GENERAL PLUMBING DESIGN REQUIREMENTS (PER RFP, UFC & APPLICABLE CODES)

This narrative shall be used to supplement all documents provided by the government including but not limited to the RFP and its amendments, UFC, applicable construction standards and all referenced material applicable to the discipline information included herein. The contractor should consider the information contained withing this narrative to be an aid in understanding the project scope at a high level, and utilize the RFP and pricing drawings for additional details.

The contractor will provide complete and working domestic water, sanitary waste and vent systems in accordance with the 2018 International Plumbing Code. There are specific equipment and system requirements that are outlined in the RFP and appendix documents. The contractor is to review all RFP and UFC standards for compliance.

Contractor will also provide testing, commissioning and training on all systems in this scope of work. Systems shall meet the energy efficiency and performance requirements outlined. Contractor is encouraged to review all other discipline drawings, especially architectural for section and elevation views to gain a working knowledge of the facility design.

The design and construction of this project shall comply with all applicable building and life safety codes and regulations. Technical criteria shall adhere to the below criteria. The RFP requirements will supersede all other criteria, and followed by code and design standards referenced specifically in chapter 12 “Plumbing.”

All materials and equipment shall meet the Buy American Act.

Domestic Water:

Required Materials: Domestic water piping, per RFP, shall consist of Type K copper pipe. Other materials such as, but not limited to CPVC and PEX are not acceptable substitutes for this project. Contractor to refer to the pricing drawings for pipe routing and sizes. Domestic hot and cold water shall be brought into the building to Mechanical room and distribute after the backflow preventer. After entering the Mechanical room, the domestic water shall be routed through a Sensus Omni T2 water meter with DDC interface and backflow preventer. A master building shut-off gate valve. should be located in the vertical riser at the water entry.

The domestic water system shall be supplied with isolation valves at each restroom group and / or fixture group to allow for ease of serviceability and maintenance. Water Hammer Arrestors (PDI-WH201) shall be provided, properly sized and installed to safeguard the water distribution system. Air chambers are not acceptable. All domestic water piping, regardless of size and temperature, shall be insulated to prevent condensation, heat transfer and reduce noise as well as meet the IECC code requirements. Domestic cold water shall consist of copper, ductile iron or steel piping depending on size see pipe schedule on RFP drawings.

Domestic Hot Water:

The domestic hot water systems shall consist of a gas type water heater.

- 65 gallon, 125,000 btu, capable of 145 gph rise at 100°

Hot water recirculation system: A hot water recirculation pumping system shall also be required to circulate the 140°F stored hot water in a 131°F hot water circulating system with point of use thermostatic mixing valves. Re-circulation pumps to be located with the tank type water heater as described above. Pumps shall be integrated into the building BAS system. Provide re-circulation pump with “freedom flanges” to allow for removal/replacement.

Water heaters shall be of ASME construction and equipped sacrificial magnesium anode and flood stop device. Tanks to be glass lined and rated at 150 psi working pressure. Each unit T&P valve to be piped and discharged to floor drain. Provide isolations valves, thermocouples, valves and all other accessories required for installation. Water shall be stored at a minimum of 140°F. Water to be distributed at 131°, mixed down to appropriate temperature per fixture utilizing a

point of use mixing valve. Recirculation system shall maintain a minimum temperature of 122°. Provide all instrumentation and piping per manufacturers recommendations.

Sanitary Sewer:

The sanitary system Soil and waste piping and fittings passing through and located below the slab and out to the exterior lines shall be Schedule 40 PVC piping. Soil, waste and venting piping and fittings above the slab shall be Schedule 40 PVC.

Sanitary for the first floor will be serviced from under slab as gravity drainage. Vertical tie-in points are located per pricing drawings to provide routing to underground for floor fixtures. A sanitary sewer main, will leave the building underground for pick up by civil. See pricing drawings for clarification. The sanitary main shall be 6". Provide master 2-way cleanouts along exterior perimeter of building for the main. Provide deep seal traps on all mechanical floor drains. Trap primers to be utilized for all floor drains, trap guards are not acceptable for this project.

Sanitary venting shall consolidate all fixture vents through common vents wherever possible to minimize vent penetrations through roof. All vent penetrations through the roof shall be through a roof jack designed for use with the roofing system designed by the architect.

Fixtures:

Plumbing fixtures shall be of the water conservation type and be provided complete with fittings and brushed nickel trim. All valves shall be of brass or stainless-steel construction. Fixtures shall comply with the standards and specifications of the RFP. Fixtures provided in pricing drawings have been scheduled as a basis of design only. Where or if there becomes a conflict between pricing drawings and RFP. The RFP shall take precedence. Fixtures of a common type shall be sourced from a single manufacturer and model.

Grease Waste:

Grease laden waste is not applicable to this project.

Natural Gas:

A new 1" Natural Gas service will be required for the building. Natural gas will be routed to water heater in mechanical room and mechanical air handling equipment. The contractor will need to coordinate service with local utility provider for new diaphragm meters and regulators. The system should operate at 2 PSIG and regulated at water heater/mechanical equipment.

Metering:

Domestic water and domestic hot water systems shall be equipped with meters that are capable of connecting to the installation's UMCS and building DDC system for reading and monitoring of utility consumption without reading the physical meter.

The water meter shall be provided with Advanced Meter Reading capability and integrated into the DDC building automation system. Provide turbine-type water services meters. Provide a non-resettable remote readout located outside on the exterior wall of the mechanical room.

[END PLUMBING]