ELECTRIC TANK WATER HEATER SCHEDULE

MARK	TYPE	LOCATION	SERVICE	CAPACITY (GAL)	KW	RECOVERY AT 100 DEG F RISE (GPH)	ELECTRICAL V / PH / HZ	WEIGHT (LBS)	BASIS OF DESIGN
DWH-1	TANK	OFFICE	OFFICE AREA	15	2.5	10	208 / 3 / 60	58	A.O. SMITH DEL-15

NOTES:
1. PROVIDE MANFACTURER'S DISCONNECT.
2. PROVIDE ASSE 1070 ANTI-SCALD PROTECTION MIXING VALVE ON HEATER DISCHARGE (SET TO 110 DEG F DISCHARGE).
3. PROVIDE VACCUM BREAKER ON CW CONNECTION TO TAKE.
4. PROVIDE T&P RELIEF PIPED TO DRAIN
5. PROVIDE HOLDRITE CEILING MOUNT.

PLUMBING FIXTURE SCHEDULE

MARK	DESCRIPTION	PIPE SIZES					BASIS OF DESIGN		NOTES
		CW	HW	SAN	VENT	STORM	MANUFACTURER	MODEL	
DF-1	**DRINKING FOUNTAIN**	**1/2**	**1/2**	**1-1/2**	**1**	**-**	**ELKAY**	**EZH20**	**1**
FCO	**FLOOR CLEAN OUT**	**-**	**-**	**-**	**-**	**-**	**WATTS**	**CO-1200-R**	**2**
FD	FLOOR DRAIN	-	-	4	-	-	WATTS	FD-100	11
LAV-1	LAVATORY	1/2	1/2	1-1/2	1	-	AMERICAN STANDARD	LUCERNE	3,4
MS-1	MOP SINK	1/2	1/2	3	1-1/2	-	FIAT	MSB 2424	5
S-1	PANTRY SINK	1/2	1/2	1-1/2	1	-	DAYTON	KINGSFORD	6,7
WC-1	WATER CLOSET	1	-	4	2	-	AMERICAN STANDARD	CADET	8
RD	ROOF DRAIN	-	-	-	-	VARIES	JAY R SMITH	1330	12
-	WATER HAMMER ARRESTOR		-	-	-	-	WATTS	LF15M2	9
-	TRAP PRIMER	-	-	1/2	-	-	PPP	LTP-1500	10

NOTES:

1. ELECTRIC BOTTLE FILLER WITH BI-LEVEL ADA FILTERED COOLER, 1.1-1.5 GPM LAMINAR FLOW BOTTLE FILLER, 3,000 GALLON NSF/ANSI 42 AND 53 CERTIFIED FILTER, NSF/ANSI 61 AND 372 CERTIFIED LOW LEAD DESIGN. PROVIDE WIRE RECESSED DUPLEX OUTLET PER MANUFACTURER'S INSTRUCTIONS (115 V / 5 FLA).
2. EPOXY COATED CAST IRON, WITH 5" DIA. ADJUSTABLE, ROUND, STAINLESS STEEL TOP.
3. WALL HUNG, VITREOUS CHINA, ADA, NOMINAL 15" WIDE BOWL, WITH AMERICAN STANDARD PARADIGM SELECTRONIC 0.35 GPM, WATERSENSE LISTED, PRESSURE COMPENSATING, LAMINAR SPRAY, BATTERY POWERED FAUCET. PROVIDE MANUFACTURER'S OPTIONAL ASSE 1070 THERMOSTATIC MIXING VALVE CERTIFIED DOWN TO 0.35 GPM (SET TO 110 F OUTLET TEMPERATURE).
4. PROVIDE HANDY SHIELD DRAIN COVER #3011, WHITE, ON ALL SINKS WITH EXPOSED SUPPLY/DRAIN PIPING.
5. MOLDED STONE BASIN, STAINLESS STEEL DRAIN BODY WITH STAINLESS STEEL DOME STRAINER AND LINT BASKET. PROVIDE MANUFACTURER'S CHROME PLATED SERVICE FAUCET WITH VACUUM BREAKER, INTEGRAL STOPS, ADJUSTABLE WALL BRACE, PAIL HOOK, AND 3/4" HOSE THREAD ON SPOUT.
6. TOP MOUNT, ADA, SINGLE BOWL 6" DEEP, #23 GAUGE, NICKEL-BEARING STAINLESS STEEL WITH SLOAN OPTIMA SENSOR 0.5 GPM BATTERY POWERED FAUCET.
7. PROVIDE ASSE 1070 THERMOSTATIC MIXING VALVE CERTIFIED DOWN TO 0.5 GPM (SET TO 110 F OUTLET TEMPERATURE).
8. FLOOR MOUNT, VITREOUS CHINA, ADA, ELONGATED BOWL, OPEN FRONT SEAT, TANK TYPE, 1.28 GPF.
9. ASSE 1010 CERTIFIED, PDI LISTED, FACTORY CHARGED AND PERMANENTLY SEALED. SIZE AND LOCATE PER MANUFACTURERS INSTRUCTIONS AT ALL FAST CLOSING VALVES.
10. PROVIDE FOR ONE LAVATORY IN EACH RESTROOM WITH A FLOOR DRAIN.
11. EPOXY COATED CAST IRON, PRIMARY AND SECONDARY WEEPHOLES, WITH 6" DIA. ADJUSTABLE, ROUND, HEEL PROOF, NICKEL BRONZE STAINER.
12. ROOF DRAIN WITH DOME, CAST IRON BODY.

EXPANSION TANK SCHEDULE

MARK	SERVICE	TANK TYPE	TANK VOLUME (GAL)	MAX. OPERATING PRESSURE (PSIG)	HEIGHT	DIAMETER	BASIS OF DESIGN
ET-1	DWH-1	DIAPHRAGM	2.1	150	11.6"	8"	FLEXCON PH 5

NOTE: ADJUST FACTORY PRE-CHARGE PRESSURE TO BE EQUAL TO MAXIMUM OPERATIONAL WATER STATIC PRESSURE.

DOMESTIC HOT WATER RECIRCULATION PUMP SCHEDULE

MARK	TYPE	LOCATION	SERVICE	GPM	HEAD (FT)	HP	V / PH / HZ	BASIS OF DESIGN
RP-1	INLINE CIRCULATOR	OFFICE	DWH-1	1	15	0.03	120 / 1 / 60	TACO 006

SUMP PUMP SCHEDULE

MARK	TYPE	SERVICE	GPM	HEAD (FT)	HP	V / PH / HZ	BASIS OF DESIGN
SP-1	ELEVATOR SUMP PUMP	ELEVATOR PIT	50	15	0.6	120 / 1 / 60	LIBERTY ELVFL63
SP-2	ELEVATOR SUMP PUMP	ELEVATOR PIT	50	15	0.6	120 / 1 / 60	LIBERTY ELVFL63

NOTE: PROVIDE PUMP WITH INTEGRAL OIL DETECTOR WITH REMOTE ALARM.

PLUMBING SPECIFICATIONS

1. SECTION 220517 - SLEEVES AND SLEEVE SEALS FOR PLUMBING PIPING
2. CAST-IRON PIPE SLEEVES: CAST OR FABRICATED OF CAST OR DUCTILE IRON AND EQUIVALENT TO DUCTILE-IRON PRESSURE PIPE, WITH PLAIN ENDS AND INTEGRAL WATERSTOP COLLAR.
3. SLEEVE-SEAL SYSTEMS: MODULAR SEALING-ELEMENT UNIT, DESIGNED FOR FIELD ASSEMBLY, FOR FILLING ANNULAR SPACE BETWEEN PIPING AND SLEEVE. DESIGNED TO FORM A HYDROSTATIC SEAL OF 20 PSIG. SEALING ELEMENTS: EPDM-RUBBER INTERLOCKING LINKS SHAPED TO FIT SURFACE OF PIPE. STAINLESS STEEL PRESSURE PLATES, NUTS AND BOLTS.
4. ASTM C1107/C1107M, GRADE B, POST-HARDENING AND VOLUME-ADJUSTING, DRY, HYDRAULIC-CEMENT GROUT. DESIGN MIX: 5000-PSI, 28-DAY COMPRESSIVE STRENGTH.
5. INSTALL SLEEVES FOR PIPING PASSING THROUGH PENETRATIONS IN FLOORS, PARTITIONS, WALLS, AND ROOFS.
6. INSTALL SLEEVE-SEAL SYSTEM FOR PENETRATIONS THROUGH BELOW GRADE CONCRETE WALLS.

2. SECTION 220518 - ESCUTCHEONS FOR PLUMBING PIPING
1. ONE-PIECE, STEEL TYPE: WITH POLISHED, CHROME-PLATED FINISH AND SETSCREW FASTENER.
2. INSTALL ESCUTCHEONS FOR PIPING PENETRATIONS OF WALLS, CEILINGS, AND FINISHED FLOORS

3. SECTION 220519 - METERS AND GAGES FOR PLUMBING PIPING
1. METAL-CASE, COMPACT-STYLE, LIQUID-IN-GLASS THERMOMETERS. ASME B40.200. CAST ALUMINUM 6 INCH NOMINAL SIZE. TUBE: GLASS WITH MAGNIFYING LENS AND BLUE ORGANIC LIQUID. ACCURACY: PLUS OR MINUS 1 PERCENT OF SCALE RANGE OR ONE SCALE DIVISION, TO A MAXIMUM OF 1.5 PERCENT OF SCALE RANGE.
2. DIRECT-MOUNTED, METAL-CASE, DIAL-TYPE PRESSURE GAGES. STANDARD: ASME B40.100. CASE: LIQUID FILLED, 4-1/2 INCH NOMINAL DIAMETER. DIAL: NONREFLECTIVE ALUMINUM WITH PERMANENTLY ETCHED SCALE MARKINGS GRADUATED IN PSI. ACCURACY: GRADE A, PLUS OR MINUS 1 PERCENT OF MIDDLE HALF OF SCALE RANGE.
3. SNUBBERS: ASME B40.100, BRASS; WITH NPS 1/4 ASME B1.20.1 PIPE THREADS AND PISTON-TYPE SURGE-DAMPENING DEVICE. INCLUDE EXTENSION FOR USE ON INSULATED PIPING.
4. VALVES: BRASS BALL, WITH NPS 1/4 ASME B1.20.1 PIPE THREADS.
5. INSTALL VALVE AND SNUBBER IN PIPING FOR EACH PRESSURE GAGE FOR FLUIDS.
6. INSTALL PRESSURE GAUGES AT BUILDING WATER SERVICE ENTRANCE, INLET AND OUTLET OF EACH PRESSURE REDUCING VALVE AND HOT WATER RECIRCULATION PUMP.
7. INSTALL THERMOMETERS AT INLET AND OUTLET OF EACH DOMESTIC HOT WATER STORAGE TANK.
8. ADJUST FACES OF METERS AND GAGES TO PROPER ANGLE FOR BEST VISIBILITY.

4. SECTION 220523.12 - BALL VALVES FOR PLUMBING PIPING
1. OBTAIN EACH TYPE OF VALVE FROM SINGLE SOURCE FROM SINGLE MANUFACTURER. ASME B16.18 FOR SOLDER-JOINT CONNECTIONS. NSF COMPLIANCE: NSF 61 AND NSF 372 FOR VALVE MATERIALS FOR POTABLE-WATER SERVICE. VALVE PRESSURE-TEMPERATURE RATINGS: NOT LESS THAN INDICATED AND AS REQUIRED FOR SYSTEM PRESSURES AND TEMPERATURES. VALVE SIZES: SAME AS UPSTREAM PIPING UNLESS OTHERWISE INDICATED. HANDLEVER: FOR QUARTER-TURN VALVES SMALLER THAN NPS 4. INCLUDE 2-INCH STEM EXTENSIONS FOR VALVES IN INSULATED PIPING.
2. BRASS BALL VALVES, TWO-PIECE WITH FULL PORT AND BRASS TRIM, THREADED OR SOLDERED ENDS. STANDARD: MSS SP-110 OR MSS SP-145. CWP RATING: 600 PSIG.

5. SECTION 220523.14 - CHECK VALVES FOR PLUMBING PIPING
1. CERTIFICATION THAT PRODUCTS COMPLY WITH NSF 61. SOURCE LIMITATIONS FOR VALVES: OBTAIN EACH TYPE OF VALVE FROM SINGLE SOURCE FROM SINGLE MANUFACTURER. ASME B16.18 FOR SOLDER JOINT. VALVE PRESSURE-TEMPERATURE RATINGS: NOT LESS THAN INDICATED AND AS REQUIRED FOR SYSTEM PRESSURES AND TEMPERATURES. VALVE SIZES: SAME AS UPSTREAM PIPING UNLESS OTHERWISE INDICATED.
2. BRONZE SWING CHECK VALVES WITH BRONZE DISC, CLASS 125. STANDARD: MSS SP-80, TYPE 3. CWP RATING: 200 PSIG.

6. SECTION 220529 - HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT
1. CARBON-STEEL PIPE HANGERS AND SUPPORTS. DESCRIPTION: MSS SP-58, TYPES 1 THROUGH 58, FACTORY-FABRICATED COMPONENTS. GALVANIZED METALLIC COATINGS: PREGALVANIZED, HOT-DIP GALVANIZED, OR ELECTRO-GALVANIZED. HANGER RODS: CONTINUOUS-THREAD ROD, NUTS, AND WASHER MADE OF CARBON STEEL.
2. TRAPEZE PIPE HANGERS. DESCRIPTION: MSS SP-58, TYPE 59, SHOP- OR FIELD-FABRICATED PIPE-SUPPORT ASSEMBLY, MADE FROM STRUCTURAL-CARBON-STEEL SHAPES, WITH MSS SP-58 CARBON-STEEL HANGER RODS, NUTS, SADDLES, AND U-BOLTS.
3. THERMAL HANGER SHIELD INSERT. INSULATION-INSERT MATERIAL FOR COLD PIPING: ASTM C552, TYPE II CELLULAR GLASS WITH 100-PSIG MINIMUM COMPRESSIVE STRENGTH AND VAPOR BARRIER. INSULATION-INSERT MATERIAL FOR HOT PIPING: WATER-REPELLENT-TREATED, ASTM C533, TYPE I CALCIUM SILICATE WITH 100-PSIG MINIMUM COMPRESSIVE STRENGTH. FOR TRAPEZE OR CLAMPED SYSTEMS: INSERT AND SHIELD SHALL COVER ENTIRE CIRCUMFERENCE OF PIPE. FOR CLEVIS OR BAND HANGERS: INSERT AND SHIELD SHALL COVER LOWER 180 DEGREES OF PIPE. INSERT LENGTH: EXTEND 2 INCHES BEYOND SHEET METAL SHIELD FOR PIPING OPERATING BELOW AMBIENT AIR TEMPERATURE.

7. SECTION 220553 - IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT
1. METAL LABELS FOR EQUIPMENT: MATERIAL AND THICKNESS: ALUMINUM, 0.032-INCH MINIMUM THICKNESS, AND HAVING PREDRILLED OR STAMPED HOLES FOR ATTACHMENT HARDWARE. FASTENERS: STAINLESS-STEEL RIVETS OR SELF-TAPPING SCREWS.
2. PIPE LABELS: PRETENSIONED PIPE LABELS: PRECOILED, SEMIRIGID PLASTIC FORMED TO COVER FULL CIRCUMFERENCE OF PIPE AND TO ATTACH TO PIPE WITHOUT FASTENERS OR ADHESIVE. PIPE LABEL CONTENTS: INCLUDE IDENTIFICATION OF PIPING SERVICE USING SAME DESIGNATIONS OR ABBREVIATIONS AS USED ON DRAWINGS; ALSO INCLUDE PIPE SIZE AND AN ARROW INDICATING FLOW DIRECTION.
3. LOCATE PIPE LABELS WHERE PIPING IS EXPOSED OR ABOVE ACCESSIBLE CEILINGS IN FINISHED SPACES; MACHINE ROOMS; ACCESSIBLE MAINTENANCE SPACES SUCH AS SHAFTS, TUNNELS, AND PLENUMS; AND EXTERIOR EXPOSED LOCATIONS AS FOLLOWS: NEAR EACH BRANCH CONNECTION, EXCLUDING SHORT TAKEOFFS FOR FIXTURES AND TERMINAL UNITS. WHERE FLOW PATTERN IS NOT OBVIOUS, MARK EACH PIPE AT BRANCH. NEAR PENETRATIONS AND ON BOTH SIDES OF THROUGH WALLS, FLOORS, CEILINGS, AND INACCESSIBLE ENCLOSURES. SPACED AT MAXIMUM INTERVALS OF 50 FEET ALONG EACH RUN. REDUCE INTERVALS TO 25 FEET IN AREAS OF CONGESTED PIPING AND EQUIPMENT.
4. DOMESTIC WATER PIPING: BACKGROUND: SAFETY GREEN. LETTER COLORS: WHITE.
5. SANITARY WASTE AND STORM DRAINAGE PIPING: BACKGROUND COLOR: SAFETY BLACK. LETTER COLOR: BLACK

8. SECTION 220719 - PLUMBING PIPING INSULATION
1. DOMESTIC COLD WATER: FLEXIBLE ELASTOMERIC: 1/2 INCH THICK.
2. DOMESTIC HOT AND RECIRCULATED HOT WATER 1-1/4 AND SMALLER: MINERAL-FIBER, PREFORMED PIPE INSULATION, TYPE I: 1/2 INCH THICK.
3. DOMESTIC HOT AND RECIRCULATED HOT WATER 1-1/2 AND LARGER: MINERAL-FIBER, PREFORMED PIPE INSULATION, TYPE I: 1-1/2 INCH THICK.
4. STORMWATER AND OVERFLOW: FLEXIBLE ELASTOMERIC: 1 INCH THICK.
5. SANITARY DRAIN PIPING WITHIN 10 FEET OF DRAIN RECEIVING CONDENSATE AND EQUIPMENT DRAIN WATER BELOW 60 DEG F: FLEXIBLE ELASTOMERIC: 3/4 INCH THICK.
6. OUTDOOR ABOVE GRADE DOMESTIC WATER PIPING: MINERAL-FIBER, PREFORMED PIPE INSULATION, TYPE I: 1 INCH THICK.
7. EXPOSED PIPING JACKET: PVC 20 MILS THICK.
8. INSTALL INSULATION CONTINUOUSLY THROUGH WALL AND FLOOR PENETRATIONS.
9. FLEXIBLE ELASTOMERIC: CLOSED-CELL, SPONGE- OR EXPANDED-RUBBER MATERIALS. COMPLY WITH ASTM C534/C534M, TYPE I FOR TUBULAR MATERIALS.
10. MINERAL-FIBER, PREFORMED PIPE: MINERAL OR GLASS FIBERS BONDED WITH A THERMOSETTING RESIN. COMPLY WITH ASTM C547. PREFORMED PIPE INSULATION: TYPE I, GRADE A WITH FACTORY-APPLIED ASJ.
11. FLEXIBLE ELASTOMERIC AND POLYOLEFIN ADHESIVE: SOLVENT-BASED ADHESIVE. SERVICE TEMPERATURE RANGE: 40 TO 200 DEG.
12. MINERAL-FIBER ADHESIVE: COMPLY WITH MIL-A-3316C, CLASS 2, GRADE A.
13. VAPOR-RETARDER MASTIC, WATER BASED: SUITABLE FOR INDOOR USE ON BELOW-AMBIENT SERVICES. WATER-VAPOR PERMEANCE: COMPLY WITH ASTM E96/E96M OR ASTM F1249. APPLY TO ALL INSULATION SEEMS ON COLD WATER PIPING.
14. ASJ TAPE: WHITE VAPOR-RETARDER TAPE MATCHING FACTORY-APPLIED JACKET WITH ACRYLIC ADHESIVE, COMPLYING WITH ASTM C1136.
15. SECUREMENTS: STAPLES: OUTWARD-CLINCHING INSULATION STAPLES, NOMINAL 3/4-INCH WIDE, STAINLESS STEEL OR MONEL.

9. SECTION 221116 - DOMESTIC WATER PIPING
1. UNDER-BUILDING-SLAB, DOMESTIC WATER, BUILDING-SERVICE PIPING, NPS 3 AND SMALLER, SHALL BE SOFT COPPER TUBE, ASTM B88, TYPE K; WROUGHT-COPPER, SOLDER-JOINT FITTINGS. SOLDER FILLER METALS: ASTM B32, LEAD-FREE ALLOYS.
2. UNDER-BUILDING-SLAB, COMBINED DOMESTIC WATER, BUILDING-SERVICE, AND FIRE-SERVICE-MAIN PIPING NPS 6 TO NPS 12, SHALL BE PLAIN-END, DUCTILE-IRON PIPE; GROOVED-JOINT, DUCTILE-IRON-PIPE APPURTENANCES; AND GROOVED JOINTS. AWWA C151/A21.51. GLANDS, GASKETS, AND BOLTS: AWWA C111/A21.11, DUCTILE- OR GRAY-IRON GLANDS, RUBBER GASKETS, AND STEEL BOLTS.
3. ABOVEGROUND DOMESTIC WATER PIPING, NPS 2 AND SMALLER SHALL BE HARD COPPER TUBE, ASTM B88, TYPE L CAST- OR WROUGHT- COPPER, SOLDER-JOINT FITTINGS; AND SOLDERED JOINTS. SOLDER FILLER METALS: ASTM B32, LEAD-FREE ALLOYS.
4. ABOVEGROUND DOMESTIC WATER PIPING, NPS 2-1/2 TO NPS 4 SHALL BE GALVANIZED-STEEL PIPE AND NIPPLES; GALVANIZED, GRAY-IRON THREADED FITTINGS; AND THREADED JOINTS. ASTM A53/A53M.
5. DIELECTRIC FITTINGS FOR NPS 2-1/2 TO NPS 4: USE DIELECTRIC FLANGE KITS.
6. ADJUST BALANCING VALVES IN HOT-WATER-CIRCULATION RETURN PIPING TO PROVIDE ADEQUATE FLOW. REMOVE AND CLEAN STRAINER SCREENS. CAP AND SUBJECT PIPING TO STATIC WATER PRESSURE OF 50 PSIG ABOVE OPERATING PRESSURE, WITHOUT EXCEEDING PRESSURE RATING OF PIPING SYSTEM MATERIALS. ISOLATE TEST SOURCE AND ALLOW IT TO STAND FOR FOUR HOURS. LEAKS AND LOSS IN TEST PRESSURE CONSTITUTE DEFECTS THAT MUST BE REPAIRED.
7. PURGE NEW PIPING AND PARTS OF EXISTING PIPING THAT HAVE BEEN ALTERED, EXTENDED, OR REPAIRED BEFORE USING. USE PURGING AND DISINFECTING PROCEDURES DESCRIBED IN EITHER AWWA C651 OR AWWA C652.
8. POTABLE-WATER PIPING AND COMPONENTS SHALL COMPLY WITH NSF 14, NSF 61, AND NSF 372.
9. WROUGHT-COPPER, SOLDER-JOINT FITTINGS: ASME B16.22, PRESSURE FITTINGS.
10. CAP AND SUBJECT PIPING TO STATIC WATER PRESSURE OF 50 PSIG ABOVE OPERATING PRESSURE, WITHOUT EXCEEDING PRESSURE RATING OF PIPING SYSTEM MATERIALS. ISOLATE TEST SOURCE AND ALLOW IT TO STAND FOR FOUR HOURS. LEAKS AND LOSS IN TEST PRESSURE CONSTITUTE DEFECTS THAT MUST BE REPAIRED. REPAIR LEAKS AND DEFECTS WITH NEW MATERIALS, AND RETEST PIPING OR PORTION THEREOF UNTIL SATISFACTORY RESULTS ARE OBTAINED.
11. FLUSH PIPING SYSTEM WITH CLEAN, POTABLE WATER UNTIL DIRTY WATER DOES NOT APPEAR AT OUTLETS. FILL SYSTEM OR PART THEREOF WITH WATER/CHLORINE SOLUTION WITH AT LEAST 50 PPM OF CHLORINE. ISOLATE WITH VALVES AND ALLOW TO STAND FOR 24 HOURS. FLUSH SYSTEM WITH CLEAN, POTABLE WATER UNTIL NO CHLORINE IS IN WATER COMING FROM SYSTEM AFTER THE STANDING TIME. REPEAT PROCEDURES IF BIOLOGICAL EXAMINATION SHOWS CONTAMINATION.

10. SECTION 221119 - DOMESTIC WATER PIPING SPECIALTIES
1. DOMESTIC WATER PIPING SPECIALTIES INTENDED TO CONVEY OR DISPENSE WATER FOR HUMAN CONSUMPTION ARE TO COMPLY WITH THE SDWA, REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION, AND NSF 61 AND NSF 372, OR TO BE CERTIFIED IN COMPLIANCE WITH NSF 61 AND NSF 372 BY AN AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)-ACCREDITED THIRD-PARTY CERTIFICATION BODY THAT THE WEIGHTED AVERAGE LEAD CONTENT AT WETTED SURFACES IS LESS THAN OR EQUAL TO 0.25 PERCENT.
2. MINIMUM WORKING PRESSURE FOR DOMESTIC WATER PIPING SPECIALTIES: 125 PSIG UNLESS OTHERWISE INDICATED.
3. ATMOSPHERIC-TYPE VACUUM BREAKERS. STANDARD: ASSE 1001.
4. HOSE-CONNECTION VACUUM BREAKERS. STANDARD: ASSE 1011. BODY: BRONZE, NONREMOVABLE, WITH MANUAL DRAIN. OUTLET CONNECTION: GARDEN-HOSE THREADED COMPLYING WITH ASME B1.20.7.
5. WATER PRESSURE-REDUCING VALVES. STANDARD: ASSE 1003. PRESSURE RATING: INITIAL WORKING PRESSURE OF 150 PSIG. BODY: BRONZE.
6. MEMORY-STOP BALANCING VALVES. STANDARD: MSS SP-110 FOR TWO-PIECE, COPPER-ALLOY BALL VALVES. PRESSURE RATING: 400-PSIG MINIMUM CWP.
7. WATER-TEMPERATURE LIMITING DEVICES. STANDARD: ASSE 1070. PRESSURE RATING: 125 PSIG. TYPE: THERMOSTATICALLY CONTROLLED, WATER MIXING VALVE. ACCESSORIES: CHECK STOPS ON HOT- AND COLD-WATER SUPPLIES, AND ADJUSTABLE, TEMPERATURE-CONTROL HANDLE.
8. Y-PATTERN STRAINERS. PRESSURE RATING: 125 PSIG. BODY: BRONZE FOR NPS 2 AND SMALLER; CAST IRON WITH INTERIOR LINING THAT COMPLIES WITH AWWA C550 FOR NPS 2-1/2 AND LARGER. SCREEN: STAINLESS STEEL WITH ROUND 0.020 INCH PERFORATIONS FOR STRAINERS NPS 2 AND SMALLER, 0.045 INCH PERFORATIONS FOR STRAINERS NPS 2-1/2 – NPS 4 AND SMALLER.
9. NONFREEZE, HOT- AND COLD-WATER WALL HYDRANTS. STANDARD: ASME A112.21.3M FOR EXPOSED-OUTLET, SELF-DRAINING WALL HYDRANTS. PRESSURE RATING: 125 PSIG. CASING AND OPERATING RODS: OF LENGTH REQUIRED TO MATCH WALL THICKNESS. INCLUDE WALL CLAMPS. BOX: DEEP, FLUSH MOUNTED WITH COVER. NONREMOVABLE, MANUAL-DRAIN-TYPE, HOSE-CONNECTION VACUUM BREAKER COMPLYING WITH ASSE 1011 OR BACKFLOW PREVENTER COMPLYING WITH ASSE 1052. GARDEN-HOSE THREAD COMPLYING WITH ASME B1.20.7 ON OUTLET.
10. BALL-VALVE-TYPE, HOSE-END DRAIN VALVES. STANDARD: MSS SP-110 FOR STANDARD-PORT, TWO-PIECE BALL VALVES.
11. WATER-HAMMER ARRESTERS. STANDARD: ASSE 1010 OR PDI-WH 201. PISTON OR DIAPHRAGM TYPE. SIZE: ASSE 1010, SIZES AA AND A THROUGH F, OR PDI-WH 201, SIZES A THROUGH F.

11. SECTION 221316 - SANITARY WASTE AND VENT PIPING
1. ABOVEGROUND SOIL, WASTE, AND VENT PIPING SHALL BE SOLID WALL PVC PIPE, PVC SOCKET FITTINGS, AND SOLVENT CEMENTED JOINTS. COMPLY WITH NSF 14, "PLASTICS PIPING SYSTEMS COMPONENTS AND RELATED MATERIALS," FOR PLASTIC PIPING COMPONENTS. INCLUDE MARKING WITH "NSF-DWV" FOR PLASTIC DRAIN, WASTE, AND VENT PIPING AND "NSF-SEWER" FOR PLASTIC SEWER PIPING. SOLID-WALL PVC PIPE: ASTM D 2665, DRAIN, WASTE, AND VENT. PVC SOCKET FITTINGS: ASTM D 2665, MADE TO ASTM D 3311, DRAIN, WASTE, AND VENT PATTERNS AND TO FIT SCHEDULE 40 PIPE.
2. UNDERGROUND SOIL, WASTE, AND VENT PIPING SHALL BE SOLID WALL PVC PIPE, PVC SOCKET FITTINGS, AND SOLVENT CEMENTED JOINTS. COMPLY WITH NSF 14, "PLASTICS PIPING SYSTEMS COMPONENTS AND RELATED MATERIALS," FOR PLASTIC PIPING COMPONENTS. INCLUDE MARKING WITH "NSF-DWV" FOR PLASTIC DRAIN, WASTE, AND VENT PIPING AND "NSF-SEWER" FOR PLASTIC SEWER PIPING. SOLID-WALL PVC PIPE: ASTM D 2665, DRAIN, WASTE, AND VENT. PVC SOCKET FITTINGS: ASTM D 2665, MADE TO ASTM D 3311, DRAIN, WASTE, AND VENT PATTERNS AND TO FIT SCHEDULE 40 PIPE.
3. TEST WASTE AND VENT PIPING EXCEPT OUTSIDE LEADERS ON COMPLETION OF ROUGHING-IN. CLOSE OPENINGS IN PIPING SYSTEM AND FILL WITH WATER TO POINT OF OVERFLOW, BUT NOT LESS THAN 10-FOOT HEAD OF WATER, FROM 15 MINUTES BEFORE INSPECTION STARTS TO COMPLETION OF INSPECTION, WATER LEVEL MUST NOT DROP. INSPECT JOINTS FOR LEAKS.
4. AFTER PLUMBING FIXTURES HAVE BEEN SET AND TRAPS FILLED WITH WATER, TEST CONNECTIONS AND PROVE THEY ARE GASTIGHT AND WATERTIGHT. PLUG VENT-STACK OPENINGS ON ROOF AND BUILDING DRAINS WHERE THEY LEAVE BUILDING. INTRODUCE AIR INTO PIPING SYSTEM EQUAL TO PRESSURE OF 1-INCH WG. USE U-TUBE OR MANOMETER INSERTED IN TRAP OF WATER CLOSET TO MEASURE THIS PRESSURE. AIR PRESSURE MUST REMAIN CONSTANT WITHOUT INTRODUCING ADDITIONAL AIR THROUGHOUT PERIOD OF INSPECTION. INSPECT PLUMBING FIXTURE CONNECTIONS FOR GAS AND WATER LEAKS.
5. COMPONENTS AND INSTALLATION SHALL BE CAPABLE OF WITHSTANDING THE FOLLOWING MINIMUM WORKING PRESSURE UNLESS OTHERWISE INDICATED: SOIL, WASTE, AND VENT PIPING: 10-FOOT HEAD OF WATER.
6. PIPING MATERIALS SHALL BEAR LABEL, STAMP, OR OTHER MARKINGS OF SPECIFIED TESTING AGENCY.

12. SECTION 221319 - SANITARY WASTE PIPING SPECIALTIES
1. CAST-IRON EXPOSED FLOOR CLEANOUTS. STANDARD: ASME A112.36.2M FOR ADJUSTABLE HOUSING. FRAME AND COVER MATERIAL AND FINISH: NICKEL-BRONZE, COPPER ALLOY.

13. SECTION 221413 - FACILITY STORM DRAINAGE PIPING
1. ABOVEGROUND STORM DRAINAGE PIPING. SERVICE CLASS, CAST-IRON SOIL PIPE AND FITTINGS; GASKETS; AND GASKETED JOINTS.
2. UNDERGROUND STORM DRAINAGE PIPING. SERVICE CLASS, CAST-IRON SOIL PIPE AND FITTINGS; GASKETS; AND GASKETED JOINTS.
3. TEST STORM DRAINAGE PIPING ON COMPLETION OF ROUGHING-IN. CLOSE OPENINGS IN PIPING SYSTEM AND FILL WITH WATER TO POINT OF OVERFLOW, BUT NOT LESS THAN 10-FOOT HEAD OF WATER. FROM 15 MINUTES BEFORE INSPECTION STARTS UNTIL COMPLETION OF INSPECTION, WATER LEVEL MUST NOT DROP. INSPECT JOINTS FOR LEAKS.
4. PIPE AND FITTINGS: MARKED WITH CISPI COLLECTIVE TRADEMARK AND NSF CERTIFICATION MARK. CLASS: ASTM A 74, SERVICE CLASS. GASKETS: ASTM C 564, RUBBER.

PLUMBING GENERAL NOTES

1. COMPLY WITH THE FOLLOWING CODES AND STANDARDS:
·2018 INTERNATIONAL BUILDING CODE
·2018 INTERNATIONAL PLUMBING CODE
·2018 INTERNATIONAL ENERGY CONSERVATION CODE
2. DRAWINGS ARE DIAGRAMMATIC AND NOT ALL APPURTENANCES ARE SHOWN. ALLOW FOR ADDITIONAL PIPE OFFSETS, AS REQUIRED. PROVIDE ALL MATERIALS AND LABOR TO PROVIDE A COMPLETE AND OPERABLE SYSTEM IN ACCORDANCE WITH THE CONTRACT DRAWINGS, SPECIFICATIONS, AND AUTHORITY HAVING JURISDICTION.
3. COORDINATE INSTALLATION OF WORK WITH ALL OTHER TRADES.
4. COORDINATE SIZE AND LOCATIONS OF ALL FLOOR, WALL, AND ROOF OPENINGS REQUIRED TO INSTALL THE WORK WITH ALL TRADES.
5. COORDINATE PIPING LAYOUT WITH OPENINGS IN STRUCTURAL BEAMS, WALLS, ELEMENTS, ETC.
6. COORDINATE REQUIREMENTS FOR PROVISION OF MOTOR STARTERS, DISCONNECTS, CONTACTORS, CONTROL WIRING, ETC. AS REQUIRED FOR A PROPER FUNCTIONING SYSTEM WITH THE ELECTRICAL AND CONTROLS CONTRACTORS.
7. MAINTAIN A SET OF COORDINATION DRAWINGS AT THE JOB SITE THAT ACCOUNTS FOR ALL TRADES. REVIEW THE COORDINATION DRAWINGS, COORDINATE WITH ALL TRADES, AND RESOLVE ANY POTENTIAL CONFLICTS PRIOR TO INSTALLING ANY PORTION OF WORK.
8. SUBMIT WRITTEN REQUEST FOR INFORMATION WHERE CONSTRUCTABILITY ISSUES ARE ENCOUNTERED IN THE FIELD. PROVIDE A FULL DESCRIPTION OF THE ISSUE AND RECOMMENDED SOLUTIONS. INCLUDE SKETCHES FOR EACH OPTION ALONG WITH ANY ASSOCIATED CHANGE ORDER COST ESTIMATES.
9. ANY DEVIATIONS FROM THE DRAWINGS MUST BE APPROVED IN WRITING BY THE ENGINEER OF RECORD. ANY CHANGES OR MODIFICATIONS MADE WITHOUT CONSENT MAY RESULT IN WORK BEING REMOVED AND INSTALLED ACCORDING TO THE PLANS.
10. SPECIFICATIONS AND DRAWINGS ARE COMPLEMENTARY AND MUST BE USED IN COMBINATION TO OBTAIN COMPLETE CONSTRUCTION INFORMATION. SUBMIT WRITTEN REQUEST FOR INFORMATION IF ANY DISCREPANCIES BETWEEN SPECIFICATION AND DRAWINGS ARE FOUND.
11. PROVIDE ONLY NEW MATERIALS AND EQUIPMENT FROM REPUTABLE MANUFACTURERS REGULARLY ENGAGED IN THE MANUFACTURE OF SUCH PRODUCTS. PERFORM ALL WORK IN A PROFESSIONAL MANNER BY WORKERS SKILLED IN THE TYPE OF WORK BEING PERFORMED.
12. KEEP THE WORK SITE AND SURROUNDING AREA FREE FROM ACCUMULATION OF WASTE MATERIALS GENERATED BY WORK PERFORMED UNDER THIS CONTRACT. REMOVE CONSTRUCTION DEBRIS FROM THE WORK SITE DAILY AND DISPOSE OF IT IN A LEGAL MANNER.
13. PROVIDE WARRANTY FOR ALL WORK (MATERIALS, LABOR, AND EQUIPMENT) FOR A PERIOD OF ONE YEAR COMMENCING WITH THE DATE OF ACCEPTANCE OF ALL WORK BY THE OWNER UNLESS OTHERWISE NOTED IN THE SPECIFICATIONS.
14. OBTAIN ALL LICENSES AND PERMITS REQUIRED BY STATE AND LOCAL JURISDICTIONAL AUTHORITIES FOR PERFORMANCE OF WORK.
15. MAINTAIN A RED LINE SET OF RECORD DRAWINGS AT THE JOB SITE THAT REFLECT ACTUAL EXECUTION OF THE WORK INCLUDING UPDATED EQUIPMENT SCHEDULES, DETAILS, CONTROLS DIAGRAMS AND SEQUENCES AND LOCATIONS OF EQUIPMENT, PIPING, AND DUCTWORK. PROVIDE THESE DRAWINGS IN CAD AND PDF FORMAT TO THE OWNER (AS-BUILT DRAWINGS).

PLUMBING INSTALLATION NOTES

16. COMPLETE ALL TESTS BEFORE ANY INSULATION IS APPLIED.
17. UNLESS OTHERWISE NOTED INSTALL ALL PIPING OVERHEAD TIGHT TO STRUCTURE ABOVE.
18. DO NOT CLOSE IN WALLS OR CEILINGS PRIOR TO INSPECTION BY ENGINEER OR OWNER'S REPRESENTATIVE. PROVIDE CLEAR UNOBSTRUCTED ACCESS TO WORK AND ANY LIFTS OR LADDERS NEEDED FOR INSPECTIONS. DURING INSPECTIONS PROVIDE PERSONNEL FAMILIAR WITH THE WORK AND TECHNICAL REQUIREMENTS OF THE WORK TO WALK THE ENGINEER/OWNER'S REPRESENTATIVE THROUGH THE WORK TO BE INSPECTED, DESCRIBE PROGRESS, AND ANSWER QUESTIONS. MAINTAIN A RECORD OF WORK INSPECTED AND COORDINATE WITH ENGINEER/OWNER'S REPRESENTATIVE ON PROGRESS OF INSPECTION UNTIL COMPLETION. SCHEDULE INSPECTIONS WITH ENGINEER/OWNER'S REPRESENTATIVE A MINIMUM OF 2 WEEKS PRIOR.
19. LOCATE PRESSURE, TEMPERATURE, AND FLOW MEASURING DEVICES IN ACCESSIBLE LOCATIONS WITH STRAIGHT SECTIONS OF DUCT/PIPE UPSTREAM/DOWNSTREAM IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
20. THE PRODUCT OF A SINGLE MANUFACTURER SHALL BE USED FOR EACH ITEM OF THE SAME EQUIPMENT TYPE.
21. CONFORM TO ASTM 315 AND ACI 318 FOR REINFORCEMENT, DETAILING, AND PLACEMENT OF CONCRETE. CONCRETE SHALL CONFORM TO ASTM C94. CONCRETE WORK SHALL CONFORM TO ACI 318, PART ENTITLED "CONSTRUCTION REQUIREMENTS." COMPRESSIVE STRENGTH IN 28 DAYS SHALL BE 3,000 PSI. TOTAL AIR CONTENT OF EXTERIOR CONCRETE SHALL BE BETWEEN 5 AND 7 PERCENT BY VOLUME. SLUMP SHALL BE BETWEEN 3 AND 4 INCHES. CONCRETE SHALL BE CURED FOR 7 DAYS AFTER PLACEMENT.
22. INSTALL ALL CONTROL WIRE IN CONDUIT. CONTROL WIRE AND CONDUIT SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE AND THE ELECTRICAL SPECIFICATIONS.
23. PROVIDE ACCESS PANELS/DOORS IN CEILINGS, WALLS, AND FLOORS FOR ALL ITEMS REQUIRING ADJUSTMENT, TESTING, OR INSPECTION INCLUDING VALVES, STRAINERS, SENSORS, TRAP PRIMERS, WATER HAMMER ARRESTORS, CLEANOUTS, ETC.
24. ATTACH PIPING, EQUIPMENT, ETC. SUPPORTS TO STEEL BAR JOISTS, TRUSSES, OR JOIST GIRDERS AT PANEL POINTS. PROVIDE BEAM CLAMPS MEETING MSS STANDARDS. DO NOT SUPPORT WORK FROM METAL DECKS.
25. PROVIDE UL LISTED PENETRATION ASSEMBLIES WHERE PIPES PENETRATE FIRE/SMOKE RATED PARTITIONS THAT MAINTAIN THE FIRE/SMOKE RESISTANCE RATING.
26. PROVIDE SLEEVES AT ALL FLOOR, WALL, AND ROOF PENETRATIONS.
27. ALL PRODUCTS LOCATED IN PLENUM AREAS SHALL HAVE A MAXIMUM FLAME SPREAD INDEX OF 25 AND A MAXIMUM SMOKE DEVELOPED INDEX OF 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84 OR ANSI/UL 723.
28. SEAL ALL PENETRATIONS OF SLAB-TO-SLAB PARTITIONS AND SHAFTS AIRTIGHT TO PRESERVE RETURN AIR PATHWAYS.
29. ALL PIPE SIZES SHOWN ARE NOMINAL SIZES.

PLUMBING EQUIPMENT INSTALLATION NOTES

30. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURERS' INSTRUCTIONS AND PER CONTRACT DRAWINGS AND SPECIFICATIONS. IF MANUFACTURERS' INSTRUCTIONS ARE IN DIRECT CONFLICT WITH INSTRUCTIONS ON THE DRAWINGS OR IN THE SPECIFICATIONS CONTACT THE ENGINEER OF RECORD FOR CLARIFICATION.
31. COORDINATE WORK WITH OTHER TRADES TO PROVIDE ALL CLEARANCES FOR EQUIPMENT SERVICE AND MAINTENANCE INCLUDING ACCESS TO PANELS, CONTROLS, VALVING, ETC., VERIFY PHYSICAL DIMENSIONS OF EQUIPMENT TO ENSURE THAT ALL CLEARANCES CAN BE MET BEFORE PURCHASING EQUIPMENT.
32. COORDINATE EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS, PROVIDE ALL PIPE TRANSITIONS AS REQUIRED TO CONNECT TO EQUIPMENT.
33. PROVIDE VIBRATION ISOLATION FOR ALL EQUIPMENT TO PREVENT TRANSMISSION OF VIBRATION TO BUILDING STRUCTURE.
34. PROVIDE EQUIPMENT DRAIN LINES TO NEAREST DRAIN, PIPE SIZE SHALL BE NO SMALLER THAN DRAIN CONNECTION SIZE.
35. PROVIDE EQUIPMENT WITH MANUFACTURER'S INTEGRAL DISCONNECT AND POWER RECEPTACLE UNLESS OTHERWISE NOTED.
36. PROVIDE FULL SET OF LAMINATED AS-BUILT SCHEMATIC CONTROL DIAGRAMS, SEQUENCES, POINTS LISTS, AND WIRING DIAGRAMS IN MECHANICAL ROOM PROVIDE THE SAME ON INSIDE DOOR OF EACH CONTROL PANEL FOR THAT PANEL'S EQUIPMENT.
37. ALL EQUIPMENT SHALL HAVE ENGRAVED NAMEPLATE REFLECTING EQUIPMENT CAPACITIES, EITHER PROVIDED BY MANUFACTURER OR CONTRACTOR. NAMEPLATE SHALL BE READILY VISIBLE AND UNOBSTRUCTED.

PLUMBING PIPING NOTES

38. SOME ACCESS DOORS, ISOLATION VALVES, ETC. ARE INDICATED ON DRAWINGS FOR CLARITY FOR SPECIFIC LOCATION REQUIREMENTS BUT DO NO INDICATE THE EXTENT OF THE REQUIREMENTS FOR THESE ITEMS.
39. THE LOCATION OF EXISTING UNDERGROUND/SUB SLAB UTILITIES IS APPROXIMATE. VERIFY THE EXACT LOCATION OF UTILITIES BEFORE BEGINNING WORK.
40. COORDINATE WITH SITE CONTRACTOR FOR CONNECTION TO SITE UTILITIES PRIOR TO INSTALLATION.
41. SCOPE OF WORK FOR UNDERGROUND PIPING EXTENDS TO A POINT APPROXIMATELY 5 FEET OUTSIDE THE BUILDING FOOTPRINT UNLESS OTHERWISE INDICATED.
42. PROVIDE VIBRATION ISOLATION AT PIPING SUPPORTS WITHIN 50 FEET OF EQUIPMENT THAT REQUIRES VIBRATION ISOLATION.
43. PROVIDE FLEXIBLE CONNECTIONS TO PUMPS AND OTHER EQUIPMENT WHICH REQUIRES VIBRATION ISOLATION.
44. ELEVATIONS SHOWN ON THE DRAWINGS ARE TO THE UNDERSIDE OF ALL PRESSURE PIPING AND TO THE INVERT OF ALL GRAVITY PIPING UNLESS OTHERWISE NOTED.
45. INSTALL UNDERGROUND PIPING BELOW THE FROST LINE AND A MINIMUM OF 36 INCHES BELOW GRADE.
46. ADJUST ALL VALVES FOR SMOOTH AND EASY OPERATION.
47. PROVIDE DRAIN VALVES WITH CAPPED HOSE END CONNECTIONS AT ALL LOW POINT AND AS REQUIRED TO COMPLETELY DRAIN THE PIPING SYSTEM.
48. INSTALL PIPING SO THAT ALL VALVES, STRAINERS, CLEANOUTS, UNIONS, AND OTHER APPURTENANCES REQUIRING MAINTENANCE ARE ACCESSIBLE.
49. PROVIDE ISOLATION VALVES AND UNIONS OR FLANGES AT PIPING CONNECTIONS TO EQUIPMENT, PUMPS, AND OTHER COMPONENTS REQUIRING MAINTENANCE TO ALLOW FOR REMOVAL.
50. PROVIDE BALANCE VALVES AND BUTTERFLY VALVES WITH POSITION INDICATORS AND MAXIMUM ADJUSTABLE STOPS (MEMORY STOPS) INSTALL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDED LENGTH OF STRAIGHT UPSTREAM AND DOWNSTREAM PIPE.
51. PROVIDE CHAINWHEEL OPERATORS FOR ALL VALVES IN EQUIPMENT ROOMS GREATER THAN 7 FEET ABOVE THE FLOOR, EXTEND CHAIN TO 7 FEET ABOVE THE FLOOR.
52. ALL VALVES AND STRAINERS SHALL MATCH THE CONNECTING PIPE SIZE BEFORE REDUCING IN SIZE TO MAKE CONNECTION TO EQUIPMENT.
53. PROVIDE A LINE SIZE STRAINER UPSTREAM OF ALL BACKFLOW PREVENTION VALVES AND PUMPS, PROVIDE AN ISOLATION VALVE ON EACH SIDE OF STRAINER.
54. PROVIDE ESCUTCHEON PLATES FOR EXPOSED WALL, CEILING, AND FLOOR PIPE PENETRATIONS AND PAINT EXPOSED PIPING IN FINISHED ROOMS.
55. PROVIDE ALUMINUM VALVE TAGS AND LAMINATED VALVE SCHEDULE IN MECHANICAL ROOM, ALSO INCLUDE VALVE SCHEDULE IN AS-BUILT DRAWINGS.
56. PROVIDE DIELECTRIC FLANGES OR NIPPLES AT CONNECTIONS OF DISSIMILAR PIPE.
57. SUPPORT PIPING SYSTEMS AND PROTECT AGAINST PHYSICAL DAMAGE AND EXCESSIVE STRESSES IN ACCORDANCE WITH MSS SP-58, PIPE HANGERS AND SUPPORTS - MATERIALS, DESIGN, MANUFACTURE, SELECTION, APPLICATION, AND INSTALLATION.
58. PRESSURE TEST, CLEAN, FLUSH, AND DISINFECT ALL PIPING BEFORE PUTTING INTO SERVICE.
59. PIPE RISERS SHALL BE ARCHITECTURALLY ENCLOSED UNLESS OTHERWISE NOTED.
60. INSTALL DRAINS AT THE LOW POINTS OF ROOFS, AREAWAYS, AND FLOORS, UNLESS OTHERWISE NOTED.
61. PROVIDE SHUT-OFF VALVES IN WATER SUPPLY PIPE FOR EACH INDIVIDUAL FIXTURE/EQUIPMENT. PROVIDE SHUT-OFF VALVES IN BRANCH SUPPLY PIPE LOCATED NEAR THE MAIN WHERE BRANCH SERVES TWO OR MORE FIXTURES.
62. WASTE PIPE SHALL SLOPE DOWNWARD IN THE DIRECTION OF FLOW A MINIMUM OF 1/8 INCH PER FOOT UNLESS OTHERWISE NOTED. VENT PIPE SHALL SLOPE UPWARD TOWARD THE DISCHARGE POINT ON THE ROOF A MINIMUM OF 1/8 INCH PER FOOT UNLESS OTHERWISE NOTED.
63. PROVIDE CLEANOUTS FOR HORIZONTAL STORM AND WASTE AT EVERY CHANGE IN DIRECTION, NEAR THE BASE OF STACKS, AT THE ENDS OF RUNS, AND AT 50-FOOT INTERVALS, MINIMUM.
64. CLEANOUT SIZE SHALL MATCH THE SIZE OF THE CONNECTED PIPE FOR PIPE SIZES UP TO SIX INCHES. PROVIDE SIX-INCH CLEANOUTS FOR PIPE SIZES LARGER THAN SIX INCHES.
65. PROVIDE TRAP PRIMER FOR ALL EMERGENCY FLOOR DRAINS OR DEEP TRAP WHERE ALLOWED BY AHJ, UNLESS OTHERWISE NOTED.
66. LOCATE ALL SANITARY VENTS A MINIMUM OF 10 FEET FROM HVAC AIR INTAKE.
67. THE DISTANCE FROM FIXTURE SUPPLY PIPE TO DOMESTIC HOT WATER MAIN SHALL NOT EXCEED 6" FOR PUBLIC LAVATORIES AND SHALL NOT EXCEED PIPE LENGTHS LISTED FOR OTHER FIXTURES PER IECC C404.5 REQUIREMENTS.
68. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS, TRANSFORMERS, OR ELECTRICAL EQUIPMENT.

PLUMBING LEGEND

PIPING SYSTEMS

——SAN——	SANITARY WASTE PIPNG
——V——	SANITARY VENT PIPING
——CW——	COLD WATER PIPING
——HW——	HOT WATER PIPING
——HWR——	HOT WATER RETURN PIPING
——ST——	PRIMARY STORM DRAIN PIPING

SYMBOLS

PIPE DOWN	BALL VALVE
PIPE UP	BUTTERFLY VALVE
FCO / COTG	GATE VALVE
END OF LINE CLEANOUT	GLOBE VALVE
END CAP	CHECK VALVE
KEYED NOTES	

UNLESS NOTED OTHERWISE, WATER AND VENT PIPING SHOWN ON PLANS ABOVE THE CEILING AND SANITARY DRAIN PIPING IS BELOW THE FLOOR

PLUMBING ABBREVIATIONS

A	COMPRESSED AIR
ADA	AMERICAN WITH DISABILITIES ACT
AFF	ABOVE FINISHED FLOOR
BFF	BELOW FINISHED FLOOR
BFP	BACKFLOW PREVENTER
BTU/H	BRITISH THERMAL UNIT PER HOUR
CW	COLD WATER
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HB	HOSE BIBB
HW	HOT WATER
HWR	HOT WATER RETURN
PSI	POUNDS PER SQUARE INCH PRESSURE
SAN	SANITARY WASTE
V	SANITARY VENT
VTR	VENT THRU ROOF
WCO	WALL CLEANOUT

PLUMBING SHEET LIST

SHEET NUMBER	SHEET NAME
P-001	PLUMBING LEGENDS AND NOTES
P-002	FIRE PROTECTION NOTES AND SPECIFICATIONS
P-101	FIRST FLOOR PLUMBING PLAN
P-102	SECOND FLOOR PLUMBING PLAN
P-103	THIRD FLOOR PLUMBING PLAN
P-104	FOURTH FLOOR PLUMBING PLAN
P-151	ROOF PLUMBING PLAN
P-401	PLUMBING ENLARGED PLANS
P-501	PLUMBING RISER DIAGRAMS

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REVISIONS

No.	Date	Description

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PLUMBING LEGENDS AND NOTES

POUGHKEEPSIE NY STORAGE

DIAMOND POINT DEVELOPMENT

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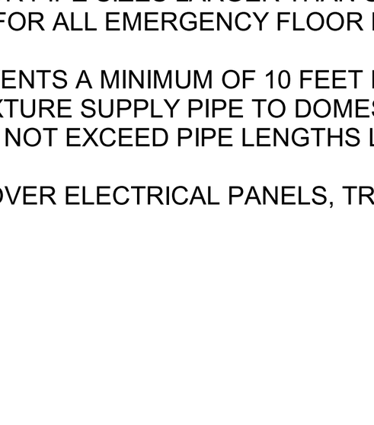

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