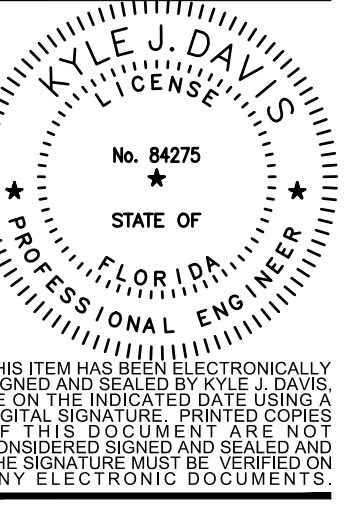






**GRAVITY PIPING FLOOR PLAN**  
SCALE: 1/4" = 1'-0"



**NEW FIRE DEPARTMENT ADMINISTRATION BUILDING**  
1579 NW LAKE JEFFERY ROAD  
LAKE CITY, FLORIDA  
COBCC PROJECT NUMBER

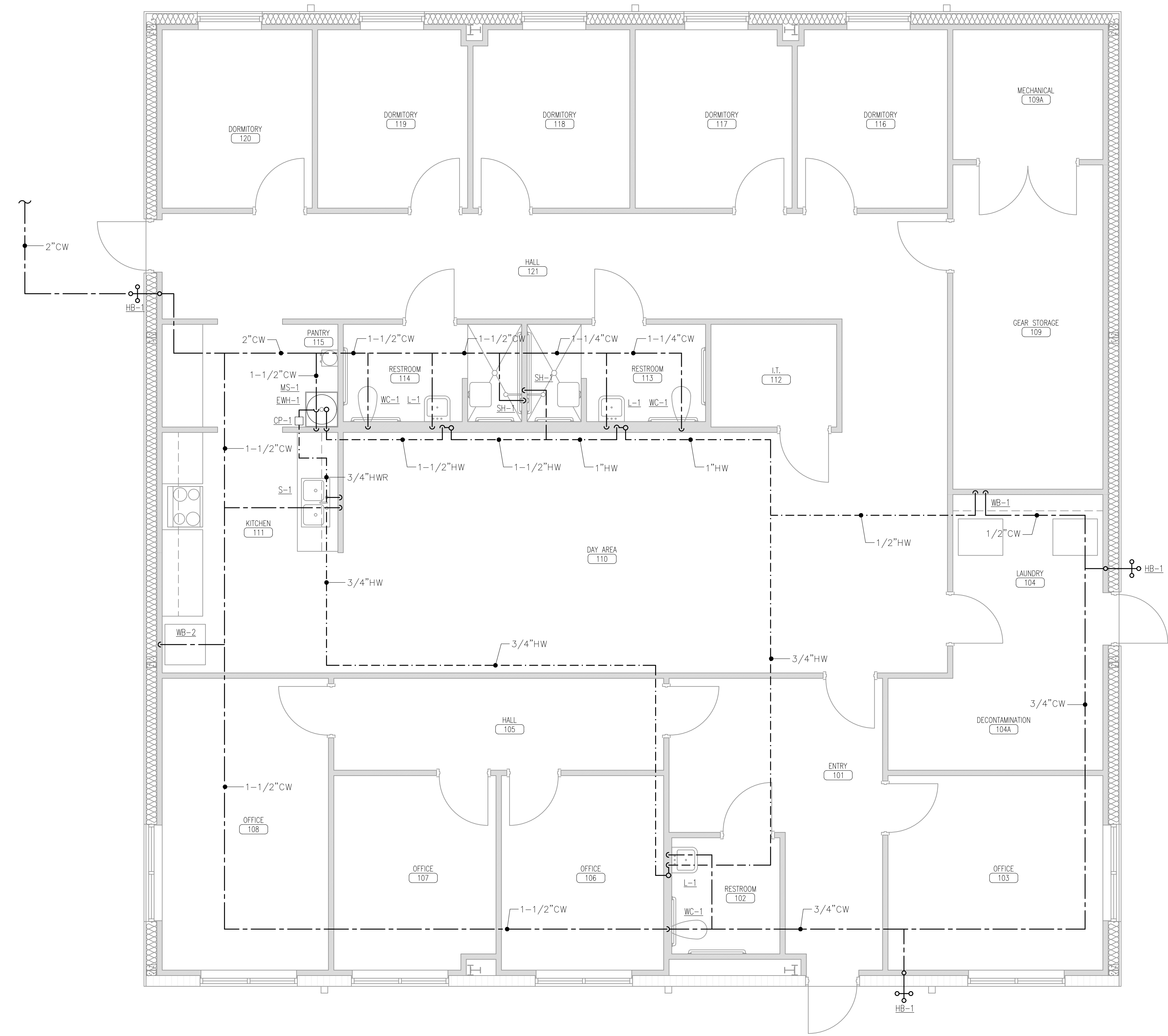
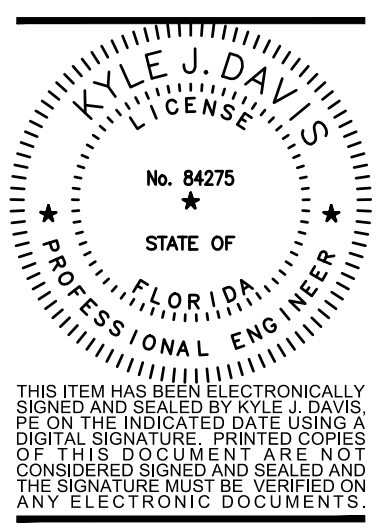
#	Date	Note

**GRAVITY PIPING FLOOR PLAN**  
CONSTRUCTION DOCUMENTS

**COBURN AND ASSOCIATES**  
CONSULTING ENGINEERS  
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FLORIDA LICENSED ENGINEERS EB 0003687  
CA JOB NUMBER 2390

DATE  
09/12/2024  
**2338**  
**P111**

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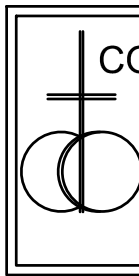



**PRESSURE PIPING FLOOR PLAN**
  
 SCALE: 1/4" = 1'-0"

**NEW FIRE DEPARTMENT ADMINISTRATION BUILDING**
  
 1579 NW LAKE JEFFERY ROAD
   
 LAKE CITY, FLORIDA
   
 CCBCC PROJECT NUMBER

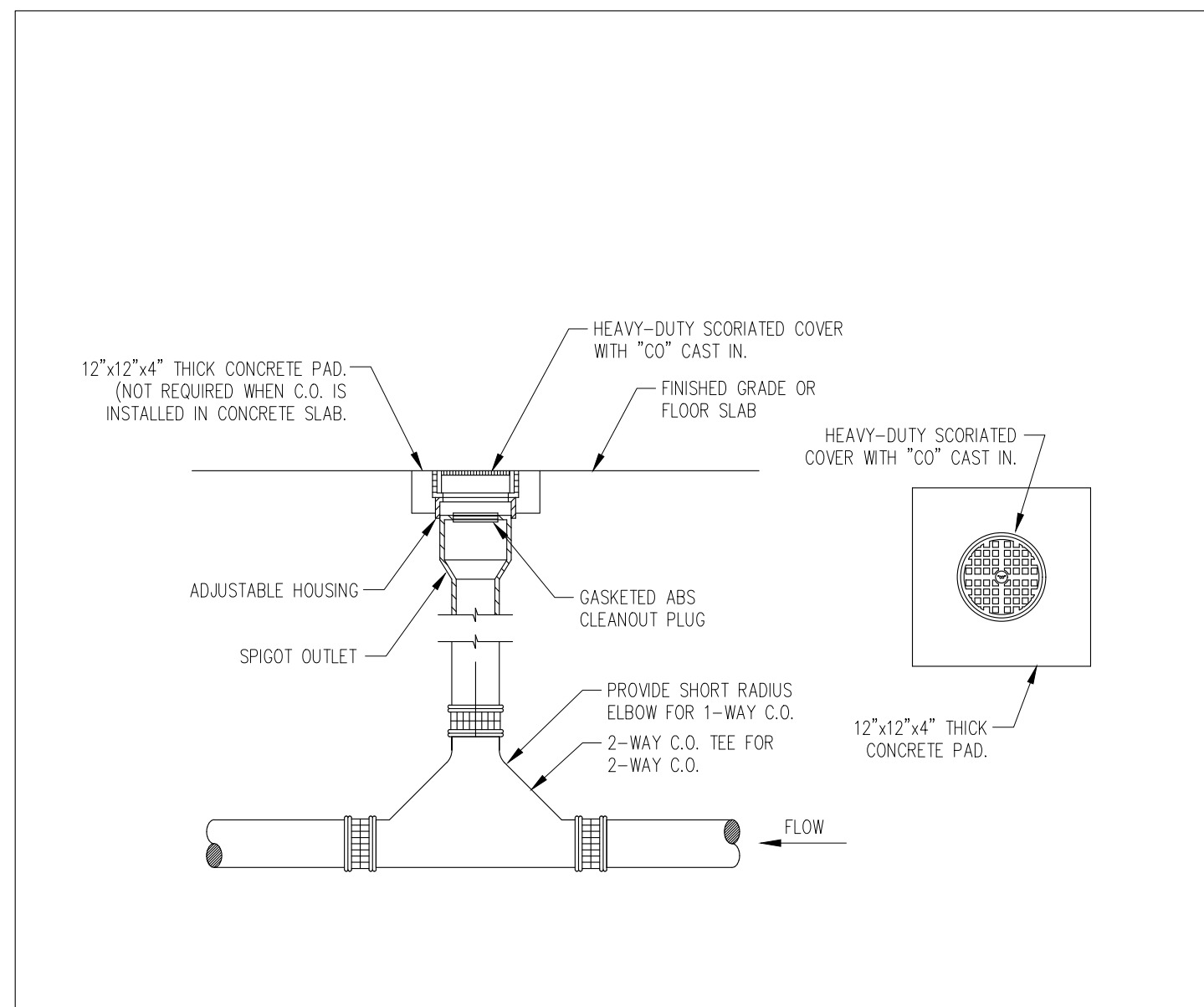
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**PRESSURE PIPING FLOOR PLAN**
  
 CONSTRUCTION DOCUMENTS

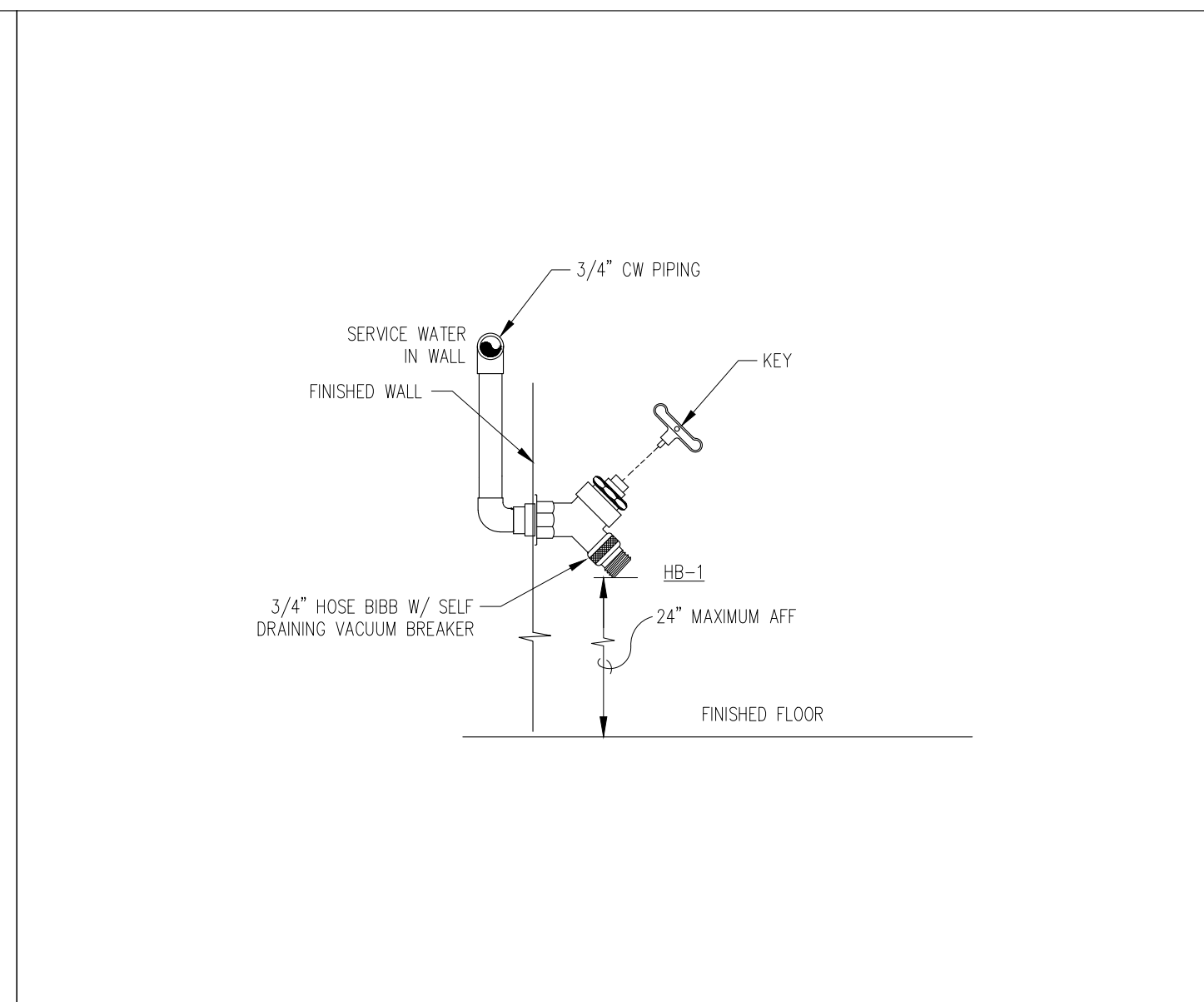

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DATE
   
 09/12/2024
   
**2338**
  
**P211**

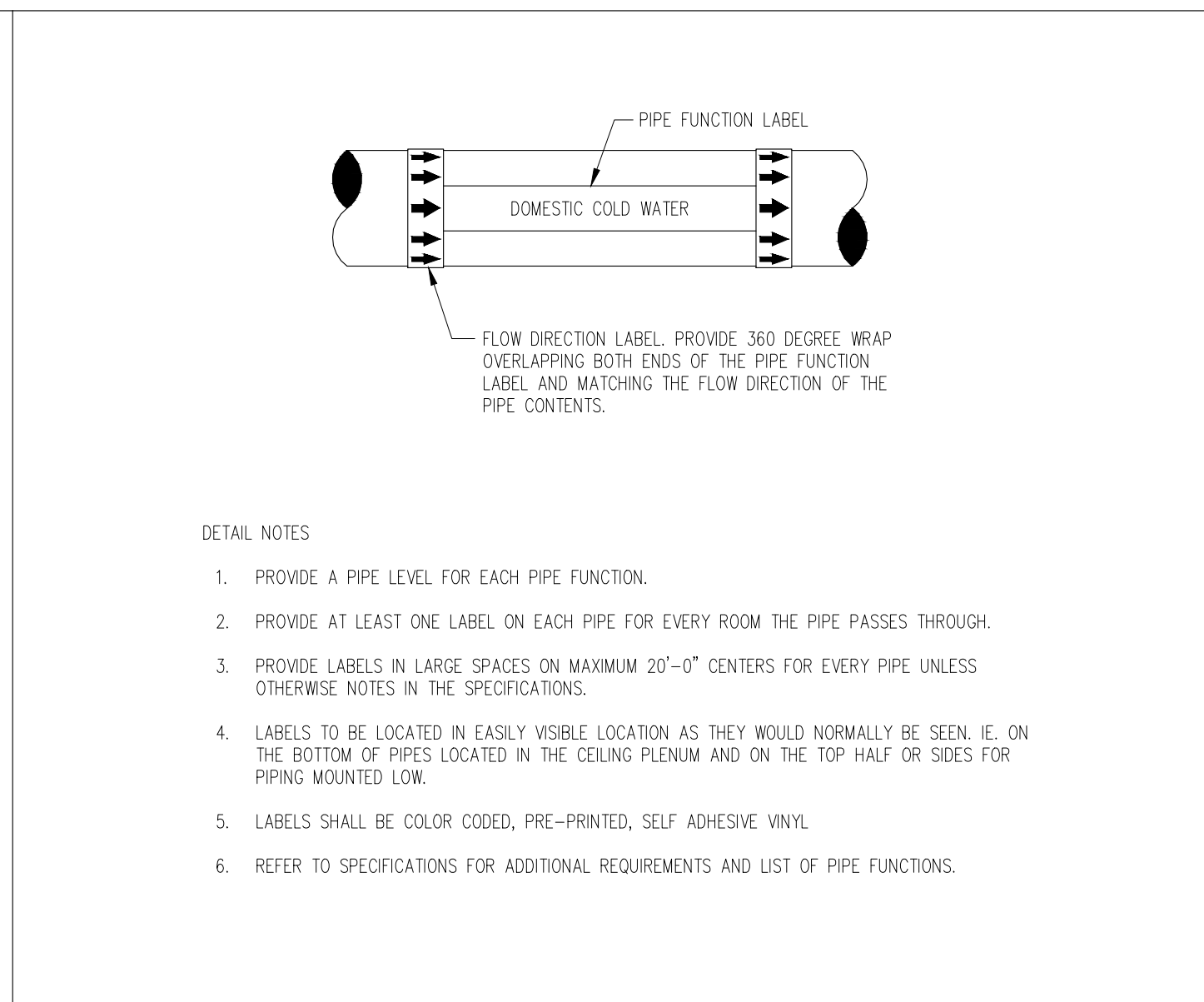




**CLEANOUT DETAIL** NTS 7

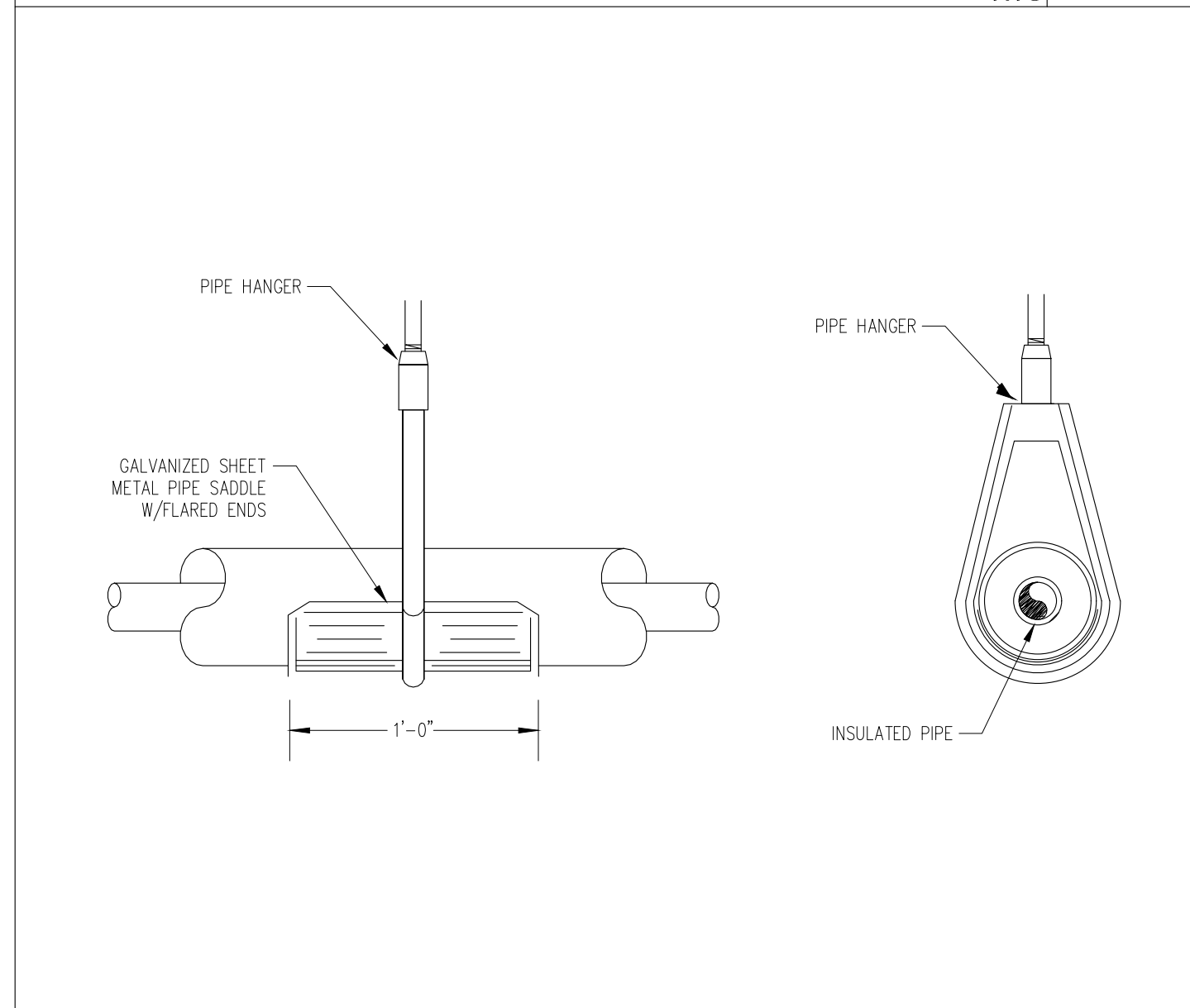


**HOSE BIBB DETAIL (HB-1)** NTS 4

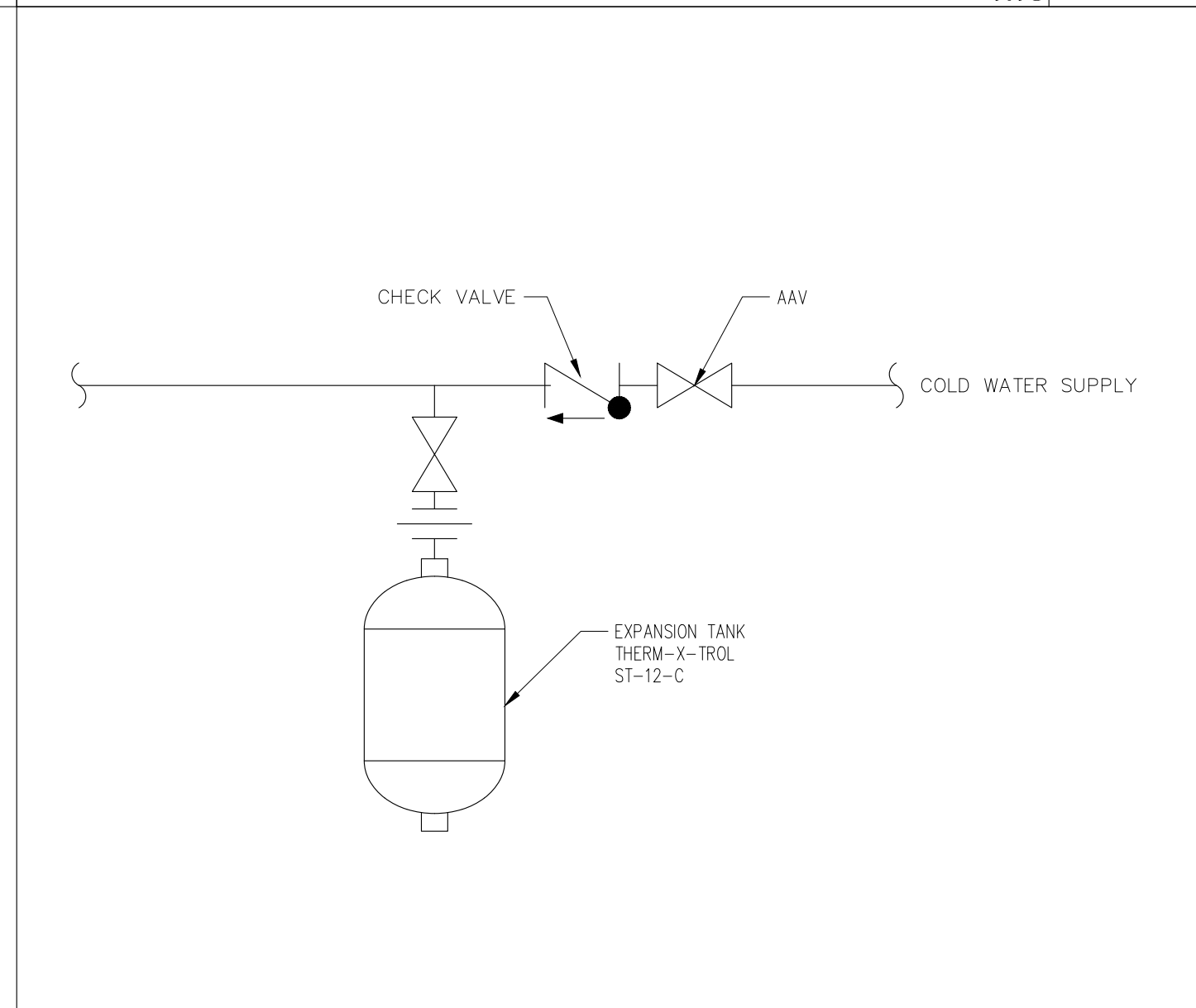


- DETAIL NOTES
1. PROVIDE A PIPE LEVEL FOR EACH PIPE FUNCTION.
  2. PROVIDE AT LEAST ONE LABEL ON EACH PIPE FOR EVERY ROOM THE PIPE PASSES THROUGH.
  3. PROVIDE LABELS IN LARGE SPACES ON MAXIMUM 20'-0" CENTERS FOR EVERY PIPE UNLESS OTHERWISE NOTES IN THE SPECIFICATIONS.
  4. LABELS TO BE LOCATED IN EASILY VISIBLE LOCATION AS THEY WOULD NORMALLY BE SEEN, I.E. ON THE BOTTOM OF PIPES LOCATED IN THE CEILING PLENUM AND ON THE TOP HALF OR SIDES FOR PIPING MOUNTED LOW.
  5. LABELS SHALL BE COLOR CODED, PRE-PRINTED, SELF ADHESIVE VINYL.
  6. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS AND LIST OF PIPE FUNCTIONS.

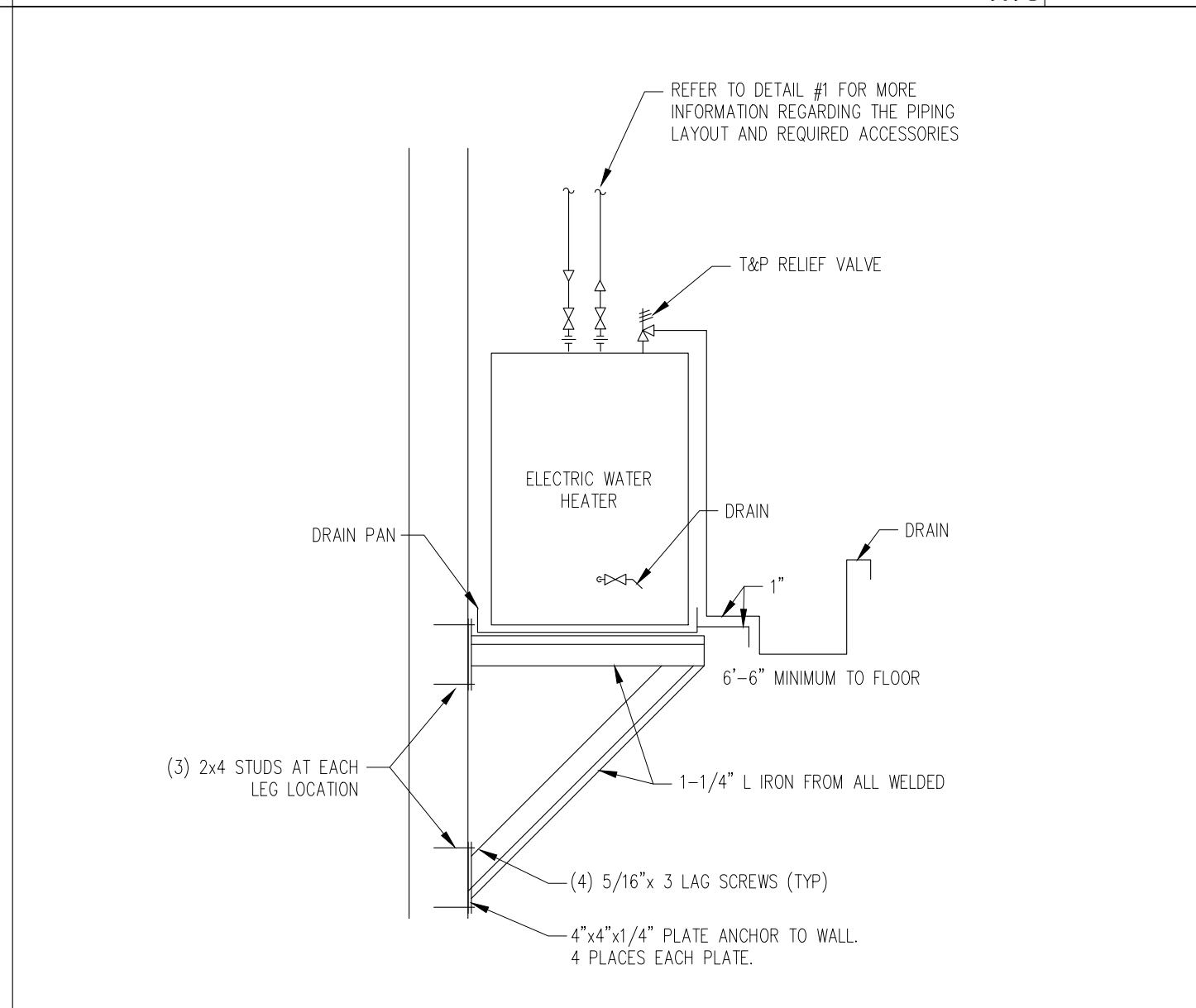
**PIPE IDENTIFICATION LABEL** NTS 1



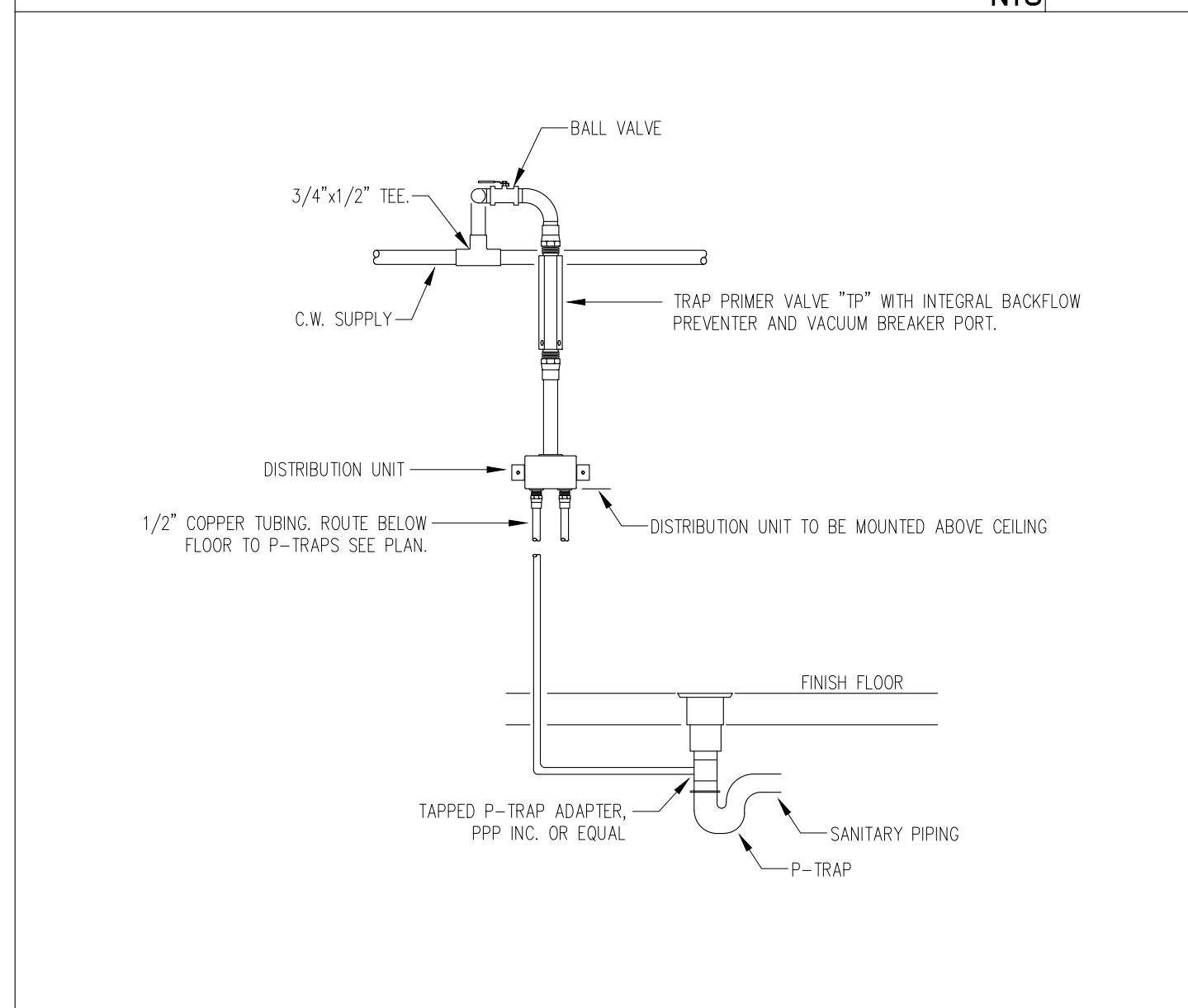
**INSULATED PIPE HANGER DETAIL** NTS 8



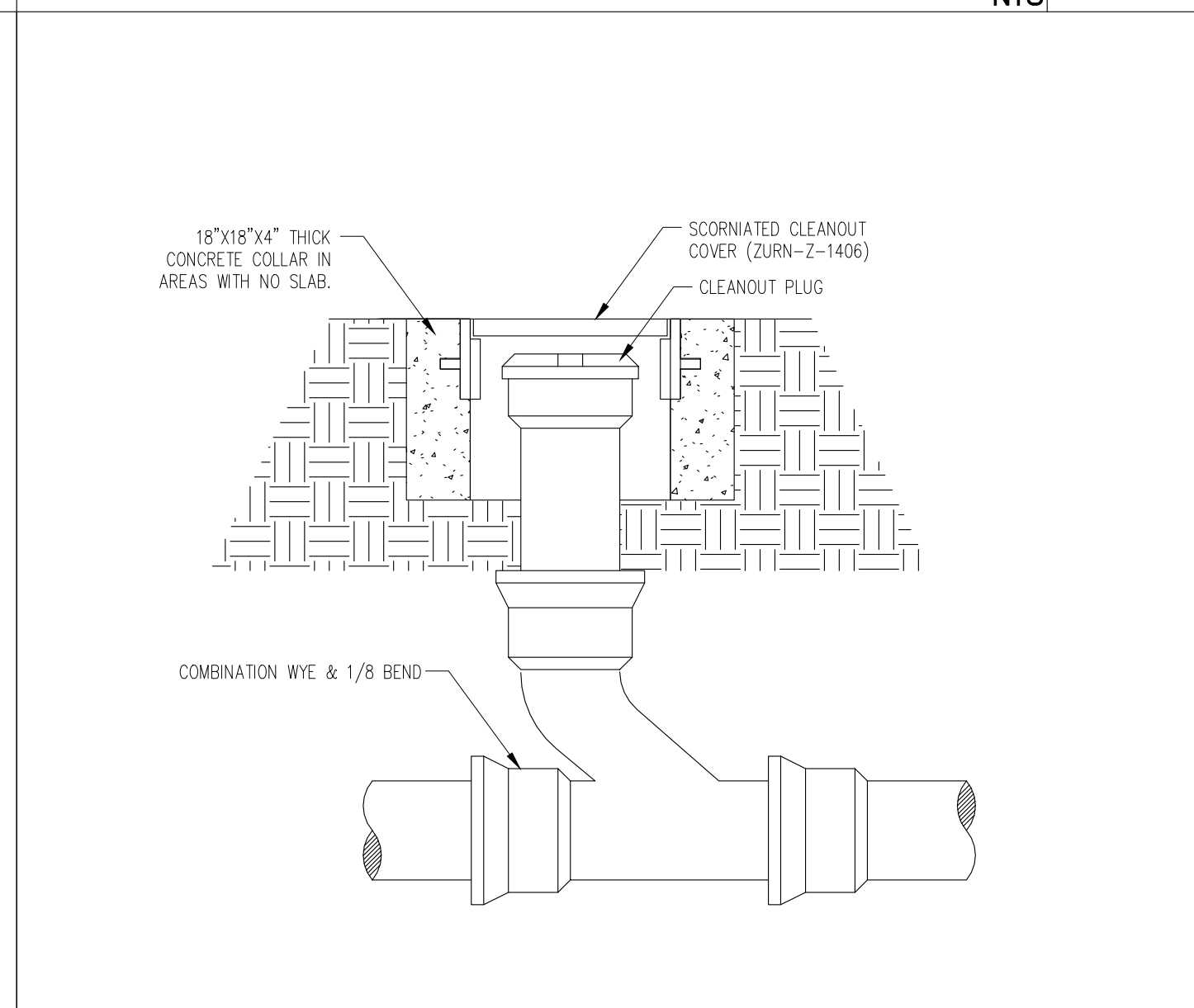
**EXPANSION TANK DETAIL** NTS 5



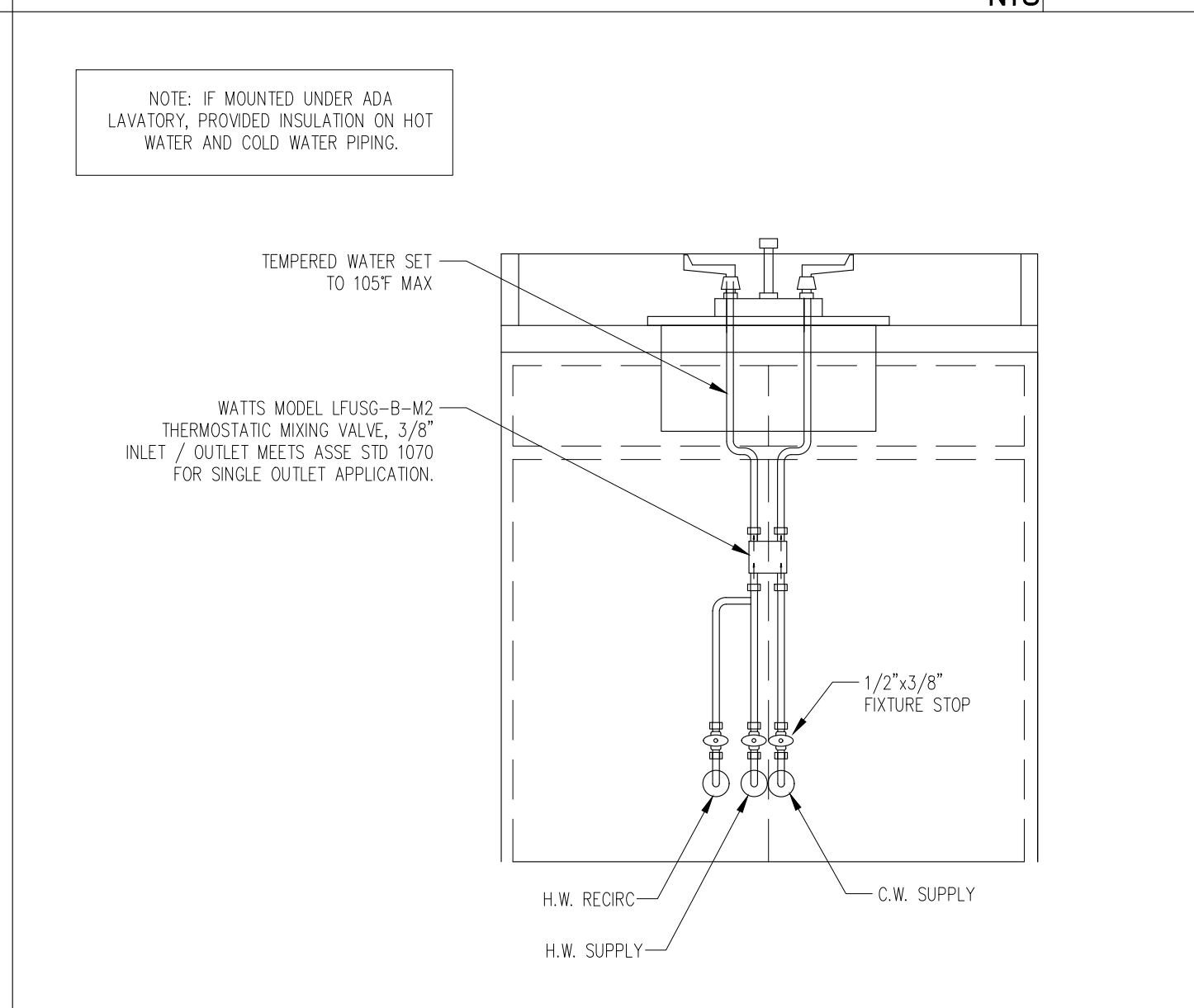
**SUSPENDED EWH DETAIL** NTS 2



**TRAP PRIMER DETAIL** NTS 9

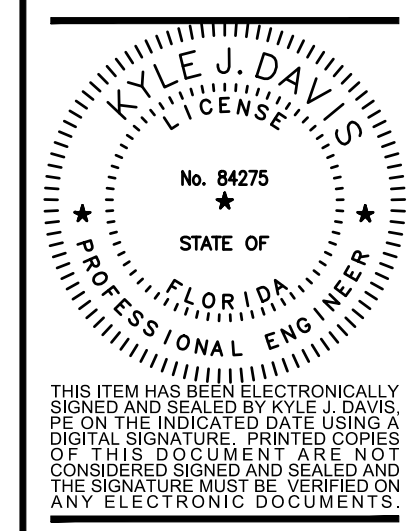


**EXTERIOR CLEANOUT** NTS 6

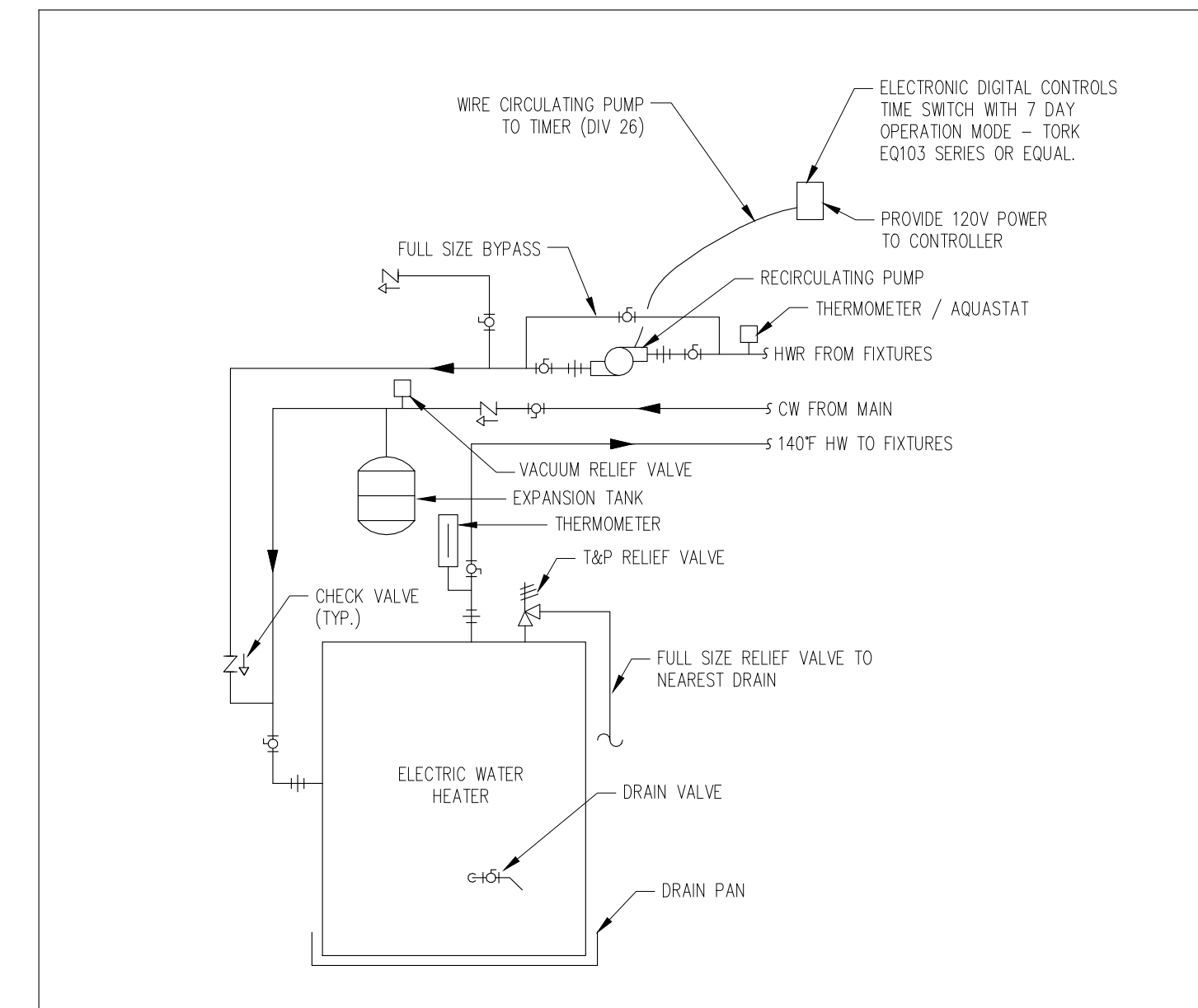


**UNDER LAV MIXING VALVE DETAIL** NTS 3

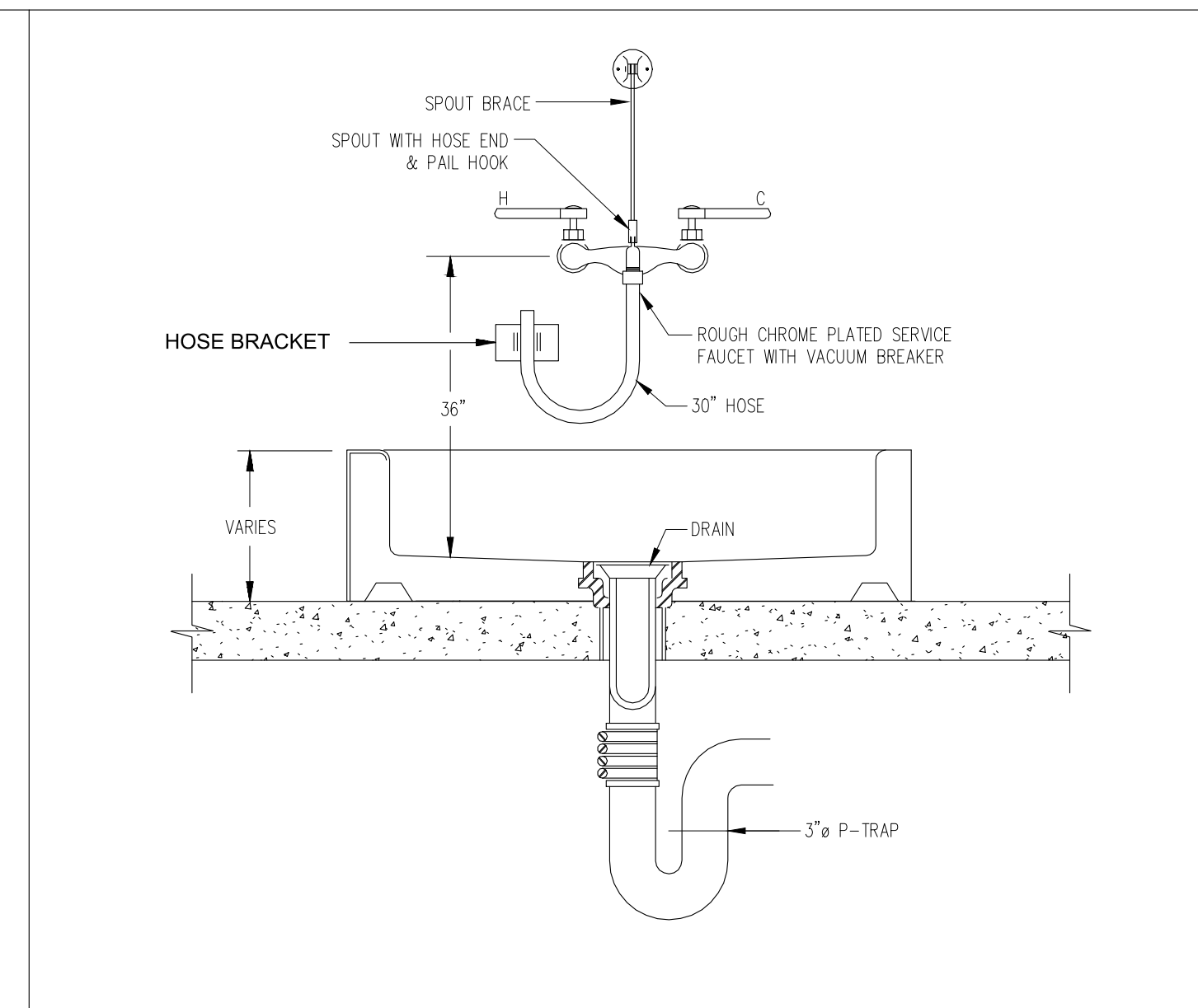
#	Date	Note



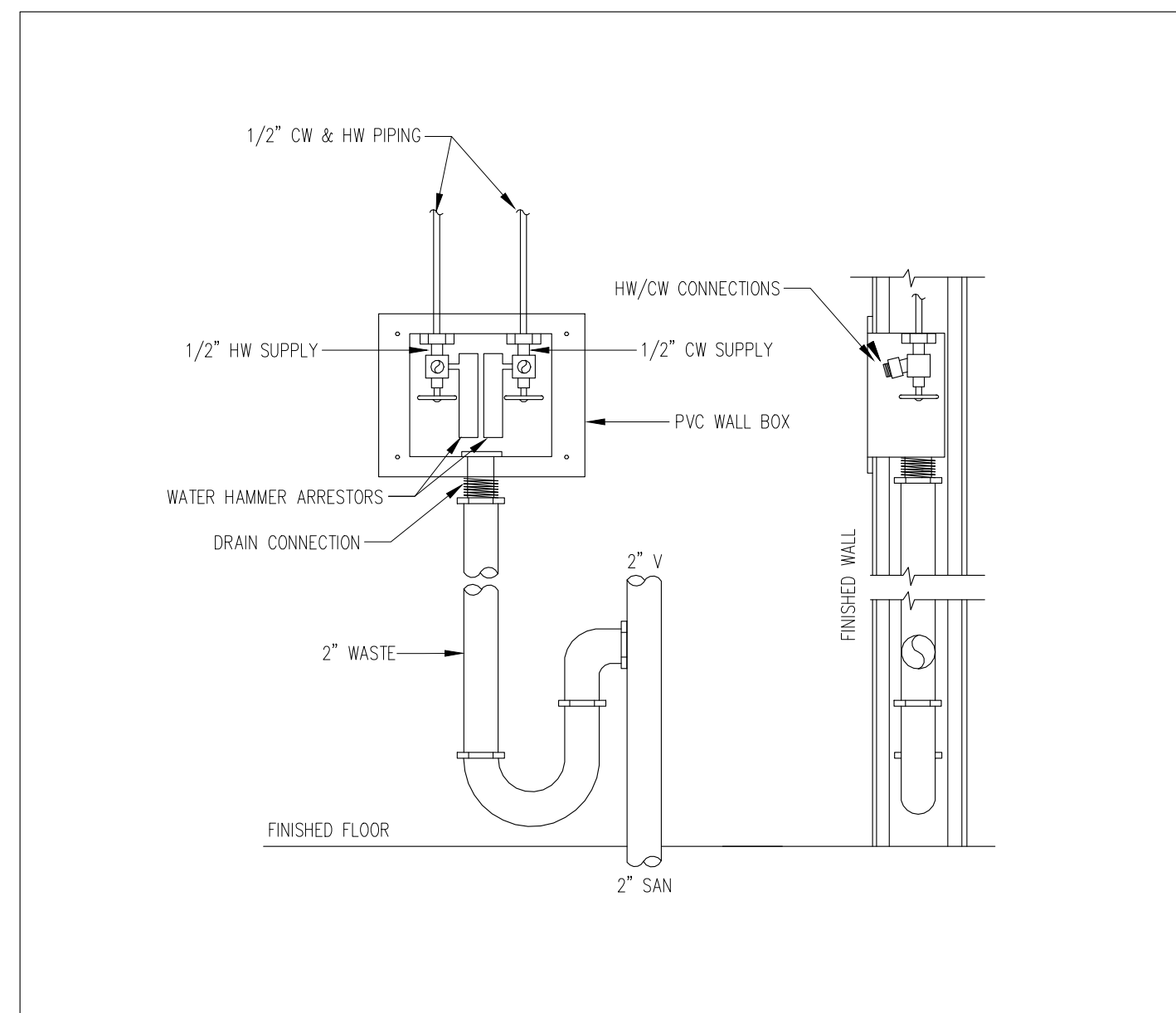
NEW FIRE DEPARTMENT ADMINISTRATION BUILDING  
1579 NW LAKE JEFFERY ROAD  
LAKE CITY, FLORIDA  
COBCC PROJECT NUMBER



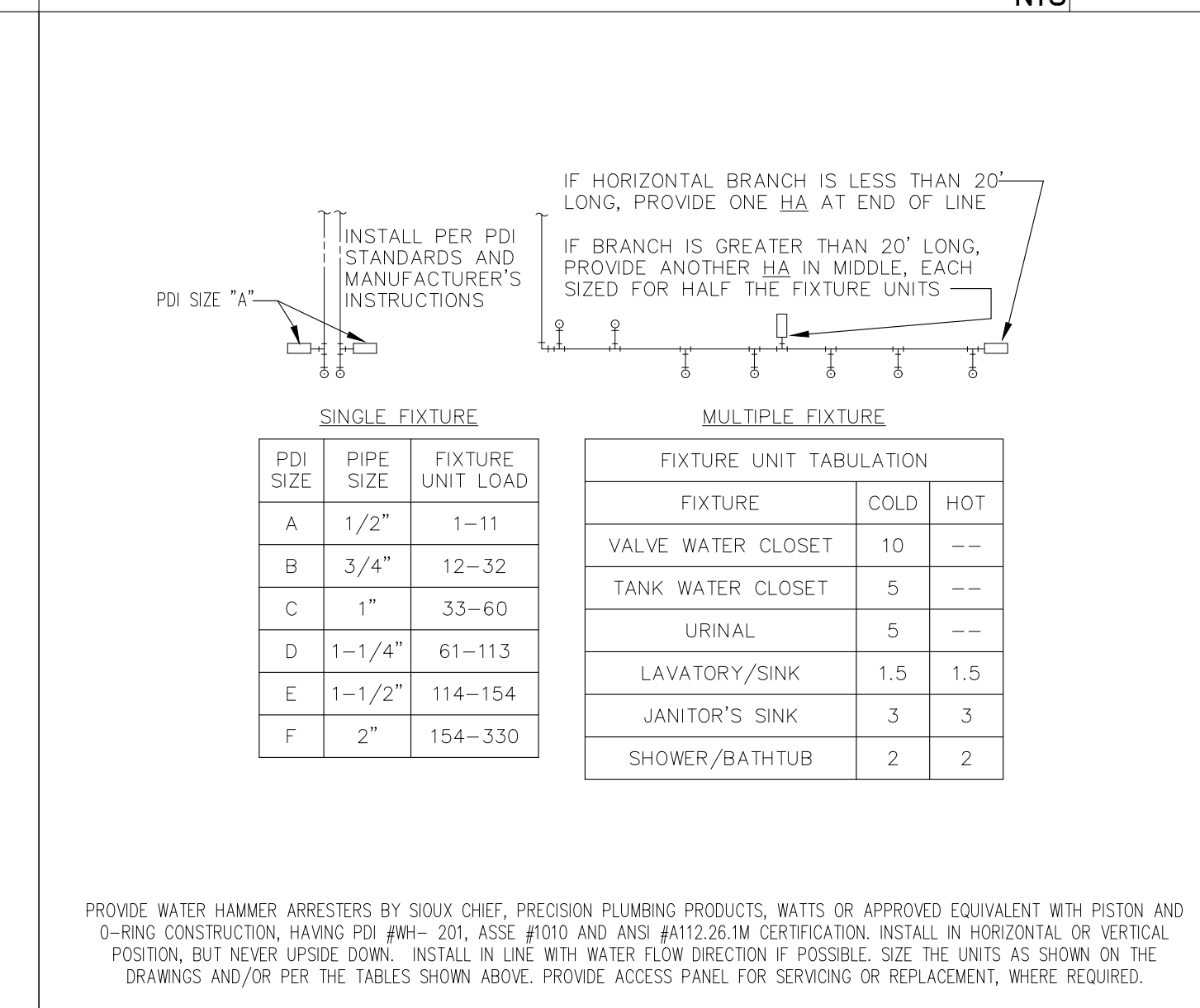
**WATER HEATER PIPING DETAIL** NTS 3



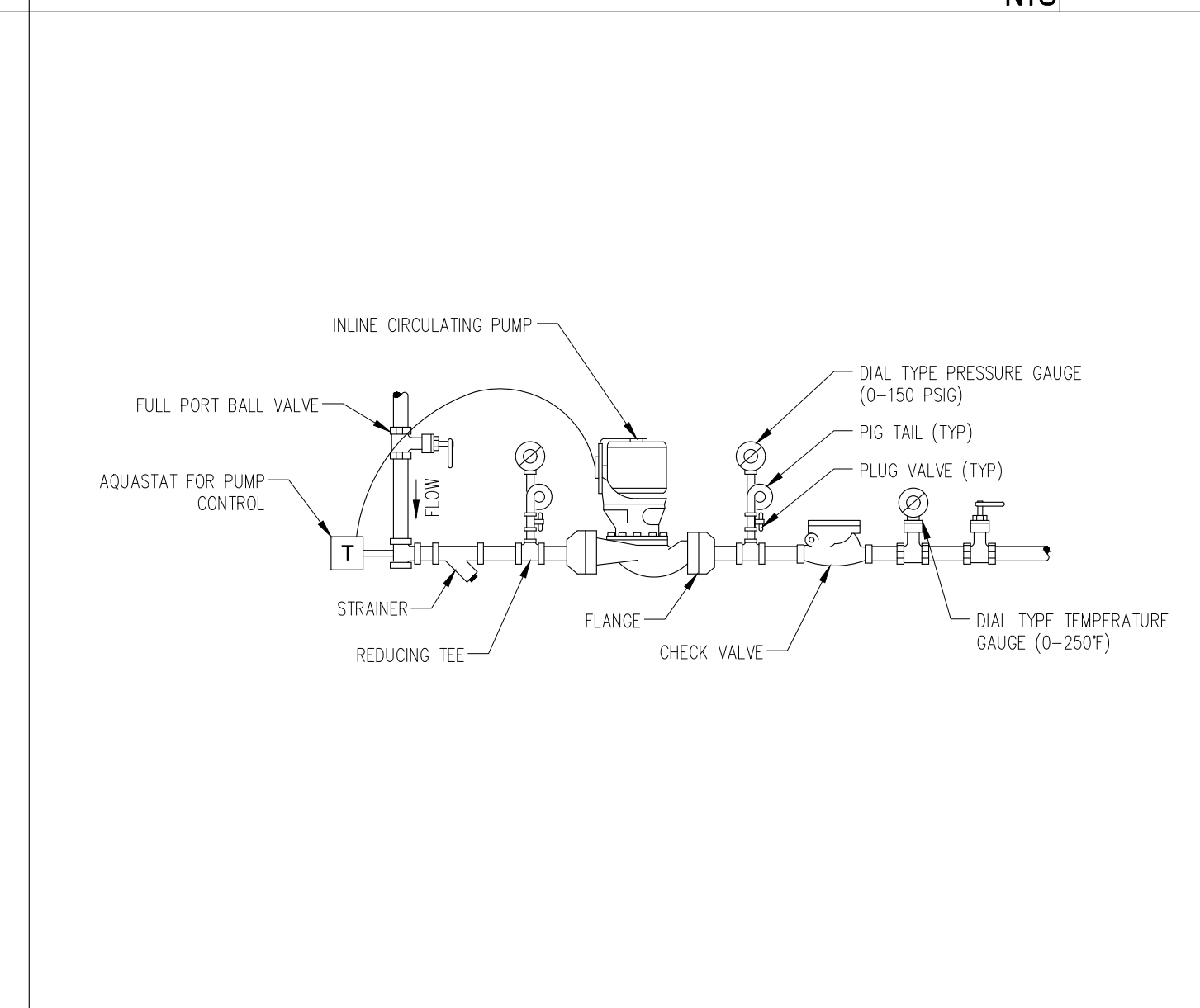
**MOP SINK DETAIL** NTS 1



**WASHING MACHINE CONNECTION** NTS 4



**HAMMER ARRESTORS DETAIL** NTS 3



**INLINE RECIRCULATING PUMP** NTS 2

#	Date	Note

**PLUMBING DETAILS**  
CONSTRUCTION DOCUMENTS

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CA JOB NUMBER 2390

DATE  
09/12/2024  
**2338**  
**P402**

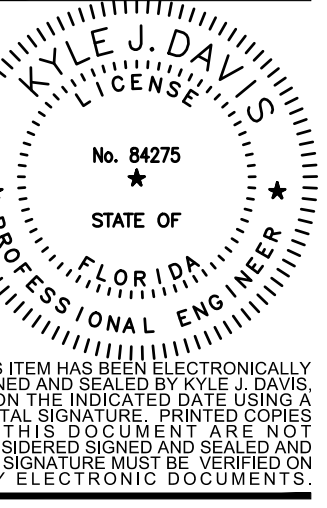
PLUMBING FIXTURE SCHEDULE										
MARK	FIXTURE	MANUFACTURER	MODEL NUMBER	TYPE	MATERIAL	WASTE	VENT	CW	HW	REMARKS
WC-1	WATER CLOSET	ZURN	Z5645-BWL	FLUSH VALVE FLOOR MOUNT	VITREOUS CHINA	4"	2"	1-1/4"	-	FLOOR MOUNTED FLUSH VALVE ADA HEIGHT 1.28 GALLONS PER FLUSHING CYCLE HIGH EFFICIENCY, VITREOUS CHINA ELONGATED BOWL, 1-1/2" INLET SPUD. TOILET SEAT, ZURN Z59555S-EL OR EQUIVALENT. ZURN Z6000AV-HET (1.28 GPM) FLUSH VALVE OR EQUIVALENT.
L-1	LAVATORY	ZURN	Z5328	WALL MOUNTED	VITREOUS CHINA	1-1/2"	1-1/2"	1/2"	1/2"	ADA ACCESSIBLE WALL HUNG 23"x21.5" VITREOUS CHINA LAVATORY WITH 8" CENTER FAUCET HOLES, DRILLED FOR CONCEALED CARRIER FAUCET; ZURN Z867R0-XL-3M (0.5 GPM) METERING FAUCET. DRAIN: Z8746-PC. OFFSET WHEELCHAIR GRID DRAIN. P-TRAP: Z8700-88-PC. TRAP WRAP: Z8946-1-NT. SUPPLY: MCGUIRE Z165CC.
S-1	TWO COMPARTMENT SINK	EKAY	ECTSRA33229TFLC	DROP-IN	STAINLESS STEEL	1-1/2"	1-1/2"	3/4"	3/4"	DROP-IN 33"x22", STAINLESS STEEL, SINGLE HOLE TWO COMPARTMENT SINK. FAUCET: LKAV705IFCR
MS-1	MOP SINK	ZURN	Z1996-24	FLOOR MOUNT	COMPOSITE	3"	2"	3/4"	3/4"	FLOOR MOUNTED 24"x24" COMPOSITE CUSTODIAL MOP SINK, 3" IPS CONNECTION DRAIN ASSEMBLY, SERVICE SINK FCT W/6" INTEGRAL VB SPOUT W/HOSE THREAD OUTLET & PAIL HOOK, ADJUSTABLE SWIVEL INLETS, 2-1/2" LEVER HANDLES, HOSE AND BRACKET. FAUCET: ZURN - Z843M1.
SH-1	SHOWER	---	---	---	---	---	---	1/2"	1/2"	---
WB-1	WALL BOX	OATLEY	28529	WALL	POLYSTYRENE	2"	1-1/2"	1/2"	1/2"	1/2" HIGH IMPACT POLYSTYRENE, 4 SUPPORT BRACKETS, SNAP-ON FACEPLATE FRAME, ACCOMMODATES UP TO 1" DRYWALL WITH 1/4 TURN BRASS BALL VALVE.
WB-2	WALL BOX	OATLEY	39156	WALL	POLYSTYRENE	-	-	1/2"	-	1/2" HIGH IMPACT POLYSTYRENE, 4 SUPPORT BRACKETS, SNAP-ON FACEPLATE FRAME, ACCOMMODATES UP TO 1" DRYWALL WITH 1/4 TURN BRASS BALL VALVE.

DRAINAGE SPECIALTIES SCHEDULES							
MARK	FIXTURE	MANUFACTURER	MODEL NO.	MATERIAL	STYLE	SIZE	REMARKS
FD-1	FLOOR DRAIN	ZURN	EZ-PV2-R6	PVC SOLVENT WELD BODY	NICKEL BRONZE ROUND	3"	ZURN EZ1 FLOOR DRAIN, PVC SOLVENT WELD BODY WITH BOTTOM OUTLET AND 1/2" TRAP PRIMER CONNECTION KNOCK-OUT PLUG AND TOP ASSEMBLY. FLOOR DRAIN IS CAPABLE OF UP TO 3/4" OF VERTICAL POST POUR ADJUSTMENT.

ELECTRIC WATER HEATER SCHEDULE								
MARK	MAKE & MODEL NO.	KW PER ELEMENT	NUMBER OF ELEMENTS	VOLTS/PH	TOTAL KW	RECOVERY (GPH @ 70F)	STORAGE (GAL.)	DIMENSIONS (D"x"H") / LBS
EWH-1	AO SMITH DRE-52	4.1	3	240/1	12.3	72	50	21.75"x55.75" / 265

PIPING SCHEDULE						
SYSTEM	SIZE	TYPE	CONNECTION	INSULATION	THICKNESS	COMMENTS
DOMESTIC COLD WATER	ALL	CPVC	GLUED	NONE	---	SCH 40 ASTM D2846
DOMESTIC HOT WATER	ALL	CPVC	GLUED	FIBERGLASS	1" MIN R4	SCH 40 ASTM D2846
SANITARY/VENT	ALL	DWV	GLUED	NONE	---	SCH. 40 ASTM D 1784 60T

HOT WATER RECIRC. PUMP SCHEDULE						
MARK	MAKE & MODEL NO.	TYPE	CAPACITY (GPM)	HEAD (FEET)	MOTOR HP	V/PH/Hz
CP-1	TACO - 006-10B4	INLINE	0-11.5	0-9.5	1/40	115/1/60



NEW FIRE DEPARTMENT ADMINISTRATION BUILDING  
 1579 NW LAKE JEFFERY ROAD  
 LAKE CITY, FLORIDA  
 CCBCC PROJECT NUMBER

#	Date	Note

PLUMBING SCHEDULES  
 CONSTRUCTION DOCUMENTS

DATE: 09/12/2024  
**2338**  
**P501**

CONSULTING ENGINEERS  
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 CA JOB NUMBER 2390

PLUMBING SPECIFICATIONS

- A. It is the intent of these specifications to define the work and materials typically installed by a Plumbing Contractor. However, it is not intended to define a subcontract between the Plumbing Contractor and the General Contractor. The General Contractor is responsible for the entire project and any questions regarding the scope of work shall be directed to the General Contractor.
- B. Work shall include all labor, materials, fixtures, equipment, tools, and service necessary for installation, testing and adjusting of all plumbing systems shall be furnished and installed in compliance with the Drawings, Specifications, and any Addenda thereto.
- C. Drawings and Specifications shall be understood to cover, according to their intent and meaning, the complete plumbing systems. Work shown and not specified, or work specified and not shown shall be performed as though mentioned in both.
- D. Minor items and accessories reasonable inferred as necessary for the complete and proper operation of any system shall be provided by the contractor or subcontractor for each system whether or not they are specifically called for.
- E. Before submitting a bid, the Plumbing Contractor shall coordinate with the utility company to ascertain, in detail, the division of work and the extent of performance by the Utility Company shall be furnished and the extent of performance shall be performed by the Plumbing Contractor.
- F. If well and / or septic is utilized, contractor shall coordinate with General Contractor and review civil drawings to coordinate scope of work.
- G. All work shall be performed or installed in strict accordance with the appropriate regulations and codes of local state and Federal Governments having lawful jurisdiction. Each contractor and subcontractor shall be responsible for such compliance.
- H. Fees for permits, inspections, patent use, royalties, etc. shall be paid by the contractor.
- I. Furnish all equipment and personnel and conduct all tests required to secure approval of the installation.
- J. Any repairs or changes required to secure the approval of the installation shall be done at no additional expense to the Owner.
- K. Upon completion of each part of the plumbing system, the contractor shall demonstrate to the Engineer that each item on that system is installed with proper covers, safeties, controls, etc. and that all are in proper working order.
- L. A set of "red-lined" plumbing drawings shall be carefully maintained at the job site. Actual conditions are to be put on the drawings in red on a daily basis so the drawings will continuously show locations of equipment and routing of all pipe systems.
- M. Equipment and materials shall be new and meet or exceed specification requirements.
- N. All product shall be current model for which replacement parts are available.
- O. Acceptable manufacturers are listed, additional manufacturers may request approval for their products up to 10 days in advance of bid. Engineer may require supplemental information prior to accepting or requesting an alternate.
- P. All work shall be performed in compliance with OSHA regulations.
- Q. Shop drawings and product data shall be submitted on all equipment, fixtures, etc.
- R. Submittals shall include all equipment to be installed by the subcontractor.
- S. All submittals shall be submitted for review at the same time.
- T. Each package must have the General Contractors review stamp prior to submission to engineer.
- U. The engineer will review one submittal and one resubmittal; subsequent resubmittals may require a review charge to be paid by the subcontractor.
- V. Shop drawings shall be labeled in the same designation as the drawings.
- W. Job conditions shall be inspected to determine prior to bidding in the following manner:
- Site Visit to determine:
    - Existing conditions
    - How and where materials will be delivered and stored.
    - Special problems encountered during construction.
  - Examine all Contract Drawings and Specifications to determine:
    - Type of construction to be used.
    - How construction or work will affect the work of this Section.
    - Nature and extent of work of other trades.
  - Failure to determine existing conditions or nature of construction will not be considered as a bases of granting additional compensation.
- X. Installation
- Contract drawings show the arrangements and sizes of principal apparatus and devices to be provided under this Contract and connection thereto. These shall be followed as closely as actual building construction will permit.
  - Dimensions of work as indicated on Plans are not guaranteed to be as-built dimensions.
  - No measurements shall be scaled from Drawings and used as definite dimensions for layout or fitting work in place.
  - Loyalty of equipment, as shown on the plans, shall be checked and exact location determined by dimension of equipment approved by Architect / Engineer.
  - Consult the Drawings for all dimensions, locations of partitions, sizes of structural member, foundations, etc.
  - Do not make final layouts until shop or equipment drawings are approved and job conditions are verified.
- Y. Excavation and Backfill:
- Plumbing Contractor shall coordinate with General Contractor to determine the extent of work regarding excavation and backfill.
- Z. Rough-in:
- Contractor shall rough-in for all equipment, fixtures, etc., in the building whether or not such equipment is furnished by the contractor or by the owner.
  - Determine in advance the location and size of all openings and chases necessary for proper installation of all work and have openings and chases provided during construction.
  - Install all inserts for hangers and supports for plumbing work and equipment as general construction progresses.
  - Rough-in openings in masonry or stud walls shall be cut, not broken or chiseled.
  - Sleeves shall be required at all points where piping passes through concrete walls, slabs, or masonry walls. Sleeves installed below grade or where subject to high water conditions shall be installed watertight.
- AA. Coordination:
- Work shall be coordinated between all Contractors, Subcontractors, Installers, Suppliers, Trades, etc., to:
    - Insure a neatly fitted installation.
    - Determine the nature and extent of work of others.
    - Eliminate interferences.
    - Maintain maximum headroom and clearances.
  - Any interference which develops or is foreseen and cannot be resolved by the affected trades, etc. shall be handled as follows:
    - Cease installation of that portion of the work which is in conflict as no additional compensation will be allowed for any removal and / or relocation.
    - Continue work only on other portions of the work area which are not in conflict.
    - Notify the architect / engineer immediately.
    - Architect / Engineer's decision shall be final as to any relocation, rerouting, removal, etc.
    - No additional compensation will be allowed for removal, relocation, repairs, or changes required by interferences.
- AB. Clear away all debris, surplus materials, etc., resulting from work on operations, leaving job and equipment in clean first-class condition.
- AC. Where factory finish is provided on equipment, all marred or damaged surfaces shall be touched-up or refinished hereunder as approved.
- AD. All plumbing fixtures shall be thoroughly cleaned of all plaster, stickers, rust stains, and other foreign matter, and be left ready for use.
- AE. Surfaces of all floor drains, cleanouts, and other equipment shall be cleaned and left in first-class condition.

CHLORINATION OF DOMESTIC WATER LINES

- A. Disinfection of wall water piping which shall carry potable water or any other piping connected thereto which is not separated by a backflow preventer.
- B. Disinfection shall be chlorine, either in the form of hydrochloric solution or in the form of compressed gas applied through an approved chlorinator.
- C. After completion of all tests, replacement, and repairs, all water supply systems shall be thoroughly flushed with water to remove sediment and/or debris.
- D. Begin disinfection only after flushing the system.
- E. The system shall be filled with a solution containing 50 parts per million available chlorine and allowed to stand for 24 hours, or as required by local authorities whichever is greater.
- F. During Chlorination all valves and equipment shall be operated to ensure that chlorine reaches all parts of the system.
- G. Following disinfection all treated water shall be flushed from the system through its extremities until the quality of water delivered is comparable with the quality of the public water supply and satisfactory to the public health authority having jurisdiction.
- H. Disinfection and flushing shall be repeated if samples taken daily over a period of three days show that water quality is not being maintained.
- I. Samples shall be taken on floor tops located and installed in such a manner that they will not contribute any contamination.
- J. Samples shall not be drawn from hydrants or through unsterilized hoses.
- K. If disinfection and flushing has been repeated three times and water quality cannot be maintained, the architect / engineer shall have the authority to require disassembly of piping as deemed necessary to determine the cause of contamination.
- L. Any disassembly, cleaning, or repair shall be performed at no additional cost to the owner.
- M. Disinfection, flushing, and testing shall be repeated upon reassembly of the piping.

PIPE AND FITTINGS

- A. Refer to "PIPING SCHEDULE" on drawings.
- B. Any manufacturer engaged in the production of pipe, fittings, and associated materials, and install, inspect, and certify that materials that meet or exceed the ASTM designation for that material shall be acceptable.
- C. Inspection for Underground Piping:
- Examine areas to receive underground piping for:
    - Complete excavation to elevations and slopes required.
    - Obstructions which would interfere with drainage system installation.
  - Begin work only when conditions are satisfactory.
- D. Inspection for Above Ground Piping:
- Examine area to receive piping for:
    - Obstructions.
    - Work to be done prior to construction.
    - Work of other trades in other areas.
- E. Installation of Underground Piping
- Excavation:
    - Excavate trenches of sufficient width for proper installation of pipe.
    - Sheet and brace trenches as necessary to protect installers and adjacent structures.
    - Comply with current OSHA standards.
  - Final grading of trench:
    - Perform final grading of trench bottoms by hand tools; carry machine excavation only to such depth that soil bearing for pipes will not be disturbed.
    - Grade bottom of trenches evenly to ensure uniform bearing for all piping.
    - Cut holes as necessary for joint making.
    - Keep trenches free from water while construction is in progress.
    - Use surveyor's level to establish elevations and grades.
    - Machine excavation shall be held a sufficient distance from foundations and footings.
    - Provide and maintain barricades and temporary bridges around excavations as required to maintain a safe work environment.
    - Water lines may be banded above sanitary lines in same trench so long that they are 18 inches or more above the sanitary line.
    - Minimum bury depth for water piping shall be 24 inches.
    - Grade horizontal drainage 1/4" per foot minimum.
    - Install same type material specified for inside the building to 8 feet outside the building.
  - Backfill:
    - Backfill for all sewer lines shall be placed in accordance with manufacturer's printed instructions.
    - Backfill trenches only after piping has been inspected.
    - The backfill below paved areas and walks shall be brought within 6" of the finished grade; the remaining six inches shall be backfilled with clean topsoil.
    - The backfill below sodded or seeded areas shall be brought to within 6" of finished grade; the remaining six inches shall be backfilled with clean topsoil.
    - Provide and place any additional fill material from off the site as required for backfill.
- F. Installation of Above-Ground Piping:
- Support piping as specified by pipe hanger and supports section for permanent installation.
    - Pipe shall be adequately supported during construction with blocking or slings to prevent injury to personnel or damage to equipment / materials.
  - Exposed piping:
    - Run exposed piping true and level.
    - Run vertical exposed piping straight and tight to wall when where available.
    - Group piping wherever practical at common elevations.
    - Install concealed pipes close to building's structure to keep furring to a minimum.
    - Slope water piping 1 inch per 40 feet and orange to drain at low points.
    - For closed systems, equip low points with a 3/4" drain valve and hose nipple.

PLASTIC PIPE AND FITTINGS

- A. Domestic Water Supply - All
- OPVC per ASTM D2846
  - Joints:
    - Gued per manufacturers recommendations.
- B. Vent Piping (Above Grade)
- Piping shall be PVC - ASTM D-1784-60T
    - Schedule 40
    - Type 1, Grade 1
    - Pipe shall bear NSF seal and ASTM designation.
  - Joints:
    - Bonded joints using adhesive per manufacturer's recommendations.
- C. Sanitary Piping
- PVC
    - Schedule 40
    - Type 1, Grade 1
    - Pipe shall bear NSF seal and ASTM designation.
  - Joints:
    - Bonded joints using adhesive per manufacturer's recommendations.
- D. Sanitary Piping - Lab (Where Applicable)
- Polyethylene Piping Meeting ASTM F714
    - Schedule 40
    - Includes all piping and fittings; including traps
    - Pipe shall bear NSF seal and ASTM designation.

TRAPS

- A. General
- All fixtures shall be trapped according to the Florida Building Code - Plumbing
  - All traps shall be the same size as the pipe in which they are installed or as sized on the drawings.
  - All traps above grade shall have a clean-out plug in the bottom of the trap.
  - All traps above grade shall be PVC (With exception of Lab Fixtures, which shall be polyethylene).
  - All traps below grade shall be PVC or Polyethylene where noted.
  - No trap below grade shall be less than 2 inches.
  - No fixture shall be double trapped.

SHOCK ABSORBERS

- A. Furnish and install shock absorbers on all domestic water piping as shown on drawings and/or as specified in this section.
- B. Acceptable Manufacturers
- Wade
  - Josam
- C. Description
- Heavy duty casing
  - Minimum burst pressure = 4500 psig
  - Resist either in the form of hydrochloric solution or in the form of compressed gas applied through an approved chlorinator.
  - Operating temperature 100 to 300 degrees F
  - Permanently sealed charge of non-combustible gas.
  - All stainless steel.
  - Designed and built in accordance with plumbing and drawing standard P01-WH201.
- D. Model Numbers (Zurn used for reference only)
- SS-1; Model 1250-A-1/2"
  - SS-2; Model 1250-B-3/4"
  - SS-3; Model 1250-C-1"
  - SS-4; Model 1250-D-1"
  - SS-5; Model 1250-E-1"
  - SS-6; Model 1250-F-1"

PIPING HANGERS AND SUPPORTS

- A. All piping shall be supported by piping hangers, clamps, clips, or supports as specified in this section.
- B. All clevis type hangers shall have a minimum of 1-1/2" of vertical adjustment by using turnbuckles and/or threaded rods.
- C. All adjustments shall be positively secured by a locknut or set screw.
- D. Hangers shall support the pipe size for which they are manufactured.
- E. Acceptable Manufacturers
- Orinal
    - Flame Spread: 30
    - Smoke Density: 100
  - Fee and Mason
    - Air drying contact cement
    - Equal to Johns-Manville "Aerotube Elastomeric Pipe Insulation"
- F. Install insulation only after pipe has been thoroughly inspected and tested and accepted by the Architect / Engineer and State or local inspectors.

PIPE AND FITTINGS

- F. All clamps, hangers, clevis, etc. shall be steel.
- G. Pipe hangers in direct contact with copper shall be copper or lead plated, or of an approved dielectric material.
- H. Installation:
- All piping shall be supported from structural building members, IE beam, blocks, columns, purins, floor joists, etc.
  - Piping shall not be supported from ceiling tile or grids, conduit, mechanical equipment, ductwork, or non-structural steel.
  - Perforated strapping may only be used for piping 3/4" or smaller and only when concealed in walls or ceilings.
  - Hangers for piping run flush along walls shall include stamped steel straps similar to conduit straps for pipes sizes 2" and smaller.
  - Hangers for piping run flush along walls shall be steel wall brackets with steel clevis type hangers and threaded rod supports for pipe over 2".
  - Hangers for piping not run along walls shall be clevis type hangers and threaded rod supports for all piping over 3/4".
- I. Spacing:
- Vertical runs of piping not over 15 feet long shall be supported by hangers placed not over one foot from elbows or connecting horizontal run.
  - Hangers shall be placed so as to prevent sag and permit proper drainage.
  - Hangers shall not be placed at more than a maximum distance as shown on the table below.
- | Pipe Size          | Max. Span (Ft.) |
|--------------------|-----------------|
| 1/2" and 3/4"      | 6'              |
| 1" and 1-1/4"      | 8'              |
| 1-1/2", 2", 2-1/2" | 10'             |
| 3" and 4"          | 12'             |
| 5" and 6"          | 14'             |
| 8" and larger      | 16'             |
- J. Concentrations of valves and fittings will require closer spaces than outlined above.
- K. Hanger Attachments:
- Pipe hangers shall be attached to structural steel by heavy steel clamps.
    - Dampers shall be bolted to steel or welded.
  - Piping hangers or clamps shall be attached to walls by means of expansions bolts (shields).

UNIONS

- A. Size
- All unions shall be the same size as the line in which they are installed unless noted otherwise.
- B. Location
- Unions shall be located between the shut-off valve and each of the following:
    - Inlet and outlet to all water heaters
    - Laboratories and Sinks
    - Water Coolers
    - Water closets and toilets
    - Inlet and Outlet of Cooling Coil
    - Inlet and outlet of pumps
  - Where final fixture connection is made by compression-type fitting, unions shall not be required.
    - This exception does not apply to the water heater.
- C. Acceptable Manufacturers
- Crone
  - Jenkins
  - Vogt
  - Stockman
- D. Unions for 2-1/2" and smaller copper
- Brass ground joints, brass body.
  - Rated for 150#
  - Sweat to threaded to match the system in which they are installed.
- E. Install in locations where wrenches can be used on each half of the union with enough clearance for at least 180 degree rotation on a 6" pipe wrench.

VALVE, COOKS, AND FAUCETS

- A. Hot, Cold, and/or Tempered Water
- Shutoff valves above grade
    - Bronze Gate Valve
  - Shutoff valve below grade
    - Bronze Gate Valve - Install in fiberglass box with cover.
  - Drain valves
    - Bronze Gate Valve
- B. Acceptable Manufacturers
- Crone
  - Vogt
  - Stierling
  - Nibco
- C. Bronze gate valves:
- 3" and smaller
    - Rising stem, wedge disc gate, bronze body
    - 200 psi, water, oil, gas
    - Stuffing, box and brass gland, screw-in bonnet
    - Threaded ends
    - Model equal to Nibco T-111
- D. Bronze Globe Valve
- 3" and smaller
    - Rising stem, bronze only
    - 150 psi, water, oil, gas
    - Stuffing box, brass gland, screw-in bonnet
    - Threaded ends.
- E. Hose Bibbs
- 3/4" Female thread inlet
  - 3/4" Male thread hose outlet
  - Rough chrome plated
  - Loose-key type
  - Provide with vacuum breaker
  - Model
    - Equal to Chicago No. 3877-E27, Nibco 763-LS, or equal
- F. Check Valve
- Swing check valve
  - Screwed ends and cap
  - Bronze ground disc
  - 200 lb WOG
  - NIBCO 1413 or equal
- G. Wall Hydrant
- Fully recessed with "key" operated cover.
  - 3/4" female inlet
  - 3/4" male threaded hose outlet
  - Rough chrome plated
  - Vacuum breaker

PRESSURE - TEMPERATURE RELIEF VALVE

- A. Supply a pressure relief valve on each hot water heater and hot water booster tank.
- B. Valve size, pressure, and temperature rating shall be specified by the tank manufacturer. In no case shall the valve be smaller than 3/4" inlet and outlet.
- C. Valve shall have a handle for manual operation and testing.
- D. Valve shall be cast brass or bronze.
- E. Pipe the outlet of the pressure-temperature relief valve to outside of the building and terminate 2" above grade or minimum height per the local code.

INSULATION

- A. Provide piping insulation on all designated on the Piping Schedule as shown on drawings and per the Florida Energy Code. Minimum R4 per inch of insulation.
- B. Acceptable Manufacturers
- Johns-Manville
  - Cerianteed
- C. Fiberglass Insulation
- Rigid lightweight heavy density fiberglass with jacket.
  - Temperature applications to 650 degrees F.
  - Insulation, jacket, and adhesive shall be tested under procedure ASTM E-84, NFPA 255, and UL 723, not exceeding the following flame and smoke index.
    - Flame Spread: 25
    - Smoke developed: 50
  - Equal to Johns-Manville Micro-Lok 650 AP-1.
- D. Closed Cell Rubber Insulation
- Closed cell, elastomeric tubular pipe insulation
  - Tested under procedure ASTM E-84, NFPA 255, and UL 723, not exceeding the following flame and smoke index.
    - Flame Spread: 30
    - Smoke Density: 100
  - Adhesive
    - Air drying contact cement
    - Equal to Johns-Manville "Aerotube Elastomeric Pipe Insulation"
- E. Install insulation only after pipe has been thoroughly inspected and tested and accepted by the Architect / Engineer and State or local inspectors.

- F. All surface to receive insulation shall be cleaned of all dirt, grease, and moisture prior to installing any insulation.
- G. Installation of Fiberglass Insulation:
- All insulation shall be continuous through wall and ceiling openings.
  - Vapor barrier jackets shall be used on piping except domestic hot water.
  - Hangers, supports, anchors, etc., that are secured directly to cold surfaces must be adequately insulated and vapor sealed to prevent condensation.
  - Shield shields shall be applied between hangers and supports and the pipe insulation.
  - Shield shall be formed to fit the insulation and shall extend up to the centerline of the pipe and shall be a minimum of 12" long.
  - Shield shall be 16 gauge sheet metal. Shields exposed to corrosive environments or installed outdoors shall be aluminum.
  - Fittings shall be covered with equivalent density insulation and covered with preformed PVC insulation fitting covers.
    - Wrap fittings with insulation.
    - Pop the preformed cover in place, tape or lock.
- H. Installation of Closed-Cell Rubber:
- Make all cuts neatly with a razor blade or sharp knife.
  - All longitudinal cuts shall be sealed with adhesive.
  - All butt joints shall be made neatly and sealed with adhesive.
  - Tape shall not be allowed on joints or seams.
  - Insulation shall be applied in a relaxed state, not stretched or crushed.
  - Fittings shall be insulated by fabricating tees, elbows, or crosses as required from the tube insulation as described by the manufacturer's literature.
  - Valves shall be insulated up to the packing nut.
  - All insulation on exposed piping shall receive two coats of paint. Paint shall match the color of the wall against which it is mounted.
  - Joints shall be sealed with adhesive as recommended by the manufacturer.

FLOOR AND SHOWER DRAINS

- A. Acceptable Manufacturers:
- Wade
  - Josam
- B. Floor Drains:
- Cast iron floor drain with integral clamping collar
  - Steeple opening
  - Heavy duty grate, with vandaloop screws
  - Square top, polished brass
  - Adjustable top
  - 4-in. outlet unless otherwise noted on drawings
  - Model - equal to Wade series W-1390 or scheduled drain.
- C. Installation
- Floor drains shall be installed in locations shown on floor plans.
  - Care shall be taken that rim of floor drain is not higher than the finished floor in order to prevent puddling of water around the drain.
  - Floor drain top shall be flush with finished floor.
  - Hub drains shall extend 1" above finished floor.

CLEANOUTS AND ACCESS COVERS

- A. Provide cleanouts as shown on drawings or as required by the Florida Plumbing Code.
- B. Acceptable Manufacturers
- Wade
  - Josam
  - Zurn
- C. Floor Cleanouts
- Same size as drain pipe through 4 inches.
  - Adjustable housing to match finished floor
  - Heavy duty top
  - Nickel brass secured cover
  - Ferrule as required to match soil pipe
  - Cast iron
  - Cover shall be marked "C.O."
  - Model Number:
    - Synthetic floor covering: Wade W-7030-D Series or Equal
    - Finished Slab - no covering: Wade W-7030 Series or Equal
    - Terrazzo Finish: Wade W-7010-U Series or Equal
- D. Concealed Cleanouts
- Cleanouts in crawl space or in unfinished mechanical rooms.
  - Cast iron cleanout tee on T-wall with ferrule fitting and neoprene seal raised plug head.
  - Same size as drain pipe through 4 inches.
  - Position cleanout plug for easy access by electric eel.
  - Model number: Cleanout Ferrule: Wade W-8530-B series or Equal.
- E. Exposed Wall Cleanouts
- Same size as pipe.
  - Polished chrome cleanout cover over wall opening.
- F. Install all cleanouts and coverplates flush with the finished floor in which they are installed.
- Any cleanout which presents a tripping hazard due to improper installation shall be removed and reinstated.

DOMESTIC WATER HEATERS - ELECTRIC

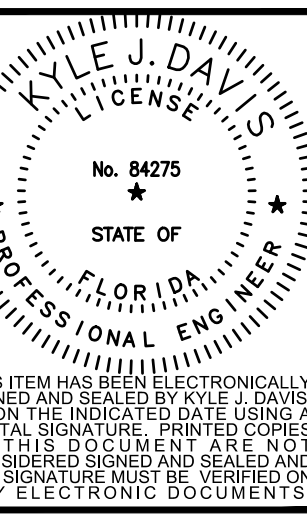
- A. Water heaters shall be UL listed, ASME constructed, and meet ASHRAE 90.1 energy efficiency standards.
- B. Acceptable Manufacturers
- A.O. Smith
  - Lochinvar
  - Loars
- C. Electric Water Heaters
- Glass lining fused to steel tank
  - Screw-in type, direct immersion
  - Working pressure - 150 PSI
  - Fully automatic thermostat controls with high temperature limit safety shutoff
  - Screw-in anode corrosion protection
  - Three-year warranty
  - 3/4" inlet, outlet, and relief opening
  - Outer jacket of baked enamel finish
- D. Model and Capacity
- Refer to electric water heater schedule
- E. Install per manufacturer's recommendations
- F. Mount units on wall shelf where noted on drawings.
- G. Provide thermostatic relief valve on each unit.

PLUMBING FIXTURES

- A. Furnish and install plumbing fixtures per the Plumbing Fixture Schedule
- B. Manufacturers and Model Numbers establish quality, equivalent fixtures by other manufacturers are acceptable.

ELECTRIC WATER COOLERS (EWC)

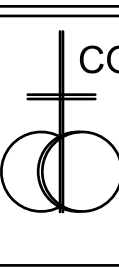
- A. Acceptable Manufacturers
- Orinal
  - Halsey Taylor
  - Eikay
- B. Dual Height (Unless otherwise noted)
- Mount units on wall shelf where noted on drawings.
  - Stainless steel top, sides, and front.
  - 14 inches from wall to front.
  - Self-closing pushbutton valve with optional "soft touch" handle
  - Automatic pressure regulating valve
  - Mounting height - 31" floor to top of basin.
  - Water delivery:
    - 14 GPH @ 50 degree F water
  - Model and Manufacturer: Refer to plumbing fixture schedule
  - Accessories:
    - Furnish with 1-1/4" ground joint tubular, 17 gauge, chrome-plated P-trap, deep flange with brass nuts; less cleanout, sterling 50190 or Dearborn 207-D-F-BN.
    - Furnish with supply assembly equal to Kohler 7666 with loosekey stop and flexible 3/8" tube risers.
- C. Unit shall be installed on wall using bracket supplied by the manufacturer.
- D. Unit shall be blocked and supported per manufacturer recommendations.
- E. Unit shall be installed per ANSI Standard 117.1-1980, Section 4.15



NEW FIRE DEPARTMENT ADMINISTRATION BUILDING  
 1579 NW LAKE JEFFERY ROAD  
 LAKE CITY, FLORIDA  
 COBCC PROJECT NUMBER

#	Date	Note

PLUMBING SPECIFICATIONS  
 CONSTRUCTION DOCUMENTS


**COBURN AND ASSOCIATES**  
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 (386)454-3748  
 FLORIDA LICENSED ENGINEERS EB 0003687  
 CA JOB NUMBER 2380

DATE  
 09/12/2024  
**2338**  
**P601**