

PROJECT ISSUES:

SCHEMATIC DESIGN: 6/25/2023

DESIGN DEVELOPMENT: 8/21/2023

100% CONSTRUCTION DOCUMENTS: 11/17/2023

REVISION 2 02/28/2024

REVISION 3 03/21/2024

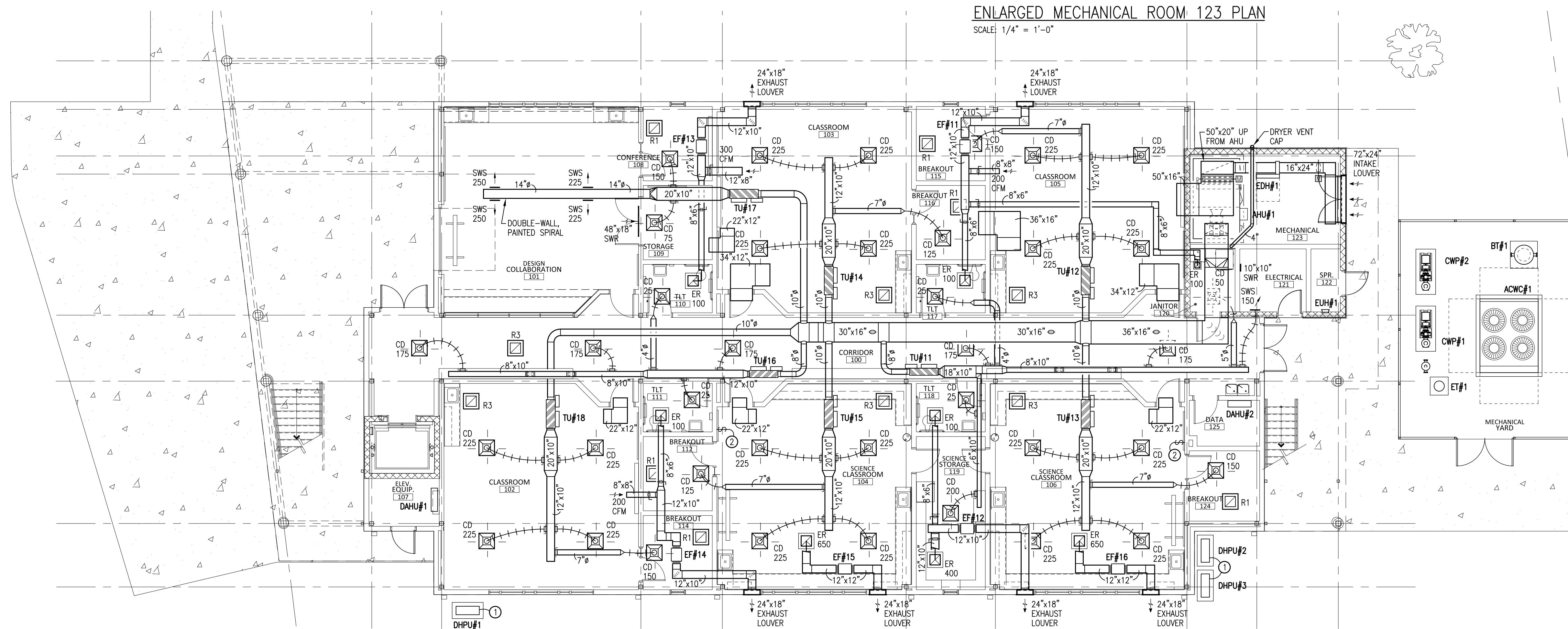
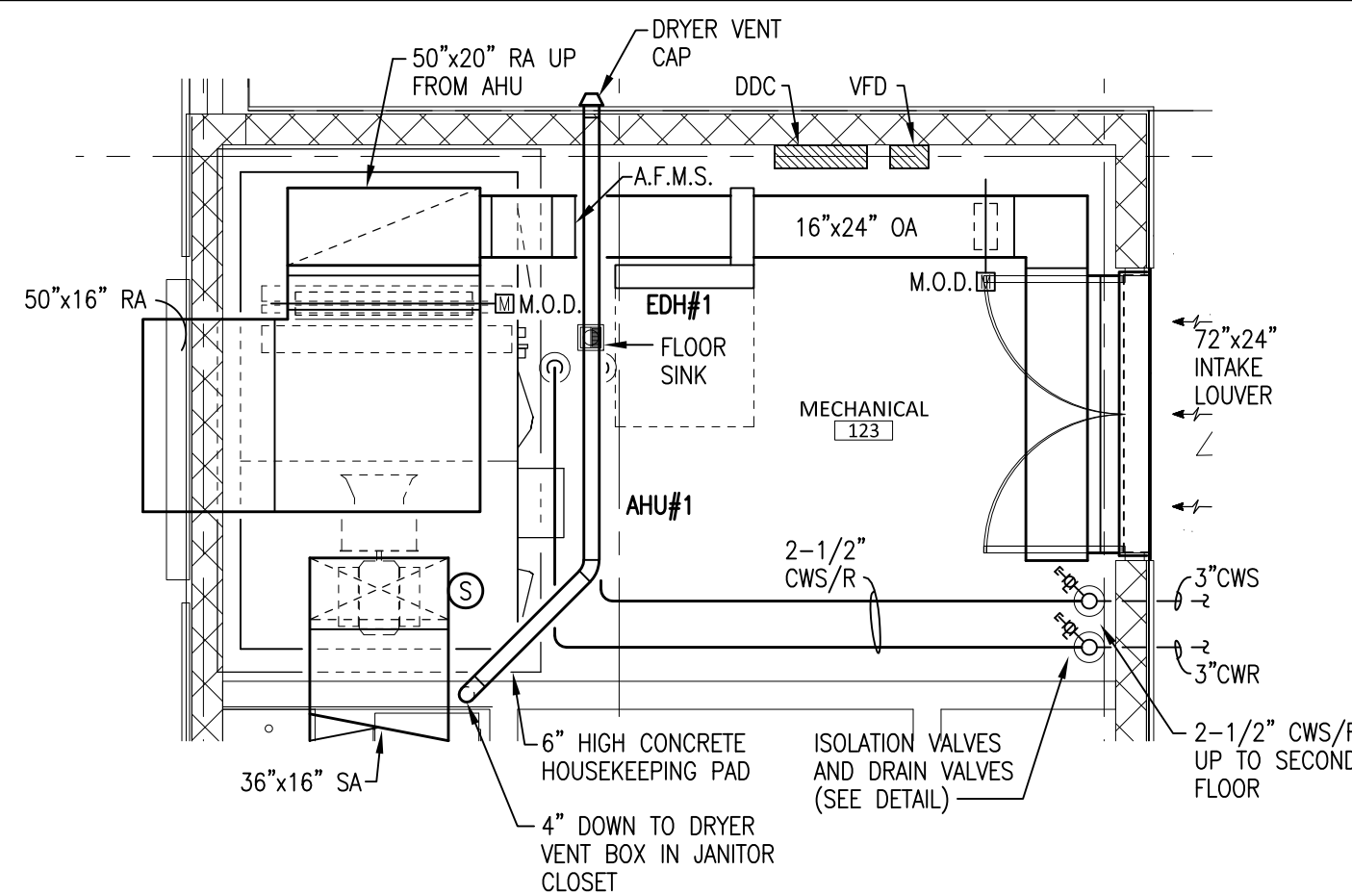
CONFORMANCE SET 04/16/2024

KEY NOTES:

- HEAT PUMP UNITS SHALL BE BOLTED TO 4" HIGH HOUSEKEEPING PAD. INCLUDE 1" VIBRATION ISOLATION PADS UNIT UNIT. BOLT UNIT WITH MINIMUM OF TWO PER SIDE.
- INSTALL MARKTIME 935 SERIES SWITCH WITH 60 MINUTE RANGE FOR CONTROL OF ROOM EXHAUST FAN.

GENERAL NOTES:

- AVAILABLE SPACE IN CORRIDOR CEILINGS IS LIMITED. COORDINATION IS REQUIRED WITH THE FIRE PROTECTION, PLUMBING AND ELECTRICAL SYSTEMS TO ENSURE THAT ALL PIPING, CONDUIT AND DUCTWORK ARE PROPERLY LOCATED.
- ALL EQUIPMENT IN THE MECHANICAL EQUIPMENT YARD SHALL BE INSTALLED ON 6" HIGH CONCRETE HOUSEKEEPING PADS.



PROJECT TEAM:

- CIVIL: KENNETH HORNE & ASSOCIATES
- LANDSCAPING: FORME DESIGN GROUP
- STRUCTURAL: MCCARTHY ENGINEERING
- ARCHITECTURAL: CALDWELL ASSOCIATES
- FIRE PROTECTION: H.M. YONGE & ASSOCIATES
- MECHANICAL / PLUMBING: H.M. YONGE & ASSOCIATES
- ELECTRICAL: KLOCKE ASSOCIATES

PROJECT:
CREATIVE LEARNING ACADEMY

**3151 HYDE PARK RD.
PENSACOLA, FL**

PROJECT NO.: 22028
SHEET TITLE:
HVAC FIRST FLOOR DUCT PLAN

SHEET NUMBER:

M101

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PHONE: (850)434-2661

CERTIFICATION OF AUTHORIZATION No. 5254
MECHANICAL ENGINEER: HOWARD M. YONGE, P.E. FLORIDA REG. NO. 32093
MECHANICAL ENGINEER: TIMOTHY J. MITCHELL, P.E. FLORIDA REG. NO. 66792
ELECTRICAL ENGINEER: ARUN T. VARGHESE, P.E. FLORIDA REG. NO. 76315

H.M. YONGE AND ASSOC. JOB# 23-130

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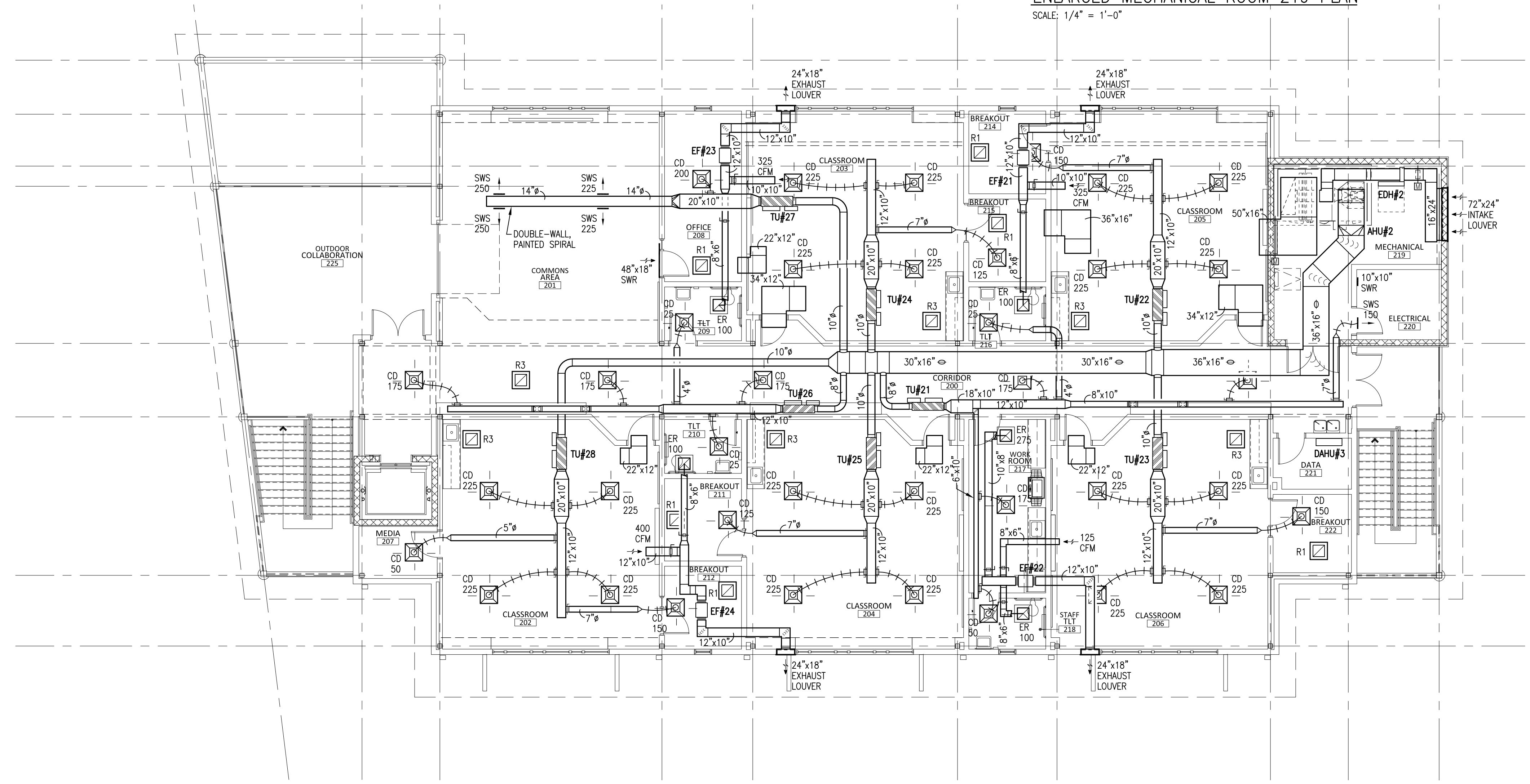
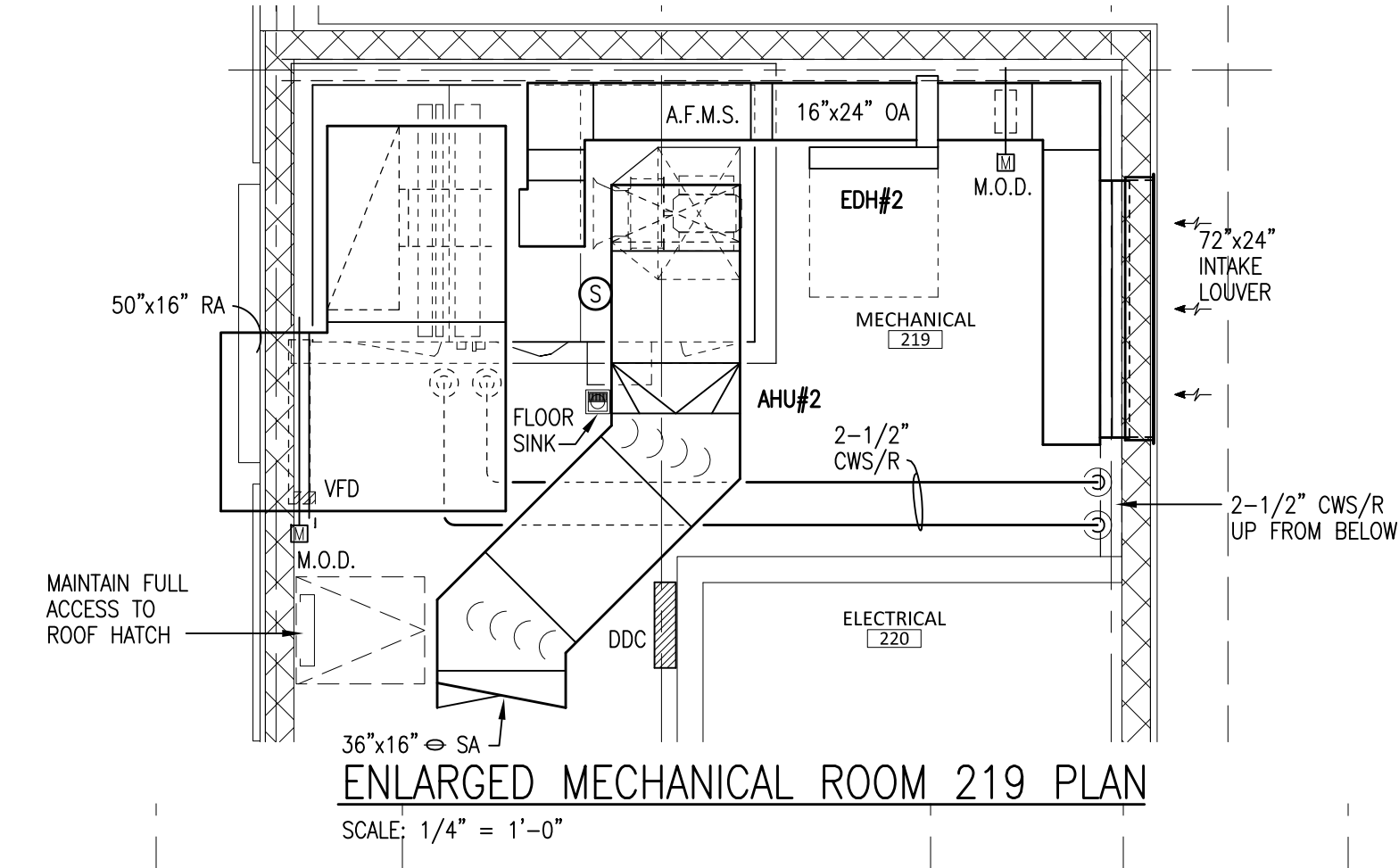
1 HVAC FIRST FLOOR DUCT PLAN
1/8" = 1'-0"

GENERAL NOTES:

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CONFORMANCE SET 04/16/2024



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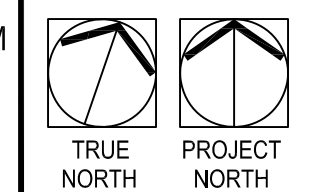
CIVIL: KENNETH HORNE & ASSOCIATES
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PROJECT:
CREATIVE LEARNING ACADEMY

3151 HYDE PARK RD.
PENSACOLA, FL

PROJECT NO.: 22028
SHEET TITLE: HVAC SECOND FLOOR DUCT PLAN

SHEET NUMBER:
M102



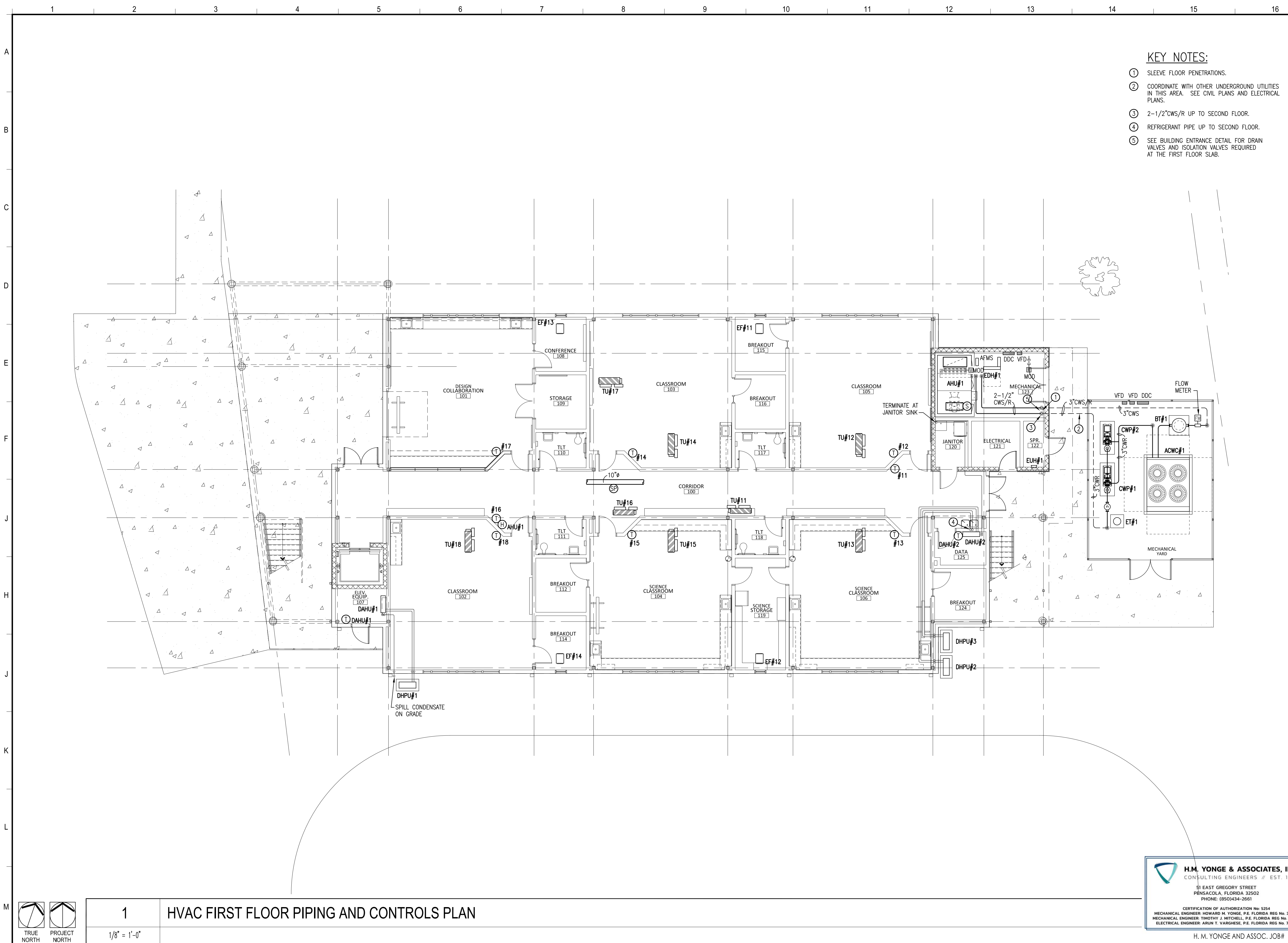
1 HVAC SECOND FLOOR DUCT PLAN
1/8" = 1'-0"

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H.M. YONGE AND ASSOC. JOB# 23-130



- KEY NOTES:**
- ① SLEEVE FLOOR PENETRATIONS.
 - ② COORDINATE WITH OTHER UNDERGROUND UTILITIES IN THIS AREA. SEE CIVIL PLANS AND ELECTRICAL PLANS.
 - ③ 2-1/2\"/>

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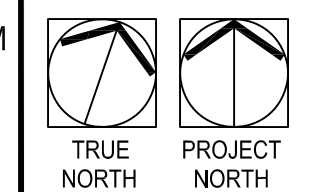
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 FIRE PROTECTION: H.M. YONGE & ASSOCIATES
 MECHANICAL / PLUMBING: H.M. YONGE & ASSOCIATES
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PROJECT:
CREATIVE LEARNING ACADEMY

**3151 HYDE PARK RD.
 PENSACOLA, FL**

**PROJECT NO. : 22028
 SHEET TITLE:
 HVAC FIRST FLOOR PIPING
 AND CONTROLS PLAN**

**SHEET NUMBER:
 M103**



1
HVAC FIRST FLOOR PIPING AND CONTROLS PLAN
 1/8" = 1'-0"

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H.M. YONGE AND ASSOC. JOB# 23-130

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CONFORMANCE SET	04/16/2024

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H.M. YONGE & ASSOCIATES
MECHANICAL / PLUMBING
H.M. YONGE & ASSOCIATES
ELECTRICAL
KLOCKE ASSOCIATES

PROJECT:
CREATIVE LEARNING ACADEMY

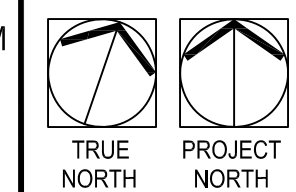
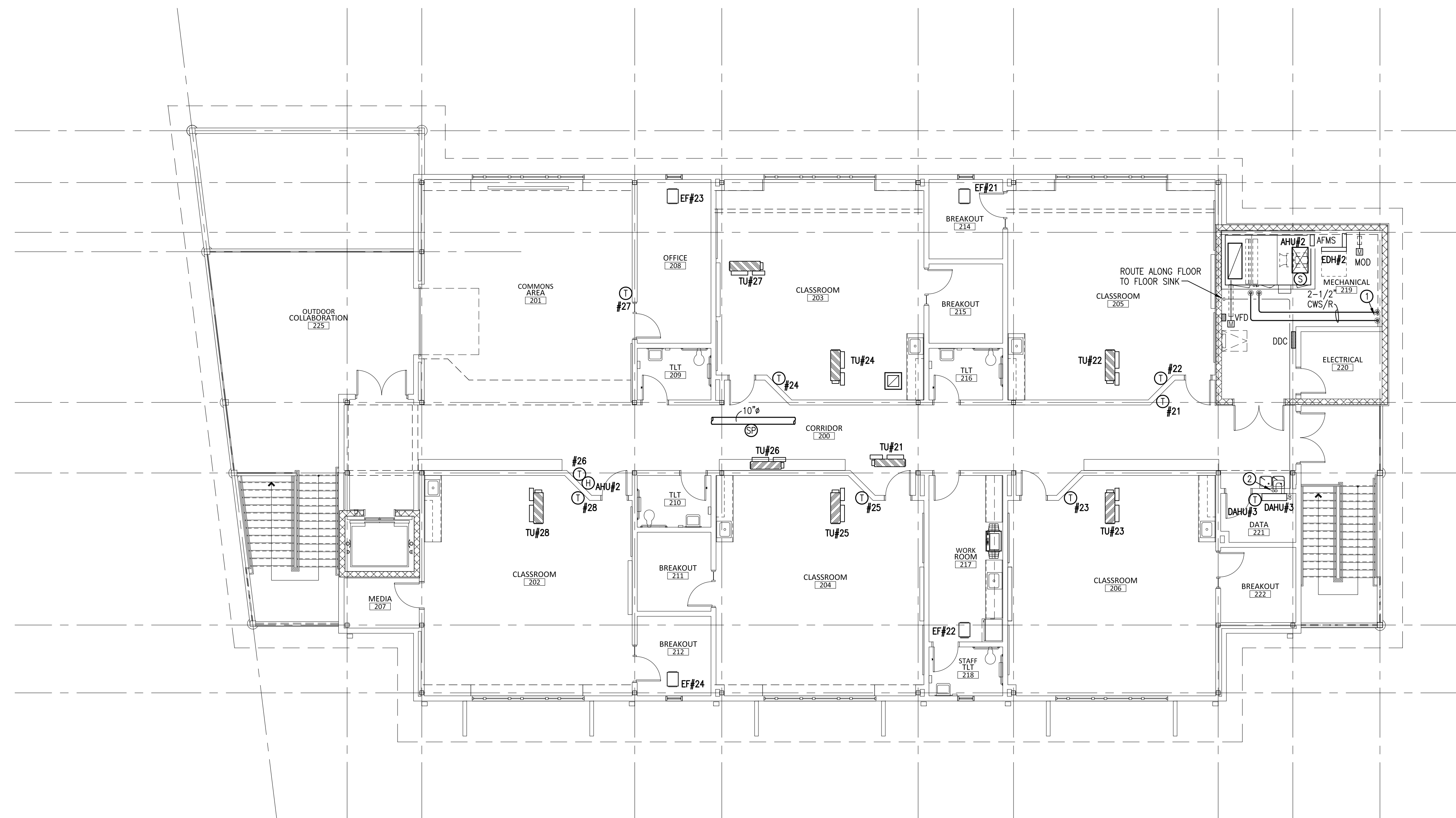
**3151 HYDE PARK RD.
PENSACOLA, FL**

PROJECT NO. : 22028
SHEET TITLE:
HVAC SECOND FLOOR PIPING
AND CONTROLS PLAN

SHEET NUMBER:
M104

KEY NOTES:

- ① 2-1/2" CWS/R UP FROM FIRST FLOOR.
- ② REFRIGERANT PIPE UP FROM FIRST FLOOR.



1 HVAC SECOND FLOOR PIPING AND CONTROLS PLAN

1/8" = 1'-0"

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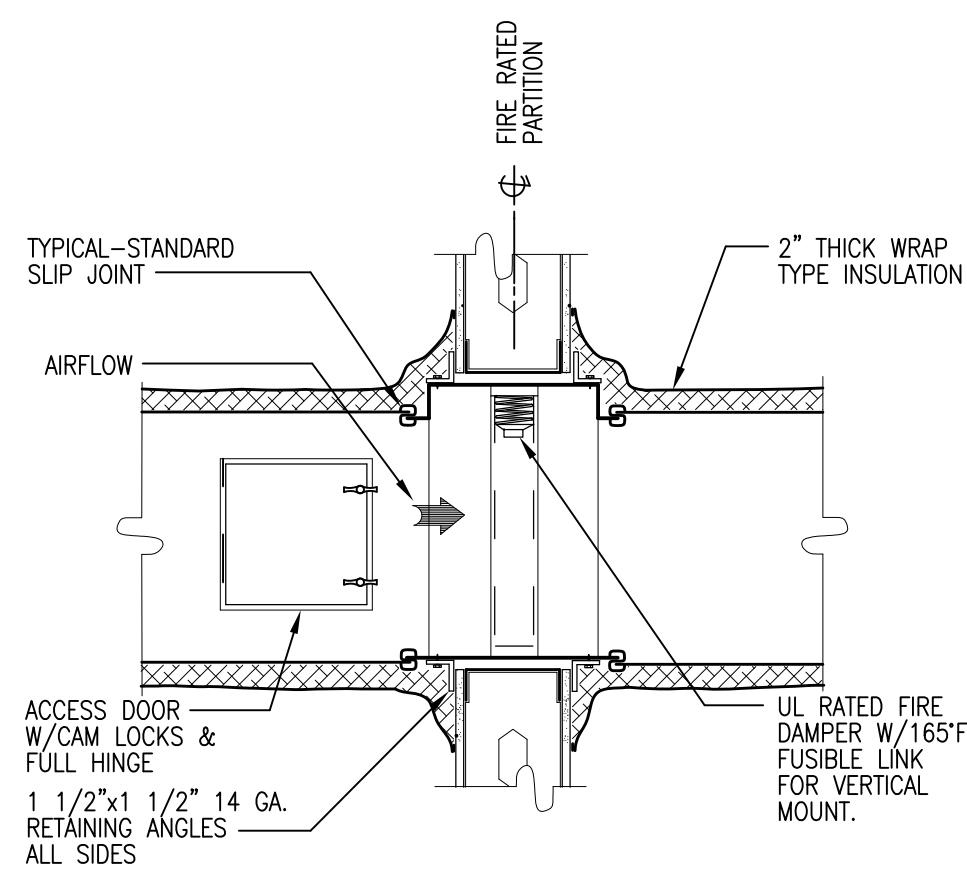
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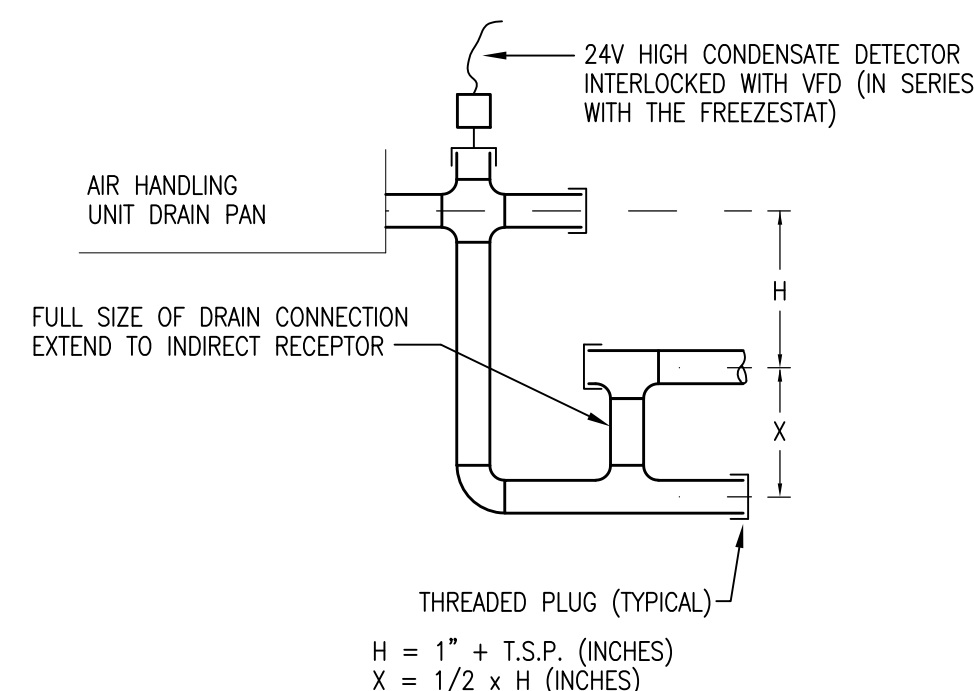
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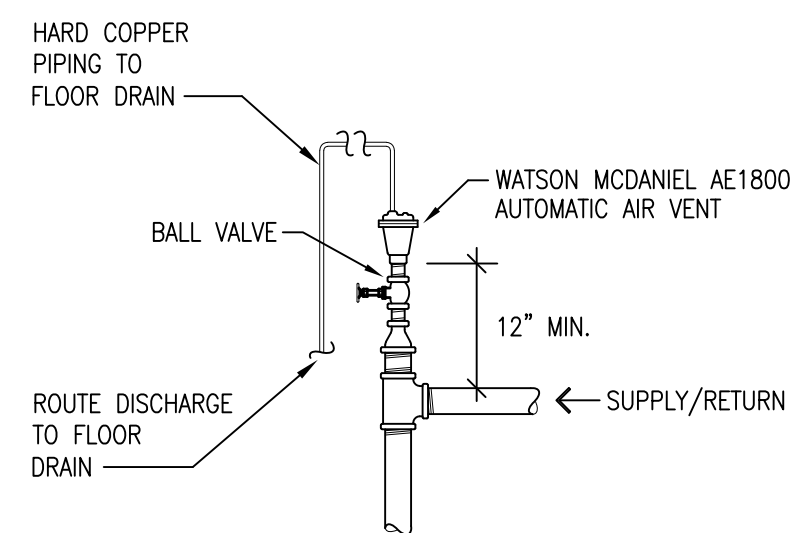
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CONFORMANCE SET	04/16/2024



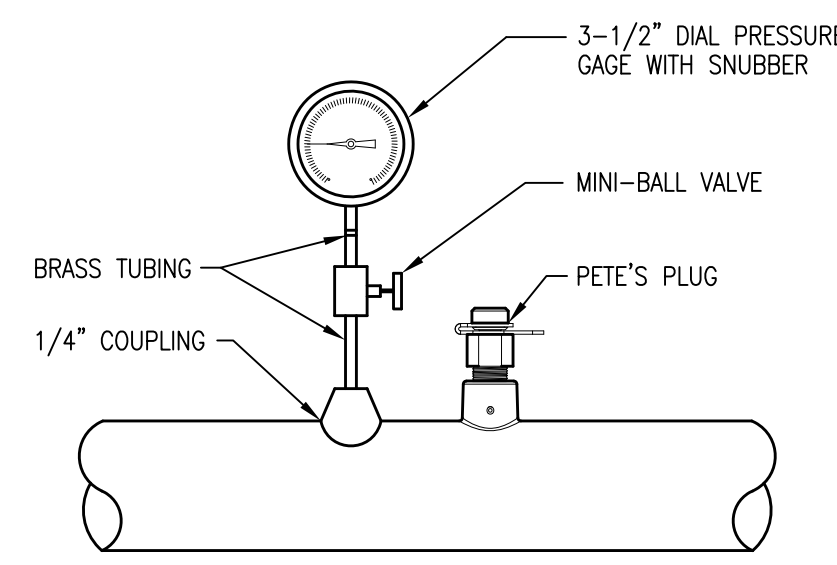
TYPICAL FIRE DAMPER DETAIL
NOT TO SCALE



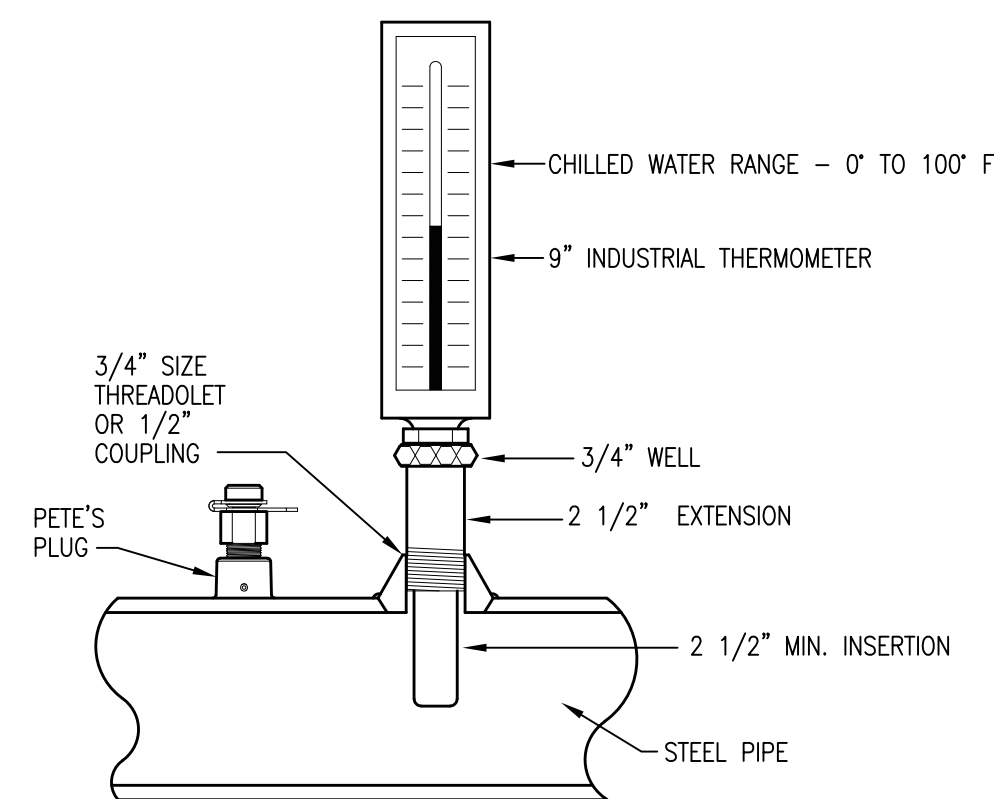
REFERENCE SPECIFICATIONS FOR APPROVED PIPING MATERIALS
DRAW-THRU AIR HANDLING UNIT CONDENSATE DRAIN DETAIL
NOT TO SCALE



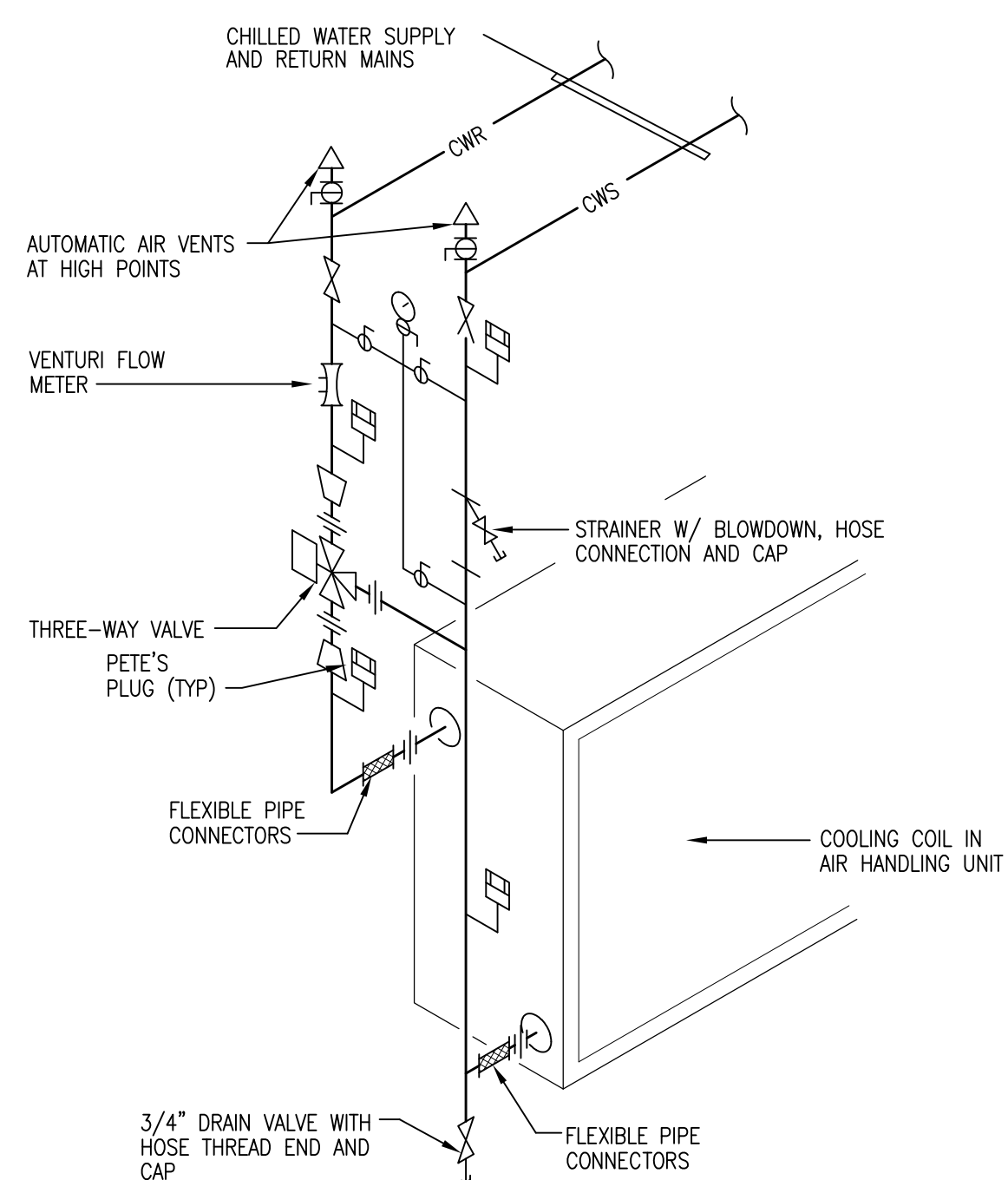
TYPICAL AUTOMATIC AIR VENT DETAIL
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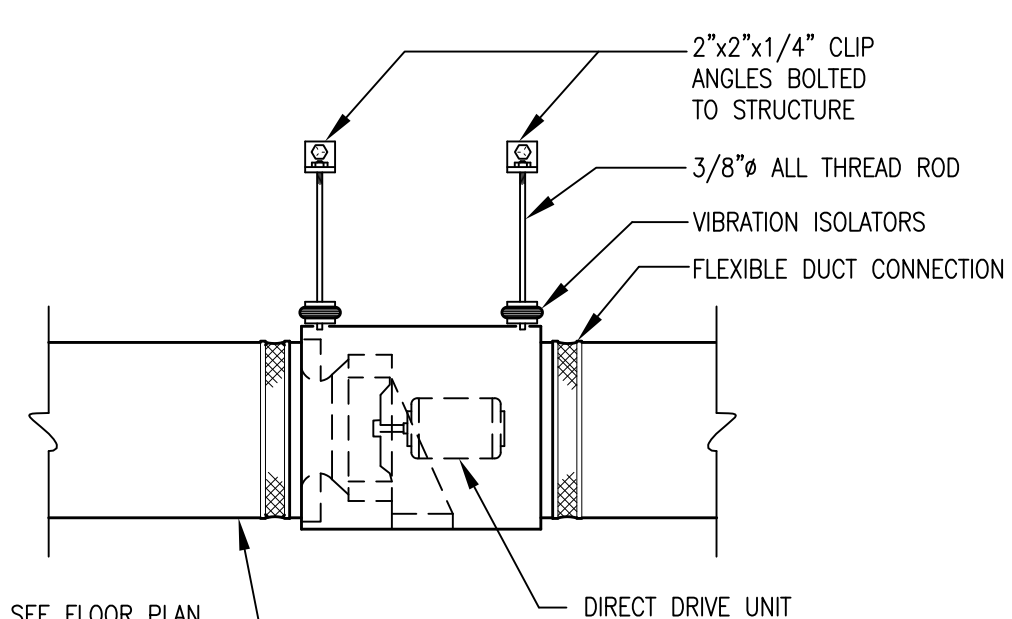
TYPICAL PRESSURE GAGE DETAIL
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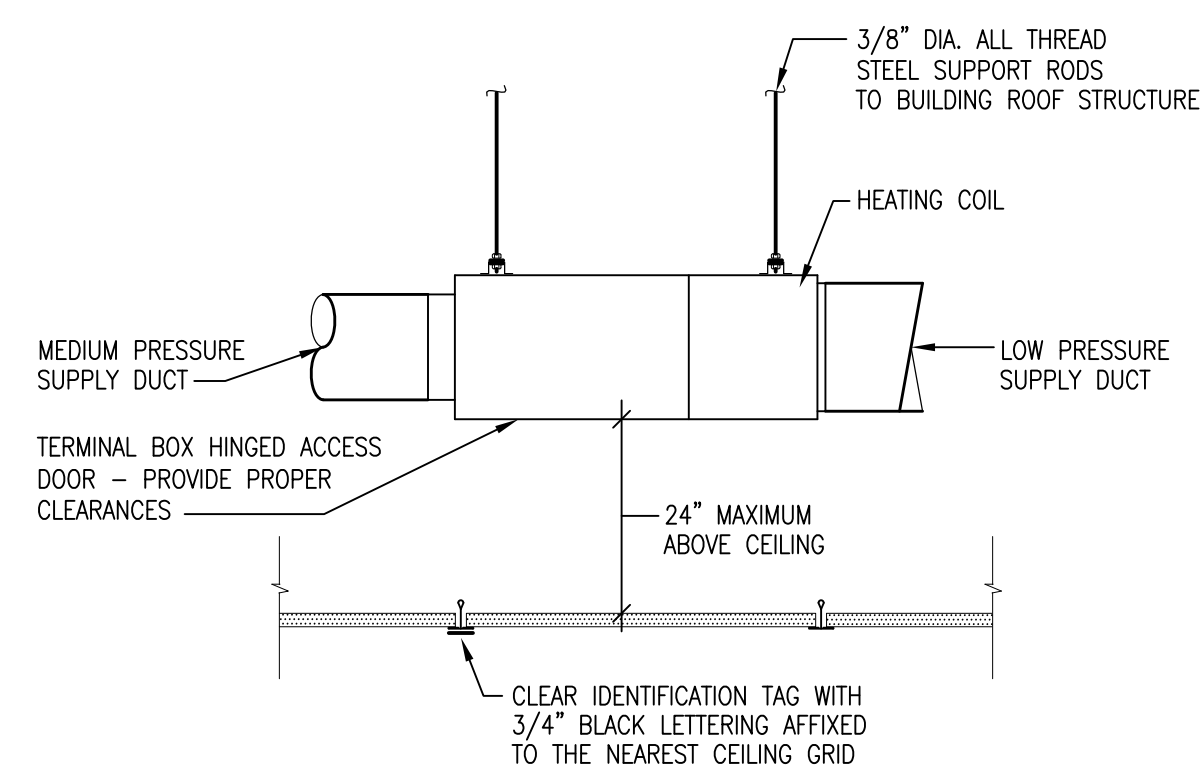
TYPICAL THERMOMETER DETAIL
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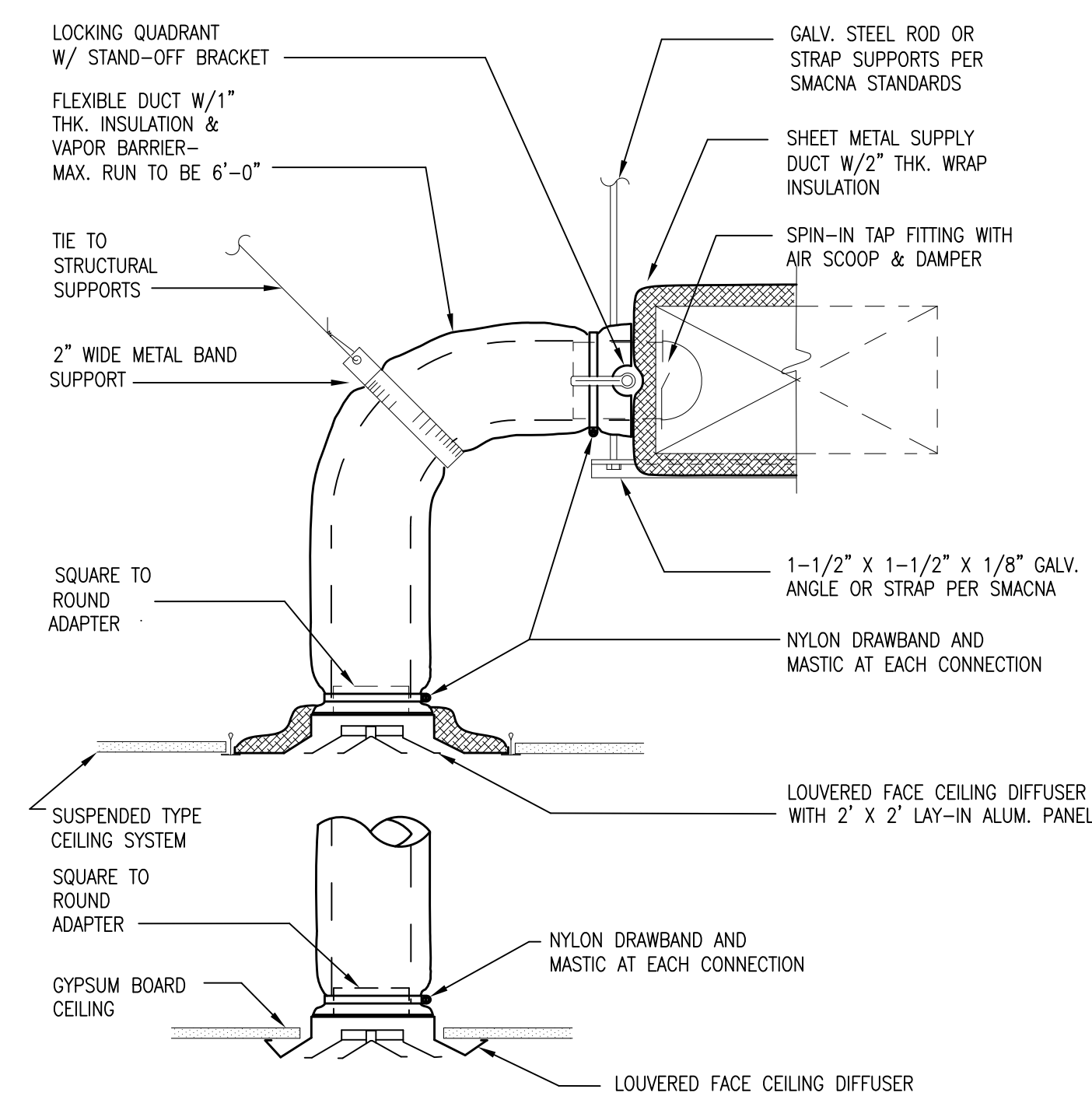
AHU CHILLED WATER COIL DETAIL
NOT TO SCALE



INLINE EXHAUST FAN
NOT TO SCALE



NOTE: SERVICE ACCESS FOR POWER AND CONTROL PANELS MUST BE COORDINATED WITH OTHER TRADES.
VAV BOX DETAIL
NOT TO SCALE



TYPICAL DIFFUSER (SIDE TAP) DETAILS
NOT TO SCALE

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PROJECT:
CREATIVE LEARNING ACADEMY

3151 HYDE PARK RD.
PENSACOLA, FL

PROJECT NO. : 22028
SHEET TITLE: HVAC DETAILS

SHEET NUMBER:

M201

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H. M. YONGE AND ASSOC. JOB# 23-130

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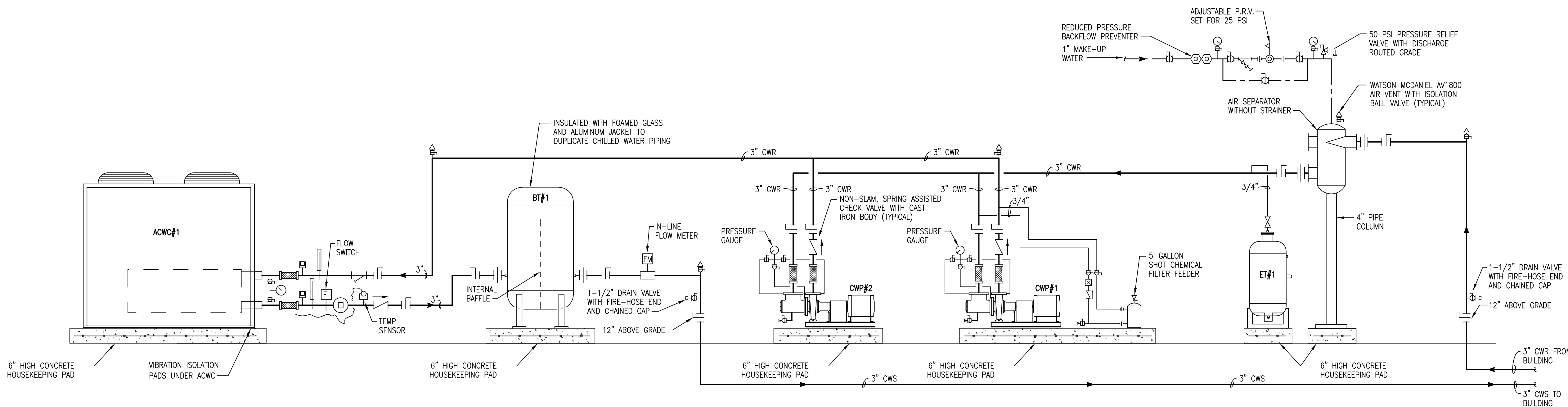
PROJECT:
CREATIVE LEARNING ACADEMY

**3151 HYDE PARK RD.
PENSACOLA, FL**

PROJECT NO. : 22028
SHEET TITLE:
HVAC DETAILS

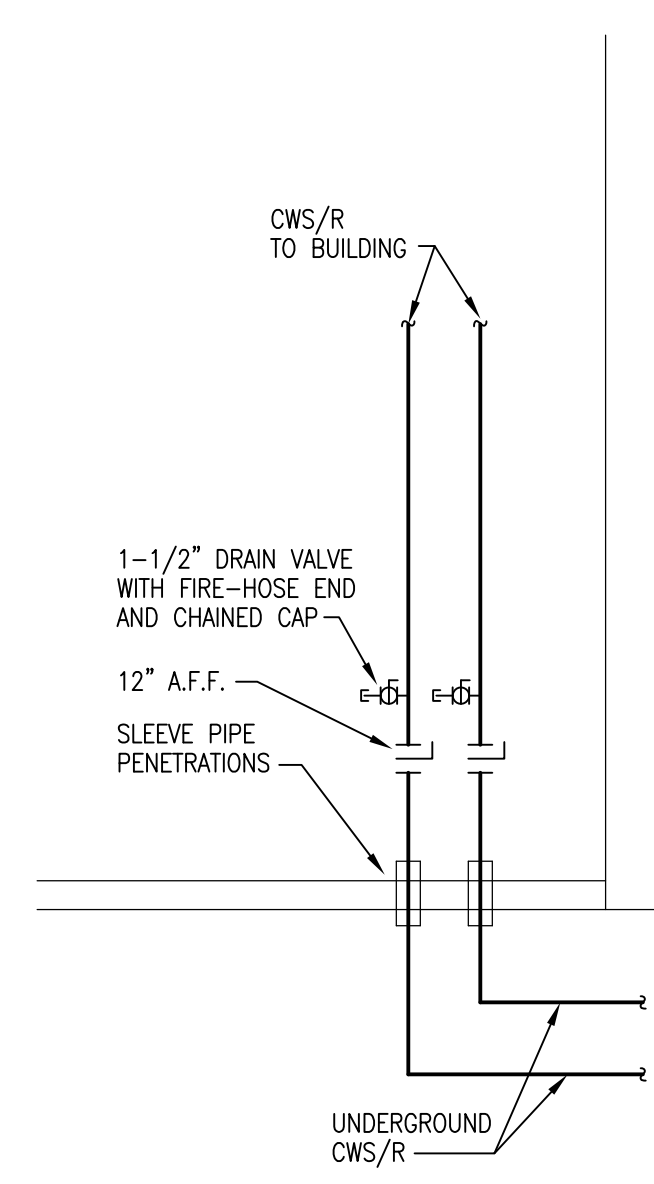
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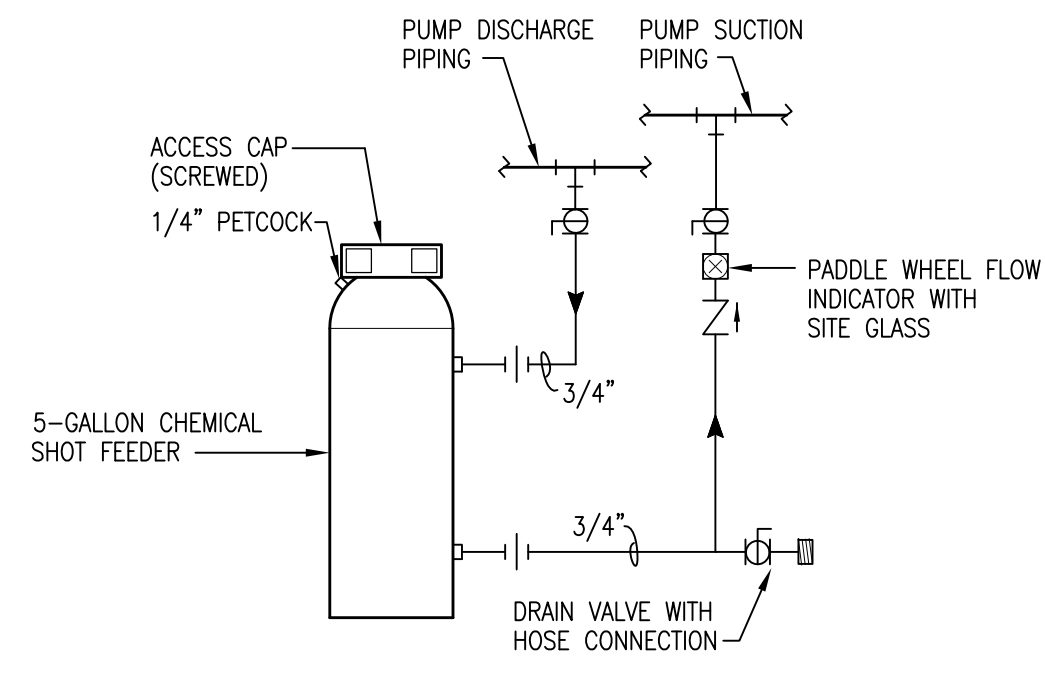


- NOTES:**
1. CHILLED WATER PIPING EXPOSED OUTDOORS SHALL BE INSULATED AND HEAT TRACED. PROVIDE STAINLESS STEEL JACKET PER SPECIFICATIONS.
 2. HEAT TRACE SHALL BE HARD-WIRED. PLUG-IN STYLE SHALL NOT BE ACCEPTABLE.

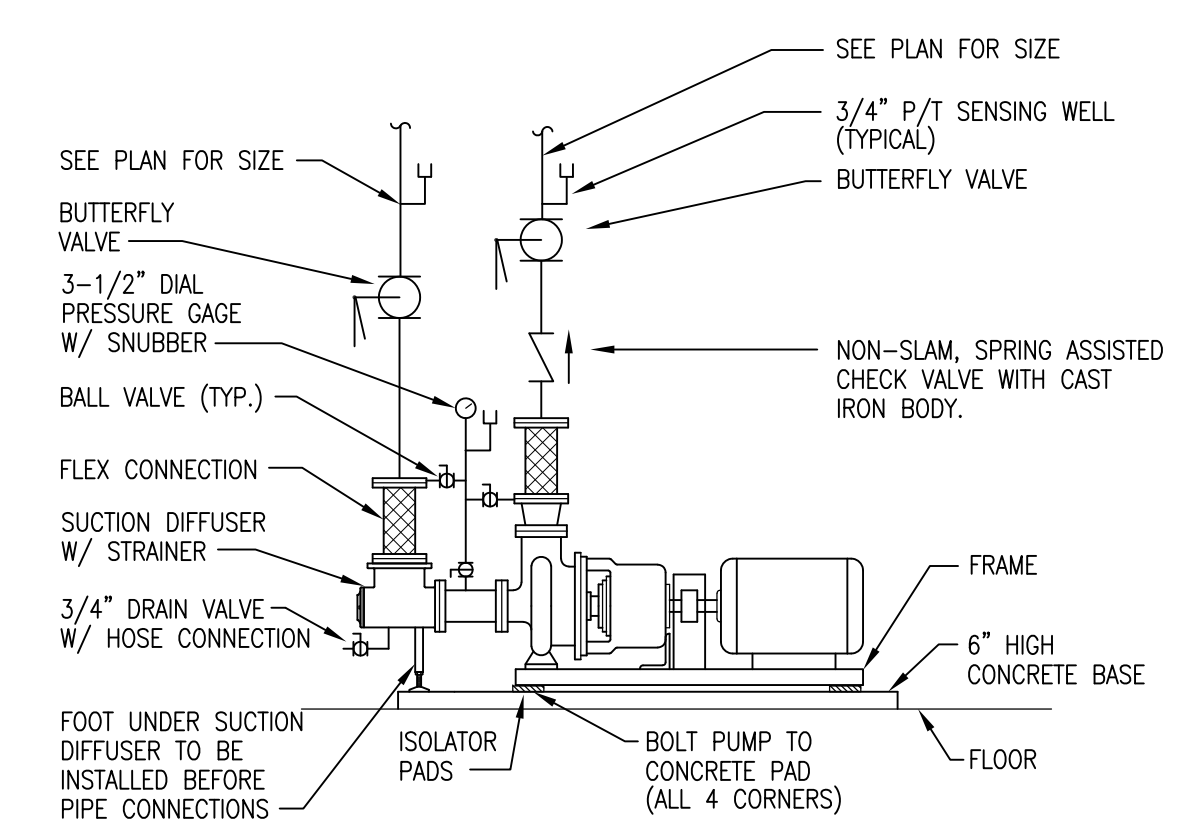
CHILLED WATER PIPING FLOW DIAGRAM
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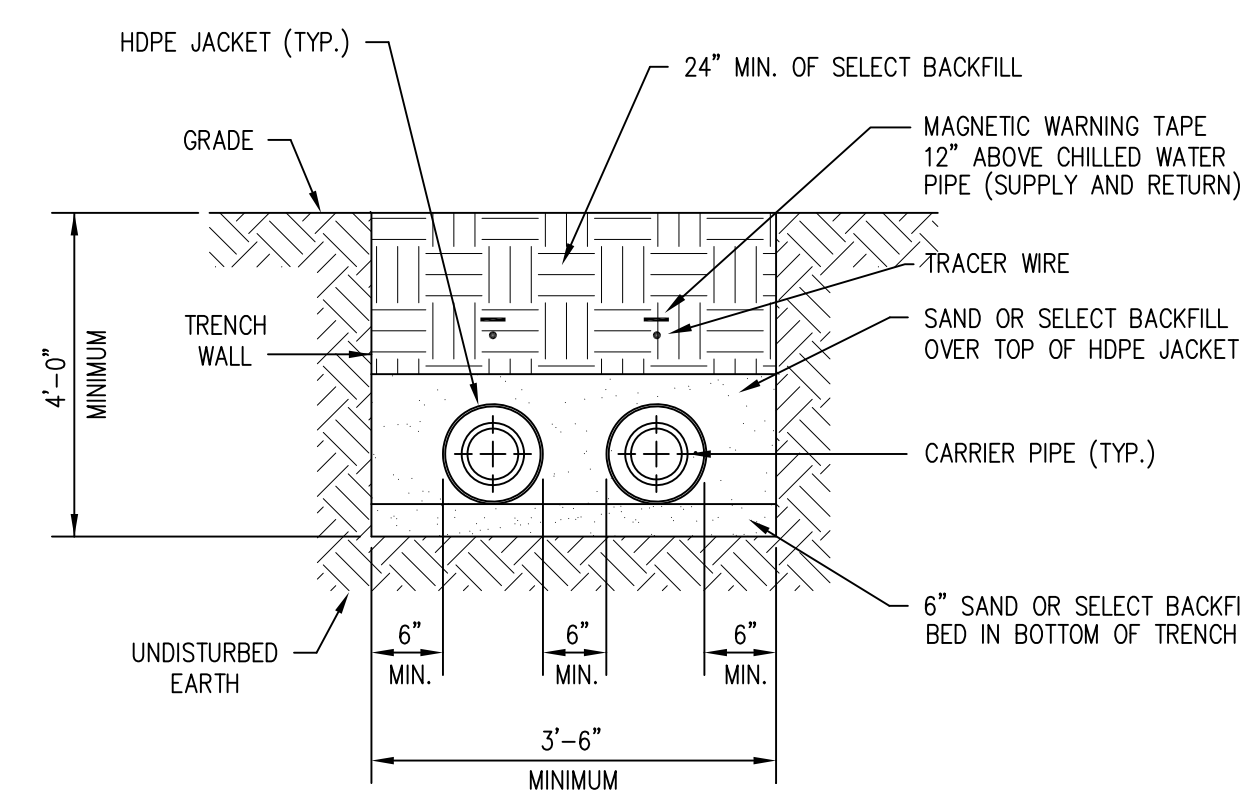
PIPE ENTRANCE DETAIL
NOT TO SCALE



ONE SHOT FILTER FEEDER DETAIL
SCALE: NONE



TYPICAL END SUCTION PUMP DETAIL
NOT TO SCALE



TYPICAL 2-PIPE TRENCH DETAIL
SCALE: NONE

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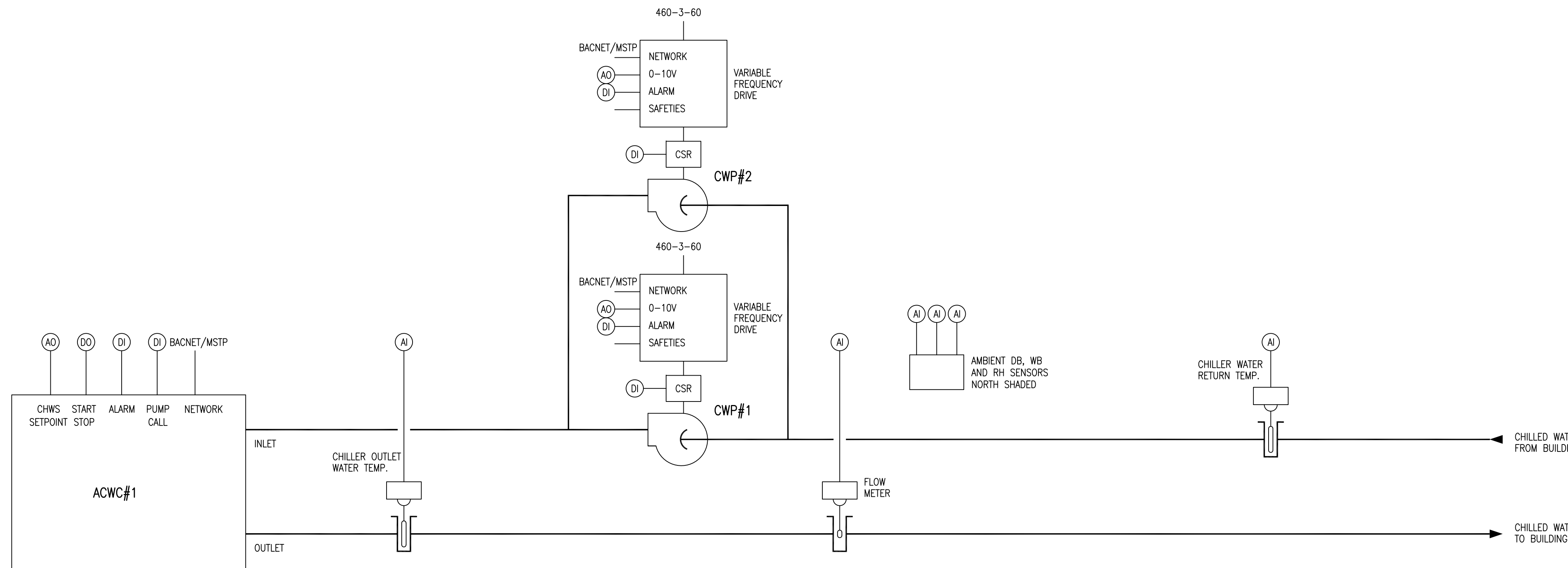
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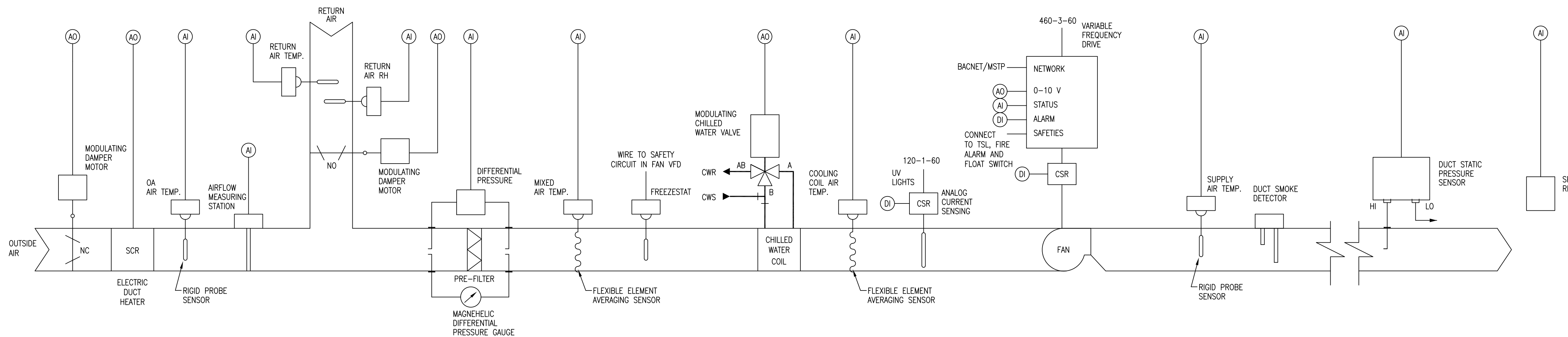
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PENSACOLA, FL**

PROJECT NO. : 22028
SHEET TITLE:
HVAC CONTROLS

SHEET NUMBER:
M301



CHILLED WATER SYSTEM FLOW DIAGRAM



NOTE:
CONDENSATE FLOAT SWITCH SHALL BE WIRED TO THE VFD SAFETY CIRCUITS FOR UNIT SHUTDOWN.

TYPICAL FLOW DIAGRAM- AIR HANDLING UNIT

1 HVAC CONTROLS

1/8" = 1'-0"

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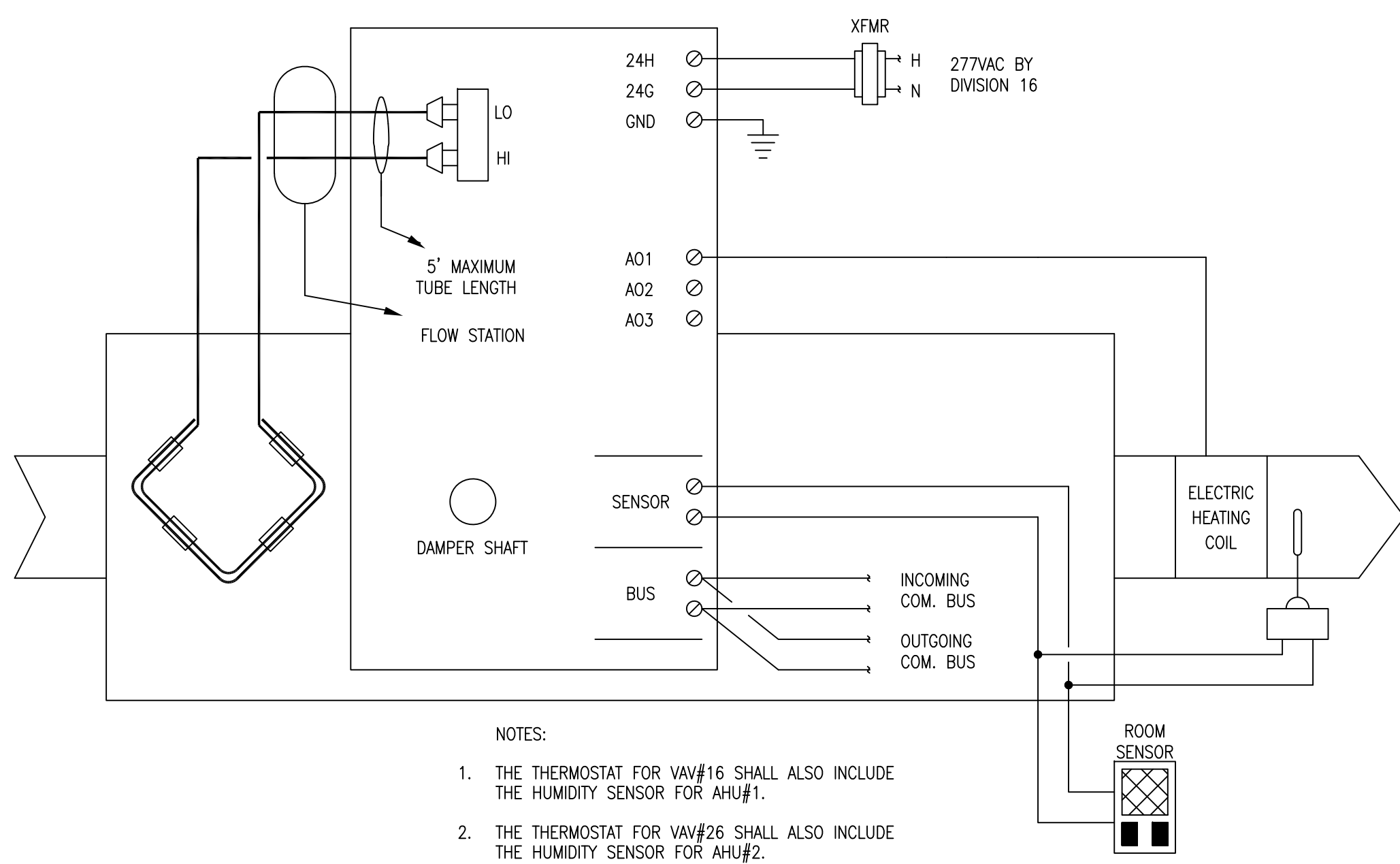
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3151 HYDE PARK RD. PENSACOLA, FL

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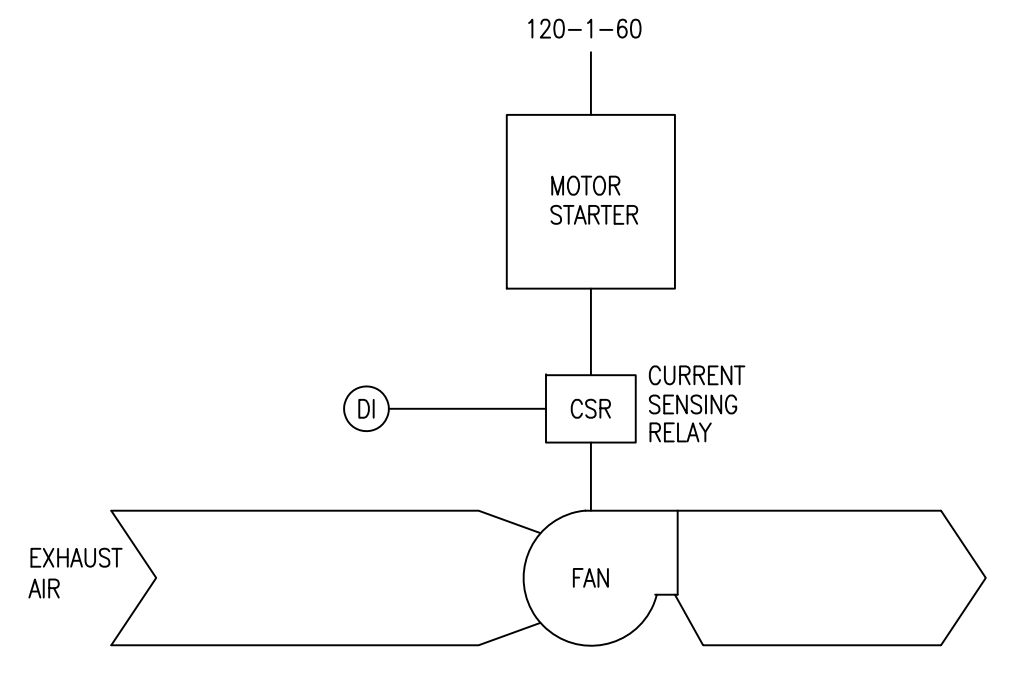
SHEET NUMBER:

M302



- NOTES: 1. THE THERMOSTAT FOR VAV#16 SHALL ALSO INCLUDE THE HUMIDITY SENSOR FOR AHU#1. 2. THE THERMOSTAT FOR VAV#26 SHALL ALSO INCLUDE THE HUMIDITY SENSOR FOR AHU#2.

TYPICAL TERMINAL UNIT



FLOW DIAGRAM- INTERLOCKED EXHAUST FANS

GENERAL CONDITIONS

THE DDC SYSTEM SHALL OPERATE THE HVAC SYSTEM SUBJECT TO THE OCCUPIED/UNOCCUPIED SCHEDULE PROVIDED BY THE BUILDING OWNER. THE OCCUPIED SCHEDULE SHALL INCLUDE DESIGN VENTILATION AS INDICATED ON SCHEDULES AND SPACE CONDITIONS OF 74°F, 50% RH (ADJUSTABLE) FOR COOLING AND 68°F, 30% RH (ADJUSTABLE) FOR HEATING.

THE DDC SYSTEM SHALL INCLUDE AN OVERRIDE CONTROL FOR THE AHU SYSTEM THAT WILL SWITCH THE HVAC SYSTEM TO OCCUPIED OPERATION FOR A PERIOD NOT TO EXCEED 3 HOURS PER ACTIVATION.

WHEN THE HVAC SYSTEM IS ACTIVATED DURING UNOCCUPIED MODE BY THE SPACE HIGH/LOW LIMITS THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED AND INTERLOCKED FANS SHALL NOT OPERATE.

THE DDC SYSTEM SHALL PROVIDE A BUILDING "WARM UP" AND "COOL DOWN" CAPABILITY. THIS CAPABILITY WILL ALLOW THE HVAC SYSTEM TO BRING THE INTERIOR SPACE TEMPERATURE WITHIN THE OCCUPIED RANGE WITHOUT CONDITIONING THE OUTSIDE AIR.

CHILLED WATER SYSTEM

CHILLED WATER SYSTEM ENABLE / DISABLE: BY CHWV POSITION

SYSTEM ENABLE: THE CHILLED WATER SYSTEM SHALL BE ENABLED WHENEVER ANY CHILLED WATER VALVE IS GREATER THAN 15% OPEN FOR MORE THAN FIVE MINUTES.

SYSTEM DISABLE: THE CHILLED WATER SYSTEM SHALL BE DISABLED WHENEVER ALL CHILLED WATER VALVES ARE LESS THAN 10% OPEN FOR A PERIOD OF 15 MINUTES.

CHILLED WATER PUMP ENABLE / DISABLE: CHILLER PUMP REQUEST

PUMP ENABLE: A CHILLED WATER PUMP SHALL BE ENABLED BASED ON A HARD-WIRED PUMP REQUEST SIGNAL FROM THE CHILLER'S FACTORY CONTROL PANEL AFTER THE DDC SYSTEM HAS ENABLED THE CHILLER OR THE CHILLER IS MANUALLY ENABLED VIA THE CHILLER CONTROL PANEL.

PUMP DISABLE: THE OPERATING CHILLED WATER PUMP SHALL BE DISABLED BASED ON THE REMOVAL OF THE HARD-WIRED PUMP REQUEST SIGNAL.

PUMP ALTERNATION: THE PRIMARY / STANDBY DESIGNATION OF THE PUMPS SHALL BE ALTERNATED ON A WEEKLY BASIS DURING A NORMALLY UNOCCUPIED TIME OF DAY SO AS TO DISTRIBUTE RUN-HOURS EVENLY BETWEEN THE TWO PUMPS.

PUMP FAILURE: IF EITHER PUMP FAILS, AS INDICATED BY LACK OF STATUS WHEN COMMANDED ON, THEN THE DDC SYSTEM SHALL AUTOMATICALLY CHANGE THE LEAD-LAG DESIGNATION VIA OVERRIDE COMMAND THEREBY STARTING THE OTHER PUMP AND SHALL POST A PUMP FAILURE ALARM.

CHILLED WATER PUMP SPEED CONTROL: CONSTANT VOLUME

ALL CHILLED WATER CONTROL VALVES IN THE SYSTEM ARE THREE-WAY. THE SPEED OF THE OPERATING CHILLED WATER PUMP(S) SHALL BE SET DURING TEST AND BALANCE.

CHILLED WATER SUPPLY TEMPERATURE SETPOINT:

THE DDC SYSTEM SHALL MONITOR THE POSITION OF ALL THE CHILLED WATER VALVES IN THE SYSTEM AND SHALL RESET THE CHILLED WATER SUPPLY TEMPERATURE SETPOINT (CHWS-SP) BASED ON THE MOST OPEN CHILLED WATER VALVE POSITION.

FREEZE PROTECTION:

IF THE OUTSIDE AIR TEMPERATURE FALLS BELOW 38°F (ADJUSTABLE) THE DDC SYSTEM SHALL ENERGIZE A CHILLED WATER PUMP AND SHALL CIRCULATE WATER UNTIL THE OA TEMPERATURE RISES ABOVE 40°F (ADJUSTABLE) FOR 15 MINUTES (ADJUSTABLE).

SYSTEM FAILURE ALARM:

IF AFTER 30 MINUTES (ADJUSTABLE) THE CHILLED WATER SUPPLY TEMPERATURE TO THE BUILDING DOES NOT REACH THE CURRENT SETPOINT THEN A HIGH-LEVEL ALARM SHALL BE POSTED TO THE DDC SYSTEM INDICATING A "GENERAL CHILLED WATER SYSTEM FAILURE" AND THE APPROPRIATE REMOTE NOTIFICATION SHALL BE EXECUTED.

VARIABLE AIR VOLUME AIR HANDLING UNIT:

THE AHU SUPPLY FANS SHALL BE STARTED/STOPPED BY THE DDC SYSTEM ACCORDING TO AN OWNER PROVIDED OCCUPIED/UNOCCUPIED SCHEDULE THROUGH THE VARIABLE FREQUENCY DRIVE ENABLE CIRCUIT.

THE DDC SYSTEM SHALL CONTROL THE SPEED OF THE FAN TO MAINTAIN THE DUCT STATIC PRESSURE SET POINT.

THE DDC SYSTEM SHALL MONITOR SUPPLY AIR DUCT STATIC PRESSURE AT A POINT APPROXIMATELY 2/3 DOWNSTREAM FROM THE FAN AND MODULATE THE FAN SPEED THROUGH THE VFD'S TO MAINTAIN STATIC PRESSURE AT THE SET POINT.

DUCT STATIC PRESSURE RESET: THE DDC SYSTEM SHALL CONTROL THE FAN SPEED THROUGH VARIABLE FREQUENCY DRIVES (VFD) TO MAINTAIN SUPPLY DUCT STATIC PRESSURE AT SET POINT.

THE DDC SYSTEM SHALL MODULATE THE 3-WAY PRIMARY CHILLED WATER CONTROL VALVE AS REQUIRED TO MAINTAIN THE PRIMARY COOLING COIL LEAVING AIR TEMPERATURE (CCLAT) AT DESIGN.

VAV COOLING LOOP DEMAND: THE DAT SET POINT SHALL BE RESET EVERY 15 MINUTES BASED ON THE VAV TERMINAL UNITS COOLING LOOP DEMAND OUTPUT.

RELATIVE HUMIDITY (RH) RESET: THE DDC SYSTEM SHALL MONITOR THE SPACE AIR RH%. THE MAXIMUM SYSTEM RH% SHALL BE USED TO DETERMINE THE DAT SET POINT USING A LINEAR RESET SCHEDULE WITH THE FOLLOWING MIN / MAX END POINTS.

THE OUTSIDE AIR DAMPER SHALL OPEN TO ITS MINIMUM SET POINT WHEN THE SUPPLY FANS RUN IN THE OCCUPIED MODE.

DIFFERENTIAL PRESSURE SENSORS SHALL MONITOR THE PRESSURE DROP ACROSS THE FILTER BANK INSIDE THE AHU.

VARIABLE AIR VOLUME TERMINAL UNITS

OCCUPIED SPACE TEMPERATURE CONTROL:

EACH VAV SHALL HAVE ITS INDIVIDUAL LOCAL THERMOSTAT CONTROL OF THE SPACE TEMPERATURE SETPOINT ENABLED ("LOCAL") OR DISABLED ("COMPUTER"). THIS SETPOINT CONTROL VARIABLE CAN ALSO BE TOGGLED BETWEEN LOCAL OR COMPUTER CONTROL.

COOLING:

THE DDC SYSTEM SHALL MODULATE THE TERMINAL UNIT PRIMARY AIR DAMPER TO MAINTAIN SPACE TEMPERATURE AT THE COOLING SETPOINT.

HEATING:

IF THE SPACE TEMPERATURE FALLS BELOW THE HEATING SETPOINT THEN THE DDC SHALL CHANGE THE TERMINAL UNIT MODE OF OPERATION TO HEATING MODE.

OCCUPANT OVERRIDE:

OCCUPANT OVERRIDE: IF THE OCCUPANT PASSES THE SCHEDULE OVERRIDE BUTTON ON THE SPACE MOUNTED THERMOSTAT THEN THE SYSTEM SHALL RETURN TO OCCUPIED MODE FOR A PERIOD OF 120 MINUTES (ADJUSTABLE).

NIGHT SETBACK HEATING:

IF THE SPACE TEMPERATURE SHOULD FALL BELOW 55 DEGREES F (ADJUSTABLE - GLOBAL) WHEN THE DDC SYSTEM HAS THE CORRESPONDING SYSTEM IN UNOCCUPIED MODE THE VAV CONTROLLER SHALL SIGNAL THE AIR HANDLING UNIT TO ENERGIZE AND SHALL ENABLE THE HEATING COIL AT THE TERMINAL UNIT IN ORDER TO HEAT THE SPACE UP TO THE NIGHT SETBACK SETPOINT PLUS 5 DEGREES F (ADJUSTABLE - GLOBAL).

NIGHT SETUP COOLING:

IF THE SPACE TEMPERATURE SHOULD RISE ABOVE 85 DEGREES F (ADJUSTABLE - GLOBAL) WHEN THE DDC SYSTEM HAS THE CORRESPONDING SYSTEM IN UNOCCUPIED MODE THE VAV CONTROLLER SHALL SIGNAL THE AIR HANDLING UNIT TO ENERGIZE IN ORDER TO COOL THE SPACE DOWN TO THE NIGHT SETUP SETPOINT MINUS 5 DEGREES F (ADJUSTABLE - GLOBAL).

GENERAL EXHAUST FANS:

THE FANS INTERLOCKED WITH AHU#1 OR AHU#2 SHALL RUN CONTINUOUSLY WHEN THE INTERLOCKED AHU IS RUNNING.

1 HVAC CONTROLS

1/8" = 1'-0"

H.M. YONGE & ASSOCIATES, INC. CONSULTING ENGINEERS // EST. 1988 51 EAST GREGORY STREET PENSACOLA, FLORIDA 32502 PHONE: (850)434-2661 CERTIFICATION OF AUTHORIZATION No. 5254 MECHANICAL ENGINEER HOWARD M. YONGE, P.E. FLORIDA REG. NO. 32093 MECHANICAL ENGINEER TIMOTHY J. MITCHELL, P.E. FLORIDA REG. NO. 66792 ELECTRICAL ENGINEER ARUN T. VARGHESE, P.E. FLORIDA REG. NO. 76315 H.M. YONGE AND ASSOC. JOB# 23-130

DO NOT SCALE DRAWINGS

PROJECT ISSUES:

SCHEMATIC DESIGN: 6/25/2023
DESIGN DEVELOPMENT: 8/21/2023

100% CONSTRUCTION DOCUMENTS: 11/17/2023

REVISION 2: 02/28/2024

CONFORMANCE SET: 04/16/2024

PROJECT TEAM:

CIVIL: KENNETH HORNE & ASSOCIATES
LANDSCAPING: FORME DESIGN GROUP
STRUCTURAL: MCCARTHY ENGINEERING
ARCHITECTURAL: CALDWELL ASSOCIATES
FIRE PROTECTION: H.M. YONGE & ASSOCIATES
MECHANICAL / PLUMBING: H.M. YONGE & ASSOCIATES
ELECTRICAL: CLOCKE ASSOCIATES

PROJECT:

CREATIVE LEARNING ACADEMY

3151 HYDE PARK RD. PENSACOLA, FL

PROJECT NO.: 22028
SHEET TITLE: HVAC SCHEDULES

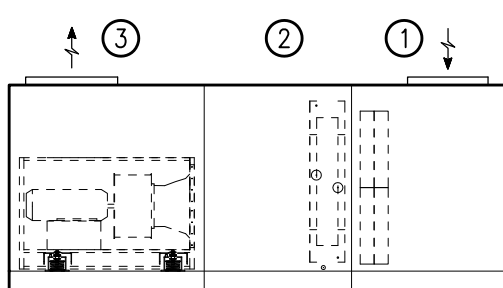
SHEET NUMBER:

M401

AIR HANDLING UNIT SCHEDULE

MARK AHU#	AREA SERVED	AIR DATA																				FILTER TYPE	MAX. VELOCITY (FPM)			ELECTRICAL DATA					REMARKS
		SUPPLY AIR FAN						COOLING CAPACITY				CHILLED WATER			GENERAL		SUP. FANS		LV LIGHTS												
		TOTAL CFM	OA CFM	ESP	TSP	MOTOR HP	FAN TYPE	EDB 'F	EWB 'F	LDB 'F	LWB 'F	TOTAL BTU/HR	SENSIBLE BTU/HR	ENT 'F	LVC 'F	GPM	MAX WPD	CLG. COIL	OUTLET	FILTER	VOLTS		Hz	PHASE	460/3/60 MCA	120/1/60 MOP	1 @ 1.63 MCA	1 @ 1.15 MOP			
1	FIRST FLOOR	6,800	2,000	2.5	7.5	15.0	D.D. PLENUM	75.6	68.8	54.0	53.8	319,500	162,500	44	56	53.0	15'	2" MERV 8 PRE-FILTER 4" MERV 13 FINAL FILTER	550	2000	550	460	60	3	1 @ 26.3 MCA	1 @ 45 MOP	1 @ 1.63 MCA	1 @ 1.15 MOP	NOTES 1, 2, 3, 4, 5, 6, 7		
2	SECOND FLOOR	7,000	2,100	2.5	7.6	15.0	D.D. PLENUM	75.7	68.9	54.0	53.8	319,500	168,200	44	56	55.0	15'	2" MERV 8 PRE-FILTER 4" MERV 13 FINAL FILTER	550	2000	550	460	60	3	1 @ 26.3 MCA	1 @ 45 MOP	1 @ 1.63 MCA	1 @ 1.15 MOP	NOTES 1, 2, 3, 4, 5, 6, 7		

- NOTES:
1. PROVIDE UNIT WITH 6" BASE RAIL.
2. MAX DBA IN ALL OCTAVE BANDS IS 85 DBA.
3. PREMIUM EFFICIENCY, INVERTER DUTY FAN MOTOR WIRED FOR VFD.
4. PROVIDE UNIT WITH LOCKABLE ON/OFF SWITCH FOR UV LIGHTS. THE SWITCH SHALL BE INTEGRAL TO THE AHU OR MOUNTED ON THE AHU.
5. PROVIDE 120V/1Ph CIRCUIT FOR UV LIGHTS.
6. ALL FILTER FRAMES SHALL INCLUDE GASKETS TO ELIMINATE AIR BYPASS OF THE FILTER.
7. PROVIDE UV RESISTANT VIEW WINDOW IN COOLING COIL SECTION.



CONFIGURATION NOTES:

1. RA INTAKE/FILTER SECTION
2. COOLING COIL SECTION W/ UV LIGHTS
3. FAN SECTION

AHU#2 CONFIGURATION

NOT TO SCALE

AIR COOLED WATER CHILLER SCHEDULE

MARK	NOMINAL CAPACITY TONS	GPM	WATER TEMP.		AMBIENT TEMP. 'F	EVAPORATOR MAX. WPD	COMPRESSOR NO.	COND. FANS NO.	COND. FANS FLA (EA)	MIN. CAPACITY REDUCTION STEPS	MIN. EER (100%)	MIN. IPLV	ELECTRICAL DATA					REMARKS	
			ENT 'F	LVC 'F									VOLTS	Hz	PHASE	MCA	MOP		
ACWC#1	60	108	56	44	95	10 FT. HD.	4	25.0	4	3.3	25-50-75-100	11.42	16.21	460	60	3	129	175	NOTES 1, 2, 3

- NOTE:
1. BACNET MS/TP CONTROL INTERFACE.
2. PROVIDE WITH FACTORY VIBRATION ISOLATION KITS.
3. PROVIDE MINIMUM 65,000A AIC RATING OPTION.

FAN SCHEDULE

MARK	TOTAL CFM	TSP IN WC	MAX RPM	TYPE DRVE	TYPE FAN	INTERLOCK WITH	MOTOR HP/WATTS	MAX SONES	ELECTRICAL DATA			FAN SERVICE	REMARKS
									VOLTS	Hz	PHASE		
EF#11	400	0.50	1500	DIRECT	CENTRIFUGAL IN-LINE	AHU#1	1/6 HP	55 dBA	120	60	1	GENERAL EXHAUST	NOTE 1
EF#12	500	0.50	1590	DIRECT	CENTRIFUGAL IN-LINE	AHU#1	1/6 HP	57 dBA	120	60	1	GENERAL EXHAUST	NOTE 1
EF#13	400	0.50	1500	DIRECT	CENTRIFUGAL IN-LINE	AHU#1	1/6 HP	55 dBA	120	60	1	GENERAL EXHAUST	NOTE 1
EF#14	300	0.50	1525	DIRECT	CENTRIFUGAL IN-LINE	AHU#1	1/10 HP	54 dBA	120	60	1	GENERAL EXHAUST	NOTE 1
EF#15	650	0.375	1140	DIRECT	CENTRIFUGAL IN-LINE	WALL SWITCH	1/6 HP	52 dBA	120	60	1	SCIENCE 104	NOTE 1
EF#16	650	0.375	1140	DIRECT	CENTRIFUGAL IN-LINE	WALL SWITCH	1/6 HP	52 dBA	120	60	1	SCIENCE 106	NOTE 1
EF#21	425	0.50	1200	DIRECT	CENTRIFUGAL IN-LINE	AHU#2	1/6 HP	49 dBA	120	60	1	GENERAL EXHAUST	NOTE 1
EF#22	500	0.50	1590	DIRECT	CENTRIFUGAL IN-LINE	AHU#2	1/6 HP	57 dBA	120	60	1	GENERAL EXHAUST	NOTE 1
EF#23	425	0.50	1200	DIRECT	CENTRIFUGAL IN-LINE	AHU#2	1/6 HP	49 dBA	120	60	1	GENERAL EXHAUST	NOTE 1
EF#24	500	0.50	1590	DIRECT	CENTRIFUGAL IN-LINE	AHU#2	1/6 HP	57 dBA	120	60	1	GENERAL EXHAUST	NOTE 1

- NOTES:
1. PROVIDE WITH SPEED CONTROLLER AND BACKDRAFT DAMPERS.

CIRCULATING PUMP SCHEDULE

MARK CWP#	CAPACITY GPM	TDH FT.	MIN. SHUTOFF HEAD (FT)	NPSH REQ'D (FT)	MAX. RPM	MOTOR HP	TYPE PUMP	ELECTRICAL DATA			REMARKS
								VOLTS	Hz	PHASE	
CWP#1	108	50	62	3	1750	3.0	BASE MOUNTED END SUCTION	460	60	3	NOTES 1, 2, 3, 4, 5
CWP#2	108	50	62	3	1750	3.0	BASE MOUNTED END SUCTION	460	60	3	NOTES 1, 2, 3, 4, 5

- NOTES:
1. CIRCULATING PUMP SHALL BE PROVIDED FOR AN OUTDOOR APPLICATION.
2. PROVIDE PREMIUM EFFICIENCY, INVERTER DUTY MOTORS WITH MINIMUM 3-YEAR WARRANTY.
3. PUMPS TO BE LASER ALIGNED BY A FACTORY CERTIFIED TECHNICIAN AT START-UP. GROUT PUMP AFTER ALIGNMENT.
4. PROVIDE WITH FACTORY MOUNTED SHAFT GROUNDING RINGS.
5. PROVIDE PUMP WITH MAXIMUM NON-OVERLOADING IMPELLER SIZE.

EXPANSION TANK SCHEDULE

TANK MARK ET#	TANK SERVICE	TANK VOLUME	ACCEPTANCE VOLUME	TANK MOUNTING	TANK TYPE	INITIAL PRESSURE CHARGE	REMARKS
1	CHILLED WATER	22	12	CONCRETE PAD	BLADDER	25 PSI	ASME STAMPED & RATED @ 125 PSI.

BUFFER TANK SCHEDULE

TANK MARK	TANK SERVICE	TANK VOLUME	TANK DIMENSIONS		PIPE CONNECTIONS	REMARKS
			DIAMETER	HEIGHT		
BT#1	CHILLED WATER	125	24"	83"	3" FLANGED	NOTES 1, 2

- NOTES:
1. ASME STAMPED AND RATED @ 125 PSI.
2. PROVIDE WITH INTERNAL BAFFLE.

SPLIT SYSTEM DUCTLESS HEAT PUMP UNIT SCHEDULE

MARK DAHU/DHPU#	AREA SERVED	NOMINAL TONNAGE	AHU DATA								COOLING CAPACITY @ ARI STANDARD CONDITIONS				HEATING CAPACITY @ ARI STANDARD CONDITIONS				CONDENSING UNIT ELECTRICAL DATA	REMARKS								
			TOTAL CFM	OA CFM	ESP	MOTOR	VOLTS	Hz	PHASE	MCA	HACR	EDB	EWB	AMBIENT	TOTAL BTU/HR	SENSIBLE BTU/HR	EDB	AMBIENT			TOTAL BTU/HR							
1	ELEV. EQUIP. 107	1.0	350	--	0.2"	---	208	60	1	--	--	80°F	67°F	95°F	12,000	9,250	70°F	47°F	14,400	25.6	10.7	GROUP A1	208	60	1	10.0	15	NOTES 1, 2, 3, 4, 5
2	DATA 125	0.75	300	--	0.2"	---	208	60	1	--	--	80°F	67°F	95°F	9,000	8,100	70°F	47°F	10,900	28.4	10.9	GROUP A1	208	60	1	10.0	15	NOTES 1, 2, 3, 4, 5
3	DATA 222	0.75	300	--	0.2"	---	208	60	1	--	--	80°F	67°F	95°F	9,000	8,100	70°F	47°F	10,900	28.4	10.9	GROUP A1	208	60	1	10.0	15	NOTES 1, 2, 3, 4, 5

- NOTES:
1. PROVIDE WITH WIRED THERMOSTAT OPTION.
2. INDOOR UNIT IS POWERED THROUGH THE OUTDOOR UNIT.
3. INDOOR UNIT IS WALL MOUNTED.
4. PROVIDE WITH INTEGRAL CONDENSATE PUMP.
5. BASIS OF DESIGN -- TRANE/MITSUBISHI NTXWST INDOOR UNIT WITH NTXSST OUTDOOR UNIT.

MARK	CFM	MAX. NC	AIR DEVICE SIZE	DUCT CONNECTION SIZE	REMARKS (TYPE)
25	25	25	6"x6"	4"	CD
50	50	25	6"x6"	5"	CD
75	75	25	6"x6"	6"	CD
100	100	25	6"x6"	6"	CD
125	125	25	6"x6"	7"	CD
150	150	25	9"x9"	7"	CD
175	175	25	9"x9"	8"	CD
200	200	25	9"x9"	8"	CD
225	225	25	9"x9"	8"	CD
250	250	25	9"x9"	10"	CD
275	275	25	9"x9"	10"	CD
300	300	25	12"x12"	10"	CD
---	---	---	---	---	---
150	150	25	10"x6"	---	SEE PLANS SWS
250	250	25	12"x8"	---	SEE PLANS SWS
225	225	25	12"x8"	---	SEE PLANS SWS
---	---	---	---	---	---
1-300	1-300	25	8"x8"	---	SEE PLANS ER
301-600	301-600	25	12"x12"	---	SEE PLANS ER
601-1125	601-1125	25	18"x18"	---	SEE PLANS ER
---	---	---	---	---	---
R1	1-300	25	8"x8"	---	SEE PLANS RAG
R2	301-600	25	12"x12"	---	SEE PLANS RAG
R3	601-1125	25	18"x18"	---	SEE PLANS RAG
R4	1126-2000	25	22"x22"	---	SEE PLANS RAG
---	---	---	---	---	---

- NOTE:
1. PROVIDE 24"x24" PANEL FOR ALL AIR DEVICES IN LAY-IN CEILING.
2. PROVIDE DUCT CONNECTION SIZE SHOWN UNLESS OTHERWISE NOTED ON PLANS.
3. RETURN AIR GRILLES DESIGNATED AS "RAG" SHALL INCLUDE ACOUSTICAL RETURN AIR CANOPY.

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CERTIFICATION OF AUTHORIZATION No. 5254
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MECHANICAL ENGINEER TIMOTHY J. MITCHELL, P.E. FLORIDA REG NO. 66792
ELECTRICAL ENGINEER ARUN T. VARGHESE, P.E. FLORIDA REG NO. 76315

BUILDING COMMISSIONING NOTES AND REQUIREMENTS:

- THIS BUILDING SHALL BE COMMISSIONED IN COMPLIANCE WITH SECTION C408 OF THE EIGHTH EDITION (2023) OF THE FLORIDA ENERGY CONSERVATION CODE. THIS COMMISSIONING SHALL INCLUDE TEST AND BALANCE VERIFICATION, HVAC FUNCTIONAL PERFORMANCE TESTING AND LIGHTING CONTROLS FUNCTIONAL TESTING.
- A P/T PORT SHALL BE INSTALLED WITHIN SIX INCHES OF ALL DDC WATER TEMPERATURE SENSORS.
- THREADED DUCT TEST PORTS (VENTLOK 699-2 OR EQUAL) SHALL BE INSTALLED WITHIN SIX INCHES OF ALL DUCT MOUNTED DDC AIR TEMPERATURE SENSORS AND RELATIVE HUMIDITY SENSORS.
- INSTALL A MINIMUM 9"x9" ACCESS DOOR ADJACENT TO ALL DUCT MOUNTED CO2 SENSORS.
- THREADED DUCT TEST PORTS (VENTLOK 699-2 OR EQUAL) SHALL BE INSTALLED AT ALL LOCATIONS WHERE THE TEST AND BALANCE CONTRACTOR MAKES A TEMPERATURE MEASUREMENT OR AN AIRFLOW MEASUREMENT.
- INSTALL A MINIMUM 12"x12" ACCESS DOOR ADJACENT TO ALL MOTORIZED CONTROL DAMPERS.
- REFERENCE SPECIFICATIONS 23 08 00, FOR ADDITIONAL INFORMATION.

ABBREVIATIONS

ACWC	AIR COOLED WATER CHILLER	ENT	ENTERING	MVD	MANUAL VOLUME DAMPER
AFMS	AIR FLOW MEASURING STATION	ER	EXHAUST REGISTER	OA	OUTSIDE AIR
AHU	AIR HANDLING UNIT	ESP	EXTERNAL STATIC PRESSURE	PRESS	PRESSURE
BD	BAROMETRIC DAMPER	ET	EXPANSION TANK	PSIG	POUNDS PER SQUARE INCH
BTU/HR	BRITISH THERMAL UNIT PER HOUR	EWB	ENTERING WET BULB	RA	RETURN AIR
CD	CEILING DIFFUSER	FD/AD	FIRE DAMPER WITH ACCESS DOOR	RAG	RETURN AIR GRILLE
CFM	CUBIC FEET PER MINUTE	FLA	FULL LOAD AMPS	RLA	RATED LOAD AMPS
CWP	CHILLED WATER PUMP	GPM	GALLONS PER MINUTE	SA	SUPPLY AIR
CWR	CHILLED WATER RETURN	HP	HORSEPOWER	SP	STATIC PRESSURE
CWS	CHILLED WATER SUPPLY	INF	INFINITE	SWR	SIDEWALL RETURN REGISTER
COP	COEFFICIENT OF PERFORMANCE	LDB	LEAVING DRY BULB	TDH	TOTAL DYNAMIC HEAD
DDC	DIRECT DIGITAL CONTROLS	LVG	LEAVING	TSP	TOTAL STATIC PRESSURE
EA	EACH	LWB	LEAVING WET BULB	TU	TERMINAL UNIT
EDB	ENTERING DRY BULB	MAX	MAXIMUM	VAV	VARIABLE AIR VOLUME
EER	ENERGY EFFICIENCY RATIO	MBH	1000 BTU/HR	VEL	VELOCITY
EF	EXHAUST FAN	MIN	MINIMUM	VFD	VARIABLE FREQUENCY DRIVE
EFF	EFFICIENCY	MOD	MOTORIZED DAMPER	WPD	WATER PRESSURE DROP

MECHANICAL LEGEND

	CHILLED WATER SUPPLY		THERMOSTAT/SENSOR
	CHILLED WATER RETURN		HUMIDISTAT
	GATE VALVE		DUCT SMOKE DETECTOR
	FLOW BALANCING VALVE		DUCT STATIC PRESSURE SENSOR
	AUTOMATIC FLOW BALANCING VALVE		VAV TERMINAL
	STRAINER W/BLOWDOWN VALVE AND HOSE CONNECTION		FLEXIBLE DUCT (MEDIUM PRESSURE)
	THERMOMETER		90° ELBOW WITH TURNING VANES
	GAGE COCK W/GAGE		SPIN-IN TAP FITTING W/SCOOP & DAMPER
	THERMOMETER WELL		METAL DUCT TO FLEX DUCT TRANSITION
	GAGE COCK		FIRE DAMPER/ACCESS DOOR
	CHECK VALVE		FLAT OVAL SPIRAL DUCT IN SECTION
	FLEXIBLE PIPING CONNECTOR		LOW PRESSURE SUPPLY DUCT IN SECTION
	RELIEF VALVE		RETURN AIR DUCT IN SECTION
	PRESSURE REDUCING VALVE		EXHAUST AIR DUCT IN SECTION
	UNION		CEILING DIFFUSER
	THREE-WAY CONTROL VALVE		RETURN/TRANSFER REGISTER
	TWO-WAY CONTROL VALVE		EXHAUST REGISTER
	IN-LINE FLOW METER		MOTORIZED DAMPER
	DRAIN PIPING		MANUAL VOLUME DAMPER
	PETE'S PLUG		BAROMETRIC DAMPER
	AUTOMATIC AIR VENT		UNDERCUT DOOR 1/2"
	BUTTERFLY VALVE		
	BALL VALVE		
	BACKFLOW PREVENTER		

VAV TERMINAL UNIT SCHEDULE

MARK TU#	INLET SIZE	BOX MAX CFM	DESIGN CFM	MINIMUM COOLING CFM	DESIGN HEATING CFM	DESIGN AIR PD	HEATING		ELECTRICAL DATA			MAX NC	REMARKS
							STEPS	KW	VOLTS	Hz	PHASE		
11	8"	900	800	250	350	0.75"	SCR	4.0	277	60	1	28	PRESSURE INDEPENDENT (SQUEEZE OFF)
12	10"	1,400	1,050	325	450	0.75"	SCR	4.5	277	60	1	28	PRESSURE INDEPENDENT (SQUEEZE OFF)
13	10"	1,400	1,050	325	450	0.75"	SCR	4.5	277	60	1	28	PRESSURE INDEPENDENT (SQUEEZE OFF)
14	10"	1,400	1,025	325	450	0.75"	SCR	4.5	277	60	1	28	PRESSURE INDEPENDENT (SQUEEZE OFF)
15	10"	1,400	1,025	325	450	0.75"	SCR	4.5	277	60	1	28	PRESSURE INDEPENDENT (SQUEEZE OFF)
16	8"	900	600	175	250	0.75"	SCR	3.0	277	60	1	28	PRESSURE INDEPENDENT (SQUEEZE OFF)
17	10"	1,400	1,175	350	525	0.75"	SCR	6.0	277	60	1	28	PRESSURE INDEPENDENT (SQUEEZE OFF)
18	10"	1,400	1,050	325	450	0.75"	SCR	4.5	277	60	1	28	PRESSURE INDEPENDENT (SQUEEZE OFF)
21	8"	900	750	250	325	0.75"	SCR	4.0	277	60	1	28	PRESSURE INDEPENDENT (SQUEEZE OFF)
22	10"	1,400	1,050	325	450	0.75"	SCR	4.5	277	60	1	28	PRESSURE INDEPENDENT (SQUEEZE OFF)
23	10"	1,400	1,050	325	450	0.75"	SCR	4.5	277	60	1	28	PRESSURE INDEPENDENT (SQUEEZE OFF)
24	10"	1,400	1,025	325	450	0.75"	SCR	4.5	277	60	1	28	PRESSURE INDEPENDENT (SQUEEZE OFF)
25	10"	1,400	1,025	325	450	0.75"	SCR	4.5	277	60	1	28	PRESSURE INDEPENDENT (SQUEEZE OFF)
26	8"	900	575	175	250	0.75"	SCR	3.0	277	60	1	28	PRESSURE INDEPENDENT (SQUEEZE OFF)
27	10"	1,400	1,150	350	525	0.75"	SCR	6.0	277	60	1	28	PRESSURE INDEPENDENT (SQUEEZE OFF)
28	10"	1,400	1,100	325	450	0.75"	SCR	4.5	277	60	1	28	PRESSURE INDEPENDENT (SQUEEZE OFF)

- NOTES:
 1. PROVIDE WITH INTEGRAL DISCONNECT SWITCH.
 2. MINIMUM CFM IS ALSO THE HEATING CFM.
 3. PROVIDE WITH 208V/24V CONTROLS TRANSFORMER DEPENDING ON HEATER VOLTAGE.
 4. BOXES SHALL BE ORDERED WITH RIGHT HAND / LEFT HAND CONFIGURATION AS REQUIRED TO PROVIDE PROPER NEC CLEARANCES.
 5. BASIS OF DESIGN - TRANE MODEL VCEF

ELECTRIC DUCT HEATER SCHEDULE

MARK EDH#	AREA SERVED	TOTAL CFM	EDB 'F	LDB 'F	ELEMENT DATA		DUCT SIZE	ELECTRICAL DATA			CONTROL WITH	REMARKS
					CONTROL	TOTAL KW		VOLTS	Hz	PHASE		
1	AHU#1 OA DUCT	2,000	30.0	61.6	SCR	20.0	16"x24"	460	60	3	DDC	NOTES 1, 2, 3
2	AHU#2 OA DUCT	2,100	30.0	60.1	SCR	20.0	16"x24"	460	60	3	DDC	NOTES 1, 2, 3

- NOTES:
 1. PROVIDE WITH INTEGRAL DISCONNECT.
 2. PROVIDE WITH FINNED TUBULAR ELEMENTS.
 3. BASIS OF DESIGN - MARKEL MODEL CHMS.

ELECTRIC UNIT HEATER SCHEDULE

MARK EUH#	AREA SERVED	CFM	HEATING CAPACITY		ELECTRICAL DATA			REMARKS	
			INPUT KW	OUTPUT BTUH	VOLTS	PHASE	Hz		AMPS
1	FIRE RISER ROOM	175	1.5 kW	5,120	120	60	1	12.5	NOTE 1

- NOTES:
 1. BASIS OF DESIGN - MARKEL 3320 SERIES WITH INTEGRAL THERMOSTAT.

1 HVAC SCHEDULES AND LEGEND

1/8" = 1'-0"

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H.M. YONGE AND ASSOC. JOB# 23-130

DO NOT SCALE DRAWINGS

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PROJECT ISSUES:

SCHEMATIC DESIGN: 6/25/2023
 DESIGN DEVELOPMENT: 8/21/2023

100% CONSTRUCTION DOCUMENTS: 11/17/2023

REVISION 3 03/21/2024

CONFORMANCE SET 04/16/2024

PROJECT TEAM:

- CIVIL: KENNETH HORNE & ASSOCIATES
 LANDSCAPING: FORME DESIGN GROUP
 STRUCTURAL: MCCARTHY ENGINEERING
 ARCHITECTURAL: CALDWELL ASSOCIATES
 FIRE PROTECTION: H.M. YONGE & ASSOCIATES
 MECHANICAL / PLUMBING: H.M. YONGE & ASSOCIATES
 ELECTRICAL: KLOCKE ASSOCIATES

PROJECT: CREATIVE LEARNING ACADEMY

3151 HYDE PARK RD. PENSACOLA, FL

PROJECT NO.: 22028
 SHEET TITLE:

HVAC SCHEDULES AND LEGEND

SHEET NUMBER:

M402