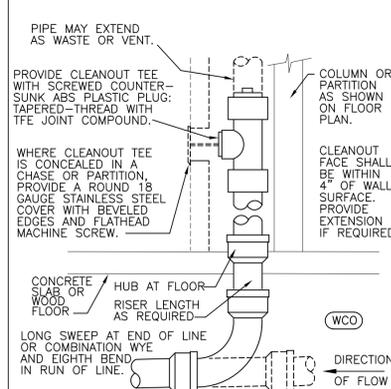


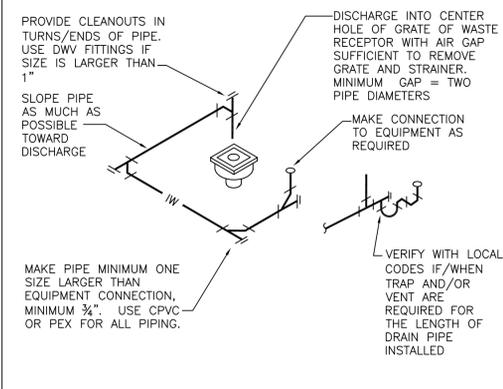
PLUMBING FIXTURE SCHEDULE

ITEM	DESCRIPTION	FIXTURE	MATERIAL	TYPE	OPERATOR/FITTING	CARRIER	H.W.	C.W.	WASTE	VENT	REMARKS/ACCESSORIES
WC-1	ADA FLOOR MOUNTED WATER CLOSET	VITREOUS CHINA	KINGSTON COMFORT HEIGHT	PRESSURE ASSISTED	---	---	1/2"	3"	2"	---	PROVIDE KOHLER: STRONGHOLD ELONGATED TOILET SEAT WITH INTEGRATED HANDLE AND CHECK HINGE #K-4731-C-0 AND #K-7637-CP SUPPLY WITH STOP. 1.28 GALLONS PER FLUSH.
WC-2	FLOOR MOUNTED WATER CLOSET	VITREOUS CHINA	KINGSTON	PRESSURE ASSISTED	---	---	1/2"	3"	2"	---	PROVIDE KOHLER: STRONGHOLD ELONGATED TOILET SEAT WITH INTEGRATED HANDLE AND CHECK HINGE #K-4731-C-0 AND #K-7637-CP SUPPLY WITH STOP. 1.28 GALLONS PER FLUSH.
URN-1	ADA WALL MOUNTED URINAL	VITREOUS CHINA	DEXTER	BATTERY OPERATED FLUSHOMETER	NEW	---	3/4"	2"	1 1/2"	---	PROVIDE ALL ACCESSORIES FOR A 100% COMPLETE INSTALLATION.
LAV-1	ADA UNDERMOUNTED LAVATORY	VITREOUS CHINA	ARCHER	BATTERY OPERATED FAUCET	---	---	1/2"	1/2"	1 1/2"	---	LAVATORY IS ADA COMPLIANT WHEN INSTALLED IN 24" MINIMUM DEPTH COUNTERTOP. PROVIDE ALL ACCESSORIES FOR A 100% COMPLETE INSTALLATION. SEE NOTE #1. FAUCET - 0.5 GPM.
KS-1	UNDERMOUNT KITCHEN SINK	18 GAUGE STAINLESS STEEL	SINGLE BASIN SINK	MANUAL SINGLE LEVER WITH SIDE SPRAY	---	---	1/2"	1/2"	1 1/2"	1 1/2"	PROVIDE ALL ACCESSORIES FOR A 100% COMPLETE INSTALLATION - INCLUDING POINT OF USE MIXING VALVE. FAUCET - 1.5 GPM.

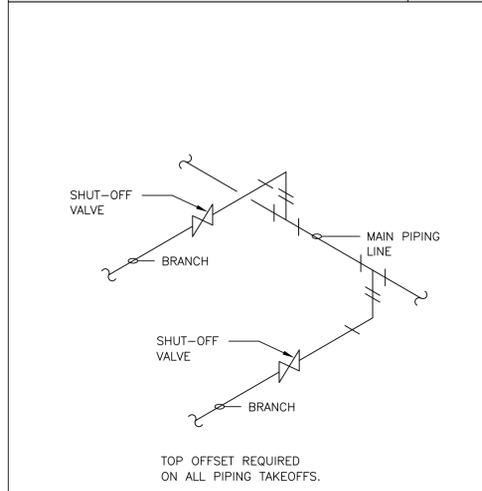
NOTES:
 1. THE "ISM" OPTION ON THE FAUCET ACTS AS A MIXING VALVE. ONCE FAUCET IS INSTALLED, ADJUST THE LEVER SO THAT FAUCET TEMPERATURE COMES OUT AT 110°F. THEN REMOVE LEVER AND PLUG HOLE WITH CAP PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
 2. FIXTURES LABELED CM (COFFEE MAKER) & DW (DISHWASHER) SHALL BE SELECTED BY ARCHITECT. PLUMBING CONTRACTOR IS TO ONLY CONNECT HOT AND WASTE LINES TO THE DISHWASHER. PLUMBING CONTRACTOR IS TO ONLY CONNECT COLD WATER TO THE COFFEE MAKERS.



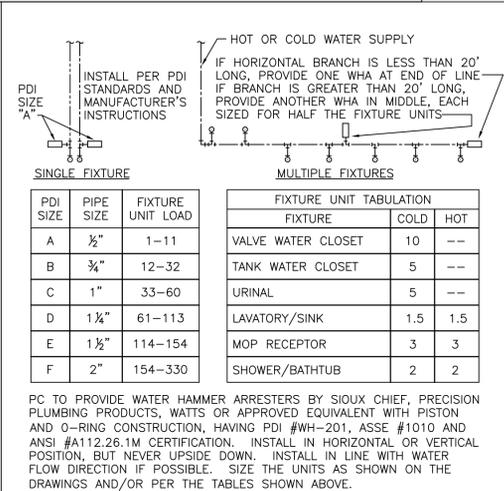
1 WALL CLEANOUT DETAIL
SCALE: NONE



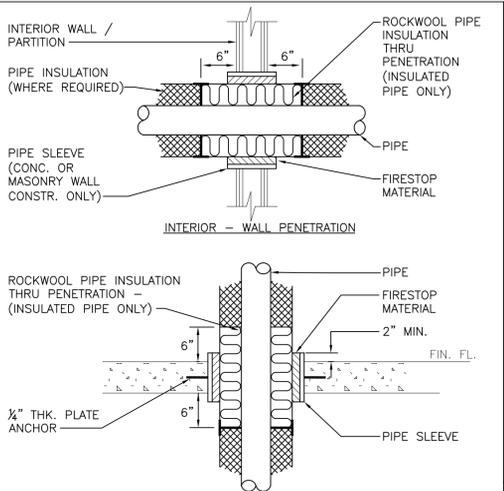
2 INDIRECT WASTE PIPE AT DRAIN RECEPTOR DETAIL
SCALE: NONE



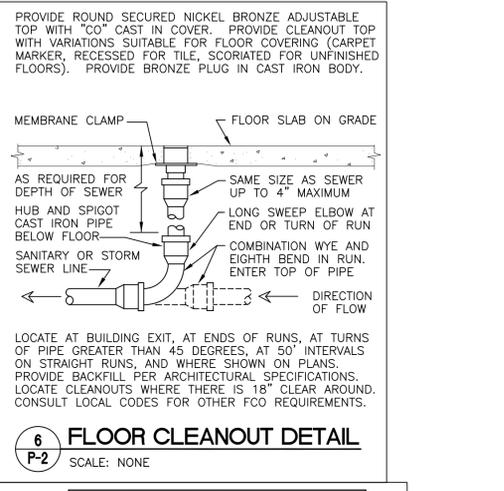
3 TYP. BRANCH PIPING TAKEOFF DETAIL
SCALE: NONE



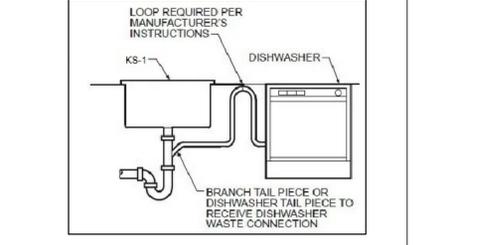
4 WATER HAMMER REQUIREMENTS
SCALE: NONE



5 TYP. FIRESTOPPING AT PENETRATIONS (PIPE THRU WALL/FLOOR) DETAIL
SCALE: NONE



6 FLOOR CLEANOUT DETAIL
SCALE: NONE



7 DISHWASHER SANITARY CONNECTION DETAIL
SCALE: NONE

GENERAL PLUMBING NOTES

- GENERAL NOTES ARE APPLICABLE TO ALL PLUMBING WORKING DRAWINGS.
- THE WORK SHALL BE EXECUTED IN STRICT CONFORMITY WITH BASE BUILDING SPECIFICATION AND WITH THE LATEST EDITION OF THE PREVAILING LOCAL PLUMBING AND BUILDING CODES AND ALL LOCAL REGULATIONS THAT MAY APPLY. IN CASE OF CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND A GOVERNING CODE OR ORDINANCE THE MORE STRINGENT STANDARD SHALL APPLY.
- ALL PLUMBING WORK SHALL BE COORDINATED WITH ALL OTHER TRADES BEFORE PROCEEDING WITH INSTALLATION.
- NO CHANGES ARE TO BE MADE IN PLUMBING LAYOUT WITHOUT WRITTEN PERMISSION BY THE ENGINEER OF RECORD.
- NO PIPING SHALL RUN EXPOSED IN FINISHED AREAS.
- PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND FOR PAYING RELATED FEES.
- ROUGH-IN DIMENSIONS OF TOILET FIXTURES MUST BE COORDINATED WITH GENERAL CONTRACTOR AND FIELD SUPERVISOR.
- INSTALL BALL VALVES ON ALL BRANCH SUPPLY LINES.
- PROVIDE ACCESS PANELS ON ALL INACCESSIBLE VALVES AND CLEANOUTS. ACCESS PANELS SHALL BE PROVIDED BY PLUMBING CONTRACTOR AND CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR LOCATION. MOUNT SHUT-OFF VALVES NO HIGHER THAN 12'-8" AFF.
- ALL WORK SHALL BE PROPERLY TESTED, BALANCED AND CLEANED. PROVIDE A ONE YEAR WARRANTY FROM DATE OF FINAL INSPECTION ON ALL PARTS AND LABOR.
- FOLLOW PDI STANDARDS FOR WATER HAMMER ARRESTORS.
- ALL FIXTURES TO BE SUPPLIED & INSTALLED BY PLUMBING CONTRACTOR UNLESS OTHERWISE NOTED. FIXTURES ON THE SCHEDULE ARE BASIS OF DESIGN, CONTRACTOR MAY SUBMIT EQUAL FOR APPROVAL. PROVIDE DEARBORN #ADA100 OR #ADA101 INSULATING KITS ON TRAPS AND HOT AND COLD WATER SUPPLIES TO ALL HANDICAPPED LAVATORIES. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF HANDICAPPED FIXTURES.
- ALL NOTED FIXTURES SHALL BE ACCESSIBLE TO INDIVIDUALS WITH DISABILITIES IN ACCORDANCE WITH THE "AMERICANS WITH DISABILITIES ACT OF 1990". FIXTURES AND THEIR INSTALLATION SHALL ALSO COMPLY WITH AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) PUBLICATION A117.1 - "PROVIDING ACCESSIBILITY AND USABILITY FOR PHYSICALLY HANDICAPPED PEOPLE" AND/OR GOVERNING CODE. ALL PLUMBING FIXTURES, EQUIPMENT, TRIM, AND FITTINGS SHALL COMPLY WITH LOCAL, STATE, AND FEDERAL REGULATIONS AND CODES.
- WATER AND ENERGY CONSERVATION CODES. THE SCHEDULED AND/OR SPECIFIED PLUMBING FIXTURES AND EQUIPMENT REPRESENT THE MINIMUM CRITERIA AND SHALL BE THE BASIS FOR THE CONTRACTOR'S BASE BID. IF THE SCHEDULED OR SPECIFIED FIXTURES OR EQUIPMENT DO NOT COMPLY WITH GOVERNING CODES OR REGULATIONS IN ALL RESPECTS, THE CONTRACTOR SHALL PROVIDE AN ALTERNATE BID FOR COMPLYING FIXTURES, EQUIPMENT, TRIM, OR FITTINGS. THE ABSENCE OF AN ALTERNATE BID SHALL BE CONSTRUED TO MEAN THAT THE CONTRACTOR'S BID INCLUDES ALL COSTS NECESSARY TO MEET ALL REGULATIONS AND CODES.
- PLUMBING FIXTURES SHALL BE WATER CONSERVING TYPE AS FOLLOWS PER NYS PLUMBING CODE (PROVIDE REQUIRED AERATORS ON ALL FAUCETS TO ENSURE FLOW RATES ARE MET):
 WATER CLOSET (TOILET) - MAX. 1.28 GPF
 URINAL - MAX. 0.5 GPF
 PUBLIC LAVATORY FAUCET - MAX. 0.5 GPM
- GENERAL CONTRACTOR SHALL COORDINATE WATER METER LOCATION AND INSTALLATION WITH LOCAL AUTHORITIES AND SITE DRAWINGS IF NOT EXISTING.
- PROVIDE BUILDING WATER AND GAS SERVICE LINES 5'-0" FROM BUILDING LINE, OR INSIDE BUILDING FROM OUTLET SIDE OF METER AS SHOWN ON SITE PLAN. COORDINATE EXACT LOCATION WITH SITE DRAWINGS AND AT JOB SITE. PROVIDE BACKFLOW PREVENTER AS REQUIRED BY LOCAL AUTHORITIES FOR WATER SERVICE.
- SANITARY SEWER PIPING SHOWN IS BASED ON 0.125"/FT FOR 3"-6" & 0.25"/FT FOR 2 1/2" OR LESS FOR ALL PIPING. COORDINATE BUILDING SEWER LOCATION AND INVERT ELEVATION WITH SITE DRAWINGS.
- TRAP SEAL PRIMERS ARE TO BE PROVIDED AT ALL FLOOR DRAIN LOCATIONS.
- FIRESTOP ALL FLOOR TO FLOOR PENETRATIONS AS REQUIRED.

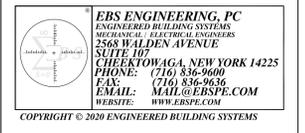
LEGEND

-----	SANITARY SEWER (SS)
-----	STORM WATER PIPING (ST)
-----	UNDERGROUND STORM WATER PIPING (ST U)
-----	OVERFLOW STORM WATER PIPING (OST)
----- U -----	UNDERGROUND PIPING (U)
-----	DOMESTIC COLD WATER (CW)
-----	HOT WATER RECIRCULATING - STANDARD TEMPERATURE (HWR)
-----	HOT WATER - STANDARD TEMPERATURE (HW)
-----	FIRE PROTECTION PIPING
-----	SANITARY VENT (V)
-----	GAS PIPING
-----	CONDENSATE PIPING (CD)
-----	UNION
-----	PLUG COCK
-----	ELBOW - TURNED DOWN
-----	ELBOW - TURNED UP
-----	TEE - TURNED DOWN
-----	TEE - TURNED UP
-----	GATE VALVE
-----	CONCENTRIC REDUCER
-----	CONCENTRIC INCREASER
-----	PRESSURE SWITCH
-----	BALL VALVE
-----	MIXING VALVE
-----	CHECK VALVE
-----	SHUT-OFF VALVE IN VERTICAL LINE
-----	GAS PRESSURE REGULATOR
-----	TEMP. & PRESS. RELIEF VALVE
ORD@ORD	ROOF DRAIN/OVERFLOW DRAIN
FD	FLOOR DRAIN
FS	FLOOR SINK
PUMP	PUMP
FCO	FLOOR CLEANOUT
GCO	GROUND CLEANOUT
HB	HOSE BIBB
WH	WALL HYDRANT - ALSO SHOWN AS HYD
WCO	WALL CLEANOUT
CO	CLEANOUT
(WHA)	WATER HAMMER ARRESTOR (WHA)
CAP	CAP/PLUG
PC	POINT OF CONNECTION - NEW TO EXISTING
CBV	CALIBRATED BALANCING VALVE
---	DIRECTION OF FLOW

FD	FLOOR DRAIN	HW	HOT WATER
ORD	OVERFLOW ROOF DRAIN	CW	COLD WATER/CITY WATER
TYP.	TYPICAL	GC	GENERAL CONTRACTOR
DN	DOWN	FCO	FLOOR CLEANOUT
VTR	VENT THRU ROOF	CONT.	CONTINUATION
U/F	UNDER FLOOR	W.C.	WATER COLUMN
SS	SANITARY SEWER	CD	CONDENSATE DRAIN
V	PLUMBING VENT	VBF	VENT BELOW FLOOR
HVAC	HEATING, VENTILATING, AND AIR CONDITIONING	ETR	EXISTING TO REMAIN
DCVA	DOUBLE CHECK VALVE ASSEMBLY	RO	REVERSE OSMOSIS
CI	CAST IRON	VFB	VENT UP FROM BELOW
MC	MECHANICAL CONTRACTOR	N/A	NOT APPLICABLE
FLR./FLRS.	FLOOR/FLOORS	PC	PLUMBING CONTRACTOR
EC	ELECTRICAL CONTRACTOR	AAV	AIR ADMITTANCE VALVE
LAV	LAVATORY	WC	WATER CLOSET
F/#	FOR (# OF ITEMS)	WC	WATER CLOSET
KEC	KITCHEN EQUIPMENT CONTRACTOR	SHWR	SHOWER
FDC	FIRE DEPARTMENT CONNECTION	TUB	BATHTUB/SHOWER
		GPD	GALLONS PER DAY

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D'Youville College - Koessler Administration Building
320 Porter Ave
Buffalo, NY

ISSUE: 02-18-2020 BID SET - NOT FOR CONSTRUCTION

SA PROJECT TEAM: PRINCIPAL P.Silvestri
PROJ. ARCH. _____ DRAFTER M.Velocci
JOB CAPT. M.Velocci INTERIORS N.Catuzza

SEAL:

TITLE: **PLUMBING LEGENDS, SCHEDULES, & DETAILS**

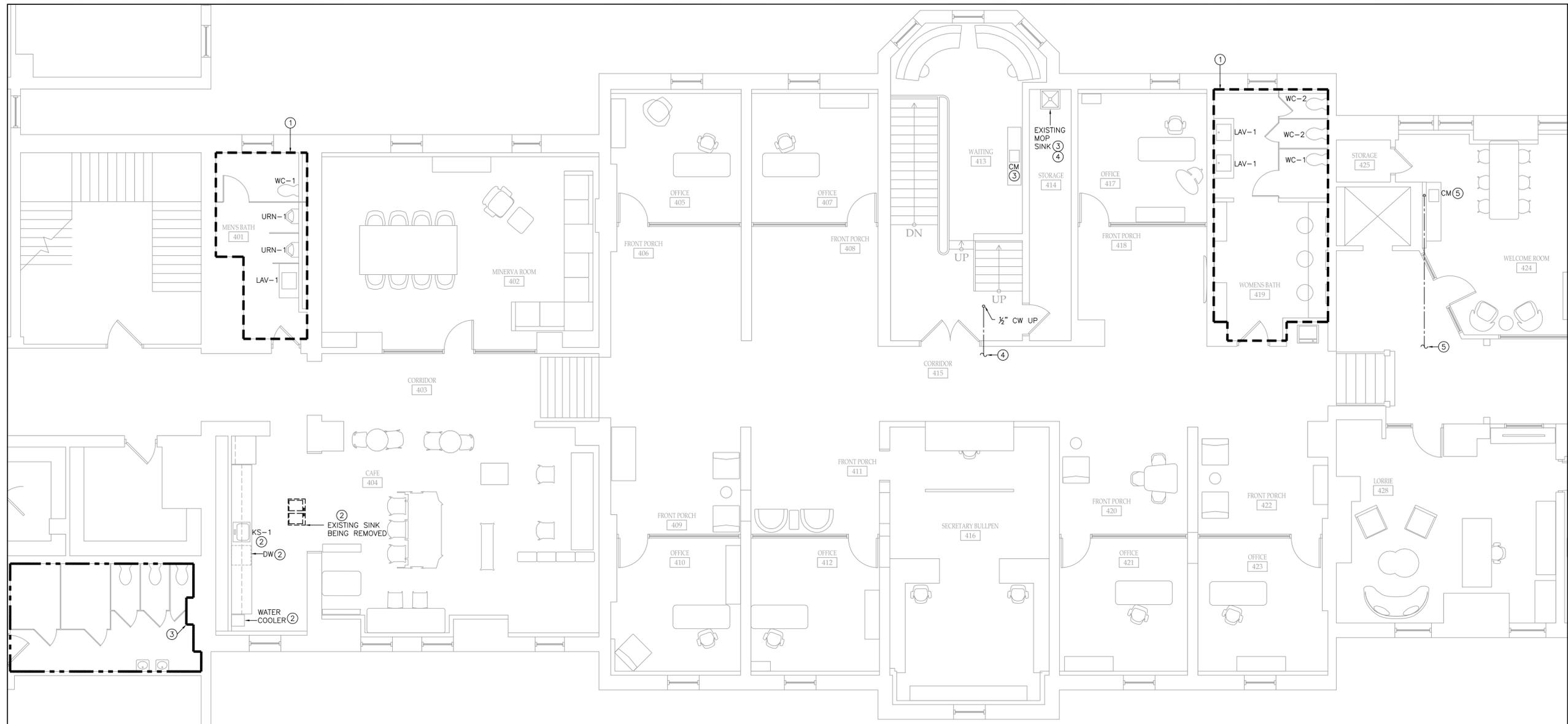


SILVESTRI ARCHITECTS - PC

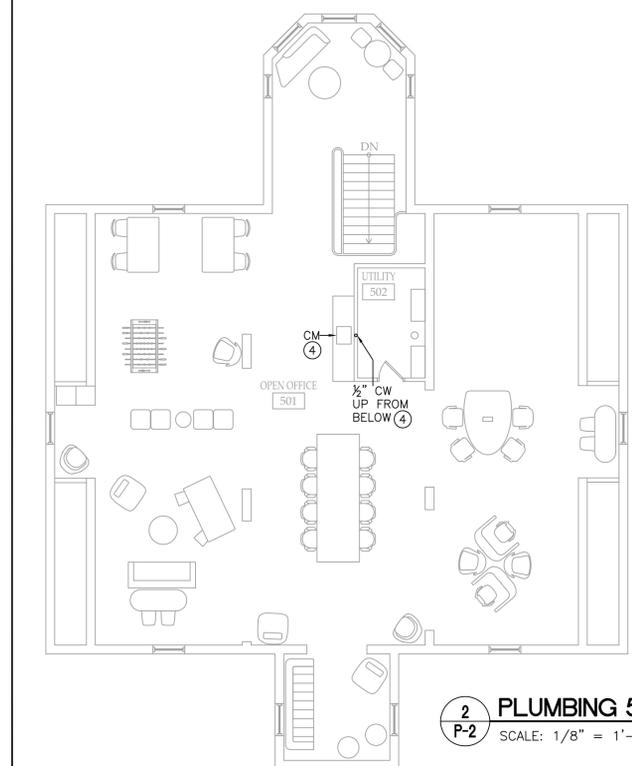
1321 MILLERSPORT HWY PH. 716.691.0900
AMHERST, NY 14221 FAX 716.691.4773

SA JOB #: 19092.01 DATE: 02-18-20

DRAWING #: P-1



1 PLUMBING PARTIAL 4TH FL. PLAN
 SCALE: 3/16" = 1'-0"



2 PLUMBING 5TH FL. PLAN
 SCALE: 1/8" = 1'-0"

PLUMBING DRAWING NOTES (P):
 (THIS IS A MASTER LIST. NOT EVERY NOTE IS USED ON EVERY DRAWING.)

- EXISTING BATHROOMS ARE BEING REMODELED - SEE GENERAL NOTES #1 AND #11. MAKE CODE COMPLIANT CONNECTIONS FOR NEW FIXTURES TO EXISTING HOT, COLD, HOT WATER RECIRCULATION, SANITARY, AND VENT PIPING LOCATED NEARBY. IF NO CODE COMPLIANT CONNECTION CAN BE MADE, PIPING SHALL BE CONNECTED TO THE NEAREST CODE COMPLIANT ABOVE CEILING/BELOW FLOOR/IN WALL PIPING.
- CONNECT NEW SINK, DISHWASHER, AND WATER COOLER TO EXISTING NEARBY PIPING FROM REMOVED SINK - SEE PLANS FOR REMOVED SINK'S LOCATION. IF PIPING ABOVE CEILING OR BELOW FLOOR IS NOT OF CODE COMPLIANT SIZE, MAKE CODE COMPLIANT CONNECTIONS TO PIPING IN NEARBY BATHROOM (SEE PLANS).
- NEW COFFEE MACHINE (CM) TO BE LOCATED WHERE INDICATED - REQUIRING 1/2" COLD WATER CONNECTION. MAKE CODE COMPLIANT CONNECTION FOR EQUIPMENT TO PIPING LOCATED NEARBY, WHICH FEEDS EXISTING MOP SINK.
- NEW COFFEE MACHINE (CM) TO BE LOCATED ON FIFTH FLOOR (REQUIRING 1/2" COLD WATER CONNECTION) - WHERE NO DOMESTIC WATER PIPING EXISTS. MAKE CODE COMPLIANT CONNECTION TO PIPING LOCATED ABOVE THE CEILING IN CORRIDOR 415. IF NO CODE COMPLIANT PIPING EXISTS IN CORRIDOR 415, MAKE CONNECTION AT EXISTING MOP SINK LOCATED ON PLANS.
- NEW COFFEE MACHINE (CM) TO BE LOCATED WHERE INDICATED (REQUIRING 1/2" COLD WATER CONNECTION) - WHERE NO DOMESTIC WATER PIPING EXISTS. MAKE CODE COMPLIANT CONNECTION TO PIPING LOCATED ABOVE THE CEILING IN CORRIDOR 415. IF NO CODE COMPLIANT PIPING EXISTS IN CORRIDOR 415, MAKE CONNECTION AT WOMEN'S BATH 419 LOCATED ON PLANS.

GENERAL NOTES:

- PRIOR TO BIDDING - CONTRACTOR TO FIELD VERIFY SIZE AND EXACT LOCATIONS OF ALL ABOVE CEILING AND UNDERFLOOR PIPING AND ALL OTHER EXISTING CONDITIONS. VERIFY HOT WATER TEMPERATURE - IF ABOVE 110°F - THEN INSTALL MIXING VALVES AT EACH FAUCET AS NOTED IN FIXTURE SCHEDULE. ALL HOT WATER TO FAUCETS SHALL MEET ADA GUIDELINES AND BE ONLY 110°F.
- EXISTING PIPING INSULATION IS TO REMAIN. REPLACE PIPE INSULATION OF SAME TYPE ON EXISTING PIPING WHICH WAS REMOVED WHILE MAKING NEW PIPE CONNECTIONS OR REMOVING EXISTING PIPE CONNECTIONS. REINSTALL SPECIFIED INSULATION AS REQUIRED DURING RECONSTRUCTION.
- PLUMBING CONTRACTOR RESPONSIBLE FOR PROPER DISPOSAL OF ALL CONCRETE, PIPING MATERIALS, ETC. OFF-SITE COMPLIANCE WITH ALL LOCAL AND STATE CODES.
- PLUMBING CONTRACTOR RESPONSIBLE FOR PATCHING/REPAIR OF CONCRETE FLOOR AND WALL SURFACES TO MATCH EXISTING ARCHITECTURAL FINISHES.
- ALL NEW UNDERFLOOR SANITARY SEWER PIPING WILL BE SLOPED DOWN AT 1/8" PER FOOT TO EXISTING SANITARY SEWER.
- ALL NEW PIPING THAT IS TO BE RUN ABOVE THE CEILING SHALL BE COORDINATED WITH ALL OTHER EXISTING WORK/CONDITIONS.
- NOT ALL PIPE SIZES SHOWN. SEE FIXTURE SCHEDULE FOR MAIN CONNECTIONS SIZES. COORDINATE ALL PIPING RUNS WITH POCKET DOORS.
- NOT ALL SHUTOFF VALVES ARE SHOWN. SHUTOFF VALVES FOR ALL FIXTURES DOMESTIC WATER CONNECTIONS SHALL BE LOCATED WHERE THEY ARE ACCESSIBLE. PROVIDE ACCESS DOOR AS REQUIRED PER FIXTURE IF VALVES WILL NOT BE ACCESSIBLE. SEE FIXTURE SCHEDULE FOR PIPE SIZES.
- ALL VENTED FIXTURES ARE TO HAVE THE VENT PIPING CONNECT TO THE SANITARY PIPING ABOVE THE FLOOR RIM. VENT PIPING COMING FROM BELOW THE FLOOR (I.E. TOILET VENTS, FLOOR DRAINS, AND FLOOR SINKS) SHALL COME OFF THE TOP OF THE SANITARY PIPE. FIXTURES THAT ARE VENTED BEFORE SANITARY HEADS BELOW THE FLOOR (I.E. LAVATORIES AND HAND SINKS) SHALL HAVE THE VENT GO UP AND THE SANITARY GO DOWN AT LOCATION INDICATED (UNLESS OTHERWISE NOTED). AIR ADMITTANCE VALVES MAY BE SUBSTITUTED FOR VENTING IN NOTED AREAS.
- BREAKS ARE SHOWN IN THE PIPING (BOTH UNDERSLAB AND ABOVE CEILING) FOR CLARITY ONLY. ALL SYSTEMS SHALL BE INSTALLED IN THEIR ENTIRETY FOR A FULL WORKING SYSTEM.
- PER NEW YORK STATE ENERGY CODE ALL SINKS INTENDED FOR PUBLIC USE MUST HAVE THE SOURCE OF DEVELOPED HOT WATER (RECIRC LINE) LOCATED WITHIN 3 FEET OF THE FAUCET IN QUESTION. ADDITIONALLY, A MIXING VALVE SHALL BE INSTALLED TO ACHIEVE TEMPERED WATER AT THESE SINKS (SEE FIXTURE SCHEDULE). FOR ALL OTHER FIXTURES THE SOURCE OF HOT WATER CANNOT EXCEED 50 FEET IN DEVELOPED LENGTH.

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 Buffalo, NY

ISSUE:
 02-18-2020 BID SET - NOT FOR CONSTRUCTION

SA PROJECT TEAM: PRINCIPAL P.Silvestri
 PROJ. ARCH. _____ DRAFTER M.Velocci
 JOB CAPT. M.Velocci INTERIORS N.Catuzza

SEAL:

TITLE: **PLUMBING FLOOR PLANS**

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 1321 MILLERSPORT HWY PH. 716.691.0900
 AMHERST, NY 14221 FAX 716.691.4773

SA JOB #: **19092.01** DATE: **02-18-20**

DRAWING #: **P-2**

PLUMBING SYSTEMS SPECIFICATIONS

PART 1 GENERAL

1.01 SUMMARY:

A. The Contractor shall provide the building plumbing systems as shown on the drawings, as specified in this Section, and as needed for a complete installation including, but not necessarily limited to:

- Applications and fees for all plumbing permits, services, and interim and final inspections.
- Temporary water provisions as required for construction purposes.
- Excavation and backfill for plumbing systems work.
- Concrete pads and pits as may be required for plumbing systems work.
- Domestic hot and cold water piping systems, including backflow preventer.
- Drain, waste, and vent systems.
- Gas piping system.
- Storm piping system.
- Plumbing fixtures and trim.
- Cathodic and dielectric protection.
- Accessory plumbing devices including but not necessarily limited to hangers, supports, inserts and valves.
- Access panels and boxes for Contractor-provided valves.
- Piping insulation.
- Cutting and patching.
- Final gas connections to HVAC equipment.
- Painting of exposed piping.
- Sterilization of the potable water system.
- Seismic Restraints (as may be required by the local jurisdiction).
- Testing, adjusting and balancing.

B. The Contractor shall include the cost of applications and fees for all plumbing permits, services, and interim and final inspections in the Base Bid.

1.02 SUBMITTALS:

The Contractor shall submit Product Data of the following: Domestic Water Piping, Sanitary/Storm Piping, Gas Piping, Valves, Pipe Hangers/Supports, Piping Insulation, and Plumbing Fixtures for review by the Architect/Engineer. Any Request for Product Substitution must be submitted one week prior to bid submission.

1.03 QUALITY ASSURANCE:

Codes and Regulations:

All materials, apparatus, and equipment and the installation thereof shall comply with all state and county ordinances and all other governmental and/or private authorities having jurisdiction, and shall comply with all county and state laws, rules, and regulations, as well as rules and regulations of the National Board of Fire Underwriters, and the Plumbing Code having jurisdiction. In the event of conflict between or among specified requirements and pertinent regulations, the more stringent requirement will govern and shall be provided at no additional cost to the owner.

Drawings and Coordination:

Construction drawings shall be considered as a part of the work, insofar as the drawings furnish the Contractor with information relating to design and construction of the building. Because of the scale of the mechanical drawings, it is not possible to indicate all offsets, fittings, and accessories which may be required to meet such conditions. The plumbing drawings show the general arrangements of all piping, ductwork, equipment, etc., and shall NOT BE SCALED. This work shall be coordinated with ALL trades. Critical locations are dimensioned on the drawings; if a conflict arises, the Contractor shall notify the owner and the Architect/ Engineer immediately for clarification.

The Contractor shall verify the dimensions governing the plumbing systems work in the building. No extra compensation shall be claimed or allowed on account of differences between actual dimensions and those indicated on the drawings. The Contractor shall examine adjoining work, on which mechanical work is dependent for proper operation, and shall report any work which must be corrected. No waiver of responsibility for defective work shall be claimed or allowed due to any failure to report unfavorable conditions affecting the plumbing systems work.

1.04 WARRANTY/ CLOSEOUT DOCUMENTS:

Manufacturer's Warranty: The Contractor shall provide the manufacturer's standard product warranty.

Installer's Warranty: The Contractor shall include a copy of the Subcontractor's Warranty for all work provided under the contract for construction for a term of 1 year after the Date of Substantial Completion.

Warranties shall be included in the Building Maintenance Manuals submitted to the owner after the Date of Final Completion.

Sterilization Certificate of Performance: Upon completion of the water line sterilization, the Contractor shall deliver a copy of an acceptable sterilization "Certificate of Performance" to the owner. This Sterilization Certificate of Performance shall additionally be included in the Building Maintenance Manuals submitted to the Construction Project Manager after the Date of Final Completion, as further described in this section.

Project Record Drawings: The Contractor shall record all changes as the work progresses on a set of project record drawings kept at the job site, and shall provide record drawings to the Construction Project Manager after the Date of Substantial Completion.

PART 2 PRODUCTS

2.01 GENERAL:

The work piping shall mean pipe, fittings, nipples, valves, etc. completely assembled.

2.02 DOMESTIC WATER SYSTEM:

Water Lines:

Copper: Type "L" hard drawn, per ASTM B88-7, for all water pipe above concrete or ground.

Copper: Type "K" hard drawn, per ASTM B88-7, for water pipe set in or under concrete or in the ground. Wrap lines below concrete floors with 5 mils polyethylene tape with joints overlapped 25% minimum, and insulate with Armalex insulation. No fittings shall be under the slab.

Fittings: Wrought copper, per ANSI B16.18 and B16.22.

Identification: Color identify pipe with size of pipe manufacturer's trademark, and conform to the following schedule:

Type "K" Copper – Green
Type "L" Copper – Blue

PEX Water Lines:

Uponor PEX—a Tubing: Tubing to be per ASTM F876 and ASTM F877, Uponor AQUAPEX, for all water pipe above or below concrete or ground, all sizes up to and including 3". Fittings: Fitting assembly is manufactured from material listed in paragraph 5.1 of ASTM F1960. All fitting material is to comply with ASTM F1960. Type: PEX—a cold expansion fitting. Assembly consists of the appropriate ProPEX insert with a corresponding ProPEX Ring. PEX Manifold: Material: Type L copper body with UNS 3600 series brass ProPEX outlet connections or Engineered Plastic (EP) body with ProPEX outlet connections. Manifold Type: Uponor ProPEX 1" Copper Manifold or Uponor engineered plastic (EP) Manifold. All manifolds manufactured with the appropriate-sized ProPEX fittings on the manifold supply inlets.

Specification for CPVC Hot and Cold Water Commercial Systems (with piping components ½" – 6"):

All pipe and fittings to be manufactured from CPVC compound with a cell class of 24448 for pipe and 23447 for fittings as per ASTM D-1784 and conform with National Sanitation Foundation (NSF) standards 14 and 61.

½" through 2" sizes: FlowGuard Gold® CPVC Copper Tube Size mfg. to standard dimension ratio (SDR) 11 and shall conform to ASTM D-2846. Transition fittings to have brass male or female connections with integral CPVC socket connections as mfg. by Charlotte Pipe and Foundry Co.

3" through 6" sizes: Corzan® CPVC Schedule 80 iron pipe size (IPS). Pipe shall conform to ASTM F-441. Socket type fittings shall conform to ASTM F-439. Transition to metal piping to be made using 150# flanged connections.

All pipe and fittings to be produced by a single manufacturer and to be installed in accordance with manufacturer's recommendations and local code requirements. FlowGuard Gold to be joined using approved one-step solvent cement conforming to ASTM F-493. Corzan to be installed using approved solvent cement conforming to ASTM F-493 and primer conforming to ASTM F-656. Pipe and fittings to be manufactured by Charlotte Pipe and Foundry Co. and are intended for hot and cold domestic water distribution systems.

2.03 SANITARY/STORM DRAINAGE SYSTEM:

Waste, Vent, & Storm Lines:

Sanitary & Storm piping to be either cast iron or copper. Where allowable by local and national codes, plastic DWV piping may be used under slab and where concealed by walls. Copper or cast piping shall be utilized for sanitary, vent, & gravity storm piping above ceiling spaces and where otherwise exposed and within plenum areas. No condensate or storm water filled piping shall run in unheated spaces such as attics or porte cocheres without heat trace protection – coordinate with electrical contractor.

Cast Iron – Aboveground: Provide cast iron no-hub soil and vent pipe, coated inside and out, conforming to CISPI 301-69T Specifications, for all soil and waste lines above ground and for all vent lines with inside diameter 2 inches and larger. Standard weight soil and waste fittings will be accepted throughout. Pipe shall conform to CISPI Standard 301. Pipe and fittings to be manufactured by Charlotte Pipe and Foundry Co.

Cast Iron – Under Building: Service weight cast iron pipe with bell and spigot joints and fittings. Underground pipe may be installed with "Tyseal" gaskets as specified hereinafter. Pipe and fittings to be manufactured by Charlotte Pipe and Foundry Co.

2.04 GAS PIPING SYSTEM:

Provide Schedule 40 black steel pipe conforming to ASTM A120 and A53 with extra-heavy malleable iron banded thread fittings. Unions shall be ground iron to bronze seat. Plug valves shall be Rockwell-Nordstrom No. 142. Factory spiral wrapped in two directions, using Scotch wrap 10 mil tape with 1" overlap for all underground piping.

Provide drip legs on all mains and risers and at equipment connections. Provide gas cocks at all equipment connections.

Fittings: Provide extra-heavy black malleable iron banded screwed or weld pattern as applicable per ASA B16.3.

Rooftop horizontal gas piping support pedestals shall be pre-manufactured roof piping supports. Wood blocking with pipe clamps is NOT an acceptable means of supporting horizontal piping located on the roof.

2.05 ROOF PENETRATIONS:

Each trade shall provide their own roof penetrations and the Contractor shall coordinate the installation of same with other related trades, such that in no way shall the roof warranty be altered, modified, or voided. The roof flashing system shall be as specified in Section 07510- Single-Ply Membrane Roofing System and Section 07720- Roof Accessories.

2.06 ACCESS DOORS:

The Plumbing Subcontractor shall furnish access doors for the Contractor's installation in finished work for concealed valves, cleanouts, and to concealed parts of the plumbing system that require accessibility for proper operation, maintenance, and repair. Doors are not required for suspended acoustical ceilings with lift-out panels.

Access doors shall be of the proper size for respective concealed items, with minimum size exclusive of other requirements, 18" x 18". Access door shall be flush type, with No. 13 U.S. Standard Gauge Steel door and trim, concealed hinges and screwdriver operated, stainless steel cam lock. Access door shall be shop painted with one coat of zinc chromate primer.

2.07 VALVES:

Valves for water piping shall be 125 lb. SWP, all bronze gate valves. Drips shall be all bronze 1/2" globe SWP hose end. Check valves shall be horizontal swing check 125 lb. SWP type. Where used in connection with chrome plated pipe, valves shall be the same finish as the pipe. Install valves on all hot and cold water branch lines to each group of fixtures or individual fixtures. All products listed meet the low-lead requirements of NSF-372 and meet the requirements of ANSI/NSF61.

Gate Valves: Red White #206AB, 125# brass body, non-rising stem, for all lines up to 4".

Check Valves: Red White #236AB 125# brass body, Y-pattern, PTFE seat for all sizes up to 2" in diameter. Nibco #B-910-LF, 125# iron body, bronze trimmed, flanged horizontal check valve for all valves larger than 2 inches in diameter.

Balancing Valve: Caleffi QuickSetter+ 132 Series – Balancing valve with flow meter made from dezincification resistant low-lead brass. Direct reading of flow rate with no sight gauge clouding or scaling. Rotatable stainless steel flow rate adjuster with inlet flow check valve. Graduated scale flow meter with magnetic movement flow rate indicator.

Plug Valves: Rockwell-Nordstrom #142 for lines two inches and smaller and #143 for 2-1/2 inches and larger, lubricated plug valve with #555 lubricant for natural gas service.

Globe Valves: Red White #211AB, brass body, 200# WOG, swivel style disc.

Ball Valves: Red White #5049AB Brass Body, 600# WOG, 150# WSP, PTFE seat, blow-out proof stem.

Gas Valves: 1½" and smaller: Provide Rockwell-Nordstrom #143 with #555 lubricant for natural gas service. 2½" and larger: Provide Rockwell-Nordstrom #143 with #555 lubricant for natural gas service.

Valve Manufacturers: Provide as manufactured by Crane, Jenkins, Walworth, Kennedy, Stockham, Red-White, Caleffi, or Nibco-Scott. No other product/manufacturers are permitted.

Provide valve boxes for all valves. Boxes shall be Mueller #H-10360, Size 564 S, screw type, and shall have 5-1/4" shaft with "WATER" cast in lid.

Trap Primers: Where shown on the drawings or required by plumbing code (see Drawings for product specifications). Automatic trap primer on cold water supply at nearest fixture and run drain to trap seal being protected. Provide access panel when primers are installed in walls.

Air Cushions and Shock Absorbers: Each hot and cold water connection to a fixture or faucet shall be equipped with full size vertical air cushion not less than 12 inches long. In addition to air cushions, provide 1 inch pipe size, shock absorber at each hot and cold connection and battery of fixtures. Shock absorbers shall be MIFAB #CL-A-NPB.

Hose Bibs: Provide as scheduled and detailed on the Drawings.

Vacuum Breakers: Furnish and install on all faucets, hydrants and all other water discharge points with threaded hose connector, where shown on drawings and where required by Code. Hose thread vacuum breaker shall be Watts Model #B-A or approved equal.

Vacuum breakers for general piping application shall be Watts Regulator Company, No. 288A or approved equal, with bronze body and internal trim and brass external trim. Vacuum breakers shall have angle type bodies with female inlet connection at bottom and female outlet connections at side. Furnish and install where contamination of potable water is possible and where required by local authorities.

2.08 PIPE HANGERS AND SUPPORTS:

Rooftop Piping Support Pedestals: Horizontal piping mounted on roof shall be supported with pre-manufactured pedestals and Accessory Pipe Straps as specified in Section 07720- Roof Accessories. Wood blocking with pipe clamps is NOT an acceptable means of supporting horizontal piping located on the roof, and the installation of same will be rejected by the Architect/ Engineer.

Adequately support piping against sagging, pocketing, swaying, and displacement. Properly space and apply hangers to achieve the result, and not farther apart than the following:

Steel Pipe: 1½" and smaller, 8 foot on center; 1½" and larger, 10 foot on center

Copper Tubing: 1¼" and smaller, 6 foot on center; 1½" and larger, 10 foot on center

Plastic Pipe (Where Allowed): 1½" and smaller, 3 foot on center; 2" and larger, 4 foot on center

Install Trisolator #500 isolators around all uninsulated copper lines where hanger occurs. Install dielectric fitting between all ferrous and non-ferrous piping with a 12" section of red brass pipe in between.

Size all hangers on insulated lines to fit around outside diameter of insulation specified with allowance for sheet metal shield. Pipe shield shall be 169A, 1/3 circumference of insulation of a length of not less than 3 x diameter of the insulation (maximum 24").

Manufacturer: Grinnell Company catalog numbers are indicated to simplify the description, however, hangers and supports shall be Grinnell, Grabler, Fee & Mason, Elcen or approved equal.

Overhead Supported: Each horizontal pipe shall be supported on adjustable wrought iron clevis hangers equal to Grinnell, Figure 260, except that groups of pipes shall be supported on trapeze hangers made up of steel rods and steel channels or angles. Pipe shall be "U" bolted to trapeze and trapeze spaced for the smallest pipe in the group.

2.09 PLUMBING SYSTEM INSULATION:

All insulation shall be applied in a neat and workmanlike manner. Remove and replace all insulation not applied in strict accordance with manufacturer's specifications or not presenting a neat appearance. Insulation shall be continuous through wall and ceiling openings and sleeves.

Work included: Pipe covering for domestic hot water (including recirculation), cold water, and roof drain piping.

Materials and Installation: No pipe insulation shall be applied until piping has been pressure tested and approved. All insulation shall be applied strictly in accordance with the manufacturer's recommendations. Materials as manufactured by Johns Manville, Fiberglas, Phillip Carey, or Armstrong will be acceptable if equal to those specified. All insulation on indoor water shall have combustible fire and smoke hazard ratings as tested by procedure NFPA 255 not exceeding: Flame Spread 25, Fuel Contributed 50, Smoke Developed 50. Accessories, such as adhesives, mastics, cements, tapes, and cloth for fitting, shall have the same component ratings as listed above. Insulation shall have an average thermal conductivity not to exceed 0.25 BTU/inch of thickness per square foot per 1F. at a mean temperature of 75 °F.

Domestic Hot Water, Tempered Water, Cold Water, and Roof Drain Piping: All piping shall be insulated with fiberglass pipe insulated with foil-kraft laminate vapor barrier fastened with pressure sensitive tape and stapled 12" on center – see schedule below for thicknesses. All piping, fittings, valves, flanges, etc. shall be covered with PVC jackets/fitting covers (20 mils thick minimum), taped and tacked fastened.

PIPING INSULATION SCHEDULE – Follow NYS Energy Code Table C403.2.10 as a minimum insulation thickness (values below are larger and preferred):

Domestic Cold Water: 1½" and Smaller: 1" thick; 1½" and Larger: 1½" thick.
Domestic Hot, Recirculated, and Tempered Hot Water: 1½" and Smaller: 1" thick; 1½" and Larger: 2" thick.
Stormwater and Overflow: All Pipe Sizes: 1" thick – unless otherwise noted.

No insulation shall be installed on any piping before the building is adequately closed in. Where necessary to install any insulation before it is protected by building enclosures, and if acceptable by the local jurisdiction, the covering must be effectively protected with roofing felt, wired on the covering to make an absolute waterproof protection for the pipe covering.

Pipe Insulation at Handicap Accessible Lavatories: Provide Dearborn #ADA100 or #ADA101 insulating kits on traps and hot and cold water supplies at each handicap accessible toilet room lavatory.

2.10 PAINTING:

Comply with Architectural requirements for painting interior piping. Paint exposed, interior metal piping, valves, service regulators, service meters and meter bars, and piping specialties, except components, with factory-applied paint or protective coating.

W.B. Light Industrial Coating: MPI INT 5.1B – G5. Prime Coat: Rust Inhibitive Primer. (MPI #107). Intermediate Coat: W.B. Light Industrial Coating (MPI #153). Topcoat: W.B. Light Industrial Coating (MPI #153). Color: Selected by Architect.

Damage and Touchup: Repair marred and damaged factory-applied finishes with materials and by procedures to match original factory finish.

2.11 TRAPS:

All fixtures and floor drains are to be separately trapped as near to the fixture or floor drain as possible. Traps shall be self-cleaning, water-sealed, and shall have a scouring action. Traps shall be set true with respect to water seal and shall be protected from freezing. All underground traps, except "P" traps into which floor drains with removable strainers discharge, shall be provided with accessible cleanouts. Traps which are not part of plumbing fixtures shall be of the same material and size as pipes or branches into which they discharge.

2.12 VENTS:

Collect vents together as shown on the drawings to minimize number of vents terminating through roof. Verify location of roof equipment indicated. Offset vents through roof to maintain a minimum distance of 10 feet away from outside air intakes.

2.13 CLEANOUTS:

Where indicated on the drawings and as required by local plumbing code. Make all cleanouts accessible by one of the following means:

- Within 6 inches from ceiling access panel; Extending to floor or grade above; Locate in wall with removable plate.

Size: Same as pipe on which installed.

Installation: Covers set flush with finished wall, floor or grade, to be securely anchored by means of integral lugs or bolts. Where surfacing materials such as resilient floor covering is used, install the clean out with top so that finished surface is smooth and flush.

Manufacturers: Cleanout products shall be as manufactured by MIFAB or as detailed in the fixture schedule.

Floor Cleanouts and Access Covers: Duco coated cast iron body and frame with "Leckeromated" plug and heavy duty adjustable scoriated secured polished bronze top.

Cleanout to Grade with Countersunk Plug: Duco-coated cast iron body with bronze taper thread countersunk plug. Installed in 24" x 24" concrete pad, tapered for drainage.

Wall Cleanouts: Stainless steel chrome plated bronze deep cover with center screw.

2.14 FLOOR DRAINS:

Floor drains shall be properly anchored to building construction with clamping device or with lugs embedded in concrete slabs. Floor drains shall be as scheduled and detailed on the drawings. All floor drains shall have automatic trap primers installed as required. Acceptable Manufacturers include: Jay R Smith, MIFAB, Watts, and Zurn.

2.15 FIXTURE SUPPORTS:

Steel plated supports for all wall hung fixture shall be supported with 3/8" x 6" steel plates recessed and lag screwed to wood studs or welded to steel studs and tapped for fixture bolts. Install the length and number of plates as required to satisfactorily support the fixtures.

2.16 PLUMBING FIXTURES:

General: Furnish and install plumbing fixtures complete with trim and caulk. See drawings for Plumbing Fixture Schedule.

All fixtures shall be Class "A". Vitreous fixtures shall be best quality. Warped, imperfect fixtures are NOT acceptable. Brass products shall contain at least 75% copper. All exposed metal below and above each fixture throughout shall be chrome plated on brass, with cast brass escutcheons. Where fixtures are noted on drawings as furnished by others, they shall be set by this contractor and this contractor shall furnish, install and connect service to such fixtures. All fixtures supported from walls shall be provided with carriers by MIFAB. Furnish, set and connect all plumbing fixtures including all necessary supports, and chrome plated exposed work and fittings. Provide loose-key type fixtures stops for all fixtures unless noted otherwise. The plumbing subcontractor shall purchase plumbing fixtures, flush valves, toilet seats and carriers as specified on the drawings.

The plumbing subcontractor shall purchase faucets, tailpiece, P-trap, lavatory insulation supply kit, valves, sink accessories, trap primer, water hammer arrester, floor drains and wall clean out as specified on the drawings.

Traps exposed above the floor shall be chrome plated adjustable brass, with chrome plated approved cleanout plugs, cast set screw wall escutcheon and casing. All trim shall be of polished chrome-plated brass and of one acceptable manufacturer unless specifically noted otherwise. Provide fixture stops or valve ahead of all equipment or fixtures. Refer to Plumbing Fixture Schedule on Drawings.

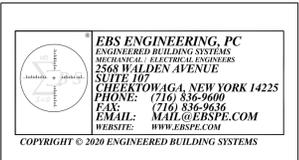
Domestic Water Heaters: Provide water heater of size, capacity and make as scheduled on the drawings. Heaters shall be fully warranted for minimum of 5 full years after final acceptance of the building. Furnish heaters with the following accessories:

- ASME combination temperature and pressure relief valve rated in excess of heater input. Run full size drain to location shown on plans.
- Automatic thermostat actuated controls with 100 percent shutoff.
- Dual high-limit controls.
- Tank drain.

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Buffalo, NY**

ISSUE:
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CONSTRUCTION**

SA PROJECT TEAM: PRINCIPAL P.Silvestri
PROJ. ARCH. _____ DRAFTER M.Velocci
JOB CAPT. M.Velocci INTERIORS N.Catuzza

SEAL:

TITLE:
**PLUMBING
SPECIFICATIONS**



SA JOB #: **19092.01** DATE: **02-18-20**

DRAWING #: **P-3**