



**Blumentals
Architecture**

1600 Marshall Street NE, Suite 1
Minneapolis, MN 55413
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612/331-2224 FAX
info@blumentals.com

SIGNATURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of MINNESOTA

06/07/19
sign date
Mark R. Brennan 24713
reg. no.

06/30/20
reg. exp. date

**STEEN
ENGINEERING INC.**

763-585-6742
763-585-6757 Fax
Email: steen@steeneng.com
5430 Douglas Drive North
Crystal, MN 55429

PROJECT INFO

Project No.
BLA201802
Drawn By:
GGH
Issue Date
02/05/19

SUBMITTALS / REVISIONS

DATE	DESCRIPTION
04-20-18	50% CONTRACT DOCUMENTS
06-21-18	100% REVIEW
07-20-18	100% CD
08-24-18	100% AHFA REVIEW
02-05-19	ISSUED FOR CITY REVIEW
02-21-19	ADDENDUM #2
04-19-19	MDU REVIEW
06-07-19	ISSUED FOR CONSTRUCTION
07-11-19	ESI #1

SCALE
AS NOTED

West Birch Apartments

W Branch Street
Princeton, MN

FIRST FLOOR WASTE AND
VENT PLAN

M111

GENERAL FIRE SPRINKLER NOTES

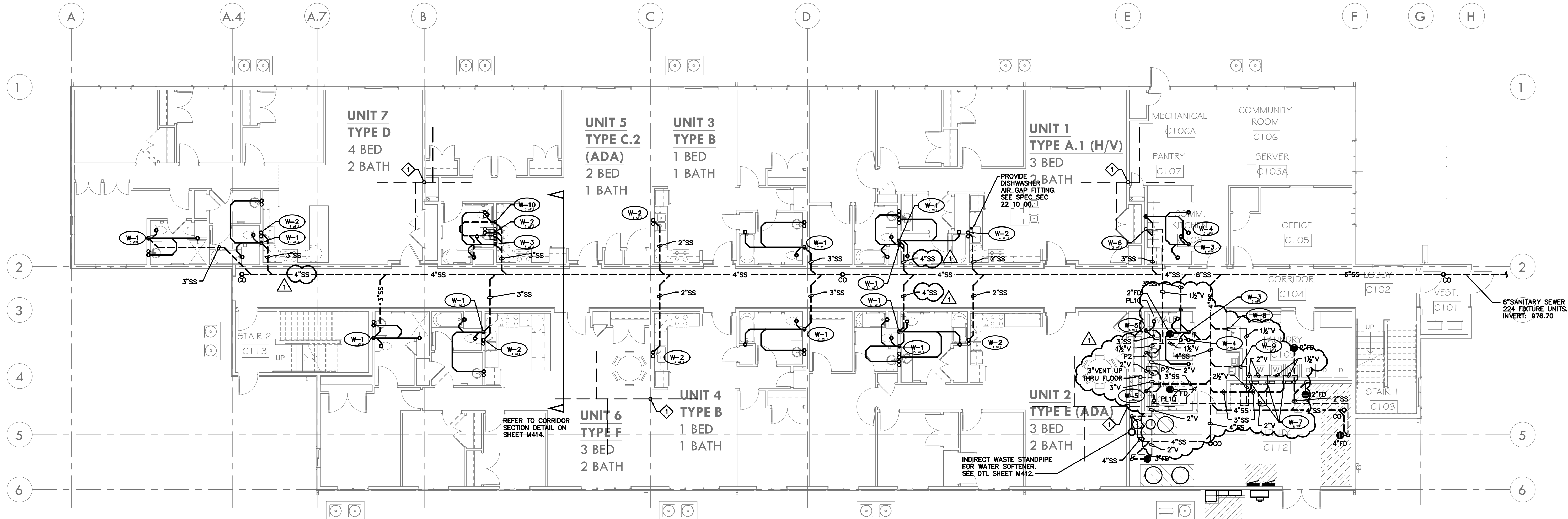
- A. PROVIDE A COMPLETE FIRE SPRINKLER SYSTEM FOR THE ENTIRE FACILITY. PROVIDE DRY FIRE SPRINKLER PROTECTION IN UNHEATED SPACES AS REQUIRED. REFER TO SPECIFICATION SECTION 21 00 10-FIRE SPRINKLER SYSTEM (PERFORMANCE BASED)
- B. ROUTE ALL SPRINKLER MAIN AND BRANCHES IN SUCH MANNER AS TO MINIMIZE EXPOSED PIPING WHERE REQUIRED THRU A LONGER ROUTE TO MINIMIZE EXPOSURE.
- C. THIS CONTRACTOR SHALL REMOVE AND RELOCATE ALL EQUIPMENT AND PIPING WHICH INTERFERES WITH THE WORK OF OTHER TRADES AT THIS CONTRACTOR'S SOLE EXPENSE IF THIS CONTRACTOR'S WORK IS NOT COORDINATED PRIOR TO THE BEGINNING OF WORK.
- D. SUBMIT PRELIMINARY PIPE ROUTING PLAN TO ARCHITECT AND ENGINEER AS SOON AS POSSIBLE. CONTRACTOR TO RECEIVE APPROVAL OF PIPE ROUTING FROM ARCHITECT PRIOR TO FABRICATION OF PIPE.
- E. REMOVE MANUFACTURER'S LABELS, UNION LABELS AND RESIDUE GLUE FROM PIPING IN EXPOSED AREAS.
- F. SPRINKLER CONTROL VALVES, FLOW ALARM AND TAMPER SWITCHES SHALL BE LOCATED IN SECURE LOCATION WITHIN STAIRWELLS OR CORRIDORS.
- G. VERIFY NEED TO PROVIDE FIRE SPRINKLER PROTECTION IN WOOD CONSTRUCTION CEILING SPACE WITH LOCAL INSPECTOR.

GENERAL PLUMBING NOTES

- A. CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH THE MECHANICAL AND PLUMBING DRAWINGS AND SPECIFICATIONS. NEITHER THE DRAWINGS NOR THE SPECIFICATIONS SHALL BE COMPLETE WITHOUT THE OTHER.
- B. DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO SHOW APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL THOROUGHLY REVIEW ALL ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS AND SPECIFICATIONS.
- C. PLACEMENT OF EQUIPMENT AND DEVICES SHALL NOT INTERFERE WITH LOCATION NOR CLEARANCES OF OTHER TRADE'S MATERIALS OR EQUIPMENT.
- D. CONTRACTOR SHALL PROVIDE PIPE OFFSETS AND TRANSITIONS AS REQUIRED TO ACCOMMODATE STRUCTURE AND ARCHITECTURE.
- E. COORDINATE LOCATION AND ELEVATION OF ALL EXTERIOR WALL AND ROOF PENETRATIONS WITH ARCHITECT.
- F. PRIOR TO INSTALLING PLUMBING VENTS THRU ROOF, COORDINATE WITH ARCHITECT TO MEET APPEARANCE REQUIREMENTS.
- G. ALL BRANCH TAKE-OFFS SHALL HAVE ISOLATION SHUT-OFF VALVES.
- H. RESIDENTIAL UNDERCOUNTER DISHWASHER DISCHARGE LINE SHALL HAVE AIR-GAP DEVICE. INSTALL ON COUNTER-TOP. LOCATE TO THE REAR OF THE COUNTER-TOP AND COORDINATE WITH GENERAL CONTR. REFER TO SPEC SEC 22 10 00-2.6-J.
- I. PROVIDE A PLASTIC FLOOR DRAIN IN AREAS WHERE CONDENSATE DISCHARGES FROM HIGH EFFICIENCY EQUIPMENT, SUCH AS SEALED COMBUSTION WATER HEATERS.
- J. THIS CONTRACTOR TO PROVIDE COMBINATION HOT AND COLD FAUCETS THAT HAVE THREADED OUTLETS WITH INTERNAL CHECK VALVES OR IN-LINE CHECK VALVES INSTALLED UPSTREAM IN THE BRANCH LINES SERVING THIS TYPE OF FAUCET. THIS INCLUDES THE COMBINATION FAUCETS SUPPLIED BY FOOD SERVICE EQUIPMENT SUPPLIERS.
- K. ALL FLOOR DRAINS AND PLUMBING FIXTURES LOCATED BELOW STREET CURB ELEVATION AT SANITARY SEWER EXIT LOCATION SHALL HAVE BACKWATER CHECK VALVES.
- L. ALL DOMESTIC HOT AND COLD WATER PEX PIPING SHALL MAINTAIN A 2" SPACING AND HAVE INDIVIDUAL FLOOR AND WALL PENETRATIONS.
- M. FLOOR MOUNTED PLUMBING EQUIPMENT SHALL BE PROVIDED WITH A 4" HIGH CONCRETE PAD BY THIS CONTRACTOR. EXTEND A MINIMUM OF 2" BEYOND THE EDGE OF THE EQUIPMENT.

SPECIFIC PLUMBING NOTES

- 1. PROVIDE A 4" DIA PVC VERTICAL PIPE WITH 4" HORIZONTAL 10 FT LONG PERFORATED PIPES BELOW GRADE. SEE DETAIL ON SHT. M413. PIPING CAN ADJUSTED AS NEEDED TO AVOID OTHER PIPING BELOW GRADE.



FIRST FLOOR WASTE AND VENT PLAN
 1/8" = 1'-0"
 N



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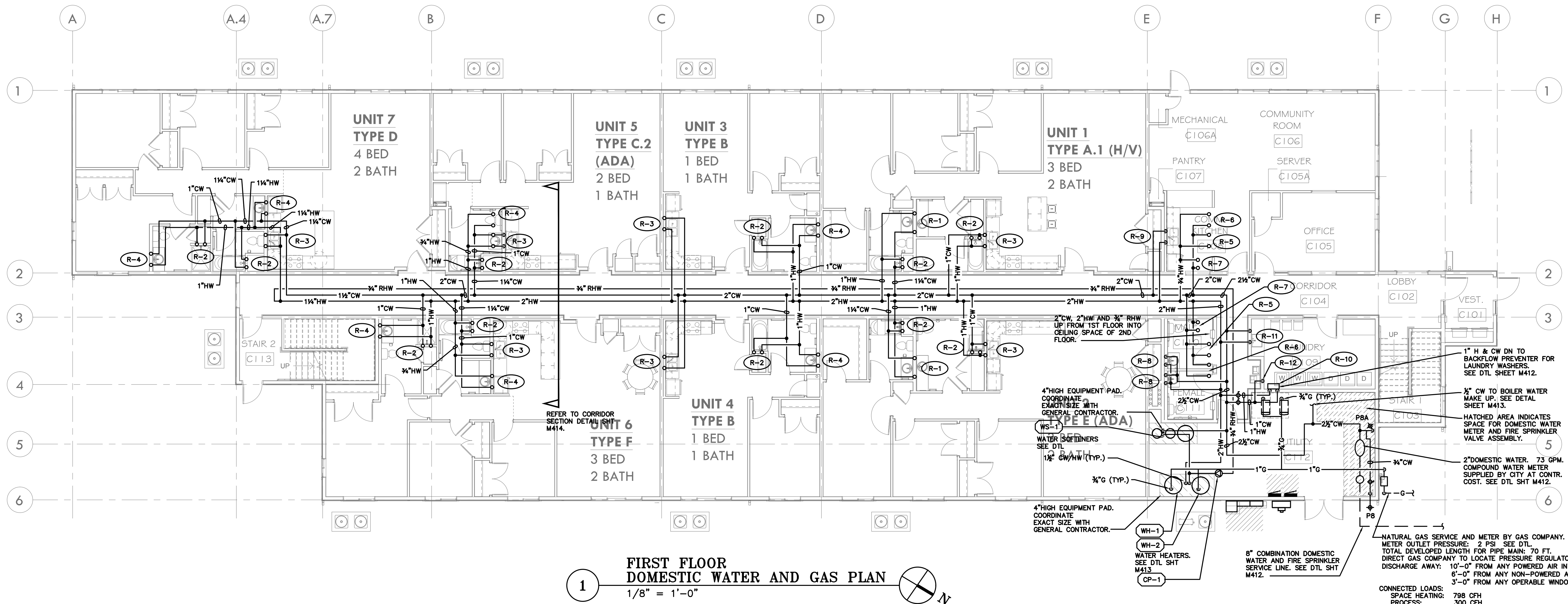
SCALE
AS NOTED

West Birch Apartments

W Branch Street
Princeton, MN

FIRST FLOOR DOMESTIC
WATER AND GAS PLAN

M112



**FIRST FLOOR
DOMESTIC WATER AND GAS PLAN**
1
1/8" = 1'-0"

CONNECTED LOADS:
SPACE HEATING: 798 CFH
PROCESS: 300 CFH
TOTAL: 1,098 CFH

REFER TO SHEET M111 FOR NOTES.



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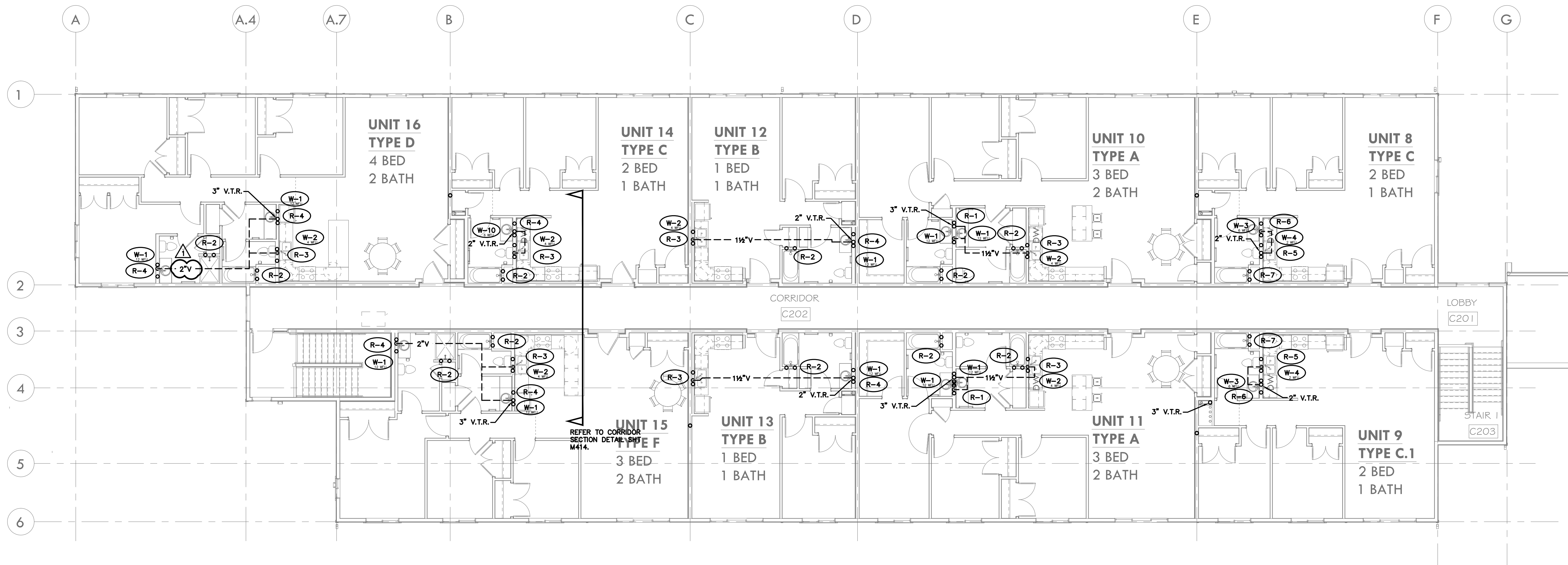
SCALE
AS NOTED

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Princeton, MN

SECOND FLOOR PLUMBING
PLAN

M113



1 SECOND FLOOR PLUMBING PLAN
1/8" = 1'-0"

REFER TO SHEET M111 FOR NOTES.

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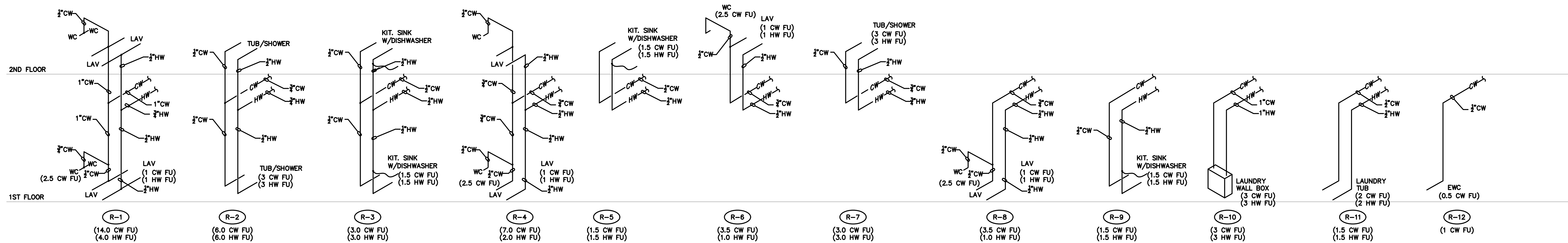
SCALE
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West Birch Apartments

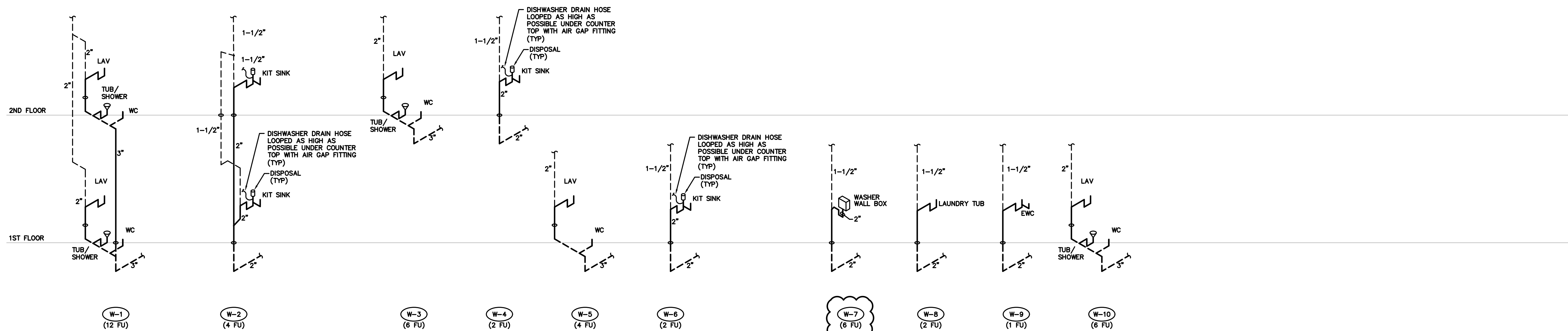
W Branch Street
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PLUMBING RISERS

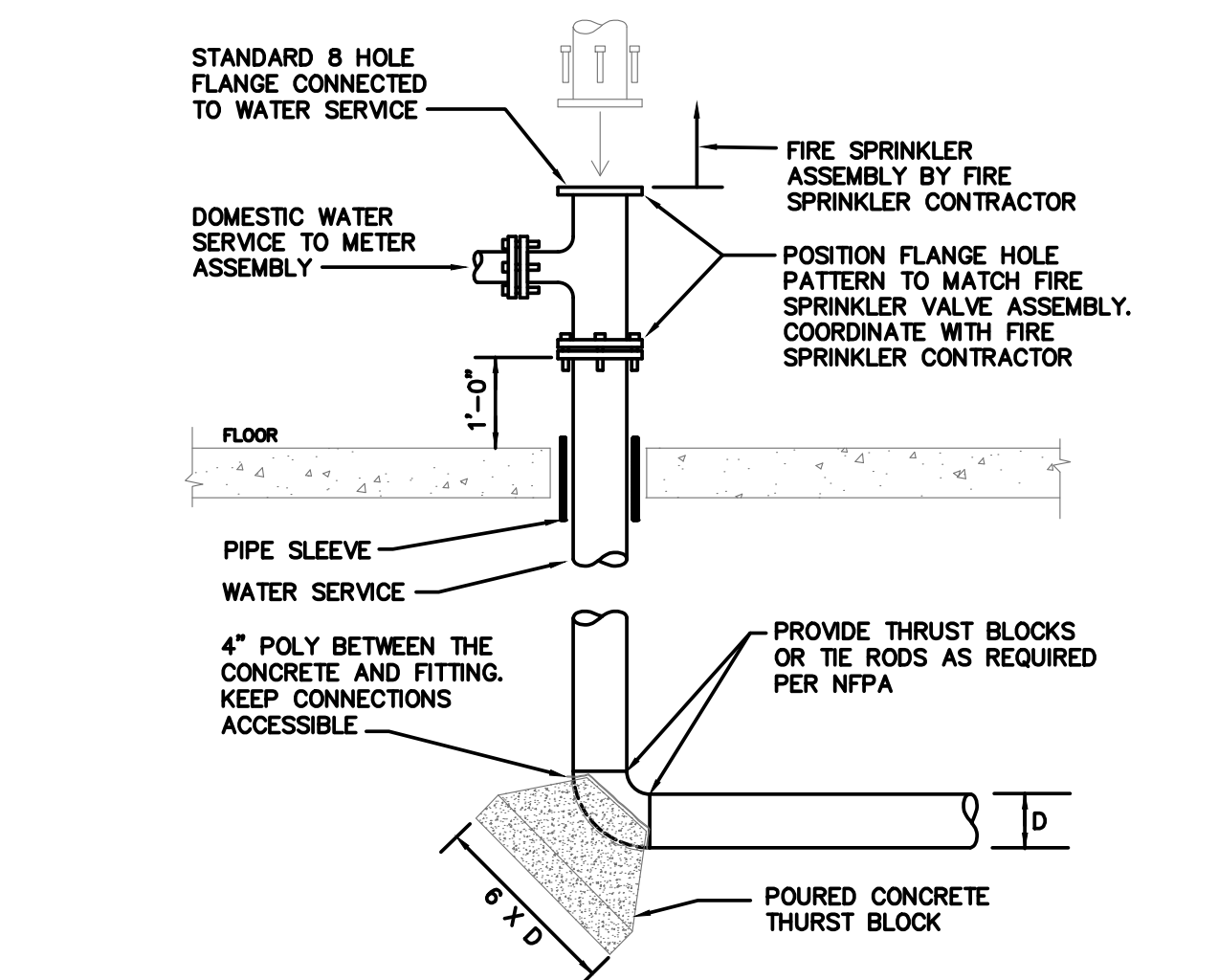
ROOF



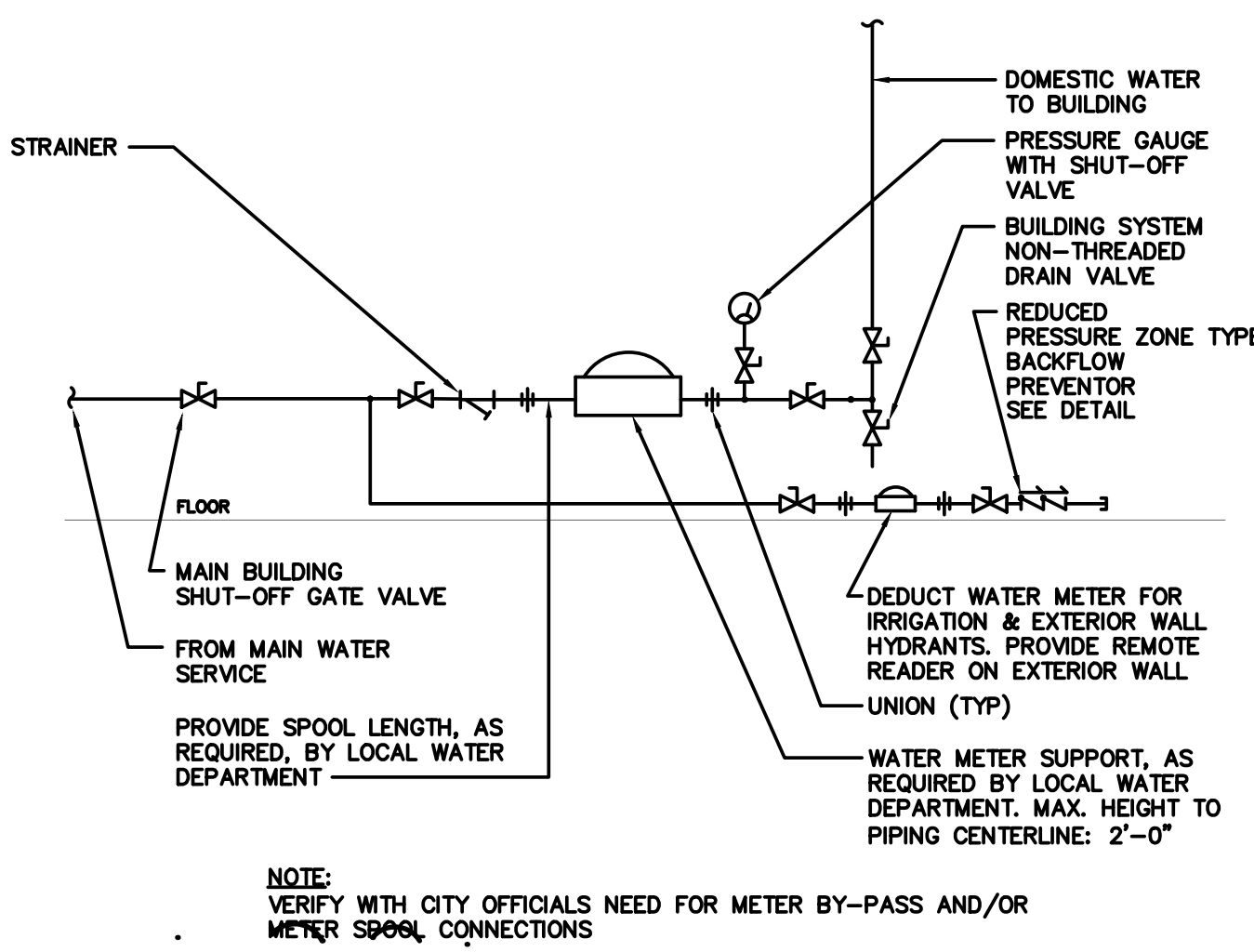
ROOF



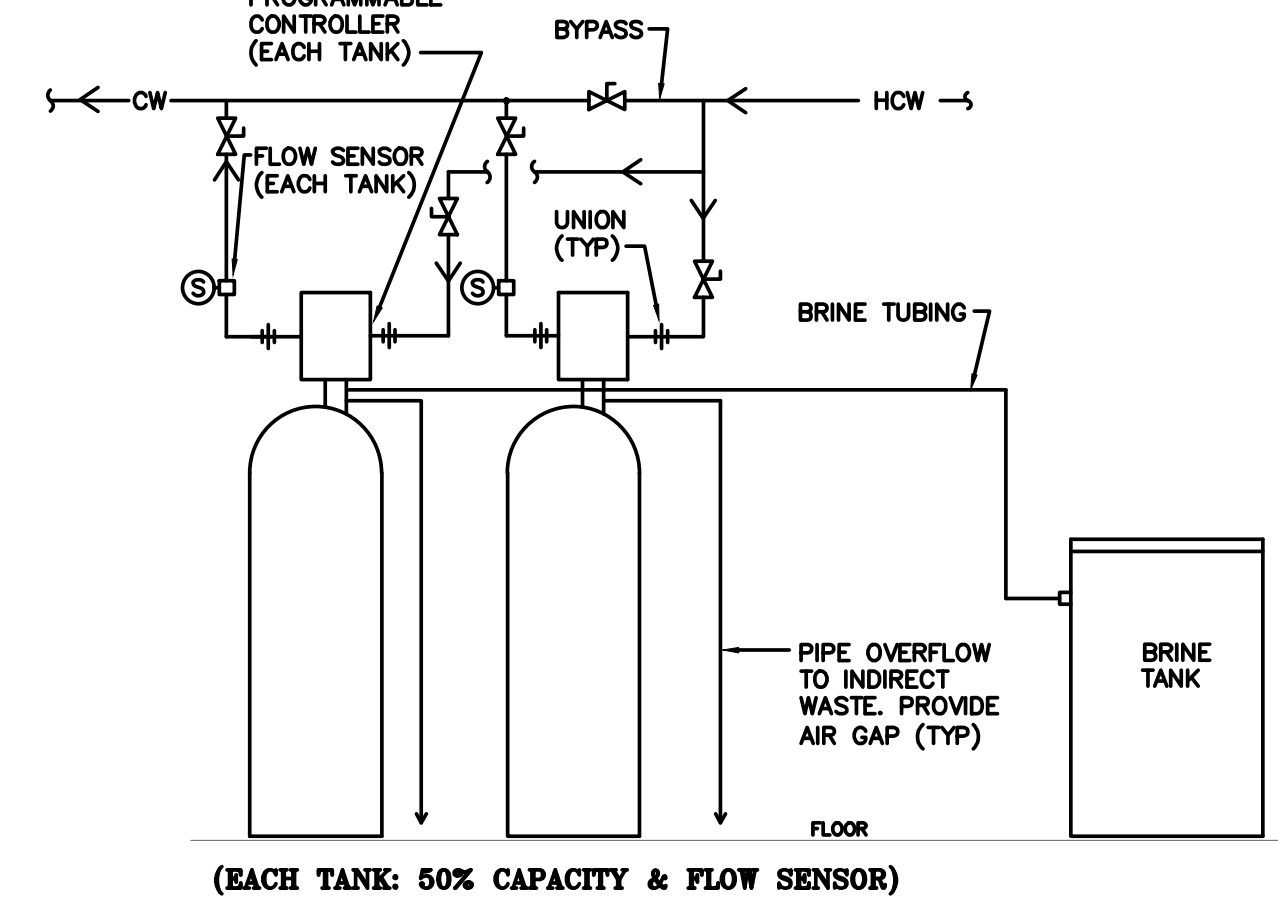
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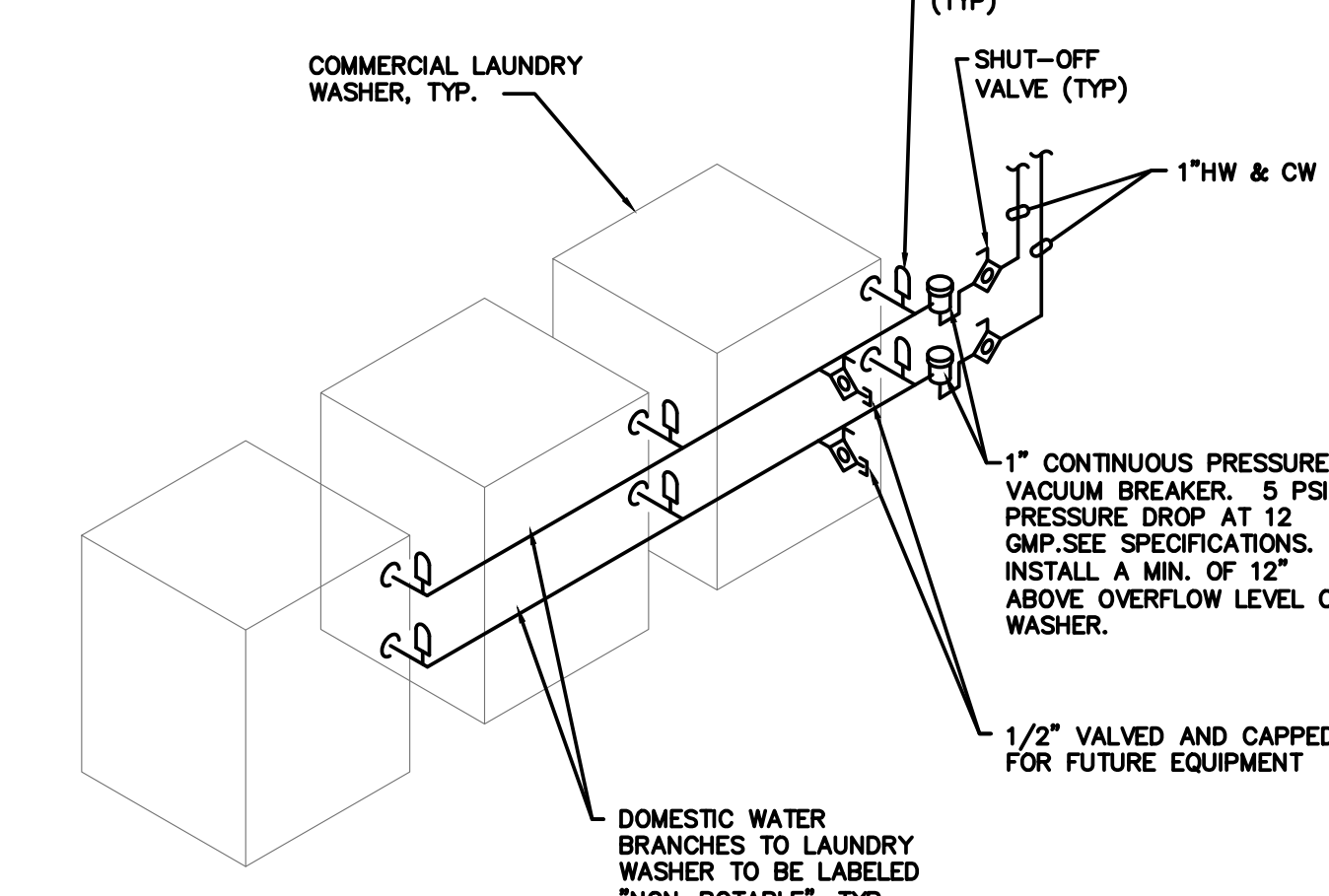
1 FIRE SPRINKLER WATER SERVICE
 NO SCALE 1302 P4005.DWG



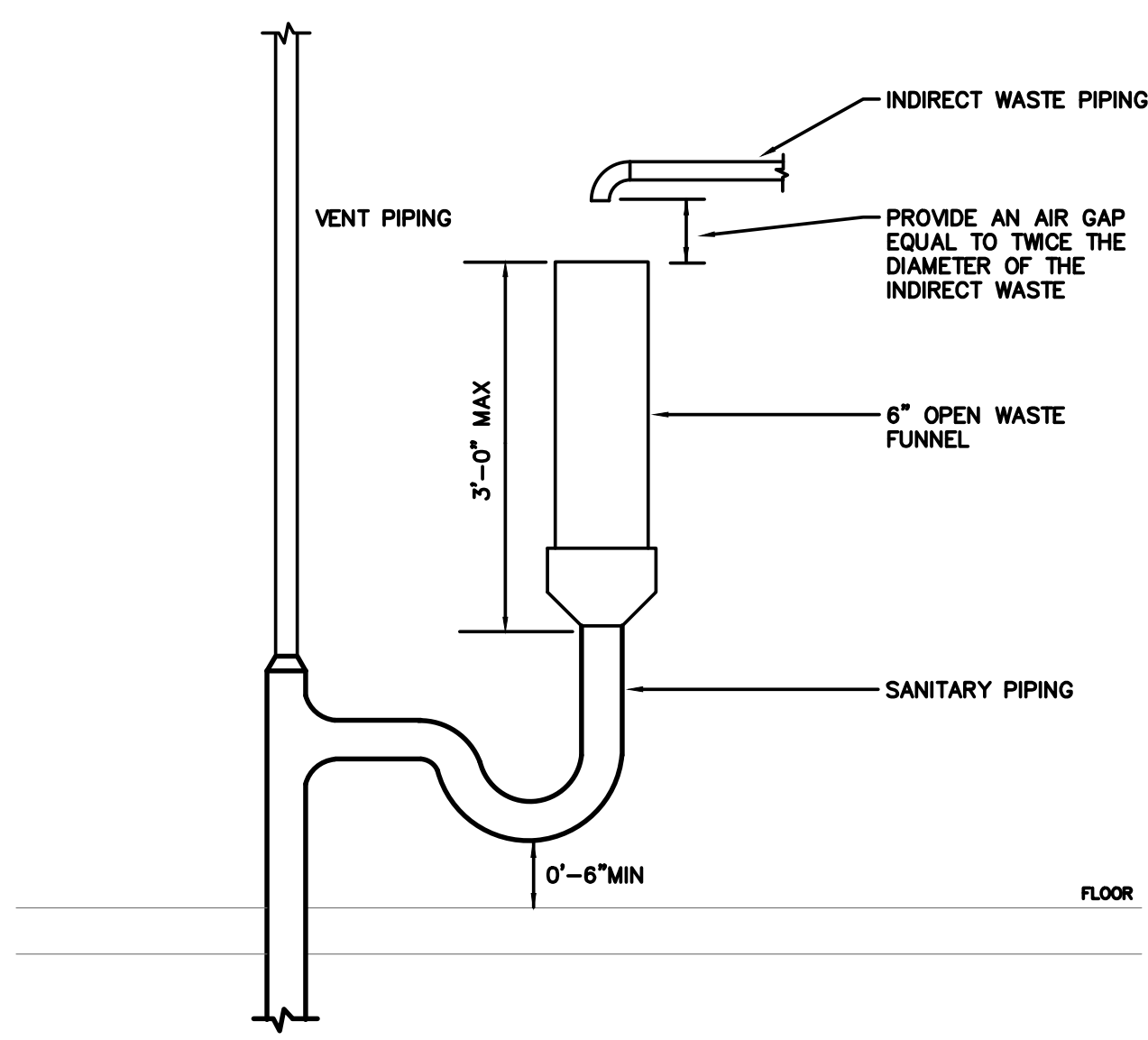
2 DOMESTIC WATER SERVICE
 NO SCALE 0205 P4003.DWG



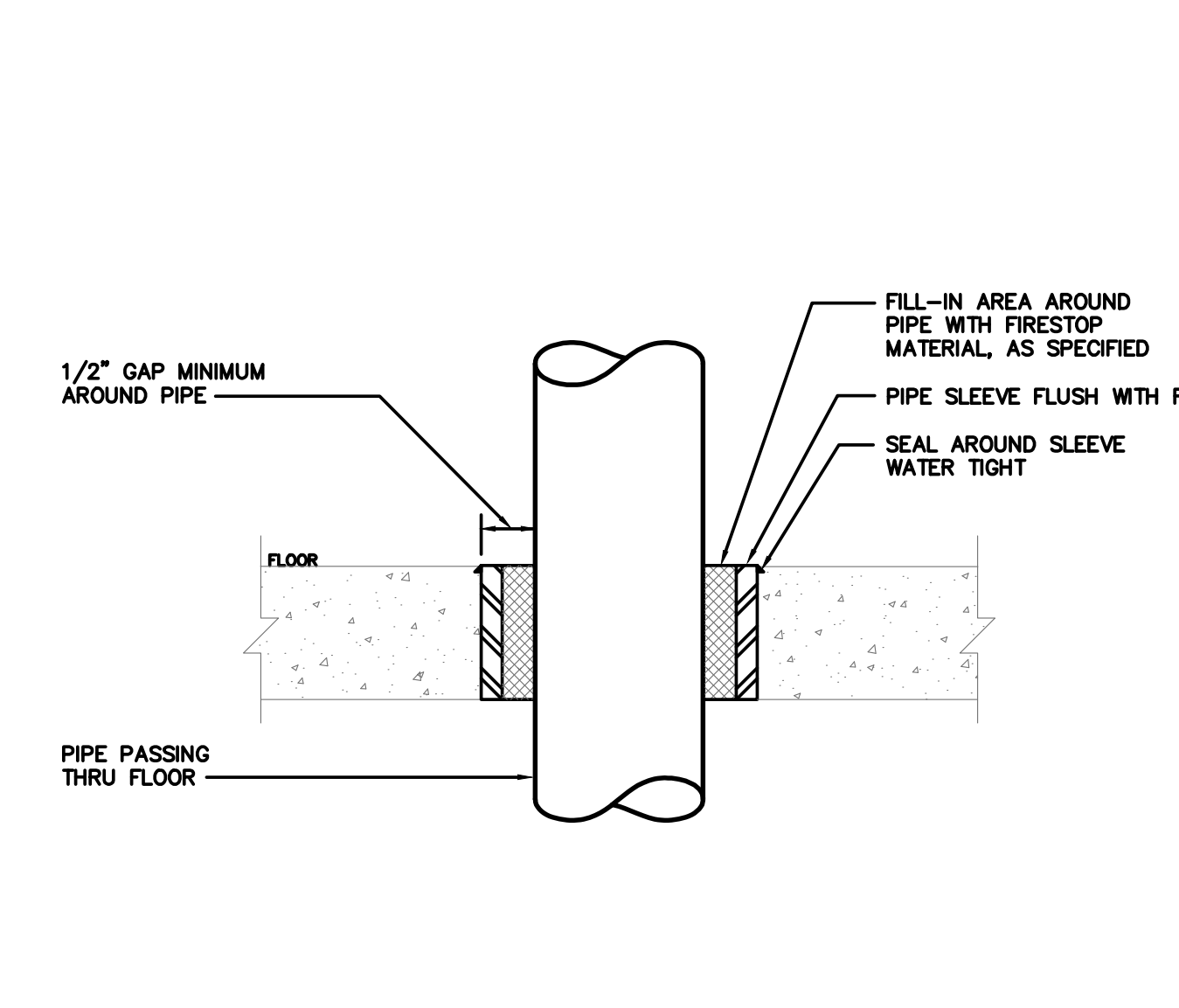
3 WATER SOFTENER (PARALLEL ALTER.DUPLEX)
 NO SCALE P40015a.DWG



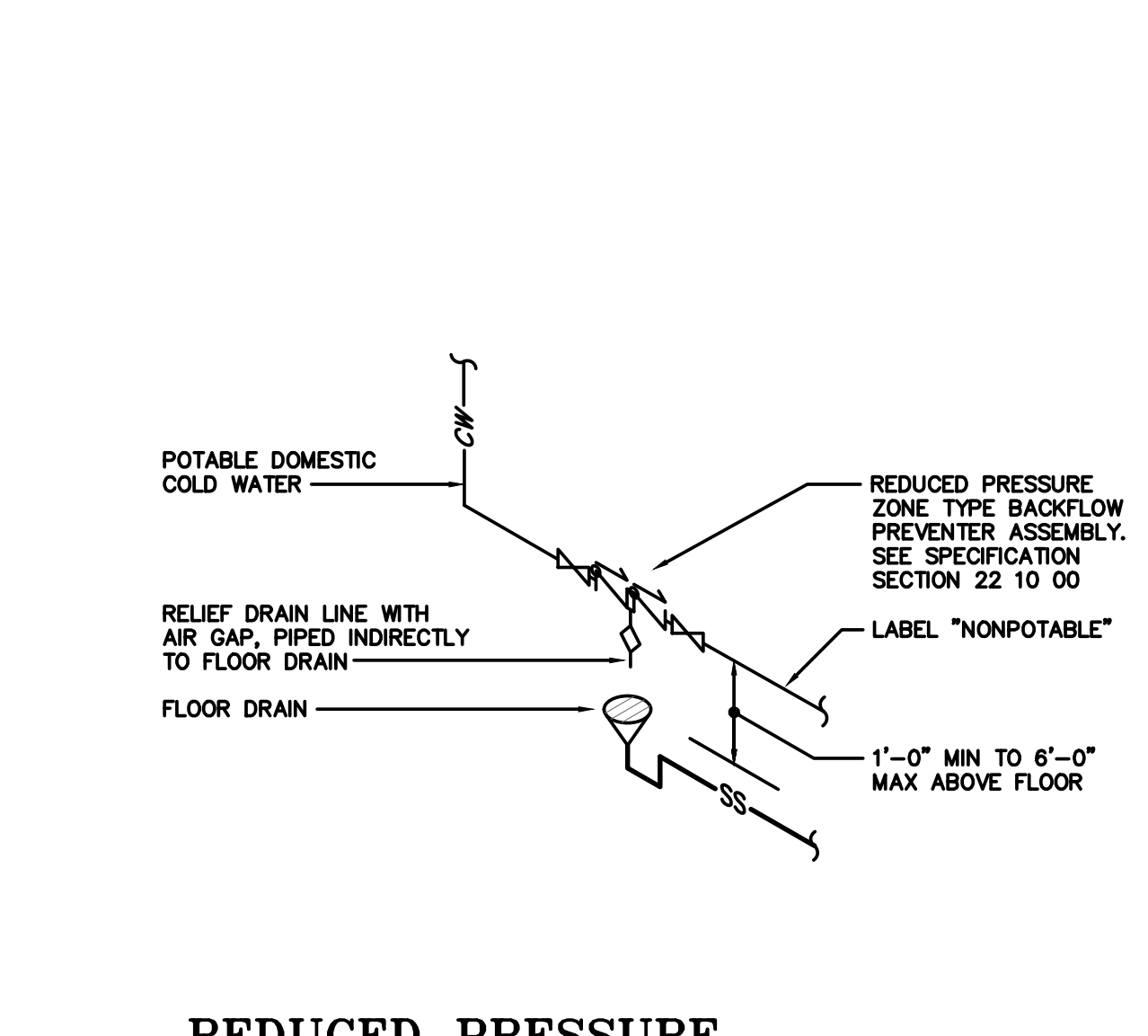
4 COMMERCIAL LAUNDRY WATER CONNECTION (3 MACHINES)
 NO SCALE 0315 P40034A.DWG



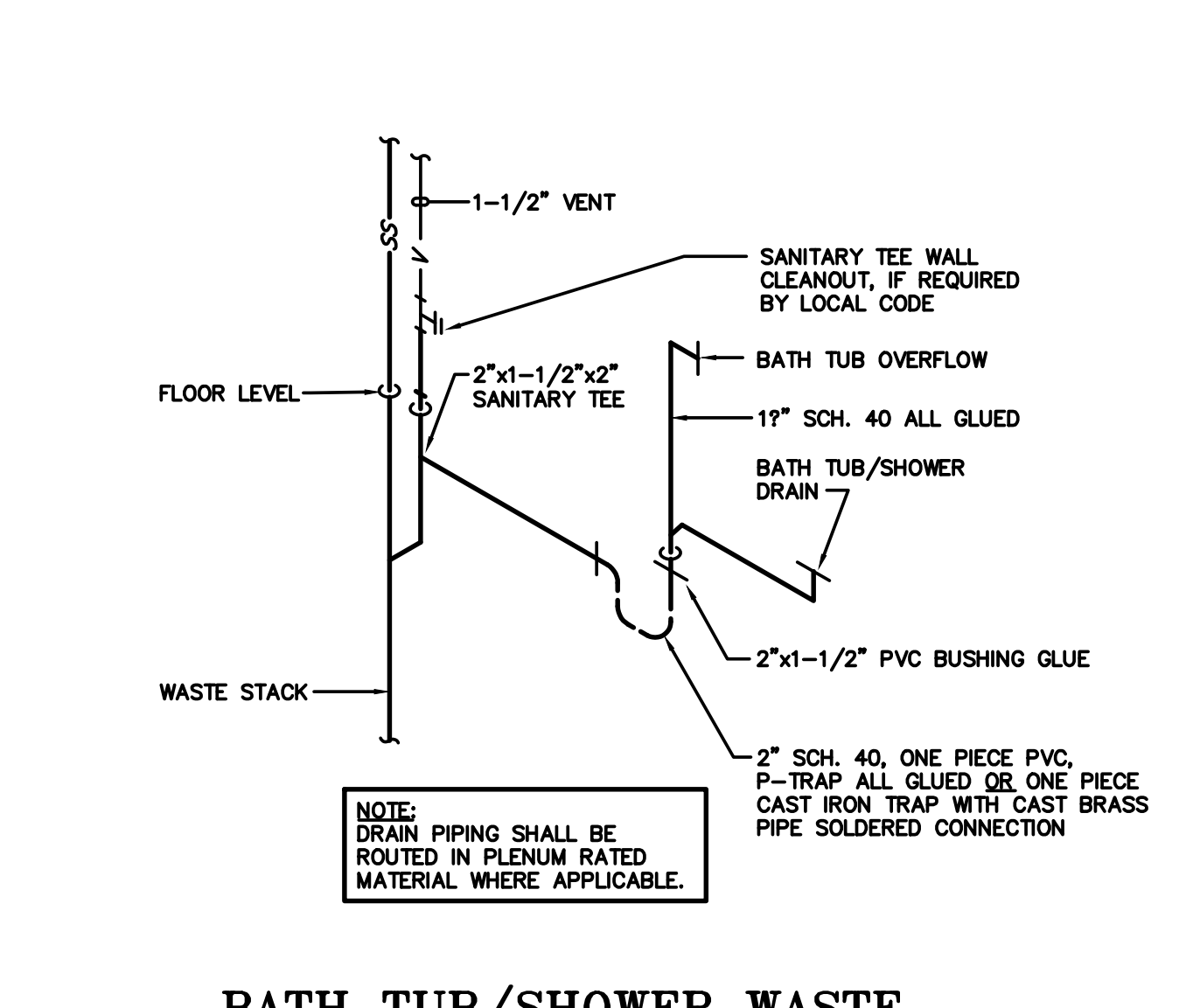
5 INDIRECT WASTE STAND PIPE
 NO SCALE 0612 P40047.DWG



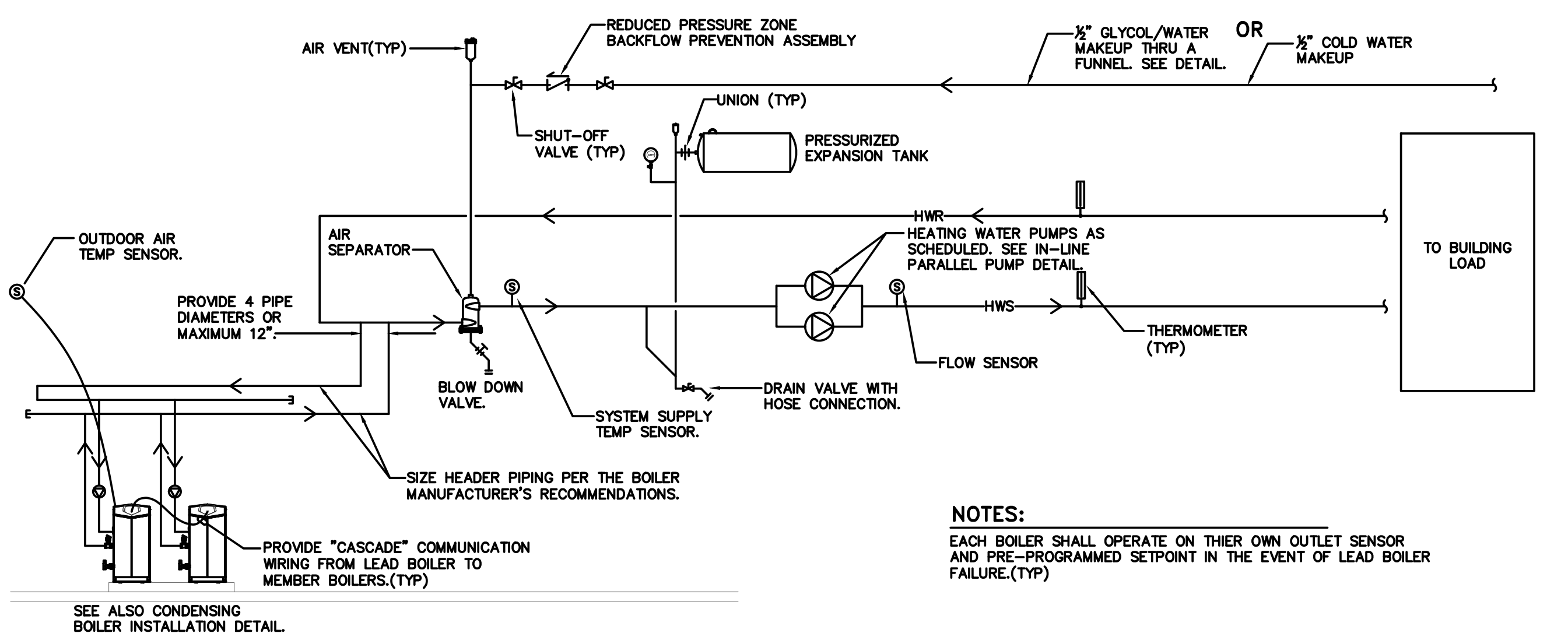
6 PIPE SLEEVE
 NO SCALE 0414 P40057.DWG



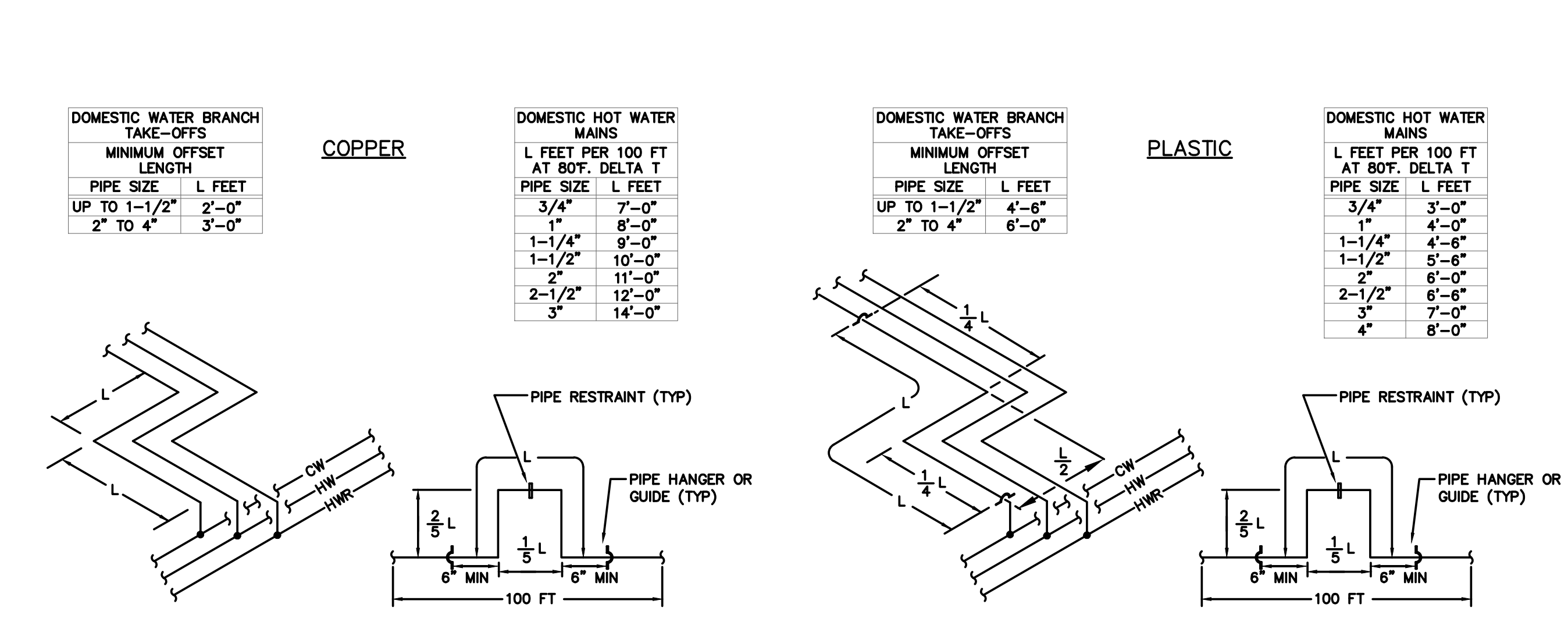
7 REDUCED PRESSURE ZONE BACKFLOW PREVENTER
 NO SCALE 0614 P40058.DWG



8 BATH TUB/SHOWER WASTE (NO ACCESS PANEL)
 NO SCALE 0115 P40060.DWG



9 CONDENSING BOILER PIPING SCHEMATIC
 NO SCALE 1712 235216-02.dwg



10 PIPING EXPANSION TABLES
 NO SCALE 0112 P40068.DWG



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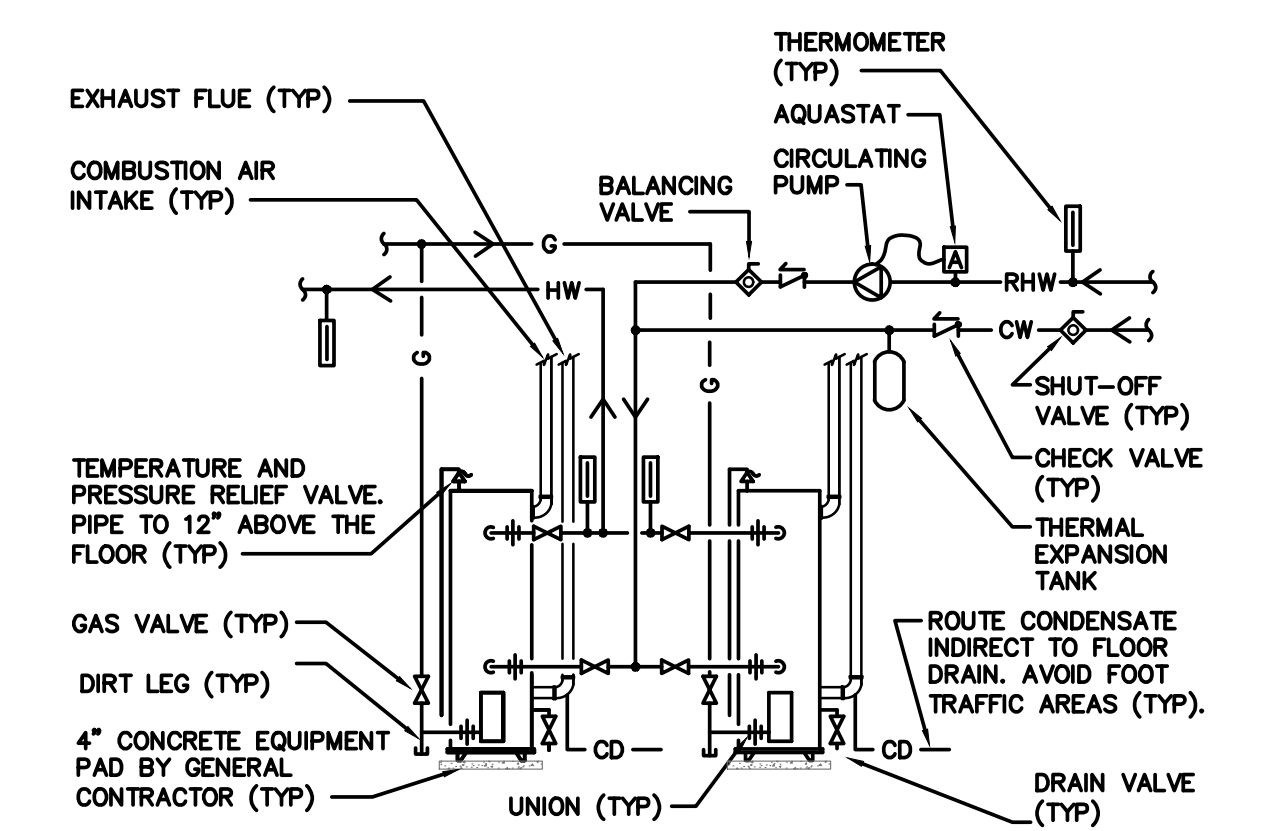
SCALE AS NOTED

West Birch Apartments

W Branch Street
Princeton, MN

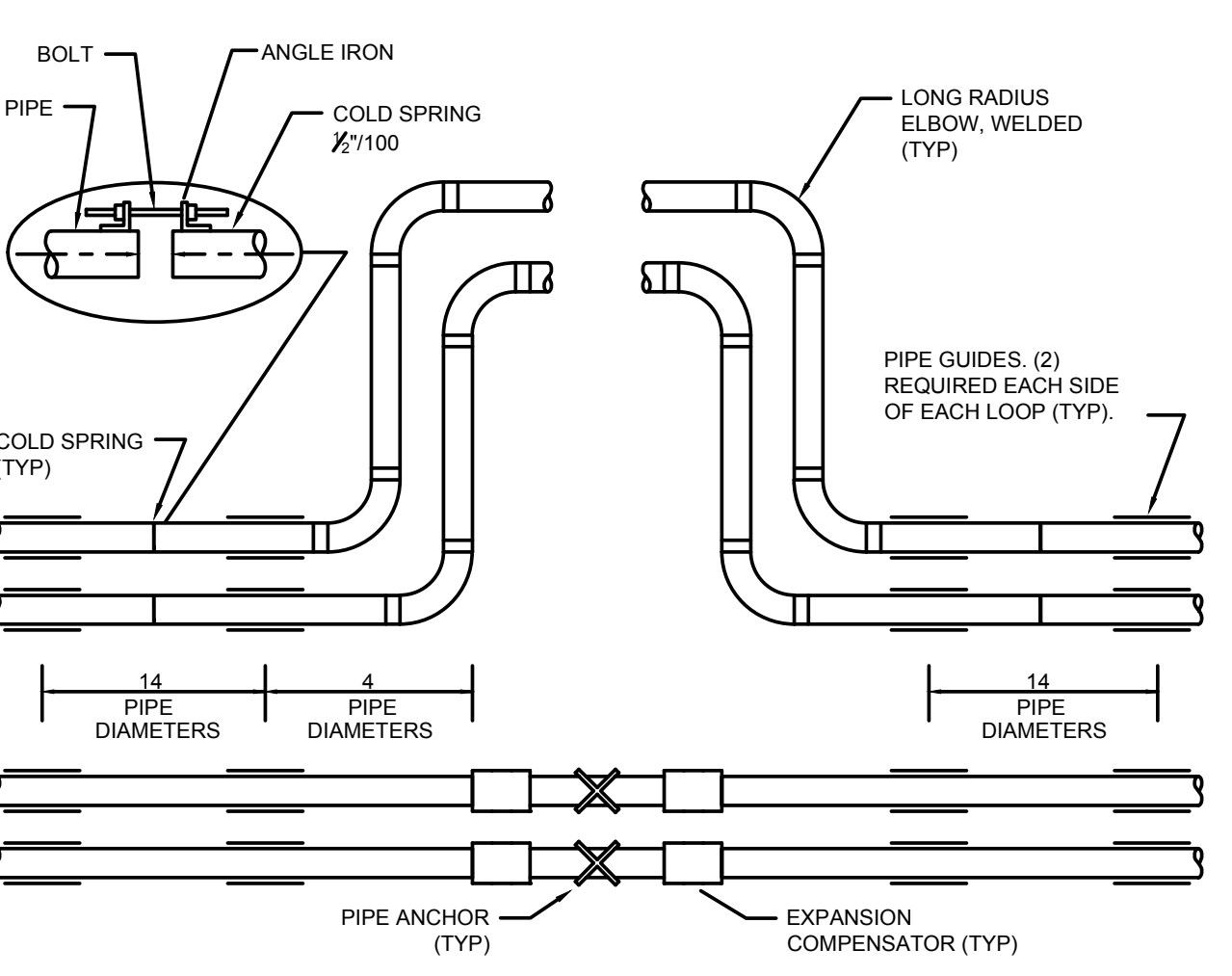
MECHANICAL DETAILS

M413



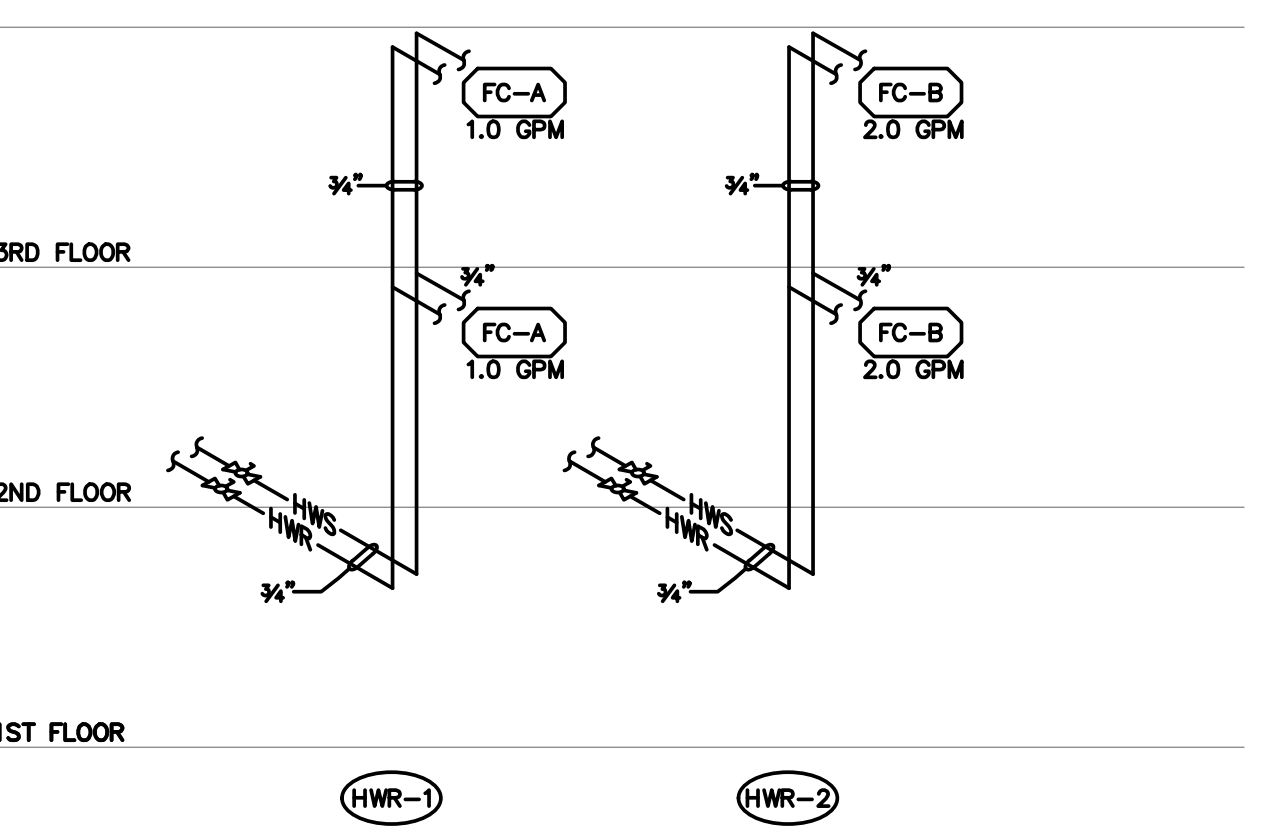
NOTES
A. ALL MANIFOLDING MUST BE EQUAL LENGTH AND HEATERS BE IDENTICAL
B. PROVIDE 8 FEET OF GAS PIPING BETWEEN PRESSURE REGULATOR VALVE AND GAS BURNER VALVE
C. PROVIDE EACH INDIVIDUAL HEATER WITH A CORRECTLY SIZED PRESSURE REGULATOR TO MATCH THE GAS BURNER SIZE. REGULATOR MUST BE RATED/CERTIFIED TO SUPPLY (AT MINIMUM) MAXIMUM BTU/HR INPUT OF HEATER WHEN PIPED AS AN INDIVIDUAL APPLIANCE.
D. PROVIDE DEDICATED ELECTRICAL CIRCUIT TO EACH INDIVIDUAL WATER HEATER. SEE ELECTRICAL SPECIFICATIONS.

1 GAS WATER HEATER - 2 SEALED COMBUSTION
NO SCALE 0712 P40078b.DWG

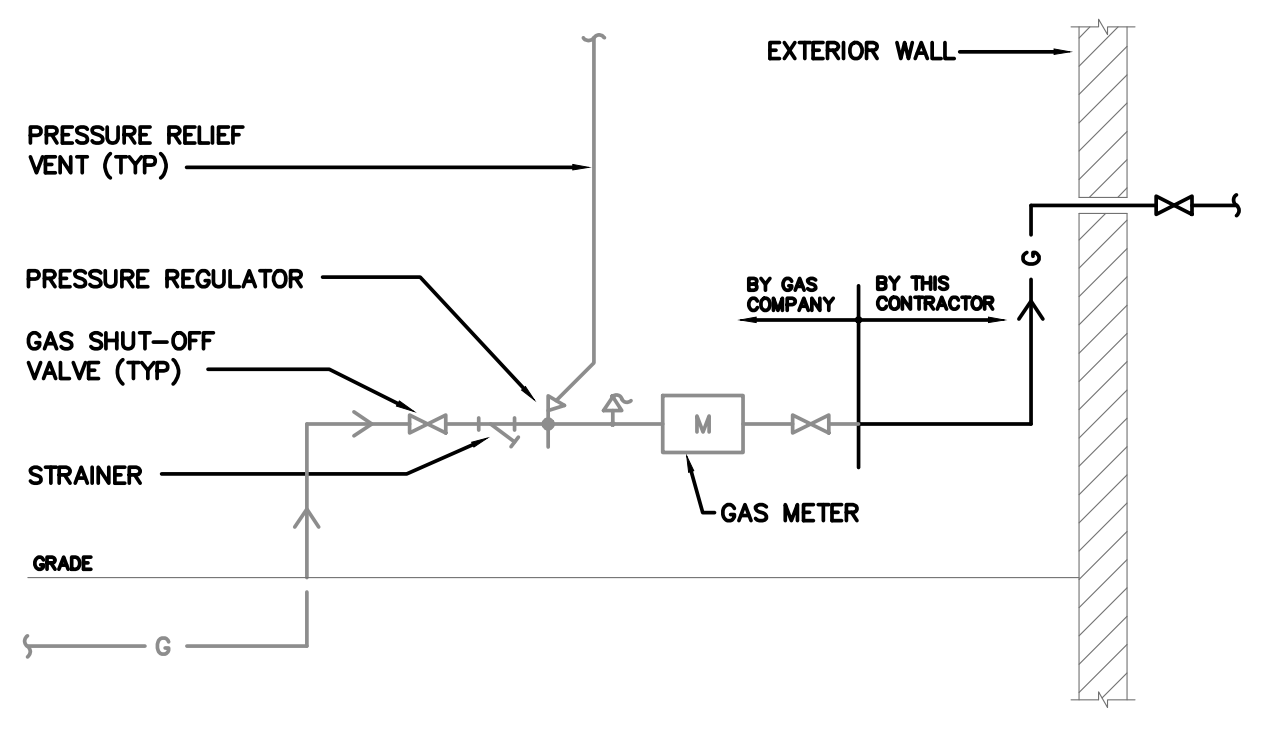


NOTE: PROVIDE PIPING EXPANSION LOOP OR EXPANSION COMPENSATORS. MANUFACTURER'S RECOMMENDATIONS FOR GUIDE SPACING SHALL TAKE PRECEDENCE.

5 EXPANSION LOOP/COMPENSATOR DETAIL
NO SCALE 1712 230516-01.dwg

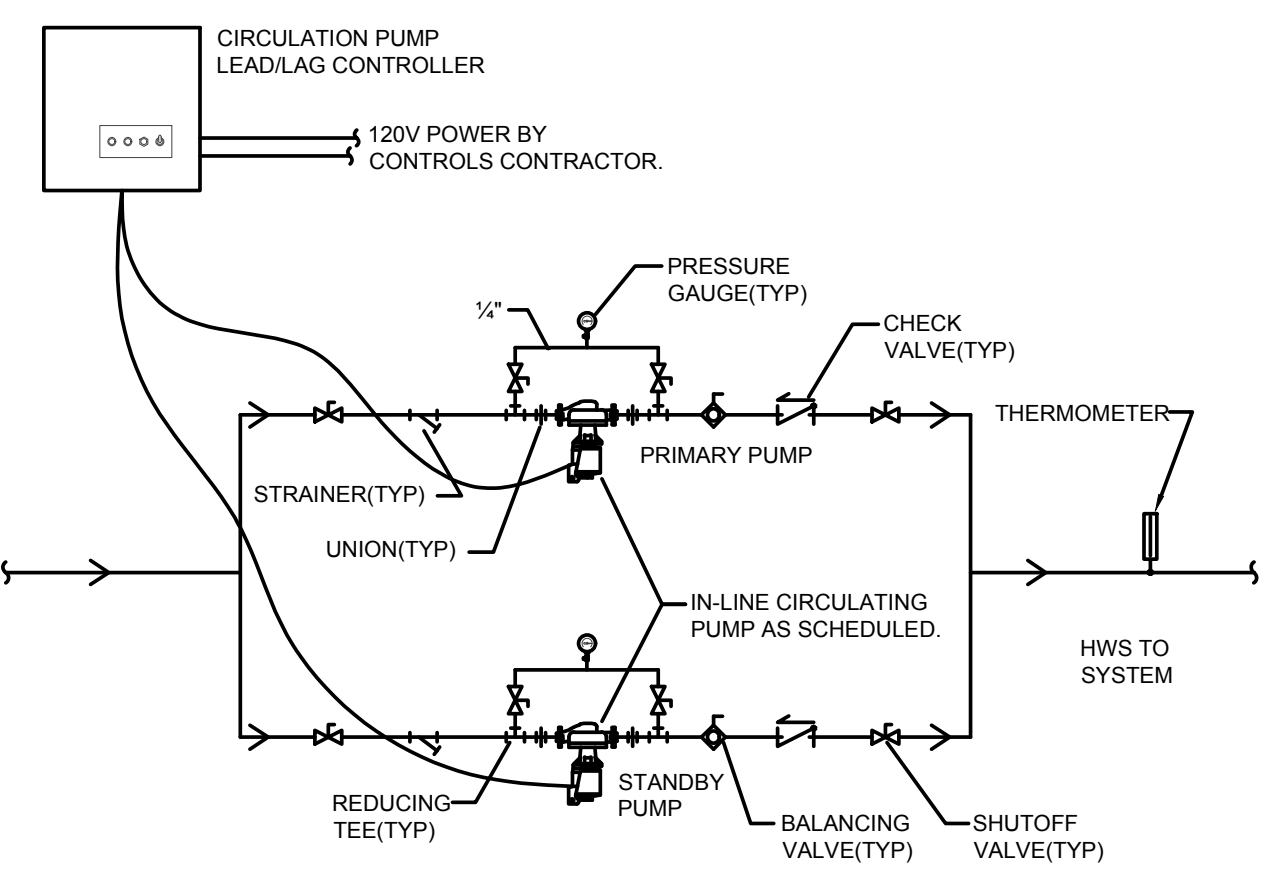


8 HYDRONIC RISERS
NO SCALE



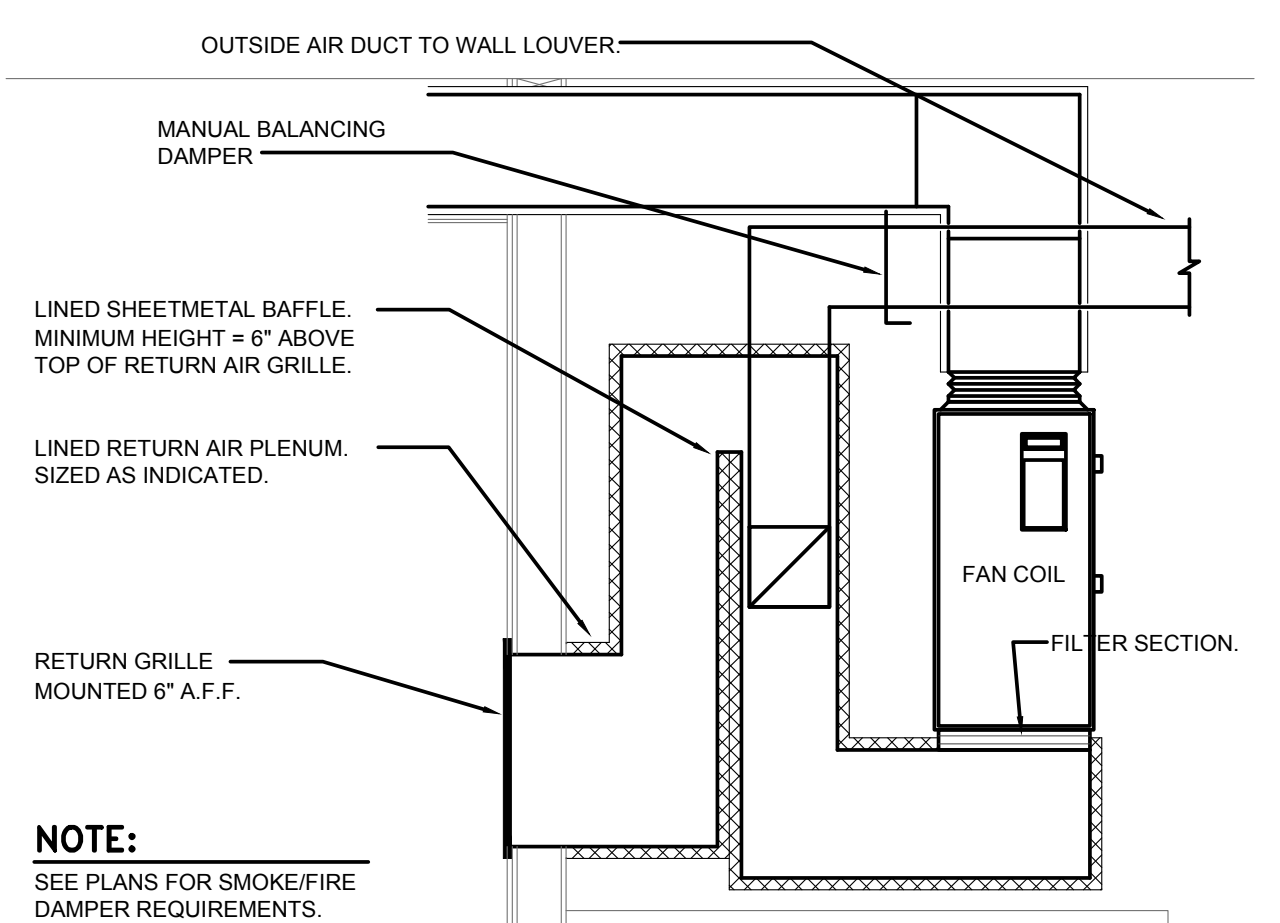
NOTE: NATURAL GAS SERVICE, VALVES, PRESSURE REGULATOR, METER & PRESSURE RELIEF VALVE BY GAS COMPANY

2 GAS SERVICE DIAGRAM
NO SCALE 0806 P40086.DWG



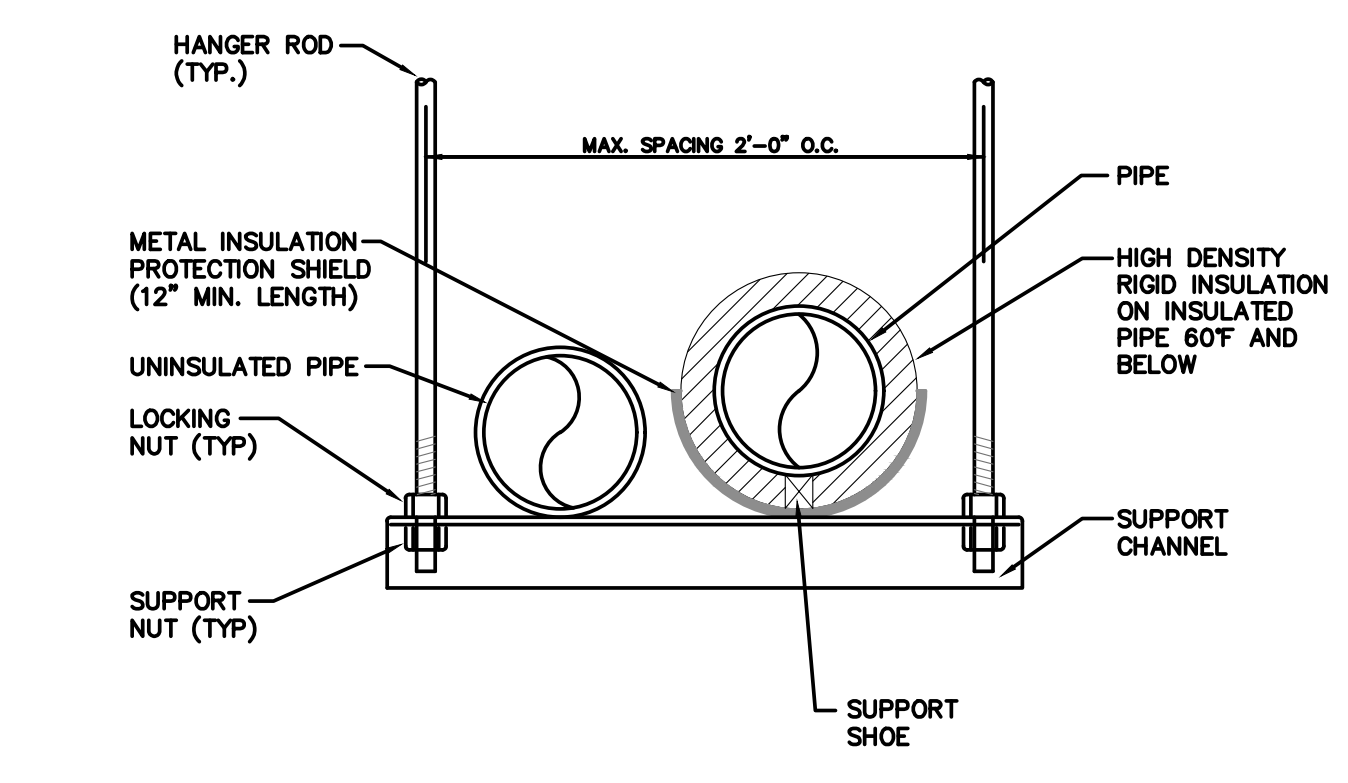
NOTE: PROVIDE SPRING ISOLATORS WHEN MOUNTING PIPING AND PUMPS TO STRUCTURAL MEMBERS.

6 IN-LINE PARALLEL PUMP DETAIL
NO SCALE 1712 232123-03.dwg

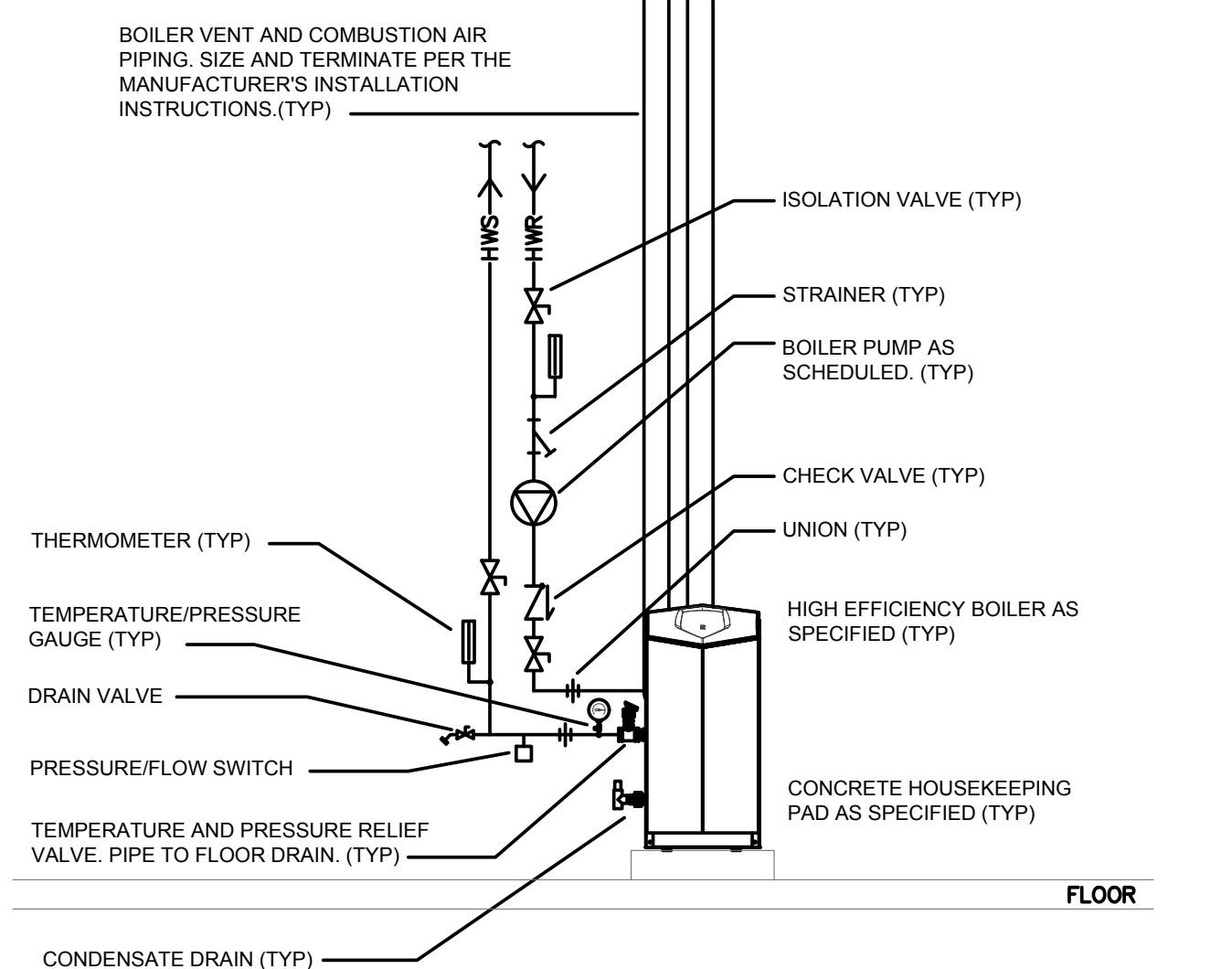


NOTE: SEE PLANS FOR SMOKE/FIRE DAMPER REQUIREMENTS.

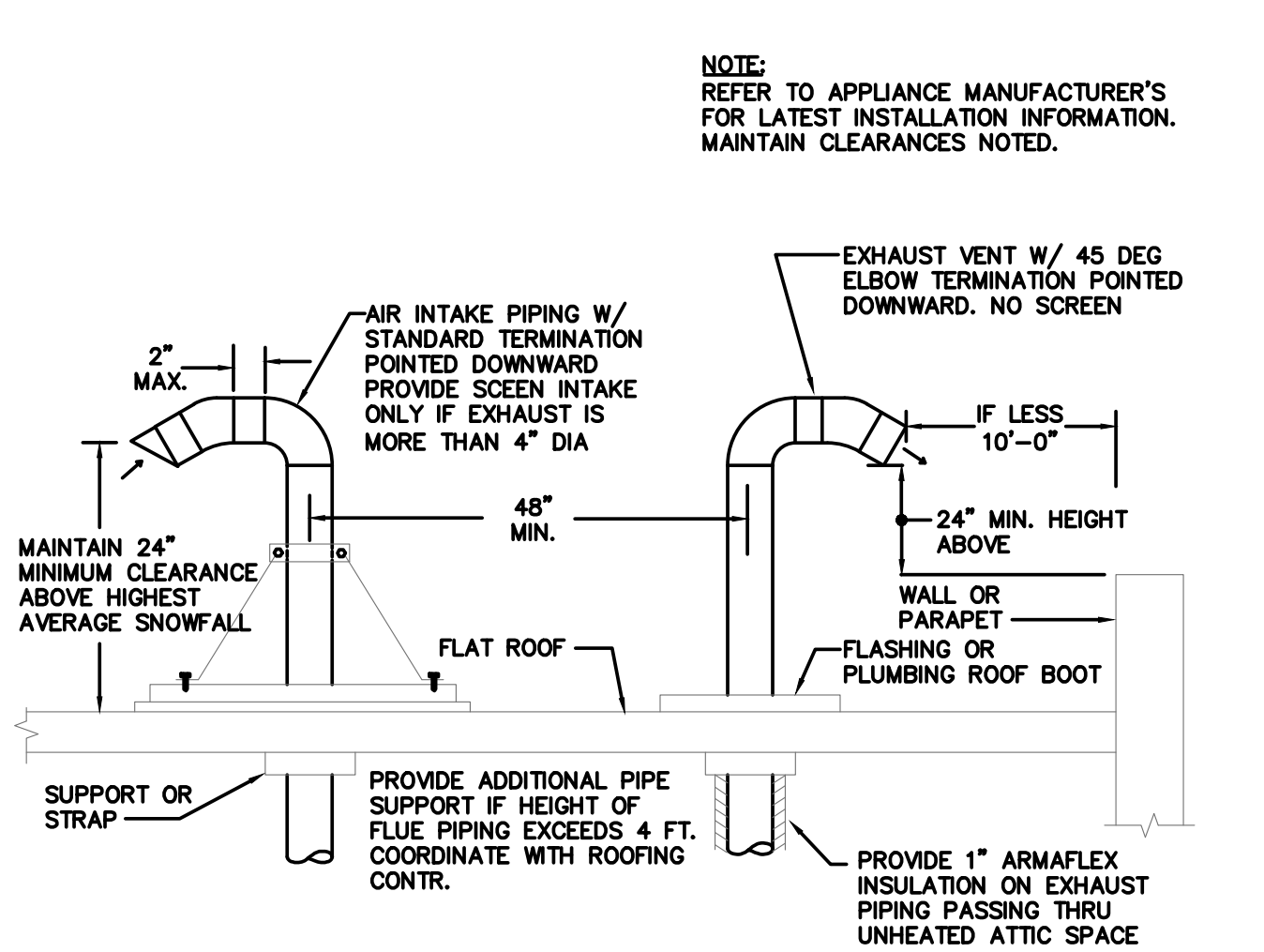
9 FURNACE RETURN DETAIL
NO SCALE 1217 235400-02.dwg



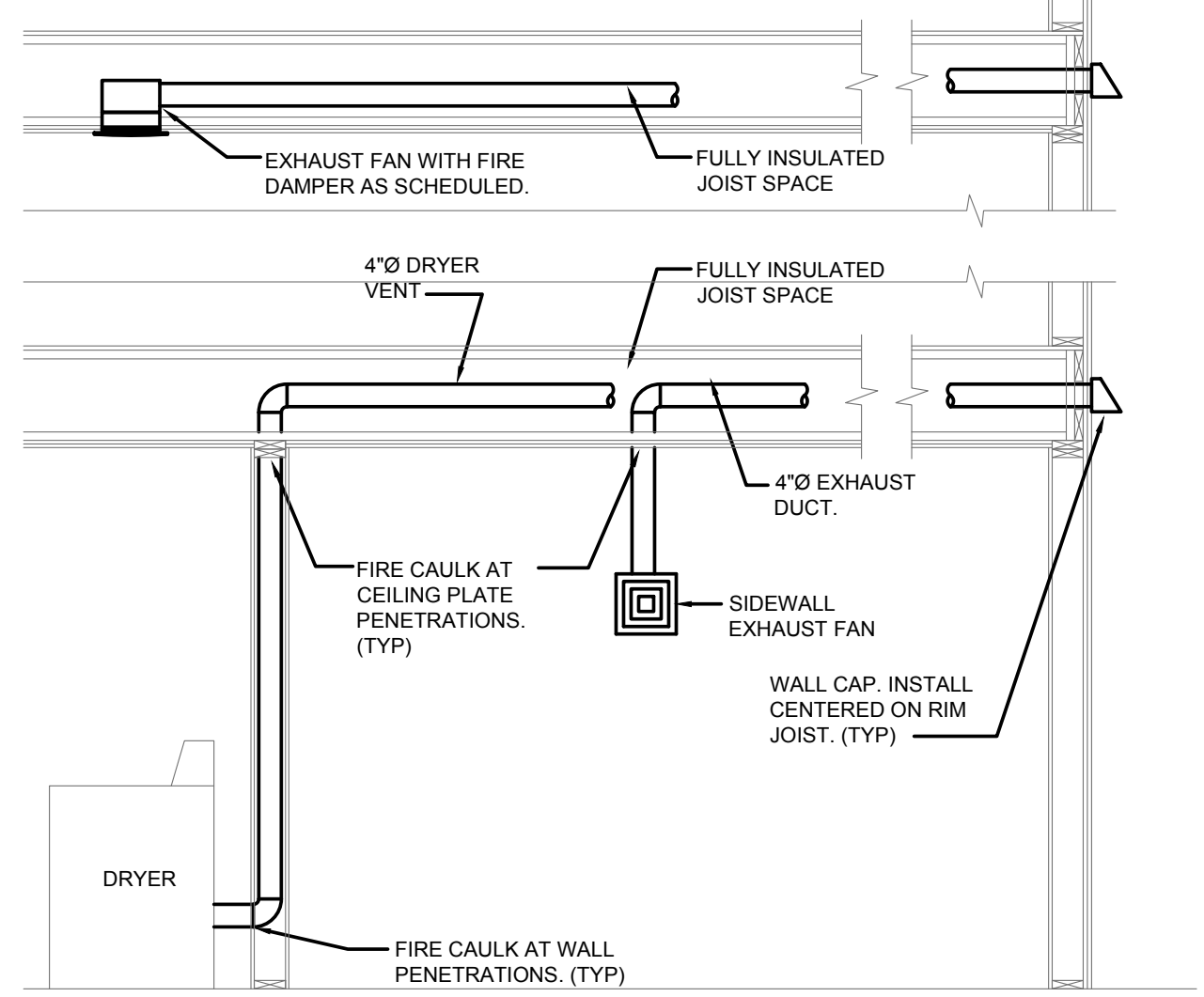
3 PIPE TRAPEZE HANGER
NO SCALE 1014 P40108.DWG



7 CONDENSING BOILER INSTALLATION DETAIL
NO SCALE 1712 235216-01.dwg



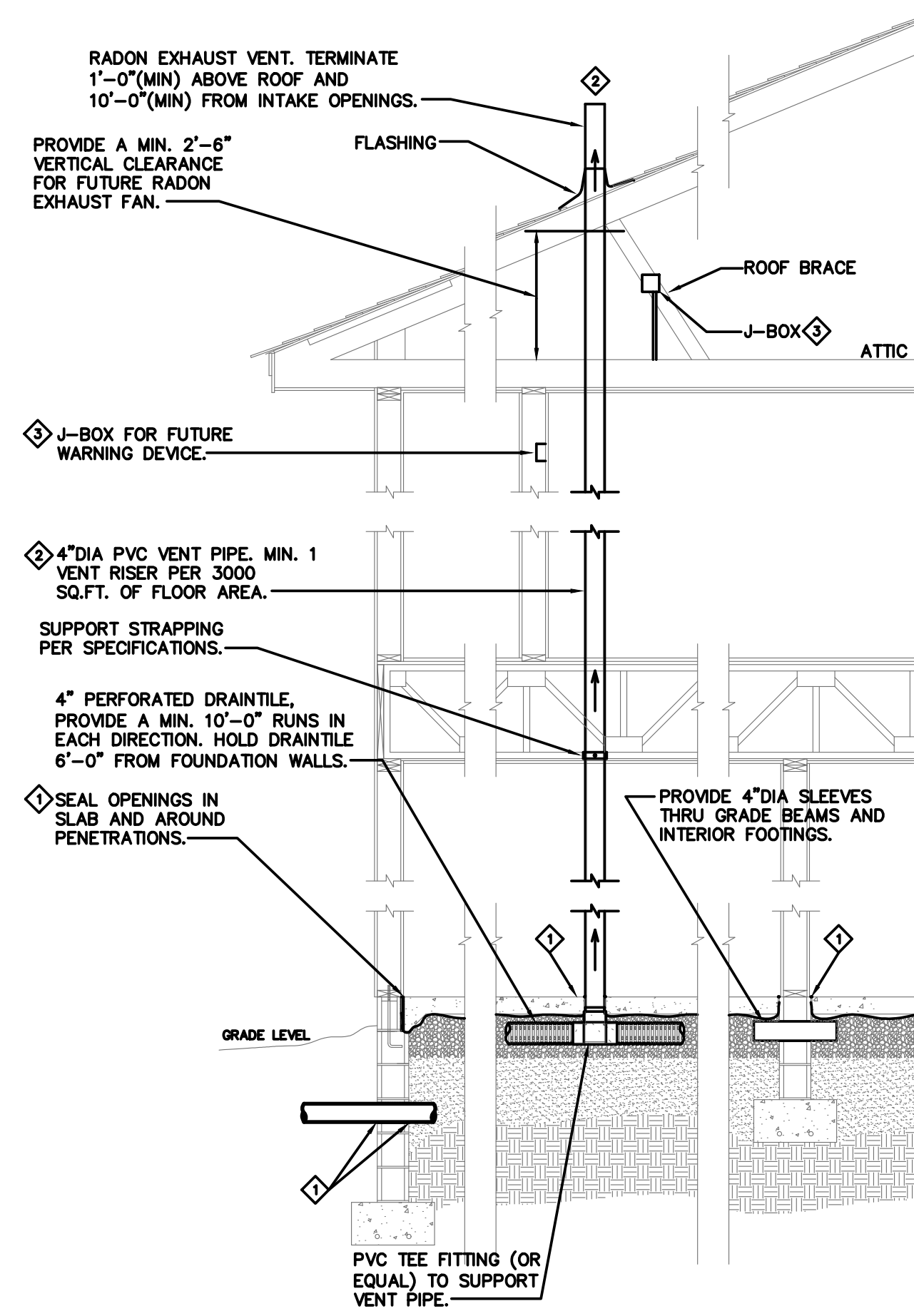
10 GAS FIRED WATER HEATER INTAKE AND EXHAUST ROOF VENT PIPING
NO SCALE 0214 P40103.DWG



4 DRYER AND BATHROOM EXHAUST DETAIL
NO SCALE 1712 230500-05.dwg

SPECIFIC DETAIL NOTES

- ALL OPENINGS, GAPS AND JOINTS IN FLOOR AND WALL ASSEMBLIES IN CONTACT WITH SOIL OR GAPS AROUND PIPES, TOILETS, BATHTUBS OR DRAINS PENETRATING THESE ASSEMBLIES SHALL BE FILLED OR CLOSED WITH MATERIALS THAT PROVIDE A PERMANENT AIR-TIGHT SEAL. SEAL LARGE OPENINGS WITH NON-SHRINK MORTAR, GROUTS OR EXPANDING FOAM MATERIALS AND SMALLER GAPS WITH AN ELASTOMERIC JOINT SEALANT, AS DEFINED IN ASTM C920-87.
- VENT PIPES SHALL BE INSTALLED SO THAT ANY RAINWATER OR CONDENSATION DRAINS DOWNWARD INTO THE GROUND BENEATH THE SLAB OR SOIL-GAS-RETARDER MEMBRANE.
- CIRCUITS SHOULD BE A MINIMUM 20 AMP, 120 VOLT, BY ELECTRICAL CONTRACTOR.



11 PASSIVE RADON MITIGATION SYSTEM
NO SCALE (09/12) P40094-B



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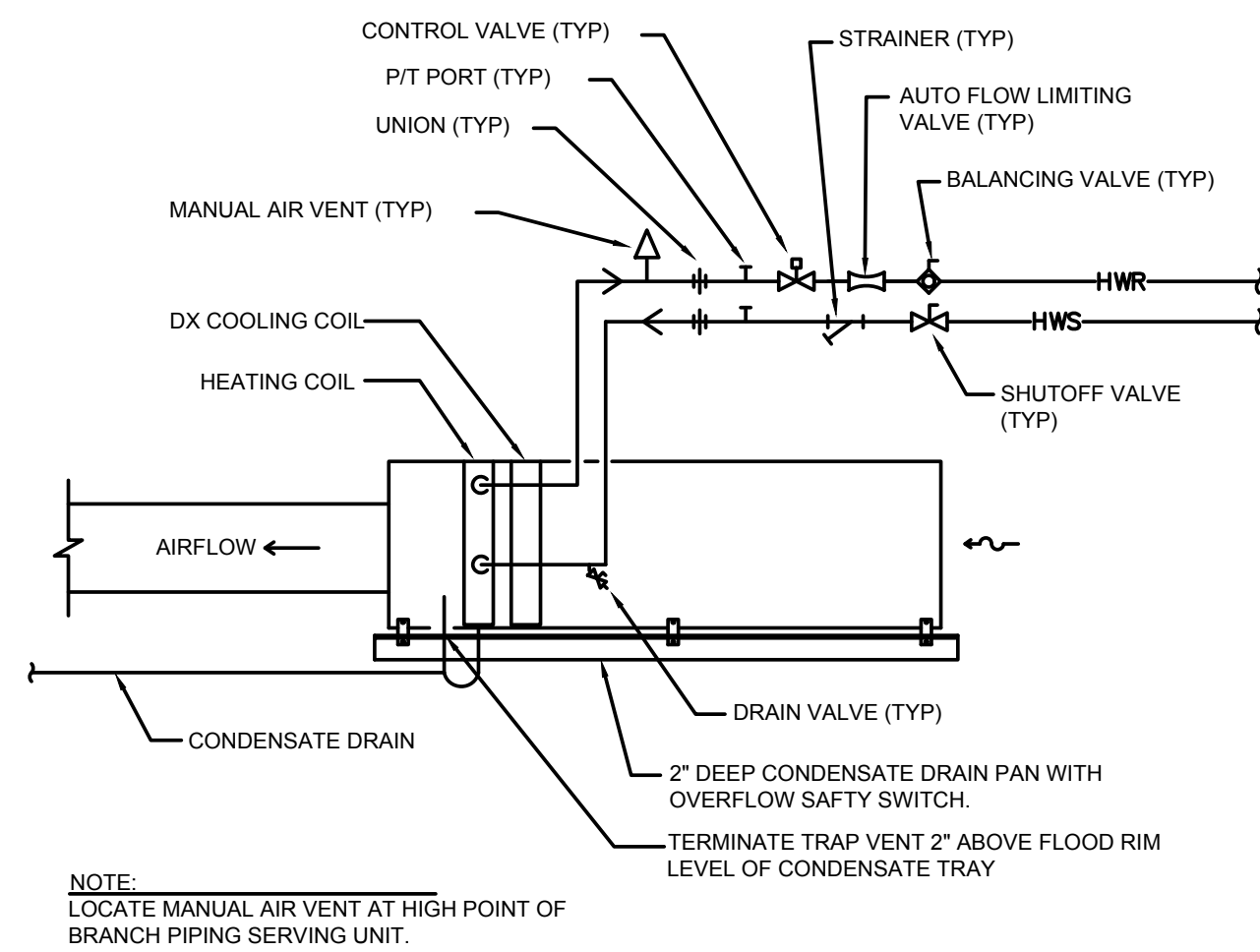
SCALE
AS NOTED

West Birch Apartments

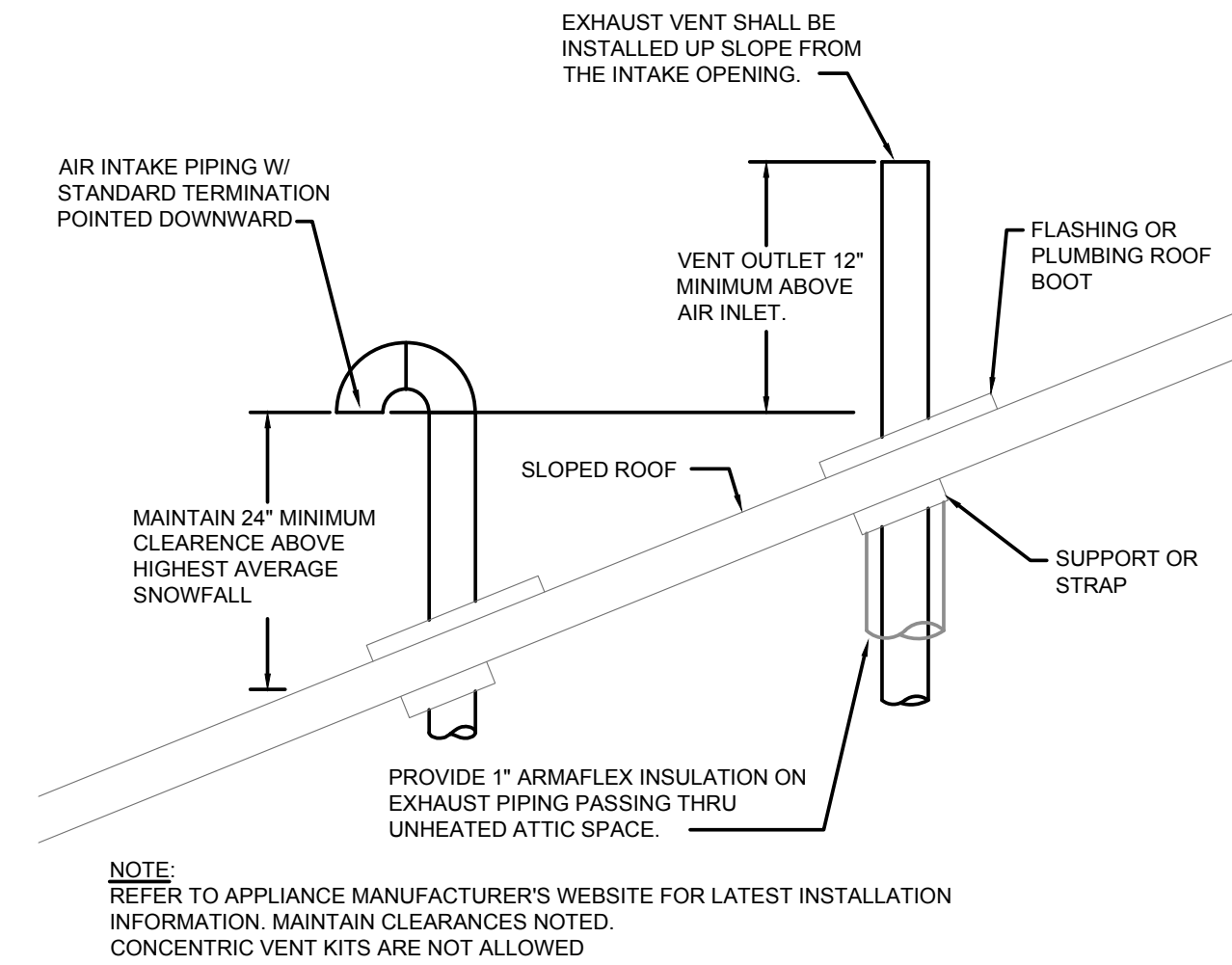
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MECHANICAL DETAILS

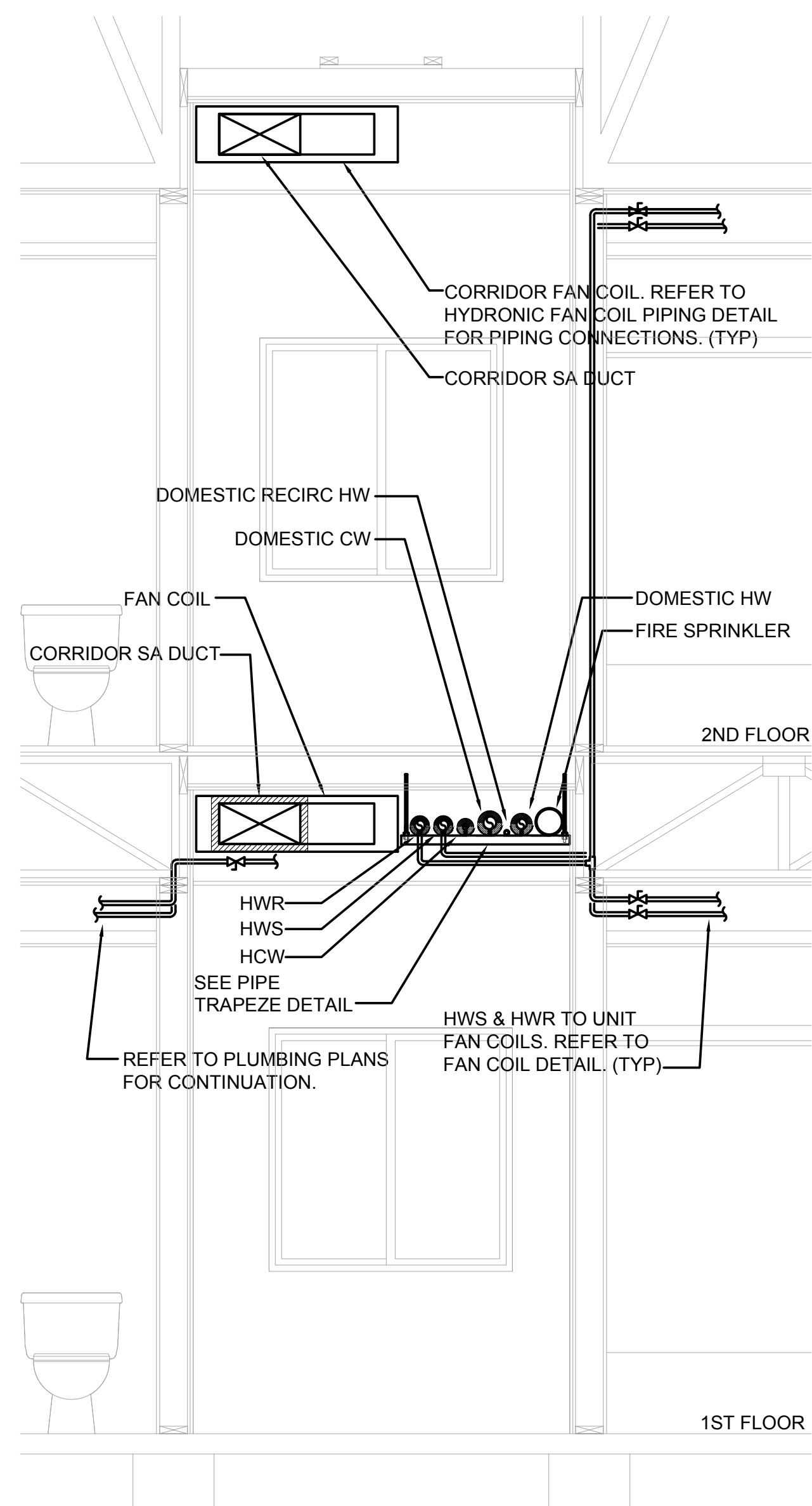
M414



1 HYDRONIC FAN COIL PIPING DETAIL
NO SCALE 1712 238220-01.dwg



2 BOILER INTAKE & EXHAUST ROOF VENT PIPING DETAIL
NO SCALE 1712 235100-01.dwg



3 CORRIDOR SECTION DETAIL
1/2" = 1'-0"