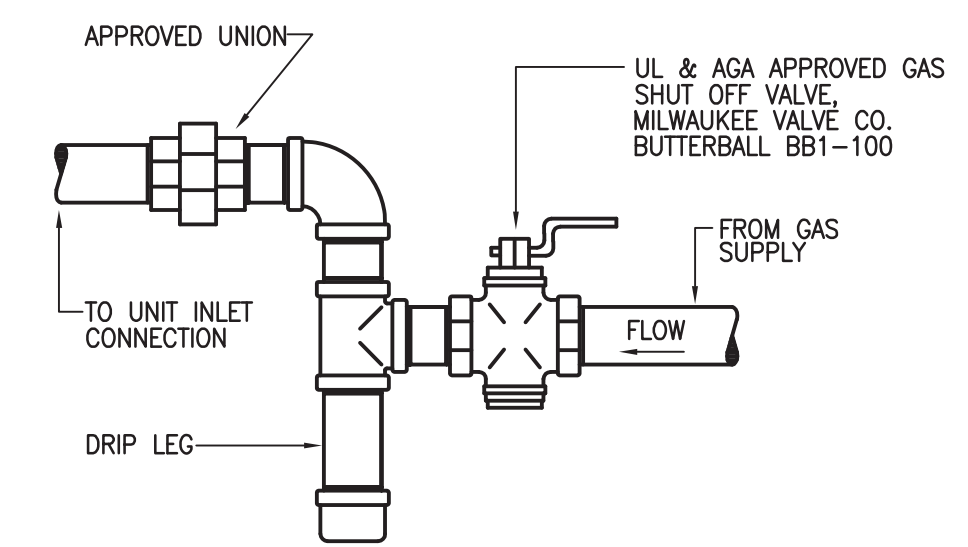


4 GAS SERVICE CONNECTION
SCALE: NONE

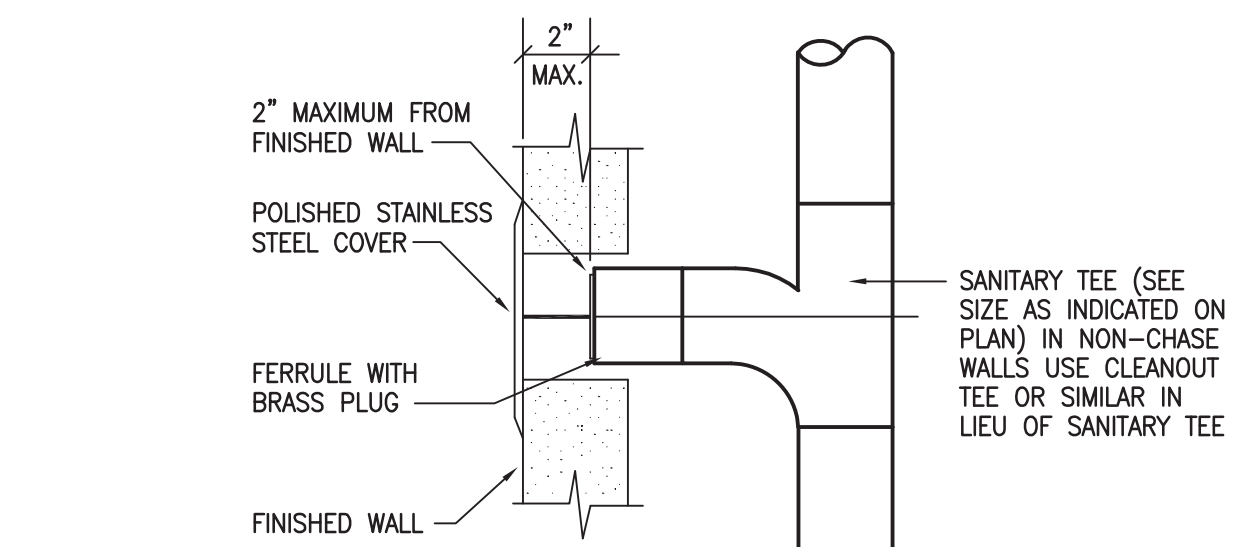
PLUMBING LEGEND

SYMBOL	DESCRIPTION
— SAN —	SANITARY OR WASTE PIPING ABOVE GRADE (SAN)
— SAN —	SANITARY OR WASTE PIPING BELOW GRADE (SAN)
— V —	VENT PIPING ABOVE OR BELOW GRADE (V)
— CW —	COLD WATER PIPING (CW)
— HW —	HOT WATER PIPING (HW)
— HWR —	HOT WATER RETURN PIPING (HWR)
→	FLOW DIRECTIONAL ARROW
⊥	BALL VALVE (BV)
⊥	CHECK VALVE
⊥	UNION
⊥	Y-STRAINER
⊥	REDUCED PRESSURE BACKFLOW PREVENTER (RPBPF)
—	PIPING DOWN
—	RISE OR DROP PIPING
—	PIPING UP —OR— PIPING UP & DOWN
—	CAP ON END OF PIPE
—	CLEANOUT (WALL OR CEILING) (CO)
—	FLOOR CLEANOUT (FCO)
—	BRANCH CONNECTION OUT OF TOP
—	BRANCH CONNECTION OUT OF BOTTOM
—	BRANCH CONNECTION OUT OF SIDE
—	WYE & 1/8TH BEND BRANCH CONNECTION
—	WYE BRANCH CONNECTION
—	WALL HYDRANT
—	GAS METER
1	REFER TO KEYED NOTE
—	FLOOR SINK (FS)
—	FLOOR DRAIN (FD)
—	FLOOR DRAIN WITH P-TRAP (FD)
—	P-TRAP
—	INVERT ELEVATION
—	1/8TH OF AN INCH SLOPE

NOTE: NOT ALL SYMBOLS MAY APPLY TO THIS PROJECT.



7 GAS CONNECTION TO EQUIPMENT
SCALE: NONE



3 WALL CLEANOUT
SCALE: NONE

- ### GENERAL NOTES
- WITHIN THE EXISTING BUILDING, EXISTING HOT AND COLD WATER AND SANITARY WASTE AND VENT SERVICES ARE TO BE MODIFIED AS REQUIRED AND REUSED FOR THE INSTALLATION OF NEW PLUMBING FIXTURES. REFER TO PLUMBING FLOOR PLANS FOR POINTS OF CONNECTION.
 - WITHIN THE EXISTING BUILDING, SAWCUT AND REMOVE EXISTING FLOOR SLAB AS REQUIRED TO PROVIDE NEW PLUMBING FIXTURES, CLEANOUTS, AND UNDERSLAB SANITARY WASTE AND VENT PIPING. PATCH AND REFINISH FLOOR TO MATCH EXISTING.
 - FIELD VERIFY EXACT LOCATION, SIZE, DEPTH, DIRECTION OF FLOW, CAPACITY, PIPE MATERIAL AND CONDITION OF EXISTING WATER AND SANITARY WASTE PIPING PRIOR TO BEGINNING CONSTRUCTION. ENSURE THAT PROPER CONNECTIONS TO AND EXTENSION OF SUCH UTILITIES CAN BE MADE.
 - SANITARY TO BE CONNECTED TO SHALL BE THOROUGHLY RODED OUT AND FLUSHED TO ENSURE THEY ARE FREE FROM BLOCKAGES.
 - CONTRACTOR SHALL COORDINATE ROUTING OF PIPING BELOW SLAB WITH COLUMN FOOTINGS, GRADE BEAMS, UNDERGROUND PLUMBING AND ELECTRICAL UTILITIES, AND OTHER SUB-SURFACE BUILDING ELEMENTS.
 - CONTRACTOR SHALL COORDINATE ROUTING OF PIPING IN CEILING SPACES WITH MECHANICAL AND ELECTRICAL EQUIPMENT, DUCTWORK AND CONDUIT. SHOULD A CONFLICT OCCUR THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER PRIOR TO INSTALLING AN ALTERNATE PIPING PLAN.
 - COORDINATE ALL FIXTURE AND EQUIPMENT LOCATIONS AND CONNECTION REQUIREMENTS WITH LATEST ARCHITECTURAL DRAWINGS AND SPECIFICATIONS PRIOR TO ANY ROUGH-INS.
 - DO NOT ROUGH-IN FROM THESE DRAWINGS. REFER TO LATEST ARCHITECTURAL DRAWINGS FOR DIMENSIONED LOCATIONS.
 - CONTRACTOR TO FIELD VERIFY AS NECESSARY THE EXACT ROUTING AND SIZES OF ALL PIPING.
 - ALL WORK, METHODS AND INSTALLATIONS INVOLVED IN THE PLUMBING DESIGN SHALL BE IN ACCORDANCE WITH THE CITY BUILDING CODE AND INSPECTION REGULATIONS AND ALL OTHER OFFICIALS HAVING JURISDICTION.
 - PRIOR TO BEGINNING CONSTRUCTION, COORDINATE BUILDING BACKFLOW PREVENTION REQUIREMENTS WITH THE LOCAL AUTHORITY HAVING JURISDICTION AND PROVIDE AS DIRECTED.
 - PIPES PASSING THROUGH CONCRETE OR CINDER WALLS AND FLOORS OR OTHER CORROSIVE MATERIAL SHALL BE PROTECTED AGAINST EXTERNAL CORROSION BY A PROTECTIVE SHEATHING OR WRAPPING OR OTHER MEANS THAT WILL WITHSTAND ANY REACTION FROM THE CORROSIVE MATERIAL. MINIMUM WALL THICKNESS OF MATERIAL SHALL BE 0.025 TO 0.0599 INCH.

PLUMBING SCOPE & SPECIFICATION

THE WORK OF THIS SECTION SHALL INCLUDE, BUT NOT BE LIMITED TO:

- A DOMESTIC COLD WATER DISTRIBUTION SYSTEM TO SERVE ALL FIXTURES.
- A SANITARY SOIL WASTE AND VENT SYSTEM TO SERVE ALL FIXTURES.
- A NATURAL GAS DISTRIBUTION SYSTEM TO SERVE ALL GAS FUELED EQUIPMENT.

DRAWINGS ARE DIAGRAMMATIC, CONFIRM DIMENSIONS AND LOCATIONS IN THE FIELD, ADVISE OF MAJOR DISCREPANCIES.

GUARANTEE LABOR AND MATERIALS FOR ONE YEAR.

ADHERE TO APPLICABLE LOCAL CODES AND REGULATIONS, INCLUDING BUT NOT LIMITED TO THE CITY CODES.

PRODUCE RECORD DRAWINGS.

CONTRACTOR SHALL OBTAIN REQUIRED PERMITS AND PAY ALL FEES.

VALVES

VALVES SHALL BE MANUFACTURED BY NIBCO, HAMMOND, POWELL, STOCKHAM, WATTS OR EQUIVALENT APPROVED BY THE ENGINEER.

GATE VALVES SHALL CONFORM TO MSS-SP-80 FOR BRONZE AND MSS-SP-70 FOR IRON. VALVES 2" AND SMALLER SHALL BE NIBCO T-113 OR S-113 OR APPROVED EQUIVALENT.

BALL VALVES SHALL HAVE CAST BRONZE BODY, BLOWMOUT PROOF STEMS, FULL SIZE PORT, 316 STAINLESS STEEL TRIM, TEFLOON SEAT AND SEAL AND THRUST WASHERS. VALVES 2" AND SMALLER SHALL BE NIBCO T-585-70-66 OR APPROVED EQUIVALENT.

UNIONS

UNIONS IN COPPER OR BRASS LINES SHALL BE BRASS, THREADED PATTERN UNIONS.

EXCAVATION

EXCAVATE TRENCHES FOR UNDERGROUND PIPING TO THE REQUIRED DEPTH.

CUT THE BOTTOM OF THE TRENCH OR EXCAVATION TO UNIFORM GRADE.

SHOULD ROCK BE ENCOUNTERED, EXCAVATE 6" BELOW GRADE, FILL WITH BEDDING MATERIAL (SAND) AND TAMP WELL.

LAY OUT ALIGNMENT OF PIPE TRENCHES TO AVOID OBSTRUCTIONS. PROVIDE ASSURANCE THAT PROPOSED ROUTE OF PIPE WILL NOT INTERFERE WITH BUILDING FOUNDATION BEFORE ANY CUTTING IS BEGUN. SHOULD INTERFERENCE BE FOUND, CONTACT THE ARCHITECT/ENGINEER BEFORE PROCEEDING.

BACKFILL

BACKFILL SHALL NOT BE PLACED UNTIL THE WORK HAS BEEN INSPECTED, TESTED AND APPROVED. USE SUITABLE FRAGILE SOILS AS BACKFILL MATERIAL. DO NOT USE PEAT, SILT, MUCK, DEBRIS OR OTHER ORGANIC MATERIALS. DEPOSIT BACKFILL IN UNIFORM LAYERS.

PLACE BACKFILL MATERIAL IN UNIFORM LAYERS, 8" MAXIMUM LOOSE MEASURE. COMPACT TO NOT LESS THAN 95% OF MAXIMUM SOIL DENSITY AS DETERMINED BY ASTM D698 STANDARD PROCTOR.

PLUMBING PIPING HANGER SPACING

MAXIMUM SPACING SHALL BE 10 FOOT.

CLEANING, TESTING AND ADJUSTING

THIS CONTRACTOR SHALL FURNISH ALL LABOR, TOOLS, INSTRUCTIONS, AND SUPERVISION REQUIRED IN THE PERFORMANCE OF ALL TESTS, CLEANING AND MAKING NECESSARY ADJUSTMENTS TO OPERATION OF ALL FIXTURES AND EQUIPMENT.

RODDING SEWERS

ALL SANITARY SOIL AND STORM SEWER LINES, BOTH IN THE BUILDING AND OUT SHALL BE RODED OUT AND FLUSHED OUT AFTER COMPLETION OF CONSTRUCTION AND PRIOR TO FINISH FLOOR BEING INSTALLED. ALL WORK MUST BE COMPLETED PRIOR TO SUBSTANTIAL COMPLETION. ALL FLOOR DRAIN AND CLEANOUT LOCATIONS MUST BE INCLUDED IN THIS WORK.

PIPING INSULATION

ALL COLD WATER PIPING, FITTINGS AND VALVES SHALL BE INSULATED WITH NOMINAL 1/2" WALL THICKNESS IMCOLOCK PIPE INSULATION, OR AN APPROVED EQUAL HAVING FLAME SPREAD RATING OF 25 OR LESS AND A SMOKE DENSITY OF 50 OR LESS WHEN TESTED BY ASTM E-84 METHOD.

IMCOLOCK PIPE INSULATION MAY BE SLIPPED ONTO THE PIPE PRIOR TO CONNECTION OR APPLIED AFTER THE PIPE IS INSTALLED, AT THE CONTRACTOR'S OPTION. ALL BUTT JOINTS AND MITER JOINTS SHALL BE CLOSED USING IMCOCA'S FUSE SEAL JOINING SYSTEM OR FACTORY APPROVED CONTACT ADHESIVE. IMCOLOCK PIPE INSULATION SHALL BE INSTALLED ACCORDING TO THE PROCEDURES OUTLINED BY THE MANUFACTURER.

FITTING COVER INSULATION SHALL BE FABRICATED AND INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDED PROCEDURES. SWEAT FITTINGS SHALL BE INSULATED WITH MITER CUT PIECES OF IMCOLOCK PIPE INSULATION THE SAME SIZE AS ON ADJACENT PIPING. THREADED FITTINGS SHALL BE INSULATED WITH SLEEVED FITTING COVERS FABRICATED FROM MITER CUT PIECES OF IMCOLOCK PIPE INSULATION ACCORDING TO THE MANUFACTURER'S SLEEVING SIZE RECOMMENDATIONS AND SHALL BE OVERLAPPED 2" AND SEALED TO THE ADJACENT PIPE INSULATION. ALL VALVES SHALL BE INSULATED WITH CUT PIECES OF IMCOLOCK PIPE INSULATIONS. ALL JOINTS AND MITER CUT PIECES ARE TO BE SEALED USING IMCOCA'S FUSE SEAL JOINING SYSTEM OR FACTORY APPROVED CONTACT ADHESIVE.

SUPPORTING HANGERS SHALL BE DESIGNED TO RESIST COMPRESSION; SUPPORTING DEVICES SUCH AS SHORT WOOD DOWELS OR WOOD BLOCKS SHALL BE USED IN COMBINATION WITH GALVANIZED SHEET METAL HANGER SHIELDS. THE WOOD SUPPORTING DEVICES SHALL BE THE SAME THICKNESS AS THE INSULATION AND SEALED TO THE INSULATION WITH FACTORY APPROVED CONTACT ADHESIVE.

PLUMBING FIXTURES

PROVIDE PLUMBING FIXTURES AS SPECIFIED OR PROVIDE FIXTURES EQUAL TO THOSE SPECIFIED.

THERMOSTATIC MIXING VALVES

ITEM NO.	INLET HOT WATER TEMP (°F)	OUTLET MIXED WATER TEMP (°F)	MINIMUM FLOW (GPM)	DESIGN FLOW (GPM)	PRESSURE DROP @ DESIGN FLOW (PSI)	VALVE FINISH	MANUFACTURER / MODEL NO.
TMV-1	140°	110°	0.5	5	5.0	ROUGH BRONZE	SYMMONS 5-210-CK-W

NOTES:

- MAKE WATER CONNECTIONS TO THERMOSTATIC MIXING VALVE(S) IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- PROVIDE PIPE INCREASERS AND/OR VALVES AS REQUIRED.
- PROVIDE UNION CONNECTIONS AND OUTLET THERMOMETER UNLESS INDICATED OTHERWISE.

- ### FIRE SPRINKLER SYSTEM
- DESIGN AND PROVIDE LABOR AND MATERIALS FOR THE COMPLETE MODIFICATION OF AN AUTOMATIC WET PIPE FIRE EXTINGUISHING SPRINKLER SYSTEM WITH THE ATTENDANT ACCESSORIES FOR THE ENTIRE AREA.
 - STUDY THE GENERAL, STRUCTURAL, ELECTRICAL AND MECHANICAL DRAWINGS AND SPECIFICATIONS AND FIELD SURVEY THE EXISTING BUILDING IN ORDER TO BECOME FAMILIAR WITH THE BUILDING AND DETAILS AS THEY APPLY TO THE WORK OF THIS SECTION. COOPERATE WITH OTHERS SO THAT THERE WILL BE NO CONFLICT OF SPACE REQUIRED. DUCTWORK AND ELECTRICAL WORK SHALL TAKE PRECEDENCE OVER OTHER WORK, EXCEPT WHERE IT IS ABSOLUTELY NECESSARY TO MAINTAIN COVERAGE PROTECTION.
 - THE INSTALLATION OF THE ENTIRE SPRINKLER SYSTEM SHALL COMPLY WITH ALL RULES AND REGULATIONS OF THE NATIONAL BOARD OF FIRE UNDERWRITERS, THE GOVERNING BUILDING CODE, REQUIREMENTS OF NFPA PAMPHLET 13, AND OTHER LOCAL AUTHORITIES EXERCISING JURISDICTION.
 - IT SHALL BE THE FIRE PROTECTION CONTRACTOR'S RESPONSIBILITY, PRIOR TO BID, TO VERIFY PRESSURE AT THE PROJECT SITE BY PERFORMING A FLOW TEST. DETERMINE IF THE AVAILABLE STATIC AND RESIDUAL PRESSURE WILL ADEQUATELY PROVIDE THE FIRE EXTINGUISHING SYSTEM WITH THE NECESSARY PRESSURE OR IF A FIRE PUMP, BREAK TANK AND NECESSARY APPURTENANCES ARE REQUIRED.
 - PROVIDE SCHEDULE 40 BLACK STEEL PIPE AND FITTINGS IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA FOR APPLICABLE FIRE PROTECTION SYSTEMS. CONFORM TO ASTM A53 AND A120. PROVIDE PIPING WITH MALLEABLE IRON, CAST IRON, STEEL, WELDED OR SCREWED FITTINGS. VICTALUG GROOVED FITTINGS MAY BE USED ABOVE GRADE IN ACCESSIBLE LOCATIONS ONLY.

ELECTRIC WATER HEATER

ITEM NO.	TOTAL KW INPUT	GALS. PER HR. RECOVERY RATE @ 60°F RISE	STORAGE CAPACITY (GALLONS)	ELECTRICAL REQUIRED	STORED WATER TEMP	MANUFACTURER COMMENT
EW-1	1.5	10	20	208V, 1ϕ	140°	A.O. SMITH DEL-20

NOTES:

PROVIDE HOT WATER EXPANSION TANK DOWNSTREAM OF CHECK VALVE ON COLD WATER SUPPLY. THERM-X-TROL ST-5.

PIPE MATERIAL LIST

WATER PIPING

ABOVE SLAB INSIDE THE BUILDING SHALL BE SEAMLESS ASTM B 88 TYPE L COPPER WATER TUBE WITH WROUGHT COPPER FITTINGS. ANSI B16.22. SOLDER MATERIAL SHALL BE 95.5 PERCENT LEAD FREE, ASTM B 32. THE USE OF DRILLED-T CONNECTIONS IS NOT PERMITTED.

BELOW SLAB SHALL BE ASTM B 88 TYPE K COPPER WATER TUBE WITH WROUGHT COPPER FITTINGS, ANSI B16.22. ALL JOINTS SHALL BE BRAZED.

SANITARY SOIL WASTE AND VENT PIPING

ABOVE SLAB INSIDE BUILDING SHALL BE SERVICE WEIGHT CAST IRON BELL AND SPIGOT SOIL PIPE AND FITTING SYSTEM CONFORMING TO ASTM STANDARD A 74. COMPRESSION GASKETS SHALL CONFORM TO ASTM STANDARD C 564.

BELOW SLAB SHALL BE SCHEDULE 40 DWV POLYVINYL CHLORIDE PIPE AND FITTINGS CONFORMING TO ASTM D-1784-82 WITH SOLVENT WELDED JOINTS.

NATURAL GAS PIPING

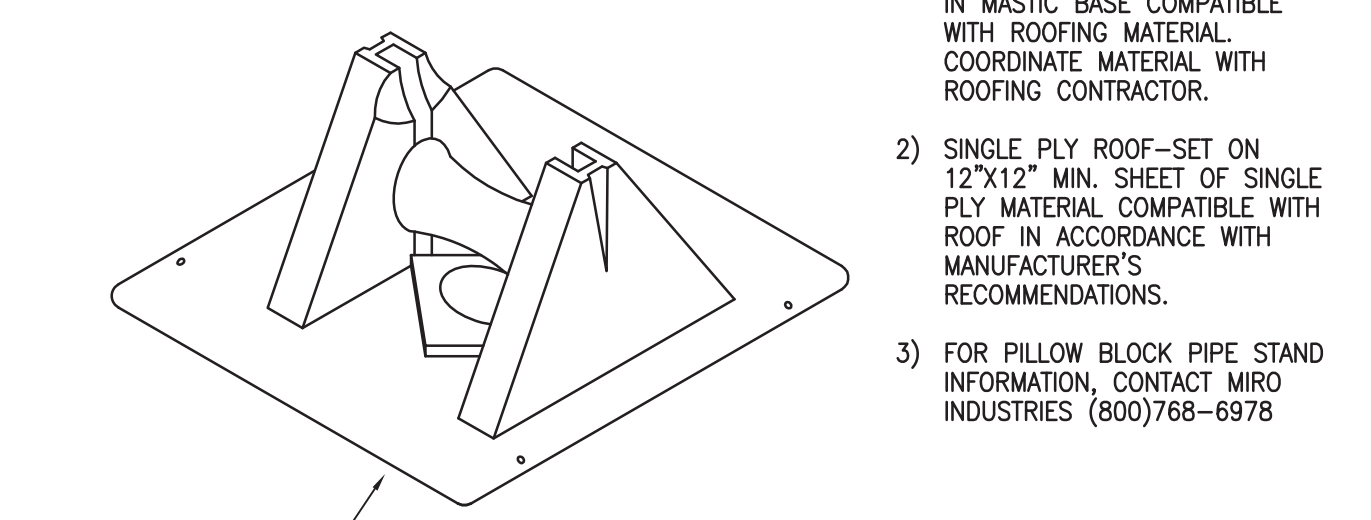
PIPE 2" AND SMALLER SHALL BE SCHEDULE 40 ASTM A 53 BLACK STEEL PIPE WITH FACTORY FABRICATED BUTT WELD FITTINGS FOR WELDED STEEL PIPES.

PIPE LARGER THAN 2" SHALL BE SCHEDULE 40 ASTM A 53 BLACK STEEL PIPE WITH FACTORY FABRICATED SOCKET WELD FITTINGS.

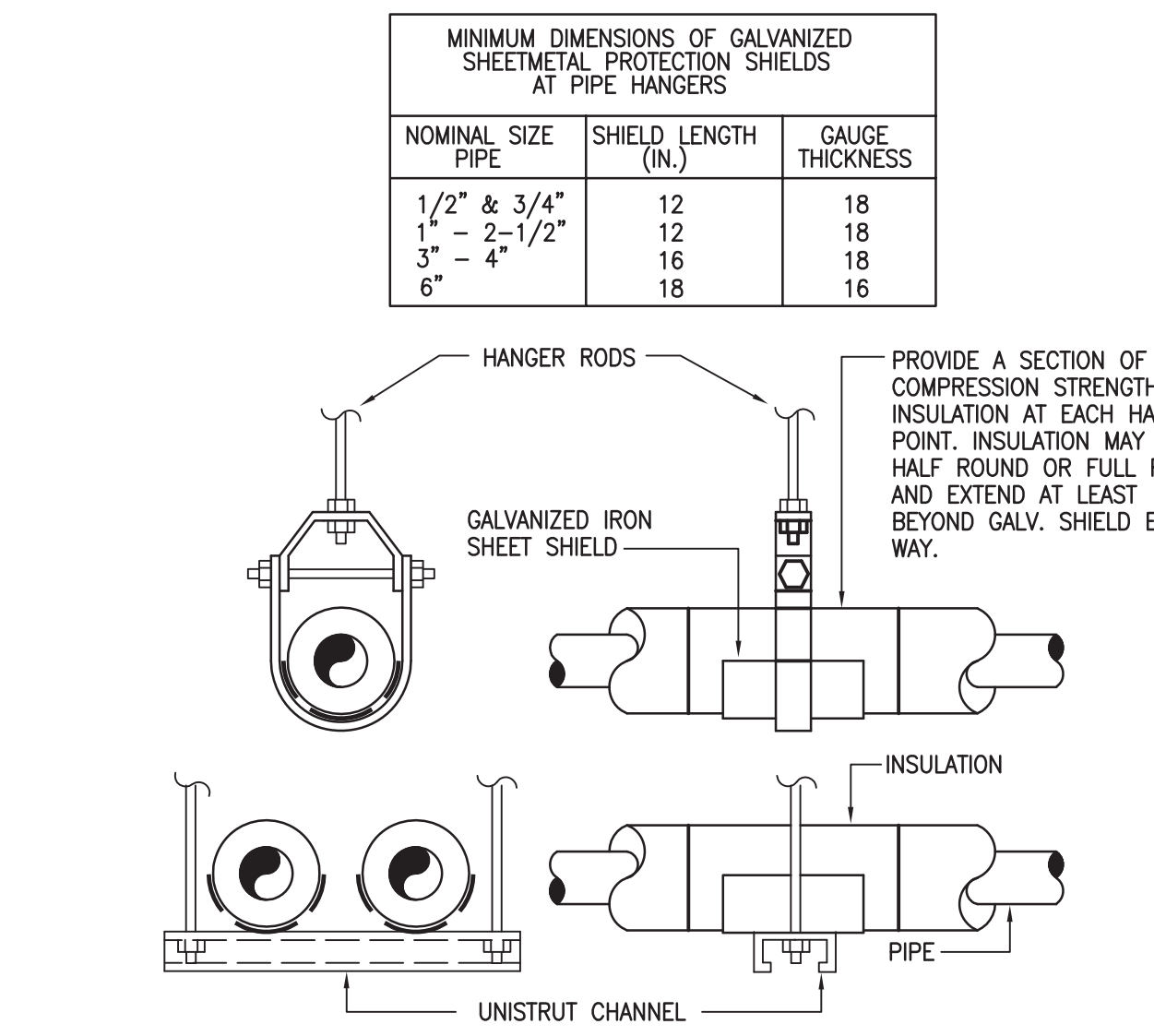
ALL GAS PIPING AND FITTINGS OUTDOORS SHALL BE PAINTED WITH TWO COATS OF BRUSHED ON RUST PREVENTATIVE SILVER PAINT. ONE COAT OF RUST PREVENTATIVE PRIMER SHALL BE APPLIED TO THE PIPE IMMEDIATELY AFTER INSTALLATION.

NOTE:

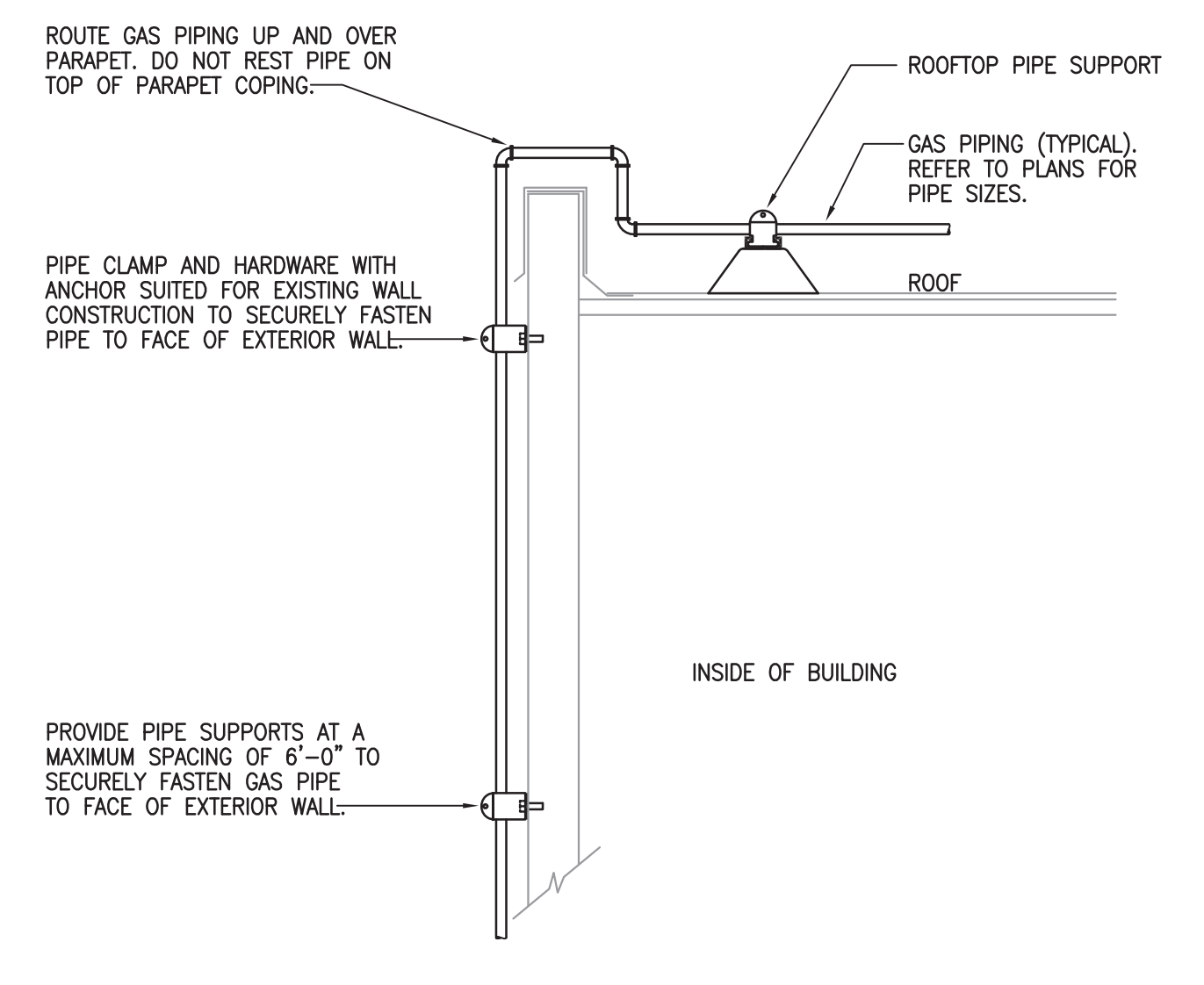
PVC PROHIBITED WITHIN PLENUMS.



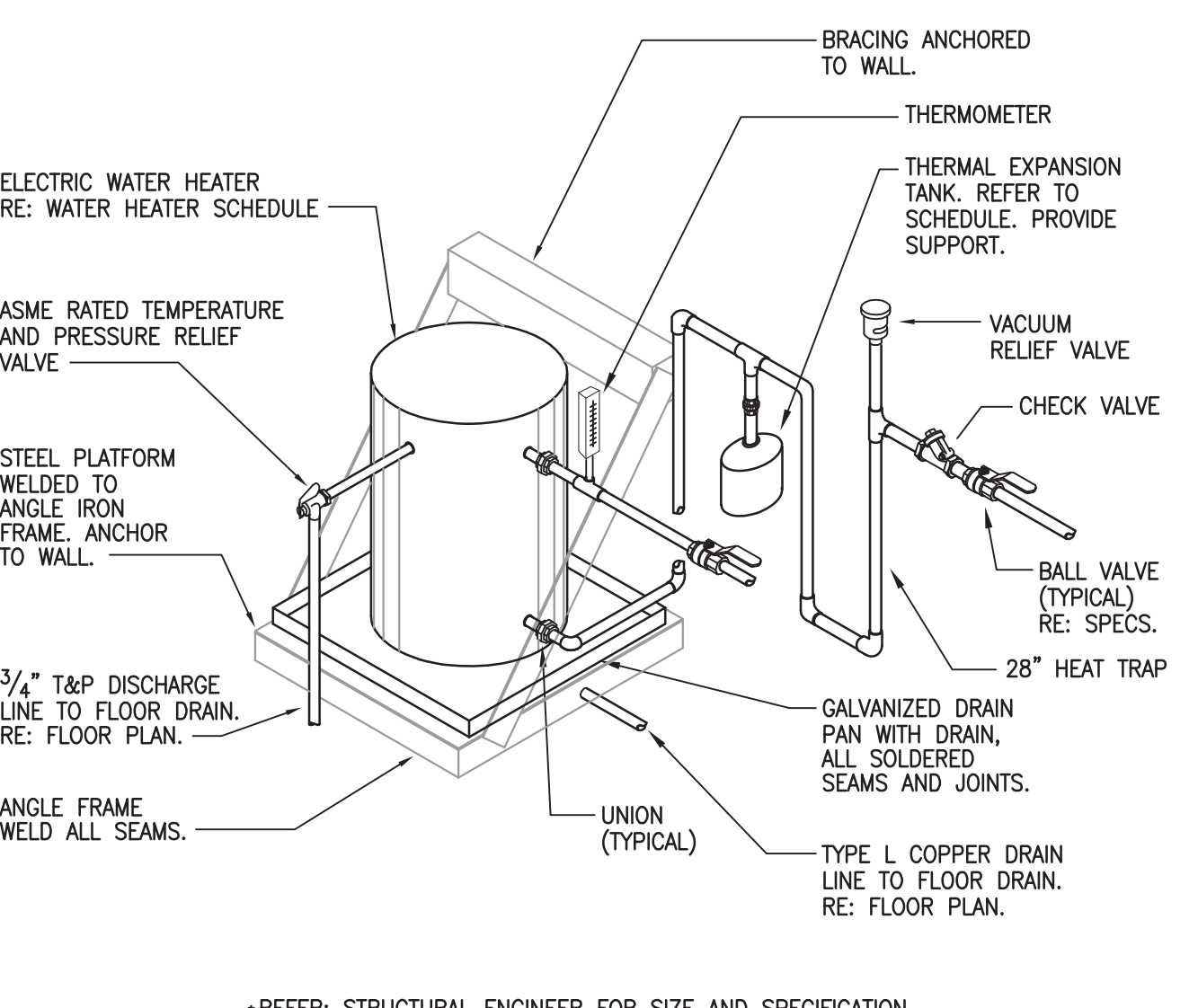
6 PIPE SUPPORT ON ROOF
SCALE: NONE



2 HANGER FOR INSULATED PIPING
SCALE: NONE



5 PIPE SUPPORT UP TO/DOWN FROM ROOF
SCALE: NONE



1 WALL MOUNTED WATER HEATER DETAIL
SCALE: NONE

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DATE: SEPTEMBER 2, 2011
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PLUMBING SCHEDULES

P2.01

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