ADDENDUM NO. 1

Fishback Creek Mechanical Renovation

Project No. 223046.00

MSD of Pike Township Indianapolis, Indiana

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Addendum No. 1, 5 Items, 2 pages Revised Drawing Sheets: M-602 and M-702 Pre-Bid Meeting Sign-in Sheet Pre-Bid Meeting Agenda

Date: April 25, 2024

FANNING/HOWEY ASSOCIATES, INC. ARCHITECTS/ENGINEERS/CONSULTANTS

TO: ALL BIDDERS OF RECORD

ADDENDUM NO. 1 to Drawings and Project Manual, dated April 5, 2024, for MSD of Pike Township, 3950 W. 56th Street, Indianapolis, Indiana 46278; as prepared by Fanning/Howey Associates, Inc., Indianapolis, Indiana. This Addendum shall hereby be and become a part of the Contract Documents the same as if originally bound thereto.

The following clarifications, amendments, additions, revisions, changes, and modifications change the original Contract Documents only in the amount and to the extent hereinafter specified in this Addendum.

Each bidder shall acknowledge receipt of this Addendum in his proposal or bid.

NOTE: Bidders are responsible for becoming familiar with every item of this Addendum. (This includes miscellaneous items at the very end of this Addendum.)

RE: ALL BIDDERS

ITEM NO. 1. PROJECT MANUAL, SECTION 01 10 00 - SUMMARY

- A. Add 2.8, B., 5., as follows:
 - "5. If equipment and materials are received prior to the work beginning on site date, Contractor may start early following the evening work schedule when school is in session or work schedule when school is not in session. The existing HVAC systems must remain fully functional during occupied hours when school is in session."

ITEM NO. 2. PROJECT MANUAL, SECTION 23 05 00 - COMMON WORK RESULTS FOR HVAC

- A. Add 3.1. D., as follows:
 - "D. During selective demolition of pneumatic control tubing and equipment, the control tubing shall be permanently capped at source to preserve existing pneumatic controls to other mechanical equipment. Once new DDC BMS system is fully operational, all pneumatic equipment can be removed."
- B. Add 3.1. E., as follows:
 - "E. Pneumatic control tubing must be completely removed from mechanical equipment to source. Removal of pneumatic conduit and supports are included in scope."

ITEM NO. 3. PROJECT MANUAL, 23 09 93 HVAC SEQUENCE OF OPERATION

A. Update specification section 1.5, D., 3d., to the following:

"Specification section 23 29 23 variable frequency motor controllers shall provide VFC for each secondary pump; verify power requirements with Mechanical Contractor. TC shall provide VFC. TC responsible for control wiring from mechanical equipment to VFC. Division 26 shall provide power wiring and installation of VFC."

B. Update specification 1.5, E., 1f., to the following:

"Specification section 23 29 23 variable frequency motor controllers shall provide VFC for each secondary pump; verify power requirements with Mechanical Contractor. TC shall provide VFC. TC responsible for control wiring from mechanical equipment to VFC. Division 26 shall provide power wiring and installation of VFC."

C. Revise 1.5, G., 1., to the following:

"Provide room temperature sensor mounted on the wall. Sensor shall cycle the unit fan and modulate the 2-way hot water control valve to maintain space temperature setpoint. Sensor shall be furnished and installed by TCC. Coordinate wiring with EC. Refer to control drawings. Integrate equipment into BMS."

D. Revise 1.5, G., 1., to the following:

"Provide room temperature sensor mounted on the wall. Sensor shall open 2-position 2-way valve and cycle the unit fan to maintain space setpoint. Sensor shall be furnished and installed by TCC. Coordinate wiring with EC. Space sensor and PUH shall be integrated into BMS. Refer to control drawings."

E. Revise 1.5, D., 2., c., to the following:

"After flow has been proven through the chiller flow switch wired to the chiller control panel, the chiller shall be enabled to operate under its own operating and safety controls to maintain 44F (adj.) leaving water temperature. Air-cooled condenser shall be cycled from the chiller control panel. Chiller evaporator capacity controls, flow switch shall be furnished by chiller manufacturer and installed by Temperature Control Contractor. Chilled water temperature sensors shall be furnished and installed by the Temperature Control Contractor as shown on control drawings."

ITEM NO. 4. PROJECT MANUAL, SECTION 23 21 13 – HYDRONIC PIPING

A. Remove the following section (and associated subsections) of the specification.

"2.5 POLYPROPYLENE RESIN (PP-R) PIPE AND FITTINGS" and associated subsections.

"1.1, B., 2. Division 23 Section "Polypropylene Hydronic Piping Option"

B. Revise the wording to specification section 3.1K to the following:

"Safety-Valve-Inlet and -Outlet Piping for Hot-Water Heating Piping: Same materials and joining methods as for piping specified for the service in which safety valve is installed."

ITEM NO. 5. REVISED DRAWING SHEETS

A. Drawing Sheets: M-602 and M-702 have been revised, dated 4/25/24, and are included with and hereby made a part of this Addendum. These Drawings supersede the original documents.

END OF ADDENDUM



PREBID CONFERENCE AGENDA

350 East New York St Suite 300 Indianapolis, IN 46204 317.848.0966 fhai.com

MSD of Pike Township Indianapolis, Indiana

Date: April 11, 2024

- Re: NAPA North Heat Pump Replacement Fishback Creek Mechanical Renovation MSD of Pike Township Indianapolis, Indiana Project Nos. 223039.00 and 223046.00
- Present: See prebid conference sign-in sheet.
- Purpose: Look at project site, conditions, and to answer questions concerning the Drawings and Project Manual for the projects. Fanning Howey to document and answer questions.
- 1. General Information
 - <u>Advertisement to Bidders</u>: Per the information contained in the Advertisement to Bidders in the Project Manual, bids will be received until <u>10:00 a.m. on May</u>
 <u>9, 2024</u> at the MSD of Pike Township Administration Services Center, Attn: Director of Facilities & Security, 6901 Zionsville Rd, Indianapolis, IN 46268 in Board Room. Bids will be opened publicly and read aloud immediately after specified closing time. Bids may be held for 60 days.
 - b. Obtaining Bid Documents: To obtain documents Bidders will be required to 317-598-0661. reaister at the Eastern Engineering. website (distribution.easternengineering.com) to become a plan holder for the Project. Once registered, Bidders can download the complete set of documents in .PDF form free of charge. Registered bidders will receive electronic distribution of addendums and other electronic communications during the bidding period. Bidders can purchase hard copies of the documents from Eastern Engineering for the cost of printing as established by the Printer. No partial sets will be issued.
 - c. <u>Instructions to Bidders</u>: Per the information contained in the Project Manual, Bids shall be executed on the Bid Proposal Form provided. Other information to be included with the bid form is outlined in the Instructions to Bidders. Each bidder is required to bid every item called for on the bid form, including any alternates and allowances.
 - d. <u>Identification of Submission of Bid Proposal</u>: Per the Instructions to Bidders, the Bid Proposal shall be submitted in an envelope identified with the name of the project, name of the bidder, base bid package, and the date and closing time of bids. Photocopies of the bid form are acceptable. Refer to the checklist in the Instructions to Bidders to make sure all required documents are



Prebid Conference Agenda (April 11, 2024) MSD of Pike Township Indianapolis, Indiana Project Nos. 223039.00, 223046.00 Page 2

submitted with the Bid. Be sure to submit the subcontractor and manufacturer lists with the bid.

- e. <u>Bonds</u>: See the Instructions to Bidders and the Advertisement to Bidders for the requirements of bid securities and bonds required. Performance and Payment Bonds are for 100% of the bid.
- f. <u>Award of Contract</u>: The Board will be asked to award a Contract at the Board Meeting on May 14, 2024 after which a Notice to Proceed will be issued, Contract will be executed and Preconstruction Conference will be scheduled.
- g. <u>Project Schedule:</u> Construction schedule and phasing can be seen in "01 10 00 SUMMARY" of each project, and on sheet M-002. A condensed schedule is shown below. Contractors shall review the specifications and documents for exact requirements:
 - .1 223039.00 NAPAN Heat Pump Replacement
 - .a Start: March 31, 2025
 - b Summer Break: May 23, 2025 to July 22, 2025
 - .c Substantial Completion: October 10, 2025
 - .2 223046.00 Fishback Creek Mechanical Renovation
 - .a Start: March 31, 2025
 - .b Summer: May 23, 2025 to July 22, 2025
 - .c Chilled Water: November 1, 2025 to March 1, 2026
- h. Walkthrough of NAPAN Heat Pump Replacement project (Approximately 10am)
- i. Walkthrough of Fishback Creek Mechanical Renovation Project (Approximately 11am, after NAPAN walkthrough)
- j. <u>Temporary Facilities and Controls</u>: Information on temporary facilities and controls are listed in Section 015000 of the Project Manual.
- k. <u>Addenda</u>: If required, any addenda will be issued by May 2, 2024.
- I. <u>Questions and Clarifications</u>: Per the instructions in the Project Manual, questions should be emailed to the appropriate contact person at Fanning Howey and followed up with a telephone call. Contacts and telephone numbers are listed in the Instruction to Bidders. Questions requiring clarifications or revisions will be addressed in an addendum. Any questions can be directed in writing to <u>Gregg Dixon at gdixon@fhai.com and Peter</u> <u>Winters at pwinters@fhai.com</u>
- m. <u>Permits, Fees, and Notices</u>: All permits, fees, and notices are the responsibility of the Contractor. The building permit for this Project will be secured by the Contractor once the Board awards the Contract.



Prebid Conference Agenda (April 11, 2024) MSD of Pike Township Indianapolis, Indiana Project Nos. 223039.00, 223046.00 Page 3

- 2. 223039.00 NAPAN Heat Pump Replacement Walkthrough
 - a. Look at project site, conditions, and to answer questions concerning the Drawings and Project Manual for 223039.00 project. Fanning Howey to document and answer questions.
- 3. 223046.00 Fishback Creek Mechanical Renovation Walkthrough
 - a. Look at project site, conditions, and to answer questions concerning the Drawings and Project Manual for 223046.00 project. Fanning Howey to document and answer questions.

Jake Sorenson, EIT Mechanical Designer

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Project Name

NEW AUGUSTA PUBLIC ACADEMY NORTH – HEAT PUMP REPLACEMENT 223039.00 APRIL 11, 2024 Project No.

MSD OF PIKE TOWNSHIP

Meeting Date

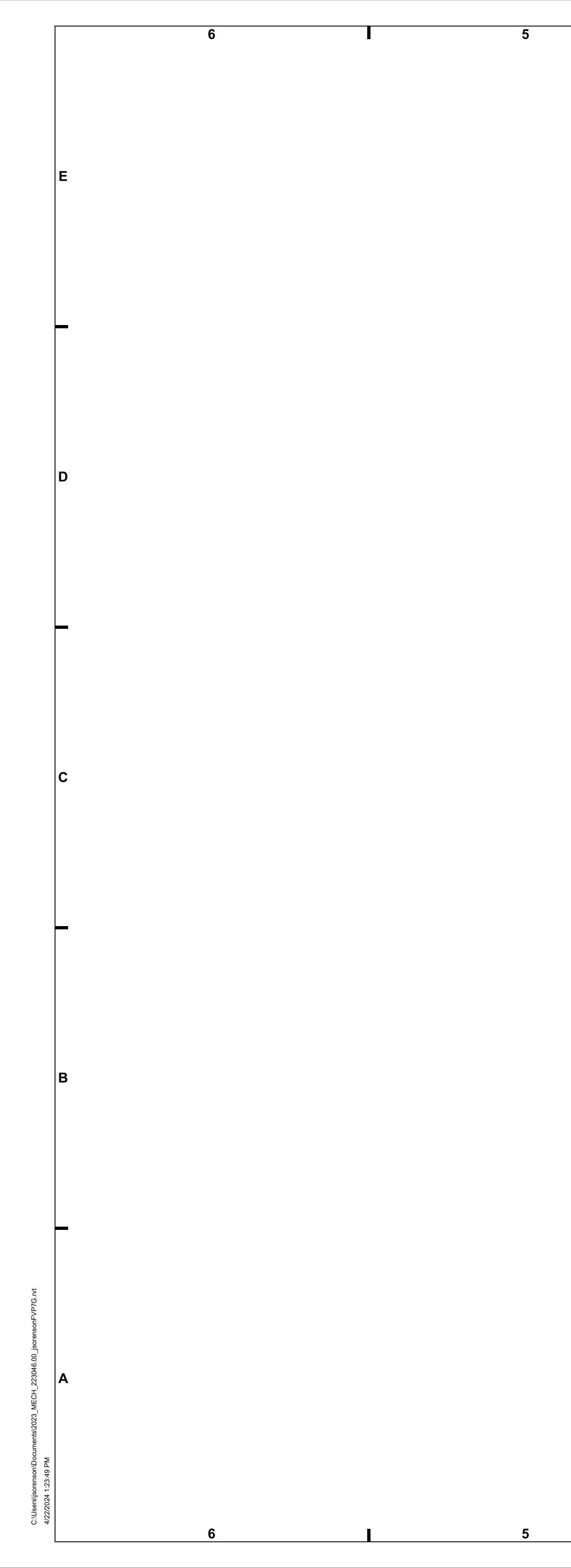
THANK YOU!

.....

PLEASE PRINT CLEARLY. YOUR NAME AND TITLE WILL BE INCLUDED IN THE MEETING REPORT.

SIGN-IN SHEET

| | | | | 3 | 57. | + | | | 1 | 1 | T | 1 | 1 | |
|------------------------|--|-------------------|---------------------|---|-------------------------|-------------------------------|------|---------------|---|---|---|---|---|--|
| E-MAIL | cgruber@pike.k12.in.us | pwinters@fhai.com | jsorenson@fhai.com | 317-910-0780 Johng Sexson mechanical. (2) | RLJORDAN JYJKE ILIZ JW. | 317 821 8155 BMattinghallonet | 0 20 | | | | | | | |
| PHONE/ FAX | 317.280.2425 | 317.410.1289 | 763.567.0559 | 317-910-0280 | 317.714-1321 | 317 821 8155 | | | | | | | | |
| COMPANY | MSD of Pike Township | Fanning Howey | Fanning Howey | Sexson Hech | FIKE | Holladay Const. | | | | | | | | |
| ТІТСЕ | Director of Facilities and Security | Project Manager | Mechanical Designer | Estimater | | EVP | | | | | | | | |
| NAME (Please print) | Clayton Gruber | Peter Winters | Jake Sorenson | John Cutzwiller | Rod Jordan | Billy Mathinely | | tallaga Mxon. | | | | | | |



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|---|--|---|
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| | | | | 23.21.13 - AIR AND D | IRT SEPERATOR SCHEDULE | | | | | | |
|---------|----------------|-------|----------------------|----------------------|------------------------|---------------------|------|--------|-----------------|-------------------|------------------|
| | IDENTITY DA | TA | LOCATION | | | MAX | TAN | K SIZE | FLOODED | CONNECTION | |
| MARK | MANUFACTURER | MODEL | # NAME | SYSTEM SERVED | TYPE | WORKING PRESSURE | DIA. | HEIGHT | WEIGHT (LBS) | DIAMETER (IN.) | MAX FLOW RATE |
| ADS-CHW | BELL & GOSSETT | RL-6F | A134 MECHANICAL ROOM | CHILLED WATER PLANT | CENTRIFUGAL TANGENTIAL | 125 psig | 18" | 44" | 579 | 6" | 850 GPM |
| ADS-HW | BELL & GOSSETT | RL-6F | A134 MECHANICAL ROOM | HOT WATER PLANT | CENTRIFUGAL TANGENTIAL | 125 psig | 18" | 44" | 579 | 6" | 850 GPM |

| | | | | | | 23.52.00 |) - HEATIN | g Boil | ER SC | CHEDU | JLE | | | | | | | | |
|-------|-----------|----------|-----------------|-------------------------------|----------------------------|-------------------------|-----------------|-------------|-------------|------------|----------------|------------------------------------|-----------|-----------|-----------|-------|------|------|------|
| | | IDENTITY | DATA | | LOCATION | | HEA | ATING V | WATE | R FLO | W | HEAT | ING CAP | ACITY | | EL | ECTR | | ſA |
| MARK | MFG | MODEL | WEIGHT (LBS) | TYPE | # NAME | SYSTEM SERVED | DESIGN (GPM) | EWT (°F) | LWT (°F) | ΔT (°F) | WPD (ftH2O) | FUEL TYPE | INPUT | OUTPUT | EFF. ຖ | VOLTS | PH | FREQ | FLA |
| BLR-1 | LOCHINVAR | FCB2000 | 2,622 | CREST W/HELLCAT COMBUSTION | A134 MECHANICAL ROOM | HEATING HOT WATER | 200 | 140 | 160 | 20 | 14.5 | NG (4" W.C. MIN / 14" W.C. MAX) | 1,999,000 | 1,923,000 | 96.2 | 120 V | 1 | 60 | 13.5 |
| BLR-2 | LOCHINVAR | FCB2000 | 2,622 | CREST W/HELLCAT COMBUSTION | A134 MECHANICAL ROOM | HEATING HOT WATER | 200 | 140 | 160 | 20 | 14.5 | NG (4" W.C. MIN / 14" W.C. MAX) | 1,999,000 | 1,923,000 | 96.2 | 120 V | 1 | 60 | 13.5 |
| BLR-3 | LOCHINVAR | FCB2000 | 2,622 | CREST W/HELLCAT COMBUSTION | A134 MECHANICAL ROOM | HEATING HOT WATER | 200 | 140 | 160 | 20 | 14.5 | NG (4" W.C. MIN / 14" W.C. MAX) | 1,999,000 | 1,923,000 | 96.2 | 120 V | 1 | 60 | 13.5 |

| | 23.64.26 - AIR-COOLED CHILLER SCHEDULE | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------|--|--------------------------|----------------------|-------------------------|------------------------|-------------------|--------|-------|-----------|--------|-------|------|-------|-------|-----|----------------|-------|-----|------------------------------------|------|-----------|---------|-------|------|-----------|---------|--------|-------|-------|
| | IDEN | NTITY DATA | | LOC | ATION | | | PERFO | ORMANCE D | ATA | | | EVAPO | RATOR | | CON | DENSE | R | (| COMP | RESSOR | | | DIME | ENSIONS | | ELECTR | | |
| | | | | | SYSTEM | AMBIENT DB AIR | REF | RIG. | CAPACITY | | | EWT | LWT | FLOW | WPD | OPER. TEMP. | FA | NS | | | MIN OA DB | kW | | ļ | WEIGH | r | | | |
| MARK | MFG | MODEL | TYPE | LOCATION | SERVED | TEMP (F) | TYPE | LBS. | | EER | IPLV | (°F) | (°F) | 1 1 | | (°F) | QTY | HP | TYPE | | TEMP (°F) | (Total) | w | L | H (LBS) | VOLTS P | H FREQ | MOP | MCA |
| CHLR- | TRANE | ASCEND (TM) MODEL ACS | AIR-COOLED SCROLL | MECHANICAL COURTYARD | CHILLED WATER PLANT | 95 °F | R-454B | 100 | 140 | 10.948 | 17.05 | 45 | 55 | 317.6 | 8.4 | -20 °F | 8 | 2.4 | DIRECT-DRIVE HERMETIC SCROLL | 4 | -20 °F | 136.1 | 88" 2 | 229" | 98" 7,897 | 460 V 3 | 60 | 350 A | 287 A |
| CHLR-2 | 2 TRANE | ASCEND (TM) MODEL ACS | AIR-COOLED SCROLL | MECHANICAL COURTYARD | CHILLED WATER PLANT | 95 °F | R-454B | 100 | 140 | 10.948 | 17.05 | 45 | 55 | 317.6 | 8.4 | -20 °F | 8 | 2.4 | DIRECT-DRIVE HERMETIC SCROLL | 4 | -20 °F | 136.1 | 88" 2 | 229" | 98" 7,897 | 460 V 3 | 60 | 350 A | 287 A |

 GENERAL REQUIREMENTS
 GENERAL REQUIREMENTS

 •
 ROUTE REFRIGERANT PIPING ACCORDING TO MANUFACTURER REQUIREMENTS. SUPPORT PIPING ACCORDING
 •
 INCLUDE FACTORY ELASTOMERIC ISOLATORS.
 PROVIDE SHORT CIRCUIT CURRENT RATING (SCCR) OF 65kA.

| | | | 23 | 3.05.16 - HYDRONIC EXI | PANSION TANK SCHEDULE | | | | 23.05.16 - HYDRONIC EXPANSION TANK SCHEDULE | | | | | | | | | | | | | |
|--------|----------------------|-------|----------------------|------------------------|-------------------------|----------------------|-----------------|-----------|---|-----------------|--|--|--|--|--|--|--|--|--|--|--|--|
| | IDENTITY DATA | | LOCATION | | | | | TANK SIZE | | FLOODED | | | | | | | | | | | | |
| MARK | MANUFACTURER | MODEL | # NAME | SYSTEM SERVED | TYPE | ACCEPTANCE VOLUME | MAX PRESSURE | DIA. | HEIGHT | WEIGHT (LBS) | | | | | | | | | | | | |
| ET-CHW | BELL & GOSSETT | B130 | A134 MECHANICAL ROOM | CHILLED WATER PLANT | FULL ACCEPTANCE BLADDER | 34.0 gal | 80 psig | 20" | 40" | 410 | | | | | | | | | | | | |
| ET-HW | BELL & GOSSETT | B1000 | A134 MECHANICAL ROOM | HOT WATER PLANT | FULL ACCEPTANCE BLADDER | 264.0 gal | 125 psig | 36" | 76" | 2,751 | | | | | | | | | | | | |

| | | | | | | AMBIENT | REF | RIG |
|--------|-------|--------------------------|----------------------|-------------------------|------------------------|--------------------|--------|-----|
| MARK | MFG | MODEL | TYPE | LOCATION | SYSTEM SERVED | DB AIR TEMP (F) | TYPE | LB |
| CHLR-1 | TRANE | ASCEND (TM) MODEL ACS | AIR-COOLED SCROLL | MECHANICAL COURTYARD | CHILLED WATER PLANT | 95 °F | R-454B | 10 |
| CHLR-2 | TRANE | ASCEND (TM) MODEL ACS | AIR-COOLED SCROLL | MECHANICAL COURTYARD | CHILLED WATER PLANT | 95 °F | R-454B | 10 |
| | | | | | | | | G |

| |] | E CONTROL PANEL SCHEDULE | 00 - TEMPERATURE | 23.09. |
|-------|---|---|---|---|
| | | LOCATION | | IDE |
| | | # NAME | MANUFACTURER | MARK |
| | | A134 MECHANICAL ROOM | SIEMENS | TCP-1 |
| | | A134 MECHANICAL ROOM | SIEMENS | TCP-2 |
| MARK | | A134 MECHANICAL ROOM | SIEMENS | TCP-3 |
| CHP-1 | | A200 MECHANICAL MEZZANINE | SIEMENS | TCP-4 |
| CHP-2 | | A201 MECHANICAL MEZZANINE | SIEMENS | TCP-5 |
| CHP-3 | | A201 MECHANICAL MEZZANINE | SIEMENS | TCP-6 |
| CHP-4 | | B200 MECHANICAL MEZZANINE | SIEMENS | TCP-7 |
| HWP-1 | | B200 MECHANICAL MEZZANINE | SIEMENS | TCP-8 |
| HWP-2 | | D200 MECHANICAL MEZZANINE | SIEMENS | TCP-9 |
| | CHP-1 CHP-2 CHP-3 CHP-4 HWP-1 | CHP-1 CHP-2 CHP-3 CHP-4 HWP-1 | LOCATION# NAMEA134 MECHANICAL ROOMA134 MECHANICAL ROOMA134 MECHANICAL ROOMA134 MECHANICAL ROOMA200 MECHANICAL MEZZANINEA201 MECHANICAL MEZZANINEA201 MECHANICAL MEZZANINEB200 MECHANICAL MEZZANINECHP-3B200 MECHANICAL MEZZANINECHP-4B200 MECHANICAL MEZZANINECHP-4 | MANUFACTURER# NAMESIEMENSA134 MECHANICAL ROOMSIEMENSA134 MECHANICAL ROOMSIEMENSA134 MECHANICAL ROOMSIEMENSA200 MECHANICAL MEZZANINESIEMENSA201 MECHANICAL MEZZANINESIEMENSA201 MECHANICAL MEZZANINESIEMENSB200 MECHANICAL MEZZANINE |

D200 MECHANICAL MEZZANINE

4

GENERAL REQUIREMENTS
 TCC RESPONSIBLE FOR ADDITIONAL TCP AS NECESSARY FOR COMPLETE DDC CONTROL OF SYSTEMS.
 TCC TO VERIFY LOCATION OF TCP WITH ALL TRADES PRIOR TO PROTACLASSING

SIEMENS

TCP-10

INSTALLATION.

REFER TO ELECTRICAL DRAWINGS FOR POWER REQUIREMENTS.
 COORDINATE DATA/NETWORK REQUIREMENTS REQUIREMENTS

WITH OWNER AND ALL OTHER TRADES.

| | | | | | | 23.21.23 - HYDRONIC PUMP SCH | EDULE | | | | | | | | | |
|-------|----------------|--------|-----------------|--------------------------|----------------------|---------------------------------|------------------------------|-----------------|-----------------------|-------|------------------------|-------------|-------------------------|------------------------|--------------------|-------|
| | IDENTITY I | DATA | | | | LOCATION | | | PER | FORMA | | 4 | | | ELECTRICAL DATA | |
| MARK | MFG | MODEL | WEIGHT (LBS) | ТҮРЕ | # NAME | SYSTEM SERVED | FLOW RATE (GPM) DESIGN | HEAD (ftH20) | IMPELLER DIA (IN.) | NPSH | BHP @ DUTY POINT | MOTOR HP | MOTOR SPEED (RPM) | DUTY POINT ໗ (%) | ELECTRICAL | NOTES |
| CHP-1 | Bell & Gossett | 3 AD | 228 | BASE MOUNTED END SUCTION | A134 MECHANICAL ROOM | CHILLED WATER PLANT - PRIMARY | 320 | 30 | 6 3/8" | 6 | 2.9 | 3 | 1800 | 84.2 | 460 V-3-60 | |
| CHP-2 | Bell & Gossett | 3 AD | 228 | BASE MOUNTED END SUCTION | A134 MECHANICAL ROOM | CHILLED WATER PLANT - PRIMARY | 320 | 30 | 6 3/8" | 6 | 2.9 | 3 | 1800 | 84.2 | 460 V-3-60 | |
| CHP-3 | Bell & Gossett | 2.5 BB | 388 | BASE MOUNTED END SUCTION | A134 MECHANICAL ROOM | CHILLED WATER PLANT - SECONDARY | 260 | 80 | 9 1/2" | 7 | 6.8 | 10 | 1800 | 77.2 | 460 V-3-60 | 1 |
| CHP-4 | Bell & Gossett | 2.5 BB | 388 | BASE MOUNTED END SUCTION | A134 MECHANICAL ROOM | CHILLED WATER PLANT - SECONDARY | 260 | 80 | 9 1/2" | 7 | 6.8 | 10 | 1800 | 77.2 | 460 V-3-60 | 1 |
| HWP-1 | Bell & Gossett | 3x3x7C | 180 | IN-LINE CENTRIFUGAL PUMP | A134 MECHANICAL ROOM | HOT WATER PLANT - PRIMARY | 200 | 25 | 6" | 7 | 1.7 | 2 | 1800 | 71.8 | 460 V-3-60 | |
| HWP-2 | Bell & Gossett | 3x3x7C | 180 | IN-LINE CENTRIFUGAL PUMP | A134 MECHANICAL ROOM | HOT WATER PLANT - PRIMARY | 200 | 25 | 6" | 7 | 1.7 | 2 | 1800 | 71.8 | 460 V-3-60 | |
| HWP-3 | Bell & Gossett | 3x3x7C | 180 | IN-LINE CENTRIFUGAL PUMP | A134 MECHANICAL ROOM | HOT WATER PLANT - PRIMARY | 200 | 25 | 6" | 7 | 1.7 | 2 | 1800 | 71.8 | 460 V-3-60 | |
| HWP-4 | Bell & Gossett | 2.5 BB | 388 | BASE MOUNTED END SUCTION | A134 MECHANICAL ROOM | HOT WATER PLANT - SECONDARY | 260 | 80 | 9 1/2" | 7 | 6.6 | 10 | 1800 | 77.2 | 460 V-3-60 | 1 |
| HWP-5 | Bell & Gossett | 2.5 BB | 388 | BASE MOUNTED END SUCTION | A134 MECHANICAL ROOM | HOT WATER PLANT - SECONDARY | 260 | 80 | 9 1/2" | 7 | 6.6 | 10 | 1800 | 77.2 | 460 V-3-60 | 1 |

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23.29.23 - VARIABLE-FREQUENCY MOTOR CONTROLLER SCHEDULE

| IDE | ENTITY DATA | LOCATION | | MOTOR | INTEGRAL | ELECTRICAL | | | | | |
|-------|------------------------|----------------------|---------|-------|----------|-------------|--|--|--|--|--|
| MARK | MANUFACTURER | # NAME | SERVICE | HP | BYPASS | DATA | | | | | |
| VFC-1 | ABB Power Distribution | A134 MECHANICAL ROOM | HWP-4 | 10 | Yes | 480 V-3-vHZ | | | | | |
| VFC-2 | ABB Power Distribution | A134 MECHANICAL ROOM | HWP-5 | 10 | Yes | 480 V-3-vHZ | | | | | |
| VFC-3 | ABB Power Distribution | A134 MECHANICAL ROOM | CHP-3 | 10 | Yes | 480 V-3-vHZ | | | | | |
| VFC-4 | ABB Power Distribution | A134 MECHANICAL ROOM | CHP-4 | 10 | Yes | 480 V-3-vHZ | | | | | |
| | | | | | | | | | | | |

GENERAL REQUIREMENTS
 PROVIDE NEMA 1 ENCLOSURE FOR ALL VFDS LOCATED INDOORS.

PROVIDE INTEGRAL DISCONNECT. PROVIDE BYPASS WITH VFD. REFER TO SPECIFICATION 23 29 23 FOR ADDITIONAL REQUIREMENTS AND INSTALLATION INSTRUCTIONS. PROVIDED BY TCC AND INSTALLED BY EC. TCC RESPONSIBLE FOR CONTROL WIRING FROM VFC TO MECHANICAL EQUIPMENT. EC

RESPONSIBLE FOR POWER WIRING

| | | 23.2 | 25.00 - CHEMICAL BYPAS | S/FILTER FEEDER SCH | IEDULE | | | | |
|---------|---------------|---------|------------------------|---------------------|------------------------|---------|-----------|--------|--|
| | IDENTITY DATA | | LOCATION | | | | TANK SIZE | | |
| MARK | MANUFACTURER | MODEL | # NAME | SYSTEM SERVED | TYPE | VOLUME | DIA. | HEIGHT | |
| CBF-CHW | NEPTUNE | FTF-5DB | A134 MECHANICAL ROOM | CHILLED WATER | 5 MICRON BAG FILTER | 5.0 gal | 10" | 32" | |
| CBF-HW | NEPTUNE | FTF-5DB | A134 MECHANICAL ROOM | HOT WATER | 5 MICRON BAG FILTER | 5.0 gal | 10" | 32" | |

GENERAL REQUIREMENTS INCLUDE EXTRA MATERIALS AS STATED IN SPECIFICATIONS. INCLUDE BOLT-ON LEG OPTION. MOUNT PER MANUFACTURER REQUIREMENTS.

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GENERAL REQUIREMENTS REFER TO ALTERNATE FOR REDUCED SCOPE.

• INCLUDE CONDENSATE PIPING, FACTORY-PROVIDED DRAIN TRAP, AND FACTORY-PROVIDED CONDENSATE NEUTRALIZER KIT FOR EACH BOILER ACCORDING TO MANUFACTURER REQUIREMENTS. PROVIDE AND INSTALL SERVICE DISCONNECT SWITCH FOR EACH BOILER ACCORDING TO MANUFACTURERS ELECTRICAL REQUIREMENTS.
 FLUE GAS EXHAUST DUCTWORK TO BE CONSTRUCTED OF DOUBLE WALL STAINLESS STEEL SPECIAL GAS VENT. SEE SPECIFICATIONS FOR MORE DETAILS.

• COMBUSTION AIR DUCTWORK TO BE CONSTRUCTED OF GALVANIZED STEEL PIPE. SEAL ALL JOINTS AND SEAMS AS REQUIRED BY LOCAL CODES AND MANUFACTURER REQUIREMENTS.

ELECTRICAL REQUIREMENTS MAY VARY BASED ON MANUFACTURER.

| 23.64.27 - REMOTE EVAPORATOR SCHEDULE | | | | | | | | | | | |
|---------------------------------------|-------|--------------------------------------|-------------------------|------------------|--------------------------------|-----------------------------------|-------------|-------------|----------------|----|----|
| IDENTITY DATA | | | | | EVAPORATOR DATA | | | | UNIT SIZE (IN) | | |
| MARK | MFG | PRODUCT | LOCATION | EQUIP. SERVED | SYSTEM DEMAND FLOW (GPM) | EQUIPMENT DESIGN FLOW (GPM) | EWT (°F) | LWT (°F) | L | w | н |
| REV-1 | TRANE | BRAZED PLATE HX REMOTE EVAPORATOR | A134 MECHANICAL ROOM | CHLR-1 | 260 | 317 | 45 | 55 | 72 | 36 | 48 |
| REV-2 | TRANE | BRAZED PLATE HX REMOTE EVAPORATOR | A134 MECHANICAL ROOM | CHLR-2 | 260 | 317 | 45 | 55 | 72 | 36 | 48 |

 GENERAL REQUIREMENTS

 •
 PROVIDE DIGITAL REFRIGERANT LEAK DETECTION SYSTEM EQUAL TO TRANE TruSense RMWH. SEE PLANS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.

GENERAL REQUIREMENTS

REFER TO ALTERNATE FOR REDUCED SCOPE. • REFER TO MECHANICAL DETAILS, SPECIFICATIONS, AND MANUFACTURER REQUIREMENTS FOR PIPING SCHEDULE NOTES1.PROVIDE AND INSTALL VARIABLE FREQUENCY DRIVE.

ACCESSORIES AND ADDITIONAL INFORMATION. • MAINTAIN ALL CLEARANCE REQUIREMENTS PER MANUFACTURER. INSTALL PUMPS PER MANUFACTURER REQUIREMENTS.

