

2024 IECC COMPLIANCE REPORT - PLUMBING

MECHANICAL SYSTEMS LIST AND REQUIREMENTS

ELECTRIC TANK TYPE WATER HEATERS

GALLONS	QUANTITY	EFFICIENCY	MINIMUM REQUIRED EFFICIENCY	CIRCULATION PUMP?
20	1	...	NO MINIMUM APPLIES	YES

☒

WITH CIRCULATING PUMP: ALL PIPING IN CIRCULATING SYSTEM IS INSULATED WITH MINIMUM 1" INSULATION HAVING A CONDUCTIVITY NOT EXCEEDING 0.27 BTU PER INCH/HXSQFTX°F

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CIRCULATING PUMPS SHALL BE ARRANGED TO TURN OFF EITHER AUTOMATICALLY OR MANUALLY WHEN THERE IS LIMITED HOT WATER DEMAND

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WITHOUT CIRCULATING PUMP: THE FIRST 8 FEET OF PIPING IN NON CIRCULATING SYSTEMS SHALL BE INSULATED WITH 0.5" OF MATERIAL HAVING A CONDUCTIVITY NOT EXCEEDING 0.27 BTU PER INCH/HXSQFTX°F

☒

HOT WATER STORAGE TEMPERATURE CONTROLS THAT ALLOW SETPOINT OF 90°F FOR NON-DWELLING UNITS AND 110°F FOR DWELLING UNITS

☐

HEAT TRAPS PROVIDED ON INLET AND OUTLET OF STORAGE TANKS

☒

OUTLET TEMPERATURE AT LAVATORIES IN PUBLIC FACILITY RESTROOMS SHALL BE LIMITED TO 104°F

COMPLIANCE STATEMENT:

THE PROPOSED MECHANICAL DESIGN REPRESENTED IN THIS DOCUMENT IS CONSISTENT WITH THE BUILDING PLANS, SPECIFICATIONS AND OTHER CALCULATIONS SUBMITTED WITH THIS PERMIT APPLICATION. THE PROPOSED MECHANICAL SYSTEMS HAVE BEEN DESIGNED TO MEET THE 2024 IECC, SECTION C404 AND TABLE C404.2 AND TO COMPLY WITH THE MANDATORY REQUIREMENTS IN THE REQUIREMENTS CHECKLIST.

MATT MOERTL

NAME

TITLE

SIGNATURE

05/25/26

DATE

PLUMBING LEGEND

WASTE PIPING -----

EX-WASTE PIPING -----

COLD WATER -----

EX-COLD WATER -----

HOT WATER -----

HOT WATER RETURN -----

VENT PIPING -----

E = EXISTING

⊠ = SHUT-OFF-VALVE (SOV)

● = POINT OF CONNECTION

○ = NEW TO EXISTING

PIPE SIZING CHART

PIPE SIZE	GPM	FIXTURE UNITS
1/2"	2	2
3/4"	6	7
1"	14	20

TRAPARM SCHEDULE

SIZE OF TRAP (INCHES)	SLOPE (INCH PER FOOT)	DISTANCE IN IN FEET FROM TRAP TO VENT
1 1/4"	1/4	5
1 1/2"	1/4	6
2"	1/4	8
3"	1/8	12
4" & LARGER	1/8	16

WASTE & VENT DIAGRAM

NTS

HOT & COLD WATER DIAGRAM

NTS

WATER CALCULATIONS

QUANTITY	FIXTURE	LOAD VALUE		TOTAL LOAD VALUE VALUE	TOTAL FIXTURE UNITS
		COLD	HOT		
1	WC (FLUSH TANK)	5	-	5	5
1	LAVATORY	1.5	1.5	2	2
1	MDP SINK	2.25	2.25	2	3
2	DRINKING FOUNTAIN	0.25	-	0.25	0.5

NUMBER OF EXISTING FIXTURE UNITS = 21.5

NUMBER OF NEW FIXTURE UNITS = 10.5

NUMBER OF POSSIBLE FUTURE FIXTURE UNITS = 343.0

TOTAL NUMBER OF FIXTURE UNITS = 375.0 @ 100 GPM

PRESSURE @ METER = 65 PSI - 10 PSI (BFP) - 10 PSI (ML) = 45 PSI

USE EXISTING 1-1/2" WATER METER

45 - [25 + (15 x .43)] = 13.55 PSI

ALLOWABLE LOSS/100 FEET: 5.23 PSI PER SHELL DRAWINGS

PLUMBING CONTRACTOR TO VERIFY AND COORDINATE EXACT STREET PRESSURE AND NOTIFY ENGINEER OF ANY DISCREPANCIES.

PLUMBING CONTRACTOR TO PROVIDE A PRESSURE REDUCING VALVE (PRV) ON CUSTOMER SIDE OF WATER METER IF THE STREET PRESSURE EXCEED 80 PSI, PRV TO BE SET @ 80 PSI

THE PLUMBING CONTRACTOR TO VERIFY THAT A REDUCED PRESSURE BACKFLOW ASSEMBLY IS EXISTING. IF ONE IS NOT EXISTING, PLUMBING CONTRACTOR TO PROVIDE AND INSTALL A WATTS #LF909 OR EQUAL REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER SAME SIZE AS WATER METER BETWEEN WATER METER AND BUILDING. BACKFLOW PREVENTER SHALL BE READILY ACCESSIBLE FOR INSPECTION.

* BEFORE THE LOCAL JURISDICTION WILL ACCEPT AN INSTALLED BACKFLOW DEVICE FOR APPROVAL, THE FOLLOWING MUST BE ACCOMPLISHED. THE DEVICE MUST BE TESTED BY A STATE CERTIFIED BACKFLOW TESTER AND TEST RESULTS FORWARDED TO THE LOCAL JURISDICTION BACKFLOW SPECIALIST. THE LOCAL JURISDICTION WILL PROVIDE AN UP-TO-DATE LIST OF CERTIFIED TESTERS FROM WHICH TO BE SELECTED. TESTER FEES WILL BE AT THE EXPENSE OF THE INSTALLER.*

PLUMBING FIXTURE SCHEDULE

PLUMBING CONTRACTOR SHALL COORDINATE AMPERAGE, VOLTAGE AND PHASE OF ALL EQUIPMENT WITH ELECTRICAL CONTRACTOR PRIOR TO ORDERING ANY EQUIPMENT.

WH-WATER HEATER	20 GALLON/4,500 WATT @ 208v SINGLE PHASE/GLASSLINED/LOWBOY A.O. SMITH #DEL-20/PROVIDE w/TEMPERATURE CONTROLS, SAFEPAN AND WATER LEAK DETECTION SYSTEM
CP-CIRC PUMP	TACO #005-SF2/1/35 HP/120V SINGLE PHASE/ALL STAINLESS STEEL/ PROVIDE WITH TACO AQUASTAT OR EQUAL
ET-EXPANSION TANK	AMTRQL #ST-S/2.0 GALLON CAPACITY/3/4" CONNECTION
EDF-ELEC. DRINKING FOUNTAIN	DUAL LEVEL WITH BOTTLE FILLER AND FILTER/STAINLESS STEEL/ELKAY #LZSTL8VSSP/8 GPH/4.8 FLA/115V SINGLE PHASE/ADA COMPLIANT
MS-MDP SINK	FLR MTD/24" X 24" X 10"/MOLDED STONE/FIAT #MSB-2424 COMPLETE w/ CHICAGO FAUCETS #897-RCF SUPPLY/TILING FLANGE, 20 GA S.S. BACKSPASH PANELS, RUBBER HOSE, PAIL HOOK, THREADED SPOUT, STRAINER, VAC BRKR AND MDP HANGER.
AWC-WATER CLOSET	FLOOR MOUNTED/TANK TYPE/VIT CHINA/ELONG BOWL/AMERICAN STANDARD PLASTIC OPEN FRDNT SEAT/ADA COMPLIANT/1.6 GPF
LAV-LAVATORY	WALL MOUNTED/VIT CHINA/19" X 17"/AMERICAN STANDARD "LUCERNE" #0356.015 COMPLETE w/ SYMONDS #S-244 FAUCET w/ BRISTLEBLADE HANDLES, SELF RIM, TAILPIECE, P-TRAP AND CARRIER/ADA COMPLIANT/0.5 GPM/ PROVIDE WITH THERMOSTATIC MIXING VALVE SET AT 104°F
FD-FLOOR DRAIN	J.R. SMITH #2010-A-U w/ TRAP GUARD
TG-TRAP GUARD	PROVIDE TRAP GUARD OR DEEP SEAL TRAP IF APPROVED BY MUNICIPALITY. IF NOT APPROVED PROVIDE PPP INC PRIME-RITE AUTOMATIC TRAP PRIMER, #PR-500. PROVIDE 1" AIR GAP WITH 1" RECEPTACLE WITH 1/2" DISCHARGE TO TRAP

PLUMBING NOTES

(ALL WORK DONE TO BE IN COMPLIANCE WITH 2024 IPC, IECC AND CURRENT CITY AMENDMENTS)

GENERAL

1) PLUMBING CONTRACTOR SHALL SEAL ALL PIPE PENETRATIONS ON RATED FLOOR, CEILING, WALL AND ROOF WITH U.L. LISTED MATERIALS.

2) SUITE IS IN EXISTING SINGLE STORY BUILDING.

3) PLBR TO SCAUT AND PATCH EXISTING CONCRETE FLOOR AS REQUIRED. COORDINATE w/GENERAL CONTRACTOR.

4) SUBMITTALS SHALL BE PROVIDED FOR ALL PLUMBING EQUIPMENT.

5) CONTRACTOR SHALL VERIFY SCALE OF DRAWINGS WITH ARCHITECTURAL DRAWINGS BEFORE SUBMITTING ANY BID.

ABBREVIATIONS

1) PDC = POINT OF CONNECTION

CO = WALL CLEANOUT

VTR = VENT THRU ROOF

SDV = SHUT OFF VALVE

2) PLUMBING FIXTURES TO HAVE THE FOLLOWING MAXIMUM RATE OF FLOW

WC = 1.6 GAL PER FLUSH

LAV = 0.5 GPM

WASTE

1) DRAIN WASTE & VENT: IAPMO APPROVED ABS OR PVC PIPE AND FITTINGS.

2) SLOPE ALL SEWER 3" & LARGER @ 1X (1/8" PER FOOT), UNLESS OTHERWISE NOTED.

3) SLOPE ALL SEWER 2" & SMALLER @ 2X (1/4" PER FOOT)

4) EACH CLEAN OUT SHALL BE READILY ACCESSIBLE AND SO LOCATED AS TO SERVE ITS INTENDED PURPOSE.

5) OFFSET ALL PLUMBING VENTS MINIMUM 10'-0" AWAY FROM ANY OUTSIDE AIR INTAKES. REFER TO MECHANICAL DRAWINGS AND COORDINATE WITH MECHANICAL CONTRACTOR.

6) ALL VENT PIPING, WATER PIPING, ETC. PENETRATING ROOF SHALL BE PROPERLY FLASHED WITH MINIMUM 26 GAUGE GALVANIZED STEEL CAULKED TO PIPING AND EXTENDED 6" INTO ROOFING. COORDINATE WITH GENERAL CONTRACTOR & ROOFING SUB-CONTRACTOR.

7) TEST ALL WASTE PIPING PRIOR TO BACKFILL AND CONCEALMENT. CONTRACTOR SHALL CALL FOR INSPECTION AND WITNESS TESTING PRIOR TO CONCEALING WASTE PIPING.

WATER

1) POTABLE WATER: TYPE "L" HARD COPPER ABOVE SLAB, TYPE "L" SOFT COPPER BELOW SLAB WITH LEAD FREE SILVER SOLDER. EXCEPTION: IAPMO APPROVED PVC MAY BE UTILIZED FOR BURIED COLD WATER LINES, OUTSIDE STRUCTURE, IN ACCORDANCE WITH IAPMO INSTALLATION STANDARDS.

2) WATER DISTRIBUTION PIPE SHALL CONFORM TO NSF 61 AND SHALL BE A LISTED STANDARD IN IPC TABLE 605.5

3) WRAP HOT WATER AND DRAIN PIPING FROM HANDICAPPED LAVATORY TO WALL WITH PLUMBEREX HANDY SHIELD SAFETY COVER OR OTHER EQUAL ASTM E84 CLASS A MATERIAL WITH A MAXIMUM 25 FLAME/450 SMOKE SAFETY COVERS OR EQUAL INSULATION AS REQUIRED PER HANDICAPPED REQUIREMENTS. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES.

4) WATER PIPING INSULATION SHALL BE 1" WITH A CONDUCTIVITY NOT EXCEEDING 0.27 BTU PER INCH/HR FT2 F.

5) INSULATE ALL HOT WATER (105°F-140°F) PIPING AS FOLLOWS:
MINIMAL PIPE SIZE INSULATION THICKNESS
1/2" TO 1-1/4" 1"
6) PIPING INSULATION FOR 105-140° FAHRENHEIT SHALL HAVE A CONDUCTIVITY OF 0.21-0.27 BTU PER INCH/(HR* FT2* FAHRENHEIT).

CONDENSATE

1) COORDINATE WITH MECHANICAL CONTRACTOR TERMINATION OF ALL A/C CONDENSATE DRAINS.

FIXTURES

1) ALL FIXTURES APPLIANCES AND APPURTENANCES SHALL HAVE SHUT-OFF VALVES.

MECHANICAL
DESIGNS

5635 E. Thomas Road Phoenix, AZ 85018

Job No: 21339

Consulting Engineers

Phone (602) 943-6808

Web: MechDesigns.com

IRKAA

ARCHITECTS

2333 EAST THOMAS ROAD, PHOENIX, ARIZONA 85016

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MAJOR PROJECTS

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PLUMBING NOTES & DIAGRAMS

DATE : 05-08-26

BROOKLYN BEDDING

PAD 5B - SUITES 101 AND 102 AT PASEO LINDO SHOPPING CENTER

NEC OF ARIZONA AVE AND OCOTILLO RD.

CHANDLER, AZ

design by: MB

drawn by: MB

checked by: JG

P200

project #: 26102.00