CITY OF ANN ARBOR, MICHIGAN

WTP
OZONE GENERATION BUILDING
CHILLER REPLACEMENT

SEPTEMBER, 2018

Project Number: 2075139804
DEMOlITION KEY NOTES:

1. REMOVE EXISTING COOLING WATER PUMP. SEE DETAIL 1 трубная SHEET FOR ADDITIONAL INSTRUCTIONS.

2. REMOVE EXISTING MONITORING CABLES. REMOVE EXISTING SAND/WIRE MESH SHEET.

3. REMOVE ASSOCIATED REFERENCE VENT TYPES AS REQUIRED TO ALLOW FOR INSTALLATION OF NEW CHILLER. PROTECT EXISTING MACHINES AND EQUIPMENT FOR REUSE.

4. PROTECT EXISTING PIPING. PROTECT EXISTING MACHINES AND EQUIPMENT FOR REUSE.

5. REMOVE EXISTING COOLING WATER PIPES. P-24-20-1 AND P-24-20-2 ARE ALL FITTINGS AND ACCESSORIES AS NECCESSARY.

6. REFER TO CONTRACT SPECIFICATIONS FOR SEQUENCE OF DEMOLITION.

7. REMOVE EXISTING FLUID PLUMBING TO BE REPLACED.

8. REMOVE EXISTING FLUID LINES TO BE REPLACED.

9. EXISTING 3" SCHEDULE 10 STAINLESS STEEL TO BE MODIFIED, REMOVE AS NECESSARY.
1. INSTALL COOLING WATER PUMP AND RECONNECT ALL PIPING.
2. INSTALL 100 TON WATER COOLED CHILLER AND RECONNECT ALL PIPING. INSTALL ALL ELECTRICAL WORK. INSTALL ALL HEAT EXCHANGERS AS PER DETAIL. INSTALL SYSTEM Piping, HVAC, and auxiliary equipment.
3. INSTALL ALL AIR COOLED CHILLERS AND RECONNECT ALL PIPING. INSTALL ROOF HILL SYSTEM Piping, HVAC, and auxiliary equipment.
4. INSTALL 10 TON AIR COOLED CONDENSER UNIT.
5. INSTALL DIFFERENTIAL PRESSURE SENSOR.
6. INSTALL TWO-TON CONTROL VALVE IN COLD WATER LINE TO GROVE GENERATOR.
7. REFER TO CONTRACT SPECIFICATIONS FOR RESIDENCE OF CONSTRUCTION.
8. EXISTING SCHEDULE TO STAINLESS STEEL PIPING COOLING WATER – 87.
9. MEASURED BACK PUMP PREDUCTION (T2).
10. 5 TON HTT, THERMAL CONVECTION FLOW PUMP, ENH T-150 SERIES.
11. 3" STAINLESS STEEL GLOVE VALVE (OPEN/CLOSED).
12. EXISTING 6" BUTTERFLY VALVE TO BE REPLACED IN KNO, 100-TON CHILLER MANUAL OPEN/CLOSED.
13. EXISTING COOLING 4" BUTTERFLY VALVE TO BE REPLACED IN KNO, 40-TON CHILLER MANUFACTURE NO CONTROL.
14. PROVIDE NEW RESIDENTIAL LINE PER MANUFACTURE'S REQUIREMENT.
GENERAL NOTES:
1. INSTALLATION AND CONNECTIONS TO NEW AND EXISTING PIPING SUBSYSTEMS SHALL BE PERFORMED IN ACCORDANCE WITH THE APPROPRIATE SPECIFICATIONS AND CODES. 
2. CONTRACTOR SHALL PROVIDE AND INSTALL AN INTEGRAL FLOW SWITCH ON EXISTING CONNECTIONS TO AVOID LEAKS.
3. CONTRACTOR SHALL PROVIDE AND INSTALL A COMBINATION PRESSURE AND TEMPERATURE INSTRUMENTATION FOR THE NEW AND EXISTING PIPING SUBSYSTEMS.
4. CONTRACTOR SHALL PROVIDE AND INSTALL A VIBRATION ISOLATION SYSTEM TO THE NEW AND EXISTING PIPING SUBSYSTEMS.

KEYED NOTES:
1. PROVIDE NEW DWYER SERIES 645 DIFFERENTIAL PRESSURE TRANSMITTER OR EQUAL.
2. PROVIDE NEW PUMPS WITH INERTIA BASE.

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# Mechanical Schedules

## Air Cooled Chiller Schedule

<table>
<thead>
<tr>
<th>UNIT IDENTIFICATION</th>
<th>AMOUNT UNIT SCHEDULED</th>
<th>UNIT CAPACITY [TONS]</th>
<th>CAPS</th>
<th>REPO S/N</th>
<th>REPO ORDER</th>
<th>FLUID TYPE</th>
<th>DMF (Ft)</th>
<th>LMT (Ft)</th>
<th>MAX WMP (Ft)</th>
<th>POOLING FACTOR</th>
<th>VOLS</th>
<th>PHASE</th>
<th>MCA</th>
<th>MOP</th>
<th>OPERATING WEIGHT [LB]</th>
<th>MANUFACTURER</th>
<th>MODEL NUMBER</th>
<th>NOTES</th>
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**Notes:**
- Perform electrical connection.
- Verify chiller connections.
- Verify all伴接.
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## Air Cooled Condensing Unit Schedule

<table>
<thead>
<tr>
<th>UNIT IDENTIFICATION</th>
<th>UNIT SCHEDULED</th>
<th>CAPS</th>
<th>TYPE</th>
<th>COUPLES</th>
<th>CONTROL</th>
<th>COLUMN DIAMETER [IN]</th>
<th>COLUMN LENGTH [IN]</th>
<th>FLUID TYPE</th>
<th>DMF (Ft)</th>
<th>LMT (Ft)</th>
<th>HPS (IN)</th>
<th>WEIGHT (LBS)</th>
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## Pump Schedule

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<th>SYSTEM</th>
<th>DESIGN</th>
<th>PUMP TYPE</th>
<th>COUPLES</th>
<th>CONTROL</th>
<th>COLUMN DIAMETER [IN]</th>
<th>COLUMN LENGTH [IN]</th>
<th>FLUID TYPE</th>
<th>DMF (Ft)</th>
<th>LMT (Ft)</th>
<th>HP</th>
<th>SPEED (RPM)</th>
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## Water Cooled Electrical Chiller Schedule

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<tr>
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<th>AMOUNT UNIT SCHEDULED</th>
<th>UNIT CAPACITY [TONS]</th>
<th>CAPS</th>
<th>REPO S/N</th>
<th>REPO ORDER</th>
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- **Ann Arbor MI**

**Mechanical Schedules**

**Project No.:** 201812047
**Scale:** 0

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[Stantec Project Logo]

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1. NEW 100 TON CHILLER.
2. EXISTING CHILLER FEEDER TO BE RE-USED, EXTEND WITH 2" RGS WITH 3 - #2 & #4 GND AS REQUIRED.
3. 400A NEMA 12 R FUSED DISCONNECT.
4. NEW 40 TON CHILLER.
5. EXISTING CHILLER FEEDER TO BE RE-USED, EXTEND WITH 1 1/2" RGS WITH 3 - #1 & #6 GND AS REQUIRED.
6. 200A NEMA 3R FUSED DISCONNECT.
7. 40 HP, 480V, 3Ø, VARIABLE FREQUENCY DRIVE, NEMA 1/12 MOUNTED ON S.S. UNISTRUT TOWER.
8. 1" RGS WITH 3 - #6 & #8 GND.
9. EXISTING CONDENSER FEEDER TO BE RE-USED, EXTEND WITH 3 4" RGS WITH 3 #12 & #12 GND AS REQUIRED.
10. NEW 40 TON OUTDOOR CONDENSER.
11. NEW COOLING WATER PUMPS AND MOTORS.
12. EXISTING UNDERGROUND CONDUIT TO BE REPLACED W/ PVC SCHEDULE 80. CONDUIT TO BE A MINIMUM OF 36" BELOW GRADE W/ EXPANSION JOINTS AS REQUIRED.
1. NEW 40 TON CHILLER CONTROL ENCLOSURE.
2. NEW 100 TON CHILLER CONTROL ENCLOSURE.
3. 1" RGS WITH 8 - CAT 6 ETHERNET.
4. 1" RGS WITH 16 - #14 & #14 GND.
5. 1" RGS WITH 12 - 2/C SHIELDED #18.
6. COOLING WATER PUMP P-08-20-02 VFD.
7. COOLING WATER PUMP P-08-20-01 VFD.
8. ExISTING PLANT CONTROL ENCLOSURE.
9. PROCESS COOLING PUMP P-08-23-1 VFD.
10. PROCESS COOLING PUMP P-08-23-2 VFD.
11. ExISTING 3" RGS WITH 8 - #14, CONDENSER CONTROL ALARM.
12. NEW OUTDOOR CONDENSER.
13. 1" RGS W/ 2-2/C SHIELDED #18 COLD WATER FLOW (AI) SPARE.
14. 1" RGS W/ 4 - #14 Ø 14 GNS COLD WATER.

OPEN (DO)
CLOSE (DO)
OPEN (DI)
CLOSE (DI)