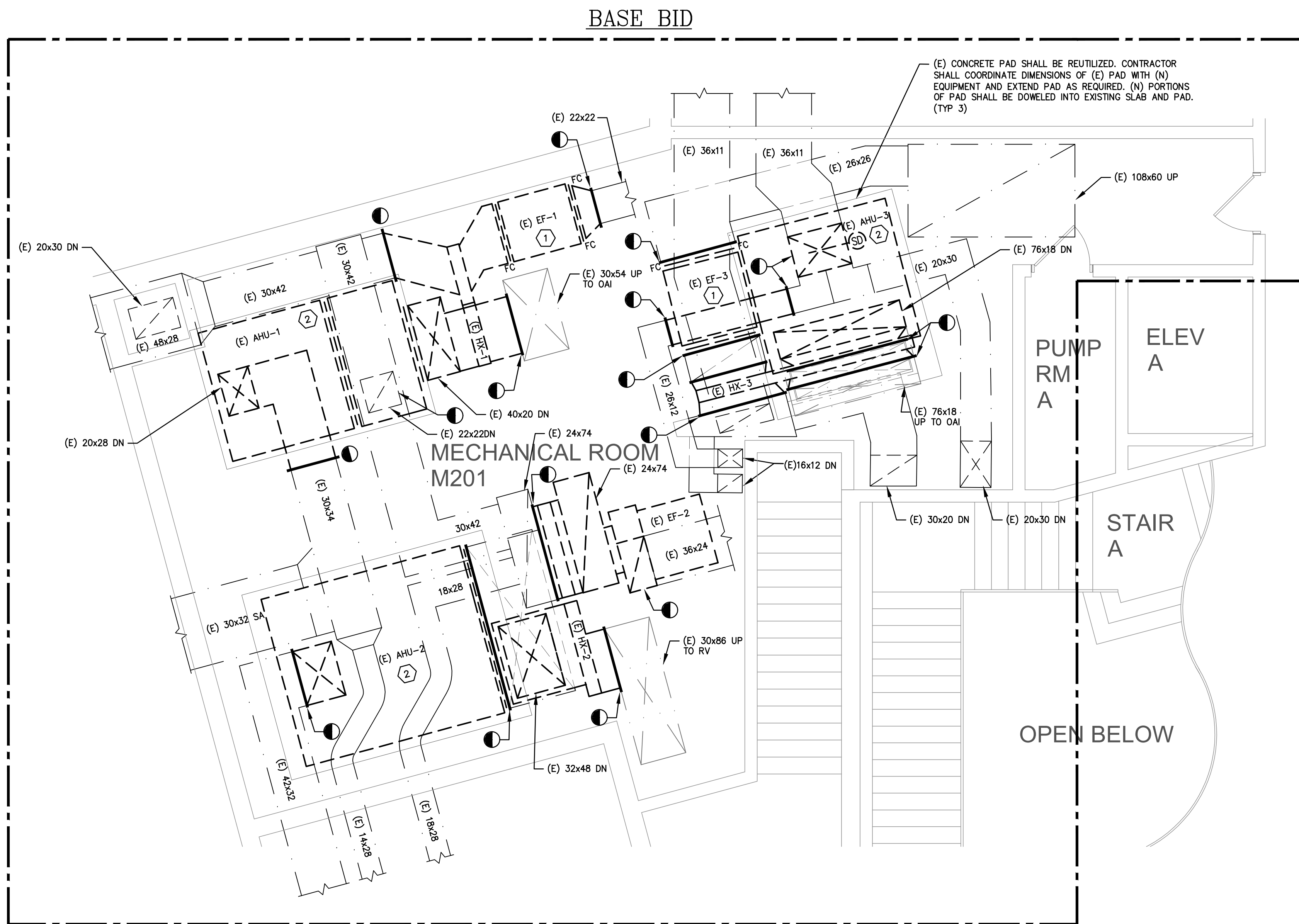




1 MECHANICAL ROOM 03 PLAN – HVAC DEMOLITION

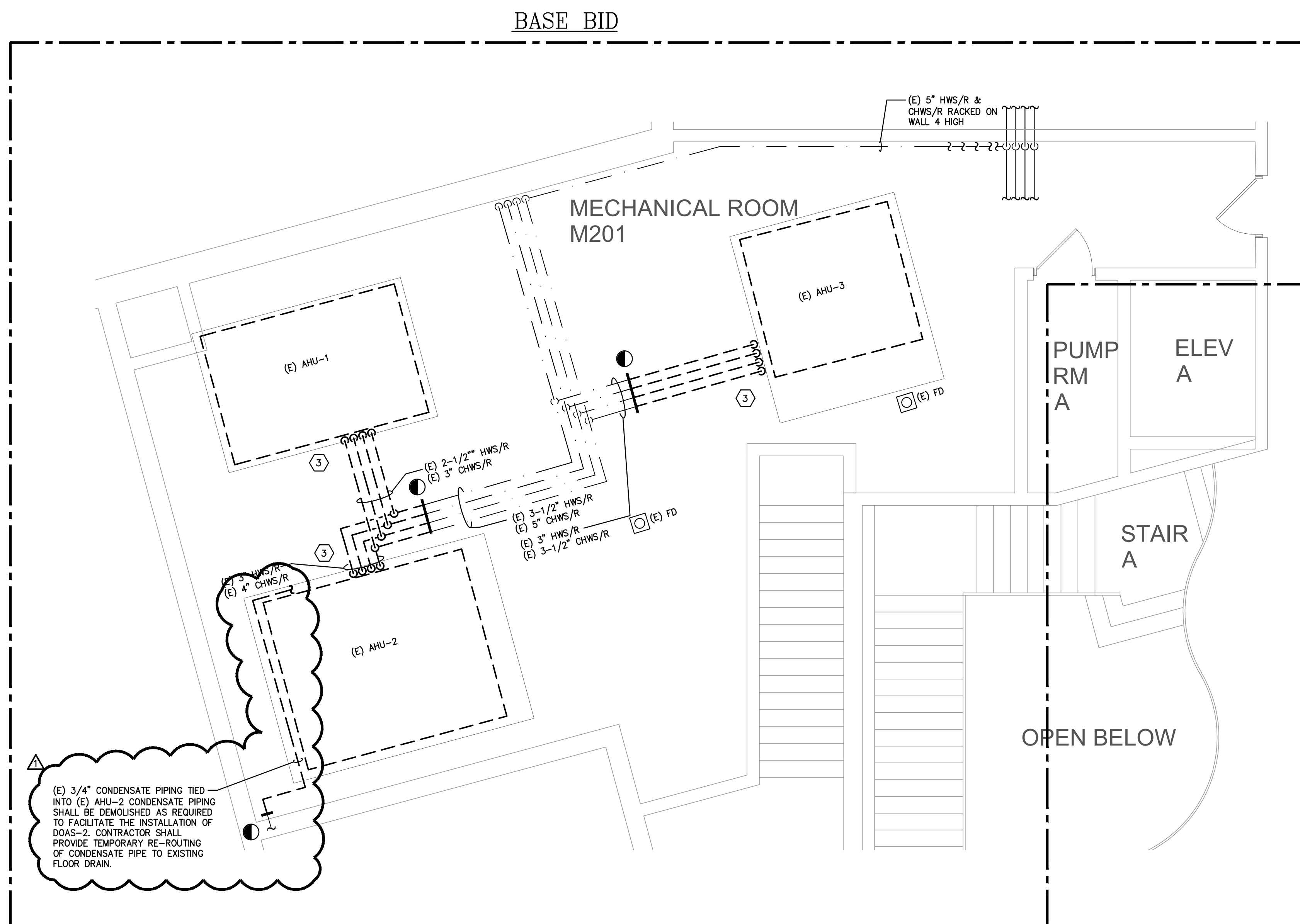
SCALE 1/4" = 1'-0"

DEMOLITION NOTES :

- REMOVE PORTION OF (E) DUCT TO FACILITATE DEMOLITION OF (E) EF & THE INSTALLATION OF NEW EF. INSTALL NEW DUCT TO REPLACE DEMOLISHED PORTION AFTER NEW EF IS SATISFACTORILY INSTALLED & TESTED.
- (E) VERTICAL/HORIZONTAL AHU/FCU, ASSOCIATED CONTROLS, PORTIONS OF DUCTWORK, HW & CHW PIPING SHALL BE REMOVED AS SHOWN. HWS/R & CHWS/R PIPING SHALL BE TEMPORARILY CAPPED LIQUID TIGHT. PORTIONS OF EXISTING CONDENSATE PIPING SHALL BE REMOVED AS REQUIRED. AS PART OF CONTROL WORK, REMOVE DEMOLISHED FCU AND ASSOCIATED GRAPHICS FROM THE DATABASE OF THE BARBER COLEMAN SYSTEM 8000 BMS.

GENERAL DEMOLITION NOTES :

- COORDINATE SHUT DOWN SCHEDULE OF HVAC SYSTEM WITH OWNER. PRIOR TO DEMOLITION, CONTRACTOR SHALL PERFORM A COMPLETE CHEMICAL CLEANING OF THE HEATING HOT WATER, CHILLED WATER, AND CONDENSER WATER SYSTEMS IN THEIR ENTIRETY. CONTRACTOR SHALL REPAIR ANY LEAKS THAT DEVELOP AS A RESULT OF CLEANING PROCESS THROUGHOUT THE BUILDING UNDER PROJECT ALLOWANCE. DRAIN EXISTING HW & CHW SYSTEMS AS REQUIRED BEFORE DEMOLITION. SUBMIT WATER ANALYSIS REPORT TO DOCUMENT CONDITIONS OF THE HEATING HOT WATER AND CHILLED WATER SYSTEM AT TURN-OVER.
- CONTRACTOR SHALL SCOPE EXISTING HEATING HOT WATER SUPPLY & RETURN AND CHILLED WATER SUPPLY & RETURN PIPING AFTER DEMOLITION AT EACH AIR HANDLING UNIT FOR A MINIMUM OF 25 FEET IN EACH DIRECTION. CONTRACTOR SHALL ALERT ARCHITECT OF SCOPING MINIMUM SEVEN (7) DAYS IN ADVANCE.
- CONTRACTOR SHALL OBTAIN SERVICES OF A NEBB CERTIFIED TESTING AND BALANCING COMPANY TO PERFORM FULL WORK UP OF EXISTING OPERATING CONDITIONS AT AHU/EF 1,2,3,5,6, & 7 AND SHALL MEASURE THE AIRFLOW THROUGH ASSOCIATED (E) SUPPLY & RETURN/EXHAUST AIR OUTLETS IN THE ENTIRE BUILDING PRIOR TO DEMOLITION. AIRFLOW MEASUREMENTS SHALL BE RECORDED AND SENT TO THE ENGINEER.
- ASSOCIATED CONTROLS (CONTROLLERS, SENSORS, THERMOSTATS, WIRING, ETC) OF ALL HVAC EQUIPMENT THAT ARE SHOWN OR NOTED TO BE DEMOLISHED SHALL BE REMOVED IN THEIR ENTIRETY.
- CONTRACTOR SHALL MEASURE THE EXISTING PRESSURE DROP THROUGH OUTSIDE AIR AND EXHAUST SIDE OF EACH EXISTING HEAT EXCHANGER.
- WHERE EXISTING DUCTWORK AND/OR EQUIPMENT THAT CONSTITUTED AN OBSTRUCTION TO SPRINKLER DISCHARGE AND IS PROVIDED WITH PROTECTION ABOVE AND BELOW PER NFPA-13, SECTION 8.5.5, IS BEING REMOVED THE SPRINKLER HEAD(S) PROVIDING PROTECTION BELOW THE OBSTRUCTION AND ASSOCIATED PIPING, VALVES, HANGERS, ETC. SHALL BE REMOVED TO A SUFFICIENT EXTENT TO PERMIT REMOVAL OF THE OBSTRUCTION. PROVIDE TEMPORARY PIPE CAPS AS REQUIRED. NO DEAD LESS SHALL BE PERMITTED TO REMAIN UPON CONCLUSION OF WORK. PROVIDE ADDITIONAL DRAIN POINTS AS REQUIRED TO ALLOW ENTIRE SYSTEM TO BE DRAINED AS REQUIRED BY CODE. CONTRACTOR SHALL PROVIDE FIRE WATCH AT ALL TIMES SPRINKLER SYSTEM, OR PORTIONS THEREOF, IS OFFLINE.



2 MECHANICAL ROOM 03 PLAN – HVAC PIPING DEMOLITION

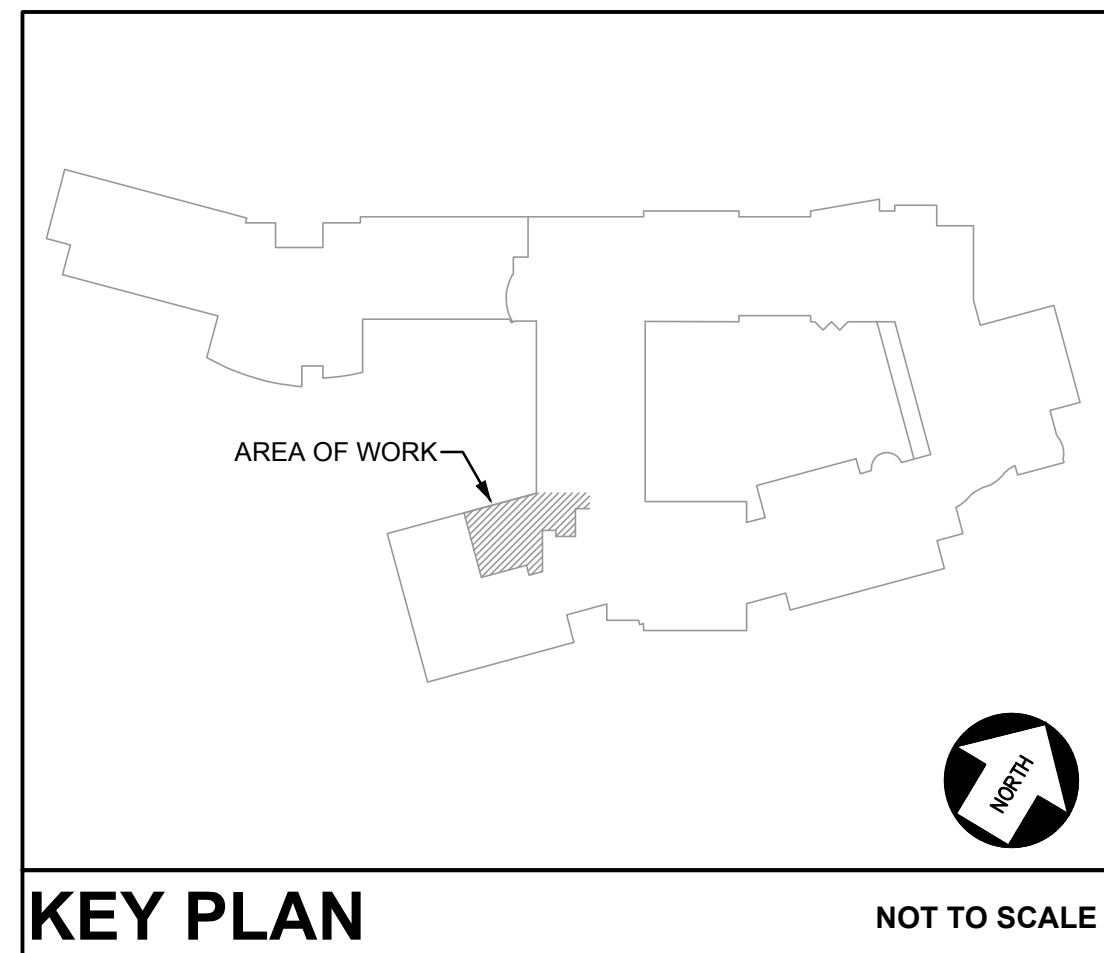
SCALE 1/4" = 1'-0"

DEMOLITION KEY NOTES :

- (E) BOILER & ASSOCIATED FLUE, PORTION OF HWS & HWR, DRAWN PIPING, PORTION OF GAS PIPING SHALL BE DEMOLISHED.
- (E) PUMP & ASSOCIATED STARTERS, PORTION OF HWS INLET & OUTLET, VALVE/STRAINER ASSEMBLIES SHALL BE DEMOLISHED.
- PORTION OF (E) HWS/R, CHWS/R PIPING, VALVE ASSEMBLIES, CONDENSATE DRAIN PIPING ASSOCIATED WITH AHU SHALL BE DEMOLISHED TO FACILITATE REMOVAL OF AHU AND INSTALLATION OF NEW AHU.

GENERAL DEMOLITION NOTES :

- COORDINATE SHUT DOWN SCHEDULE OF HVAC SYSTEM WITH OWNER. PRIOR TO DEMOLITION, CONTRACTOR SHALL PERFORM A COMPLETE CHEMICAL CLEANING OF THE HEATING HOT WATER, CHILLED WATER, AND CONDENSER WATER SYSTEMS IN THEIR ENTIRETY. CONTRACTOR SHALL REPAIR ANY LEAKS THAT DEVELOP AS A RESULT OF CLEANING PROCESS THROUGHOUT THE BUILDING UNDER PROJECT ALLOWANCE. DRAIN EXISTING HW & CHW SYSTEMS AS REQUIRED BEFORE DEMOLITION. SUBMIT WATER ANALYSIS REPORT TO DOCUMENT CONDITIONS OF THE HEATING HOT WATER AND CHILLED WATER SYSTEM AT TURN-OVER.
- CONTRACTOR SHALL SCOPE EXISTING HEATING HOT WATER SUPPLY & RETURN AND CHILLED WATER SUPPLY & RETURN PIPING AFTER DEMOLITION AT EACH AIR HANDLING UNIT FOR A MINIMUM OF 25 FEET IN EACH DIRECTION. CONTRACTOR SHALL ALERT ARCHITECT OF SCOPING MINIMUM SEVEN (7) DAYS IN ADVANCE.
- CONTRACTOR SHALL OBTAIN SERVICES OF A NEBB CERTIFIED TESTING AND BALANCING COMPANY TO PERFORM FULL WORK UP OF EXISTING OPERATING CONDITIONS AT AHU/EF 1,2,3,5,6, & 7 AND SHALL MEASURE THE AIRFLOW THROUGH ASSOCIATED (E) SUPPLY & RETURN/EXHAUST AIR OUTLETS IN THE ENTIRE BUILDING PRIOR TO DEMOLITION. AIRFLOW MEASUREMENTS SHALL BE RECORDED AND SENT TO THE ENGINEER.
- ASSOCIATED CONTROLS (CONTROLLERS, SENSORS, THERMOSTATS, WIRING, ETC) OF ALL HVAC EQUIPMENT THAT ARE SHOWN OR NOTED TO BE DEMOLISHED SHALL BE REMOVED IN THEIR ENTIRETY.
- CONTRACTOR SHALL MEASURE THE EXISTING PRESSURE DROP THROUGH OUTSIDE AIR AND EXHAUST SIDE OF EACH EXISTING HEAT EXCHANGER.



NJDOE SP #07-1770-160-21-1-1000

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PARTIAL SECOND FLOOR PLANS - HVAC DEMOLITION

DRAWING DATE:
24 SEP 21

REVISION DATE:
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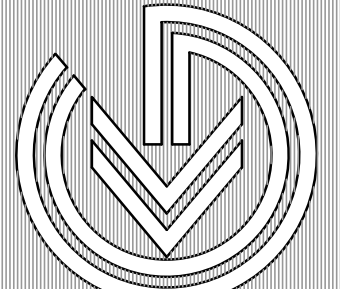
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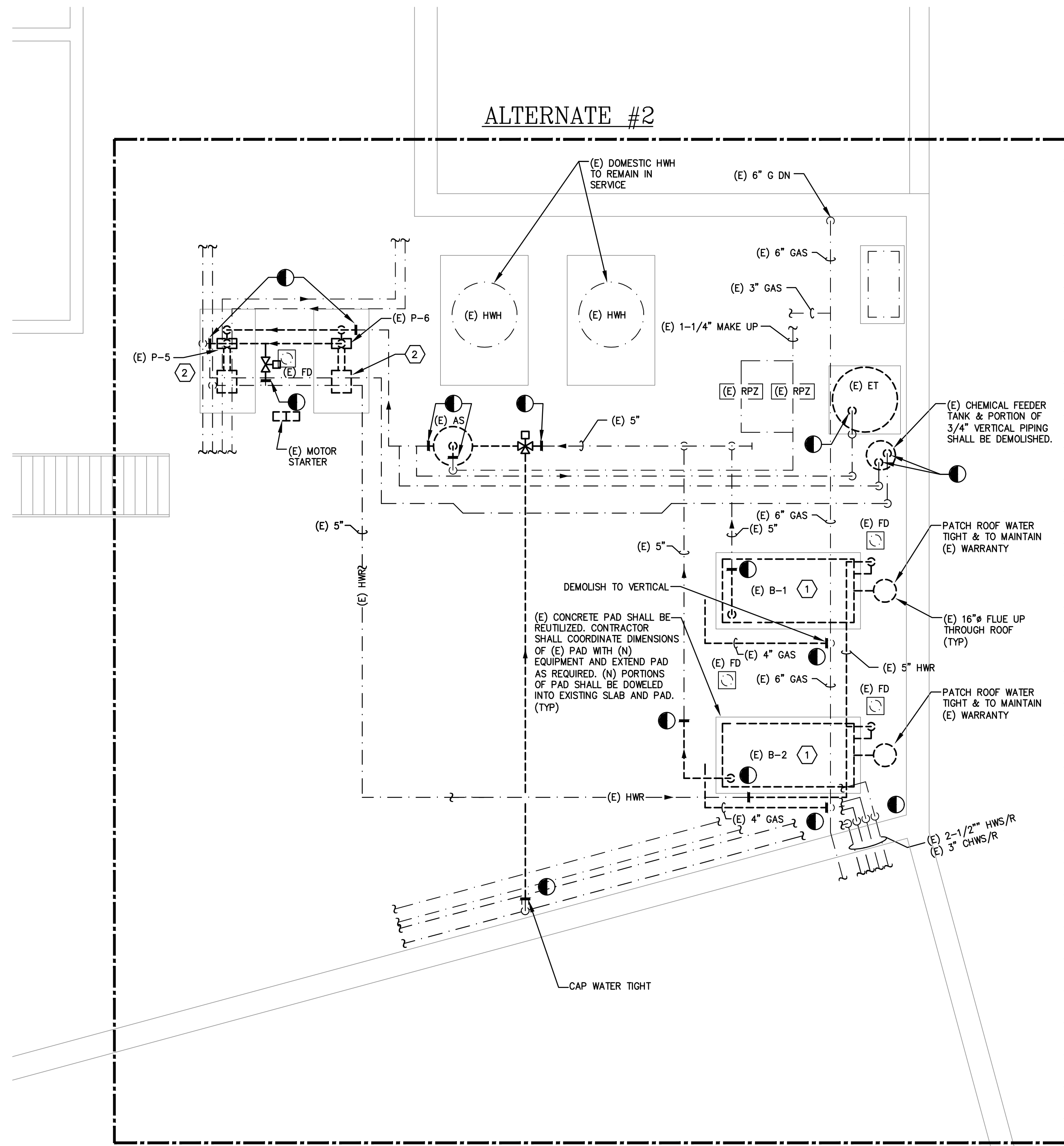
1 OF 17

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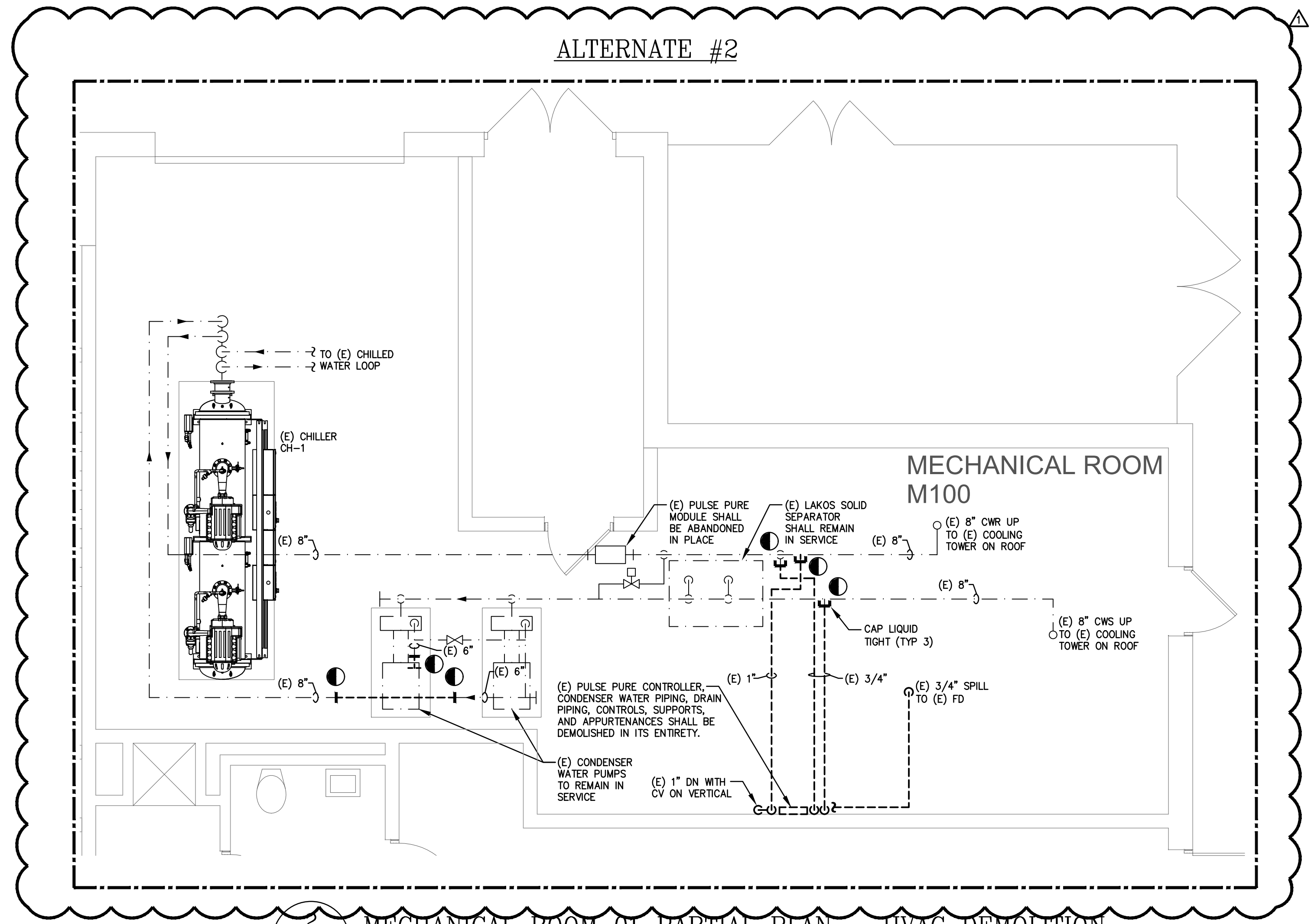


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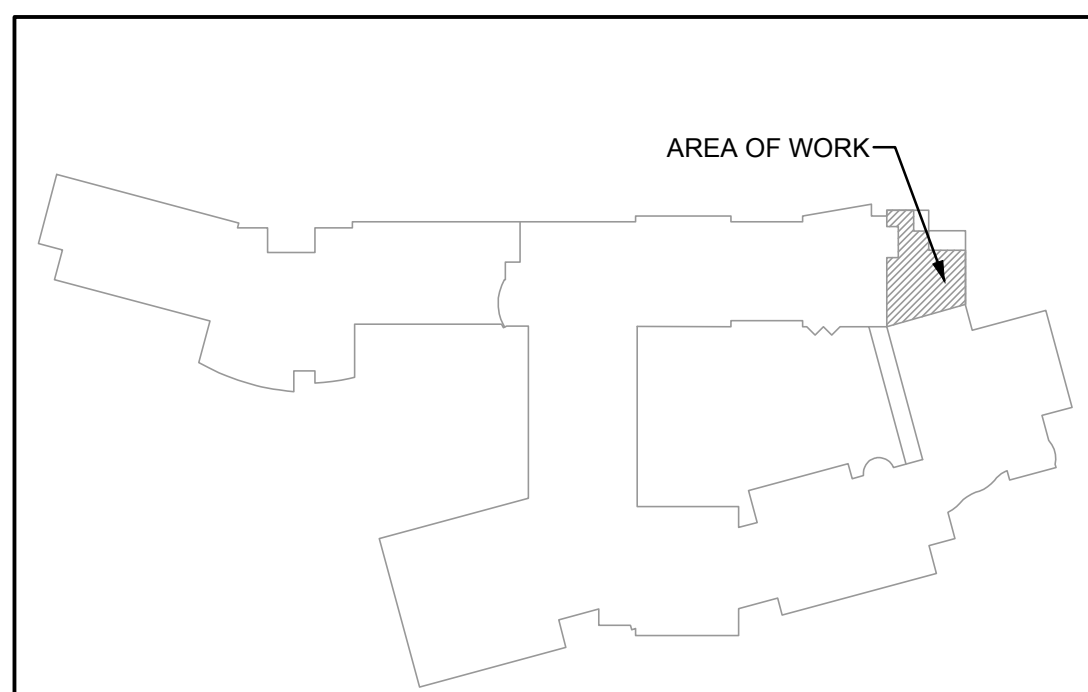
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HD1.4 SECOND FLOOR MECHANICAL ROOM 02 – HVAC PIPING DEMOLITION
SCALE 1/4" = 1'-0"

- GENERAL DEMOLITION NOTES :
- COORDINATE SHUT DOWN SCHEDULE OF HVAC SYSTEM WITH OWNER. DRAIN EXISTING HW SYSTEM AS REQUIRED BEFORE DEMOLITION. SUBMIT WATER ANALYSIS REPORT TO DOCUMENT CONDITIONS OF THE HEATING HOT WATER SYSTEM AT TURN-OVER.
 - CONTRACTOR SHALL SCOPE EXISTING HEATING HOT WATER SUPPLY & RETURN PIPING AFTER DEMOLITION AT EACH BOILER FOR A MINIMUM OF 25 FEET IN EACH DIRECTION. CONTRACTOR SHALL ALERT ARCHITECT OF SCOPING MINIMUM SEVEN (7) DAYS IN ADVANCE.
 - ASSOCIATED CONTROLS (CONTROLLERS, SENSORS, THERMOSTATS, WIRING, ETC) OF ALL HVAC EQUIPMENT THAT ARE SHOWN OR NOTED TO BE DEMOLISHED SHALL BE REMOVED IN THEIR ENTIRETY.
- DEMOLITION KEY NOTES :
- (1) (E) BOILER & ASSOCIATED FLUE, PORTION OF HWS & HWR, DRAWN PIPING, PORTION OF GAS PIPING SHALL BE DEMOLISHED.
 - (2) (E) PUMP & ASSOCIATED STARTERS, PORTION OF HWS INLET & OUTLET, VALVE/STRAINER ASSEMBLIES SHALL BE DEMOLISHED.
 - (3) PORTION OF (E) HWS/R, CHWS/R PIPING, VALVE ASSEMBLIES, CONDENSATE DRAIN PIPING ASSOCIATED WITH AHU SHALL BE DEMOLISHED TO FACILITATE REMOVAL OF AHU AND INSTALLATION OF NEW AHU.



2
HD1.4 MECHANICAL ROOM 01 PARTIAL PLAN – HVAC DEMOLITION
SCALE 1/4" = 1'-0"

- GENERAL DEMOLITION NOTES :
- COORDINATE SHUT DOWN SCHEDULE OF HVAC SYSTEM WITH OWNER. DRAIN EXISTING CONDENSER WATER SYSTEM AS REQUIRED BEFORE DEMOLITION. SUBMIT WATER ANALYSIS REPORT TO DOCUMENT CONDITIONS OF THE CONDENSER WATER SYSTEM AT TURN-OVER.
 - CONTRACTOR SHALL SCOPE EXISTING CONDENSER WATER SUPPLY & RETURN PIPING AFTER DEMOLITION AT EXISTING PUMPS FOR A MINIMUM OF 25 FEET IN EACH DIRECTION. CONTRACTOR SHALL ALERT ARCHITECT OF SCOPING MINIMUM SEVEN (7) DAYS IN ADVANCE.
 - ASSOCIATED CONTROLS (CONTROLLERS, SENSORS, THERMOSTATS, WIRING, ETC) OF ALL HVAC EQUIPMENT THAT ARE SHOWN OR NOTED TO BE DEMOLISHED SHALL BE REMOVED IN THEIR ENTIRETY.



NJDOE SP #07-1770-160-21-1000

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PARTIAL 1ST & 2ND FLOOR MECHANICAL RM PLANS - HVAC PIPING DEMO

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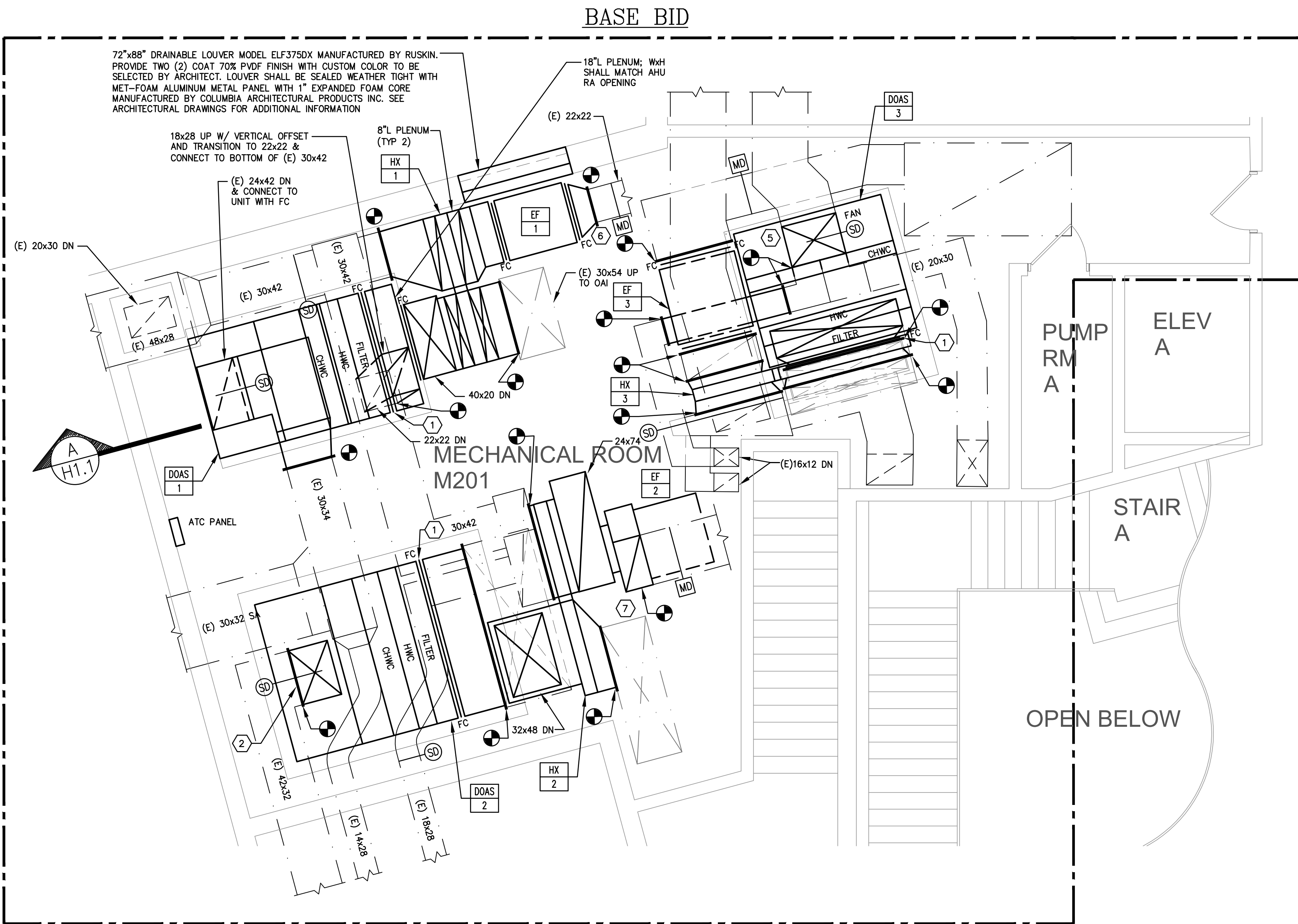
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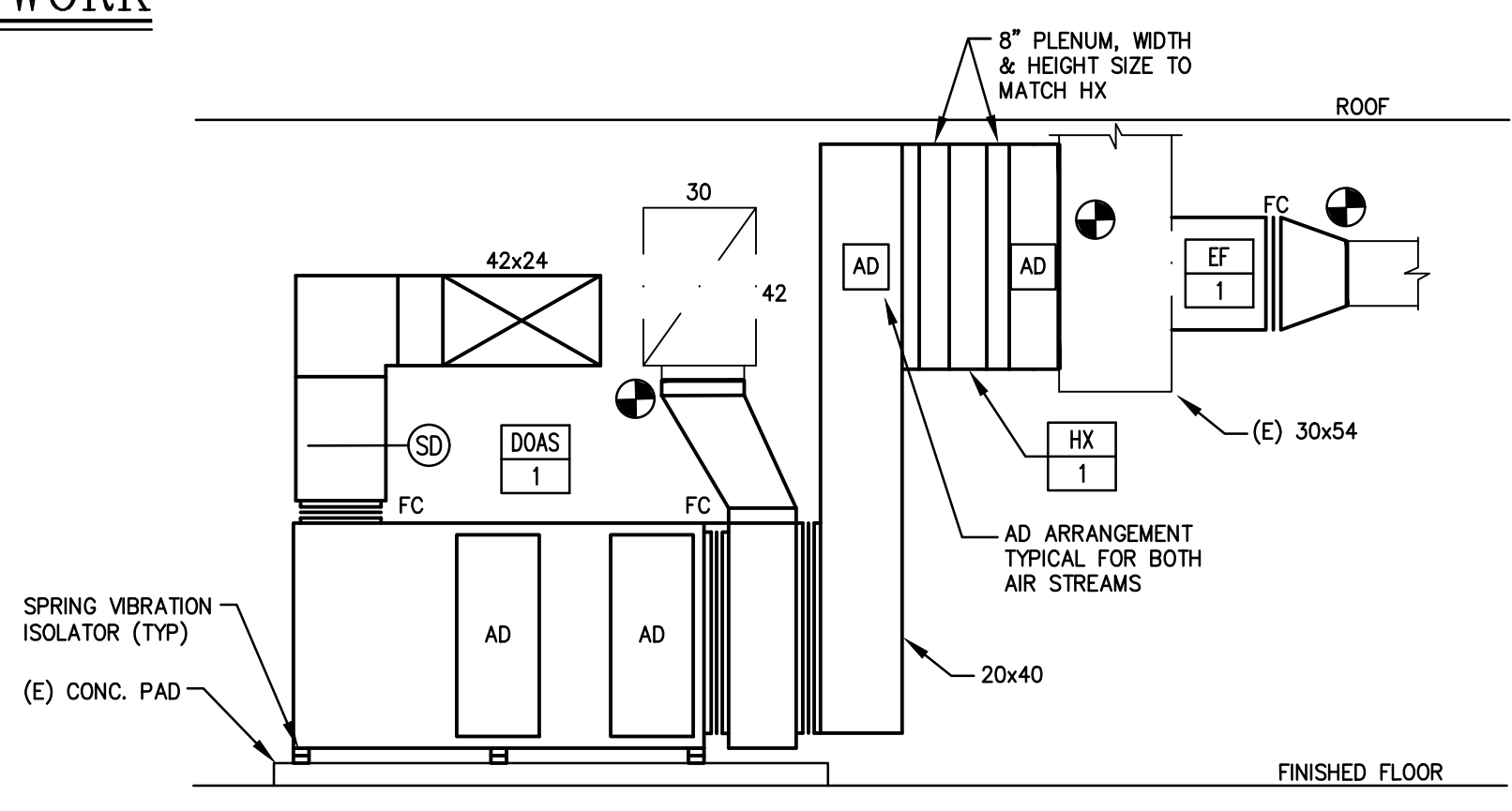
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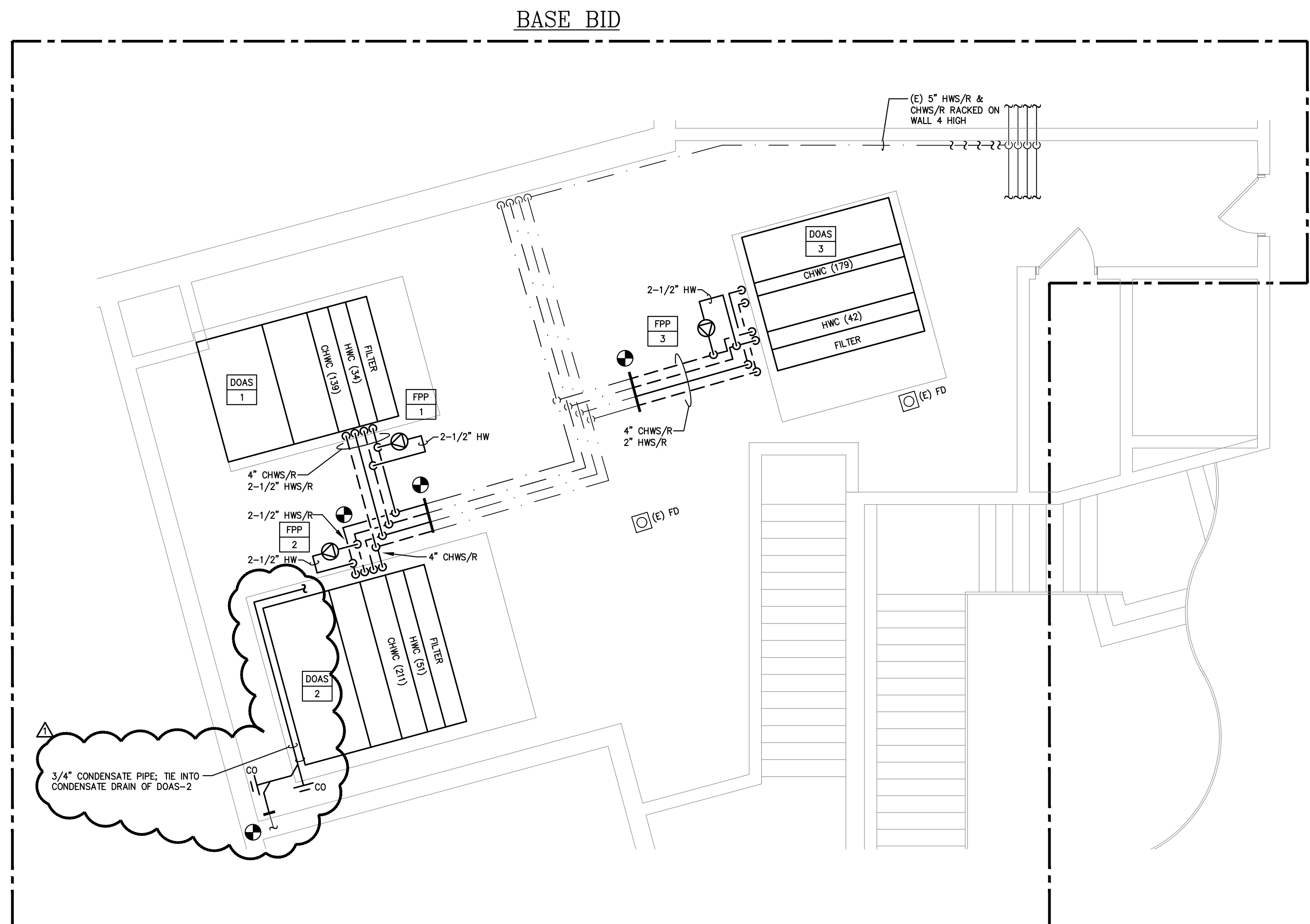


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H1.1 MECHANICAL ROOM 03 PLAN - HVAC DUCTWORK
SCALE 1/4" = 1'-0"

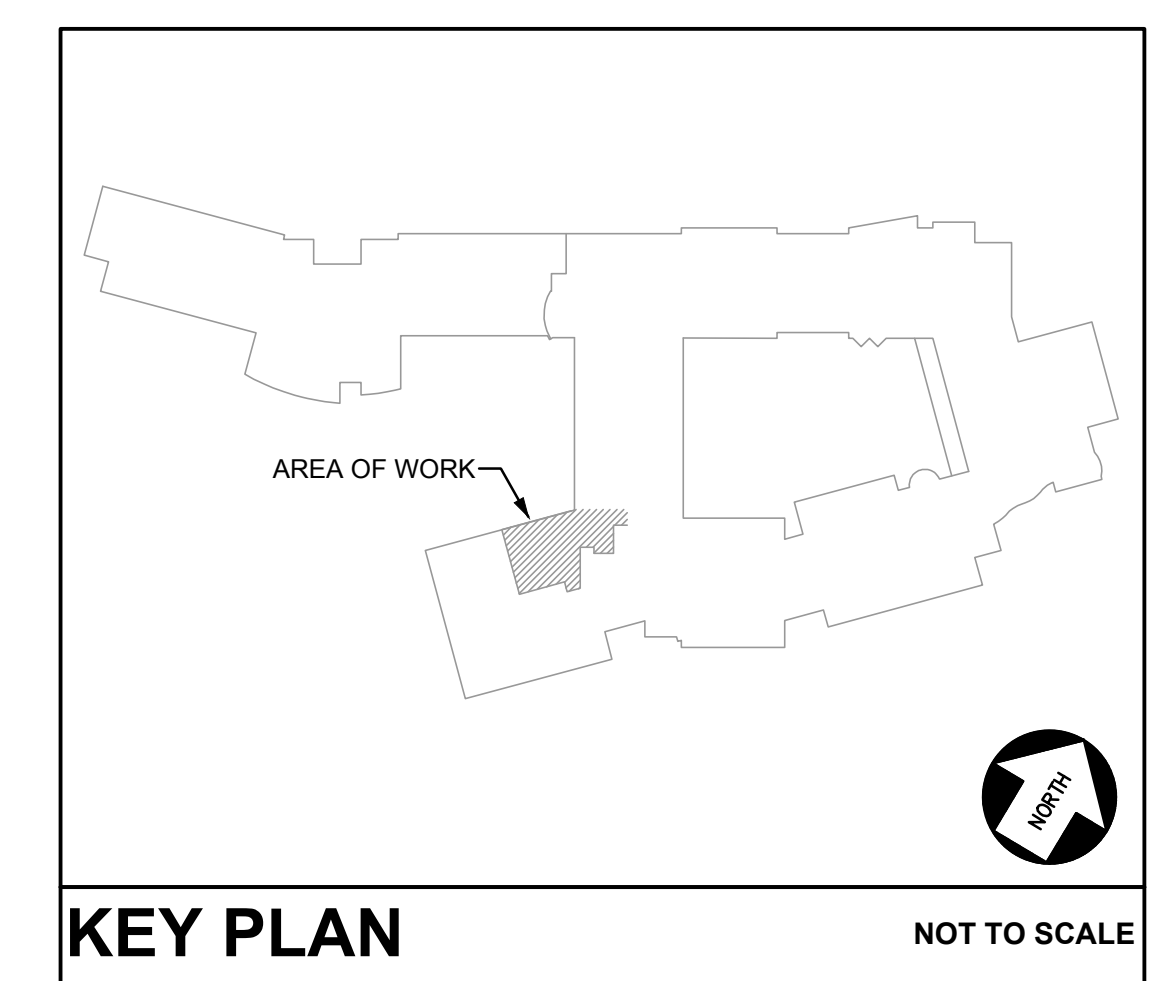
- GENERAL NOTE:
1. PROVIDE SMOOTH TRANSITIONS AT INLET/OUTLET OF ALL HX'S, EF'S AND AHU'S.
 2. WHERE REMOVAL OF SPRINKLER HEAD(S) BELOW OBSTRUCTION(S) TO SPRINKLER DISCHARGE HAS RESULTED IN GAPS IN SPRINKLER COVERAGE, CONTRACTOR SHALL PROVIDE ADDITIONAL SPRINKLER HEAD(S) AND ASSOCIATED PIPING AND SUPPORTS AS REQUIRED TO MAINTAIN CODE-REQUIRED COVERAGE.
- KEY NOTES:
1. PROVIDE FC BETWEEN (E) OAI PLENUM AND INLET OPENING OF AHU. INLET OPENING SHALL MATCH SIZE OF (E) OAI PLENUM OPENING.
 2. 26x22 VERTICAL SUPPLY, CONNECT TO SUPPLY OPENING OF UNIT WITH FC AND CONNECT TO BOTTOM OF EXISTING 26x22.
 3. 30x32 VERTICAL SUPPLY, CONNECT TO SUPPLY OPENING OF UNIT WITH FC AND CONNECT TO BOTTOM OF EXISTING 26x22.
 4. 28x20 VERTICAL SUPPLY, CONNECT TO SUPPLY OPENING OF UNIT WITH FC AND CONNECT TO BOTTOM OF EXISTING 26x20.
 5. 36x27 SUPPLY, CONNECT TO SUPPLY OPENING OF UNIT WITH FC & SMOOTH TRANSITION AND CONNECT TO BOTTOM OF (E) 36x27.
 6. PROVIDE FC BETWEEN EF AND (E) INLET AND OUTLET DUCTS. SIZE TO MATCH EXISTING.
 7. PROVIDE FC BETWEEN EF AND (E) INLET DUCT. PROVIDE VERTICAL DUCT, CONNECT TO OUTLET OF EF WITH FC AND TO BOTTOM OF (E) DUCT. PROVIDE SMOOTH TRANSITION.



A
H1.1 SECTION AT DOAS-1
SCALE: 1/4" = 1'-0"



2
H1.1 MECHANICAL ROOM 03 PLAN - HVAC PIPING
SCALE 1/4" = 1'-0"
GENERAL NOTES:



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NUDOE SP #07-1770-160-21-1000

FAN COIL, AIR HANDLER & BOILER REPLAC'T'S

COLD SPRINGS SCHOOL
104 PARKER STREET
GLOUCESTER CITY, NJ 08030

TITLE: PARTIAL SECOND FLOOR PLANS - HVAC

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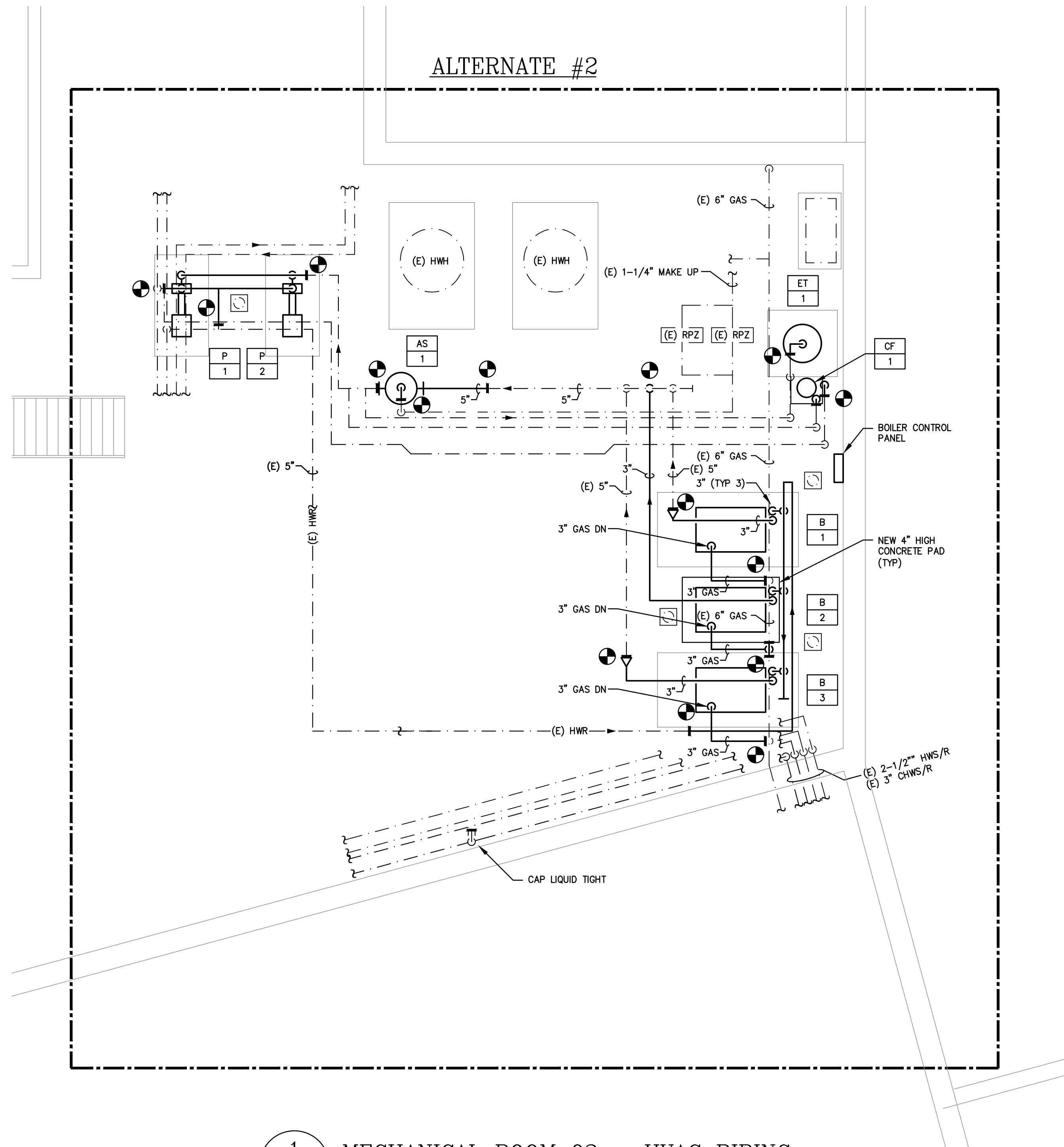
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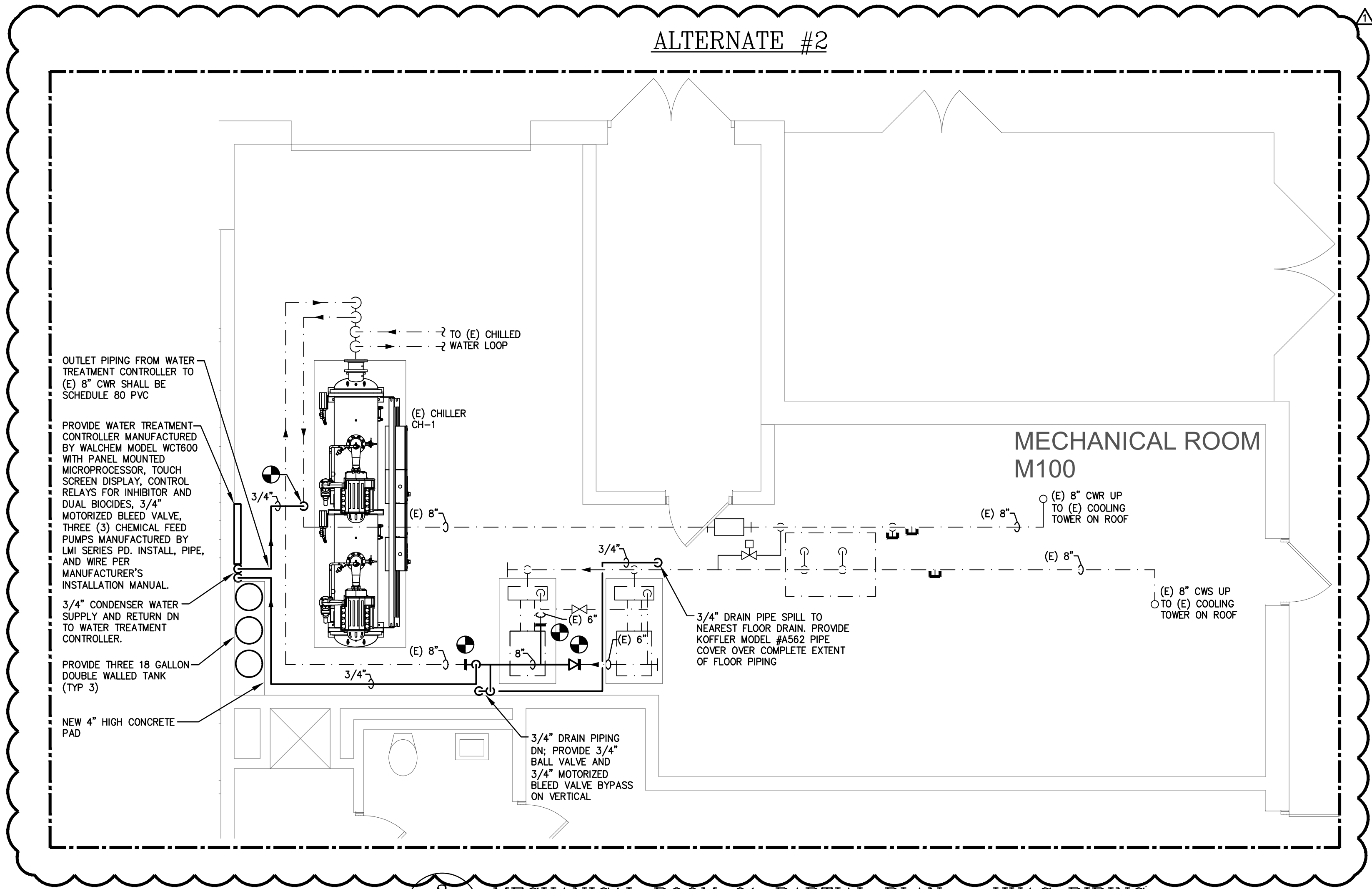
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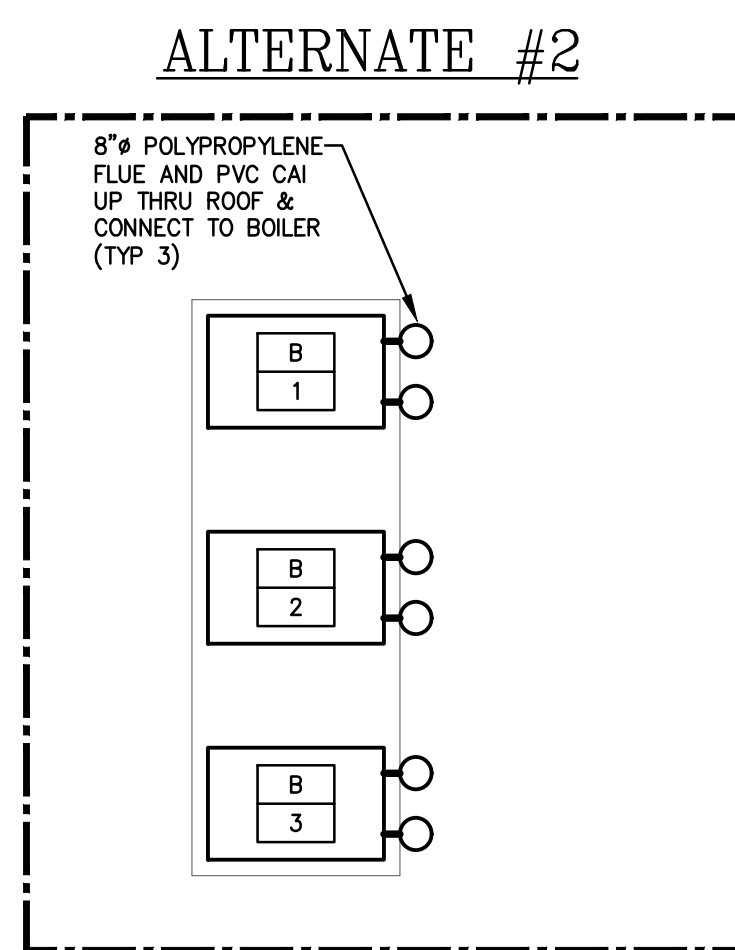
Frank Kelter, P.E.
Engineer
NJ 38695



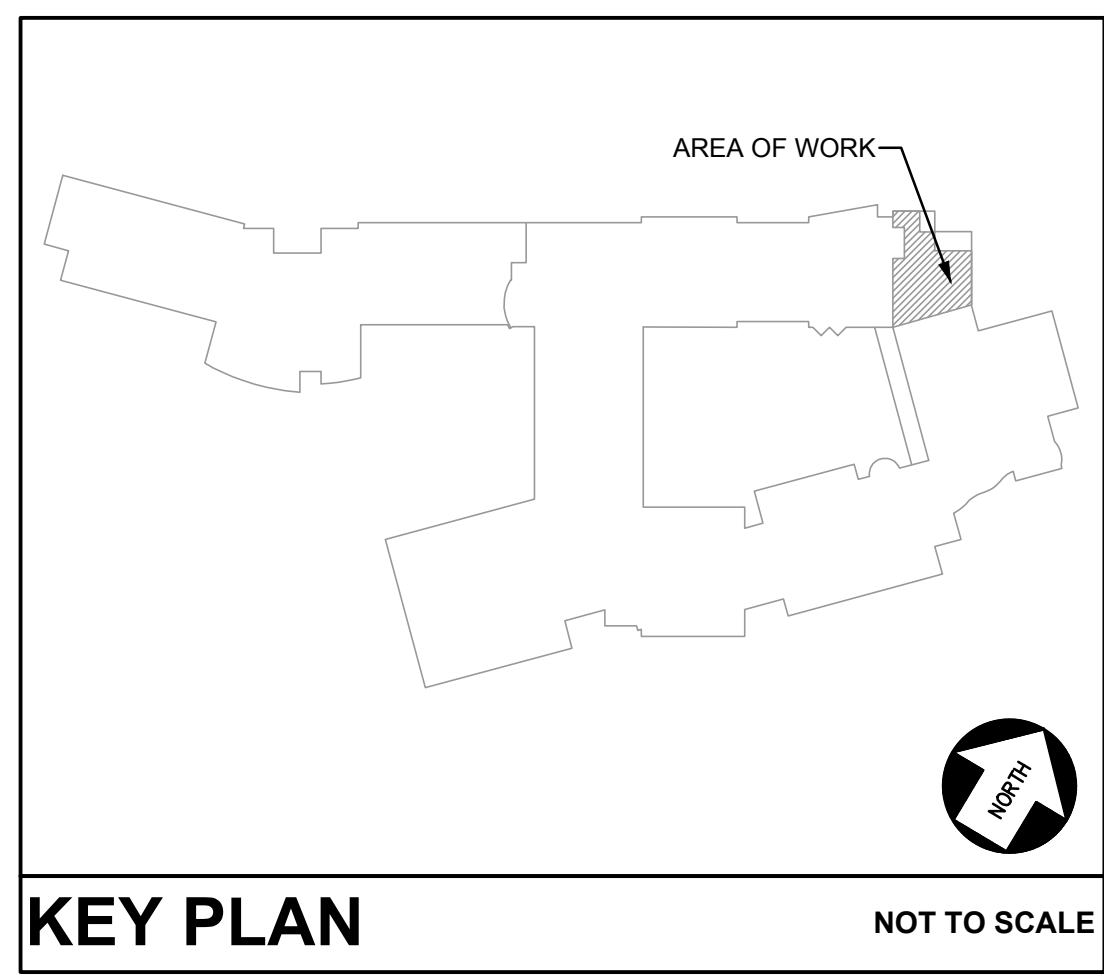
1 MECHANICAL ROOM 02 – HVAC PIPING
SCALE 1/4" = 1'-0"
GENERAL NOTES:
1. RECHARGE EXISTING SYSTEM INCLUDING TREATMENT CHEMICALS & PLACE BACK INTO SATISFACTORY OPERATION.
2. TOTAL DEVELOPED LENGTH OF GAS PIPE TO BOILER B-1 = 100'-0"
3. TOTAL DEVELOPED LENGTH OF GAS PIPE TO BOILER B-2 = 125'-0"
4. TOTAL DEVELOPED LENGTH OF GAS PIPE TO BOILER B-3 = 125'-0"
5. MAXIMUM FLOW REQUIRED BY EACH BOILER = 2000 CFH
6. ALL GAS PRESSURE REGULATING VALVES SHALL BE LOOK-UP TYPE, APPROVED BY PSE&G.
7. GAS PRESSURE REGULATING VALVE VENTS SHALL BE RUN TO EXTERIOR OF BUILDING AND TERMINATED WITH A GOOSENECK AND INSECT SCREEN.



3 MECHANICAL ROOM 01 PARTIAL PLAN – HVAC PIPING
SCALE 1/4" = 1'-0"
GENERAL NOTE:
1. CONTRACTOR SHALL PROVIDE COMPLETE CHEMICAL TREATMENT OF EXISTING CONDENSER WATER SYSTEM IN ITS ENTIRETY.
2. WATER TREATMENT CONTROLLER INLET & OUTLET PIPING AND DRAIN PIPING SHALL BE FULLY INSULATED. INSULATION SHALL MATCH CHILLED WATER PIPING INSULATION SCHEDULE.
3. SEE WATER TREATMENT PIPING DETAIL 10/H3.1 FOR ADDITIONAL INFORMATION.



2 PARTIAL ROOF PLAN – BOILER TERMINATIONS – HVAC
SCALE 1/4" = 1'-0"
GENERAL NOTE:
1. CONTRACTOR SHALL USE ROOF MANUFACTURER'S AUTHORIZED INSTALLER FOR ALL ROOF WORK TO MAINTAIN WARRANTY. REFER TO SECTION 024119.



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COLD SPRINGS SCHOOL
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GLOUCESTER CITY, NJ 08030
TITLE: PARTIAL 1ST & 2ND FLOOR MECHANICAL RM PLANS - HVAC PIPING

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10 OF 17

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ABBREVIATIONS			
AC	AIR CONDITIONING UNIT	IHW	DOMESTIC HOT WATER SUPPLY
AWF	ABOVE FINISHED FLOOR	IHW	HEATING HOT WATER RETURN
AHC	ABOVE HUNG CEILING	IWS	HEATING HOT WATER SUPPLY
AHU	AIR HANDLING UNIT	Hz	HERTZ (FREQUENCY)
AMPS	AMPERES	IN	INCHES
APPROX	APPROXIMATE	INW	INCHES IN WATER GAUGE
ARCH	ARCHITECTURAL	INW	INCHES OF WATER COLUMN
ASD	AIR PRESSURE DROP	KW	KILOWATTS
AS	AIR SEPARATOR	LAT	LEAVING AIR TEMPERATURE
ATC	AUTOMATIC TEMPERATURE CONTROL	LBS	POUNDS PER HOUR
&	AND	LBS/HR	POUNDS PER HOUR
#	AT	LBS	POUNDS
BHP	BRAKE HORSEPOWER	LBS	POUNDS
BLDG	BUILDING	LBS	POUNDS
CAI	COMBUSTION AIR INTAKE	LBS	POUNDS
CC	COOLING COIL	LBS	POUNDS
CD	CEILING DIFFUSER	LBS	POUNDS
CD	CONDENSATE DRAIN	LBS	POUNDS
CF	CUBIC FEET	LBS	POUNDS
CFM	CUBIC FEET PER MINUTE	LBS	POUNDS
CGT	CHEMICAL FEED TANK	LBS	POUNDS
CHMR	CHILLED WATER RETURN	LBS	POUNDS
CHWS	CHILLED WATER SUPPLY	LBS	POUNDS
CLD	CEILING	LBS	POUNDS
COND	CONDENSATE PIPING	LBS	POUNDS
CO	CLEANOUT	LBS	POUNDS
CP	CONDENSATE PUMP	LBS	POUNDS
CR	CONDENSATE REGISTER	LBS	POUNDS
CT	COOLING TOWER	LBS	POUNDS
CW	CONDENSING UNIT	LBS	POUNDS
CWR	CONDENSER WATER RETURN	LBS	POUNDS
CWS	CONDENSER WATER SUPPLY	LBS	POUNDS
D	DRAIN	LBS	POUNDS
DB	DRY BULB	LBS	POUNDS
DHC	DUCT MOUNTED HEATING COIL	LBS	POUNDS
DIA.	DIAMETER	LBS	POUNDS
DN	DOWN	LBS	POUNDS
DOAS	DEDICATED OUTSIDE AIR SYSTEM	LBS	POUNDS
DWG	DRAWING	LBS	POUNDS
EAT	ENTERING AIR TEMPERATURE	LBS	POUNDS
EF	EXHAUST FAN	LBS	POUNDS
EQUIP	EQUIPMENT	LBS	POUNDS
ER	EXHAUST REGISTER	LBS	POUNDS
EWB	ENTERING WET BULB	LBS	POUNDS
EXT	ENTERING WATER TEMPERATURE	LBS	POUNDS
ESP	EXTERNAL STATIC PRESSURE	LBS	POUNDS
EXIST./IC	EXISTING	LBS	POUNDS
IT	EXPANSION TANK	LBS	POUNDS
FA	FAHRENHEIT	LBS	POUNDS
FACE	FACE AREA	LBS	POUNDS
FC	FLEXIBLE CONNECTOR	LBS	POUNDS
FCU	FAN COIL UNIT	LBS	POUNDS
FLA	FULL LOAD AMPS	LBS	POUNDS
FP	FREEZE PROTECTION PUMP	LBS	POUNDS
FT	FEET	LBS	POUNDS
FT	FEET	LBS	POUNDS
G	GAS	LBS	POUNDS
GAUGE	GAUGE	LBS	POUNDS
GALV	GALVANIZED	LBS	POUNDS
GPM	GALLONS PER MINUTE	LBS	POUNDS
H	HEIGHT	LBS	POUNDS
HP	HORSE POWER	LBS	POUNDS

DIFFUSER & REGISTER SCHEDULE			SELECTION BASED ON TITUS
NO.	MARK	REMARKS	
1.	RECTANGULAR CD SHALL BE TITUS MODEL TMS-AA OR APPROVED "EQUAL".		①②③④
2.	CG/TG, CR/TR/ER/RR SHALL BE TITUS MODEL 350-FL OR APPROVED "EQUAL".		①②③④
3.	LD SHALL BE TITUS MODEL ML-38 OR APPROVED "EQUAL".		①②③④
REMARKS:			
① LOWERED FACE, HIGH CAPACITY, ALUMINUM DIFFUSER WITH ROUND NECK AND ADJUSTABLE DISCHARGE PATTERN.			
② PROVIDE OPPOSED BLADE VOLUME DAMPER.			
③ PROVIDE EQUALIZING GRID.			
④ PROVIDE STANDARD WHITE FINISH.			
⑤ ALUMINUM RETURN/EXHAUST REGISTER WITH BLADES AT 3/4" SPACING AND 35° FIXED DEFLECTION. REFER TO DRAWINGS FOR CORRECT MOUNTING STYLE.			
⑥ INTERNALLY INSULATED PLENUM BOX			

SYMBOLS LIST			
	EQUIPMENT DESIGNATION		PRESSURE REDUCING VALVE
	ITEM NUMBER		BALL VALVE
	THERMOSTAT		CHECK VALVE
	SMART SENSOR (TEMP/RH/CO2)		GLOBE VALVE
	BACKDRAFT DAMPER		GATE VALVE
	MOTORIZED DAMPER		AUTO FLOW BALANCING/SHUT-OFF VALVE WITH P/T PORTS (B&G CIRCUIT ENTRY)
	FIRE DAMPER		UNION
	SMOKE DETECTOR		2-WAY CONTROL VALVE
	POINT OF NEW CONNECTION		3-WAY CONTROL VALVE
	POINT OF REMOVAL		STRAINER WITH BLOW OFF VALVE
	AIRFLOW THRU UNDERCUT DOOR		AUTOMATIC AIR VENT WITH OUTLET PIPED TO DRAIN (SWITCH OFF VALVE AT INLET)
	SUPPLY AIR FLOW		MANUAL AIR VENT
	RETURN OR EXHAUST AIRFLOW		PLUG VALVE
	DUCT SIZE, SECOND FIGURE IS HEIGHT SHOWN		STEAM TRAP
	PIPE TURNED UP		INLINE PUMP
	PIPE TURNED DOWN		PRESSURE GAUGE W/SHUT OFF VALVE
	PIPE TEE BRANCH TURNED DOWN		THERMOMETER
	CONDENSATE DRAIN PIPING		PRESSURE RELIEF VALVE W/OUTLET PIPED TO DRAIN
	PITCH PIPE IN DIRECTION OF ARROW		CAPPED HOSE CONNECTION
	DUCT/PIPE CAP		VERTICAL GATE VALVE
	BLIND FLANGE		FLANGED CONNECTION
	CLEAN-OUT		
	EXISTING WORK TO REMAIN		
	EXISTING WORK TO BE REMOVED		
	NEW WORK (DOUBLE-LINE & EQPT.)		
	NEW WORK (SINGLE-LINE DUCTWORK)		
	FLOW DIRECTION		
	DUCT TRANSITION		

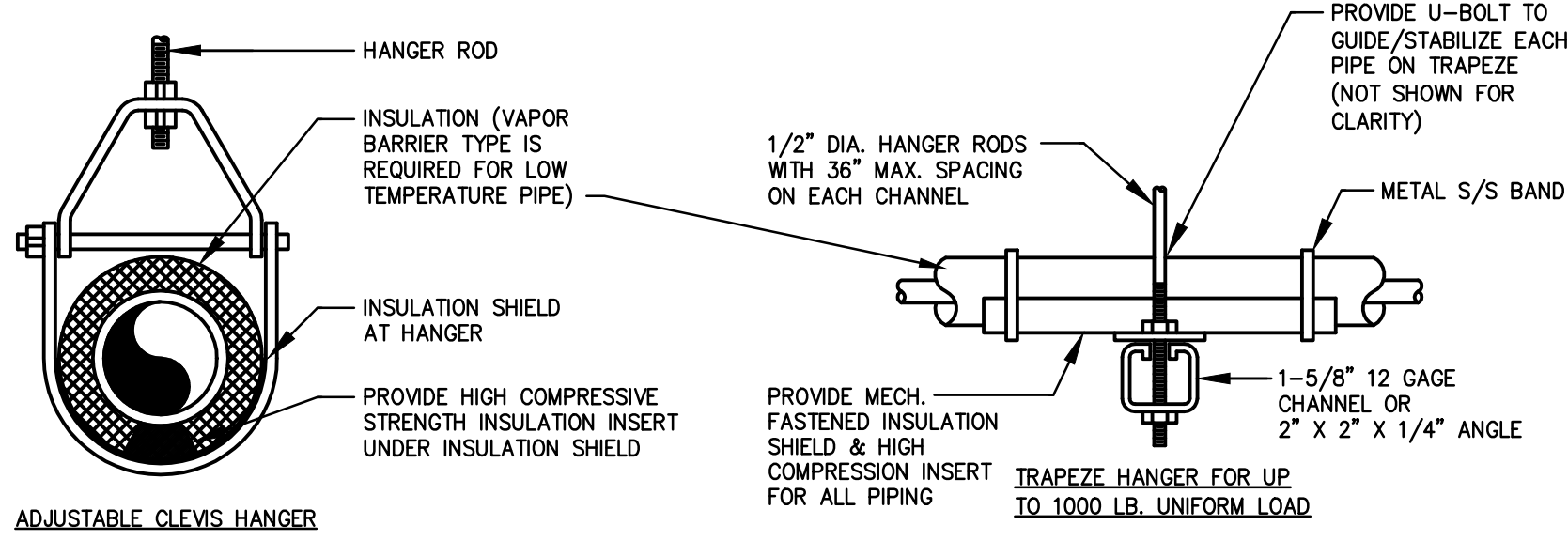
	CG-X X CFM	SUPPLY CEILING DIFFUSER		CG-X X CFM	RETURN, EXHAUST CEILING REGISTER
	CG-X X CFM	SUPPLY CEILING REGISTER		CG-X X CFM	RETURN, EXHAUST CEILING GRILLE
	4-WAY			3-WAY	
	2-WAY			2-WAY	
	1-WAY			1-WAY	

DEDICATED OUTSIDE AIR SYSTEM SCHEDULE										DOCS					
TAG No.	LOCATION		DOAS-1 MECHANICAL ROOM M201		DOAS-2 MECHANICAL ROOM M201		DOAS-3 MECHANICAL ROOM M201		DOAS-4 MECHANICAL ROOM M200		DOAS-5 MECHANICAL ROOM M200		DOAS-6 MECHANICAL ROOM M200		
MANUFACTURER			CARRIER		CARRIER		CARRIER		CARRIER		CARRIER		CARRIER		
MODEL - SIZE			39MN - 12W		39MN - 30W		39MN - 25W		39MN - 17W		39MN - 21W		39MN - 08W		
SUPPLY FAN DATA:															
TOTAL AIRFLOW	CFM		10100		15400		13200		8300		10500		3800		
MIN OUTSIDE AIR	CFM		10100		15400		13200		8300		10500		3800		
ESP	IN		2.00		2.00		2.00		2.00		2.00		2.00		
TSP	IN		4.70		4.62		4.77		4.89		4.80		4.75		
FAN SPEED	RPM		2977		3184		2328		2812		3044		3362		
NUMBER OF FANS			3		4		3		3		3		2		
FAN TOTAL BRAKE HORSEPOWER	BHP		11.1		17.7		13.8		6.8		11.8		4.5		
CHILLED WATER COIL DATA:															
TOTAL COOLING CAPACITY	MBH		698		1056		898		568		719		262		
SENSIBLE COOLING CAPACITY	MBH		421		638		543		344		435		158		
EAT DB/WB	°F		93.0/75.0		93.0/75.0		93.0/75.0		93.0/75.0		93.0/75.0		93.0/75.0		
LAT DB/WB	°F		52.76/52.74		52.98/52.94		53.22/53.17		53.09/52.97		52.99/52.97		52.74/52.74		
FLUID FLOW RATE	GPM		139		211		179		113		143		52		
WAT/LWT	°F		44/54		44/54		44/54		44/54		44/54		44/54		
HOT WATER PREHEAT COIL DATA:															
CAPACITY	MBH		822		1250		1030		665		842		288		
EAT/LAT DB	°F		0/65.65		0/65.47		0/62.92		0/64.66		0/64.69		0/61.04		
WAT/LWT	°F		180/130		180/130		180/130		180/130		180/130		180/130		
WATER FLOW	GPM		34		51		42		27		34		11.7		
WPD	FT WG		4.6		11.9		7.4		4.7		4.7		1.8		
ELECTRICAL DATA:															
POWER	V-PH-HZ		460-3-60		460-3-60		460-3-60		460-3-60		460-3-60		460-3-60		
MCA	AMPS		25		30		18.7		25		25		11.3		
MOP	AMPS		30		40		20		15		30		15		
FILTER DATA:															
TYPE			PLEATED		PLEATED		PLEATED		PLEATED		PLEATED		PLEATED		
EFFICIENCY			MERV 8 & MERV 13		MERV 8 & MERV 13		MERV 8 & MERV 13		MERV 8 & MERV 13		MERV 8 & MERV 13		MERV 8 & MERV 13		
FILTERS CLEAN SP			0.10		0.10		0.10		0.10		0.10		0.10		
DIRT ALLOWANCE			0.58 & 0.90		0.58 & 0.89		0.58 & 0.90		0.58 & 0.90		0.58 & 0.91		0.58 & 0.88		
DOAS DIMENSIONS (L x W x H)															
APPROX. UNIT WEIGHT	LBS		114" x 80" x 60" 3300		108" x 105" x 60" 4400		89" x 86" x 96" 3800		101" x 80" x 50" 2700		114" x 80" x 60" 3300		94" x 55" x 40" 1700		
UNIT SOUND DATA:															
INLET FREQUENCY BAND		63	125	250	500	1000	2000	4000	63	125	250	500	1000	2000	4000
RADIATED SOUND POWER (dBA)		47	60	80	85	87	85	85	48	62	82	87	89	88	90
		53	70	79	80	79	79	83	-	-	-	-	-	-	-
DISCHARGE FREQUENCY BAND		63	125	250	500	1000	2000	4000	63	125	250	500	1000	2000	4000
RADIATED SOUND POWER (dBA)		55	67	92	91	96	96	96	57	69	94	94	99	99	101
		58	74	90	88	89	91	92	-	-	-	-	-	-	-
55	67	92	91	96	96	96			55	67	92	92	97	96	97
64	64	79	93	89	88	84									
PROVIDE THE FOLLOWING:															
① DOUBLE WALL CONSTRUCTION THROUGHOUT WITH DOUBLE WALL ACCESS DOORS.															
② FACTORY MOUNTED GFI OUTLET.															
③ INVERTER DUTY MOTOR AND VFD FOR ALL SUPPLY & EXHAUST FANS.															
④ COMPLETE DDC CONTROLS, WIRING, RELAYS, PROGRAMMING, START UP AND PERSONNEL TRAINING.															
⑤ DOAS-6 WITH A 6" H CONCRETE PAD															
⑥ SPILL CONDENSATE DRAINS TO NEAREST FLOOR DRAIN, SIZED TO MATCH EQUIPMENT OUTLET															
⑦ PROVIDE KOFFLER MODEL #A562 PIPE COVER OVER COMPLETE EXTENT OF FLOOR PIPING.															
⑧ EQUIPMENT SHALL BE SHIPPED IN SECTIONS AND FIELD ASSEMBLED.															
⑨ PROVIDE 4" EXTERNAL SPRING VIBRATION ISOLATORS & INTERNAL FAN VIBRATION ISOLATORS.															

AIR HANDLING UNIT SCHEDULE																SELECTION BASED ON CARRIER										AHU 7											
UNIT TAG	MODEL NUMBER	ROOM(S) SERVED	TOTAL AIRFLOW CFM	OA CFM	COOLING COIL										PREHEAT COIL										SUPPLY FAN							ELECTRICAL DATA		DIMENSIONS L x W x H (IN)		APPROX. OPERATING WEIGHT (LBS)	
					ENT AIR		LVG AIR		ROWS	TOTAL CAPACITY MBH	SENS. CAPACITY MBH	WATER				AIR		ROWS	SENS. CAPACITY MBH	WATER																	
					DB T	WB T	DB T	WB T				GPM	ENT T	LVG T	PD FT	ENT T	LVG T			GPM	ENT T	LVG T	PD FT	ESP (IN WG)	TSP (IN WG)	BHP	HP	FAN RPM	DRIVE	V/PH/Hz							
AHU-1	42BHE06NC390509AK	CLASSROOMS 103 & 105	350	120	72.0	64.0	52.9	52.4	6	16.1	9.9	3.2	44.0	54.0	2.20	71.5	102.6	1	16.4	0.7	180.0	130.0	0.83	0.70	0.86	0.23	1/4	1080	BELT	120/1/60	36" x 28" x 19.75"	225					
AHU-2	42BHE06NC390509AK	CLASSROOM 104	430	165	71.0	64.0	52.8	52.4	6	16.2	9.5	3.2	44.0	54.0	2.21	72.0	102.8	1	16.3	0.7	180.0	130.0	0.82	0.70	0.86	0.23	1/4	1080	BELT	120/1/60	36" x 28" x 19.75"	225					
AHU-3	42BHE06MR9Y0509JW	CLASSROOM 106	700	185	72.6	64.0	53.8	53.2	6	24.2	15.7	4.8	44.0	54.0	4.16	71.2	97.2	1	21.9	0.9	180.0	130.0	1.3	0.70	1.16	0.23	1/4	1279	DIRECT	460/3/60	36" x 28" x 22.75"	250					
AHU-4	42BHE06NC390509AK	CLASSROOM 107	430	135	71.7	64.0	52.9	52.4	6	16.2	9.8	3.2	44.0	54.0	2.20	71.7	102.7	1	16.4	0.7	180.0	130.0	0.82	0.70	0.86	0.23	1/4	1080	BELT	120/1/60	36" x 28" x 19.75"	225					
AHU-5	42BHA16MR9Y0509JG	FACULTY PREP	1575	270	73.1	64.0	55.2	52.6	6	46.8	31.6	9.3	44.0	54.0	6.3	71.0	96.1	1	44.6	1.8	180.0	130.0	1.0	0.70	1.23	0.61	1	1219	DIRECT	460/3/60	35.75" x 47" x 24.5"	350					
AHU-6	42BHA12MR9Y0509JG	CLASSROOM 200	1100	185	75.0	55.0	53.3	45.5	6	28.3	28.3	5.6	44.0	54.0	6.65	67.0	94.8	1	37.0	1.5	180.0	130.0	3.71	0.70	1.21	0.37	1	1411	DIRECT	120/1/60	37.5" x 37" x 24.5"	300					
AHU-7	42BHA16MR9Y0509JG	CLASSROOM 201	865	185	73.1	64.0	53.5	52.5	6	32.7	21.1	6.5	44.0	54.0	8.35	71.9	99.8	1	31.1	1.3	180.0	130.0	2.83	0.70	1.04	0.35	1/2	1256	DIRECT	460/3/60	37.5" x 37" x 24.5"	300					
AHU-8	42BHE06NC390610BK	CLASSROOM 202 & STORAGE	265	135	71.6	64.0	52.9	52.4	6	16.1	9.8	3.2	44.0	54.0	2.21	71.7	102.7	1	16.3	0.7	180.0	130.0	0.82	0.70	0.86	0.23	1/4	1080	BELT	120/1/60	36" x 28" x 19.75"	250					
AHU-9	42BHE06NC390610BK	CLASSROOM 209	590	165	72.2	64.0	53.3	52.7	6	19.5	12.3	3.9	44.0	54.0	2.97	71.4	100.0	1	18.7	0.8	180.0	130.0	1.02	0.70	0.95	0.29	1/3	1170	BELT	120/1/60	36" x 28" x 19.75"	250					
AHU-10	42BHE06NC390610BK	CLASSROOM 210	590	165	72.2	64.0	53.3	52.7	6	19.5	12.3	3.9	44.0	54.0	2.97	71.4	100.0	1	18.7	0.8	180.0	130.0	1.02	0.70	0.95	0.29	1/3	1170	BELT	120/1/60	36" x 28" x 19.75"	250					
AHU-11	42BHE06NC390610BK	CLASSROOM 211	590	185	71.9	64.0	53.3	52.7	6	19.5	12.1	3.9	44.0	54.0	2.97	71.6	100.1	1	18.7	0.8	180.0	130.0	1.02	0.70	0.95	0.29	1/3	1170	BELT	120/1/60	36" x 28" x 19.75"	250					
AHU-12	42BHE06NC390509AK	CLASSROOM 212	430	135	71.7	64.0	52.9	52.4	6	16.1	9.8	3.2	44.0	54.0	2.20	71.7	102.7	1	16.3	0.7	180.0	130.0	0.82	0.70	0.86	0.23	1/4	1080	BELT	120/1/60	36" x 28" x 19.75"	250					
AHU-13	42BHE06MR9Y0509JW	STAIR 4	800	0	72.0	64.0	53.8	53.2	6	24.2	15.7	4.8	44.0	54.0	4.16	71.2	97.2	1	21.9	0.9	180.0	130.0	1.3	0.70	1.16	0.23	1/4	1279	DIRECT	460/3/60	36" x 28" x 22.75"	250					
AHU-14	42BHA12MR9Y0509JG	FACULTY ROOM A	1200	150	77.5	55.0	53.6	44.4	6	31.2	31.2	6.2	44.0	54.0	7.72	67.0	96.8	1	37.0	1.5	180.0	130.0	3.71	0.70	1.21	0.37	1	1411	DIRECT	120/1/60	37.5" x 37" x 24.5"	300					
AHU-15	42BHE06NC390509AK	CAFETERIA AREA	950	0	75.0	55.0	53.3	45.5	6	25.3	25.3	5.0	44.0	54.0	5.57	67.0	94.2	1	34.4	1.4	180.0	130.0	3.32	0.70	1.10	0.29	1	1322	DIRECT	120/1/60	37.5" x 37" x 24.5"	300					
AHU-16	42BHA12NR9Y0509JG	SERVING AREA	1200	150	83.1	68.0	55.3	53.8	6	52.7	36.8	10.5	44.0	54.0	17.6	41.0	104.8	2	83.5	3.4	180.0	130.0	4.5	0.70	1.25	0.4	1	1428	DIRECT	120/1/60	37.5" x 37" x 24.5"	300					
AHU-17	42BHA12NR9Y0509JG	OFFICES K101 & K102 STOR. RM., LOCKERS & WASH AREA	1200	150	83.1	68.0	55.3	53.8	6	52.7	36.8	10.5	44.0	54.0	17.6	41.0	104.8	2	83.5	3.4	180.0	130.0	4.5	0.70	1.25	0.4	1	1428	DIRECT	120/1/60	37.5" x 37" x 24.5"	300					
AHU-18	42BHA12NR9Y0509JG	GRSL'S LOCKER ROOM	1200	280	83.1	68.0	55.3	53.8	6	52.7	36.8	10.5	44.0	54.0	17.6	41.0	104.8	2	83.5	3.4	180.0	130.0	4.5	0.70	1.25	0.4	1	1428	DIRECT	120/1/60	37.5" x 37" x 24.5"	300					
AHU-19	42BHE06NC390509BK	OFFICE GOOZ & STORAGE CO2	390	150	75.0	63.0	52.5	51.7	6	15.5	11.8	3.1	44.0	54.0	2.06	70.0	101.8	1	16.8	0.7	180.0	130.0	.85	0.70	0.86	0.23	1/3	1080	BELT	120/1/60	36" x 28" x 19.75"	225					
AHU-20	42BHE06NC390509BK	OFFICE GOOZ & TOILETS	390	150	75.0	63.0	52.5	51.7	6	15.5	11.8	3.1	44.0	54.0	2.06	70.0	101.8	1	16.8	0.7	180.0	130.0	.85	0.70	0.86	0.23	1/3	1080	BELT	120/1/60	36" x 28" x 19.75"	225					
AHU-21	42BHA12NR9Y0509JG	LOBBY 1100	1200	350	83.1	68.0	55.3	53.8	6	52.7	36.8	10.5	44.0	54.0	17.6	41.0	104.8	2	83.5	3.4	180.0	130.0	4.5	0.70	1.25	0.4	1	1428	DIRECT	120/1/60	37.5" x 37" x 24.5"	300					
AHU-22	42BHA12NR9Y0509JG	BOYS LOCKER ROOM	1200	150	83.1	68.0	55.3	53.8	6	52.7	36.8	10.5	44.0	54.0	17.6	41.0	104.8	2	83.5	3.4	180.0	130.0	4.5	0.70	1.25	0.4	1	1428	DIRECT	120/1/60	37.5" x 37" x 24.5"	300					

PROVIDE THE FOLLOWING:
① UNIT MOUNTED DISCONNECT SWITCH.
② STAINLESS STEEL DRAIN PAN WITH WATER SENSOR TO SHUTDOWN FCU WHEN DRAIN IS CLOGGED.
③ STEEL HANGERS WITH SPRING VIBRATION ISOLATORS.

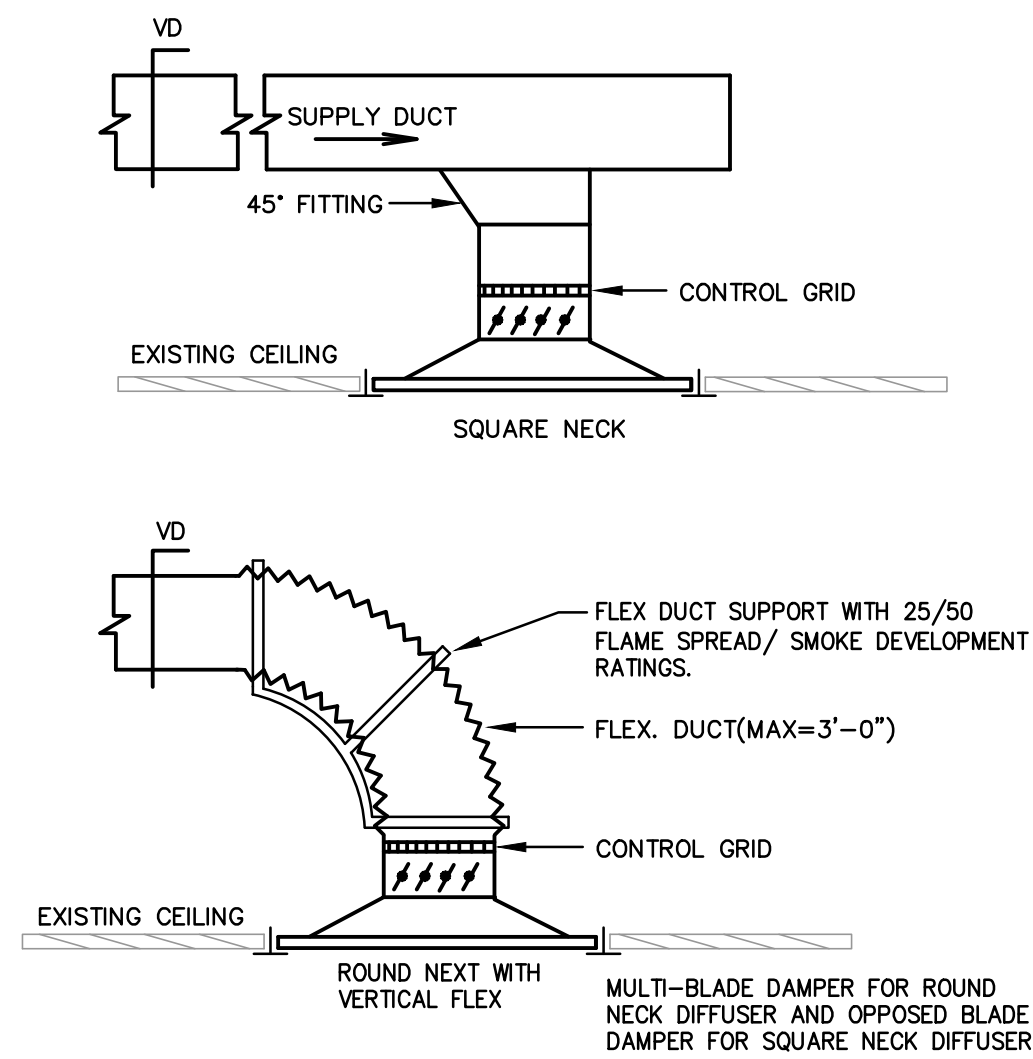
④ * PLATED MERV 13 FILTERS.
⑤ ECM MOTOR
⑥ PROVIDE 3/4" CONDENSATE TRAP AND DRAIN AND CONNECT TO EXISTING CONDENSATE DRAIN PIPING



MAXIMUM PIPE/TUBING SUPPORT SPACING, FEET																			
NOM. SIZE	THRU 3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"	
PIPE	7 FT	7	7	9	10	11	12	14	16	17	19	22	23	25	27	28	30	32	
TUBING	5 FT	6	7	8	9	10	12	13	14	16	-	-	-	-	-	-	-	-	

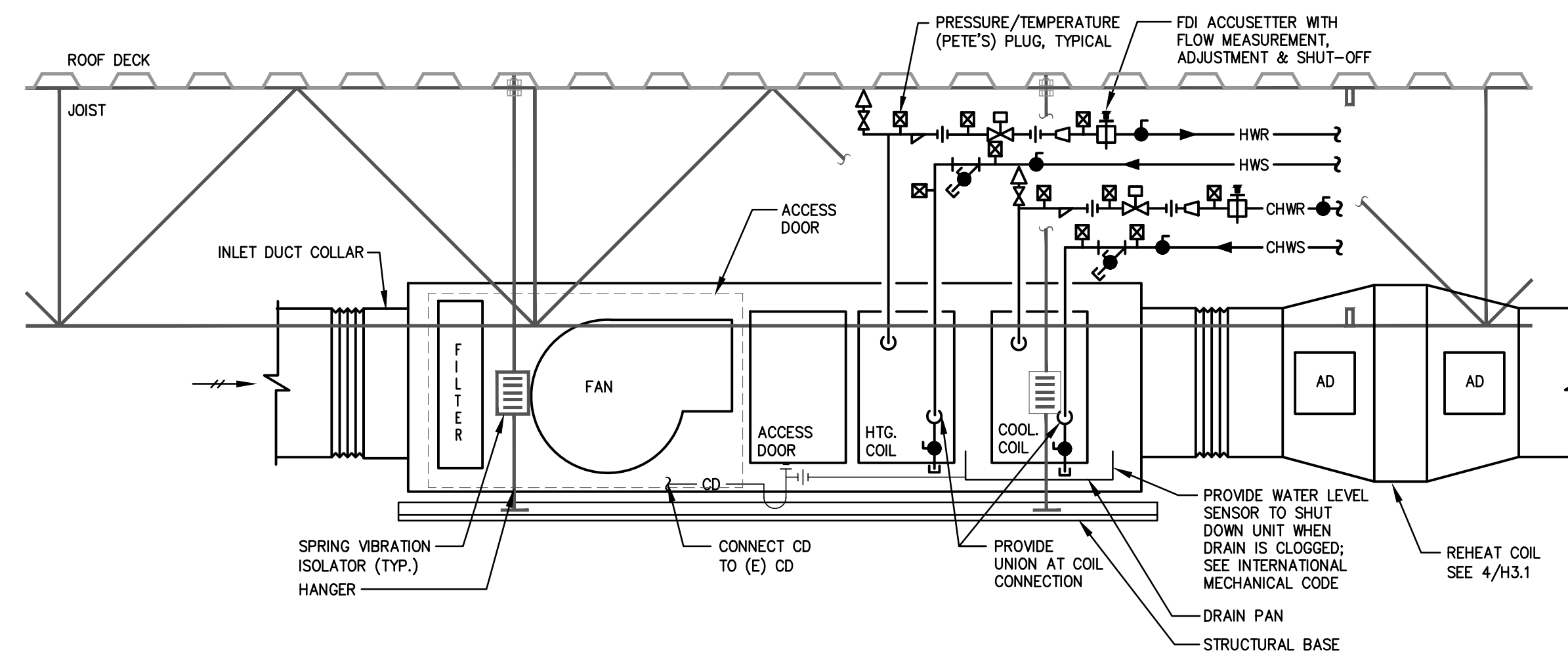
NOTE: FOR TRAPEZE HANGER TAKE SPACING OF SMALLEST SIZE ON TRAPEZE

1 TYPICAL PIPE HANGERS DETAIL
H3.1 NOT TO SCALE



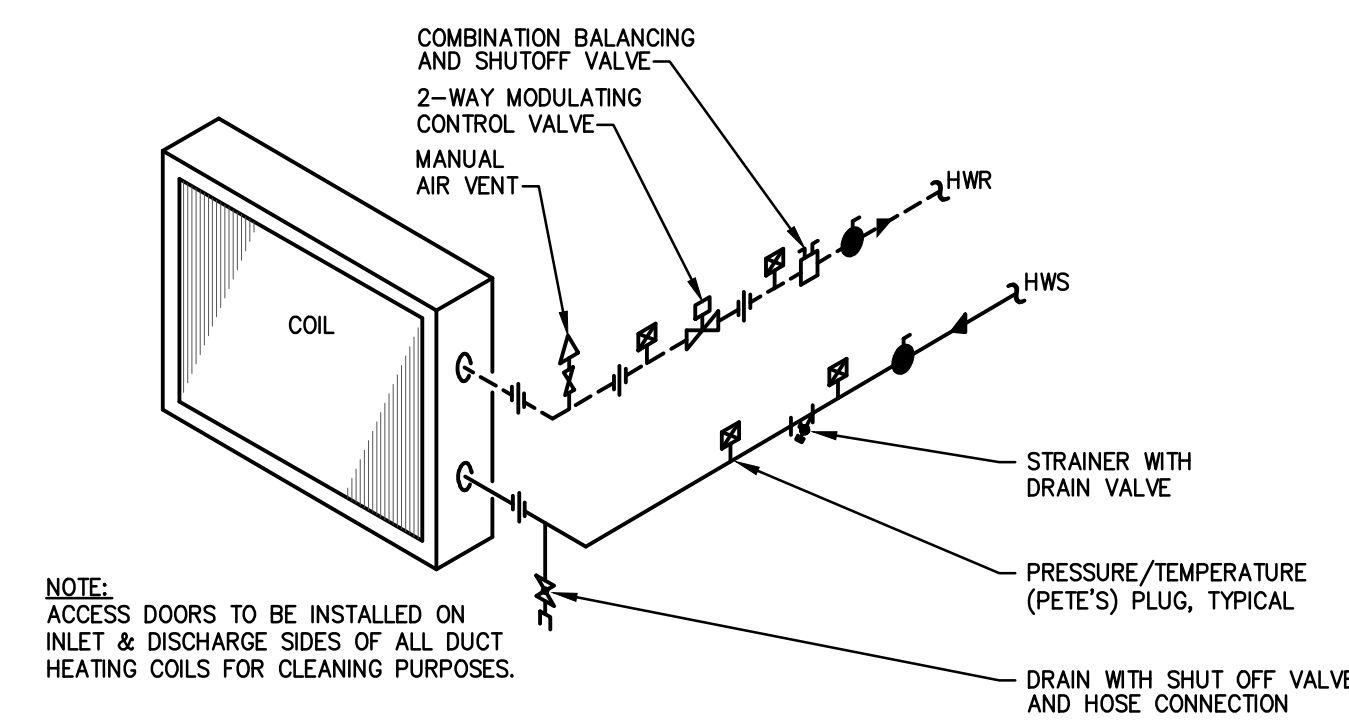
2 CEILING DIFFUSER TAKE-OFF
H3.1 NOT TO SCALE

NOTE:
FLEX DUCT IS NOT ACCEPTABLE FOR NEGATIVELY PRESSURIZED DUCTWORK.

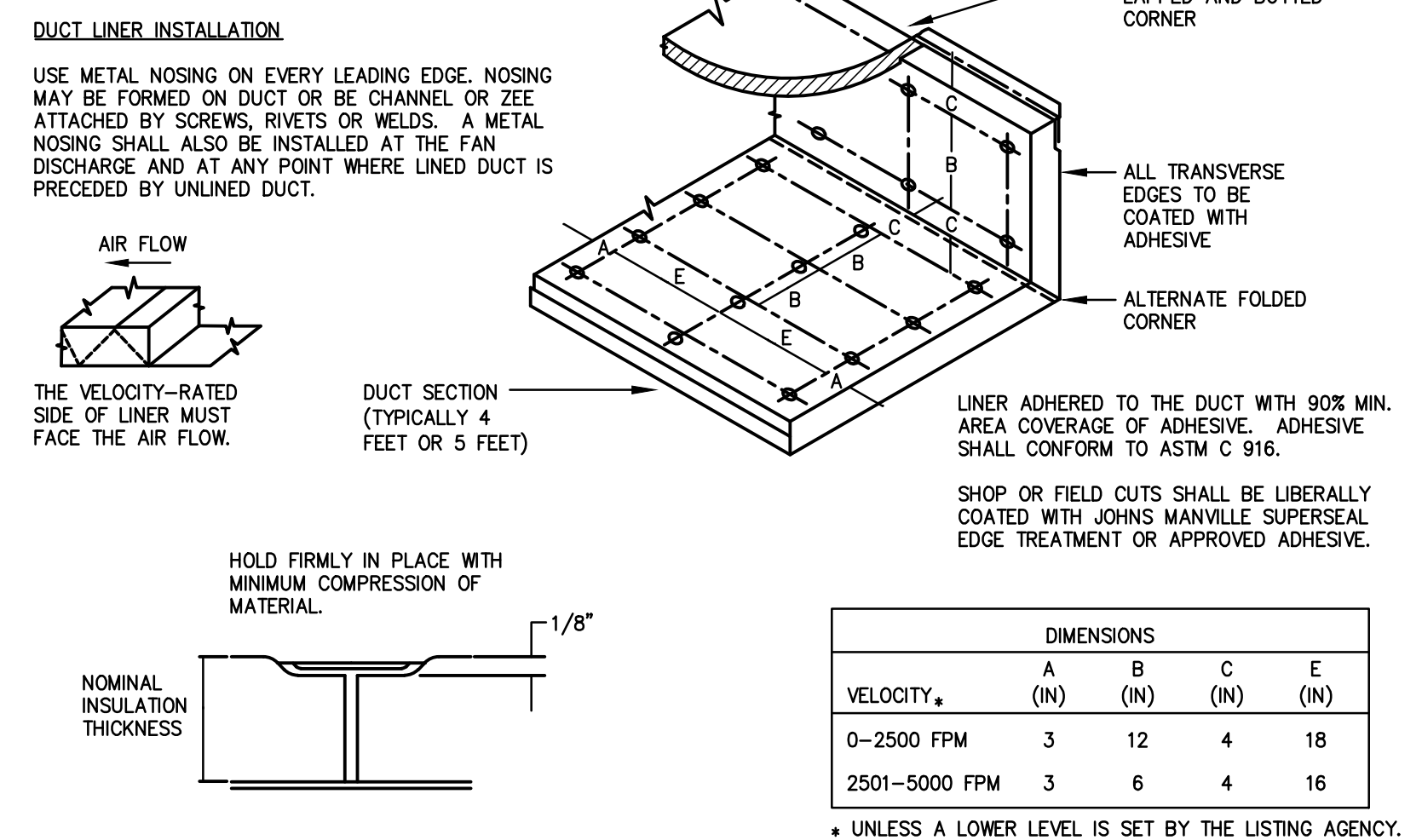


3 TYPICAL CONNECTIONS TO AHU DETAIL
H3.1 NOT TO SCALE

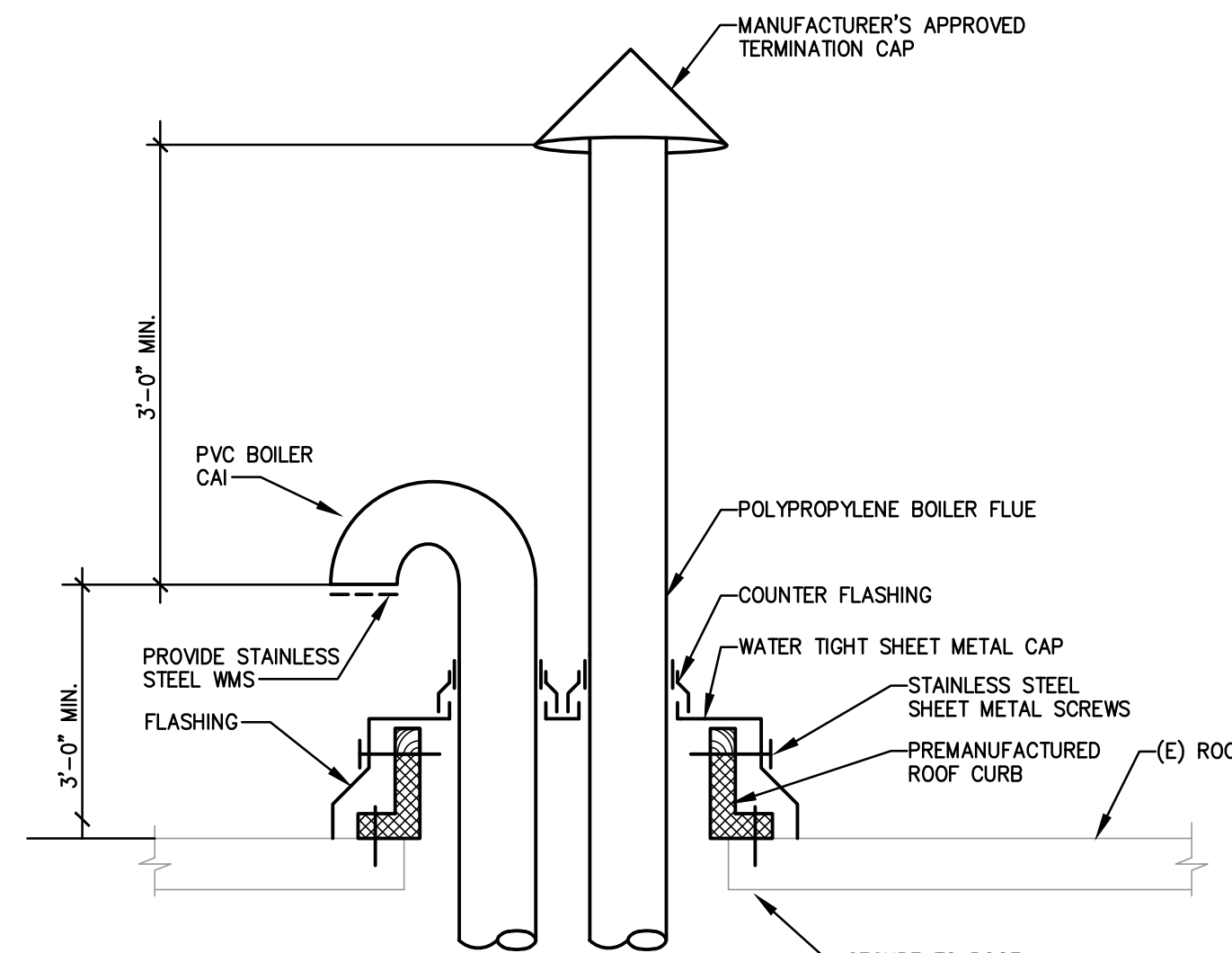
NOTE:
SIMILAR CONFIGURATION FOR COOLING-ONLY.



4 DUCT HEATING COIL PIPING DETAIL
H3.1 NOT TO SCALE



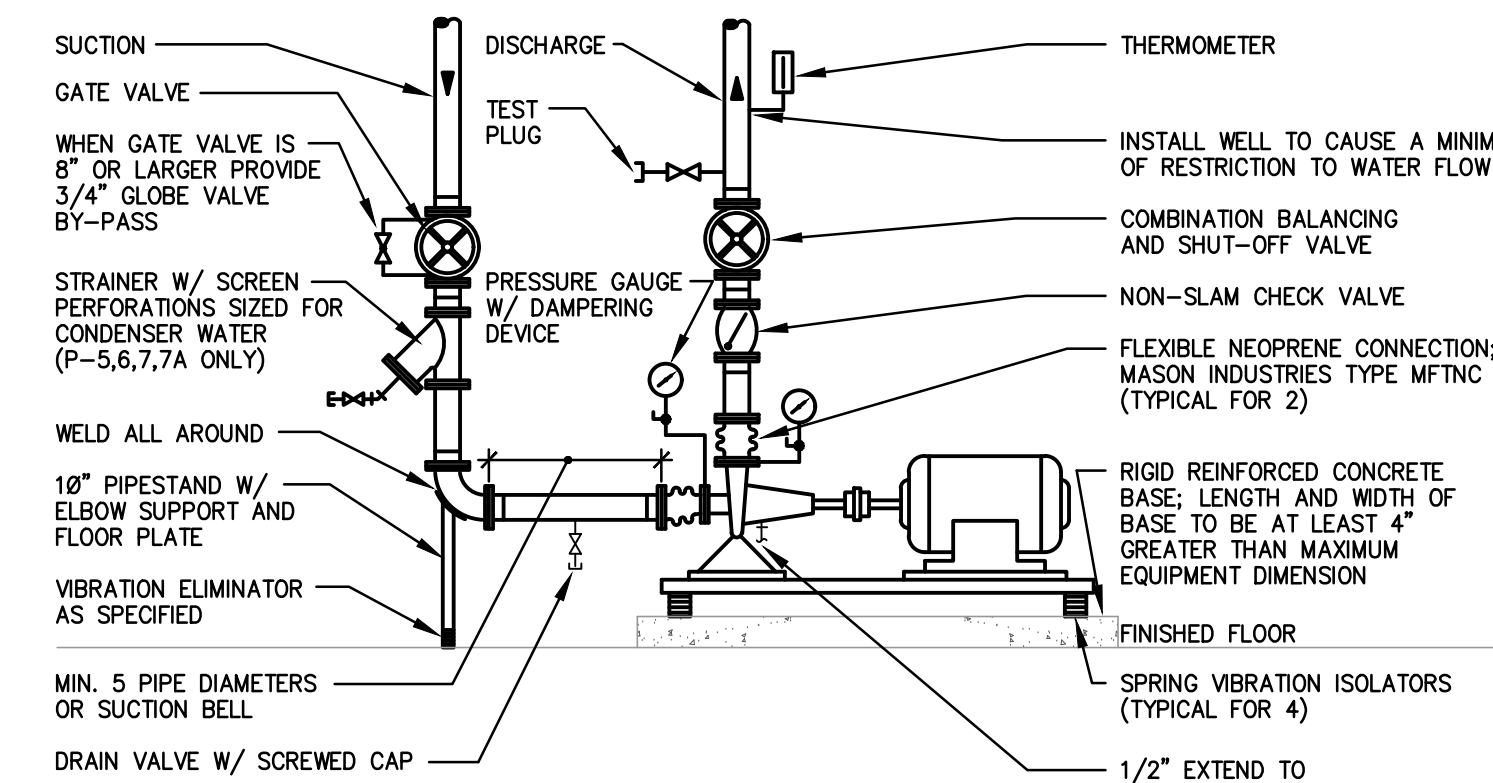
5 DUCT LINER INSTALLATION DETAIL
H3.1 NOT TO SCALE



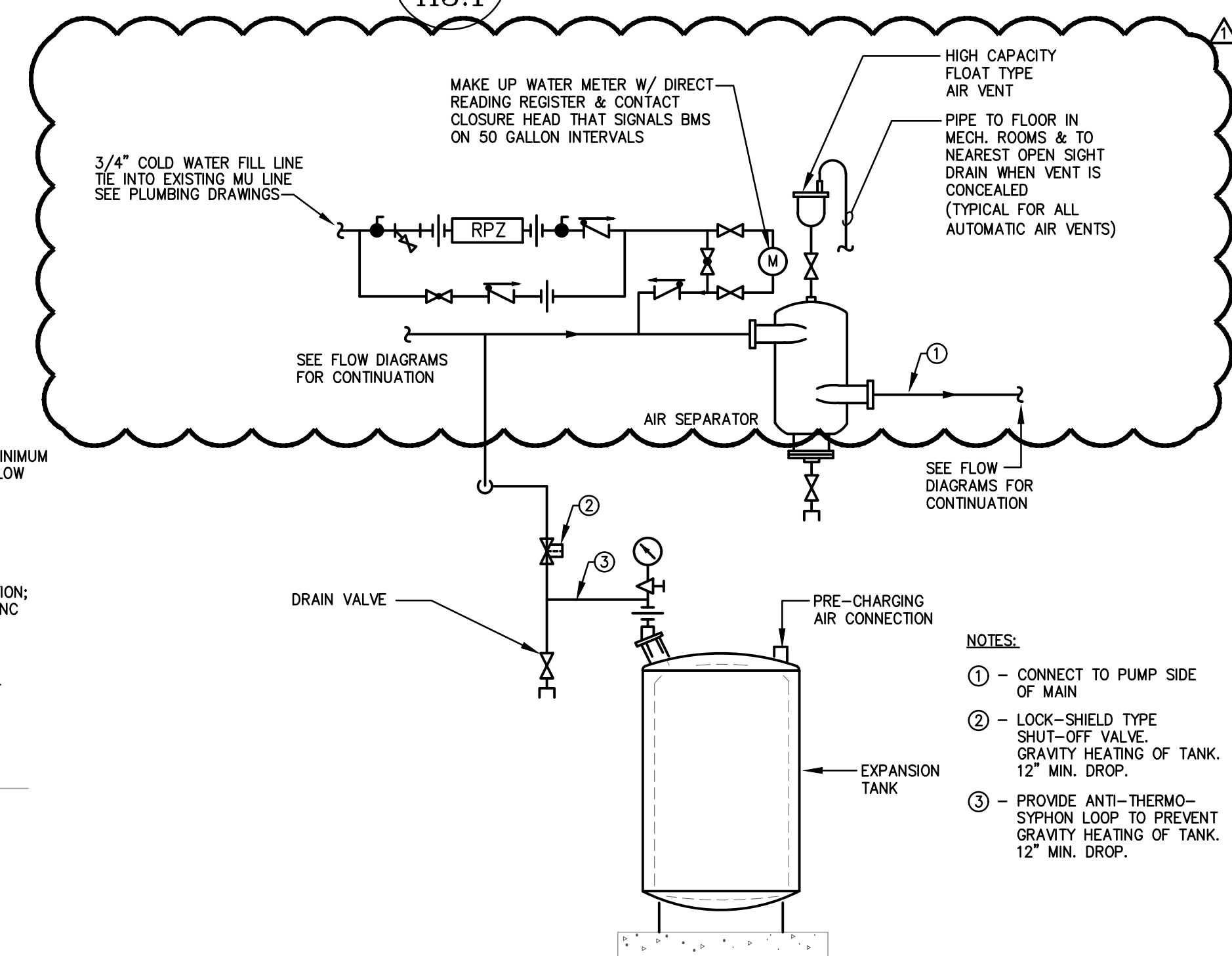
6 BOILER FLUE & CAI DETAIL
H3.1 NOT TO SCALE

NOTES:

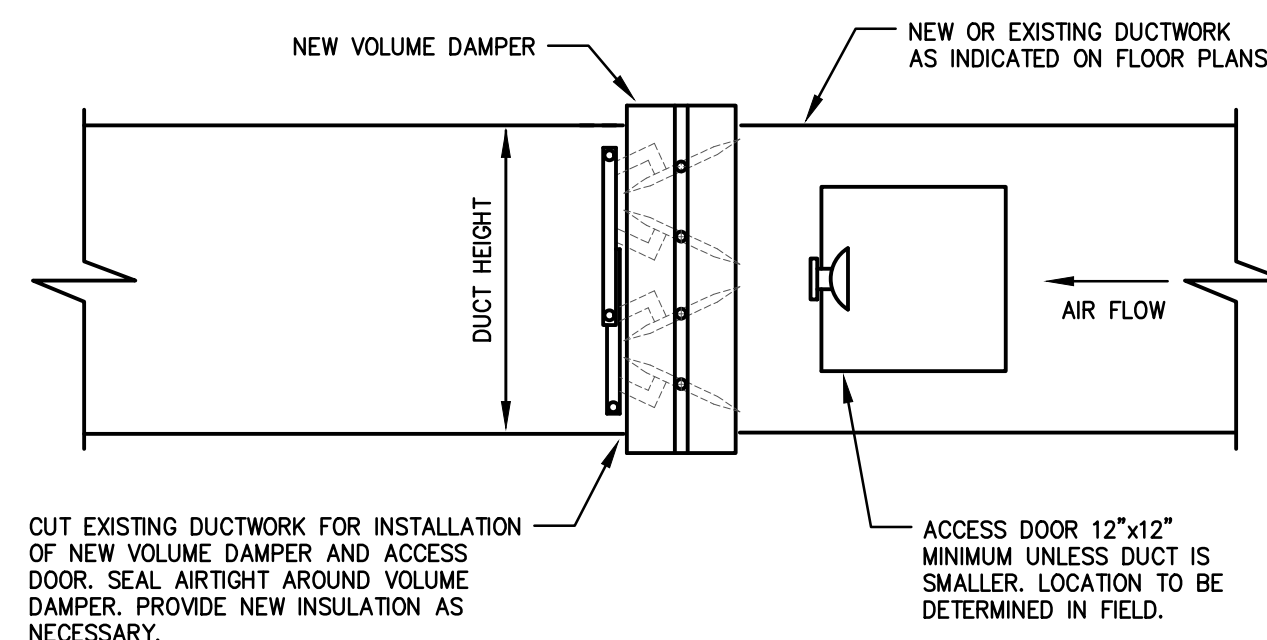
- ALL WOOD SHALL BE PRESSURE TREATED FIRE RETARDANT.
- CONTRACTOR SHALL USE ROOF MANUFACTURER'S AUTHORIZED INSTALLER FOR ALL ROOF WORK TO MAINTAIN WARRANTY. REFER TO SECTION 024119.



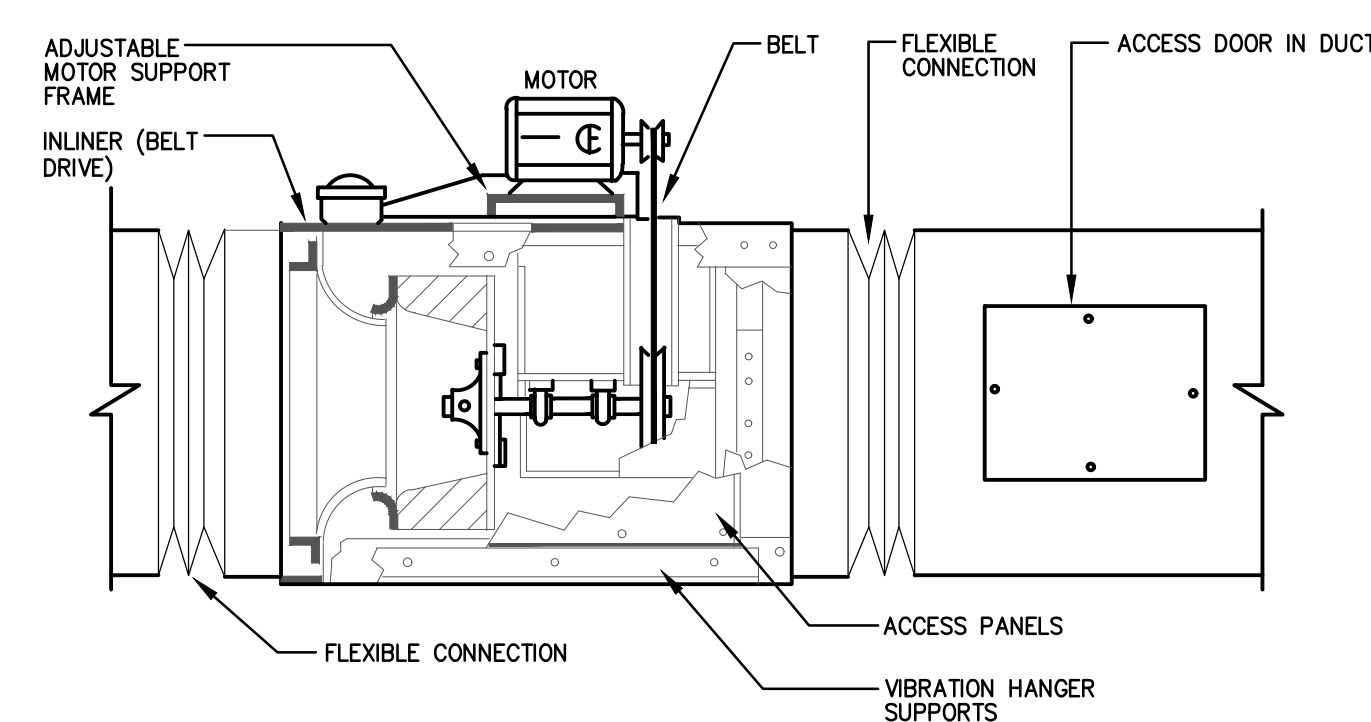
7 END SUCTION PUMP PIPING DETAIL
H3.1 NOT TO SCALE



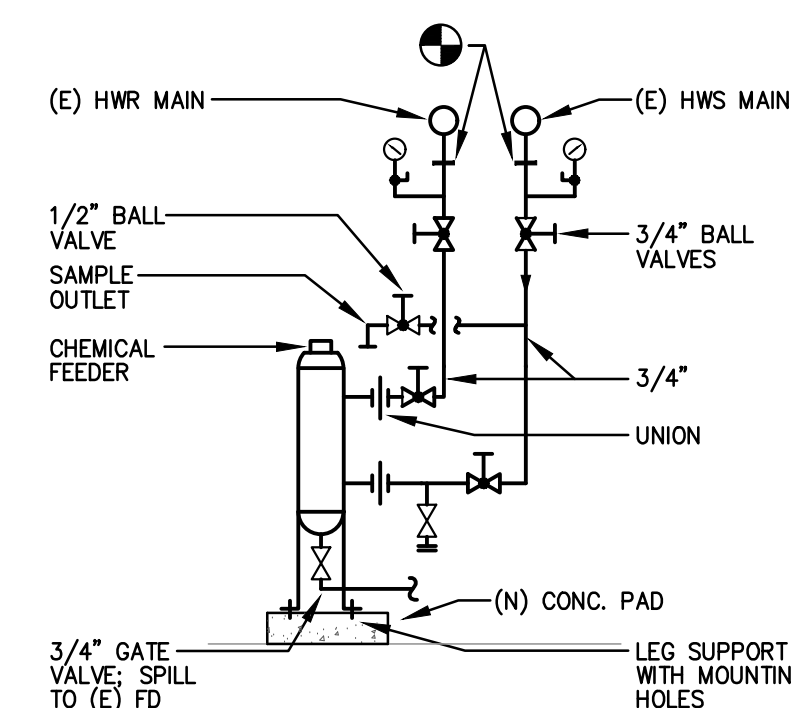
8 AIR CONTROL & PIPING CONNECTION FOR WATER SYSTEM
H3.1 NOT TO SCALE



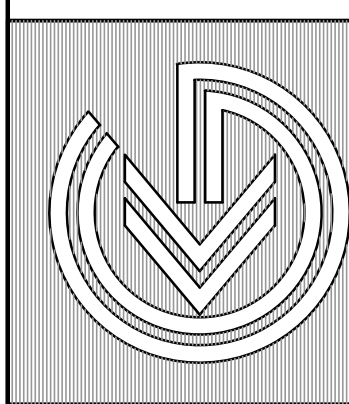
9 VOLUME DAMPER DETAIL
H3.1 NOT TO SCALE

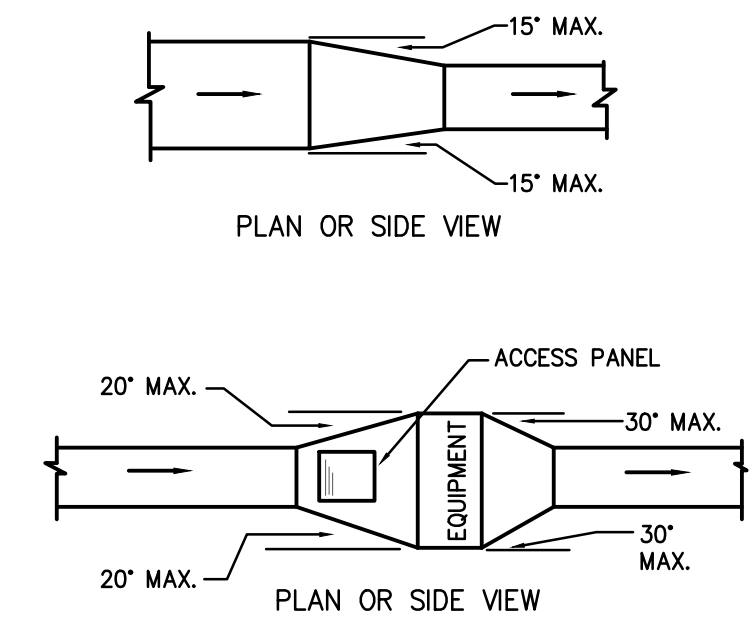


10 IN-LINE CENTRIFUGAL FAN DETAIL
H3.1 NOT TO SCALE

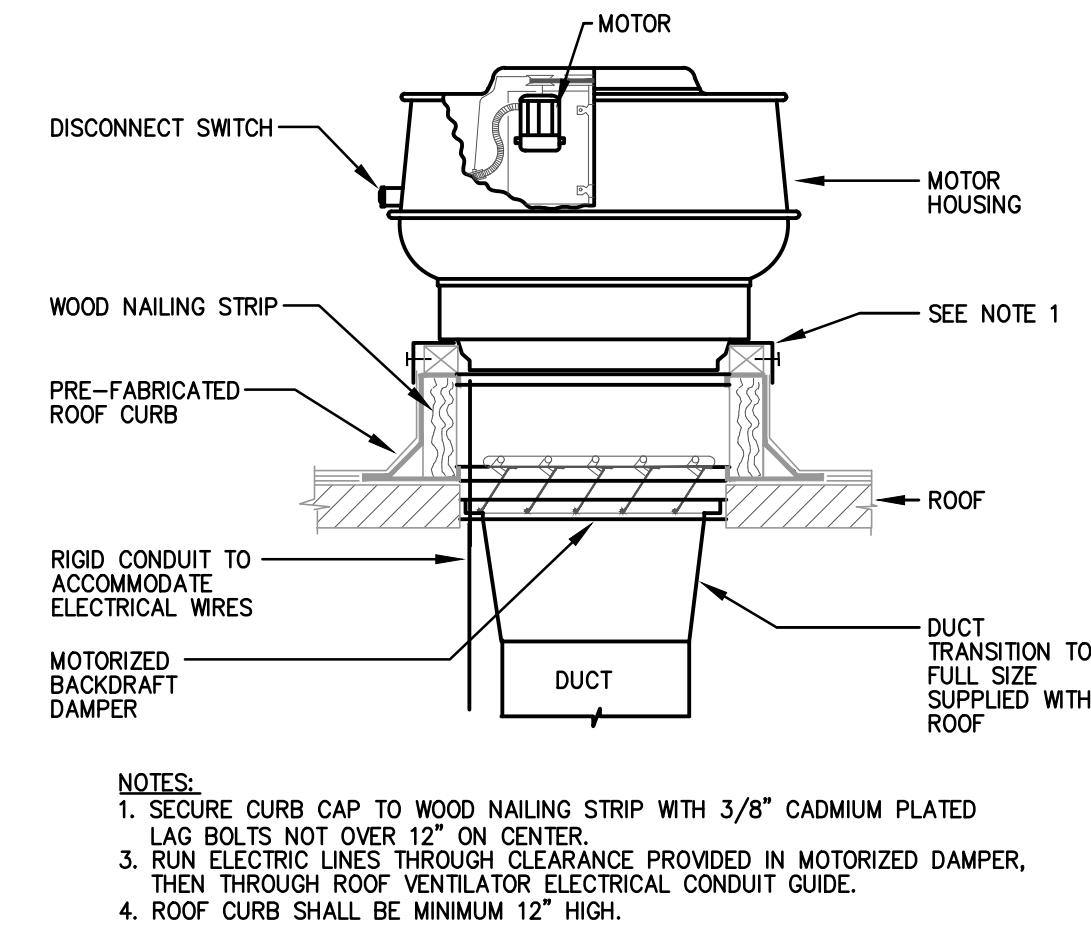


11 CHEMICAL FEED DETAIL
H3.1 NOT TO SCALE

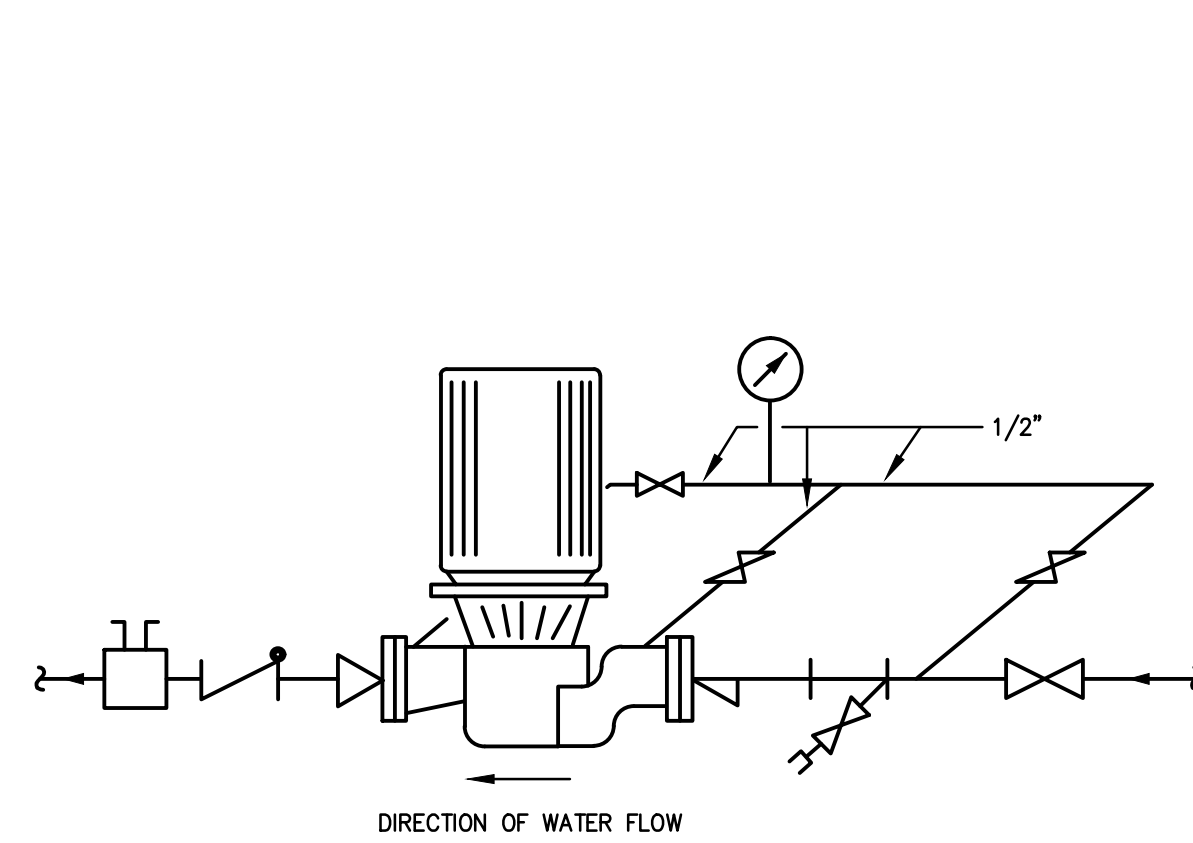




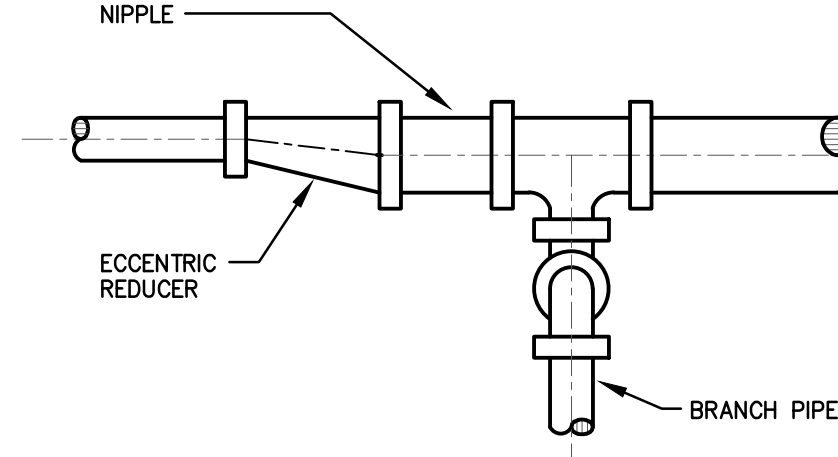
1
H3.2 DUCT TRANSITION WITH EQUIPMENT IN DUCT DETAIL
NOT TO SCALE



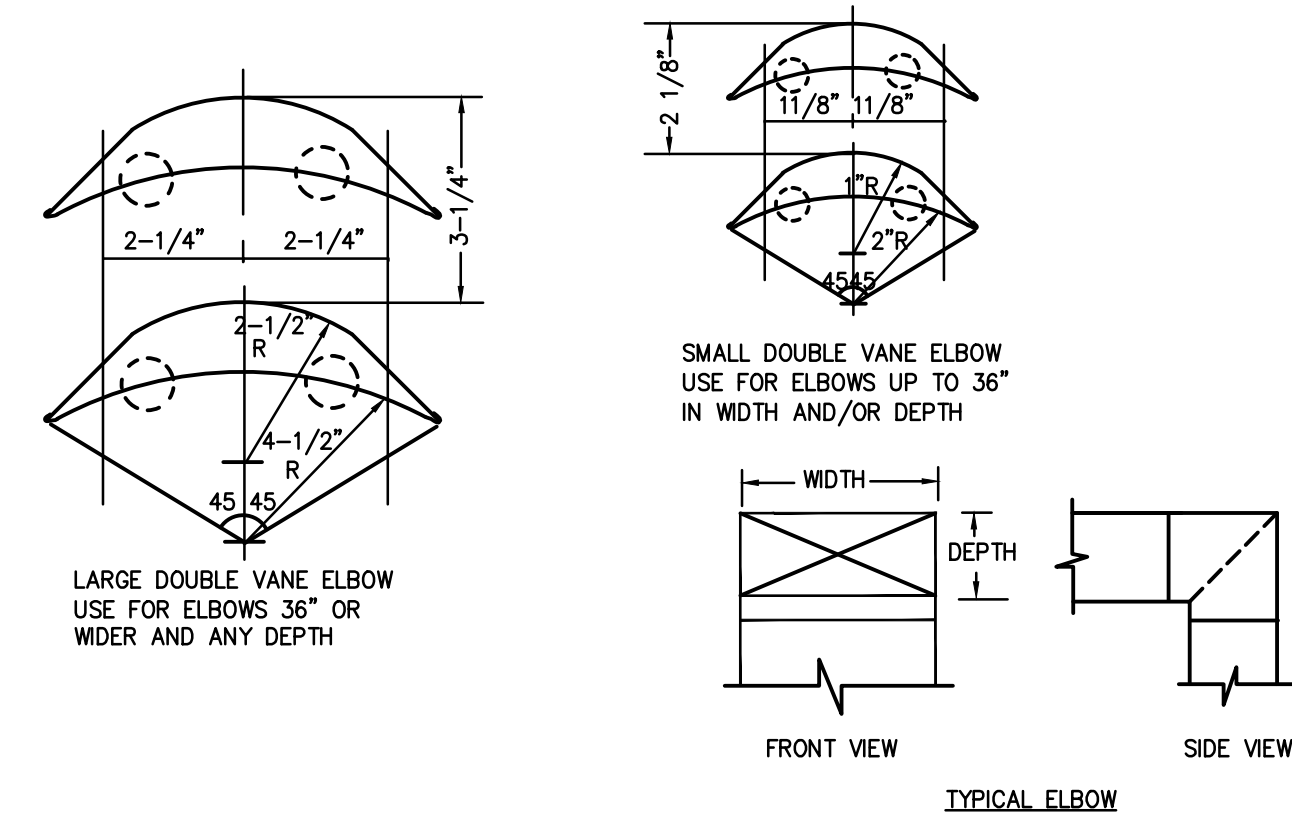
2
H3.2 INDOOR DOAS UNIT DRAIN TRAP DETAIL
NOT TO SCALE



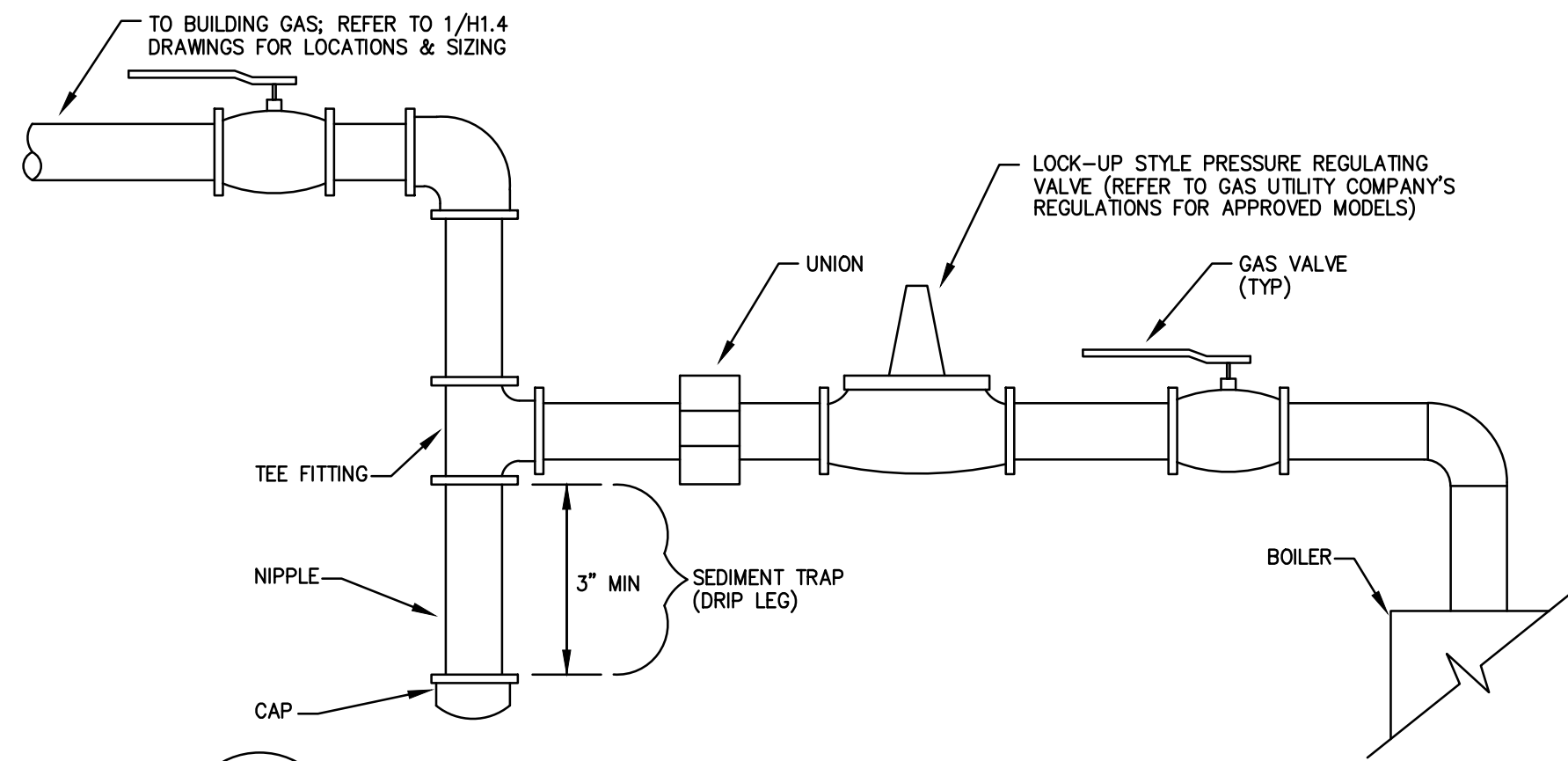
3
H3.2 PIPE THROUGH INTERIOR WALL DETAIL
NOT TO SCALE



4
H3.2 REDUCTION IN PIPE SIZE DETAIL
NOT TO SCALE

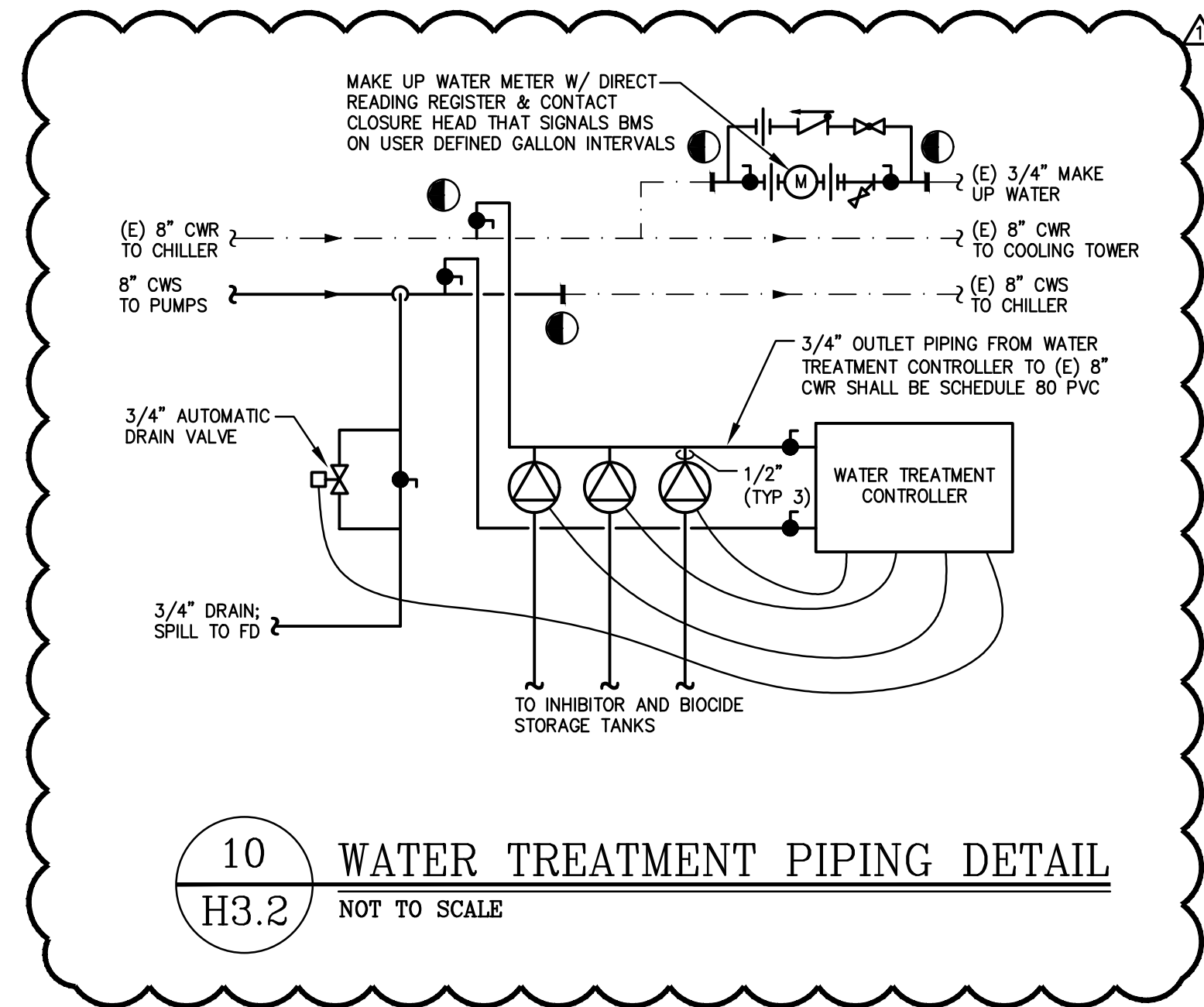


5
H3.2 ROOF EXHAUST FAN DETAIL
NOT TO SCALE

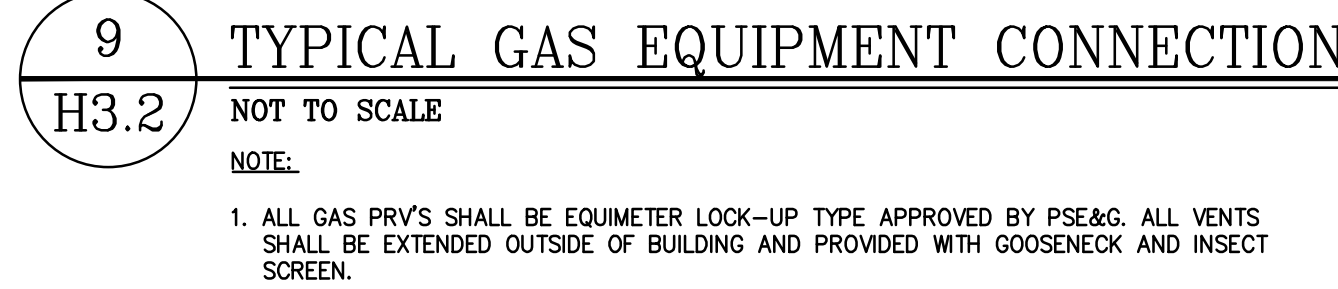


6
H3.2 TYPICAL CONNECTIONS TO IN-LINE WATER PUMP
NOT TO SCALE

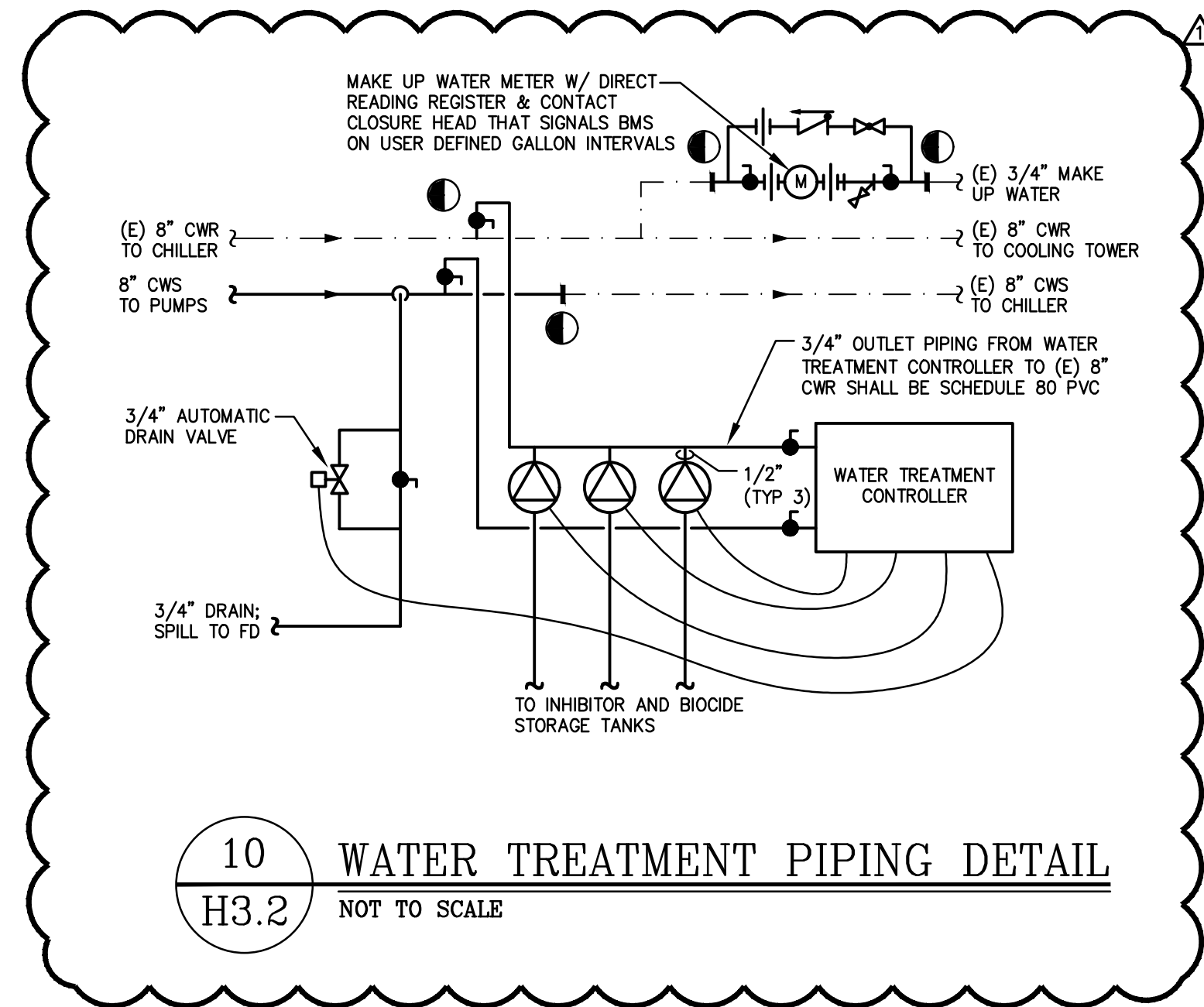
7
H3.2 HEATING/COOLING COIL VALVE ASSEMBLY DETAIL
NOT TO SCALE



8
H3.2 SQUARE OR RECTANGULAR ELBOW DETAIL
NOT TO SCALE



9
H3.2 TYPICAL GAS EQUIPMENT CONNECTION
NOT TO SCALE



10
H3.2 WATER TREATMENT PIPING DETAIL
NOT TO SCALE

