DOMESTIC WATER PIPING

1. PIPING AND JOINTS: PROVIDE TYPE 'L' HARD DRAWN SEAMLESS COPPER TUBING (ASTM B 88) AND CAST COPPER ALLOY FITTINGS (ASME B16.18). JOINTS 2" AND SMALLER SHALL BE LEAD FREE 95-5 TIN/SILVER SOLDER JOINTS (ASTM B 32).

2. INSULATE PIPING ABOVE GRADE (EXCEPT EXPOSED CONNECTIONS TO PLUMBING FIXTURES). PROVIDE GLASS FIBER INSULATION HAVING A VAPOR BARRIER AND JACKET FOR HOT WATER PIPING AND PROVIDE CLOSED CELL ELASTOMERIC INSULATION WITH JACKET FOR COLD WATER PIPING. PIPE INSULATION SHALL HAVE A CONDUCTIVITY NOT EXCEEDING 0.27 BTUH x SQ. FT., SEE LIST BELOW FOR INSULATION THICKNESS:

   - PROVIDE 1" THICK INSULATION FOR HOT WATER & CIRCULATION PIPING SIZES 1/2" THRU 1-1/4".
   - PROVIDE 1-1/2" THICK INSULATION FOR HOT WATER & CIRCULATION PIPING SIZES 1-1/2" THRU 4".
   - PROVIDE 1/2" THICK INSULATION FOR COLD WATER PIPING SIZES 1/2" THRU 1-1/4".
   - PROVIDE 1" THICK INSULATION FOR COLD WATER PIPING SIZES 1-1/2" THRU 4".

3. PIPING INSULATION, JACKETS, COVERINGS, SEALERS, MASTICS AND ADHESIVES SHALL MEET A FLAME-SPREAD RATING OF 25 OR LESS AND A SMOKE-DEVELOPED RATING OF 50 OR LESS AS TESTED BY ASTM E84 (NFPA 255) METHOD AND SHALL BE PLENUM RATED. PROVIDE PVC INSULATION JACKET FOR EXPOSED PIPING IN MECHANICAL ROOMS. INSTALL INSULATION CONTINUOUSLY THRU FIRE RATED WALLS AND PIPE HANGERS. PROVIDE GALVANIZED STEEL SHIELD BETWEEN PIPE HANGER AND INSULATION.

4. PROTECT COPPER PIPING AGAINST CONTACT WITH DISSIMILAR METALS. ALL HANGERS, SUPPORTS, ANCHORS AND CLIPS SHALL BE COPPER OR COPPER PLATED. WHERE COPPER PIPING IS CARRIED ON TRAPEZE HANGERS WITH OTHER PIPING, PROVIDE A PERMANENT ELECTROLYTIC ISOLATION MATERIAL TO PREVENT CONTACT WITH DISSIMILAR OTHER METALS.

5. PERFORM A PRESSURE TEST ON ALL WATER PIPING. FILL PIPING WITH POTABLE WATER, CAP AND SUBJECT PIPING TO A STATIC WATER PRESSURE OF 50 PSIG ABOVE OPERATING PRESSURE, WITHOUT EXCEEDING PRESSURE RATING OF PIPING SYSTEM MATERIALS OR PRESSURIZE PIPING WITH AIR TO AT LEAST ONE-HUNDRED (100) PSI. ISOLATE TEST SOURCE AND ALLOW 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

6. STERILIZE THE DOMESTIC WATER SYSTEM IN PER THE AMERICAN WATER WORKS ASSOCIATION'S INSTRUCTIONS SPECIFICATIONS AND LOCAL HEALTH DEPARTMENT REGULATIONS.

SANITARY WASTE & VENT PIPING

1. BELOW GRADE PIPING AND JOINTS: PROVIDE SERVICE WEIGHT CAST IRON HUB AND SPIGOT PIPE (ASTM A 74) WITH COMPRESSION JOINTS (CISPI HSN) AND NEOPRENE GASKETS (ASTM C 564) OR NO-HUB PIPE AND FITTINGS (CISPI 301) WITH NEOPRENE GASKET / STAINLESS STEEL CLAMP JOINTS (CISPI 310) WITH NEOPRENE GASKET / STAINLESS STEEL CLAMP JOINTS (ASTM C1540-15)

2. ABOVE GRADE PIPING AND JOINTS: PROVIDE SERVICE WEIGHT CAST IRON NO-HUB PIPE AND FITTINGS (CISPI 301) WITH NEOPRENE GASKET AND STAINLESS STEEL CLAMP JOINTS (CISPI 310) WITH NEOPRENE GASKET / STAINLESS STEEL CLAMP JOINTS (ASTM C1540-15)

3. SLOPE WASTE AND STORM DRAIN PIPING AT 1/4" PER FOOT MINIMUM FOR PIPING 2-1/2" AND SMALLER AND 1/8" PER FOOT MINIMUM FOR PIPING 3" AND LARGER UNLESS NOTED OTHERWISE.

4. PROVIDE FLOOR CLEANOUTS (FCO) WITH TOPS DESIGNED TO MATCH SPECIFIC FLOOR FINISHES SUCH AS CARPET, TILE, ETC. PROVIDE YARD CLEANOUTS (YCO) ENCASED IN AN 18"x18"x6" CONCRETE PAD.

5. WASTE AND VENT SYSTEMS SHALL BE TESTED AND PROVED WATER TIGHT UNDER A HEAD PRESSURE OF NO LESS THAN 10 FT. THIS PRESSURE SHALL BE HELD FOR A PERIOD OF NO LESS THAN 15 MINUTES.

COMMISSIONING NOTE

THIS PROJECT INCLUDES A THIRD PARTY COMMISSIONING AGENT CONTRACTED BY THE OWNER. THE PLUMBING CONTRACTOR SHALL COORDINATE WITH OWNER'S COMMISSIONING AGENT AND PROVIDE ALL NECESSARY TIME, MATERIALS, AND PROCEDURES REQUIRED FOR A FULLY COMMISSIONED PROJECT. SEE COMMISSIONING REQUIREMENTS IN THE PROJECT MANUAL FOR FURTHER INFORMATION.

PLUMBING GENERAL NOTES

1. GENERAL AND SPECIAL CONDITIONS OF THE CONTRACT APPLY TO THE PLUMBING SCOPE OF WORK. THE PLUMBING DRAWINGS AND SPECIFICATIONS SHALL NOT BE INTERPRETED AS WAIVING OR OVERRULING ANY REQUIREMENTS EXPRESSED IN GENERAL CONDITIONS.

2. PLUMBING WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE 2018 NORTH CAROLINA STATE PLUMBING CODE AND WITH THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.

3. SCOPE: PROVIDE ALL LABOR, MATERIAL AND EQUIPMENT REQUIRED FOR THE COMPLETION AND OPERATION OF ALL PLUMBING SYSTEMS IN ACCORDANCE WITH ALL APPLICABLE CODES.

4. PERMITS: APPLY AND PAY FOR ALL NECESSARY PERMITS, FEES AND INSPECTIONS REQUIRED BY ANY PUBLIC AUTHORITY HAVING JURISDICTION. ACREAGE CHARGES, FACILITIES CHARGES AND BOND PROPERTY ASSESSMENTS ARE NOT TO BE CONSTRUED TO BE A PART OF THIS CONTRACT.

5. WARRANT THE SYSTEM LABOR, MATERIALS AND EQUIPMENT FOR THE TIME PERIOD SPECIFIED IN THE PROJECT MANUAL. IF NO WARRANTY SECTION IS PROVIDED, THEN WARRANT THE SYSTEM LABOR, MATERIAL AND EQUIPMENT FOR A MINIMUM OF ONE YEAR AFTER COMPLETION AND ACCEPTANCE. PRIOR TO TURNING THE COMPLETED SYSTEM OVER TO THE OWNER, REVIEW THE INSTALLATION WITH THE ARCHITECT / ENGINEER AND REPLACE OR REPAIR ANY DEFECTIVE WORKMANSHIP, EQUIPMENT AND MATERIALS AT NO ADDITIONAL COST TO THE OWNER.

6. COORDINATE ALL PLUMBING PIPING LOCATIONS, ROUGH-IN LOCATIONS AND EQUIPMENT LOCATIONS WITH OTHER TRADES TO AVOID CONFLICTS AND INTERFERENCES. FINAL PIPING AND EQUIPMENT LOCATIONS SHALL BE A CODE COMPLIANT INSTALLATION FOR ALL TRADES.

7. PLUMBING PLANS SHALL NOT BE SCALED. REFERENCE THE ARCHITECTURAL PLANS FOR DIMENSIONS OF ALL LOCATIONS OF PLUMBING FIXTURES, FLOOR DRAINS, COLUMNS, WALLS, DOORS, ETC.

8. WHERE DISCREPANCIES ARE FOUND IN THE DRAWINGS AND SPECIFICATIONS THE MORE STRINGENT SHALL APPLY. CONTACT ENGINEER FOR CLARIFICATION.

9. ALL PIPING SHALL BE MANUFACTURED IN THE UNITED STATES OF AMERICA.

10. ALL VALVES, BACKFLOW PREVENTERS, ACCESSORIES, ETC. SERVING THE DOMESTIC WATER SYSTEM SHALL MEET LEAD FREE STANDARDS PER ANSI/NSF 372 AND NSF 61, ANNEX G.

11. PIPING AND SPECIALTIES SHALL BE LOCATED CONCEALED IN WALLS, PARTITIONS OR ABOVE CEILINGS UNLESS NOTED OTHERWISE. PIPING IN EXPOSED AREAS SHALL BE RUN TIGHT TO UNDERSIDE OF STRUCTURE.

12. PROVIDE ACCESS DOORS FOR ALL SPECIALTIES, VALVES, WATER HAMMER ARRESTORS, TRAPS, ETC., CONCEALED BEHIND WALLS OR CEILINGS THAT REQUIRE MAINTENANCE ACCESS.

13. PIPING, VENTS, ETC. EXTENDING THROUGH EXTERIOR WALLS AND/OR THE ROOF SHALL BE FLASHED AND COUNTER FLASHED IN A WATERPROOF MANNER. COORDINATE FLASHING WITH THE GENERAL CONTRACTOR.

14. PROVIDE NON-CONDUCTING DIELECTRIC UNIONS WHENEVER CONNECTING DISSIMILAR METALS.

15. VALVES AND OTHER PIPING ACCESSORIES REQUIRING ACCESS SHALL BE INSTALLED IN ACCESSIBLE LOCATION NO MORE THAN 18" ABOVE THE CEILING OR 2" BEHIND THE WALL, PROVIDE OFFSETS IN PIPING AS NEEDED.

FIRE STOPPING:

1. FIRE STOP ALL PIPING PENETRATIONS, OF FIRE RATED WALLS, FLOORS AND PARTITIONS. PROVIDE A DEVICE(S) OR SYSTEM(S) WHICH HAS BEEN TESTED AND LISTED AS COMPLYING WITH ASTM E-814 AND INSTALL IN ACCORDANCE WITH THE CONDITIONS OF THEIR LISTING. PROVIDE A DEVICE(S) OR SYSTEM(S) WITH AN 'F' RATING EQUAL TO THE RATING OF THE ASSEMBLY BEING PENETRATED. REFER TO ARCHITECTURAL PLANS FOR WALL AND FLOOR TYPES.

SUBMITTALS:

1. PROVIDE SUBMITTALS BEARING THE CONTRACTORS REVIEW STAMP FOR ALL PLUMBING FIXTURES, PIPING, EQUIPMENT AND ACCESSORIES IN ELECTRONIC FORMAT (PDF).

PLUMBING LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
	CW	COLD WATER PIPING
	HW	HOT WATER PIPING
	HWR	HOT WATER RETURN PIPING
	W	SANITARY WASTE PIPING
	V	SANITARY VENT PIPING
D	D	DRAIN PIPING (INDIRECT)
	-	PIPING ELBOW DOWN
	-	PIPING ELBOW UP
	-	PIPING CONTINUES
	-	SHUT-OFF VALVE
	HB	HOSE BIBB / WALL HYDRANT

ADDITIONAL ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	MFG	MANUFACTURER
AFG	ABOVE FINISHED GRADE	PSI	POUNDS PER SQUARE INCH
BFF	BELOW FINISHED FLOOR	POD	POINT OF DISCONNECT
CONT	CONTINUATION	T&P	TEMPERATURE AND PRESSURE
CTE	CONNECT TO EXISTING	TYP	TYPICAL
DN	DOWN	UG	UNDERGROUND
ETR	EXISTING TO REMAIN	VTR	VENT THRU ROOF
(E)	EXISTING		
GPF	GALLONS PER FLUSH	EC	ELECTRICAL CONTRACTOR
GPM	GALLONS PER MINUTE	CM	CONSTRUCTION MANAGER
KW	KILOWATT	MC	MECHANICAL CONTRACTOR
MBH	1,000 BRITISH THERMAL UNIT / HOUR	PC	PLUMBING CONTRACTOR

PLUMBING DEMOLITION NOTES

1. THE PLUMBING CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING THE PROJECT TO VERIFY EXISTING CONDITIONS AND DETERMINE THE LEVEL OF DEMOLITION REQUIRED AND INCLUDE ALL NECESSARY PRICING IN THEIR BID. ANY DISCREPANCIES NOTED BETWEEN THE DOCUMENTS AND EXISTING CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO BIDDING.

2. PLUMBING CONTRACTOR SHALL REMOVE EXISTING PLUMBING FIXTURES AND EQUIPMENT AS INDICATED, INCLUDING ASSOCIATED LP GAS, HOT WATER, COLD WATER, STORM DRAIN, SANITARY WASTE AND VENT PIPING, UNLESS NOTED OTHERWISE. SEE ARCHITECTURAL DEMOLITION PLAN FOR LOCATIONS.

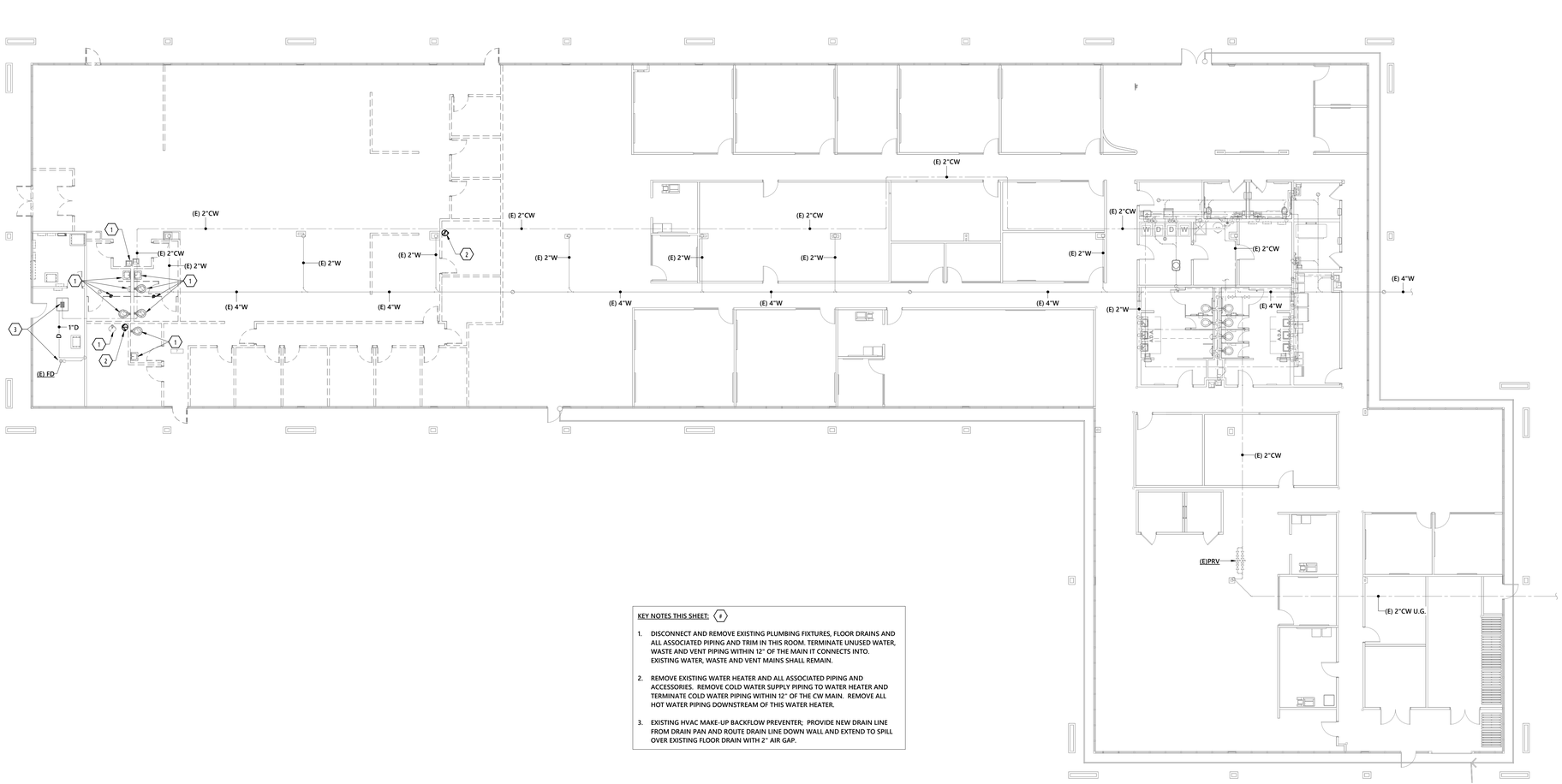
3. PLUMBING CONTRACTOR SHALL REMOVE UNUSED HW & CW BRANCH PIPING BACK TO WITHIN 12" OF THE MAIN IT CONNECTS, TERMINATE WITH SHUT-OFF VALVE AND CAP.

4. PLUMBING CONTRACTOR SHALL TERMINATE UNUSED BRANCH WASTE PIPING WITH A CLEAN-OUT AT THE MOST REMOTE END OR ABANDONED AND CAPPED WITHIN 12" OF THE MAIN IT CONNECTS. (NO DEAD- ENDS ALLOWED)

5. PLUMBING CONTRACTOR SHALL REMOVE UNUSED VENT BRANCH PIPING BACK TO WITHIN 12" OF THE MAIN IT CONNECTS THEN CAP.

6. WITH THE REMOVAL OF EXISTING WALLS, SOME EXISTING WASTE, VENT, STORM DRAIN, OR DOMESTIC WATER PIPING MAY BE DISCOVERED. ANY EXISTING PIPING DISCOVERED THAT IS ACTIVE SHALL BE OFFSET BY THE P.C. TO NEW WALLS. ANY EXISTING PIPING DISCOVERED THAT IS ABANDONED SHALL BE REMOVED.

7. ALL EXISTING WATER AND SANITARY WASTE SYSTEMS SHALL BE KEPT FULLY OPERATIONAL THROUGHOUT THE CONSTRUCTION PROCESS. WRITTEN CONSENT FROM THE DESIGNATED OWNERS REPRESENTATIVE MUST BE OBTAINED PRIOR TO ANY UTILITY SHUTDOWNS.



KEY NOTES THIS SHEET: (#)

1. DISCONNECT AND REMOVE EXISTING PLUMBING FIXTURES, FLOOR DRAINS AND ALL ASSOCIATED PIPING AND TRIM IN THIS ROOM. TERMINATE UNUSED WATER, WASTE AND VENT PIPING WITHIN 12" OF THE MAIN IT CONNECTS INTO. EXISTING WATER, WASTE AND VENT MAINS SHALL REMAIN.

2. REMOVE EXISTING WATER HEATER AND ALL ASSOCIATED PIPING AND ACCESSORIES. REMOVE COLD WATER SUPPLY PIPING TO WATER HEATER AND TERMINATE COLD WATER PIPING WITHIN 12" OF THE CW MAIN. REMOVE ALL HOT WATER PIPING DOWNSTREAM OF THIS WATER HEATER.

3. EXISTING HVAC MAKE-UP BACKFLOW PREVENTER; PROVIDE NEW DRAIN LINE FROM DRAIN PAN AND ROUTE DRAIN LINE DOWN WALL AND EXTEND TO SPILL OVER EXISTING FLOOR DRAIN WITH 2" AIR GAP.

1 **DEMOLITION PLUMBING PLAN**
3/32" = 1'-0"

Ref North

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