SECTION 15000 – TECHNICAL SPECIFICATIONS

1. SCOPE OF WORK

1.1 The project entails the renovation of the existing boiler plant at the Finkelstein Memorial Library, including, but not limited to the following.

A. All "Heating Work" as shown and required, including Boilers, Pumps, Piping, Valves, Chimney, Breeching, Insulation and Controls.

B. All "Plumbing" work as shown and required, including makeup water rig and connection to the heating system, and gas piping to new boilers.

C. All "Electrical" work as shown and required for connection of all new Equipment and Controls; all in conformance with the Local and National Electric Code.

D. All "General Construction" work as shown and required including new concrete pads, etc.

E. Demolition and removal of existing boilers, and associated piping, breeching, electrical controls, equipment, insulation, etc.; all as shown and required.

1.2 The bids shall be for a complete "turnkey" project, including all general construction work, heating work, plumbing work, and electrical work, as shown and required.

1.3 The bids shall include all fees for permits and filing with the Building Dept. as required.

2. REQUIRED SHOP DRAWINGS

2.1 Shop Drawings shall be submitted for approval for the following items:

A. Boilers.

B. Piping Materials.

C. Air Separator

3. CONCRETE WORK

3.1 General: Provide all concrete work as shown and required for a complete installation. Concrete work shall include all concrete and form work.

3.2 Concrete: The Contractor shall furnish concrete equal to "Plant-Mix", which shall develop a compressive strength of 3000 psi at 28 days when sampled and tested in accordance with ASTM, designation C-31 and C-39.

3.3 Forms: Forms shall be constructed to produce finished concrete of the exact size, shape and location shown on the Drawings.

3.4 Installation: New concrete shall be applied over existing concrete that has been thoroughly roughed and coated with a bonding agent, applied to a damp surface.

3.5 Pad Reinforcement: Provide 6 x 6 x 10-gauge woven wire mesh for each pad, centered in the pour. Tie into existing slab.

4. PIPING MATERIALS

4.1 Heating Piping: Type “L” hard temper copper tubing with “ProPress” or wrought sweat fittings, joined with 95/5 lead free solder.

4.2 Domestic Water Piping: Type "L" hard temper copper tubing with “Pro Press” or wrought sweat fittings, joined with 95/5 lead free solder.

4.3 Gas and Fuel Oil Piping: Schedule 40 Black Steel with Malleable Screwed Fittings or Welded Fittings, at Contractor’s option.

5. VALVES

5.1 General: Provide all gate, globe, check, plug and other types of valves as required and as shown for complete and proper valving of the entire installation. Valves listed below are of Nibco-Scott manufacture. Equal valves of Jenkins, Crane, Walworth, or Kennedy are acceptable.

5.2 Gate Valves: 2-1/2" and over - Class 125 S.W.P., 200 W.O.G., iron body, rising stem O.S. & Y., solid wedge, flanged Nibco-Scott Figure #F-617-0; 2" and under-Class 125 S.W.P., 200 W.O.G., bronze, threaded, with renewable Teflon disc., Nibco-Scott Figure #T-211-Y or #S-211-Y sweat.

5.3 Globe Valves: 2-1/2" and over - Class 125 S.W.P., 200 W.O.G., iron body, flanged, with renewable Teflon disc Nibco-Scott #F-719-Y or approved equal; 2" and under- Class 125 S.W.P., 200 W.O.G., bronze, threaded, with renewable Teflon disc, Nibco-Scott #-211-Y or #S-211-Y sweat.

5.4 Swing Check Valves: 2-1/2" and over - Class 125 S.W.P., 200 W.O.G., iron body, flanged with renewable Teflon disc, Nibco-Scott Figure #F-918-Y or approved equal. 2" and under Class - 125 S.W.P., 200 W.O.G, bronze, threaded, with renewable Teflon disc., Nibco-Scott Figure #T-413-Y or #S-413-Y sweat.

5.5 Ball Valves: 2" and under – Brass Ball Valves, Nibco-Scott Figure # T-580-A Threaded or S-580-A sweat.

7. TESTS

7.1 Furnish all necessary skilled labor, helpers, for testing, operating, and adjusting the system.

7.2 All tests shall be done in the presence of the Consulting Engineer or his representative or other inspecting authority. Give not less than five days' notice to these parties before doing any tests.

7.3 Test all piping, mains, and joints for leaks before any piping is enclosed, insulated, or concealed in any way.

7.4 Upon completion of the above tests, operate all systems at full capacity for a period of not less than three (8-hour) days, at a date approved by the Engineer. During This time, make any corrections or adjustments required by the Engineer.

7.5 Upon completion of all tests and before the final payment, submit copies of test results for approval, as follows:

A. All temperature control settings.

B. All motor nameplate current ratings and actual currents. Currents shall be determined at starters of junction boxes with a clamp-on ammeter.

7.6 Note the general operation, quietness, and freedom from vibration of all systems.

8. INSULATION-THERMAL-PIPING

8.1 General: After completion of tests for leaks, provide thermal insulation for all new piping provided under this Contract. In addition, provide new insulation for all existing piping within the new Boiler Rooms. Remove existing as required. Insulation and insulation products shall be classified by Underwriters Laboratories for the following maximum criteria:

Flame Spread	25
Fuel Contributed	50
Smoke Developed	50

8.2 Insulation shall be Owens-Corning Fiberglass 25CP pre-formed glass fiber, sectional or one-piece covering with ASJ (All Service Jacket) or approved equal. Insulation "K" factor shall be .30 (BTU/HR) (sq. ft.) (F/IN) at 200 degrees F. Insulation thickness shall be as follows:

A. Hot Water Piping: 1-1/2" thick for piping 2" and smaller; 2" thick for piping 2-1/2" and larger.

8.3 Apply piping insulation by removing release paper from factory applied pressure sensitive strip on longitudinal tap. Seal to adjacent surface starting from center with nylon sealing tool. Finish butt joints in piping insulation with pressure sensitive adhesive coated joint sealing strips. Apply firmly and seal with nylon sealing tool.

8.4 Fittings and elbows shall be insulated with "Zeston" pre-molded PVC insulation fittings PVC fittings shall have flame spread, etc., consistent with the basic insulation as specified above.

9. CODES AND STANDARDS

9.1 All materials furnished, and all work installed, shall comply, where applicable, with the 2020 New York State Building Code, Mechanical Code and Energy Conservation Code.

9.3 Where applicable or specified herein, all material and devices furnished shall meet requirements of Underwriter's Laboratories, Inc., shall be U.L. listed, and where further applicable, and shall bear the U.L. listing mark.

END OF SECTION