## PLUMBING - GENERAL NOTES NOTE: REFER TO DESIGN DOCUMENTS, SPECS., OR THE BOOK SPEC. FOR ADDITIONAL NOTES. ALL NOTES FOUND ON THESE DOCUMENTS WILL SUPERCEDE THE FOLLOWING NOTES SHOULD THERE BE A CONFLICT. 1. INSTALLATION AND MATERIALS OF THE SYSTEMS SHALL CONFORM TO THE REQUIREMENTS OF THE INTERNATIONAL PLUMBING CODE, OR LATEST APPLICABLE CODE, AND ANY LOCAL AUTHORITIES HAVING JURISDICTION. 2. EXCEPT WHERE EXPLICITLY INDICATED ON THE DRAWINGS, ALL PIPING SHOWN IS AS IT ACTUALLY OCCURS WITHIN THE BUILDING. PROPOSED PLUMBING WORK SHALL BE COORDINATED WITH EXISTING CONDITIONS IN ORDER TO INSURE PROPER INSTALLATION. 3. EXCEPT WHERE OTHERWISE INDICATED, HORIZONTAL SANITARY, WASTE, AND STORM WATER PIPING SHALL SLOPE AT A MINIMUM OF 1/4" PER FOOT, FOR PIPES 3" OR SMALLER. PIPES 4" AND BIGGER SHALL SLOPE AT 1/8" PER FOOT. 4. ALL PIPING SYSTEMS SHALL BE DISINFECTED AS PER ALL APPLICABLE CODE. 5. ALL PIPE PENETRATIONS THROUGH FLOORS OR FIRE-RATED PARTITIONS SHALL BE FIRE-PROOFED WITH APPROPRIATE SLEEVES, FIRE-SAFING MATERIAL, AND CAULKING. 6. CONNECTIONS BETWEEN DISSIMILAR PIPING WILL BE MADE WITH DIELECTRIC INSULATING UNIONS. 7. DOMESTIC WATER PIPING WILL BE ASTM-72, H23.1-59 TYPE L HARD DRAWN SEAMLESS COPPER WATER PIPING AS MANUFACTURED BY MULLER, CHASE, PHELPS-DODGE, CERRO, WOLVERINE, OR AN APPROVED EQUAL. IN ADDITION, FITTINGS WILL BE AS PER THE ABOVE LISTED MANUFACTURERS (IN ADDITION, NIBCO AND ARCO ARE APPROVED) AND SHALL BE WROUGHT COPPER CONSTRUCTION CONFORMING TO LATEST ANSI B16.22 EDITION. ALL PIPING SHALL BE SUITABLE FOR 150 PSIG WORKING PRESSURE. 8. SOLDERED COPPER JOINTS SHALL BE ASTM B32-72 GRADE 95/5 TIN/ANTIMONY SOLDER. 9. ALL PIPING HUNG FROM NEW/EXISTING STRUCTURE SHALL BE BE SUPPORTED WITH UL LISTED HANGERS/SUPPORTS SUITABLE FOR THE INTENDED APPLICATION. DESIGN, SELECTION, AND SPACING OF HANGERS AND SUPPORTS SHALL CONFORM TO ANSI B31.1 AND MSS SP-69. 10. ALL NEW DOMESTIC WATER PIPING SHALL BE INSULATED WITH 1" THICKNESS PRE-FORMED FIBER PIPE INSULATION WITH NON-COMBUSTIBLE ALL-SERVICE JACKET (VAPOR BARRIER AS PROVIDED BY JOHN-MANVILLE (MICRO-LOK), ARMSTRONG (ACCUTHERM), OWENS-CORNING (ASJ), OR APPROVED EQUAL WITH A THERMAL CONDUCTIVITY FACTOR OF 0.23 BTU-IN /HR-SQ. FT. AT 75°F, A FLAME SPREAD NOT TO EXCEED 25, AND A SMOKE DEVELOPED RATING NOT TO EXCEED 50 AS PER ASTM E-84, NFPA 255, AND UL 723. ADHESIVE SYSTEMS WHICH EMPLOY RELEASE PAPER WILL NOT BE ACCEPTABLE. INSULATION SHALL BE APPLIED ACCORDING TO THE MANUFACTURERS RECOMMENDATIONS. PROVIDE PROTECTIVE GALVANIZED METAL SHIELDS AT ALL PIPING SUPPORTS; SEAL JOINTS WITH APPROVED MASTIC. 11. SANITARY/VENT PIPING SHALL BE CAST IRON PIPE, CISPI 301, HUBLESS, SERVICE WEIGHT. ALL FITTINGS WILL BE CAST IRON AND JOINTS SHALL BE NEOPRENE GASKETS AND STAINLESS-STEEL CLAMP-AND-SHIELD ASSEMBLIES. 12. STORM WATER PIPING WILL BE CAST IRON PIPING, CISPI 301, HUBLESS, SERVICE WEIGHT. FITTINGS SHALL BE CAST IRON AND JOINTS SHALL BE NEOPRENE GASKETS AND STAINLESS STEEL CLAMP—AND—SHIELD ASSEMBLIES. 13. ALL PLUMBING VENTS WITHIN A 10'-0" RADIUS OF EXHAUST VENTS SHALL BE EXTENDED TO A HEIGHT OF 3'-0" ABOVE EXHAUST VENT 14. ALL WALL FAUCETS/HOSE BIBBS SHALL BE MOUNTED 18" AFF UNLESS OTHERWISE NOTED; THESE ITEMS WILL HAVE VACUUM BREAKER AND WILL BE FREEZE-PROOF. 15. ALL WALL HYDRANTS SHALL BE MOUNTED 24" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED. 16. ALL PIPING SHALL HAVE ITS SLOPE AND INVERTS ESTABLISHED PRIOR TO INSTALLATION OF ANY PIPING; SLOPES AS REQUIRED WILL BE MAINTAINED. COORDINATE ALL PIPING WITH ALL OTHER TRADES PRIOR TO THE COMMENCEMENT OF WORK. REFER TO ARCHITECTURAL PLANS BEFORE BEGINNING ANY WORK. 17. PVC PIPING/FITTINGS SHALL BE PERMISSIBLE WHEN ALLOWED BY THE LOCAL JURISDICTION HAVING AUTHORITY. 18. ALL CORE DRILLING WILL REQUIRE THE PRIOR APPROVAL OF THE BUILDING OWNER AND A REGISTERED STRUCTURAL ENGINEER PRIOR TO THE COMMENCEMENT OF WORK. **VALVING SPECIFICATIONS** A. <u>GATE VALVES. 2-1/2" AND SMALLER</u> 1. MSS SP-80, CLASS 125, 200 PSI COLD-WORKING PRESSURE, OR CLASS 150, 300 PSI CWP; ASTM B 62 CAST-BRONZE BODY AND BONNET SOLID-BRONZE WEDGE, COPPER-SILICON ALLOY RISING RING, TEFLON-IMPREGNATED PACKING WITH BRONZE PACKING NUT, THREADED OR SOLDERED END CONNECTIONS; ALUMINUM OR MALLEABLE IRON HANDWHEEL. B. <u>BALL VALVES, 4" AND SMALLER</u> 1. MSS SP-110, CLASS 150, 600 PSI CWP, ASTM B 584 BRONZE BODY AND BONNET, 2-PIECE CONSTRUCTION; CHROME-PLATED BRASS BALL, STANDARD PORT FOR 1/2" VALVES AND SMALLER AND CONVENTIONAL PORT FOR 3/4" VALVES AND LARGER, BLOWOUT PROOF, BRONZE OR BRASS STEM; TEFLON SEATS AND SEALS; THREADED OR SOLDERED END CONN. C. <u>PLUG VALVES</u> 1. MSS SP-78, 275 PSI CWP, ASTM A 126 CAST-IRON BODY AND BONNET, CAST-IRON PLUG, BUNA N, VITON, OR TEFLON PACKING, FLANGED OR GROOVED END CONNECTIONS; SQUARE-HEAD OPERATOR AND LOOSE WRENCH. PROVIDE WITH MEMORY STOP. D. <u>GLOBE VALVES. 2-1/2" AND SMALLER</u> 1. MSS SP-80, CLASS 125, 200 PSI CWP, OR CLASS 150, 300 PSI CWP; ASTM B 62 CAST-BRONZE BODY AND SCREWED BONNET, RUBBER, BRONZE, OR TEFLON DISC, SILICON BRONZE-ALLOY STEM, TEFLON-IMPREGNATED PACKING WITH BRONZE NUT, THREADED OR SOLDERED END CONNECTIONS; AND WITH ALUMINUM OR MALLEABLE IRON HANDWHEEL. E. <u>GLOBE VALVES. 3" AND LARGER</u> 1. MSS SP-85, CLASS 125, 200 PSI CWP, ASTM A 126 CAST-IRON BODY AND BOLTED BONNET WITH BRONZE FITTINGS, RENEWABLE BRONZE 1. MSS SP-85, CLASS 125, 200 PSI CWP, ASTM A 126 CAST-IRON BODY AND BOLTED BONNET WITH BRONZE FITTINGS, RENEWABLE BRONZE 1. MSS SP-85, CLASS 125, 200 PSI CWP, ASTM A 126 CAST-IRON BODY AND BOLTED BONNET WITH BRONZE FITTINGS, RENEWABLE BRONZE SEAT AND DISC, BRASS-ALLOY STEM, OUTSIDE SCREW AND YOKE, TEFLON-IMPREGNATED PACKING WITH CAST-IRON FOLLOWER, FLANGED END CONNECTIONS; AND WITH CAST-IRON HANDWHEEL. F. <u>SWING CHECK VALVES, 2-1/2" AND SMALLER</u> 1. MSS SP-80, CLASS 125, 200 PSI CWP, OR CLASS 150, 300 PSI; HORIZONTAL SWING, Y-PATTERN, ASTM 62 CAST-BRONZE BODY AND CAP ROTATING BRONZE DISC WITH RUBBER SEAT OR COMPOSITION SEAT, THREADED OR SOLDERED END CONNECTIONS. G. <u>SWING CHECK VALVES, 3" AND LARGER</u> 1. MSS SP-71, CLASS 125, 200 PSI CWP, ASTM A 126 CAST-IRON BODY AND BOLTED CAP, HORIZONTAL-SWING BRONZE DISC, FLANGED OR GROOVED END CONNECTIONS. H. <u>BUTTERFLY VALVES</u>: NICKEL-PLATED DUCTILE IRON, ALUMINUM BRONZE OR ELASTOMER-COATED DUCTILE IRON DISC FOR CHILLED WATER SYSTEMS, ALUMINUM BRONZE OR EPOXY-COATED DUCTILE IRON DISC FOR HOT WATER SYSTEMS, EPDM SLEEVE AND STEM SEALS. I. FLANGES: ASME B16.1 FOR CAST IRON, ASME B16.5 FOR STEEL, AND ASMEB16.24 FOR BRONZE VALVES. J. THREADS: ASME B1.20.1 K. <u>SOLDER JOINTS</u>: ASME B16.18. WHERE SOLDERED END CONNECTIONS ARE USED, USE SOLDER HAVING A MELTING POINT BELOW 84°F FOR GATE, GLOBE, AND CHECK VALVES; BELOW 421°F FOR BALL VALVES. PLUMBING ABBREVIATIONS ABOVE FINISHED FLOOR FLEX FLEXIBLE UP THRU ROOF CO CLEAN OUT GALLONS PER MINUTE VENT **CONDENSATE** VENT THRU ROOF CONNECTION HOT WATER RECIRCULATION **CORRIDOR** INDIRECT WASTE EXISTING TO BE REMOVED COLD WATER PROPANE GAS PIPING EXISTING/EXISTING TO REMAIN

MAXIMUM

MINIMUM

PLUMBING

SANITARY/WASTE

REVOLUTIONS PER MINUTE

DN

EACH

FIRELINE/SPRINKLER

FIRELINE/STANDPIPE

FULL LOAD AMPERES

PLUMBING SYMBOLS	EQUIPMENTSCHEDULE														
——————————————————————————————————————				WATER 4)	WATER 1)	WATER N)	ER	IER	IER	DRAIN )	DIRECT DRAIN AFF (IN)	RAIN	Z Z	D N	
— — — — HOT WATER PIPING, RETURN				COLD W SIZE (IN)	$1 \sim 4$	$1 \sim \square$	HOT WATER SIZE (IN)	[W]	WA N	DIRECT DRAI SIZE (IN)			INDIR DRAIN SIZE (IN)	GAS PIPING SIZE (IN)	표 등
VENT	ITEM NO	OTY	EQUIPMENT CATEGORY	COL	CO   F	COLE ACH	HOT SIZE	JOT AFF	ΑÓ	OIRE SIZE	OIRE AFF	N 이 기를 하	NDI Size	GAS SIZE	МВТИН
SANITARY/WASTE	01	1	THREE COMPARTMENT SINK	0.5	36		0.5	36					(3)1.5		
	02	5	wall mounted hand sink	0.5	36		0.5	36					1.5		
— D/PD — CONDENSATE/PUMP DRAIN	03	1	GLASS WASHER				0.5						1.5		
GAS	09	1	ICE MACHINE	0.5									0.75		
CHECK VALVE W/BALL DRIP	12	1	COFFEE MAKER	0.25	39										
- <del>√</del> GAS COCK	15	1	ICE BIN		<u> </u>								1.0		
−¢——	1A	2	GAS FRYER											1.25	122
-√ \ √√ BUTTERFLY VALVE	2A	2	48" GRIDDLE	<u> </u>										0.75	81
	4A	1	GAS RANGE		<u> </u>									1.00	215
□▼	5A	2	VULCAN CONVECTION OVEN	0.5	1 2/		0.5	27					1.5	0.75	88
WATER HAMMER ARRESTOR	9A		HAND SINK	0.5	36		0.5	36					1.5		
2-WAY CONTROL VALVE	10A 11A	1	DISH WASHER TRIPLE POT SINK	0.5	36		0.5	36					1.5		
– <mark>⊼</mark> —–δ—— GLOBE VALVE	15A	1	SALAMANDER BROILER	0.3	36		0.5	36					(3)1.3	0.75	50
BALANCING VALVE	19A	<b>-</b>	MOP SINK	0.5	36		0.5	36		2.0				0.70	
CHECK VALVE, SWING-GATE	-	l	BING FIXTURE/CONNECT		1	CH			E						

SYMBOL	DESCRIPTION	WASTE	VENT	CW	HW	GAS	MODEL/REMARKS		
P1	WATER CLOSET	3"	2"	1/2"	-	_	FLOOR MOUNTED, FLUSH TANK		
P2	LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"	-	MEN'S/WOMEN'S RESTROOM		
P3	URINAL	2"	1-1/2"	3/4"	1	_	MEN'S RESTROOM		

——**©**—— PUMP

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EXISTING TO BE RELOCATED

NEW LOCATION OF EXISTING

TO BE RELOCATED

—└───Ó---- PRESSURE REDUCING VALVE

- FLOW SWITCH

---- PRESSURE GAUGE

THERMOMETER

——─── FLOOR CLEAN-OUT

ECCENTRIC REDUCER

CONCENTRIC REDUCER

SIAMESE CONNECTION

W/VACUUM BREAKER

NEW TO EXISTING

DIAMETER

CONNECTION POINT

FLOOR DRAIN/SINK

POINT OF DISCONNECT

NON-FREEZE HOSE BIBB.

- PRESSURE RELIEF VALVE

PRESSURE/TEMPERATURE RELIEF VALVE

CW, HW, HWR PIPING RISER DESIGNATION

SANITARY PIPING RISER DESIGNATION

VENT PIPING RISER DESIGNATION

- 1. PROVIDE INDIVIDUAL STOP VALVES AT ALL FIXTURES.
- 2. PROVIDE FLOOR AND WALL CLEANOUTS WHERE INDICATED ON THE PLANS, ZURN OR APPROVED EQUAL.
- 3. PROVIDE ACCESS PANELS FOR ALL SHUT-OFF VALVES IN WALLS OR ABOVE CEILING AS NEEDED.
- 4. PROVIDE TRAP PRIMER IN ALL FLOOR DRAINS.
- 3"FD: <u>FLOOR DRAIN</u> ZURN MODEL FD-2290-P, OR APPROVED EQUAL.
- WH: WATER HEATER GAS-FIRED, TANKLESS WATER HEATER WITH MAXIMUM FLOW RATE: 9.8 GPM, 199 MBH GAS INPUT, WATER FLOW SENSOR, ELECTRONIC WATER CONTROL AND BY- PASS CONTROL, CONDENSING TANKLESS ENERGY STAR QUALIFIED WATER HEATER WITH INTEGRATED RECIRCULATION PUMP, AC 120 Volts, 60 Hz, MAX: 8A FUSE: 10A DIRECT ELECTRONIC IGNITION, RINNAI MODEL NUMBER: REU-KBP3237FFUD-US, CONTROLLER CABLE NON-POLARIZED TWO-CORE CABLE, MINIMUM 22 AWG. DIRECT VENT SYSTEM DESIGNED FOR USE WITH UBBINK POLYPROPYLENE CONCENTRIC VENT, TWIN PIPE PVC/CPVC (3? AND 4? CONFIGURATIONS), OR CENTROTHERM 3? POLYPROPYLENE (WITH CENTROTHERM TWIN PIPE ADAPTER).



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PLUMBING - GEN. NOTES SPECS, ABBREVS & SYMS

09/29/16 | RELEASED FOR MEP WORK 09/27/16 | CLIENT REVIEW PRELIMS ARK DATE DESCRIPTION PROJECT NO: JERNS-001-16 09/27/16

AS NOTED

DRAWN BY: MMB | FINAL REVIEW: MMB P-1