FRUITLAND INTERMEDIATE SCHOOL
COOLING TOWER/PUMP REPLACEMENT
208 WEST MAIN STREET
FRUITLAND, MD 21826

PROJECT LOCATION

DRAWING LIST

CS1.0 COVER SHEET
M/E1.0 MECHANICAL & ELECTRICAL SPECIFICATIONS
M/E1.1 MECHANICAL & ELECTRICAL LEGEND, SCHEDULES, & DETAILS
M/E2.0 MECHANICAL & ELECTRICAL FLOOR PLANS

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Drawn by:
Checked by:
Date:

Mechanical / Electrical / Plumbing /
Information Technology
Consulting Engineers

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Revisions:
No.
Date

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland.

www.allenshariff.com

License Number: 15177
Expiration Date: 10/29/2021

Salisbury, Maryland 21801
Tel: 410.341.0200
Allen & Shariff Engineering, LLC
205 East Market Street
WIRING OF ALL CONTROLS IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.

Conductors shall be soft annealed copper insulated for 600 volts unless specifically noted. All wiring shall be done in accordance with the National Electrical Code (NEC), Article 725 and UL 723.

1. Manufacturers listed are basis of design. Substitutions are subject to the approval of the Engineer. Changes in direction, at junction points and to facilitate wire pulling. Furnish box sizes in accordance with the National Electrical Code (NEC), Article 90-7.

2. Software upgrades, reprogramming, downgrades adjustments, revisions to Schedules of Equipment and Systems will be processed by the Owner. Changing the location, variations in numbering etc. Alterations shall be marked in red and deletions all items to be removed are indicated on drawing. Revisions shall be submitted to the Engineer for approval.

3. Software upgrades, reprogramming, downgrades adjustments, revisions to Schedules of Equipment and Systems will be processed by the Owner. Changing the location, variations in numbering etc. Alterations shall be marked in red and deletions all items to be removed are indicated on drawing. Revisions shall be submitted to the Engineer for approval.

4. Conductors shall be soft annealed copper insulated for 600 volts unless specifically noted. All wiring shall be done in accordance with the National Electrical Code (NEC), Article 90-7. Conduit shall be of rigid, intermediate, or electrical metallic tubing in accordance with the National Electrical Code (NEC), Article 90-7. Conduit shall be of rigid, intermediate, or electrical metallic tubing in accordance with the National Electrical Code (NEC), Article 90-7.

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COOLING TOWER SCHEDULE

**Unit No.** | **Location** | **Service** | **Pipe** | **Pump** | **System** | **Operation** | **Eff. (%)** | **Pump Sched.**
--- | --- | --- | --- | --- | --- | --- | --- | ---
1 |  |  |  |  |  |  | 100 | 1
2 |  |  |  |  |  |  | 100 | 1
3 |  |  |  |  |  |  | 100 | 1
4 |  |  |  |  |  |  | 100 | 1
5 |  |  |  |  |  |  | 100 | 1
6 |  |  |  |  |  |  | 100 | 1
7 |  |  |  |  |  |  | 100 | 1
8 |  |  |  |  |  |  | 100 | 1
9 |  |  |  |  |  |  | 100 | 1
10 |  |  |  |  |  |  | 100 | 1
11 |  |  |  |  |  |  | 100 | 1
12 |  |  |  |  |  |  | 100 | 1

**SYSTEM OF MECHANICAL-ELECTRICAL WORK**

1. **MECHANICAL**
   - Condenser Water Supply Piping
   - Condenser Water Return Piping
   - Cool Tower/Pump Replacement
   - Cool Tower Sump Tank Reinstallation

2. **ELECTRICAL**
   - Cool Tower Motor Control Center
   - Cool Tower Controls
   - Cool Tower Lighting

**GENERAL RISER NOTES**

1. **MECHANICAL**
   - All equipment on Mechanical Riser are located as shown. Any inaccuracies found to affect work or score must be brought to the attention of the Owner, Engineer, Inspector, and work stoppage until direction is provided by Owner and Engineer.

2. **ELECTRICAL**
   - All equipment on Electrical Riser are located as shown. Any inaccuracies found to affect work or score must be brought to the attention of the Owner, Engineer, Inspector, and work stoppage until direction is provided by Owner and Engineer.

**CONTROL CENTER NOTES**

1. **MECHANICAL**
   - All riser squares are scaled. A control center (B) is control center, 4" by 4" box noted.

   - **Existing** to **New** Pumps:
     - 24 - EXISTING PUMPS
     - 24 - NEW PUMPS
     - 72 - EXISTING FUSES AND 72 - NEW FUSES
     - 3 - EXISTING FUSES
     - 3 - NEW FUSES

   - **Existing** to **New** Cooling Tower:
     - 1 - EXISTING TOWER
     - 1 - NEW TOWER
     - 2 - EXISTING FUSES
     - 2 - NEW FUSES

   - **New** to **New**:
     - 72 - EXISTING FUSES
     - 72 - NEW FUSES

2. **ELECTRICAL**
   - All riser squares are scaled. A control center (B) is control center, 4" by 4" box noted.

   - **Existing** to **New** Pumps:
     - 24 - EXISTING PUMPS
     - 24 - NEW PUMPS
     - 72 - EXISTING FUSES AND 72 - NEW FUSES
     - 3 - EXISTING FUSES
     - 3 - NEW FUSES

   - **Existing** to **New** Cooling Tower:
     - 1 - EXISTING TOWER
     - 1 - NEW TOWER
     - 2 - EXISTING FUSES
     - 2 - NEW FUSES

   - **New** to **New**:
     - 72 - EXISTING FUSES
     - 72 - NEW FUSES
GENERAL NOTES:
1. REMOVE EXISTING BASE MOUNTED PUMP, PIPING ACCESSORIES, AND PIPING COMPLETE.
2. INSTALL NEW BASE MOUNTED PUMP ON EXISTING CONCRETE PAD. PROVIDE ALL NEW PIPING ACCESSORIES AND ALL NEW PIPING.
3. REMOVE EXISTING 457 GALLON REMOTE SUMP TANK AND ASSOCIATED PIPING COMPLETE.
4. INSTALL NEW 457 GALLON REMOTE SUMP TANK ON THREE 24 INCH TALL STEEL I BEAMS ON EXISTING CONCRETE PAD.
5. DEMOLISH EXISTING CT-1 DISCONNECT AND CONNECTIONS TO DEMOLISHED CT-1. EXISTING CONCRETE SLAB TO BE DEMOLISHED. DEMOLISH EXISTING CT-1 CONDUIT AND FEED FROM THE SLAB STUB UP TO DISCONNECT. EXISTING CONDUIT SHALL BE RETAINED AND REINSTALLED IN EXISTING PIPING, EQUIPMENT, ETC. FOR RE-USE. CONTRACTOR SHALL DOCUMENT ACCESS TO BOILER ROOM BEFORE BIDDING PROJECT.
6. EXISTING SQUARE D MODEL 5 CONTROL CENTER 2-SECTION 480V 3ɸ 800A CABINET. EXISTING COOLING TOWER, CT-1 BASE MOUNTED PUMP, P-7, FEEDERS FROM SECTION 2 TO REMAIN.
7. NOT ALL EXISTING ELECTRICAL EQUIPMENT, COMPONENTS, DEVICES, LIGHTING SHOWN FOR CLARITY.
8. VERIFY EXISTING FUSES AT THE MOTOR CONTROL CENTER AND DISCONNECTS ARE IN WORKING ORDER AND SIZED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL NEW PIPING ACCESSORIES AND ALL NEW PIPING.
9. ELECTRICAL DEVICES AND EQUIPMENT MARKED WITH AN 'E' ARE EXISTING TO REMAIN. ELECTRICAL DEVICES AND EQUIPMENT MARKED WITH A 'J' ARE SCHEDULED TO BE DEMOLISHED.
10. INSTALL NEW FENCE AND CONCRETE PAD. FENCE SHALL BE PROVIDED BY OWNER UNDER SEPARATE CONTRACT.
11. PROPOSED ROUTE OF CT-1 FEED FROM CTCC, IN CONCRETE SLAB. PROVIDE (3) #12 + (1) #12G, 1/2" RMC. MECHANICAL CONTRACTOR. PROVIDE 1/2" RMC WHERE EXPOSED.
12. PROVIDE NEW 120V 20A GFCI RECEPTACLE. EXISTING WP COVER TO REMAIN.
13. FIELD CONFIRM EXACT LOCATION OF EXISTING SIDEWALK. PROTECT SIDEWALK DURING CONSTRUCTION.
14. EXISTING FIRE ESCAPE WINDOW SERVING EXISTING CLASSROOM TO REMAIN IN OPERATION. KEEP ESCAPE EGRESS ROUTE OUTSIDE CLEAR.

MECHANICAL DRAWING NOTES:
1. REMOVE EXISTING AT CALLING REMOTE SUMP TANK AND ASSOCIATED PIPING COMPLETE.
2. REMOVE EXISTING CT-1 CONDUIT AND FEED FROM THE SLAB STUB UP TO DISCONNECT. CONTRACTOR SHALL VISIT SITE TO REVIEW.
3. PROVIDE ALL ACCESS TO EXISTING CT-1 PUMP ACCESSORIES AND PIPING COMPLETE.
4. INSTALL NEW CT-1 FEED FROM CTCC, IN CONCRETE SLAB. PROVIDE (3) #12 + (1) #12G, 1/2" RMC. MECHANICAL CONTRACTOR. PROVIDE 1/2" RMC WHERE EXPOSED.
5. ALL EXISTING TEMPERATURE CONTROL DEVICES, SENSORS, VALVES, ELECTRICAL DEVICES AND EQUIPMENT SHOWN FOR CLARITY.
6. NOT ALL EXISTING PIPING AND EQUIPMENT SHOWN FOR CLARITY.
7. PROVIDE 4" SQUARE JUNCTION BOX AHEAD OF FEEDERS TO EXISTING DISCONNECT. PROVIDE (2) FEEDS OF (3) #12 + (1) #12G, 1/2" RMC. MECHANICAL CONTRACTOR. PROVIDE 1/2" RMC WHERE EXPOSED.
8. INSTALL COOLING TOWER CONTROL PANEL ON WALL OUTSIDE. PROVIDE ALL CLEARANCES REQUIRED.
9. PROVIDE NEW NEMA 1, HEAVY DUTY, 600V 3ɸ 30A RATED FUSIBLE DISCONNECT WITH 20A CLASS H FUSES.
10. INSTALL NEW FENCE AND CONCRETE PAD. FENCE SHALL BE PROVIDED BY OWNER UNDER SEPARATE CONTRACT.
11. PROPOSED ROUTE OF CT-1 FEED FROM CTCC, IN CONCRETE SLAB. PROVIDE (3) #12 + (1) #12G, 1/2" RMC. MECHANICAL CONTRACTOR. PROVIDE 1/2" RMC WHERE EXPOSED.
12. SUPPORT ALL EXTERIOR PIPING FROM PIPE STANCHIONS AND NOT FROM THE COOLING TOWER. KEEP ALL PIPING COORDINATE SLAB FRAMING AND POUR SCHEDULE WITH GC. COORDINATE STUB UP POINT AT CT-1 AND CT-1 CONNECTION POINTS WITH MECHANICAL CONTRACTOR. PROVIDE 1/2" RMC WHERE EXPOSED.
13. EXISTING WEATHERPROOF GFCI RECEPTACLE AND COVER. DEMOLISH DEFECTIVE GFCI RECEPTACLE. EXISTING CONSTRUCTION POINT OF THE PUMP. EXISTING P-7 DISCONNECT, 600V 3ɸ 30A RATED, TO REMAIN.
14. REMOVE EXISTING FENCE AND CONCRETE PAD.

ELECTRICAL DRAWING NOTES:
1. CONTRACTOR SHALL HAVE CRANE COMPANY VISIT SITE TO REVIEW CRANE SETUP LOCATION WITH OWNER BEFORE CONTRACTOR WILL PERFORM ANY TOWING OF MATERIAL OR EQUIPMENT. CONTRACTOR SHALL VISIT SITE TO REVIEW CRANE SETUP LOCATION WITH OWNER BEFORE CRANE COMPANY WILL PERFORM ANY TOWING OF MATERIAL OR EQUIPMENT.
2. PROVIDE ALL ACCESS TO EXISTING CT-1 PUMP ACCESSORIES AND PIPING COMPLETE.
3. PROVIDE ALL ACCESS TO EXISTING CT-1 PUMP ACCESSORIES AND PIPING COMPLETE.
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