

PLUMBING SPECIFICATIONS

1. ALL WORK AND EQUIPMENT SHALL COMPLY WITH ALL APPLICABLE LAWS, CODES, ETC., OF ALL AUTHORITIES HAVING JURISDICTION, INCLUDING BUT NOT LIMITED TO : THE INTERNATIONAL PLUMBING CODE, THE LOCAL FIRE MARSHAL, UNDERWRITERS LABORATORY (UL), IRI, FM, OSHA, AND THE NATIONAL ELECTRICAL CODE (NEC). WHERE CONTRACT DOCUMENT REQUIREMENTS ARE IN EXCESS OF CODE REQUIREMENTS, THE CONTRACT DOCUMENT SHALL GOVERN. DEVIATIONS FROM THE CONTRACT DOCUMENTS REQUIRED BY THE ABOVE AUTHORITIES SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. MODIFICATIONS REQUIRED BY THE ABOVE SAID AUTHORITIES TO BRING THE SPACE UNDER CONTRACT UP TO CODE SHALL BE MADE WITHOUT ADDITIONAL CHARGE. CONTRACTOR IS RESPONSIBLE FOR ALL ROUGH-IN, FINAL CONNECTIONS, AND PROPER INSTALLATION OF FIXTURES AND ASSOCIATED PIPING MOUNT FAUCETS, AND TO SUPPLY ANY TRAPS, VALVE FITTINGS, VACUUM BREAKERS, PRESSURE GAGES, OR PRESSURE REGULATORS REQUIRED FOR A COMPLETE INSTALLATION THAT MEETS CODE.

2. ALL SPECIFICATIONS AND DRAWINGS, I.E., ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL ARE COMPLIMENTARY AND MUST BE USED IN COMBINATION TO OBTAIN COMPLETE CONSTRUCTION INFORMATION. ANY INFORMATION CONFLICTS WITHIN THE SPECIFICATIONS AND DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION.

3. ALL PIPING SHALL RUN CONCEALED ABOVE CEILING OR IN WALL CHASE, UNLESS OTHERWISE NOTED. EXPOSED PIPING SHALL BE 3/4 INCH MINIMUM FROM ANY WALL SURFACE. EXCEPT WHERE OTHERWISE INDICATED ON THE DRAWINGS, PIPING IS SHOWN ON THE FLOOR WHERE IT ACTUALLY OCCURS IN THE BUILDING.

4. CONTRACTOR SHALL VERIFY ALL POINTS OF CONNECTION BEFORE COMMENCING WORK. CONTRACTOR SHALL COORDINATE WORK WITH EXISTING WORK AND OTHER TRADES. CONTRACTOR SHALL REMOVE ALL WASTE MATERIALS, DEBRIS, AND RUBBISH FROM SITE AND LEGALLY DISPOSE OF IT. ALL UNUSED EQUIPMENT SERVING THIS AREA SHALL BE REMOVED AND RETURNED TO THE OWNER.

5. CONTRACTOR SHALL CONFIRM THE REQUIREMENTS FOR PREMIUM TIME OR SPECIAL PROCEDURES WITH THE OWNER AND INCLUDE THE COST IN HIS BID PROPOSAL. THE CONTRACTOR, BY SUBMITTING HIS BID PROPOSAL AGREES TO ACCEPT ALL EXISTING SITE CONDITIONS NOT SPECIFICALLY EXCEPTED. ALL EXCEPTIONS SHALL BE PROVIDED IN WRITING TO THE ARCHITECT AND ENGINEER.

6. CONTRACTOR SHALL COORDINATE, PREPARE AND SUBMIT SHOP DRAWINGS TO THE ARCHITECT AND ENGINEER FOR THEIR APPROVAL. SHOP DRAWINGS TO BE SUBMITTED INCLUDE: FIXTURES, VALVES, PUMPS, WATER HEATERS, PIPING MATERIALS AND INSULATION, DRAINS, CLEANOUTS AND ALL EQUIPMENT SPECIFIED ON THESE CONTRACT DRAWINGS.

7. A SET OF MEP RECORD/COORDINATION DRAWINGS SHALL BE MAINTAINED IN THE GENERAL CONTRACTORS OFFICE AT THE JOB SITE. ACTUAL LOCATIONS OF ALL EQUIPMENT, PIPING, DUCTWORK, ETC., AND ALL DEVIATIONS OF THE WORK FROM THAT SHOWN ON THE CONTRACT DOCUMENTS SHALL BE MARKED ON THE RECORD/COORDINATION DRAWINGS. EACH TRADE SHALL REVIEW THE COORDINATION DRAWINGS AND RESOLVE ANY POTENTIAL CONFLICTS WITH OTHER TRADES PRIOR TO INSTALLING ANY PORTION OF THEIR WORK. CONTRACTOR SHALL NOT CORE, DRILL, OR CUT CONCRETE SLABS FOR ANY REASON WITHOUT THE KNOWLEDGE AND WRITTEN CONSENT OF THE STRUCTURAL ENGINEER AND THE OWNER.

8. WORK SHALL BE EXECUTED IN A GOOD WORKMANLIKE MANNER USING MECHANICS SKILLED IN THEIR RESPECTIVE TRADES. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES FOR COORDINATING THE WORK UNDER THIS CONTRACT. MAINTAIN THE CONSTRUCTION PREMISES IN A NEAT AND ORDERLY CONDITION AT THE END OF EACH WORKING DAY.

9. IN CASES OF DOUBT AS TO THE WORK INTENDED, OR IN THE EVENT OF NEED FOR EXPLANATION THEREOF, THE CONTRACTOR SHALL REQUEST SUPPLEMENTARY INSTRUCTIONS FROM THE ENGINEER. NO CHANGES ARE TO BE MADE TO THE WORK OF THIS CONTRACT WITHOUT PRIOR KNOWLEDGE AND APPROVAL OF THE ENGINEER. THE CONTRACTOR SHALL HOLD THE OWNER AND ITS CONSULTANTS HARMLESS AGAINST ALL CLAIMS AND JUDGMENTS ARISING OUT OF THE CONTRACTORS PERFORMANCE OF THE WORK OF THIS CONTRACT. THE CONTRACTOR SHALL NOT PROCEED WITH ANY WORK, WHICH HE EXPECTS ADDITIONAL COMPENSATION BEYOND THE CONTRACT AMOUNT, WITHOUT WRITTEN AUTHORIZATION FROM THE APPROPRIATE AUTHORITY. FAILURE TO OBTAIN SUCH AUTHORIZATION SHALL INVALIDATE ANY CLAIM FOR EXTRA COMPENSATION.

10. WHEREVER FIRE RATED PARTITIONS ARE PENETRATED FOR WIRE, DUCT, OR PIPE PASSAGE, SEAL PASSAGES WITH CODE APPROVED, LABORATORY TESTED AND LABELED SEALANT OF FIRE RESISTANCE RATINGS NOT LESS THAN THAT OF PENETRATED ASSEMBLY THAT WILL PREVENT PASSAGE OF FIRE AND SMOKE.

11. ALL CUTTING, DRILLING, AND PATCHING OF WALLS, FLOORS, AND/OR STRUCTURAL MEMBERS FOR THE INSTALLATION OF THE PLUMBING SYSTEMS SHALL BE PROVIDED. STRUCTURAL COMPONENTS SHALL NOT BE CUT, DRILLED, OR MODIFIED IN ANY WAY WITHOUT THE STRUCTURAL ENGINEERS REVIEW AND APPROVAL PROC.

12. SUPPORT ALL PIPING FROM STRUCTURE WITH UL LISTED HANGERS AND SUPPORTS SUITABLE FOR THE INTENDED INSTALLATION. DESIGN, SELECTION, SPACING, AND APPLICATION OF HANGERS AND SUPPORTS SHALL COMPLY WITH ANSI B31.1 AND MSS SP-89.

13. CONNECTIONS BETWEEN DISSIMILAR PIPING MATERIALS SHALL BE MADE WITH SUITABLE DIELECTRIC INSULATING UNIONS. ISOLATE COPPER PIPING FROM DISSIMILAR METALS, SUCH AS METAL STUDS AND VENT PIPING.

14. ALL PRODUCTS LOCATED WITHIN PLENUM AREAS, INCLUDING BUT NOT LIMITED TO INSULATION AND ADHESIVE SYSTEMS, SHALL HAVE A COMPOSITE FIRE HAZARD RATING NOT TO EXCEED 25 FLAME SPREAD AND 50 SMOKE DEVELOPED AS DETERMINED BY THE APPLICABLE UL OR ASTM STANDARD.

15. ALL NEW DOMESTIC WATER PIPING SHALL BE TYPE L HARD DRAWN SEAMLESS COPPER WATER TUBE OR CPVC PIPE (ASTM D2846) WITH CPVC FITTINGS AND SOLVENT WELD JOINTS. COPPER TUBE FITTINGS SHALL BE WROUGHT COPPER JOINT FITTINGS CONFORMING TO ANSI 316.22. SOLDERED COPPER JOINTS SHALL BE SOLDERED WITH LEAD FREE ASTM B32 GRADE 95T TIN-ANTIMONY SOLDER.

16. PIPING SYSTEM SHALL BE INSULATED WITH 1/2 INCH THICK HEAVY-DUTY FIBERGLASS MATERIAL WITH ALL PURPOSE NONCOMBUSTIBLE VAPOR BARRIER JACKET. INSULATION SHALL HAVE A MAXIMUM THERMAL CONDUCTIVITY FACTOR (K) OF 0.23 BTU/IN*HR*FT²*F AT 75°F. ADHESIVE SYSTEMS THAT EMPLOY RELEASE PAPER WILL NOT BE ACCEPTABLE. AS AN ACCEPTABLE ALTERNATE TO THE ABOVE INSULATION, THE CONTRACTOR MAY PROVIDE OWENS-CORNING 95SL11 DOUBLESURE JOINT INSULATION.

17. ALL NEW DOMESTIC WATER PIPING PIPING SHALL HAVE THE OPTION TO BE INSULATED WITH 3/4 INCH THICK ARMSTRONG FLEXIBLE ELASTOMERIC CLOSED CELL PIPE INSULATION OR APPROVED EQUAL. THE INSULATION SHALL HAVE A MAXIMUM THERMAL CONDUCTIVITY FACTOR (K) OF 0.28 BTU/IN*HR*FT²*F AT 75°F AND A MAXIMUM WATER PERMEABILITY OF 0.15 PER-INCH. THE PIPE INSULATION BUTT JOINTS AND LONGITUDINAL JOINTS SHALL BE SEALED WITH ARMSTRONGS 520 ADHESIVE AND THE ENTIRE INSULATION INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. ADHESIVE SYSTEMS THAT EMPLOY RELEASE PAPER WILL NOT BE ACCEPTABLE.

18. FITTINGS, VALVES, AND FLANGES SHALL BE INSULATED WITH THE SAME MATERIALS AND OF THE SAME THICKNESS AS THE ADJOINING PIPE.

19. REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY SHALL BE WATTS NO. 909-S SERIES OR APPROVED EQUAL. IF IT COMPLIES WITH THESE SPECIFICATIONS EQUIPMENT MANUFACTURED BY CLA-VAL COMPANY, FEBCO, HERSEY PRODUCTS, INC., OR WATTS REGULATION COMPANY WILL BE ACCEPTABLE. ASSEMBLY SHALL BE COMPLETE WITH STRAINER, DRAIN LINES, INLET AND OUTLET SHUT-OFF VALVES AND WATTS SERIES 'AG' AIR GAP. THE PRESSURE LOSS OVER THE ENTIRE ASSEMBLY SHALL NOT EXCEED 10 PSI AT THE DESIGN FLOW. THE SIZE OF THE ASSEMBLY SHALL NOT BE SMALLER THAN THE LINE SIZE IN WHICH IT IS INSTALLED. BACKFLOW PREVENTER ASSEMBLY SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION. PIPE RELIEF OUTLET DISCHARGE TO NEAREST FLOOR DRAIN. DO NOT INSTALL ABOVE FINISHED CEILINGS, UNLESS NOTED OR INDICATED OTHERWISE.

20. DOMESTIC WATER GATE VALVES FOR COPPER PIPING UP TO AND INCLUDING 2-1/2 INCHES SHALL BE NIBCO NO. 5-1111 OR APPROVED EQUAL, CLASS 125, 200 PSIG WOG, BRONZE BODY WITH SOLDERED ENDS, RISNG STEM, SOLID WEDGE AND SCREWED BONNET. DOMESTIC WATER GATE VALVES FOR COPPER PIPING 3 INCHES AND 4 INCHES SHALL BE CRANE NO. 465-1/2 OR APPROVED EQUAL, 200# WOG CAST IRON OS&Y VALVE WITH CLASS 125 ANSI B16.1 FLAT FACED FLANGED ENDS AND BRONZE TRIM: STEMS, DISC FACES, SEAT FACES, SEAT RINGS AND BONNET BUSHINGS CONSTRUCTED OF BRONZE. ALL OF THE ABOVE GATE VALVES SHALL BE USED FOR STOP OR ISOLATION VALVE APPLICATIONS. IN LIEU OF GATE VALVES FOR PIPING 2-1/2 INCHES AND SMALLER, NIBCO 585-70 BALL VALVES MAY BE USED.

21. GLOBE VALVES FOR COPPER PIPING UP TO AND INCLUDING 2-1/2 INCHES SHALL BE NIBCO NO. 9-235 OR APPROVED EQUAL, CLASS 150, 300# WOG, BRONZE BODY, BRONZE RISNG STEM, UNION BONNET, RENEWABLE SEAT AND SOLDERED ENDS. DOMESTIC WATER GLOBE VALVES FOR COPPER PIPING 3 INCHES AND 4 INCHES SHALL BE CRANE NO. 351 OR APPROVED EQUAL, CLASS 125, 200# WOG CAST IRON OS&Y VALVES WITH ANSI B16.1 FLANGED ENDS, YOKE BONNET, RENEWABLE SEAT AND BRONZE TRIM: STEMS, DISC FACES, SEAT FACES AND BUSHINGS CONSTRUCTED OF BRONZE. ALL OF THE ABOVE GLOBE VALVES SHALL BE USED FOR BALANCING OR THROTTLING VALVE APPLICATIONS.

22. DOMESTIC WATER SHUT-OFF VALVES SHALL BE THREE PIECE, FULL PORT, TRUE UNION TYPE, WITH PLASTIC BODY, BLOW-OUT PROOF STEM DESIGN AND O-RING STEM SEAL. PLASTIC PARTS SHALL BE CPVC. VALVES SHALL BE NIBCO DUO-BLOC, OR EQUAL.

23. DOMESTIC WATER PRESSURE REDUCING VALVE ASSEMBLIES SHALL BE SELECTED TO PROVIDE STABLE FLOW CONDITIONS WITHOUT CAVITATION OR VALVE CHATTER.

24. SHOCK ARRESTORS SHALL BE LOCATED DOWNSTREAM OF THE DOMESTIC WATER SERVICE VALVE, AT EACH SERVICE TO A GROUP OF FIXTURES, OR AS INDICATED ON THE DRAWINGS. SHOCK ARRESTORS SHALL BE AS MANUFACTURED BY PRECISION PLUMBING PRODUCTS OR APPROVED EQUAL AND CONFORM TO THE REQUIREMENTS OF THE PLUMBING AND DRAINAGE INSTITUTE.

25. PROVIDE STOP VALVES AT ALL FIXTURE AND EQUIPMENT SUPPLIES. ALL EXPOSED FIXTURE CONNECTIONS SHALL BE CHROME PLATED, STAINLESS STEEL OR FITTED WITH CHROME PLATED SLEEVES. PROVIDE VACUUM BREAKERS WHERE REQUIRED BY CODE.

26. ALL DOMESTIC WATER PIPING SYSTEMS SHALL BE DISINFECTED IN ACCORDANCE WITH THE APPLICABLE CODES AND AWWA C651.

27. PERFORM A HYDROSTATIC PRESSURE TEST ON ALL PIPING, AT THE PIPING SYSTEM WORKING PRESSURE, FOR A MINIMUM PERIOD OF 24-HOURS. REPAIR ANY LEAKS AND RETEST TO DEMONSTRATE TIGHTNESS. STOP-LEAK COMPOUNDS WILL NOT BE ALLOWED. ALL PIPING FOR PRESSURIZED WATER SYSTEMS SHALL HAVE A MINIMUM PRESSURE RATING OF 150 PSI.

28. ALL NEW SANITARY, SOIL, WASTE, VENT AND STORM WATER PIPING SHALL BE SERVICE WEIGHT CAST IRON, BELL AND SPIGOT, PIPE AND FITTINGS, ANSI A12.51 AS MANUFACTURED BY TYLER PIPE AND FOUNDRY CO., U.S. PIPE AND FOUNDRY CO., CENTRAL FOUNDRY OR APPROVED EQUAL. TYLER 'NO-HUB' OR APPROVED EQUAL, NEOPRENE POSITIVE SEAL ELASTOMERIC COMPRESSION TYPE GASKETS SHALL BE USED AT ALL JOINTS. AS AN OPTION, ALL NEW SANITARY, SOIL, WASTE, VENT AND STORM WATER PIPING 1/2 INCHES AND SMALLER MAY USE HUBLESS SERVICE WEIGHT CAST IRON PIPE, FITTINGS AND JOINTS WITH TYLER 'NO-HUB' STAINLESS STEEL CONNECTORS. IN ADDITION, ALL VENT PIPING MAY BE DWN COPPER PIPE AND FITTINGS WITH SOLDERED JOINTS. GASKETS, JOINTS, CONNECTORS, SPECIALTIES AND PIPE SHALL BE MANUFACTURED AND PROVIDED BY THE SAME MANUFACTURER. ALL STORM PIPING AND WASTE LINES FROM DRINKING WATER FOUNTAINS SHALL BE INSULATED WITH 1/2 INCH THICK HEAVY DUTY FIBERGLASS MATERIAL WITH ALL PURPOSE NONCOMBUSTIBLE VAPOR BARRIER JACKET. INSULATION SHALL HAVE A MAXIMUM THERMAL CONDUCTIVITY (K) OF 0.23 BTU/IN*HR*FT²*F AT 75°F. ADHESIVE SYSTEMS THAT EMPLOY RELEASE PAPER WILL NOT BE ACCEPTABLE. ALL DRAINAGE PIPE SHALL BE SUPPORTED DIRECTLY ON EACH SIDE OF A JOINT. ALL PIPING SUPPORTS AND RESTRAINTS SHALL BE IN STRICT ACCORDANCE WITH THE DRAINAGE PIPE MANUFACTURERS RECOMMENDATIONS AND INSTALLATION GUIDELINES.

29. (OPTION) ALL NEW SANITARY, SOIL, WASTE, VENT, AND STORM PIPING SHALL BE ABS OR PVC, DWV SCHEDULE 40 OR HEAVIER. PLASTIC SANITARY SEWER PIPING BELOW GRADE SHALL BE PVC PIPE, ASTM D3034, SDR 35 OR HEAVIER, WITH ELASTOMERIC GASKETS. SANITARY SEWER PIPING ABOVE GRADE SHALL BE ABS PIPE, ASTM D2680 OR D2151 WITH SOLVENT WELD JOINTS, OR PVC PIPE, ASTM D2665 WITH SOLVENT WELD JOINTS. STORM WATER PIPING ABOVE GRADE SHALL BE ABS PIPE, ASTM D2680 OR D2151 WITH SOLVENT WELD JOINTS OR PVC PIPE. ALL STORM PIPING AND WASTE LINES FROM DRINKING WATER FOUNTAINS SHALL BE INSULATED WITH 1/2 INCH THICK HEAVY-DUTY FIBERGLASS MATERIAL WITH ALL PURPOSE NONCOMBUSTIBLE VAPOR BARRIER JACKET. INSULATION SHALL HAVE A MAXIMUM THERMAL CONDUCTIVITY FACTOR (K) OF 0.23 BTU/IN*HR*FT²*F AT 75°F. ADHESIVE SYSTEMS THAT EMPLOY RELEASE PAPER WILL NOT BE ACCEPTABLE. ALL DRAINAGE PIPE SHALL BE SUPPORTED DIRECTLY ON EACH SIDE OF A JOINT. ALL PIPING SUPPORTS AND RESTRAINTS SHALL BE IN STRICT ACCORDANCE WITH THE DRAINAGE PIPE MANUFACTURERS RECOMMENDATIONS AND INSTALLATION GUIDELINES.

30. EXCEPT WHERE OTHERWISE INDICATED, HORIZONTAL SANITARY, SEWAGE AND WASTE PIPING SHALL SLOPE AT 1/4 INCH PER FOOT FOR PIPES 2 INCHES AND SMALLER, PIPES 3 INCHES AND LARGER SHALL SLOPE AT 1/8 INCH PER FOOT. ALL VERTICAL SANITARY SEWER AND STORM WATER PIPING, WHICH TURN 90° AFTER PASSING THROUGH A FLOOR, SHALL BE INSTALLED AS TIGHT AS POSSIBLE TO THE UNDERSIDE OF THE STRUCTURE.

31. CLEAN-OUTS SHALL BE PROVIDED IN PIPING AT EACH CHANGE IN DIRECTION, IN ALL HORIZONTAL STRAIGHT RUNS MORE THAN 50 FEET LONG, AND AT ALL OTHER LOCATIONS AS NOTED ON THE DRAWINGS. ALL CLEAN-OUTS SHALL BE THE SAME SIZE AS THE PIPE DIAMETER UP TO AND INCLUDING PIPE 4 INCHES IN DIAMETER. FOUR INCH CLEAN-OUTS SHALL BE USED FOR ALL PIPE LARGER THAN 4 INCHES, UNLESS NOTED OTHERWISE. ALL CLEAN-OUT LOCATIONS SHALL BE NO MORE THAN 5 FEET ABOVE THE BASE OF THE HORIZONTAL OFFSET AND BE APPROVED BY THE ARCHITECT. FOR CARPETED AREAS, PROVIDE A PERMANENT IDENTIFYING MARK IN THE CARPET DIRECTLY ABOVE THE CLEAN-OUT. THE CLEAN-OUT SHALL HAVE A SMOOTH POLISHED BRONZE FINISH WITH THE LETTERS 'C.O.' CAST IN THE COVER. FOR WALLS, PROVIDE AN ACCESS PANEL WITH CLEARANCE FOR RODDING. THE FLOOR CLEAN-OUTS SHALL BE ZURN MODEL ZN-1400-0 OR APPROVED EQUAL WITH BRONZE PLUG, SQUARE NICKEL BRONZE FRAME AND COVER. THE WALL CLEAN-OUTS SHALL BE ZURN MODEL ZN-143-8P OR APPROVED EQUAL WITH BRONZE PLUG AND 7 INCHES X 7 INCHES NICKEL BRONZE COVER. NO SANITARY, SOIL OR WASTE PIPE SHALL EXTEND GREATER THAN 2'-0" TO A DEAD-END.

32. PROVIDE ONE TRAP PRIMER VALVE FOR EACH FLOOR DRAIN WITHOUT A CONSTANT SOURCE OF WATER SUPPLY TO MAINTAIN TRAP SEAL. PRIMER VALVE SHALL BE LOCATED IN AN ACCESSIBLE AREA AND CONNECTED TO THE NEAREST 3/4 INCH COLD WATER LINE SERVING A FIXTURE. PROVIDE FLOAT TYPE BACKWATER VALVE (SIZED FOR ANTICIPATED FLOW RATE) IN ALL OPEN SITE DRAINS AND FLOOR RECEPTORS RECEIVING A/C UNIT CONDENSATE, AND/OR CLEAR WATER WASTE, SUCH AS SPRINKLER FLOW TESTING. ALL HORIZONTAL DRAINAGE PIPING AND TRAPS FROM AN OPEN SITE DRAINER RECEPTORS RECEIVING A/C UNIT CONDENSATE SHALL BE INSULATED.

33. ALL GAS PIPING 1/2 INCH AND LARGER SHALL BE A-83 SCHEDULE 40 BLACK STEEL. FOR PIPING 4 INCHES AND LARGER PROVIDE FACTORY MADE FULL LINE SIZE ALL WELDED FITTINGS. FOR PIPING 3 INCHES AND SMALLER PROVIDE CLASS 150 MALLEABLE IRON SCREW JOINT FITTINGS WITH AMERICAN PIPE THREAD STANDARD SCREW THREADS FOR PIPING 3 INCHES AND SMALLER. SCREW JOINTS SHALL BE MADE UP WITH GRAPHITE AND OIL OR APPROVED EQUAL PIPE JOINT COMPOUND. PIPING SMALLER THAN 1/2 INCH SHALL BE TYPE K SOFT DRAWN COPPER ASTM-B88 WITHOUT FITTINGS. GAS PIPING AND VENTS SHALL SLOPE AT 1/4 INCH IN 15 FEET TOWARDS A DRIP LEG. GAS PIPING SHALL BE INSTALLED TO THE REQUIREMENTS OF THE AGA PAMPHLET 'INSTALLATION OF GAS PIPING' AND NFPA STANDARD NO. 54. ANY OTHER TESTS, AS REQUIRED BY LOCAL GAS INSPECTION DEPARTMENT OR GAS COMPANY, SHALL ALSO BE PERFORMED.

34. PROVIDE AN AGA APPROVED OR UL LISTED GAS VALVE REGULATOR AND A QUICK-DISCONNECT UNION AT EACH PIECE OF GAS FUELED EQUIPMENT AND AS INDICATED ON THE DRAWINGS. PROVIDE ATMOSPHERIC VENTS FOR GAS REGULATORS IN ACCORDANCE WITH LOCAL CODE AND SUPPLIERS REQUIREMENTS. VALVES SHALL BE INSTALLED AT AN ACCESSIBLE LOCATION. GAS VALVES 2 INCHES AND SMALLER SHALL BE AGA OR UL APPROVED. VALVES 2-1/2 INCHES AND LARGER SHALL BE CERTIFIED BY THE MANUFACTURER TO BE SUITABLE FOR GAS SERVICE AND SHALL BE MINIMUM 125 PSI RATED.

35. ALL PIPING SYSTEMS, VALVES, AND EQUIPMENT SHALL BE PROPERLY IDENTIFIED. ALL VALVES SHALL HAVE THEIR NORMAL (N OPERATION) POSITION IDENTIFIED, SUCH AS 'NORMALLY OPEN' OR 'NORMALLY CLOSED'.

36. ALL PACKAGED EQUIPMENT SHALL BE INDEPENDENTLY THIRD PARTY LABELED AS A SYSTEM FOR ITS INTENDED USE BY A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL) IN ACCORDANCE WITH OSHA FEDERAL REGULATIONS 29CFR1910.303 AND .399, AS WELL AS NFPA PAMPHLET NO. 70, NATIONAL ELECTRIC CODE (NEC), ARTICLE 90-7.

37. THE CONTRACTOR SHALL MAKE ALL FINAL EQUIPMENT AND FIXTURE CONNECTIONS AND PROVIDE THE NECESSARY ADAPTERS, FITTINGS, VALVES, DEVICES, ETC. FOR A COMPLETE AND OPERABLE SYSTEM. PROVIDE VALVES AND UNIONS WHERE NEEDED TO PERMIT DISCONNECTIONS OF EACH PIECE OF EQUIPMENT FOR REPAIRS. PLUMBING CONNECTIONS SHOWN ARE NOMINAL. VERIFY EXACT CONNECTION SIZE WITH EACH PIECE OF EQUIPMENT SUPPLIED. FOLLOW FIXTURE MANUFACTURERS RECOMMENDED INSTALLATION INSTRUCTIONS, AND ROUGH-IN DIMENSIONS. REFER TO CONSULTANT AND ARCHITECTURAL DOCUMENTS FOR ADDITIONAL INFORMATION. COORDINATE WITH THE EQUIPMENT SUPPLIER FOR ADDITIONAL INFORMATION.

PLUMBING FIXTURE SCHEDULE													
DESIGNATION	FIXTURE TYPE	C.W.	H.W.	WASTE	VENT	MANUFACTURER	MODEL NO.	TRIM	WASTE	TRAP	SUPPLY	ACCESSORIES	REMARKS
L-1A	LAVATORY - ADA	1/2"	1/2"	1 1/4"	1 1/4"	KOHLER	K-1722	SLOAN EBF-650-BDT	K-7151	K-6998	K-7608	THERMOSTATIC MIX. VALVE	1, 2, 3
WC-1	WATER CLOSET	1"	-	4"	2"	KOHLER	K-4302	SLOAN 8111	-	-	-	K-4670-CA	1
WC-1A	WATER CLOSET - ADA	1"	-	4"	2"	KOHLER	K-4302	SLOAN 8111	-	-	-	K-4670-CA	1, 2, 4
S-1A	SHOWER - ADA	1/2"	1/2"	2"	1 1/2"	FIAT	36 FT	KOHLER K-8543 / K-8516	-	-	-	K-T14642-4 / K-304-KS	1, 2, 6, 7
U-1A	URINAL - ADA	3/4"	-	2"	1 1/2"	SLOAN	-	WEUS-1000.1401-0.13 ECOS	-	-	-	-	1, 2
EW-1	EMER. EYE WASH	1/2"	1/2"	1 1/2"	1 1/2"	BRADLEY	S19-2220	-	-	-	-	S19-2000 EFXS	1
KS-1	KITCHEN SINK	1/2"	1/2"	1 1/2"	1 1/2"	KOHLER	K-3258-3	K-15171-F	K-6801	-	-	-	1, 5
SS-1	SCRUB SINK	1/2"	1/2"	1 1/2"	1 1/2"	SLOAN	EH5-1750-BDT	EBF-750-BDT	-	-	-	ETF-667	1
IM-1	ICE MAKER SUPPLY	1/2"	-	-	-	WATER TITE	W9700	-	-	-	-	-	1
MS-1	MOP SERVICE SINK	3/4"	3/4"	3"	1 1/2"	FIAT	TS9C1610	830-AA / 832-AA	-	-	-	869-CC / MS62424	1
HB-1	HOSE BIB	3/4"	-	-	-	WOODFORD	67	-	-	-	-	-	1
FD-1	FLOOR DRAIN	-	-	3"	1 1/2"	ZURN	Z402 SERIES	TYPE 'B' STRAINER	-	-	-	-	1

REMARKS:
1. PROVIDE ALL REQUIRED COMPONENTS FOR COMPLETE FIXTURE ROUGH-IN, I.E., SUPPLIES, STOPS, TRAPS, CARRIERS, GRID DRAINS, TAILPIECES, ETC. NOT ALL REQUIRED COMPONENTS ARE SPECIFIED ABOVE.

2. FIXTURES SHALL BE ADA COMPLIANT. PROVIDED WITH ADA COMPLIANT ACCESSORIES. MOUNT ADA COMPLIANT. SEE ARCHITECTURAL PLAN FOR ELEVATIONS.
3. PROVIDE SKAL - GUARD INSULATING DEVICES ON EXPOSED UNDERCOUNTER PLUMBING.
4. COORDINATE VALVE INSTALLATION WITH ADA GRAB BAR. VALVE SHALL BE LOCATED SO THAT GRAB BAR DOES NOT INTERFERE WITH USE OF VALVE. PROVIDE EXTENSION AS REQUIRED.
5. FIXTURES SHALL HAVE AN INSINKERATOR GARBAGE DISPOSAL RATED #13 HP INSTALLED PRIOR TO FIXTURE ROUGH-IN.
6. PROVIDE SHOWER WALL PANEL KIT SWANSTONE MODEL# DK-363672. COLOR TO BE CHOSEN BY ARCHITECT/OWNER
7. PROVIDE AND INSTALL THE FOLLOWING ACCESSORIES: SHOWER DOME LIGHT, SHOWER CURTAIN ROD WITH HOOKS, AND WEIGHTED, ANTI-BACTERIAL VINYL SHOWER CURTAIN.

DIVISION OF MECHANICAL/ ELECTRICAL WORK		
ITEM	MECH/ DIV 15	ELEC/ DIV 16
AUTOMATIC TEMPERATURE CONTROLS	FURNISH, INSTALL & WIRE	POWER WIRING
CONTROL PANELS FOR MECHANICAL EQUIPMENT	FURNISH & INSTALL	POWER WIRING
LOW & LINE VOLTAGE CONTROL WIRING FOR MECH. EQUIP.	FURNISH & INSTALL	
MECHANICAL FLOW SWITCHES	FURNISH, INSTALL & WIRE	
THERMOSTATS/ SENSORS	FURNISH, INSTALL & WIRE	
P/ E & E/P SWITCHES	FURNISH, INSTALL & WIRE	
DISCONNECT SWITCHES FOR MECHANICAL EQUIPMENT	FURNISH, INSTALL & WIRE	
MECHANICAL EQUIPMENT MOTORS	FURNISH & INSTALL	POWER WIRING
MANUAL STARTERS FOR MECHANICAL EQUIPMENT	FURNISH	INSTALL & POWER WIRE
MAGNETIC STARTERS FOR MECHANICAL EQUIPMENT	FURNISH	INSTALL & POWER WIRING
MOTOR CONTROL CENTERS	CONTROL WIRING	FURNISH, INSTALL & POWER WIRE
VARIABLE SPEED CONTROLLERS	FURNISH & INSTALL	POWER WIRING
MOTORIZED DAMPERS & VALVES	FURNISH, INSTALL & WIRE	
DUCT SMOKE DETECTORS	INSTALL	FURNISH & WIRE
HEAT TRACE CABLE FOR PIPING	FURNISH & INSTALL	POWER WIRING
OIL/ GAS EMERGENCY SHUT-OFF SWITCHES	FURNISH, INSTALL & WIRE	
SPRINKLER FLOW & TAMPER SWITCHES	FURNISH & INSTALL	WIRE

MISCELLANEOUS EQUIPMENT

WATER HEATER - WH-1 - LOCHINVAR MODEL# TN125-60 PROPANE GAS FIRED WATER HEATER; 60 GALLON CAPACITY, 125 MBH PROPANE GAS INPUT, 120V/100; PROVIDE CONCENTRIC VENT KIT BY WATER HEATER MANUFACTURER; REFER TO MECHANICAL DRAWINGS FOR ROUTING OF FLUE

AIR COMPRESSOR - (2) CHAMPION MODEL VRT-12, 23.5 CFM @ 175 PSIG, 7.5 HP, 208V/3Ø WITH 120 GALLON VERTICAL RECEIVER, TWO STAGE SPLASH LUBRICATED CAST IRON AIR COOLED AIR COMPRESSOR, ODP BELT DRIVEN MOTOR, OSHA GUARD, CENTRIFUGAL HEAD UN-LOADERS, INLET FILTER MUFFLER, HAND OPERATED DISCHARGE VALVE, 0-300 PSIG RECEIVER GAUGE, FACTORY SET AND WIRED PRESSURE SWITCH. PROVIDE THE FOLLOWING OPTIONAL EQUIPMENT: 1) RECEIVER VIBRATION ISOLATORS, 2) LOW OIL SHUT-DOWN SWITCH, 3) AUTOMATIC TANK DRAIN, 4) AIR COOLED AFTER-COOLER, 5) MOUNTED AND WIRED NEMA 1 STARTER WITH ON-OFF SELECTOR SWITCH, 6) FLEXIBLE CONNECTOR FOR DISCHARGE PIPING, 7) 3-MICRON PARTICULATE FILTER FOR MAIN SYSTEM PIPING, 8) 1/2 MICRON OIL REMOVING COALESCING FILTER FOR SYSTEM PIPING, 9) 3/4" PRESSURE REGULATOR FOR MAIN SYSTEM PIPING.

AIR DRYER - ZEKs MODEL 50 NCD, CAPACITY: 50 CFM @ 38° F DEW POINT, 1/2 HP, 120V/1P, WITH FACTORY INSTALLED 3-VALVE BY-PASS, ELECTRONIC AUTO CONDENSATE DRAIN.

AIR COMPRESSOR OUTLET/COUPLER - DYNAQUID SAFETY EXHAUST COUPLER MODEL DCO40 OR APPROVED EQUAL, 1/4" BODY SIZE.

AIR HOSE REEL - REELCRAFT MODEL 5450 OLP, SELF RETRACTING HOSE REEL W/50' OF 1/4" HOSE, MAX. PSI 300. PROVIDE (1) HOSE REEL WITH 3/8" TOOL CONNECTION AND (1) HOSE REEL WITH 1/2" TOOL CONNECTION. REFER TO PLANS FOR REEL LOCATIONS.

LUBE SYSTEM - PROVIDE ALL INCONNECTING PIPING, HOSES, CONTROLS AND MOUNTINGS FOR FULLY FUNCTIONAL SYSTEM - 1-55:1 RATIO GREASE PUMP - PUMP MASTER 3 32 OZ. P.M.I., 3" AIR MOTOR PISTON, 1.5" STROKE, PROVIDE I/CABLE FILTER AND REGULATOR.

- 1-5:1 RATIO MOTOR OIL, GEAR OIL & ATF PUMPS FOR 55 GALLON DRUMS. PUMP MASTER 4, 10 GPM, 3.5" AIR ON, 4" STROKE. PROVIDE APPLICABLE FILTERS AND REGULATORS.

- 4-SETS OF 2 DISPENSING REELS - REEL MASTER 1672 FOR 5:1 FLUIDS, REEL MASTER 1680 FOR 55:1 FLUID. IDE COMPLETE ASSEMBLY

- CONTROL HANDLES - REEL MASTER 1172 FOR OIL, REEL MASTER 1115 FOR GREASE.

PLUMBING LEGEND		
SYMBOL	ABRV.	DESCRIPTION
	SAN. W.	SANITARY PIPING
	V	VENT PIPING
	CW	COLD WATER PIPING
	HW	HOT WATER PIPING
		PIPE UP
		PIPE DOWN
		PIPE TEE DOWN
	CO	CLEAN OUT, FLOOR
		CAPPED PIPE
		PIPE UNION
	BFP	BACK FLOW PREVENTER
		BALL VALVE OR SHUTOFF VALVE
	BV	BALANCING VALVE
		GAS COCK
	PRTRV	PRESSURE AND/OR TEMPERATURE RELIEF VALVE
		MIXING VALVE
		GAS SOLENOID VALVE
	CV	CHECK VALVE
		GATE VALVE
		HOSE BIB
		OPEN SITE DRAIN
		HOSE BIB EXTERNAL

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