McALLEN CHILLER REPLACEMENT

ISSUED FOR CONSTRUCTION

DATE: 2018.10.26
GENERAL DEMOLITION NOTES

A. DEMOLITION WORK SHALL BE PERFORMED IN A ORDERED MANNER FOR THE PROTECTION OF EXISTING EQUIPMENT AND PIPING.
B. PROVIDE TEMPORARY SPACE ALLOW EASY REMOVAL OF EQUIPMENT, COILS, FANS, MOTORS, FILTERS, ACCESS PANELS, ETC. PROVIDE ACCESS TO EXISTING BUILDING, COORDINATE WORK TO MINIMIZE IMPACT ON THE SPACE. COORDINATE ALL OUTAGES AND REQUIREMENTS.
C. CONTRACTOR RESPONSIBLE FOR PROTECTING EXISTING BUILDING, COORDINATE TIMES, DATES, EQUIPMENT INGRESS AND EGRESS ROUTES SHALL BE ARRANGED TO ALL ELEVATIONS INDICATED IN THIS WAY (8' - 0") ARE THE LARGER OF THE TWO SIZES SHOWN.
D. CONTRACTOR TO PROVIDE TEMPORARY SPACE PRIOR TO STARTING WORK. CONTRACTOR TO PROVIDE TEMPORARY SPACE PRIOR TO STARTING WORK.
E. ALLOW EASY REMOVAL OF EQUIPMENT, COILS, FANS, MOTORS, FILTERS, ACCESS PANELS, ETC. PROVIDE ACCESS TO EXISTING BUILDING, COORDINATE WORK TO MINIMIZE IMPACT ON THE SPACE. COORDINATE ALL OUTAGES AND REQUIREMENTS.
F. CONTRACTOR TO PROVIDE TEMPORARY SPACE PRIOR TO STARTING WORK. CONTRACTOR TO PROVIDE TEMPORARY SPACE PRIOR TO STARTING WORK.
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MARK COOLED SCROLL CHILLER

GENERAL NOTES

97 Dba maximum sound power per ari
Chiller operation is from 20f to 115f.
Scheduled eer and nplv values are at actual design conditions.
Iec 2015 by 5% at standard rating conditions. Provide calculations and interconnect piping and wiring.
Unit shall be 1 factor including compressors and fans.
Provide power factor correction to maintain a minimum of 0.95 unit power
Minimum chiller flow rate not to exceed 110 gpm. Basis of design chiller is six (6).

Maximum of 3 compressors per circuit. Maximum number of compressors
Provide a minimum of two independent refrigerant circuits with a
Chiller refrigerant is r410a. Basis of design refrigerant charge is 146 lbs.

1 1/2"ø (E) Scroll compressor
Hermetic

Temperature

Existing pump section - south (base bid)

Ambient air

Capacity

Pressure

Drop

Foiling

Schedule - air cooled chiller (base bid)

Schematic - air cooled chiller (base bid)

New air connections.
Connect to existing piping as required to chiller. Field route chilled locations of the purchased based on the connection new pipe routing may vary construction.
Refer to specification for new 6" housekeeping pad.
Provide isolation pads for move "as is" or it can
Shed relocation will be included in the shed. The pad shall be 13' x 9' x 6". Pad and pad for the relocation of storage shed. The pad shall be reinforced with #3 rebar, 12" on center 4", 3000 psi concrete pad on top. Pad shall soil, install 6" compacted road base; pour a pad construction:
Lwt

Ewt

Service

Drive

Legend

Connect to existing
Existing
New

Keyplan

Scale

MECHANICAL YARD PLAN

Texas Registered Engineering Firm F
Phone: 214.358.2204

No. Description Date

McAllen
Chiller Replacement

SCHEDULE - AIR COOLED CHILLER (BASE BID)

SCROLL CHILLER

M-201

10-10245

CHILLER
BUILDING CHW TONNAGE

CHILLER RUNTIME (CALCULATION)

- CHILLED WATER PUMPS ON VFD (EA)
- CHW SUPPLY TEMP
- AMPS
- REMAIN
- ALARMS
- ENABLE / DISABLE

BUILDING CHW RETURN
BUILDING CHW SUPPLY
BUILDING CHW SYSTEM

CONTROLS - AIR-COOLED CHILLER (BASE BID)
CONTROLS - AIR-COOLED CHILLER (ALTERNATE #1)

POINT SUMMARY

CONTROLS
START/STOP
OPEN/CLOSE
DIGITAL
START/STOP OPEN/CLOSE ON/OFF 4-20MA 0-10 VDC 1-18 PSI OTHER
OUTPUT
X X X
PRESSURE SWITCH LOW TEMP SWITCH END SWITCH SMOKE DET. AUX. CUR. MON. RELAY TEMPERATURE PRESSURE FLOW (CFM, GPM) HUMIDITY OTHER
ANALOG
0-10 VDC
ANALOG
AUX. CONTACT
ANALOG
DIGITAL
ANALOG
DIGITAL
ANALOG
DIGITAL
ANALOG
DIGITAL
I/O
COMMUNICATIONS LINK
SOFTWARE
X X
GRAPHIC OTHER
X X
X X
X X
X X
X X
X X
X X
X X
X X
X X
X X

CONTROL SEQUENCE OF OPERATION

1. GENERAL
A. THE CHILLED WATER SYSTEM CONSIST OF AIR COOLED CHILLER CALL DUTY Cyclical.
B. THE CHILLED WATER SYSTEM SHAL USE ACCESS POINTS LISTED IN THE PORTS SUMMARY. THE CHILLER WILL OPERATE IN ACCLIMATIZATION MODE AS INDICATED IN THE PORTS SUMMARY. THE CONSTRUCTION CONTRACTOR WILL PROVIDE THE SAME QUALITY AND PROVISION THAT PROVIDE ON ALL TAMUHS PROJECTS UNDER THE MASTER AGREEMENT.

2. NORMAL OPERATION
A. THE AIR COOLED CHILLER SYSTEM WILL OPERATE W/SIDE A/P PRO DuCT CALL DUTY Cyclical. THE CHILLER WILL USE ACCESS POINTS LISTED IN THE PORTS SUMMARY. THE CONSTRUCTION CONTRACTOR WILL PROVIDE THE SAME QUALITY AND PROVISION THAT PROVIDE ON ALL TAMUHS PROJECTS UNDER THE MASTER AGREEMENT.
B. THE CHILLER WILL OPERATE OR DATION A CHILLED WATER SUPPLY TEMPERATURE SETPOINT (AP) ADJUSTED AS PER CHILLER CONTROLS. THE CHILLED WATER SYSTEM WILL BE CONTROLLER VIA MODBUS TO MAINTAIN A CONSTANT DIFFERENTIAL PRESSURE BETWEEN THE BUILDING SUPPLY AND RETURN PIPING.
C. THE CHILLED WATER PUMP WILL BE CONTROLLED VIA MODBUS TO MAINTAIN A SETPOINT (AP). THE WATER FLOWRATE, TS RETURN AND TS SUPPLY.
D. THE CHILLER WILL OPERATE TO MAINTAIN A CHILLED WATER SUPPLY TEMPERATURE SETPOINT (44F, ADJUSTABLE FROM CONTROLS SYSTEM) USING THE CHILLER CONTROLS. THE CHILLER SHALL OPERATE TO MAINTAIN A CHILLED WATER SUPPLY TEMPERATURE SETPOINT (44F, ADJUSTABLE FROM CONTROLS SYSTEM) USING THE CHILLER CONTROLS.
E. UPON CALL FOR COOLING, THE DDC SYSTEM SHALL START THE CHILLED WATER SYSTEM. THE CHILLED WATER SYSTEM SHALL OPERATE WHENEVER ANY PROCESS CALLS FOR COOLING. THE CHILLED WATER PUMP SHALL BE CONTROLLED VIA VFD TO MAINTAIN A CONSTANT WATER FLOW RATE (AP) ADJUSTED AS PER CHILLER CONTROLS. THE CHILLED WATER PUMP SHALL BE CONTROLLED VIA VFD TO MAINTAIN A CONSTANT WATER FLOW RATE (AP) ADJUSTED AS PER CHILLER CONTROLS.
F. UPON FAILURE OF LEAD PUMP, THE DDC SYSTEM SHALL REPLACE THE FAILED PUMP WITH THE LAG PUMP.

3. SAFETIES
A. EXPERIMENTAL SWITCH IS TO BE INSTALLED ON THE CHILLER BY THE CHILLER MANUFACTURER TO VERIFY PROOF OF FLOWS
B. THE DDC SYSTEM SHALL ALARM THE FLOW STATUS DEPENDING ON FLOW DELAY.
D. THE DDC SYSTEM SHALL ALARM THE ALARMS AS INDICATED IN THE POINTS LIST AND PROCEED FROM THE ORDER.

SEQUENCE OF OPERATION

1. BASE BID SEQUENCE OF OPERATION WILL REMAIN THE SAME.
2. CHILLER CONTROLS CONTRACTOR WILL INTEGRATE THE NEW CHILLER INTO THE EXISTING SYSTEM TO ACCESS POINTS LISTED IN THE POINTS SUMMARY. THE CHILLER WILL OPERATE IN ACCLIMATIZATION MODE AS INDICATED IN THE POINTS SUMMARY. THE CONSTRUCTION CONTRACTOR WILL PROVIDE THE SAME QUALITY AND PROVISION THAT PROVIDE ON ALL TAMUHS PROJECTS UNDER THE MASTER AGREEMENT.
GENERAL NOTES - 0010

KEYED NOTES - E010
1. CIRCUIT BREAKER TO REMAIN. USE TO CONNECT NEW CHILLER.
   REFER TO SHEET E-011. FOR RENO WORK.
2. UNDER ALT #1, CIRCUIT BREAKER TO REMAIN. TURN OFF AND
   MARK AS SPARE.
3. REMOVE CONDUCTORS FROM EQUIPMENT BACK TO MDP.
   REMOVE SURFACE CONDUIT AT CHILLER. LEAVE STUB UP AT
   CHILLER AND COVER FOR USE IN RENOVATION.
4. UNDER ALT #1, REMOVE CONDUCTORS FROM EQUIPMENT BACK
   TO MDP. REMOVE ALL SURFACE MOUNTED CONDUIT.
5. LOAD BANK TO BE RELOCATED. REFER TO E101 FOR EXISTING
   AND NEW LOCATION.
6. REMOVE CONTROL WIRING FROM LOAD BANK TO GENERATOR.
   REMOVE ALL SURFACE MOUNTED CONDUIT.
7. REMOVE CONDUCTORS FROM LOAD BANK BACK TO GENERATOR.
   REMOVE ALL SURFACE MOUNTED CONDUIT.

ONE LINE DIAGRAM - MAIN SWITCHBOARD

1. MDP - BASE BID - DEMO

ONE LINE DIAGRAM - CUMMINS GENERATOR - DEMO

3. MDP - ALT #1 - DEMO

ONE LINE DIAGRAM - MAIN SWITCHBOARD

2. MDP - ALT #1 - DEMO

CUMMINS GENSET. MODEL #C50 D6

NO SCALE

Texas Registered Engineering Firm F - 2113

A S S I S T A N T E X A S E N G E E R I N G S P E C I A L I S T

JUSTIN M. BRANDON 131576
Tx. Registration # F-2113

ISSUED FOR CONSTRUCTION

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10010
THE UNIVERSITY OF TEXAS MEDICAL BRANCH
McALLEN
CHILLER REPLACEMENT
10-10245
ONE LINE DIAGRAMS - DEMO

No. Description Date
1 1 CIRCUIT BREAKER TO REMAIN. USE TO CONNECT NEW CHILLER.
2 REFER TO SHEET E-011. FOR RENO WORK.
3 REMOVE CONDUCTORS FROM EQUIPMENT BACK TO MDP.
4 REMOVE SURFACE CONDUIT AT CHILLER. LEAVE STUB UP AT
   CHILLER AND COVER FOR USE IN RENOVATION.
5 REMOVE CONTROL WIRING FROM LOAD BANK TO GENERATOR.
6 REMOVE ALL SURFACE MOUNTED CONDUIT.
7 REMOVE CONDUCTORS FROM LOAD BANK BACK TO GENERATOR.
   REMOVE ALL SURFACE MOUNTED CONDUIT.

NO SCALE
ONE LINE DIAGRAM - MAIN SWITCHBOARD

MOP - BASE BID - RENO

KEYED NOTES - B011

1. PROVIDE MAIN SWITCHGEAR 'MDP'.
2. PROVIDE COMMUNICATION TO DDC.
3. PROVIDE MODBUS CONNECTION BACK TO DDC VIA GENERATOR.
4. PROVIDE VARIOUS SIZES OF CONDUIT TO EXISTING MODBUS.
5. PROVIDE SPOUT AND WATER EXISTING MODBUS.
6. PROVIDE SPOUT AND WATER EXISTING MODBUS.
7. PROVIDE PROJECTIONS FOR VARIOUS WIRING.
8. PROVIDE VARIOUS SIZES OF CONDUIT TO EXISTING MODBUS.
9. PROVIDE PROJECTIONS FOR VARIOUS WIRING.

GENERAL NOTES - G011

- NO SCALE
- PROVIDE ALL CONDUCTORS AND CONDUIT.
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