PLUMBING SPECIFICATIONS

GENERAL CONDITIONS
THE GENERAL CONDITIONS, SPECIAL CONDITIONS, SUPPLEMENTARY CONDITIONS AND MECHANICAL CONDITIONS OF THE SPECIFICATIONS AND "GENERAL CONDITIONS OF THE CONTRACT", CURRENT EDITION, ESTABLISHED IN STANDARD FORM BY THE AMERICAN INSTITUTE OF ARCHITECTS SHALL APPLY TO ALL WORK ON THIS PROJECT EXCEPT AS MODIFIED BELOW. THIS CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THESE PROVISIONS AND ADHERE TO THESE REQUIREMENTS. CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER TRADES PRIOR TO INSTALLATION.

RELATED DOCUMENTS
THIS CONTRACTOR IS REFERRED TO THE ARCHITECTURAL, MECHANICAL AND ELECTRICAL PLANS AND SPECIFICATIONS. SUCH PLANS AND SPECIFICATIONS ARE A PART OF THE CONTRACT DOCUMENTS. CONTRACTORS SHALL VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH ALL CONDITIONS SURROUNDING THE WORK. IF ANY OF THE CONDITIONS REQUIRE A MODIFICATION OF THE SYSTEMS INDICATED BY THESE PLANS AND SPECIFICATIONS, THE CONTRACTOR SHALL INCLUDE THE COST OF SUCH MODIFICATIONS IN HIS BID. NO EXTRA COMPENSATION WILL BE ALLOWED BECAUSE OF FAILURE TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING BIDS.

MODIFICATIONS TO PLANS AND SPECIFICATIONS
THROUGHOUT THE COURSES OF THE WORK, MINOR CHANGES AND ADJUSTMENTS TO PLANS AND SPECIFICATIONS MAY BE REQUESTED BY THE ARCHITECT/ENGINEER. THE CONTRACTOR SHALL MAKE SUCH ADJUSTMENTS WITHOUT ADDITIONAL COST TO THE OWNER. WHERE SUCH ADJUSTMENTS ARE NECESSARY FOR THE PROPER INSTALLATION AND OPERATION AND WITHIN THE INTENT OF THE CONTRACT DOCUMENTS.

EQUIPMENT SUBSTITUTION
IT IS THE INTENT OF THE PLANS AND SPECIFICATIONS TO FORM A GUIDE FOR A COMPLETE INSTALLATION. EVERYTHING NECESSARY FOR THE COMPLETION AND SUCCESSFUL OPERATION OF THE WORK, WHETHER OR NOT HEREIN DEFINITELY SPECIFIED OR INDICATED ON THE DRAWINGS SHALL BE FURNISHED AND INSTALLED AS WELL AND AS FAITHFULLY AS IT IS SPECIFIED OR INDICATED WITH OUT ADDITIONAL COST TO THE OWNER. THE MECHANICAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND LENGTHS PRIOR TO INSTALLATION.

IF ANY ERRORS, DISCREPANCIES OR OMISSIONS APPEAR IN THE DRAWINGS, SPECIFICATIONS OR OTHER CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF SUCH ERROR OMISSION. IN THE EVENT OF THE CONTRACTOR FAILS TO GIVE SUCH NOTICE BEFORE CONSTRUCTION AND/OR FABRICATION OF THE WORK, HE WILL BE HELD RESPONSIBLE FOR THE RESULTS OF ANY SUCH ERRORS, DISCREPANCIES OR OMISSIONS AND THE COST TO RECTIFYING SAME.

CODE COMPLIANCE
CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE STATE, LOCAL AND NATIONAL CODES REGULATING THIS WORK.

PERMITS, FEES, LICENSES
THIS CONTRACTOR SHALL PAY ALL FEES AND RELATED CHARGES REQUIRED FOR PERMITS, LICENSES, ETC... REQUIRED FOR INSTALLATION OF THE PLUMBING SYSTEMS.

EQUIPMENT SUBSTITUTION
THIS CONTRACTOR SHALL REIMBURSE THE ELECTRICAL CONTRACTOR, WITHOUT ANY CHARGE TO OWNER, ANY COSTS THE ELECTRICAL CONTRACTOR INCURS DUE TO THIS CONTRACTOR'S SUBSTITUTION OF EQUIPMENT HAVING DIFFERENT ELECTRICAL SERVICE REQUIREMENTS THAN THE SPECIFIED EQUIPMENT.

SHOP DRAWINGS
THIS CONTRACTOR SHALL PROVIDE THE ARCHITECT WITH A MINIMUM OF SEVEN CERTIFIED COPIES OF ALL SHOP AND EQUIPMENT DRAWINGS FOR HIS APPROVAL, TWO OF WHICH SHALL BE RETAINED BY THE ARCHITECT/ENGINEER AND THE REMAINING BEING RETURNED TO THE CONTRACTOR. DRAWINGS SHALL BE SUBMITTED BEFORE START AT CONSTRUCTION. FAILURE OF COMPLIANCE WITH THIS PARAGRAPH WILL RESULT IN WITHHOLDING OF FINAL PAYMENT.

WARRANTY
THIS CONTRACTOR SHALL WARRANT HIS WORK TO BE FREE FROM DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM SUBSTANTIAL COMPLETION.

BASIC MATERIALS AND METHODS
ALL WORKMANSHIP AND MATERIALS SHALL BE OF THE HIGHEST QUALITY IN EVERY RESPECT. ALL MATERIALS AND EQUIPMENT SHALL BE NEW, OF THE LATEST DESIGN AND FREE OF DEFECTS. ALL MATERIALS AND EQUIPMENT SHALL CONFORM TO THE LATEST AMENDED EDITION OF ALL APPLICABLE STANDARDS, INCLUDING BUT NOT LIMITED TO, ASTM, UL AND NEMA STANDARDS.

INSTALL ALL PIPING TO PRESENT A NEAT AND ORDERLY APPEARANCE. RUN ALL LINES PARALLEL WITH BUILDING WALLS AND CONSTRUCTION. KEEP PIPING FREE FROM CONTACT WITH STRUCTURE OR EQUIPMENT TO PREVENT NOISE TRANSMISSION, ALLOWING CLEARANCES FOR EXPANSION AND CONTRACTION. PROVIDE ACCESS DOORS OR PANELS FOR ALL VALVES, CLEANOUTS, CONTROL DEVICES, ETC...

WATER SUPPLY PIPING
ALL ABOVE GROUND WATER SUPPLY PIPE SHALL BE TYPE L HARD TEMPER COPPER WATER TUBE COMPLYING WITH ASTM B88. ALL FITTINGS SHALL BE WROUGHT COPPER COMPLYING WITH USASI B16.1B & B16.1BA. DIELECTRIC COUPLINGS SHALL BE USED BETWEEN STEEL AND COPPER CONNECTIONS. ALL BELOW GROUND WATER SUPPLY PIPE SHALL BE TYPE K COPPER WATER TUBE. PROVIDE 95-5 LEAD-FREE, SILVER SOLENOID JOINTS.

SANITARY WASTE AND VENT PIPING
ALL ABOVE GROUND STORM, SANITARY WASTE AND VENT PIPING SHALL BE SCHEDULE 40 PVC-DWV PIPE AND FITTINGS (ASTM D2665) WITH SOLVENT WELD JOINTS. ALL BELOW GROUND SANITARY SOIL AND WASTE PIPING SHALL BE SCHEDULE 40 PVC-DWV PIPE FITTINGS (AST D2665) WITH SOLVENT WELD JOINTS.

PIPE HANGERS AND SUPPORT
SUPPORT HORIZONTAL PIPING ADEQUATELY FROM SLABS OR OTHER STRUCTURAL MEMBERS AT INTERVALS SPECIFIED BELOW. USE GRINNELL #260 HANGERS, OR APPROVED EQUAL, HAVING ADJUSTABLE WROUGHT CLEVIS, SOLID RODS AND SOCKETS. PIPING INSTALLED ALONG WALLS SHALL BE SUPPORTED BY GRINNELL #199, OR APPROVED EQUAL, STEEL ANGLE BRACKETS. THE SPACING OF PIPE SUPPORTS FOR STEEL PIPE 3/4" TO 2" SHALL BE 10'-0" AND FOR COPPER PIPE SIZE UP TO 2" SHALL BE 6'-0". HANGERS IN CONTACT WITH COPPER SHALL BE PLASTIC PLATED AND SHALL BE EQUAL TO GRINNELL FIGURE CT-65. HANGER RODS SHALL BE 3/8" DIAMETER FOR PIPES UP TO 2" IN SIZE.

PIPES SLEEVES AND OPENINGS
THE CONTRACTOR SHALL CUT ALL OPENINGS IN FLOORS AND WALLS REQUIRED FOR PENETRATION OF PIPING. PATCH ALL OPENINGS FOR SOUND DEADENING AND FIRE SEPARATION. GENERAL CONTRACTOR SHALL PERFORM ALL FINISH PATCHING AS REQUIRED BY ARCHITECTURAL SPECIFICATIONS. ALL HORIZONTAL PIPING WHICH PENETRATES WALLS SHALL BE FITTED WITH PIPE SLEEVES MADE UP OF SIMILAR MATERIALS AS PIPE, 1" GREATER IN DIAMETER THAN OUTSIDE DIAMETER OF PIPE AND PIPE INSULATION. THE VOID BETWEEN PIPE AND SLEEVE SHALL BE SEALED WITH ROPE AND FILLED WITH NON-SHRINKING CEMENT. SLEEVES SHALL BE SUCH LENGTH THAT THEY END FLUSH WITH WALL FINISH ON BOTH SIDES OF WALL. PROVIDE RATED PENETRATIONS OF ALL WALLS AND FLOOR AS REQUIRED TO MAINTAIN THE RATING OF THE WALL OR FLOOR PENETRATED.

WHERE UNCOVERED EXPOSED PIPES PASS THRU WALLS, THEY SHALL BE FITTED WITH CRANE #10, OR EQUAL, WALL ESCUTCHEON PLATES. SLEEVES THROUGH WATER PROOF FLOORS SHALL EXTEND 2" ABOVE FINISHED FLOOR.

VALVES
THE CONTRACTOR SHALL FURNISH AND INSTALL VALVES WHERE INDICATED ON PLAN AND NECESSARY FOR PROPER SYSTEM OPERATION AND COMPONENT ISOLATION. PROVIDE VALVES RATED FOR 125 PSI OR GREATER WORKING PRESSURE IN WATER PIPING.

CHECK VALVE UP TO 3"	APOLLO 61-109 61-500 OR NIBCO T-413-13
GLOBE VALVE UP TO 3"	CRANE NO. 1240, 1241 OR EQUAL
BALL VALVE UP TO 3" FULLPORT	APOLLO SERIES 82-100 OR 82-200
TEMP. & PRESS RELIEF VALVE 3/4" F	WATTS 10L MOD. M4, OR EQUAL, 3/4" M x
WATER HAMMER ARRESTOR	WADE #10 (HOT), WADE #5 (COLD)
BACKFLOW PREVENTER	WATTS NO. 9D, OR EQUAL
VACUUM RELIEF VALVE	WATTS NO. 36A - 3/4" OR EQUAL
PRESSURE REDUCING VALVE	WATTS NO. U5
TRAP PRIMER VALVE	JR SMITH

INSULATION
INSULATION SHALL BE REQUIRED ON ALL HOT SURFACES TO RETARD UNDESIRABLE HEAT TRANSFER AND PREVENT CONDENSATION. INSULATION SHALL BE APPLIED TO PIPE LINES, AND EQUIPMENT ONLY AFTER THEY HAVE BEEN TESTED, INSPECTED AND ALL SURFACES THOROUGHLY CLEANED OF ALL MOISTURE, FOREIGN MATERIAL, GREASE AND RUST. INSULATION SHALL BE CONTINUOUS THROUGH WALLS, FLOORS, PARTITIONS, SLEEVES, ETC... EXCEPT WHERE OTHERWISE INDICATED OR SPECIFIED. ALL INSULATION ADHESIVES, SEALERS AND COATINGS SHALL HAVE A FIRE HAZARD RATING NOT TO EXCEED 25/50/50 FLAME SPREAD, FUEL CONTRIBUTED AND SMOKE DEVELOPED IN ACCORDANCE WITH UL 723 AND ASTM-E84. PROVIDE INSULATION FOR HOT WATER PIPING.

PIPE INSULATION SHALL BE 1" THICK RIGID FIBERGLASS WITH SELF-SEALING LAP AND ALL SERVICES JACKET OR APPROVED EQUAL.

INSULATION SHALL BE REQUIRED AT ALL ADA ACCESSIBLE LAVATORIES TO PROTECT AGAINST CONTACT OF HOT WATER AND DRAIN PIPES. INSULATE TRAP AND BOTH SUPPLIES WITH A HIGH IMPACT, STAIN RESISTANT, PREMOLDED VINYL COVERING AS MANUFACTURED BY TRUEBRO "HANDY-LAVGUARD", McGUIRE OR BROCAR "TRAP WRAP".

PLUMBING FIXTURES

ALL VENT & WATER PIPING SHALL RUN ABOVE FLOOR OF PLAN ON WHICH SHOWN UNLESS OTHERWISE INDICATED. ALL SANITARY DRAIN AND WASTE PIPING SHALL RUN BELOW FLOOR OF PLAN ON WHICH SHOWN UNLESS OTHERWISE INDICATED. WC-1. FD-1, ETC... REFER TO FIXTURES LISTED IN SCHEDULES AND LOCATED ON THE PLANS.

PLUMBING DEMOLITION NOTES

1. THE CONTRACTOR SHALL REVIEW NEW FLOOR PLANS FOR SYSTEMS TO REMAIN FEEDING OTHER AREA TO BE REUSED PRIOR TO DEMOLITION.
2. UNLESS NOTED OTHERWISE, REMOVE PLUMBING FIXTURES, VALVES, SUPPORTS AND ASSOCIATED PIPING BACK TO THE MAIN SOURCE. REFER TO FLOOR PLANS FOR EXISTING PIPING TO REMAIN OR SYSTEMS TO BE REUSED. REMOVE ALL UNUSED PIPING EXPOSED BY DEMOLITION AND DO NOT ABANDON IN PLACE UNLESS INTENDED TO BE REUSED.
3. MAINTAIN CONTINUITY OF EXISTING PIPING TO REMAIN AND OR BE REUSED.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE AND LEGALLY DISPOSE OF DEMOLISHED MATERIALS.
5. THE OWNER RESERVES THE RIGHT TO INSPECT THE MATERIAL SCHEDULED FOR REMOVAL AND SALVAGE ANY ITEMS DEEMED USEABLE AS SPARE PARTS.
6. EXISTING CONDITIONS INDICATED ON THIS DRAWING ARE TAKEN FROM EXISTING DOCUMENTS AND FIELD INVESTIGATION. IT IS RECOMMENDED FOR CONTRACTOR TO VISIT PROJECT AREA AND VERIFY EXISTING CONDITIONS PRIOR TO DEMOLITION.
7. THE DEMOLITION PLAN IS NOT INCLUSIVE OF ALL PIPING DEVICES AND FITTINGS ETC. IT IS INTENDED TO PROVIDE THE CONTRACTOR WITH GENERAL KNOWLEDGE OF EXISTING CONDITIONS WITHIN THE PROJECT AREA.
8. THE CONTRACTOR SHALL INSURE THAT PIPING REMAINING WITHIN THE PROJECT AREA IS SUPPORTED IN ACCORDANCE WITH THE SPECIFICATIONS. PIPING THAT ARE ATTACHED TO ITEMS BEING REMOVED DURING DEMOLITION SHALL BE SUPPORTED FROM THE STRUCTURE PRIOR TO REMOVING ITEM.
9. CONTRACTOR SHALL PATCH, PAINT, AND MATCH FINISHES WITH EXISTING SURFACES TO REMAIN WHERE PIPING HAS BEING REMOVED. THIS INCLUDES NEW PIPE TO BE LOCATED UNDER BOTTOM EXISTING FINISHED FLOORS, PIPE ABOVE HARD FINISHED CEILINGS OR INSIDE EXISTING WALLS.
10. CONTRACTOR SHALL REVIEW NEW FLOOR PLANS FOR DEVICES TO REMAIN PRIOR TO DEMOLITION
11. THE BUILDING WILL BE IN OPERATION DURING DEMOLITION AND CONSTRUCTION. CONTRACTOR SHALL REFER TO ARCHITECTURAL DRAWINGS ON PHASING INSTRUCTIONS. CONTRACTOR SHALL COORDINATE WITH OWNER ON DEMOLITION AND CONSTRUCTION SCHEDULE AND NOTIFY OWNER A MINIMUM OF 72 HOURS PRIOR TO POWER SHUTDOWN OR COMMENCING WORK IN EACH AREA.
12. REFER TO ARCHITECTURAL DEMOLITION DRAWINGS FOR FURTHER DEMOLITION INFORMATION. CONTRACTOR SHALL REMOVE ASSOCIATED ELECTRICAL DEVICES, EQUIPMENT AND OTHER EXISTING SYSTEMS SERVING ITEMS BEING REMOVED.
13. BEFORE DEMOLITION OF ANY PIPE SYSTEMS VERIFY ALL SOURCES BEING SERVED OUTSIDE CONSTRUCTION AREA. VERIFY WITH OWNER OR DEPARTMENT SUPERVISOR BEFORE DISRUPTING ANY SERVICES AFFECTED OUTSIDE THE CONSTRUCTION AREA. ANY EXISTING WATER SYSTEMS DISRUPTED BY DEMOLITION ARE TO BE RESTORED TO OPERATION IMMEDIATELY OR WITHIN TIME AGREED UPON WITH OWNER.
14. THE CONTRACTOR SHALL COORDINATE THE DISRUPTION IN THE SPACES LOCATED ON THE FLOOR BELOW THE AREA OF WORK WHEN INSTALLING THE NEW WORK AND PIPE.
15. PROVIDE JET CLEANING SERVICE FOR CLEANING EXISTING SANITARY LINES WITHIN THE PROJECT AREA TO A POINT OUTSIDE THE BUILDING TO REDUCE THE CHANCES OF BACKUPS.

GENERAL NOTES

1. REFERENCE THE SPECIFICATIONS FOR MATERIAL AND EQUIPMENT INSTALLATION STANDARDS.
2. THE PLUMBING INSTALLATION SHALL COMPLY WITH ALL STATE AND LOCAL CODES.
3. PLANS ARE NOT COMPLETELY TO SCALE. PIPE ROUTING SHOWN IS SCHEMATIC AND IS NOT INTENDED TO INDICATE EXACT ROUTING. CONTRACTOR SHALL PROVIDE ANY ADDITIONAL OFFSETS AND FITTINGS REQUIRED FOR PROPER INSTALLATION AND TO MAINTAIN CLEARANCES. VERIFY STRUCTURAL, MECHANICAL AND ELECTRICAL INSTALLATIONS AND OTHER POTENTIAL OBSTRUCTIONS AND ROUTE PIPING TO AVOID INTERFERENCES.
4. PROVIDE ALL OFFSETS AND FITTINGS AND MAKE CONNECTION TO SITE UTILITIES.
5. CONCEAL PIPING ABOVE CEILINGS, WITHIN WALLS OR CHASES EXCEPT IN MECHANICAL ROOMS OR AS SPECIFICALLY NOTED.
6. PROVIDE ACCESS DOOR / PANEL FOR ALL VALVES CONCEALED IN WALLS OR ABOVE NON-ACCESSIBLE CEILINGS.
7. SLEEVE ALL PENETRATIONS THROUGH WALLS, CEILING, AND FLOORS. SLEEVE AND/OR FIRE STOP ALL PENETRATIONS THROUGH RATED WALLS, CEILINGS, AND FLOORS WITH U/L LISTED ASSEMBLIES. FIRE STOP ASSEMBLIES SHALL BE EQUAL OR EXCEED THE RATING OF THE WALL, CEILING, OR FLOOR. SEE ARCHITECTURAL DRAWINGS FOR FINAL FINISHES.
8. SEE ARCHITECTURAL DRAWINGS FOR FIXTURE LOCATIONS AND MOUNTING HEIGHTS.
9. PROVIDE AUTOMATIC TRAP PRIMERS FOR ALL FLOOR DRAINS.
10. PROVIDE AN AIR GAP, WHEN REQUIRED BY CODE, SERVING INDIVIDUAL FIXTURES, DEVICES, APPLIANCES AND APPARATUS.
11. ALL EXPOSED PIPE AND FITTINGS IN FINISHED AREAS SHALL BE CHROME PLATED.
12. PROVIDE CLEANOUTS IN ACCORDANCE WITH ALL STATE AND LOCAL CODES. INSTALL CLEANOUT WITH COVER FLUSH TO FINISH SURFACE.
13. COORDINATE EXACT FLOOR DRAIN LOCATIONS WITH ARCHITECTURAL DRAWINGS. SET FLOOR DRAINS BELOW FINISHED FLOOR TO ALLOW FOR FLOOR SLOPING TO THE DRAIN.
14. COORDINATE PIPING WITH ALL ELECTRICAL EQUIPMENT (PANELS, TRANSFORMERS, ETC.) PRIOR TO ANY INSTALLATION. DO NOT ROUTE ANY PIPING OVER ANY ELECTRICAL PANELS UNDER ANY CIRCUMSTANCES. ANY PIPING RUN OVER PANELS SHALL BE RE-ROUTED AT NO ADDITIONAL COST.
15. ALL WALL MOUNTED LAVATORIES, WATER COOLERS AND OTHER WALL MOUNTED FIXTURES SHALL BE ATTACHED TO FLOOR MOUNTED CARRIER DESIGNED TO WITHSTAND A VERTICAL LOAD OF 250 POUNDS ON THE FRONT OF THE FIXTURE.
16. PROVIDE SANITARY WASTE, VENT, DOMESTIC WATER, ETC. ROUGH-IN AND MAKE FINAL CONNECTIONS (TO INCLUDE PROVIDING ALL NECESSARY RELATED STOPS, VALVES, TRAPS, ETC. AND MAKE READY FOR USE) TO ALL EQUIPMENT, WHETHER FURNISHED BY THIS CONTRACTOR OR FURNISHED BY OTHERS.
17. INSTALL ISOLATION/SHUT-OFF VALVES AT ALL MAIN RISERS AND MAIN BRANCH TAKEOFFS, TO PERMIT ISOLATION OF PIPING SECTIONS OR ENTIRE SYSTEM.
18. PROVIDE RIGID SUPPORT SWAY BRACING AT ALL CHANGES IN DIRECTION GREATER THAN 45° ON PIPING 4" AND LARGER.
19. PROVIDE WATER HAMMER ARRESTOR ON ALL COLD AND HOT WATER LINES SERVING PLUMBING FIXTURES. ARRESTORS SHALL BE SIZED IN ACCORDANCE WITH P.D.I. STANDARDS FOR THE TOTAL NUMBER OF FIXTURES SERVED.
20. ALL PIPING SHALL BE PROTECTED FROM THE INTRUSION OF WATER, DUST, DIRT, DEBRIS, ETC. WHILE STORED ON SITE AND DURING CONSTRUCTION.
21. ALL PRODUCTS USED INDOORS SHALL HAVE LOW VOC CONTENT THAT QUALIFIES FOR THE LATEST VERSION OF LEED.

PLUMBING ABBREVIATIONS

AAV	AIR ADMITTANCE VALVE
AFF	ABOVE FINISH FLOOR
AW	ACID WASTE
AV	ACID VENT
CA	COMPRESSED AIR
CD	CONDENSATE DRAIN
CFH	CUBIC FEET PER HOUR
CO	CLEAN OUT
CONT	CONTINUATION
CW	COLD WATER
DCW	DOMESTIC COLD WATER
DN	DOWN
DS	DOWNSPOUT
DWG	DRAWING
EXIST	EXISTING
ESH	EMERGENCY SHOWER / EYEWASH
EWH	ELECTRIC WATER HEATER
EWC	ELECTRIC WATER COOLER
°F	DEGREE FAHRENHEIT
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
FS	FLOOR SINK
G	GAS
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	KITCHEN WASTE (GREASE)
HB	HOSE BIBB
HD	HUB DRAIN
HW	DOMESTIC HOT WATER
HWR	DOMESTIC HOT WATER RECIRCULATING
IE	INVERT ELEVATION
IW	INDIRECT WASTE
KW	KILOWATT
LBS	POUNDS
MH	MANHOLE
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OD	OUTSIDE DIAMETER
PEMB	PRE-ENGINEERED METAL BUILDING
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE PIPE
RD	ROOF DRAIN
RPBP	REDUCED PRESSURE BACKFLOW PREVENTOR
SAN	SANITARY
SD	STORM DRAIN
SF	SQUARE FEET
SH	SHEET
SS	SERVICE SINK
STO	OVERFLOW STORM DRAIN
V	VENT
VAC	VACUUM
VTR	VENT THRU ROOF
WCO	WALL CLEAN OUT
WM	WASHING MACHINE SUPPLY AND DRAIN BOX
WTR	WATER

PLUMBING SYMBOL LEGEND

SYMBOL	DESCRIPTION
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	DOMESTIC HOT WATER RECIRCULATING
G	GAS
GR	KITCHEN WASTE (GREASE)
S	SANITARY PIPING
	SANITARY VENT
ST	ABOVE GROUND STORM
STO	OVERFLOW STORM DRAIN
CD	CONDENSATE DRAIN
CA	COMPRESSED AIR
M	WATER METER
	HOSE BIBB OR WALL HYDRANT WITH VALVE IN RISER
	HOSE BIBB OR WALL HYDRANT WITH VALVE
	CLEAN OUT PLUG
	WALL CLEAN OUT
	FLOOR CLEAN OUT
FD	FLOOR DRAIN
RD	ROOF DRAIN (ABOVE)
FS	FLOOR SINK
	SHUT-OFF VALVE IN VALVE BOX
	SHUTOFF VALVE
	BALL VALVE
	CALIBRATED BALANCING VALVE
	CHECK VALVE (SWING)
	PRESSURE REDUCING VALVE
	SOLENOID OPERATED VALVE
	REDUCED PRESSURE BACKFLOW PREVENTER
	RELIEF OR SAFETY VALVE
	GAS COCK
	GAS PRESSURE REGULATOR
	CONNECTION, TOP
	CONNECTION, BOTTOM
	ELBOW, TURNED DOWN
	ELBOW, TURNED UP
	TEE, TURNED UP
	TEE, TURNED DOWN
	CAP
	DIRECTION OF FLOW
	COMPRESSED AIR PRESSURE REGULATOR
TP FD	1/2" LINE TO PRIMER
	CODED OR KEY NOTES
1	REVISION REFERENCE
1 / P-1	DETAIL REFERENCE: TOP-DETAIL#, BOTTOM-DRAWING# SHOWN ON

PLUMBING PIPING SCHEDULE

TYPE / LOCATION	DOMESTIC COLD WATER	DOMESTIC HOT WATER	DRAIN, WASTE & VENT	CONDENSATE WASTE
ABOVE GROUND	CPVC	CPVC	PVC	PVC
BELOW GROUND	CPVC	CPVC	PVC	PVC
EXPOSED (PUBLIC)	TYPE 'L' COPPER	TYPE 'L' COPPER	TYPE 'L' COPPER	TYPE 'L' COPPER
AREA UNDERGROUND SUBJECT TO STRESS (THRU FOOTING)	STEEL	STEEL	DUCTILE IRON	STEEL

NOTES:
1. INSULATE THE FOLLOWING PIPING SYSTEMS WITH 1" THICK INSULATION.
A. HOT WATER PIPING
B. CONDENSATE WASTE PIPING

CODE COMPLIANCE

1. TO THE BEST OF MY KNOWLEDGE, THESE PLANS AND SPECIFICATIONS ARE COMPLETE AND COMPLY WITH THE 2015 SOUTH CAROLINA PLUMBING CODE, 2015 SOUTH CAROLINA FIRE CODE AND THE CODES REFERENCED WITHIN.

GAS WATER HEATER SCHEDULE

UNIT #	SERVING	FUEL TYPE	GALLONS	INPUT BTUH	EFF.	GPM REC. @ 70°F RISE	VOLT/PHASE CURRENT DRAW (PER PHASE)	WEIGHT (LBS.)	DIMENSIONS	MANUFACTURER	
										MANUFACTURER	MODEL #
GWH-1	WOODHOUSE SPA	NATURAL GAS	50	199,000	95%	15	120V - 1Ø	451	70" H x 32"Ø	AO SMITH	BTH-199-MXi

NOTES:
1. PROVIDE WITH EXPANSION VALVE, T & P VALVE AND WATER HEATER DRAIN PAN.
2. COORDINATE WATER HEATER LOCATION AND PIPING WITH MECHANICAL AND ELECTRICAL PLANS.

PUMP SCHEDULE

UNIT #	DESCRIPTION	TYPE	GPM	FT HEAT	PUMP EFF. %	CONN. SIZE		MOTOR DATA				SELECTION BASED ON:		REMARKS
						INLET	OUTLET	HP	RPM	VOLT	PH.	MANUFACTURER	MODEL	
HWCP-1	HOT WATER CIRCULATION PUMP	IN LINE PUMP	3	12	70	3/4"	3/4"	1/6	1750	120	1 PH	BELL & GOSSETT	SERIES 60	PROVIDE AQUASTAT AND TIME CLOCK.

FIXTURE CONNECTION SCHEDULE

MARK	DESCRIPTION	WASTE	TRAP	VENT	CW	HW
WC-1, 2	W. CLOSET, TANK TYPE	4"	INTEG.	2"	1"	--
L-1, 2	LAVATORY	2"	1-1/4"	1-1/2"	1/2"	1/2"
S-1, 2, 3, 4	SINK	2"	1-1/2"	1-1/2"	1/2"	1/2"
MS-1	MOP SINK	3"	3"	2"	1/2"	1/2"
SH-1/BT-1	SHOWER/BATHTUB	2"	1-1/4"	1-1/2"	1/2"	--
FD-1	FLOOR DRAIN	3"	2"	1-1/2"	--	--

NOTES
1. MAKE FINAL PIPE CONNECTIONS FROM BRANCH OR MAIN TO EACH FIXTURE OR DEVICE USING PIPE SIZE(S) AS PER THIS CHART. IF PIPE SIZE IS NOT SHOWN ON PIPING DRAWINGS.

RENOVATION NOTES

SYMBOL	DESCRIPTION
	CONNECT TO EXISTING
	DEMOLISH TO POINT INDICATED
	NEW PIPING TO BE PROVIDED
	EXISTING PIPING TO REMAIN
	EXISTING PIPING TO BE REMOVED

WATER HAMMER ARRESTOR SCHEDULE

MARK	P.D.I. SIZE (2)	CONNECTION SIZE
A	A (1 - 11 F.U.)	1/2"
B	B (12 - 32 F.U.)	3/4"
C	C (33 - 60 F.U.)	1"

NOTES:
1. PROVIDE HAMMER ARRESTERS PER ARRESTER SCHEDULE.
2. PROVIDE AND INSTALL PER (PDI) PLUMBING AND DRAINAGE INSTITUTE STANDARD WH-201.

INTERPLAN LLC
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INTERIOR DESIGN
PROJECT MANAGEMENT

F-3219

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SEAL: NOT FOR REGULATORY APPROVAL, PERMITTING OR CONSTRUCTION UNLESS THE ARCHITECTS OR ENGINEER'S SIGNATURE AND SEAL APPEAR BELOW

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NO DATE REMARKS
REVISIONS

WOODHOUSE DAY SPA
RENOVATION

MARKET STREET
9595 SIX PINES DRIVE
THE WOODLANDS, TEXAS 77680

PROJECT NO: 2019.0172
DATE: APRIL 08, 2019

P0.0

CHECKED: LMS DRAWN: PJR

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