

PLUMBING SPECIFICATIONS

1. GENERAL PROVISIONS

- A. INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE 2021 VIRGINIA STATE PLUMBING CODE INCLUDING REFERENCED CODES AND STANDARDS AND IN ACCORDANCE WITH MANDATES OF THE LOCAL BUILDING OFFICIALS.
- B. THE GENERAL ARRANGEMENT AND LOCATIONS OF PIPING, FIXTURES, ETC. ARE INDICATED BY THE DRAWINGS AND SHALL BE INSTALLED IN ACCORDANCE THEREWITH; WITH THE EXCEPTION OF SUCH CHANGES AS MAY BE REQUIRED ON ACCOUNT OF OTHER TRADES, CONTRACTOR SHALL COORDINATE WORK WITH INSTALLATION OF OTHER SUBCONTRACTORS.
- C. PLUMBING WORK SHALL BE COORDINATED WITH THE CONTRACTOR AS TO SCHEDULING, DIMENSIONING AND LOCATION OF EQUIPMENT.
- D. MAJOR ITEMS ARE SHOWN ON THE PROJECT PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INCIDENTAL ITEMS REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM.
- E. ALL PIPING SYSTEMS SHALL TERMINATE 5 FEET BEYOND THE BUILDING LINE UNLESS INDICATED OTHERWISE. EXTENSION OF THESE LINES SHALL BE PROVIDED BY THE SITE CONTRACTOR.
- F. TRADE NAMES AND CATALOG NUMBERS SHALL BE INTERPRETED AS ESTABLISHING A GENERAL DESIGN AND STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. UNLESS STATED OTHERWISE, THE CONTRACTOR MAY USE ANY ARTICLE WHICH, IN HIS JUDGEMENT, AND WITH WRITTEN COMMENT FROM THE ARCHITECT/ENGINEER INDICATING NO OBJECTION, IS EQUAL OR SUPERIOR TO THAT SPECIFIED. DRAWINGS SHOWING CHANGES OR REVISIONS REQUIRED BY THE SUBSTITUTION FOR SPECIFIED ITEMS SHALL BE SUBMITTED WITH THE SHOP DRAWING DATA, AND THE COSTS OF ALL SUCH CHANGES SHALL BE BORNE BY THE CONTRACTOR.
- G. SIMILAR ITEMS SHALL BE PROVIDED BY A SINGLE MANUFACTURER.
- H. ALL REQUIRED WALL OR FLOOR OPENINGS SHALL BE COORDINATED WITH THE CONTRACTOR.
- I. ALL PIPING SHALL BE ABOVE CEILING UNLESS INDICATED OTHERWISE.
- J. DO NOT INSTALL PVC PIPING OR ANY COMBUSTIBLE MATERIAL IN ANY AIR PLENUM.
- K. ALL EQUIPMENT SHALL BE WIPED CLEAN, REMOVING ALL TRACES OF OIL, DIRT, OR PAINT SPOTS.
- L. PROVIDE SUPPORTS TO RIGIDLY ATTACH ALL EQUIPMENT, APPURTENANCES AND PIPE AS REQUIRED FOR SUPPORT. PRIOR TO INSTALLATION OF HANGERS AND INSERTS, THE CONTRACTOR SHALL COORDINATE LOCATIONS AND REQUIREMENTS TO MINIMIZE CONFLICTS WITH OTHER BUILDING SYSTEMS. INSTALLATION OF PIPE HANGERS AND SUPPORTS SHALL BE IN STRICT ACCORDANCE WITH MSS SP-58, 69 AND 89.
- M. CONTRACTOR SHALL MAKE FINAL CONNECTIONS TO ALL EQUIPMENT INDICATED TO BE FURNISHED BY OTHERS.

2. SUBMISSION OF SHOP DRAWINGS, PRODUCT DATA, SAMPLES AND PROJECT INFORMATION

- A. SHOP DRAWINGS SHALL BE SUBMITTED FOR THE FOLLOWING ITEMS:
- (1) PIPING IDENTIFICATION
 - (2) INSULATION
 - (3) GAS COCKS
 - (4) CLEANOUTS
 - (5) FLOOR DRAINS
 - (6) GATE VALVES
 - (7) CHECK VALVES
 - (8) BACKFLOW PREVENTERS
 - (9) ALL SCHEDULED EQUIPMENT INDICATED ON SHEET P-2
- B. IDENTIFY ALL PLUMBING SHOP DRAWINGS, PRODUCT DATA AND SAMPLES WITH THE NAME OF THE PROJECT. CLEARLY MARK THE SPECIFIC ITEMS INTENDED FOR USE. SUBMIT ALL RELATED ITEMS AT ONE TIME.
- C. PRIOR TO SUBSTANTIAL COMPLETION OF THE PROJECT, SUBMIT THE FOLLOWING INFORMATION FOR REVIEW AND APPROVAL:
- (1) OPERATING AND MAINTENANCE INSTRUCTIONS.
 - (2) "AS BUILT" DRAWINGS.
3. GUARANTEE: ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED TO BE FREE FROM DEFECTS FOR A PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE AND CONTRACTOR SHALL MAKE GOOD, WITHOUT ADDITIONAL COST TO THE OWNER, ANY DEFECTS WHICH MAY APPEAR WITHIN THAT PERIOD. MANUFACTURER'S WARRANTIES EXTENDING BEYOND ONE YEAR SHALL BE PROCESSED AND TURNED OVER TO THE OWNER.
4. "AS BUILT" DRAWINGS: CONTRACTOR SHALL KEEP AN ACCURATE RECORD OF THE LOCATION OF ALL CONCEALED PIPING, VALVES, CONTROLS, ETC., BOTH INTERIOR AND EXTERIOR. ON COMPLETION OF THE WORK, ONE PRINT EACH OF THE CONTRACT DRAWINGS WHICH ARE APPLICABLE SHALL BE NEATLY AND CLEARLY MARKED IN COLOR TO SHOW ALL VARIATIONS BETWEEN THE WORK ACTUALLY PROVIDED AND THAT INDICATED ON THE CONTRACT DRAWINGS.

5. OPERATING AND MAINTENANCE MANUALS

- A. GENERAL: PRIOR TO COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL PROVIDE TWO HARDBACKED LOOSELEAF RING TYPE BINDERS, IDENTIFIED WITH THE NAME OF THE PROJECT. CONTRACTOR SHALL DELIVER THESE BINDERS TO THE ENGINEER FOR REVIEW AND TRANSMITTAL TO THE OWNER.
- B. THE FOLLOWING ITEMS AND OTHER ADDITIONAL PERTINENT DATA FOR EACH ITEM OF EQUIPMENT SHALL BE INCLUDED:
- C. THE OPERATING AND MAINTENANCE MANUALS SHALL BE CONSIDERED A PART OF THE FINAL INSPECTION AND THEY SHALL BE SUBMITTED FOR APPROVAL AT LEAST THIRTY (30) DAYS PRIOR TO REQUEST FOR FINAL INSPECTION.
6. ACCESS DOORS: ACCESS DOORS SHALL BE PROVIDED FOR ALL CONCEALED VALVES, CONTROLS, AND ANY OTHER EQUIPMENT OR MATERIALS REQUIRING INSPECTION OR MAINTENANCE. ACCESS DOORS SHALL BE FURNISHED FOR FLOORS, WALLS AND CEILING, OF ADEQUATE SIZE SO THAT CONCEALED ITEMS WILL BE READILY ACCESSIBLE FOR SERVICING OR FOR REMOVAL AND REPLACEMENT IF NECESSARY.

7. IDENTIFICATION

- A. SUBMITTALS
- (1) SUBMIT LIST OF WORDING, SYMBOLS, LETTER SIZE, AND COLOR CODING FOR MECHANICAL IDENTIFICATION.
 - (2) SUBMIT VALVE CHART AND SCHEDULE, INCLUDING VALVE TAG NUMBER, LOCATION, FUNCTION, AND VALVE MANUFACTURER'S NAME AND MODEL NUMBER.
 - (3) PRODUCT DATA: PROVIDE MANUFACTURERS CATALOG LITERATURE FOR EACH PRODUCT REQUIRED.

B. NAMEPLATES

- (1) DESCRIPTION: LAMINATED THREE-LAYER PLASTIC WITH ENGRAVED LETTERS ON LIGHT CONTRASTING BACKGROUND COLOR.
- C. TAGS
- (1) METAL TAGS: BRASS WITH STAMPED LETTERS; TAG SIZE MINIMUM 1-1/2 INCHES (40 MM) DIAMETER.
 - (2) CHART: TYPEWRITTEN LETTER SIZE LIST IN ANODIZED ALUMINUM FRAME.
- D. INSTALLATION
- (1) DECREASE AND CLEAN SURFACES TO RECEIVE ADHESIVE FOR IDENTIFICATION MATERIALS.
 - (2) INSTALL PLASTIC NAMEPLATES WITH CORROSIVE-RESISTANT MECHANICAL FASTENERS OR ADHESIVE. APPLY WITH SUFFICIENT ADHESIVE TO ENSURE PERMANENT ADHESION AND SEAL WITH CLEAR LAQUER.
 - (3) INSTALL TAGS WITH CORROSION RESISTANT CHAIN.
 - (4) INSTALL PLASTIC PIPE MARKERS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
 - (5) IDENTIFY CONTROL PANELS AND MAJOR CONTROL COMPONENTS OUTSIDE PANELS WITH PLASTIC NAMEPLATES.
 - (6) IDENTIFY VALVES IN MAIN AND BRANCH PIPING WITH TAGS.
 - (7) IDENTIFY PIPING: CONCEALED OR EXPOSED, WITH PLASTIC PIPE MARKERS OR STENCILLED PAINTING. IDENTIFY SERVICE, FLOW DIRECTION, AND PRESSURE. INSTALL IN CLEAR VIEW AND ALIGN WITH AXIS OF PIPING. LOCATE IDENTIFICATION NOT TO EXCEED 20 FEET (6 M) ON STRAIGHT RUNS INCLUDING RISERS AND DROPS, ADJACENT TO EACH VALVE AND TEE, AT EACH SIDE OF PENETRATION OF STRUCTURE OR ENCLOSURE, AND AT EACH OBSTRUCTION.
 - (8) PROVIDE CEILING TAGS TO LOCATE VALVES ABOVE T-BAR TYPE PANEL CEILING. LOCATE IN CORNER OF PANEL CLOSEST TO EQUIPMENT.

B. PIPING SPECIALTIES

- A. PIPE ESCUTCHEONS: INSTALL PIPE ESCUTCHEONS ON EACH PIPE PENETRATION THRU FLOORS, WALLS PARTITIONS, AND CEILING WHERE PENETRATION IS EXPOSED TO VIEW AND ON EXTERIOR OF BUILDING. SECURE ESCUTCHEON TO PIPE OR INSULATION SO ESCUTCHEON COVERS PENETRATION HOLE AND IS FLUSH WITH ADJOINING SURFACE. PROVIDE SHEET STEEL ESCUTCHEONS, SOLID OR SPLIT HINGED. FOR AREAS WHERE WATER AND CONDENSATION CAN BE EXPECTED TO ACCUMULATE, PROVIDE CAST BRASS OR SHEET BRASS ESCUTCHEONS, SOLID OR SPLIT HINGED.
- B. PIPE SLEEVES: INSTALL PIPE SLEEVES WHERE PIPING PASSES THROUGH WALLS, FLOORS, CEILING, AND ROOFS. DO NOT INSTALL SLEEVES THROUGH STRUCTURAL MEMBERS OF WORK, EXCEPT AS DETAILED ON DRAWINGS, OR AS REVIEWED BY ARCHITECT/ENGINEER. SIZE SLEEVES SO THAT PIPING AND INSULATION (IF ANY) WILL HAVE FREE MOVEMENT IN SLEEVE, INCLUDING ALLOWANCE FOR THERMAL EXPANSION.
- C. FIRE BARRIER PENETRATION SEALS: PROVIDE SEALS FOR ANY OPENING THROUGH FIRE-RATED WALLS, FLOORS, OR CEILING USED AS PASSAGE FOR PLUMBING COMPONENTS SUCH AS PIPING. INSTALLATION SHALL BE AS RECOMMENDED BY THE MANUFACTURER. SEALS SHALL BE EQUAL TO ONE OF THE FOLLOWING:
- (1) DOW-CORNING FIRESTOP SYSTEM PENETRATION SEALS INCLUDING FIRE STOP SEALANT AND FIRE STOP FOAM.
 - (2) 3M BRAND "FIRE BARRIER WRAP/STRIP" NO. FS-195, FIRE BARRIER CAULK, CP-25 AND PUTTY NO. 303 SHALL BE USED WHERE PVC, POLYPROPYLENE OR OTHER NON-METALLIC PIPES PASS THROUGH FLOORS AND FIRE RATED WALLS.

9. INSULATION

- A. FLAME/SMOKE RATINGS: PROVIDE COMPOSITE PLUMBING INSULATION (INSULATION, JACKETS, COVERINGS, SEALERS, MASTICS AND ADHESIVES) WITH FLAME-SPREAD RATING OF 25 OR LESS, AND SMOKE-DEVELOPED RATING OF 50 OR LESS, AS TESTED BY ANSI/ASTM E84 (NFPA 255) METHOD. INSULATION SHALL BE LABELED BY THE MANUFACTURER. THE LABEL SHALL INDICATE THE INSULATING VALUE, FLAME SPREAD AND SMOKE-DEVELOPED RATING.
- B. SUBMITTALS: SUBMIT MANUFACTURER'S SPECIFICATIONS AND INSTALLATION INSTRUCTIONS FOR EACH TYPE OF PLUMBING INSULATION. SUBMIT SCHEDULE SHOWING MANUFACTURER'S PRODUCT NUMBER, THICKNESS, AND FURNISHED ACCESSORIES FOR EACH PLUMBING SYSTEM REQUIRING INSULATION.
- C. INSTALLATION: INSULATION SHALL BE APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS USING ONLY ADHESIVES, MASTICS AND PLUMBING FASTENERS APPROVED BY THE INSULATION MANUFACTURER. INSULATION SHALL NOT BE APPLIED UNTIL AFTER THE EQUIPMENT HAS BEEN TESTED WITH RESULTS ACCEPTABLE TO THE ARCHITECT/ENGINEER.
- D. MATERIALS:
- (1) CELLULAR FOAM PIPE INSULATION: TUBULAR, FLEXIBLE, FIRE RESISTANT INSULATION WITH OPERATING TEMPERATURE RANGE OF -40 DEGREES F TO 220 DEGREES F, THERMAL CONDUCTIVITY "K" <0.27 BTU-IN/HR-SF-DEG F AT 75 DEGREES F. NO JACKET REQUIRED. EQUAL TO ARMSTRONG ARMAFLEX AP.
- E. PIPE INSULATION
- (1) INSULATION OMITTED: OMIT INSULATION ON EXPOSED PLUMBING FIXTURE RUNOUTS FROM FACES OF WALL OR FLOOR TO FIXTURE, ON UNIONS, FLANGES, STRAINERS, FLEXIBLE CONNECTIONS, AND EXPANSION JOINTS.
 - (2) COVER VALVES, FITTINGS AND SIMILAR ITEMS IN EACH PIPING SYSTEM WITH EQUIVALENT THICKNESS AND COMPOSITION OF INSULATION AS APPLIED TO ADJOINING PIPE RUN.
 - (3) EXTEND PIPING INSULATION WITHOUT INTERRUPTION THROUGH WALLS, FLOORS AND SIMILAR PIPING PENETRATIONS, EXCEPT WHERE OTHERWISE INDICATED.
 - (4) INSTALL PROTECTIVE METAL SHIELDS AND INSULATED INSERTS WHEREVER NEEDED TO PREVENT COMPRESSION OF INSULATION.
 - (5) DOMESTIC COLD WATER PIPING, ABOVE GROUND: PIPING SHALL BE INSULATED WITH 1/2 INCH THICK GLASS FIBER, CELLULAR FOAM, OR POLYETHYLENE PIPE INSULATION.
 - (6) DOMESTIC HOT WATER PIPING (INCLUDING HOT WATER RECIRCULATING): PIPING SHALL BE INSULATED WITH 1 INCH THICK GLASS FIBER, CELLULAR FOAM, OR POLYETHYLENE PIPE INSULATION. VAPOR SEAL IS NOT REQUIRED.

10. PLUMBING PIPING

- A. DOMESTIC WATER PIPING ABOVE GROUND
- PIPE: TYPE L HARD DRAWN COPPER IN ACCORDANCE WITH ASTM B75 PEX IN ACCORDANCE WITH ASTM F1281 OR CPVC IN ACCORDANCE WITH ASTM D2846
- FITTINGS: CAST BRONZE OR WROUGHT COPPER ASTM B16.15, PEX, CPVC JOINTS: SOLDERED USING TIN-ANTIMONY (95-5) SOLDER
- B. DOMESTIC WATER PIPING UNDERGROUND
- PIPE: TYPE K SEAMLESS ROLL STOCK
- FITTINGS: CAST BRONZE OR WROUGHT COPPER
- JOINTS: SOLDERED USING TIN-ANTIMONY (95-5) SOLDER
- C. SOIL, WASTE AND VENT PIPING BELOW GRADE AND STORM SEWER BELOW GRADE
- SIZE: ALL
- PIPE: SCH. 40 PVC-DWV ASTM D-2665
- FITTINGS: PVC SOCKET FITTINGS (DWV)
- JOINTS: SOLVENT CEMENT JOINTS
- D. SOIL, WASTE AND VENT PIPING ABOVE GRADE AND STORM DRAINS & ROOF LEADERS
- SIZE: ALL
- PIPE: SCH. 40 PVC-DWV ASTM D-2665
- FITTINGS: PVC SOCKET FITTINGS (DWV)
- JOINTS: SOLVENT CEMENT JOINTS
- E. ALL PIPE OF THE SAME SIZE SHALL BE THE SAME MATERIAL.
- F. SLOPE ALL DRAIN LINES 1/4 INCH PER FOOT MINIMUM FOR SIZES LESS THAN 4 INCHES; SLOPE 1/8 INCH PER FOOT FOR SIZES 4 INCHES AND LARGER.
- G. SOIL, WASTE AND VENT PIPING LOCATED BELOW GRADE SHALL BE MINIMUM 2 INCHES SIZE.
- H. VENTS SHALL EXTEND 12 INCHES ABOVE THE ROOF. ROOF FLASHING SHALL BE COORDINATED WITH BY THE CONTRACTOR.
- I. DOMESTIC HOT AND COLD WATER PIPING SHALL BE 1/2 INCHES SIZE UNLESS INDICATED OTHERWISE.
11. NATURAL GAS SYSTEMS
- A. GAS SERVICE PIPING:
- (1) ALL SIZES: SCHEDULE 40 BLACK STEEL PIPE, ASTM A120/A53-OM OR ASTM/A53 GRADE B (WELDED OR SEAMLESS); WROUGHT STEEL BUTTWELDING FITTINGS.
 - (2) WRAPPING FOR EXPOSED PIPING: MACHINE WRAP PIPE USING 50% OVERLAP WRAP, WITH POLYVINYL CHLORIDE TAPE. HAND WRAP FITTINGS USING 100% OVERLAP WRAP EXTENDING 6 INCHES BEYOND FITTING ONTO WRAPPED PIPE. COMPLY WITH TAPE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- B. BUILDING DISTRIBUTION PIPING AND VENT PIPING:
- (1) ALL SIZES: SCHEDULE 40 BLACK STEEL PIPE, ASTM A120/A53-OM OR ASTM/A53 GRADE B (WELDED OR SEAMLESS); MALLEABLE IRON THREADED FITTINGS (EXPOSED PIPING ONLY); WROUGHT STEEL BUTTWELDING FITTINGS (CONCEALED AND EXPOSED PIPING). OUTDOOR PIPING TO BE PAINTED WITH EXTERIOR GRADE ENAMEL PAINT, COLOR AS DETERMINED BY THE ARCHITECT.
- C. GAS COCKS:
- (1) GAS COCKS 2 INCHES AND SMALLER: 150 PSI NON-SHOCK WOG, BRONZE STRAIGHTWAY COCK, FLAT OR SQUARE HEAD, THREADED ENDS.
 - (2) GAS COCKS 2-1/2 INCHES AND LARGER: 125 PSI NON-SHOCK WOG, IRON BODY BRONZE MOUNTED, STRAIGHTWAY COCK, SQUARE HEAD, FLANGED ENDS.
- D. ALL GAS PIPING EQUIPMENT CONNECTIONS SHALL BE PROVIDED WITH A 6 INCHES DIRT TRAP, UNION AND GAS COCK SHUT OFF.
- E. ALL JOINTS SHALL BE SEALED WITH CHEMICALLY RESISTANT SEALER APPLIED TO MALE THREADS OF PIPE CONNECTION.
- F. GAS PIPING SHALL BE INSTALLED WITH A 1/64 INCH PER FOOT DOWNWARD SLOPE IN DIRECTION OF FLOW.
- G. PIPING, FABRICATED SUPPORTS, OR OTHER UNFINISHED AND UNPROTECTED MATERIALS LOCATED OUTDOORS SHALL BE PAINTED WITH A SUITABLE PRIMER AND COMPATIBLE FINISH PAINT. COLOR SHALL BE YELLOW.

12. CLEANOUTS

- A. CLEANOUTS SHALL BE THE SAME SIZE AS LINE SERVED, BUT NOT LARGER THAN 4 INCHES, AND SHALL BE PROVIDED AT THE BASE OF EACH SOIL AND WASTE STACK, AT ALL POINTS WHERE DIRECTION CHANGE IS MORE THAN 45 DEGREES. AT MINIMUM INTERVALS OF 50 FEET FOR 4 INCHES AND SMALLER PIPING, AT MINIMUM INTERVALS OF 100 FEET FOR PIPING LARGER THAN 4 INCHES, AS REQUIRED BY CODE AND AS INDICATED ON THE DRAWINGS. COVERS SHALL BE SET FLUSH WITH FLOOR OR WALL.

13. FLOOR DRAINS

- A. PROVIDE FLOOR DRAINS OF SIZE AND TYPE AS INDICATED ON DRAWINGS. ALL DRAINS CONNECTING TO SANITARY SEWER SYSTEM SHALL BE FURNISHED WITH P-TRAP. DRAINS SHALL HAVE OUTLET COMPATIBLE WITH PIPING SYSTEM TO WHICH IT IS CONNECTED.
- B. INSTALL FLOOR DRAINS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. PROVIDE FLOOR DRAINS WHERE INDICATED ON DRAWINGS AND AT LOW POINTS OF SURFACE AREAS TO BE DRAINED.

14. PLUMBING VALVES

- A. PROVIDE SHUT-OFF BALL VALVE AND UNION OR EQUIVALENT AT EACH HOT AND COLD WATER EQUIPMENT CONNECTION. PROVIDE SHUT-OFF BALL VALVE ON EACH BRANCH OR RISER THAT SERVES TWO OR MORE PLUMBING FIXTURES.
- B. CHECK VALVES IN HORIZONTAL PIPES:

- (1) 2 INCHES AND SMALLER: ALL BRONZE, REGRINDING BRONZE DISC, HORIZONTAL SWING, Y-PATTERN. STOCKHAM B-3190R B-309.
- C. CHECK VALVES IN VERTICAL PIPES AND PUMP DISCHARGE: SILENT CHECK VALVE WITH SEM-STEEL BODY, BRONZE TIE-IN AND STAINLESS STEEL SPRING. METRAFLEX 700 SERIES.
- D. BALL VALVES MAY BE USED FOR ALL PIPE SIZES. BALL VALVES SHALL HAVE BRONZE BODY, BRONZE BALL AND TFE SEATS AND SEALS. STOCKHAM S-216BRRT OR S-216BRRS.

15. WATER HEATERS

- A. UL AND NEMA COMPLIANCE: PROVIDE ELECTRIC COMPONENTS REQUIRED AS PART OF PLUMBING EQUIPMENT, WHICH HAVE BEEN LISTED AND LABELED BY UNDERWRITER'S LABORATORIES AND COMPLY WITH NEMA STANDARDS.
- B. NEC COMPLIANCE: COMPLY WITH NATIONAL ELECTRICAL CODE (ANSI/NFPA 70) AS APPLICABLE TO INSTALLATION AND ELECTRICAL CONNECTIONS OF ANCILLARY ELECTRICAL COMPONENTS OF PLUMBING EQUIPMENT.
- C. WATER HEATERS SHALL BE FURNISHED WITH TEMPERATURE AND PRESSURE RELIEF VALVE WITH TEST LEVER.

16. PLUMBING FIXTURES

- A. CODES AND STANDARDS: COMPLY WITH APPLICABLE PORTIONS OF NATIONAL STANDARD PLUMBING CODE PERTAINING TO MATERIALS AND INSTALLATION OF PLUMBING FIXTURES.
- (1) ANSI STANDARDS: COMPLY WITH APPLICABLE ANSI STANDARDS PERTAINING TO PLUMBING FIXTURES AND SYSTEMS.
 - (2) PDI COMPLIANCE: COMPLY WITH STANDARDS ESTABLISHED BY PDI PERTAINING TO PLUMBING FIXTURE SUPPORTS.
 - (3) UL COMPLIANCE: CONSTRUCT WATER COOLERS IN ACCORDANCE WITH UL STANDARD 389 "SPRINKLING-WATER COOLERS", AND PROVIDE UL-LISTING AND LABEL.
 - (4) ANSI COMPLIANCE: CONSTRUCT AND INSTALL BARRIER FREE PLUMBING FIXTURES IN ACCORDANCE WITH ANSI STANDARD A117.1 "SPECIFICATIONS FOR MAKING BUILDINGS AND FACILITIES ACCESSIBLE TO AND USABLE BY PHYSICALLY HANDICAPPED PEOPLE".

- B. ALL EXPOSED FIXTURE SUPPLIES AND WASTE LINES SHALL BE CHROME PLATED.
- C. PLUMBING FIXTURES SHALL BE POSITIVELY VENTED AND TRAPPED IN ACCORDANCE WITH THE BOCA PLUMBING CODE, LATEST EDITION. WET VENTING IS ALLOWED IF WASTE PIPING IS OVERSIZED AND IN ACCORDANCE WITH CODE PROVISIONS. LOCATION OF VENT SHALL NOT EXCEED MAXIMUM DISTANCES TO THE TRAP AS ESTABLISHED WITHIN THE BOCA PLUMBING CODE.

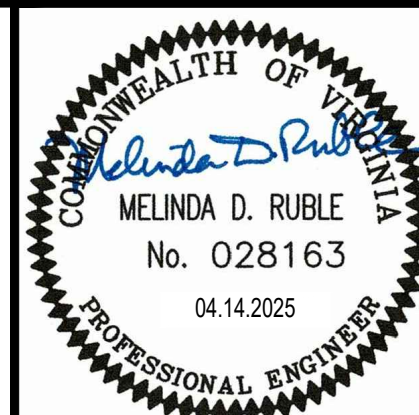
17. FIRE SUPPRESSION SYSTEM

- A. ALL AREAS SHALL BE PROTECTED BY A FIRE SUPPRESSION SYSTEM DESIGNED AND INSTALLED IN STRICT ACCORDANCE WITH NFPA-13 AND THE STATE BUILDING CODE. SYSTEM TO BE BASED ON A STATIC PRESSURE OF 80 PSI, RESIDUAL PRESSURE OF 62 PSI AT FLOW OF 1267 GPM AND 3894 AT 20 PSI PITOT GAUGE READINGS.
- B. CONTRACTOR TO PROVIDE FULL SHOP DRAWINGS TO INCLUDE ALL DESIGN CALCULATIONS, DETAILED CATALOG CUT SHEETS AND LAYOUT DRAWINGS INDICATING THE PROPOSED SYSTEM.
- C. COORDINATE PIPING WITH OTHER TRADES. PIPING MUST BE OFFSET TO AVOID CONFLICTS WITH DUCTWORK, CONDUIT, EQUIPMENT, ETC.
- D. ALL FIRE PROTECTION PIPE SIZES SHALL BE HYDRAULICALLY CALCULATED IN ACCORDANCE WITH NFPA-130.
- E. ALL SPRINKLER HEADS SHALL BE QUICK RESPONSE CONCEALED SPRINKLER HEADS WITH CAPS EXCEPT IN BATHROOMS. BATHROOM HEADS SHALL BE TEFLON COATED EXPOSED HEADS.

18. CLEANING AND TESTING

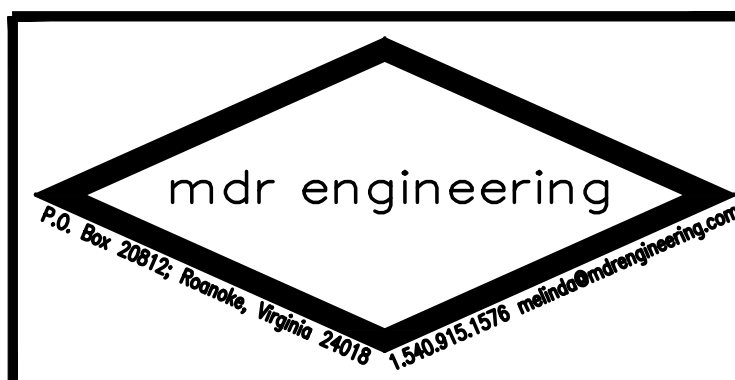
- A. ALL WATER PIPING, VALVES, ETC. SHALL BE THOROUGHLY FLUSHED OF FOREIGN MATTER AND TESTED FOR LEAKS FOR A PERIOD OF TWO HOURS AT NOT LESS THAN 25 PSIG. ANY LEAKAGE SHALL BE REPAIRED. DISINFECT DOMESTIC WATER PIPING INCLUDING WATER SERVICE PIPING IN ACCORDANCE WITH ANWA C801.
- B. ALL DRAIN, WASTE AND VENT PIPING SHALL BE TESTED FOR LEAKS BY FILLING PIPING SYSTEM TO OVERFLOW AND ALLOWING TO STAND FOR 24 HOURS. NO VISIBLE DROP IN WATER LEVEL WILL BE ACCEPTABLE.

END OF SPECIFICATIONS

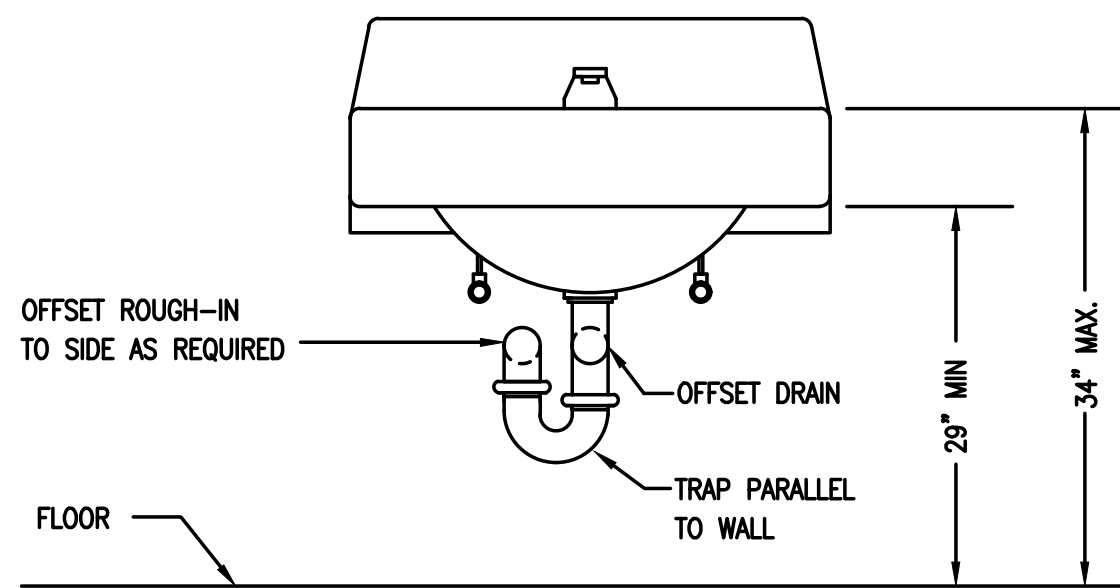
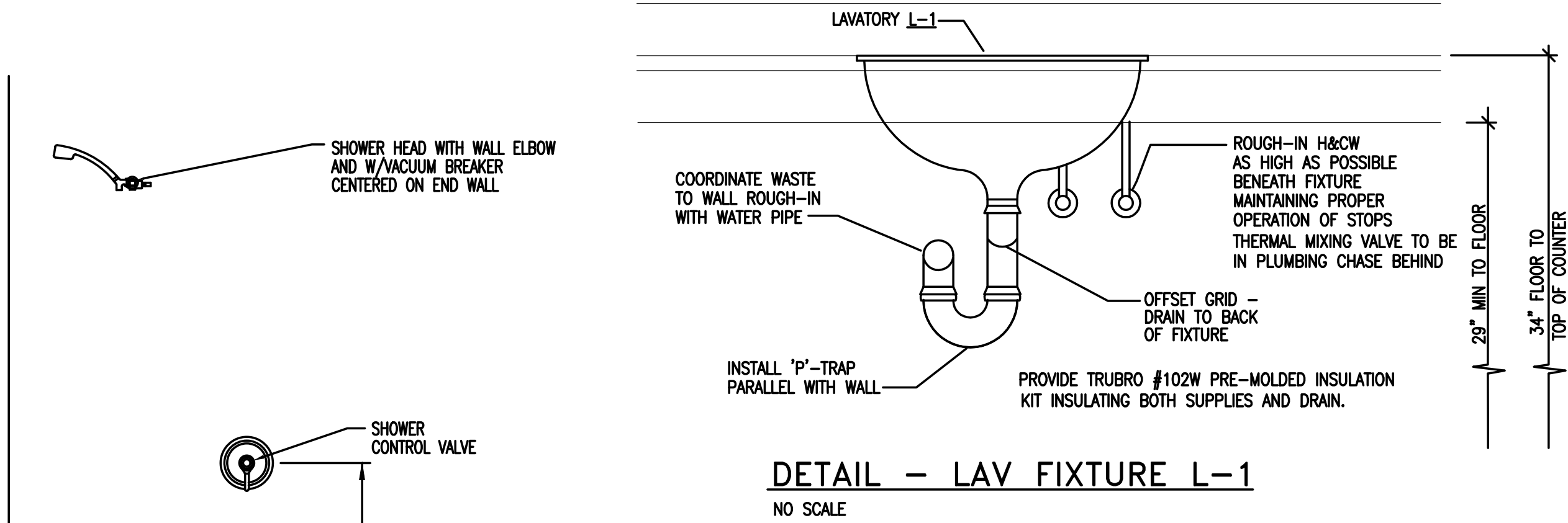


PLUMBING SPECIFICATIONS
DISMAS CHARITIES, INC.
NEW FACILITY - ROANOKE

100% WORKING DRAWINGS - CODE REVIEW
ROANOKE, VIRGINIA 24012
THE DRAWING IS THE PROPERTY OF THE ARCHITECT/ENGINEER AND MAY NOT BE USED OR REPRODUCED WITHOUT THE WRITTEN PERMISSION OF CONDIEFF ARCHITECTURE, INC. COPYRIGHT 2005 CONDIEFF ARCHITECTURE, INC.



P1.1 SHEET: 11
DATE: 04-14-25
REV. NO.:
DESIGNED BY: MDR
DRAWN BY: MDR
CHECKED BY: MDR
PROJECT NO.:
COMMISSION NO.:



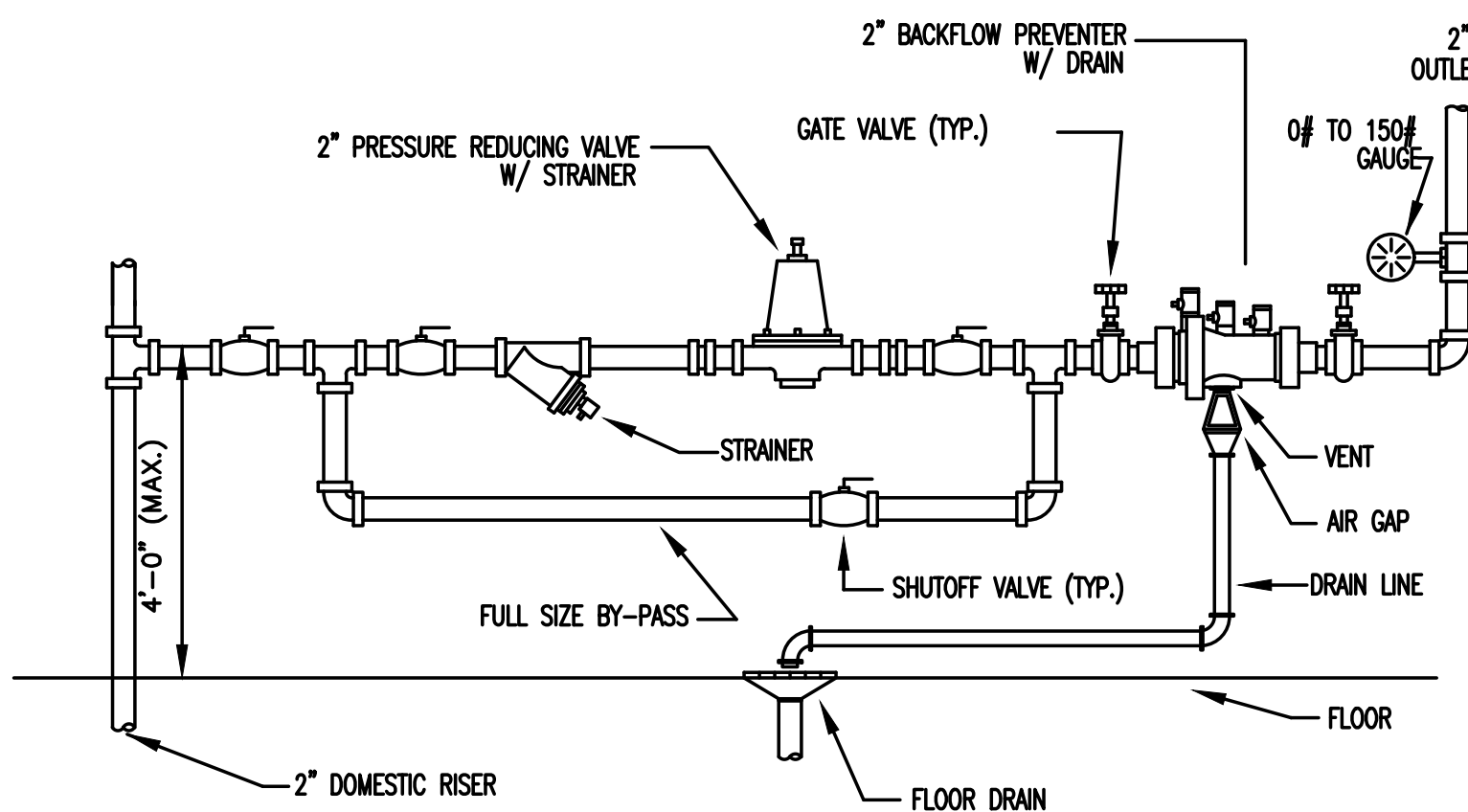
DETAIL - LAVATORY L-2

NO SCALE

NOTE: INSULATE TRAP & SUPPLIES AS SPECIFIED.

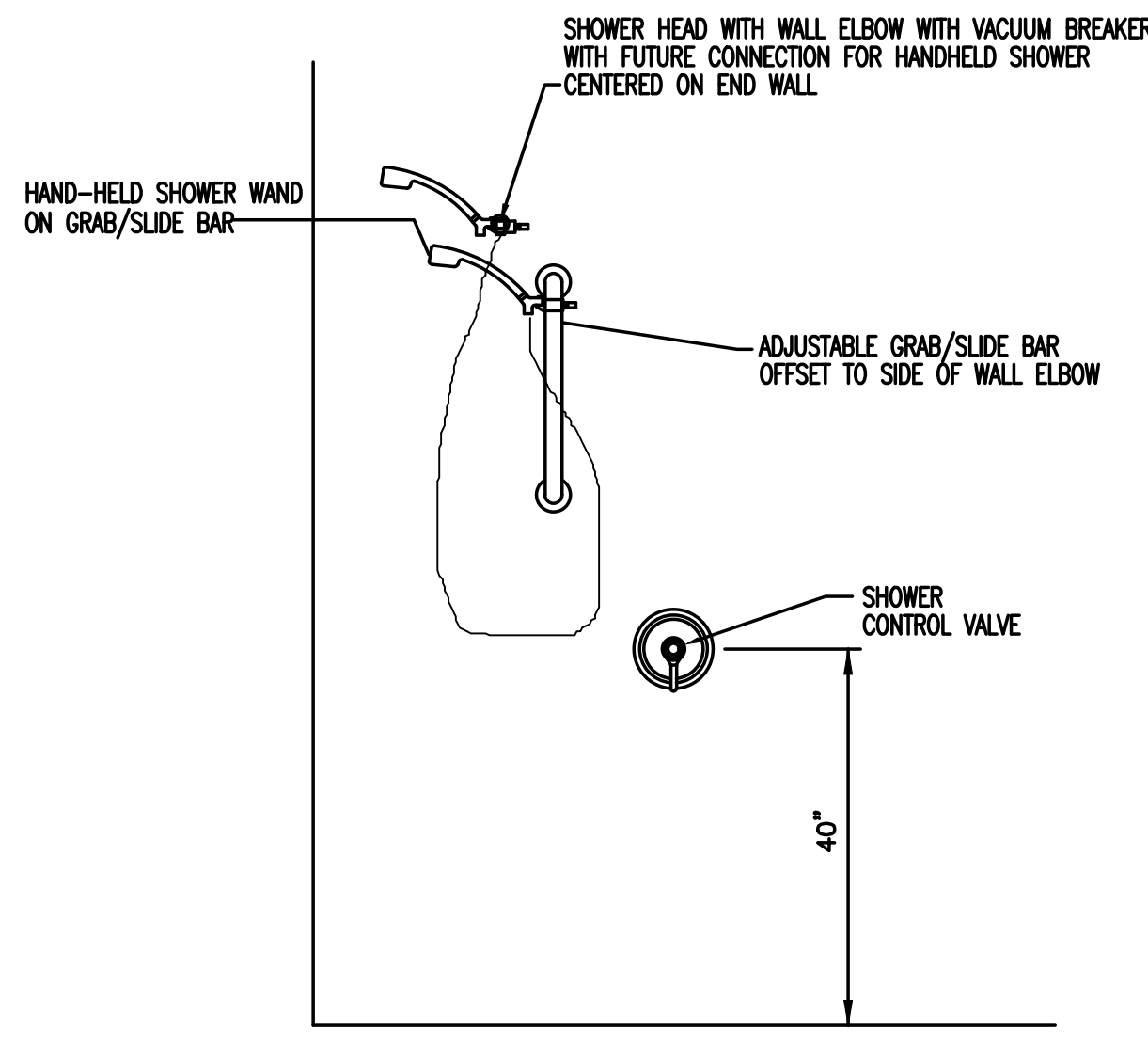
SHOWER SH-1 WET WALL

NO SCALE



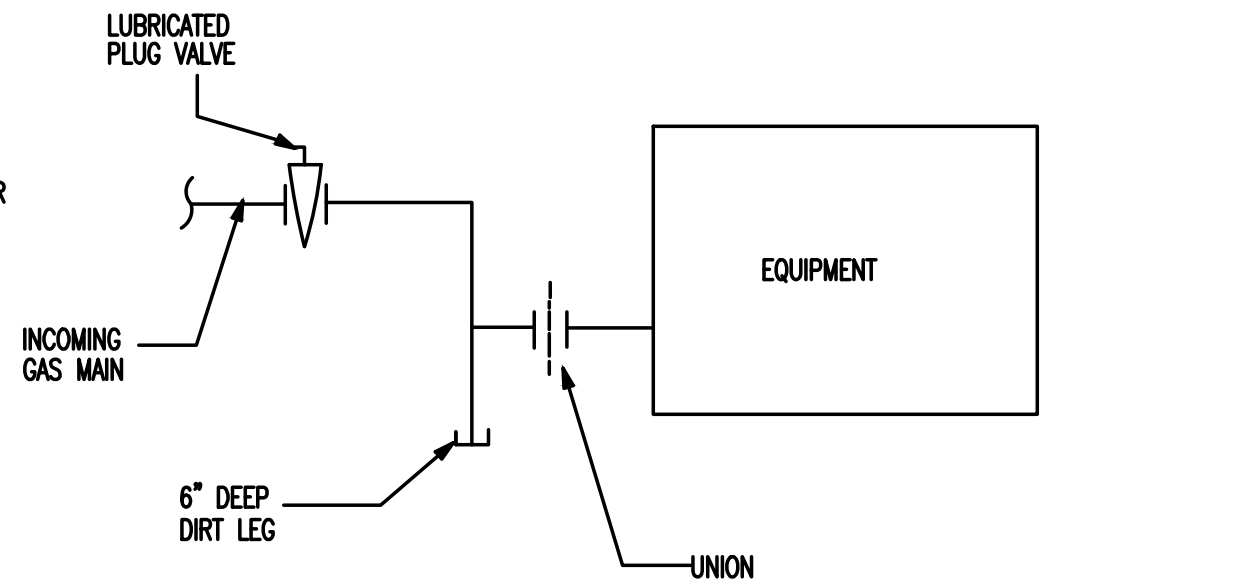
WATER SERVICE ENTRANCE DETAIL

NO SCALE



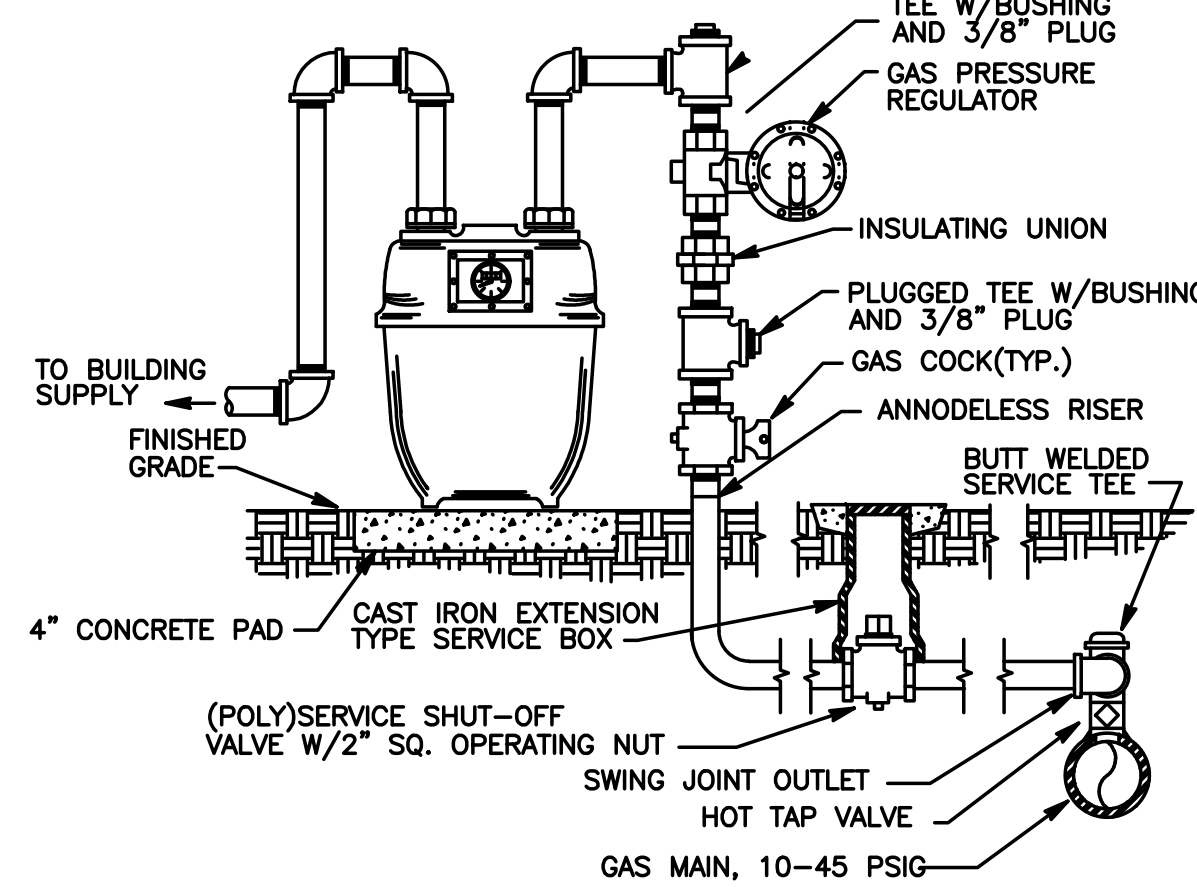
SHOWER SH-2 WET WALL

NO SCALE



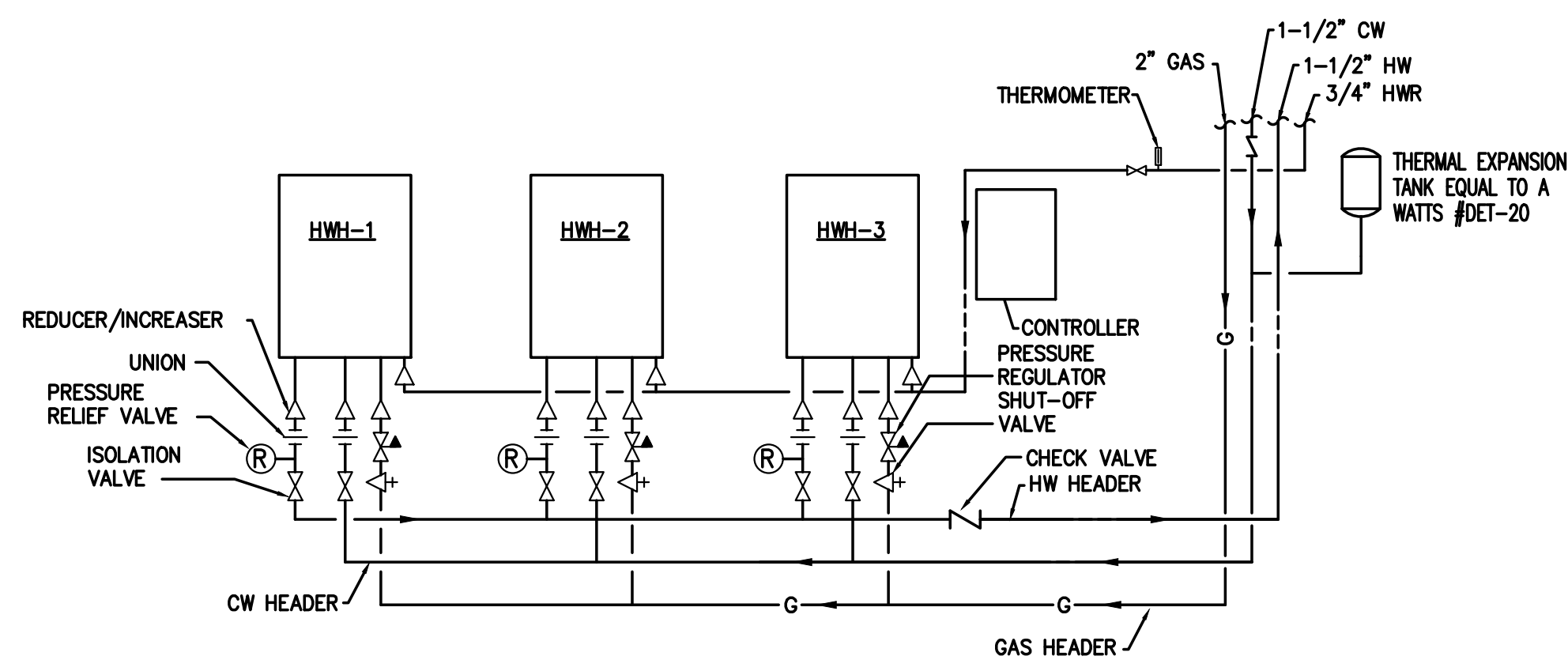
TYPICAL GAS CONNECTION

NO SCALE



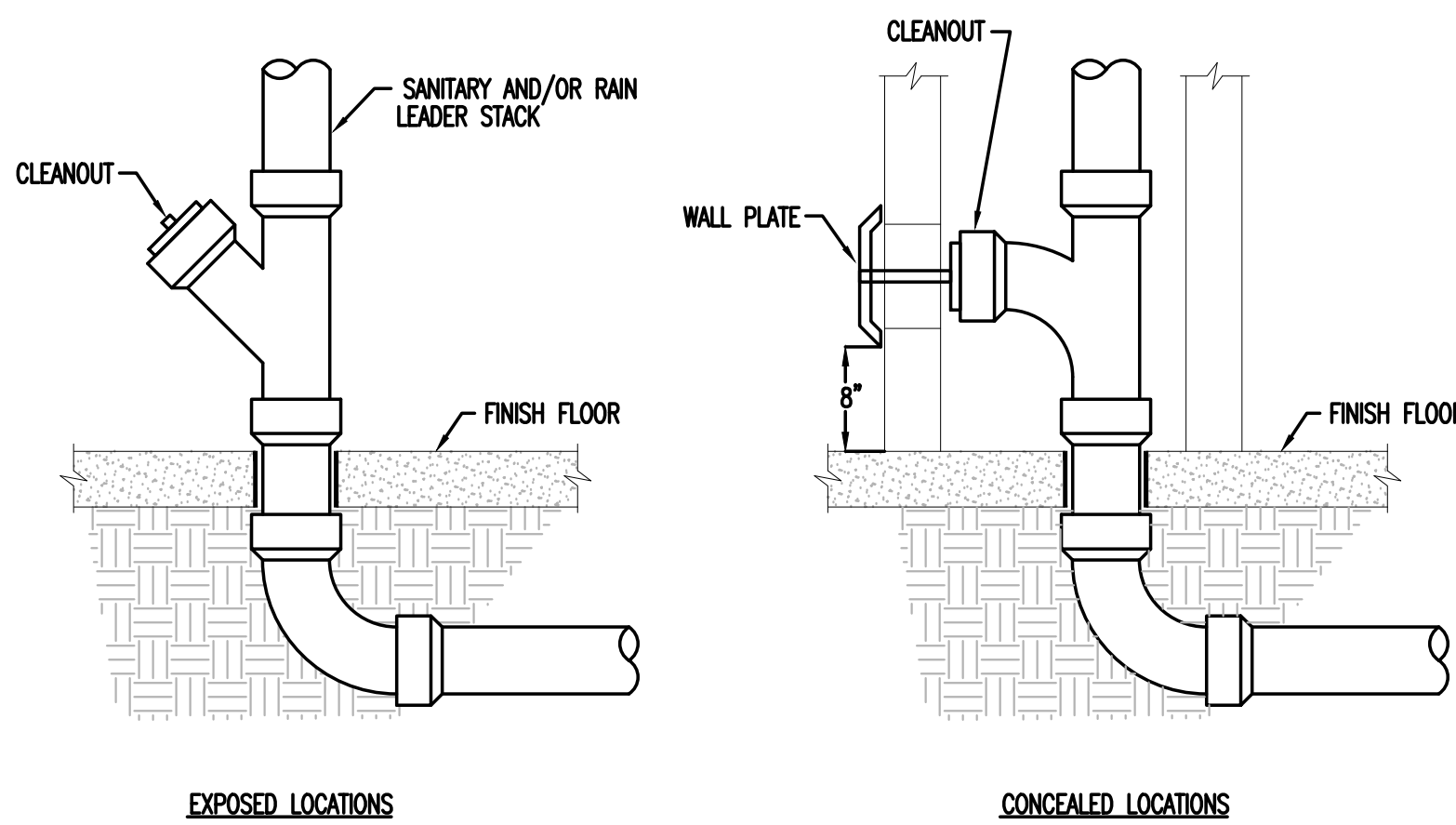
TYPICAL GAS SERVICE CONNECTION DETAIL

N.T.S.



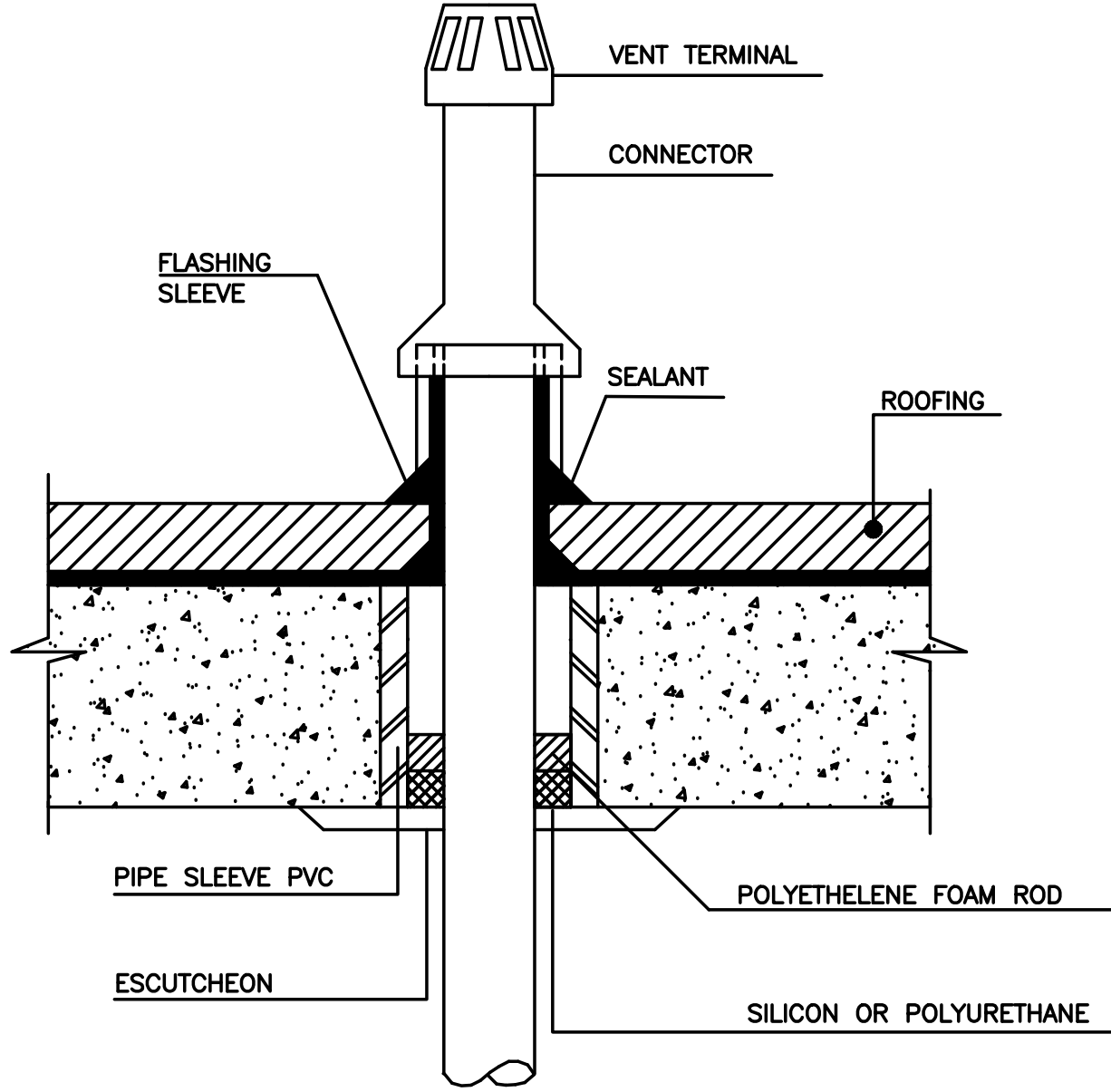
WATER HEATER DETAIL

NO SCALE



DETAIL-CLEANOUT @ STACK

NO SCALE



ROOF VENT AND CAP

N.T.S.

PLUMBING EQUIPMENT SCHEDULE	
WC-1	AMERICAN STANDARD WADORA, ELONGATED VITREOUS CHINA WATER CLOSET (FLUSH VALVE, TOP SPUD, FLOOR MTD., 1.6 GPF) WITH SLOW 111-XL FLUSH VALVE, PLUMTESH MODEL-407C ELONGATED SEAT HERCULES 60210 MAX BOWL RING, CLOSET BOLTS
U-1	AMERICAN STANDARD WASHBROOK FLOWISE VITREOUS CHINA URINAL (FLUSH VALVE, 3/4" TOP SPUD, WALL MTD., 1.0 GAL/FLUSH) SIPHON JET WITH SLOW 111-XL MANUAL FLUSH VALVE, SIPHON JET, WALL HANGAR OR JOSAM #17800 SERIES CARRIER
L-1	BOWL INTEGRAL WITH COUNTER BY GC; AMERICAN STANDARD MONTERREY FAUCET MODEL NO. 6114.111.002 WITH WHEELCHAIR OFFSET; GRID DRAW STRAINER, AND ANGLE SUPPLIES WITH LOOSE KEY STOPS. PROVIDE TRIBURO #102W PRE-MOLDED INSULATION KIT INSULATING BOTH SUPPLIES AND DRAIN. PROVIDE THERMOSTATIC MIXING VALVE, WILKINS MODEL ZW3870ULT ASSE 1070 COMPLANT
L-2	KOHLER K-2005 KINGSTON, VITREOUS CHINA, WITH OVERFLOW; AMERICAN STANDARD MONTERREY FAUCET MODEL NO. 6114.111.002 WITH WHEELCHAIR OFFSET; GRID DRAW STRAINER, AND ANGLE SUPPLIES WITH LOOSE KEY STOPS. PROVIDE JAY R SMITH CARRIER AND TRIBURO #102W PRE-MOLDED INSULATION KIT INSULATING BOTH SUPPLIES DRAIN. PROVIDE THERMOSTATIC MIXING VALVE, WILKINS MODEL ZW1070, ASSE 1070 COMPLANT
S-1	ELKAY LRAQ-171665 LUSTERSTONE STAINLESS STEEL SINGLE BOWL KITCHEN SINK, 18 GA., 6.5" DEEP FOR TOP MOUNT INSTALLATION; AMERICAN STANDARD COLONY PRO 7074.400 FAUCET; CHROME P-TRAP AND SUPPLIES
S-2	ELKAY LRAQ-131665 LUSTERSTONE STAINLESS STEEL SINGLE BOWL KITCHEN SINK, 18 GA., 6.5" DEEP FOR TOP MOUNT INSTALLATION; AMERICAN STANDARD MONTERREY 6114.111.002 FAUCET; CHROME P-TRAP AND SUPPLIES
JS-1	WILLIAMS 99-900 MOP SERVICE BASIN, 24"x24"x12", FIN 830-AA WALL MTD FACET W/VACUUM BREAKER & BUCKET HOOK 832-AA HOSE & BRACKET, STAINLESS STEEL BUMPER GUARD, 889-CC MOP HANGAR
ENC-1	HALSEY-TAYLOR HACRFS-BL TWO STATION ELECTRIC WATER COOLER WITH BOTTLE FILLER, LIGHT GRAY, CANE APRON, WALL CARRIER, LEAD FREE WORKING COMPONENTS 8.0 GPH CAPACITY AND 6.0 AMPS
FD-1	JR SMITH 2005 FLOOR DRAIN, SATIN FINISH BRONZE TOP, NON-CLOG STRAINER, SECURED GRATE; 4" DEEP SEAL TRAP, TRAP GUARD. SET RIM FLUSH WITH FINISH FLOOR
FD-2	WINGETTE SD1000 SHOWER DRAIN WITH CHROME SHOWER GRATE
TD-1	ZURN Z886, 5'-0" LONG, HDPE CONSTRUCTION, REBAR CLIPS, P8-HPP HEEL PROOF SLOTTED GRATE
CO	JOSAM CLEANOUT FLOOR WALL ROUND, SATIN BRONZE TOP, RECESSED PLUG, CHROME FLUSH WALL PLATE, RECESSED PLUG
WH-1	JOSAM #71050-74-72 WALL HYDRANT, NON FREEZE, CAST BRONZE W/ INTEGRAL VACUUM BREAKER, UNION ELBOW ASSEMBLY AND WALL CLAMP; NOTE: ALL SUPPLY PIPING SHALL BE CONCEALED IN AN APPROVED MANNER
SH-1	TOWER INDUSTRIES 36" X 36" SHOWER BASE WITH CENTER DRAIN & RAISED WATERSTOP, PATHOS COLOR; ZURN Z7101-SS-LH AND Z70100-S7 SURFACE MOUNT SHOWER, CHROME FINISH, STANDARD SHOWER HEAD
SH-2	TOWER INDUSTRIES 36" X 36" SHOWER BASE WITH CENTER DRAIN & RAISED WATERSTOP, PATHOS COLOR; ZURN Z7101-SS-LH AND Z70100-S7 SURFACE MOUNT SHOWER, CHROME FINISH, STANDARD SHOWER HEAD; ZURN Z7000 HAND SHOWER WITH DIVERTER CONNECTION, 60" HOSE AND SLIDE BAR
RPZ	WATTS #909 REDUCED PRESSURE ZONE BACKFLOW PREVENTOR, BRONZE CONSTRUCTION, EPOXY COATED CAST IRON CHECK VALVE BODY WITH BRONZE SEATS, FDA APPROVED EPOXY COATED CAST IRON RELIEF VALVE WITH TRIM. ASSEMBLY TO BE SUITABLE FOR VERTICAL INSTALLATION
PRV	WATTS 25AUB WATER PRESSURE REDUCING VALVE, BRONZE CONSTRUCTION, WITH INTEGRAL STRAINER AND BUILT-IN BYPASS
WMB	QATEYFIRE RATED BOX, ABS BOX WITH CENTER DRAIN, TWO 1/2" WATER VALVES AND WATER HAMMER ARRESTORS AND 2" DRAIN FITTINGS

PLUMBING FIXTURE INSTALLATION SCHEDULE

FIXTURE	MARK	MH	CW	HW	VENT	WASTE
WATER CLOSET	WC-1	17"	1"	--	2"	4"
URINAL	U-1	17"	3/4"	--	1-1/2"	2"
SINK	S-1	COUNTER	1/2"	1/2"	1-1/2"	2"
SINK	S-2	COUNTER	1/2"	1/2"	1-1/2"	2"
LAVATORY	L-1	INTEGRAL	1/2"	1/2"	1-1/2"	2"
LAVATORY	L-2	34"	1/2"	1/2"	1-1/2"	2"
JANITOR SINK	JS-1	FLOOR	1/2"	1/2"	1-1/2"	2"
ELECTRIC WATER COOLER	ENC-1	36"(A)	1/2"	--	1-1/2"	2"
SHOWER	SH-1	72"(B)	1/2"	1/2"	--	--
SHOWER	SH-2	72"(B)	1/2"	1/2"	--	--

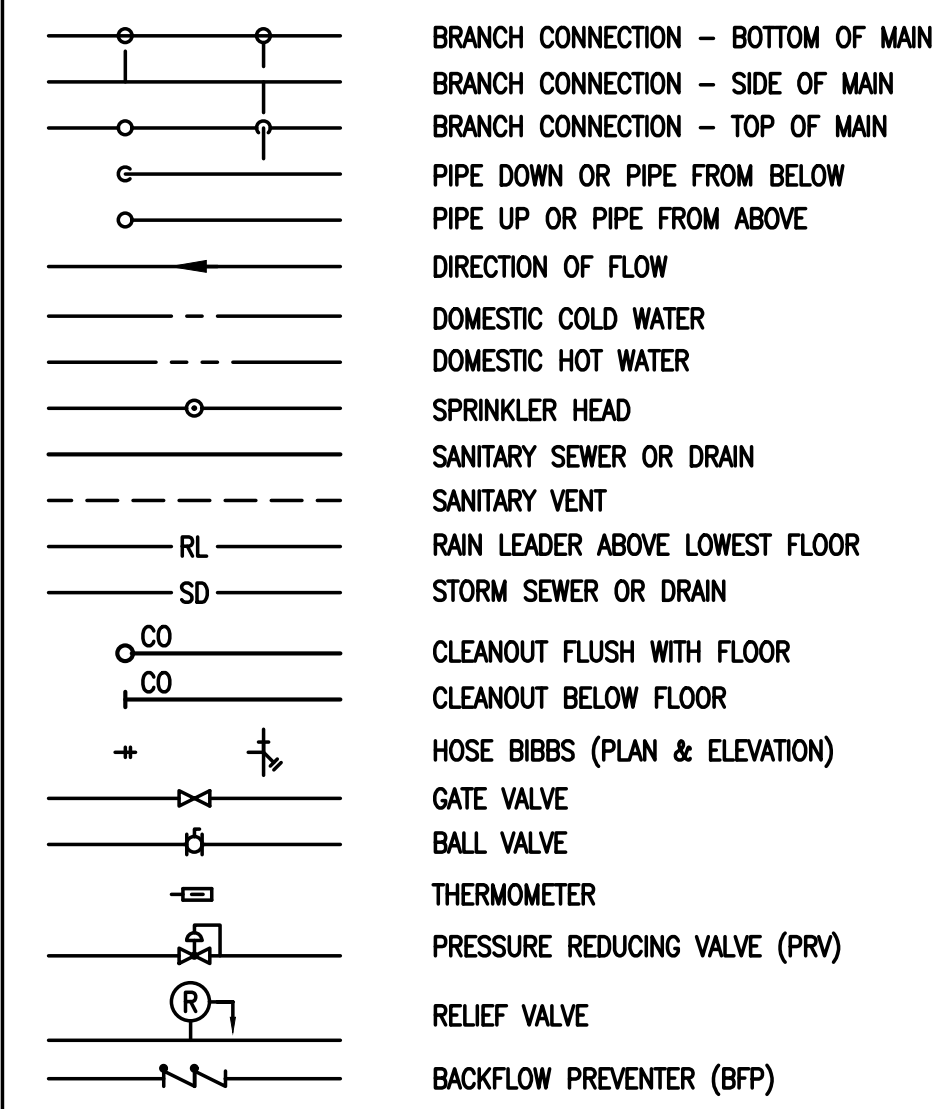
- NOTES
- SIZE GIVEN ARE FOR FIXTURE ONLY. EXCEPTIONS, IF ANY, ARE SHOWN ON PLANS.
 - MOUNTING HEIGHT DIMENSIONS ARE TO FLOOD LEVEL RIM OF FIXTURE, UNLESS NOTED OTHERWISE.
 - MOUNTING HEIGHT TO LOWER SPOUT OUTLET.
 - MOUNTING HEIGHT TO SHOWER HEAD
 - THERMOSTATIC MIXING VALVE TO BE MOUNTED HIGH UNDER LAVATORY TO CONCEAL FROM VIEW.

GAS WATER HEATER SCHEDULE

MARK	STORAGE CAPACITY	RECOVERY RATE	BTUH INPUT	MANUFACTURER AND MODEL	FUEL SUPPLY	PRESSURE	PILOT TYPE	REMARKS
HWH-1 THRU HWH-3	---	3.2 GPM @ 100' RISE	199,000	NAVIER NPE-240A2	NG	3.5-10.5" WC	NAT GAS	PROVIDE WITH ANY ACCESSORIES AS NECESSARY FOR MULTIPLE UNIT OPERATION, CASCADE CABLE, CONDENSATE NEUTRALIZATION KIT, INTERNAL RECIRCULATING PUMP

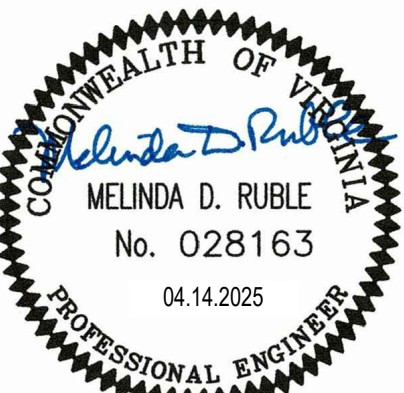
NOTE: SEE WATER HEATER DETAIL, INSTALL COMBUSTION AIR AND VENT PIPING PER MANUFACTURER'S INSTRUCTIONS.

LEGEND



ABBREVIATIONS

ABV	ABOVE
BTU	BRITISH THERMAL UNIT
BEL	BELOW
BET	BETWEEN
CLG	CEILING
CO	CLEANOUT
CONC	CONCRETE
CONN	CONNECT, CONNECTION
CW	COLD WATER
CONT	CONTINUED
DN	DOWN
EA	EACH
EW	ELECTRIC WATER COOLER
F	DEGREES FAHRENHEIT
FD	FLOOR DRAIN
FL	FLOOR
FR	FROM
FT	FEET
GPM	GALLONS PER MINUTE
GV	GATE VALVE
HB	HOSE BIBB
HW	HOT WATER
IN	INCH, INCHES
MAX	MAXIMUM
MIN	MINIMUM
RD	ROOF DRAIN
REQD	REQUIRED
RL	ROOF LEADER
SH	SHEET
TEMP	TEMPERATURE
TYP	TYPICAL
V	SANITARY VENT
VTR	VENT THRU ROOF
W	SANITARY WASTE
WH	WALL HYDRANT



PLUMBING LEGEND, SCHEDULES & DETAILS

DISMAS CHARITIES, INC.,
NEW FACILITY - ROANOKE
2921 HOLINS ROAD NE
ROANOKE, VIRGINIA 24012

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P2.1

DATE: 04-14-25

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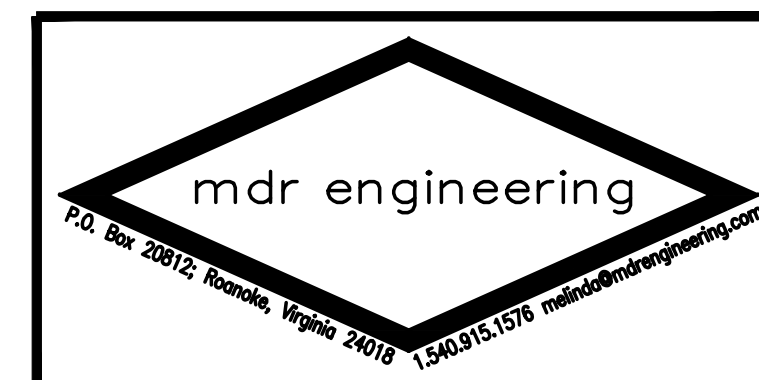
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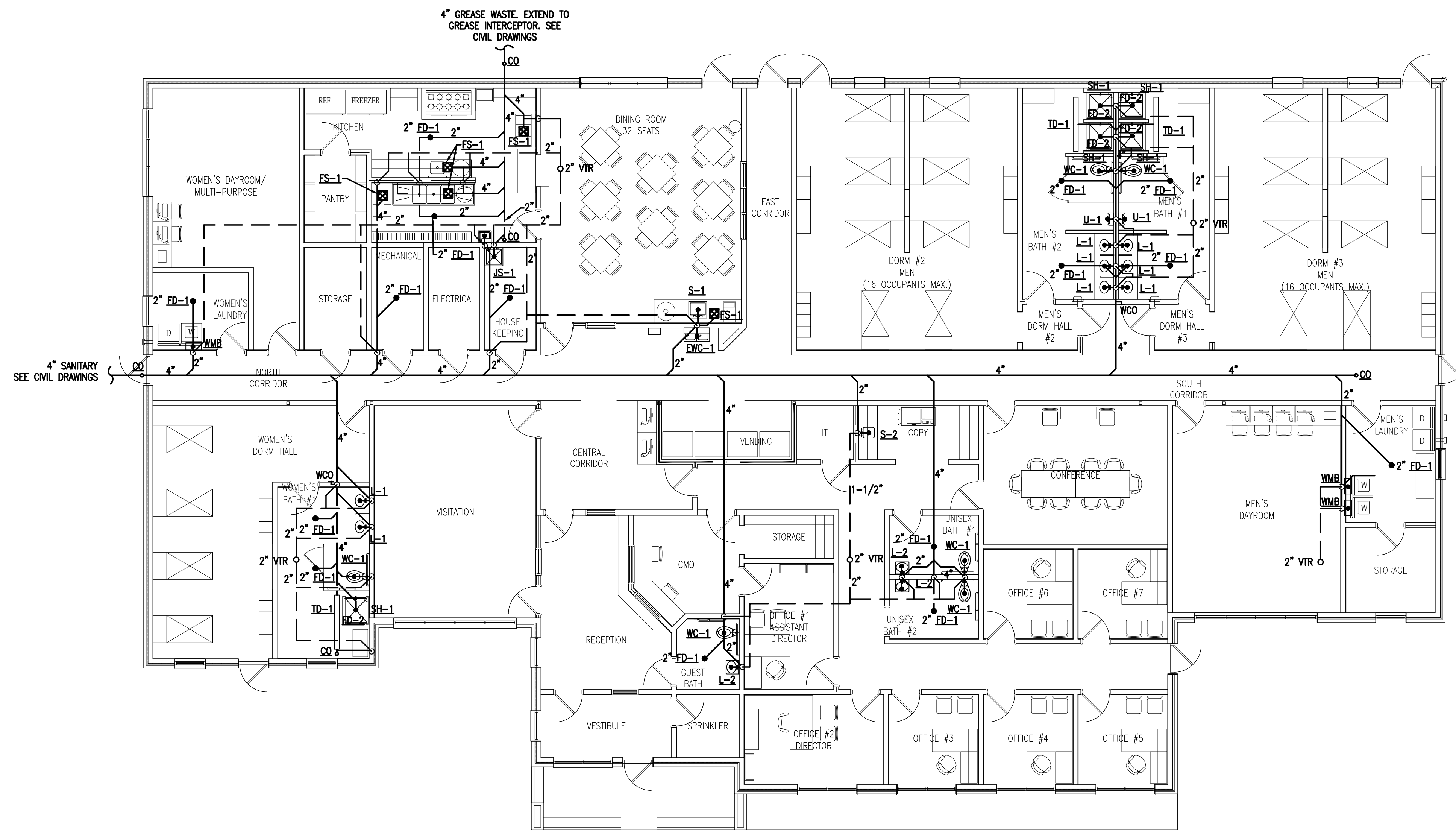
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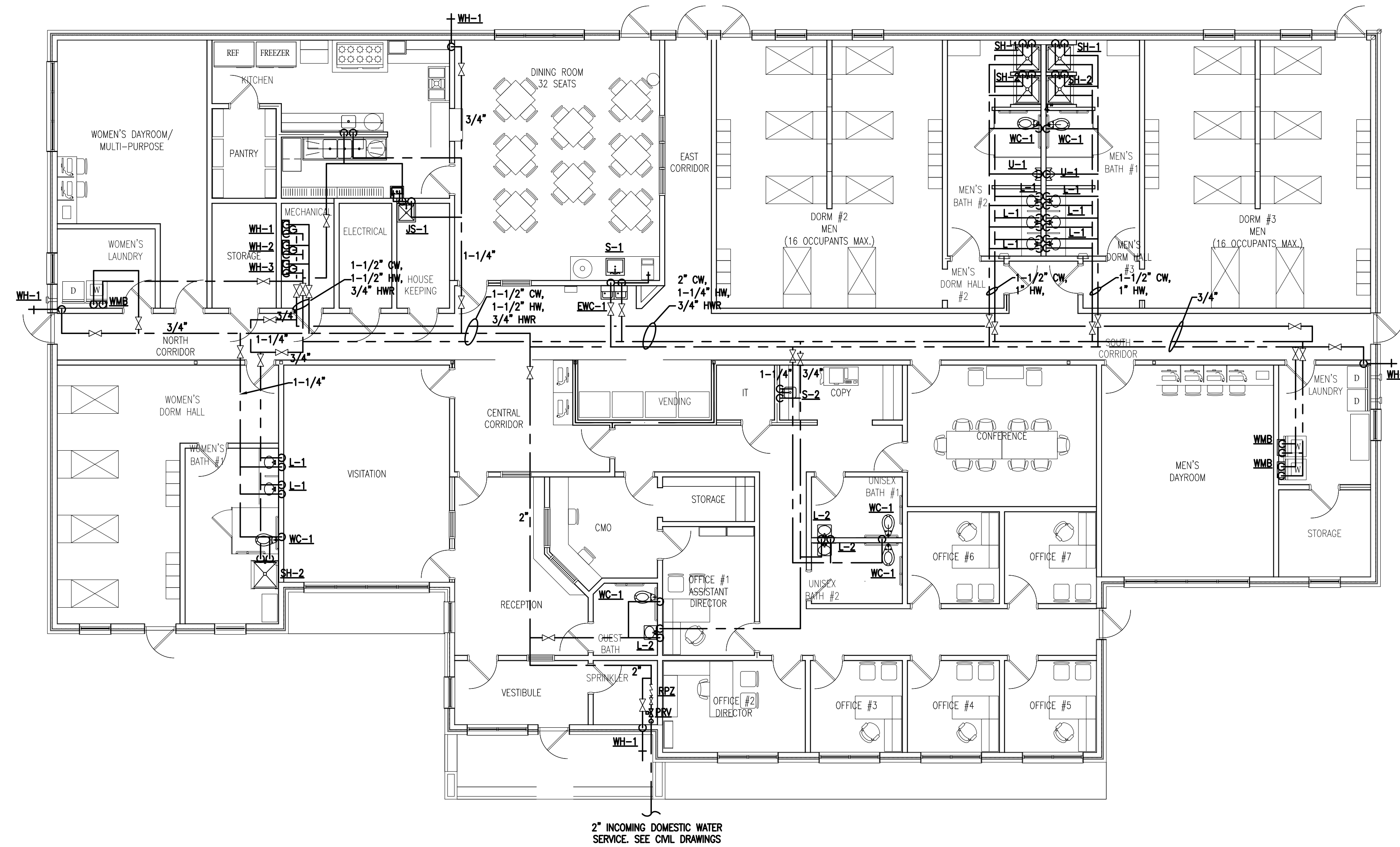
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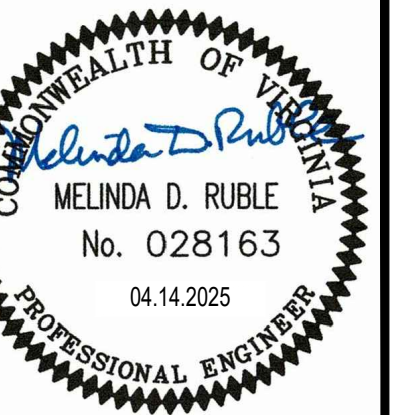




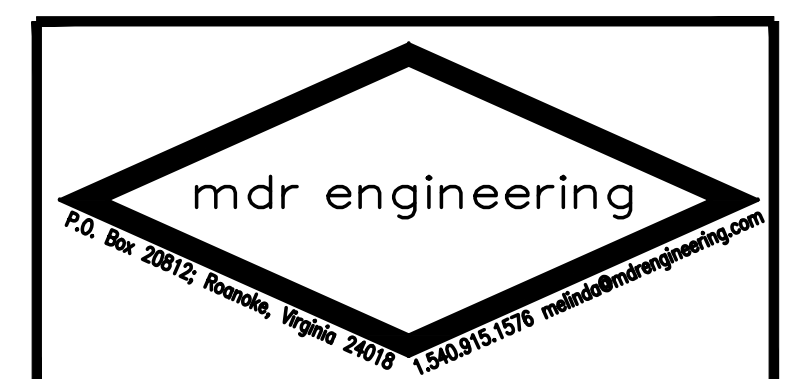
FLOOR PLAN - PLUMBING SANITARY & VENT
SCALE: 1/8" = 1'-0"



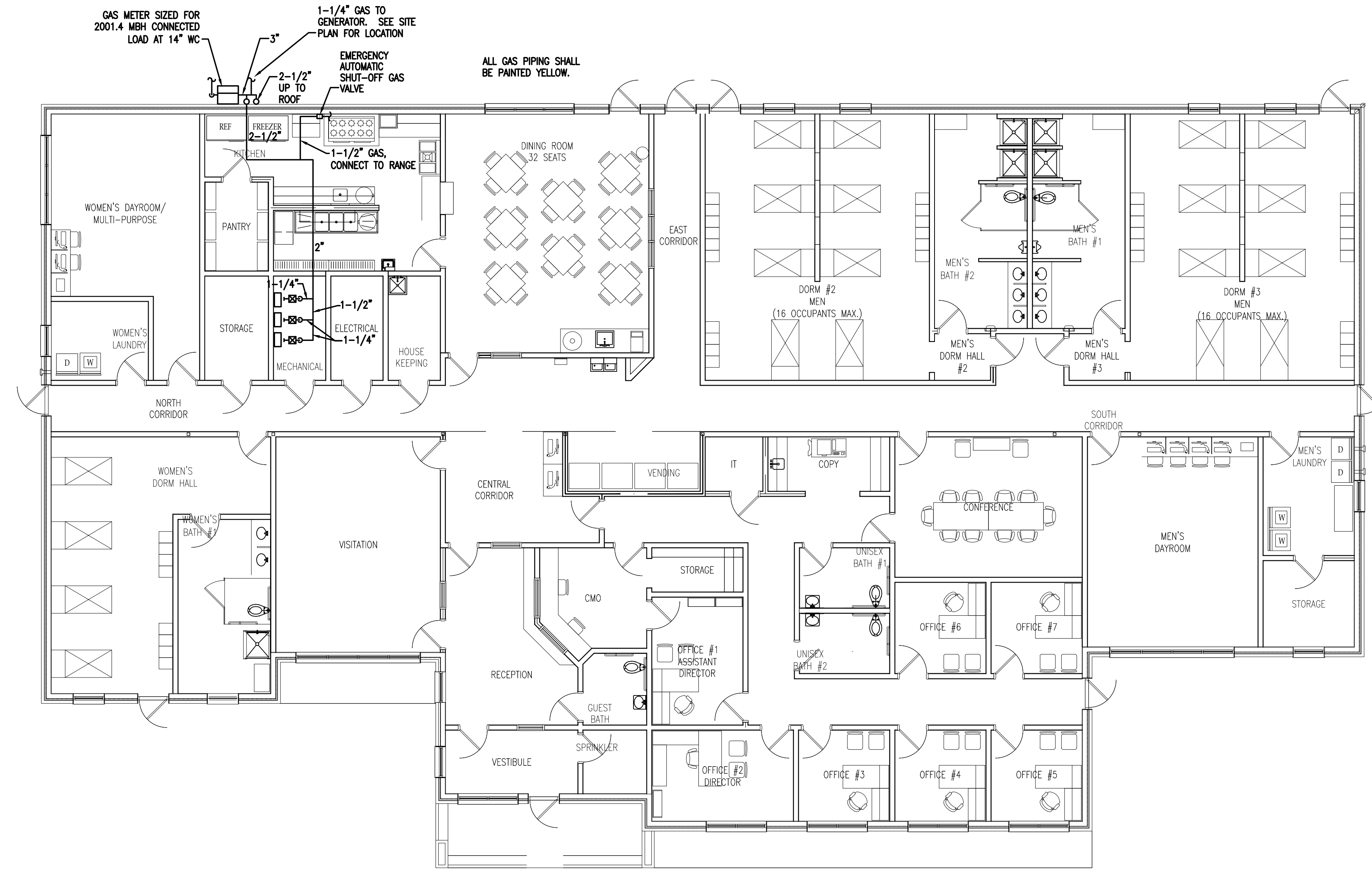
FLOOR PLAN - PLUMBING DOMESTIC WATER
SCALE: 1/8" = 1'-0"



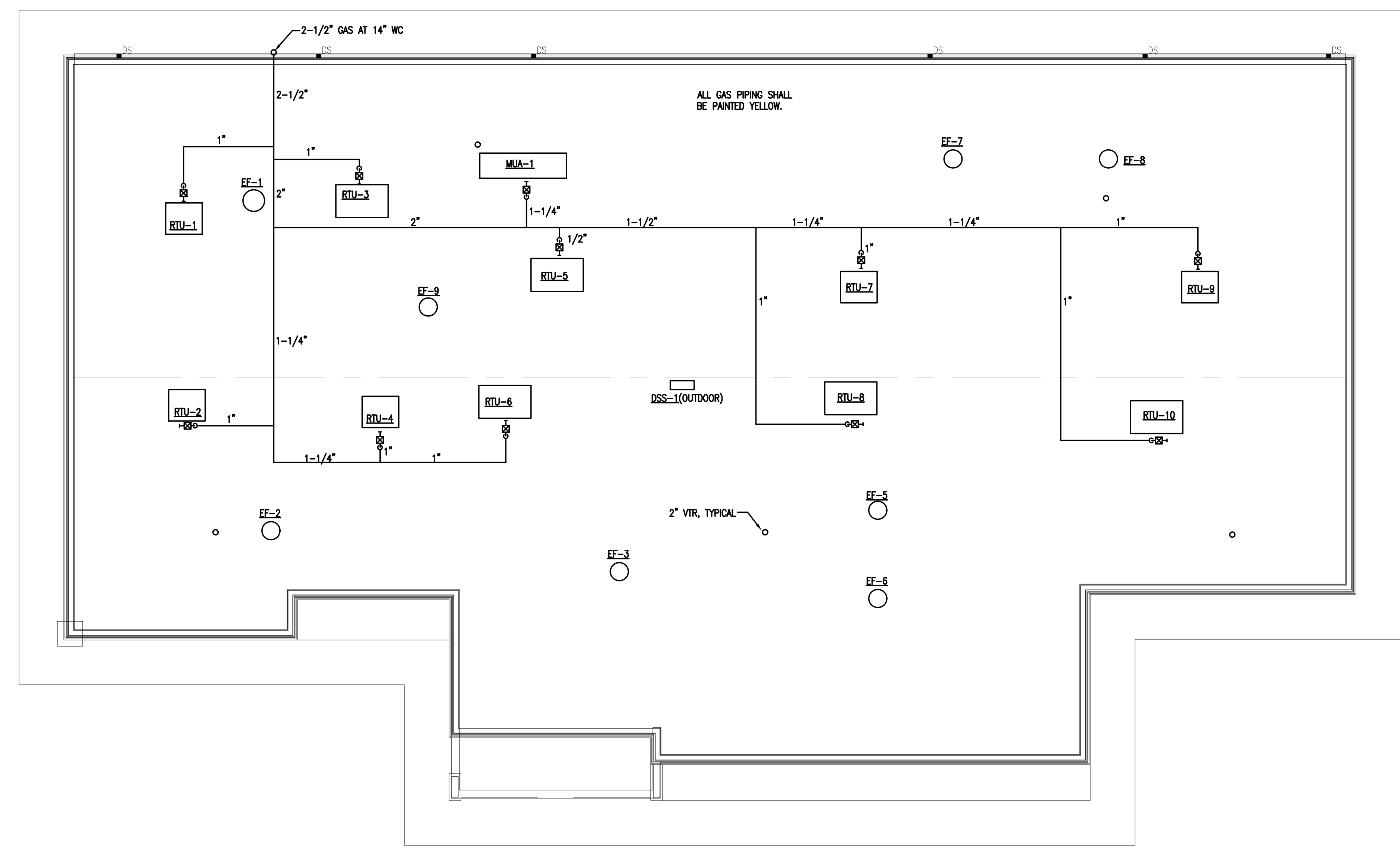
PLUMBING FLOOR PLANS
DISMAS CHARITIES, INC.
NEW FACILITY - ROANOKE
2921 HOLINS ROAD NE
ROANOKE, VIRGINIA 24012
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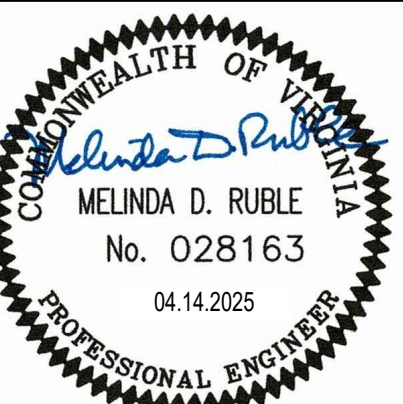
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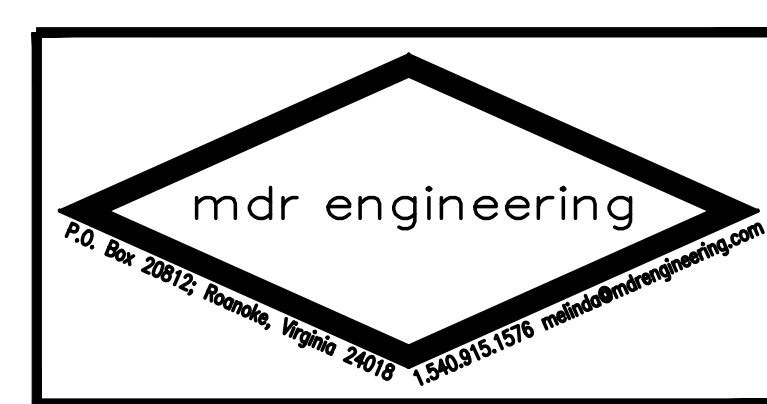
FLOOR PLAN - GAS PIPNG
SCALE: 1/8" = 1'-0"



ROOF PLAN - PLUMBING
SCALE: 1/8" = 1'-0"



PLUMBING GAS PIPNG & ROOF PLAN
 DISMAS CHARITIES, INC.
 NEW FACILITY - ROANOKE
 2921 HOLINS ROAD NE
 ROANOKE, VIRGINIA 24012
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