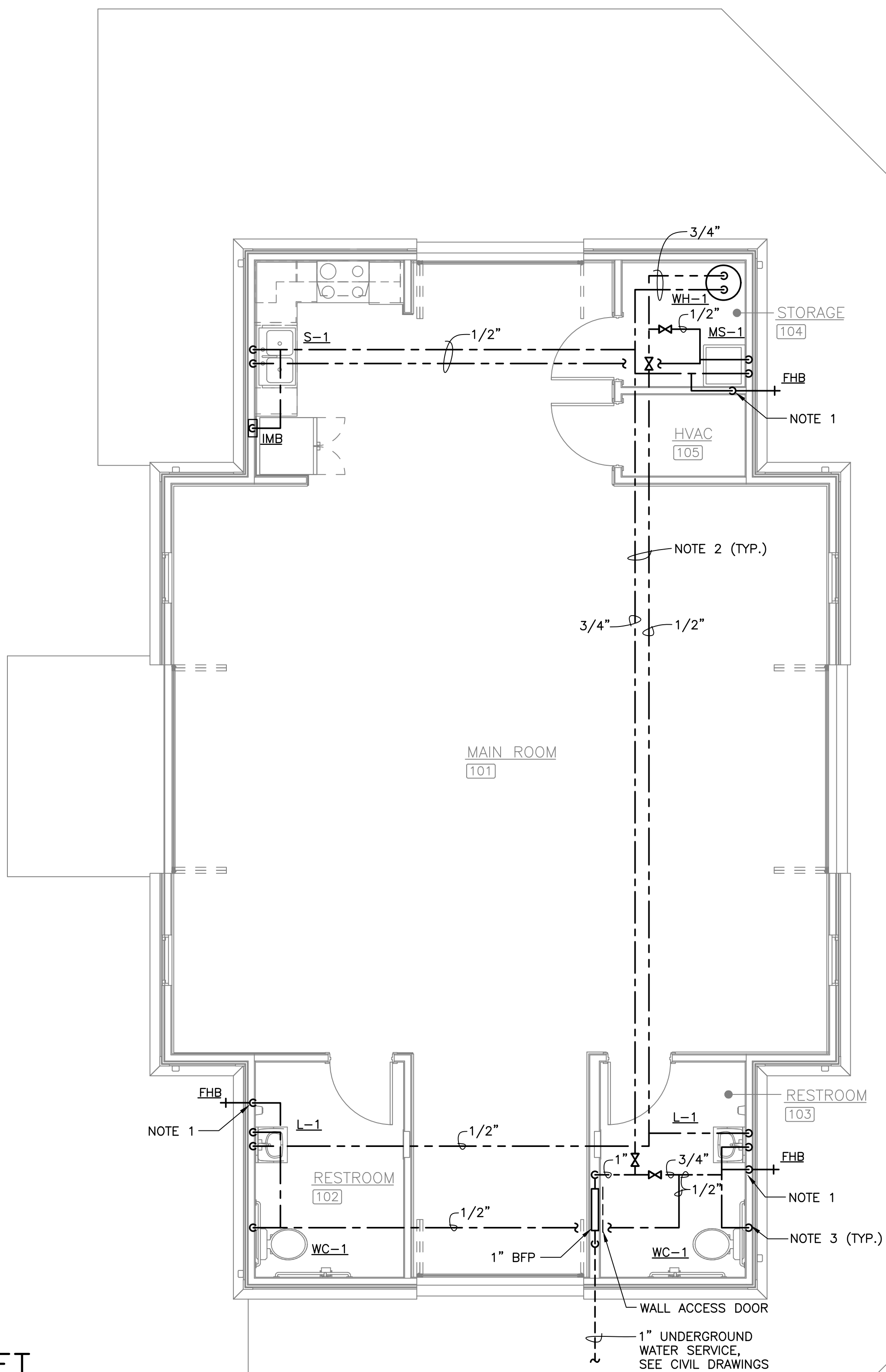


**FLOOR PLAN – SANITARY**  
SCALE: 1/4" = 1'-0"

**NOTES THIS SHEET**

1. PROVIDE SHUTOFF VALVE AND WALL ACCESS DOOR FOR FHB.
2. ROUTE WATER PIPING BELOW ATTIC INSULATION.
3. ROUTE WATER PIPING TIGHT TO INTERIOR SIDE OF WALL WITH INSULATION BETWEEN PIPE AND EXTERIOR.



**FLOOR PLAN – WATER**  
SCALE: 1/4" = 1'-0"

DATE: SEPT. 5, 2025

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Clubhouse  
241 Springbeauty Street

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CHECKED BY: JMM

**FLOOR PLANS - PLUMBING**

**MANN & ASSOCIATES, INC.**  
306 Market Street  
Roanoke, VA 24011  
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COMMONWEALTH OF VIRGINIA  
JOHN M. MANN  
Lic. No. 21023  
9-5-25  
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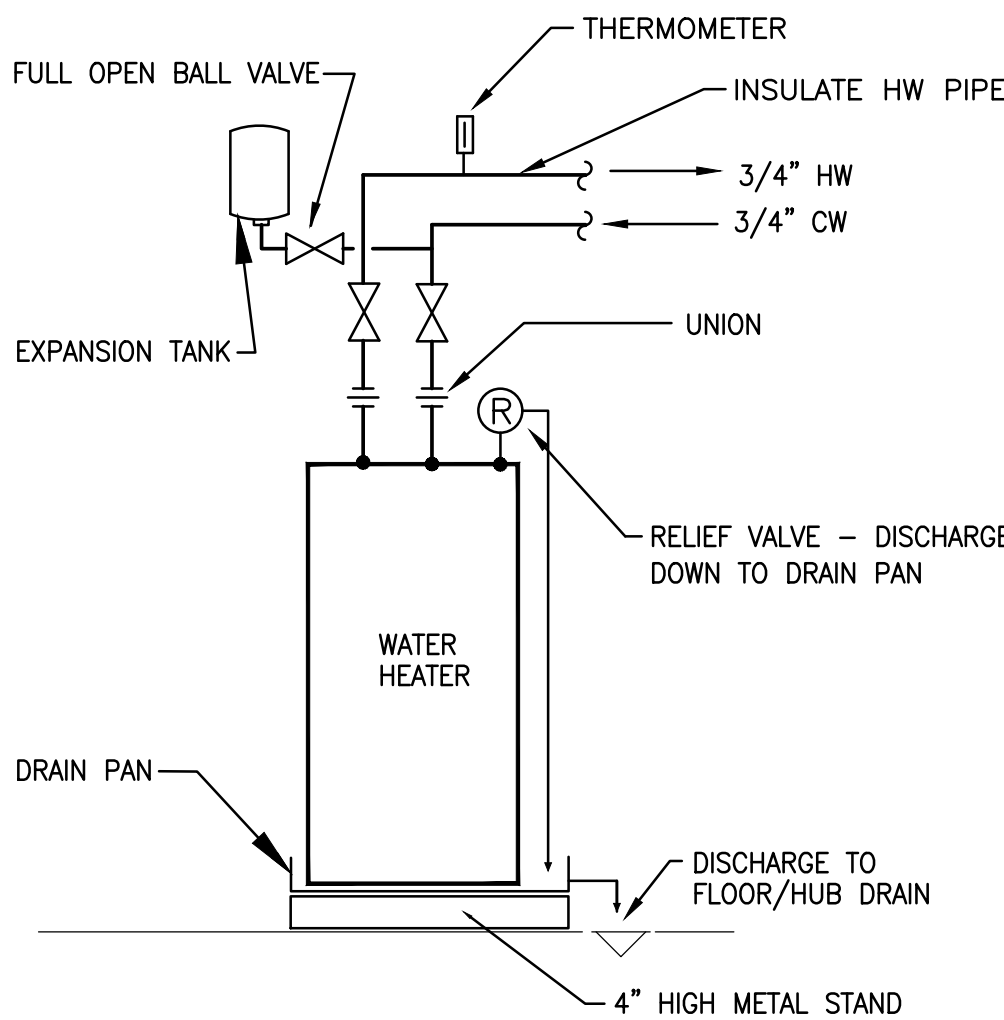
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PLUMBING FIXTURE SCHEDULE (PRIOR TO ORDERING FIXTURES, SUBMIT SHOP DRAWINGS TO OWNER FOR REVIEW AND APPROVAL)										
MARK	DESCRIPTION	FIXTURE WASTE	VENT	C.W.	H.W.	MANUFACTURER	MODEL	CATALOG NO.	REMARKS	MTG HGT
WC-1	WATER CLOSET, TANK -ACCESSIBLE	4"	2"	1/2"	---	AMERICAN STANDARD	CHAMPION PRO	211AA.004 (LH) 211AA.005 (RH)	ELONGATED FRONT, 1.6 GPF, PROVIDE CHURCH SEAT, MODEL 295CT. PROVIDE ANGLE SUPPLY & STOP. PROVIDE TRIP LEVER TO THE WIDE SIDE OF STALL.	16-1/2" RIM 17"-19" SEAT
L-1	WALL LAVATORY-ACCESSIBLE	1-1/2"	1-1/4"	1/2"	1/2"	AMERICAN STANDARD	LUCERNE	0355.012	WALL LAVATORY, TOTO ECOPOWER TEL105-D10E SENSOR FAUCET, THERMOSTATIC MIXING VALVE, 0.5 GPM AERATOR, OFFSET GRID DRAIN STRAINER, TRUBRO MODEL #102-Z WASTE & WATER PIPE INSULATION. ANGLE SUPPLIES & STOPS, SEE FIXTURE SCHEDULE NOTE 1. PROVIDE FLOOR MOUNTED, CONCEALED ARM CARRIER.	34" TO RIM
S-1	UNDERMOUNT, DOUBLE BOWL ADA PARALLEL APPROACH	1-1/2"	1-1/4"	1/2"	1/2"	ELKAY	LUSTERTONE	ELUH3116	UNDERMOUNT SINK, TO FIT IN 24" DEEP COUNTERTOP. ELKAY FAUCET LKHA1041, SINGLE-HOLE WITH SINGLE HAND LEVER AND PULL-DOWN SPRAY, BASKET STRAINER, SUPPLIES & STOPS.	COUNTER TOP MOUNTED
MS-1	MOP SINK	3"	2"	1/2"	1/2"	FLORESTONE	MOP RECEPTOR	MSR-2424	FLORESTONE FAUCET #MR-371, HOSE & MOP HANGER. PROVIDE STAINLESS STEEL OR FRP WALL GUARDS TO PROTECT ADJACENT WALL SURFACES.	FLOOR MOUNTED
IMB	ICE MAKER BOX	---	---	1/2"	---	WATER-TITE	---	AB9700HA	PROVIDE WITH QUARTER TURN SUPPLY VALVE AND WATER HAMMER ARRESTER, FLANGED BOX FOR DRYWALL INSTALLATION.	24"
FD	FLOOR DRAIN	2"	---	---	---	JAY R. SMITH	---	2005	PROVIDE WITH ROUND BRONZE TOP. PROVIDE SURE SEAL TRAP SEAL.	---
CO	CLEANOUT (FLOOR)	4"	---	---	---	JAY R. SMITH	---	4020	PROVIDE WITH ROUND NICKEL BRONZE TOP.	---
FHB	FREEZEPROOF HOSE BIBB	---	---	3/4"	---	WOODFORD	---	MODEL 65	ANTI-SIPHON, AUTOMATIC DRAINING FREEZELESS WALL HYDRANT, BRASS FINISH WITH VACUUM BREAKER. SIZE EXTENSION TO WALL THICKNESS.	24"

FIXTURE SCHEDULE NOTES: 1. PROVIDE THERMOSTATIC MIXING VALVE SET AT 109°F MAX., ZURN MODEL ZW3870X70XLT, ASSE 1070. MOUNTED BELOW FIXTURE. MOUNT HIGH UNDER LAVATORY OR SINK TO CONCEAL FROM VIEW.  
2. SINK AND LAVATORY FAUCETS TO HAVE SATIN NICKEL FINISH.

PLUMBING LEGEND	
SYMBOL	DESCRIPTION
----	DOMESTIC COLD WATER PIPING
-----	DOMESTIC HOT WATER PIPING
-----	SANITARY PIPING
-----	VENT PIPING
⌒	PIPE TURN DOWN
⌒	PIPE TURN UP
⌒	ISOLATION VALVE
● CO	FLOOR CLEANOUT
FD	FLOOR DRAIN
W	SANITARY WASTE PIPING
V	SANITARY VENT PIPING
VTR	VENT THRU ROOF
CW	COLD WATER
HW	HOT WATER



**WATER HEATER DETAIL**  
NO SCALE

### PLUMBING EQUIPMENT NOTES

WH-1: COMMERCIAL ELECTRIC WATER HEATER, 40 GALLONS, 4.5 KW, 240 VOLTS, SINGLE PHASE. EQUAL TO STATE PATRIOT MODEL PCE-40-20RTA, 0.95 EF, WITH HEAT TRAP FITTINGS. PROVIDE T&P RELIEF, THERMAL EXPANSION TANK, HOT & COLD SHUTOFF VALVES. PROVIDE DRAIN PAN WITH DRAIN OUTLET.

BFP: BACKFLOW PREVENTER, BRONZE DOUBLE CHECK VALVE ASSEMBLY, 1" SIZE, ASSE 1015, WATTS MODEL LF007-QT-S WITH FULL PORT, QUARTER TURN ISOLATION BALL VALVES AND BRONZE STRAINER. INSTALL IN ACCESSIBLE LOCATION TO ALLOW INSPECTION.

PRV: CONFIRM STREET PRESSURE AND PROVIDE PRESSURE REDUCING VALVE IF ABOVE 75 PSI. PRESSURE REDUCING VALVE, 1" SIZE, WATTS MODEL 25 AUB-23 SET AT 60 PSI DISCHARGE. PROVIDE BYPASS VALVES AND COORDINATE INSTALLATION WITH BFP.

GREASE INTERCEPTOR: EQUAL TO MODEL GB3 AS MANUFACTURED BY SCHIER, SEAMLESS POLYETHYLENE FOR BELOW GRADE INSTALLATION. PROVIDE WITH WATER-TIGHT, HEAVY DUTY REMOVABLE TOP, 450 LB. RATED. FLOW RATE OF 50 GPM AND GREASE CAPACITY OF 270LB. INTEGRAL FLOW CONTROL VALVE AND VENT. GREASE INTERCEPTOR SHALL CONFORM TO GREASE INTERCEPTOR STANDARD PDI-G101 AND ASME A112.14.3. INSTALL BELOW GRADE WITH EXTENSION RISER AS REQUIRED. TOP OF INTERCEPTOR TO BE FLUSH WITH GRADE.

### PLUMBING OUTLINE SPECIFICATIONS

- ALL WORK SHALL COMPLY WITH THE 2021 VIRGINIA UNIFORM STATEWIDE BUILDING CODE.
- ALL DOMESTIC WATER SYSTEM COMPONENTS, PIPING, FITTINGS, SOLDER, VALVES, FAUCETS, AND MATERIALS IN CONTACT WITH DRINKING WATER SHALL BE CERTIFIED LEAD-FREE TO MEET NSF/ANSI STANDARD 61/372 CONTAINING LESS THAN 0.25% LEAD BY WEIGHT.
- PROVIDE COMPLETE SUBMITTAL INFORMATION FOR FIXTURES, EQUIPMENT AND DEVICES.
- RECORD ALL CHANGES IN THE WORK ON THE PROJECT RECORD DRAWINGS.
- PROVIDE DETAILED OPERATION AND MAINTENANCE MANUALS FOR ALL EQUIPMENT.
- PLUMBING EQUIPMENT, MATERIALS AND LABOR SHALL INCLUDE A ONE YEAR WARRANTY.
- DRAWINGS INDICATE GENERAL LAYOUT OF PIPING AND EQUIPMENT. COORDINATE INSTALLATION WITH OTHER TRADES AND PROVIDE ADDITIONAL FITTINGS, OFFSETS AND TRANSITIONS AS REQUIRED. SEE ARCHITECTURAL DRAWINGS FOR CRITICAL INSTALLATION DIMENSIONS.
- VERIFY SITE CONDITIONS INCLUDING LOCATION FOR CONNECTIONS OF WATER AND SANITARY WASTE PIPING.
- CONFIRM LOCATION OF ELECTRICAL PANELBOARDS. PIPING SHALL NOT BE INSTALLED ABOVE ELECTRICAL PANELBOARDS.
- COORDINATE ALL WORK WITH FIRE RATED ASSEMBLIES. PROVIDE FIRESTOPPING AT PENETRATIONS OF RATED ASSEMBLIES AND AT FLOORS. SEAL AIRTIGHT ALL PIPE AND DUCT PENETRATIONS OF NON-RATED ASSEMBLIES. ALL MATERIALS LOCATED IN RETURN AIR PLENUMS SHALL BE LISTED FOR INSTALLATION IN PLENUMS.
- COORDINATE INSTALLATION OF EQUIPMENT AND OTHER DEVICES TO PROVIDE ACCESS FOR SERVICING.
- PROVIDE ALL MISCELLANEOUS COMPONENTS REQUIRED FOR A COMPLETE AND PROPER INSTALLATION, WHETHER OR NOT THESE COMPONENTS ARE SPECIFIED HEREIN.
- MOUNT ALL EQUIPMENT PLUMB AND LEVEL WITH SUBSTANTIAL FASTENERS SUITABLE FOR THE LOAD. ALL COMPONENTS SHALL BE RIGIDLY ANCHORED FOR LONG LIFE UNDER HARD USE.
- METAL ACCESS DOORS SHALL BE PROVIDED AS REQUIRED FOR ALL COMPONENTS REQUIRING ACCESS. COORDINATE LOCATIONS WHERE ACCESS DOORS WILL BE REQUIRED FOR CLEANOUTS, VALVES, SHOCK ARRESTORS OR OTHER DEVICES.
- THE DESIGN SHOWN IS BASED ON THE MANUFACTURERS AND MODELS SCHEDULED AND IS INTENDED ONLY TO SHOW THE GENERAL SIZE, CONFIGURATION, LOCATION, CONNECTIONS AND/OR SUPPORT FOR EQUIPMENT OR SYSTEMS SPECIFIED WITH RELATION TO THE OTHER BUILDING SYSTEMS.
- PROVIDE SLEEVES FOR ALL PIPE PENETRATIONS IN MASONRY WALLS AND CONCRETE. ANCHOR SLEEVES TO ADJACENT STRUCTURE. SLEEVE ALL PIPES AT FOOTINGS AND FOUNDATION WALLS.
- INSTALL PIPING AND PIPE HANGERS PER ASME B31.9. SUPPORT PIPING AND SPACE HANGERS IN ACCORDANCE WITH VIRGINIA PLUMBING CODE, TABLE 308.5.
- WATER PIPING, BURIED WITHIN 5 FEET OF BUILDING: COPPER, TYPE K, HARD DRAWN, ASTM B42, SOLDER FITTINGS, ASME B16.18 OR B16.22. FLUSH CLEAN AND DISINFECT.
- WATER PIPING, ABOVE GROUND: COPPER, TYPE L, ASTM B 88M, SOLDER FITTINGS. FLUSH CLEAN AND DISINFECT. ROUTE WATER PIPING TO PREVENT FREEZING, WITHIN BUILDING INSULATION.
- SANITARY WASTE AND VENT PIPING, BURIED WITHIN 5 FEET OF BUILDING: SCHEDULE 40 DWV PVC. ASTM D2665 OR ASTM D3034 WITH SOLVENT WELDED JOINTS WITH ASTM D2564 SOLVENT CEMENT.
- SANITARY WASTE AND VENT PIPING, ABOVE GROUND: SCHEDULE 40 PVC, DWV, ASTM D2865. FITTINGS SHALL BE PVC WITH SOLVENT WELD JOINTS WITH ASTM D 2564 SOLVENT CEMENT.
- INSTALL CLEANOUTS IN ACCORDANCE WITH VIRGINIA PLUMBING CODE. CLEANOUTS SHALL BE SAME MATERIAL AS DRAIN PIPING. LOCATE AT CHANGES OF DIRECTION GREATER THAN 45 DEGREES IN HORIZONTAL RUNS, AT BASE OF STACKS, AND NEAR THE JUNCTION OF THE BUILDING DRAIN AND THE BUILDING SEWER.
- ISOLATION VALVES FOR WATER PIPING SHALL BE QUARTER TURN BALL VALVES, MSS SP-110, CLASS 150 WITH LEVER HANDLE AND THREADED ENDS. SOLDERED ENDS SHALL NOT BE USED.
- PROVIDE ASSE 1072 SURESEAL TRAP SEALER IN ALL FLOOR DRAINS.
- WATER HAMMER ARRESTERS: ASSE 1010, INSTALLED WHERE INDICATED AND IN LOCATION CONCEALED FROM PUBLIC VIEW. PROVIDE ACCESS TO WATER HAMMER ARRESTER.
- BACKFLOW PREVENTER SHALL BE TESTED BY CERTIFIED TESTER AND RESULTS OF TEST SHALL BE PROVIDED TO THE OWNER AND THE BUILDING OFFICIAL.
- AIR ADMITTANCE VALVES PER ASSE 1051 AND INSTALLED IN AN ACCESSIBLE AND VENTILATED LOCATION FOR PROPER OPERATION. LOCATE A MINIMUM OF 4" ABOVE FIXTURE DRAIN. AAV TO BE UL LISTED WHEN INSTALLED IN A RETURN AIR PLENUM.
- INSULATE ALL WATER PIPING WITH FIBERGLASS PIPE WRAP WITH ALL SERVICE VAPOR BARRIER JACKET. FLAME SPREAD/SMOKE DEVELOPED INDEX OF 25/50 MAXIMUM, K-VALUE OF 0.24. MINIMUM THICKNESS OF 1" THICKNESS FOR HOT WATER AND 1/2" FOR COLD WATER. SEAL COLD WATER PIPE INSULATION WITH VAPOR BARRIER MASTIC. INSULATION SHALL BE CONTINUOUS AT HANGERS. PROVIDE GALVANIZED INSULATION SHIELDS FOR PIPES LARGER THAN 1" DIAMETER.
- PLUMBING FIXTURES SHALL BE WHITE VITREOUS CHINA UNLESS INDICATED OTHERWISE AND SHALL BE IN COMPLIANCE WITH ASME 112.18, ASME A112.19.2 AND ANSI A117.1, AND MEET ADA REQUIREMENTS WHERE REQUIRED. INSTALL PER MANUFACTURER'S INSTRUCTIONS AND CAULK TO WALL AND FLOOR SURFACES WITH COLOR TO MATCH FIXTURE. FURNISH AND INSTALL FIXTURES COMPLETE WITH ALL TRIM INCLUDING SUPPLIES, CHROME ESCUTCHEONS, WASTE AND VENT CONNECTIONS, FITTINGS, CARRIERS, HANGERS AND SUPPORTS, BOLT CAPS, FAUCETS, VALVES AND TRAPS. ALL TRIM SHALL BE BRASS WITH SATIN NICKEL FINISH. TRAPS SHALL BE 17 GAUGE WITH CLEANOUT PLUG.
- WATER SUPPLY TO FIXTURES TO INCLUDE CHROME ESCUTCHEONS, ANGLE SUPPLY VALVE WITH QUARTER TURN HANDLE. FLEXIBLE SUPPLIES TO BE CHROME PLATED COPPER TUBE RISERS OR BRAIDED STAINLESS STEEL.
- PROVIDE CHROME ESCUTCHEONS AT PIPE PENETRATIONS OF WALLS AND FLOORS.
- LABEL WATER PIPES PER ASME A13.1.
- VERIFY AND DEMONSTRATE TO OWNER THE OPERATION OF ALL EQUIPMENT AND CONTROLS.
- PERFORM TESTING OF WATER, SANITARY AND VENT PIPES PER VIRGINIA PLUMBING CODE. DISINFECT WATER PIPING PER LOCAL HEALTH DEPARTMENT REQUIREMENTS. PROVIDE ALL NECESSARY TESTS AND COORDINATE INSPECTIONS AND APPROVAL PER LOCAL REQUIREMENTS.

DATE: SEPT. 5, 2025

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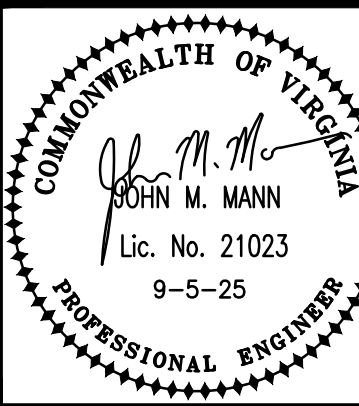
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PLUMBING  
SPECS &  
SCHEDULES

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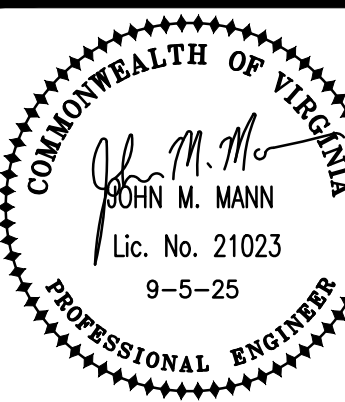
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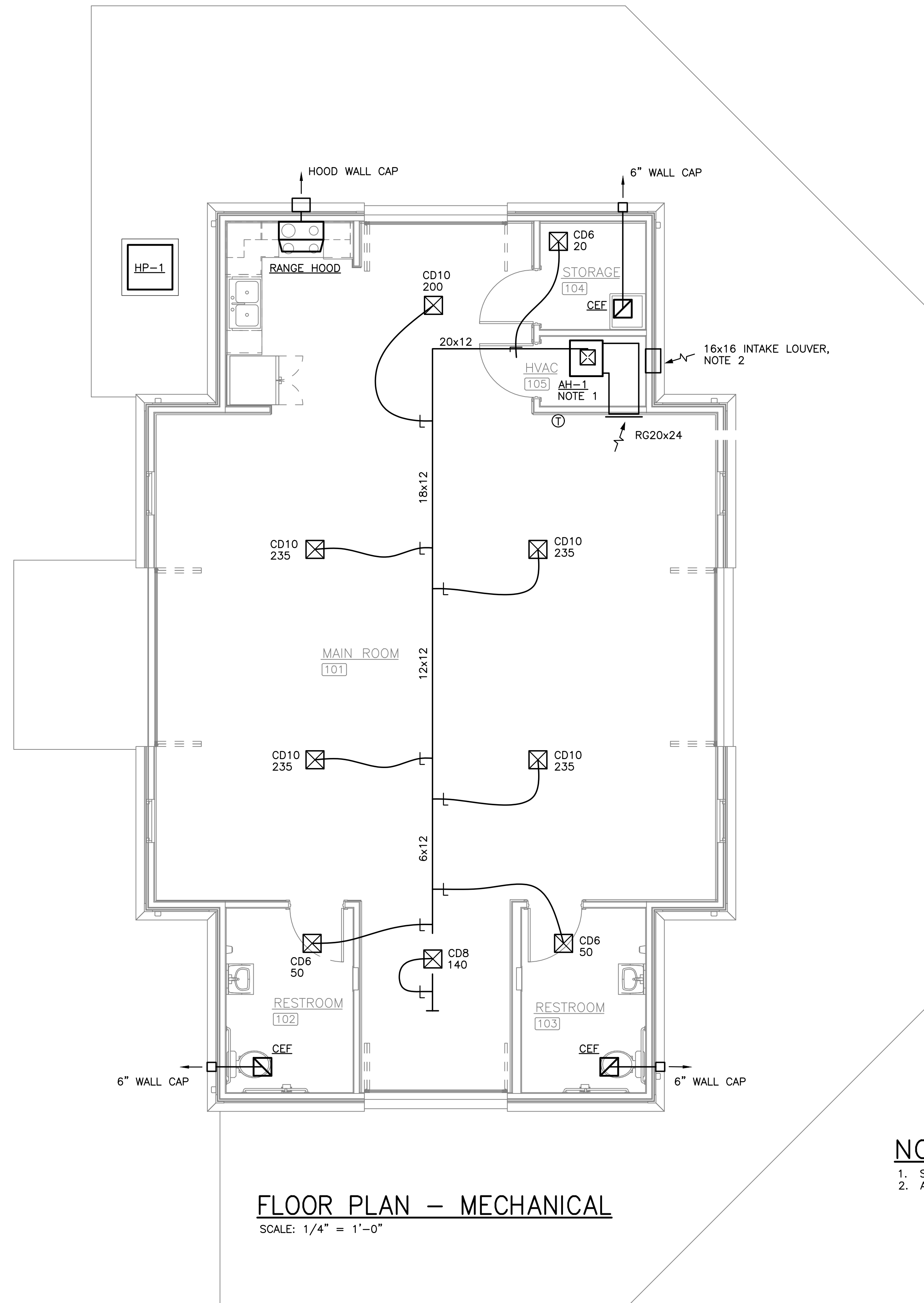
FLOOR PLAN -  
MECHANICAL

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**FLOOR PLAN – MECHANICAL**  
SCALE: 1/4" = 1'-0"

**NOTES THIS SHEET**

1. SEE AIR HANDLER DETAIL ON SHEET M2-1.
2. ALIGN TOP OF LOUVER WITH WINDOW HEAD.

SPLIT–SYSTEM HEAT PUMP SCHEDULE																		
UNIT	SUPPLY FAN				AIR HANDLER ELECTRICAL				COOLING		HEATING		HP ELEC.			SEER2 HSPF2	SELECTION BASED ON CARRER	NOTES
	SUPPLY CFM	MINIMUM OUTSIDE AIR (CFM)	ESP (IN. WATER)	MOTOR HP	VOLTAGE	PHASE	ELEC HEAT (KW AT 240)	HEATER AND FAN MCA/MOP	TOTAL (MBH)	SENSIBLE (MBH)	AT 47F (MBH)	AT 17F (MBH)	VOLTAGE	PHASE	MCA/MOP			
AH–1/HP–1	1400	100/400	0.6	3/4	240	1	15.0	81.0/90	48	36	48	31	240	1	31.4/50	17.0 8.1	AIR HANDLER FT5ANBD60, HEATPUMP 27TPA8–48	1 THRU 10

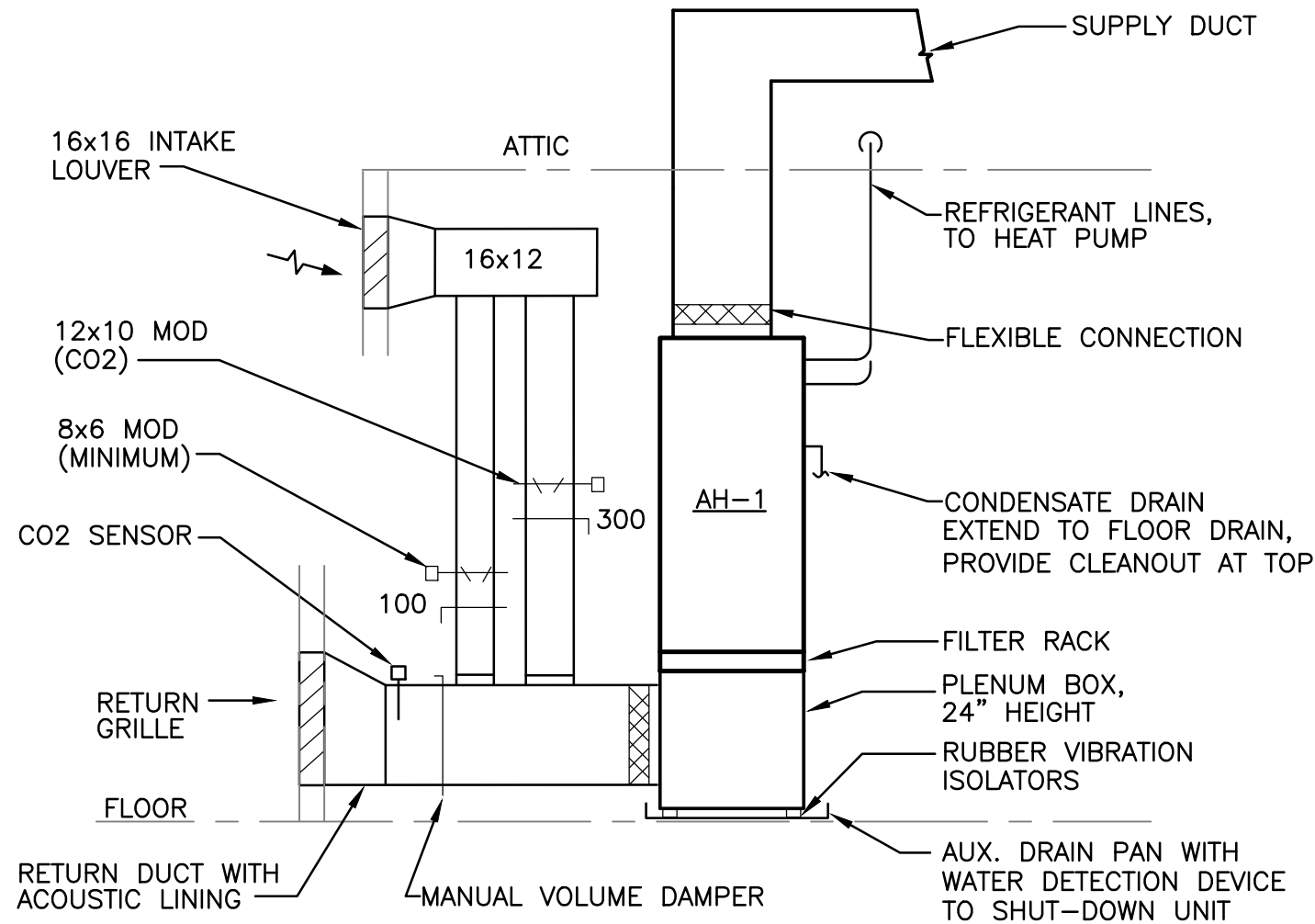
- SCHEDULE NOTES:
- AIR HANDLER--MULTIPOSITION, DIRECT DRIVE ECM CONSTANT AIRFLOW MOTOR, 2--SPEED OPERATION, COPPER TUBES, ALUMINUM FINS. LINEAR EXPANSION VALVE, SLOPED CONDENSATE PAN.
  - HEAT PUMP MATCHED WITH INDOOR COIL, ENERGY STAR, LOCATE UNITS TO NOT EXCEED MANUFACTURER'S MAXIMUM REFRIGERANT LINE LENGTHS.
  - HEATING OPERATION DOWN TO 5F OUTDOOR TEMPERATURE.
  - ROUTE CONDENSATE DRAIN TO FLOOR/HUB DRAIN.
  - UL LISTED ELECTRIC HEATER KIT WITH SINGLE POINT ELECTRICAL CONNECTION TO AIR HANDLER, HIGH LIMIT CONTROLS.
  - THERMOSTAT -- HARD WIRED THERMOSTAT, 7 DAY PROGRAMMABLE HEAT PUMP THERMOSTAT, AUTO CHANGEOVER, ADAPTIVE RECOVERY. PROVIDE LOW VOLTAGE CONTROL WIRING. SUBMIT SAMPLE TO OWNER AND OBTAIN APPROVAL OF THERMOSTAT.
  - PROVIDE CONDENSATE OVERFLOW DETECTION SWITCH IN AUXILIARY DRAIN PAN TO DE--ENERGIZE AIR HANDLER.
  - AIR HANDLERS SHALL BE VERTICAL CONFIGURATION. FILTER RACK WITH HINGED AND GASKETED DOOR FOR PREMANUFACTURED 1" MERV 8 FILTER.
  - PROTECT AIR HANDLER COIL UNTIL FINISHED FLOOR IS INSTALLED.
  - CO2 DEMAND CONTROL VENTILATION: PROVIDE CO2 SENSOR IN RETURN AIR DUCT AND CONTROLLER TO OPEN CO2 OUTSIDE AIR DAMPER, BASED ON A RISE IN RETURN AIR CO2 LEVELS ABOVE 1000 PPM, EQUAL TO HONEYWELL C7232. MINIMUM OUTSIDE AIR DAMPER SHALL BE OPEN WHENEVER THE AIR HANDLER FAN IS OPERATING.

FAN SCHEDULE												
UNIT	CFM	S.P.	DRIVE	RPM	MOTOR			MAX SONES	SELECTION BASED ON GREENHECK	AREA SERVED	CONTROL	NOTES
					FLA, AMPS	VOLTS	PH					
CEF	75	0.25	DIRECT	700	0.17	120	1	0.4	SP--A90	TOILETS AND JAN.	ROOM LIGHT	1,2,3

- SCHEDULE NOTES:
- CENTRIFUGAL CEILING EXHAUST FAN. ENERGY STAR, BACKDRAFT DAMPER, CEILING GRILLE, ELECTRICAL PLUG TYPE DISCONNECT.
  - PROVIDE WALL CAP.
  - FAN TO BE ENERGIZED BY LIGHT SWITCH.

## RANGE HOOD/FAN

ACCUREX RANGE HOOD SYSTEM, MODEL XRRS--30, STAINLESS STEEL WALL HOOD FOR INSTALLATION OVER 30" RANGE, INTEGRAL FAN, 250 CFM. PROVIDE WALL CAP ACCESSORY FOR INTERNAL FAN, REAR DISCHARGE HOOD CONFIGURATION. SYSTEM TO INCLUDE FIRE SUPPRESSION, MANUAL PULL STATION, AND ELECTRIC SHUT--OFF DEVICE. 120V, 15A BREAKER. SYSTEM TO MEET UL 507 FAN AND UL 300A SUPPRESSION.



DETAIL -- AIR HANDLER AH--1  
NOT TO SCALE

## MECHANICAL OUTLINE SPECIFICATIONS

- ALL WORK SHALL COMPLY WITH THE 2021 VIRGINIA UNIFORM STATEWIDE BUILDING CODE.
- PROVIDE COMPLETE SUBMITTAL INFORMATION FOR EQUIPMENT AND DEVICES.
- RECORD ALL CHANGES IN THE WORK ON THE PROJECT RECORD DRAWINGS.
- PROVIDE DETAILED OPERATION AND MAINTENANCE MANUALS FOR ALL EQUIPMENT.
- MECHANICAL EQUIPMENT, MATERIALS AND LABOR SHALL INCLUDE A ONE YEAR WARRANTY AND FIVE YEAR COMPRESSOR WARRANTY.
- DRAWINGS INDICATE GENERAL LAYOUT OF PIPING, DUCTWORK AND EQUIPMENT. THE CONTRACTOR SHALL INVESTIGATE ALL STRUCTURAL, ELECTRICAL AND FINISH CONDITIONS AFFECTING THE WORK AND SHALL ARRANGE THE MECHANICAL WORK ACCORDINGLY. PROVIDE ADDITIONAL FITTINGS, OFFSETS AND TRANSITIONS AS REQUIRED TO PROPERLY COMPLETE THE WORK, WHETHER OR NOT SUCH COMPONENTS ARE INDICATED ON THE DRAWINGS.
- SEAL AIRTIGHT ALL PIPE AND DUCT PENETRATIONS OF NON--RATED ASSEMBLIES.
- COORDINATE INSTALLATION OF EQUIPMENT AND OTHER DEVICES TO PROVIDE ACCESS FOR SERVICING.
- PROVIDE ALL MISCELLANEOUS COMPONENTS REQUIRED FOR A COMPLETE AND PROPER INSTALLATION, WHETHER OR NOT THESE COMPONENTS ARE SPECIFIED HEREIN.
- METAL ACCESS DOORS SHALL BE PROVIDED AS REQUIRED FOR ALL COMPONENTS REQUIRING ACCESS. COORDINATE LOCATIONS WHERE ACCESS DOORS WILL BE REQUIRED FOR VALVES, DAMPERS, SENSORS OR OTHER DEVICES.
- DUCTWORK SHALL BE INSTALLED TO PERMIT THE INSTALLATION OF CEILINGS AND LIGHT FIXTURES AT THE INDICATED HEIGHTS. REFER TO ARCHITECTURAL AND ELECTRICAL DRAWINGS FOR COORDINATION.
- GALVANIZED SHEET METAL DUCTWORK CONSTRUCTION SHALL COMPLY WITH SMACNA STANDARDS WITH TURNING VANES OR LONG RADIUS ELBOWS AND MANUAL DAMPERS FOR BALANCING. INDICATED DUCT SIZES ARE INTERIOR AIRFLOW DIMENSIONS AND SHEET METAL SIZE MUST BE INCREASED ACCORDINGLY WHERE DUCT LINER IS SPECIFIED TO BE USED. AT EACH TAKEOFF TO A SUPPLY DIFFUSER, PROVIDE LOW--LOSS CONICAL OR TAPERED 45 DEGREE RECTANGULAR BRANCH TAKEOFF WITH MANUAL DAMPER. MANUAL VOLUME DAMPER TO HAVE LOCKING HANDLE WITH EXTENDED SHAFT AND STANDOFF FOR INSULATION THICKNESS. DUCTS SHALL BE FASTENED AND SEALED PER MECHANICAL CODE AND ENERGY CODE FOR 2.0 INCHES STATIC PRESSURE AND SMACNA SEAL CLASS A.
- INSULATE ALL SUPPLY, RETURN, AND OUTSIDE AIR DUCTWORK. INSULATE TOP OF SUPPLY AIR CEILING DIFFUSERS. SEAL ALL INSULATION JOINTS VAPOR TIGHT. INSULATE WITH FIBERGLASS DUCT WRAP WITH ALL SERVICE VAPOR BARRIER JACKET. FLAME SPREAD/SMOKE DEVELOPED INDEX OF 25/50 MAXIMUM, MINIMUM INSTALLED R8 INSULATION PER ENERGY CODE. PROVIDE 1" ACOUSTIC LINER WITH FUNGUS/BACTERIA RESISTANT COATING PER ASTM G21 WHERE INDICATED IN RETURN DUCTS..
- FLEXIBLE DUCTS SHALL HAVE STEEL WIRE HELIX REINFORCEMENT, CONTINUOUS INNER LINER, R8 FIBERGLASS INSULATION AND OUTER JACKET TO COMPLY WITH UL 181 CLASS 1. DIAMETER OF FLEX DUCT SHALL MATCH DIFFUSER INLET SIZE. SUPPORT EVERY FOUR FEET WITH MAXIMUM OF 1" SAG. MAXIMUM LENGTH IS EIGHT FEET.
- CEILING DIFFUSERS (CD) TO HAVE FLUSH FACE LOUVERS, EXTRUDED ALUMINUM WITH ALUMINUM DAMPER, PRICE AMD SERIES FOR SURFACE MOUNT TO GYPBORD CEILING, FOUR WAY THROW UNLESS INDICATED OTHERWISE. RETURN GRILLES (RG) TO BE ALUMINUM 630 SERIES WITH VANES ON 3/4" CENTERS FOR WALL MOUNT.
- LOUVERS SHALL BE 4 INCH DEEP, EXTRUDED ALUMINUM, INSECT SCREEN, KYNAR FINISH SELECTED BY ARCHITECT, RUSKIN MODEL EME420DDE FOR WIND DRIVEN RAIN. COORDINATE FRAME AND INSTALLATION WITH WALL CONSTRUCTION. DUCT CONNECTION TO LOUVER SHALL BE WATERTIGHT AND DUCT SHALL SLOPE DOWN TOWARD LOUVER TO DRAIN.
- PROVIDE IDENTIFICATION MARKINGS FOR EQUIPMENT, PIPING AND CONTROLS. NAMEPLATES SHALL BE PLASTIC LAMINATE WITH 1/4" LETTERS.
- CONDENSATE LINES TO BE PVC WITH TRAP AND CLEANOUT TEE AT COOLING COIL. INSULATE WITH 3/4" PIPE WRAP. ROUTE TO NEAREST FLOOR DRAIN OR SERVICE SINK AND TERMINATE WITH AIR GAP FOR AN INDIRECT CONNECTION.
- REFRIGERANT LINES SHALL BE COPPER TUBING SIZED PER MANUFACTURER'S INSTRUCTIONS. INSULATE REFRIGERANT LINES PER ENERGY CODE WITH THICKNESS BASED ON LINE SIZE AND MAXIMUM LINE TEMPERATURE, 1" MINIMUM THICKNESS. INSULATE WITH FLEXIBLE ELASTOMERIC CELLULAR INSULATION, SEAL JOINTS WITH VAPOR BARRIER MASTIC. INSULATION SHALL BE CONTINUOUS AT HANGERS. APPLY TWO COATS OF UV RESISTANT PROTECTIVE FINISH ON EXTERIOR LINES. PROVIDE LOCKING CAPS ON ALL REFRIGERANT SERVICE VALVES.
- PROVIDE FLEXIBLE CONNECTORS AT CONNECTION OF DUCTWORK TO AIR HANDLING EQUIPMENT.
- TEST AND BALANCE ALL EQUIPMENT FOR PROPER OPERATION, AIRFLOW, CAPACITY, ACCEPTABLE SPACE TEMPERATURES AND NOISE LEVELS. PERFORM TAB AND RECORD RESULTS PER AABC OR NEBB STANDARDS AND SUBMIT REPORT FOR REVIEW.
- START--UP EQUIPMENT AND PERFORM FUNCTIONAL TEST IN HEATING AND COOLING MODES. PROGRAM THERMOSTATS AND INSTRUCT OWNER'S MAINTENANCE PERSONNEL ON THE OPERATION OF EQUIPMENT AND CONTROLS. PROVIDE FINAL FILTER CHANGE.

DATE: SEPT. 5, 2025

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