENT TRANSFORMER	MIN	MINIMUM
CKT	CIRCUIT	MLD	MAIN LUGS ONLY
CLG	CEILING	MTD	MOUNTED
CPT	CONTROL POWER TRANSFORMER	MTG	MOUNTING
CDMMN	COMMUNICATION	NO	NEW
CTR	CENTER	NTS	NOT TO SCALE
CDMP	COMPARTMENT	DC	ON CENTER
CDNC	CONCRETE	DCP	OVER CURRENT PROTECTION
COND	CONDUIT	PB	PULL BOX
CDNT	CONTINUOUS	PH	PHASE
CU	COPPER	PNL	PANEL
DIA	DIAMETER	RECP	RECEPTACLE
DN	DOWN	REF	REFER
DWG	DRAWING	RGS	RIGID GALV. STEEL
D.S	DISCONNECT SWITCH	SCH	SCHEDULE
(E)	EXISTING	STL	STEEL
EA	EACH	STRUC	STRUCTURE
E.C	ELECTRICAL CONTRACTOR	SW	SWITCH
EMERG	EMERGENCY	SWB	SWITCHBOARD
EMT	ELECTRIC METALLIC TUBING	S.S	STAINLESS STEEL
ELEC	ELECTRICAL	SYG	SYSTEM
EQUIP	EQUIPMENT	TOP	TOP OF CONDUIT
FIX	FIXTURE	TEL	TELEPHONE
FLR	FLOOR	TEMP	TEMPERATURE
FIN	FINISHED	TYP	TYPICAL
FS	FLOW SWITCH	UN	UNLESS OTHERWISE NOTED
		WP	WEATHERPROOF

**ELECTRICAL SYSTEM LEGEND**



**CORPORATE REAL ESTATE**

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**Project Manager**



**MEP Engineer**

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**CONSULTANT STAMP**



**REVISIONS / AUTHORIZATIONS**

NO.	REVISIONS / AUTHORIZATIONS	DATE	BY
	ISSUED FOR PRICING AND CONSTRUCTION	1/11/19	M.D
△	ADDENDUM #1-ELEC REVISIONS	2/1/19	M.D

**PROPRIETARY AT&T INFORMATION**

NOT FOR GENERAL USE OR DISCLOSURE OUTSIDE OF AT&T  
THIS INFORMATION MAY ONLY BE USED BY AUTHORIZED PERSONNEL OF THE LOCAL GOVERNMENT AGENCY IN CONNECTION WITH APPLICATION FOR PERMITS AND AUTHORIZATIONS FOR BUILDINGS, CONSTRUCTION, AND/ OR ZONING CHANGES.



PROJECT TITLE: EXISTING CHILLER & CHPs REPLACEMENT  
210 EARNEST ST.  
SILSBEE, 77656  
TX US

SLSBTXSL WB6230

SHEET TITLE: ELECTRICAL SCHEDULES, SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES

AT&T PROJECT NUMBER	DATE: 1/11/2019	SCALE: NOTED
T22427	DRAWN BY: S.D	CHECKED BY: M.D
AT&T AUTHORIZATION	SHEETS: - OF: - SHEETS	SHEET NO:
PARISA MAZRATIAN	AT&T DRAWING NO:	E1.01

T76010.00 at&t SILSBEE CENTRAL OFFICE - CHILLER AND CHILLED WATER PUMPS REPLACEMENT