

Order Plans @

PLUMBING FIXTURE UNIT SCHEDULE

DRAINAGE				WATER SUPPLY			
ITEM	#	IND. F.U.	TOT. F.U.	ITEM	#	IND. F.U.	TOT. F.U.
SANITARY SEWER							
WATER CLOSET, 1.6 GPF	2	4.0	8.0	WATER CLOSET FLUSH TANK	2	2.00	4.00
LAVATORY	2	2.0	4.0	LAVATORY	2	3.00	6.00
EMERGENCY KEY WASH	1	2.0	2.0	SERVICE SINK	1	1.50	1.50
SERVICE SINK	1	5.0	5.0	EMERGENCY EYE WASH	1	1.50	1.50
WATER COOLER	1	2.0	2.0	WATER COOLER	1	1.00	1.00
SUBTOTAL S.S.			21.0	COFFEE STATION	1	0.50	0.50
				HOSE BIBB	1	2.50	2.50
				TOTAL C.W. F.U.			22.5
				TOTAL DEMAND GPM			20.85
				GAS MAIN SIZE		1 1/2"	
				FLUSH TANK			

GAS DEMAND AND NOTES

ITEM	IND. DEMAND
RTU-1	130.00
RTU-2	80.00
SUBTOTAL HEATING	190.00
TOTAL DEMAND	190.00
MOST REMOTE FIXTURE DIST. (F.T.)	150'
BUILDING GAS MAIN SIZE	1 1/2"

GAS PIPE SIZING IS PER 2018 NORTH CAROLINA FUEL AND GAS CODE TABLE 402.4(4).

WATER HEATER SIZING

EQUIPMENT	Quantity	GPH CALCULATED
Lavatory	2	10
Service Sink	1	5
Eye Wash	2	2
Total		17

Recovery Rate Needed (GPH): 17

Water Heater Input (BTU or kW) Needed:	Electric Water Heater
Gas Water Heater	Electric Water Heater
15,000 BTU at 80°F rise	3.8 kW at 80°F rise
17,000 BTU at 90°F rise	4.3 kW at 90°F rise
19,000 BTU at 100°F rise	4.8 kW at 100°F rise

ROUGH-IN HEIGHTS

EQUIPMENT TAG	EQUIPMENT	MOUNTING HEIGHTS (A.F.F.)
P1	WATER CLOSET	0'-6"
P2	LAVATORY	1'-10"
P3	SERVICE SINK	2'-2"
P4	EYE WASH (MIXING VALVE)	1'-9 1/2"
P5	WATER COOLER	1'-8"
P6	COFFEE STATION	2'-0"
P7	WALL HYDRANT	3'-0"
P10	MAIN SHUT-OFF VALVE	3'-0"

WATER SIZING CRITERIA

1. ALL PIPE SIZES SHOWN ON THESE PLANS ARE BASED ON PE-X-A PIPE UNLESS OTHERWISE NOTED. PE-X-A IS AN APPROVED SOLUTION MATERIAL (SEE SPECIFICATION SHEET 051000). IF PE-X-A IS INSTALLED, ALL PIPE SIZES SHALL BE BASED ON SINGLE FIXTURE BRANCHES. PE-X-A PIPE SIZES SHALL BE BASED ON THE FOLLOWING CRITERIA:

2. COLD WATER PIPE SIZING BASED ON DESIGN MAXIMUMS OF 8 FT/SEC VELOCITY AND 8 PSI/100FT TO 8 PSI/100FT OF PRESSURE LOSS.

3. PE-X-A PIPE SIZING BASED ON MANUFACTURER DESIGN CRITERIA AND DESIGN MAXIMUMS OF 8 FT/SEC VELOCITY AND 8 PSI/100FT TO 8 PSI/100FT OF PRESSURE LOSS.

PLUMBING FIXTURE SCHEDULE

P-1	WATER CLOSET, FLOOR MOUNTED, PRESSURE ASSISTED FLUSH TANK (HANDICAP) A. KOHLER - K3519 OR EQUAL, 1.7 HIGH, 1.0 GPF ADA ELONGATED SIPHON JET SEAT - KOHLER - K4731 OPEN SEAT LESS COVER C. MOUNT FLUSH CONTROL ON WIDE SIDE OF STALL FOR ACCESSIBILITY.
P-2	LAVATORY, WALL HUNG A. LAVATORY - KOHLER - K-1997-0 OR AMERICAN STANDARD MURRO - 0955.0610C WHITE. B. FAUCET - BRADLEY CAPACITIVE TECHNOLOGY TOUCHLESS FAUCET - 553-315, HARD WIRED. C. WALL HANGER INCLUDED. D. TRAP/SUPPLIES - TRUEBRO 102-EZ (82193) LAV GUARD TRAP AND SUPPLY COVER W/ TUBULAR P-TRAP, 2 ANGLE STOPS & 2 SUPPLIES.
P-3	SERVICE SINK A. SINK - ELKAY - BIC24X24X27 STAINLESS STEEL. B. FAUCET - CHICAGO - 807 W/ WALL BRACE, PAIL HOOK AND MALE HOSE THREADED OUTLET.
P-4	EMERGENCY EYE WASH A. EYE WASH - BRADLEY - S19224DC WALL MOUNTED. B. MIXING VALVE - BRADLEY - S19-20000EEX OR EQUAL.
P-5	WATER COOLER A. WALL MOUNT - ELKAY - BI-LEVEL COOLER - VRCGRNTL8FC OR EQUAL. B. MOUNT ADA COMPLIANT.
P-6	COFFEE STATION A. 1/4" CHROME SHUT-OFF VALVE MOUNTED AT 24" A.F.F. B. INSTALL SHUT-OFF VALVE IN DATEY - 38570 RECESSED WALL BOX.
P-7	EXTERIOR WALL HYDRANT A. 1/4" CHROME SHUT-OFF VALVE MOUNTED AT 24" A.F.F. B. INSTALL SHUT-OFF VALVE IN DATEY - 38570 RECESSED WALL BOX.
P-8	ELECTRIC WATER HEATER A. A.O. SMITH ELECTRIC WATER HEATER MODEL: DEL-60 B. 208V/3 KW ELEMENT WATTAGE/1 PHASE/60 CYCLE (0 ELEMENT) C. SET AT 110°F OPERATION. D. PROVIDE HOUDRTE - MODEL: 50-SWHP-W WALL HUNG PLUMBING W/ BUILT IN DRAIN PAN. E. INSTALL PER MANUFACTURER RECOMMENDATIONS.
P-9	WALL CLEANOUT (NOT) USED
P-10	FLOOR CLEANOUT A. SLOUX 4" PEX-834-X PNR B. TOP SHALL BE FLUSH WITH FLOOR. C. X=SIZE OF CLEANOUT REQUIRED IN MODEL NUMBER.

LEGEND

LINE TYPE	LINE TYPE
---	WASTE PIPING
----	VENT PIPING
----	COLD WATER PIPING
----	HOT WATER PIPING (110°)
----	GAS PIPING
----	EXISTING WASTE PIPING
----	EXISTING COLD WATER PIPING

SYMBOLS	SYMBOLS
⊙	EXISTING GRADE CLEANOUT
⊕	PLUG CLEANOUT
⊖	WALL CLEANOUT
⊗	GATE VALVE
⊘	CHECK VALVE
⊙	HOSE BIBB
⊕	VENT THROUGH ROOF
⊖	GAS COCK AND UNION
⊗	GAS METER
⊘	NEW TO EXISTING

ABBREVIATIONS	ABBREVIATIONS
PLUMBING CONTRACTOR	PC
GENERAL CONTRACTOR	GC
OWNER/FRANCHISEE	O/F
HOSE BIBB	HB
TRAP PRIMER	TP
ROOF TOP EQUIPMENT (HVAC)	RTU
WATER HAMMER ARRESTOR	WHA
MIXING VALVE	MV
BACKFLOW PREVENTER	BFP
EXHAUST FAN	EF
EXISTING	EX
NORMALLY OPEN	NO
NORMALLY CLOSED	NC
NOT TO SCALE	NTS
ON CENTER	OC
OUT SIDE DIA.	OD
INSIDE DIA.	ID
MOP SINK	MS
TYPICAL	TP
WATER CLOSET	WC
LAVATORY	LAV
WATER HEATER	WH
HOSE BIBB	HB
DRAINAGE FIXTURE UNIT	DFU
CLEANOUT	CO

PLUMBING GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED BY A LICENSED CONTRACTOR. CONTRACTOR SHALL INSTALL SYSTEMS, EQUIPMENT & COMPONENTS IN ACCORDANCE WITH MINIMUM REQUIREMENTS SHOWN IN THESE PLANS. ANY DEVIATION FROM THE DESIGN PLANS SHALL ONLY BE PERMITTED IF APPROVED BY THE OWNER REPRESENTATIVE OR DESIGN ENGINEER. ALL WORK SHALL MEET OR EXCEED THE MINIMUM REQUIREMENTS OF ALL APPLICABLE CODES AND STANDARDS. HOWEVER, ANY DEVIATION FROM THE DESIGN PLANS IMPLIED BY LOCAL CODES THAT SUGGESTS INSTALLATION OF LESS THAN THE REQUIREMENTS SPECIFIED IN THESE DESIGN PLANS SHALL NOT BE ALLOWED WITHOUT APPROVAL BY THE OWNER REPRESENTATIVE OR THE DESIGN ENGINEER.

2. IT WILL BE THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR TO INSURE THAT ITEMS TO BE FURNISHED UNDER PLUMBING CONTRACT WILL FIT THE SPACE AVAILABLE. PLUMBING CONTRACTOR SHALL MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS, INCLUDING THOSE FOR CONNECTIONS AND SHALL FURNISH AND INSTALL SUCH SIZES AND SHAPES OF EQUIPMENT THAT ARE THE TRUE INTENT OF THE DRAWINGS AND SPECIFICATIONS.

3. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR WATER, VENT, AND WASTE SYSTEM TESTS, PER LOCAL CODE REQUIREMENTS. ALL HVAC AND EXHAUST SYSTEMS MUST BE RUNNING WHILE THESE WASTE/VENT TESTS ARE BEING PERFORMED. A CERTIFICATE WILL BE REQUIRED FROM THE PLUMBING CONTRACTOR CERTIFYING COMPLIANCE AND ACCEPTANCE OF THESE TESTS.

4. INSTALL ALL PLUMBING FIXTURES TO BE FULLY 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 REGULATIONS. ALL FITTINGS SHALL COMPLY WITH LOCAL, STATE, AND FEDERAL REGULATIONS & CODES, INCLUDING, BUT NOT LIMITED TO, WATER AND ENERGY CONSERVATION CODES.

5. THE SCHEDULED AND/OR SPECIFIED PLUMBING FIXTURES AND EQUIPMENT REPRESENT THE MINIMUM CRITERIA AND SHALL BE THE BASIS FOR THE CONTRACTOR'S BID. 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, AND FITTINGS. THE ABSENCE OF AN ALTERNATE BID SHALL BE CONSTRUED TO IMPLY THAT CONTRACTOR'S BID INCLUDES ALL COSTS NECESSARY TO MEET ALL REGULATIONS & CODES.

6. GENERAL CONTRACTOR SHALL PROVIDE ALL OPENINGS IN WALLS, FLOORS, AND ROOF WITH EACH CONTRACTOR BE RESPONSIBLE FOR VERIFYING LOCATION AND SIZES OF ALL OPENINGS REQUIRED UNDER HIS CONTRACT, UNLESS NOTED OTHERWISE ON THE PLANS.

7. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FINAL CONNECTIONS TO KITCHEN EQUIPMENT THAT REQUIRES A WATER AND/OR WASTE CONNECTIONS, ALONG WITH ALL PIPE, VALVES, WATER HAMMER ARRESTORS, PRESSURE REGULATORS, ETC. REQUIRED FOR A COMPLETE INSTALLATION.

8. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR APPROVED FLOOR PLAN AND DIMENSIONS. DO NOT SCALE DIMENSIONS.

9. ANY DEVIATIONS FROM SPECIFIED PLUMBING FIXTURES AND LISTED IN FIXTURE SCHEDULE SHALL OBTAIN PRIOR APPROVAL FROM THE OWNER'S REPRESENTATIVE/UROR.

COORDINATION

10. IT WILL BE THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR TO ENSURE THAT ITEMS TO BE FURNISHED UNDER PLUMBING CONTRACT WILL FIT THE SPACE AVAILABLE. PLUMBING CONTRACTOR SHALL MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS, INCLUDING THOSE FOR CONNECTIONS AND SHALL FURNISH AND INSTALL SUCH SIZES AND SHAPES OF EQUIPMENT THAT ARE THE TRUE INTENT OF THE DRAWINGS AND SPECIFICATIONS.

11. PLUMBING CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL PRIME CONTRACTORS PRIOR TO INSTALLATION OF HIS WORK.

12. MECHANICAL DUCTWORK SHALL HAVE RIGHT-OF-WAY OVER ALL PLUMBING PIPES AND ELECTRICAL CONDUITS.

13. PLUMBING CONTRACTOR SHALL COORDINATE WITH EQUIPMENT SHELTERS.

INSTALLATION

14. ALL PLUMBING LINES ARE TO BE RECESSED WITHIN THE WALL CAVITIES UNLESS SPECIFICALLY NOTED OTHERWISE ON PLANS.

15. ALL PLUMBING FIXTURES SHALL BE NEATLY CALKED WITH SILICONE COMPOUND WHERE FIXTURE MEETS WALL.

16. ALL PIPES PASSING THROUGH FLOOR SLAB OR WALLS SHALL BE INSTALLED WITH FOAM RUBBER INSULATION.

17. PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL A BACKFLOW PREVENTER OR VACUUM BREAKER AT ALL FIXTURE CONNECTIONS AND AS REQUIRED BY LOCAL CODES AT ANY POINT WHERE THERE IS DANGER OF NON-POTABLE WATER COMING IN CONTACT WITH THE POTABLE WATER SYSTEM OR ANY DANGER OF BACK-FLOW. COORDINATE WITH LOCAL INSPECTOR.

18. WHERE TUBING PASSES BEHIND STUCCO, PLASTER OR AREAS WHERE STAPLES ARE USED, IT SHALL BE PROTECTED BY CONTINUOUS SLEEVE OR APPROVED SHIELD THAT IS TWICE THE DIAMETER OF THE TUBING BEING PROTECTED.

20. PLUMBING CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR APPROVED FLOOR PLAN AND DIMENSIONS. DO NOT SCALE PLUMBING DRAWINGS.

DWY PIPING

21. INSTALL ALL THREADED CLEANOUT PLUGS WITH PIPE DOPE TO ALLOW EASY REMOVAL IN THE FUTURE.

22. ALL INDIRECT WASTE LINES SHALL HAVE A MINIMUM OF 2" AIR GAP OR TWICE THE EFFECTIVE DRAIN DIAMETER (WHICH EVER IS LARGER) WHERE IT TERMINATES AT THE RECEPTOR.

23. ALL HUB/FLOOR/TRENCH DRAINS AND FLOOR SINKS SHALL BE PROVIDED WITH DEEP SEAL TRAPS.

24. SET TOP RIM OF ALL IN-FLOOR FIXTURES (DRAINS, FLOOR SINKS, CLEAN-OUTS, ETC.) FLUSH WITH FINISHED FLOOR UNLESS DRAWINGS EXPLICITLY SPECIFY OTHERWISE.

25. CLEANOUTS LOCATED IN TRAFFIC-BEARING AREAS SHALL BE INSTALLED WITH A VEHICLE TRAFFIC BEARING BOX. THE BOX SHALL BE SET IN CONCRETE SLAB, EXTENDING AT LEAST 12" FROM THE PERIMETER OF THE CLEANOUT. THE SLAB SHALL BE NOT LESS THAN 6" THICK. THE CONCRETE SHALL BE NOT LESS THAN 2,500 PSI.

WATER PIPING

26. PLUMBING CONTRACTOR SHALL INSTALL SHOCK ABSORBERS/WATER HAMMER ARRESTORS TO MEET ALL STATE AND LOCAL CODE REQUIREMENTS.

27. PLUMBING CONTRACTOR SHALL INSTALL WATER SUPPLY PIPES SO THAT NO PIPE JOINTS ARE UNDER FLOOR SLAB- ALL JOINTS WILL BE ABOVE THE FLOOR IN ACCESSIBLE WALLS.

28. ALL NEW HOT AND COLD WATER PIPING IN WALLS, ABOVE CEILING, AND EXPOSED SHALL BE INSULATED WITH AN INSULATION HAVING A MAXIMUM K FACTOR OF 0.27. THICK CLOSED CELL PLASTIC TYPE INSULATION SIMILAR TO JOHNS-MANVILLE "AEROTUBE". INSULATE FITTINGS CONTINUOUSLY, BUT DO NOT INSULATE VALVE BODIES, NOR FIXTURE SUPPLIES.

a. LONGITUDINAL SEAMS SHALL BE SEALED.
b. LATERAL SEAMS (BUTT JOINTS) SHALL BE SEALED ON COLD WATER PIPES ONLY.
c. THICKNESS SHALL BE 1/2" FOR COLD WATER PIPES UP TO 1-1/4" AND 1" FOR COLD WATER PIPES 1-1/2" AND GREATER.
d. THICKNESS SHALL BE 1" MIN. FOR ALL HOT WATER PIPES.

P.C. SHALL INSTALL ALL DOMESTIC HOT AND COLD WATER PIPING LOCATED IN EXTERIOR WALLS AND CEILING ON HEATED SIDE OF THE INSULATION.
P.C. SHALL CLOSELY COORDINATE PIPING INSTALLATION WITH GENERAL CONTRACTOR AND VERIFY NO BUILDING INSULATION IS COMPROMISED IN EXTERIOR WALLS.

29. HOT AND COLD WATER PIPING ABOVE GROUND SHALL BE TYPE "L" HARD DRAWN COPPER TUBING ASSEMBLED WITH WROUGHT SWEAT FITTINGS. BRANCH PIPING MAY BE CROSS-LINKED POLYETHYLENE (PEX-0) TUBING AND ASTM F-1969 COLD EXPANSION FITTINGS. ALL WATER PIPING BELOW GRADE OR BELOW CONCRETE SLAB SHALL BE TYPE "K" COPPER TUBING, JOINTS IN COPPER TUBING SHALL BE WITH SILVER SOLDER SIMILAR OR EQUAL TO SIL-PHOS.

30. ALL VALVES SHALL BE SAME SIZE AS PIPING SERVED (MIN).

GAS PIPING

31. PLUMBING CONTRACTOR SHALL SUPPLY AND INSTALL GAS PIPING AS SHOWN ON PLANS. ALL GAS PIPING SHALL COMPLY WITH LOCAL CODES. PLUMBING CONTRACTOR SHALL MAKE FINAL CONNECTIONS TO ALL GAS EQUIPMENT. INSTALL REGULATORS AT EQUIPMENT WHERE REQUIRED BY MANUFACTURER OR CUTS SUPPLIED BY FURNISHING CONTRACTOR.

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DRAWING: PLUMBING NOTES, LEGEND AND SCHEDULES

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