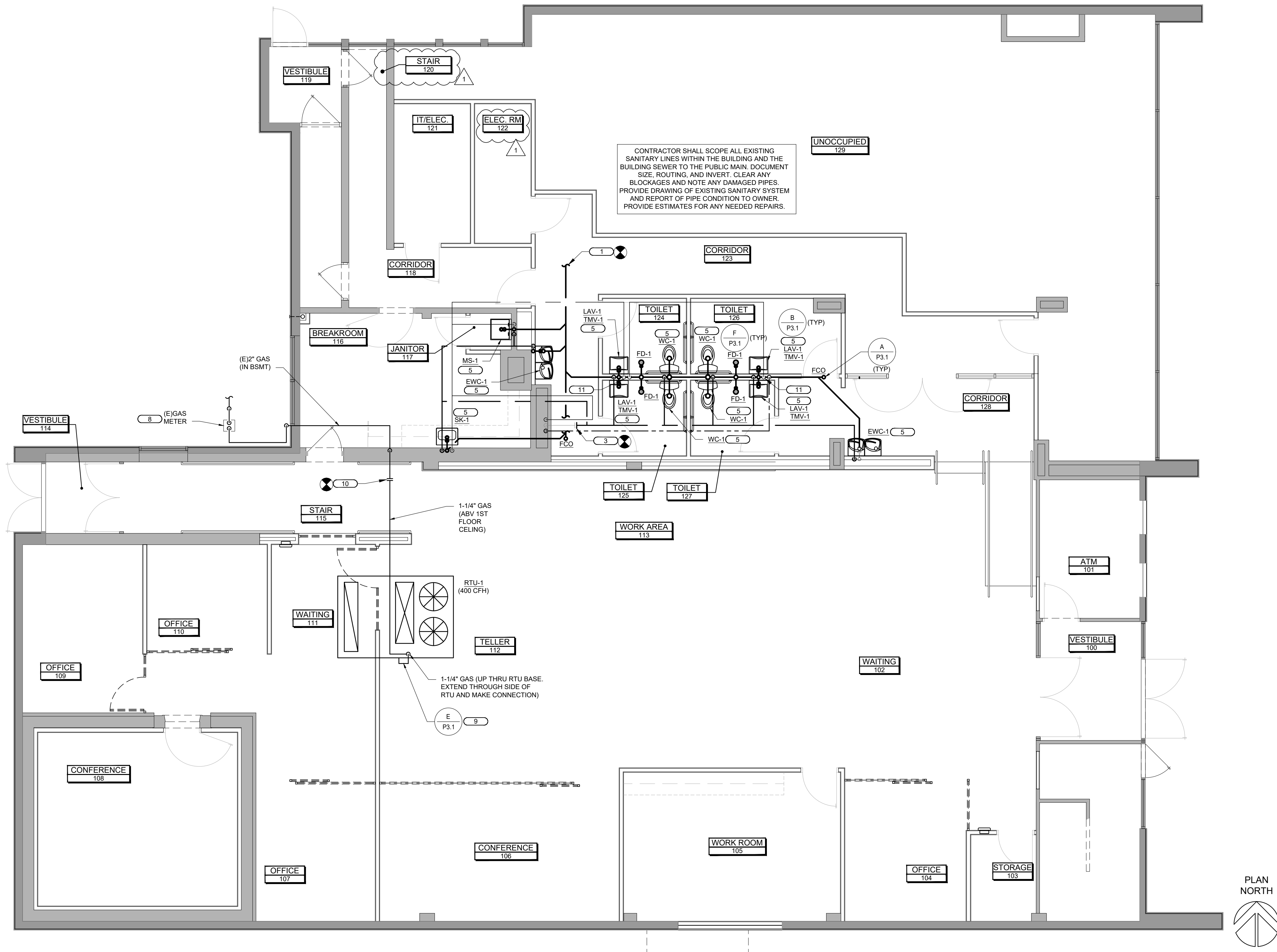


PLUMBING PLAN



- UNLESS OTHERWISE SPECIFIED, CONTRACTOR SHALL PROVIDE ALL NECESSARY EQUIPMENT, MATERIAL, LABOR AND SUPERVISION NECESSARY TO COMPLETE THE PLUMBING WORK IN ACCORDANCE WITH THE SPECIFICATIONS AND STANDARDS.
- CONTRACTOR SHALL FURNISH AND INSTALL ALL PLUMBING FIXTURES.
- CONTRACTOR SHALL FURNISH AND INSTALL ALL REQUIRED VALVES, PIPING, HANGERS, ETC. REQUIRED FOR A COMPLETE PLUMBING SYSTEM. ALL FIXTURES, VALVES, PIPING AND APPURTENANCES REQUIRED FOR A FULL ROUGH-IN SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
- SEAL AROUND ALL PIPES PENETRATING FIRE SEPARATIONS WITH LISTED AND APPROVED FIRE SEAL MATERIAL. ONLY LISTED AND APPROVED SEALANTS AND METHODS FOR THE SPECIFIC USE WILL BE PERMITTED.
- CONTRACTOR SHALL ENSURE THAT ALL FLOOR PENETRATIONS WITHIN THE DEMISED PREMISES ARE PROPERLY SEALED AND REMAIN WATERTIGHT TO PREVENT ANY POSSIBLE DAMAGE TO THE BUILDING AND/OR SURROUNDING AREAS. FAILURE TO DO SO SHALL BE AT THE RISK AND SOLE EXPENSE OF THE CONTRACTOR.
- ALL MATERIAL SHALL BE NEW AND OF COMMERCIAL GRADE, AND BEAR UNDERWRITER'S LABORATORIES AND UNION LABELS WHERE SUCH LABELING APPLIES.
- CONTRACTOR MUST VISIT THE JOBSITE TO BECOME FAMILIAR WITH MAJOR ITEMS SUCH AS STRUCTURAL ELEMENTS AND OTHER EXISTING JOB CONDITIONS THAT MAY AFFECT THE WORK. ADDITIONALLY, CONTRACTOR SHALL VERIFY EXACT LOCATIONS AND DIMENSIONS OF SUCH ITEMS AS WASTE, VENTS, WATER LINES, ETC.
- CONTRACTOR SHALL FOLLOW ALL SPECIFICATIONS AND DETAILS.
- CONTRACTOR SHALL PROVIDE ACCESS TO ALL ITEMS REQUIRING ACCESS (VALVES, TRAP PRIMERS, ETC.) INSTALLED BEHIND WALLS, FLOORS OR CEILINGS. PLUMBING CONTRACTOR SHALL ALSO VERIFY THAT ALL SUCH ITEMS ARE OPERABLE AND FULLY ACCESSIBLE THROUGH ACCESS PROVIDED.
- ALL PLUMBING FIXTURES SHALL BE INSTALLED WITH STOP VALVES TO ISOLATE EACH FIXTURE.
- FIELD VERIFY ALL CONDITIONS PRIOR TO BID.
- CONTRACTOR TO INSURE THAT STUDS ARE NOT TO BE CUT OR MODIFIED FOR PLUMBING AND ELECTRICAL RUNS.
- COORDINATE ROUTING OF ALL PIPING WITH OTHER TRADES WORK PRIOR TO FABRICATION, PURCHASING OR INSTALLATION.

PLUMBING GENERAL NOTES

- EXTEND SANITARY LINE TO EXISTING SANITARY PIPING AND CONNECT. FIELD VERIFY AND COORDINATE EXACT LOCATION, ELEVATION, SIZE, DIRECTION OF FLOW AND OTHER REQUIREMENTS OF EXISTING SANITARY PIPING PRIOR TO BID. PATCH SLAB TO MATCH SURROUNDING AREA. NEW SANITARY LINE SHALL BE PRESSURE TESTED PER LOCAL CODES WITH A MINIMUM REQUIREMENT OF HOLDING 10 FT. W.C. FOR TWO HOURS. REFER TO STACK DIAGRAM AND PLUMBING SPECIFICATIONS FOR MORE INFORMATION.
- EXTEND VENT LINE TO EXISTING VENT PIPING AND CONNECT. FIELD VERIFY AND COORDINATE EXACT ELEVATION, LOCATION, SIZE AND OTHER REQUIREMENTS OF EXISTING VENT PRIOR TO BID.
- EXTEND COLD WATER LINE TO EXISTING COLD WATER PIPING AND CONNECT. FIELD VERIFY AND COORDINATE EXACT LOCATION, SIZE, ELEVATION AND OTHER REQUIREMENTS OF EXISTING WATER LINES PRIOR TO BID. REFER TO RISER DIAGRAM AND PLUMBING SPECIFICATIONS FOR MORE INFORMATION. PROVIDE WATER SHUT-OFF VALVE AT CONNECTION.
- EXISTING ELECTRIC TANK TYPE WATER HEATER TO REMAIN. CONTRACTOR SHALL VERIFY THAT IT IS IN PROPER WORKING ORDER. REPAIR / REPLACE AS NEEDED.
- ALL PLUMBING FIXTURES SHALL BE INSTALLED WITH STOP VALVES TO ISOLATE EACH FIXTURE. REFER TO PLUMBING SPECIFICATIONS FOR MORE INFORMATION.
- INSTALL 1/2\"/>

PLUMBING CODED NOTES MAY
BE CALLED OUT ON EITHER
SHEET P1.1, P2.1, OR BOTH.

PLUMBING CODED NOTES

REVISIONS:
07/25/2025
1
ADDENDUM 1

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PLUMBING PLAN

COMMONWEALTH OF VIRGINIA
JEREMY T. PERRY
Lic. No. 42243
Professional Engineer
07/25/25

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SEAL. THIS BUILDING USE IS ONLY APPLICABLE IN
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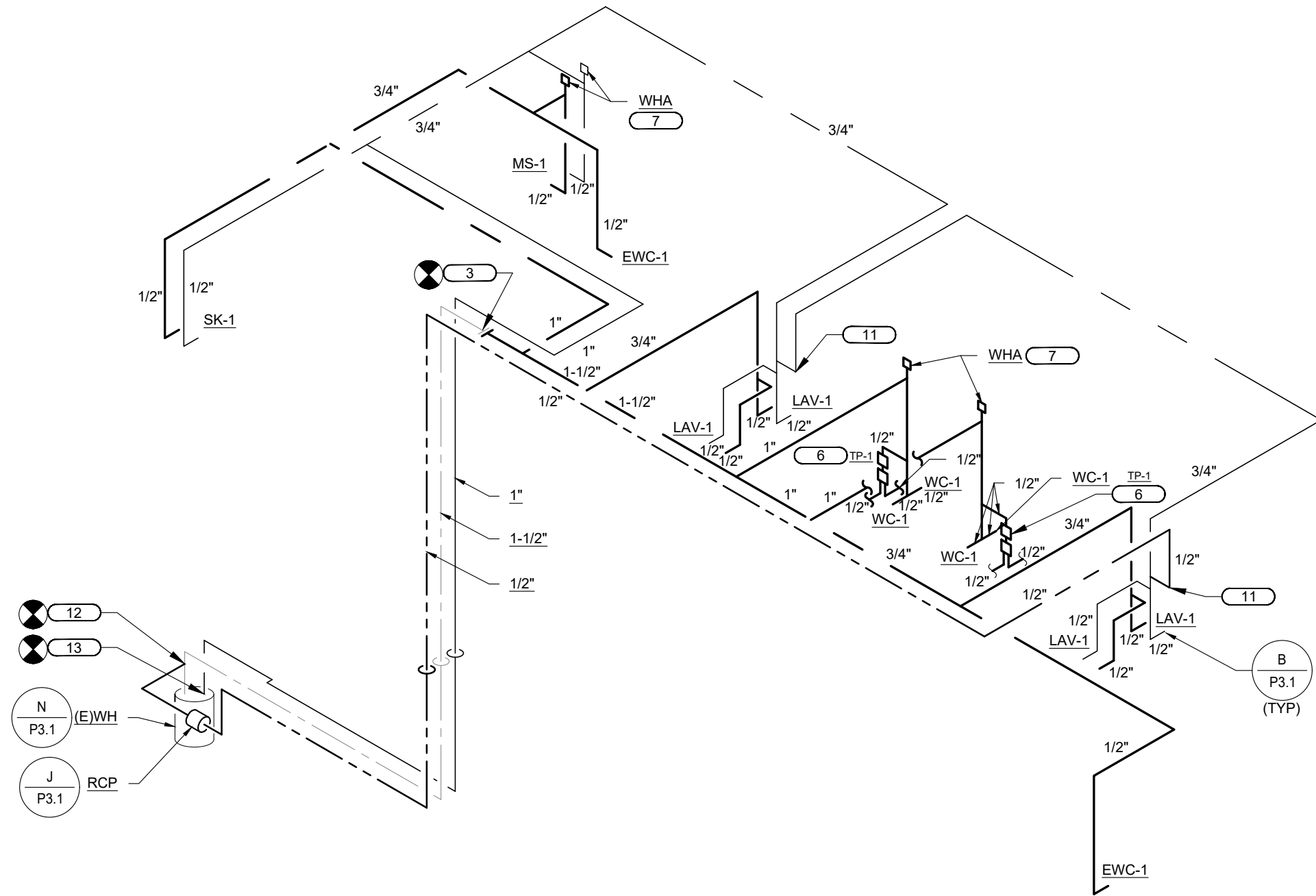
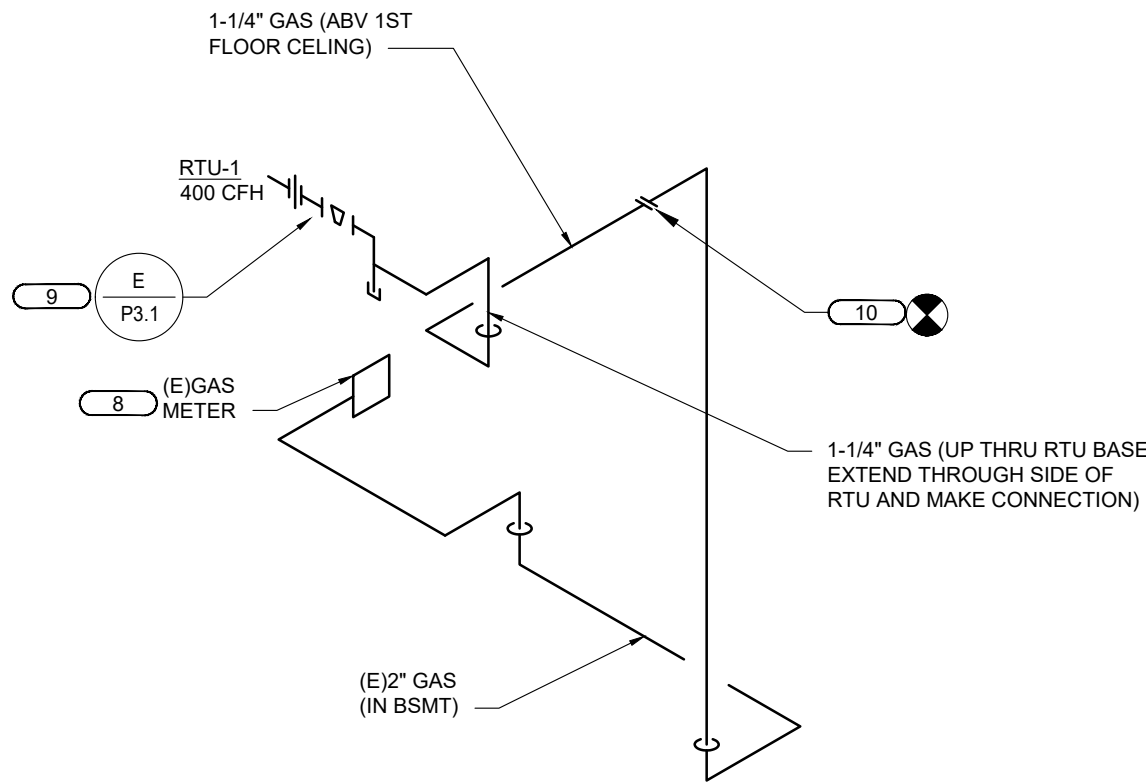
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P1.1

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NATURAL GAS CALCULATIONS	
EQUIPMENT	MBH
RTU-1	400
-	-
-	-
TOTAL GAS LOAD (MBH)	400

NOTE(S):

1. REUSE EXISTING GAS METER AND REGULATOR
2. THE TOTAL DEVELOPED LENGTH FROM THE EXISTING GAS METER TO THE UH-1 IS APPROXIMATELY 60'-0".
3. PIPE SIZES SHOWN ON THE RISER DIAGRAM ARE BASED ON INTERNATIONAL FUEL AND GAS CODE TABLE 402.4(1) WITH A DELIVERY PRESSURE OF LESS THAN 2 PSI AND A PRESSURE DROP OF 0.3" WATER COLUMN. VERIFY FIELD CONDITIONS FOR ACTUAL DEVELOPED LENGTH AND POSSIBLE ADJUSTMENTS TO PIPE SIZES.
4. FIELD-VERIFY THE CAPACITY OF THE EXISTING GAS METER AND REGULATOR. COORDINATE WITH THE UTILITY COMPANY AND REPLACE AS REQUIRED.
5. REFER TO SHEET P-101 AND P-301 FOR MORE INFORMATION.



REFER TO SHEET P1.1 FOR PLUMBING CODED NOTES.

REFER TO SHEET P1.1 FOR PLUMBING CODED NOTES.

GAS RISER

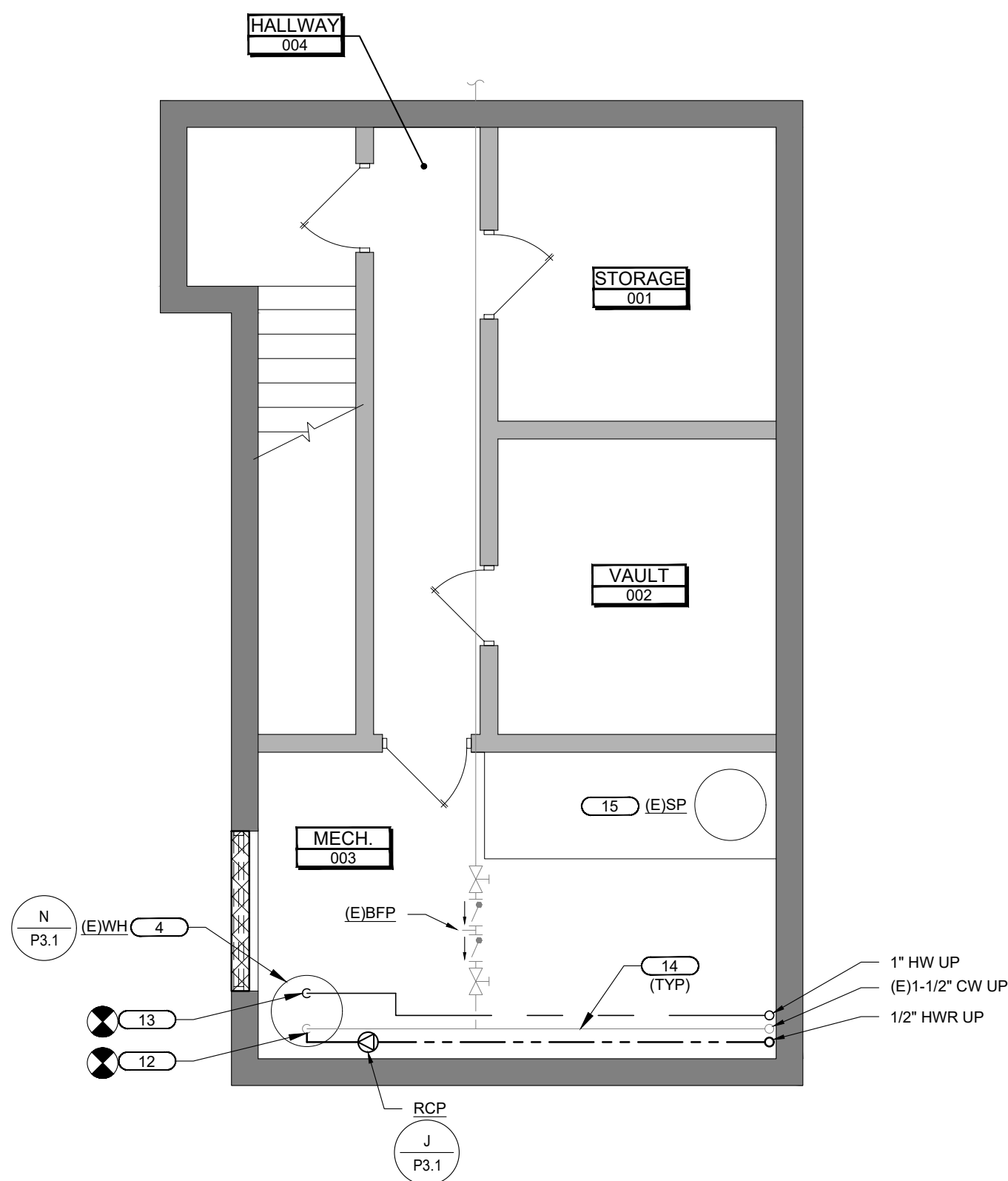
N.T.S.

L

WATER RISER

N.T.S.

C



REFER TO SHEET P1.1 FOR PLUMBING CODED NOTES.

REFER TO SHEET P1.1 FOR PLUMBING CODED NOTES.

BASEMENT PLUMBING PLAN

3/16" = 1'-0"

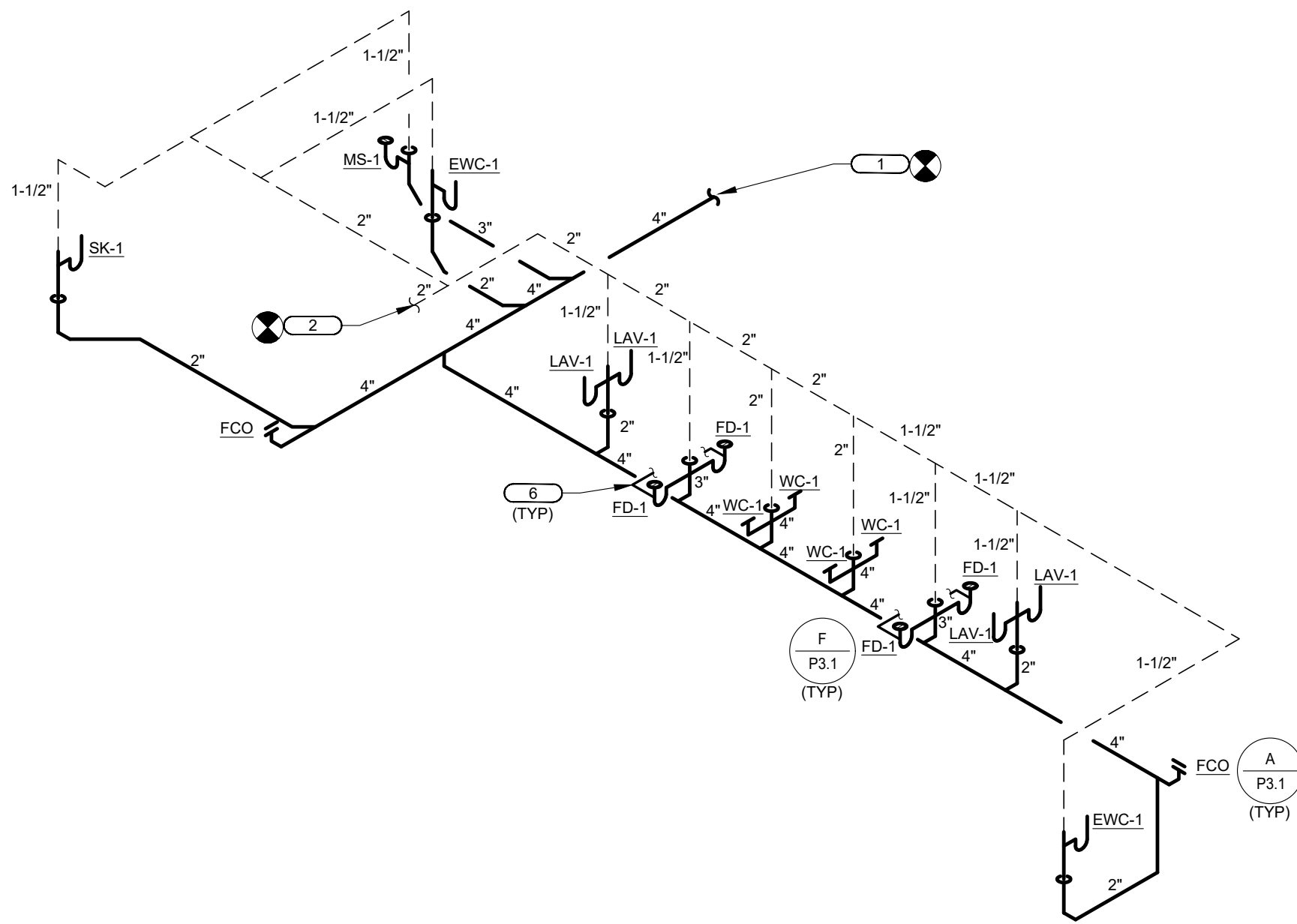
J

SANITARY STACK

N.T.S.

A

PLUMBING ISOMETRICS



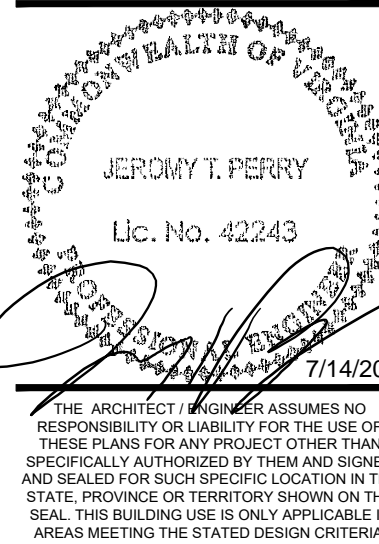
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(E)WATER HEATER DETAIL

N.T.S.
-

N

RECIRCULATION PUMP DETAIL

J

GAS PIPING DETAIL

N.T.S.
-

E

FLOOR CLEANOUT DETAIL

N.T.S.
-

A

NOT USED

R

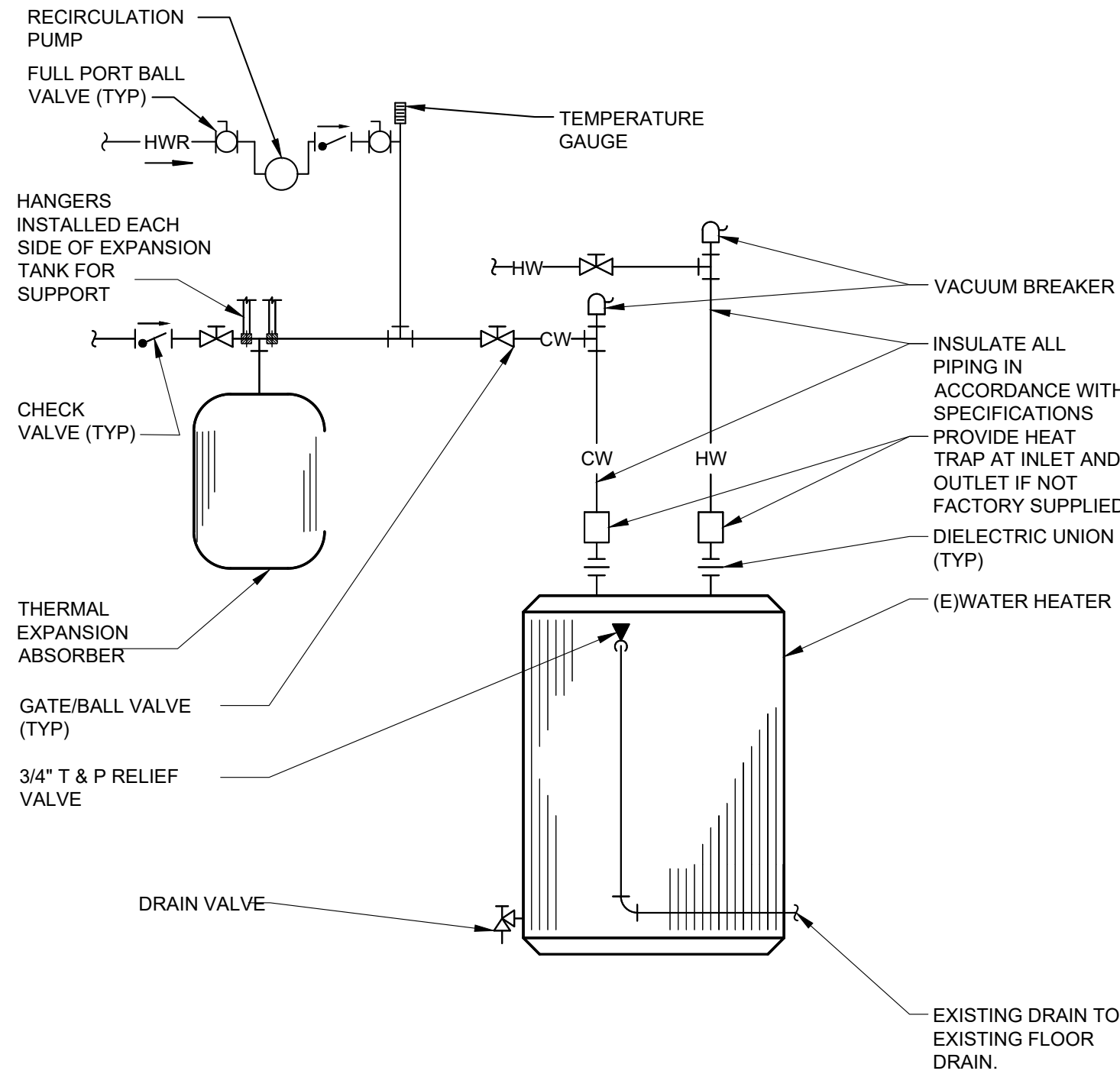
PLUMBING SYMBOLS & ABBREVIATIONS

L

PLUMBING SCHEDULES

N.T.S.
-

C



NOT USED

K

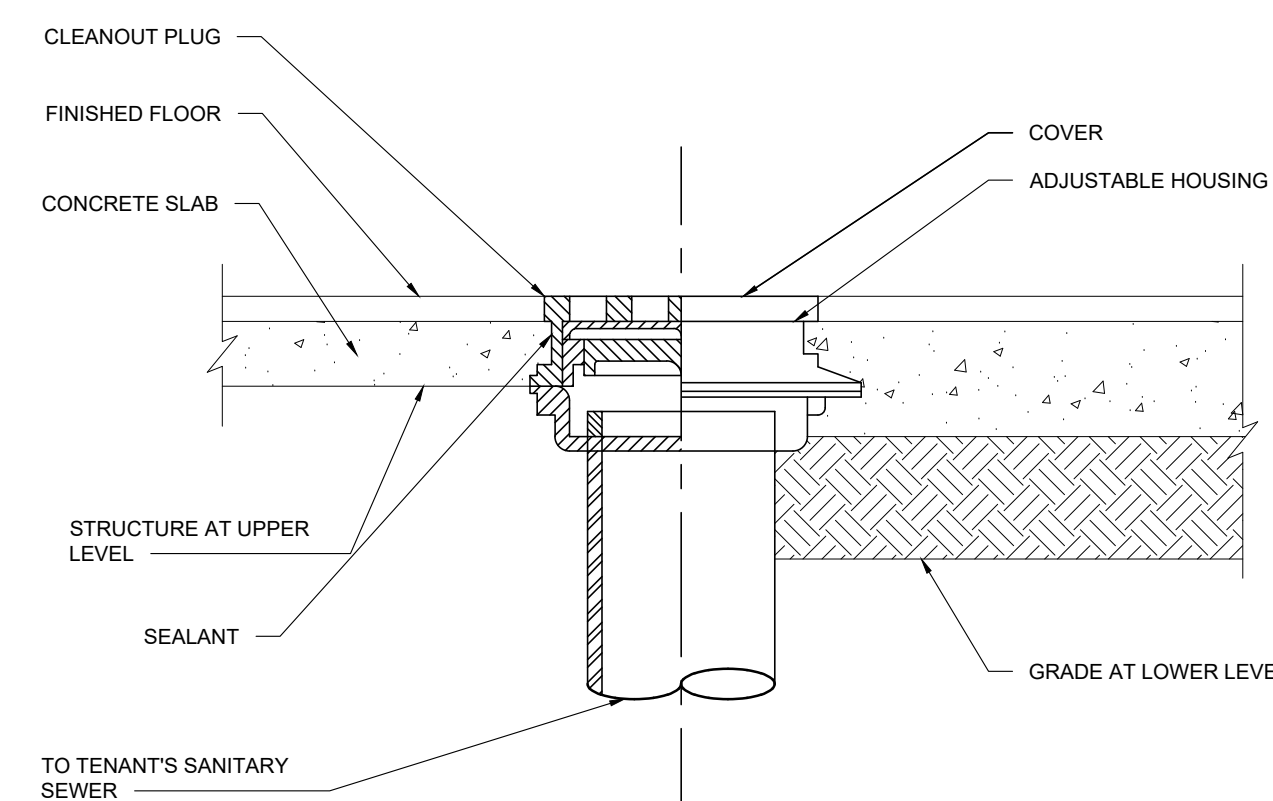
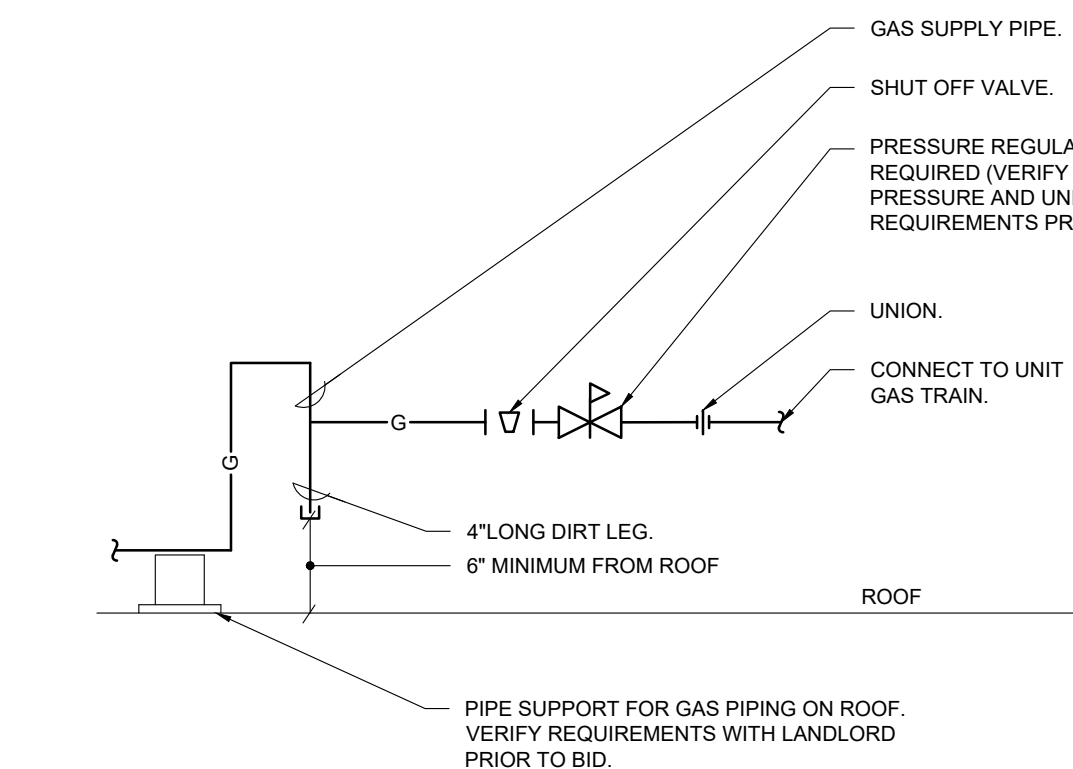
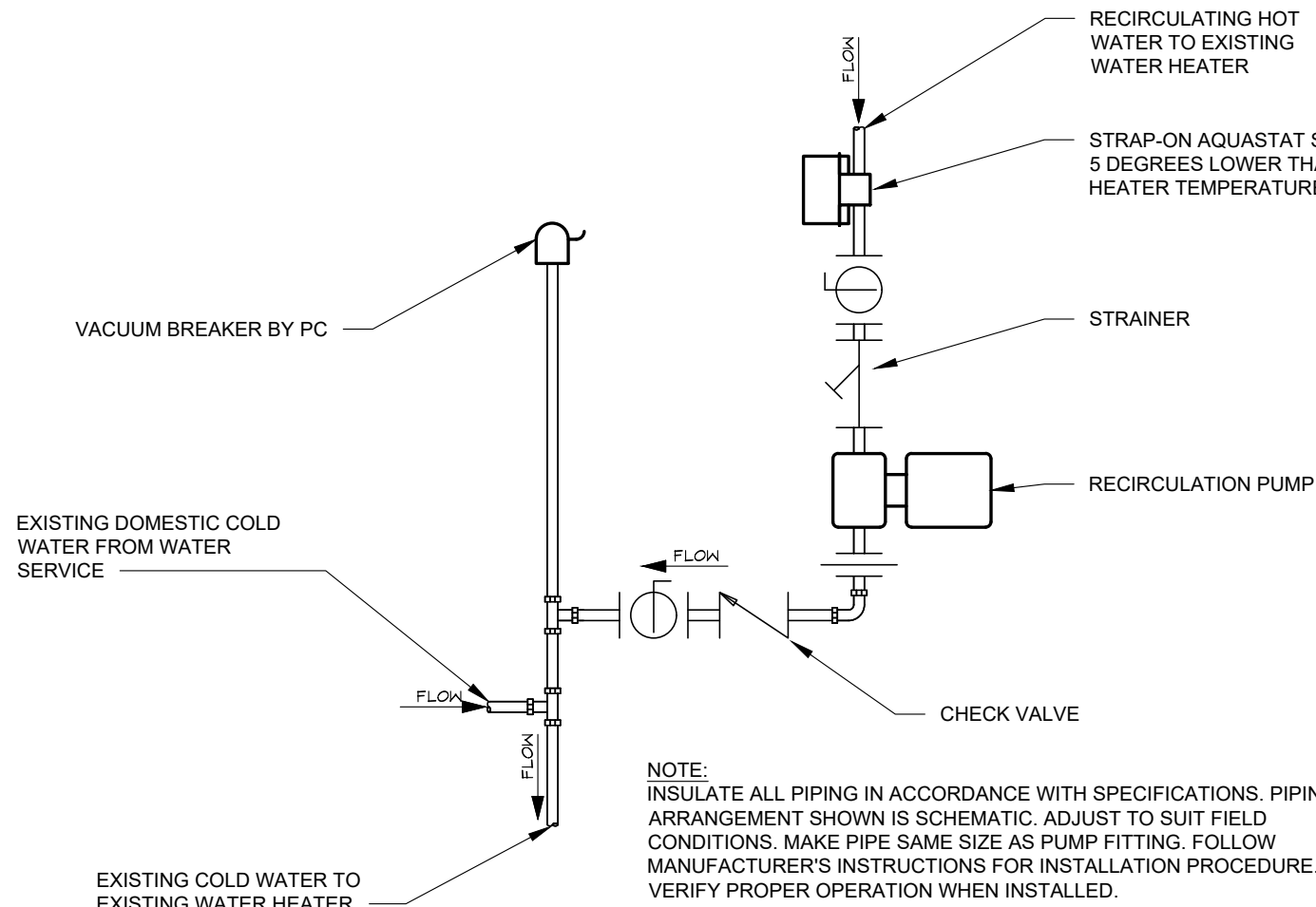
DRAIN WITH TRAP PRIMER

1/4" = 1'-0"
-

MIXING VALVE DETAIL

N.T.S.
-

B



SAI # 240506

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P3.1

PLUMBING SCHEDULES & DETAILS

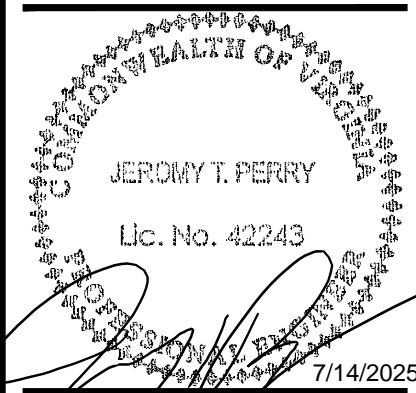
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7/14/2025

THE ARCHITECT/ENGINEER ASSUMES NO RESPONSIBILITY OR LIABILITY FOR THE USE OF THESE PLANS FOR ANY PROJECT OTHER THAN SPECIFICALLY AUTHORIZED BY THEM AND SIGNED AND SEALED FOR SUCH SPECIFIC LOCATION IN THE STATE, PROVINCE OR TERRITORY SHOWN ON THE SEAL. THIS BUILDING USE IS ONLY APPLICABLE IN AREAS MEETING THE STATED DESIGN CRITERIA.

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PLUMBING SYMBOLS & ABBREVIATIONS

CW	DOMESTIC WATER PIPE		
HW	DOMESTIC HOT WATER		
G	GAS PIPE		
SAN	SANITARY PIPE		
COND	CONDENSATE PIPE		
V	SANITARY VENT PIPE		
(E)XX	EXISTING PIPE OR EQUIPMENT		
FP	SPRINKLER PIPE		
STM	STORM PIPE		
	BACK FLOW PREVENTER		
	PIPE UP		
	PIPE DOWN		
	COMBINATION BALANCE AND SHUT-OFF VALVE		
	GATE VALVE		
	GLOBE VALVE		
	DRAIN VALVE		
	CHECK VALVE		
	GAGE COCK		
	GAS SHUT-OFF (PLUG) VALVE		
(E)	EXISTING		
(R)	RELOCATED		
AB	ABOVE		
AFF	ABOVE FINISHED FLOOR		
ARCH	ARCHITECT		
BEL	BELOW		
BLOG	BUILDING		
CLG	CEILING		
CO	CLEANOUT		
COND	CONDENSATE PIPE		
CONT	CONTINUATION		
CW	COLD WATER		
CONTR	CONTRACTOR		
COORD	COORDINATE		
DISC	DISCONNECT		
DN	DOWN		
EA	EACH		
EX	EXISTING		
EWC	ELECTRIC WATER COOLER		
FCO	FLOOR CLEAN OUT		
FD	FLOOR DRAIN		
FIXT	FIXTURE		
FP	FIRE PROTECTION PIPE		
FURN	FURNISH		
FV	FLUSH VALVE		
G	GAL		
GC	GENERAL CONTRACTOR		
GPH	GALLONS PER HOUR		
GPM	GALLONS PER MINUTE		
HB	HOSE BIB		
HP	HOT WATER		
HW	HOT WATER		
LAV	LAVATORY		
MAX	MAXIMUM		
MFR	MANUFACTURER		
MT	MOUNT		
NTS	NOT TO SCALE		
PLBG	PLUMBING		
RD	ROOF DRAIN		
SAN	SANITARY		
TMV	THERMOSTATIC MIXING VALVE		
TP	TRAP PRIMER		
TYP	TYPICAL		
UR	URINAL		
V	VENT		
VTR	VENT THROUGH ROOF		
WC	WATER CLOSET		
WCO	WALL CLEANOUT		
WH	WATER HEATER		
W	WITH		
	P&T RELIEF VALVE		
	BUTTERFLY VALVE		
	BALL VALVE		
	FLOOR DRAIN		
	WATER METER		
	HOSE BIBB		
	UNION		
	Y-TYPE STRAINER		
	CAPPED LINE		
	CONNECT TO EXISTING		
	ACCESS DOOR		

PLUMBING FIXTURE SCHEDULE

FIXTURE DESIGNATION	DESCRIPTION	PIPING CONNECTIONS					MANUFACTURER'S CATALOG NUMBER				MOUNTING HEIGHT
		COLD	HOT	TRAP	WASTE	VENT	FIXTURE	STOP	OUTLET	FAUCET	
SK-1	SINGLE COMPARTMENT TOP MOUNT 1 HOLE SINK. 18 GAUGE TYPE 304 (18-8) NICKEL BEARING STAINLESS STEEL. 5-1/2" BOWL DEPTH.	1/2"	1/2"	2"	2"	1-1/2"	ELKAY LRAD252155	DEARBORN 2712SCW	ELKAY LK-35 BASKET STRAINER	MOEN-RILEY 7402 SERIES SINGLE HANDLE FAUCET	TOP MOUNT COUNTER
LAV-1	WHITE VITREOUS CHINA, ADA COMPLIANT, WALL HUNG LAVATORY. 8" CENTERS AND WALL CARRIER. INSTALL FLEXIBLE SUPPLY PIPES WITH WHEEL HANDLE STOPS, DRAIN WITH TAILPIECE, 1-1/2" ADJUSTABLE P-TRAP. INSULATE SUPPLIES AND TRAP PER A.D.A.	1/2"	1/2"	2"	2"	1-1/2"	AMERICAN STANDARD LUCERNE 0356.015	DEARBORN 2712SCW	-	MOEN M-DURA 9220F12 1.2 GPM	WALL MOUNT
MS-1	FIAT MOP MOLDED STONE SERVICE BASIN MODEL NUMBER MSB-2424 WITH VINYL BUMPERGUARD. FURNISH WITH AMERICAN STANDARD FAUCET MODEL NUMBER 8344.012 WITH INTEGRAL VACUUM BREAKER AND STOPS. EQUAL PRODUCTS ARE STERNS-WILLIAMS OR MUSTEE. PROVIDE BOBRICK B-239-34 MOP HANGER.	1/2"	1/2"	1-1/2"	3"	1-1/2"	FIAT MSB2424	DEARBORN 2712SCW	-	AMERICAN STANDARD 8344.112	FLOOR MOUNT
WC-1	WHITE, VITREOUS CHINA TANK TYPE HIGH EFFICIENCY WATER CLOSET. 1.6 GAL PER FLUSH FLOOR MOUNTED, WHITE SEAT WITH OPEN FRONT. 12" ROUGH-IN, CHROME FLUSH LEVER, BOLT CAPS, EVERECLEAN SURFACE. UNIT MEETS ADA GUIDELINES. AMERICAN STANDARD #5321.110 SEAT	1/2"	-	INTEGRAL	3"	2"	AMERICAN STANDARD CADET 2467.100	DEARBORN 2712SCW	-	-	16.5" TO RIM
FD-1	COATED CAST IRON BODY WITH BOTTOM OUTLET, INVERTIBLE MEMBRANE CLAMP AND ADJUSTABLE COLLAR WITH SEEPAGE SLOTS, AND ADJUSTABLE POLISHED NICKLE BRONZE STRAINER, PROVIDE UNDERDECK CLAMPING IF REQUIRED. PROVIDE DRAINS WITH 1/2" TRAP PRIMER CONNECTION. PROVIDE TRAP PRIMERS FOR ALL DRAINS NOT INDIRECTLY CONNECTED TO THE SANITARY SYSTEM. PROVIDE FUNNEL FOR FD-2.	(1/2" PRIMER CONN.)	-	3"	3"	-	ZURN #415N	-	-	-	FLUSH W/ FLOOR
EW-1	(2) STAINLESS STEEL, CHILLED WATER MOUNTED AS HIGH AND LOW. MINIMUM 1 TO MEET ADA REQUIREMENTS. BOTTLE FILLER TO BE MOUNTED ABOVE THE LOW SIDE.	1/2"	-	2"	2"	1-1/2"	OASIS PRACY WITH PWEBF	-	-	-	-
WHA	WATER HAMMER ARRESTOR	-	-	-	-	-	SILOUX CHIEF 653-B SERIES OR EQUAL	-	-	-	-
TP	BRASS FLOOR DRAIN TRAP PRIMER VALVE, AUTOMATICALLY OPENS WHEN PRESSURE DROPS FROM FAUCET OPENING IN SYSTEM.	1/2"	-	-	-	-	PRECISION PLUMBING PRODUCTS #P2-500	-	1/2"	-	ABOVE CEILING
FCO	FLOOR CLEANOUT WITH POLISHED BRONZE TOP	-	-	-	-	-	ZURN #1400	-	-	-	FLUSH W/ FLOOR
TMV-1	THERMOSTATIC MIXING VALVE - 3/8" TEMPERED OUTLET, 0.25 - 5 GPM, ASSE 1070. SET TEMPERATURE AT 110°F	3/8"	-	-	-	-	LEONARD 170-LF	-	-	-	UNDER-COUNTER
RCP	92 WATTS, 115V/60HZ, 2340 RPM. PROVIDE WITH REQUIRED UNION TO MAKE CONNECTION. CONTINUOUSLY RE-CIRCULATE WATER WHEN TEMPERATURE DROPS BELOW 110°F AND SHALL HAVE A MINIMUM CAPACITY OF 5 GPM. PROVIDE BALANCING COCKS TO CONTROL RE-CIRCULATION AND AUTOMATIC TIMER KIT.	3/4"	-	-	-	-	BELL AND GOSSETT #HBF-22-103252LF	-	-	-	-

NOTES: 1. SEATS FOR WATER CLOSETS SHALL ELONGATED WITH OPEN FRONT. 2. SUPPLY AND KEY STOPS FOR TANK TYPE WATER CLOSETS SHALL BE DEARBORN. 3. SUPPLY AND WHEEL STOPS FOR LAVATORIES AND SINKS SHALL BE DEARBORN. 4. TRAPS FOR LAVATORIES AND WATER COOLERS SHALL BE DEARBORN.

PLUMBING SPECIFICATIONS

22 05 00 PLUMBING GENERAL PROVISIONS

- A. PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL A PLUMBING SYSTEM COMPLETE AS INDICATED ON THE DRAWINGS AND AS REQUIRED BY CODE AND AS SPECIFIED HEREIN.
- B. THIS CONTRACTOR, UNLESS OTHERWISE NOTED IS TO PROVIDE POWER WIRING FOR EACH ITEM OF ELECTRICAL EQUIPMENT AND MAKE FINAL CONNECTIONS TO MOTORS.
- C. PAINTING:
1. ALL FINISH PAINTING IS TO BE PERFORMED BY THE CONTRACTOR, EXCEPT AS NOTED BELOW. THE CONTRACTOR SHALL RESTORE TO ORIGINAL CONDITION ANY PAINTING DEFACED DURING CONSTRUCTION AND AFTER ORIGINAL PAINTING, THIS CONTRACTOR, AT THEIR EXPENSE, SHALL ENGAGE THE PROJECT'S PAINTER AS REQUIRED TO ENSURE THE PROPER COLOR AND METHOD IS USED.
 2. ALL EXPOSED MATERIALS (E.G., PIPING, WIRING) IN OPEN/EXPOSED SITUATIONS WITH A SPECIFIED COLOR IN THE ARCHITECTURAL REFLECTED CEILING PLAN SHALL BE PAINTED TO MATCH THAT COLOR. THE CONTRACTOR MUST ENGAGE WITH THE PAINTER TO ENSURE THE PAINT IS APPLIED NEATLY AND PROFESSIONALLY AND MATCHES THE EXACT SPECIFIED COLOR UNLESS OTHERWISE SPECIFIED ON THE ARCHITECTURAL REFLECTED CEILING PLAN. THE CONTRACTOR MUST COORDINATE AND FIELD-VERIFY THE COLOR PRIOR TO PURCHASE AND THE START OF WORK, USING APPROPRIATE PROTECTIVE MEASURES AND PRIMERS TO ENSURE PAINT ADHERENCE WITHOUT COMPROMISING MATERIAL LISTINGS OR VIOLATING MANUFACTURER RECOMMENDATIONS.
- D. ALL WORK SHALL CONFORM TO CODES, RULES, AND REGULATIONS:
1. NATIONAL ELECTRICAL CODE.
 2. STANDARD FOR INSTALLATION OF AIR CONDITIONING AND VENTILATING SYSTEMS, NFPA 90A.
 3. CODE FOR SAFETY TO LIFE FROM FIRE IN BUILDINGS AND STRUCTURES, NFPA 101.
 4. FEDERAL OCCUPATIONAL SAFETY AND HEALTH STANDARDS.
 5. STATE MECHANICAL CODE.
 6. STATE BUILDING CODE.
 7. STATE INDUSTRIAL COMMISSION REQUIREMENTS.
 8. LOCAL BUILDING CODE REQUIREMENTS.
 9. BUILDING INSURING AGENCY REQUIREMENTS.
 10. STATE PLUMBING CODE.
 11. NFPA.
- E. ALL PERMITS REQUIRED BY LAWS, ORDINANCES AND BUILDING CODES HAVING JURISDICTION SHALL BE OBTAINED AT THE PROPER TIME BY AND AT THE EXPENSE OF THIS CONTRACTOR.
- F. THIS CONTRACTOR SHALL OBTAIN ALL INSPECTIONS REQUIRED BY ALL LAWS, ORDINANCES AND PUBLIC AUTHORITY HAVING JURISDICTION AND SHALL OBTAIN CERTIFICATES OF SUCH INSPECTIONS AND SUBMIT SAME TO THE ARCHITECT AND SHALL PAY ALL FEES, CHARGES, ASSESSMENTS AND OTHER EXPENSES IN CONNECTION THEREWITH.
- G. PIPING AND EQUIPMENT LAYOUT IS SCHEMATIC. EXACT LOCATIONS ARE DETERMINED BY STRUCTURAL AND OTHER CONDITIONS. DESIGN OF SYSTEM MAY NOT BE CHANGED. ONLY EXACT LOCATION OF PIPING AND DUCTS MAY BE REVISED TO SUIT CONSTRUCTION CONDITIONS AND AID IN COORDINATION WITH WORK OF OTHER CONTRACTORS.
- H. THE MATERIALS AND EQUIPMENT INSTALLED IN THE WORK SHALL MEET THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND NO MATERIALS OR EQUIPMENT SHALL BE ORDERED UNTIL REVIEWED BY THE ENGINEER, LANDLORD AND/OR ARCHITECT.
- I. GENERAL CONTRACTOR SHALL SUBMIT SHOP DRAWINGS PER THE DOCUMENTS PROVIDED BY THE TENANT/CONTRACTOR.
- J. CATALOG DATA FOR EQUIPMENT REVIEWED BY THE ARCHITECT SHALL NOT SUPERSEDE THE ENGINEER'S CONTRACT DOCUMENTS. THE REVIEW OF THE ENGINEER SHALL NOT RELIEVE THE GENERAL CONTRACTOR FROM RESPONSIBILITY FOR DEVIATIONS FROM DRAWINGS OR SPECIFICATIONS, PROVIDING PROPER CLEARANCE, FABRICATION PROCESS AND COORDINATION WITH OTHER TRADES.
- K. WHEN SUBMITTED FOR THE ARCHITECT'S REVIEW, SHOP DRAWINGS SHALL BEAR THIS CONTRACTOR'S CERTIFICATION THAT THIS CONTRACTOR HAS REVIEWED, CHECKED AND APPROVED THE SHOP DRAWINGS, THAT THEY ARE IN HARMONY WITH THE REQUIREMENTS OF THE PROJECT AND WITH THE PROVISIONS OF THE CONTRACT DOCUMENTS AND THAT THIS CONTRACTOR HAS VERIFIED ALL FIELD MEASUREMENTS AND CONSTRUCTION CRITERIA, MATERIALS, CATALOG NUMBERS AND SIMILAR DATA. GENERAL CONTRACTOR SHALL ALSO CERTIFY THAT THE WORK REPRESENTED BY THE SHOP DRAWINGS AS RECOMMENDED BY THIS CONTRACTOR AND THE GENERAL CONTRACTOR'S GUARANTEE WILL FULLY APPLY.
- L. ALL CONTRACTORS SUBMITTING PROPOSALS FOR THIS WORK SHALL FIRST EXAMINE THE SITE AND ALL CONDITIONS THEREIN. ALL PROPOSALS SHALL TAKE INTO CONSIDERATION ALL SUCH CONDITIONS AS MAY AFFECT THE WORK UNDER THIS CONTRACT. THE SUBMITTING OF A BID AUTOMATICALLY IMPLIES THAT THIS EXAMINATION OF SITE HAS BEEN DONE.
- M. CONTRACTOR SHALL VERIFY LOCATION OF UTILITIES AND NOTE CONDITIONS WHICH WOULD AFFECT THE WORK. ALL DISCREPANCIES SHALL THEN BE REPORTED PRIOR TO THE BID AWARD.
- N. WITHIN 90 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE, RECORD DRAWINGS OF THE ACTUAL INSTALLATION SHALL BE PROVIDED TO THE BUILDING LANDLORD. RECORD DRAWINGS SHALL INCLUDE AS A MINIMUM THE LOCATION AND PERFORMANCE DATA ON EACH PIECE OF EQUIPMENT, GENERAL CONFIGURATION OF DISTRIBUTION SYSTEM INCLUDING SIZES.
- O. ANY REFERENCE TO TENANT OR TENANT CONSTRUCTION MANAGER, OR FURNISHED BY ANY OF THE ABOVE, REFERS TO VACU.
- P. TRADE NAMES, MANUFACTURERS AND SHOP DRAWINGS
1. WHERE TRADE NAMES AND MANUFACTURERS ARE USED ON THE DRAWINGS OR IN THE SPECIFICATIONS, THE EXACT EQUIPMENT SHALL BE USED. THE USE OF ANY UNAUTHORIZED EQUIPMENT SHALL BE SUBJECT TO REMOVAL AND REPLACEMENT AT THIS CONTRACTOR'S EXPENSE.
 2. THIS CONTRACTOR SHALL SUBMIT ONLY SUBSTITUTION REQUESTS TO TENANT CONSTRUCTION MANAGER FOR APPROVAL. SUBMISSIONS SHALL BE MADE EARLY ENOUGH IN PROJECT TO ALLOW FOUR (4) WORKING DAYS FOR TENANT CONSTRUCTION MANAGER'S REVIEW WITHOUT CAUSING DELAYS OR CONFLICTS TO THE JOB'S PROGRESS. SUBMITTALS SHALL BEAR THE STAMP OF THE CONTRACTOR AND THE SUB-CONTRACTOR SHOWING THAT THEY HAVE REVIEWED AND CONFIRMED THAT THE SUBMITTALS ARE IN CONFORMANCE WITH THE CONTRACT DRAWINGS AND SPECIFICATIONS OR INDICATE WHERE EXCEPTIONS HAVE BEEN TAKEN.
- Q. DEMOLITION
1. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE DEMOLITION AND REMOVAL OF EXISTING WORK. FIELD VERIFY AND COORDINATE ANY EXISTING EQUIPMENT REQUIRED TO BE LEFT INTACT AND PROTECT EQUIPMENT TO REMAIN DURING CONSTRUCTION.
- R. WARRANTY AND GUARANTEE
1. THIS CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND LABOR PROVIDED UNDER THIS CONTRACT AND SHALL MAKE GOOD, REPAIR OR REPLACE AT NO ADDITIONAL COST ANY DEFECTIVE WORK, MATERIAL, OR EQUIPMENT DISCOVERED WITHIN 12 MONTHS FROM THE DATE OF CERTIFICATE OF OCCUPANCY. THIS GUARANTEE SHALL EXTEND TO LABOR AND MISCELLANEOUS MATERIALS REQUIRED FOR THE INSTALLATION OF EQUIPMENT. THIS CONTRACTOR IS RESPONSIBLE TO VERIFY, COORDINATE AND FOLLOW ALL PROPER HANDLING AND INSTALLATION TECHNIQUES WITH MANUFACTURER(S) IN ORDER TO MAINTAIN MANUFACTURER'S WARRANTY.

22 06 00 PLUMBING BASIC MATERIALS AND METHODS

- A. PROVIDE AND ERECT THE FOLLOWING PIPING AS SHOWN ON THE DRAWINGS AND/OR AS REQUIRED.
1. SANITARY BUILDING DRAIN AND VENT PIPING SHALL BE SERVICE WEIGHT CAST IRON SOIL PIPE.
 2. SCHEDULE 40 PVC PIPING CAN BE USED FOR SANITARY WASTE AND VENT PIPING WHERE LOCAL CODE ALLOWS AND WITH APPROVAL FROM LANDLORD. PVC NOT ALLOWED IN RETURN AIR PLENUM.
 3. DOMESTIC HOT AND COLD WATER USE TYPE "L" HARD COPPER PIPE.
- B. THIS CONTRACTOR IS TO BECOME INFORMED OF THE EXACT DIMENSIONS OF FINISHED WORK WHERE PIPES ARE TO BE PLACED AND WILL ARRANGE THE WORK ACCORDINGLY. ASSUMING ALL RESPONSIBILITY FOR PROPER LOCATION. IN THE ERECTION OF THE MAINS, SPECIAL CARE SHALL BE USED PROVIDING SUPPORT AND PROPER ALLOWANCES SHALL BE MADE FOR EXPANSION.
- C. ALL PIPE LINES MUST BE PROVIDED WITH A SUFFICIENT NUMBER OF FITTINGS OR UNIONS TO MAKE POSSIBLE DISASSEMBLY WITHOUT BREAKAGE OF FITTINGS.
- D. ALL EXPOSED PIPING SHALL BE NEAT AND CAREFULLY ALIGNED WITH THE STRUCTURAL ELEMENTS OF THE BUILDING. NO OFFSETS OR OBLIQUE BENDS WILL BE PERMITTED. DRAWINGS ARE DIAGRAMMATIC AND SHOULD NOT BE USED FOR LAYOUT WORK.
- E. ALL LOW POINTS IN WATER PIPING TO HAVE DRAIN VALVES WITH STANDARD HOSE ATTACHMENTS. HOT AND COLD WATER PIPING IS TO PITCH TOWARD THE NEAREST DRAIN VALVE.
- F. ALL PIPES TO BE INSTALLED SHALL BE LOCATED AT SUFFICIENT DISTANCE FROM WALLS, OTHER PIPES, CONDUIT, DUCTWORK AND OTHER OBSTACLES TO AVOID INTERFERENCE AND TO PERMIT THE APPLICATION OF FULL THICKNESS OF INSULATION SPECIFIED.
- G. MECHANICAL JOINT TYPE PIPING SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
- H. ALL SLEEVES AND OPENINGS THROUGH FIRE RATED WALLS AND/OR FLOORS SHALL BE FIRE SEALED WITH CALCIUM SILICATE, SILICONE "RTV" FOAM, 3M® FIRE RATED SEALANTS OR EQUAL, SO AS TO RETAIN THEIR FIRE RATING.

22 13 16 HOT AND COLD WATER, SANITARY WASTE AND VENT PIPING

- A. BUILDING DRAIN, SOIL, WASTE AND VENT LINES SHALL BE SERVICE WEIGHT CAST IRON HUBLESS PIPE WITH TYPE 304 STAINLESS STEEL CLAMPS AT COUPLINGS. SCHEDULE 40 PVC MAY BE USED FOR SANITARY WASTE AND VENT PIPING WHERE ALLOWED BY LOCAL CODE AND WITH APPROVAL OF LANDLORD. PVC NOT ALLOWED IN RETURN AIR PLENUM.
- B. VENT STACKS SHALL EXTEND THROUGH THE BUILDING, TERMINATING 12" ABOVE THE ROOF. STANDARD FLASHING SHALL BE EXTENDED 12" IN ALL DIRECTIONS FROM THE VENT TERMINAL AND TURNED DOWN INTO VENT. FLASHING UNITS AS MADE BY STONEMAN CAULK TYPE NO. S1110-4 MAY BE USED IN LIEU OF FIELD FABRICATED FLASHING.
- C. HORIZONTAL RUNS SHALL BE GIVEN AS STEEP A PITCH TOWARD THE OUTLET AS CONDITIONS WILL PERMIT BUT NOT LESS THAN 1/8" PER FOOT.
- D. FULL "Y" BRANCH FITTINGS AND EXTENSION WITH BRASS NIPPLES AND FINISHED SCREW PLUGS FOR CLEANOUTS SHALL BE PLACED IN ACCESSIBLE POSITIONS AT ENDS OF HORIZONTAL LINES OF PIPE AND AT FOOT OF ALL VERTICAL LINES OF PIPE OR ELSEWHERE, AS MAY BE REQUIRED BY THE CODE.
- E. WHERE CLEANOUTS OCCUR IN FINISHED AREAS, THEY SHALL BE RECESSED AND COVERS TO BE FLUSH WITH THE FLOOR OR WALL. SHALL BE CHROME PLATED BRASS.
- F. HOT AND COLD WATER PIPING, ABOVE GROUND, SHALL BE TYPE "L" HARD COPPER TUBE WITH SOLDER FITTINGS. EXPOSED PIPING SHALL BE CHROME PLATED BRASS.
- G. ALL COPPER TUBING SHALL HAVE SWEAT JOINTS AND BE CLEAN OF SCALE AND FOREIGN MATTER BEFORE INSTALLATION. ALL ENDS OF TUBING TO BE SWEATED SHALL BE REAMED, CLEANED AND BURNISHED TO REMOVE DIRT AND OXIDE. HARD 95-5 SOLDER SHALL BE USED AND APPLIED TO THE JOINTS ACCORDING TO STANDARD PRACTICE AND/OR MANUFACTURER'S RECOMMENDATIONS. SUITABLE ADAPTERS SHALL BE USED AT CONNECTION TO EQUIPMENT.
- H. EACH HOT AND COLD WATER BRANCH SHALL BE PROVIDED WITH A GATE VALVE SHUT-OFF AND EACH FIXTURE SHALL BE PROVIDED WITH A STOP VALVE.

22 41 16 STERILIZATION

- A. STERILIZE NEW DOMESTIC WATERLINES AFTER INSTALLATION.
- B. FURNISH A CERTIFICATE OF STERILIZATION AND APPROVAL FOR HUMAN CONSUMPTION TO BE SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THIS STATE, REGULARLY EMPLOYED BY THE TESTING LABORATORY. CERTIFICATE MUST BE GIVEN TO THE ENGINEER AND TENANT BEFORE FINAL PAYMENT WILL BE MADE.
- C. STERILIZATION SHALL BE BY MEANS OF CHLORINE INJECTED INTO THE WATER SYSTEM NEAR THE SOURCE AND OUTLETS THROUGHOUT THE SYSTEM SHALL BE TESTED TO PROVE PRESENCE OF MINIMUM REQUIREMENTS. LEAVE CHLORINE IN FOR 24 HOURS AND FLUSH OUT SYSTEM UPON COMPLETION OF WORK. SEND DOCUMENTATION ON OFFICIAL LETTERHEAD OF TESTING LABORATORY TO TENANT AND ENGINEER AFTER STERILIZATION.
- D. STERILIZATION SHALL BE PERFORMED UNDER THE IMMEDIATE SUPERVISION OF A WATER TESTING LABORATORY REGULARLY ENGAGED IN THE SERVICE AND SHALL BE DONE ACCORDING TO THEIR INSTRUCTIONS.
- E. PROVIDE CERTIFICATE OF STERILIZATION IN FINAL CLOSE OUT PACKAGE TO BE DELIVERED TO TENANT PROJECT MANAGER.

22 42 20 GAS PIPING

- A. ALL ABOVE-GROUND GAS PIPING SIZE 2" AND LARGER SHALL BE SCHEDULE 40 BLACK STEEL WITH WELDED JOINTS. ABOVE-GROUND GAS PIPING SIZE 1-1/2" AND SMALLER SHALL BE SCHEDULE 40 BLACK STEEL WITH SOCKET WELDED FITTINGS.
- B. ABOVE-GROUND LOCATIONS: GAS PIPING MAY BE INSTALLED IN ACCESSIBLE ABOVE-GROUND CEILING SPACES (SUBJECT TO THE APPROVAL OF THE AUTHORITY HAVE JURISDICTION). WHETHER OR NOT SUCH SPACE ARE USED AS A PLENUM. VALVES SHALL NOT BE LOCATED IN SUCH SPACES SPACES. PIPING IN PLENUM SHALL BE WELDED.
- C. THIS CONTRACTOR MAY SUBSTITUTE THREADED FITTINGS 1-1/2" AND SMALLER AND WHERE ALLOWED BY LOCAL AUTHORITY HAVING JURISDICTION, PIPING IN IN PLENUMS SHALL BE WELDED.
- D. GAS COCK'S 1-1/2" AND SMALLER SHALL BE ALL BRONZE, SCREWED, FLAT HEAD, BRASS PLUG AND WASHER 200 LB. NOG.
- E. PROVIDE LINE SIZE 6" LONG DIRT LEG AND GAS COCK AT ALL EQUIPMENT CONNECTIONS.
- F. ALL EQUIPMENT SHALL SHALL BE CONNECTED WITH RIGID PIPING AS SPECIFIED ABOVE. FLEXIBLE CONNECTORS ARE NOT ACCEPTABLE.
- G. PROVIDE UNION AT ALL EQUIPMENT CONNECTIONS.

22 57 00 PLUMBING FIXTURES AND EQUIPMENT

- A. VALVES TO BE AS FOLLOWS:
1. 125 LB. S.W.P. BALL AND CHECK VALVES:
 2. FULL PORT BALL VALVES (2-1/2" AND SMALLER) - ALL BRONZE, TEFLON STEM SEALS AND SEAT, 1/4 TURN SHUT-OFF, VINYL COVERED HANDLES.
 3. CHECK (2-1/2" AND SMALLER) - ALL BRONZE, SCREWED, HORIZONTAL SWING CHECK WITH BRONZE DISC.
- B. VALVES SHALL BE MILWAUKEE VALVE. EQUAL PRODUCTS BY CRANE OR NIBCO MAY BE FURNISHED AT THE CONTRACTOR'S OPTION.
- C. UNIONS TO BE AS FOLLOWS:
1. UNIONS FOR COPPER PIPE TO BE 150 LB., ALL BRONZE, SOLDER END TYPE BY CHASE. EQUAL PRODUCTS BY NIBCO, ELKHART OR MUELLER MAY BE FURNISHED AT THE CONTRACTOR'S OPTION.
 2. DIELECTRIC UNIONS BETWEEN FERROUS AND COPPER SHALL BE INSULATED TO PREVENT METAL-TO-METAL CONTACT AND SHALL BE MANUFACTURED BY WATTS. EQUAL PRODUCTS BY ZURN.
- D. WATER CLOSETS, URINALS AND LAVATORIES SHALL BE VITREOUS CHINA AS SCHEDULED AND PROVIDED BY CONTRACTOR. INSTALL PER ADA REQUIREMENTS.

22 57 13 INSULATION

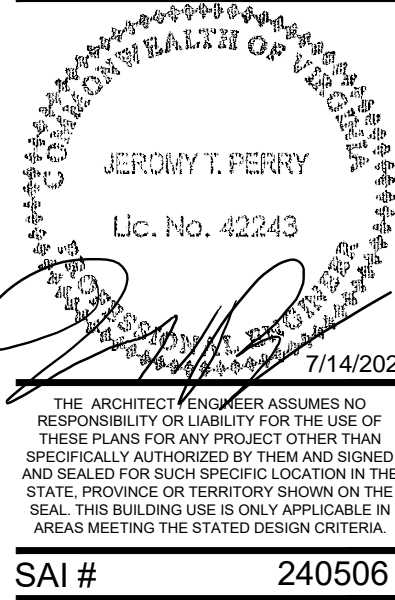
- A. PIPE INSULATION AND APPURTENANCES AND COVERINGS ON PIPES USED IN CHASES, SHAFTS OR OTHER CONCEALED SPACES IN TYPES 1 AND 2 CONSTRUCTION SHALL HAVE A FLAME SPREAD RATING NOT EXCEEDING TWENTY-FIVE (25) AND IN TYPE 3 AND 4 CONSTRUCTION NOT EXCEEDING SEVENTY-FIVE (75) AND A SMOKE DEVELOPED RATING NOT EXCEEDING FIFTY (50).
- B. INSULATION SHALL BE JOHNS MANVILLE MICRO-LOK HP FIBERGLASS WITH FACTORY APPLIED ALL SERVICE JACKET WITH SELF-SEALING TAPE. INSULATION SHALL LIMIT HEAT LOSS TO 25 BTU/HR/SQ.FT. OF PIPE SURFACE WITH 55 DEGREES AMBIENT, AND SHALL BE 1/2" THICK ON COLD WATER PIPING, 1" THICK ON HOT WATER PIPING 1-1/2" AND SMALLER AND 1-1/2" THICK ON HOT WATER PIPING LARGER THAN 1-1/2". APPLY INSULATION ALL THE WAY TO POINT OF CONNECTION AT EACH PIECE OF EQUIPMENT INCLUDING HOT WATER HEATER.
- C. EXPOSED PIPE FITTINGS, ELBOWS AND VALVES SHALL BE INSULATED WITH ZESTON INSULATION AND HAVE FACTORY PREMOULDED PVC COVERS. BUTT THE JOINTS TOGETHER AND WRAP WITH 3" WIDE STRIP TAPE.
- D. INSULATION SHALL NOT BE APPLIED UNTIL THE GENERAL CONSTRUCTION HAS PROGRESSED SUFFICIENTLY TO INSURE AGAINST PHYSICAL OR MOISTURE DAMAGE TO THE INSULATION. ALL INSULATION DAMAGED THROUGH FAILURE TO OBSERVE THIS DIRECTIVE SHALL BE REPLACED BY THIS CONTRACTOR AT THIS CONTRACTOR'S EXPENSE.
- E. INSTALL ALL INSULATION ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- F. INSTALL INSULATION OVER ALL LANDLORD PIPING WITHIN DEMISED PREMISES.
- G. INSULATION SHALL NOT BE APPLIED OVER FLANGES, JOINTS AND SEAMS IN PIPING. CONTINUE INSULATION TO POINT OF CONNECTION AT EQUIPMENT OR FIXTURE.
- H. INSULATION SHALL BE JOHNS MANVILLE. EQUAL PRODUCT BY ARMSTRONG, CERTAINTeed, OWENS-CORNING OR KNAUF MAY BE FURNISHED AT THE CONTRACTOR'S OPTION.

22 58 00 PLUMBING SYSTEM TESTING

- A. SYSTEM TESTING SHALL PROVIDE FOR THE FOLLOWING:
1. TEST NEW INTERIOR DOMESTIC WATER SYSTEM.
 2. TEST ALL SOIL, WASTE, AND VENT PIPING.
 3. FURNISH ALL PUMPS FOR AIR AND WATER PRESSURE TESTS ALONG WITH GAUGES AND ANY OTHER REQUIRED TEST EQUIPMENT.
 4. TEST PIPING IN ACCORDANCE WITH GAS COMPANY REQUIREMENTS. AFTER TESTING, PURGE SYSTEM COMPLETELY.
- B. UNDERGROUND LINES TO BE TESTED BEFORE CONCEALED. THIS CONTRACTOR SHALL REPAIR ANY LEAKS AND ALL DAMAGE RESULTING THEREFROM.
1. CHANGES IN AMBIENT TEMPERATURE WILL BE TAKEN INTO ACCOUNT WHEN TESTING UNDERGROUND PIPING, HOWEVER, THE VARIOUS SYSTEMS SHALL BE THOROUGHLY INSPECTED FOR LEAKS BEFORE HYDROSTATIC PRESSURE TESTS ARE CONCLUDED.
 2. INTERIOR WATER PIPING: HYDROSTATIC TEST AT 125 PSI AWWA PROCEDURES.
 3. SOIL, WASTE, AND VENT PIPING SHALL BE WATER AND SMOKE OR AIR TIGHT (STATE PLUMBING CODE).
- C. MEASURE LEAKAGE BY METERING WATER REQUIRED TO MAINTAIN LINE PRESSURE. REMOVE AIR BEFORE TESTING.
- D. REPAIR ANY LEAKING JOINTS AND DEMONSTRATE ACCEPTABLE LEAKAGE TO SATISFACTION OF TENANT'S REPRESENTATIVE AND APPROVING AUTHORITY. FLUSH ALL PIPING BEFORE PLACING INTO OPERATION.

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PLUMBING SPECIFICATIONS



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