DESIGN / BID / BUILD PLUMBING SYSTEM CRITERIA

PLUMBLING CRITERIA-BASIC MATERIALS & METHODS

1. GENERAL-Provide a complete Plumbing system, left in proper working order. Provide herein means installed completely, including labor and materials.
2. INCLUSION- The Plumbing work is a portion of the overall project requirements and as such shall comply with the conditions and requirements of the General Conditions, Supplementary Conditions and all applicable requirements of the overall project.
3. CODES, UTILITIES, REGULATIONS-Secure and pay for all fees, licenses, permits, inspection. Coordinate with power and communication utilities. Meet and comply with all Federal, State, County, and City Codes.
4. CONTRACTOR REQUIRMENTS-The installing contractor providing for this work shall be a firm licensed for this type work and shall provide copies of licenses, business licenses, bonding limits and insurance coverage. The contractor's field personnel shall be under direct supervision of a licensed plumber(s).
5. COORDINATION-This contractor is responsible for coordinating with all other trades for the proper installation of this work, maintaining required clearances. Confirm and coordinate, in writing with electrical trade the electrical characteristics and power requirement of item requiring power, prior to finalizing equipment order.
6. SUBMITTALS-Provide complete submittals on Contractor qualifications, all items, equipment, products, etc. For review, prior to finalizing orders. Submit a minimum of three sets, more if required by the General Conditions.
7. PROVISIONS TO BE INCLUDED-Labor, supplies and materials, tools, equipment, etc.; material shipping, delivery, receiving, storage, and protection; installation of all Mechanical equipment and connections; coordination with other trades.
8. MATERIALS-All materials shall be new, currently manufactured, U.L. labeled, and meet all industry standards. Label all equipment. Provide 300 PSI class concrete for bases an backfill. Provide 3/4" thick A/D fire retardant grade backboards. Provide all support hardware. Paint all material exposed to view as directed by architect.
9. CUTTING/TRENCHING/PATCHING-Contractor shall provide for all necessary cutting, trenching, backfilling, and patching related to this work. Backfill to 95% compaction. Patch and finish, to match original conditions. Contact "Call-Before-You-Dig" services prior to any excavation work.
10. FIRE AND SMOKE SEALS-Provide fire/smoke seals of each penetration of any rated barrier.
11. EQUIPMENT AND CONTROLS-All equipment shall be factory pre-wired complete, and provided with equipment disconnect, starters, over-load relays, etc. including all controls and low-voltage wiring. All equipment motors shall meet current energy efficiency requirements. Provide all control and interlock wiring.
12. EQUIPMENT SUPPORT, CLEARANCES, AND ACCESS-Equipment shall be properly supported as instructed by the manufacturer. Provide vibration isolation devices for each item. Equipment shall be located to maintain proper clearances and required access. Verify and coordinate prior to the installation.
13. SEISMIC REQUIRMENTS-Support all items in accordance with the seismic zoning requirements.
14. WORKMANSHIP-All work shall be installed in a coordinated, organized, neat, and professional manner.
15. STRUCTURAL COORDINATION-Review and coordinate with the structural conditions prior to the start of any work. Any attachments, welding and/or cutting of the building structure must first be approved, in writing, by the building structural engineer. Locate slab penetrations to avoid conflict and damage. Sleeve and seal each penetration.
16. ROOF PENETRATIONS-Any roof modifications shall be by the building owner's designated roofing installer/supplier to maintain the roofing warranty. Provide all necessary components (curbs, pitch pockets, etc.) and pay all related cost for a complete installation.
17. CLOSE OUT/INSPECTIONS-This contractor shall assist with on-site reviews of this work. At completion of the project, demonstrate in the presence of the Owner/Tenant, Architect, and Engineer to proper operation of all components, systems, devices, etc.
18. WARRANTY-This contractor shall warrant all materials, labor, and installation for one full year from date of Certificate of Occupancy. Any extended product warranties shall be passed onto the owner.

END OF PLUMBING BASIC MATERIALS AND METHODS

PLUMBING CRITERIA-PIPING SYSTEMS GENERAL

1. DIAGRAMMATIC DRAWINGS-Drawings are diagrammatic to indicate the intended requirements for the Plumbing system. Every fitting and detail is not necessarily indicated. The contractor shall provide for and install for a complete and properly functioning system(s) in a professional manner. All work shall be installed so that working components are accessible for service.
2. ACCESS PANELS-Provide flush mounted hinged cover access panels for access to any concealed valves, devices, or other components requiring maintenance, adjustments, etc.
3. FIRE STOP-The contractor shall review the architectural and structural drawings and provide UL listed Fire-Stop at each fire rated barrier, in accordance with it labeling, to match the barrier rating (at minimum) and where required by the AHJ. Provide access to any concealed unit.
4. GENERAL PIPING-All piping work is to be concealed unless otherwise indicated. Contractor shall coordinate and field verify exact duct routes and clearances prior to fabrication. Provide for modifications to adjust to field conditions and maintain power flows and pressures. Any piping in counters and cabinets work shall be located out-of-the-way to the rear and well secured. Coordinate fully with the Architect/Cabinet Manufacturer.
5. EXPOSED PIPING-Any exposed piping work is to be protected from physical damage. All piping exposed below sinks, lavatories, etc. shall be insulated and protected in accordance with HSI/ADA requirements utilizing McGuire ProWrap, TrueBro INC. or equivalent.
6. STUB-UP AND OUTS-Field coordinate the final exact location of each stub-up and stub-out location prior to rough-in. Floor slab penetrations shall be sleeved and sealed. Coordinate sloping of floor to drains with Architect and General Contractor. All floor drains, floor sinks, clean-outs, etc. shall be flashed to the waterproofing membrane and sealed.
7. PIPING SUPPORT-Utilize pipe hangers and supports with wide surfaces to avoid crushing insulation. Each wall penetration shall have wall sleeves installed. Chrome-plated escutcheons at each stub-out to the waterproofing membrane and sealed.
8. PIPING INSULATION-All thru foil backed preformed insulation, UL listed for use in environmental air plenums. Armaflex, Type AP or equal. Insulate all CW, HW, P-Traps and any waste/soil piping exposed to unconditioned environment.
9. PIPING MATERIALS-Use the same manufacturer for all piping of the same type material. All fittings and related components and materials shall be per the piping manufacturer's written data. Handle, store, and install per the manufacturer's written data.
10. RETURN AIR PLENUMS-ABS/PVC/CVPC piping product can not be used in environmental return-air plenums.

END OF PLUMBING BASIC MATERIALS AND METHODS

PLUMBING CRITERIA-SOIL/WASTE/VENT (SWV) PIPING SYSTEMS

1. BASIS OF DESIGN-The soil waste and vent piping design is generally based on inch per foot slope, smooth pipe.
2. UTILITY COORDINATION-Prior to start of work, coordinate and verify in writing, the utility tie-in, location, size(s), invert, etc. Copy to Owner, Architect and Engineer.
3. IN GRADE S&W-Service weight cast iron with hub and spigot joints, or where permitted by code, schedule 40 DWV PVC pipe utilizing manufactured approved fittings and solvents.
4. ABOVE GRADE S&W-Hub less cast iron pipe with positive-seal, one-piece elastomeric compression type gasket no-hub fitting with stainless steel clamps. Schedule 40 DWV PVC pipe with manufacture approved fittings and solvents may be utilized in non-return air environments, where allowed by code and written owner approval.
5. VENTING (V)-Hub less iron pipe with positive seal, one-piece elastomeric compression type gasket no-hub fitting stainless steel clamps. Plenum-rated schedule 40 DWV PVC pipe with manufacture approved fitting and solvents may be utilized where allowed by code and written owner approval.
6. CAST IRON PIPE-No hub/hub less pipe and matching components. Pipe shall comply with ASTM A-888, CISPI-301, IAPMO listed, ISO 9001-2000 certified. Coupling shall be stainless steel type complying with ASTM C-1277 (Standard) and ASTM C-1540 (Heavy Duty).
7. DWV PVC PIPE AND FITTING-PVC schedule 40 solid wall pipe, conforming to NSF 14, 12454 cell class per ASTM D-1784, iron pipe size per ASTM D-1785 and D-2665, fittings per ASTM D-2665. Note PVC can not be utilized in return/environmental air plenums.
8. P TRAPS-Provide each fixture, drain, etc. with a P-Trap in accordance with the code. Utilize chrome-plated, joint P-Trap where exposed under fixtures, etc.
9. CLEAN OUT-Provide clean outs as shown and/or required by code. Utilize flush-in-floor or wall type, cast, water, and gas tight, with nickel bronze cover and plug.
10. FLOOR DRAIN-Where shown or required, general service, light duty (UNO) nickel bronze top, adjustable height head, with drain grid, strainer and sediment bucket. Flush mount in floor. Provide Pro-Set Trap-Guard in each drain (UNO).

END OF PLUMBING BASIC MAATERIALS AND METHODS

PLUMBING CRITERIA-WATER DISTRIBUTION SYSTEMS

1. BASIS OF DESIGN-The Water Distribution System piping design is generally based on PVC piping.
2. UTILITY COORDINATION-Prior to start of work, coordinate and verify in writing, the utility connection, metering, location size(s), invert, pressure, etc. Copy to Owner, Architect, and Engineer.
3. PRESSURE REDUCTION/BACK FLOW PREVENTION-provide adjustable pressure reduction valve and back flow prevention valve on each incoming water supply. Sized for required pressure and flow. PRV valve shall be adjustable and have strainer. BFP valve shall be UL/AWWA listed, double-gate type.
4. WATER DISTRIBUTION GENERAL-All materials shall be approved for portable water service. Utilize "No Lead" components, materials, fittings, etc.
5. IN/BELOW GRADE WATER PIPING-Utilize ASTM B-88 Type L annealed temper copper tubing, seamless and joint less, with ASME b16.18/22/26/50 fittings.
6. ABOVE GRADE PIPING-Utilize ASTM B-88 Type M Hard Temper copper tubing with soldered, brazed or flared joints and ASME b16.18/22/26/50 fittings and connectors. Ant copper-to-steel connections shall utilize insolation unions. Fitting shall be cast iron and approved for the purpose.
7. SOLDER-Utilize no-lead solder, 95% tin/5% Antimony and water based flux.
8. FIXTURE CONNECTIONS-Provide chrome escutcheon and chrome angle-off valve with stainless steel flexible tubing, with slack, for each fixture pipe connection.
9. VALVES-Provide line size, brass or bronze body gate valves, rated for 125 PSI shock water pressure. Crane, Nibco, or Hammond. Tag or label each valve.
10. HOSE BIBBS-Utilize brass or bronze body with bronze interior components, replaceable seat and seal, and vacuum breaker hardware. Location subject to freeze shall be no-freeze wall hydrant type.
11. SHOCK ABSORBERS-Sized and installed per P.D.I. standards.
12. PRESSURE AND TEMPERATURE GAUGES-Stainless steel case and ring with balanced adjustable pointer and brass socket, 4.5 inch dial with Watts type pressure snubber and brass needle valve. 0-200 PSI for utility water service, 0-100 PSI for water distribution piping. Temperature gauges shall be adjustable angle type with red pointer and contrasting temperature scale.
13. PRESSURE TESTING-Each piping system shall be pressure tested with water, per piping manufacturer, before insulated or concealed, at 125 PSI for 24 hours with NO pressure loss. Copy test results to AHJ, Owner, Architect, and Engineer.
14. DISINFECTING-Each piping system shall be completely disinfected in accordance with the code, then flushed clean. Each fixture shall be cleaned prior to disinfecting piping. A water sample for the farthest outlet shall be taken and tested by an independent lab to certify the water copy. Send copies of test results to AHJ, Owner, Architect, and Engineer.
15. MISC. HARDWARE-Refer to the symbols and hardware schedule fro other items and criteria.

END OF PLUMBING BASIC MATERIALS AND METHODS

PLUMBING CRITERIA-GAS PIPING SYSTEMS

1. DESIGN BASIS-The gas piping design is generally based on natural gas, and smooth steel piping.
2. UTILITY COORDINATION-Prior to start of work, coordinate and verify in writing, the utility tie-in, location, size(s), pressure, elevation, etc. Copy to Owner, Architect, and Engineer.
3. METERING-Coordinate with the owner/tenant regarding any metering requirements, choices, etc.
4. GAS DISTRIBUTION GENERAL-All materials, fitting components, etc. shall be approved for the type gas utilized. Utilize only UL listed and labeled components.
5. ABOVE GRAD PIPING-Schedule 40, black steel piping with threaded joints, connector and fittings. Threaded connections shall be sealed and tight. Weld a;; joints, fittings and connections on piping system with pressure greater than 5.0 PSIG.
6. SHUT OFF GAS COCK VALVES-Provide quarter-turn cast ball shut-off gas valve at each gas appliance.
7. APPLIANCE CONNECTION LINES-Utilize UL labeled stainless steel flexible type connector at each appliance connection. Provide with at least one loop of slack, and drip leg in gas piping.
8. APPLIANCE SAFETY VALVES-Each appliance is to be equipped with a UL labeled automatic shut-off valve. Notify AHJ and owner immediately of any appliance not equipped with safety valve.
9. GAS REGULATION-Provide pressure reducing regulators where shown or required. Sized for the proper flow and inlet and outlet pressure.
10. PRESSURE TESTING-Each gas piping system shall be pressure tested, before being concealed. Close all appliance gas cocks and ends. Test at 15 PSIG but not less than 3 PSIG, per code. Copy test results to AHJ, Owner, Architect, and Engineer.

END OF PLUMBING BASIC MATERIALS AND METHODS

HVAC ABBREVATIONS

AC	AIR CONDITIONING
AHU	AIR HANDLING UNIT
AUTO	AUTOMATIC
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AP	ACCESS PANEL
BC	BALANCE COCK
BFC	BELOW FINISHED CEILING
BLDG	BUILDING
BV	BALL VALUE
CONN	CONNECT
CLG	CEILING
CTR	CENTER
CV	CHECK VALUE
CW	COLD WATER
DFU	DRAINAGE FIXTURE UNIT
DISTB	DISTRIBUTION
DIA	DIAMETER
DN	DOWN
DP	DEEP
DS	DOWN SPOUT
DWGS	DRAWINGS
EDH	ELECTRIC DUCT HEATER
EMG	EMERGENCY
EXIST	EXISTING
FA	FRESH AIR
FCO	FLOOR CLEAN OUT
FCU	FAN COIL UNIT OR AHU
FD	FLOOR DRAIN
FH	FIRE HYDRANT
FIXT	FIXTURE
FS	FLOOR SINK
FT	FOOT/FEET
G	GAS
GC	GAS COCK
GH	GROUND HYDRANT
GRND	GROUND
GV	GATE VALVE
HD	HUB DRAIN
HP	HORSE POWER
HTR	HEATER
HW	HOT WATER
HWR	HOT WATER RETURN
HPU	HEAT PUMP UNIT
INV	INVERT ELEVATION
KVA	KILO-VOLT-AMPERES
KW	KILOWATTS
LT	LIQUID-TIGHT
MANUF	MANUFACTURER
MH	MAN HOLE
MIN	MINIMUM
MTD	MOUNTED
NFHB	NONFREEPE HOSE BIB
NIC	NOT IN CONTRACT
PNL	PANEL
PRV	PRESSURE REDUCING VALVE
P&T	PRESSURE & TEMPERATURE
QTY	QUANTITY
RD	ROOF DRAIN
RW	RAIN WATER
S	STACK/SANITY
SA	SHOCK ABSORBER
SCHD	SCHEDULE
THRU	THROUGH
TYP	TYPICAL
UG	UNDER-GROUND
V	VENT
VTR	VENT THROUGH ROOF
W	WASTE
WCO	WALL CLEAN OUT
WG	WATER GAUGE
WH	WALL HYDRANT
WHA	WATER HAMMER ARRESTOR
W&V	WASTE & VENT

ARCHITECT'S STAMP

STATE OF GEORGIA · GORDON W. SMITH JR. · 7575 · REGISTERED ARCHITECT

SIGNATURE REQUIRED

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REVISIONS

	DATE	DESCRIPTION

PROJECT:

VERNON ROAD FIRE STATION

VERNON ROAD
LAGRANGE GEORGIA

TITLE:

PLUMBING SPECS

MODIFIED DATE:

ISSUED DATE:
FOR BID AND PERMIT
07 MAY 2018

JOB NO:
1731

SHEET:
P-1