

PLUMBING GENERAL NOTES

GENERAL

THE INTENT OF THESE CONTRACT DOCUMENTS (SPECIFICATIONS AND DRAWINGS) IS FOR THE CONTRACTOR TO FURNISH AND INSTALL COMPLETE PLUMBING SYSTEMS. ALL SYSTEMS SHALL BE COMPLETE IN ALL RESPECTS. OPERATING, TESTED, ADJUSTED, APPROVED BY THE AUTHORITIES HAVING JURISDICTION AND READY FOR BENEFICIAL USE BY THE OWNER.

WHEN A CONFLICT BETWEEN THE DRAWINGS, NOTES AND/OR SPECIFICATIONS OCCUR, THE MORE STRINGENT, AND/OR LARGER QUANTITY AND/OR MORE EXPENSIVE SHALL APPLY. THE REQUIREMENTS LISTED WITHIN NOTES OR SPECIFICATIONS SHALL BE REQUIRED, PROVIDED AND INSTALLED WHETHER SPECIFICALLY INDICATED ON THE DRAWINGS OR NOT.

ITEMS AND SERVICES NOT SHOWN ON DRAWINGS OR SPECIFICATIONS BUT REQUIRED TO RENDER THE WORK COMPLETE AND READY FOR OPERATION, SHALL BE PROVIDED WITHOUT ADDITIONAL COST.

WORK OF THIS SECTION SHALL BE GOVERNED BY THE CONTRACT DOCUMENTS. PROVIDE MATERIALS, LABOR, EQUIPMENT AND SERVICES NECESSARY TO FURNISH, DELIVER AND INSTALL ALL WORK AS SPECIFIED AND AS REQUIRED BY JOB CONDITIONS. WHERE A CONFLICT EXISTS BETWEEN THESE NOTES, THE DRAWINGS AND THE SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT SHALL APPLY.

DRAWINGS ARE DIAGRAMMATIC AND INDICATE A GENERAL ARRANGEMENT OF WORK AND ARE NOT TO BE CONSIDERED SUB-CONTRACTOR DOCUMENTS. IT IS THE INTENT OF THESE DOCUMENTS TO INCLUDE THE PROVISION AND INSTALLATION OF ALL NECESSARY WORK AND MATERIALS FOR COMPLETE, OPERATIONAL AND CODE COMPLIANT SYSTEMS BY THE CONTRACTOR. GENERAL DESIGN CONCEPTS INDICATED MUST BE FOLLOWED OR BETTERED. THE BID SHALL INCLUDE OFFSETS, ADDITIONAL PIPING, VALVES AND EQUIPMENT AND COMPONENTS AS REQUIRED TO MEET CONSTRUCTION CONDITIONS FOR PROPER OPERATION. DO NOT SCALE DRAWINGS. CONSULT ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR SPACE CONDITIONS AND ADDITIONAL REQUIREMENTS.

PERFORM THE WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT GENERAL CONDITIONS AND WITH THE PROVISIONS OF ALL APPLICABLE LOCAL, STATE, AND FEDERAL CODES AND LAWS.

WORK SHALL INCLUDE ALL INCIDENTALS, LABOR, MATERIAL, EQUIPMENT, APPLIANCES, SERVICES, HOISTING, SCAFFOLDING, SUPPORTS, TOOLS, CONSUMABLE ITEMS, FEES, LICENSES, AND ADMINISTRATIVE TASKS REQUIRED TO COMPLETE AND MAKE OPERABLE WORK SHOWN ON THE DRAWINGS, SPECIFIED HEREIN AND AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.

ALL EQUIPMENT, MATERIALS AND RELATED SYSTEMS COMPONENTS SHALL BE NEW UNLESS SPECIFICALLY NOTED OTHERWISE.

STORE MATERIALS INSIDE AND PROTECTED FROM DEBRIS, WEATHER AND MOISTURE.

REPAIR AND/OR REPLACE AT NO COST TO OWNER ALL EQUIPMENT AND MATERIALS DAMAGED DURING CONSTRUCTION.

ALTERATION WORK AND DEMOLITION

ALL EQUIPMENT, FIXTURES, PIPING, ETC. TO BE REMOVED, SHALL BE DISPOSED OF, TURNED OVER TO THE OWNER, OR SALVAGED AS DIRECTED BY THE OWNER. EQUIPMENT, FIXTURES, PIPING, DEVICES, ETC. SHALL NOT BE REMOVED FROM THE PREMISES WITHOUT THE OWNER'S APPROVAL.

UPON COMPLETION OF REMOVALS AND MODIFICATIONS, ALL PIPING TO REMAIN SHALL BE PROPERLY PLUGGED, VALVED, CAPPED AND/OR BY PASSED SUCH THAT UPON COMPLETION OF WORK ALL SYSTEMS TO REMAIN, REMAIN OPERATIONAL.

NO DEAD ENDS SHALL BE LEFT ON ANY PIPING SYSTEMS UPON COMPLETION OF WORK.

EXISTING EXPOSED PIPING SYSTEMS NOT TO BE REUSED, AND NOT SPECIFICALLY NOTED FOR REMOVAL SHALL BE COMPLETELY REMOVED.

ALL SYSTEMS SHALL BE LEFT IN WORKING ORDER TO THE SATISFACTION OF THE OWNER UPON COMPLETION OF ALL NEW WORK.

ALL EXISTING EXPOSED, UNNECESSARY PIPING RELATED TO NEW WORK SHALL BE COMPLETELY REMOVED.

RE-ROUTE OR REMOVE ALL EXISTING PIPING AND SYSTEMS WHERE NECESSARY TO AVOID NEW EQUIPMENT, STRUCTURAL, OR MASONRY WORK AS REQUIRED BY THE PROPOSED ALTERATIONS.

COORDINATION

THE CONTRACTOR SHALL OBTAIN AND REVIEW ALL CONTRACT DOCUMENTS, INCLUDING PROJECT MANUAL, PLANS AND SPECIFICATIONS OF ALL TRADES BEFORE SUBMITTING BID. REFER TO SPECIFICATIONS AND PLANS, INCLUDING ALL EQUIPMENT SCHEDULES FOR INFORMATION. CONTRACTOR SHALL WALK THROUGH BUILDING PRIOR TO SUBMITTING BID WHEN AVAILABLE.

ALL OF THE CONTRACT DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY TO FORM A TOTAL DESIGN PACKAGE. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR/CONSTRUCTION MANAGER TO DETERMINE WHICH TRADE CONTRACTOR IS RESPONSIBLE FOR VARIOUS PORTIONS OF THE WORK.

ALL WORK AND ACTION DEPICTED AND DESCRIBED SHALL BE PERFORMED BY THE CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE.

THE PLUMBING CONTRACTOR SHALL VERIFY THESE DRAWINGS WITH EXISTING FIELD CONDITIONS AND SHALL COORDINATE WITH CIVIL ENGINEER LOCATIONS AND ELEVATIONS OF PLUMBING SERVICE LINES BEFORE PROCEEDING WITH CONSTRUCTION. THE UTILITY SERVICE LINES SHOWN ON THE DRAWINGS ARE FOR REFERENCE & BUILDING PERMIT ONLY. REFER TO CIVIL ENGINEERS DRAWINGS FOR UTILITY SERVICE LINES LAY-OUT & DETAILS.

CONTRACTORS SHALL COORDINATE THEIR WORK WITH ALL OWNER-FURNISHED EQUIPMENT, INCLUDING REQUIRED SERVICE CONNECTIONS, RECEPTACLES, ETC. BEFORE INSTALLATION.

THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT. THE CONTRACTOR SHALL COORDINATE LOCATIONS OF EQUIPMENT WITH ALL TRADES BEFORE STARTING CONSTRUCTION. ANY MODIFICATIONS TO THE EQUIPMENT LAYOUT REQUIRED FOR INSTALLATION ARE TO BE PERFORMED AT NO ADDITIONAL COST TO THE OWNER.

COORDINATE ALL PIPING AND CONDUITS LEAVING THE BUILDING WITH THE SITE CONTRACTOR BEFORE INSTALLATION. LOCATION AND SIZES OF ALL FLOOR, WALL AND ROOF PENETRATIONS SHALL BE COORDINATED WITH ALL OTHER TRADES INVOLVED.

DEVELOP AND SUBMIT COORDINATION DRAWINGS AS OUTLINED.

SHEET METAL, PLUMBING AND FIRE PROTECTION SHOP DRAWINGS THAT HAVE BEEN COORDINATED WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO ENGINEER FOR REVIEW. DRAWINGS MUST BE RETURNED FROM ENGINEER EITHER "REVIEWED" OR "TURNISH AS CORRECTED" PRIOR TO BEING USED AS BASIS FOR COORDINATION DRAWINGS.

AFTER SHEET METAL AND PIPING DRAWINGS HAVE BEEN REVISED PER ENGINEERS COMMENTS, REPRODUCIBLE COPIES SHALL BE SENT TO THE TRADES IN THE FOLLOWING SEQUENCE FOR THE INCLUSION OF THEIR WORK:

-MECHANICAL SHEET METAL

-PLUMBING PIPING

-MECHANICAL PIPING

-SPRINKLER PIPING

-ELECTRICAL WORK

AFTER ALL TRADES HAVE INCLUDED THEIR WORK ON THE COORDINATION DRAWING AND NOTED CONFLICTS, ALL TRADES SHALL MEET TO RESOLVE CONFLICTS AND AGREE TO ACCEPTABLE SOLUTIONS. EACH TRADE SHALL SIGN COORDINATION DRAWINGS. ITEMS NOT SHOWN ON COORDINATION DRAWING IS RESPONSIBILITY OF OMITTING CONTRACTOR AND CONTRACTOR IS SUBJECT TO ADDITIONAL COSTS INCURRED BY OTHER TRADES.

THE ARCHITECT AND ENGINEER ARE NOT PART OF THE COORDINATION DRAWING PROCESS. THE ENGINEER WILL PROVIDE ASSISTANCE FOR NOTED CONFLICTS ONLY. COORDINATION DRAWINGS ARE NOT TO BE CONSIDERED PIPING OR DUCT SHOP DRAWINGS. THE CONTRACTOR IS REQUIRED TO SUBMIT INDIVIDUAL PIPING AND DUCTWORK SHOP DRAWINGS FOR REVIEW BY THE ENGINEER. PIPING AND DUCTWORK SHOP DRAWINGS SHALL FOLLOW THE DESIGN INTENT OF THE CONTRACT DOCUMENTS.

SUBMIT FINAL SIGNED COORDINATION DRAWING TO ENGINEER FOR REVIEW. ENGINEER WILL REVIEW COORDINATION DRAWINGS FOR GENERAL ARRANGEMENT AND FOR NOTED CONFLICTS ONLY. SPECIFIC INSTALLATION REQUIREMENTS WILL BE REVIEWED ONLY IN INDIVIDUAL TRADE SHOP DRAWINGS.

ANY WORK FABRICATED OR INSTALLED PRIOR TO SIGN OFF BY ALL TRADES WHICH IS DEEMED TO BE IN CONFLICT WITH COORDINATION DRAWINGS SHALL BE REMOVED AND RE-INSTALLED IN CONFORMANCE WITH COORDINATION DRAWINGS.

EACH CONTRACTOR (MENTIONED ABOVE) IS RESPONSIBLE FOR THE COORDINATION OF HIS SUB-CONTRACTORS.

THE OVERALL COORDINATION OF THE COORDINATION PROCESS IS THE RESPONSIBILITY OF THE CONTRACTOR. THE ENGINEER IS NOT RESPONSIBLE FOR THE COORDINATION PROCESS. THE ENGINEER WILL RESPOND TO QUESTIONS THAT ARISE FROM THE COORDINATION PROCESS. DRAWINGS SUBMITTED WILL BE REVIEWED FOR CLEARLY IDENTIFIED CONFLICTS ONLY. SOLUTIONS TO CONFLICTS WILL NOT BEAR ADDITIONAL COST.

SHOP DRAWINGS

CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO BE APPROVED, REVISED, OR RESUBMITTED AS PER THE ENGINEERS COMMENTS, PRIOR TO CONSTRUCTION. INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

-PLUMBING FIXTURES

-CLEAN OUTS

-DRAINS

-PIPE SEALS

-FITTINGS

-PIPING

-HANGERS/SUPPORTS

-INSULATION

-BRAZING

-VALVES

-THERMOSTATIC MIXING VALVES

AS BUILT DRAWINGS

PROVIDE A COMPLETE SET OF AS-BUILT DRAWINGS REFLECTING AS INSTALLED CONDITIONS. AS-BUILT DRAWINGS SHALL INDICATE ALL INSTALLED CONDITIONS OF SYSTEMS WITHIN THIS DISCIPLINE. DRAWINGS SHALL BE OF SIMILAR SCALE AS THE CONSTRUCTION DOCUMENTS AND INCLUDE DETAILS AS NECESSARY TO CLEARLY REFLECT THE INSTALLED CONDITION. DRAWINGS SHALL BE BOUND IN A COMPLETE AND CONSECUTIVE SET. SUPPLEMENTAL SKETCHES AND LOOSE PAPERWORK WILL NOT BE ACCEPTABLE AND WILL BE RETURNED FOR REVISION. THE CONTRACTOR OR SHALL COMPLY WITH THE ENGINEERS COMMENTS TO PRODUCE A CLEAR AND CONCISE SET OF DRAWINGS. DRAWINGS SHALL BE SUBMITTED IN BOTH HARD COPY AND ELECTRONIC (AUTO-CAD VERSION AS REQUIRED BY THE OWNER) VERSION. NUMBER OF COPIES OF EACH AS REQUESTED BY THE OWNER.

PROVIDE "AS-BUILT DRAWINGS" INDICATING IN A NEAT AND ACCURATE MANNER A COMPLETE RECORD OF ALL REVISIONS OF THE ORIGINAL DESIGN OF THE WORK. INDICATE THE FOLLOWING INSTALLED CONDITIONS:

INCLUDE ALL CHANGES AND AN ACCURATE RECORD, ON REPRODUCTIONS OF THE CONTRACT DRAWINGS OR APPROPRIATE SHOP DRAWINGS, OF ALL DEVIATIONS, BETWEEN THE WORK SHOWN AND WORK INSTALLED.

MAINS AND BRANCHES OF PIPING SYSTEMS, WITH VALVES AND CONTROL DEVICES LOCATED AND NUMBERED, CONCEALED UNIONS LOCATED, AND WITH ITEMS REQUIRING MAINTENANCE LOCATED (I.E., TRAPS, STRAINERS, EXPANSION COMPENSATORS, TANKS, ETC.). VALVE LOCATION DIAGRAMS, COMPLETE WITH VALVE TAG CHART. EQUIPMENT LOCATIONS (EXPOSED AND CONCEALED), DIMENSIONED FROM PROMINENT BUILDING LINES.

APPROVED SUBSTITUTIONS, CONTRACT MODIFICATIONS, AND ACTUAL EQUIPMENT AND MATERIALS INSTALLED.

CONTRACT MODIFICATIONS, ACTUAL EQUIPMENT AND MATERIALS INSTALLED.

SUBMIT FOR REVIEW BOUND SETS OF THE REQUIRED DRAWINGS, MANUALS AND OPERATING INSTRUCTIONS.

SUBMIT A COMPLETE MAINTENANCE MANUAL OF ALL EQUIPMENT INSTALLED UNDER THIS CONTRACT.

HANGERS AND SUPPORT

SEISMIC RESTRAINT: PROVIDE SEISMIC RESTRAINT AND EXPANSION OF ALL PLUMBING EQUIPMENT AND SYSTEMS IN ACCORDANCE WITH STATE AND FEDERAL BUILDING CODE REQUIREMENTS. SUBMIT SHOP DRAWINGS SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT INDICATING ALL NECESSARY COMPONENT CUTS, PLAN LOCATIONS AND CALCULATIONS FOR A COMPLETE SYSTEM.

PROVIDE ALL NECESSARY STRUCTURAL MEMBERS INCLUDING ADDITIONAL STRUCTURAL SUPPORT TO SUPPORT PIPING AND EQUIPMENT. HANGERS AND SUPPORTS SHALL BE OF AN APPROVED DESIGN NECESSARY TO SUPPORT PIPING, EQUIPMENT AND TO KEEP PIPING IN PROPER ALIGNMENT AND PREVENT TRANSMISSION OF INJURIOUS THRUSTS AND VIBRATIONS. IN ALL CASES WHERE HANGERS, BRACKETS, ETC., ARE SUPPORTED FROM CONCRETE CONSTRUCTION, DO NOT PENETRATE WATERPROOFING. ALL HANGERS AND SUPPORTS SHALL BE CAPABLE OF SCREW ADJUSTMENT AFTER PIPING IS ERECTED. HANGERS SUPPORTING PIPING EXPANDING INTO LOOPS, BENDS AND OFFSETS SHALL BE SECURED TO THE BUILDING STRUCTURE IN SUCH A MANNER THAT HORIZONTAL ADJUSTMENT PERPENDICULAR TO THE RUN OF PIPING SUPPORTED MAY BE MADE TO ACCOMMODATE DISPLACEMENT DUE TO EXPANSION. ALL SUCH HANGERS SHALL BE FINALLY ADJUSTED BOTH IN THE VERTICAL AND HORIZONTAL DIRECTION, AS REQUIRED. HANGERS IN CONTACT WITH COPPER OR BRASS PIPE SHALL BE DIELECTRIC, COMPATIBLE WITH COPPER AND BRASS ALLOY OR PROVIDED WITH FELL SLEEVE.

PROVIDE ADDITIONAL SUPPORT FOR PIPING AND EQUIPMENT WHEN DECK IS NOT CAPABLE OF SUPPORT.

BEAM CLAMPS - HANGERS SUPPORTED FROM STEEL SHALL BE CENTER LOADING BEAM CLAMPS FOR HANGERS SUPPORTING PIPING 2 INCHES. FOR PIPING 2 1/2 INCHES AND LARGER, 1 BEAM CLAMPS SHALL BE FORGED STEEL. "C" CLAMPS ARE NOT TO BE USED.

PROVIDE AND INSTALL EXPANSION COMPENSATION FOR ALL PIPING. SUBMIT PLANS, CALCULATIONS AND EQUIPMENT DATA.

BAND IRON, THE WIRE, METAL STRAPPING OR WIRE STRAPPING SHALL NOT BE PERMITTED TO SUPPORT PIPING OR EQUIPMENT.

PIPE SEALS

SEAL ALL PIPING PASSING THROUGH ALL FIRE AND/OR SMOKE RATED PARTITIONS AND WALLS WITH A UL LISTED, APPROVED AND TESTED FIRE AND/OR SMOKE SEALING MATERIAL INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

ALL PIPING PENETRATING A SLAB ON GRADE OR FOUNDATION WALL BELOW GRADE AND IN CONTACT WITH EARTH SHALL BE PROVIDED WITH A POURED IN PLACE SCHEDULE 80 GALVANIZED STEEL WATER TIGHT SLEEVE WITH INTEGRAL WATER STOP AND SEAL EQUAL TO "UNK SEAL".

FURNISH AND SET STEEL PIPE SLEEVES OF SCHEDULE 40 BLACK STEEL FOR ALL LOCATIONS OF INTERIOR PARTITIONS, WALLS AND FLOORS PROVIDING AT LEAST 1"2" CLEARANCE BETWEEN PIPE INSULATION AND SLEEVE OR PIPE AND SLEEVE. WALL SLEEVES SHALL BE SMOOTH CUT AND SET FLUSH WITH FINISHED WALLS. FLOOR SLEEVES SHALL EXTENDED 2" ABOVE THE FINISHED FLOOR.

ALL PIPING THROUGH WALLS, FLOORS OR CEILINGS SHALL HAVE SLEEVES AND ESCUTCHEONS. PROVIDE A TWO PIECE CHROME ESCUTCHEON WHERE PIPING PASSES THROUGH WALLS OR FLOORS OF FINISHED SPACES.

PLUMBING FIXTURES

PLUMBING FIXTURES SHALL BE NEW, COMPLETE WITH TRIMMINGS AND FITTINGS, INCLUDING FAUCETS, CARRIERS, SUPPLIES, STOPS, TRAPS, TAILPIECES, WASTE PLUGS, CASINGS, HANGERS, PLATES, BRACKETS, ANCHORS, SUPPORTS, HARDWARE AND FASTENING DEVICES. NOTE: ALL FIXTURES SHALL BE OF SAME MANUFACTURER. TRIMMINGS AND FITTINGS SHALL BE CONSTRUCT OF FORGED, CAST, ROLLED OR EXTRUDED BRASS OR BRONZE WITH MONEL AND OTHER SUITABLE NON CORROSIVE PARTS. DESIGNED WITH EASILY RENEWABLE PARTS THAT ARE SUBJECT TO WEAR OR DETEIORATION. NO DIE CASTINGS AND STAMPINGS OTHER THAN BRASS OR STAINLESS STEEL. PROVIDE PLUMBING FIXTURES AND TRIM WITH ALL NECESSARY TRIM, DEVICES AND ACCESSORIES REQUIRED FOR PROPER OPERATION SPECIFICALLY NOTED OR NOT.

ESCUTCHEONS SHALL BE ONE-PIECE CHROME PLATED CAST BRASS OR STAINLESS STEEL.

P-TRAPS SHALL BE ONE PIECE CHROME PLATED CAST BRASS WITH CLEANOUT PLUG.

EXAMINE ROUGHING-IN WORK OF POTABLE WATER AND WASTE PIPING SYSTEMS TO VERIFY ACTUAL LOCATIONS OF PIPING CONNECTIONS PRIOR TO INSTALLING FIXTURES. CORRECT ANY INCORRECT LOCATION OF PIPING, AND UNSATISFACTORY CONDITIONS FOR INSTALLATION OF PLUMBING FIXTURES. DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED IN A MANNER ACCEPTABLE TO THE ENGINEER. ALL ROUGH-IN TO PLUMBING FIXTURES SHALL CONFORM TO FIXTURE MANUFACTURER PUBLISHED ROUGH-IN DIMENSIONS, AND REQUIREMENTS.

UPON COMPLETION OF INSTALLATION OF PLUMBING FIXTURES AND AFTER UNITS ARE WATER PRESSURIZED, TEST FIXTURES TO DEMONSTRATE CAPABILITY AND COMPLIANCE WITH REQUIREMENTS. CORRECT MALFUNCTIONING UNITS AT SITE, THEN RETEST TO DEMONSTRATE COMPLIANCE; OTHERWISE, REMOVE AND REPLACE WITH NEW UNITS AND PROCEED WITH RETESTING.

CLEAN PLUMBING FIXTURES, TRIM, AND STRAINERS OF DIRT AND DEBRIS UPON COMPLETION OF INSTALLATION.

ADJUST WATER PRESSURE AT DRINKING FOUNTAINS, FAUCETS, SHOWER VALVES, AND FLUSH VALVES TO PROVIDE PROPER FLOW STREAM AND SPECIFIED GPM.

SET FIXTURES LEVEL AND UNIFORMLY, WITH CONNECTIONS AT RIGHT ANGLES TO WALL AND PROPERLY CENTERED. LAY OUT ROUGHING ACCURATELY AND IN COORDINATION WITH SPACE AND FINISH REQUIREMENTS.

LOCATE WASTE OUTLETS AND WATER SUPPLIES AT CONSTANT HORIZONTAL LEVELS, WITH WASTE OUTLET CENTERED ON FIXTURE DRAIN CONNECTION AND WATER SUPPLIES SPACED EQUALLY TO RIGHT AND LEFT.

REFER TO THE ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATION AND MOUNTING HEIGHTS OF EQUIPMENT. COLORS SHALL BE COORDINATED WITH THE ARCHITECT. CONTACT ARCHITECT FOR CLARIFICATION IF INFORMATION IS NOT CONTAINED IN THE DRAWINGS.

DRAINS AND CLEANOUTS

PROVIDE ALL POURED IN PLACE DRAINS AND CLEANOUTS WITH 24" X 24" FLASHING.

PROVIDE TRAP PRIMERS FOR EACH FLOOR DRAIN. CONNECT TRAP PRIMER TO NEAREST COLD WATER MAIN. PROVIDE ISOLATION VALVE AND EXTEND TO FLOOR DRAIN AS REQUIRED.

CLEANOUTS SHALL BE LOCATED AT MINIMUM INTERVALS OF 50 FEET FOR PIPING NPS 4 AND SMALLER AND 100 FEET FOR LARGER PIPING.

BUILDING SEWERS SHALL BE PROVIDED WITH CLEANOUTS LOCATED NOT MORE THAN 100 FEET APART MEASURED FROM THE UPSTREAM ENTRANCE OF THE CLEANOUT. FOR BUILDING SEWERS 8 INCHES AND LARGER, MANHOLES SHALL BE PROVIDED AND LOCATED NOT MORE THAN 200 FEET FROM THE JUNCTION OF THE BUILDING DRAIN AND BUILDING SEWER, AT EACH CHANGE IN DIRECTION AND AT INTERVALS OF NOT MORE THAN 400 FEET APART. MANHOLES AND MANHOLE COVERS SHALL BE OF AN APPROVED TYPE.

CLEANOUTS SHALL BE INSTALLED AT EACH CHANGE OF DIRECTION OF THE BUILDING DRAIN OR HORIZONTAL WASTE OR SOIL LINES GREATER THAN 45 DEGREES (INCLUDING P-TRAPS), WHERE MORE THAN ONE CHANGE OF DIRECTION OCCURS IN A RUN OF PIPING. ONLY ONE CLEANOUT SHALL BE REQUIRED FOR EACH 40 FEET OF DEVELOPED LENGTH OF THE DRAINAGE PIPING.

A CLEANOUT SHALL BE PROVIDED AT THE BASE OF EACH WASTE OR SOIL STACK.

THERE SHALL BE A CLEANOUT NEAR THE JUNCTION OF THE BUILDING DRAIN AND THE BUILDING SEWER. THE CLEANOUT SHALL BE EITHER INSIDE OR OUTSIDE THE BUILDING WALL AND SHALL BE BROUGHT UP TO THE FINISHED GROUND LEVEL OR TO THE BASEMENT FLOOR LEVEL. AN APPROVED TWO-WAY CLEANOUT IS ALLOWED TO BE USED AT THIS LOCATION TO SERVE AS A REQUIRED CLEANOUT FOR BOTH THE BUILDING DRAIN AND BUILDING SEWER. THE CLEANOUT AT THE JUNCTION OF THE BUILDING DRAIN AND BUILDING SEWER SHALL NOT BE REQUIRED IF THE CLEANOUT ON A 3-INCH OR LARGER DIAMETER SOIL STACK IS LOCATED WITHIN A DEVELOPED LENGTH OF 10 FEET OF THE BUILDING DRAIN AND BUILDING SEWER CONNECTION.

CONCEALED PIPING, CLEANOUTS ON CONCEALED PIPING OR PIPING UNDER A FLOOR SLAB OR IN A CRAWL SPACE OF LESS THAN 24 INCHES IN HEIGHT OR A PLENUM SHALL BE EXTENDED THROUGH AND TERMINATE FLUSH WITH THE FINISHED WALL, FLOOR OR GROUND SURFACE OR SHALL BE EXTENDED TO THE OUTSIDE OF THE BUILDING. CLEANOUT PLUGS SHALL NOT BE COVERED WITH CEMENT, PLASTER OR ANY OTHER PERMANENT FINISH MATERIAL. WHERE IT IS NECESSARY TO CONCEAL A CLEANOUT OR TO TERMINATE A CLEANOUT IN AN AREA SUBJECT TO VEHICULAR TRAFFIC, THE COVERING PLATE, ACCESS DOOR OR CLEANOUT SHALL BE OF AN APPROVED TYPE DESIGNED AND INSTALLED FOR THIS PURPOSE.

MINIMUM SIZE, CLEANOUTS SHALL BE THE SAME NOMINAL SIZE AS THE PIPE THEY SERVE UP TO 4 INCHES. FOR PIPES LARGER THAN 4 INCHES NOMINAL SIZE, THE MINIMUM SIZE OF THE CLEANOUT SHALL BE 4 INCHES.

CAST-IRON CLEANOUT SIZING SHALL BE IN ACCORDANCE WITH ASTM A 74 FOR HUB AND SPIGOT FITTINGS OR ASTM A 888 OR CSPI 301 FOR HUBLESS FITTINGS.

ACCESS SHALL BE PROVIDED TO ALL CLEANOUTS.

PROVIDE CONDENSATE DRAINAGE, COMPLETE WITH CONDENSATE REMOVAL PUMP, FOR EACH COOLING COIL. CONDENSATE PUMP DISCHARGE SHALL BE CONNECTED VIA INDIRECT WASTE CONNECTION TO BUILDING SANITARY/WASTE PIPING SYSTEM. COORDINATE PUMP WIRING WITH PROJECT ELECTRICIAN. IF GRAVITY DRAINAGE IS POSSIBLE WITHIN THE CONSTRAINTS OF PIPING PITCH, CONCEALMENT ABOVE CEILINGS, AND ONLY AFTER COMPLETE COORDINATION WITH STRUCTURE AND OTHER TRADES, THE CONTRACTOR MAY SUBMIT SKETCH PROPOSALS FOR GRAVITY ROUTING FOR REVIEW/APPROVAL.

MISCELLANEOUS SPECIALTIES

ALL EQUIPMENT, VALVES, STRAINERS, UNIONS, TRAPS, FLANGES AND OTHER APPURTENANCES REQUIRING ACCESS SHALL BE LOCATED IN ACCESSIBLE LOCATIONS. WHEN A PIECE OF EQUIPMENT MUST BE LOCATED ABOVE AN INACCESSIBLE CEILING OR WALL, THEN THE APPROPRIATE ACCESS DOOR SHALL BE PROVIDED. SUCH EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO CLEANOUTS, WATER HAMMER ARRESTORS AND VALVES. THESE SHALL BE COORDINATED WITH THE ARCHITECT. ACCESS DOORS SHALL BE RIGID CONSTRUCTION WITH TWO HINGES AND A LATCH. IN PLENUM CEILINGS, PROVIDE FELT BETWEEN THE DOOR AND FRAME TO MAKE AN AIR TIGHT SEAL. ACCESS DOORS SHALL BE RATED TO THE SAME OR GREATER RATING OF THE PARTITION IN WHICH THEY ARE INSTALLED. ACCESS DOORS SHALL BE FLUSH MOUNTED, PRIME COATED WITH RUST INHIBITIVE PAINT, CONCEALED FRAME, FLUSH SCREW DRIVER OPERATED LOCKS WITH METAL CAMS AND ANCHORS AS REQUIRED.

ACCESS DOOR SIZES SHALL BE:
12" X 12" AT EASILY ACCESSIBLE ITEMS
18" X 18" WHERE PARTIAL BODY ACCESS IS REQUIRED
24" X 24" WHERE FULL BODY ACCESS IS REQUIRED

INSTALL ELECTRONIC TRAP PRIMERS SERVING ALL DRAINS. INSTALL ALL TRAP PRIMER VALVES IN AN ACCESSIBLE LOCATION. PROVIDE AND INSTALL ACCESS PANELS AND DOORS WHERE REQUIRED TO GAIN ACCESS IN CONCEALED CONSTRUCTION.

PROVIDE FLEXIBLE CONNECTIONS IN ALL PIPING SYSTEMS CONNECTED TO PUMPS AND OTHER EQUIPMENT WHICH REQUIRES VIBRATION ISOLATION, EXCEPT WATER COILS. FLEXIBLE CONNECTIONS SHALL BE PROVIDED AS CLOSE TO THE EQUIPMENT AS POSSIBLE.

PIPING GENERAL

NO PIPING SHALL BE COVERED UNTIL TESTED APPROVED BY THE AUTHORITIES HAVING JURISDICTION.

ALL PIPING SHALL BE RUN PERPENDICULAR AND/OR PARALLEL TO FLOORS, INTERIOR WALLS, ETC. PIPING AND VALVES SHALL BE GROUPED NEATLY AND SHALL BE RUN AS TO MAXIMIZE HEADROOM OR PASSAGE CLEARANCE. ALL VALVES, CONTROLS AND ACCESSORIES CONCEALED IN FURRED SPACES AND REQUIRING ACCESS FOR OPERATION AND MAINTENANCE SHALL BE ARRANGED TO ASSURE THE USE OF A MINIMUM NUMBER OF ACCESS DOORS.

ALL PIPE LINES MADE WITH SCREENED FITTINGS MUST BE PROVIDED WITH A SUFFICIENT NUMBER OF FLANGES AND/OR UNIONS TO ALLOW FOR EASY AND CONVENIENT DISMANTLING OF THE SYSTEM WITHOUT BREAKING FITTINGS.

ALL PIPING SHALL RUN CONCEALED IN FURRED SPACES OF OCCUPIED AREAS OR CHASES. CONTRACTOR SHALL OBTAIN PERMISSION TO RUN ANY EXPOSED PIPES.

CAP ALL PIPE AND EQUIPMENT OUTLETS DURING CONSTRUCTION AND KEEP LINES AND INSIDE OF EQUIPMENT FREE OF FOREIGN MATERIALS.

PROVIDE FOR EXPANSION WITHOUT WARPING OR DISLOCATING LINES OR STRAINING CONNECTED EQUIPMENT. INSTALL PIPING TO CLEAR BUILDING CONSTRUCTION AND TO AVOID INTERFERENCE WITH OTHER WORK. THE CONTRACTOR SHALL PROVIDE AND INSTALL COMPLETE PIPING EXPANSION SYSTEM (INCLUDING SEISMIC JOINT EXPANSION) AND DEVICES AS REQUIRED FOR PROPER EXPANSION COMPENSATION STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF THE PROJECT.

THE DRAWINGS INDICATE SCHEMATICALLY THE SIZE AND LOCATION OF PIPING. PIPING SHALL BE SET UP AND DOWN AND OFFSET AS REQUIRED TO MEET CONSTRUCTION CONDITIONS.

THIS CONTRACTOR SHALL INFORM HIMSELF FROM THE GENERAL CONSTRUCTION SPECIFICATIONS AND PLANS, OF THE EXACT DIMENSION OF FINISHED WORK AND OF THE HEIGHT OF FINISHED CEILINGS IN ALL ROOMS WHERE EQUIPMENT OR PIPES ARE TO BE PLACED AND ARRANGE HIS WORK IN ACCORDANCE WITH THE SCHEDULE OF INTERIOR FINISHES, AS INDICATED ON THE ARCHITECTURAL DRAWINGS.

WATER PIPING SHALL BE RUN FREE OF TRAPS AND UNNECESSARY BENDS. ANY TRAPS FORMED SHALL BE PROVIDED WITH HOSE END DRAIN VALVES WITH THREADED CAP AND CHAIN TO COMPLETELY DRAIN THE SYSTEM.

PROVIDE SECTION CUT-OFF VALVES ON ALL MAINS AND BRANCHES. PITCH AND VALVE ALL WATER PIPING FOR CONVENIENT DRAINAGE.

UNIONS AND/OR FLANGES SHALL BE INSTALLED AT EACH PIECE OF EQUIPMENT, IN BYPASSES AND IN LONG PIPING RUNS (100 FEET OR MORE) TO PERMIT DISASSEMBLY FOR ALTERATION AND REPAIRS.

WHEREVER DISSIMILAR METALS ARE JOINED TOGETHER AN APPROVED DIELECTRIC FITTING SHALL BE USED. THE DIELECTRIC FITTING SHALL BE A LISTED ASSEMBLY.

RUN ALL SOIL, WASTE AND VENT PIPING SHOWN OR REQUIRED BY LOCAL CODES. PIPING SHOWN IS MINIMUM AND IN ACCORDANCE WITH STATE AND FEDERAL CODES. IF LOCAL CODES REQUIRE ADDITIONAL VENTING OR LARGER SIZES, PROVIDE AS REQUIRED.

MAKE ALL CONNECTIONS THROUGH TRAPS. EACH TRAP TO BE VENTED, EITHER BY CIRCUIT, LOOP, OR INDIVIDUAL VENT, AS REQUIRED, BUT NOT LESS THAN SHOWN, OR AS REQUIRED BY LOCAL CODE.

SET AND PROPERLY CONNECT ALL FIXTURES WITH HOT AND COLD WATER, VENT AND DRAINAGE PIPING, AS REQUIRED AND PROTECT FIXTURES UNTIL ACCEPTANCE AND TEST. CLEAN ALL FLUSH VALVES AFTER TWO WEEKS OF OPERATION.

PLUMBING ABBREVIATIONS

ABBREVIATION	DESCRIPTION
ADA	AMERICAN DISABILITIES ACT
A.F.F.	ABOVE FINISHED FLOOR
A.F.G.	ABOVE FINISHED GRADE
B.F.F.	BELOW FINISHED FLOOR
B.F.P.	BACKFLOW PREVENTER
BI/V	BUTTERFLY INDICATING VALVE
BLDG	BUILDING
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNITS PER HOUR
C.E.	CIVIL ENGINEER
CONT	CONTINUED
COP	CLEANOUT PLUG
CPVC	CHLORINATED POLYVINYL CHLORIDE
CV	CHECK VALVE
CW	COLD WATER
D.F.U.	DRAINAGE FIXTURE UNITS
DIA.	DIAMETER
DN	DOWN
DWG	DRAWING
EA	EACH
E.C.	ELECTRICAL CONTRACTOR
EW/H	ELECTRIC WATER HEATER
EX	EXISTING
FO	FLOOR CLEANOUT
FOD	FLOOR DRAIN
FDF	FLOOR DRAIN WITH FUNNEL
FDF-R	FLOOR DRAIN WITH ROUND FUNNEL
F.F.	FINISHED FLOOR
F.F.E.	FINISHED FLOOR ELEVATION
FLR	FLOOR
F.P.C.	FIRE PROTECTION CONTRACTOR
FS	FLOOR SINK
GAL	GALLONS
G.C.	GENERAL CONTRACTOR
GPF	GALLONS PER FLUSH
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GW/H	GAS WATER HEATER
HD	HUB DRAIN
HP	HORSEPOWER
HR	HOUR
HW	HOT WATER
HWR	HOT WATER RECIRCULATION
KW	KILOWATTS
MAX	MAXIMUM
MBTUH	THOUSANDS OF BTU PER HOUR
M.C.	MECHANICAL CONTRACTOR
MIN.	MINIMUM
MISC.	MISCELLANEOUS
NC	NORMALLY CLOSED
N.I.C.	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
P.C.	PLUMBING CONTRACTOR
P.R.A.	PROJECTED ROOF AREA
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
RAD.	RADIUS
RD	ROOF DRAIN
RO	ROOF OVERFLOW
RRBP	REDUCED PRESSURE BACKFLOW PREVENTER
RL	RAINWATER LEADER
S.C.	SITE CONTRACTOR
SF	SQUARE FEET
SS	SANITARY SEWER STACK
TB	THRUST BLOCK
TD	TRENCH DRAIN
TP	TRAP PRIMER
TYP.	TYPICAL
U.O.N.	UNLESS OTHERWISE NOTED
V	VENT
VB	VACUUM BREAKER
V.I.F.	VERIFY IN FIELD
VS	VENT STACK
VTR	VENT THROUGH ROOF
WCO	WALL CLEANOUT
WH	WALL HYDRANT
WS	WASTE STACK
YCO	YARD CLEANOUT
Ø	DIAMETER

PLUMBING SYMBOL LEGEND

SYMBOL	DESCRIPTION
	AIR ADMITTING VALVE
	BALANCING VALVE
	BALL VALVE
	VALVE IN UNDERGROUND BOX
	BACKWATER VALVE
	CHECK VALVE
	GAS VALVE
	PRESSURE RELIEF VALVE
	THERMOSTATIC MIXING VALVE
	GATE VALVE
	SUPPLY VALVE
	METER
	REDUCED PRESSURE BACKFLOW PREVENTER
	CLOTHES WASHER CONNECTION
	FLOOR CLEANOUT
	WALL CLEANOUT
	YARD CLEANOUT
	FLOOR DRAIN
	FLOOR DRAIN WITH FUNNEL
	FLOOR SINK WITH FULL GRATE
	FLOOR SINK WITH HALF GRATE
	FLOOR SINK WITH THREE-QUARTER GRATE
	HUB DRAIN
	ROOF DRAIN
	ROOF OVERFLOW DRAIN
	TRENCH DRAIN
	HOSE BIBB
	POINT OF NEW CONNECTION
	POINT OF DISCONNECTION
	VENT THROUGH ROOF
	RECIRCULATION PUMP
	WATER HAMMER ARRESTOR
	TRAP PRIMER
	"P" TRAP
	WALL HYDRANT
	PIPE DOWN
	PIPE UP
	CAPPED PIPE
	CLEANOUT PLUG
	UNION
	DIRECTION OF FLOW
	PIPE OR EQUIPMENT TO BE DEMOLISHED
	PLUMBING FIXTURE
	ADA COMPLIANT PLUMBING FIXTURE

PLUMBING DRAWING LIST

DRAWING NUMBER	DRAWING DESCRIPTION
P000	PLUMBING COVER SHEET
P110	PLUMBING DRAINAGE FLOOR PLAN
P111	PLUMBING SUPPLY FLOOR PLAN
P120	PLUMBING ATTIC PLAN
P200	PLUMBING RISER DIAGRAMS
P300	PLUMBING DETAILS
P301	PLUMBING DETAILS
P400	PLUMBING SCHEDULES

Project Title:
**NEW ANIMAL FACILITY AT:
MONTVILLE ANIMAL SHELTER**
225 Maple Ave. Parcel ID: 077-041-000
Montville, CT



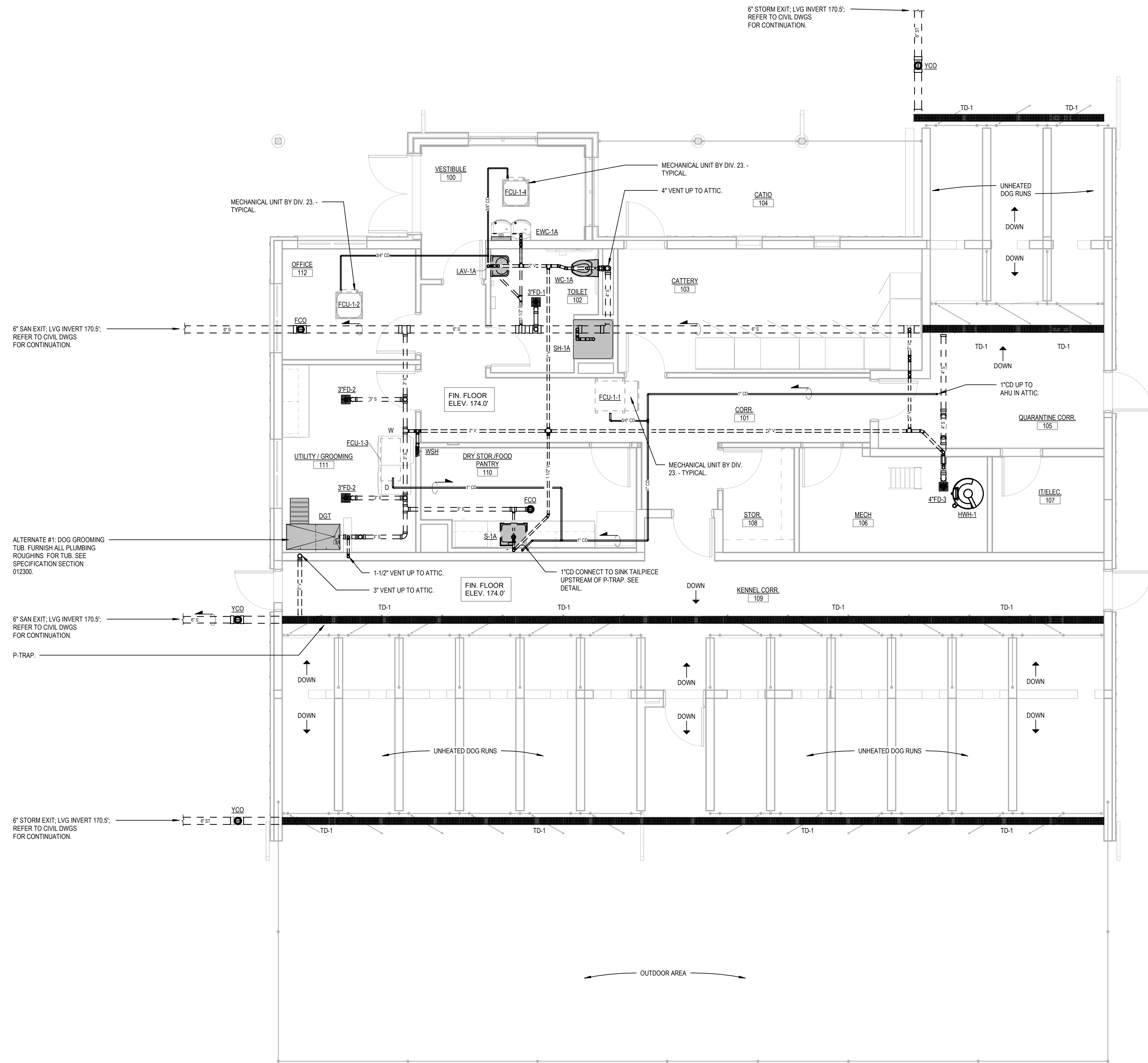
SILVER PETRUCELLI + ASSOCIATES
3190 WHITNEY AVENUE HAMDEN CT 06518
311 STATE STREET NEW LONDON CT 06320
203 230 9007 silverpetrucelli.com

Revision:	Description:	Date:	Revised By:
	ISSUED FOR BID	09/27/2024	

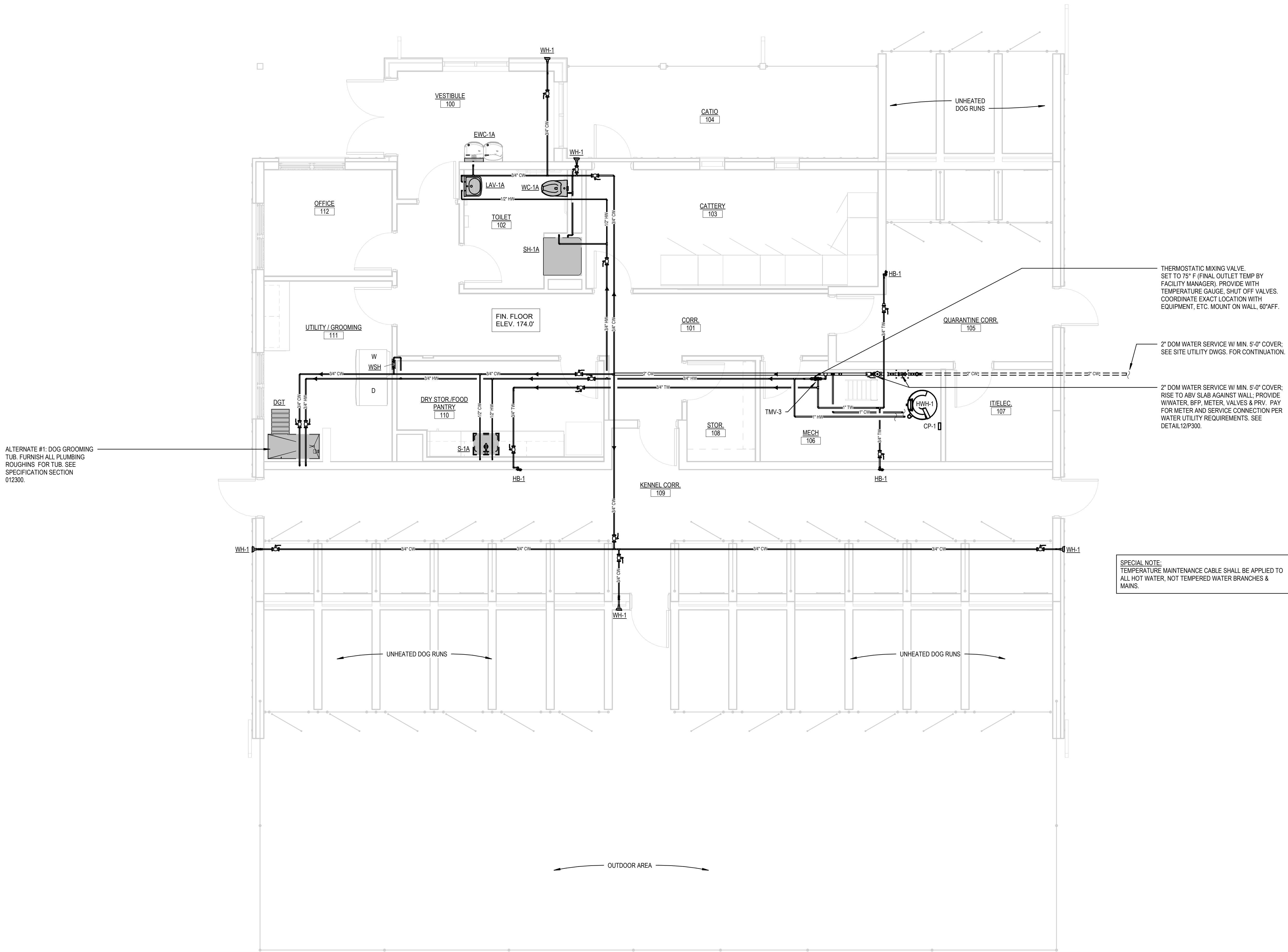
Drawing Title:
PLUMBING COVER SHEET

Date: 09/27/2024
Scale: NONE
Drawn By: JES
Project Number: 22.130
Drawing Number:

P000

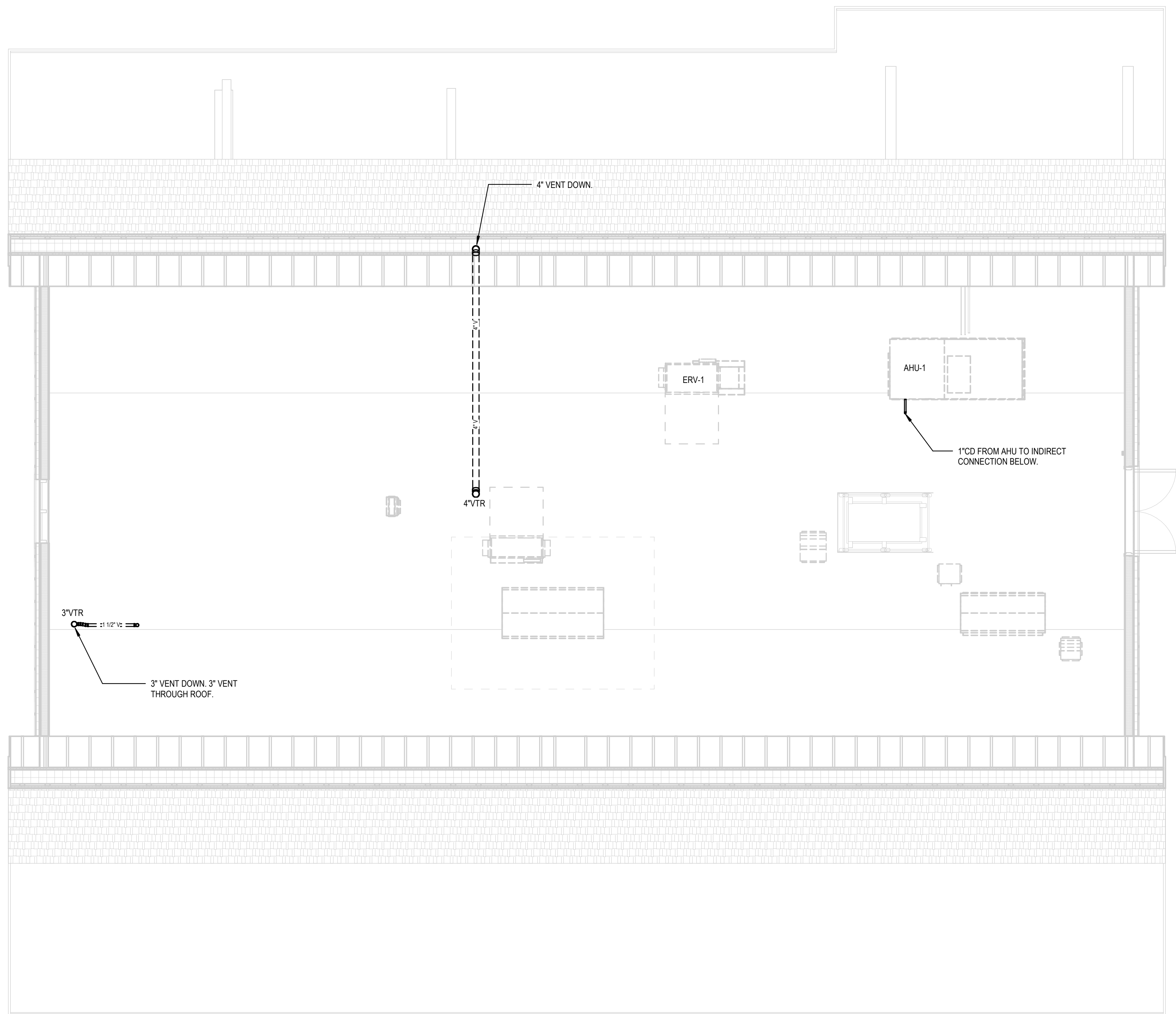


1 MAIN LEVEL PLAN DRAINAGE
1/4" = 1'-0"



1 MAIN LEVEL PLAN SUPPLY

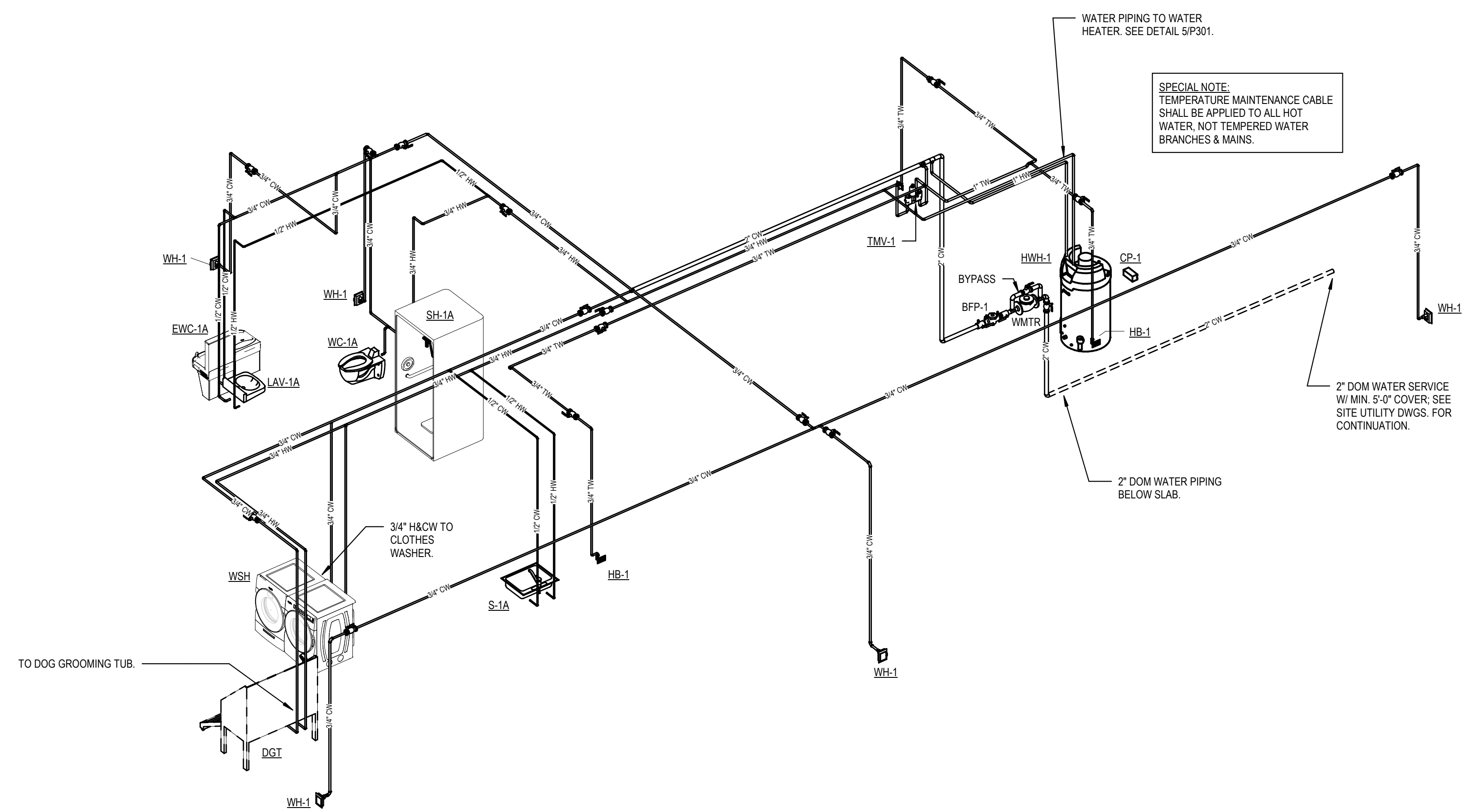
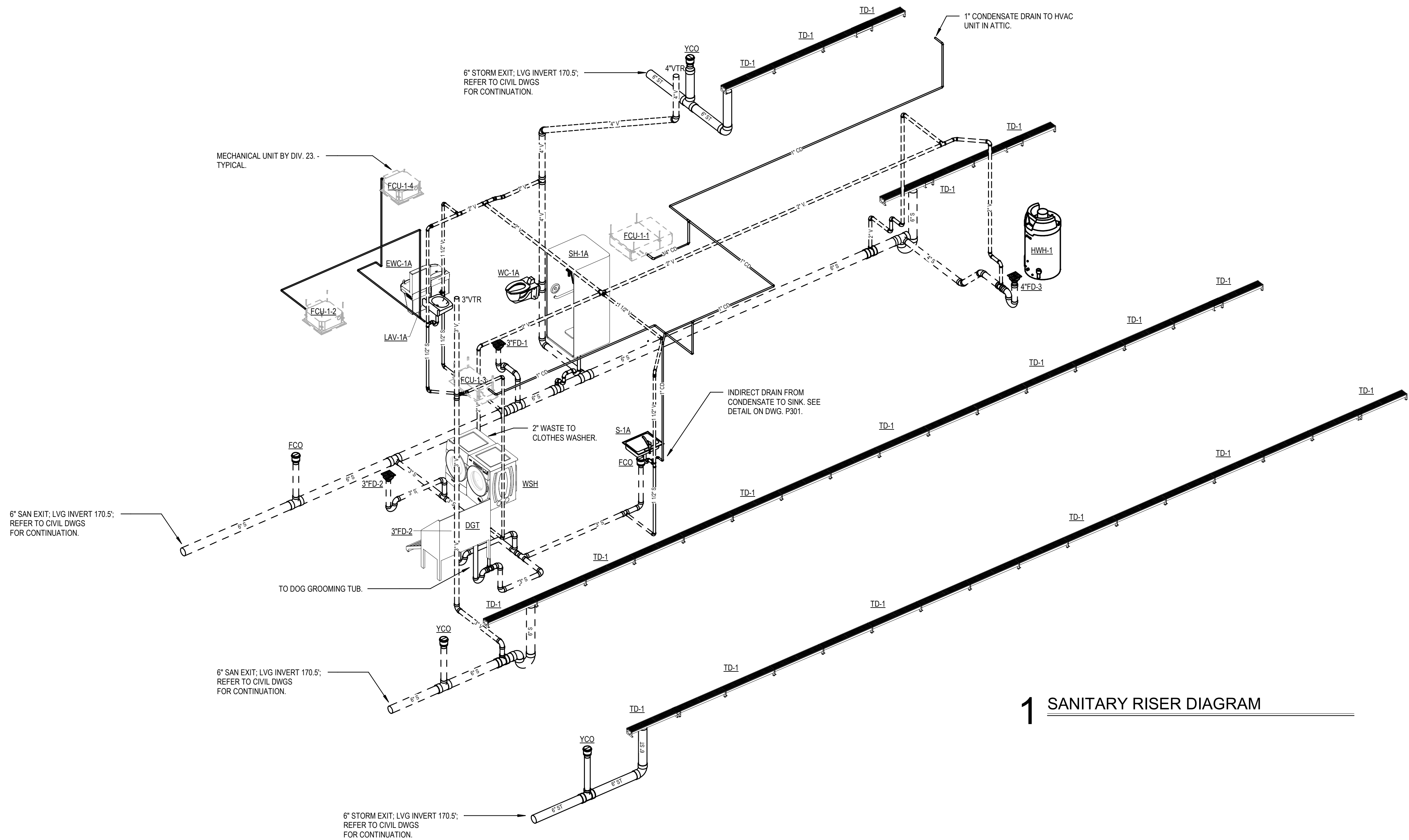
1/4" = 1'-0"

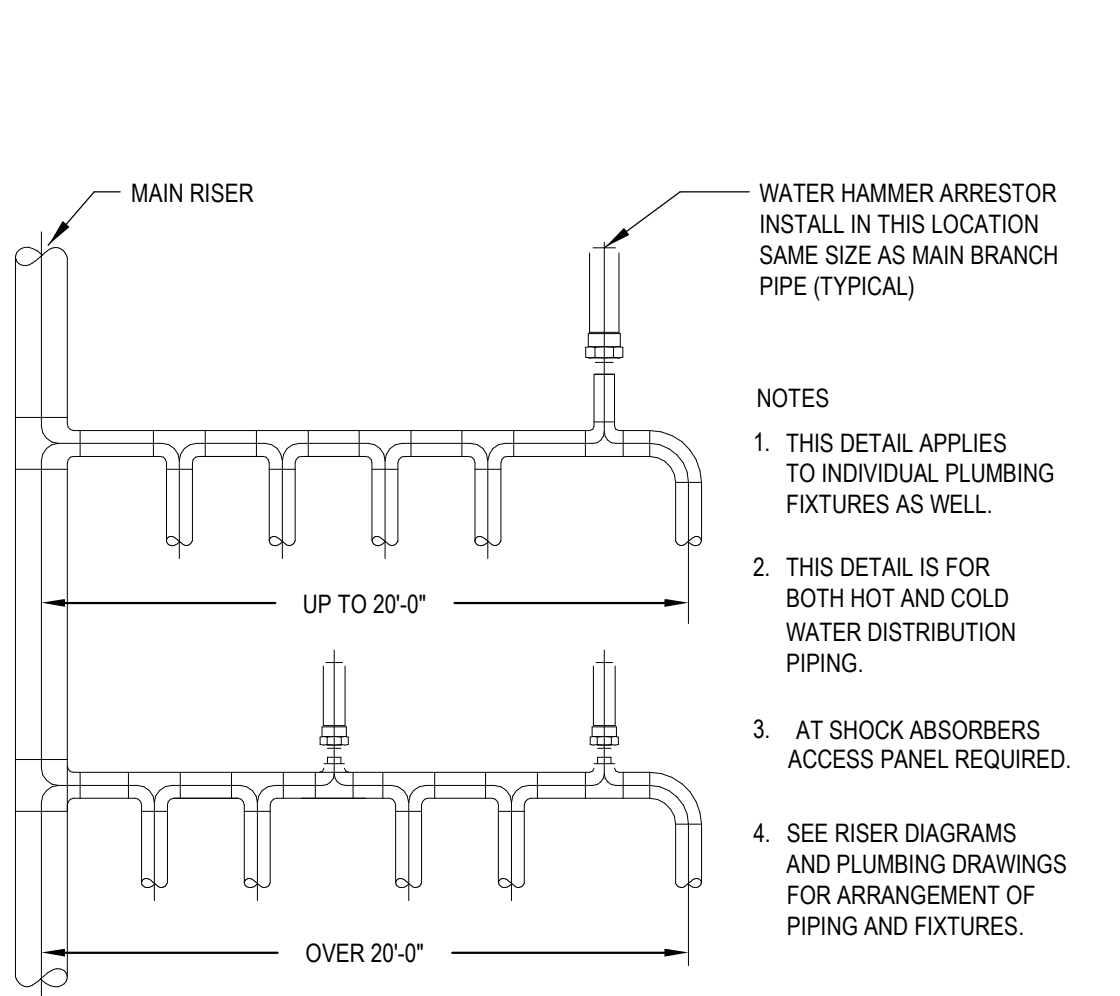


1 ATTIC PLAN
1/4" = 1'-0"

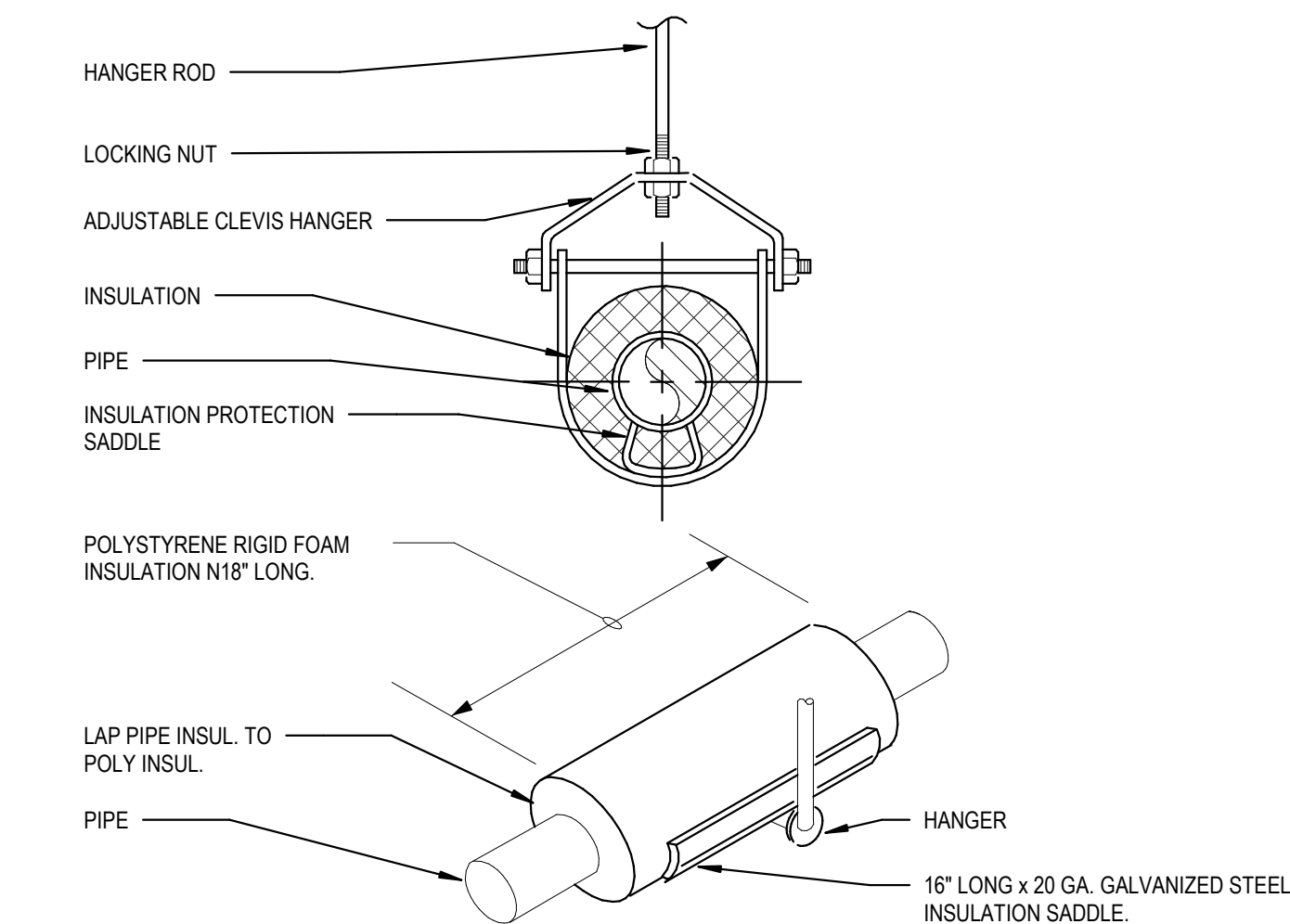


Revision:	Description:	Date:	Revised By:

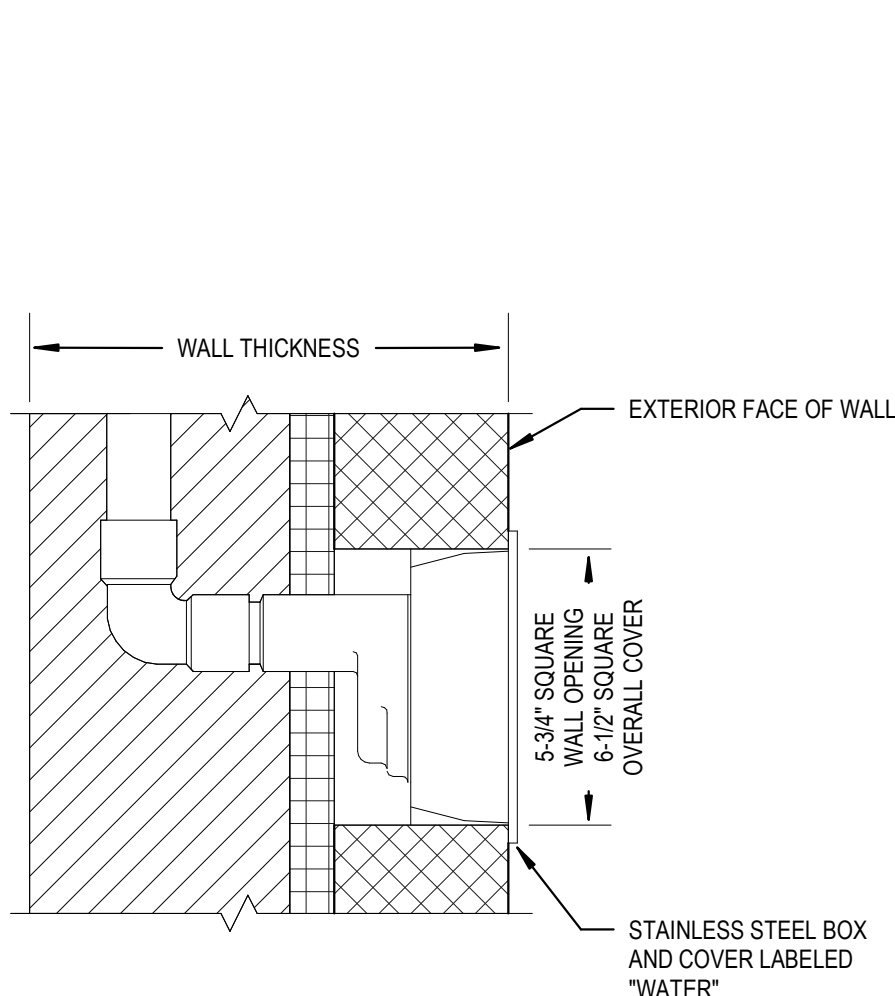




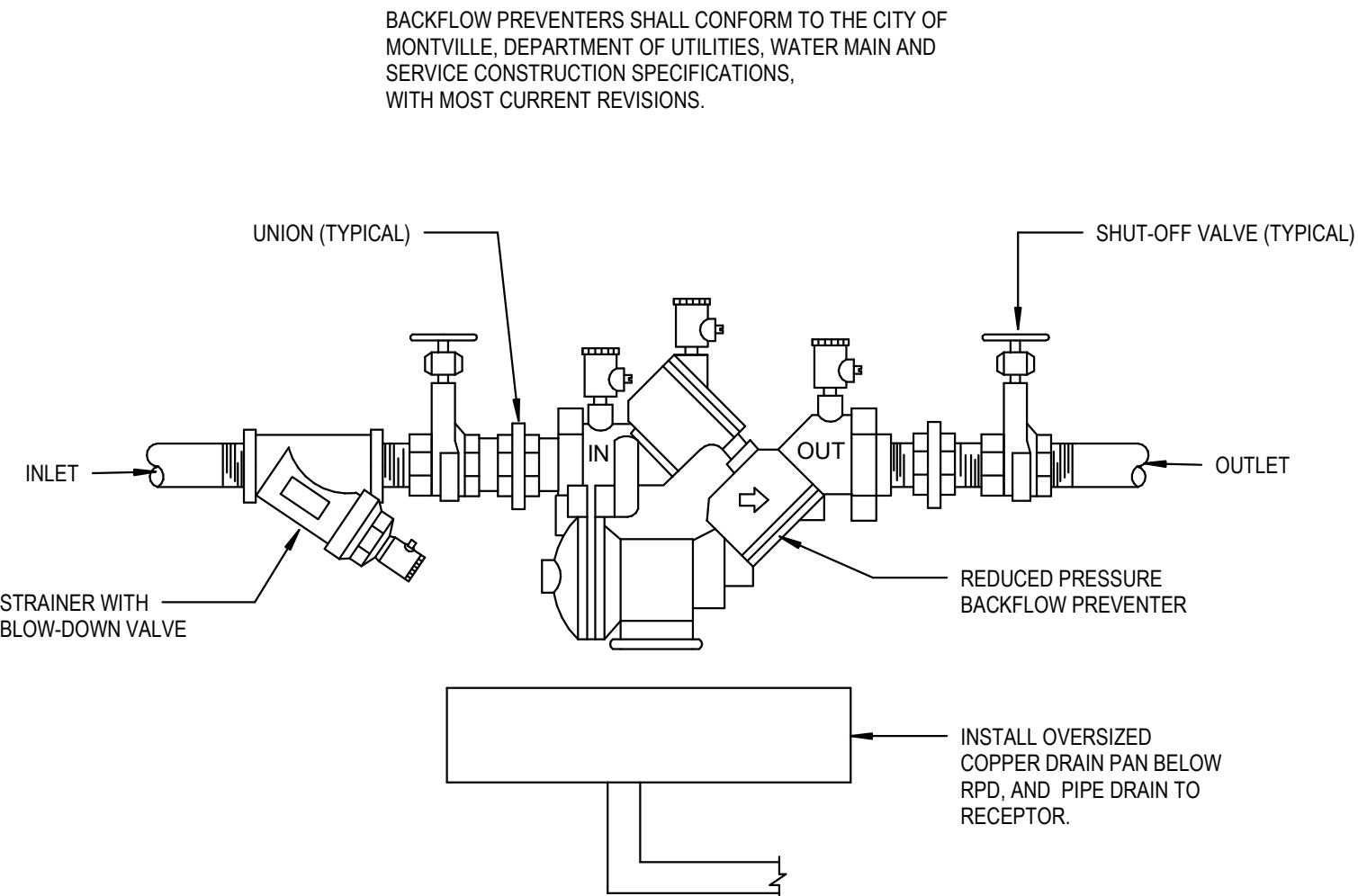
10 SHOCK ABSORBER DETAIL
NTS



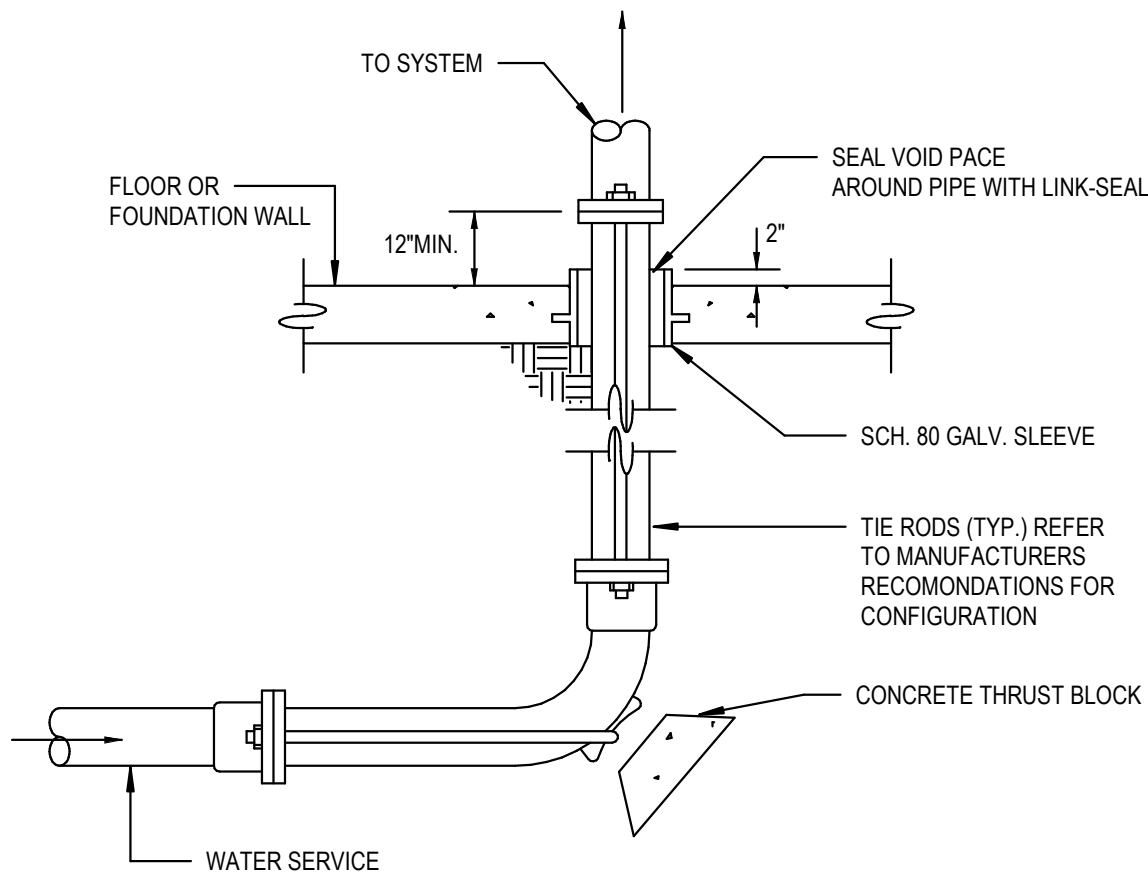
7 CLEVIS HANGER WITH SADDLE DETAIL
NTS



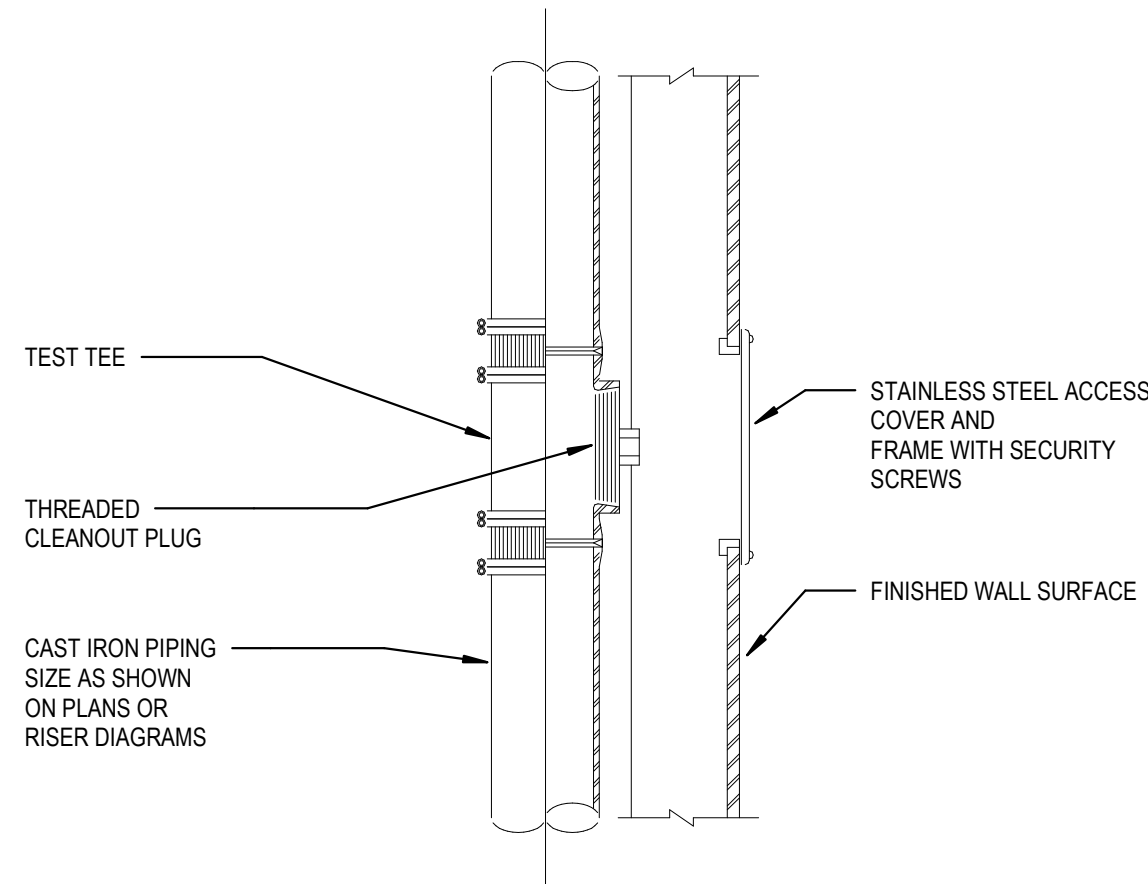
4 WALL HYDRANT DETAIL1
NTS



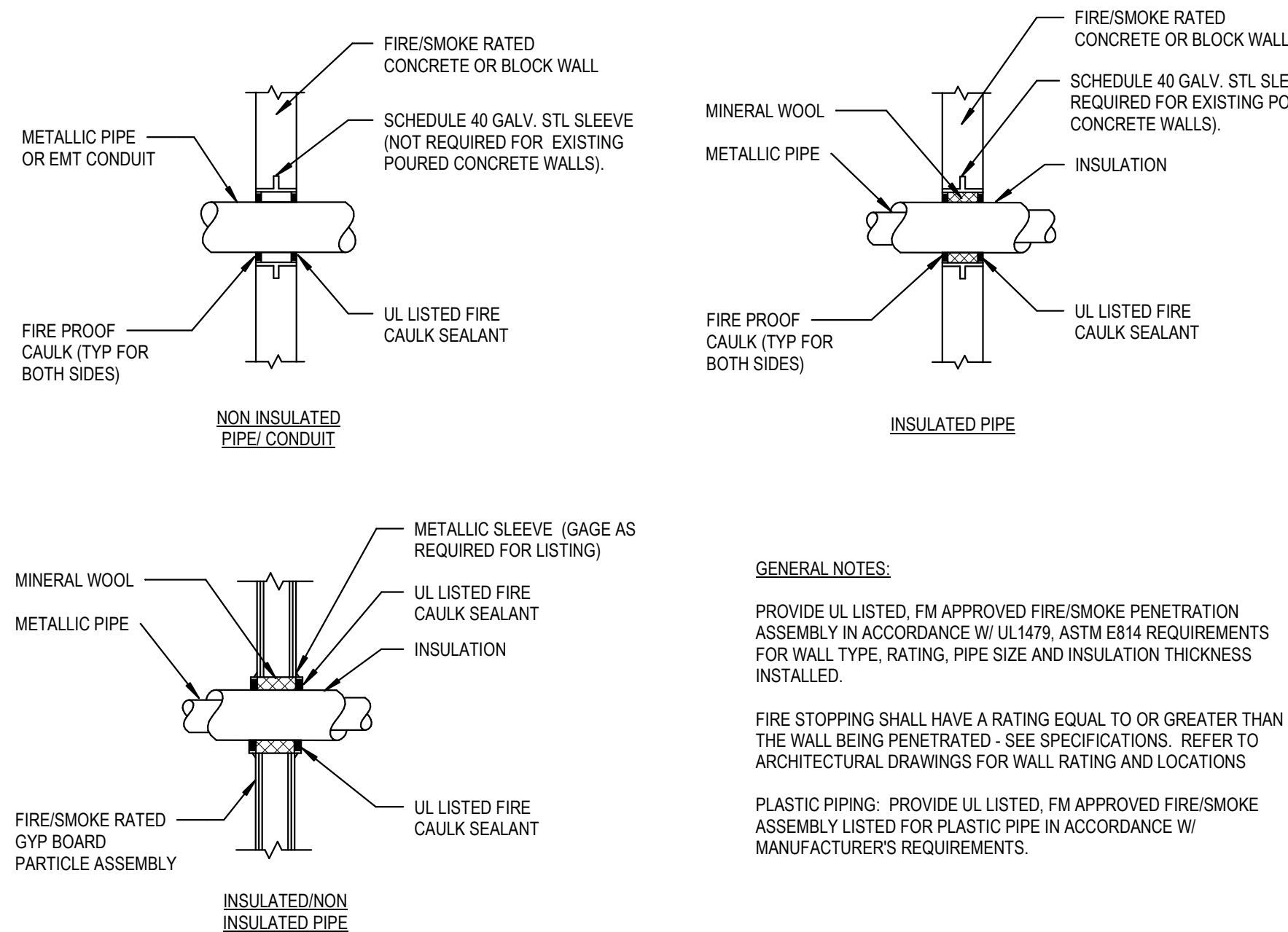
1 BACKFLOW PREVENTER DETAIL
NTS



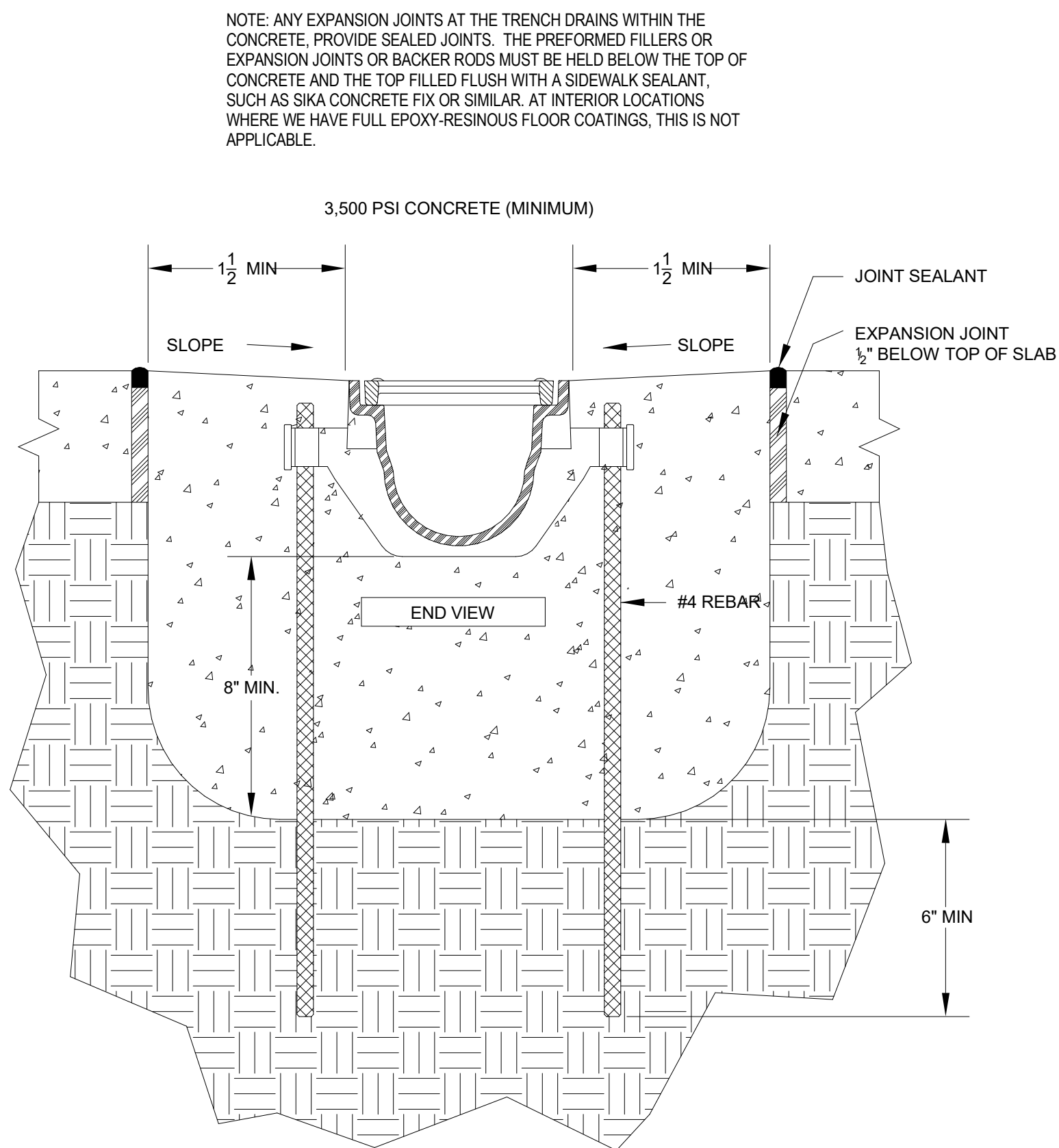
11 WATER PIPING ENTRY DETAIL
NTS



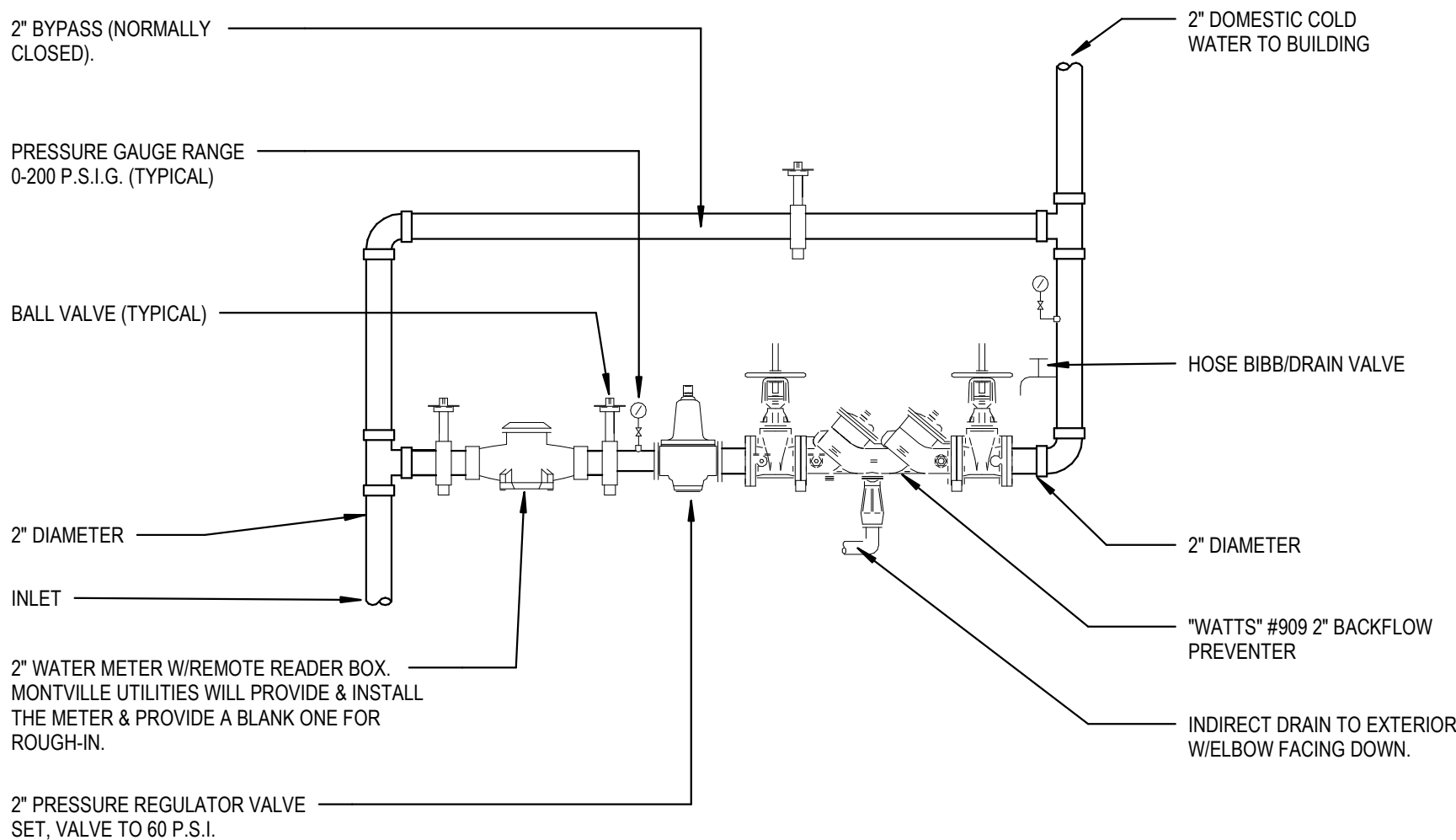
8 WALL CLEANOUT DETAIL1
NTS



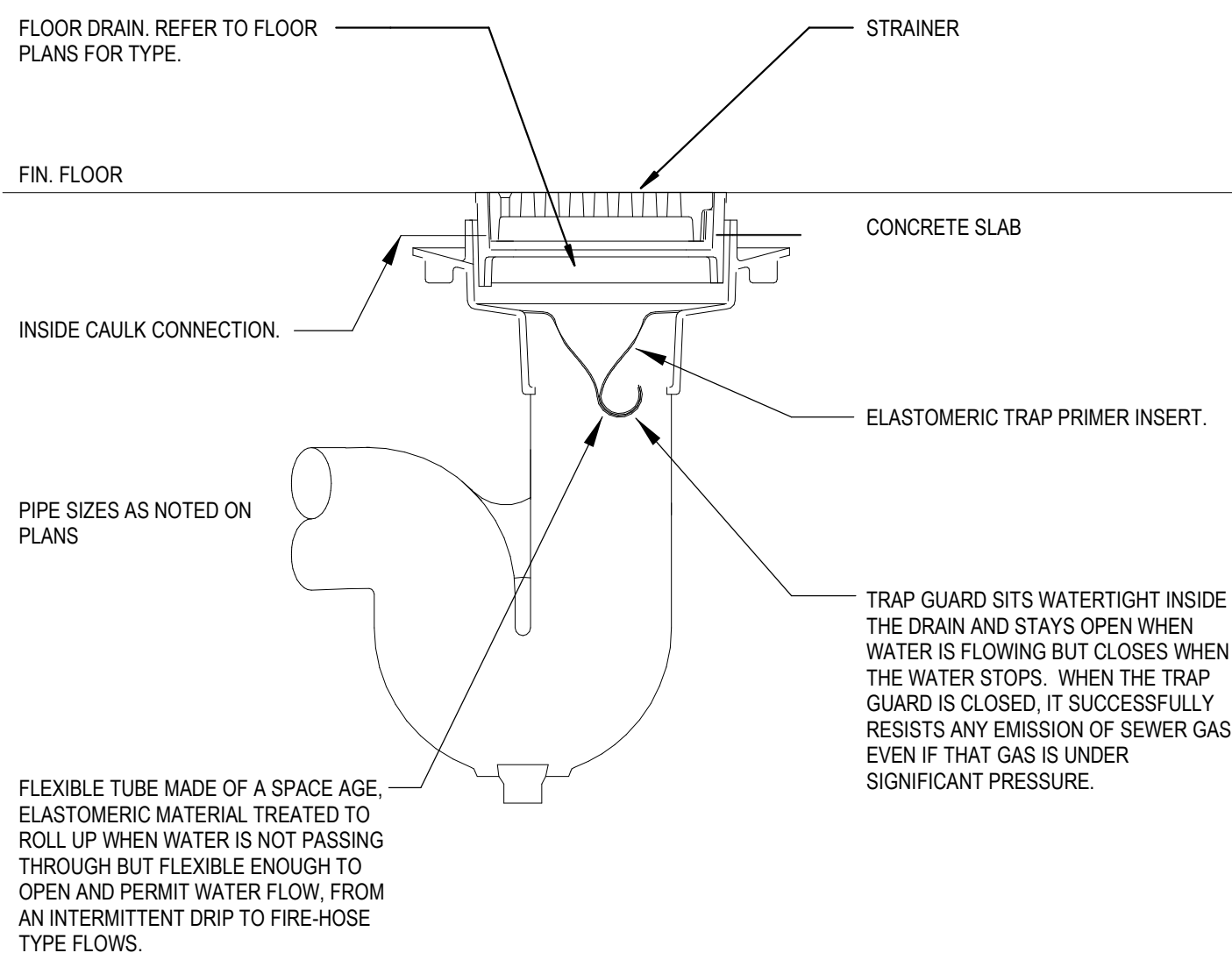
5 PIPE FIRE/SMOKE SEAL DETAIL
NTS



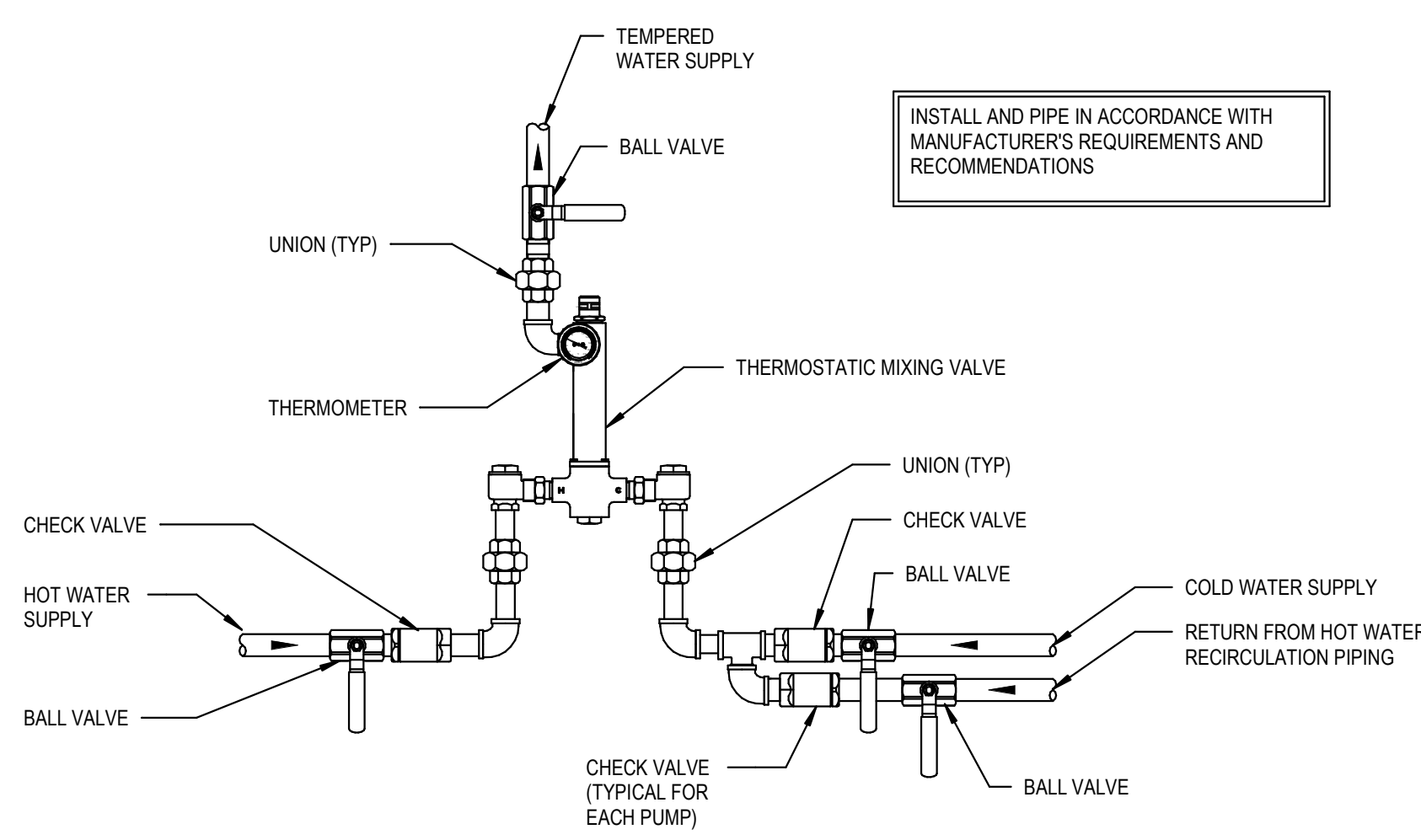
2 TRENCH DRAIN PIPING DETAIL
NTS



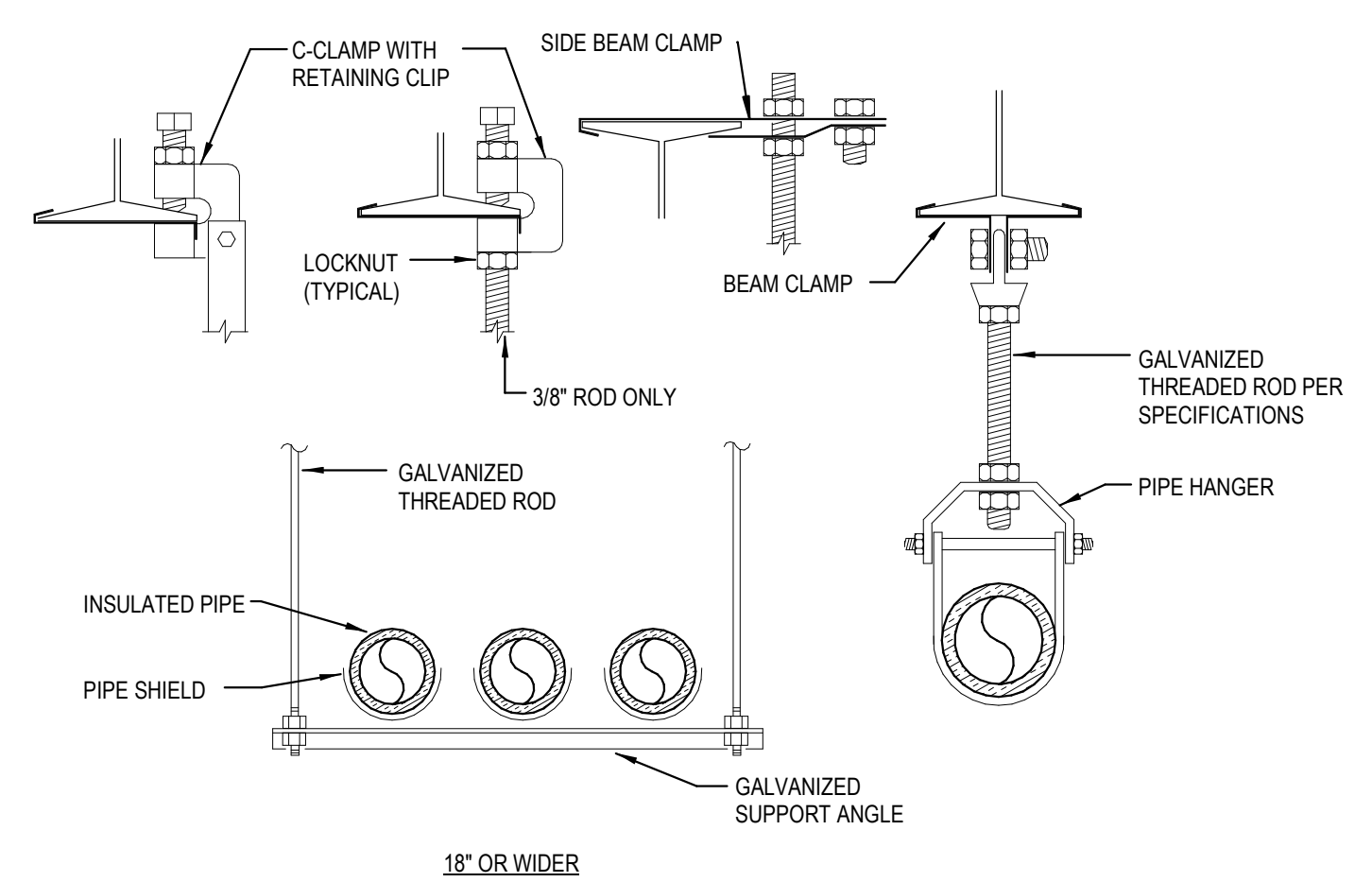
12 WATER SERVICE ENTRANCE DETAIL
NTS



9 TRAP PRIMER DETAIL
NTS



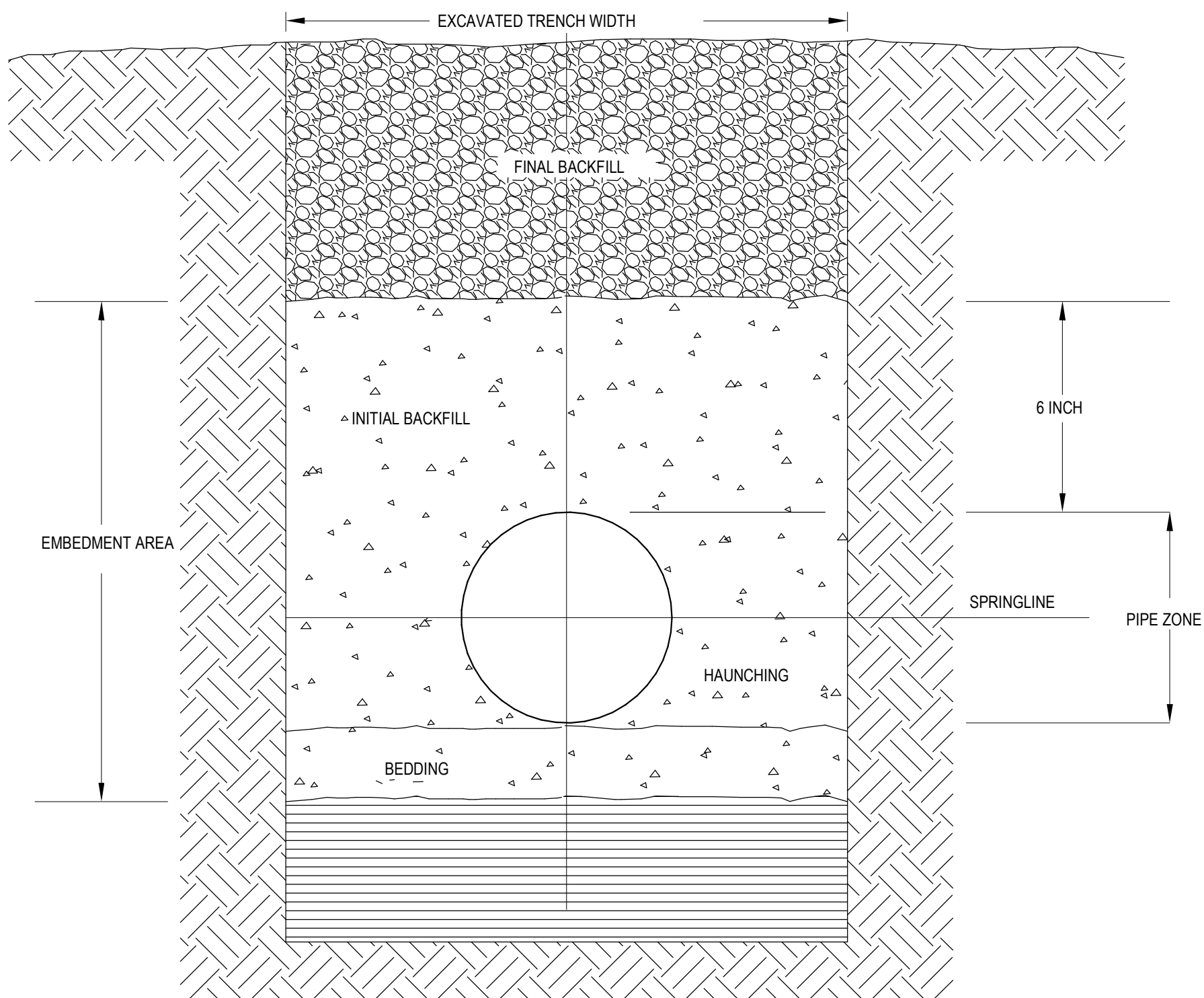
6 MASTER THERMOSTATIC MIXING VALVE
NTS



PIPE SIZE	ROD DIA.	SUPPORT ANGLE OR EQUIV. CHANNEL	MAX SPACING STEEL PIPE	MAX SPACING COPPER PIPE	MAXIMUM AREA *
1/2" TO 1"	3/8"	1 1/2" X 1 1/2" X 1/8"	8'-0" O.C.	6'-0" O.C.	4 SQ. FT.
1 1/4" TO 2"	3/8"	1 1/2" X 1 1/2" X 1/8"	10'-0" O.C.	8'-0" O.C.	10 SQ. FT.
2 1/2" TO 4"	1/2"	2" X 2" X 1/4"	12'-0" O.C.	10'-0" O.C.	10 SQ. FT.

* REDUCE SPACING TO NEXT SMALLER INTERVAL IF PIPE AREA EXCEEDS MAXIMUM

3 PIPE SUPPORT DETAIL
NTS



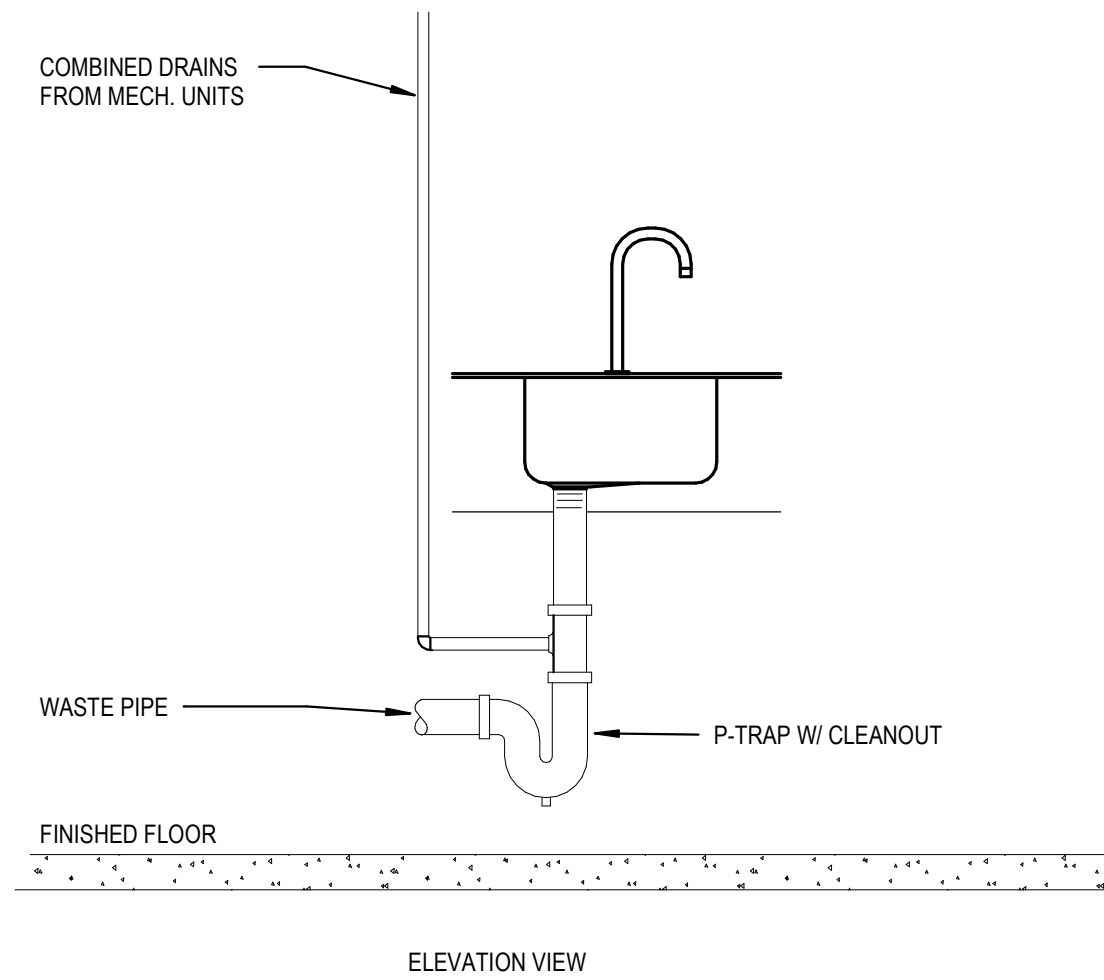
7 UNDERGROUND INSTALLATION OF PVC

NTS

UNDERGROUND INSTALLATION OF PLASTIC PIPE

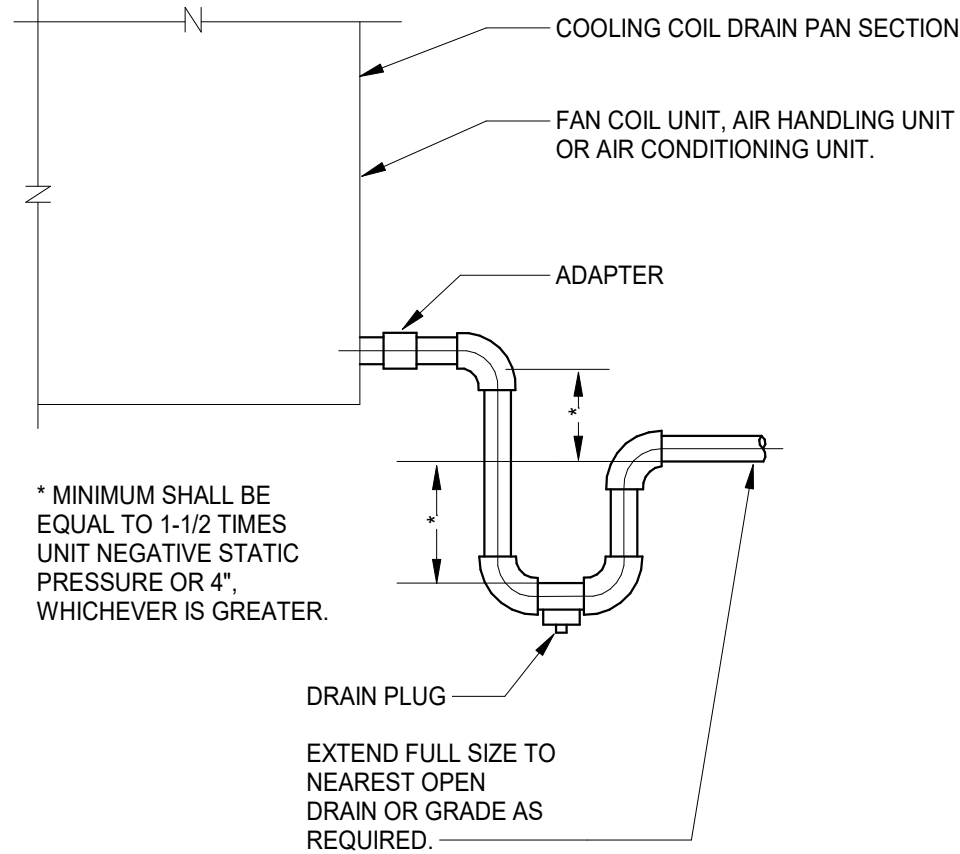
PLASTIC PIPE SHOULD ALWAYS BE BURIED IN STRICT ACCORDANCE WITH THE ASTM STANDARD RELEVANT TO THE TYPE OF PLASTIC PIPING SYSTEM BEING INSTALLED. THOSE STANDARDS ARE: ASTM D2321 STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS, ASTM D2774 STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PRESSURE PIPING. NOTE: IN ADDITION TO THESE STANDARDS, PIPE SHOULD ALWAYS BE INSTALLED IN ACCORDANCE WITH ALL LOCAL CODE REQUIREMENTS. RECOMMENDATIONS FOR UNDERGROUND INSTALLATION OF PLASTIC DRAINAGE PIPE:

1. THE MINIMUM WIDTH OF THE TRENCH SHOULD BE THE PIPE OD (OUTSIDE DIAMETER) PLUS 16 INCHES OR THE PIPE OUTSIDE DIAMETER TIMES 1.25 PLUS 12 INCHES. THIS WILL ALLOW ADEQUATE ROOM FOR JOINING THE PIPE, SNAKING THE PIPE IN THE TRENCH TO ALLOW FOR EXPANSION AND CONTRACTION WHERE APPROPRIATE AND SPACE FOR BACKFILLING AND COMPACTION OF BACKFILL. THE SPACE BETWEEN THE PIPE AND TRENCH WALL MUST BE WIDER THAN THE COMPACTION EQUIPMENT USED TO COMPACT THE BACKFILL.
2. PROVIDE A MINIMUM OF 4 INCHES OF FIRM, STABLE AND UNIFORM BEDDING MATERIAL IN THE TRENCH BOTTOM. IF ROCK OR UNYIELDING MATERIAL IS ENCOUNTERED, A MINIMUM OF 6 INCHES OF BEDDING SHALL BE USED. BLOCKING SHOULD NOT BE USED TO CHANGE PIPE GRADE OR TO INTERMITTENTLY SUPPORT PIPE OVER LOW SECTIONS IN THE TRENCH.
3. THE PIPE SHOULD BE SURROUNDED WITH AN AGGREGATE MATERIAL WHICH CAN BE EASILY WORKED AROUND THE SIDES OF THE PIPE. BACKFILLING SHOULD BE PERFORMED IN LAYERS OF 6 INCHES WITH EACH LAYER BEING SUFFICIENTLY COMPACTED TO 85% TO 95% COMPACTION.
4. A MECHANICAL TAMPER IS RECOMMENDED FOR COMPACTING SAND AND GRAVEL. THESE MATERIALS CONTAIN FINE-GRAINS, SUCH AS SILT AND CLAY. IF A TAMPER IS NOT AVAILABLE, COMPACTING SHOULD BE DONE BY HAND.
5. THE TRENCH SHOULD BE COMPLETELY FILLED. THE BACKFILL SHOULD BE PLACED AND SPREAD IN UNIFORM LAYERS TO PREVENT ANY UNFILLED SPACES OR VOIDS. LARGE ROCKS, STONES, FROZEN CLODS, OR OTHER LARGE DEBRIS SHOULD BE REMOVED. STONE BACKFILL SHALL PASS THROUGH AN 1-1/2" SIEVE. ROCK SIZE SHOULD BE ABOUT ONE-TENTH OF THE PIPE OUTSIDE DIAMETER. HEAVY TAMPERS OR ROLLING EQUIPMENT SHOULD ONLY BE USED TO CONSOLIDATE THE FINAL BACKFILL.
6. TO PREVENT DAMAGE TO THE PIPE AND DISTURBANCE TO PIPE EMBEDMENT, A MINIMUM DEPTH OF BACKFILL ABOVE THE PIPE SHOULD BE MAINTAINED. PIPE SHOULD ALWAYS BE INSTALLED BELOW THE FROST LEVEL. TYPICALLY, IT IS NOT ADVISABLE TO ALLOW VEHICULAR TRAFFIC OR HEAVY CONSTRUCTION EQUIPMENT TO TRAVERSE THE PIPE TRENCH.



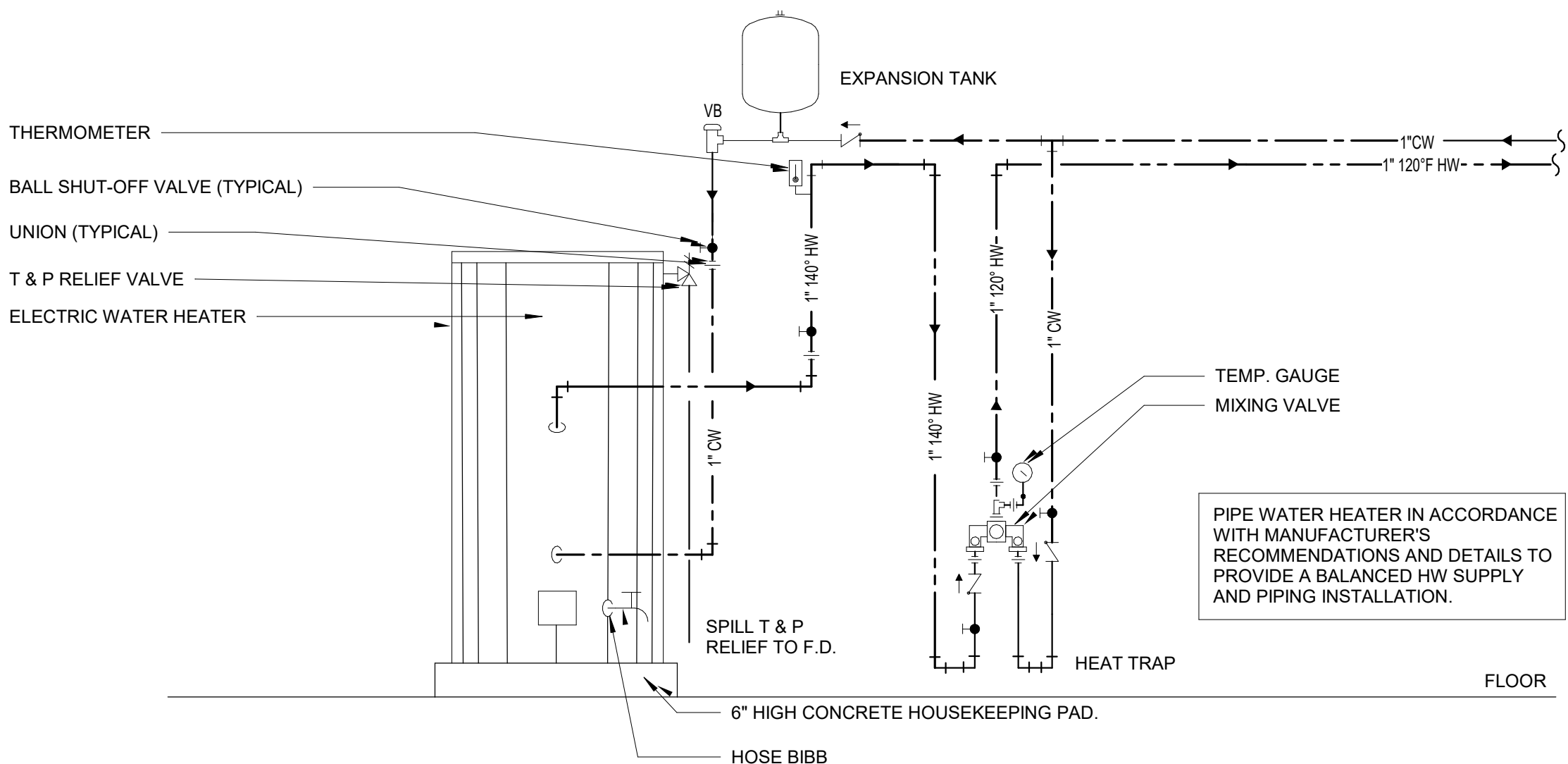
4 SINK INDIRECT DRAIN

NTS



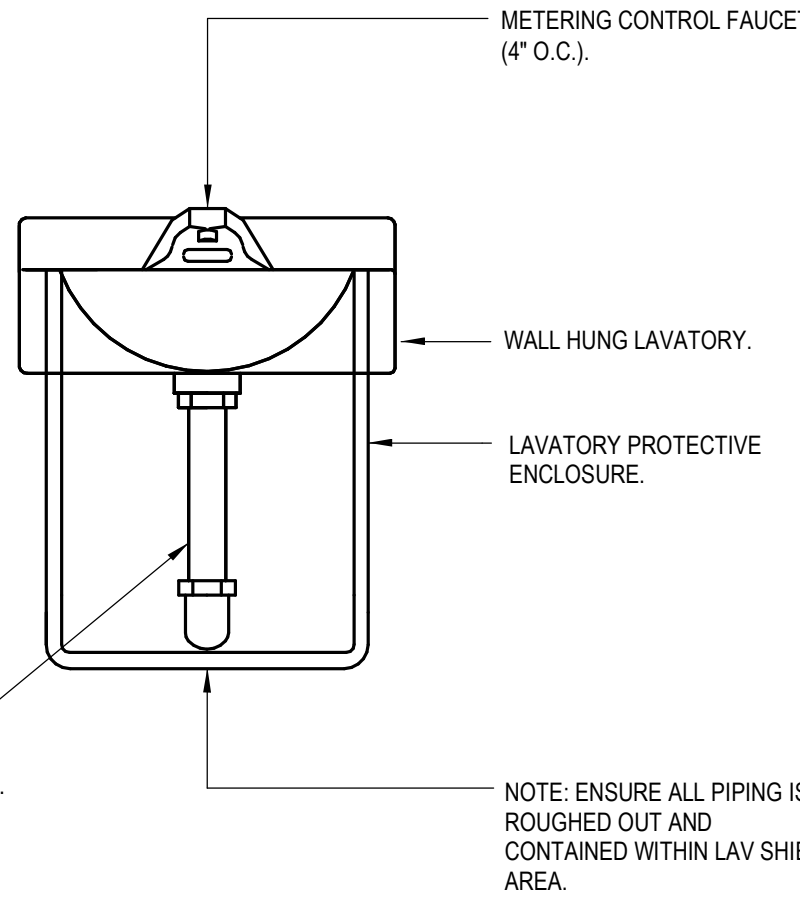
1 CONDENSATE DRAIN DETAIL

NTS



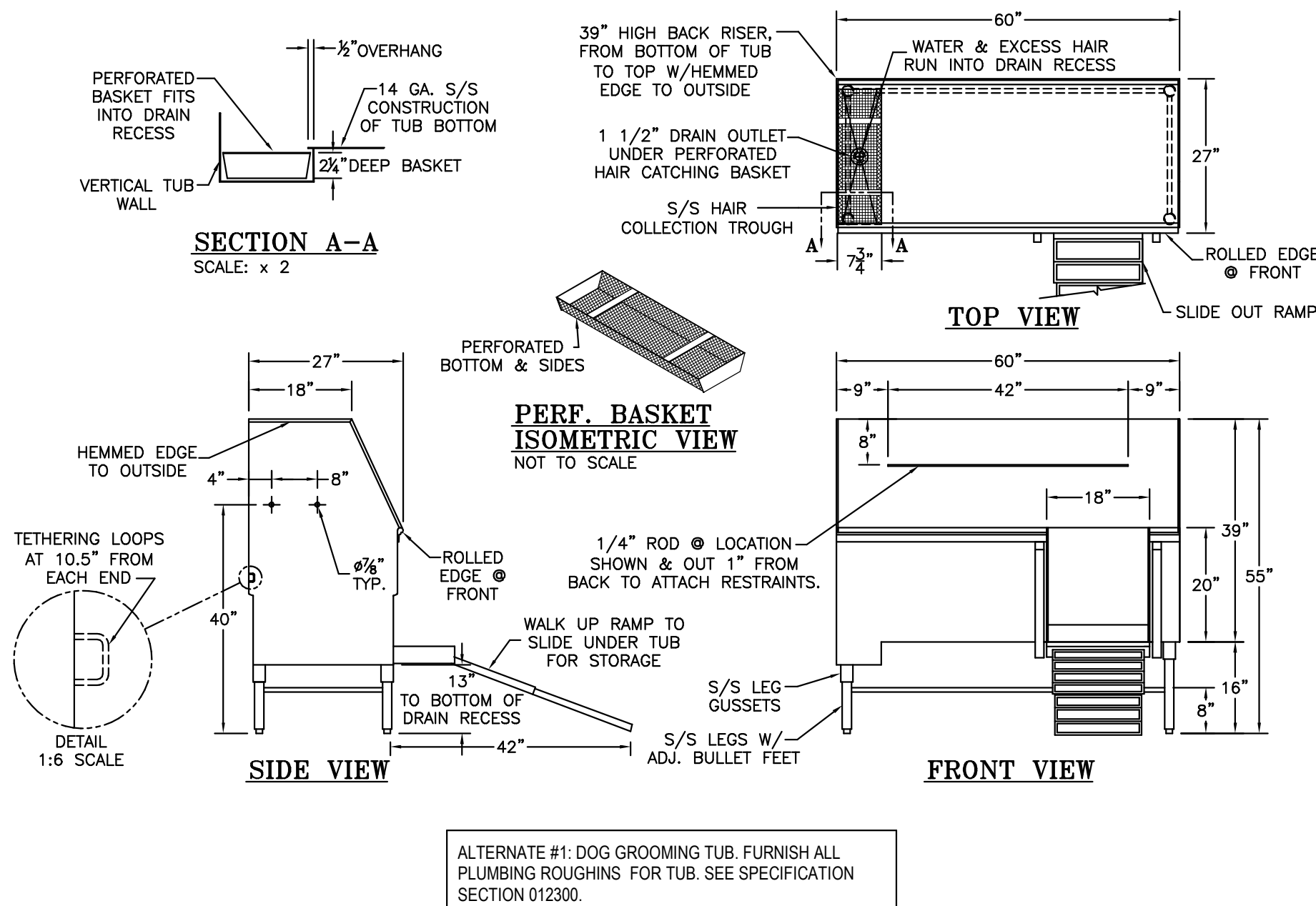
5 ELECTRIC WATER HEATER

NTS



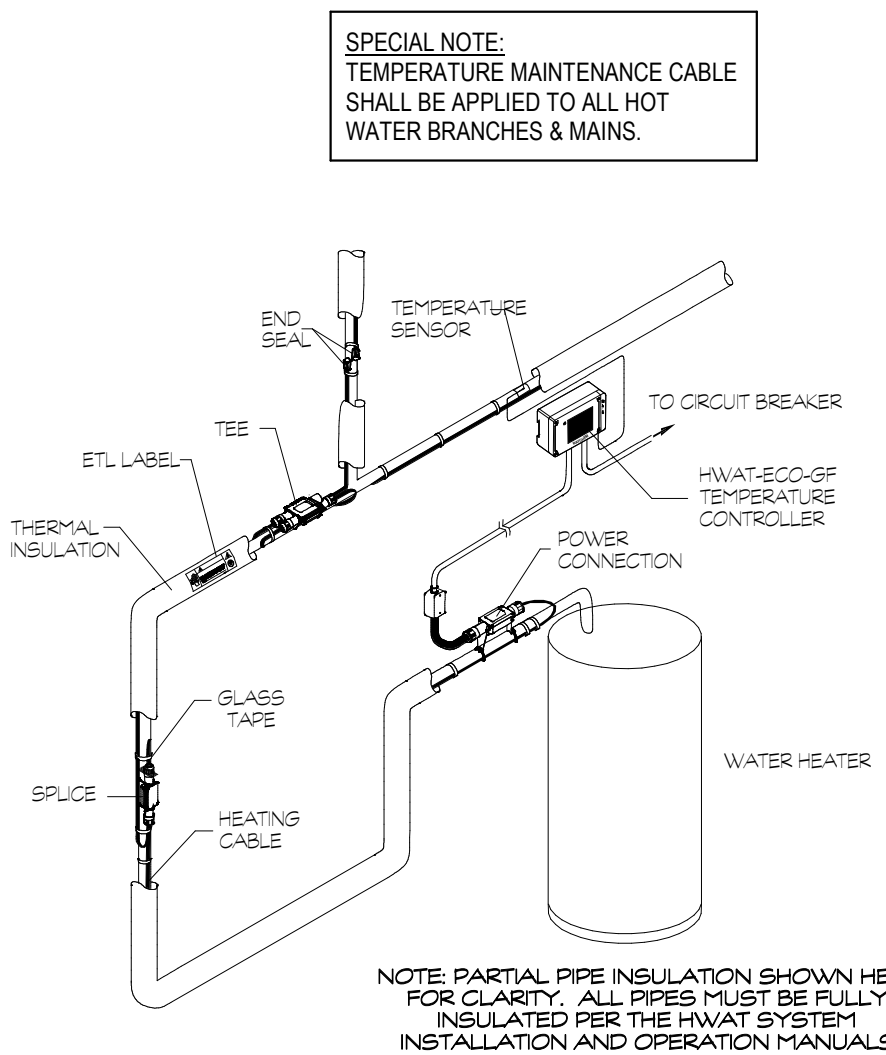
2 WALL MOUNTED LAV ENCLOSURE

NTS



6 DOG GROOMING TUB

NTS



3 TEMPERATURE MAINTENANCE CABLE

NTS

Project Title:
New Animal Facility at:
Montville Animal Shelter
225 Maple Ave.
Montville, CT



SILVER PETRUCCELLI + ASSOCIATES
3190 WHITNEY AVENUE HAMDEN CT 06518
311 STATE STREET NEW LONDON CT 06320
203 230 9007 silverpetrucci.com

Revision:	Description:	Date:	Revised By:

Drawing Title:
PLUMBING DETAILS

Date:
09/27/2024
Scale:
As Indicated
Drawn By:
JES
Project Number:
22.130

Drawing Number:
P301

10/4/2024 9:21:55 AM

DRAIN SCHEDULE				
MARK	FIXTURE, MODEL NUMBER AND DESCRIPTION	ROUGH-IN		
		TRAP	WASTE	VENT
FD-1	FLOOR DRAIN: WADE MFG. TOILET ROOMS: 1100-STD6-27, CAST IRON BODY DRAIN w/ROUND NICKEL BRONZE TOP, SEDIMENT BUCKET AND VANDAL-PROOF SCREWS w/TRAP GUARD DEVICE.	AS NOTED ON DRWGS.	AS NOTED ON DRWGS.	AS NOTED ON DRWGS.
FD-2	FLOOR DRAIN (ANIMAL AREAS): WADE MFG. 9190 STAINLESS STEEL, 12" SQUARE FLOOR DRAIN WITH 8" DEEP ROUNDED FD SUMP AND STAINLESS STEEL SUSPENDED SEDIMENT BUCKET w/TRAP GUARD DEVICE.	AS NOTED ON DRWGS.	AS NOTED ON DRWGS.	AS NOTED ON DRWGS.
FD-3	FLOOR DRAIN (MECHANICAL ROOM): WADE 1210-27-39-TSD, HEAVY DUTY CAST IRON BODY, BOTTOM OUTLET, MECHANICAL ROOMS: CAST IRON BODY DRAIN w/ROUND CAST IRON ADJUSTABLE STRAINER HEAD, SEDIMENT BUCKET AND VANDAL-PROOF SCREWS, PROVIDE WITH BACKWATER VALVE & PROSET TO G-23 TRAP GUARD DEVICE.	AS NOTED ON DRWGS.	AS NOTED ON DRWGS.	AS NOTED ON DRWGS.
TD-1	TRENCH DRAIN: WADE/ART MFG. TR08-08 504E FG-F21G 8" ID WIDE HIGH DENSITY POLYETHYLENE MODULAR TRENCH DRAIN WITH 8" WIDE THROAT, RADIUS BOTTOM, INTERLOCKING ENDS, REBAR SADDLES, LOCK DEVICES, BLANK GRATE INSERTS AND GRATES AS SPECIFIED. GRATE: 10" DUCTILE IRON SLOTTED, ADA, CLASS A WITH END PLATE W/80° OUTLET (6" PITCH) & 90 DEGREE SECTION, PROVIDE WITH ALL REQUIRED ACCESSORIES, INLETS, OUTLETS, CUTS, ETC. FOR A COMPLETE SYSTEM. FURNISH WITH TF-14 #1901 NUNE CATCH BASIN AT END OF TRENCH DRAIN RUNS. PROVIDE A 1/2" SCALE INSTALLATION & FABRICATION DRAWING WITH SLOPES, DIMENSIONS, MODULES, ETC.	AS NOTED ON DRWGS.	AS NOTED ON DRWGS.	AS NOTED ON DRWGS.
FORMS: F08FR - PRE-MANUFACTURED TRENCH FORMS USING RECYCLABLE NON-CFC EPS FOAMS. FORMS TO BE ROUND BOTTOM, PRE-SLOPED OR NON-SLOPED. FORM SEGMENTS ARE 8" (203 MM) WIDE. TRENCH WIDTH CREATED TO BE WITHIN 1 1/2" (1.58MM) OF SPECIFIED. INVERT SLOPE PER APPLICATION REQUIREMENT AS NOTED ON PLANS. NON-SLOPING SECTIONS MUST HAVE WRITTEN APPROVAL BY ENGINEER PRIOR TO INSTALLATION. FORM WORK TO BE ANCHORED AGAINST FLOATATION TO THE EARTH WITHOUT PENETRATING THE SUBGRADE USING STEEL NO-FLOAT LESS AND AN ANCHOR SLAB POUR. MEANS TO ASSURE CONSTANT RAIL SPACING AND GRATE SEAT DIMENSION MUST BE PROVIDED. NON-PETROLEUM BASED FORM RELEASE IS TO BE USED FOR SMOOTH INTERIOR WALLS AND EASY FORM REMOVAL.				
GRATING - 08 504E FG - GALVANIZED DUCTILE IRON LONGITUDINALLY SLOTTED/ADA GRATES. GRATES TO HAVE A 0.39 FT/1FT (0.119 M/1M) OPEN AREA. GRATES SHALL PASS A PROOF LOAD 820 PSI (MODIFIED AASHTO M-306 TEST METHOD) APPLIED TO A 3 INCH WIDE X 6 INCH LONG LOAD CONTACT AREA. GRATES MUST BE FLUSH WITH TOP OF RAILS. COVERS ARE RETAINED IN SEAT AGAINST VERTICAL LOADS WITH A BOLT AND TOGGLE.				
FRAMES / RAILS - F21G - POST FABRICATION HOT DIPPED GALVANIZED 1 7/8" X 1 7/8" X 0.188" (44.5 MM X 44.5 MM X 4.8 MM) STEEL RAILS, STANDARD HEADED CONCRETE ANCHORS CONFORMING TO OR EXCEEDING AMERICAN CONCRETE INSTITUTE'S SPECIFICATIONS, GRATE RAILS TO PROVIDE A MINIMUM OF 1.188 SQUARE INCHES CONCRETE BEARING AREA PER INCH OF TRENCH LENGTH ON EACH SIDE. AUXILIARY FRAMES ARE TO BE USED AS NOTED ON PLANS TO FACILITATE RAIL INTERSECTIONS, GRADE CHANGES AND EXPANSION, CONTROL & CONSTRUCTION JOINTS. LOAD BARS ARE TO BE INSTALLED AS NOTED ON THE PLANS TO REINFORCE RAILS WHERE UNSUPPORTED BY CONCRETE.				
NOTES: 1. PROVIDE TRAP PRIMERS FOR ALL DRAINS. DRAINS INCORPORATING A CONSTANT AND REGULAR WASTE ARE NOT REQUIRED TO INTERGRATE TRAP PRIMERS (I.E. SHOWER DRAINS, KITCHEN DRAINS, ETC). 2. TRANSITION COUPLINGS AND NO-HUB PIPE SHALL NOT BE INSTALLED BELOW SLAB OR IN ANY BURIED CONDITIONS IN CONTACT WITH EARTH				

CLEANOUT SCHEDULE				
MARK	FIXTURE, MODEL NUMBER AND DESCRIPTION	TRAP SIZE	REMARKS	
FCO	FLOOR CLEANOUT (ALL INTERIOR AREAS EXCEPT CARPETED AREAS). WADE 8000-1-75, ADJUSTABLE ROUND SCORIATED HEAVY DUTY NICKEL BRONZE SECURED TOP WITH FRAME, CAST IRON BODY, FLASHING FLANGE AND CLAMP, BRONZE PLUG. PROVIDE WITH VANDAL PROOF SCREWS. PROVIDE NICKEL BRONZE FRAME IN WET AREAS.	AS NOTED ON DWG.	--	
FCO	FLOOR CLEANOUT (CARPETED AREAS). WADE 8000-1-75, ADJUSTABLE ROUND SCORIATED HEAVY DUTY NICKEL BRONZE SECURED TOP WITH FRAME, CARPET MARKER, CAST IRON BODY, FLASHING FLANGE AND CLAMP, BRONZE PLUG. PROVIDE WITH VANDAL PROOF SCREWS.	AS NOTED ON DWG.	--	
YCO	FLOOR CLEANOUT (EXTERIOR AREAS). WADE #401COF-12-75 WITH CO-380 ROUND FLANGED HOUSING WITH HEAVY DUTY SCORIATED DUCTILE IRON TOP. CLEANOUT FERRULE BODY WITH BRONZE PLUG. INSTALL CLEANOUTS WITH 16" SQUARE X 6" DEEP CONCRETE APRON IN NON-PAVED AREAS. PROVIDE WITH VANDAL PROOF SCREWS.	AS NOTED ON DWG.	--	
WCO	WALL PLATE CLEANOUT COVER. WADE #6304-COFICOTDUCO, PROVIDE AT CAST IRON CLEANOUTS WITH COUNTERSUNK BRASS PLUG AND STAINLESS STEEL COVER SECURED WITH VANDAL PROOF SCREWS.	--	--	
NOTES: 1. TRANSITION COUPLINGS AND NO-HUB PIPE SHALL NOT BE INSTALLED BELOW SLAB OR IN ANY BURIED CONDITIONS IN CONTACT WITH EARTH 2. PROVIDE ALL POURED IN PLACE CLEANOUTS WITH 24"x24" FLASHING				

BACKFLOW PREVENTER SCHEDULE							
MARK	SIZE	LOCATION	SERVICE	BODY MATERIAL	TEMPERATURE RANGE	MAX. WORKING PRESSURE	MANUFACTURER
							MODEL
							WATTS
BFP-1	2"	WATER SERVICE ROOM	DOMESTIC WATER	FDA EPOXY COATED CAST IRON	33°F-110°F	175PSI	SERIES LF309-FS-SMALL
REMARKS LEAD FREE, STAINLESS STEEL INTERNAL PARTS.							

INSULATION SCHEDULE					
SYSTEM	PIPE SIZE	INSULATION TYPE	INSULATION THICKNESS	FITTINGS, VALVES, FLANGES INSULATION TYPE	REMARKS
DOMESTIC COLD WATER	ALL	MINERAL FIBER, ASJ, SSL	1/2"	MOLDED, PRE-FORMED MINERAL FIBER WITH PVC JACKET	TYPE 1
DOMESTIC HOT WATER & HWC	< 1-1/2"	MINERAL FIBER, ASJ, SSL	1 1/2"	MOLDED, PRE-FORMED MINERAL FIBER WITH PVC JACKET	TYPE 1
DOMESTIC HOT WATER & HWC	> 1-1/2"	MINERAL FIBER, ASJ, SSL	2"	MOLDED, PRE-FORMED MINERAL FIBER WITH PVC JACKET	TYPE 1
DOMESTIC WATER UNDERGROUND & INSULAB	ALL	CLOSED CELL	1"	ARMAFLEX	--
CONDENSATE	ALL	MINERAL FIBER, ASJ, SSL	1/2"	MOLDED, PRE-FORMED MINERAL FIBER WITH PVC JACKET	TYPE 1
EXTERIOR PIPE	ALL	CELLULAR GLASS (FOAM GLASS)	2"	CELLULAR GLASS (FOAM GLASS)	ALUMINUM JACKET WITH FREEZE PROTECTION HEAT TRACE
NOTES: 1. FIBERGLASS INSULATION: THERMAL CONDUCTIVITY: .22 TO .28 BTU x IN./H x FT x °F W/ 100°F MEAN TEMP. THICKNESS BASED ON ASHRAE 90.1, 2007 & 6.3 2. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS 3. ALL EXPOSED PIPE, ESPECIALLY ABOVE THE POOL AND GYMNASIUM SHALL BE COLOR CODED & PVC JACKETED. 4. FOR ITEMS INSTALLED IN PLENUM RATED CEILING, MATERIALS SHALL COMPLY WITH ASTM E 84 WITH FLAME-SPREAD INDEX OF 25 OR LESS, AND SMOKE-DEVELOPED INDEX OF 50 OR LESS. 5. FIRE-BARRIER PENETRATIONS: MAINTAIN INDICATED FIRE RATING OF WALLS, PARTITIONS, CEILINGS, AND FLOORS AT PIPE PENETRATIONS. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS. SEAL PIPE PENETRATIONS WITH FIRESTOP MATERIALS. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION					

PLUMBING FIXTURE/EQUIPMENT SCHEDULE					
MARK	FIXTURE, MODEL NUMBER AND DESCRIPTION	ROUGH-IN			
		WASTE/ SANITARY	VENT	CW	HW
DGT	ALTERNATE #1 - DOG GROOMING TUB, FOREVER STAINLESS MFG. 2808HT COMPLETE WITH RAMP AND INTEGRAL DRAIN TROUGH WITH LIFT-OUT STAINLESS STEEL FINE-MESH BASKET. PROVIDE TUB MFR'S DELUXE WALL-MOUNTED MIXING FAUCET, BACKFLOW PREVENTER, FLEXIBLE STAINLESS STEEL HOSE WITH ANGLE CHROME PLATED BRASS SPRAY VALVE WITH AUTO SHUTOFF, AND 8-INCH ADD-ON GOOSENECK SPOUT WITH BUILT-IN CHECKS FOR CROSS-FLOW PREVENTION, 2" CHROME-PLATED CAST BRASS TRAP AND GROUND-JOINT SWIVEL ELBOW WITH BRASS TUBE TO WALL, CHROME-PLATED BRASS OR STEEL WALL FLANGE.	2"	1-1/2"	1/2"	1/2"
EWV-1A	ELECTRIC WATER COOLER WITH BOTTLE FILLER, MANUFACTURED BY HAWS 1011-8-1920HO WALL MOUNT ADA COMPLIANT, FILTERED 8 GPH STAINLESS, CHILLING CAPACITY OF 8.0 GPH OF 50° F DRINKING WATER, BASED ON 80° F INLET WATER AND 90° F AMBIENT, PER ASHRAE 18 TESTING. FEATURES SHALL INCLUDE FILTERED AND BE HEAVY DUTY VANDAL RESISTANT. FURNISHED WITH VANDAL RESISTANT STREAMSAVER BUBBLER, MECHANICAL FRONT BUBBLER BUTTON ACTIVATION. PRODUCT SHALL BE WALL MOUNT, SINGLE STATION. UNIT SHALL BE CERTIFIED TO UL 399 AND CAN/CSA C22.2 NO. 120. UNIT SHALL BE LEAD-FREE DESIGN WHICH IS CERTIFIED TO NSF/ANSI 61 & 372 (LEAD FREE) AND MEETS FEDERAL AND STATE LOW-LEAD REQUIREMENTS. PROVIDE WITH SKS CANE APRON. PROVIDE WITH P-TRAP, 120 V, 8 GPH, 5.0 AMPS, 370 WATTS.	1-1/2"	1-1/2"	1/2"	--
HB-1	HOSE BIBB, NARROW WALL HYDRANT, WADE MODEL 8709, BRONZE BODY, REMOVABLE VALVE SEAT & STEM ASSEMBLY, THREADED END, INTEGRAL ANTI-SIPHON BACKFLOW PREVENTER, LOOSE TEE KEY. BOX WITH HINGED COVER.	--	--	1/2"	--
L-1A	LAVATORY, WALL-HUNG LAVATORY, MANUFACTURED BY KOHLER, GREENWICH, MODEL K-2032, SINGLE CENTER FAUCET HOLE (20-1/2" X 18-1/4"), VITREOUS CHINA, FAUCET: CHICAGO FAUCETS MODEL 434-ABCP 0.5 GPM PRESSURE COMPENSATING, VANDAL-RESISTANT MULTI-LAMINAR SPRAY, THERMOSTATIC MIXING VALVE, 20" FLEXIBLE INLET HOSES WITH 3/8" COMPRESSION FITTINGS. ASSE 1070 CERTIFIED DOWN TO 0.35 GPM. WITH WADE 400 SERIES CARRIER. PROVIDE 1-1/2" CHROME PLATED CAST BRASS P-TRAP, SUPPLIES, BRASS ANGLE STOPS WITH LOOSE KEY OPERATION, GRID DRAIN, ETC. FOR COMPLETE INSTALLATION. COORDINATE MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION. PROVIDE WITH TRUEBOR LAV SHIELD 102 E-Z.	1-1/2"	1-1/2"	1/2"	1/2"
SA	WATER HAMMER ARRESTOR, WADE 4480 SERIES, 3/4" SIZE PER MANUFACTURE RECOMMENDATIONS AND REQUIREMENTS.	--	--	1/2"-1"	--
S-1A	ELKAY LUSTERTONE STAINLESS STEEL #ELUHA021154SPD SINK, 23-1/2" X 18-1/4" X 4-3/8", SINGLE BOWL, UNDERMOUNT ADA SINK W/PERFECT DRAIN, 18 GAUGE, TYPE 304 STAINLESS STEEL, WITH A SATIN FINISH. REAR CENTER DRAIN PLACEMENT AND BOTTOM ONLY PADS. PROVIDE WITH: CHICAGO 434-ABCP FAUCET, 1.5 GPM. LKPDAD188 DRAIN, LKWOBG2115SS BOTTOM GRID. PROVIDE WITH 1070 THERMOSTATIC MIXING VALVE, CHICAGO 131-CABRCF. PROVIDE 1-1/2" CHROME PLATED CAST BRASS P-TRAP, SUPPLIES, BRASS ANGLE STOPS CHICAGO ST851 SERIES WITH LOOSE KEY OPERATION, GRID DRAIN, ETC. FOR COMPLETE INSTALLATION. COORDINATE MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION.	1-1/2"	1-1/2"	1/2"	1/2"
SH-1A	BARRIER-FREE PREFAB SHOWER, AQUATIC 3638FS, ONE PIECE ACRYLIC SHOWER MODULE, COMPLETE WITH GRAB BARS, CURTAIN ROD AND FOLD-UP WHEELS, CHAIR TRANSFER SEAT, FURNISH WITH DOME LIGHT 60 WATT, RECESSED ROUND SHOWER LIGHT. THRESHOLDS IN SHOWER MUST BE A MAXIMUM OF 1/2" HIGH TO MEET ADA REQUIREMENTS. CONTROLS: CHICAGO FAUCET, SH-PB1-13-031, 2.5 GPM COMMERCIAL SHOWER/HAND SYSTEM WITH LEVER HANDLE, PRESSURE-BALANCING MIXING VALVE WITH ADJUSTABLE TOP SCREW TO LIMIT HANDLE TURN. WALL/HAND SHOWER, AND A 59" FLEXIBLE METAL HOSE WITH IN-LINE VACUUM BREAKER, WALL CONNECTION AND FLANGE, 24 INCH SLIDE BAR FOR HAND SHOWER MOUNTING.	1-1/2"	1-1/2"	1/2"	1/2"
TP-1 (SINGLE DRAIN)	TRAP PRIMER INSERT, WADE 4405, ELASTOMERIC, NORMALLY CLOSED TRAP GUARD DEVICE UTILIZES A NORMALLY CLOSED SEAL TO PREVENT EVAPORATION OF THE TRAP SEAL AND ALSO PROTECT AGAINST SEWER GASES FROM BACKING UP INTO HABITABLE AREAS. IT OPENS WITH FLUID AND ALLOWS LIQUID DRAINAGE TO FLOW THROUGH INTO THE BUILDING DRAIN.	--	--	--	--
W-1A	WATER CLOSET, WALL HUNG, ADA COMPLIANT WHEN PROPERLY INSTALLED AT MOUNTING HEIGHT), KOHLER K-4325 VITREOUS CHINA WALL HUNG WATER CLOSET, ELONGATED BOWL, SIPHON JET, TOP SPUD, 1.28 GALLON FLUSH W/SLID PLASTIC OPEN FRONT SEAT. EXPOSED, CHROME TOP SPUD MANUAL FLUSH VALVE, VACUUM BREAKER, WALL & SPUD FLANGES, WADE 330 CHAIR CARRIER, MOUNT AT ACCESSIBLE HEIGHT PER ARCHITECTURAL DWGS. SLOAN 111-1.28 ES-S-1 1M-10-2-Y, TRANSFORMER, REL-154 120 VAC, TOP SPUD, SIPHON JET TOILET WITH WALL SUPPLY, GURCH 256CT OPEN FRONT SEAT. PROVIDE ALL ITEMS REQUIRED FOR COMPLETE INSTALLATION.	4"	2"	1"	--
WH-1	FREEZE PROOF HOSE BIBB, WADE MODEL 8304, CAST BRONZE NON-FREEZE WALL HYDRANT WITH STAINLESS STEEL HINGED LOCKING COVER, 3/4"CHPT OUTLET, INTEGRAL DOUBLE CHECK BACKFLOW PREVENTER PRESSURE RELIEF VALVE, AND 3/4" FEMALE & 1" MALE NPT INLET CONNECTION.	--	--	3/4"	--
WSH	WASHING MACHINE OUTLET - SYMMONS W-602-X LAUNDRY MATE WITH SERVICE STOPS.	2"	1-1/2"	1/2"	1/2"
TEMPERATURE MAINTENANCE CABLE	ELECTRIC HEAT TRACE, RAYCHEM, HWAT-R2 SERIES, UL LISTED SYSTEM WITH (2) 16AWG COPPER BUS WIRES ENCLOSED IN A PARALLEL, IN A POLYMER CORE. THE SYSTEM SHALL INCLUDE ALL POWER CONNECTIONS, SERIALS, SPLICES, TEE KITS AND FASTENING HARDWARE. CONTROLS SHALL BE THERMOSTATIC AMBIENT SENSING, AND ALL CABLE SHALL MAINTAIN 100°F - 140°F WITH A 10°F AMBIENT TEMPERATURE. COORDINATE WITH ELECTRICAL CONTRACTOR AND MANUFACTURERS REQUIREMENTS AND RECOMMENDATIONS. WITH DIGITAL CONTROLLER RAYCHEM: (1) HWAT-ECO-GF, CP-1 LOCATED IN MECHANICAL ROOM NEXT TO WATER HEATER. SEE SPECIFICATIONS FOR MORE DETAILS.				
NOTES: 1. LAVATORY & WATER COOLERS SUPPLY SHALL BE BRASS W/ BRASS ANGLE STOPS FOR 1/2" WATER SUPPLY LINES, W/ LOOSE KEY (WICAP), AND WALL FLANGE. ALL COMPONENTS SHALL BE POLISHED CHROME FINISH. MANUFACTURER: BRASS CRAFT OR APPROVED EQUAL. 2. CAST BODY "P" TRAP 1-1/2" x 1-1/2" WITH HEAVY CAST J-BEND & FLAT CLEANOUT PLUG, SLP NUTS AND WALL FLANGE. ALL COMPONENTS SHALL BE POLISHED CHROME FINISH. MANUFACTURER: BRASS CRAFT OR APPROVED EQUAL. 3. STRAINERS SHALL BE FURNISHED WITH FIXTURES AS REQUIRED. FOR H/C LAVATORY OR SINKS PROVIDE OFFSET TAILPIECE. 4. PROVIDE TRUEBOR MODEL 103 (WHITE), ANTIMICROBAL HAND/LAV-GUARDS INSTALLATION KIT FOR ALL WHEELCHAIR LAVATORY & SINKS FOR WATER SUPPLIES & WASTE LINE. 5. PROVIDE WATER SUPPLY & "P" TRAP & OPTIONAL WATER FILTERS FOR ELECTRIC WATER COOLERS AS PER MANUFACTURERS RECOMMENDATIONS. 6. THE PLUMBING FIXTURES VENDOR SHALL COORDINATE WITH THE PLUMBING AND GENERAL CONTRACTOR ALL PLUMBING FIXTURES ROUGH IN DIMENSIONS BEFORE CONSTRUCTION BEGIN. 7. UNLESS SHOWN ABOVE, PLUMBING FIXTURES MANUFACTURER, TRIM COLOR AND FINISH SHALL BE FURNISHED AS DIRECTED BY OWNER/ARCHITECT. 8. REFER TO ARCHITECTURAL DRAWINGS FOR STANDARD, A.D.A MOUNTING AND FIXTURE HEIGHTS. REFER TO ARCHITECTURAL FOR LOCATION OF A.D.A COMPLIANT SHOWER SEAT AND SHOWER BARS 9. CONTRACTOR TO PROVIDE AN EXTRA 10% OF BATTERIES, AERATORS, CARTRIDGE, ETC.. 10. ALL HARD WIRED FAUCETS TO A HAVE BOX MOUNTED TRANSFORMER ABOVE CEILING. REFER TO ELECTRICAL DOCUMENTS FOR LOCATIONS AND CONNECTION POINT.					

EXPANSION TANK SCHEDULE				
MARK	MAKE & MODEL	SERVICE	WATER HEATER STORAGE CAPACITY (GALLONS)	* REQUIRED MINIMUM ACCEPTANCE VOLUME (GALLONS)
EXP-1	AMTROL ST-80VC	WH-1	100	25.65
* BASED OFF 1.5% EXPANSION FACTOR: 140 ° F HOT WATER STORAGE TEMPERATURE, & 5.7 DESIGN PRESSURE FACTOR : 100 PSI MAXIMUM ALLOWABLE PRESSURE & 80 PSI LINE PRESSURE. (WATER HEATER VOLUME x 1.5 % x 5.7).				
NOTES: 1. ASME CONSTRUCTION SHALL BE STANDARD 2. PROVIDE ALL NECESSARY ACCESSORIES. 3. PROVIDE AIR CHARGING FITTING				

PIPE HANGER SPACING TABLE			
PIPE MATERIAL	PIPE SIZES (INCHES)	HORIZONTAL PIPE MAX. HANGER DISTANCE (FT)	VERTICAL PIPE MAX. HANGER DISTANCE (FEET)
COPPER & COPPER ALLOY TUBING	1-1/4" & SMALLER	6'-0"	10'-0"
COPPER & COPPER ALLOY TUBING	1-1/2" & LARGER	10'-0"	10'-0"
COPPER & COPPER ALLOY PIPE	ALL	12'-0"	10'-0"
CAST IRON PIPE	ALL	5'-0" *	15'-0"
STEEL PIPE	ALL	12'-0"	15'-0"
STAINLESS STEEL DRAINAGE	ALL	10'-0"	10'-0" *
CPVC PIPE OR TUBING	1" & SMALLER	3'-0"	10'-0" *
CPVC PIPE OR TUBING	1-1/4" & LARGER	4'-0"	10'-0" *
PVC PIPE	ALL	4'-0"	10'-0" *
NOTES: * MAXIMUM HORIZONTAL SPACING OF CAST IRON PIPE HANGERS SHALL BE INCREASED TO 10'-0" WHERE 10'-0" LENGTHS OF PIPE ARE USED * MIDSTORY GUIDE FOR SIZES 2" AND SMALLER NOT ALL PIPE MATERIALS ON THIS TABLE WILL PERTAIN TO THIS PROJECT			

ELECTRIC WATER HEATER SCHEDULE										
MARK	MAKE & MODEL	TYPE	STORAGE	RECOVERY @ TEMP RISE	MIXING VALVE	ELECTRICAL			REMARKS	
						KW INPUT	# ELEMENTS	VOLTAGE	AMPS	PHASE
HW-1	AO SMITH DRE-80-18	ELECTRIC	80 GALLONS	92 GPH @ 80°F	TMV-1	18	3	208V	50	3
SEE NOTES										
NOTES: 1. INSTALL WATER HEATER IN ACCORDANCE WITH BUILDING CODE - PLUMBING & MECHANICAL (WITH LATEST AMENDMENTS), CODES, ENERGY CODE, AND APPLICABLE STANDARDS AND MANUFACTURERS RECOMMENDATIONS. 2. PROVIDE BRASS DRAIN VALVE, & ALL REQUIRED OPTIONS TO COMPLETE THE INSTALLATION. 3. PROVIDE THERMAL EXPANSION TANK (EXP-1), MANUFACTURED BY AMTROL, THERM-X-TROL MODEL ST-12-DO, 150 PSIG WORKING PRESSURE, 6.4 GAL TANK VOLUME, FACTORY PRECHARGE 55 PSIG 4. REFER TO SPECIFICATION FOR VENTING CRITERIA.										

THERMOSTATIC MIXING VALVE SCHEDULE										
MARK	EQUIPMENT BEING SERVED (I.E. WATER HEATER, ETC...)	AREA SERVED	FLOW RATE @ 10PSI DIFFERENTIAL	MINIMUM FLOW RATE GPM	INLET TEMP.	OUTLET TEMP.	INLET SIZE	OUTLET SIZE	MANUFACTURER MODEL	REMARKS
TMV-1	WH-1	120°F LOOP	42 GPM	2 GPM	140°F	120°F	1"	1"	ACORN MV17-3	ASSE 1017
TMV-2	SINKS	120°F LOOP	2.1 GPM	0.25 GPM	120°F	105°F	1/2"	1/2"	POWERS LFG480-00	ASSE 1070
TMV-3	TEMPERED WATER TO HOSE BIBBS	120°F LOOP	11 GPM	0.5 GPM	120°F	75°F	1"	1"	POWERS LM490-10	ASSE 1070
NOTES: 1. MAXIMUM PRESSURE DIFFERENTIAL SHALL BE 10PSI FOR MIXING VALVE 2. WITH DIAL THERMOMETER, ADJUSTABLE SET POINT, INTEGRAL STRAINER CHECKSTOPS ON INLETS, PROVIDE SHUTOFFS/UNIONS AT ALL CONNECTIONS 3. MINIMUM LOW RATE WHEN VALVE IS INSTALLED AT OR NEAR HOT WATER SOURCE WITH RECIRCULATED TEMPERED WATER AND CONTINUOUSLY OPERATING CIRCULATION PUMP.										

PIPE AND FITTING SCHEDULE					
DESCRIPTION	SIZE	PIPE		FITTING	
		TYPE	SCHEDULE	TYPE	RATING
SOIL, WASTE AND VENT ABOVE GROUND	ALL	PVC	40	PVC	SV / 40
SOIL, WASTE AND VENT BELOW GROUND	ALL	PVC	40	PVC	SV / 40
DOMESTIC WATER WITHIN BUILDING	ALL	COPPER	TYPE L	CUS	STD
INDIRECT WASTE AND CONDENSATE PIPING	ALL	COPPER	TYPE L	CUS	STD
DOMESTIC HOT & COLD WATER PIPING WITHIN BUILDING, BELOW SLAB	2" AND SMALLER	CPVC	SCH 80	CPVC	SCH 80
NO JOINTS ALLOWED BELOW SLAB					
NOTES: 1. TRANSITION COUPLINGS AND NO-HUB PIPE SHALL NOT BE INSTALLED BELOW SLAB OR IN ANY BURIED CONDITIONS IN CONTACT WITH EARTH 2. ALL PIPING IN RETURN AIR CEILING PLENUM INSTALLATIONS SHALL BE UL LISTED FOR THIS APPLICATION 3. MECHANICAL JOINTS ARE ALLOWED FOR SERVICE. PURPOSED ONLY IN WALLS AND CEILINGS BUT MUST BE READILY ACCESSIBLE. 2550 PVDF IS UL LISTED FOR RETURN AIR CEILING PLENUM INSTALLATIONS 4. FOR ITEMS INSTALLED IN PLENUM RATED CEILING, MATERIALS SHALL COMPLY WITH ASTM E 84 WITH FLAME-SPREAD INDEX OF 25 OR LESS, AND SMOKE-DEVELOPED INDEX OF 50 OR LESS. 5. FIRE-BARRIER PENETRATIONS: MAINTAIN INDICATED FIRE RATING OF WALLS, PARTITIONS, CEILINGS, AND FLOORS AT PIPE PENETRATIONS. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS. SEAL PIPE PENETRATIONS WITH FIRESTOP MATERIALS. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.					
ABBREVIATIONS	DESCRIPTION			ABBREVIATIONS	DESCRIPTION
AWWA	AMERICAN WATER WORKS ASSOCIATION			MIT	MALLEABLE IRON THREADED
CI	CAST IRON			NH	NO HUB WISUPER DUTY HUSKY SD 4000 CLAMP
CLDI	CEMENT LINED DUCTILE IRON			PEX	PEX PIPING
CPVC	CHLORINATED POLYVINYL CHLORIDE			PF	PRESSURE FITTING
CUS	WROUGHT COPPER SOLDER (95S)			PVC	POLYVINYLIDENE POLYVINYL CHLORIDE
DI	DUCTILE IRON			POLY-PRD	POLYPROPYLENE PIPING
DMJ	DUCTILE IRON MECHANICAL JOINT			STD	STANDARD
GES	GROOVED END STEEL			STL-BLK	BLACK STEEL
GJ	GROOVED JOINT SYSTEM FITTINGS/COUPLINGS			SV	SERVICE WEIGHT
GS	GALVANIZED STEEL			TJ	THREADED JOINTS
H&S	HUB AND SPIGOT			WE	BUT WELD
MJ	MECHANICAL JOINT				

VALVE SCHEDULE								
DESCRIPTION	SIZE	TYPE					CLASS	REMARKS
		BUTTERFLY	CHECK	BALL	PLUG	BALANCE		
DOMESTIC COLD WATER	2" AND SMALLER	--	CVT	BVT	--	--	125PSI	--
DOMESTIC HOT WATER	2" AND SMALLER	--	CVT	BVT	--	CBV	125PSI	--
DOMESTIC COLD WATER	2-1/2" AND LARGER	BFY	CVF	--	--	--	125PSI	--
DOMESTIC HOT WATER	2-1/2" AND LARGER	BFY	CVF	--	--	CBV	125PSI	--
BACKFLOW PREVENTER	2" AND SMALLER	--	--	BVT	--	--	125PSI	--
BACKFLOW PREVENTER	2-1/2" AND LARGER	GVF	--	--	--	--	125PSI	--

ABBREVIATIONS (NOT ALL SYMBOLS ARE USED)					
ABV	ABOVE	FA	FACE AREA	NTS	NOT TO SCALE
ACCU-#	AIR COOLED CONDITIONING UNIT	FBO	FURNISHED BY OTHERS	OA	OUTSIDE AIR
AD	ACCESS DOOR		INSTALLED BY HVAC SUBCONTRACTOR	OAT	OUTDOOR AIR TEMPERATURE
AF	AIRFOIL			OAI	OUTDOOR AIR INTAKE
AFF	ABOVE FINISHED FLOOR	FIBO	FURNISHED AND INSTALLED BY OTHERS	P-#	PUMP
AHU-#	AIR HANDLING UNIT	FIN FL	FINISH FLOOR	PD	PRESSURE DROP
APD	AIR PRESSURE DROP	FLA	FULL LOAD AMPERES	PH	PHASE
ASHP	AIR SOURCE HEAT PUMP	FT	FEET	PRV	PRESSURE REDUCING VALVE
AUTO	AUTOMATIC	GC	GENERAL CONTRACTOR	PSI	POUND PER SQUARE INCH
AVG	AVERAGE	GPM	GALLONS PER MINUTE	RA	RETURN AIR
B-#	BOILER	HD	FEET OF HEAD	RF-#	RETURN/RELIEF AIR FAN
BD	BELT DRIVE	HP	HORSEPOWER	RAT	RETURN AIR TEMPERATURE
BTUH	BRITISH THERMAL UNIT/ HR	HTG	HEATING	REF	REFRIGERATION PIPING
CAP	CAPACITY	HVAC	HEATING, VENTILATING & AIR CONDITIONING	RH	RELATIVE HUMIDITY
CC-#	COOLING COIL			RM	ROOM
CFM	CUBIC FEET PER MINUTE	HX-#	HEAT EXCHANGER	RPM	REVOLUTIONS PER MINUTE
CLG	CEILING	ID	INSIDE DIMENSION	SA	SUPPLY AIR
CONV-#	HOT WATER CONVECTOR	IN	INCHES	SAF-#	SUPPLY AIR FAN
CUH-#	CABINET UNIT HEATER HOT WATER	KW	KILOWATT	SAT	SUPPLY AIR TEMPERATURE
CV	CONTROL VALVE	LAT	LEAVING AIR TEMPERATURE	SD	SMOKE DAMPER
dBA	DECIBELS	LRA	LOCKED ROTOR AMPERES	SP	STATIC PRESSURE
DB	DRY BULB	LVG	LEAVING	SQ FT	SQUARE FOOT (AREA)
DD	DIRECT DRIVE	LWT	LEAVING WATER TEMPERATURE	TSTAT	THERMOSTAT
DN	DOWN	MAT	MIXED AIR TEMPERATURE	TD	TEMPERATURE DIFFERENCE
DX	DIRECT EXPANSION	MAX	MAXIMUM	TEMP	TEMPERATURE
EAT	ENTERING AIR TEMPERATURE	MBH	1000 BTU/HR	TYP	TYPICAL
ECM	ELECTRONICALLY COMMUTATED MOTOR	MCA	MINIMUM CIRCUIT AMPACITY	UH-#	UNIT HEATER HOT WATER
EER	ENERGY EFFICIENCY RATIO	MD	MOTORIZED DAMPER	VD	VOLUME DAMPER
EF-#	EXHAUST FAN	MER	MECHANICAL EQUIPMENT ROOM	VFD	VARIABLE FREQUENCY DRIVE
ESP	EXTERNAL STATIC PRESSURE	MFS	MAXIMUM FUSE SIZE	VRF	VARIABLE REFRIGERANT FLOW
ERV-#	ENERGY RECOVERY UNIT	MIN	MINIMUM	WB	WET BULB
ET-#	EXPANSION TANK	MJA	MAKE-UP AIR	WMS	WIRE MESH SCREEN
EUH-#	ELECTRIC UNIT HEATER	MV	MOTORIZED VALVE	WPD	WATER PRESSURE DROP
EWT	ENTERING WATER TEMPERATURE	NC	NORMALLY CLOSED	WT	WEIGHT (LBS)
EXH	EXHAUST	NIC	NOT IN THIS CONTRACT	ZD	ZONE DAMPER
EX	EXISTING	NO	NORMALLY OPEN		
F	DEGREES FAHRENHEIT				

SYMBOL LEGEND (NOT ALL SYMBOLS ARE USED)			
	CAP		MECHANICAL NOTE REFERENCE, NUMBER INDICATES NOTE
	PIPE CONNECTION BOTTOM	CFM	CUBIC FEET PER MINUTE
	PIPE CONNECTION TOP		VOLUME DAMPER
	PIPE COUPLING (JOINT)		MOTORIZED DAMPER
	PIPE ELBOW, TURNED DOWN		SUPPLY OR OUTSIDE AIR DUCT UP OR SUPPLY DIFFUSER/REGISTER
	PIPE TEE		SUPPLY OR OUTSIDE AIR DUCT DOWN
	SPACE TEMPERATURE SENSOR		RETURN OR EXHAUST DUCT UP OR CEILING RETURN/EXHAUST GRILLE
	PRESSURE SENSOR		RETURN OR EXHAUST DUCT DOWN
	DIRECTION OF FLOW		FLEXIBLE CONNECTION
DIA	DIAMETER		
	PIPE TEE, OUTLET UP		RECTANGULAR TO ROUND TRANSITION
	PIPE ELBOW, TURNED UP		TRANSITION
	PIPE TEE, OUTLET DOWN		DUCT WORK, DIRECTION OF FLOW
	RETURN OR EXHAUST DUCT UP		POSITIVE PRESSURE DUCT
	SUPPLY OR OUTSIDE AIR DUCT UP		NEGATIVE PRESSURE DUCT
	MOTORIZED DAMPER		CHANGE OF ELEVATION, RISE (R) DROP (D)
	COMBINATION TEMPERATURE AND HUMIDITY SENSOR		DUCT ACCESS DOOR
	DUCT MOUNTED HUMIDITY SENSOR		RELATIVE HUMIDITY SENSOR

PIPING NOTES

- UNLESS OTHERWISE NOTED, ALL PIPING IS OVERHEAD, TIGHT TO UNDERSIDE OF STRUCTURE OR SLAB, WITH SPACE FOR INSULATION.
- ALL PIPING WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
- ALL PENETRATIONS THRU WALLS, FLOORS & CEILINGS SHALL BE SEALED USING U.L. LISTED METHODS APPROPRIATE FOR INDICATED RATING

GENERAL

- THE INTENT OF THESE CONTRACT DOCUMENTS IS FOR THE CONTRACTOR TO FURNISH AND INSTALL COMPLETE MECHANICAL SYSTEMS. THESE MECHANICAL SYSTEMS INCLUDE HVAC AND ALL ASSOCIATED SPECIAL SYSTEMS. ALL SYSTEMS SHALL BE COMPLETE IN ALL RESPECTS, OPERATING, TESTED, ADJUSTED, APPROVED BY THE AUTHORITIES HAVING JURISDICTION AND READY FOR BENEFICIAL USE BY THE OWNER.
- THE CONTRACTOR SHALL OBTAIN AND REVIEW ALL CONTRACT DOCUMENTS, INCLUDING PROJECT MANUAL, PLANS AND SPECIFICATIONS OF ALL TRADES BEFORE SUBMITTING BID. REFER TO SPECIFICATIONS, PROJECT MANUAL AND PLANS, INCLUDING ALL EQUIPMENT SCHEDULES FOR MECHANICAL INFORMATION. CONTRACTOR SHALL WALK THROUGH BUILDING PRIOR TO SUBMITTING BID.
- ALL OF THE CONTRACT DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY TO FORM A TOTAL DESIGN PACKAGE. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR/CONSTRUCTION MANAGER TO DETERMINE WHICH TRADE CONTRACTOR IS RESPONSIBLE FOR VARIOUS PORTIONS OF THE WORK.
- ALL WORK AND ACTION DEPICTED AND DESCRIBED SHALL BE PERFORMED BY THE CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE.
- PROVIDE SUPPORT/BRACING OF EQUIPMENT AND BUILDING SERVICES FOR SEISMIC RESTRAINT AS REQUIRED BY CODE.
- OBTAIN AND PAY FOR ALL REQUIRED PERMITS AND INSPECTIONS.
- ALL EQUIPMENT, MATERIALS AND RELATED SYSTEMS COMPONENTS SHALL BE NEW UNLESS SPECIFICALLY NOTED OTHERWISE.
- REPAIR AND/OR REPLACE AT NO COST TO OWNER ALL EQUIPMENT AND MATERIALS DAMAGED DURING CONSTRUCTION.
- THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT. THE CONTRACTOR SHALL COORDINATE LOCATIONS OF EQUIPMENT WITH ALL TRADES BEFORE STARTING CONSTRUCTION. ANY MODIFICATIONS TO THE EQUIPMENT LAYOUT REQUIRED FOR INSTALLATION ARE TO BE PERFORMED AT NO ADDITIONAL COST TO THE OWNER.
- REFER TO THE ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATION OF LIGHT FIXTURES AND MOUNTING HEIGHTS OF EQUIPMENT, INCLUSIVE OF RECEPTACLES, SWITCHES, THERMOSTATS, ETC. ALL SUCH EQUIPMENT AND COLORS SHALL BE COORDINATED WITH THE ARCHITECT. CONTACT ARCHITECT FOR CLARIFICATION OF MOUNTING REQUIREMENTS, IF INFORMATION IS NOT CONTAINED IN THE DRAWINGS.
- ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH THE APPLICABLE CODES IN THE ORDINANCES AND THE REGULATORY AGENCIES HAVING JURISDICTION.
- ALL EQUIPMENT SHALL BE LOCATED IN ACCESSIBLE LOCATIONS. WHEN A PIECE OF EQUIPMENT MUST BE LOCATED ABOVE AN INACCESSIBLE CEILING OR WALL, THEN THE APPROPRIATE ACCESS DOOR / PANEL SHALL BE PROVIDED. THESE SHALL BE COORDINATED WITH THE ARCHITECT.
- WHEN CONFLICTS OCCUR BETWEEN THE DRAWINGS AND/OR SPECIFICATIONS IT SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. THE CONTRACTOR SHALL CARRY AS PART OF THE BID THE LARGER QUANTITY AND/OR MORE EXPENSIVE ITEM(S).
- CONTRACTORS SHALL COORDINATE THEIR WORK WITH ALL OWNER-FURNISHED EQUIPMENT, INCLUDING REQUIRED SERVICE CONNECTIONS, RECEPTACLES, ETC. BEFORE INSTALLATION.
- CONTRACTORS SHALL PROVIDE ALL REQUIRED SLEEVES AND SEALS FOR PIPES OR CONDUIT PENETRATING WALLS OR FLOOR SLABS WITH FIRE STOPPING SEALANT WHERE REQUIRED.
- ALL EQUIPMENT, PIPING, DUCT WORK SHALL BE SUPPORTED AS DETAILED, SPECIFIED AND REQUIRED TO PROVIDE A VIBRATION FREE INSTALLATION.
- LOCATE ALL TEMPERATURE, PRESSURE AND FLOW MEASURING DEVICES IN ACCESSIBLE LOCATIONS WITH STRAIGHT SECTION OF PIPE OR DUCT UP/DOWN STREAM AS RECOMMENDED BY THE MANUFACTURER FOR GOOD ACCURACY.
- PROVIDE ACCESS PANELS FOR INSTALLATION IN WALLS AND CEILINGS, WHERE REQUIRED, TO SERVICE DAMPERS, VALVES, SMOKE DETECTORS, FIRE DAMPERS AND OTHER CONCEALED MECHANICAL EQUIPMENT.
- LOCATION AND SIZES OF ALL WALL PENETRATIONS SHALL BE COORDINATED WITH ALL OTHER TRADES INVOLVED.
- ALL PENETRATIONS THRU RATED WALLS AND CEILINGS SHALL BE SEALED USING U.L. LISTED METHODS APPROPRIATE FOR INDICATED RATING

DUCTWORK NOTES

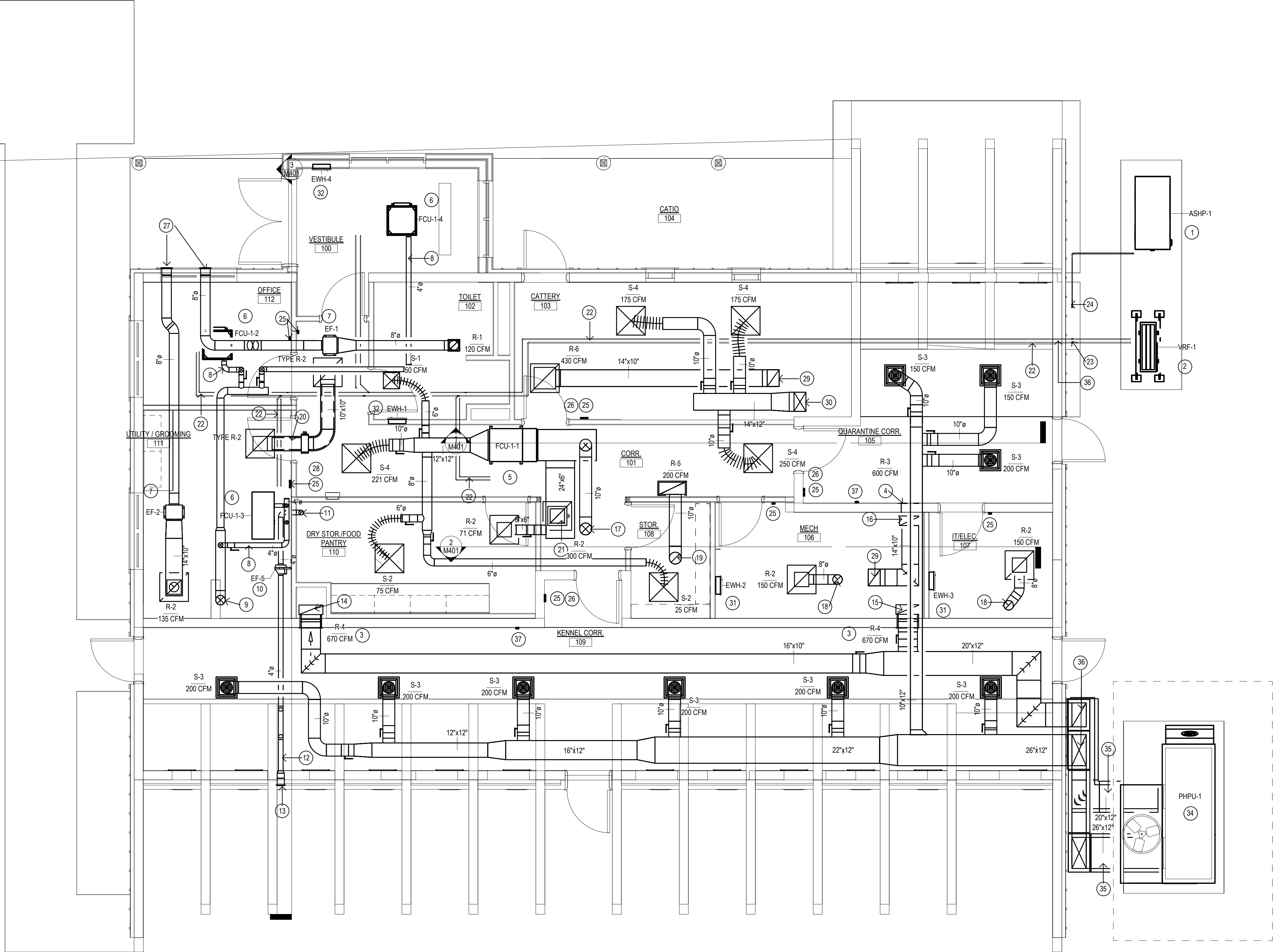
- DUCTWORK LAYOUTS AS INDICATED ON THE DRAWINGS ARE DIAGRAMMATIC; PROVIDE ADDITIONAL TRANSITIONS AND OFFSETS AS REQUIRED FOR COORDINATION WITH BUILDING CONSTRUCTION AND THE WORK OF OTHER TRADES. OFFSETS IN DUCTS, INCLUDING DIVIDED DUCTS AND TRANSITIONS AROUND OBSTRUCTIONS, SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
- ALL DUCTWORK DIMENSIONS, AS SHOWN ON THE DRAWINGS, ARE INTERNAL CLEAR DIMENSIONS AND DUCT SIZE SHALL BE INCREASED TO COMPENSATE FOR DUCT LINING THICKNESS.
- THE SUPPLY DUCTWORK SHALL BE PURGED TO ENSURE ALL FOREIGN PARTICLES ARE REMOVED PRIOR TO FINAL CONNECTION OF AIR DIFFUSERS AND REGISTERS
- ALL DUCTWORK, EXISTING AND NEW, SHALL BE PROVIDED WITH INSULATION IN ACCORDANCE WITH THE CURRENT VERSION OF INTERNATIONAL ENERGY CONSERVATION CODE.
- PROVIDE VOLUME DAMPERS, AS SPECIFIED AND AS INDICATED ON THE DRAWINGS.
- PROVIDE FIRE DAMPERS AT DUCT PENETRATIONS OF FIRE RATED PARTITIONS.
- FLEX DUCT RUNS, WHERE SHOWN ON DRAWINGS, SHALL NOT BE LONGER THAN 5 FT.
- PROVIDE SMOKE DETECTORS ON THE SUPPLY AND RETURN SIDE OF ALL AIR HANDLING EQUIPMENT 2000 CFM AND OVER.
- MAINTAIN MANUFACTURER'S RECOMMENDED MINIMUM CLEARANCES FOR INSTALLATION OF EQUIPMENT.
- PROVIDE ALL 90 DEGREE SQUARE ELBOWS WITH DOUBLE RADIUS TURNING VANES UNLESS OTHERWISE INDICATED. UNVANE ELBOWS SHALL BE SMOOTH RADIUS CONSTRUCTION WITH A RADIUS EQUAL TO 1-1/2 TIMES THE WIDTH OF THE DUCT. PROVIDE ACCESS DOORS UPSTREAM OF ALL ELBOWS WITH TURNING VANES.
- COORDINATE DIFFUSER, REGISTER AND GRILLE LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS, LIGHTING AND OTHER CEILING ITEMS.
- PROVIDE INSULATED FLEXIBLE CONNECTIONS IN ALL DUCTWORK SYSTEMS CONNECTED TO AIR HANDLING UNITS, FANS AND OTHER EQUIPMENT WHICH REQUIRE VIBRATION ISOLATION. FLEXIBLE CONNECTIONS SHALL BE AT THE POINT OF CONNECTION TO THE EQUIPMENT UNLESS OTHERWISE INDICATED.
- ALL DUCTWORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN DUCTS, INCLUDING DIVIDED DUCTS AND TRANSITIONS AROUND OBSTRUCTIONS, SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
- PROVIDE ACCESS DOORS IN DUCTWORK TO PROVIDE ACCESS FOR ALL SMOKE DETECTORS, FIRE DAMPERS, SMOKE DAMPERS, VOLUME DAMPERS, COILS AND OTHER ITEMS LOCATED IN DUCTWORK WHICH REQUIRE SERVICE OR INSPECTION.
- PROVIDE ACCESS DOORS IN DUCTWORK FOR OPERATION, ADJUSTMENT AND MAINTENANCE OF ALL FANS, VALVES, FIRE DAMPER FUSIBLE LINKS AND MECHANICAL EQUIPMENT.
- DUCTWORK SHALL BE PRESSURE TESTED AND SEALED FOR LEAKAGE.
- ALL DUCT SECTIONS DELIVERED TO THE SITE SHALL HAVE SEALED ENDS. SEAL OPEN ENDS ON DUCT DAILY AS WORK PROGRESS. AIR SYSTEM SHALL BE PURGED TO ENSURE ALL FOREIGN PARTICLES ARE REMOVED PRIOR TO FINAL CONNECTION OF SUPPLY AIR DIFFUSERS.

CONSTRUCTION NOTES

- 1 AIR COOLED HEAT PUMP OUTDOOR UNIT. INSTALL IN ACCORDANCE WITH THE UNIT MANUFACTURER'S CLEARANCE REQUIREMENTS. PROVIDE WITH 12" HIGH STEEL STAND. STEEL STAND SHALL BE ANCHORED AND MOUNTED ON A 6" THICK CONCRETE PAD.
- 2 AIR COOLED VARIABLE REFRIGERANT FLOW OUTDOOR UNIT. INSTALL IN ACCORDANCE WITH THE UNIT MANUFACTURER'S CLEARANCE REQUIREMENTS. PROVIDE WITH 18" HIGH EQUIPMENT STAND. EQUIVALENT TO QUICK SLING SUPERSTAND, MOUNTED AND ANCHORED ON A 6 INCH THICK CONCRETE PAD.
- 3 LOW RETURN AIR GRILLE WITH WEEP HOLES. PROVIDE 18 x 24 WELDED STAINLESS STEEL PLENUM. PITCH BOTTOM OF PLENUM TOWARDS GRILLE. BOTTOM OF PLENUM AT 12" AFF. COORDINATE ELEVATION IN FIELD.
- 4 LOW RETURN AIR GRILLE WITH WEEP HOLES. PROVIDE 16 x 24 WELDED STAINLESS STEEL PLENUM IN CHASE. PITCH BOTTOM OF PLENUM TOWARDS GRILLE. BOTTOM OF PLENUM AT 12" AFF. COORDINATE ELVATION IN FIELD.
- 5 ABOVE CEILING VRF INDOOR UNIT SUSPENDED FROM THE STRUCTURE. PROVIDE WITH VIBRATION ISOLATION. INSTALL UNIT AND REFRIGERATION PIPING IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION AND CLEARANCE REQUIREMENTS. REFRIGERATION PIPING SHALL BE ROUTED ABOVE CEILING. COORDINATE EXACT LOCATION WITH ARCHITECTURAL CEILING PLAN. REFER TO PLUMBING DRAWINGS AND DIVISION 22 SECTIONS FOR CONDENSATE DRAIN PIPING. PROVIDE WITH SECONDARY DRAIN PAN WITH MOISTURE SENSOR. COORDINATE REQUIREMENTS.
- 6 VRF INDOOR UNIT SUSPENDED FROM THE STRUCTURE. PROVIDE WITH VIBRATION ISOLATION. INSTALL UNIT AND REFRIGERATION PIPING IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION AND CLEARANCE REQUIREMENTS. REFRIGERATION PIPING SHALL BE ROUTED ABOVE CEILING. COORDINATE EXACT LOCATION WITH ARCHITECTURAL CEILING PLAN. REFER TO PLUMBING DRAWINGS AND DIVISION 22 SECTIONS FOR CONDENSATE DRAIN PIPING. COORDINATE REQUIREMENTS.
- 7 EXHAUST FAN SUSPENDED FROM THE STRUCTURE. PROVIDE WITH VIBRATION ISOLATION.
- 8 4" OUTSIDE AIR DUCTWORK CONNECT TO INDOOR UNIT. BALANCE TO 25 CFM.
- 9 8" OUTSIDE AIR DUCTWORK UP TO ATTIC. ROUTE IN BETWEEN JOIST.
- 10 DRYER BOOSTER FAN SUSPENDED FROM THE STRUCTURE. INSTALL IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
- 11 4" STAINLESS STEEL DRYER EXHAUST DOWN.
- 12 4" STAINLESS STEEL DRYER EXHAUST DUCT ROUTED ABOVE CEILING.
- 13 6" STAINLESS STEEL DRYER VENT CAP WITH BACKDRAFT DAMPER EQUIVALENT TO SEIHO RCC-S. TERMINATE AT EXTERIOR WALL ABOVE LOW ROOF.
- 14 20 x 8 RETURN AIR DN IN CHASE. CONNECT TO STAINLESS STEEL RETURN AIR PLENUM.
- 15 20 x 8 RETURN AIR DN IN CORNER. CONNECT TO STAINLESS STEEL RETURN AIR PLENUM.
- 16 18 x 8 RETURN AIR DN IN CHASE. CONNECT TO STAINLESS STEEL RETURN AIR PLENUM.
- 17 10" OUTSIDE AIR UP TO ATTIC. ROUTE IN BETWEEN JOIST. BALANCE TO 300 CFM.
- 18 8" EXHAUST AIR UP TO ATTIC. ROUTE IN BETWEEN JOIST.
- 19 10" RETURN AIR UP TO ATTIC. ROUTE IN BETWEEN JOIST.
- 20 LINED TRANSFER DUCT. PROVIDE WITH MOTORIZED DAMPER.
- 21 12x12 RETURN AIR BOTTOM CONNECTION TO TYPE R-2 GRILLE. PROVIDE WITH MOTORIZED DAMPER.
- 22 REFRIGERANT PIPING ROUTED ABOVE CEILING. SUCTION AND LIQUID REFRIGERANT PIPING SHALL BE PROVIDED WITH CONTINUOUS INSULATION WITH VAPOR BARRIER. REFER TO M701 VRF DIAGRAM FOR REFRIGERANT PIPE SIZES.
- 23 GENERAL LOCATION OF REFRIGERATION PIPING DROP EXPOSED ALONG EXTERIOR WALL. SUCTION AND LIQUID REFRIGERANT PIPING SHALL BE PROVIDED WITH CONTINUOUS INSULATION WITH VAPOR BARRIER. ALL EXTERIOR EXPOSED PIPING SHALL BE PROVIDED WITH STAINLESS STEEL JACKET. PROVIDE PIPE SUPPORT. ANCHOR AND SUPPORT SHALL BE SUITABLE FOR EXTERIOR WALL MATERIAL.
- 24 GENERAL LOCATION OF REFRIGERATION PIPING DROP EXPOSED ALONG EXTERIOR WALL. SUCTION AND LIQUID REFRIGERANT PIPING SHALL BE PROVIDED WITH CONTINUOUS INSULATION WITH VAPOR BARRIER. ALL EXTERIOR EXPOSED PIPING SHALL BE PROVIDED WITH STAINLESS STEEL JACKET. PROVIDE PIPE SUPPORT. ANCHOR AND SUPPORT SHALL BE SUITABLE FOR EXTERIOR WALL MATERIAL.
- 25 GENERAL LOCATION OF WALL MOUNTED TEMPERATURE SENSOR.
- 26 GENERAL LOCATION OF WALL MOUNTED HUMIDITY SENSOR.
- 27 8" ALUMINUM VENT CAP WITH INSECT SCREEN EQUIVALENT TO SEIHO SFX. VENT CAP SHALL BE LOCATED AT EXTERIOR WALL ABOVE LOW ROOF. COLOR BY ARCHITECT.
- 28 GENERAL LOCATION OF EXHAUST FAN WALL SWITCH.
- 29 10 x 14 RETURN AIR UP TO ATTIC. ROUTE IN BETWEEN JOIST.
- 30 10 x 16 SUPPLY AIR UP TO ATTIC. ROUTE IN BETWEEN JOIST.
- 31 SURFACE MOUNTED ELECTRIC WALL HEATER. INSTALL IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
- 32 RECESSED MOUNTED ELECTRIC WALL HEATER. INSTALL IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
- 33 INSULATED REFRIGERANT PIPING THROUGH EXTERIOR WALL. PROVIDE EXTERIOR WALL PENETRATIONS WITH SLEEVE SEAL SYSTEM.
- 34 PACKAGED HEAT PUMP UNIT MOUNTED ON A CUSTOM CURB ANCHORED TO THE CONCRETE PAD. CUSTOM CURB SHALL BE AT LEAST 28 INCHES HIGH WITH HORIZONTAL DUCT CONNECTIONS. PROVIDE FLEXIBLE DUCT CONNECTIONS.
- 35 EXTERIOR MOUNTED DUCTWORK SHALL BE PHENOLIC OUTDOOR DUCT SYSTEM WITH INSULATION R VALUE OF 12. PHENOLIC OUTDOOR DUCT SYSTEM OUTER JACKET SHALL BE PAINTED METAL.
- 36 EXTERIOR MOUNTED DUCTWORK ROUTED EXPOSED ALONG WALL TO THE SPACE ABOVE CEILING. SEAL WALL PENETRATION.
- 37 GENERAL LOCATION OF WALL PLATE SENSOR AT 12" AFF. PROVIDE WITH WATERPROOF/SPLASH PROOF COVER. COORDINATE EXACT LOCATION IN FIELD.

GENERAL NOTES:

- 1 REFER TO M000 FOR NOTES, LEGEND AND ABBREVIATIONS.
- 2 REFER TO M801 FOR DETAILS.
- 3 REFER TO M701 FOR VRF DIAGRAM.
- 4 ALL DUCTWORK SHALL BE ROUTED ABOVE CEILING AND IN SOFFITS. NO EXPOSED DUCTWORK SHALL BE ALLOWED, UNLESS OTHERWISE NOTED.
- 5 PROVIDE MANUAL VOLUME DAMPER AT EVERY BRANCH TAKE-OFF WHETHER OR NOT INDICATED IN PLANS. VOLUME DAMPERS AT INACCESSIBLE CEILING LOCATIONS SHALL BE PROVIDED WITH REMOTE ACTUATOR. COORDINATE LOCATIONS WITH ARCHITECTURAL CEILING PLANS.
- 6 ALL NEW CORRIDOR WALL OPENINGS ABOVE CEILING AND ALL FLOOR AND WALL PENETRATIONS SHALL BE COORDINATED WITH DIVISION 4.
- 7 ALL RATED WALL THROUGH PENETRATIONS SHALL BE PROVIDED WITH THE REQUIRED FIRESTOP SYSTEM. COORDINATE WITH DIVISION 7.
- 8 DELIVER ALL DUCT SECTIONS WITH SEALED ENDS TO PREVENT DEBRIS AND DUST FROM GETTING INSIDE. SEAL OPEN ENDS OF DUCT DAILY AS WORK PROGRESS UNTIL REGISTERS AND GRILLES ARE INSTALLED.
- 9 ALL DIFFUSER BOOTS / BACKPANS, RETURN GRILLE AND EXHAUST AIR PLENUM BOXES ABOVE CEILING SHALL BE PROVIDED WITH INSULATION WITH MINIMUM INSTALLED R VALUE OF 6.
- 10 ALL DUCTWORK DIMENSIONS, AS SHOWN ON DRAWINGS, ARE INTERNAL CLEAR DIMENSIONS AND DUCT SIZES SHALL BE INCREASED TO COMPENSATE FOR DUCT LINING THICKNESS.
- 11 ALL MISCELLANEOUS OPENING, FRAMING AND TRUSS SPACING ADJUSTMENTS REQUIRED TO ROUTE DUCTWORK TO THE ATTIC SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR AND TRUSS SUPPLIER.



1 MAIN LEVEL PLAN

1/4" = 1'-0"

Project Title:
NEW ANIMAL FACILITY AT:
MONTVILLE ANIMAL SHELTER
225 Maple Ave. Parcel ID: 077-041-000
Montville, CT



SILVER PETRUCCELLI + ASSOCIATES

3190 WHITNEY AVENUE HAMDEN CT 06518
311 STATE STREET NEW LONDON CT 06320
203 230 9007 silverpetrucci.com

Revision:	Description:	Date:	Revised By:
	ISSUED FOR BID	09/27/2024	

Drawing Title:
MAIN LEVEL PLAN

Date:
09/27/2024
Scale:
1/4" = 1'-0"
Drawn By:
AMG
Project Number:
22.130

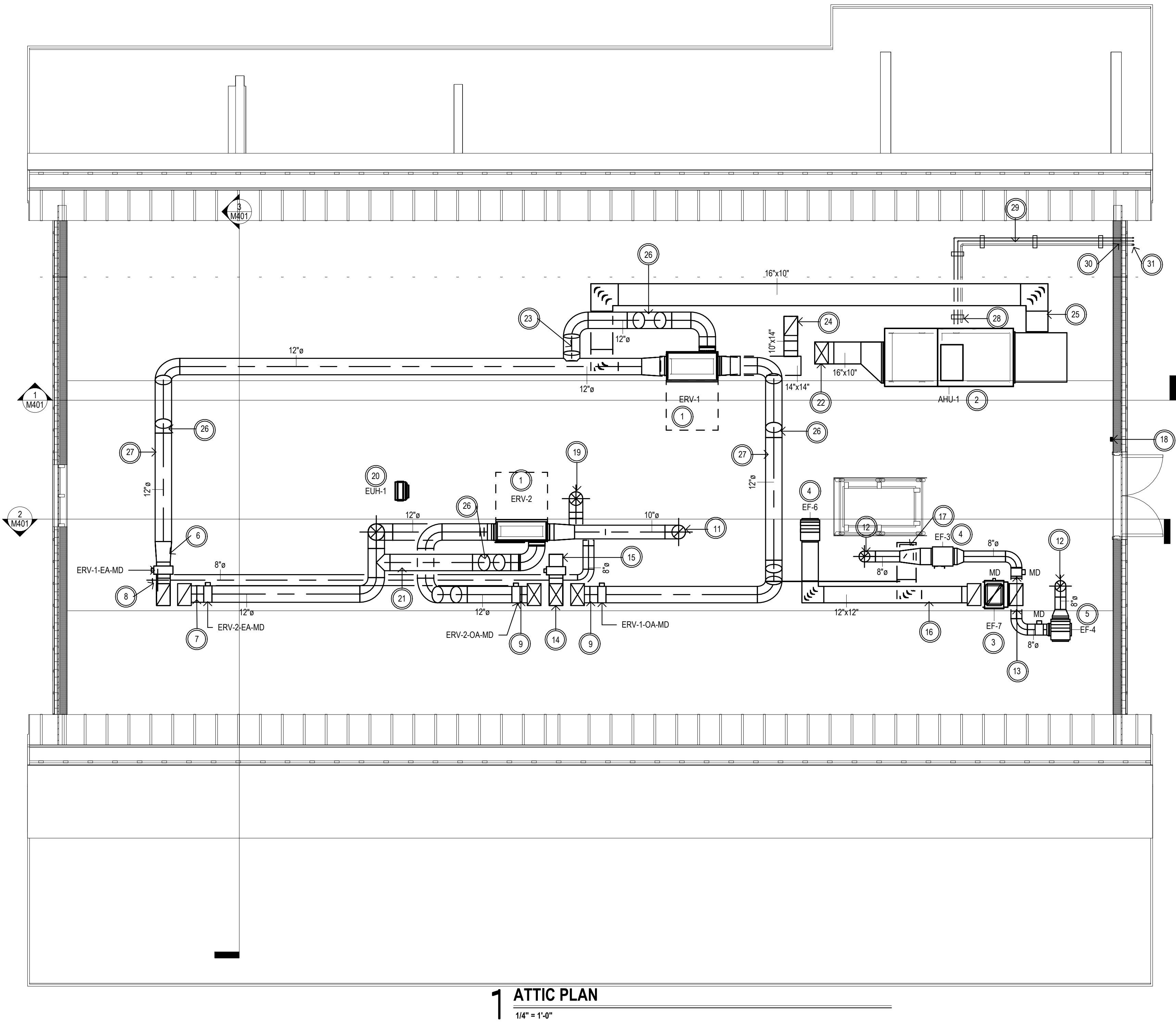
M101

CONSTRUCTION NOTES

- 1 ENERGY RECOVERY VENTILATOR WITH BYPASS. MOUNTED ON SUPPORT RAILS. INSTALL UNIT IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION AND CLEARANCE REQUIREMENTS. PROVIDE VIBRATION ISOLATION BETWEEN FRAME AND THE UNIT. COORDINATE UNIT FOOTPRINT AND LOADING WITH ISOLATION RAIL MANUFACTURER. REFER TO 231548.13 FOR EQUIPMENT SUPPORT AND VIBRATION CONTROLS. PROVIDE INSULATED FLEXIBLE CONNECTIONS TO THE UNIT. INSTALL IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS. INSTALL FACTORY PROVIDED BYPASS AND EXHAUST MOTORIZED DAMPERS. REFER TO M701 FOR SCHEMATIC FLOW DIAGRAM.
- 2 AIR HANDLING UNIT MOUNTED ON SUPPORT RAILS. INSTALL UNIT IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION AND CLEARANCE REQUIREMENTS. PROVIDE RESTRAINED SPRING ISOLATOR BETWEEN THE SUPPORT RAILS AND THE UNIT. COORDINATE LOADING WITH ISOLATOR MANUFACTURER. PROVIDE FLEXIBLE DUCT AND PIPE CONNECTIONS TO THE UNIT. REFER TO 230548.13 FOR EQUIPMENT SUPPORT AND VIBRATION CONTROLS. PROVIDE UNIT WITH SECONDARY DRAIN PAN WITH FLOAT SWITCH OR MOISTURE SENSOR. PROVIDE CONDENSATE DRAIN PIPING IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS. ROUTE TO NEAREST INDIRECT DRAIN OR FLOOR DRAIN. COORDINATE WITH DIVISION 22.
- 3 TOP DISCHARGE EXHAUST FAN MOUNTED A 12" STEEL PLATFORM. PROVIDE RESTRAINED SPRING ISOLATOR BETWEEN THE PLATFORM AND THE FAN. COORDINATE LOADING WITH ISOLATOR MANUFACTURER. PROVIDE FLEXIBLE DUCT CONNECTIONS TO THE UNIT.
- 4 EXHAUST FAN SUSPENDED FROM THE STRUCTURE. PROVIDE WITH RESTRAINED SPRING ISOLATORS. PROVIDE FLEXIBLE DUCT CONNECTIONS TO THE UNIT.
- 5 SIDE DISCHARGE EXHAUST FAN SUSPENDED FROM THE STRUCTURE. PROVIDE WITH RESTRAINED SPRING ISOLATORS. PROVIDE FLEXIBLE DUCT CONNECTIONS TO THE UNIT.
- 6 12" EXHAUST DUCT FROM ERV-1 CONNECT TO 10 x 16 EXHAUST AIR DUCT UP TO EXHAUST VENTILATOR ON ROOF. ROUTE EXHAUST DUCT IN BETWEEN ROOF JOIST.
- 7 12" EXHAUST DUCT FROM ERV-2 CONNECT TO 10 x 16 EXHAUST AIR DUCT UP TO EXHAUST VENTILATOR ON ROOF. ROUTE EXHAUST DUCT IN BETWEEN ROOF JOIST.
- 8 8" SUPPLY AIR DUCT DOWN. REFER TO M101 FOR CONTINUATION. ROUTE SUPPLY AIR IN BETWEEN FLOOR JOIST.
- 9 12" OUTSIDE AIR TO CONNECT TO 10 x 16 OUTSIDE AIR DUCT UP TO INTAKE VENTILATOR ON ROOF. ROUTE DUCT IN BETWEEN ROOF JOIST.
- 10 10 x 16 OUTSIDE AIR DUCT UP TO INTAKE VENTILATOR ON ROOF. ROUTE DUCT IN BETWEEN ROOF JOIST. CONNECT 10 x 16 TO 12 x 12 OUTSIDE AIR DUCT TO ERV-2.
- 11 10" RETURN DUCT DOWN. REFER TO M101 FOR CONTINUATION.
- 12 8" EXHAUST DUCT DOWN. REFER TO M101 FOR CONTINUATION.
- 13 8" EXHAUST AIR TO CONNECT TO 10 x 16 EXHAUST AIR DUCT UP TO RELIEF VENTILATOR ON ROOF. ROUTE DUCT IN BETWEEN ROOF JOIST.
- 14 16 x 10 OUTSIDE AIR DUCT UP TO INTAKE VENTILATOR ON ROOF. ROUTE DUCT IN BETWEEN ROOF JOIST. TERMINATE WITH WIRE MESH SCREEN.
- 15 16 x 10 OUTSIDE AIR DUCT. PROVIDE WITH MOTORIZED DAMPER. TERMINATE WITH WIRE MESH SCREEN.
- 16 14 x 10 EXHAUST DUCT ROUTED BELOW 12 x 12 EXHAUST DUCT. COORDINATE ELEVATION IN FIELD.
- 17 14 x 10 EXHAUST DUCT BOTTOM TAKE-OFF. DROP TO CEILING SPACE BELOW. REFER TO M101 FOR CONTINUATION.
- 18 WALL MOUNTED SPACE SENSOR. COORDINATE EXACT LOCATION IN FIELD.
- 19 10" SUPPLY AIR DUCT DOWN. REFER TO M101 FOR CONTINUATION. ROUTE SUPPLY AIR IN BETWEEN FLOOR JOIST.
- 20 ELECTRIC UNIT HEATER LOCATION. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION AND CLEARANCE REQUIREMENTS.
- 21 12" BYPASS DUCT CONNECT TO 12" RETURN DUCT AND ERV-2 BYPASS DAMPER.
- 22 10x16 SUPPLY AIR DROP TO CEILING SPACE BELOW. REFER TO M101 FOR CONTINUATION.
- 23 12" BYPASS DUCT CONNECT TO 12" RETURN DUCT AND ERV-1 BYPASS DAMPER.
- 24 10 x 14 RETURN DUCT DROP TO CEILING SPACE BELOW. REFER TO M101 FOR CONTINUATION.
- 25 16 x 10 SUPPLY AIR FROM ERV-1 CONNECT TO AHU-1 PLENUM.
- 26 GENERAL LOCATION OF CHANGE IN ELEVATION. PROVIDE ALL THE REQUIRED OFFSETS AND FITTING.
- 27 BOTTOM OF DUCT INSULATION FOR DUCTS ROUTED ABOVE PLATFORM SHALL BE AT A MINIMUM OF 6'-9" ABOVE ATTIC FLOOR.
- 28 SUCTION, LIQUID AND HOT GAS REHEAT REFRIGERANT PIPING TO AHU. PROVIDE FLEXIBLE PIPE CONNECTION.
- 29 SUCTION, LIQUID AND HOT GAS REHEAT REFRIGERANT PIPE GENERAL ROUTING. PROVIDE WITH CONTINUOUS INSULATION WITH VAPOR BARRIER. PROVIDE WITH PIPE SUPPORT. MANUFACTURER SHALL ADVISE ON PIPE SIZING BASED ON ACTUAL ROUTING.
- 30 INSULATED REFRIGERANT PIPING THROUGH EXTERIOR WALL. PROVIDE EXTERIOR WALL PENETRATIONS WITH SLEEVE SEAL SYSTEM.
- 31 GENERAL LOCATION OF REFRIGERATION PIPING DROP EXPOSED ALONG EXTERIOR WALL. SUCTION AND LIQUID REFRIGERANT PIPING SHALL BE PROVIDED WITH CONTINUOUS INSULATION WITH VAPOR BARRIER. ALL EXTERIOR EXPOSED PIPING SHALL BE PROVIDED WITH STAINLESS STEEL JACKET. PROVIDE PIPE SUPPORT. ANCHOR AND SUPPORT SHALL BE SUITABLE FOR EXTERIOR WALL MATERIAL.

GENERAL NOTES:

- 1 REFER TO M000 FOR NOTES, LEGEND AND ABBREVIATIONS.
- 2 REFER TO M801 FOR DETAILS.
- 3 REFER TO M701 FOR SCHEMATIC FLOW DIAGRAM AND VRF DIAGRAM.
- 4 ALL DUCTWORK SHALL BE ROUTED ABOVE CEILING AND IN SOFFITS. NO EXPOSED DUCTWORK SHALL BE ALLOWED, UNLESS OTHERWISE NOTED.
- 5 PROVIDE MANUAL VOLUME DAMPER AT EVERY BRANCH TAKE-OFF WHETHER OR NOT INDICATED IN PLANS. VOLUME DAMPERS AT INACCESSIBLE CEILING LOCATIONS SHALL BE PROVIDED WITH REMOTE ACTUATOR. COORDINATE LOCATIONS WITH ARCHITECTURAL CEILING PLANS.
- 6 ALL NEW CORRIDOR WALL OPENINGS ABOVE CEILING AND ALL FLOOR AND WALL PENETRATIONS SHALL BE COORDINATED WITH DIVISION 4.
- 7 ALL RATED WALL THROUGH PENETRATIONS SHALL BE PROVIDED WITH THE REQUIRED FIRESTOP SYSTEM. COORDINATE WITH DIVISION 7.
- 8 DELIVER ALL DUCT SECTIONS WITH SEALED ENDS TO PREVENT DEBRIS AND DUST FROM GETTING INSIDE. SEAL OPEN ENDS OF DUCT DAILY AS WORK PROGRESS UNTIL REGISTERS AND GRILLES ARE INSTALLED.
- 9 ALL DIFFUSER BOOTS, BACKPANS, RETURN GRILLE AND EXHAUST AIR PLENUM BOXES ABOVE CEILING SHALL BE PROVIDED WITH INSULATION WITH MINIMUM INSTALLED R VALUE OF 6.
- 10 ALL DUCTWORK DIMENSIONS, AS SHOWN ON DRAWINGS, ARE INTERNAL CLEAR DIMENSIONS AND DUCT SIZES SHALL BE INCREASED TO COMPENSATE FOR DUCT LINING THICKNESS.
- 11 ALL MISCELLANEOUS OPENING, FRAMING AND TRUSS SPACING ADJUSTMENTS REQUIRED TO ROUTE DUCTWORK TO THE ATTIC SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR AND TRUSS SUPPLIER.



Project Title:
NEW ANIMAL FACILITY AT:
MONTVILLE ANIMAL SHELTER
225 Maple Ave. Parcel ID: 077-041-000
Montville, CT



SILVER PETRUCELLI + ASSOCIATES

3190 WHITNEY AVENUE HAMDEN CT 06518
311 STATE STREET NEW LONDON CT 06320
203 230 9007 silverpetrucelli.com

Revision:	Description:	Date:	Revised By:
	ISSUED FOR BID	09/27/2024	

Drawing Title:
ATTIC PLAN

Date:
09/27/2024
Scale:
1/4" = 1'-0"
Drawn By:
AMG
Project Number:
22.130

Drawing Number:
M102



EXHAUST VENTILATOR LOREN COOK MODEL GR OR EQUIVALENT THROAT SIZE 18W X 30L PROVIDE WITH 24-INCH HIGH PITCHED ROOF CURB COORDINATE ROOF PITCH CURB AND VENTILATOR SHALL BE FACTORY PAINTED ARCHITECT SHALL ADVISE ON COLOR

OUTSIDE AIR INTAKE VENTILATOR LOREN COOK MODEL GI OR EQUIVALENT THROAT SIZE 18W X 48L PROVIDE WITH 24-INCH HIGH PITCHED ROOF CURB COORDINATE ROOF PITCH CURB AND VENTILATOR SHALL BE FACTORY PAINTED ARCHITECT SHALL ADVISE ON COLOR

EXHAUST VENTILATOR LOREN COOK MODEL GR OR EQUIVALENT THROAT SIZE 18W X 42L PROVIDE WITH 24-INCH HIGH PITCHED ROOF CURB COORDINATE ROOF PITCH CURB AND VENTILATOR SHALL BE FACTORY PAINTED ARCHITECT SHALL ADVISE ON COLOR

GENERAL NOTES

- REFER TO M000 FOR NOTES, LEGEND AND ABBREVIATION
- REFER TO M801 FOR DETAILS
- PROVIDE SEPARATION DISTANCE OF 10'-0" BETWEEN OUTSIDE AIR INTAKE AND ANY EXHAUST OR PLUMBING VENT TERMINATIONS IF SEPARATION DISTANCE IS LESS THAN 10'-0" VENT TERMINATIONS SHALL BE EXTENDED 24 INCHES HIGHER THAN THE OUTSIDE AIR INTAKE

1 ROOF PLAN

1/4" = 1'-0"

Project Title:
NEW ANIMAL FACILITY AT:
MONTVILLE ANIMAL SHELTER
225 Maple Ave. Parcel ID: 077-041-000
Montville, CT



SILVER PETRUCELLI + ASSOCIATES
3190 WHITNEY AVENUE HAMDEN CT 06518
311 STATE STREET NEW LONDON CT 06320
203 230 9007 silverpetrucelli.com

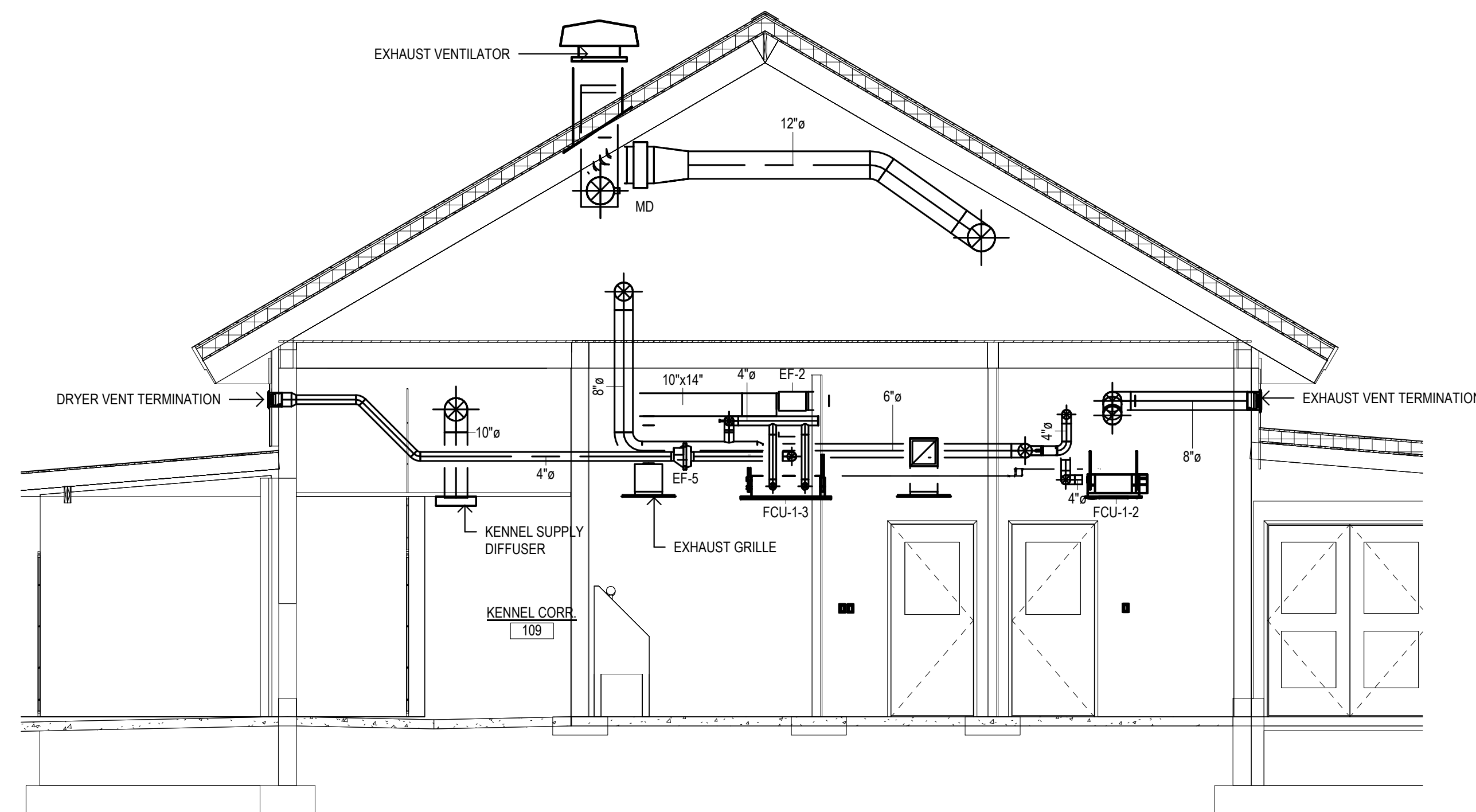
Revision:	Description:	Date:	Revised By:
	ISSUED FOR BID	09/27/2024	

Drawing Title:
ROOF PLAN

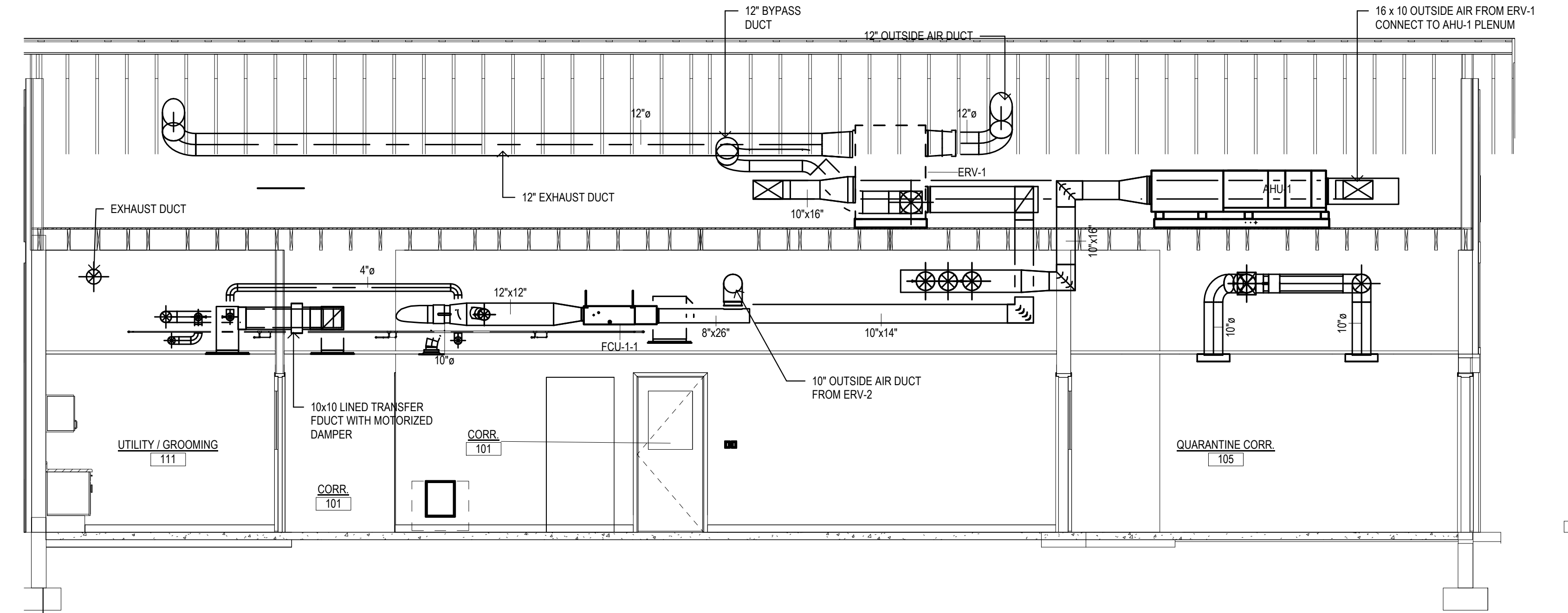
Date:
09/27/2024
Scale:
1/4" = 1'-0"
Drawn By:
AMG
Project Number:
22.130

Drawing Number:

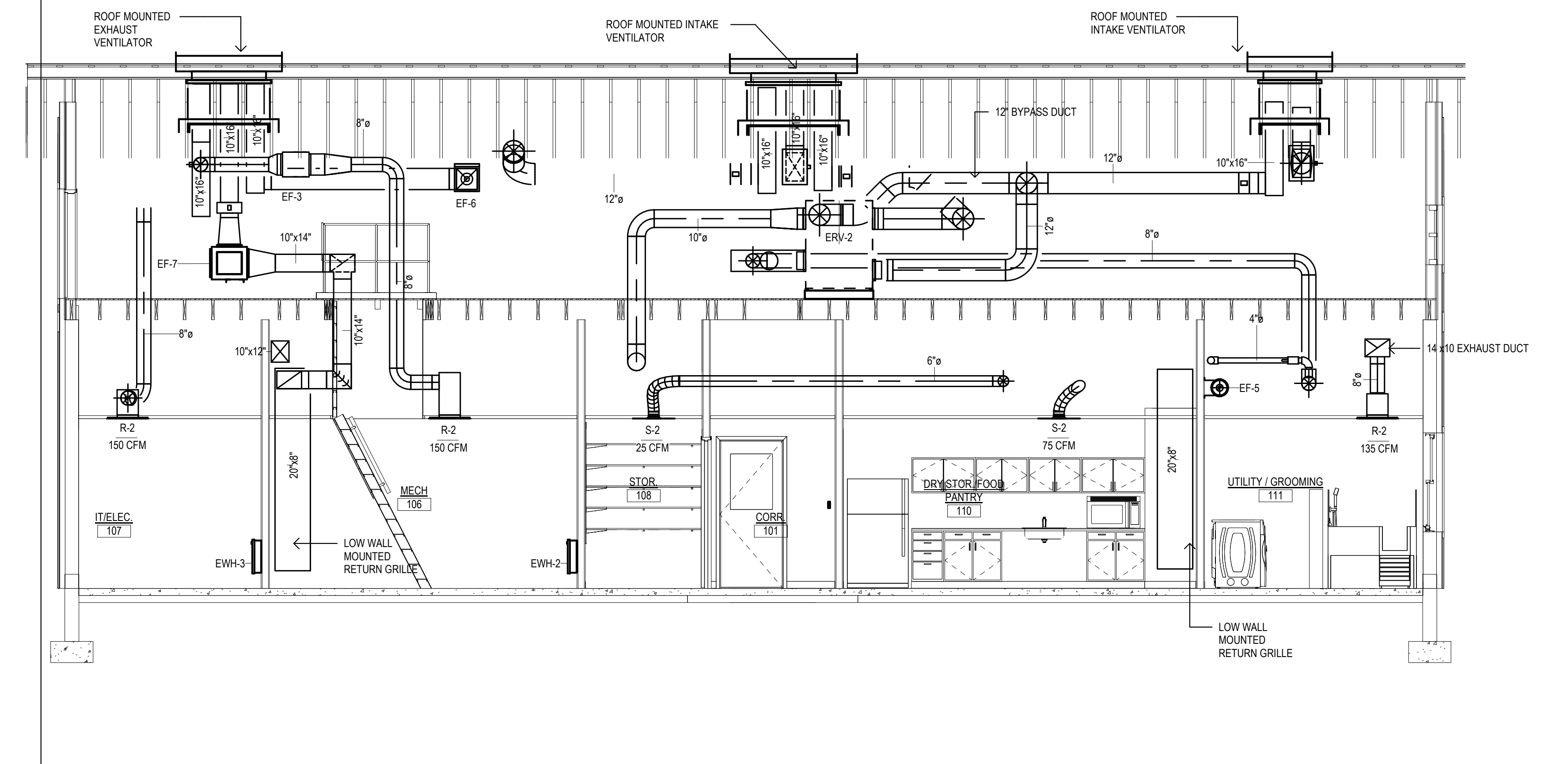
M103



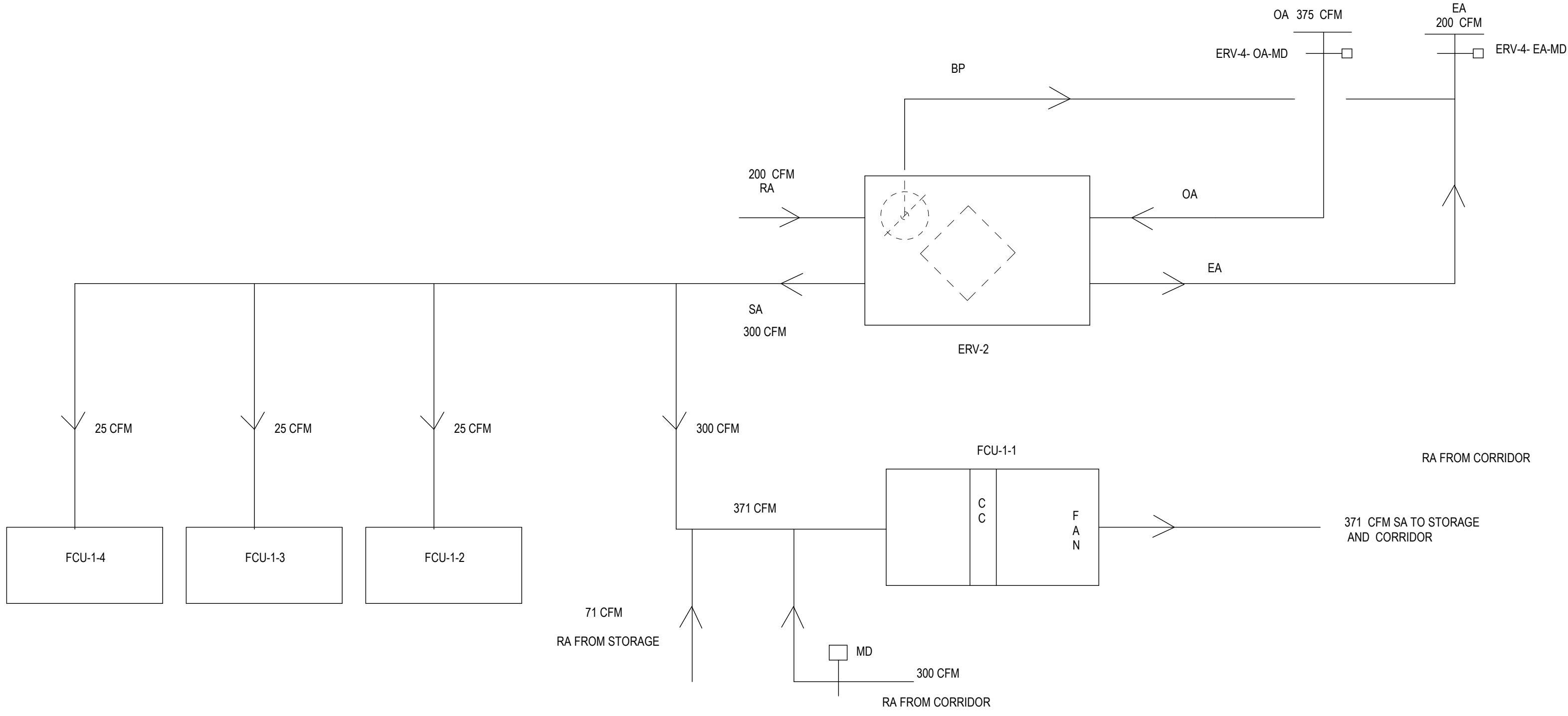
3 SECTION C
1/4" = 1'-0"



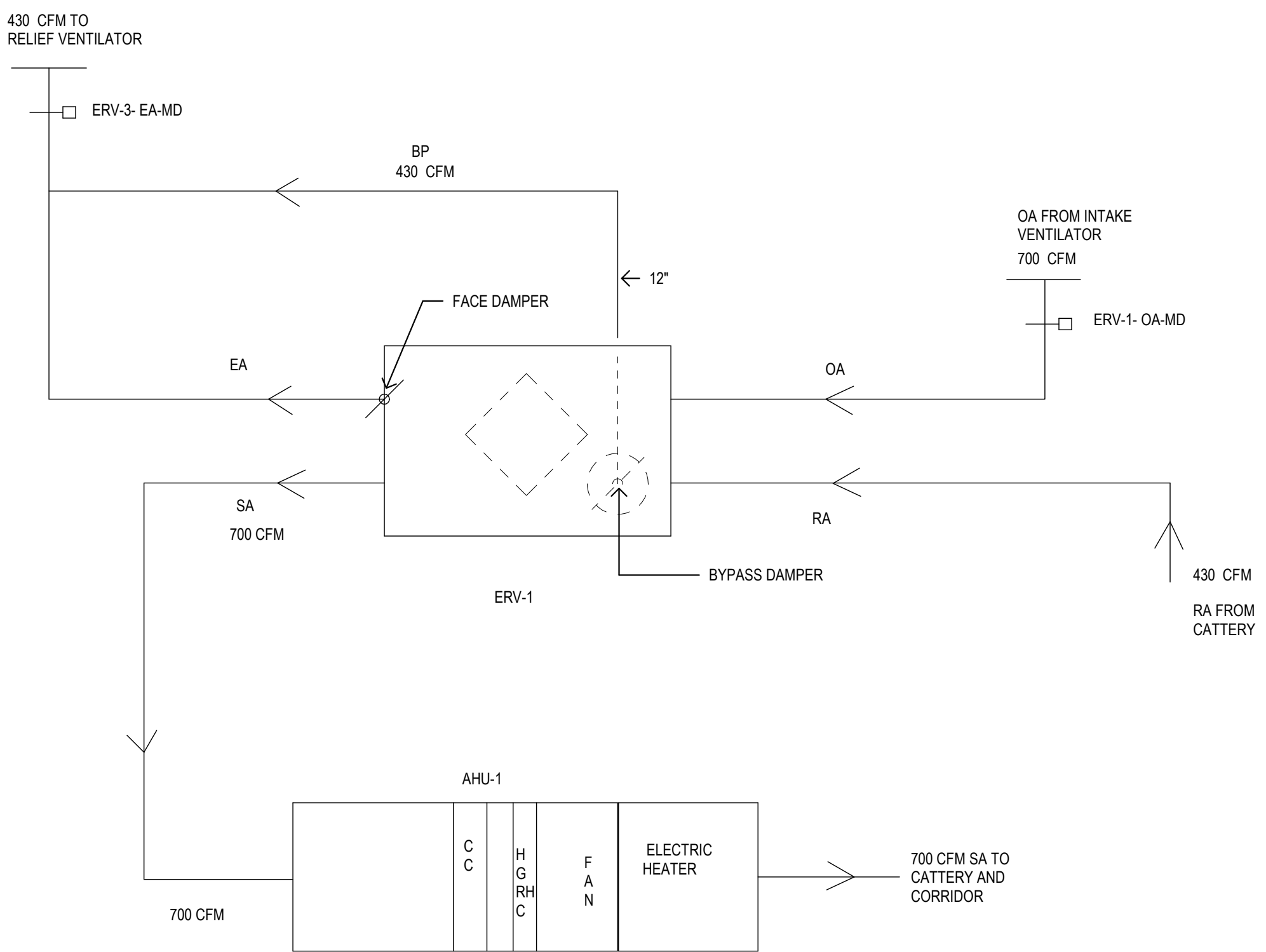
1 SECTION A
1/4" = 1'-0"



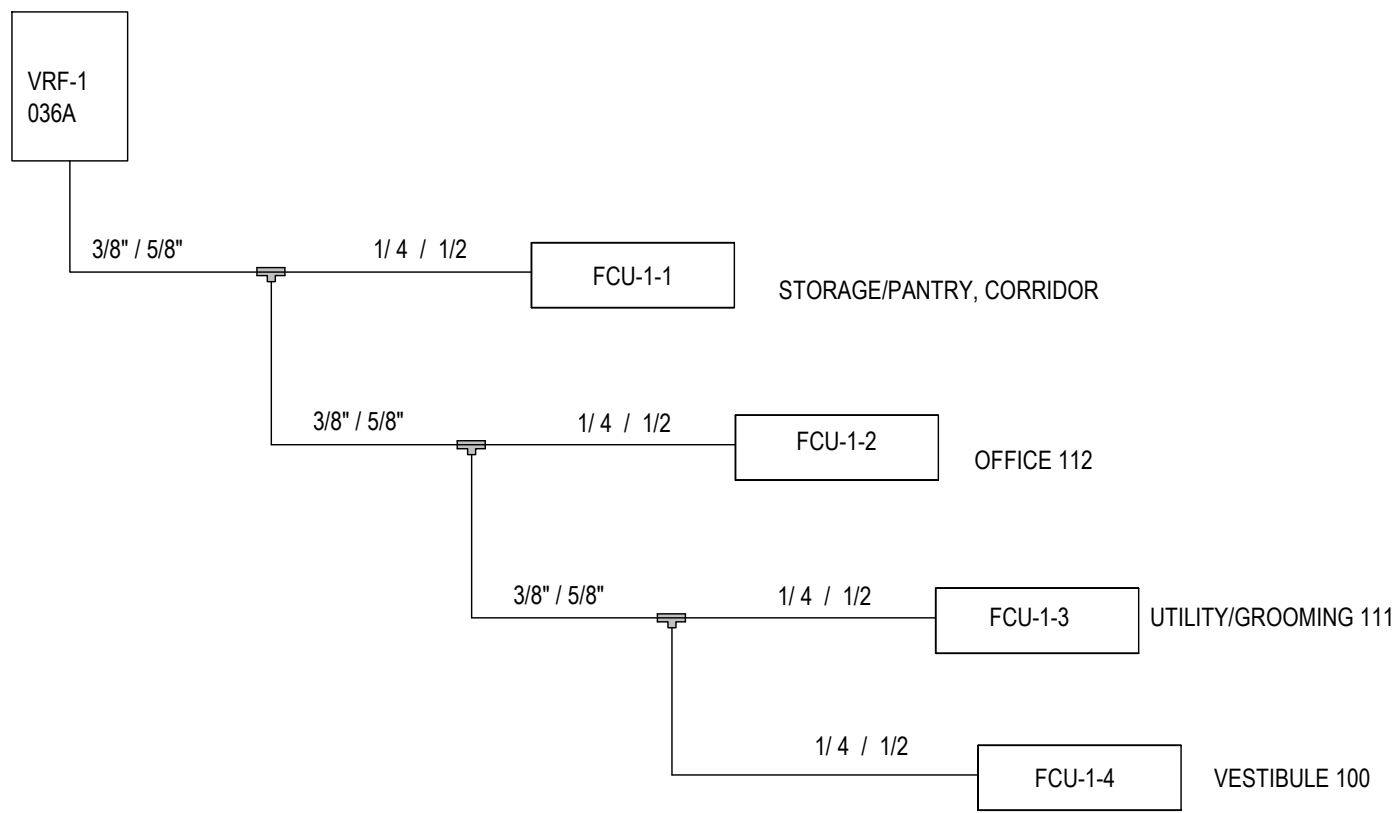
2 SECTION B
1/4" = 1'-0"



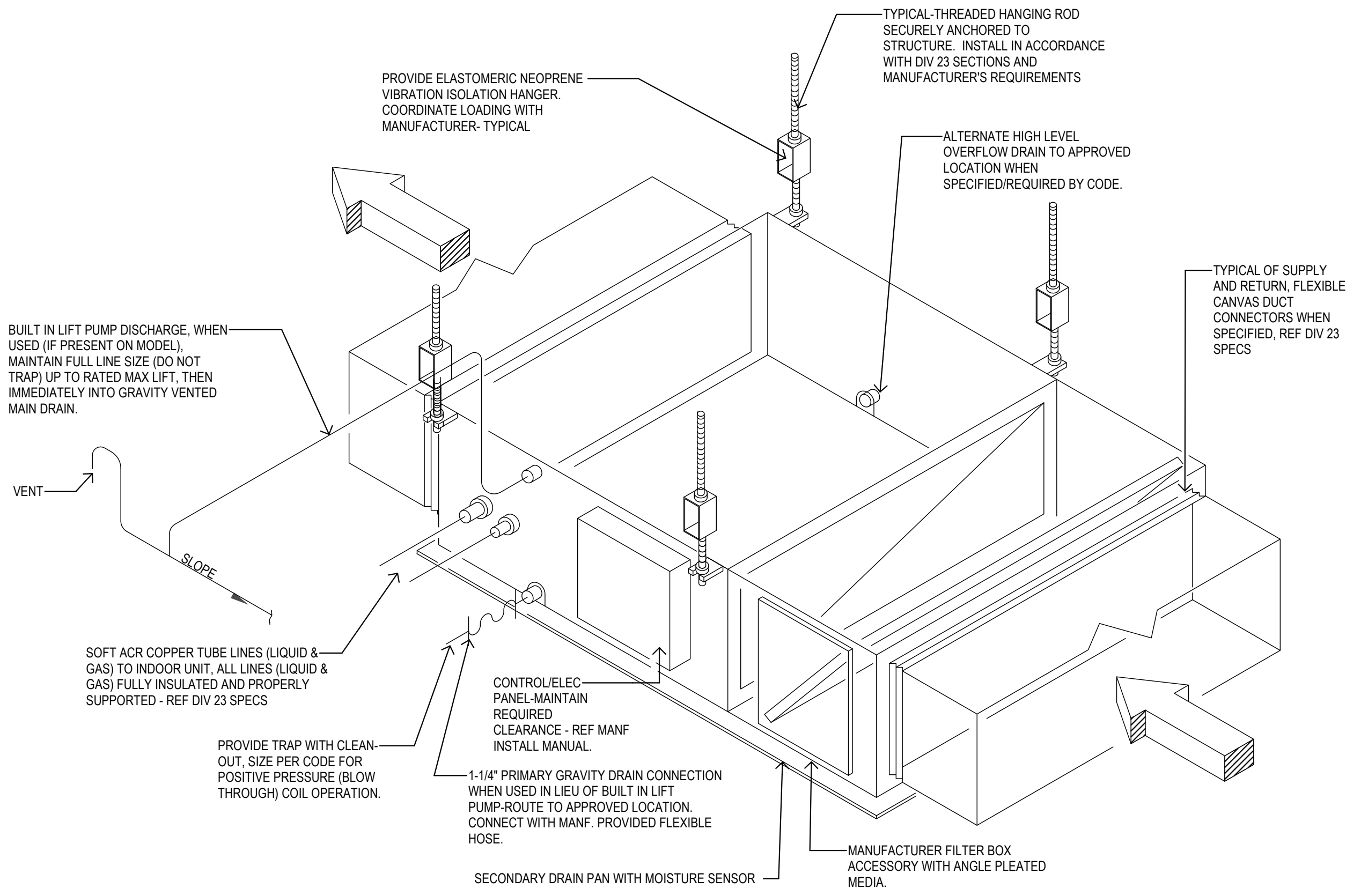
STORAGE AND CORRIDOR SCHEMATIC FLOW



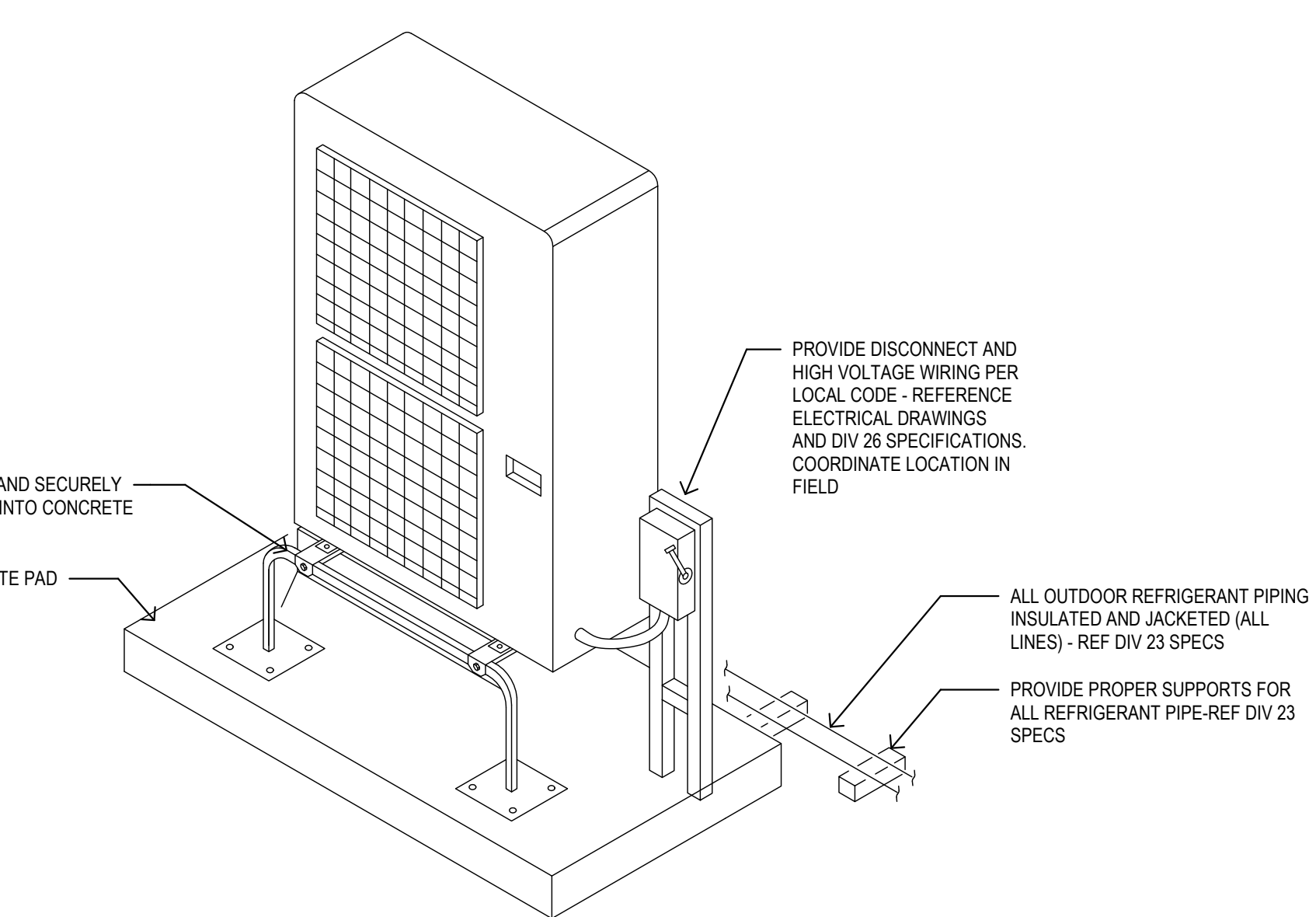
CATTERY AND CORRIDOR SCHEMATIC FLOW



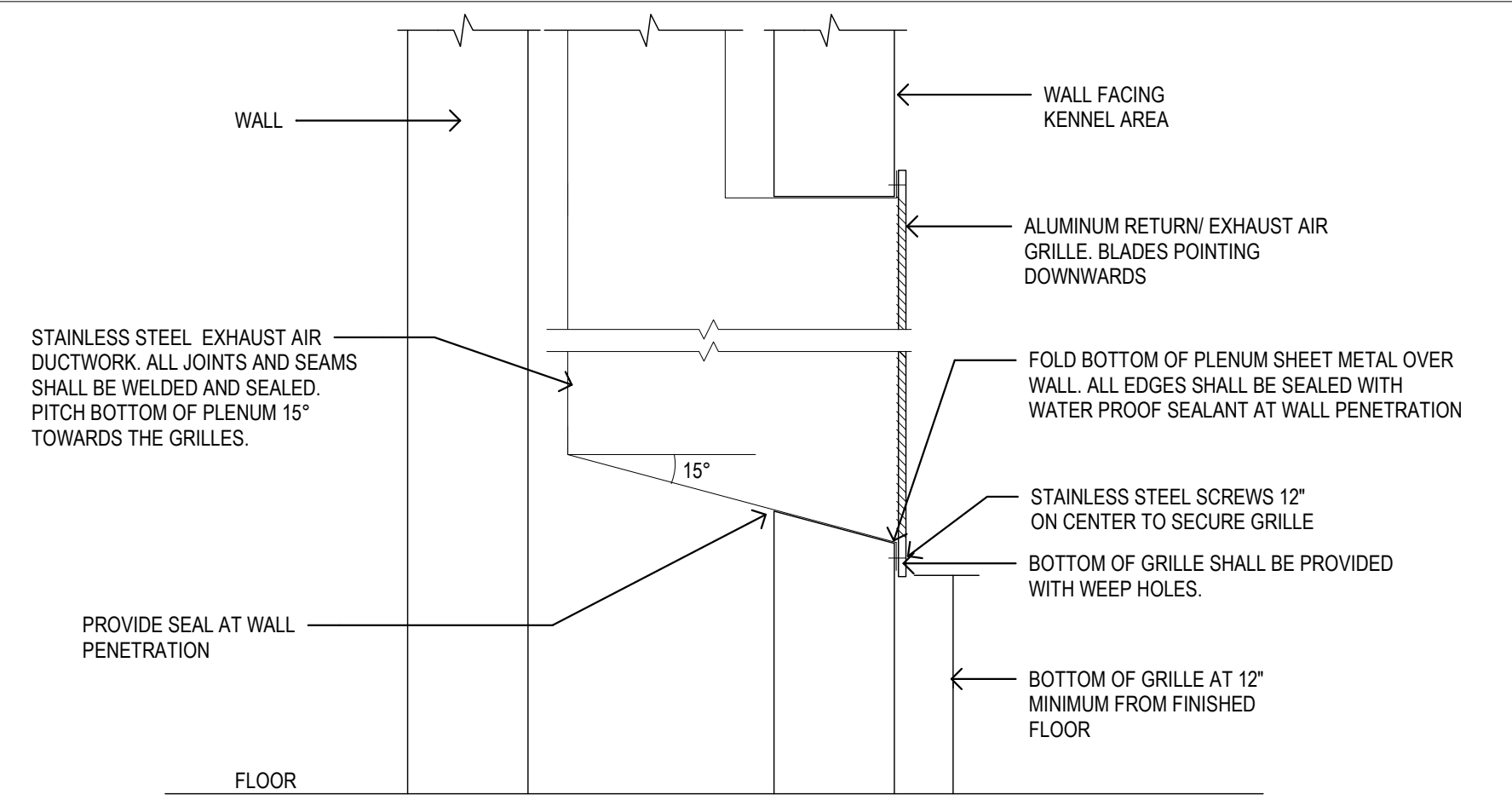
VRF DIAGRAM



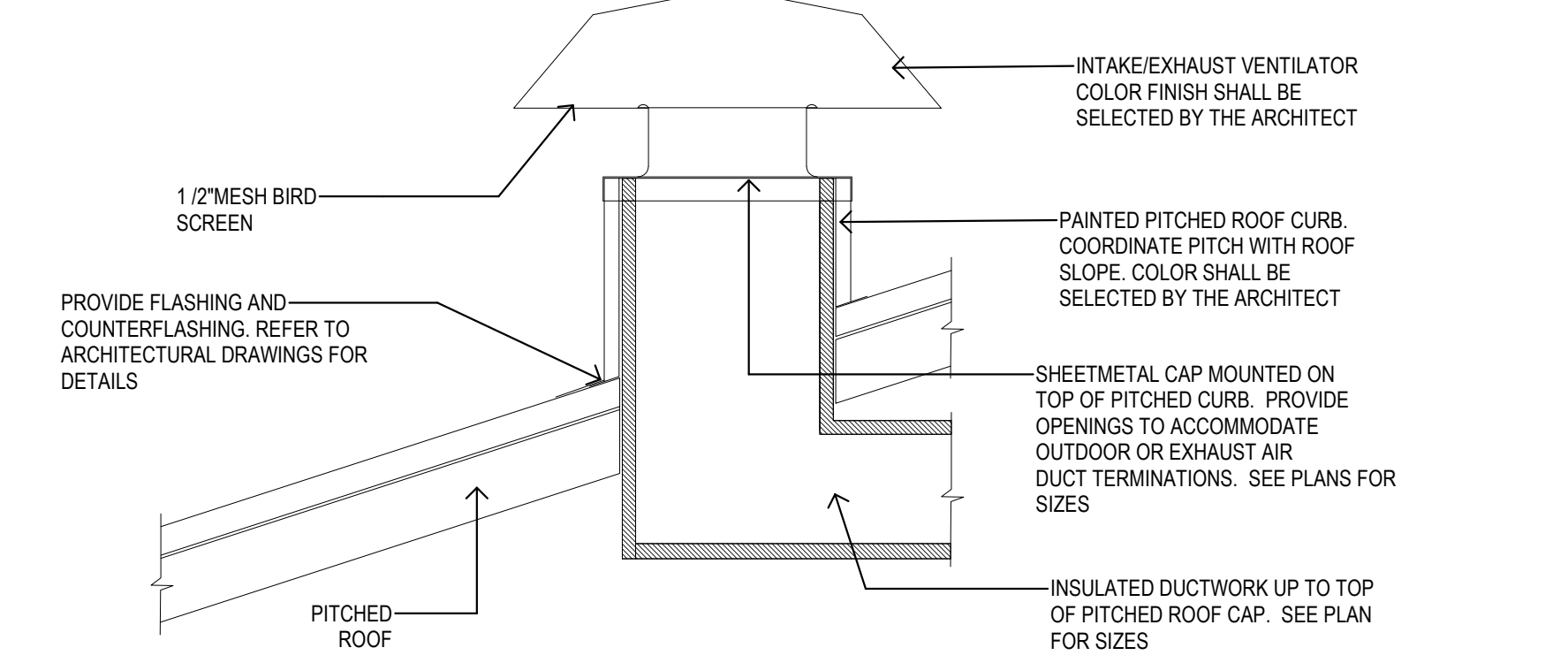
14
801
VRF DUCTED INDOOR UNIT DETAIL
NOT TO SCALE



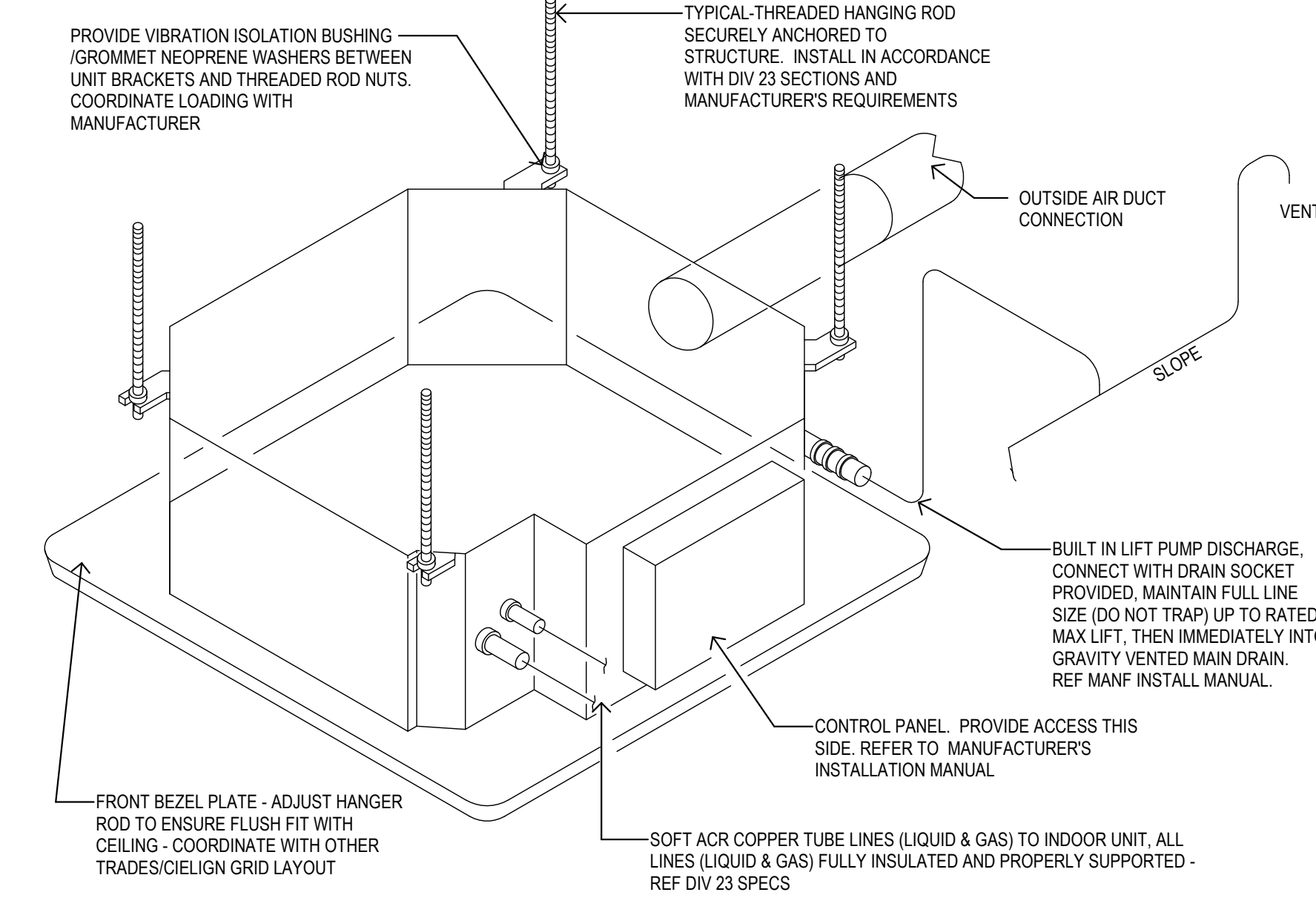
15
801
VRF OUTDOOR UNIT MOUNTING DETAIL
NOT TO SCALE



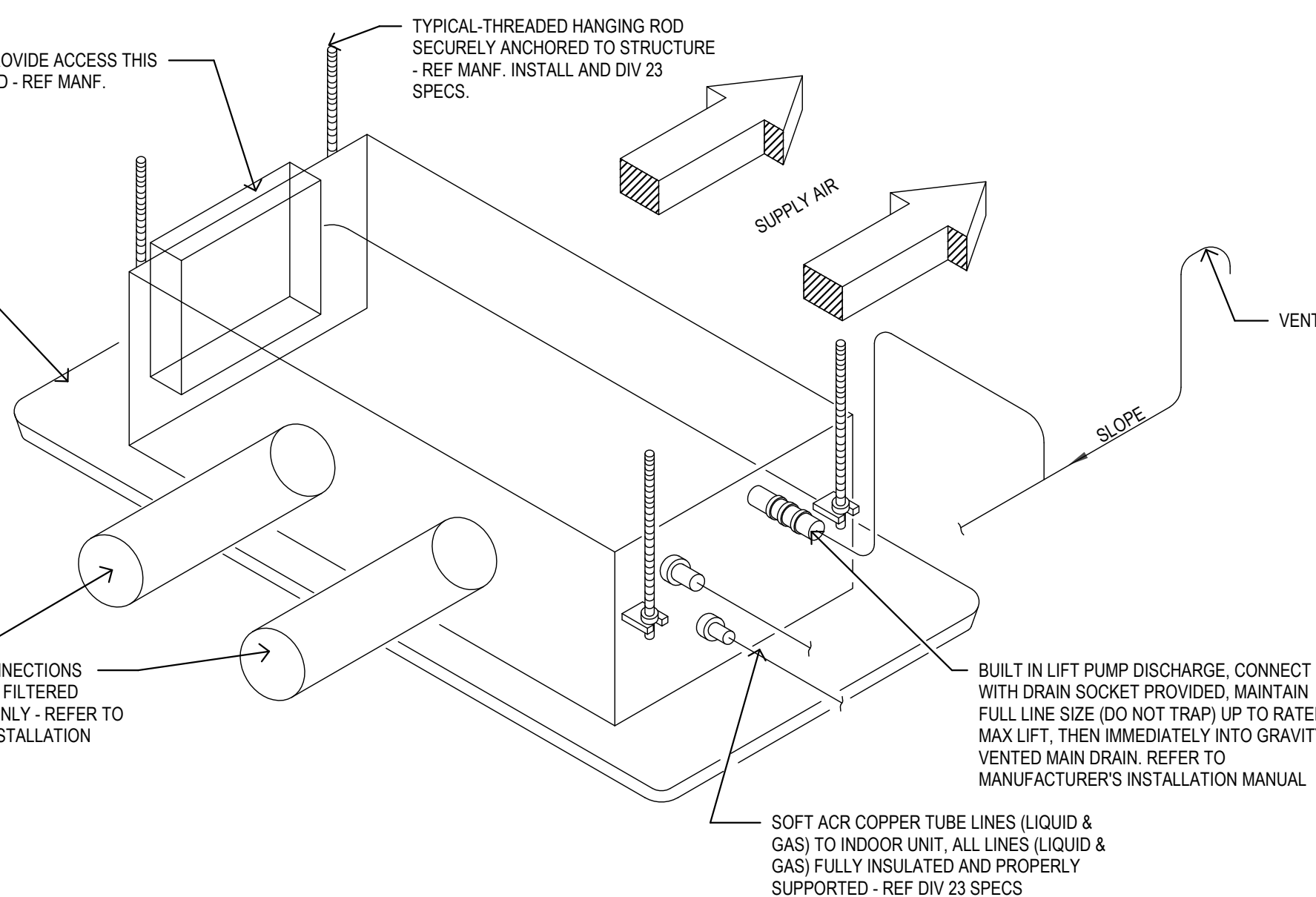
10
801
LOW EXHAUST GRILLE INSTALLATION DETAIL
NOT TO SCALE



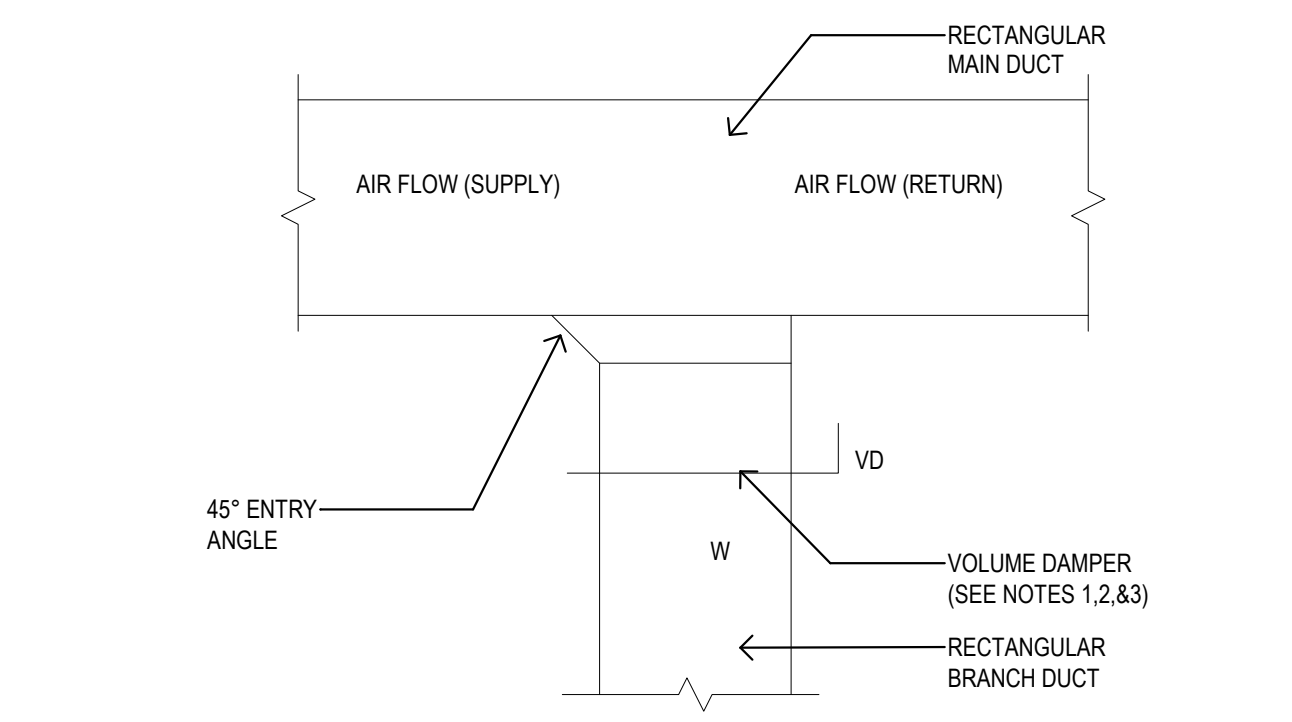
11
801
INTAKE/EXHAUST VENTILATOR DETAILS
NOT TO SCALE



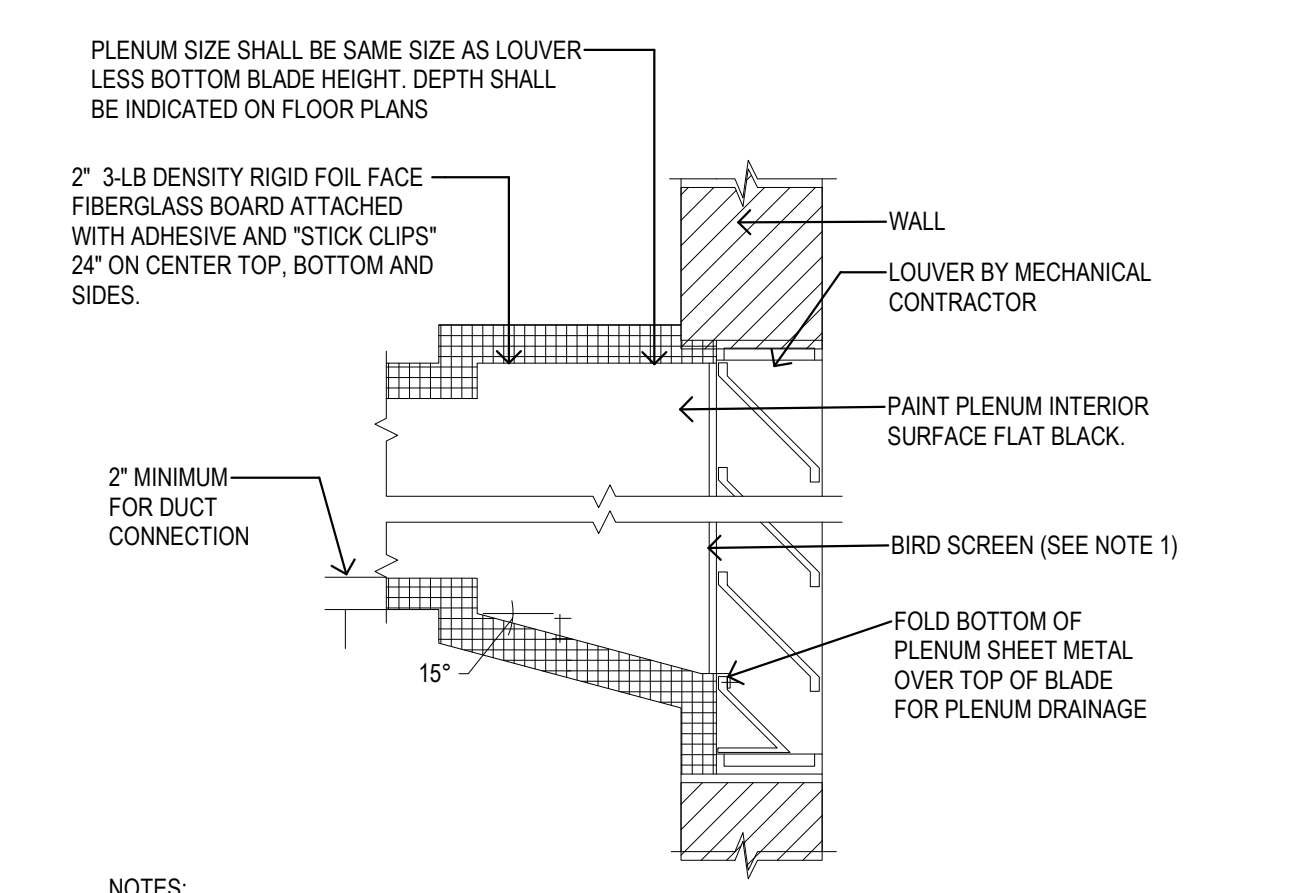
12
801
VRF CASSETTE INDOOR UNIT DETAIL
NOT TO SCALE



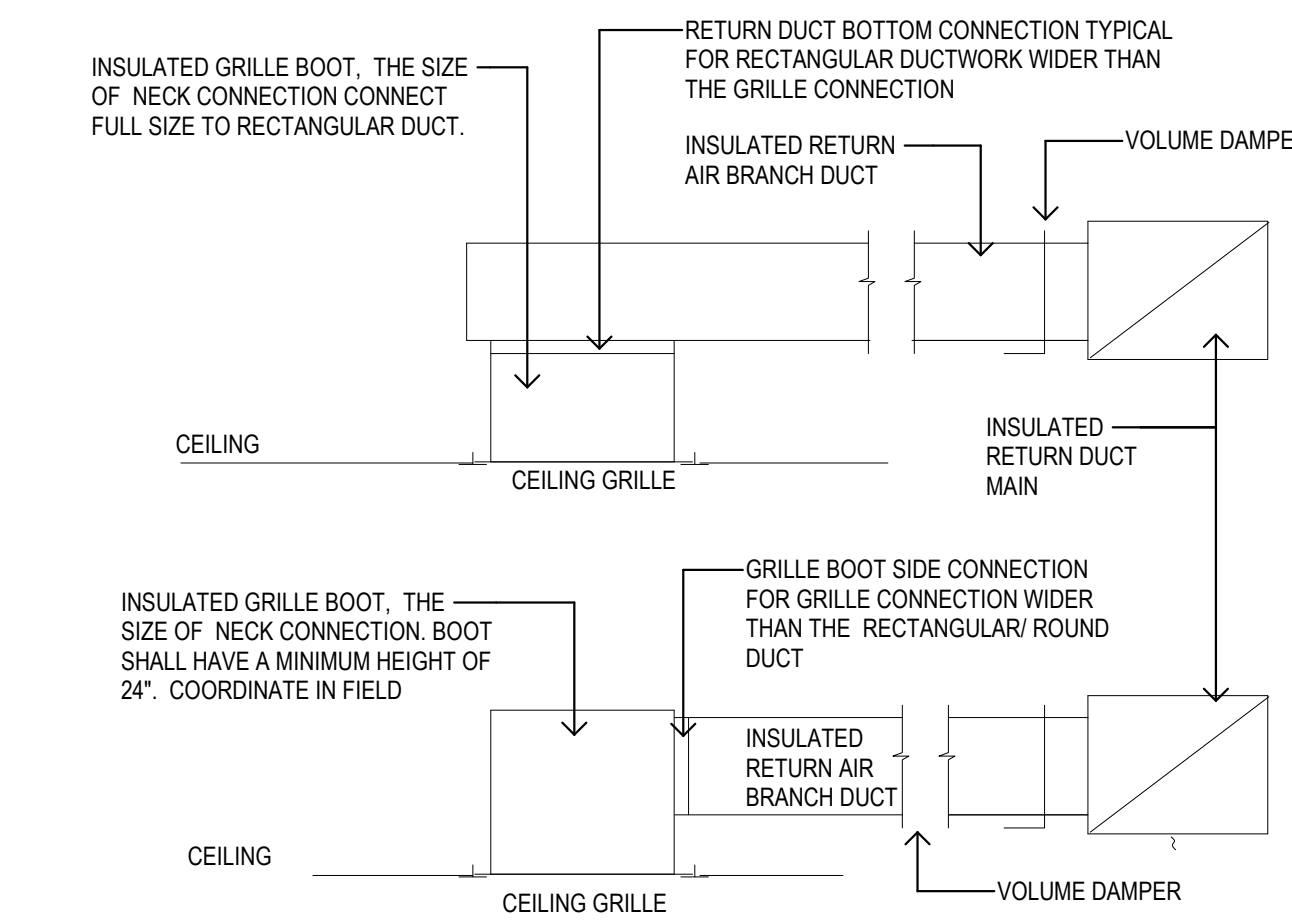
13
801
VRF CASSETTE (ONE-WAY) INDOOR UNIT DETAIL
NOT TO SCALE



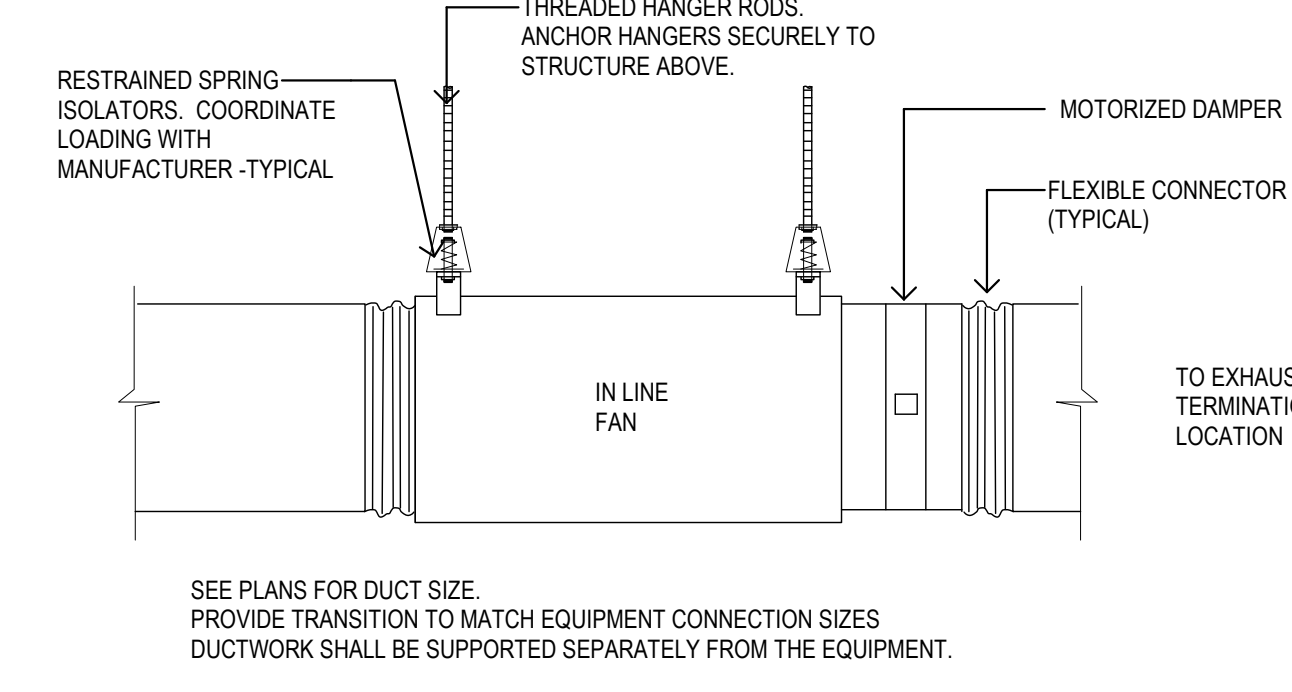
6
801
TYPICAL RECTANGULAR SUPPLY/RETURN DUCT TAKE-OFF
NOT TO SCALE



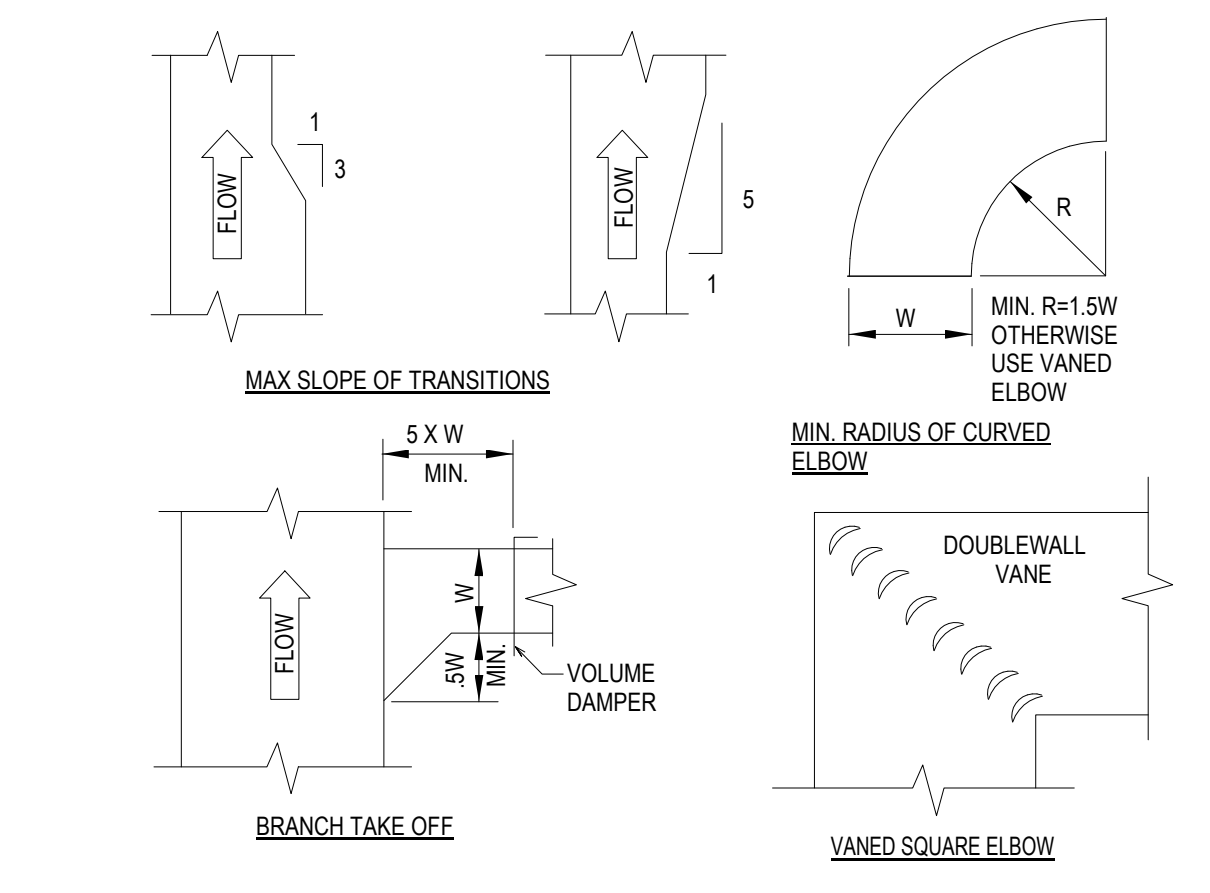
7
801
INTAKE AND EXHAUST LOUVER INSTALLATION DETAIL
NOT TO SCALE



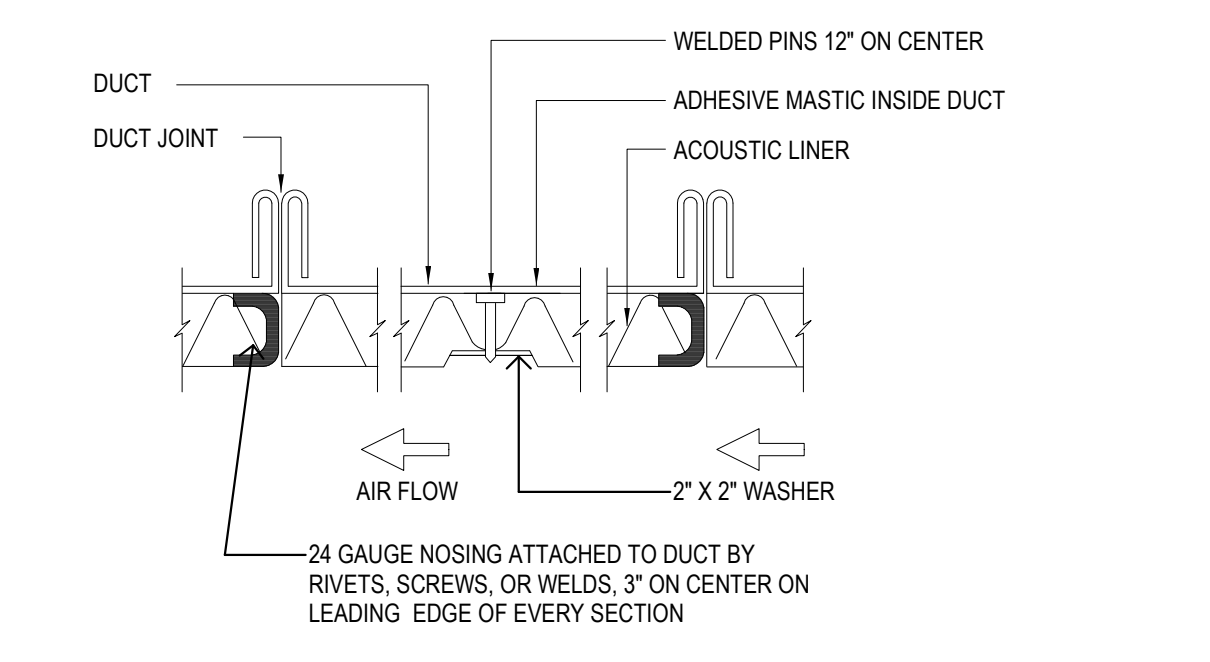
8
801
TYPICAL RETURN AIR GRILLE BOOT
NOT TO SCALE



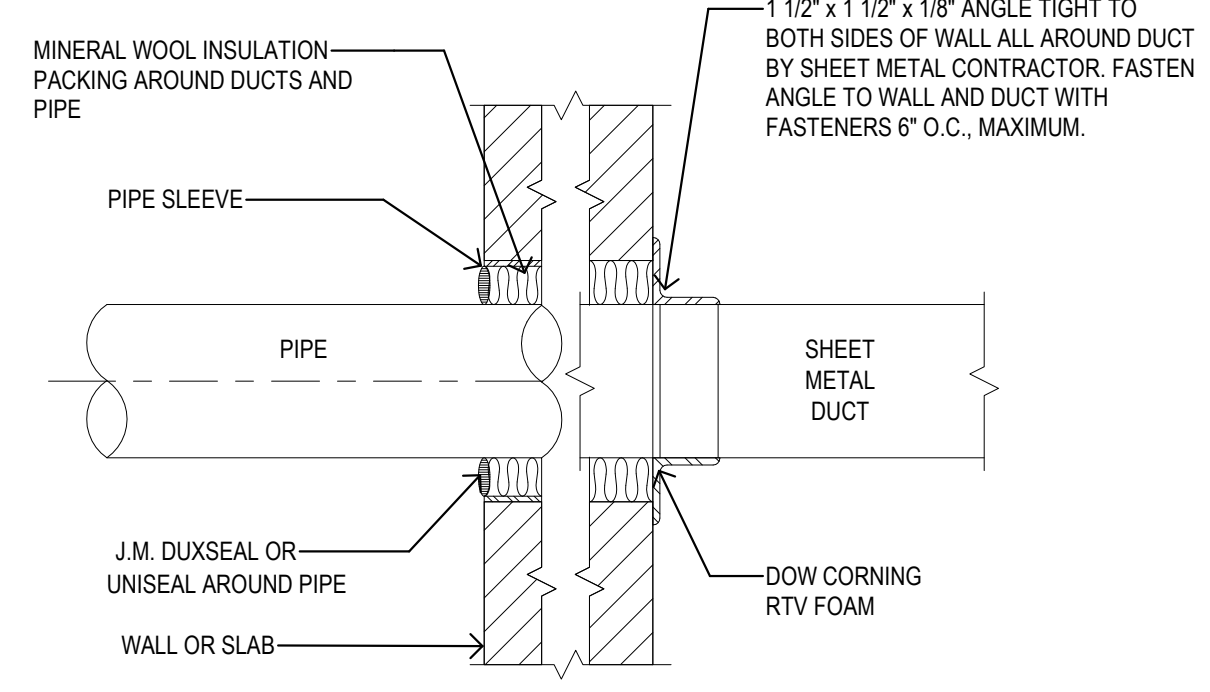
9
801
IN-LINE FAN MOUNTING DETAIL
NOT TO SCALE



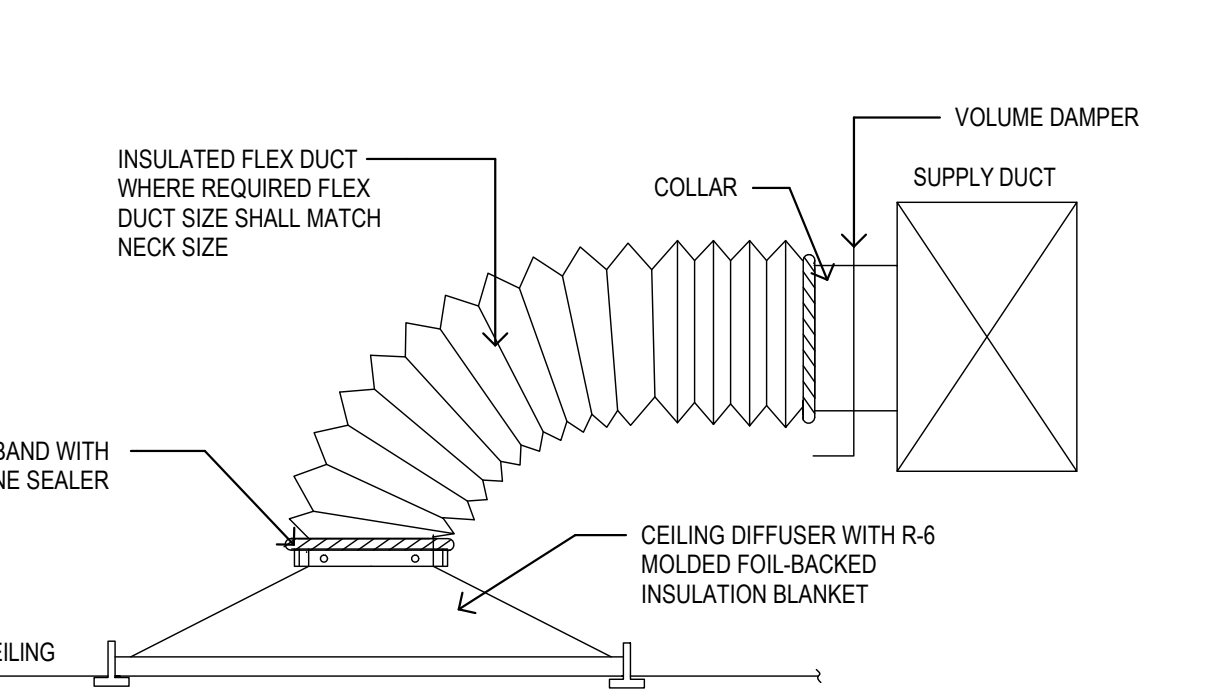
1
801
DUCT CONSTRUCTION DETAIL
NOT TO SCALE



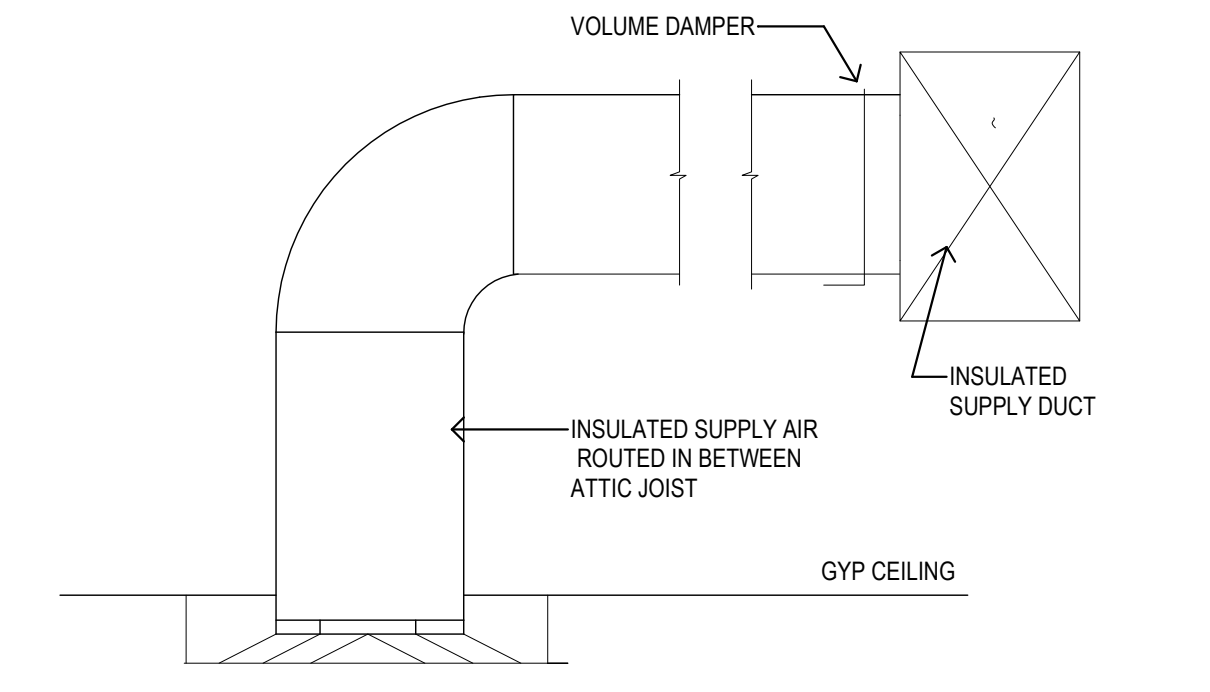
2
801
ACOUSTIC DUCT LINING
NOT TO SCALE



3
801
CAULKING OF DUCTS AND PIPES- NON-RATED WALL
NOT TO SCALE



4
801
TYPICAL CEILING DIFFUSER CONNECTION
NOT TO SCALE



5
801
TYPICAL DROPPED FACE DIFFUSER CONNECTION
NOT TO SCALE

PACKAGED HEAT PUMP UNIT

TAG	AREA SERVED	MANUFACTURER AND MODEL	UNIT ELECTRICAL DATA				SUPPLY FAN			EXHAUST FAN			COOLING PERFORMANCE										HEATING PERFORMANCE										ENERGY WHEEL		SUMMER CONDITIONS				ENERGY WHEEL WINTER CONDITIONS								FILTER			WEIGHT (LBS)	NOTES															
			VOLTS/PH/Ø	MCA	FLA	MOCP	CFM	ESP	TSP	MOTOR HP	CFM	ESP	TSP	MOTOR HP	NET COOLING CAPACITY			EAT DBWB (°F)	DX COIL LAT DBWB (°F)	UNIT LAT DBWB (°F)	COMPRESSOR			HOT GAS REHEAT COIL			HEAT PUMP					ELECTRIC HEAT					OUTSIDE AIR		SUPPLY AIR		RETURN AIR		EXHAUST AIR		HEAT EXCHANGER EFFECTIVENESS (%)		OUTSIDE AIR		SUPPLY AIR			RETURN AIR		EXHAUST AIR		HEAT EXCHANGER EFFECTIVENESS (%)										
															EQUIVALENT TOTAL (MBH)	TOTAL (MBH)	SENSIBLE (MBH)				CAPACITY CONTROL	QTY	REFNT	CAPACITY (MBH)	LAT DBWB (°F)	RH (%)	HIGH TEMP CAPACITY (MBH)	LOW TEMP CAPACITY (MBH)	EAT (°F)	LAT (°F)	TOTAL CAPACITY (MBH)	EAT DBWB (°F)	LAT DBWB (°F)	INPUT KW	FLA AMP	CFM	°F DBWB	CFM	°F DBWB	CFM	°F DBWB	CFM	°F DBWB	SENSIBLE	TOTAL	CFM	°F DBWB	CFM	°F DBWB			CFM	°F DBWB	SENSIBLE	TOTAL	CFM	°F DBWB	CFM	°F DBWB	CFM	°F DBWB	SENSIBLE	TOTAL	OA	RA	SA
PHU-1	KENNEL AND QUARANTINE	AAON R9A08	208/603	127	102	150	1700	1.0	2.80	3.0	1340	1.0	1.89	2.0	133.5	87.4	57.6	82.8/67.8	49.4/8.9	50.9/49.8	VARIABLE CAPACITY (10-100%)	1	R-454B	46.9	75/59.8	40	85.0	3.4	48.96	2328	50.1/39.4	50.1/39.4	102.4	38.6/31.2	94.2/58.2	30	83.3	1897	95/75	1700	82.8/67.8	1430	75/62	1532	90.2/72	75.7	73.7	1897	0/-1	1700	38.6/31.2	1430	68/50	1532	15.9/14.5	75.3	76.2	MERV 8	MERV 8	MERV 8 + MERV 13	1700	1,2,3,4,5				

- NOTES:
1. PROVIDE WITH CUSTOM CURB WITH HORIZONTAL DUCT CONNECTIONS
2. MANUFACTURER PROVIDED CONTROLLER WITH BACnet INTERFACE
3. SINGLE POINT POWER CONNECTION
4. DOUBLE WALL CONSTRUCTION WITH R13 FOAM INSULATION
MANUFACTURER PROVIDED DISCONNECT SWITCH
MANUFACTURER PROVIDED GFI RECEPTACLE POWERED BY AN INDEPENDENT 120V POWER SOURCE
UNIT SHALL HAVE FULLY MODULATING HOT GAS REHEAT
5. REFER TO SPECIFICATION SECTION FOR MORE INFORMATION

INDOOR AIR HANDLING UNIT

TAG	AREA SERVED	MANUFACTURER AND MODEL	ELECTRICAL				OUTSIDE AIR (CFM)	SUPPLY FAN				DIRECT EXPANSION COIL				HOT GAS REHEAT COIL			HEATING SECTION								FILTER	REFRIGERANT	WEIGHT (LBS)	NOTES
			VOLTS/PHZ	MCA	FLA	MOCP		CFM	ESP	MOTOR HP	TYPE	NET TC (MBH)	NET SC (MBH)	EAT DB/WB (°F)	LAT DB/WB (°F)	CAPACITY (MBH)	LAT DB/WB (°F)	RH (%)	PRIMARY HEAT : HEAT PUMP				AUXILIARY HEATING : ELECTRIC HEAT							
																			TC (MBH)	EAT DB/WB (°F)	TC (MBH)	EAT DB/WB (°F)	LAT DB (°F)	INPUT (KW)	FLA					
AHU-1	CATTERY	AAON H3-SRB	208/60/3	21	17	25	700	700	0.75	1.0	DIRECT DRIVE VFD	39.20	23.6	81.8/68.9	49.4/49.3	15.3	70/57.8	47.7	36.2	39.5/32.5	53.9	39.5/32.5	95	15.8	14.7	MERV 13	R-454B	575	1 TO 4	

- NOTES:
1. PROVIDE DISCONNECT SWITCH. REFER TO DIV 26
2. LEFT HAND SIDE CONNECTIONS AND SERVICE ACCESS
3. REFER TO SPECIFICATION SECTION FOR MORE INFORMATION
4. MANUFACTURER PROVIDED BACNET CONTROLLER. REFER TO 23 09 93 FOR SEQUENCE OF OPERATION

VRF UNIT SCHEDULE

BASIS OF DESIGN: TRANSIMBUSHI													
TAG	MODEL	MODULES	NOMINAL CAPACITY		COOLING EFFICIENCY IEER/SEER (SEER)	HEATING COP & 47F (HSPF)	CORRECTED CAPACITY		NOMINAL SYSTEM CONNECTED CAPACITY	ELECTRICAL DATA			NOTES/OPTIONS
			COOLING (BTU/HR)	HEATING (BTU/HR)			COOLING (BTU/HR)	HEATING (BTU/HR)		VOLTAGE/PH	MCA	MOCP	
VRF-1	NTXMSH36A	P36	36,000	45,000	0/13.8 (20.65)	3.85 (12.1)	36,173	43,934	77.8%	208/230V, 1 PH	36	40	1, 2, 3
NOTES:													
1. NOMINAL COOLING CAPACITY ARE BASED ON INDOOR COIL EAT OF 80/67 F (DBWB), OUTDOOR TEMPERATURE OF 91 F DB							3. EFFICIENCY VALUES OF EER, IEER, COP ARE BASED AHRI 1230 TEST METHOD OF MIXTURE OF DUCTED AND NOT DUCTED INDOOR UNITS						
2. NOMINAL HEATING CAPACITY ARE BASED ON INDOOR COIL EAT OF 70 F DB, OUTDOOR TEMPERATURE OF 43 F WB													

ENERGY RECOVERY VENTILATOR SCHEDULE

TAG	UNIT SERVED	MANUFACTURER MODEL	UNIT ELECTRICAL DATA			MOTORS			SUMMER								WINTER								FILTER		UNIT WEIGHT (LBS)	NOTES
			V/PH/Hz	UNIT MCA AMP	MOP AMP				OUTDOOR AIR		VENTILATION SUPPLY AIR		RETURN AIR		HEAT EXCHANGER EFFECTIVENESS (%)		OUTDOOR AIR		VENTILATION SUPPLY AIR		RETURN AIR		HEAT EXCHANGER EFFECTIVENESS (%)					
						TYPE	QTY @ W	FLA (AMP)	CFM	°F DB/WB	CFM	°F DB/WB	CFM	°F DB/WB	SENSIBLE	TOTAL	CFM	°F DB/WB	CFM	°F DB/WB	CFM	°F DB/WB	SENSIBLE	TOTAL	OUTSIDE AIR	RETURN AIR		
ERV-1	AHU-1	RENEWAIRE HE10-JIN1	120/60/1	18.2	25	ECM	2 @ 480	8.1	718	89.9/73.1	700	81.8/68.9	430	75/62.5	89	68.8	718	3.5/1.6	700	39.5/32.5	430	70/51.4	89	68.4	MERV 8	MERV 8	275	1 TO 6
ERV-2	VRF FCUs	RENEWAIRE HED7-JIN1	120/60/1	12.2	15	ECM	2 @ 357 W	5.4	381	89.9/73.1	375	82.5/69	200	75/62.5	94.4	78.4	381	3.5/1.6	375	36.4/29.9	200	70/51.4	94.4	94	MERV 8	MERV 8	199	1 TO 6
NOTES																												
1. MANUFACTURER PROVIDED BACnet CONTROLLER AND SENSORS. INTERFACE WITH BAS. REFER TO SECTION 230993.									4. UNIT SHALL BE PROVIDED WITH ENTHALPIC MOTORIZED DAMPERS ALL AIRSTREAMS																			
2. MANUFACTURER SHALL PROVIDE DISCONNECT SWITCH.									5. UNIT SHALL BE PROVIDED WITH BY PASS ECONOMIZER DAMPERS																			
3. FAN MOTOR SHALL BE ECM DIRECT DRIVE									6. REFER TO SPECIFICATION SECTION 23 74 33 FOR MORE INFORMATION																			

AIR COOLED HEAT PUMP UNIT

TAG	UNIT SERVED	MANUFACTURER AND MODEL	ELECTRICAL				NOMINAL TONS	COMPRESSOR CAPACITY CONTROL	REFRIGERANT	CONNECTION SIZE			WEIGHT (LBS)	NOTES
			VOLTS/PHZ/PHØ	MCA	FLA	MOCP				SUCTION	LIQUID	HOT GAS REHEAT		
ASHP-1	AHU-1	AAON CFA-003	208/60/3	19	16	30	3	VARIABLE CAPACITY SCROLL	R454B	1.13 IN	0.5 IN	0.88 IN	360	1, 2, 3
NOTES: 1. MOUNT UNIT ON 6" HOUSEKEEPING PAD 2. PROVIDE DISCONNECT SWITCH. REFER TO DIV 26 3. MANUFACTURER SHALL ADVISE ON THE FINAL SIZE OF REFRIGERATION PIPING BASED PIPE ROUTING														

ELECTRIC UNIT HEATER

TAG	LOCATION	KW	AIRFLOW	VOLT/PH	(BASED ON QMARK)	
					MODEL	NOTES
EUH-1	ATTIC	7.5	650	208/3	MUH072-PRO-SSP	1, 2
NOTES 1. PROVIDE WITH MOUNTING BRACKET 2. PROVIDE WITH REMOTE MOUNTED SMART SERIES PLUS THERMOSTAT, SMART SERIES PLUS CONTROL WITH BACNET COMPATIBILITY, DISCONNECT SWITCH, 24V TRANSFORMER						

ELECTRIC WALL HEATER

TAG	LOCATION	WATTS	CAPACITY BTU/H	VOLT/PH	(BASED ON QMARK)	
					MODEL	NOTES
EWH-1	TOILET 102	1500	5,115	120/1	CWH3150F	1, 2
EWH-2	MECH 106	1500	5,115	120/1	CWH3150F	1, 3
EWH-3	ELECTRICAL 107	1500	5,115	120/1	CWH3150F	1, 3
EWH-4	VESTIBULE 100	1500	5,115	120/1	CWH3150F	1, 2
NOTES 1. PROVIDE WITH UNIT MOUNTED THERMOSTAT 2. PROVIDE WITH RECESSED MOUNTING FRAME 3. PROVIDE SURFACE MOUNTING FRAME						

FAN SCHEDULE

TAG	AREA SERVED	TYPE	CFM	EXTERNAL STATIC PRESS (IN. WG.)	FAN RPM	ELECTRICAL		SONES	MODEL	NOTES
						VOLTS/Ø	HP			
EF-1	TOILET 102	CABINET IN-LINE	120	0.375	1514	115/1	0.013	2.0	GNVF-340	1, 2
EF-2	GROOMING	CABINET IN-LINE	135	0.50	1272	115/1	1/6	2.5	GNVF-500	1, 3
EF-3	MECH RM 106	IN-LINE	150	0.50	1432	115/1	1/6	3.9	90SQND	5, 7, 11
EF-4	IT / ELECTRICAL	IN-LINE	150	0.50	1432	115/1	1/6	3.9	90SQND	5, 7
EF-5	DRYER BOOSTER	IN-LINE	150	0.20	-	115/1	83 W	-	FANTECH DEDPV-705	4
EF-6	ATTIC	IN-LINE	450	0.50	1444	115/1	1/4	5.3	100SQND	7, 8, 10
EF-7	QUARANTINE KENNEL	IN-LINE	600	0.675	1415	115/1	1/4	9.1	120SQND	7, 9, 11

NOTES

1. PROVIDE CABINET INLINE EXHAUST FAN WITH DISCONNECT SWITCH, VIBRATION ISOLATOR , GRAVITY BACKRAFT DAMPER AND SOLID STATE SPEED CONTROLLER.

2. INTERLOCK WITH OCCUPANCY SENSOR. REFER TO ELECTRICAL DRAWING FOR WIRING.

3. INTERLOCK WITH WALL SWITCH. WALL SWITCH SHALL HAVE TIMED OPERATION. REFER TO ELECTRICAL DRAWING FOR WIRING.

4. UL 705 DRYER BOOSTER. PROVIDE WITH DBLT4W SECONDARY DRYER LINT TRAP, PRESSURE SENSING SWITCH, TEMPERATURE LIMIT SWITCH, WALL MOUNTED INDICATOR PANEL WITH 50 FT CABLE AND UNIT PROVIDED FAST CLAMPS FOR EASY INSTALLATION AND MAINTENANCE. PROVIDE WITH DRYER VENT BOX

5. INTERLOCK WITH OCCUPANCY SENSOR AND WITH ROOM TEMPERATURE SENSOR. REFER TO ELECTRICAL DRAWING FOR WIRING AND 23 09 93 FOR CONTROLS SEQUENCE OF OPERATION

6. DIRECT DRIVE IN LINE FAN. PROVIDE WITH DISCONNECT SWITCH, FAN HOUSING WITH 0.5 INCH THICK INSULATION, ELECTRONIC COMMUTATION DRIVE MOTOR WITH 0-10V WIRE INPUT, RESTRAINED SPRING ISOLATOR. PROVIDE WITH GRAVITY BACKRAFT DAMPER.

7. DIRECT DRIVE IN LINE FAN. PROVIDE WITH DISCONNECT SWITCH, FAN HOUSING WITH 0.5 INCH THICK INSULATION, ELECTRONIC COMMUTATION DRIVE MOTOR WITH 0-10V WIRE INPUT, RESTRAINED SPRING ISOLATOR. PROVIDE WITH MOTORIZED BACKRAFT DAMPER, SAME VOLTAGE AS FAN, WITH END SWITCH. REFER TO ELECTRICAL FOR WIRING.

8. INTERLOCK WITH LIGHT SWITCH AND SPACE TEMPERATURE SENSOR. REFER TO 23 09 93 FOR SEQUENCE OF OPERATION

9. INTERLOCK WITH DOAS

10. PROVIDE WITH SAFETY INLET SCREEN

11. SIDE DISCHARGE CONNECTION

SUPPLY/DIFFUSER/GRILLE SCHEDULE

TAG	MANUFACTURER	MODEL	NECK SIZE	LOUVERED FACE SIZE	MODULE SIZE	MAX AIRFLOW (CFM)	MAX NC	DESCRIPTION	NOTES
S-1	TITUS	TDC-AA	6	-	12 x 12	100	16	LOUVERED FACE DIFFUSER	1, 2
S-2	TITUS	TDC-AA	6	-	24 x 24	100	16	LOUVERED FACE DIFFUSER	1, 3, 4
S-3	TITUS	TDV-AA	9 x 9	-	12 x 12	200	14	LOUVERED FACE DIFFUSER INDUCTION VANES	1, 4, 6
S-4	TITUS	TDV-AA	10	12 x 12	24 x 24	250	14	LOUVERED FACE DIFFUSER INDUCTION VANES	1, 3, 4
R-1	TITUS	350FL	8 x 8	-	8 x 8	150	10	CEILING GRILLE	1, 2
R-2	TITUS	PAR-AA	12 x 12	12 x 12	24 x 24	320	10	PERFORATED GRILLE	1, 3, 5
R-3	METALAIRE	4500	16 x 24	-	16 x 24	500	15	HEAVY DUTY SIDEWALL GRILLE	1, 7, 8
R-4	METALAIRE	4500	18 x 24	-	18 x 24	625	15	HEAVY DUTY SIDEWALL GRILLE	1, 7, 8
R-5	TITUS	PAR-AA	10 x 22	10 x 22	12 x 24	320	10	PERFORATED GRILLE	1, 3, 5
R-6	TITUS	PAR-AA	18 x 18	18 x 18	24 x 24	500	10	PERFORATED GRILLE	1, 3, 5
NOTES: 1. PROVIDE IN ALL ALUMINUM CONSTRUCTION 2. PROVIDE BORDER FOR SURFACE MOUNT 3. PROVIDE BORDER FOR LAY-IN INSTALLATION. COORDINATE WITH CEILING LAYOUT 4. DIFFUSER BACKPAN SHALL BE PROVIDED WITH R-6 INSULATION 5. PROVIDE WITH ACOUSTICALLY LINED PLENUM BOX 6. PROVIDE DROPPED FACE BORDER 7. SIDEWALL MOUNTED. PROVIDE WITH WEEP HOLES AT THE BOTTOM OF GRILLE TO ALLOW FOR DRAINAGE 8. PROVIDE WITH WELDED STAINLESS STEEL PLENUM BOX. BOTTOM OF PLENUM BOX SHALL BE PITCHED TOWARDS THE GRILLE TO ALLOW FOR DRAINAGE									

GENERAL

1.

WHEN A CONFLICT BETWEEN THE DRAWINGS, NOTES AND/OR SPECIFICATIONS OCCUR, THE MORE STRINGENT, AND/OR LARGER QUANTITY AND/OR MORE EXPENSIVE SHALL APPLY. THE REQUIREMENTS LISTED WITHIN NOTES OR SPECIFICATIONS SHALL BE REQUIRED, PROVIDED AND INSTALLED WHETHER SPECIFICALLY INDICATED ON THE DRAWINGS OR NOT.

2.

ALL WORK AND ACTION DEPICTED AND DESCRIBED SHALL BE PERFORMED BY THE CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE.

3.

REPAIR AND/OR REPLACE AT NO COST TO THE OWNER ALL EQUIPMENT, DEVICES AND MATERIALS DAMAGED DURING CONSTRUCTION.

4.

ALL EQUIPMENT SHALL BE LOCATED IN ACCESSIBLE LOCATIONS. WHEN A PIECE OF EQUIPMENT MUST BE LOCATED ABOVE AN INACCESSIBLE CEILING OR WALL, THEN AN APPROPRIATE ACCESS DOOR SHALL BE PROVIDED. THESE SHALL BE COORDINATED WITH THE OWNER AND ARCHITECT.

5.

ANY COP REQUEST FOR ELECTRICAL WORK AFTER AWARD MUST BE BASED ON NORMAL NECA COMMERCIAL LABOR UNITS & NATIONAL AVERAGE MATERIAL AMP MATERIAL COST PRICES; NATIONAL AVERAGE AMP DATA BASE FOR MATERIAL AND NECA LABOR RATES MUST BE SUBMITTED TO THE ENGINEER OF RECORD AT THE TIME OF AWARD.

WIRING & RACEWAY

1.

THE DRAWINGS SHOW THE GENERAL LAYOUT AND TYPICAL DETAILS. PROVIDE ALL NECESSARY EQUIPMENT AND LABOR FOR A COMPLETE SYSTEM. DRAWINGS ARE BASED ON THE SPECIFIED EQUIPMENT, RACEWAY LAYOUTS, BOXES AND WIRING OF THE SYSTEMS ARE SUBJECT TO APPROVED SHOP DRAWINGS.

2.

ENSURE THAT ITEMS TO BE FURNISHED FIT THE SPACE AVAILABLE. MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS, INCLUDING THOSE FOR CONNECTIONS, AND PROVIDE SUCH SIZES AND SHAPES OF EQUIPMENT THAT FINAL INSTALLATION SHALL SATISFY THE INTENT OF THE DRAWINGS AND SPECIFICATIONS.

3.

LOCATIONS OF OUTLETS, SWITCHES, APPLIANCES, ETC. AS SHOWN ON ELECTRICAL PLANS ARE APPROXIMATE. COORDINATE WITH ARCHITECTURAL AND MECHANICAL PLANS AND DETAILS, AND PROJECT CONDITIONS. INSTALL SWITCHES WITH "OFF" POSITION DOWN. INSTALL RECEPTACLES WITH GROUNDING POLE IN THE UP POSITION FOR VERTICAL MOUNTING AND AT RIGHT FOR HORIZONTAL MOUNTING.

4.

LOCATE AND INSTALL ELECTRICAL EQUIPMENT, JUNCTION AND PULL BOXES, PANELBOARDS, SWITCHES, CONTROLS, AND OTHER APPARATUS REQUIRING MAINTENANCE, INSPECTION, AND OPERATION SO AS TO BE READILY ACCESSIBLE.

RACEWAY INSTALLATION

1.

IN ALL ARCHITECTURALLY FINISHED SPACES, CONDUITS AND CABLES SHALL BE RUN CONCEALED IN HUNG OR FURRED CEILINGS, SLABS, MASONRY, AND PARTITIONS UNLESS OTHERWISE INDICATED. SAW CUTTING AND FINISHED PATCHING SHALL BE REQUIRED IN EXISTING SLABS AND MASONRY WALLS. IN UNFINISHED SPACES, RACEWAYS MAY BE RUN EXPOSED.

2.

UNLESS OTHERWISE INDICATED, EXACT ROUTING OF RACEWAYS SHALL BE DETERMINED BY THE CONTRACTOR TO SUIT PROJECT REQUIREMENTS AND FIELD CONDITIONS.

3.

PROVIDE SEPARATE RACEWAYS, JUNCTION BOXES, PULL BOXES AND WIREWAYS FOR ALL EMERGENCY SYSTEM WIRING.

4.

CONTRACTOR SHALL PROVIDE ALL REQUIRED SLEEVES AND SEALS FOR PIPES OR CONDUITS PENETRATING WALLS OR FLOOR SLABS WITH UL LISTED FIRE STOPPING SEALANT MATCHING OR EXCEEDING THE FLOOR OR WALL RATING WHERE REQUIRED.

5.

ELECTRICAL CONDUITS AND BOXES SHALL BE CONCEALED IN WALLS OR ABOVE CEILINGS WHEREVER POSSIBLE. WHERE SURFACE CONDUITS ARE REQUIRED IT MUST MATCH THE WALL COLOR (PAINTED) THAT IT IS BEING ATTACHED TO; REFER TO RACEWAY & BOX SPECIFICATION FOR FURTHER DETAILS.

WIRING INSTALLATION

1.

DO NOT USE WIRE SMALLER THAN NO. 12 AWG FOR ANY POWER OR LIGHTING CIRCUIT. USE LARGER SIZES WHERE INDICATED, AS REQUIRED BY CODES, AND AS FOLLOWS:

30 AMPERE CIRCUIT: NO. 10

40 AMPERE CIRCUIT: NO. 8

50 AMPERE CIRCUIT: NO. 6

60 AMPERE CIRCUIT: NO. 6

A.

MINIMUM HOMERUN AND BRANCH CIRCUIT WIRING SIZES AND MAXIMUM HOMERUN CONDUIT FILL FOR 120 VOLT, 20 AMPERE CIRCUITS SHALL BE AS FOLLOWS:

LENGTH	CIRCUIT WIRE SIZE	HOMERUN WIRE SIZE	CONDUIT SIZE (8 WIRES/CONDUIT)
0' - 50'	#12	#12	3/4"
51' - 100'	#12	#10	3/4"
101' - 200'	#10	#8	1"

GREATER THAN 200' - REQUEST DIRECTION FROM ARCHITECT.

NOTE: PROVIDE DERATING PER CODE WHEN INSTALLING MORE THAN 3 CURRENT CARRYING CONDUCTORS IN A SINGLE CONDUIT.

GREATER THAN 200' - REQUEST DIRECTION FROM ARCHITECT.

NOTE: PROVIDE DERATING PER CODE WHEN INSTALLING MORE THAN 3 CURRENT CARRYING CONDUCTORS IN A SINGLE CONDUIT.

2.

DO NOT USE WIRE SMALLER THAN NO. 14 AWG FOR CONTROL CIRCUITS UNLESS OTHERWISE RECOMMENDED BY THE EQUIPMENT OR SYSTEMS MANUFACTURER ON WIRING SHOP DRAWINGS, AND SO APPROVED BY THE ENGINEER.

3.

WHERE GREATER THAN THREE (3) CURRENT CARRYING CONDUCTORS ARE INSTALLED IN ANY ONE CONDUIT OR CABLE, CONDUCTORS MUST BE DERATED AND SIZES INCREASED, IF NEEDED, TO ACCOMMODATE CONDUITORS DERATING AS REQUIRED BY NEC ARTICLE 310.

4.

CONDUCTORS SHALL BE COMPLETELY INSTALLED AND CONNECTED. PROVIDE ALL TERMINALS, LUGS, AND CONNECTORS TO SUIT THE APPLICATION, AND IN COMPLIANCE WITH EQUIPMENT MANUFACTURERS' RECOMMENDATIONS.

5.

UNDER NO CIRCUMSTANCES SHALL ANY SWITCH OR CIRCUIT BREAKER BREAK A NEUTRAL CONDUCTOR.

6.

THE CIRCUIT NUMBERS INDICATED ON THE DRAWINGS ARE INTENDED AS A GUIDE FOR PROPER CONNECTION OF CIRCUITS AT PANELS. HOWEVER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THE FINAL CUTTING WORK FULFILLS THE FOLLOWING CONDITIONS:

A.

LOADS ON PANEL BUSES SHALL BE PHASE BALANCED AS EVENLY AS POSSIBLE.

GROUNDING INSTALLATION

1.

EQUIPMENT GROUNDING

A.

INSTALL AN INSULATED GROUND CONDUCTOR, RUN IN THE RACEWAY WITH THE PHASE CONDUCTORS, FOR EACH FEEDER SERVING: PANELBOARDS, LIGHTING DIMMER PANELS, MOTOR CONTROL CENTERS, MOTORS, EQUIPMENT AND APPLIANCES UNLESS OTHERWISE NOTED.

B.

INCLUDE AN INSULATED GROUND CONDUCTOR IN ALL CONDUIT RUNS CONTAINING SECTIONS OF FLEXIBLE CONDUIT UNLESS OTHERWISE NOTED.

C.

INCLUDE AN INSULATED GROUND CONDUCTOR IN ALL BRANCH CIRCUIT RACEWAYS OR CABLES UNLESS OTHERWISE NOTED.

2.

TELECOMMUNICATIONS CLOSET GROUNDING

A.

PROVIDE A #4 AWG GROUND CONDUCTOR RISER IN 1" EMT CONDUIT TO EACH TELECOMMUNICATIONS CLOSET GROUNDING BUSBAR (TGB) FROM THE TELECOMMUNICATIONS MAIN GROUNDING BUSBAR (TMGB), AND TO MAIN SERVICE GROUNDING ELECTRODE SYSTEM.

B.

CONNECT THE GROUND RISER TO THE "TMGB" AND "TGB" PER TIA/EIA STANDARDS 607.

C.

PROVIDE ADDITIONAL #4 AWG GROUND CABLE CONNECTIONS FROM EACH "TMGB" AND "TGB" TO THE CLOSEST BUILDING STEEL AND TO THE GROUND BUS IN THE ELECTRIC PANEL. FEEDING CABLES AND EQUIPMENT IN THE ASSOCIATED TELECOMMUNICATIONS ROOM/CLOSET.

3.

GROUND EACH TELECOMMUNICATIONS, FIRE ALARM, SECURITY, AND BMS SYSTEM EQUIPMENT AND CONTROL PANEL WITHIN EACH TELECOMMUNICATIONS ROOM/CLOSET TO THE ASSOCIATED CLOSET "TMGB" OR "TGB" WITH #4 AWG CONDUCTOR PER TIA/EIA STANDARD 607.

RACEWAYS FOR TELECOMMUNICATION SYSTEMS

1.

PROVIDE EMPTY CONDUIT SYSTEMS FOR TELECOMMUNICATION WORK, COMPLETE WITH PULL BOXES, OUTLET BOXES, AND CONDUIT AS INDICATED ON THE DRAWINGS.

2.

PROVIDE MINIMUM INSIDE BENDING RADIUS OF 10 TIMES CONDUIT INSIDE DIAMETER FOR ALL TELECOMMUNICATIONS RACEWAYS.

3.

WHEN COMPLETED THE CONDUIT SYSTEMS SHALL BE READY FOR INSTALLATION OF WIRING AND EQUIPMENT.

4.

FOR EACH OUTLET PROVIDE A 1" EMPTY EMT CONDUIT ROUTED INTO THE CEILING CAVITY OR TO THE CLOSEST TELECOMMUNICATIONS CLOSET. PROVIDE A PULL STRING IN EACH CONDUIT RUN AND TERMINATE BEYOND THE BUSHED ELBOW.

MECHANICAL EQUIPMENT WIRING

1.

UNLESS OTHERWISE INDICATED OR SPECIFIED HEREIN, ALL MOTORS, MOTOR STARTERS, MOTOR CONTROLLERS, VARIABLE SPEED/FREQUENCY DRIVES, AND ASSOCIATED CONTROL DEVICES ARE FURNISHED AND INSTALLED UNDER THIS DIVISION. COORDINATE INSTALLATION AND LOCATIONS WITH OTHER DIVISION CONTRACTORS.

2.

POWER WIRING FROM THE INDICATED SOURCE TO THE STARTER/CONTROLLER/DRIVE UNIT, AND FROM THE STARTER/CONTROLLER/DRIVE UNIT TO THE MOTOR, INCLUDING ANY LOCAL DISCONNECT SWITCHES PROVIDED AND INSTALLED BY THIS DIVISION, AND ALL ASSOCIATED LUGS, TERMINALS, AND CONNECTIONS, ARE THE WORK OF THIS DIVISION.

3.

CONTROL CIRCUIT WIRING IS GENERALLY FURNISHED AND INSTALLED UNDER OTHER DIVISIONS. EXCEPT THAT ANY SUCH WIRING SHOWN ON ELECTRICAL DRAWINGS IS WORK OF THIS DIVISION.

4.

PROVIDE 120 VOLT POWER TO ALL TEMPERATURE CONTROL PANELS (TOP'S) SUPPLIED AND INSTALLED BY MECHANICAL CONTRACTOR. USE EMERGENCY POWER SOURCES WHEN AVAILABLE. COORDINATE ALL POWER REQUIREMENTS AND PANEL LOCATIONS WITH TEMPERATURE CONTROLS CONTRACTOR.

5.

COOPERATE AND COORDINATE WITH OTHER TRADES IN THE INSTALLATION, CONNECTION, AND TESTING OF MECHANICAL EQUIPMENT. PERFORM WORK OF THIS SECTION IN ACCORDANCE WITH EQUIPMENT MANUFACTURERS' INSTRUCTIONS.

COORDINATION DRAWINGS

1.

DEVELOP AND SUBMIT COORDINATION DRAWINGS AS OUTLINED.

A.

SHEET METAL, PLUMBING AND FIRE PROTECTION SHOP DRAWINGS THAT HAVE BEEN COORDINATED WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO ENGINEER FOR REVIEW. DRAWINGS MUST BE RETURNED FROM ENGINEER EITHER "REVIEWED" OR "TURNED AS CORRECTED" PRIOR TO BEING USED AS BASIS FOR COORDINATION DRAWINGS.

B.

AFTER SHEET METAL, AND PIPING DRAWINGS HAVE BEEN REVISED PER ENGINEERS COMMENTS, REPRODUCIBLE COPIES SHALL BE SENT TO THE TRADES IN THE FOLLOWING SEQUENCE FOR INCLUSION OF THEIR WORK:

- MECHANICAL SHEET METAL

- PLUMBING PIPING

- MECHANICAL PIPING

- SPRINKLER PIPING

- ELECTRICAL WORK

2.

AFTER ALL TRADES HAVE INCLUDED THEIR WORK ON THE COORDINATION DRAWING AND NOTED CONFLICTS, ALL TRADES SHALL MEET TO RESOLVE CONFLICTS AND AGREE TO ACCEPTABLE SOLUTIONS. EACH TRADE SHALL SIGN COORDINATION DRAWINGS. ITEMS NOT SHOWN ON COORDINATION DRAWINGS IS RESPONSIBILITY OF OMITTING CONTRACTOR AND CONTRACTOR IS SUBJECT TO ADDITIONAL COSTS INCURRED BY OTHER TRADES.

3.

THE ARCHITECT AND ENGINEER ARE NOT PART OF THE COORDINATION DRAWING PROCESS. THE ENGINEER WILL PROVIDE ASSISTANCE FOR NOTED CONFLICTS ONLY. COODINATION DRAWINGS ARE NOT BE CONSIDERED PIPING OR DUCT SHOP DRAWINGS. THE CONTRACTOR IS REQUIRED TO SUBMIT INDIVIDUAL PIPING AND DUCTWORK SHOP DRAWINGS FOR REVIEW BY THE ENGINEER. PIPING AND DUCTWORK SHOP DRAWINGS SHALL FOLLOW THE DESIGN INTENT OF THE CONTRACT DOCUMENTS.

4.

SUBMIT FINAL SIGNED COORDINATION DRAWING TO ENGINEER FOR REVIEW. ENGINEER WILL REVIEW COORDINATION DRAWINGS FOR GENERAL ARRANGEMENT AND FOR NOTED CONFLICTS ONLY. SPECIFIC INSTALLATION REQUIREMENTS WILL BE REVIEWED ONLY IN INDIVIDUAL TRADE SHOP DRAWINGS.

5.

ANY WORK FABRICATED OR INSTALLED PRIOR TO SIGN OFF BY ALL TRADES WHICH IS DEEMED TO BE IN CONFLICT WITH COORDINATION DRAWINGS SHALL BE REMOVED AND RE-INSTALLED IN CONFORMANCE WITH COORDINATION DRAWINGS AT NO ADDITIONAL COST TO THE OWNER.

6.

EACH CONTRACTOR (MENTIONED ABOVE) ARE RESPONSIBLE FOR COORDINATION OF THEIR SUB-CONTRACTORS.

7.

THE OVERALL COORDINATION OF THE COORDINATION PROCESS IS THE RESPONSIBILITY OF THE CONTRACTOR. THE ENGINEER IS NOT RESPONSIBLE FOR THE COORDINATION PROCESS. THE ENGINEER WILL RESPOND TO QUESTIONS THAT ARISE FROM THE COORDINATION PROCESS. DRAWINGS SUBMITTED WILL BE REVIEWED FOR CLEARLY IDENTIFIED CONFLICTS ONLY. SOLUTIONS TO CONFLICTS WILL NOT BEAR ADDITIONAL COST.

AS-BUILT DRAWINGS

1.

PROVIDE COMPLETE SET OF AS-BUILT DRAWINGS REFLECTING AS INSTALLED CONDITIONS. AS-BUILT DRAWINGS SHALL INDICATE ALL INSTALLED CONDITIONS OF SYSTEMS WITHIN THIS DISCIPLINE. DRAWINGS SHALL BE SIMILAR SCALE AS THE CONSTRUCTION DOCUMENTS AND INCLUDE DETAILS AS NECESSARY TO CLEARLY REFLECT THE INSTALLED CONDITION. DRAWINGS SHALL BE BOUND IN A COMPLETE AND CONSECUTIVE SET. SUPPLEMENTAL SKETCHES AND LOOSE PAPERWORK WILL NOT BE ACCEPTABLE AND WILL BE RETURNED FOR REVISION. THE CONTRACTOR SHALL COMPLY WITH THE ENGINEERS COMMENTS TO PRODUCE A CLEAR AND CONCISE SET OF DRAWINGS. DRAWINGS SHALL BE SUBMITTED IN BOTH HARD COPY AND ELECTRONICALLY (AUTOCAD) VERSION AS REQUIRED BY OWNER) VERSION. NUMBER OF COPIES OF EACH AS REQUESTED BY THE OWNER.

2.

PROVIDE "AS-BUILT DRAWINGS" INDICATING IN A NEAT AND ACCURATE MANNER A COMPLETE RECORD OF ALL REVISIONS TO THE ORIGINAL DESIGN OF THE WORK. INDICATE THE FOLLOWING INSTALLED CONDITIONS:

A.

INCLUDE ALL CHANGES AND AN ACCURATE RECORD, ON REPRODUCTIONS OF THE CONTRACT DRAWINGS OR APPROPRIATE SHOP DRAWING.

B.

DRAWINGS, OF ALL DEVIATIONS, BETWEEN THE WORK SHOWN AND THE WORK INSTALLED.

C.

EQUIPMENT LOCATIONS (EXPOSED AND CONCEALED), DIMENSIONED FROM PROMINENT BUILDING LINES.

D.

APPROVED SUBSTITUTIONS, CONTRACT MODIFICATIONS, AND ACTUAL EQUIPMENT AND MATERIALS INSTALLED.

E.

































CONTRACT MODIFICATIONS, ACTUAL EQUIPMENT AND MATERIALS INSTALLED.

F.

SUBMIT FOR REVIEW BOUND SETS OF THE REQUIRED DRAWINGS, MANUALS AND OPERATING INSTRUCTIONS.

G.

SUBMIT A COMPLETE MAINTENANCE MANUAL OF ALL EQUIPMENT INSTALLED UNDER THIS CONTRACT.

ELECTRICAL LEGEND	
	ELECTRICAL PANELBOARD RATED FOR 120/208V-3PHASE
	NON-FUSED DISCONNECT SWITCH.
	FUSED DISCONNECT SWITCH.
	WALL MOUNT 4' X 4' ELECTRIC J-BOX
	4' X 4' ELECTRIC J-BOX
	2'X2' RECESSED LUMINAIRE
	WRAPAROUND LED LUMINAIRE. (REFER TO LIGHT FIXTURE SCHEDULE FOR LENGTH)
	WALL MOUNTED LED LUMINAIRE
	RECESSED DOWNLIGHT
	CEILING MOUNTED EXIT SIGN. SHADING INDICATES DIRECTION OF FIXTURE FACE.
	CEILING MOUNTED EXIT SIGN. SHADING INDICATES DIRECTION OF FIXTURE FACE. ARROW INDICATES DIRECTION OF CHEVRON.
	SINGLE-POLE SWITCH; MOUNT AT 48" AFF.
	3-WAY SWITCH; MOUNT AT 48" AFF.
	4-WAY SWITCH; MOUNT AT 48" AFF.
	SINGLE-POLE, MOTION SENSOR SWITCH; MOUNT AT 48" AFF.
	DIMMING LIGHT SWITCH.
	SINGLE-POLE, PILOT SWITCH; MOUNT AT 48" AFF.
	CEILING MOUNTED OCCUPANCY SENSOR.
	TOGGLE SWITCH WITH THERMAL OVERLOAD PROTECTION.
	DUPLEX RECEPTACLE; MOUNTED ABOVE COUNTER 42" A.F.F. OR 48" A.F.F. (IN TOILET).
	DUPLEX GROUND FAULT RECEPTACLE; MOUNTED ABOVE COUNTER 42" A.F.F. OR 48" A.F.F. (IN TOILET).
	DUPLEX RECEPTACLE; MOUNT AT 18" AFF UNLESS OTHERWISE SPECIFIED.
	QUAD RECEPTACLE; MOUNTED ABOVE COUNTER 42" A.F.F.
	QUAD RECEPTACLE; MOUNT AT 18" AFF UNLESS OTHERWISE SPECIFIED.
	NEMA POWER RECEPTACLE; MOUNT AT 18" AFF UNLESS OTHERWISE SPECIFIED.
	VOICEDATA OUTLET, 4" X 4" OUTLET BOX WITH A 1 GANG COVER 18 INCHES ABOVE FINISHED FLOOR OR AS NOTED WITH 3/4" CONDUIT TO 1' ABOVE ACCESSIBLE CEILING AND TWO CAT 6 CABLES V:X/D:X = NUMBER OF VOICE/DATS PORTS.
	FLUSH OUTLET BOX FOR WALL-MOUNTED TELEPHONE
	CALL-FOR-AND SWITCH; MOUNT AT 48" AFF WITH CORD EXTENDING TO WITHIN 12" OF FLOOR
	CALL-FOR-AND CORRIDOR LIGHT/BUZZER.
	BRANCH CIRCUIT HOMERUN.
	CONDUIT AND WIRE.
	CONDUIT AND WIRE, SWITCHED.
ABBREVIATION	
AF	ABOVE FINISHED FLOOR
C	CEILING MOUNTED
DM	DRYER MACHINE
G	GROUND FAULT INTERRUPTER
REF	REFRIGERATOR
MW	MICROWAVE
WP	WEATHERPROOF
WM	WASHER MACHINE
W	WALL MOUNTED

Project Title:

NEW ANIMAL FACILITY AT:
MONTVILLE ANIMAL SHELTER
225 Maple Ave. Parcel ID: 077-041-000
Montville, CT



SILVER PETRUCCELLI + ASSOCIATES
3190 WHITNEY AVENUE HAMDEN CT 06518
311 STATE STREET NEW LONDON CT 06320
203 230 9007 silverpetrucci.com

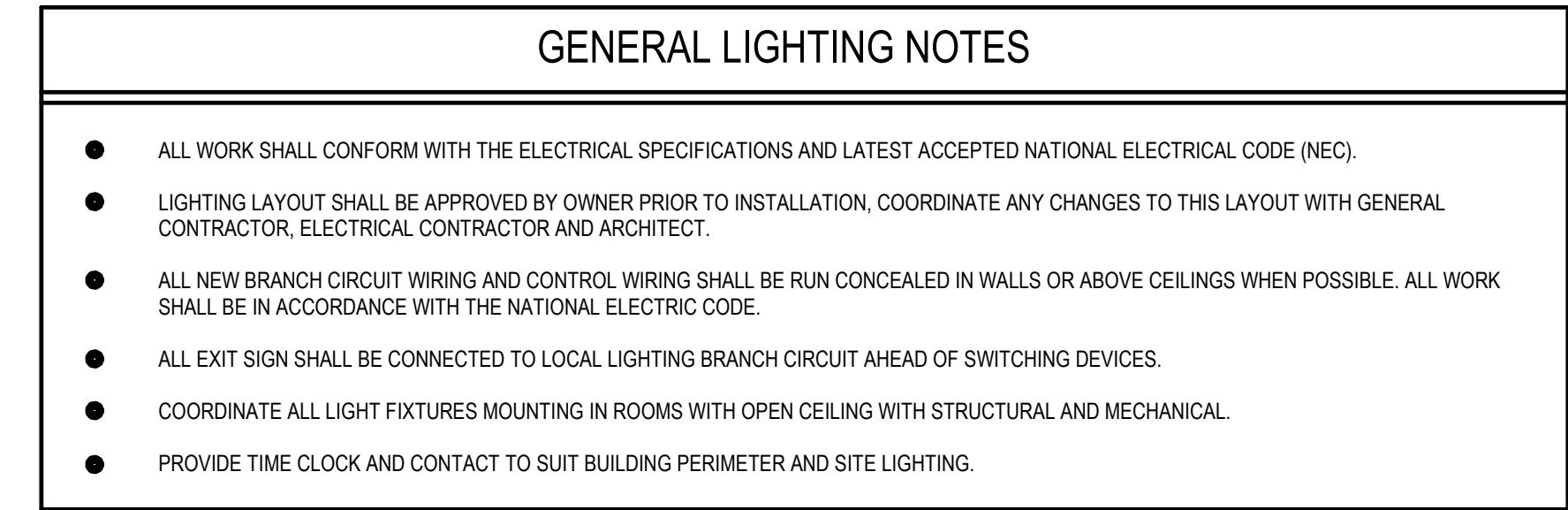
Revision:	Description:	Date:	Revised By:
	ISSUED FOR BID	09/27/2024	

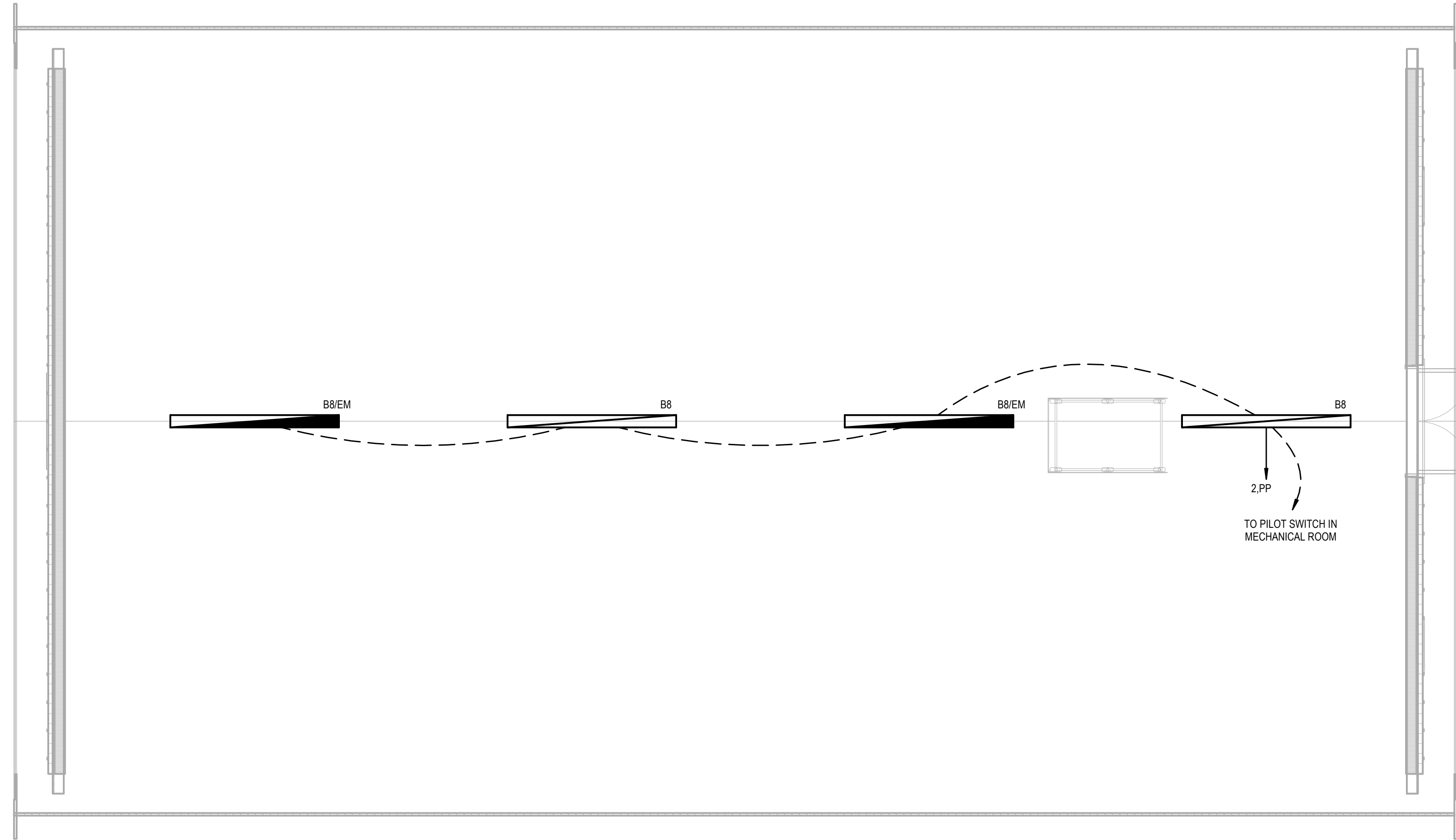
Drawing Title:

ELECTRICAL GENERAL NOTES AND
LEGEND

Date: 09/27/2024
Scale:
AS NOTED
Drawn By: JRP
Project Number: 22.130
Drawing Number:

E001





1 ELECTRICAL ATTIC LIGHTING PLAN

1/4" = 1'-0"



Revision:	Description:	Date:	Revised By:
	ISSUED FOR BID	09/27/2024	