




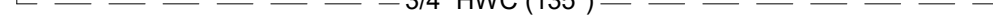




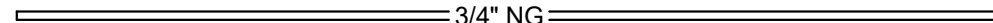





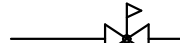
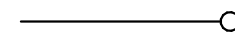
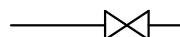
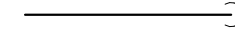
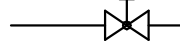

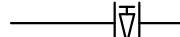

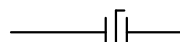








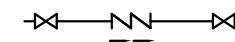
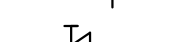

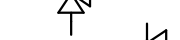

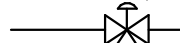

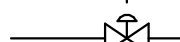





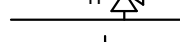

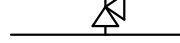





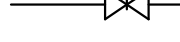

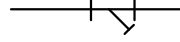
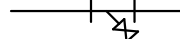


SYMBOL		DESCRIPTION
	3/4" CW	- DOMESTIC COLD WATER PIPING
	3/4" HW	- DOMESTIC HOT WATER PIPING, BETWEEN 110°F & 120°F
	3/4" HW (120°)	- DOMESTIC HOT WATER PIPING (120°F MAXIMUM)
	3/4" HW (140°)	- DOMESTIC HOT WATER PIPING (140°F MAXIMUM)
	3/4" HWC (115°)	- DOMESTIC HOT WATER CIRCULATION PIPING (115°F MAXIMUM)
	3/4" HWC (135°)	- DOMESTIC HOT WATER CIRCULATION PIPING (135°F MAXIMUM)
	3" SS	- SANITARY SEWER PIPING
	3" SS U/G	- SANITARY SEWER PIPING, UNDERGROUND
	4" SD	- STORM DRAIN PIPING
	4" SD U/G	- STORM DRAIN PIPING, UNDERGROUND
	4" OSD	- OVERFLOW STORM DRAIN PIPING
	3/4" NG	- NATURAL GAS PIPING, LESS THAN 2 PSI
	3/4" NG (M.P.)	- NATURAL GAS PIPING, 2 PSI OR GREATER. REFER TO PLANS FOR PRESSURE
	3" V	- VENT PIPING
		- POINT OF CONNECTION TO EXISTING
		- ENLARGED PLAN REFERENCE: VIEW NUMBER / SHEET NUMBER

## PIPING ELEMENTS / VALVING\*

	PRESSURE REDUCING VALVE (PRV)		PIPE RISING UP
	GATE VALVE		PIPE DROPPING DOWN
	GLOBE VALVE		UNION - SCREWED OR FLANGED
	PLUG VALVE		FLOW SWITCH
	BUTTERFLY VALVE		TEMPERATURE TRANSMITTER
	VALVE IN RISE OR DROP		PRESSURE TRANSMITTER OR PRESSURE SWITCH
	BALL VALVE		THERMOMETER/TEMPERATURE INDICATOR
	SWING CHECK VALVE		GAUGE WITH GAUGE COCK / PRESSURE INDICATOR
	LIFT CHECK VALVE		BACKFLOW PREVENTER (REDUCED PRESSURE ZONE)
	GATE VALVE, ANGLE		BACKFLOW PREVENTER (DOUBLE CHECK VALVE ASSEMBLY)
	GLOBE VALVE, ANGLE		WATER HAMMER ARRESTOR
	THREE WAY CONTROL VALVE		CIRCUIT SETTING BALANCING VALVE
	TWO WAY CONTROL VALVE		HOSE BIBB
	SOLENOID VALVE		ROOF DRAIN
	TEMPERATURE AND PRESSURE RELIEF VALVE		OPEN SITE DRAIN
	RELIEF/SAFETY VALVE		FLOOR DRAIN
	GAS COCK		AREA DRAIN
	GAS PRESSURE REGULATOR		CLEANOUT
	STRAINER		FLOOR CLEANOUT
	STRAINER WITH BLOW OFF VALVE		WALL CLEAN OUT
	FLEXIBLE-CONNECTION		
	SPRINKLER HEAD		

\*NOT TO SCALE

PLUMBING ABBREVIATIONS	
AD	- AREA DRAIN
AFB	- ABOVE FINISH FLOOR
BFB	- BELOW FINISH FLOOR
CFH	- CUBIC FEET PER HOUR
CO	- CLEAN OUT
CW	- COLD WATER
DN	- DOWN
*F	- DEGREES FAHRENHEIT
FCO	- FLOOR CLEAN OUT
FD	- FLOOR DRAIN
GPH	- GALLONS PER HOUR
GPM	- GALLONS PER MINUTE
HW	- HOT WATER
HWC	- HOT WATER RECIRCULATION
I.E.	- INVERT ELEVATION
KW	- KILOWATT
MV	- MIXING VALVE
NG	- NATURAL GAS
NTS	- NOT TO SCALE
OSD	- OVERFLOW STORM DRAIN
P&ID	- PIPING AND INSTRUMENT DIAGRAM
PSI	- POUNDS PER SQUARE INCH
PCI	- POLYVINYL CHLORIDE PIPE
SD	- STORM DRAIN
SOV	- SHUT OFF VALVE
SS	- SANITARY SEWER
SF	- SQUARE FEET
V	- VENT
VTR	- VENT THRU ROOF
WCO	- WALL CLEAN OUT

## PLUMBING GENERAL NOTES

1. DO NOT SCALE FROM THESE DRAWINGS. EXACT DIMENSIONS SHALL BE TAKEN FROM ARCHITECTURAL DRAWINGS.
2. ALL INDICATED WORK SHALL BE PERFORMED BY THE PLUMBING CONTRACTOR UNLESS OTHERWISE NOTED.
3. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF ALL APPLICABLE CODES AND REGULATIONS INCLUDING BUT NOT LIMITED TO: NATIONAL, CITY STATE AND LOCAL ORDINANCES WHICH MAY BE IN EFFECT; AND ALL APPLICABLE CODES, INSTALLATION PROCEDURES AND SYSTEM LAYOUTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ENFORCEMENT AUTHORITIES HAVING JURISDICTION, AND IT SHALL BE THE PLUMBING CONTRACTOR'S RESPONSIBILITY TO PAY FOR ALL NECESSARY PERMITS AND APPROVALS FOR THIS INSTALLATION.
4. IT IS THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR TO REVIEW THESE PLANS AND SPECIFICATIONS, AS WELL AS THE RELATED HVAC, FIRE AND ELECTRICAL DRAWINGS, AND TO REPORT ANY DISCREPANCIES, AS WELL AS THE RELATED HVAC, FIRE AND ELECTRICAL, INTERIOR DECOR AND SITE ENGINEERING DRAWINGS TO BECOME FAMILIAR WITH THE PROJECT BEFORE BEGINNING WORK. THE PLUMBING CONTRACTOR MUST COORDINATE WITH AN OWNER REPRESENTATIVE TO FULLY UNDERSTAND ALL PROJECT REQUIREMENTS WHICH MAY NOT BE SPECIFIED HEREIN AND WHICH THE OWNER MAY CONSIDER PART OF THIS CONTRACT. DURING THE COURSE OF CONSTRUCTION, COORDINATION AND COMMUNICATION ARE THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR TO WORK CLOSELY WITH ALL ACCOMPANYING CONTRACTORS AND TRADES TO ENSURE A SMOOTH RUNNING, CAREFULLY COORDINATED, AND PROFESSIONAL INSTALLATION.
5. ANY DISCREPANCIES OR INADEQUACIES WITHIN THESE BID DOCUMENTS OR BETWEEN THESE BID DOCUMENTS AND THE PROJECT HAVING TO DO WITH THE ELECTRICAL, STRUCTURAL, ARCHITECTURAL, INTERIOR DECOR AND SITE ENGINEERING DRAWINGS, OR BETWEEN THESE BID DOCUMENTS AND THE PROJECT CONDITIONS MUST BE BROUGHT TO THE ATTENTION OF THE OWNER, ARCHITECT AND ENGINEER PRIOR TO BID SUBMISSION.
6. AS-BUILT DRAWINGS ARE REQUIRED TO BE SUBMITTED BY THE PLUMBING SUB-CONTRACTOR. REFER TO GENESIS SPECIFICATION SECTION 22 05 00 FOR INFORMATION.
7. SHOP DRAWINGS ARE REQUIRED TO BE SUBMITTED BY THE PLUMBING SUB-CONTRACTOR. REFER TO GENESIS SPECIFICATION SECTION 22 05 00 FOR INFORMATION.
8. RUN ALL DOMESTIC WATER, WASTE, VENT AND GAS PIPING AS HIGH AS POSSIBLE THROUGHOUT THE BUILDING. INSTALL LEAD PIPING TO THE BOTTOM OF THE JOIST SPACE AND OTHER PIPING TIGHT TO BOTTOM OF SITE. COORDINATE AND VERIFY WITH OTHER TRADES TO AVOID CONFLICTS. PROVIDE PROPER DUCTWORK, FIRE PROTECTION PIPING, LIGHTING SYSTEMS, ETC.
9. ALL EXPOSED HORIZONTAL AND VERTICAL PIPING SHALL BE INSTALLED IN A NEAT ARRANGEMENT IN LOCATIONS WHERE THE MOST BEAUTIFUL FINISH IS REQUIRED. DROPS SHALL BE KEPT TO AN ABSOLUTE MINIMUM AND THEIR FINAL LOCATIONS SHALL BE COORDINATED AND APPROVED BY THE ARCHITECT PRIOR TO ANY MECHANICAL/ELECTRICAL FEEDS. ALL SUCH LOCATIONS ARE TO BE REVIEWED WITH AN OWNER REPRESENTATIVE AND ARCHITECT PRIOR TO INSTALLATION.
10. FINAL CONNECTIONS TO ALL GAS FIRED EQUIPMENT TO BE BY THE PLUMBING CONTRACTOR, REGARDLESS OF WHO PROVIDES EQUIPMENT. THIS SHALL INCLUDE BUT NOT BE LIMITED TO HVAC EQUIPMENT, WATER HEATERS, ETC.
11. ALL SHUT-OFF AND ISOLATION VALVES SHALL BE FULL LINE SIZE GUIDELINES. REFER TO SPECIFICATIONS FOR VALVE SIZES. REFER TO SPECIFICATIONS FOR REQUIREMENTS FOR ISOLATION VALVES.
12. DOMESTIC WATER HEATER TEMPERATURE/PRESSURE RELIEF VALVES SHALL BE PIPED FULL SIZE TO THE NEAREST STORAGE FLOOR DRAIN. THIS REQUIREMENT DOES NOT APPLY TO WATER HEATERS OR WATER HEATING APPARATUS, INSTANTANEOUS WATER HEATERS NOT STORING WATER SHALL NOT REQUIRE TEMPERATURE OR PRESSURE RELIEF VALVES.
13. THE PLUMBING CONTRACTOR SHALL RUN OUT ALL PLUMBING AND DRAINAGE PIPING TO THE LOCATIONS SHOWN ON THE DRAWINGS AND MAKE ALL CONNECTIONS TO SITE LEVEL SYSTEMS.
14. ALL EXPOSED PIPING BELOW VALUANCES DESIGNATED AS ADA/ANSI COMPLIANT SHALL BE TOTALLY CONCEALED BY INSULATION BY THE PLUMBING COVER KIT OR ADA-COMPLANT KNEE SHIELD.
15. ALL ROOF DRAIN SUMPS AND HORIZONTAL STORM DRAIN PIPING LOCATED ABOVE CEILINGS ON THE UPPER MOST FLOOR OF THE ROOF/STORM DRAIN SHALL NOT BE INSULATED INCLUDING AIR FITTINGS UP TO THE DRAIN RISER.
16. ALL NON-DRAINAGE PIPING SHALL BE RUN LEVEL AND GENERALLY FREE OF TRAPS AND UNNECESSARY BENDS, ARRANGED TO CONFORM TO THE BUILDING REQUIREMENTS AND TO SUIT THE NECESSITIES AND CLEARANCES FOR OTHER MECHANICAL WORK. PROVIDE VALVE DRAINAGE OUTLETS IN AREAS OF PIPING WHICH WOULD BE UNPAVED OR UNPAVED AREAS OF REPAIRS.
17. ALL REQUIRED OFFSETS, RISERS AND DROPS DUE TO POSSIBLE OBSTRUCTIONS OF PIPE RUNS ARE NOT NECESSARILY SHOWN. PLUMBING CONTRACTOR SHALL PROVIDE ALL REQUIRED OFFSETS NECESSARY FOR FINAL COORDINATION WITH OTHER TRADES AND STRUCTURE.
18. THROUGH PENETRATIONS OF FIRE RESISTANCE RATED HORIZONTAL ASSEMBLIES SHALL BE PROTECTED BY AN APPROVED THROUGH-PENETRATION FIRESTOP SYSTEM INSTALLED AND TESTED IN ACCORDANCE WITH ASTM E 814 OR E 1996. THE MINIMUM FIRESTOP SYSTEM DIFFERENTIAL OF 0.1 INCH OF WATER (2.48 PA) THE CONTRACTOR SHALL HAVE TO PROVIDE. THE MINIMUM DIFFERENTIAL OF 1 HOUR BUT NOT LESS THAN THE REQUIRED RATING OF THE FLOOR PENETRATED. SEE THE MECHANICAL DRAWINGS FOR THE TESTED ASSEMBLY LOCATIONS, RATINGS AND DETAILS.
- EXCEPTIONS:
- A. FLOOR PENETRATIONS CONTAINED AND LOCATED WITHIN THE CAVITY OF A WALL ABOVE THE FLOOR OR BELOW THE FLOOR DO NOT REQUIRE A T RATING.
- B. FLOOR PENETRATIONS BY FLOOR DRAINS, TUB OR SHOWERS OR SHOWER DRAINS INSTALLED AND LOCATED WITHIN THE CONCEALED SPACE OF A HORIZONTAL ASSEMBLY DO NOT REQUIRE A T RATING.
19. ADEQUATE PIPE SUPPORT SHALL BE PROVIDED FOR ALL JOINTS AND ALL CONCEALED PIPING. THE CONTRACTOR SHALL NOT BE CONSIDERED PIPE SUPPORT. REFER TO SPECIFICATIONS AND DETAIL PAGES.
20. FLUSH LEVERS FOR ACCESSIBLE WATER CLOSETS SHALL BE LOCATED ON THE APPROACH SIDE (WIDE SIDE OF ROOM) OF THE FIXTURE.
21. CLEANSOUTS SHALL BE PROVIDED IN ACCORDANCE WITH THE CODE REQUIREMENTS, INCLUDING AT THE END OF ALL DRAINAGE STAKES.
22. ALL PLUMBING EQUIPMENT, INSULATION, PIPING, ETC. INSTALLED IN HVAC RETURN AIR PLENUMS SHALL MEET CODE REQUIREMENTS FOR FLAME SPREAD AND SMOKE DEVELOPMENT RATINGS (CLASS 25 (SMOKE 0), WHEN TESTED IN ACCORDANCE WITH ASTM E84 OR UL 273).
23. ALL PLUMBING EQUIPMENT REQUIRING ELECTRICAL POWER SHALL BE PROVIDED AND CONCEALED. ALL SWITCHES AT EACH PIECE OF EQUIPMENT, COORDINATE SWITCH TYPE (FUSED OR NON-FUSED) WITH ELECTRICAL DRAWINGS.
24. ALL PLUMBING EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S REQUIREMENTS. MANUFACTURER RECOMMENDATIONS ARE DEEMED REQUIREMENTS.
25. WATER PIPING ROUTED ABOVE CEILINGS AND IN EXTERIOR WALLS SHALL BE ROUTED ON HEATED SIDE (UPPERSIDE) OF CEILING INSULATION AND HEATED SIDE (INSIDE) OF WALL INSULATION. DO NOT INSTALL PIPING IN LOCATIONS SUBJECT TO FREEZING CONDITIONS.
26. WATER HAMMER ARRESTORS, SIZED PER PID, SHALL BE PROVIDED ON THE SUPPLY PIPING TO EACH QUICK CLOSING VALVE (E.G. WATER CLOSERS, URINALS, SENSOR OPERATED FAUCETS, ICE MACHINE SUPPLY BOXES, WATER COOLERS, WASHING MACHINE SUPPLY BOXES, DISHWASHER, ETC). ARRESTORS SHALL BE DOUBLE SEAL JUNCTION TYPE WITH THREADED CONNECTIONS, LISTED FOR CONCEALED INSTALLATIONS WITH NO EXPOSED PARTS.
27. WHERE REQUIRED FOR ACCESS TO VALVES AND ACCESSORIES ABOVE HALL CEILINGS OR IN WALLS, ACCESS PANELS SHALL BE PROVIDED BY THIS CONTRACTOR. PANELS IN RATED ASSEMBLIES SHALL HAVE LISTED RATING NOT GREATER THAN THE ASSEMBLY THEY ARE INSTALLED IN.
28. ALL VALUE ENGINEERING OR DEVIATIONS FROM THE CONTRACT DOCUMENTS SHALL BE SUBMITTED IN WRITING TO THE DESIGN TEAM FOR REVIEW AND APPROVAL PRIOR TO ACCEPTANCE OR IMPLEMENTATION. ANY COST INCURRED AS A RESULT OF VALUE ENGINEERING OR DEVIATIONS FROM THOSE INDICATED IN THE CONTRACT DOCUMENTS (E.G. PLUMBING MODIFICATIONS TO ACCOMMODATE EQUIPMENT OR EQUIPMENT AND REVISIONS TO ACCOMMODATE VERTICAL STRUCTURAL MOVEMENT, INCLUDING BUT NOT LIMITED TO WOOD SHRINKAGE, STRUCTURE SETTLEMENT, ETC.
- B. REFER TO SPEC 22 05 00 FOR FLEXIBLE CONNECTION IN WOOD FRAMED BUILDINGS.
29. PENETRATION THRU VERTICAL WOOD WALL STUDS
- A. GC TO REFER TO STRUCTURAL DESIGN DOCUMENTS FOR PENETRATION REINFORCEMENTS
- B. PENETRATION CRACK REPAIRS AND REVISIONS TO ACCOMMODATE VERTICAL STRUCTURAL MOVEMENT, INCLUDING BUT NOT LIMITED TO WOOD SHRINKAGE, STRUCTURE SETTLEMENT, ETC.
- B. REFER TO SPEC 22 05 00 FOR FLEXIBLE CONNECTION IN WOOD FRAMED BUILDINGS.

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