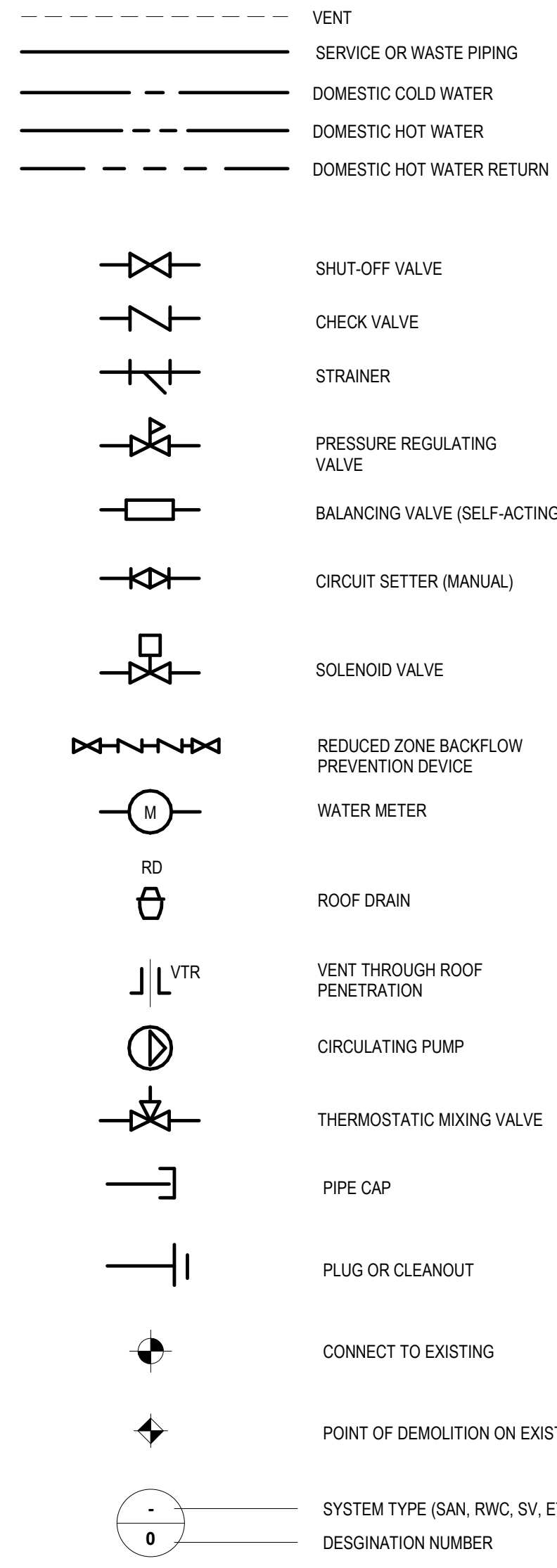


DIAGRAM SYMBOLS



ABBREVIATIONS

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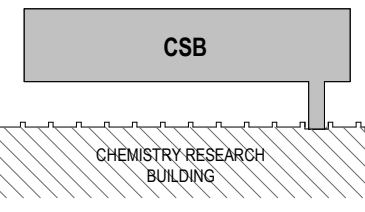
GENERAL NOTES

- 1. PLUMBING SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES INDICATED ON THIS DRAWING ARE TYPICAL. PLUMBING DRAWINGS MAY NOT INDICATE ALL SYMBOLS AND ABBREVIATIONS SHOWN ON THIS DRAWING.
- 2. PLUMBING SYSTEMS SHALL BE FABRICATED AND INSTALLED IN STRICT ACCORDANCE WITH STATE AND LOCAL CODES, THE OWNERS INSURANCE AGENCY, NFPA 54, AND ALL OTHER APPLICABLE STATE AND LOCAL CODES.
- 3. DRAWINGS ARE GENERALLY DIAGRAMMATIC AND DUE TO SMALL SCALE IT IS NOT POSSIBLE TO INDICATE ALL FITTINGS, VALVES, GAUGES AND SPECIALTIES REQUIRED. PROVIDE COMPLETE OPERATING SYSTEMS AND ALL NECESSARY FITTINGS, VALVES, GAUGES AND SPECIALTIES WHETHER OR NOT INDICATED.
- 4. CONTRACTOR SHALL BE RESPONSIBLE TO PREPARE ALL REQUIRED DOCUMENTS, CALCULATIONS AND DRAWINGS, AND OBTAIN ALL LICENSES, PERMITS, CERTIFICATES AND AGENCY APPROVALS PRIOR TO COMMENCING FABRICATION OR INSTALLATION.
- 5. COORDINATE PLUMBING SYSTEM SHUT DOWN REQUIREMENTS WITH OWNER. NOTIFY OWNER A MINIMUM OF 48 HOURS PRIOR TO SYSTEM SHUT DOWN.
- 6. COORDINATE PLUMBING WORK WITH OTHER DISCIPLINES. SEE SPECIFICATIONS FOR INFORMATION REGARDING COORDINATION DRAWINGS. PROVIDE DEDUCTIONS FOR ANY OWNER AGREED REDUCTIONS IN PIPING RUNS. COORDINATE ROUGH-IN INFORMATION WITH FIXTURE AND EQUIPMENT SUPPLIERS. COORDINATE PLUMBING FIXTURE LOCATIONS WITH ARCHITECTURAL PLANS.
- 7. COORDINATE ALL BELOW GRADE PLUMBING PIPING WITH FOUNDATION ELEVATIONS AND SITE UTILITY INVERTS. VERIFY EXISTING ELEVATIONS AND INVERTS PRIOR TO CONSTRUCTION.
- 8. INSTALL ALL PIPING IN ACCORDANCE WITH BEST PRACTICES OF TRADE. LOCATE GROUPS OF PIPES PARALLEL TO EACH OTHER. SPACED TO PERMIT VALVE SERVICING. BULLHEAD TEES ARE NOT ALLOWED. USE UNIFORM SYSTEM MATERIALS THROUGHOUT THE BUILDING.
- 9. ALL DOMESTIC WATER, LABORATORY GAS, VENT PIPING AND RAIN WATER CONDUCTORS SHOWN ON PLANS ARE LOCATED ABOVE CEILING UNLESS OTHERWISE NOTED. ALL SANITARY AND WASTE PIPING ARE LOCATED BELOW FLOOR UNLESS OTHERWISE NOTED.
- 10. PLUMBING SYSTEMS SHALL NOT BE LOCATED IN ELEVATOR SHAFTS OR IN ELEVATOR PIT ROOMS EXCEPT FLOOR DRAINS, SUMPS, SUMP PUMPS, AND SUMP PUMP DISCHARGE PIPING DEDICATED TO THE SHAFT AND LOCATED AT THE BASE OF THE SHAFT.
- 11. PLUMBING SYSTEMS SHALL NOT BE LOCATED IN ELECTRICAL EQUIPMENT ROOMS, TRANSFORMER VAULT, ELECTRICAL CLOSETS, OR TELE DATA COMMUNICATION CENTERS, OR SIMILAR AREAS CONTAINING ELECTRICAL EQUIPMENT.
- 12. DO NOT INSTALL PIPING OVER, AROUND, IN FRONT OF, BEHIND, OR DIRECTLY BELOW ELECTRICAL EQUIPMENT, SWITCHES, TERMINALS, OR SIMILAR ELECTRICAL EQUIPMENT. MAINTAIN 4" IN FRONT OF 480 VAC EQUIPMENT. MAINTAIN 36" IN FRONT OF 240 VAC EQUIPMENT. CONFORM TO NEC.
- 13. COORDINATE EXACT LOCATION AND FINAL COUNT FOR ALL PLUMBING FIXTURES WITH ARCHITECTURAL PLANS. SEE ARCHITECTURAL CONTROL PLANS FOR MORE INFORMATION REGARDING FLOOR PENETRATION LOCATIONS.
- 14. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES BETWEEN CONSTRUCTION DOCUMENTS AND EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
- 15. COORDINATE ALL ROUGH-IN INFORMATION WITH FIXTURE AND EQUIPMENT SUPPLIERS.
- 16. PROVIDE PIPING PENETRATIONS WITH FIRE RATINGS EQUAL TO, OR GREATER THAN, THE FIRE RATING OF THE WALL OR FLOOR PENETRATED. COORDINATE PIPE PENETRATIONS WITH CONCRETE CONSTRUCTION. PROVIDE CORE DRILLED PENETRATIONS AT ALL LOCATIONS WHERE CONCRETE OR MASONRY WALLS OR FLOORS HAVE BEEN CONSTRUCTED PRIOR TO PLUMBING PIPING INSTALLATION. CORING SIZES AND LOCATIONS SHALL BE APPROVED BY THE ARCHITECT/ENGINEER. EXTEND SLEEVES 4" ABOVE FLOOR SLAB IN ALL WET AREAS SUCH AS KITCHENS, WASH AREAS, MECHANICAL ROOMS, PLUMBING CLOSETS, AND SIMILAR AREAS.
- 17. PROVIDE PIPE SLEEVES THROUGH CONCRETE BEAMS WHERE REQUIRED. COORDINATE WITH THE ARCHITECTURAL AND STRUCTURAL DRAWINGS.
- 18. ALL PIPING SYSTEMS ARE TO BE LABELED IN THE STANDARD FORMATS AT FREQUENT INTERVALS (NOT MORE THAN 15 FEET), AND ADDITIONALLY, AT ALL WALL, FLOOR AND CEILING PENETRATIONS. LABELING MUST INCLUDE DIRECTIONAL ARROWS AND PIPE DIAMETERS CLEARLY VISIBLE FROM FLOOR LEVEL.
- 19. SUPPORT ALL PIPING IN CONFORMANCE WITH SPECIFICATIONS AND THE PLUMBING CODE. SEE PLUMBING CODE FOR SPACING REQUIREMENTS. CONFORM TO THE BUILDING CODE AND MSS SP-127 FOR SEISMIC, WIND AND DYNAMIC FORCES.
- 20. CONTRACTOR SHALL PROVIDE SEISMIC RESTRAINTS IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE.
- 21. PROVIDE SHUT OFF VALVES WITHIN 2'-0" OF MAINS ON ALL BRANCH PIPING SERVING PLUMBING FIXTURES. EQUIPMENT OR CASEWORK. CONNECT SERVICE BRANCHES TO TOP OF MAINS.
- 22. PROVIDE SHUT OFF VALVES TO ALL FIXTURES AND EQUIPMENT.
- 23. DO NOT INSTALL VALVES WITH OPERATORS IN A DOWNWARD POSITION.
- 24. BALANCING VALVES SHALL BE MARKED AND LOCKED IN POSITION AFTER BALANCING.
- 25. PROVIDE DRAIN VALVES AND HOSE CONNECTIONS AT ALL LOW POINTS IN SERVICE PIPING SYSTEMS.
- 26. INSTALL MANUAL AIR VENTS AT ALL CLOSED WATER SYSTEM HIGH POINTS.
- 27. PROVIDE WATER HAMMER ARRESTORS ON SUPPLY LINES TO FLUSH VALVES, SOLENOID VALVES, AND AUTOMATIC VALVES. IN CONFORMANCE WITH PDI AND LOCAL ORDINANCES. INSTALL WHA IMMEDIATELY ADJACENT AND UPSTREAM OF THE FINAL FLUSH VALVE IN EASILY ACCESSIBLE LOCATIONS FOR MAINTENANCE.
- 28. PROVIDE BACKFLOW PREVENTION DEVICES ON PLUMBING SYSTEM IN CONFORMANCE WITH THE INTERNATIONAL PLUMBING CODE, AND LOCAL ORDINANCES.
- 29. PROVIDE REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION DEVICES ON ALL WATER CONNECTIONS TO STERILIZERS, AUTOCLAVES AND GLASSWARE WASHING EQUIPMENT.
- 30. SLOPE ALL PIPING IN CONFORMANCE WITH SPECIFICATIONS AND THE PLUMBING CODE.
- 31. PROVIDE CLEANOUTS AT THE BASE OF ALL WASTE STACKS IN CONFORMANCE WITH SPECIFICATIONS AND THE PLUMBING CODE.
- 32. PROVIDE CLOSED CELL MOLDED VINYL INSULATION ON EXPOSED LAVATORY DRAINS AND SUPPLIES.
- 33. PROVIDE PIPING MATERIAL IN CONFORMANCE WITH THE SPECIFICATIONS AND THE PLUMBING CODE.
- 34. PROVIDE PLUMBING FIXTURES AND EQUIPMENT IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS AND THE PLUMBING CODE.
- 35. PROVIDE TRAP PRIMERS WITH 1/2" PIPING CONNECTED TO THE DRAIN TAILPIECE FOR ALL FLOOR DRAINS.
- 36. PROVIDE HEAT TRACING FOR ALL FLOOR DRAIN TRAPS, WATER PIPING AND PUMPED DISCHARGE PIPING LOCATED IN UNHEATED AREAS OF THE BUILDING. PROVIDE 2" INSULATION AND JACKET AROUND ALL HEAT TRACING.
- 37. TEST ALL PLUMBING SYSTEMS IN CONFORMANCE WITH THE SPECIFICATIONS AND THE PLUMBING CODE.
- 38. DISINFECT DOMESTIC WATER SYSTEM IN CONFORMANCE WITH THE SPECIFICATIONS AND THE PLUMBING CODE.
- 39. ALL CONTROL BOXES, VALVES, CONTROL VALVES (OF EVERY TYPE, SHAPE, AND FUNCTION), AND DDC CONTROL BOXES MUST BE INSTALLED IN SUCH A MANNER AS TO BE FULLY AND REASONABLY ACCESSIBLE AND FREE FROM INSULATION OR OTHER CONSTRUCTION COMPONENTS. FULLY AND REASONABLY ACCESSIBLE IS DEFINED AS CAPABLE OF BEING ACCESSIBLE FOR REPAIR OR REPLACEMENT BY AN AVERAGE-SIZE INDIVIDUAL, ON A LADDER IF NECESSARY, AND CAPABLE OF BEING REMOVED WITHOUT REMOVING OTHER COMPONENTS OF THE WORK.
- 40. ELEMENTS OF THE WORK ARE TO BE INSTALLED IN A MANNER SUCH THAT AT SUBSTANTIAL COMPLETION THE FOLLOWING ITEMS, NEW OR EXISTING, SHALL BE "FULLY AND REASONABLY ACCESSIBLE": ALL HVAC CONTROL BOXES, ALL JUNCTION BOXES, ALL VALVES (OF EVERY SHAPE, SORT, AND FUNCTION), ALL DDC CONTROL BOXES, ALL ELECTRICAL PANELS, ALL FILTERS, ALL BELTS, ALL WATER COILS, ALL DISCONNECT SWITCHES AND ALL MAINTENANCE ACCESS ELEMENTS, INCLUDING PULL SPACE.
- 41. "FULLY AND REASONABLY ACCESSIBLE" SHALL BE DEFINED AS: CAPABLE OF BEING ACCESSED FOR SERVICE, REPAIR, OR REPLACEMENT BY AN AVERAGE SIZED INDIVIDUAL (ON A LADDER IF NECESSARY AND CAPABLE OF BEING SERVICED OR REMOVED WITHOUT REMOVING, MODIFYING, OR DISTORTING OTHER COMPONENTS OF THE WORK).
- 42. CONFLICT WITH MEETING THESE REQUIREMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE IN A TIMELY MANNER AND SHALL BE CHANGED AT NO COST TO THE OWNER.
- 43. MECHANICAL AND ELECTRICAL DRAWINGS SHOW PIPE, DUCT, AND CONDUIT RUNS, AND THE LOCATIONS OF EQUIPMENT, VALVES, PANELS AND OTHER COMPONENTS. DIMENSIONS NOT SHOWN MUST BE OBTAINED FROM THE ARCHITECT. AND NOT SCALED FROM THE DRAWINGS. LAY OUT ROUTING AND LOCATIONS TO MEET FIELD CONDITIONS. TO PROVIDE EASY ACCESS FOR SERVICE AND MAINTENANCE, AND TO AVOID CONFLICT BETWEEN THE WORK OF ALL TRADES. SUBMIT PROPOSED ROUTINGS AND LOCATIONS TO THE ARCHITECT FOR APPROVAL, AND MODIFIED OR RELOCATE THEM WITHIN REASONABLE LIMITS, AS DIRECTED, WITHOUT EXTRA COST.
- 44. PROVIDE EQUIPMENT AND APPARATUS COMPLETE WITH ALL THE USUAL AND NECESSARY FITTINGS AND ACCESSORIES NOT NORMALLY SHOWN OR SPECIFIED, BUT WHICH ARE REQUIRED FOR PROPER INSTALLATION AND OPERATION. PLACE GAUGES, THERMOSTATS, THERMOMETERS, AND OTHER ACCESSORIES, NOT SPECIFICALLY LOCATED ON THE DRAWINGS, WHERE DIRECTED BY THE ARCHITECT.

PIPING SYSTEM ABBREVIATIONS

Table of piping system abbreviations including RWC (Rainwater Conductor), ORD (Overflow Drain), SSD (Soil Subdrain), PD (Pumped Drain), SAN (Sanitary Waste Drain), SV (Sanitary Vent), LW (Laboratory Waste), LWV (Laboratory Waste Vent), SC (Secondary Containment), AW (Animal Drinking Water), CW (Domestic Cold Water), HW (Domestic Hot Water), HWR (Domestic Hot Water Return), LOW (Laboratory Cold Water), LHW (Laboratory Hot Water), LHR (Laboratory Hot Water Return), PW (Pure Water), TW (Tempered Water), RWR (Rainwater Reclamation Water), SW (Softened Water), SW 95 (Softened Water - Preheated to 95 Degrees), AR (Argon), CA (Compressed Air), CO2 (Carbon Dioxide), FAI (Fresh Air Inlet), GM (Gas Manifold), H (Hydrogen), HE (Helium), HPA (High Pressure Compressed Air), MA (Medical Air), MRV (Manifold Relief Vent), MV (Medical Vacuum), N (Nitrogen), N2O (Nitrous Oxide), NG (Natural Gas), NSV (Natural Gas Vent), OX (Oxygen), VAC (Lab Vacuum), SG (Special Gas), WAGD (Waste Anesthesia Gas Disposal).

KEYPLAN:



SEAL:



CONDITION OF USE: WHEN THIS DOCUMENT IS SUPPLIED TO EITHER OWNER OR CONTRACTOR, IN EITHER PAPER OR ELECTRONIC FORM, THE DOCUMENT IS SUBJECT TO THE CONDITIONS OF THE AGREEMENT BETWEEN THE OWNER AND BALLINGER AND TO BALLINGER'S COPYRIGHT AND OTHER RIGHTS IN THE DOCUMENT. CONTRACTOR AND OTHER RIGHTS IN THE DOCUMENT SHALL REMAIN THE PROPERTY OF BALLINGER. THIS DOCUMENT IS AVAILABLE TO SUBCONTRACTORS, SUBJECT TO THE SIGNATURE OF CONTRACTOR. BALLINGER HAS A CONVENIENCE TO SUCH SUBCONTRACTORS IN THEIR PREPARATION OF SHOP DRAWINGS. THE PROVIDER OF THIS DOCUMENT BY BALLINGER SHALL NOT MAKE BALLINGER RESPONSIBLE IN ANY WAY FOR ANY ASPECT OF THE SUBCONTRACTOR'S SHOP DRAWINGS, NOR RELIEVE SUBCONTRACTORS FROM ALL RESPONSIBILITY FOR PREPARATION OF THEIR REQUIRED SHOP DRAWINGS.

06/29/23 CONFORMED SET 06/29/23 CONSTRUCTION DOCUMENTS DRAWING ISSUE

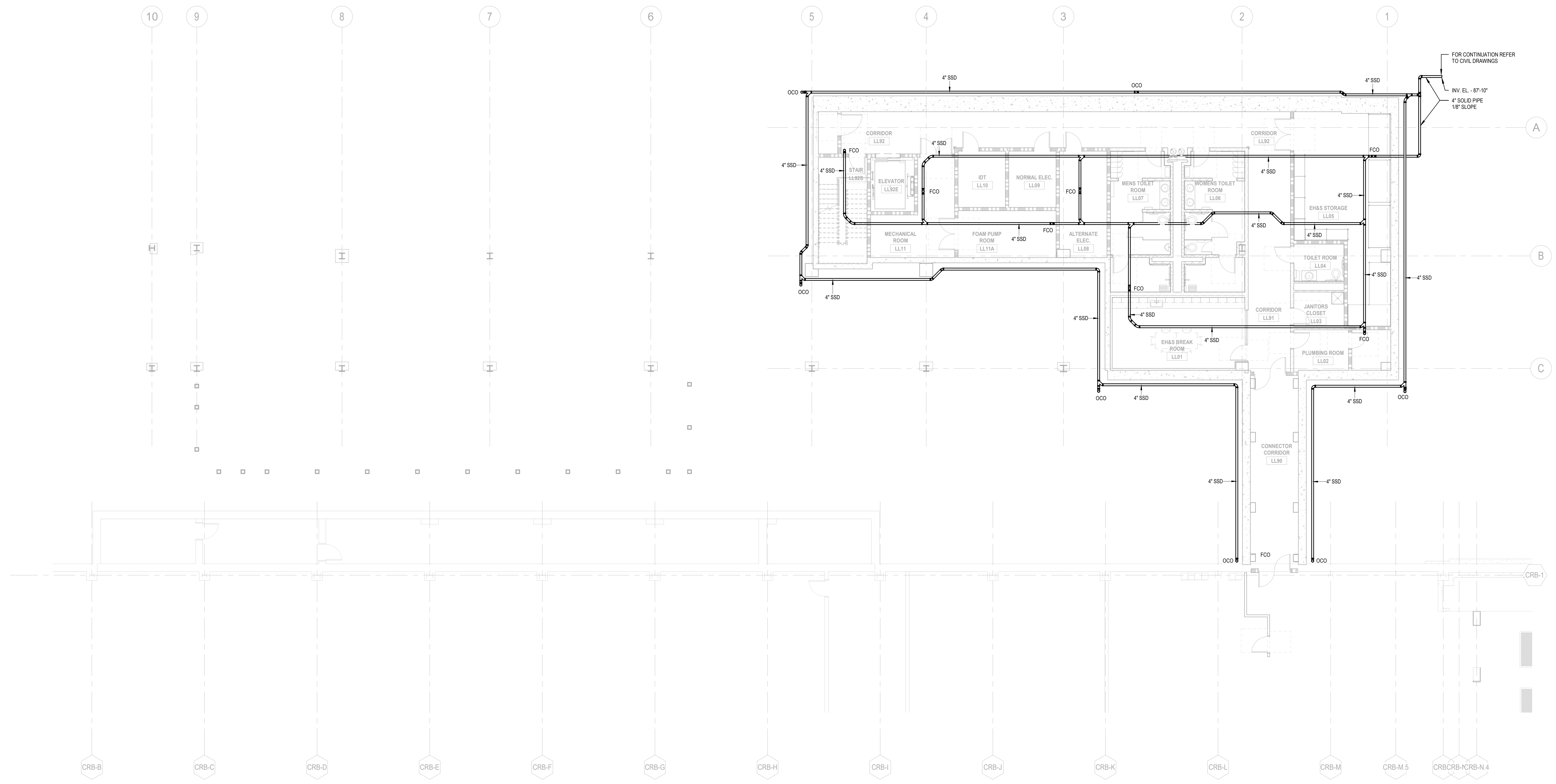
PROJECT: 21029.00 SCALE: 1/2" = 1'-0"

PLUMBING

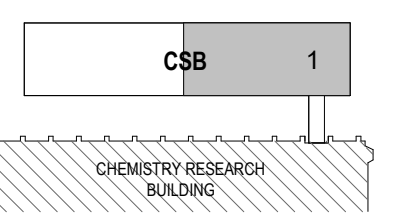
TITLE: PLUMBING SYMBOLS, NOTES AND ABBREVIATIONS

CHEMICAL SAFETY BUILDING NUMBER:

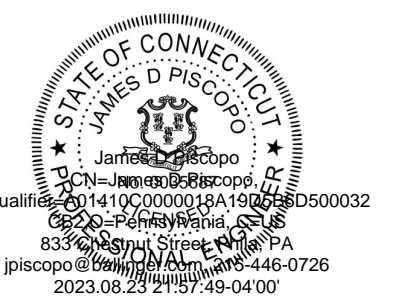
P001



KEYPLAN:



SEAL:



CONDITION OF USE
WHEN THIS DOCUMENT IS SUPPLIED TO OTHER OWNER OR CONTRACTOR, IN EITHER PAPER OR ELECTRONIC FORM, THE SUBSEQUENT USE OF THE INFORMATION CONTAINED ON THE DOCUMENT IS SUBJECT TO THE CONDITIONS OF THE AGREEMENT BETWEEN THE OWNER AND BALLINGER AND TO BALLINGER'S COPYRIGHT AND OTHER RIGHTS IN THIS DOCUMENT CONTRACTOR WAIVES ELECTRONIC REUSE OF THIS DOCUMENT AVAILABLE TO SUBCONTRACTORS. SUBJECT TO THE STATEMENT OF CONDITIONS OF USE, BALLINGER CONSENTS TO SUCH SUBCONTRACTORS IN THEIR PREPARATION OF SHOP DRAWINGS. THE PROVIDER OF THIS DOCUMENT BY BALLINGER SHALL NOT MAKE BALLINGER RESPONSIBLE IN ANY WAY FOR ANY ASPECT OF THE SUBCONTRACTOR'S SHOP DRAWINGS, NOR RELIEVE SUBCONTRACTORS FROM ALL RESPONSIBILITY FOR PREPARATION OF THEIR REQUIRED SHOP DRAWINGS.

08/29/23 CONFORMED SET
08/30/23 CONSTRUCTION DOCUMENTS
DRAWING ISSUE

PROJECT: 210229.00
SCALE: 1/8" = 1'-0"

PLUMBING

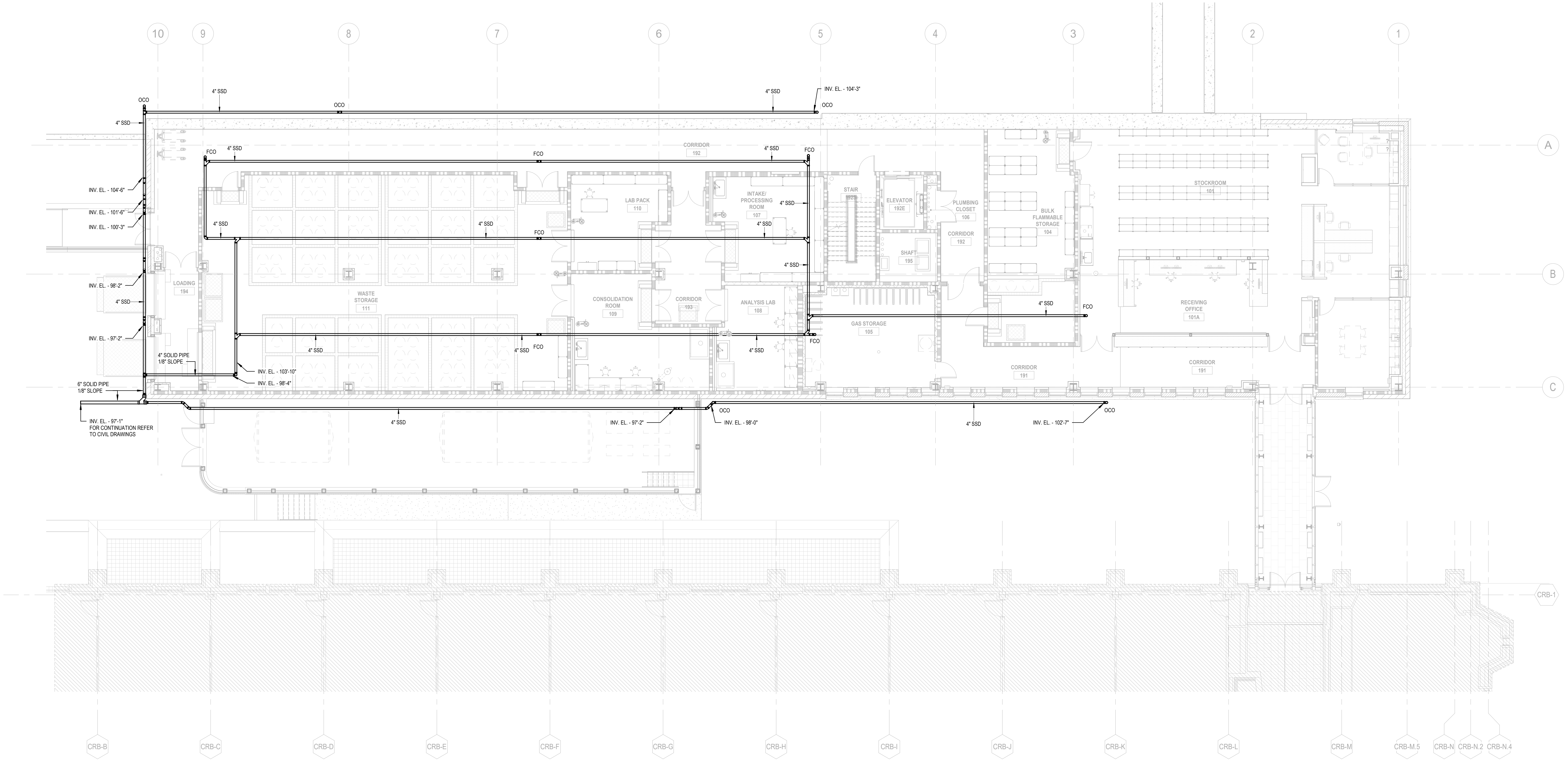
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UNDER SLAB AND PERIMETER DRAINAGE PIPING

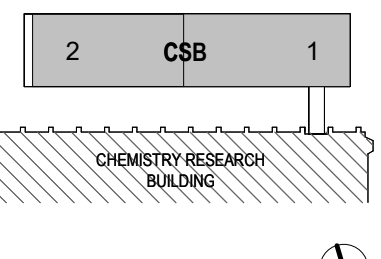
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NUMBER:

P100U

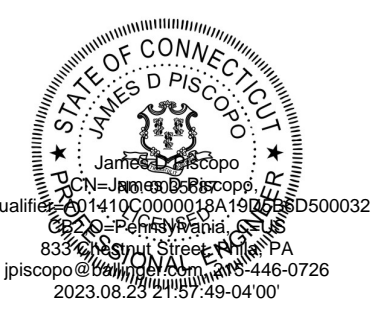
1/8" = 1'-0" 1 FLOOR PLAN
P-FP-00 CSB LOWER LEVEL UNDERSLAB DRAINAGE PLAN



KEYPLAN:



SEAL:



CONDITION OF USE
WHEN THIS DOCUMENT IS SUPPLIED TO EITHER OWNER OR CONTRACTOR, IN EITHER PAPER OR ELECTRONIC FORM, THE SUBSCRIBER USES OF THE INFORMATION CONTAINED ON THE DOCUMENT IS SUBJECT TO THE CONDITIONS OF THE AGREEMENT BETWEEN THE OWNER AND BALLINGER AND TO BALLINGER'S COPYRIGHT AND OTHER RIGHTS IN THIS DOCUMENT. CONTRACTOR SHALL MAKE ELECTRONIC FILES OF THIS DOCUMENT AVAILABLE TO SUBCONTRACTORS, SUBJECT TO THE STATEMENT OF CONDITIONS OF USE, LOCATED AS A CONVENIENCE TO SUCH SUBCONTRACTORS IN THEIR PREPARATION OF SHOP DRAWINGS. THE PROVIDER OF THIS DOCUMENT BY BALLINGER SHALL NOT MAKE BALLINGER RESPONSIBLE IN ANY WAY FOR ANY ASPECT OF THE SUBCONTRACTOR'S SHOP DRAWINGS, NOR RELIEVE SUBCONTRACTORS FROM FULL RESPONSIBILITY FOR PREPARATION OF THEIR REQUIRED SHOP DRAWINGS.

08/25/23 CONFORMED SET
05/18/23 ADDENDUM NO. 1
05/03/23 CONSTRUCTION DOCUMENTS
DRAWING ISSUE

PROJECT: 210209.00
SCALE: 1/8" = 1'-0"
PLUMBING

TITLE:
UNDER SLAB AND PERIMETER DRAINAGE PIPING

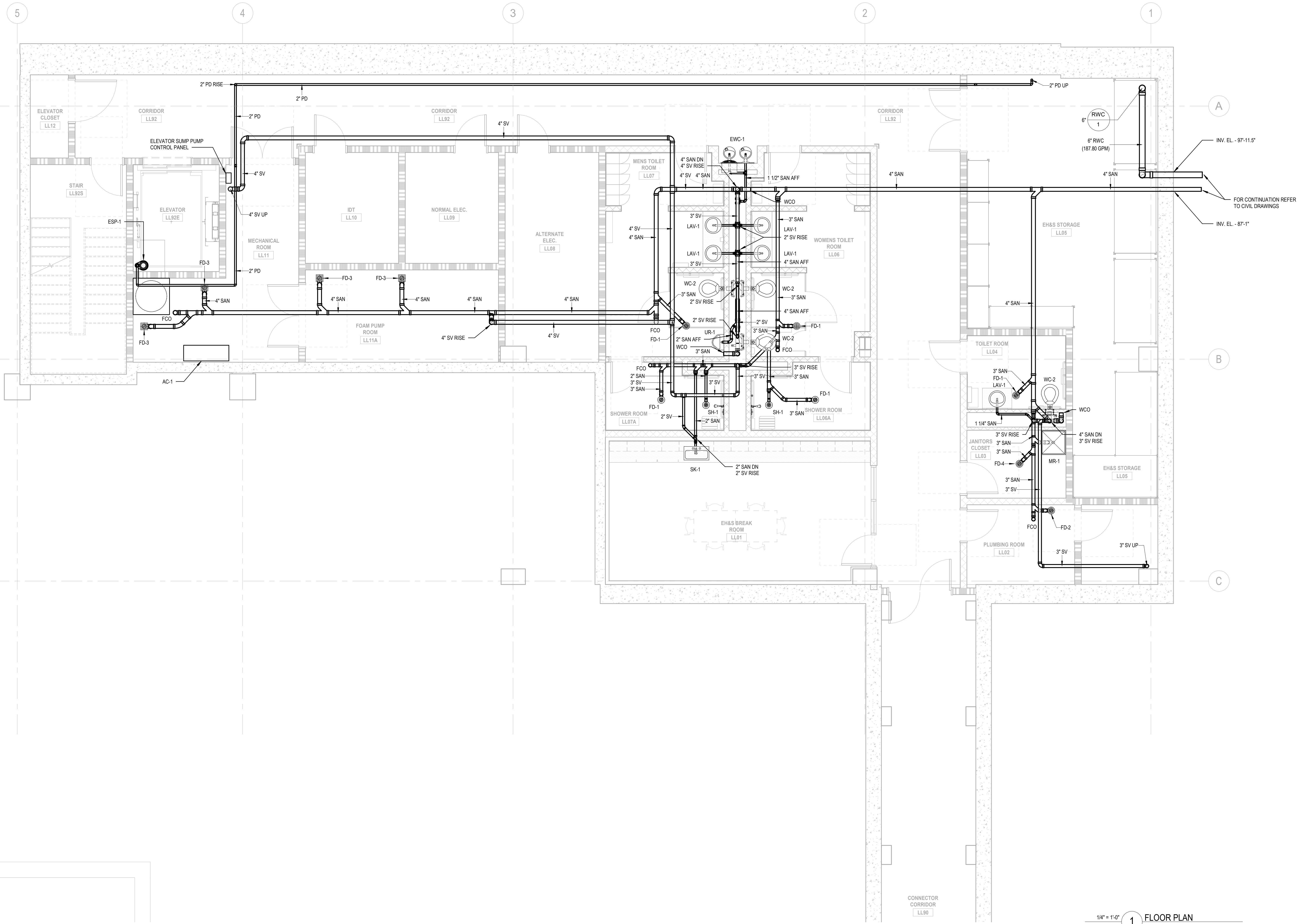
CHEMICAL SAFETY BUILDING
NUMBER:

P101U

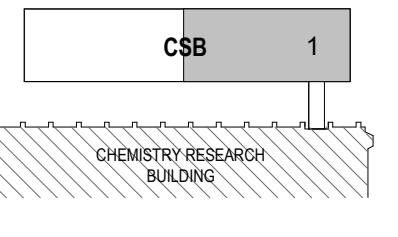
1/8" = 1'-0" 1 FLOOR PLAN
P-FP-01 CSB FIRST FLOOR UNDERSLAB DRAINAGE PLAN

DRAINAGE PIPING PLAN NOTES:

1. SYMBOLS AND ABBREVIATIONS ARE SHOWN ON DRAWING NUMBER P001.
2. ALL DRAINAGE PIPING TO BE RUN BELOW SLAB UNLESS OTHERWISE NOTED.
3. ALL VENTS AND RAIN WATER CONDUCTORS TO BE RUN ABOVE CEILING UNLESS OTHERWISE NOTED.
4. ROUTE DRAINAGE PIPING IN BEAM POCKETS WHERE POSSIBLE. ROUTE DRAINAGE PIPING TIGHT TO UNDERSIDE OF BEAMS WHERE CROSSING UNDER STRUCTURE. COORDINATE DRAINAGE PIPING HEIGHTS CLOSELY WITH DUCTWORK ELEVATIONS.
5. DO NOT RUN PIPING THROUGH ELECTRICAL ROOMS, ELEVATOR SHAFTS, ELEVATOR MACHINE ROOMS, TELE DATA ROOMS OR STAIRWELLS.
6. PROVIDE CLEANOUTS AT THE BASE OF ALL STACKS, LEADERS AND AT ALL CHANGE OF DIRECTIONS GREATER THAN 45 DEGREES. AT HORIZONTAL DISTANCES GREATER THAN 50' ON PIPING 4 INCHES IN DIAMETER AND SMALLER, AT HORIZONTAL DISTANCES GREATER THAN 100 FEET FOR PIPING GREATER THAN 4 INCHES IN DIAMETER, AND IN CONFORMANCE WITH THE LOCAL PLUMBING CODE. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
7. PROVIDE NONCOMBUSTIBLE INSULATION ON ALL PLASTIC PIPING IN PLENUM SPACES. INSULATION SHALL HAVE A FLAME SPREAD RATING OF NOT MORE THAN 25 AND A SMOKE DEVELOPED RATING OF NOT MORE THAN 50 IN CONFORMANCE WITH ASTM E 84.
8. PIPING MATERIAL IS INDICATED IN THE SPECIFICATIONS. IDENTIFY PIPING AS SPECIFIED.
9. SLEEVE AND SEAL PIPING PENETRATIONS AS INDICATED IN THE SPECIFICATIONS.
10. COORDINATE PIPING WITH MECHANICAL DUCTWORK, PIPING AND EQUIPMENT.
11. COORDINATE ROUGH IN LOCATIONS WITH ARCHITECTURAL DRAWINGS.
12. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND NUMBER OF PLUMBING FIXTURES, FLOOR SINKS AND FLOOR DRAINS.
13. REFER TO ARCHITECTURAL DRAWINGS FOR FURTHER INFORMATION ON LAB SINKS, CASEWORK, FUME HOODS AND EQUIPMENT.
14. PROVIDE TRAP PRIMERS TO ALL INDIRECT WASTE PREVENTERS AND FLOOR DRAINS. ALL TRAP PRIMER PIPING MUST SLOPE CONTINUOUSLY TO DRAIN TAILPIECES.
15. ROUTE INDIRECT WASTE PIPING FROM BACKFLOW PREVENTERS TO INDIRECT WASTE DRAINS OR FLOOR SINKS.
16. INDIVIDUAL WASTE AND VENT PIPE SIZES TO PLUMBING FIXTURES WILL BE THE SAME SIZE AS INDICATED ON PLUMBING FIXTURE SCHEDULE FOR ROUGH-INS.
17. INDIVIDUAL WASTE AND VENT PIPE SIZES TO EMERGENCY PLUMBING FIXTURES WILL BE THE SAME SIZE AS INDICATED ON EMERGENCY PLUMBING FIXTURE SCHEDULE FOR ROUGH-INS.
18. FINAL CONNECTIONS TO OTOI EQUIPMENT SHALL BE PROVIDED BY OWNER.
19. FINAL CONNECTIONS TO ALL EQUIPMENT FURNISHED UNDER THIS CONTRACT SHALL BE MADE BY THE PLUMBING CONTRACTOR.



KEYPLAN:



SEAL:



CONDITION OF USE
 WHEN THIS DOCUMENT IS SHOWN TO OTHER OWNER OR CONTRACTOR, IN EITHER PAPER OR ELECTRONIC FORM, THE SUBSCRIBER'S USE OF THE INFORMATION CONTAINED ON THE DOCUMENT IS SUBJECT TO THE CONDITIONS OF THE AGREEMENT BETWEEN THE OWNER AND BALLINGER. BALLINGER'S COPYRIGHT AND OTHER RIGHTS IN THIS DOCUMENT CONTRACTOR SHALL MAKE ELECTRONIC FILES OF THIS DOCUMENT AVAILABLE TO SUBCONTRACTORS, SUBJECT TO THE STATEMENT OF CONDITIONS OF USE, LOCATED IN CONFORMANCE TO SUCH SUBCONTRACTORS IN THEIR PREPARATION OF SHOP DRAWINGS. THE PROVIDER OF THIS DOCUMENT BY BALLINGER SHALL NOT MAKE BALLINGER RESPONSIBLE IN ANY WAY FOR ANY ASPECT OF THE SUBCONTRACTORS' SHOP DRAWINGS, NOR RELIEVE SUBCONTRACTORS FROM FULL RESPONSIBILITY FOR PREPARATION OF THEIR REQUIRED SHOP DRAWINGS.

06/25/23 CONFORMED SET
 06/13/23 ADDENDUM NO. 3
 05/18/23 ADDENDUM NO. 1
 06/03/23 CONSTRUCTION DOCUMENTS
 DRAWING ISSUE

PROJECT: 210229.00
 SCALE: 1/4" = 1'-0"
 PLUMBING
 TITLE:

LOWER LEVEL DRAINAGE PLAN - AREA 1

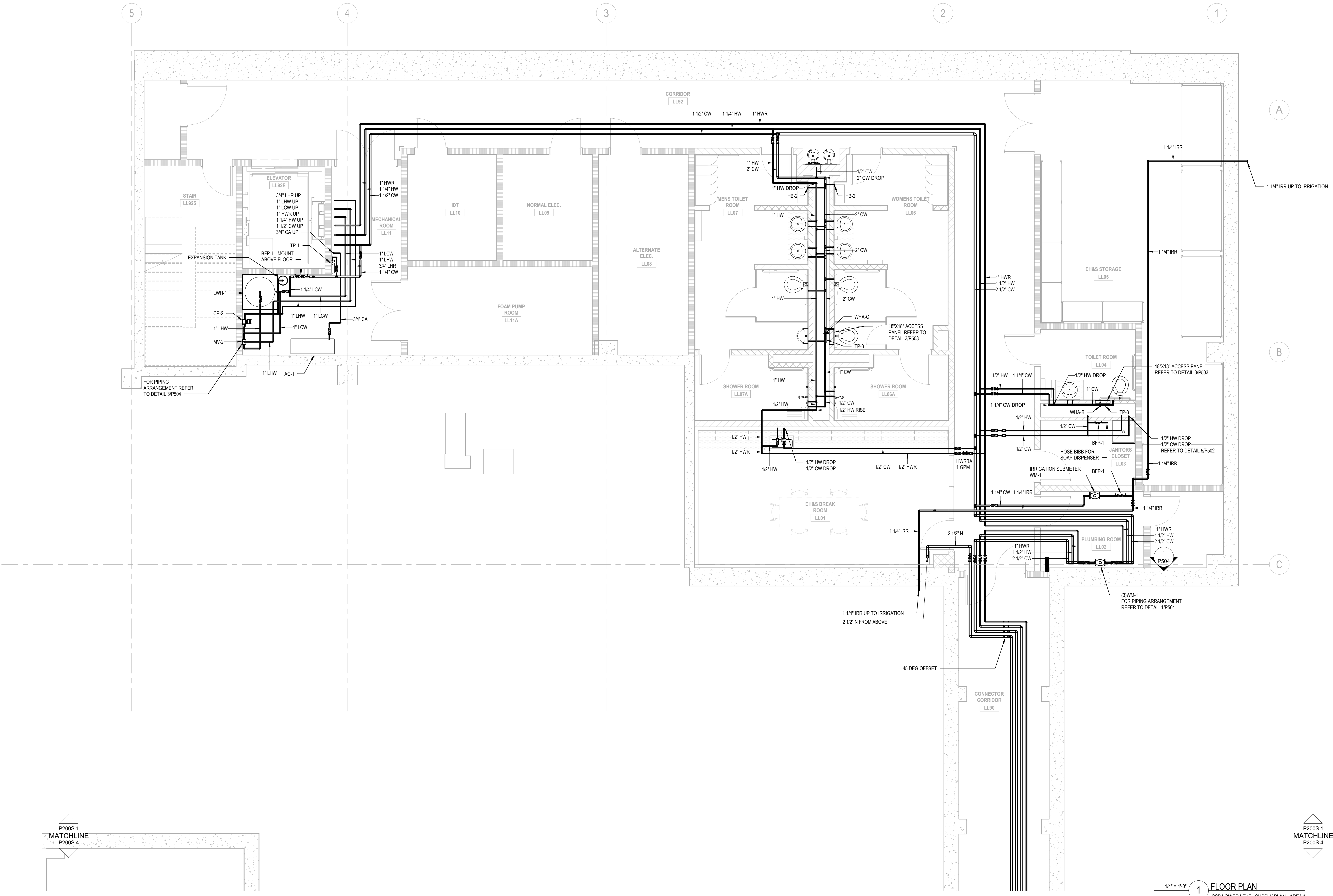
CHEMICAL SAFETY BUILDING
 NUMBER:

P200D.1

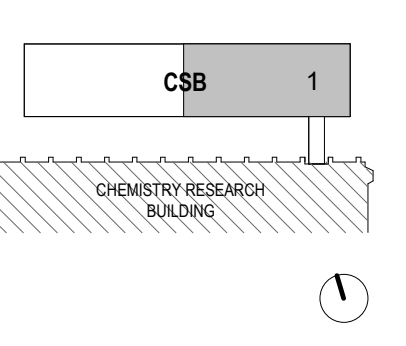
1/4" = 1'-0" 1 FLOOR PLAN
 CSB LOWER LEVEL DRAINAGE PLAN - PART 1

SERVICE PIPING PLAN NOTES:

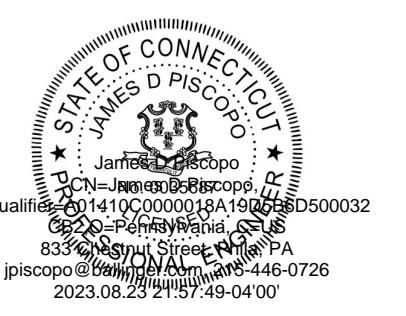
1. SYMBOLS AND ABBREVIATIONS ARE SHOWN ON DRAWING NUMBER P001.
2. ALL SERVICE PIPING TO BE RUN ABOVE CEILING UNLESS OTHERWISE NOTED.
3. LOCATE SERVICE VALVES AND BALANCING VALVES IN ACCESSIBLE LOCATION. DO NOT INSTALL VALVES ABOVE DUCTWORK OR ELECTRICAL CABLE TRAYS.
4. PROVIDE WATER HAMMER ARRESTORS WHERE QUICK CLOSING VALVES ARE INSTALLED. WATER HAMMER ARRESTORS SHALL BE LOCATED BEHIND A WALL MOUNTED ACCESS PANEL ACCESSIBLE FOR MAINTENANCE.
5. PROVIDE TRAP PRIMERS TO ALL INDIRECT WASTE RECEPTORS AND FLOOR DRAINS.
6. DO NOT LOCATE WATER PIPING ABOVE ELECTRICAL PANELS, LIGHT SWITCHES OR ELECTRICAL OUTLETS.
7. DO NOT LOCATE SERVICE PIPING THROUGH ELECTRICAL ROOMS, ELEVATOR SHAFTS, ELEVATOR MACHINE ROOMS, TELE DATA ROOMS OR STAIRWELLS.
8. PIPING MATERIAL IS INDICATED IN THE SPECIFICATIONS. IDENTIFY PIPING AS SPECIFIED.
9. SLEEVE AND SEAL PIPE PENETRATIONS AS INDICATED IN THE SPECIFICATIONS.
10. COORDINATE PIPING AND VALVE LOCATIONS WITH MECHANICAL DUCTWORK, PIPING AND EQUIPMENT.
11. COORDINATE ROUGH IN LOCATIONS WITH ARCHITECTURAL DRAWINGS.
12. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND NUMBER OF PLUMBING FIXTURES AND GAS OUTLETS.
13. REFER TO ARCHITECTURAL DRAWINGS FOR FURTHER INFORMATION ON LAB SINKS, EQUIPMENT, FUME HOODS, CASEWORK AND SERVICE OUTLETS.
14. INDIVIDUAL SERVICE PIPE SIZES TO PLUMBING FIXTURES WILL BE THE SAME SIZE AS INDICATED ON PLUMBING FIXTURE SCHEDULE FOR ROUGH-INS.
15. INDIVIDUAL PIPE SIZES TO LABORATORY SERVICE OUTLETS WILL BE 1/2" FOR GAS CONNECTIONS AND 3/4" FOR VACUUM.
16. FINAL CONNECTIONS TO OTOI EQUIPMENT SHALL BE PROVIDED BY OWNER.
17. FINAL CONNECTIONS TO ALL EQUIPMENT FURNISHED UNDER THIS CONTRACT SHALL BE MADE BY THE PLUMBING CONTRACTOR.
18. REFER TO DRAINAGE PLANS FOR PLUMBING FIXTURES DESIGNATION.



KEYPLAN:



SEAL:



CONDITION OF USE
 WHEN THIS DOCUMENT IS SHOWN TO EITHER OWNER OR CONTRACTOR IN EITHER PAPER OR ELECTRONIC FORM, THE SUBSCRIBER USE OF THE INFORMATION CONTAINED ON THE DOCUMENT IS SUBJECT TO THE CONDITIONS OF THE AGREEMENT BETWEEN THE OWNER AND BALLINGER AND TO BALLINGER'S COPYRIGHT AND OTHER RIGHTS IN THIS DOCUMENT. CONTRACTOR SHALL MAKE ELECTRONIC FILES OF THIS DOCUMENT AVAILABLE TO SUBCONTRACTORS, SUBJECT TO THE RESTRICTIONS OF CONDITIONS OF USE, SCHEDULE A. CONFORMANCE TO SUCH SUBCONTRACTORS IN THEIR PREPARATION OF SHOP DRAWINGS, THE PROVIDER OF THIS DOCUMENT BY BALLINGER SHALL NOT MAKE BALLINGER RESPONSIBLE IN ANY WAY FOR ANY ASPECT OF THE SUBCONTRACTORS SHOP DRAWINGS, NOR RELIEVE SUBCONTRACTORS FROM FULL RESPONSIBILITY FOR PREPARATION OF THEIR REQUIRED SHOP DRAWINGS.

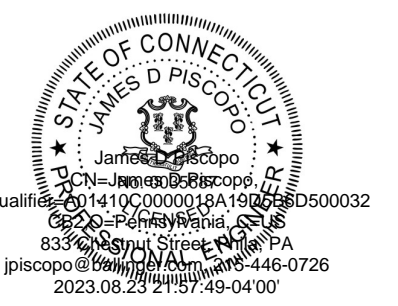
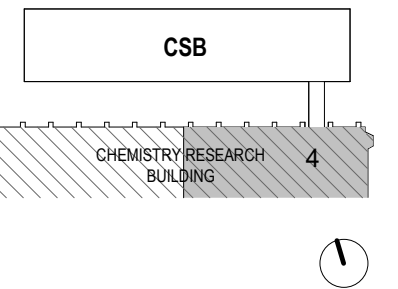
08/29/23 CONFORMED SET
 06/03/23 CONSTRUCTION DOCUMENTS
 DRAWING ISSUE

PROJECT: 210229.00
 SCALE: 1/4" = 1'-0"
 PLUMBING

TITLE:
 LOWER LEVEL
 SUPPLY PLAN -
 AREA 1

CHEMICAL SAFETY BUILDING
 NUMBER:

P200S.1



CONDITION OF USE
WHEN THIS DOCUMENT IS SUPPLIED TO EITHER OWNER OR CONTRACTOR IN EITHER PAPER OR ELECTRONIC FORM, THE SUBSEQUENT USE OF THE INFORMATION CONTAINED ON THE DOCUMENT IS SUBJECT TO THE CONDITIONS OF THE AGREEMENT BETWEEN THE OWNER AND BALLINGER AND TO BALLINGER'S COPYRIGHT AND OTHER RIGHTS IN THE DOCUMENT. CONTRACTOR SHALL MAKE ELECTRONIC FILES OF THIS DOCUMENT AVAILABLE TO SUBCONTRACTORS, SUBJECT TO THE RESTRICTIONS OR CONDITIONS OF USE, AS SET FORTH IN THE AGREEMENT TO SUCH SUBCONTRACTORS IN THEIR PREPARATION OF SHOP DRAWINGS. THE PROVIDER OF THIS DOCUMENT BY BALLINGER SHALL NOT MAKE BALLINGER RESPONSIBLE IN ANY WAY FOR ANY ASPECT OF THE SUBCONTRACTOR'S SHOP DRAWINGS, NOR RELIEVE SUBCONTRACTORS FROM FULL RESPONSIBILITY FOR PREPARATION OF THEIR REQUIRED SHOP DRAWINGS.

08/25/23 CONFORMED SET
08/23/23 CONSTRUCTION DOCUMENTS
DRAWING ISSUE

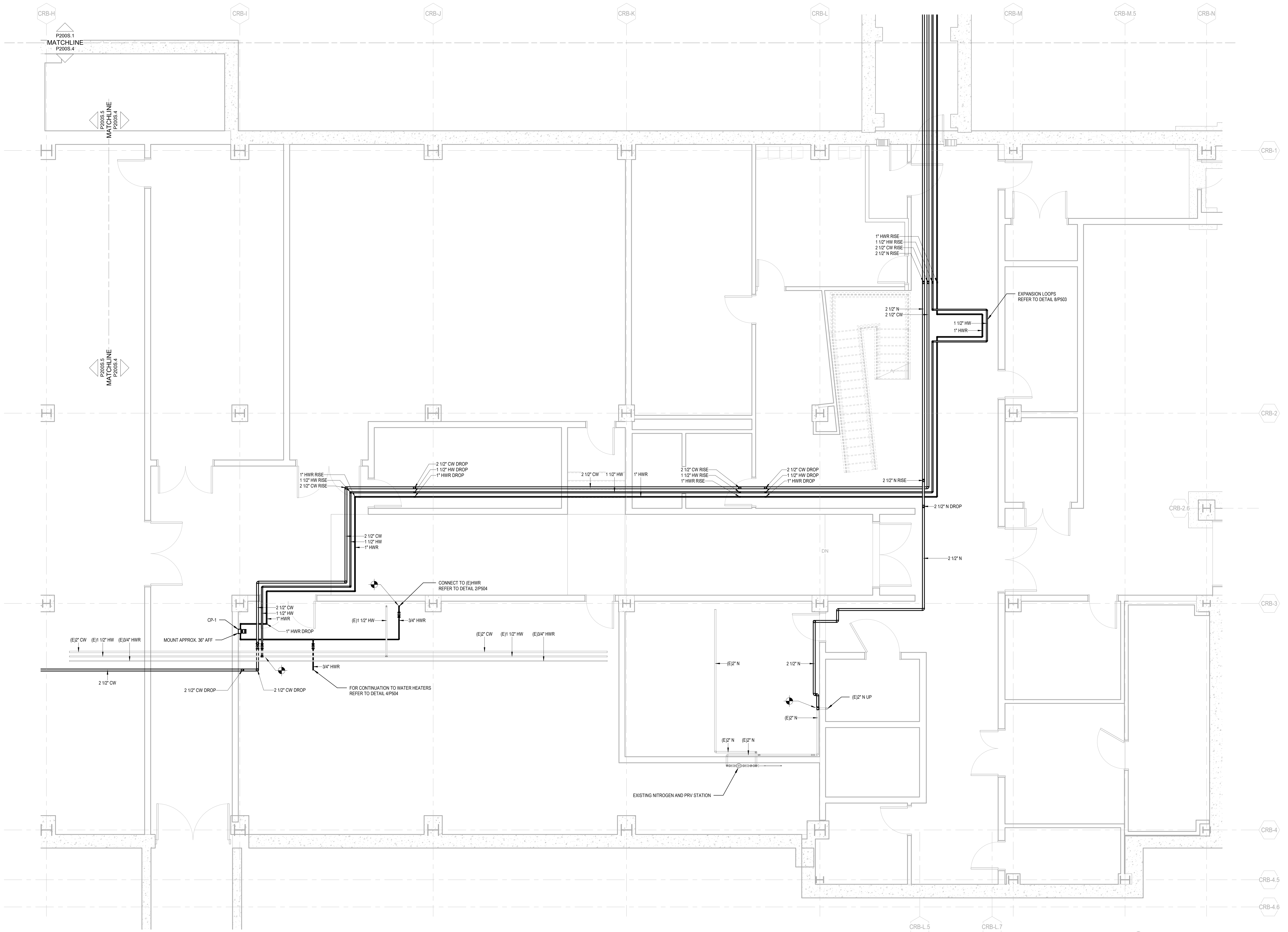
PROJECT: 21029.00
SCALE: 1/4" = 1'-0"

PLUMBING

TITLE:
LOWER LEVEL
SUPPLY PLAN -
AREA 4

CHEMICAL SAFETY BUILDING
NUMBER:

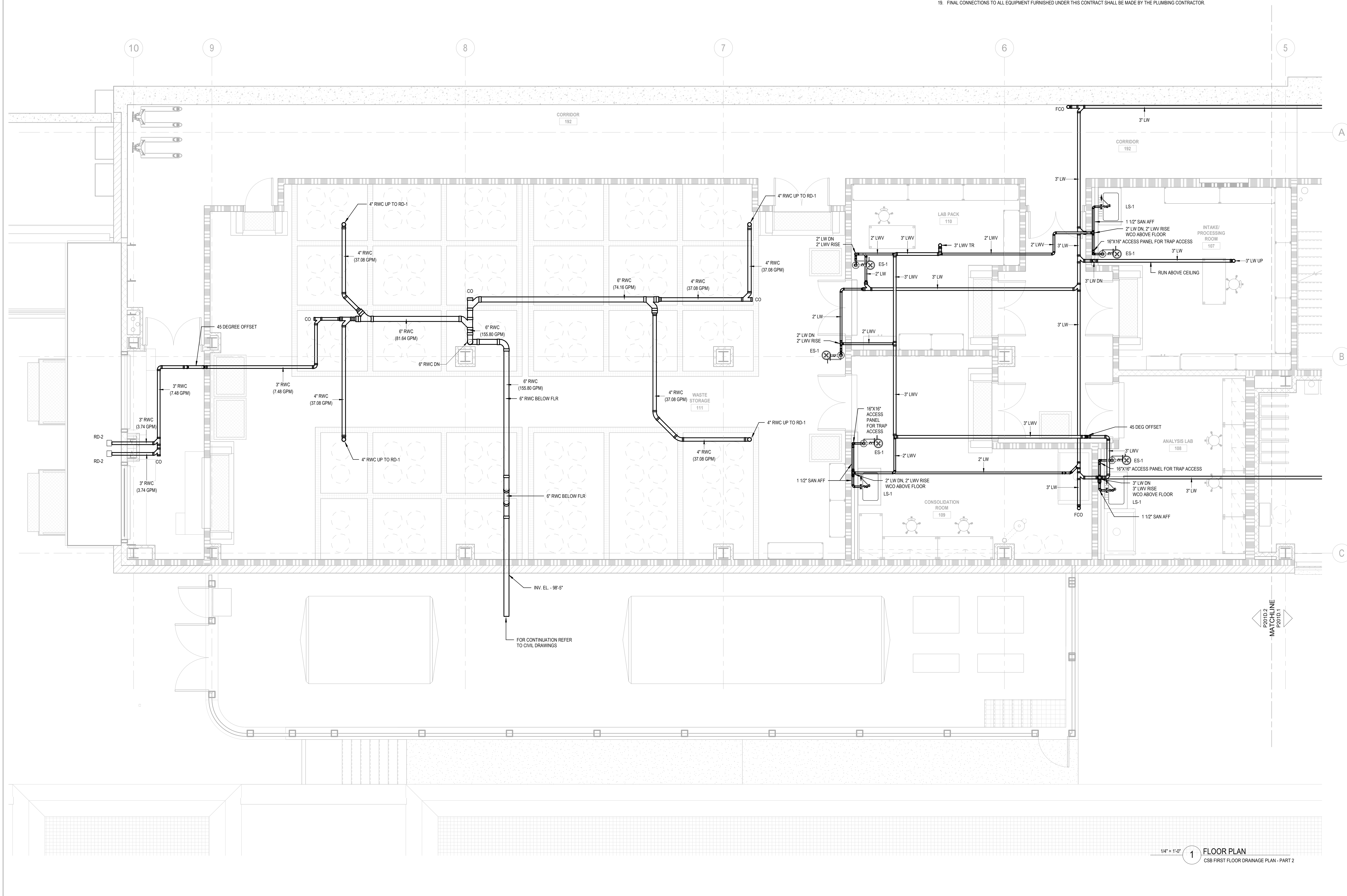
P200S.4



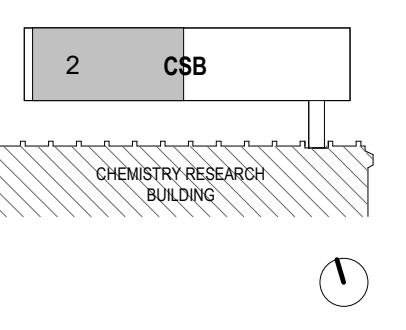
1/4" = 1'-0" 1 FLOOR PLAN
CSB LOWER LEVEL SUPPLY PLAN - AREA 4

DRAINAGE PIPING PLAN NOTES:

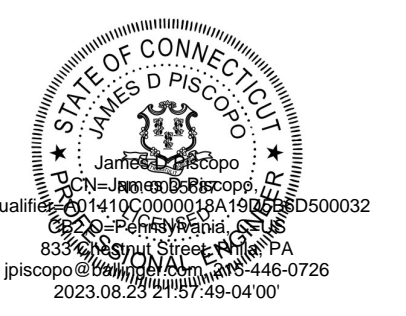
1. SYMBOLS AND ABBREVIATIONS ARE SHOWN ON DRAWING NUMBER P001.
2. ALL DRAINAGE PIPING TO BE RUN BELOW SLAB UNLESS OTHERWISE NOTED.
3. ALL VENTS AND RAIN WATER CONDUCTORS TO BE RUN ABOVE CEILING UNLESS OTHERWISE NOTED.
4. ROUTE DRAINAGE PIPING IN BEAM POCKETS WHERE POSSIBLE. ROUTE DRAINAGE PIPING TIGHT TO UNDERSIDE OF BEAMS WHERE CROSSING UNDER STRUCTURE. COORDINATE DRAINAGE PIPING HEIGHTS CLOSELY WITH DUCTWORK ELEVATIONS.
5. DO NOT RUN PIPING THROUGH ELECTRICAL ROOMS, ELEVATOR SHAFTS, ELEVATOR MACHINE ROOMS, TELE DATA ROOMS OR STAIRWELLS.
6. PROVIDE CLEANOUTS AT THE BASE OF ALL STACKS, LEADERS AND AT ALL CHANGE OF DIRECTIONS GREATER THAN 45 DEGREES. AT HORIZONTAL DISTANCES GREATER THE 50' ON PIPING 4 INCHES IN DIAMETER AND SMALLER, AT HORIZONTAL DISTANCES GREATER THAN 100 FEET FOR PIPING GREATER THAN 4 INCHES IN DIAMETER, AND IN CONFORMANCE WITH THE LOCAL PLUMBING CODE. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
7. PROVIDE NONCOMBUSTIBLE INSULATION ON ALL PLASTIC PIPING IN PLENUM SPACES. INSULATION SHALL HAVE A FLAME SPREAD RATING OF NOT MORE THAN 25 AND A SMOKE DEVELOPED RATING OF NOT MORE THAN 50 IN CONFORMANCE WITH ASTM E 84.
8. PIPING MATERIAL IS INDICATED IN THE SPECIFICATIONS. IDENTIFY PIPING AS SPECIFIED.
9. SLEEVE AND SEAL PIPING PENETRATIONS AS INDICATED IN THE SPECIFICATIONS.
10. COORDINATE PIPING WITH MECHANICAL DUCTWORK, PIPING AND EQUIPMENT.
11. COORDINATE ROUGH-IN LOCATIONS WITH ARCHITECTURAL DRAWINGS.
12. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND NUMBER OF PLUMBING FIXTURES, FLOOR SINKS AND FLOOR DRAINS.
13. REFER TO ARCHITECTURAL DRAWINGS FOR FURTHER INFORMATION ON LAB SINKS, CASEWORK, FUME HOODS AND EQUIPMENT.
14. PROVIDE TRAP PRIMERS TO ALL INDIRECT WASTE RECEPTORS AND FLOOR DRAINS. ALL TRAP PRIMER PIPING MUST SLOPE CONTINUOUSLY TO DRAIN TAILPIECES.
15. ROUTE INDIRECT WASTE PIPING FROM BACKFLOW PREVENTERS TO INDIRECT WASTE DRAINS OR FLOOR SINKS.
16. INDIVIDUAL WASTE AND VENT PIPE SIZES TO PLUMBING FIXTURES WILL BE THE SAME SIZE AS INDICATED ON PLUMBING FIXTURE SCHEDULE FOR ROUGH-INS.
17. INDIVIDUAL WASTE AND VENT PIPE SIZES TO EMERGENCY PLUMBING FIXTURES WILL BE THE SAME SIZE AS INDICATED ON EMERGENCY PLUMBING FIXTURE SCHEDULE FOR ROUGH-INS.
18. FINAL CONNECTIONS TO O/F/O EQUIPMENT SHALL BE PROVIDED BY OWNER.
19. FINAL CONNECTIONS TO ALL EQUIPMENT FURNISHED UNDER THIS CONTRACT SHALL BE MADE BY THE PLUMBING CONTRACTOR.



KEYPLAN:



SEAL:



CONDITION OF USE
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08/25/23 CONFORMED SET
 08/23/23 CONSTRUCTION DOCUMENTS
 DRAWING ISSUE

PROJECT: 21029.00
 SCALE: 1/4" = 1'-0"
 PLUMBING

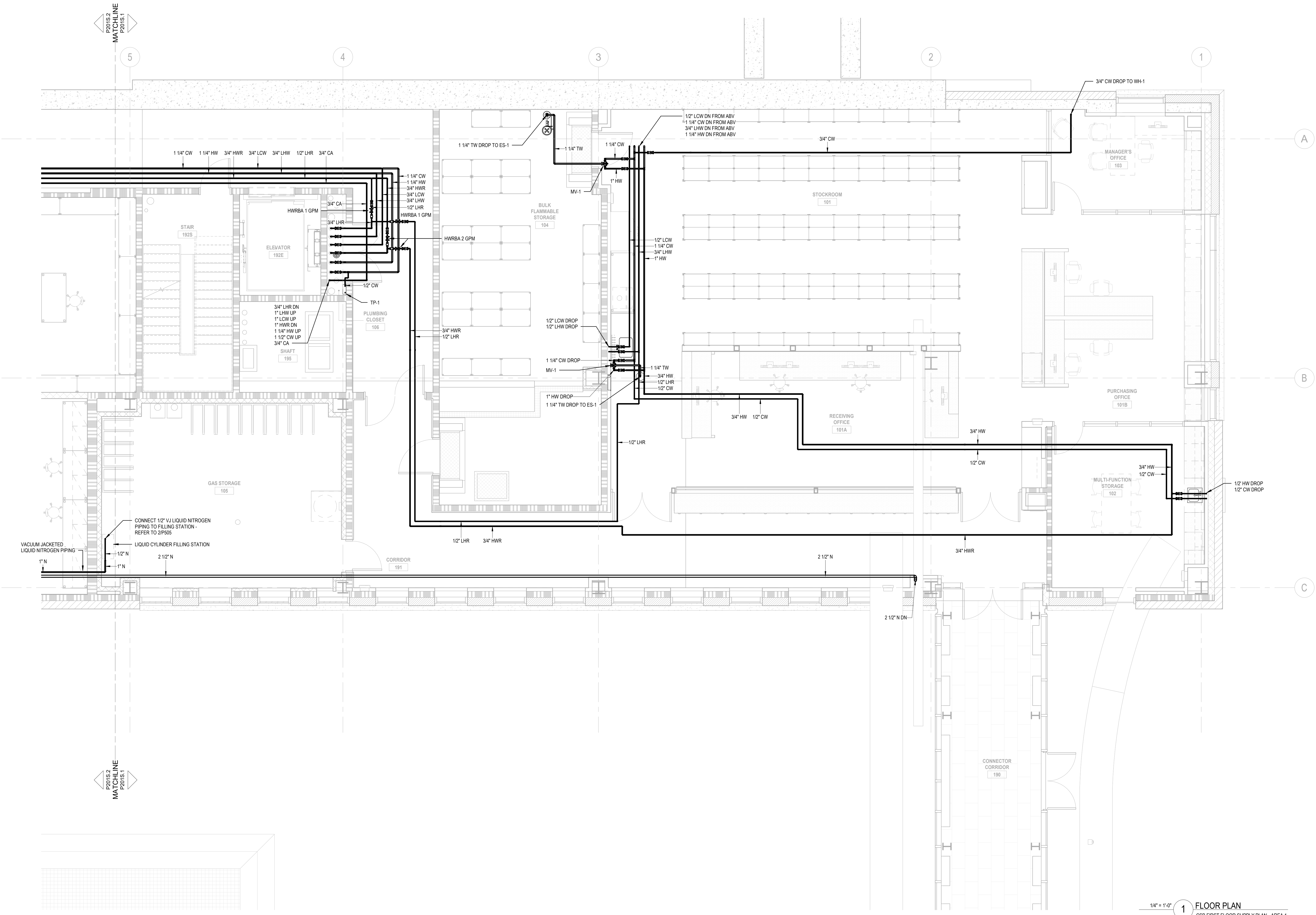
TITLE:
 FIRST FLOOR DRAINAGE PLAN - AREA 2

CHEMICAL SAFETY BUILDING
 NUMBER:

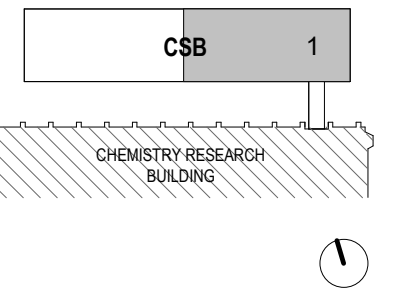
P201D.2

SERVICE PIPING PLAN NOTES:

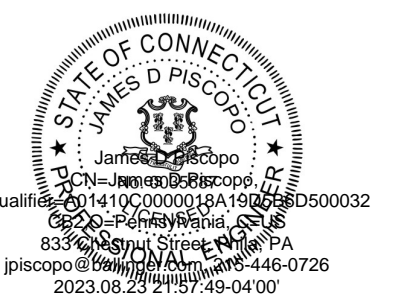
1. SYMBOLS AND ABBREVIATIONS ARE SHOWN ON DRAWING NUMBER P101
2. ALL SERVICE PIPING TO BE RUN ABOVE CEILING UNLESS OTHERWISE NOTED.
3. LOCATE SERVICE VALVES AND BALANCING VALVES IN ACCESSIBLE LOCATION. DO NOT INSTALL VALVES ABOVE DUCTWORK OR ELECTRICAL CABLE TRAYS.
4. PROVIDE WATER HAMMER ARRESTORS WHERE QUICK CLOSING VALVES ARE INSTALLED. WATER HAMMER ARRESTORS SHALL BE LOCATED BEHIND A WALL MOUNTED ACCESS PANEL ACCESSIBLE FOR MAINTENANCE.
5. PROVIDE TRAP PRIMERS TO ALL INDIRECT WASTE RECEPTORS AND FLOOR DRAINS.
6. DO NOT LOCATE WATER PIPING ABOVE ELECTRICAL PANELS, LIGHT SWITCHES OR ELECTRICAL OUTLETS.
7. DO NOT LOCATE SERVICE PIPING THROUGH ELECTRICAL ROOMS, ELEVATOR SHAFTS, ELEVATOR MACHINE ROOMS, TELE DATA ROOMS OR STAIRWELLS.
8. PIPING MATERIAL IS INDICATED IN THE SPECIFICATIONS, IDENTIFY PIPING AS SPECIFIED.
9. SLEEVE AND SEAL PIPING PENETRATIONS AS INDICATED IN THE SPECIFICATIONS.
10. COORDINATE PIPING AND VALVE LOCATIONS WITH MECHANICAL DUCTWORK, PIPING AND EQUIPMENT.
11. COORDINATE ROUGH IN LOCATIONS WITH ARCHITECTURAL DRAWINGS.
12. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND NUMBER OF PLUMBING FIXTURES AND GAS OUTLETS.
13. REFER TO ARCHITECTURAL DRAWINGS FOR FURTHER INFORMATION ON LAB SINKS, EQUIPMENT, FUME HOODS, CASEWORK AND SERVICE OUTLETS.
14. INDIVIDUAL SERVICE PIPE SIZES TO PLUMBING FIXTURES WILL BE THE SAME SIZE AS INDICATED ON PLUMBING FIXTURE SCHEDULE FOR ROUGH-INS.
15. INDIVIDUAL PIPE SIZES TO LABORATORY SERVICE OUTLETS WILL BE 1/2" FOR GAS CONNECTIONS AND 3/4" FOR VACUUM.
16. FINAL CONNECTIONS TO OPIF EQUIPMENT SHALL BE PROVIDED BY OWNER.
17. FINAL CONNECTIONS TO ALL EQUIPMENT FURNISHED UNDER THIS CONTRACT SHALL BE MADE BY THE PLUMBING CONTRACTOR.
18. REFER TO DRAINAGE PLANS FOR PLUMBING FIXTURES DESIGNATION.



KEYPLAN:



SEAL:



CONDITION OF USE
 WHEN THIS DOCUMENT IS SUBMITTED TO EITHER OWNER OR CONTRACTOR IN EITHER PAPER OR ELECTRONIC FORM, THE SUBSCRIBER USES OF THE INFORMATION CONTAINED ON THE DOCUMENT IS SUBJECT TO THE CONDITIONS OF THE AGREEMENT BETWEEN THE OWNER AND BALLINGER AND TO BALLINGER'S COPYRIGHT AND OTHER RIGHTS IN THE DOCUMENT. CONTRACTOR SHALL MAKE ELECTRONIC FILES OF THIS DOCUMENT AVAILABLE TO SUBCONTRACTORS, SUBJECT TO THE RESTRICTIONS OF CONDITIONS OF USE, SCHEDULE A.4. CONFORMANCE TO SUCH SUBCONTRACTORS IN THEIR PREPARATION OF SHOP DRAWINGS, THE PROVIDER OF THIS DOCUMENT BY BALLINGER SHALL NOT MAKE BALLINGER RESPONSIBLE IN ANY WAY FOR ANY ASPECT OF THE SUBCONTRACTOR'S SHOP DRAWINGS, NOR RELIEVE SUBCONTRACTORS FROM FULL RESPONSIBILITY FOR PREPARATION OF THEIR REQUIRED SHOP DRAWINGS.

08/29/23 CONFORMED SET
 08/30/23 CONSTRUCTION DOCUMENTS
 DRAWING ISSUE

PROJECT: 21029.00
 SCALE: 1/4" = 1'-0"
 PLUMBING

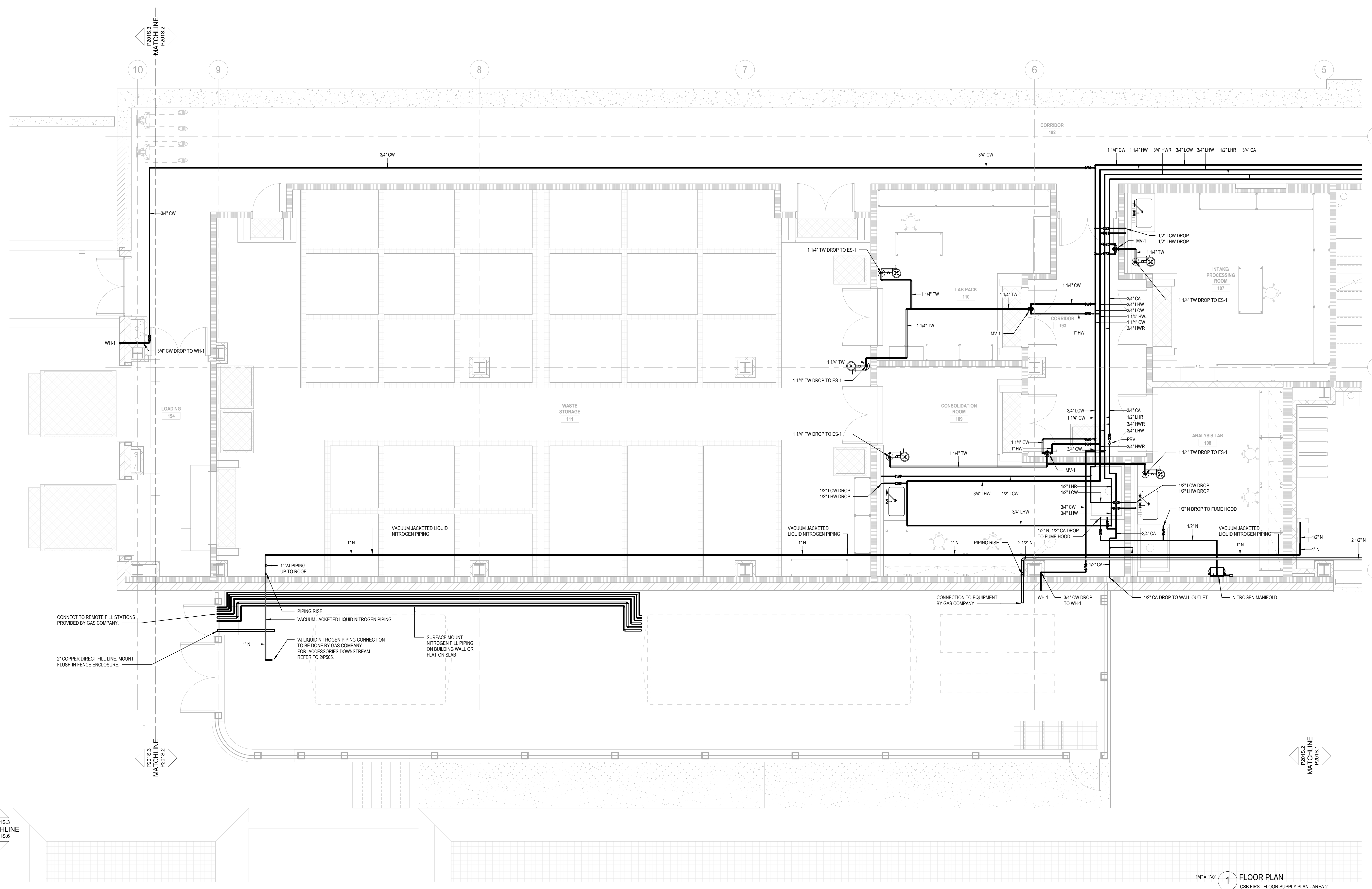
TITLE:
 FIRST FLOOR
 SUPPLY PLAN -
 AREA 1

CHEMICAL SAFETY BUILDING
 NUMBER:

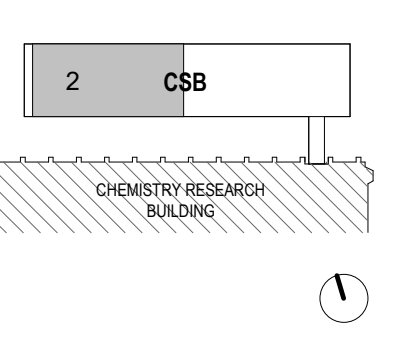
P201S.1

SERVICE PIPING PLAN NOTES:

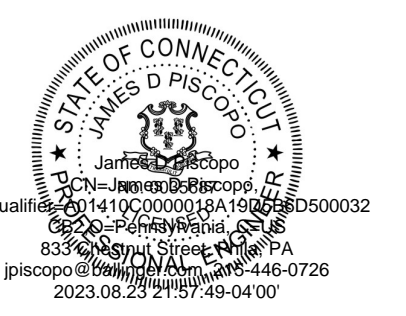
1. SYMBOLS AND ABBREVIATIONS ARE SHOWN ON DRAWING NUMBER P001.
2. ALL SERVICE PIPING TO BE RUN ABOVE CEILING UNLESS OTHERWISE NOTED.
3. LOCATE SERVICE VALVES AND BALANCING VALVES IN ACCESSIBLE LOCATION. DO NOT INSTALL VALVES ABOVE DUCTWORK OR ELECTRICAL CABLE TRAYS.
4. PROVIDE WATER HAMMER ARRESTORS WHERE QUICK CLOSING VALVES ARE INSTALLED. WATER HAMMER ARRESTORS SHALL BE LOCATED BEHIND A WALL MOUNTED ACCESS PANEL ACCESSIBLE FOR MAINTENANCE.
5. PROVIDE TRAP PRIMERS TO ALL INDIRECT WASTE RECEPTORS AND FLOOR DRAINS.
6. DO NOT LOCATE WATER PIPING ABOVE ELECTRICAL PANELS, LIGHT SWITCHES OR ELECTRICAL OUTLETS.
7. DO NOT LOCATE SERVICE PIPING THROUGH ELECTRICAL ROOMS, ELEVATOR SHAFTS, ELEVATOR MACHINE ROOMS, TELE DATA ROOMS OR STAIRWELLS.
8. PIPING MATERIAL IS INDICATED IN THE SPECIFICATIONS. IDENTIFY PIPING AS SPECIFIED.
9. SLEEVE AND SEAL PIPING PENETRATIONS AS INDICATED IN THE SPECIFICATIONS.
10. COORDINATE PIPING AND VALVE LOCATIONS WITH MECHANICAL DUCTWORK, PIPING AND EQUIPMENT.
11. COORDINATE ROUGH IN LOCATIONS WITH ARCHITECTURAL DRAWINGS.
12. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND NUMBER OF PLUMBING FIXTURES AND GAS OUTLETS.
13. REFER TO ARCHITECTURAL DRAWINGS FOR FURTHER INFORMATION ON LAB SINKS, EQUIPMENT, FUME HOODS, CASEWORK AND SERVICE OUTLETS.
14. INDIVIDUAL SERVICE PIPE SIZES TO PLUMBING FIXTURES WILL BE THE SAME SIZE AS INDICATED ON PLUMBING FIXTURE SCHEDULE FOR ROUGH-INS.
15. INDIVIDUAL PIPE SIZES TO LABORATORY SERVICE OUTLETS WILL BE 1/2" FOR GAS CONNECTIONS AND 3/4" FOR VACUUM.
16. FINAL CONNECTIONS TO O/F OF EQUIPMENT SHALL BE PROVIDED BY OWNER.
17. FINAL CONNECTIONS TO ALL EQUIPMENT FURNISHED UNDER THIS CONTRACT SHALL BE MADE BY THE PLUMBING CONTRACTOR.
18. REFER TO DRAINAGE PLANS FOR PLUMBING FIXTURES DESIGNATION.



KEYPLAN:



SEAL:



CONDITION OF USE
WHEN THIS DOCUMENT IS SUPPLIED TO EITHER OWNER OR CONTRACTOR IN EITHER PAPER OR ELECTRONIC FORM, THE SUBSCRIBER USES OF THE INFORMATION CONTAINED ON THE DOCUMENT IS SUBJECT TO THE CONDITIONS OF THE AGREEMENT BETWEEN THE OWNER AND BALLINGER AND TO BALLINGER'S COPYRIGHT AND OTHER RIGHTS IN THIS DOCUMENT. CONTRACTOR SHALL MAKE ELECTRONIC FILES OF THIS DOCUMENT AVAILABLE TO SUBCONTRACTORS. SUBJECT TO THE SELECTION OR CONDITIONS OF USE, BALLINGER'S CONVEYANCE TO SUCH SUBCONTRACTORS IN THEIR PREPARATION OF SHOP DRAWINGS, THE PROVIDER OF THIS DOCUMENT BY BALLINGER SHALL NOT MAKE BALLINGER RESPONSIBLE IN ANY WAY FOR ANY ASPECT OF THE SUBCONTRACTOR'S SHOP DRAWINGS, NOR RELIEVE SUBCONTRACTORS FROM FULL RESPONSIBILITY FOR PREPARATION OF THEIR REQUIRED SHOP DRAWINGS.

08/29/23 CONFORMED SET
08/30/23 CONSTRUCTION DOCUMENTS
DRAWING ISSUE

PROJECT: 210209.00
SCALE: 1/4" = 1'-0"

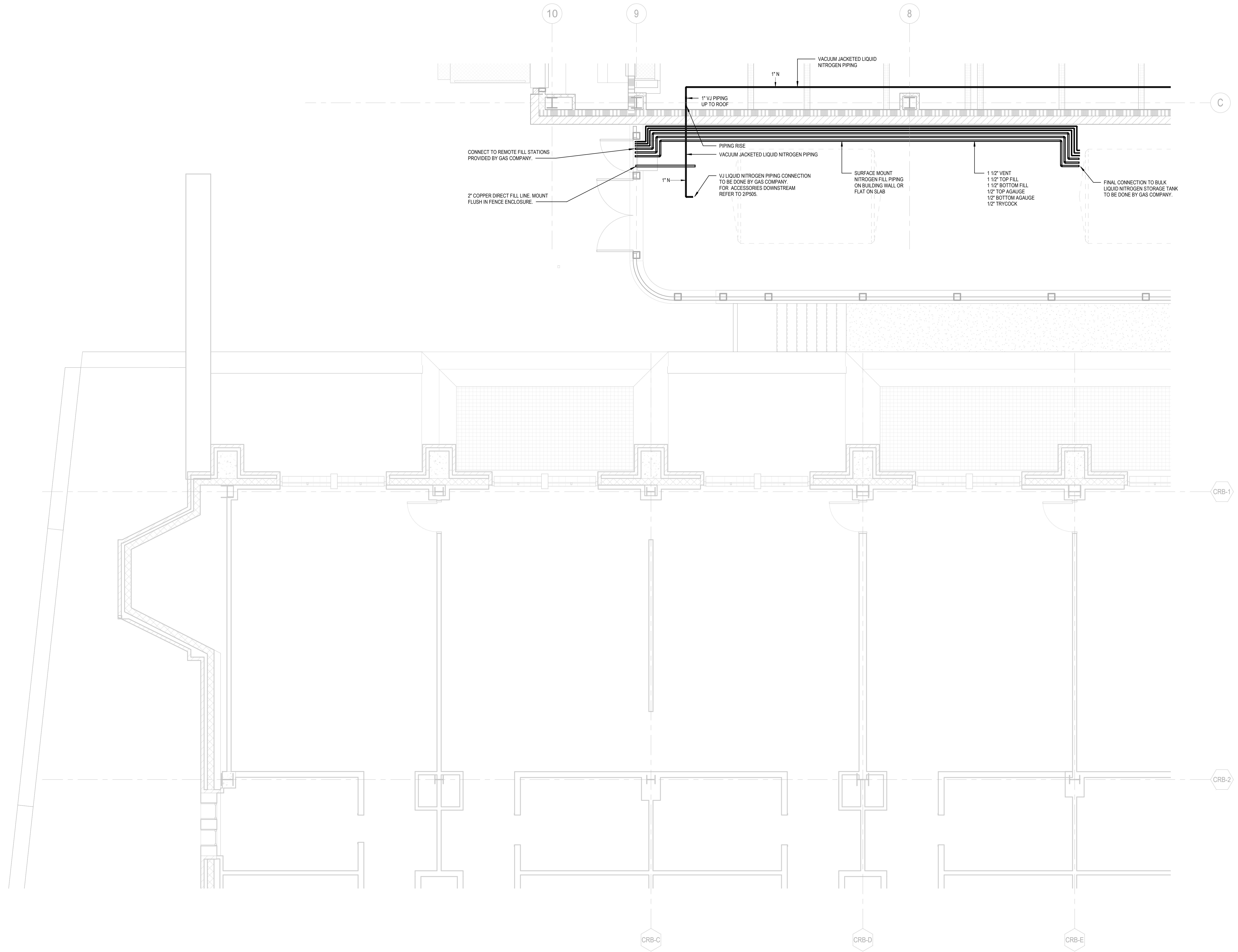
PLUMBING

TITLE:
FIRST FLOOR SUPPLY PLAN - AREA 2

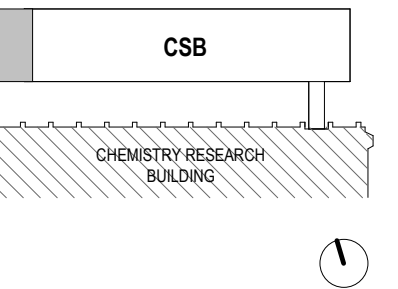
CHEMICAL SAFETY BUILDING
NUMBER:

P201S.2

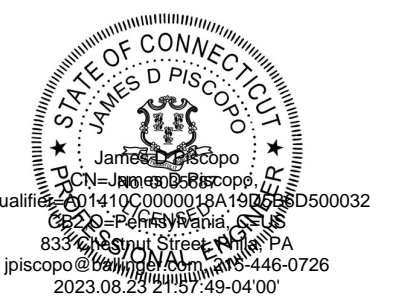
1/4" = 1'-0" 1 FLOOR PLAN
CSB FIRST FLOOR SUPPLY PLAN - AREA 2



KEYPLAN:



SEAL:



CONDITION OF USE
 WHEN THIS DOCUMENT IS SUPPLIED TO EITHER OWNER OR CONTRACTOR, IN EITHER PAPER OR ELECTRONIC FORM, THE SUBSEQUENT USE OF THE INFORMATION CONTAINED ON THE DOCUMENT IS SUBJECT TO THE CONDITIONS OF THE AGREEMENT BETWEEN THE OWNER AND BALLINGER AND TO BALLINGER'S COPYRIGHT AND OTHER RIGHTS IN THE DOCUMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR THE DOCUMENT'S CONDITION OF USE. BALLINGER'S USE OF THIS DOCUMENT FOR ANY OTHER PURPOSES WITHOUT THE CONSENT OF BALLINGER SHALL BE AT THE USER'S SOLE RISK. BALLINGER SHALL NOT BE RESPONSIBLE FOR ANY DAMAGE TO OR LOSS OF DATA OR INFORMATION OF ANY KIND, INCLUDING BUT NOT LIMITED TO, THE LOSS OF OR DAMAGE TO ANY ORIGINAL OR REPRODUCED DOCUMENTS, OR THE LOSS OF PROFITS, REVENUE, OR BUSINESS OPPORTUNITIES, ARISING FROM THE USE OF THIS DOCUMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PREPARATION OF THEIR REQUIRED SHOP DRAWINGS.

08/25/23 CONFORMED SET
 08/23/23 CONSTRUCTION DOCUMENTS
 DRAWING ISSUE

PROJECT: 210229.00
 SCALE: 1/4" = 1'-0"

PLUMBING

TITLE:

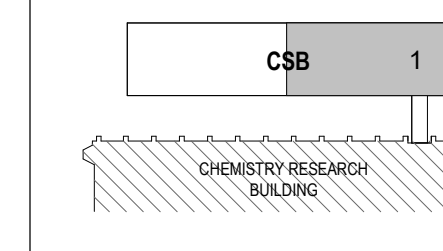
FIRST FLOOR
 NITROGEN SUPPLY
 PLAN - AREA 3

CHEMICAL SAFETY BUILDING
 NUMBER:

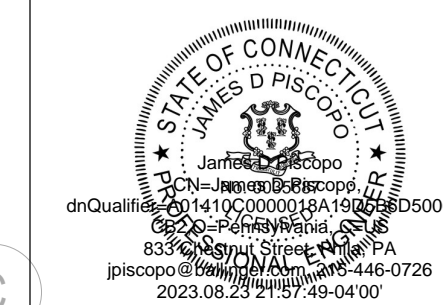
P201S.3

1/4" = 1'-0" **1** FLOOR PLAN
 CSB FIRST FLOOR NITROGEN SUPPLY PLAN - AREA 3

KEYPLAN:



SEAL:



CONDITION OF USE
WHEN THIS DOCUMENT IS SUBMITTED TO EITHER OWNER OR CONTRACTOR IN EITHER PAPER OR ELECTRONIC FORM, THE SUBSEQUENT USE OF THE INFORMATION CONTAINED ON THE DOCUMENT IS SUBJECT TO THE CONDITIONS OF THE AGREEMENT BETWEEN THE OWNER AND BALLINGER AND TO BALLINGER'S COPYRIGHT AND OTHER RIGHTS IN THE DOCUMENT. CONTRACTOR SHALL MAKE ELECTRONIC FILES OF THIS DOCUMENT AVAILABLE TO SUBCONTRACTORS, SUBJECT TO THE STATEMENT OF CONDITIONS OF USE, SOLELY AS A CONVENIENCE TO SUCH SUBCONTRACTORS IN THEIR PREPARATION OF SHOP DRAWINGS. THE PROVIDER OF THIS DOCUMENT BY BALLINGER SHALL NOT MAKE BALLINGER RESPONSIBLE IN ANY WAY FOR ANY ASPECT OF THE SUBCONTRACTOR'S SHOP DRAWINGS, NOR RELIEVE SUBCONTRACTORS FROM FULL RESPONSIBILITY FOR PREPARATION OF THEIR REQUIRED SHOP DRAWINGS.

08/29/23 CONFORMED SET
06/03/23 CONSTRUCTION DOCUMENTS
DRAWING ISSUE

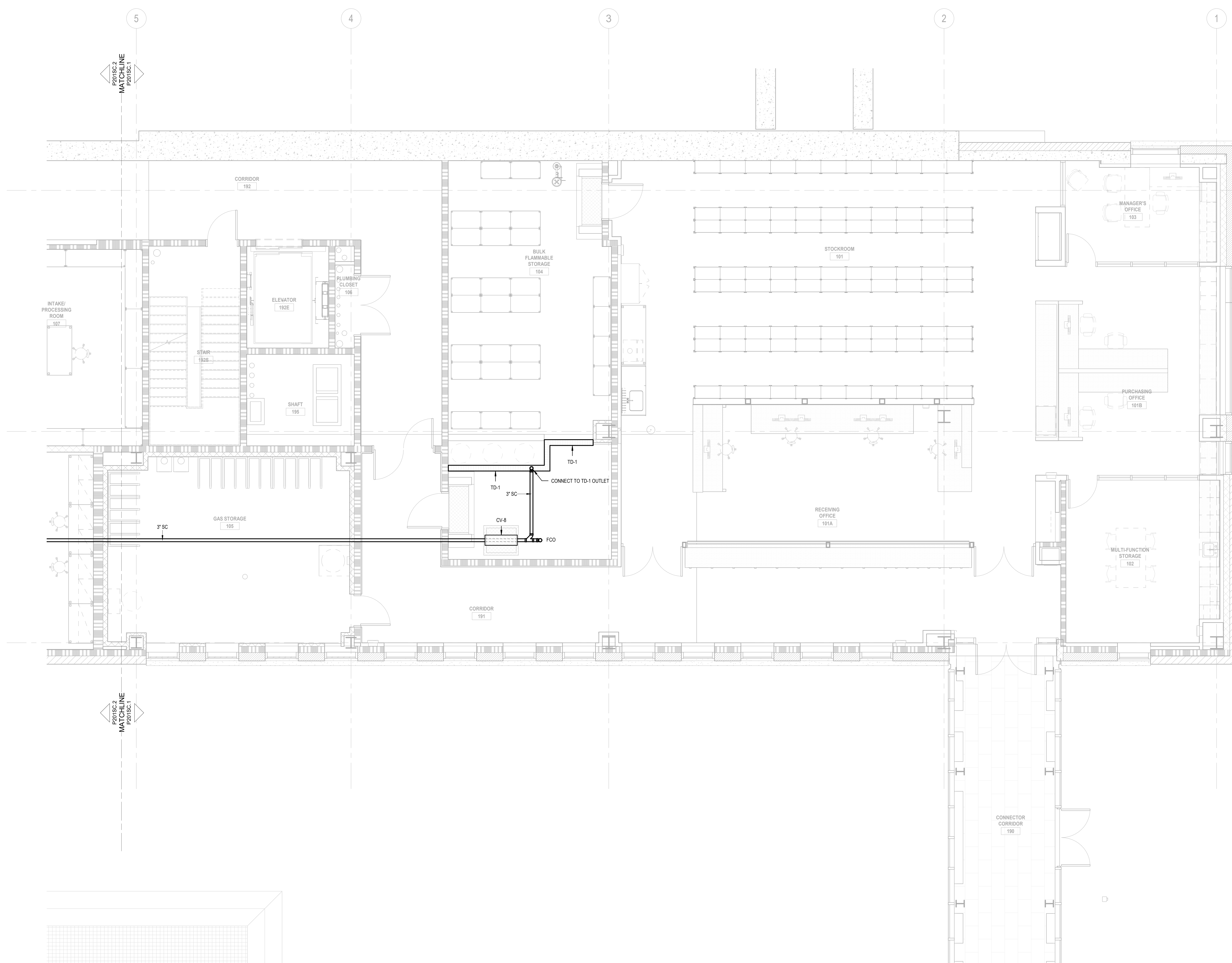
PROJECT: 210229.00
SCALE: 1/4" = 1'-0"

PLUMBING

TITLE:
FIRST FLOOR
SECONDARY
CONTAINMENT PLAN
- AREA 1

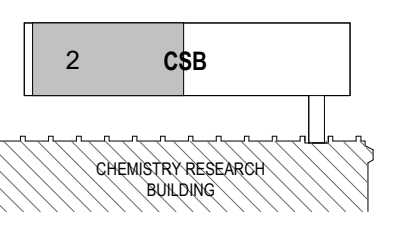
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NUMBER:

P201SC.1

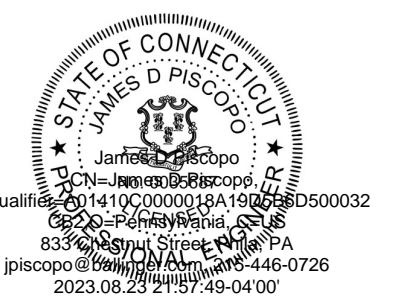


1/4" = 1'-0" 1 FLOOR PLAN
CSB FIRST FLOOR SECONDARY CONTAINMENT PLAN - AREA 1

KEYPLAN:



SEAL:



CONDITION OF USE
WHEN THIS DOCUMENT IS SUPPLIED TO OTHER OWNER OR CONTRACTOR, IN EITHER PAPER OR ELECTRONIC FORM, THE SUBSCRIBER USES THE INFORMATION CONTAINED ON THE DOCUMENT IS SUBJECT TO THE CONDITIONS OF THE AGREEMENT BETWEEN THE OWNER AND BALLINGER AND TO BALLINGER'S COPYRIGHT AND OTHER RIGHTS IN THE DOCUMENT. CONTRACTOR SHALL MAKE ELECTRONIC USE OF THIS DOCUMENT AVAILABLE TO SUBCONTRACTORS, SUBJECT TO THE RESTRICTIONS OR CONDITIONS OF USE, AS LISTS HEREIN. CONFORMANCE TO SUCH SUBCONTRACTORS IN THEIR PREPARATION OF SHOP DRAWINGS, THE PROVIDER OF THIS DOCUMENT BY BALLINGER SHALL NOT MAKE BALLINGER RESPONSIBLE IN ANY WAY FOR ANY ASPECT OF THE SUBCONTRACTORS' SHOP DRAWINGS, NOR RELIEVE SUBCONTRACTORS FROM FULL RESPONSIBILITY FOR PREPARATION OF THEIR REQUIRED SHOP DRAWINGS.

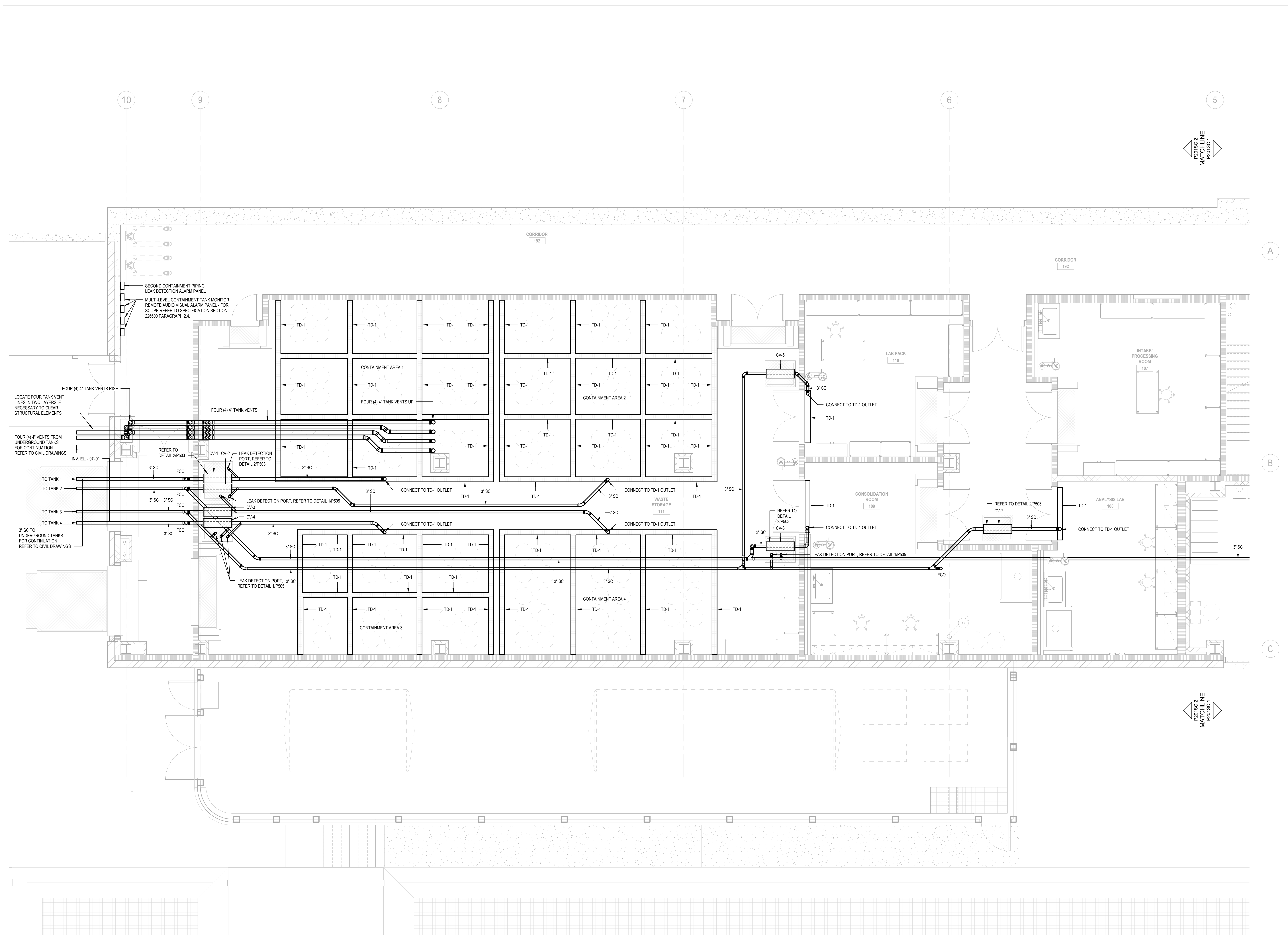
08/25/23 CONFORMED SET
05/18/23 ADDENDUM NO. 1
06/03/23 CONSTRUCTION DOCUMENTS
DRAWING ISSUE

PROJECT: 21029.00
SCALE: 1/4" = 1'-0"
PLUMBING

TITLE:
FIRST FLOOR
SECONDARY
CONTAINMENT PLAN
- AREA 2

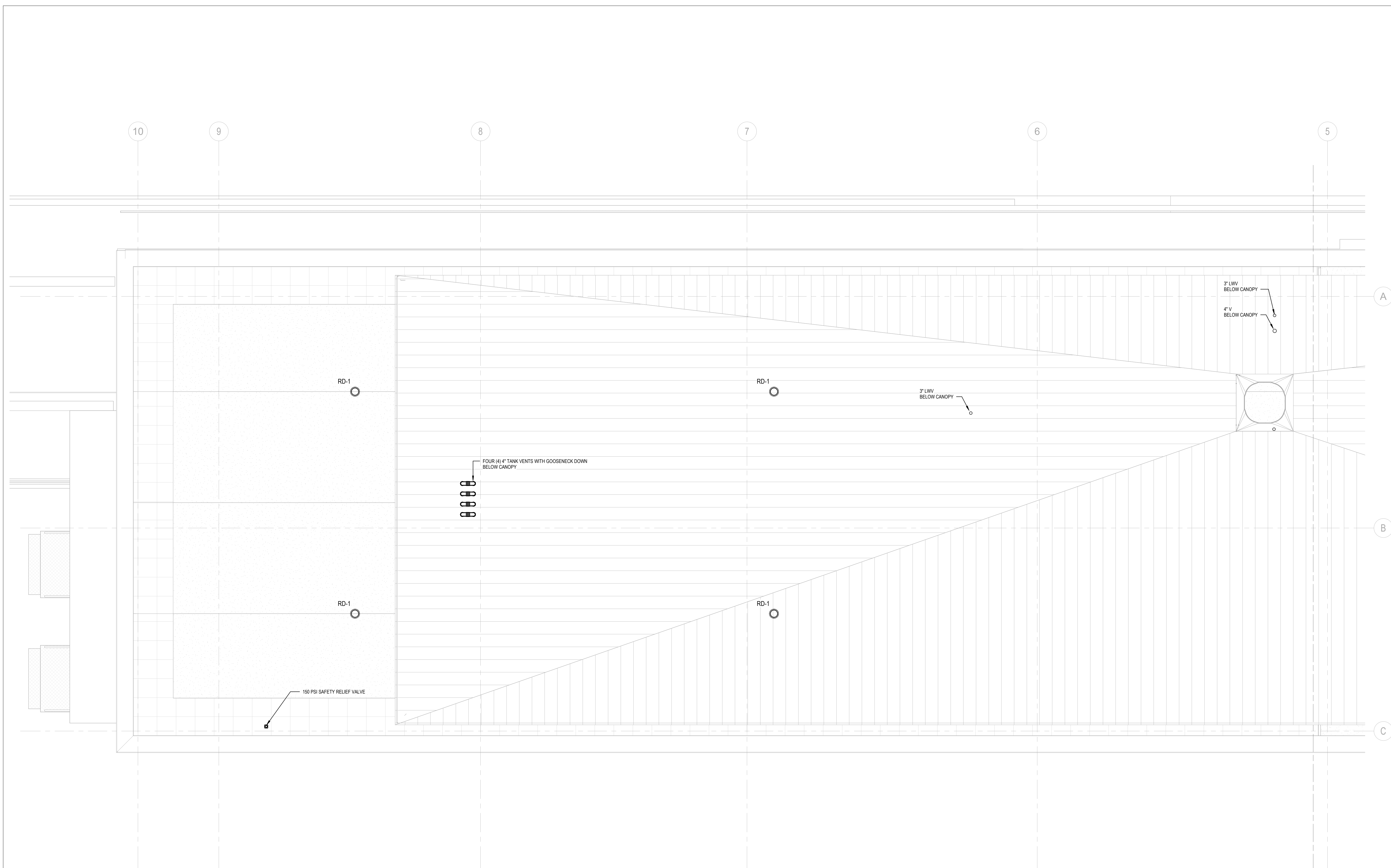
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NUMBER:

P201SC.2

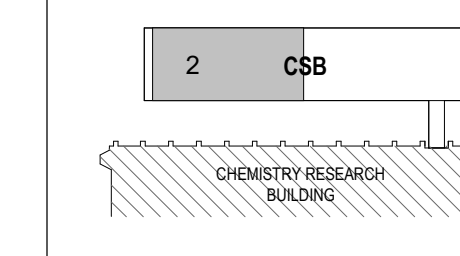


1/4" = 1'-0" 1 FLOOR PLAN
CSB FIRST FLOOR SECONDARY CONTAINMENT PLAN - AREA 2

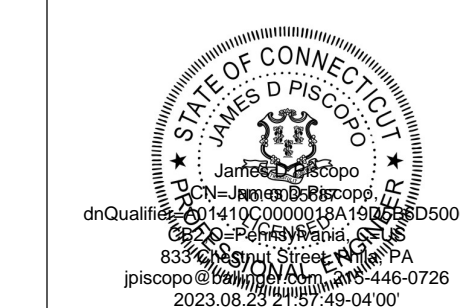
8/27/2023 12:52:15 PM



KEYPLAN:



SEAL:

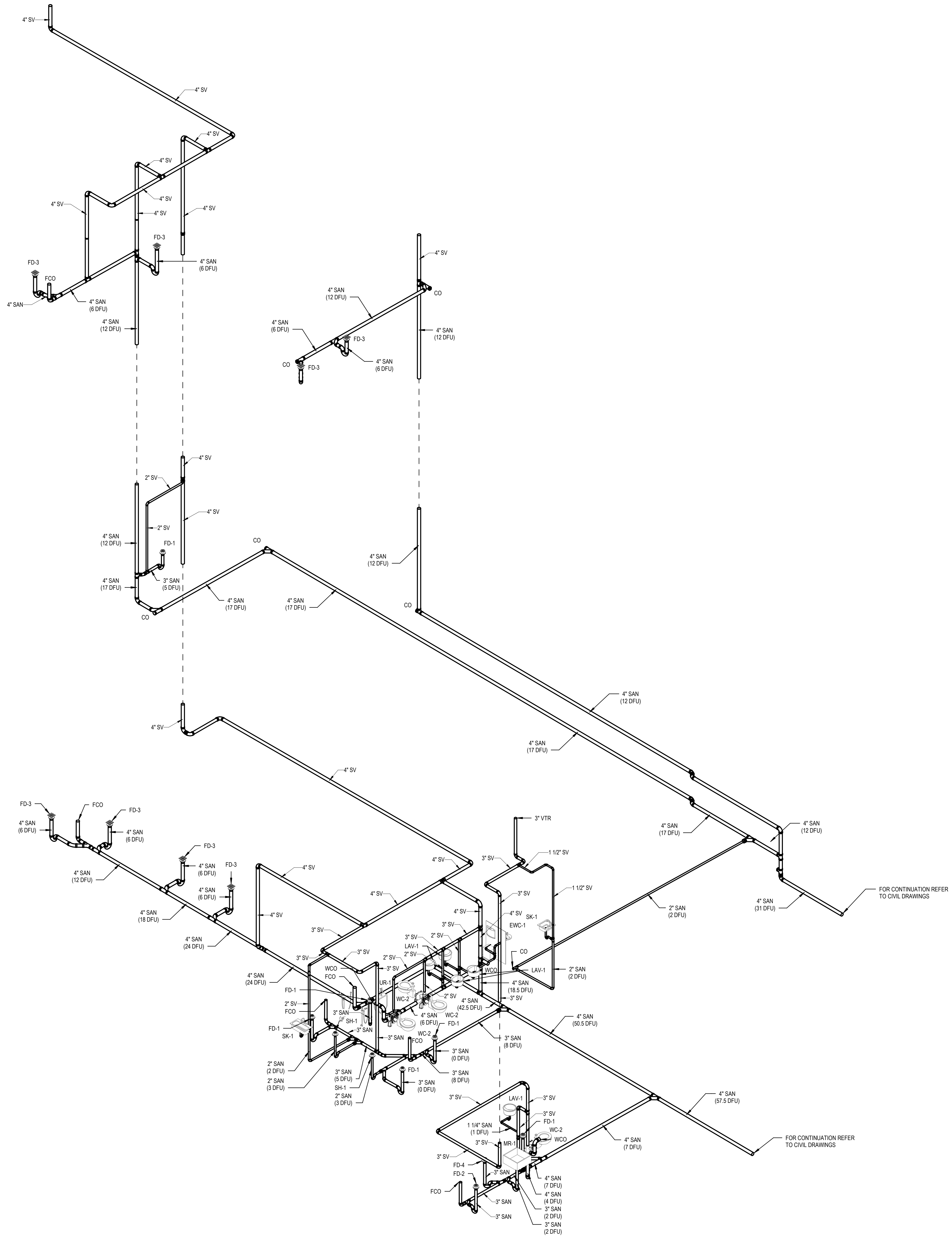


CONDITION OF USE
WHEN THIS DOCUMENT IS SUBMITTED TO EITHER OWNER OR CONTRACTOR, IN EITHER PAPER OR ELECTRONIC FORM, THE SUBSEQUENT USE OF THE INFORMATION CONTAINED ON THIS DOCUMENT IS SUBJECT TO THE CONDITIONS OF THE AGREEMENT BETWEEN THE OWNER AND BALLINGER AND TO BALLINGER'S COPYRIGHT AND OTHER RIGHTS IN THIS DOCUMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THIS DOCUMENT AND FOR THE PROTECTION OF THE INFORMATION CONTAINED HEREIN. CONTRACTOR SHALL NOT REPRODUCE OR TRANSMIT THIS DOCUMENT OR ANY PART THEREOF IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF BALLINGER. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THIS DOCUMENT AND FOR THE PROTECTION OF THE INFORMATION CONTAINED HEREIN. CONTRACTOR SHALL NOT REPRODUCE OR TRANSMIT THIS DOCUMENT OR ANY PART THEREOF IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF BALLINGER.

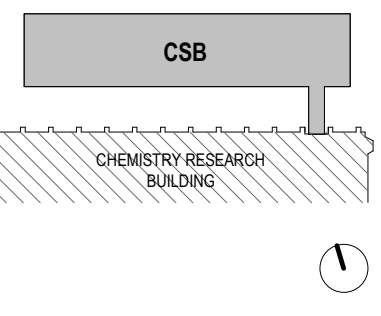
DRAINAGE PIPING PLAN NOTES:

1. SYMBOLS AND ABBREVIATIONS ARE SHOWN ON DRAWING NUMBER P001.
2. ALL DRAINAGE PIPING TO BE RUN BELOW SLAB UNLESS OTHERWISE NOTED.
3. ALL VENTS AND RAIN WATER CONDUCTORS TO BE RUN ABOVE CEILING UNLESS OTHERWISE NOTED.
4. ROUTE DRAINAGE PIPING IN BEAM POCKETS WHERE POSSIBLE. ROUTE DRAINAGE PIPING TIGHT TO UNDERSIDE OF BEAMS WHERE CROSSING UNDER STRUCTURE. COORDINATE DRAINAGE PIPING HEIGHTS CLOSELY WITH DUCTWORK ELEVATIONS.
5. DO NOT RUN PIPING THROUGH ELECTRICAL ROOMS, ELEVATOR SHAFTS, ELEVATOR MACHINE ROOMS, TELE DATA ROOMS OR STAIRWELLS.
6. PROVIDE CLEANOUTS AT THE BASE OF ALL STACKS, LEADERS AND AT ALL CHANGE OF DIRECTIONS GREATER THAN 45 DEGREES, AT HORIZONTAL DISTANCES GREATER THE 50 ON PIPING 4 INCHES IN DIAMETER AND SMALLER, AT HORIZONTAL DISTANCES GREATER THAN 100 FEET FOR PIPING GREATER THAN 4 INCHES IN DIAMETER, AND IN CONFORMANCE WITH THE LOCAL PLUMBING CODE. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
7. PROVIDE NONCOMBUSTIBLE INSULATION ON ALL PLASTIC PIPING IN PLENUM SPACES. INSULATION SHALL HAVE A FLAME SPREAD RATING OF NOT MORE THAN 25 AND A SMOKE DEVELOPED RATING OF NOT MORE THAN 50 IN CONFORMANCE WITH ASTM E 84.
8. PIPING MATERIAL IS INDICATED IN THE SPECIFICATIONS. IDENTIFY PIPING AS SPECIFIED.
9. SLEEVE AND SEAL PIPING PENETRATIONS AS INDICATED IN THE SPECIFICATIONS.
10. COORDINATE PIPING WITH MECHANICAL DUCTWORK, PIPING AND EQUIPMENT.
11. COORDINATE ROUGH IN LOCATIONS WITH ARCHITECTURAL DRAWINGS.
12. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND NUMBER OF PLUMBING FIXTURES, FLOOR SINKS AND FLOOR DRAINS.
13. REFER TO ARCHITECTURAL DRAWINGS FOR FURTHER INFORMATION ON LAB SINKS, CASEWORK, FUME HOODS AND EQUIPMENT.
14. PROVIDE TRAP PRIMERS TO ALL INDIRECT WASTE RECEPTORS AND FLOOR DRAINS. ALL TRAP PRIMER PIPING MUST SLOPE CONTINUOUSLY TO DRAIN TAILPIECES.
15. ROUTE INDIRECT WASTE PIPING FROM BACKFLOW PREVENTERS TO INDIRECT WASTE DRAINS OR FLOOR SINKS.
16. INDIVIDUAL WASTE AND VENT PIPE SIZES TO PLUMBING FIXTURES WILL BE THE SAME SIZE AS INDICATED ON PLUMBING FIXTURE SCHEDULE FOR ROUGH-INS.
17. INDIVIDUAL WASTE AND VENT PIPE SIZES TO EMERGENCY PLUMBING FIXTURES WILL BE THE SAME SIZE AS INDICATED ON EMERGENCY PLUMBING FIXTURE SCHEDULE FOR ROUGH-INS.
18. FINAL CONNECTIONS TO OTOI EQUIPMENT SHALL BE PROVIDED BY OWNER.
19. FINAL CONNECTIONS TO ALL EQUIPMENT FURNISHED UNDER THIS CONTRACT SHALL BE MADE BY THE PLUMBING CONTRACTOR.

P203D.2
MATCHLINE
P203D.1



KEYPLAN:



SEAL:



CONDITION OF USE
 WHEN THIS DOCUMENT IS SUPPLIED TO EITHER OWNER OR CONTRACTOR, IN EITHER PAPER OR ELECTRONIC FORM, THE SUBSCRIBER USE OF THE INFORMATION CONTAINED ON THE DOCUMENT IS SUBJECT TO THE CONDITIONS OF THE AGREEMENT BETWEEN THE OWNER AND BALLINGER AND TO BALLINGER'S COPYRIGHT AND OTHER RIGHTS IN THIS DOCUMENT. CONTRACTOR SHALL MAKE ELECTRONIC FILES OF THIS DOCUMENT AVAILABLE TO SUBCONTRACTORS, SUBJECT TO THE RESTRICTIONS OF CONDITIONS OF USE, IN ALL CONFORMANCE TO SUCH SUBCONTRACTORS IN THEIR PREPARATION OF SHOP DRAWINGS. THE PROVIDER OF THIS DOCUMENT BY BALLINGER SHALL NOT MAKE BALLINGER RESPONSIBLE IN ANY WAY FOR ANY ASPECT OF THE SUBCONTRACTOR'S SHOP DRAWINGS, NOR RELIEVE SUBCONTRACTORS FROM FULL RESPONSIBILITY FOR PREPARATION OF THEIR REQUIRED SHOP DRAWINGS.

08/25/23 CONFORMED SET
 08/03/23 CONSTRUCTION DOCUMENTS
 DRAWING ISSUE

PROJECT: 210209.00

SCALE:

PLUMBING

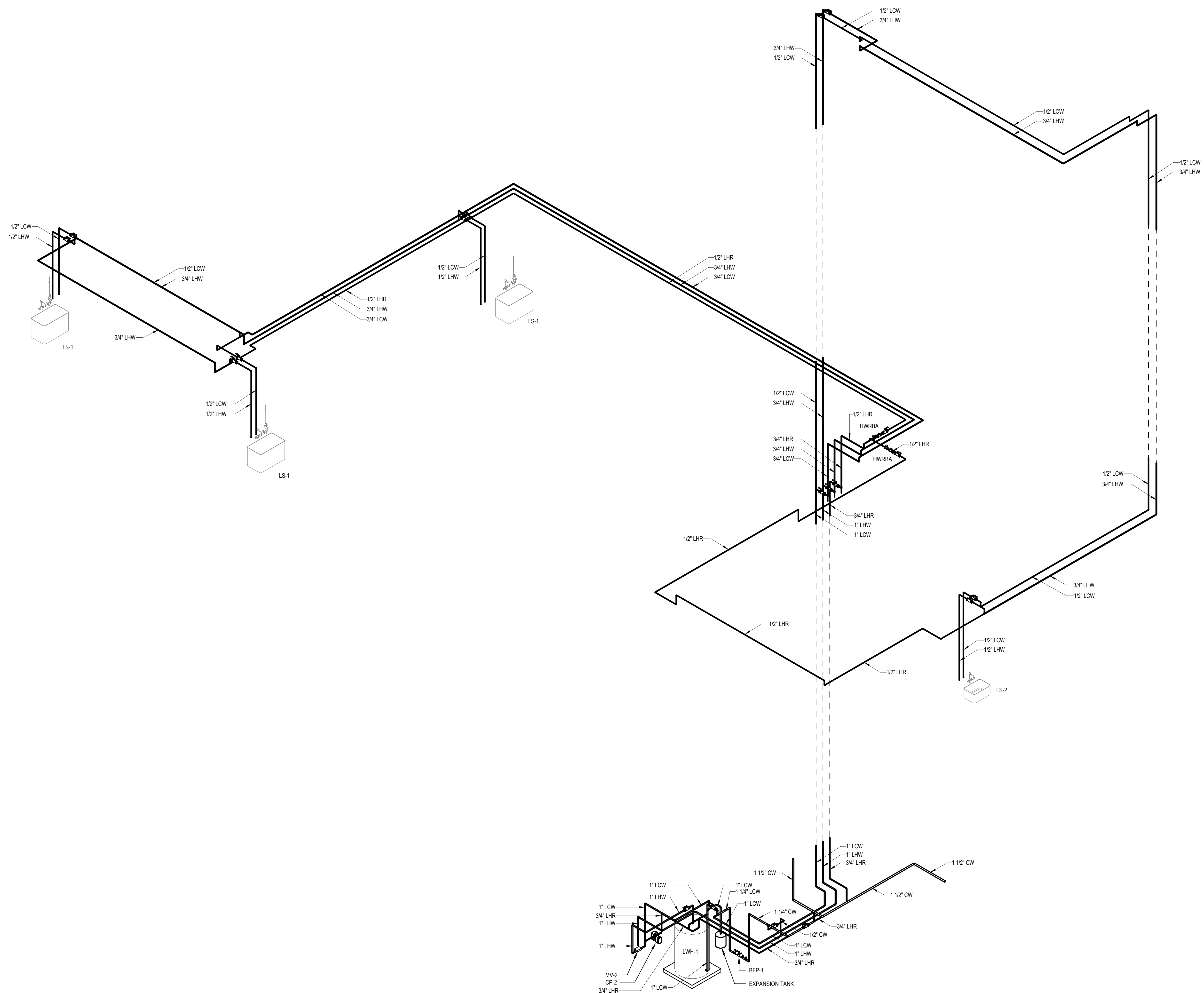
TITLE:

SANITARY RISER DIAGRAM

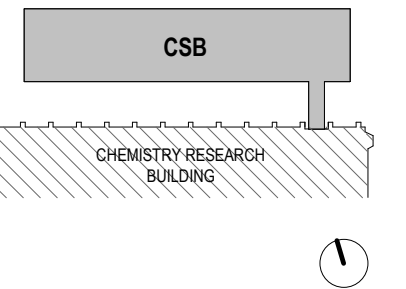
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NUMBER:

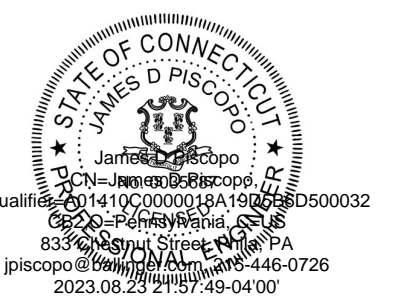
P301



KEYPLAN:



SEAL:



CONDITION OF USE
WHEN THIS DOCUMENT IS SUPPLIED TO EITHER OWNER OR CONTRACTOR, IN EITHER PAPER OR ELECTRONIC FORM, THE SUBSEQUENT USE OF THE INFORMATION CONTAINED ON THE DOCUMENT IS SUBJECT TO THE CONDITIONS OF THE AGREEMENT BETWEEN THE OWNER AND BALLINGER AND TO BALLINGER'S COPYRIGHT AND OTHER SUCH RIGHTS IN THE DOCUMENT. CONTRACTOR MAY MAKE ELECTRONIC FILES OF THIS DOCUMENT AVAILABLE TO SUBCONTRACTORS, SUBJECT TO THE STATEMENT OF CONDITIONS OF USE, SILENTLY AS A CONVENIENCE TO SUCH SUBCONTRACTORS IN THEIR PREPARATION OF SHOP DRAWINGS. THE PROVIDER OF THIS DOCUMENT BY BALLINGER SHALL NOT MAKE BALLINGER RESPONSIBLE IN ANY WAY FOR ANY ASPECT OF THE SUBCONTRACTOR'S SHOP DRAWINGS, NOR RELIEVE SUBCONTRACTORS FROM FULL RESPONSIBILITY FOR PREPARATION OF THEIR REQUIRED SHOP DRAWINGS.

08/29/23 CONFORMED SET
08/30/23 CONSTRUCTION DOCUMENTS
DRAWING ISSUE

PROJECT: 21029.00

SCALE:

PLUMBING

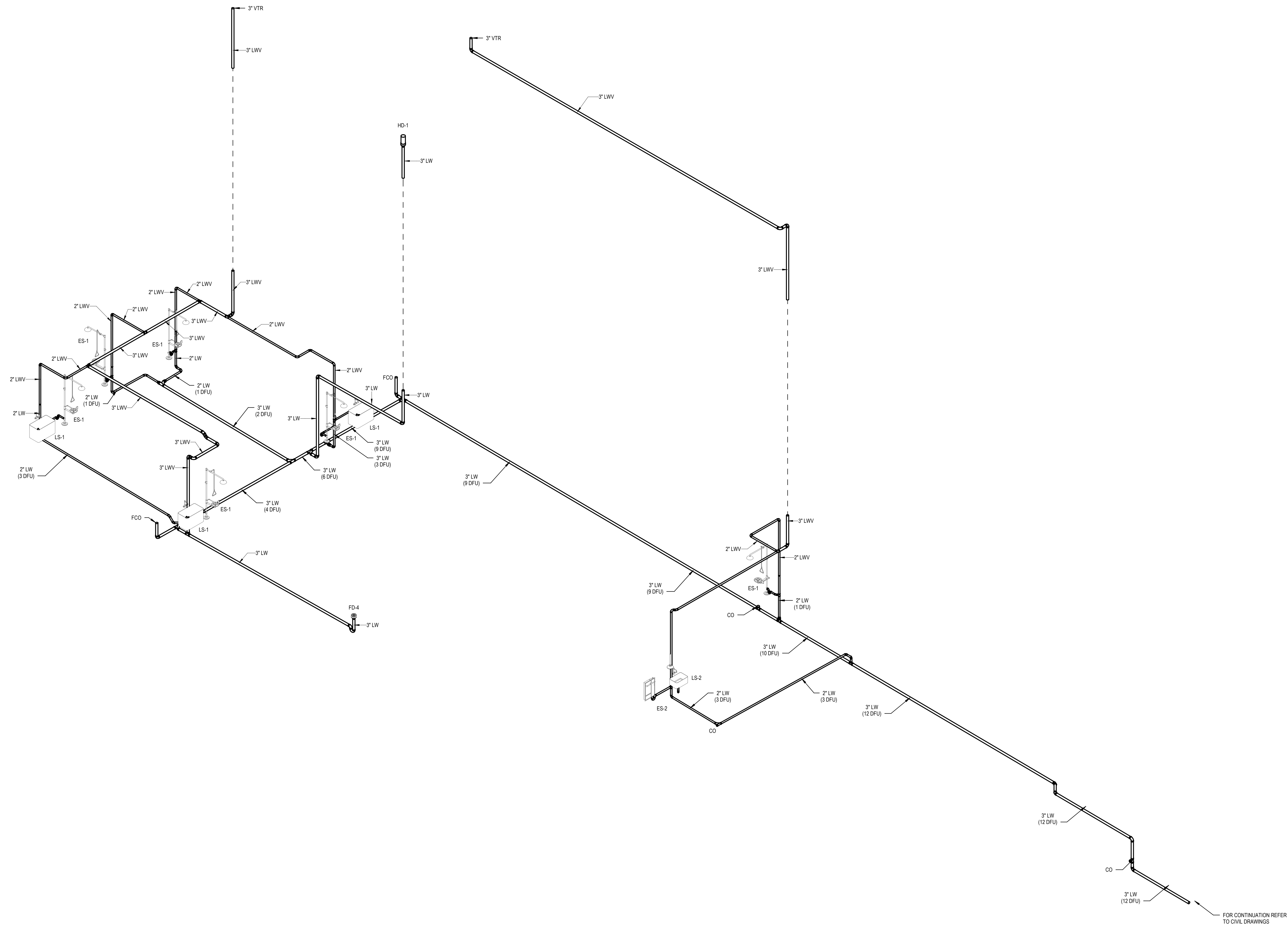
TITLE:

LABORATORY
WATER RISER
DIAGRAM

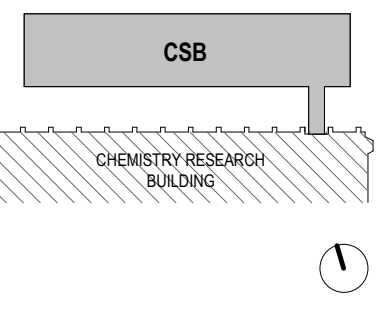
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NUMBER:

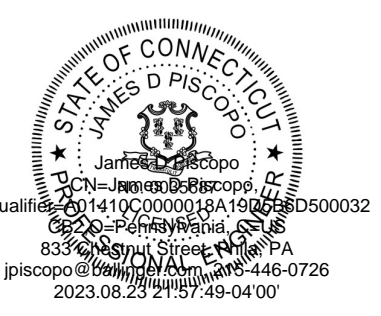
P303



KEYPLAN:



SEAL:



CONDITION OF USE
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06/29/23 CONFORMED SET
 06/30/23 CONSTRUCTION DOCUMENTS
 DRAWING ISSUE

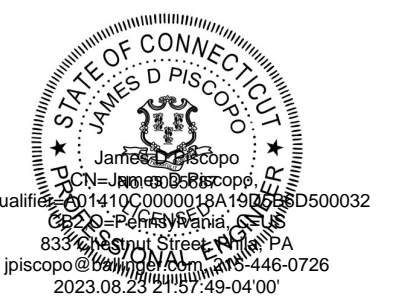
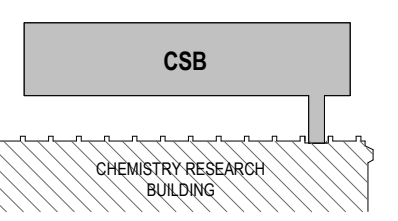
PROJECT: 21029.00
 SCALE:
 TITLE: PLUMBING

LABORATORY WASTE RISER DIAGRAM

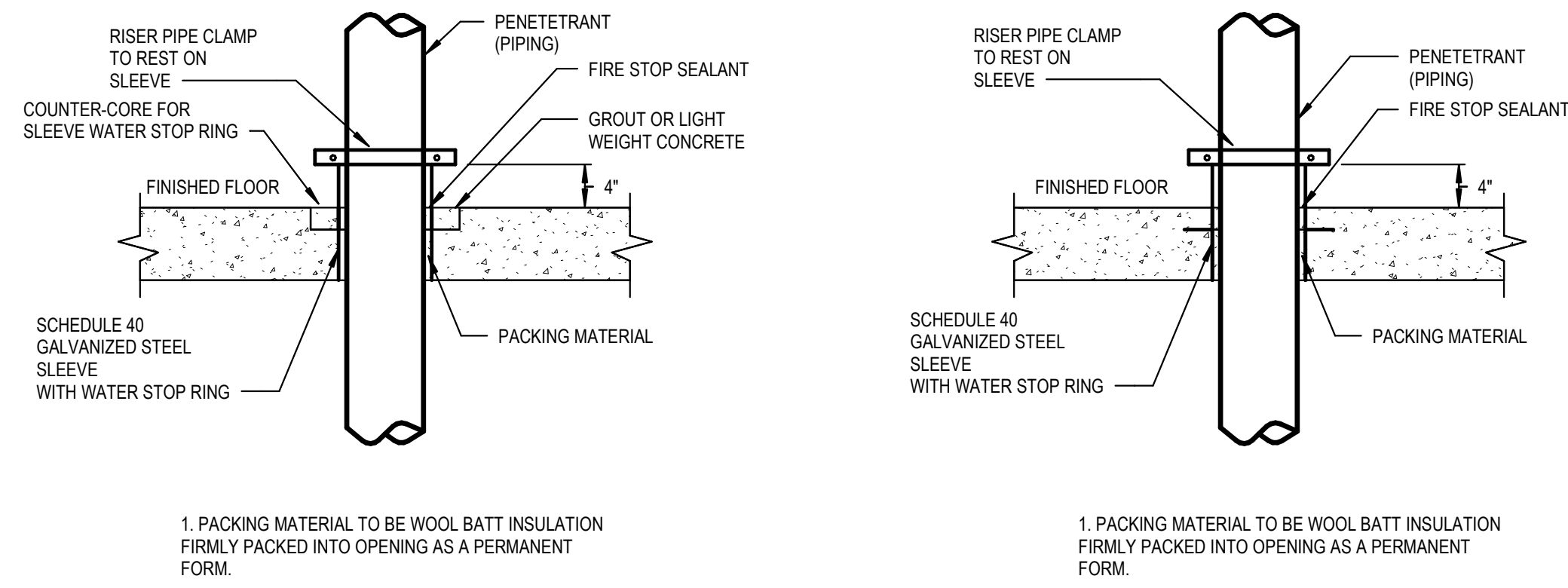
CHEMICAL SAFETY BUILDING
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P305

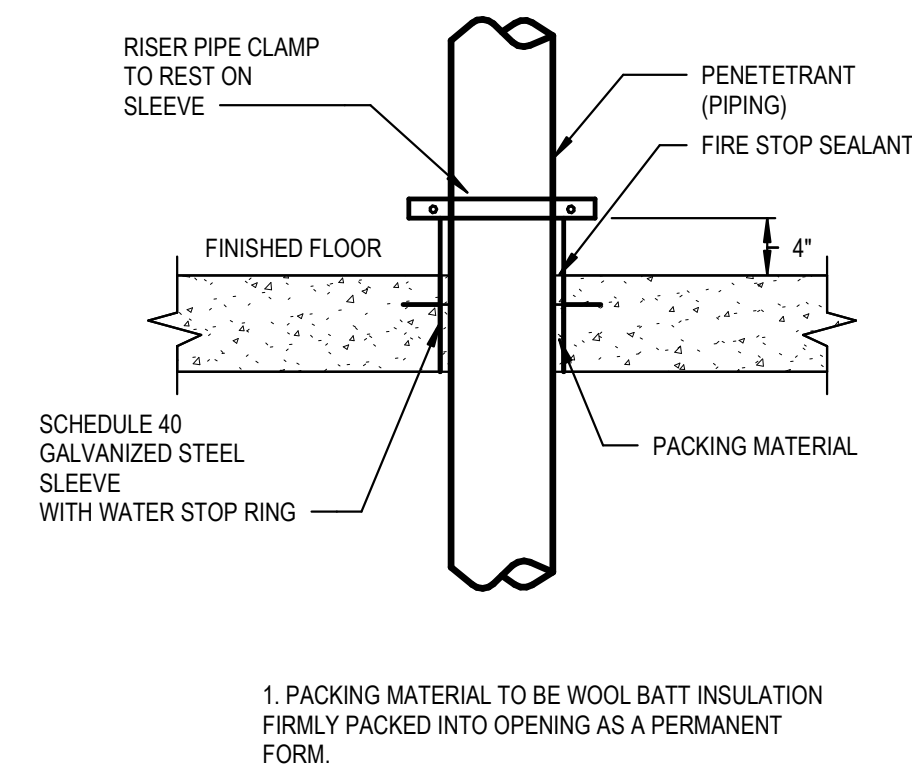
FOR CONTINUATION REFER TO CIVIL DRAWINGS



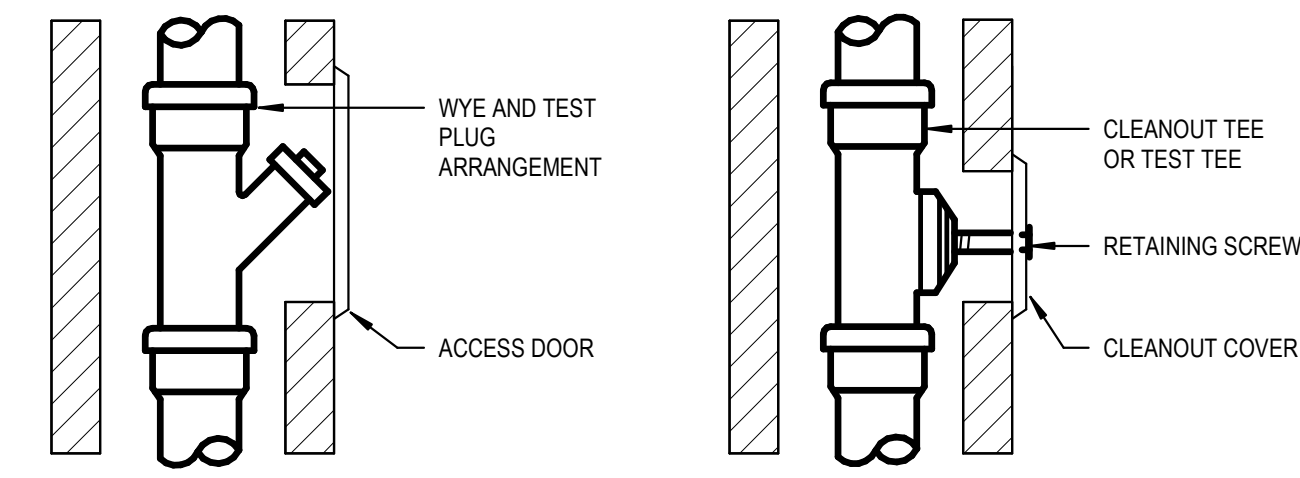
WHEN THIS DOCUMENT IS SUPPLIED TO EITHER OWNER OR CONTRACTOR, IN EITHER PAPER OR ELECTRONIC FORM, THE SUBSCRIBER'S USE OF THE INFORMATION CONTAINED ON THE DOCUMENT IS SUBJECT TO THE CONDITIONS OF THE AGREEMENT BETWEEN THE OWNER AND BALLINGER AND TO BALLINGER'S COPYRIGHT AND OTHER RIGHTS IN THE DOCUMENT. CONTRACTOR SHALL ELECTRONICALLY STORE THIS DOCUMENT IN A SECURE MANNER. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY CONSENT FROM THE OWNER TO REPRODUCE OR TRANSMIT THIS DOCUMENT IN ANY MANNER. THE PROVIDER OF THIS DOCUMENT BY BALLINGER SHALL NOT MAKE BALLINGER RESPONSIBLE IN ANY MANNER FOR ANY SUBJECT OF THE SUBCONTRACTOR'S SHOP DRAWINGS, NOR RELIEVE SUBCONTRACTOR'S RESPONSIBILITY FOR PREPARATION OF THEIR REQUIRED SHOP DRAWINGS.



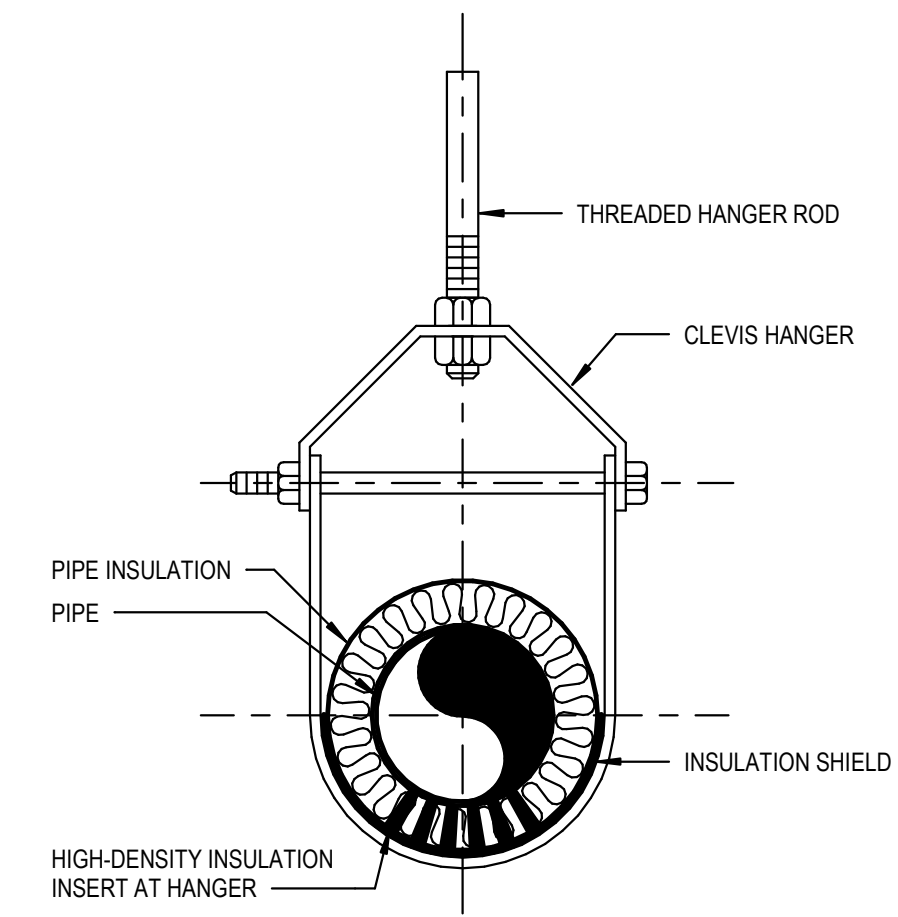
NOT TO SCALE 10 TYPICAL DETAIL
CORED FLOOR PIPE SLEEVE DETAIL
2HR FIRE RATED FLOOR PENETRATION DETAIL



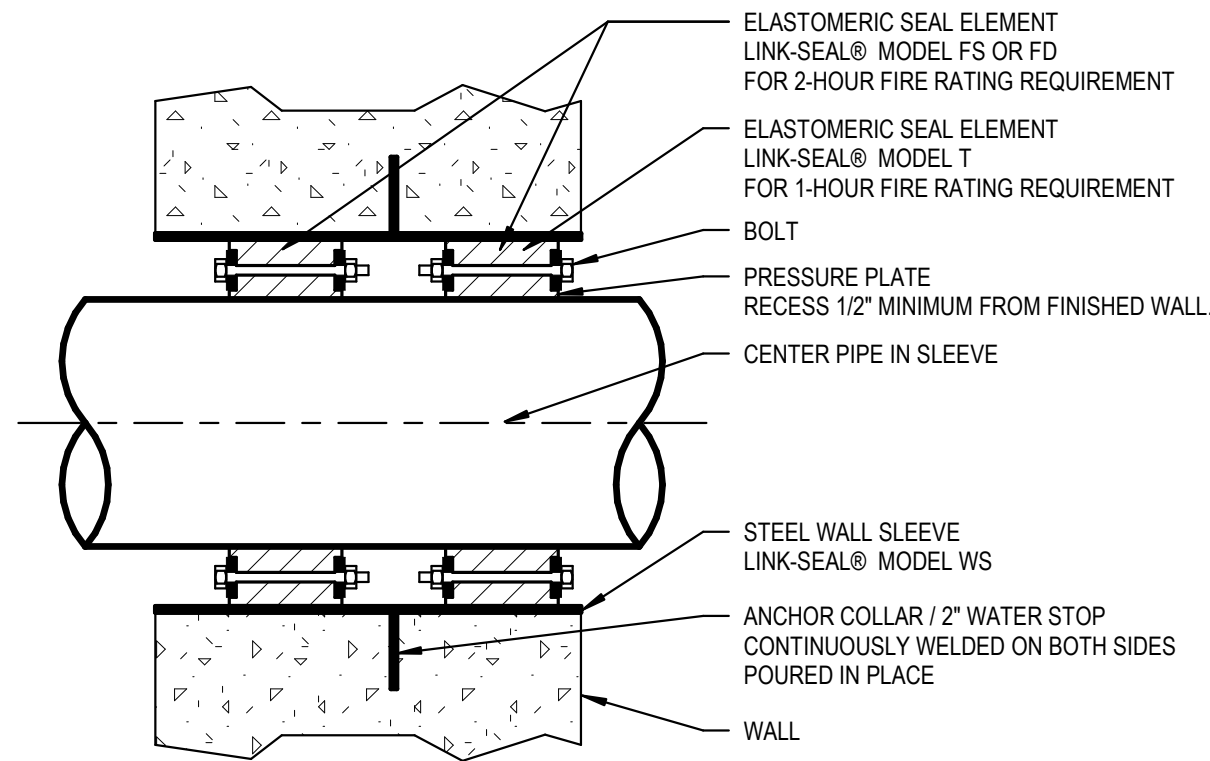
NOT TO SCALE 9 TYPICAL DETAIL
POURED IN PLACE FLOOR PIPE SLEEVE DETAIL
2HR FIRE RATED FLOOR PENETRATION DETAIL



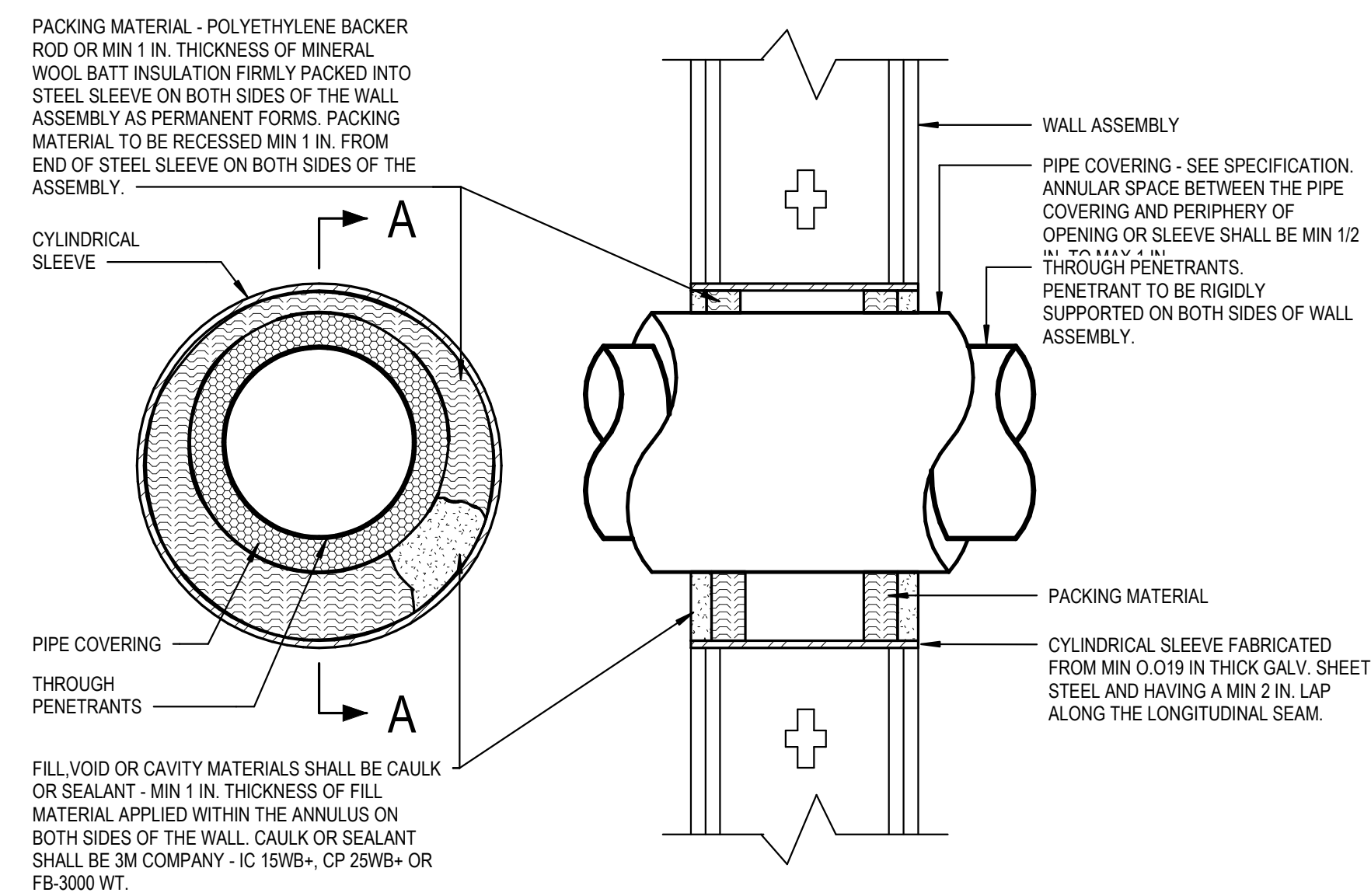
NOT TO SCALE 6 TYPICAL DETAIL
ACCESS TO CONCEALED CLEANOUTS DETAIL SANITARY AND STORM



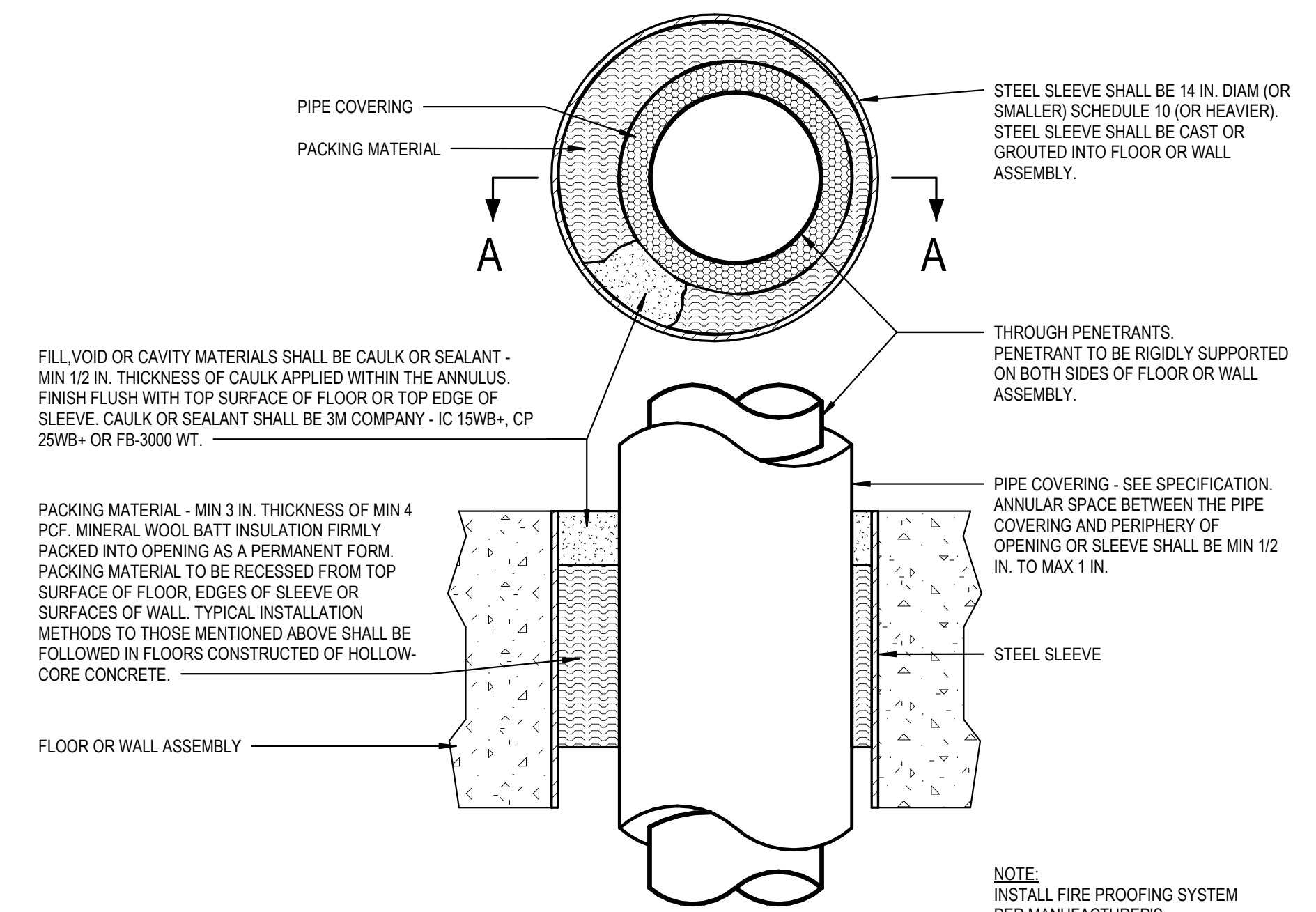
NOT TO SCALE 3 TYPICAL DETAIL
CLEVIS HANGER DETAIL FOR INSULATED PIPE



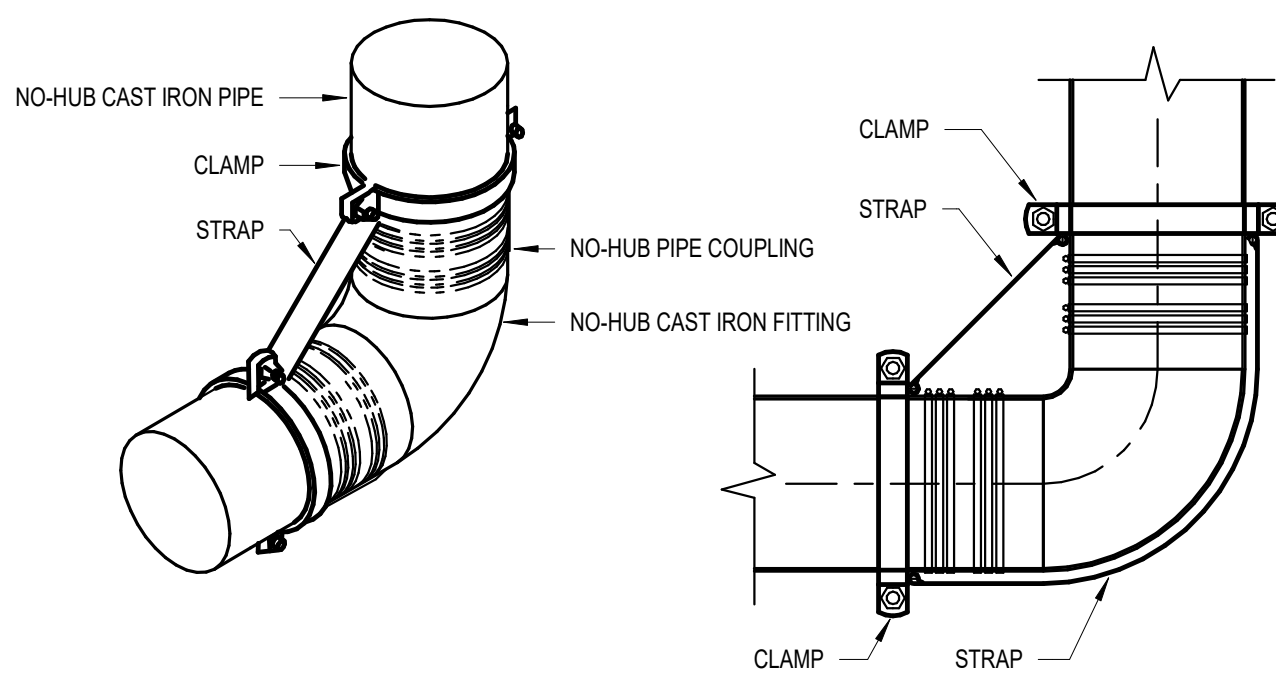
NOT TO SCALE 8 TYPICAL DETAIL
LINK-SEAL WALL SLEEVE DETAIL



NOT TO SCALE 5 TYPICAL DETAIL
FIRE PROOFING OF INSULATED PIPE PENETRATION THROUGH 1 OR 2 HR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY
SYSTEM NO. W-L-5011
(FOR STEEL OR IRON PIPE 8" DIA AND SMALLER, COPPER PIPE / TUBING 4" DIA AND SMALLER)



NOT TO SCALE 2 TYPICAL DETAIL
FIRE PROOFING OF INSULATED PIPE PENETRATION THROUGH CONCRETE WALL OR SLAB
SYSTEM NO. C-AJ-5210
(FOR STEEL OR IRON PIPE 8" DIA AND SMALLER, COPPER PIPE / TUBING 4" DIA AND SMALLER)



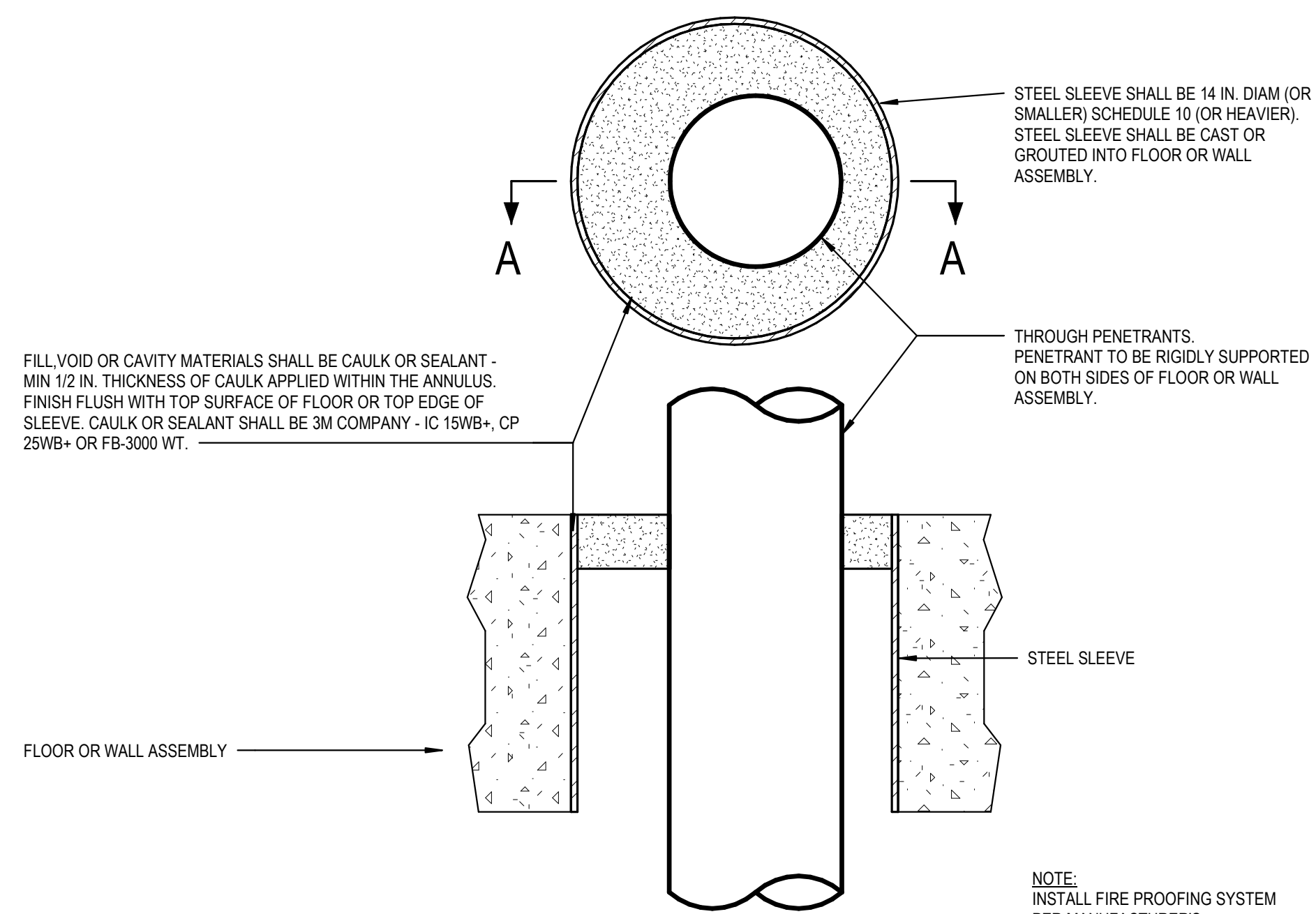
HORIZONTAL PIPE AND FITTINGS 5" AND LARGER MUST BE SUITABLY BRACED AT EVERY BRANCH OPENING OR CHANGE OF DIRECTION BY THE USE OF BRACES, BLOCKS, ROODING OR OTHER SUITABLE METHOD. THE IMAGES SHOWN ARE TYPICAL REPRESENTATIONS OF COMMON LOCATIONS WHERE RETENTION STRAPS ARE REQUIRED BUT ARE NOT INTENDED TO ILLUSTRATE ALL CONDITIONS.

RETENTION STRAP KIT SHALL BE "HOLDRITE #117-K" SERIES.

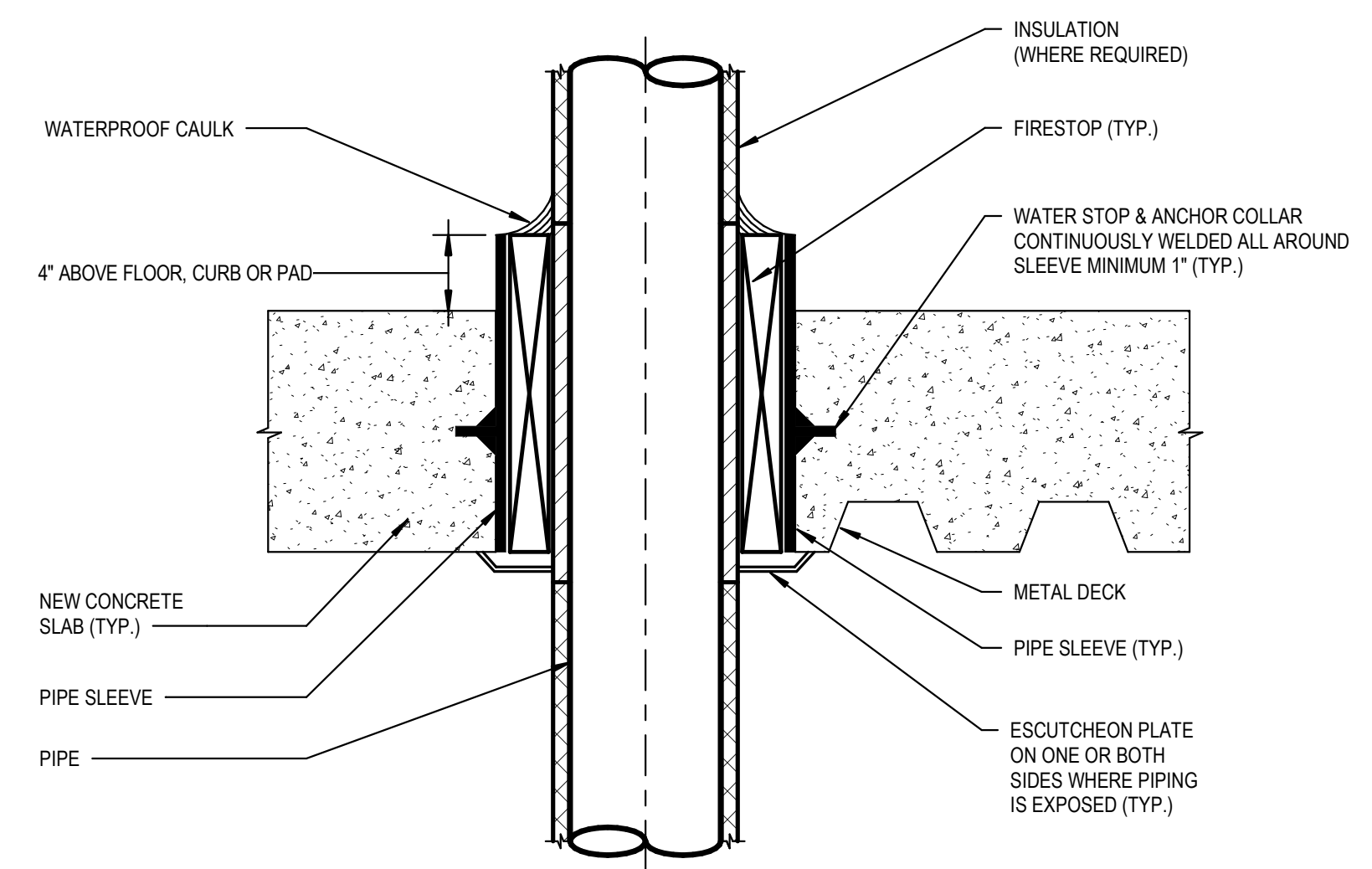
STRAP MATERIAL SHALL BE GALVANIZED STEEL FOR PIPES 5" THROUGH 8" AND HEAVY GAUGE GALVANIZED STEEL FOR PIPES 10" THROUGH 15" WITH GALVANIZED T-BOLTS & MATCHING HARDWARE.

CLAMP MATERIAL SHALL BE HIGH STRENGTH, HIGH TORQUE GALVANIZED STEEL.

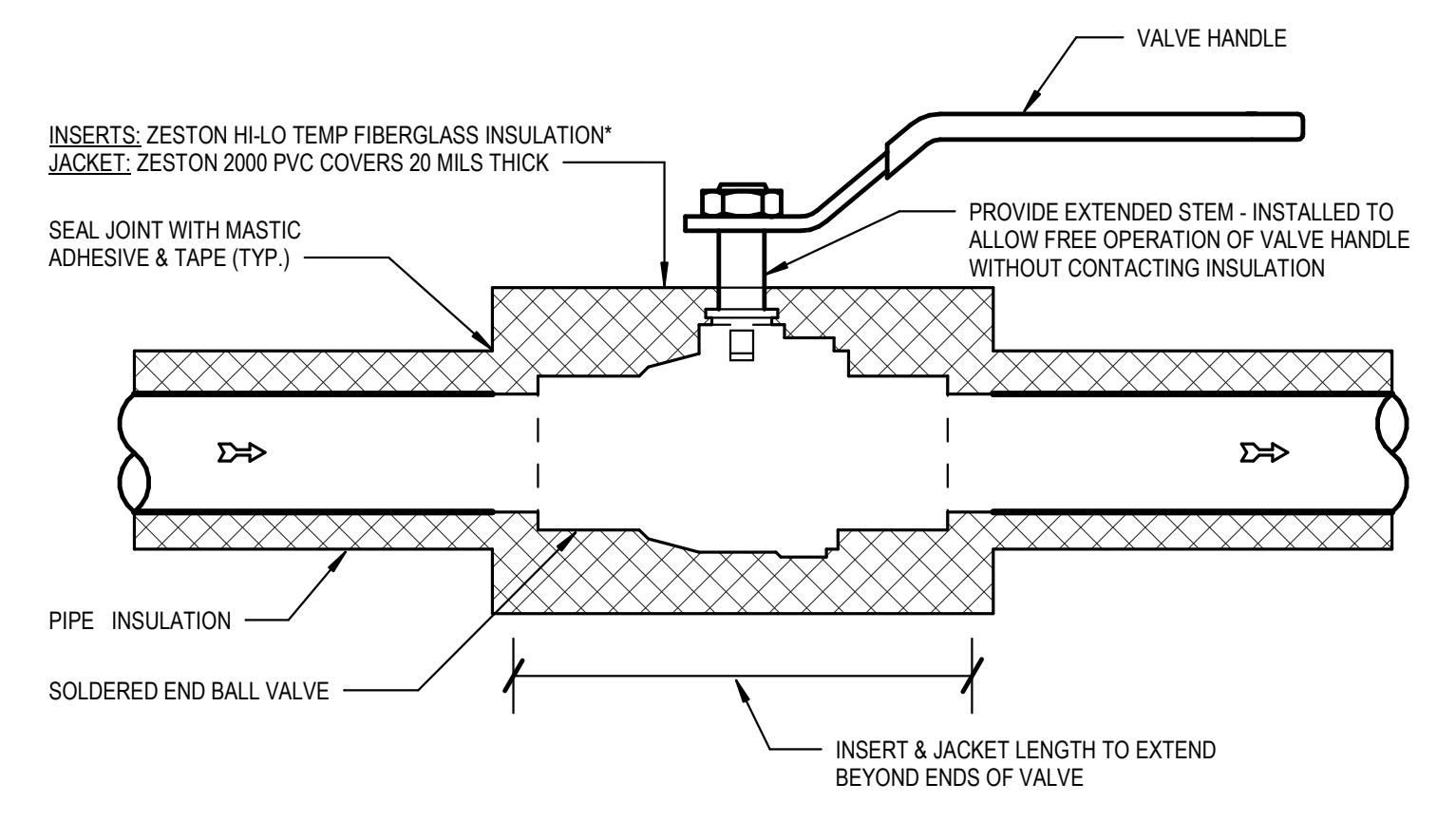
NOT TO SCALE 7 TYPICAL DETAIL
RETENTION STRAP DETAIL
(FOR NO-HUB CAST IRON PIPING, 5" DIA. & LARGER)



NOT TO SCALE 4 TYPICAL DETAIL
FIRE PROOFING OF NON-INSULATED PIPE PENETRATION THROUGH CONCRETE WALL OR SLAB
SYSTEM NO. C-AJ-1551
(FOR STEEL OR IRON PIPE 8" DIA AND SMALLER, COPPER PIPE / TUBING 4" DIA AND SMALLER)

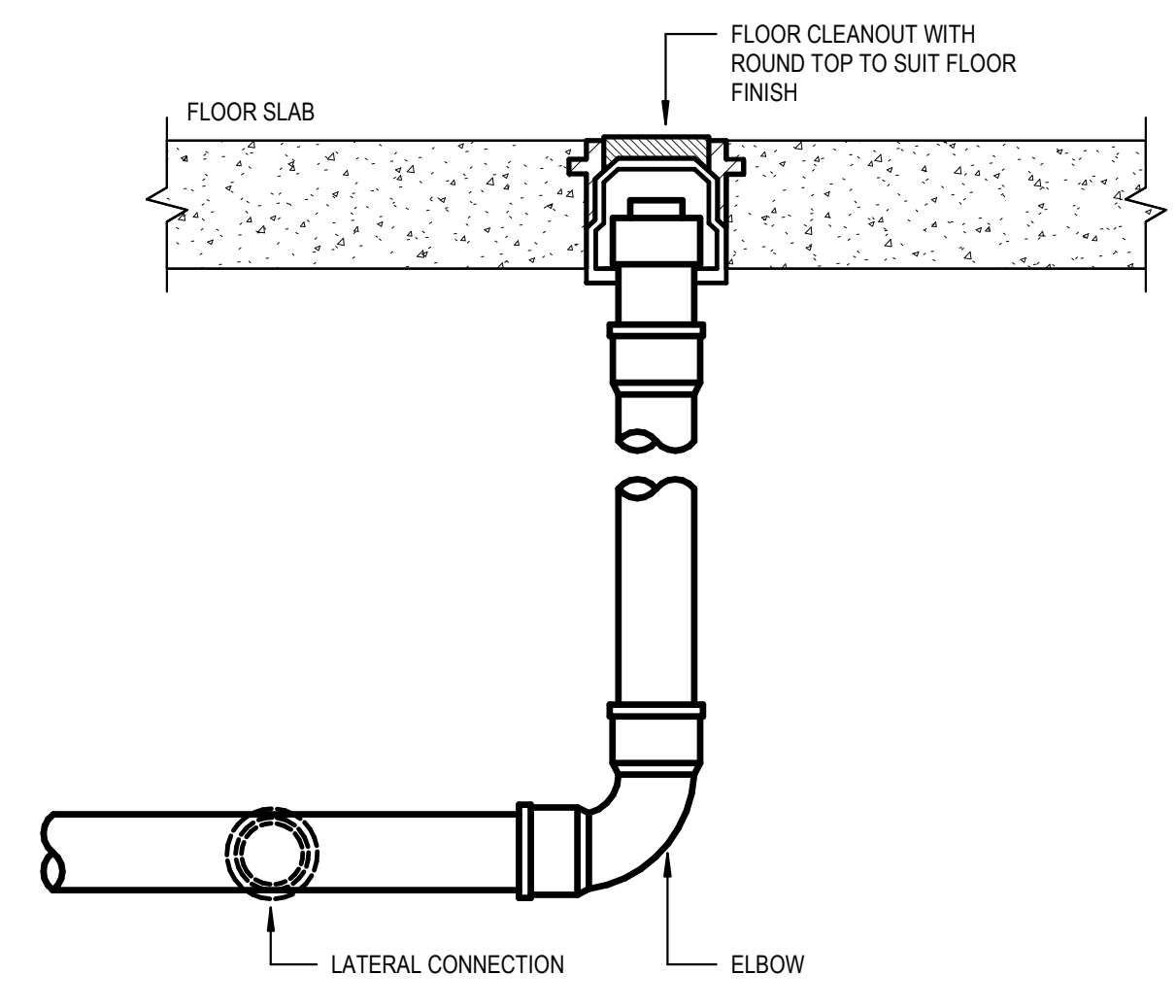


NOT TO SCALE 1 TYPICAL DETAIL
PIPE SLEEVE DETAIL

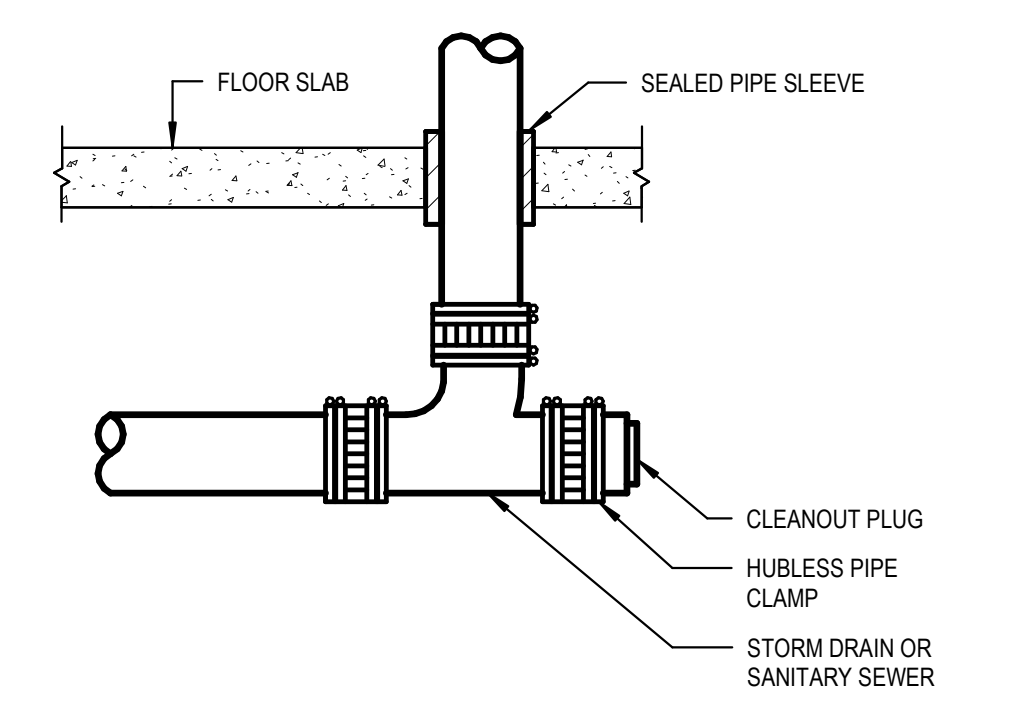


*NOTE: FIBERGLASS INSERTS SHALL BE MOLDED IN TWO MATCHING HALF-SECTIONS, MATCHING THE DENSITY, THERMAL CONDUCTIVITY AND THICKNESS OF THE ADJOINING PIPE INSULATION. 2" AND SMALLER SIZES

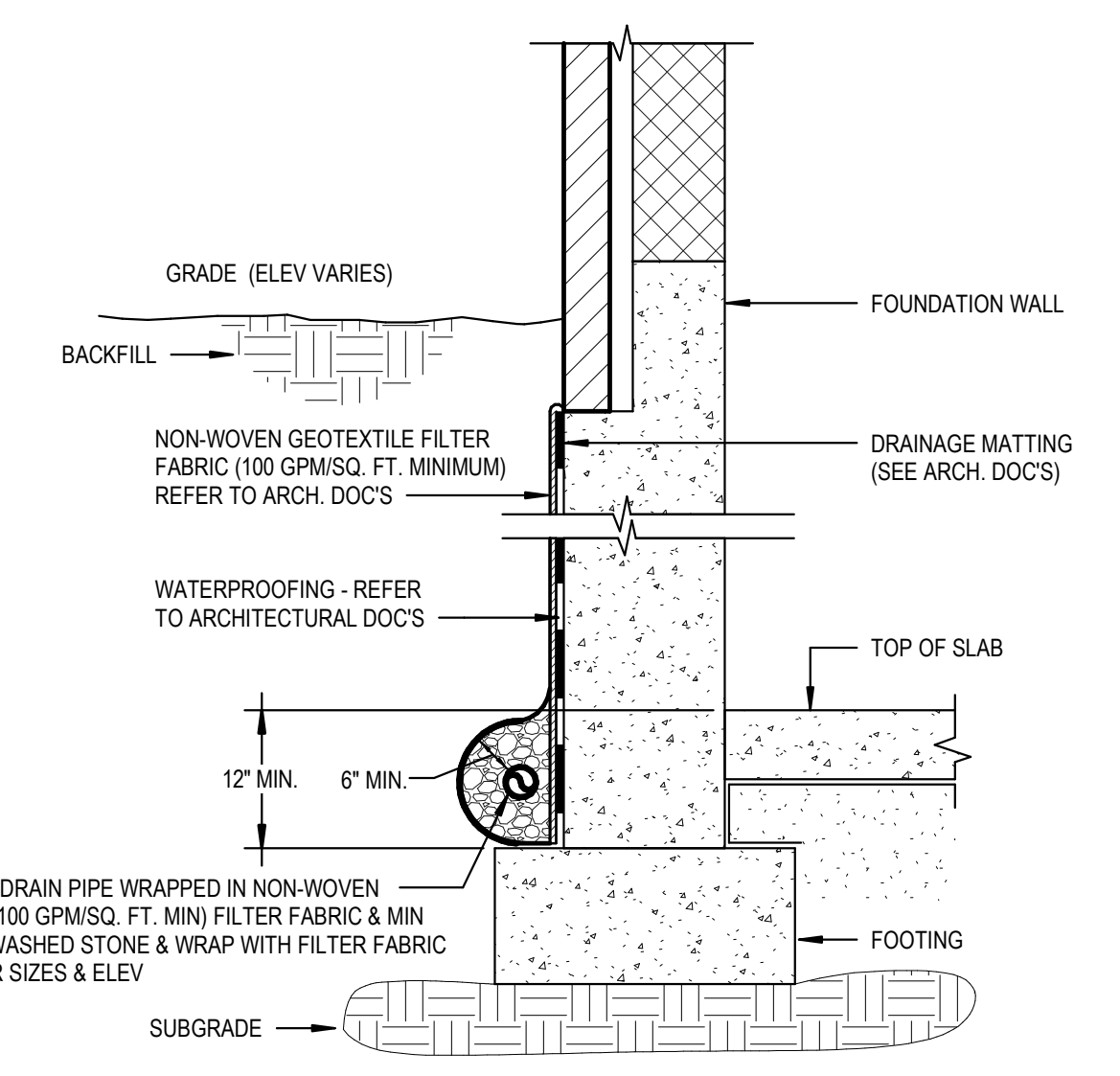
NOT TO SCALE 9 TYPICAL DETAIL BALL VALVE INSULATION DETAIL



NOT TO SCALE 6 TYPICAL DETAIL FLOOR CLEANOUT DETAIL

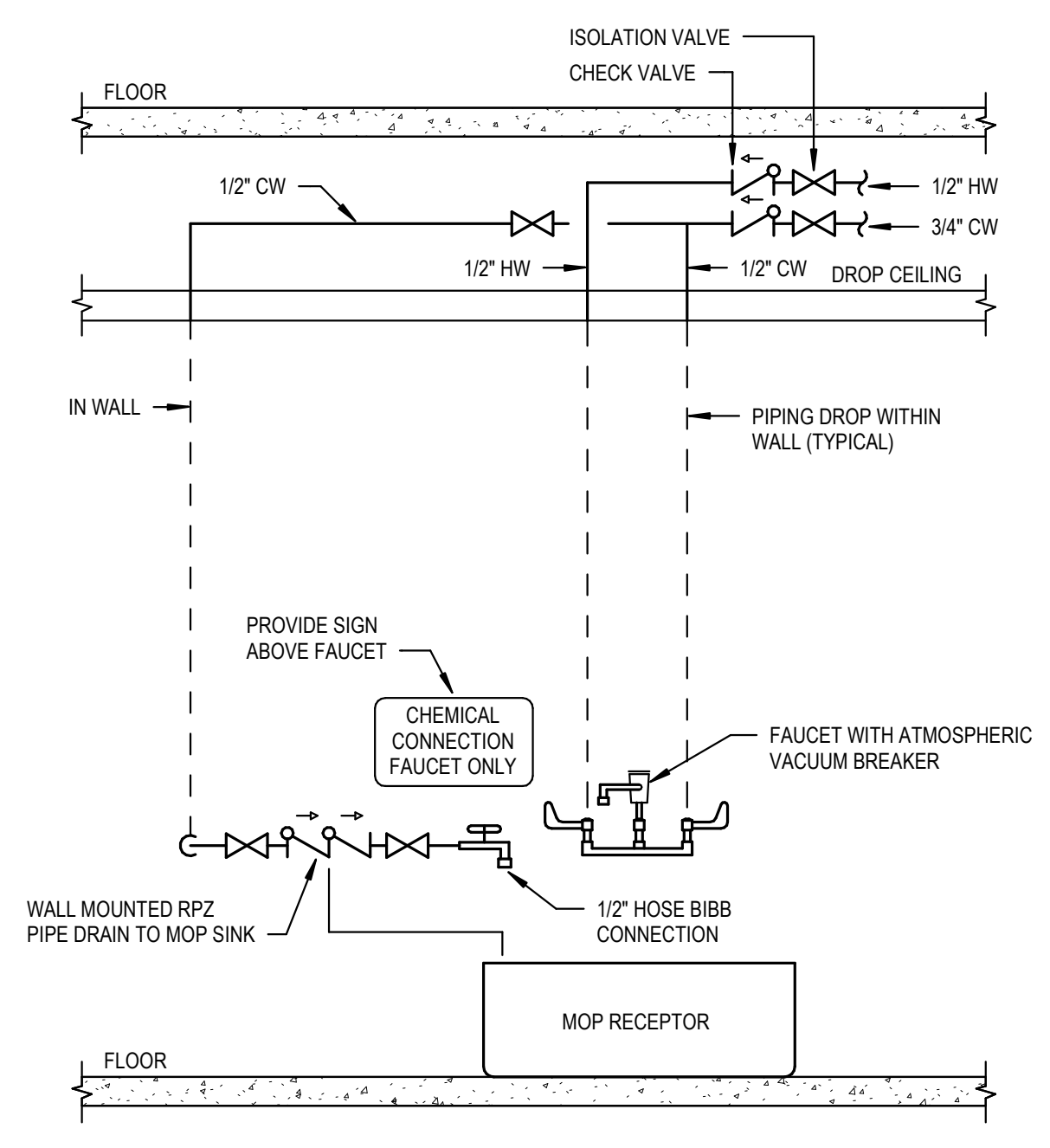


NOT TO SCALE 3 TYPICAL DETAIL CAST IRON CLEANOUT PLUG

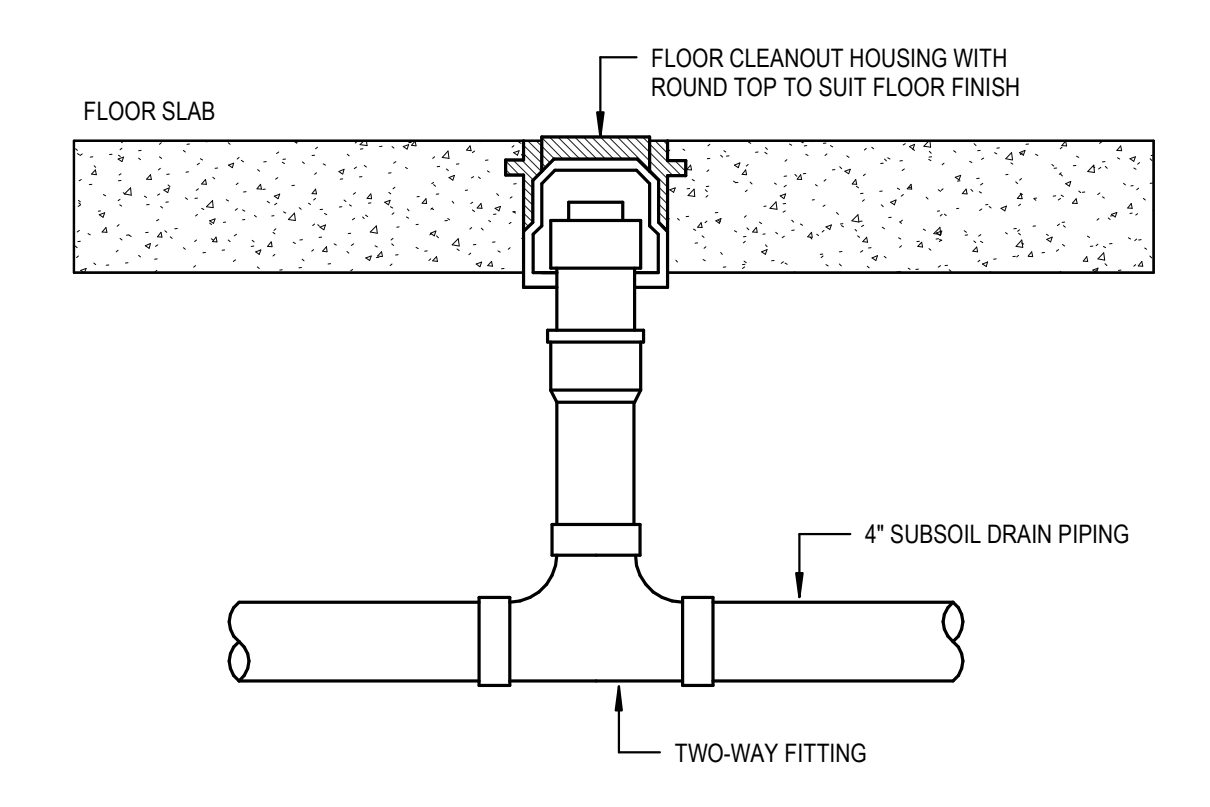


NOTE: THIS IS A TYPICAL DETAIL FOR PERIMETER DRAINAGE INSTALLATION. IT DESCRIBES THE WATER PROOFING INTENT AND LISTS PIPING AND GEOTEXTILE MATERIAL CHARACTERISTICS. FOR THE EXACT SHAPE, SIZES AND DEPTH OF STRUCTURAL ELEMENTS, FOR THE NECESSARY AMOUNT OF WASHED STONE AND EXTENT OF WATER PROOFING ON FOUNDATION WALLS OR OTHER ELEMENTS REFER TO STRUCTURAL AND ARCHITECTURAL DRAWINGS AND DETAILS.

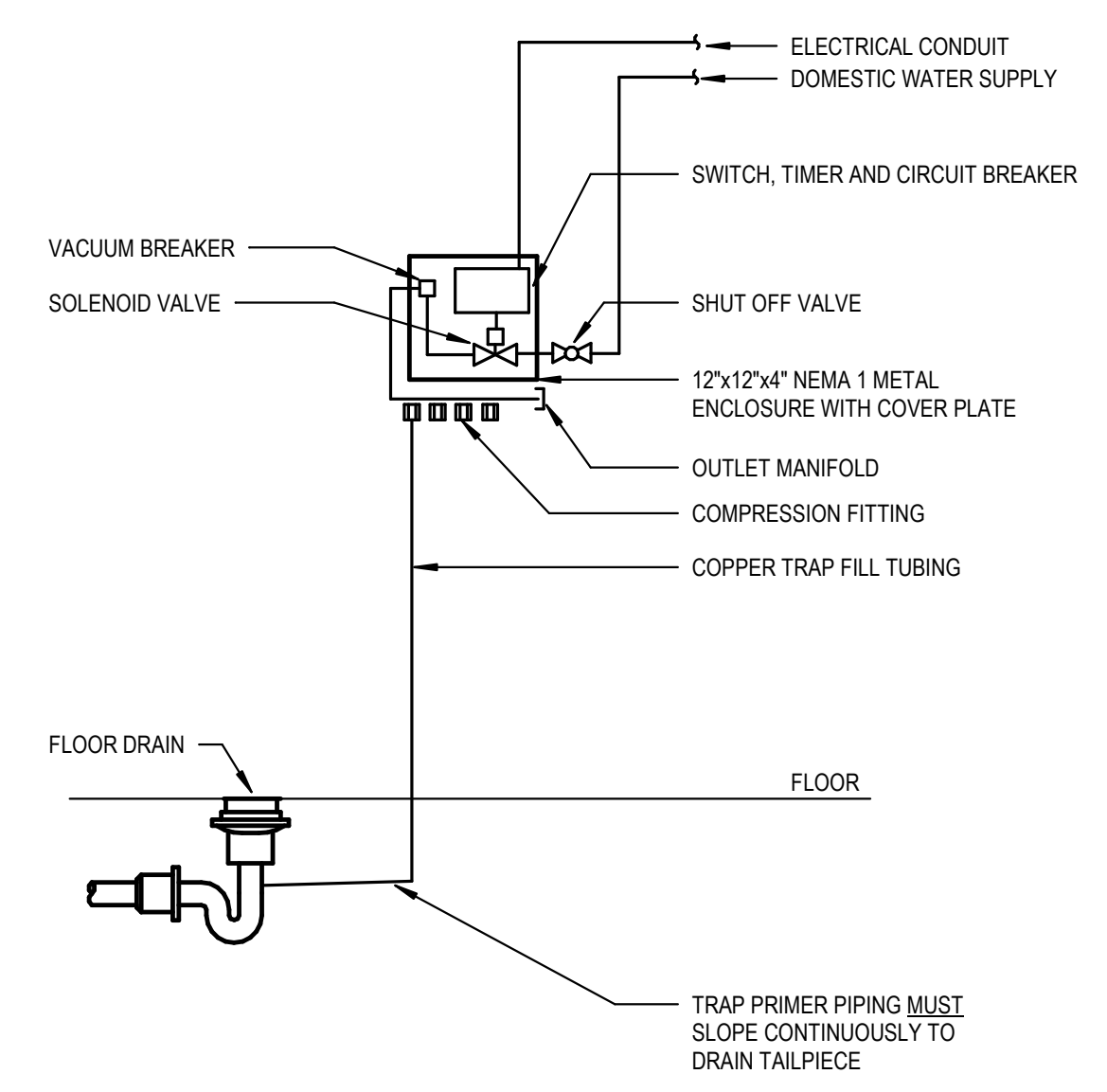
NOT TO SCALE 8 TYPICAL DETAIL PERIMETER DRAINAGE DETAIL



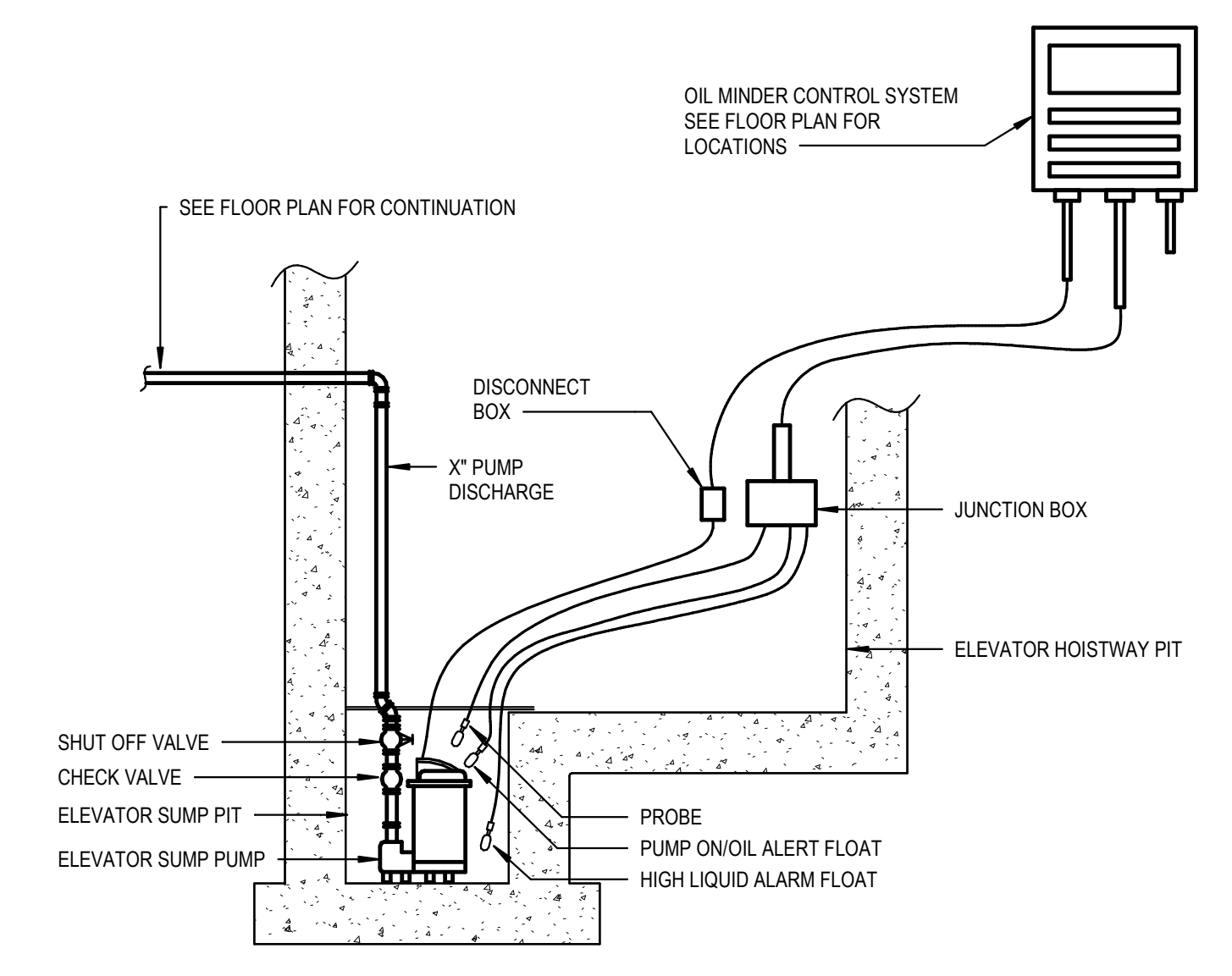
NOT TO SCALE 5 TYPICAL DETAIL MOP RECEPTOR



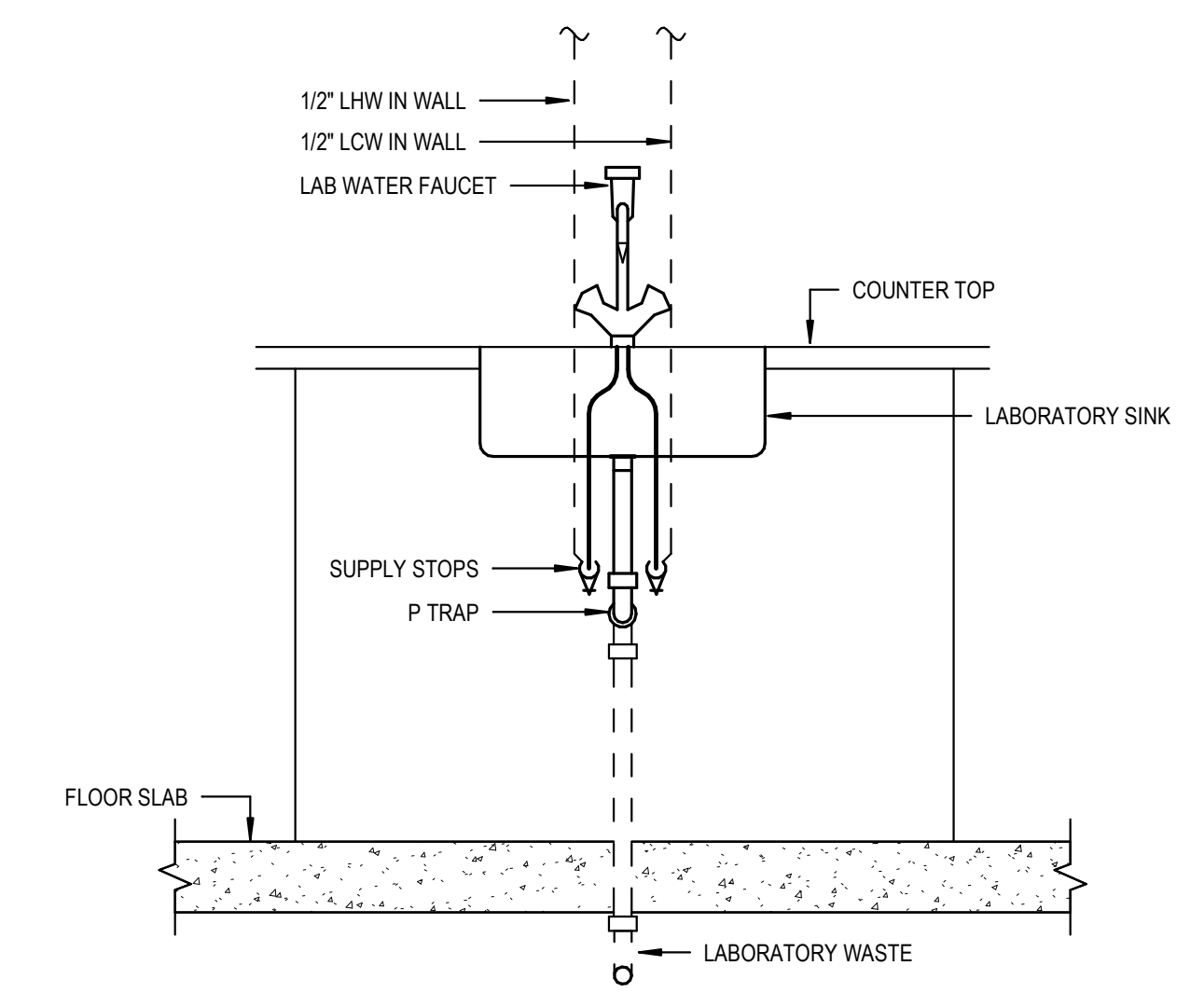
NOT TO SCALE 2 TYPICAL DETAIL SUBSOIL DRAIN FLOOR CLEANOUT DETAIL



NOT TO SCALE 7 TYPICAL DETAIL ELECTRONIC TRAP PRIMER DETAIL

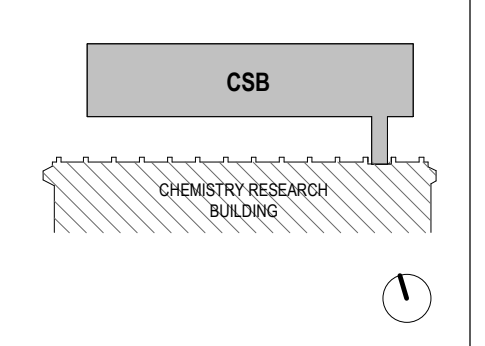


NOT TO SCALE 4 TYPICAL DETAIL ELEVATOR SUMP PUMP DETAIL



NOT TO SCALE 1 TYPICAL DETAIL LABORATORY SINK INSTALLATION DETAIL

KEYPLAN:



SEAL:



CONDITION OF USE: WHEN THIS DOCUMENT IS SUPPLIED TO EITHER OWNER OR CONTRACTOR, IN EITHER PAPER OR ELECTRONIC FORM, THE SUBSCRIBER'S USE OF THE INFORMATION CONTAINED ON THE DOCUMENT IS SUBJECT TO THE CONDITIONS OF THE AGREEMENT BETWEEN THE OWNER AND BALLINGER AND TO BALLINGER'S COPYRIGHT AND OTHER RIGHTS IN THE DOCUMENT. CONTRACTOR SHALL ELECTRONICALLY ACKNOWLEDGE THIS DOCUMENT AVAILABLE TO SUBCONTRACTORS. SUBJECT TO THE SEVERITY OF CONDITIONS OF USE, BALLINGER'S ASSUMED LIABILITY TO SUCH SUBCONTRACTORS IN THEIR PREPARATION OF SHOP DRAWINGS, THE PROVIDER OF THIS DOCUMENT BY BALLINGER SHALL NOT MAKE BALLINGER RESPONSIBLE IN ANY WAY FOR ANY ASPECT OF THE SUBCONTRACTOR'S SHOP DRAWINGS, NOR RELIEVE SUBCONTRACTORS FROM FULL RESPONSIBILITY FOR PREPARATION OF THEIR REQUIRED SHOP DRAWINGS.

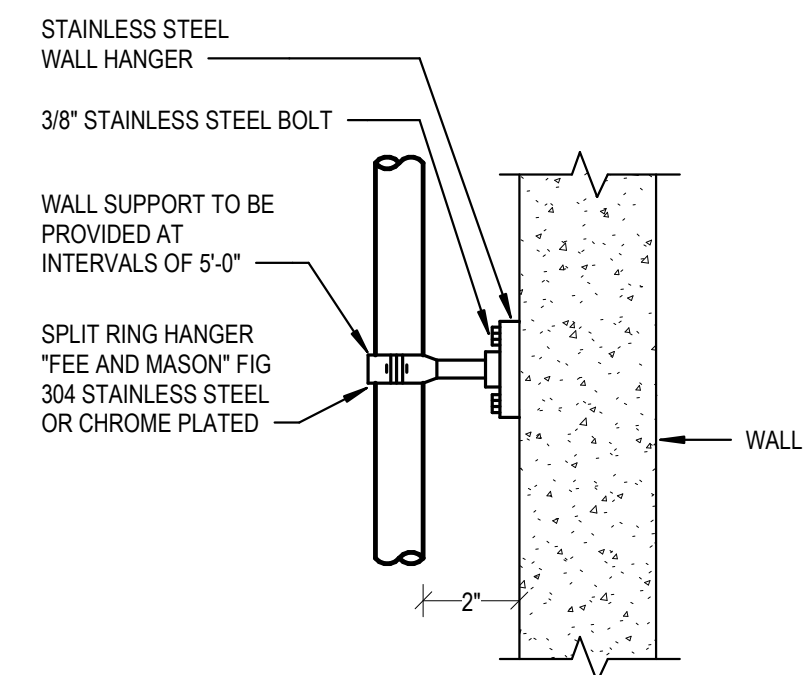
08/29/23 CONFORMED SET 08/29/23 CONSTRUCTION DOCUMENTS DRAWING ISSUE

PROJECT: 21029.00 SCALE: NOT TO SCALE PLUMBING

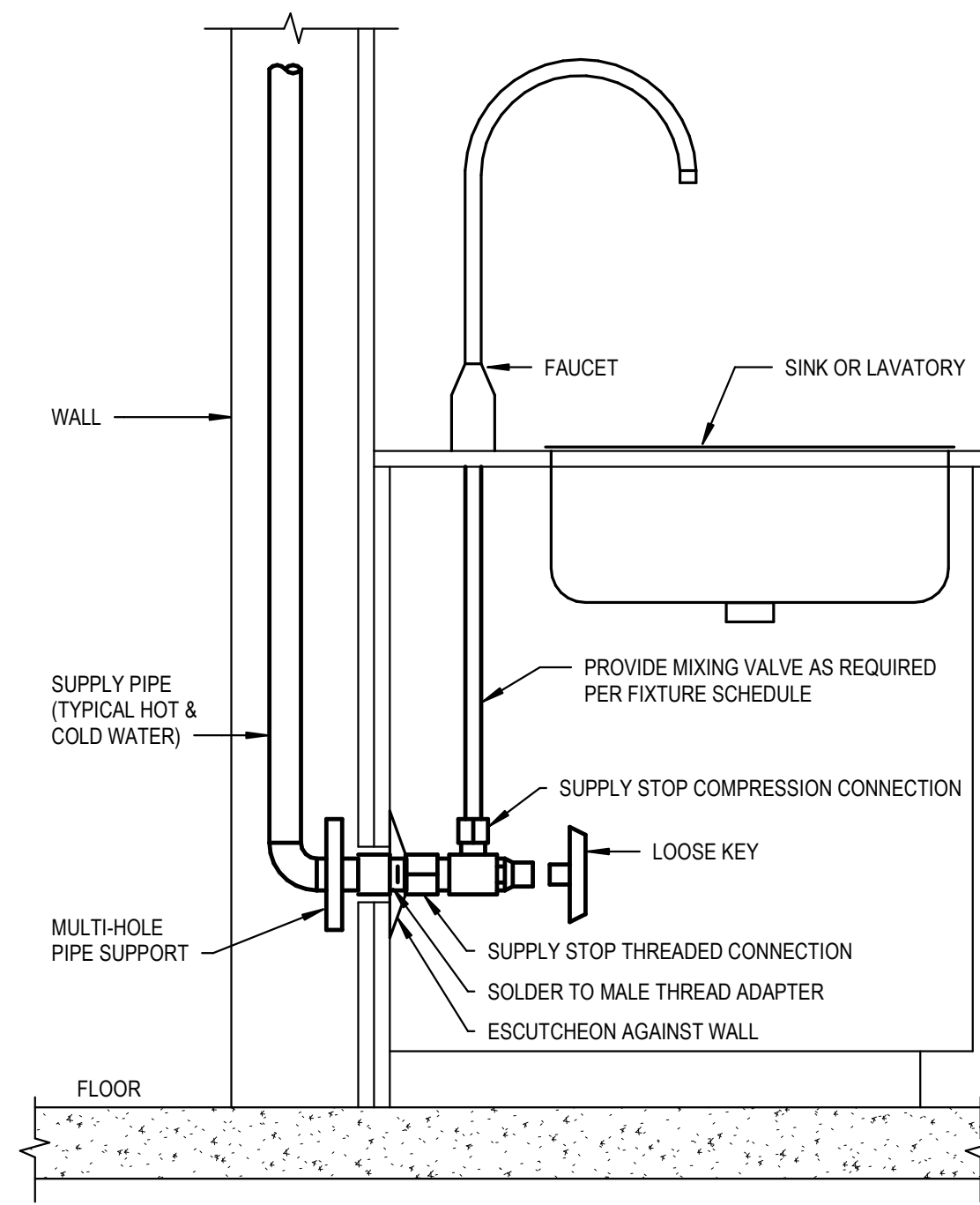
TITLE: PLUMBING DETAILS

CHEMICAL SAFETY BUILDING NUMBER:

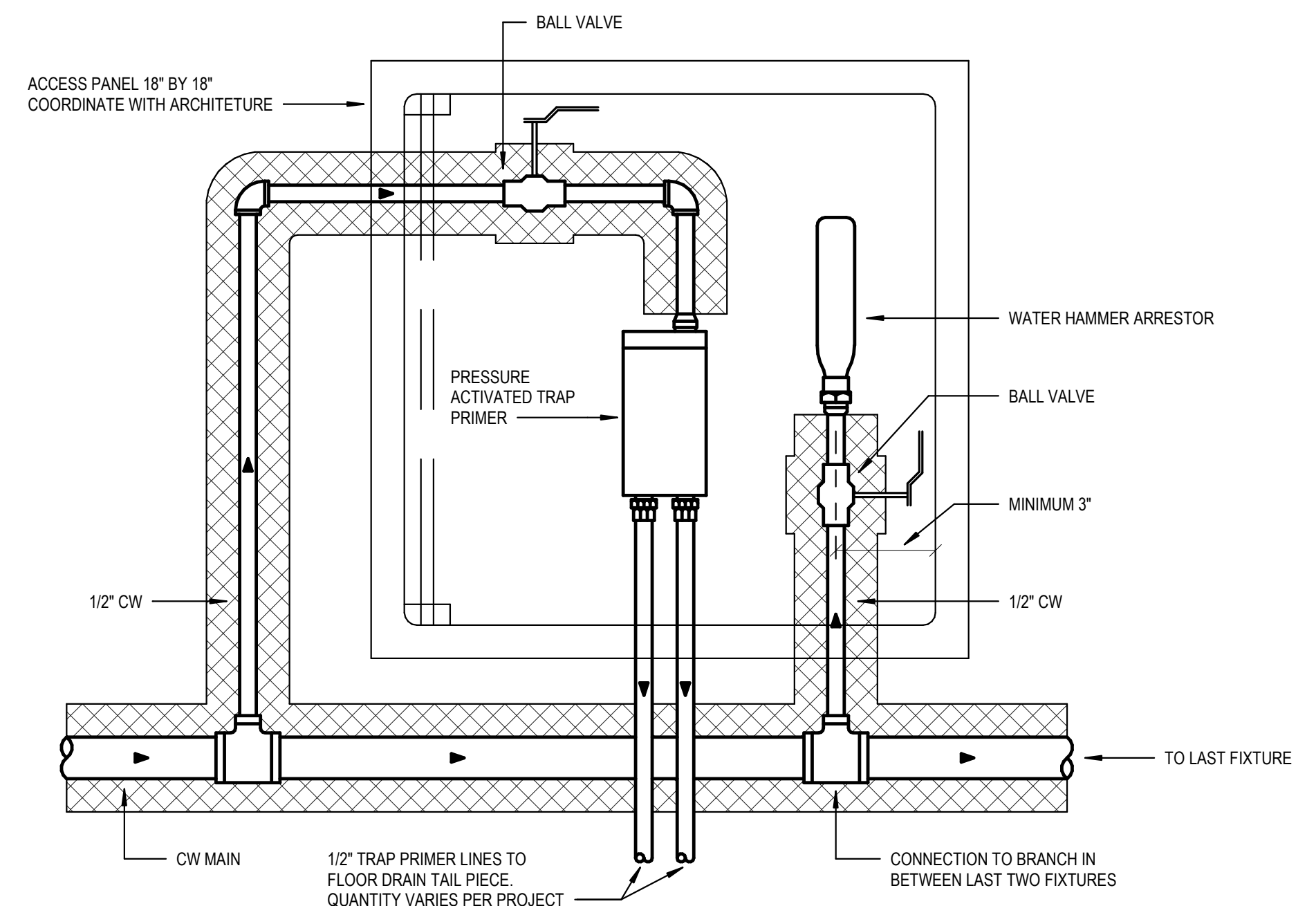
P502



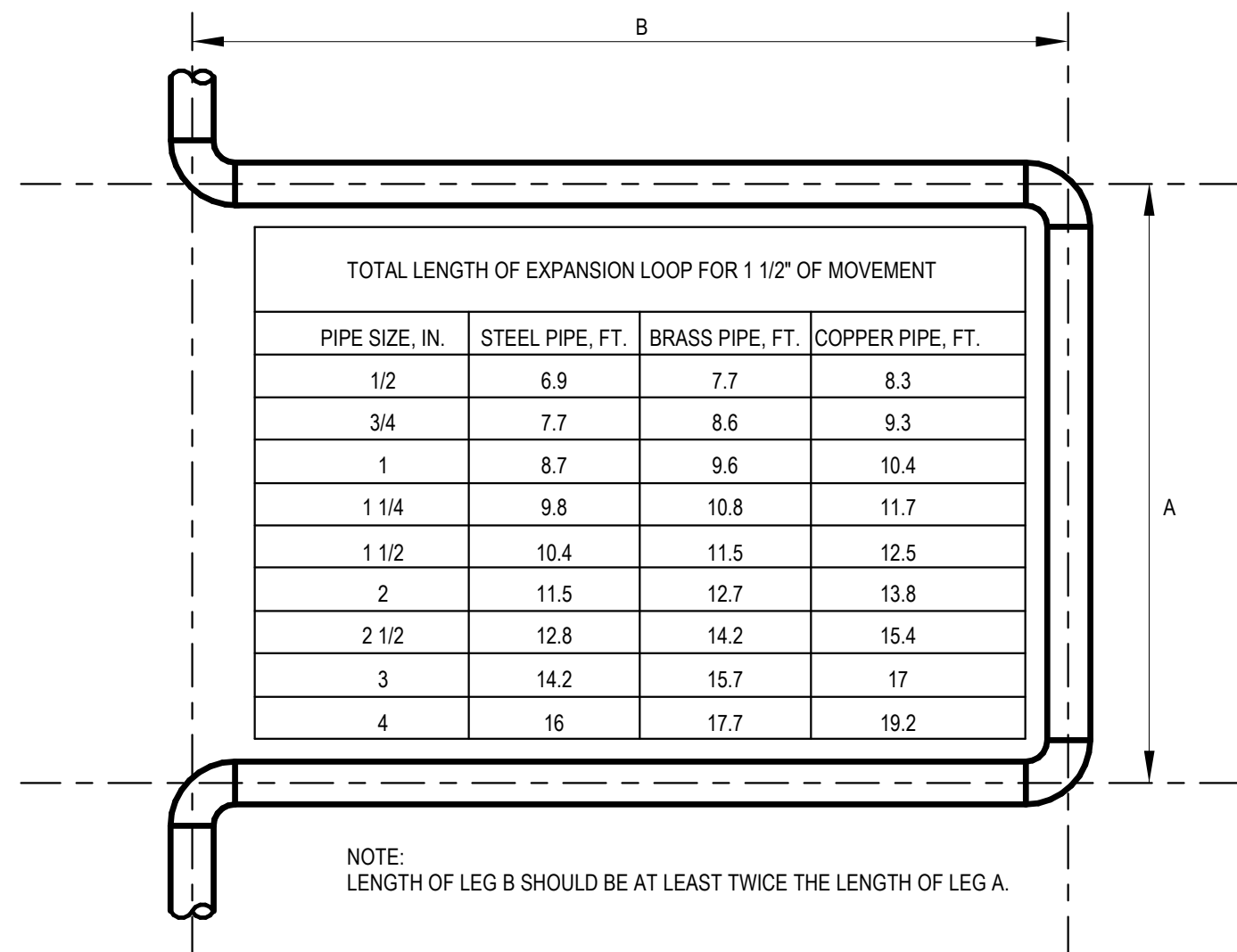
NOT TO SCALE 9 TYPICAL DETAIL
VERTICAL PIPE SUPPORT DETAIL



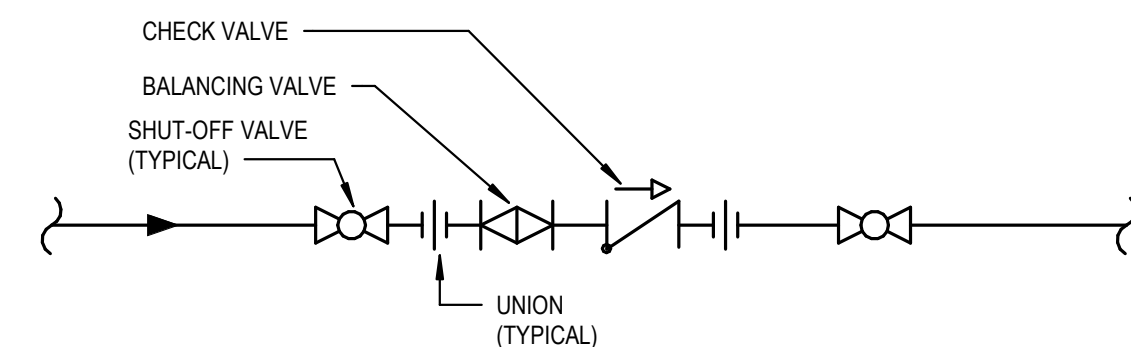
N.T.S. 6 TYPICAL DETAIL
SINK SUPPLY STOP ROUGH-IN DETAIL



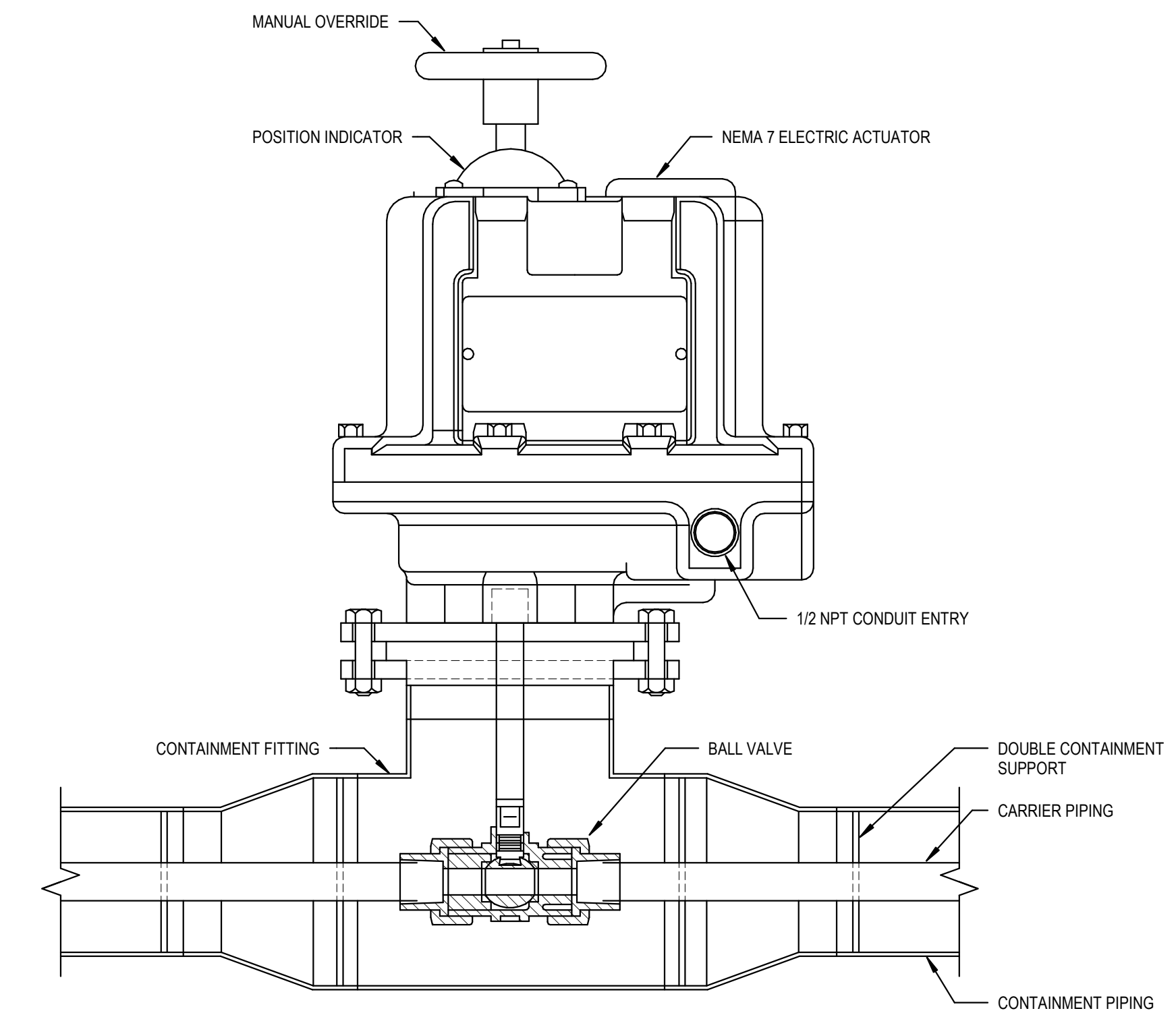
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NOT TO SCALE 8 TYPICAL DETAIL
EXPANSION LOOP DETAIL

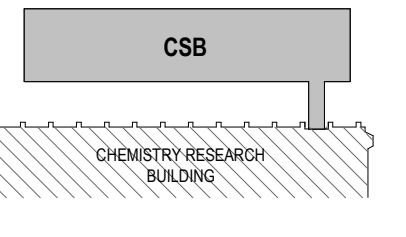


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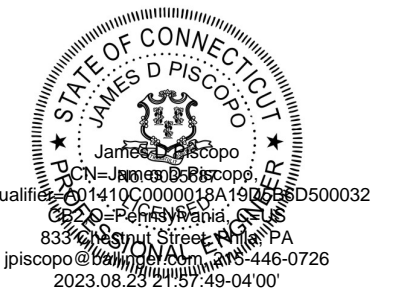


NOT TO SCALE 2 TYPICAL DETAIL
BALL VALVE IN CONTAINMENT FITTING DETAIL

KEYPLAN:



SEAL:



CONDITION OF USE
WHEN THIS DOCUMENT IS SUPPLIED TO EITHER OWNER OR CONTRACTOR, IN EITHER PAPER OR ELECTRONIC FORM, THE SUBSEQUENT USE OF THE INFORMATION CONTAINED ON THE DOCUMENT IS SUBJECT TO THE CONDITIONS OF THE AGREEMENT BETWEEN THE OWNER AND BALLINGER AND TO BALLINGER'S COPYRIGHT AND OTHER SUCH RIGHTS IN THIS DOCUMENT. CONTRACTOR MAY MAKE ELECTRONIC REUSE OF THIS DOCUMENT AVAILABLE TO SUBCONTRACTORS, SUBJECT TO THE RESTRICTIONS OR CONDITIONS OF USE, LOCATED IN A CONFORMANCE TO SUCH SUBCONTRACTORS IN THEIR PREPARATION OF SHOP DRAWINGS. THE PROVIDER OF THIS DOCUMENT BY BALLINGER SHALL NOT MAKE BALLINGER RESPONSIBLE IN ANY WAY FOR ANY ASPECT OF THE SUBCONTRACTOR'S SHOP DRAWINGS, NOR RELIEVE SUBCONTRACTORS FROM FULL RESPONSIBILITY FOR PREPARATION OF THEIR REQUIRED SHOP DRAWINGS.

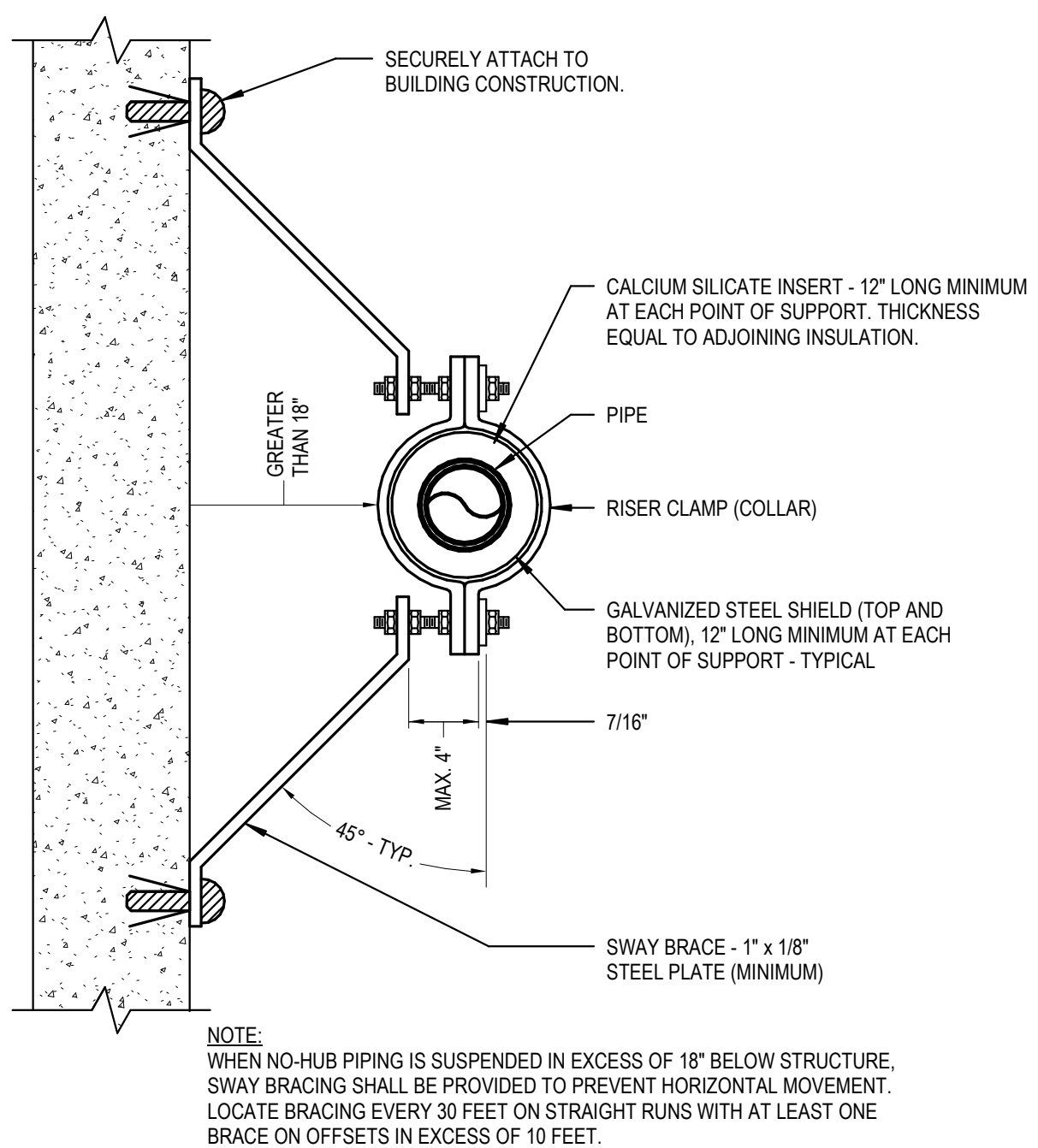
08/25/23 CONFORMED SET
08/25/23 CONSTRUCTION DOCUMENTS
DRAWING ISSUE

PROJECT: 21029.00
SCALE: NOT TO SCALE
PLUMBING

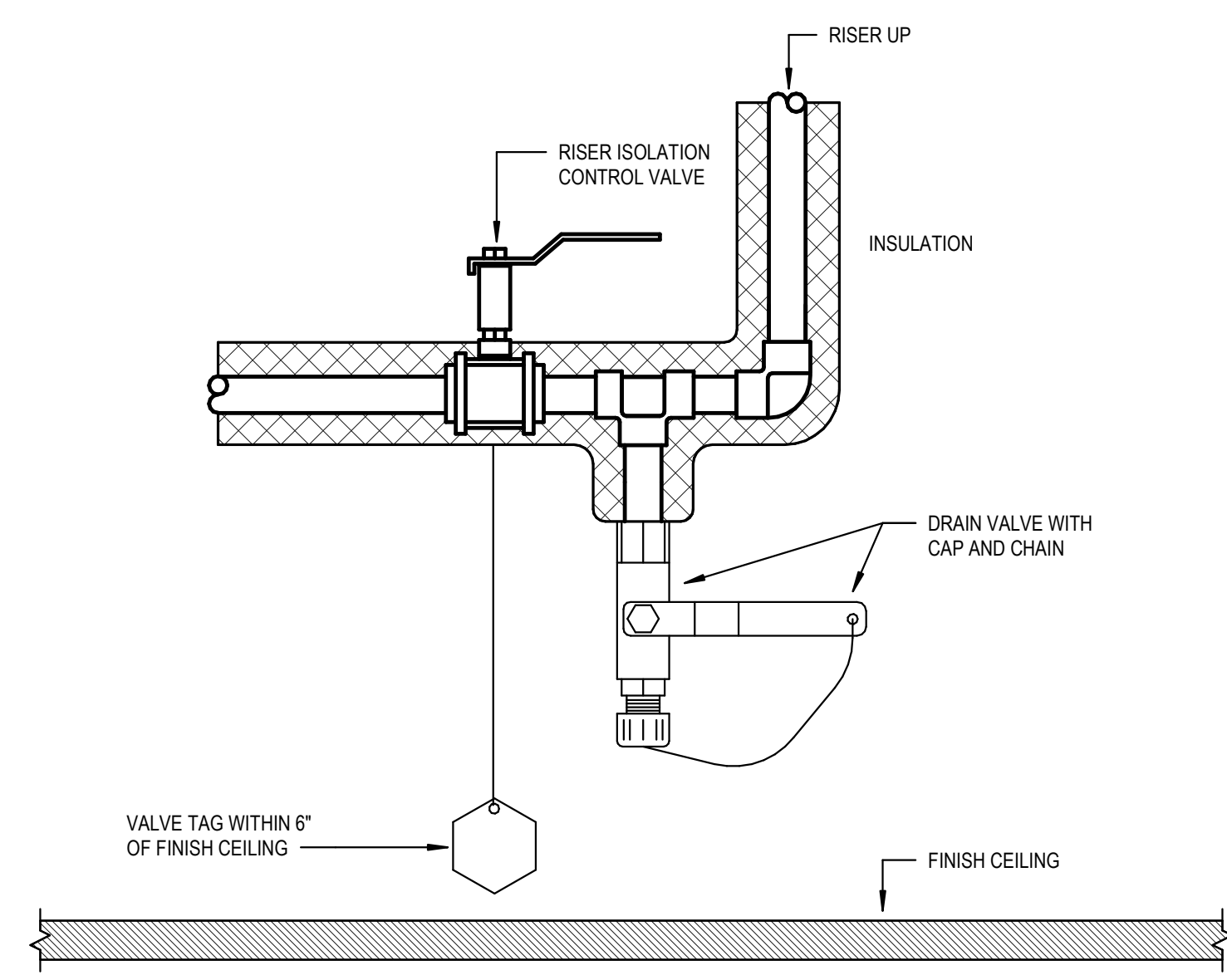
PLUMBING DETAILS

CHEMICAL SAFETY BUILDING
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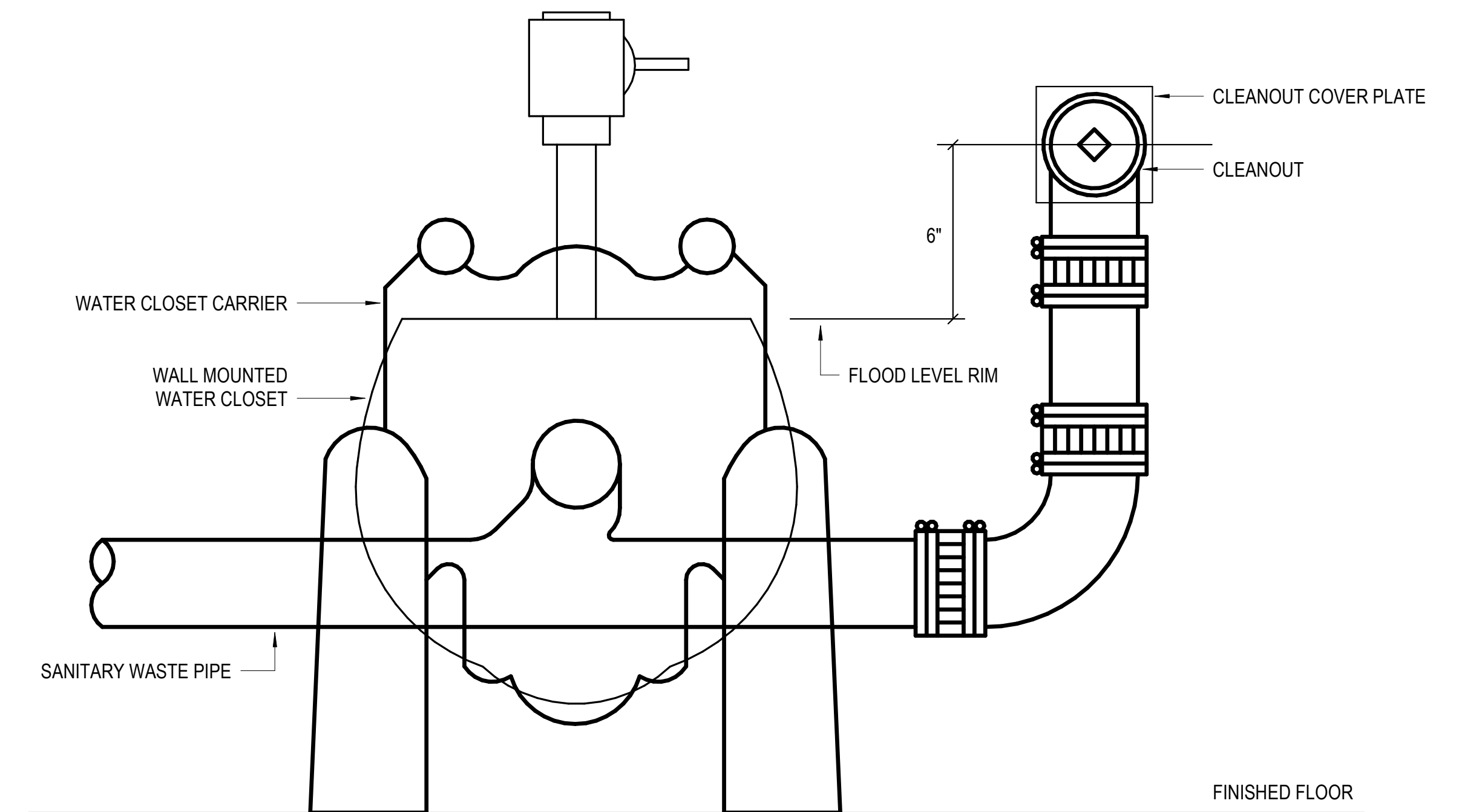
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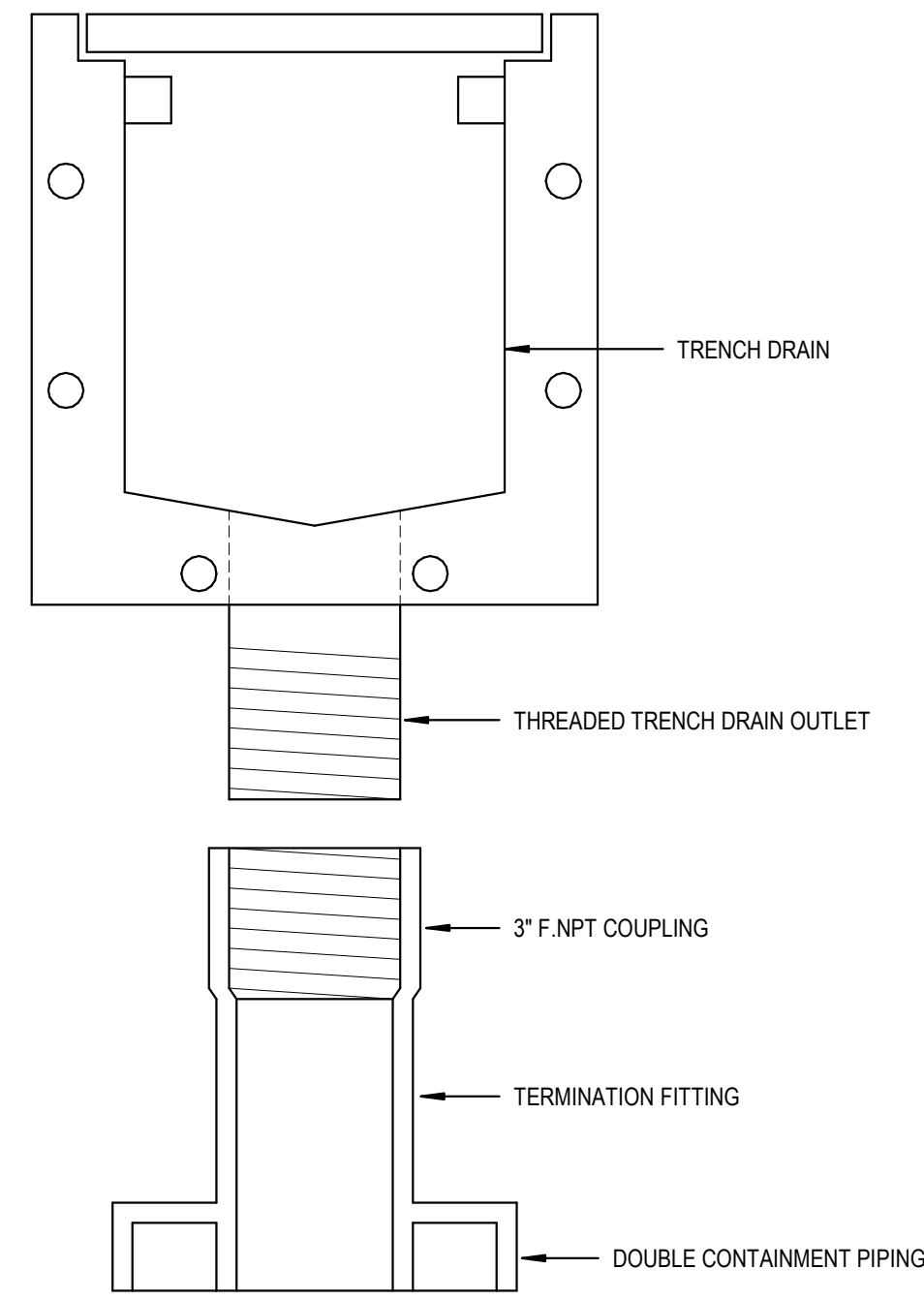
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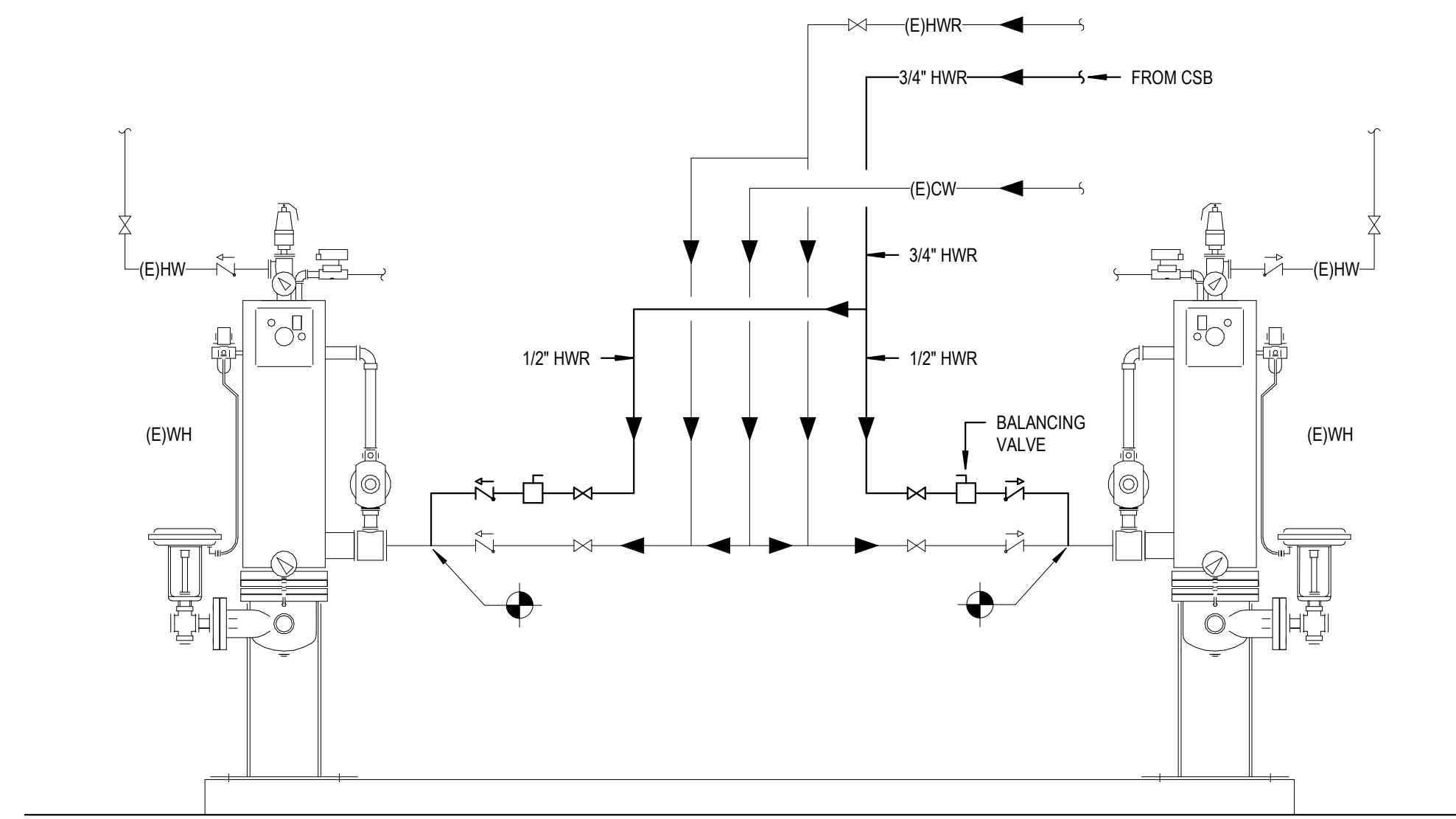
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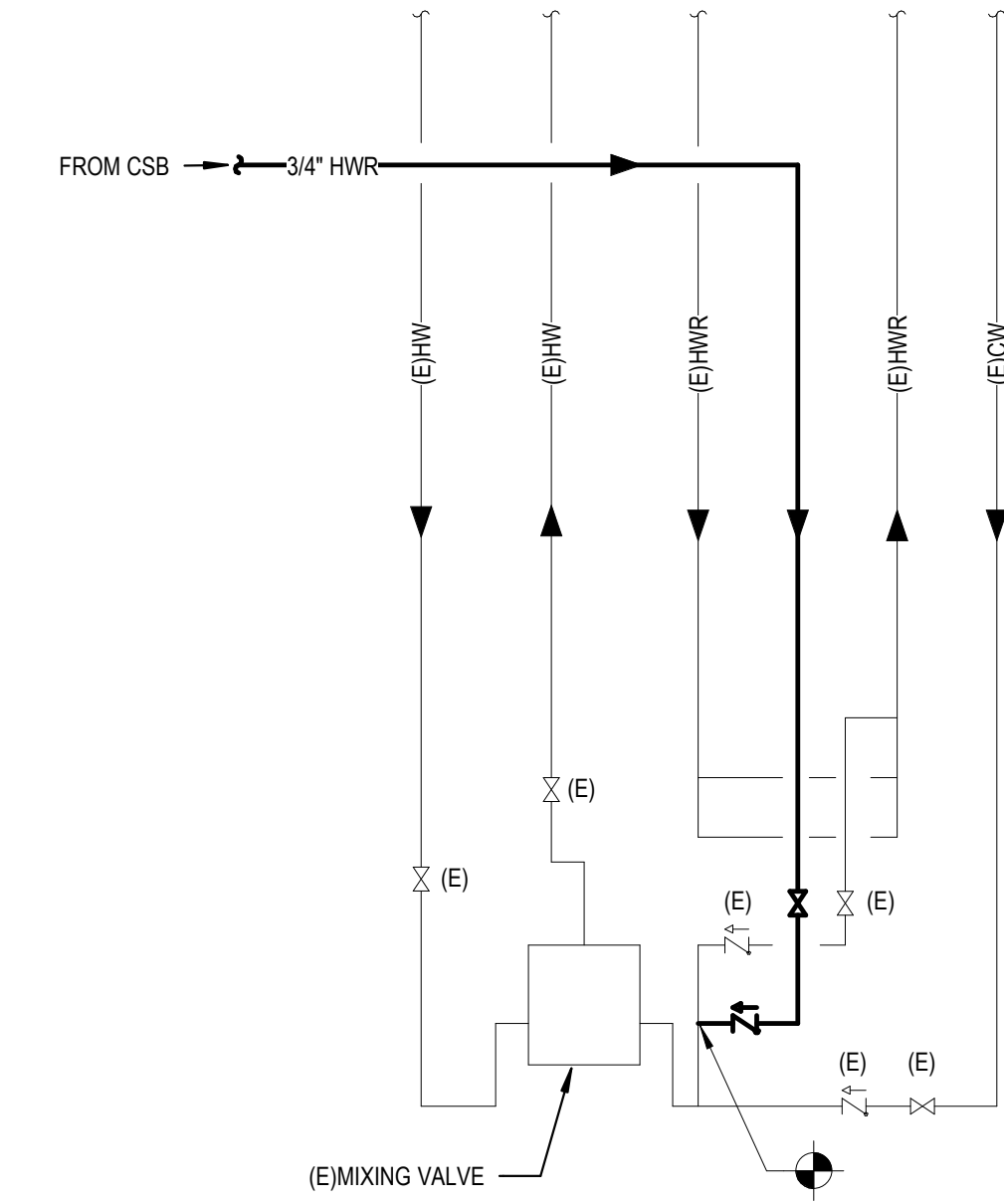
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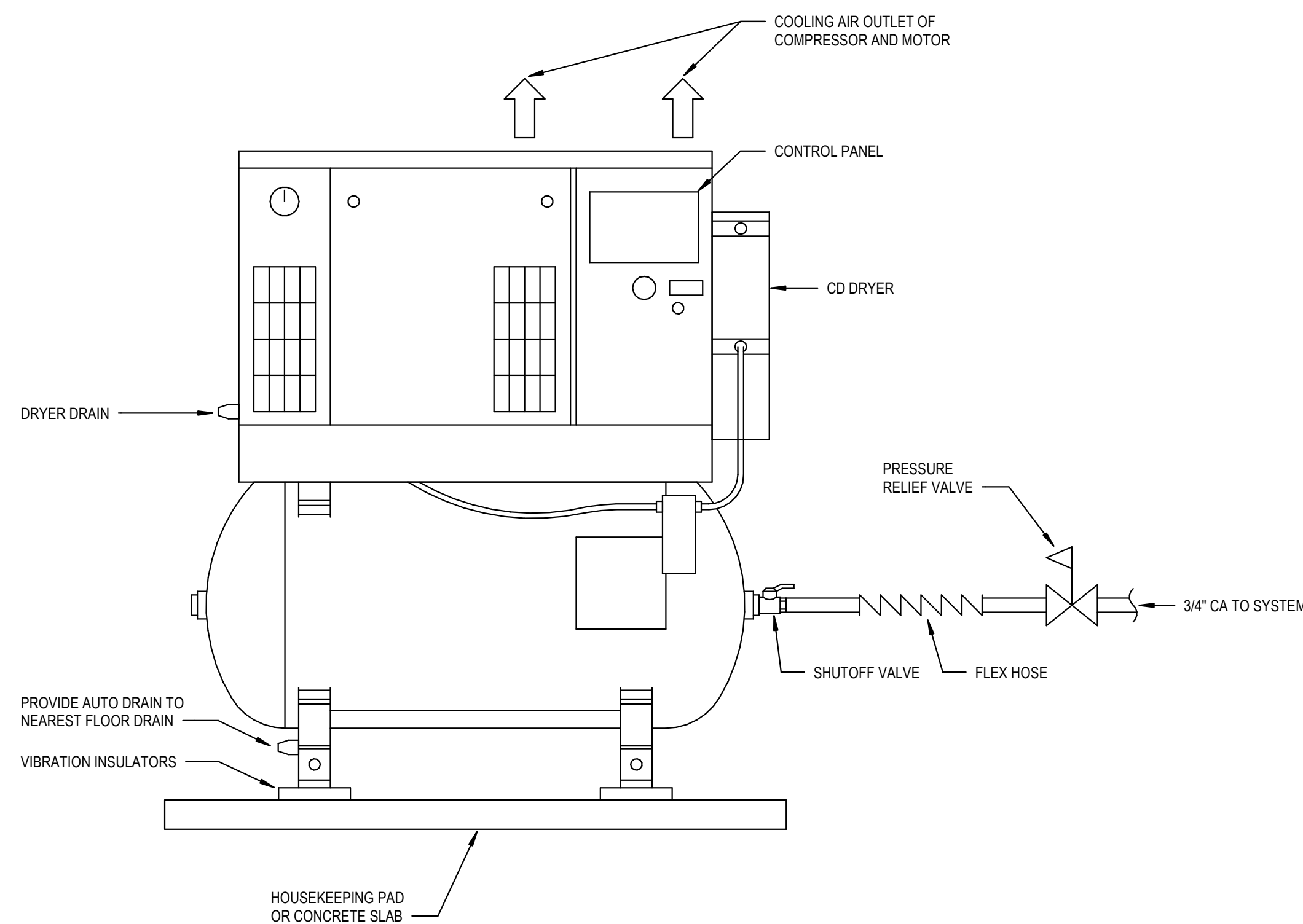
NOT TO SCALE **6** TYPICAL DETAIL
STAINLESS STEEL TRENCH TO DOUBLE CONTAINMENT TRANSITION



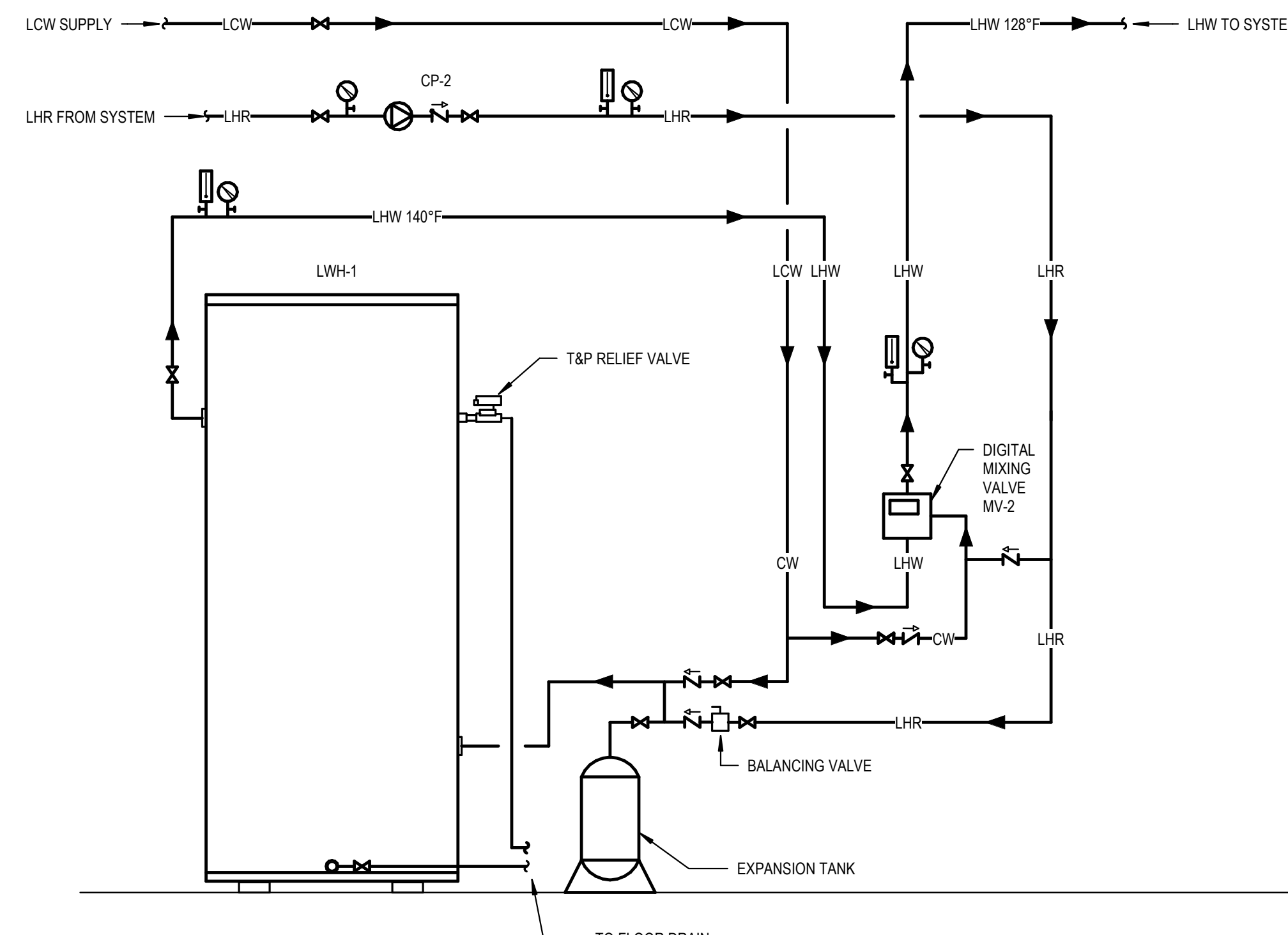
NOT TO SCALE **4** TYPICAL DETAIL
EXISTING CRB DOMESTIC WATER HEATERS



NOT TO SCALE **2** TYPICAL DETAIL
EXISTING DOMESTIC WATER MIXING VALVE ASSEMBLY



NOT TO SCALE **5** TYPICAL DETAIL
AIR COMPRESSOR DETAIL

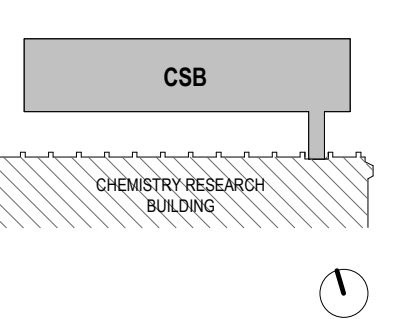


NOT TO SCALE **3** TYPICAL DETAIL
LAB WATER HEATER ASSEMBLY



1" = 1'-0" **1** TYPICAL DETAIL
WATER METER DETAIL

KEYPLAN:



SEAL:



CONDITION OF USE
WHEN THIS DOCUMENT IS SUPPLIED TO EITHER OWNER OR CONTRACTOR IN EITHER PAPER OR ELECTRONIC FORM, THE SUBSCRIBER'S USE OF THE INFORMATION CONTAINED ON THE DOCUMENT IS SUBJECT TO THE CONDITIONS OF THE AGREEMENT BETWEEN THE OWNER AND BALLINGER AND TO BALLINGER'S COPYRIGHT AND OTHER RIGHTS IN THIS DOCUMENT. CONTRACTOR SHALL MAKE ELECTRONIC FILES OF THIS DOCUMENT AVAILABLE TO SUBCONTRACTORS, SUBJECT TO THE RESTRICTIONS OR CONDITIONS OF USE, SOLELY AS A CONVENIENCE TO SUCH SUBCONTRACTORS IN THEIR PREPARATION OF SHOP DRAWINGS. THE PROVIDER OF THIS DOCUMENT BY BALLINGER SHALL NOT MAKE BALLINGER RESPONSIBLE IN ANY MANNER FOR ANY ASPECT OF THE SUBCONTRACTOR'S SHOP DRAWINGS, NOR RELIEVE SUBCONTRACTORS FROM ALL RESPONSIBILITY FOR PREPARATION OF THEIR REQUIRED SHOP DRAWINGS.

08/25/23 CONFORMED SET
08/25/23 CONSTRUCTION DOCUMENTS
DRAWING ISSUE

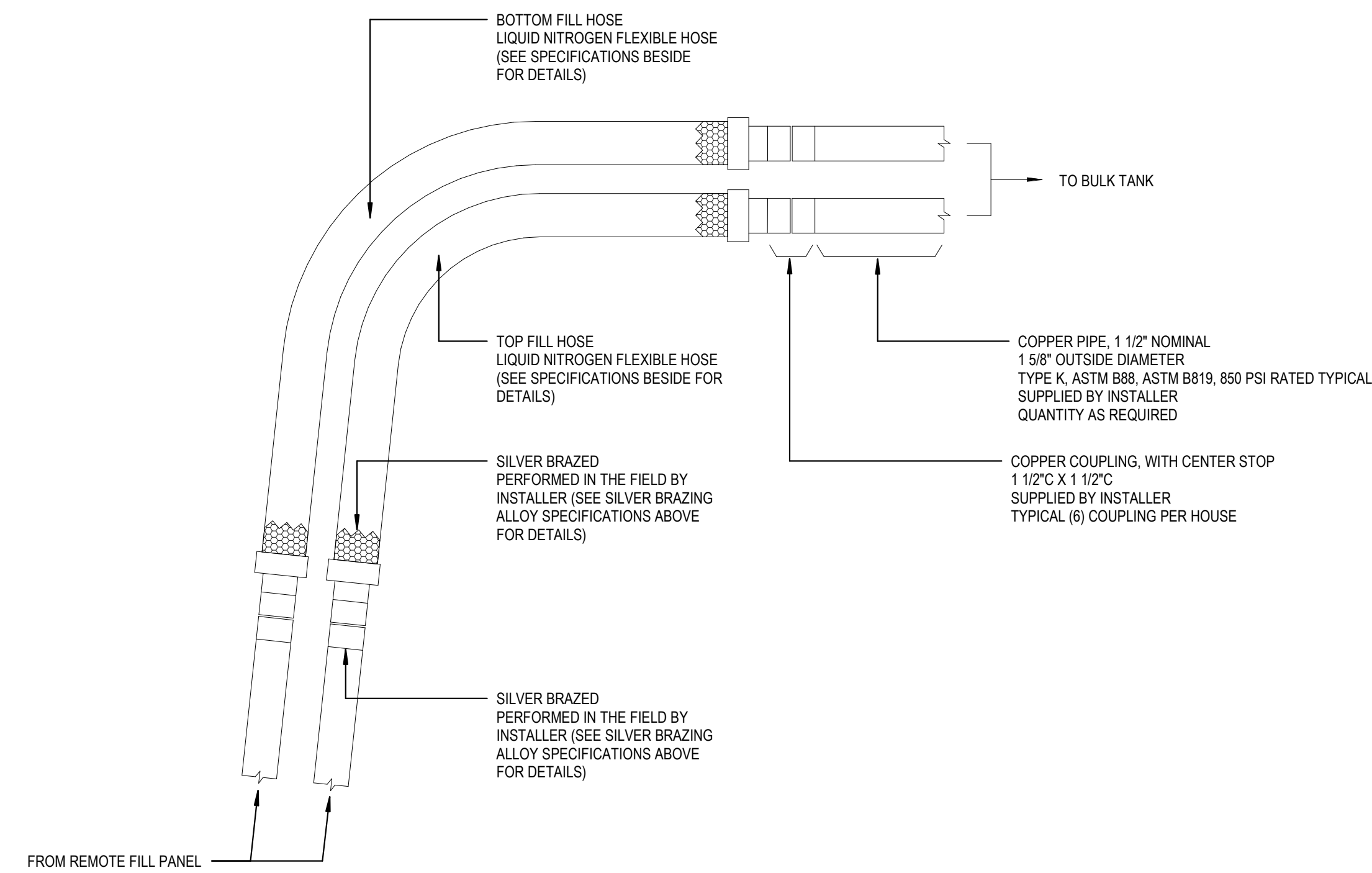
PROJECT: 210209.00
SCALE: As indicated
PLUMBING

TITLE:
PLUMBING DETAILS

CHEMICAL SAFETY BUILDING
NUMBER:

P504

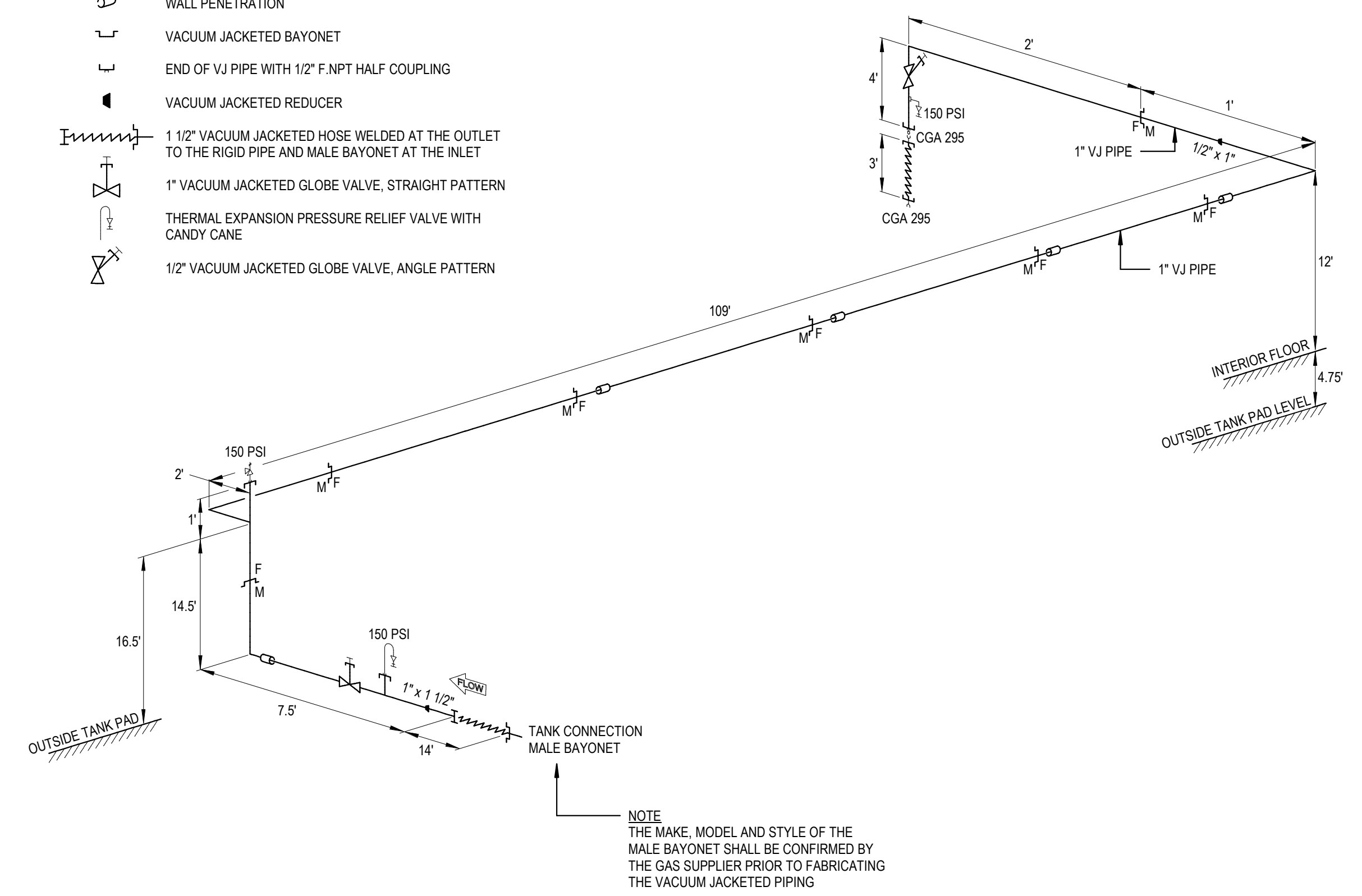
LIQUID N ₂ FLEXIBLE HOSE	
SPECIFICATIONS	
NOMINAL HOSE I.D.	1 1/2"
TO FIT COPPER TUBE	
NOMINAL SIZE:	1 1/2"
ACTUAL O.D.:	1 5/8"
OVERALL LENGTH:	36"
LENGTH OF COPPER TUBE NED:	2"
MAX. WORKING PRESSURE:	510 PSIG
TEMPERATURE RANGE:	-320°F TO 450°F
HOSE MATERIAL	
CORRUGATED CORE:	STAINLESS STEEL 321
SINGLE BRAID:	STAINLESS STEEL 304
SILVER BRAZING ALLOY	
SPECIFICATIONS	
NOMINAL COMPOSITION	
SILVER:	15% APPROX.
COPPER:	80% APPROX.
PHOSPHOROUS:	5% APPROX.
PHYSICAL PROPERTIES	
MELTING POINT (SOLIDUS):	1190°F
FLOW POINT (LIQUIDUS):	1300°F
FLUX:	NOT REQUIRED
RECOMMENDED BRANDS	
SIL-FOS 15	
SILVALOY 15	
SILVALOY 15 EXCEL	



NOT TO SCALE **5** TYPICAL DETAIL
FLEXIBLE HOSE INSTALLATION IN TRENCH

VACUUM JACKETED PIPING	
TECHNICAL SPECIFICATIONS	
FLUID SERVICE:	LIQUID NITROGEN
DESIGN TEMPERATURE:	-320°F
MAX. ALLOWABLE WORKING PRESSURE:	150 PSIG
INNER PIPE:	TYPE 304/304L SCHEDULE 5
OUTER PIPE:	TYPE 304/304L SCHEDULE 5
FINISH:	BRUSHED
EVACUATION PORT:	DV-6R
HELIUM LEAK TEST:	YES
PNEUMATIC PRESSURE TEST:	SAFETY RELIEF VALVE
VACUUM RETENTION TEST:	5 DAYS
TYPE OF SERIAL TAG:	STANDARD TAG
CONSTRUCTION CODE:	ASME B31.3
X-RAY TESTING:	5% RANDOM

MECHANICAL LEGEND	
SYMBOL	DESCRIPTION
	SAFETY RELIEF VALVE
	WALL PENETRATION
	VACUUM JACKETED BAYONET
	END OF VJ PIPE WITH 1/2" F.NPT HALF COUPLING
	VACUUM JACKETED REDUCER
	1 1/2" VACUUM JACKETED HOSE WELDED AT THE OUTLET TO THE RIGID PIPE AND MALE BAYONET AT THE INLET
	1" VACUUM JACKETED GLOBE VALVE, STRAIGHT PATTERN
	THERMAL EXPANSION PRESSURE RELIEF VALVE WITH GANDY GANE
	1 1/2" VACUUM JACKETED GLOBE VALVE, ANGLE PATTERN



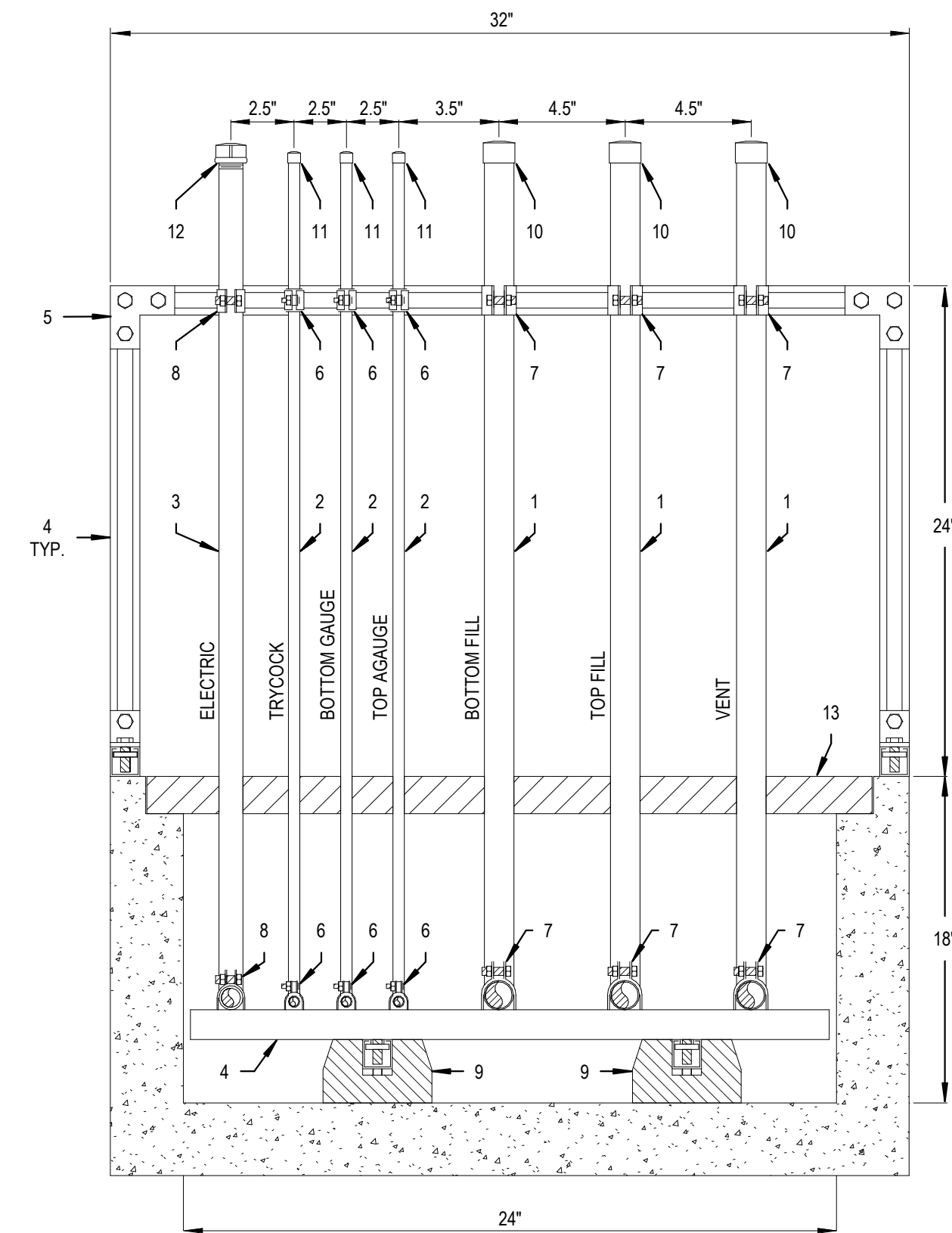
NOT TO SCALE **2** TYPICAL DETAIL
LIQUID NITROGEN PIPING DIAGRAM

ITEM	DESCRIPTION
1.	PIPE, COPPER, TYPE K, 1 1/2" NPS
2.	PIPE, COPPER, TYPE K 1/2" NPS
3.	PIPE, GALVANIZED STEEL, 1" NPS
4.	GALVANIZED STEEL STRUT, 1 5/8" X 1 5/8"
5.	STRUT FITTINGS, ZINC-PLATED STEEL, FOR 1 5/8" STRUTS
6.	PIPE CLAMP FOR 5/8" O.D. COPPER TUBE W/ CUSHION ¹⁾
7.	PIPE CLAMP FOR 1 1/16" O.D. COPPER TUBE W/ CUSHION ¹⁾
8.	PIPE CLAMP FOR 1" NPS GALVANIZED STEEL PIPE
9.	FLOOR-MOUNT STRUT-STYLE SUPPORT
10.	PIPE CAP, COPPER, FOR 1 1/2" NPS PIPE
11.	PIPE CAP, COPPER, FOR 1/2" NPS PIPE
12.	GALV. STEEL PIPE CAP, FOR 1" NPS PIPE
13.	STEEL COVER PLATE

¹⁾ THIS PIPE CLAMP IS SLIGHTLY OVERSIZED TO ALLOW THE COPPER PIPE TO CONTRACT DURING LIQUID NITROGEN TANK FILLING. DO NOT OVERTIGHT.

NOTES:

- SILVER BRAZE ALL COPPER JOINTS WITH SIL-FOS 15.
- CONCRETE TRENCH AND COVER ARE INDICATED FOR ILLUSTRATION PURPOSES ONLY. IT IS NOT PART OF THE PLUMBING SCOPE. FOR EXACT DETAILS REFER TO CIVIL DRAWINGS.



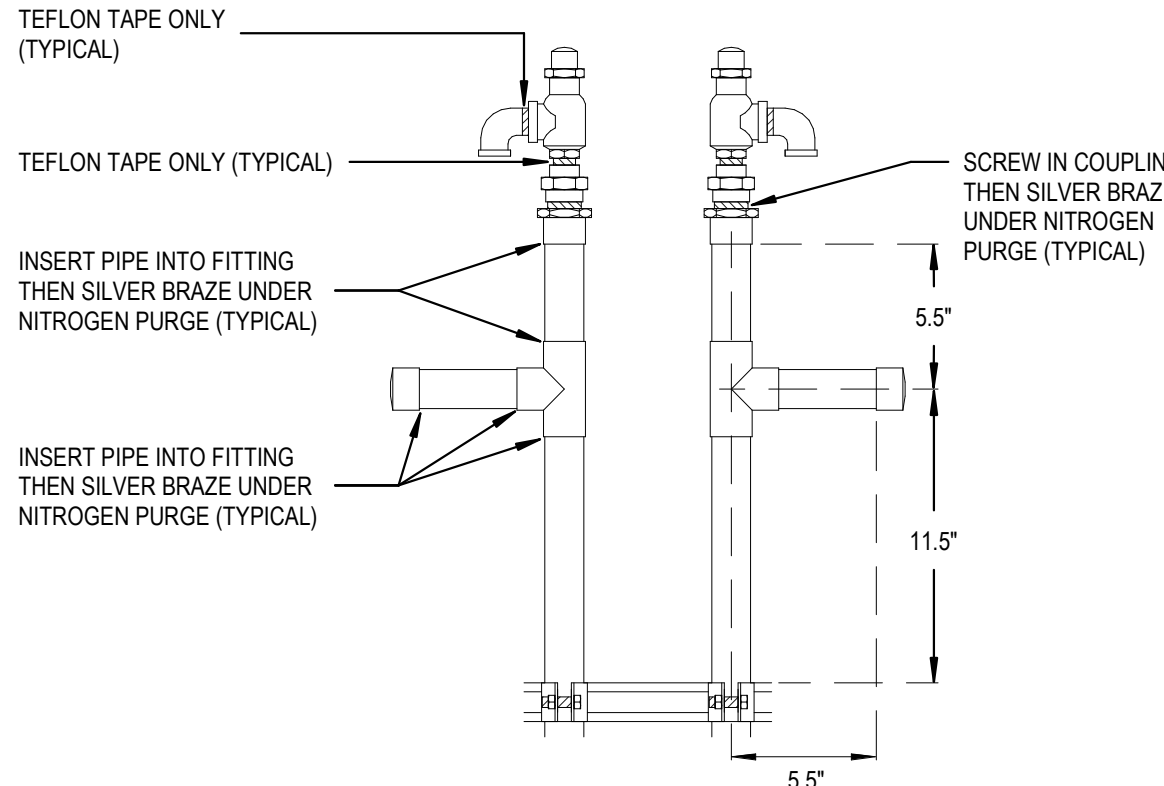
NOT TO SCALE **4** TYPICAL DETAIL
LIQUID NITROGEN AND VENT PIPES IN TRENCH AT REMOTE FILL STATION

ITEM	DESCRIPTION
1.	PIPE, COPPER, TYPE K, 1 1/2" NPS
2.	PIPE, COPPER, TYPE K 1/2" NPS
3.	PIPE, GALVANIZED STEEL, 1" NPS
4.	GALVANIZED STEEL STRUT, 1 5/8" X 1 5/8"
5.	STRUT FITTINGS, ZINC-PLATED STEEL, FOR 1 5/8" STRUTS
6.	PIPE CLAMP FOR 5/8" O.D. COPPER TUBE W/ CUSHION ¹⁾
7.	PIPE CLAMP FOR 1 1/16" O.D. COPPER TUBE W/ CUSHION ¹⁾
8.	PIPE CLAMP FOR 1" NPS GALVANIZED STEEL PIPE
9.	FLOOR-MOUNT STRUT-STYLE SUPPORT
10.	PIPE CAP, COPPER, FOR 1 1/2" NPS PIPE
11.	PIPE CAP, COPPER, FOR 1/2" NPS PIPE
12.	GALV. STEEL PIPE CAP, FOR 1" NPS PIPE
13.	STEEL COVER PLATE
14.	ADAPTOR, COPPER, 1 1/2" X 1" M.NPT
15.	REDUCING COUPLING, BRASS, 1" F.NPT X 1 1/2" NPT
16.	SAFETY RELIEF VALVE, 1/2" M.NPT IN X 3/4" F.NPT OUTLET
17.	STREET ELBOW, BRASS, 3/4" M.NPT X 3/4" F.NPT
18.	TEE, COPPER, 1 1/2" ALL PORTS

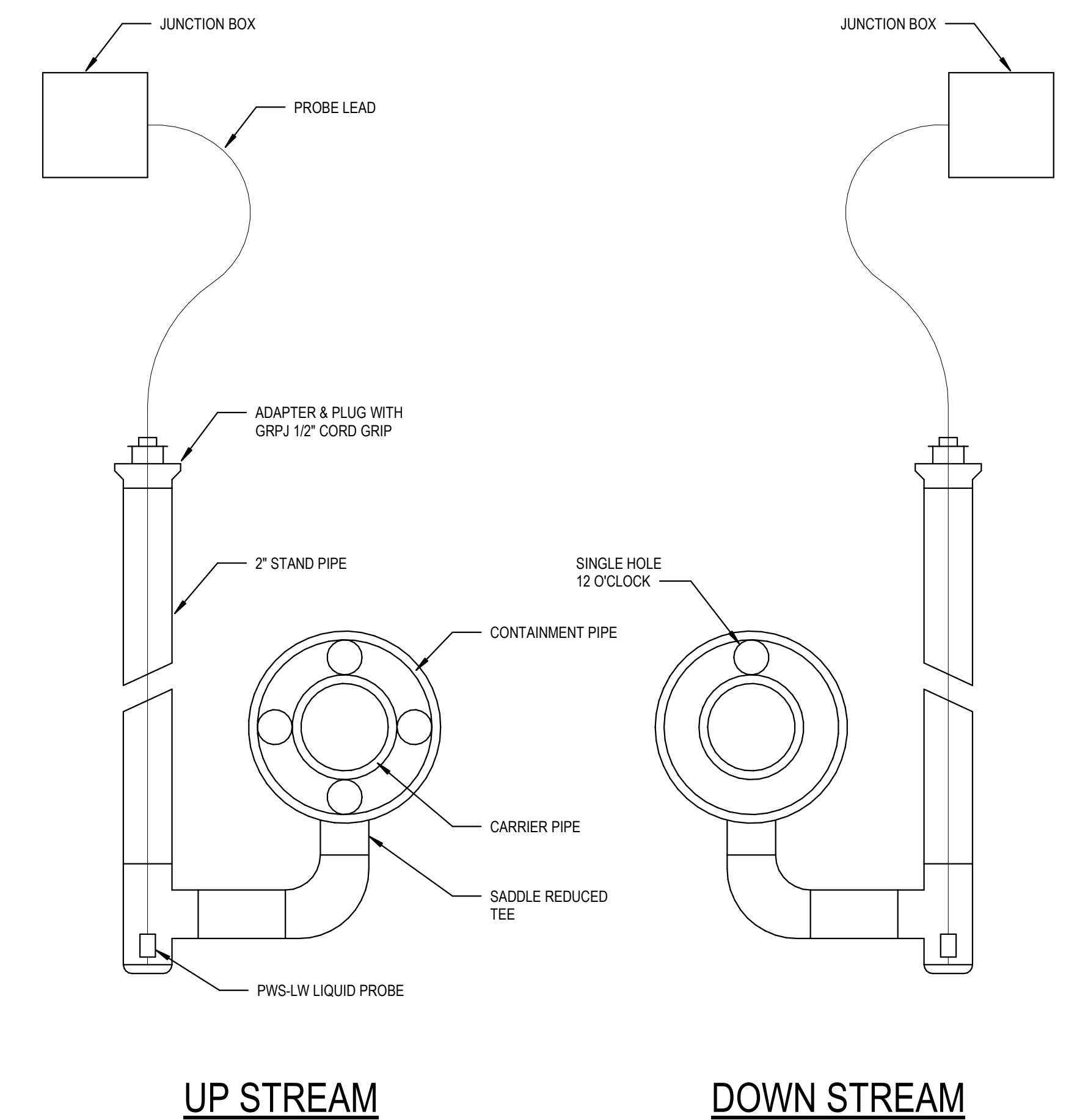
¹⁾ THIS PIPE CLAMP IS SLIGHTLY OVERSIZED TO ALLOW THE COPPER PIPE TO CONTRACT DURING LIQUID NITROGEN TANK FILLING. DO NOT OVERTIGHT.

NOTES:

- THE ORIENTATION OF THE TEE AND THE RELIEF VALVE OUTLET TO BE COORDINATED WITH THE GAS SUPPLIER.
- SILVER BRAZE ALL COPPER-TO-COPPER JOINTS AND BRASS-TO-COPPER JOINTS WITH SIL-FOS 15.
- CONCRETE TRENCH AND COVER ARE INDICATED FOR ILLUSTRATION PURPOSES ONLY. IT IS NOT PART OF THE PLUMBING SCOPE. FOR EXACT DETAILS REFER TO CIVIL DRAWINGS.

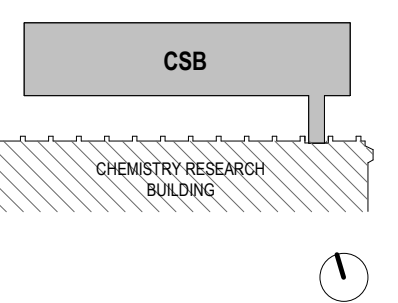


NOT TO SCALE **3** TYPICAL DETAIL
LIQUID NITROGEN AND VENT PIPES IN TRENCH AT BULK TANK

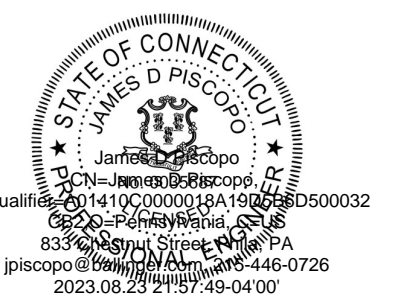


NOT TO SCALE **1** TYPICAL DETAIL
LEAK DETECTION PORT WITH RISER

KEYPLAN:



SEAL:



CONDITION OF USE
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08/29/23 CONFORMED SET
08/30/23 CONSTRUCTION DOCUMENTS
DRAWING ISSUE

PROJECT: 21029.00
SCALE: NOT TO SCALE
PLUMBING

TITLE:

PLUMBING DETAILS

CHEMICAL SAFETY BUILDING
NUMBER:

P505

AIR COMPRESSOR SYSTEM SCHEDULE

SYMBOL	DESCRIPTION	CHARACTERISTICS	BASIS OF DESIGN		DESIGN CAPACITY			ELECTRICAL CHARACTERISTICS					STARTER		CONTROLS	NOTES		
			MANUFACTURER	MODEL NUMBER	PSIG	FLOW (CFM)	NOISE (DBA)	HP	VAC/PH	EP	MCA (A)	MOC/P (A)	SCCR (KA)	LOCAL DISCONNECT BY			TYPE	BY
AC-1	LABORATORY AIR COMPRESSOR	OIL-FREE SCROLL COMPRESSOR PLUS WITH ENCLOSURE, GRAPHIC CONTROLLER, INTEGRATED DESICCANT DRYER AND 71G TANK	BEACON MEDAES	LES03-145-RD-071-3D-GR	130	7.2	56	3	480/3	NO	9.25	15	10	DIV 22	-	DIV 22	PRESSURE SWITCH	PROVIDE AUTO DRAIN UNIT

HOT WATER CIRCULATING PUMP SCHEDULE

SYMBOL	DESCRIPTION	CHARACTERISTICS	BASIS OF DESIGN		DESIGN CAPACITY			ELECTRICAL		LOCAL DISCONNECT		STARTER		CONTROLS	NOTES	
			MANUFACTURER	MODEL NUMBER	HEAD (FT)	FLOW (GPM)	RPM	HP	VAC/PH	EP	TYPE	BY	TYPE			BY
CP-1	HOT WATER CIRCULATING PUMP	IN-LINE MOUNTED PUMP WITH VFD, STAINLESS STEEL PUMP HOUSING	B&G	ECOCIRC XL N 2035 104450LF	12	5	-	0.5	120/1	NO	FUSIBLE SWITCH	DIV 26	VFD	DIV 22	-	-
CP-2	HOT WATER CIRCULATING PUMP	IN-LINE, CLOSE COUPLED DRY MOTOR, LEAD-FREE BRONZE BODY	B&G	PL-30	8	3	2650	0.083	120/1	NO	FUSIBLE SWITCH	DIV 26	-	DIV 22	-	-

ELEVATOR SUMP PUMP SCHEDULE

SYMBOL	DESCRIPTION	CHARACTERISTICS	BASIS OF DESIGN		DESIGN CAPACITY			ELECTRICAL					NOTES				
			MANUFACTURER	MODEL NUMBER	HEAD (FT)	FLOW (GPM)	RPM	HP	FLA	VAC/PH	MCA (A)	MOC/P (A)		SCCR (KA)	EP		
ESP-1	ELEVATOR SUMP PUMP	SUBMERSIBLE OIL MINDER PUMP SYSTEM WITH CONTROL PANEL	STANCOR	SE-100 WITH OIL MINDER	35	50	3450	1	2	480/3	2.5	15	20	YES	OIL MINDER CONTROL PANEL SHALL HAVE FOLLOWING BAS CONTACTS: OIL FAULT, HIGH WATER, PUMP OVERLOAD, PUMP RUN, POWER LOSS. PROVIDE JUNCTION BOX WITH DISCONNECT FOR THREE PHASE APPLICATION AND COMPLETE WIRING FROM THE CONTROL PANEL TO THE PUMP JUNCTION BOX. PROVIDE ALUMINUM GRATE ON PIT.		

EMERGENCY PLUMBING FIXTURE SCHEDULE

SYMBOL	DESCRIPTION	BASIS OF DESIGN		COMPONENTS			APURTENANCES				ROUGH IN		FIXTURE UNITS		NOTES
		MANUFACTURER	MODEL NUMBER	SHOWER	SHOWER	EYEFACE WASH	TW	SAN	TW	SAN	TW	SAN			
ES-1	SAFETY STATION WITH EYEFACE WASH, ALL STAINLESS STEEL CONSTRUCTION	GUARDIAN	G1996	10" DIA STAINLESS HEAD, 1" 3/16 STAINLESS STEEL STAY-OPEN BALL VALVE	11-1/8" STAINLESS STEEL BOWL, TWO SPRAY HEADS, DUST COVER, 1/2" 3/16 STAINLESS STEEL STAY-OPEN BALL VALVE	DRAIN OUTLET SET 18-3/8" AFF POLYPROPYLENE P-TRAP WITH UNIONS EXPOSED OR CONCEALED AS INDICATED ON DRAWINGS, ACCESS PANEL, WHERE NEEDED	1 1/4"	1 1/4"	11	2'	SCHEDULE 40 304 STAINLESS PIPE AND FITTINGS				
ES-2	RECESSED SAFETY STATION WITH DRAIN PAN, EXPOSED SHOWER HEAD	GUARDIAN	GBF2150	10" DIA STAINLESS HEAD, 1" STAY-OPEN BALL VALVE & "PANIC BAR"	TWO SPRAY HEADS MOUNTED ON SUPPLY ARMS, 1/2" BRASS PLUG TYPE VALVE	STAINLESS STEEL PIPE AND ESCUTCHEON, RECESSED CABINET, CONCEALED POLYPROPYLENE P-TRAP WITH UNIONS AND ACCESS PANEL	1 1/4"	1 1/4"	11	2'	-				

MIXING VALVE SCHEDULE

SYMBOL	SERVICE	BASIS OF DESIGN		DESIGN CAPACITY		CONFIGURATION	INLETS	OUTLET	NOTES	
		MANUFACTURER	MODEL NUMBER	MIN FLOW (GPM)	DESIGN FLOW (GPM)					
MV-1	THERMOSTATIC MIXING VALVE WITH SURFACE MOUNTED STAINLESS STEEL CABINET	GUARDIAN	G6042	THERMOSTATIC ANSI / ASSE 1071	0.5	50	-	1" HW, 1-1/4" CW	1-1/4"	TO BE USED FOR EMERGENCY SHOWERS. INSTALLATION PER ANSI Z388.1, AND MANUFACTURER'S RECOMMENDATIONS
MV-2	DIGITAL WATER MIXING VALVE	POWERS	LFIS075VL	DIGITAL CONTROL +/- 2 DEG. F PER ASSE 1017	0.5	16	POWER 115V, 60 Hz, 20 VA	3/4"	3/4"	TO BE USED AS A MASTER MIXING VALVE FOR LAB HOT WATER SUPPLY. INSTALLATION PER MANUFACTURER'S RECOMMENDATIONS

ELECTRIC WATER HEATER SCHEDULE

SYMBOL	DESCRIPTION	CHARACTERISTICS	BASIS OF DESIGN		DESIGN CAPACITY			ELECTRICAL					LOCAL DISCONNECT		NOTES			
			MANUFACTURER	MODEL NUMBER	RECOVERY (GPH)	STORAGE (GAL)	TEMP IN	TEMP OUT	KW	VAC/PH	AMP	MCA (A)	MOC/P (A)	SCCR (KA)		EP	TYPE	BY
LWH-1	LABORATORY WATER HEATER	COMMERCIAL STORAGE TYPE ELECTRIC WATER HEATER WITH 150 GAL UNLINED DUPLEX STAINLESS STEEL ALLOY TANK	PVI	90 L 150A-VE	70	150	40	140	18	480/3	22	27.5	30	10	NO	CIRCUIT BREAKER	DIV 26	PROVIDE THERMAL EXPANSION TANK AMTROL ASME PARTIAL ACCEPTANCE BLADDER ST-35GL

LAB GAS SPECIALTIES SCHEDULE

SYMBOL	DESCRIPTION	CHARACTERISTICS	BASIS OF DESIGN		SERVICE PRESSURE (PSIG)	APURTENANCES	CONTROLS	NOTES
			MANUFACTURER	MODEL NUMBER				
N	NITROGEN MANIFOLD	CABINET-STYLE, PRESSURE DIFFERENTIAL AUTOMATIC SWITCH-OVER MANIFOLD	BEACON MEDAES	POSM3000B-CGA580-2-AB-SSH-105-WM	100"	OUTLET PRESSURE RELIEF VALVE (PRV), OUTLET LINE DIAPHRAGM VALVE (LDV), REMOTE ALARM BOX	-	-
N	LIQUID CYLINDER FILLING STATION	MANUAL START / AUTOMATIC STOP FILL STATION FOR CONVENTIONAL LIQUID CYLINDERS	CHART	ADF 105	-	TWO NON-VACUUM INSULATED HOSES, STAINLESS STEEL CASE, SINGLE PHASE 115V / 3 AMP, VENT PIPING TO OUTSIDE	-	-

NOTES:
* SERVICE PRESSURE SHALL BE SET ACCORDING TO OWNER REQUIREMENTS.

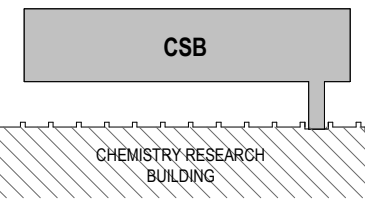
PLUMBING FIXTURE SCHEDULE

SYMBOL	DESCRIPTION	CHARACTERISTICS	BASIS OF DESIGN				COLOR	ELECTRICAL CHARACTERISTICS		ROUGH IN						FIXTURE UNITS			NOTES	
			FIXTURE MFR	NAME AND/OR MODEL NUMBER	FAUCET OR FLUSH VALVE	CARRIER OR SUPPORT		TRIM	AMP (A)	VOLTS / PHASE	EP	CW	HW	TW	FW	SAN	VENT	CW		HW
WC-1	WATER CLOSET	Elongated wall-mounted water closet, 1-1/2" top spud, sensor-operated, single flush, true mechanical override	SLOAN	ST-2459	ROYAL EXPOSED SENSOR HARDWIRED WATER CLOSET FLUSHMETER 11 ESS-128-TMO, TRANSFORMER 00345154	JAY R SMITH 02307	BEMS - 1955CT1955SSCT & 2155CT2155SSCT	WHITE	0.3	120/1	NO	1"	-	-	4"	2"	10	-	4	MOUNT IN CONFORMANCE WITH ANSI REQUIREMENTS
WC-2	ADA WATER CLOSET	Elongated wall-mounted water closet, 1-1/2" top spud, sensor-operated, single flush, true mechanical override	SLOAN	ST-2459	ROYAL EXPOSED SENSOR HARDWIRED WATER CLOSET FLUSHMETER 11 ESS-128-TMO, TRANSFORMER 00345154	JAY R SMITH 02307	BEMS - 1955CT1955SSCT & 2155CT2155SSCT	WHITE	0.3	120/1	NO	1"	-	-	4"	2"	10	-	4	MOUNT IN CONFORMANCE WITH ANSI AND ADA REQUIREMENTS
UR-1	URINAL AND FLUSHMETER COMBO	URINAL AND FLUSHMETER COMBO, SENSOR-OPERATED, 3/4" TOP SPUD INLET, 0.5 GPF	SLOAN	SU-1009	ROYAL 186 ESS FLUSHMETER, TRANSFORMER 00345154	JAY R SMITH 0637	SPUD COUPLING AND FLANGE	WHITE	0.3	120/1	NO	3/4"	-	-	2"	1-1/2"	5	-	2	MOUNT IN CONFORMANCE WITH ANSI AND ADA REQUIREMENTS
LAV-1	LAVATORY	OVAL UNDER COUNTER BATHROOM SINK	AMERICAN STANDARD	OVALYN 0497300	CHICAGO FAUCETS E80-A11A-47ASCP, TRANSFORMER 243.260.00.1	COUNTERTOP	LX 99 DRAIN FITTING, MCGUIRE 8912 TRAP, MCGUIRE (LFCX2165L) OR CHICAGO (1017-CABCP) SUPPLIES WITH INTEGRAL CHECK VALVES, TRUEBRO LAV GUARD 2	WHITE	0.4	120/1	NO	1-1/2"	1-1/2"	0.7	0.7	1				ADA REQUIREMENTS
LS-1	LAB SINK	STAINLESS STEEL, TOP MOUNT, SINGLE BOWL WITH DIMENSIONS 18" x 14" x 6-3/8"	BY DIV. 12	BY DIV. 12	BY DIV. 12	-	-	-	-	-	-	1/2"	1/2"	-	2"	1-1/2"	2	2	2	
LS-2	LAB SINK	STAINLESS STEEL, TOP MOUNT, SINGLE BOWL WITH DIMENSIONS 21" x 15-3/4" x 5-7/8"	BY DIV. 12	BY DIV. 12	BY DIV. 12	-	-	-	-	-	-	1/2"	1/2"	-	2"	1-1/2"	2	2	2	
SK-1	PANTRY SINK	STAINLESS STEEL UNDERMOUNT SINK	ELKAY	ELUHAD 211555	SINGLE LEVER, SINGLE-HOLE DECK MOUNT FAUCET WITH SIDE SPRAY CHICAGO FAUCETS Z381-E34ABCP 1.5 GPM	COUNTERTOP	LX 189 STAINLESS STEEL PERFORATED GRID DRAIN, MCGUIRE 8912 TRAP, MCGUIRE (LFCX2165) OR CHICAGO (1017-CABCP) SUPPLIES WITH INTEGRAL CHECK VALVES, TEMPERING MIXING VALVE WATTS LFUSG-B OR LEONARD 170D-LF SET TO 120°F	-	-	-	-	1/2"	1/2"	-	1-1/2"	1 1/4"	1.5	1.5	1	CHROME PLATED FAUCET, 10" CAST BRASS SWING SPOUT, CERAMIC QUARTER-TURN CARTRIDGES
SH-1	SHOWER	SHOWER DRAIN / FLOOR DRAIN WITH 4" WIDE FLANGE, ADJUSTABLE STRAINER HEAD AND STAINLESS STEEL STRAINER	J.R. SMITH	DX2005-SS	WATERSENSE CERTIFIED 2.0 GPM SHOWER SYSTEM SYMOMS 1-117V1-FS-X-830-L2-ADACHS	-	SHOWER DRAIN TRAP, ADA HAND SHOWER, PRESSURE BALANCING MIXING VALVE, INTEGRAL STOPS AND 30" ADJUSTING BAR	-	-	-	-	1/2"	1/2"	-	2"	1 1/4"	3	3	2	BONDING FLANGE DRAIN TO BE INTEGRATED WITH SHOWER WATERPROOFING SYSTEM
MR-1	MOP RECEPTOR	PRECAST TERRAZZO, ONE PIECE, FLAT CHROME STRAINER, NO SEAMS, 24" x 24" MOP RECEPTOR	FIAT	TSB-3000	CHICAGO 445-PVBCP	-	5' LONG 5/8" HOSE, MOP HANGER FIAT 889-CC, HOSE AND HOSE BRACKET 832-AA, VINYL BLUMPER GUARD FIAT E-77-AA, STAINLESS STEEL RIM GUARDS, CHICAGO FAUCETS HOSE BIBB 962-CP	-	-	-	-	1/2"	1/2"	-	3"	1 1/2"	2.25	2.25	3	VACUUM BREAKER FOR CONTINUOUS PRESSURE SYSTEMS
EW-1	ELECTRIC WATER COOLER	STAINLESS STEEL BOTTLE FILLING STATION AND BLUEVEL FILTERED WATER COOLER, ADA COMPLIANT, CHILLING CAPACITY 8.0 GPH	HALSEY TAYLOR	HTHB-HACB8LSS-WF	-	-	-	-	-	-	-	1 1/4"	1 1/4"	0.25	-	0.5	-	-	-	

PLUMBING SPECIALTY SCHEDULE

SYMBOL	DESCRIPTION	CHARACTERISTICS	BASIS OF DESIGN		SERVICE	APURTENANCES	NOTES
			MANUFACTURER	MODEL NUMBER			
BFP-1	REDUCED ZONE BACKFLOW PREVENTION DEVICE	FDA APPROVED	WATTS	LF909	CW	BALL VALVES, AIR GAP DEVICE	DRAIN TO NEAREST INDIRECT WASTE RECEPTOR
WHA	WATER HAMMER ARRESTOR	-	PRECISION PLUMBING PRODUCTS	SC SERIES	DOM WATER	-	PROVIDE NEAR EQUIPMENT WITH QUICK CLOSING DEVICE
RD-1	ROOF DRAIN	ROOF DRAIN WITH ADJUSTABLE EXTENSION	ZURN	Z100F-85-G	RWC	GALVANIZED CAST IRON BODY AND DOME, UNDERDECK CLAMP SLUMP RECEIVER	GENERAL PURPOSE ROOF DRAIN
RD-2	ROOF DRAIN	6-3/8" x 7-1/2" OBLIQUE SCUPPER DRAIN	ZURN	Z187-G	RWC	GALVANIZED CAST IRON BODY WITH REVERSIBLE BACK OUTLET, OBLIQUE ALUMINUM GRATE WITH 90° COMBINATION FRAME AND MEMBRANE FLASHING CLAMP	CANOPY DRAIN
FD-1	FLOOR DRAIN	ROUND TOP FLOOR DRAIN WITH ADJUSTABLE STRAINER HEAD	J.R. SMITH	2005-SS	SAN	DUOCO CAST IRON BODY, STAINLESS STEEL STRAINER, P-TRAP WITH TRAP PRIMER CONNECTION OR TRAP PRIMER ADAPTER	GENERAL PURPOSE DRAIN FOR USE IN TOILET ROOMS AND OTHER AREAS WITH FOOT TRAFFIC
FD-2	FLOOR DRAIN	8"x8" SQUARE TOP STAINLESS STEEL FLOOR DRAIN WITH 1/2 GRATE	BLUCHER	BFD-324-150-DS	SAN	TYPE 304 STAINLESS STEEL RECEPTOR, 1/8" GRATING, DOME STRAINER, P-TRAP WITH TRAP PRIMER CONNECTION OR TRAP PRIMER ADAPTER	FOR USE IN PLUMBING CLOSET
FD-3	FLOOR DRAIN	12"x12" SQUARE TOP STAINLESS STEEL FLOOR DRAIN WITH 1/2 GRATE	BLUCHER	BFD-344-150-DS	SAN	TYPE 304 STAINLESS STEEL RECEPTOR, 1/8" GRATING, SEDIMENT BUCKET, DOME STRAINER, P-TRAP WITH TRAP PRIMER CONNECTION OR TRAP PRIMER ADAPTER	FOR EQUIPMENT DISCHARGE IN MECHANICAL ROOMS AND OTHER UNFINISHED AREAS
FD-4	FLOOR DRAIN	8"x8" SQUARE TOP STAINLESS STEEL FLOOR DRAIN	BLUCHER	BFD-324-DS	SAN	TYPE 304 STAINLESS STEEL RECEPTOR, 1/8" GRATING, DOME STRAINER, P-TRAP WITH TRAP PRIMER CONNECTION OR TRAP PRIMER ADAPTER	FOR USE IN PLUMBING ROOMS AND OTHER FINISHED AREAS
TD-1	TRENCH DRAIN	WIDE REVEAL 316 STAINLESS STEEL CUSTOM MADE TRENCH DRAIN SYSTEM WITH "Y" BOTTOM	ZURN	ZM890	SECOND CONTAINMENT	7" WIDE CHANNEL WITH 4" WIDE THROAT AND GRATES, 16-GAUGE 316 STAINLESS STEEL, 1% BUILT-IN SLOPE, HEEL PROOF 12 GA PERFORATED GRATE, 3" MALE THREADED OUTLET, END CAPS AND CATCH BASINS	CUSTOM DRAIN. REFER TO DRAWINGS FOR EXACT SHAPE AND LENGTH. PROVIDE CONCRETE ENCASMENT AND REINFORCEMENT
HD-1	HUB DRAIN	TYPE 316 STAINLESS STEEL HUB DRAIN WITH SEDIMENT BASKET AND BOTTOM OUTLET	BLUCHER	BHD-200-316-B	STACK DRAIN	HUB DRAIN WITH SEDIMENT BASKET AND BOTTOM OUTLET	SAFE WASTE DRAIN FOR STACK ON ROOF. INSTALL 4-INCHES ABOVE ROOF SURFACE.
TP-1	TRAP PRIMER	ELECTRONIC TRAP PRIMING MANIFOLD WITH BOX, 115V	PRECISION PLUMBING PRODUCTS	MPB-500	CW, SAN	1" AIR GAP, 24 HOUR CLOCK TIMER, SOLENOID VALVE AND DISTRIBUTION UNIT WHERE REQUIRED	-
TP-2	TRAP PRIMER	ELECTRONIC TIMER CONTROLLED TRAP PRIMER	PRECISION PLUMBING PRODUCTS	PTS-12	CW, SAN	ATMOSPHERIC VACUUM BREAKER, 24 HOUR CLOCK TIMER, SOLENOID, SHUT OFF VALVE AND DISTRIBUTION UNIT	-
TP-3	TRAP PRIMER	PRESSURE DROP ACTIVATED AUTOMATIC TRAP PRIMER	PRECISION PLUMBING PRODUCTS	PR-500	CW, SAN	SHUT OFF VALVE AND DISTRIBUTION UNIT	-
DS-1	DOWNSPILT NOZZLE	EMERGENCY OVERFLOW DAYLIGHT DRAIN, CAST BRONZE BODY, CAST IRON PIPE CONNECTION	J.R. SMITH	1771-NB-6S	PD DISCHARGE	BIRD SCREEN	-
WH-1	WALL HYDRANT	1/4 TURN NON-FREEZE HYDRANT, AUTOMATIC DRAINING INTEGRAL VACUUM BREAKER, DUAL CHECK VALVE, STAINLESS STEEL BOX	J.R. SMITH	5619	CW	HOSE FITTING	LOCATED ON EXTERIOR WALLS, COORDINATE WITH ARCHITECTURAL ELEVATIONS, SEE PLANS FOR LOCATIONS
HB-1	3/4" HOSE BIB	TEE HANDLE SILCOCK, ANGLED HOSE CONNECTION WITH VACUUM BREAKER	WATTS	57LFC8-6	CW	HOSE FITTING	-
HB-2	3/4" HOSE BIB	WALL MOUNTED CHROME PLATED WASH-DOWN SILL FITTING, HOSE THREAD SPOUT, SLOW COMPRESSION OPERATING CARTRIDGE, 2-1/4" METAL TEE HANDLE	CHICAGO FAUCETS	952-CP	CW	INTEGRAL VACUUM BREAKER IN CONFORMANCE TO ANSISASSE 1011, HOSE FITTING	-
TS-1	TRAP SEAL	IN-LINE FLOOR DRAIN TRAP SEAL WITH UV RESISTANT ABS PLASTIC FRAME, SILICON RUBBER SEALING PAPPER AND FOUR FLEXIBLE SEALING RISBS	MIFAB	MI-GARD-4	SAN	-	FOR FLOOR DRAIN IN GAS STORAGE 105
WM-1	WATER METER	IN-LINE, LINE SIZE, ELECTROMAGNETIC SUB-METER	ONICON	F-3200-102	CW, HW, HWR	EPOXY PAINTED CARBON STEEL OUTER BODY, 304 STAINLESS STEEL FLOW TUBE AND INTEGRAL LINER, 120 VAC, 12VA POWERED, SENSOR BODY GASKETS, MODBUS RTU (RS485) SERIAL COMMUNICATION	CONNECT TO BAS

KEYPLAN:



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