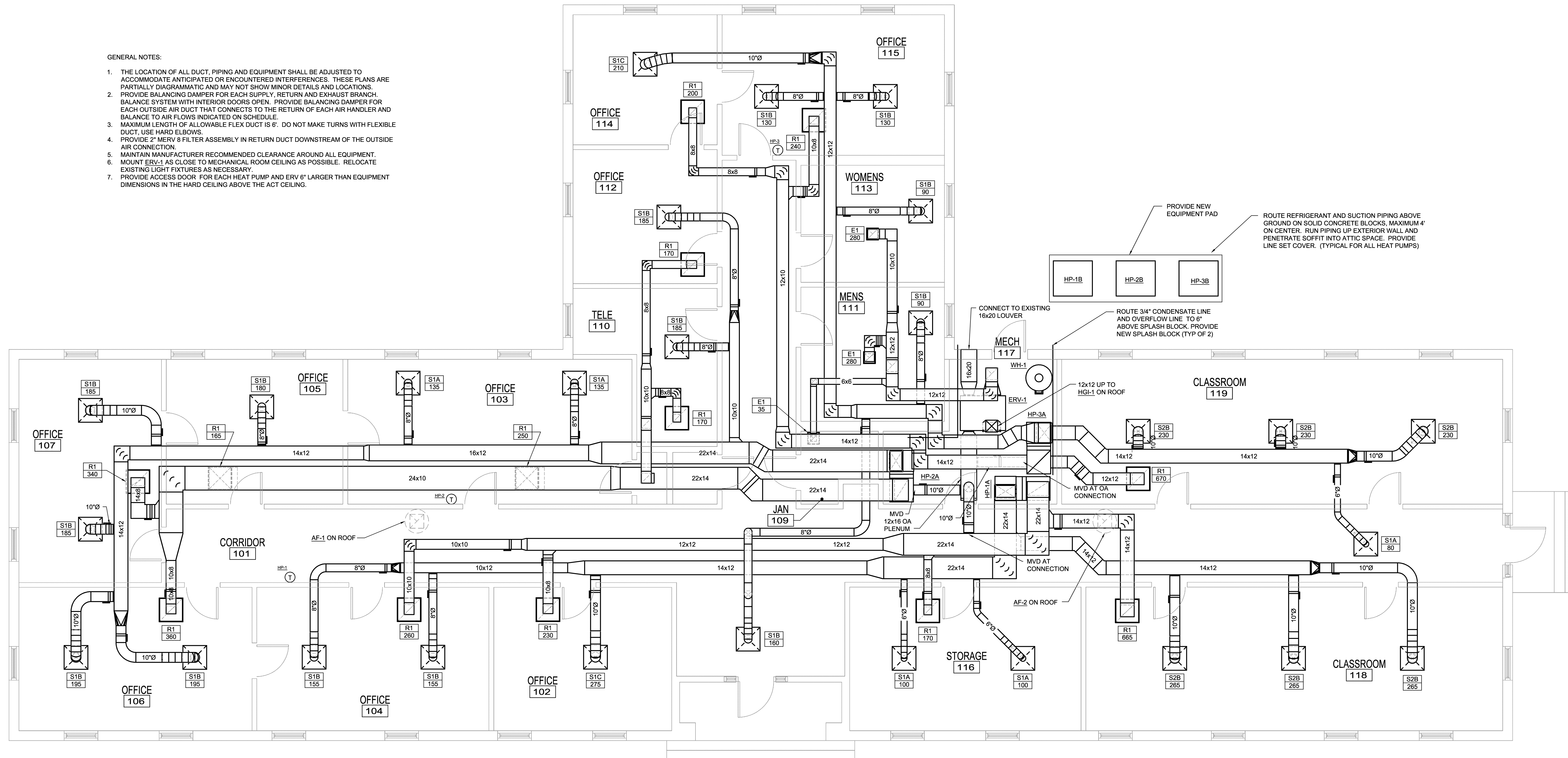


SYM.	PREP'D BY	DATE	APPROVED

GENERAL NOTES:

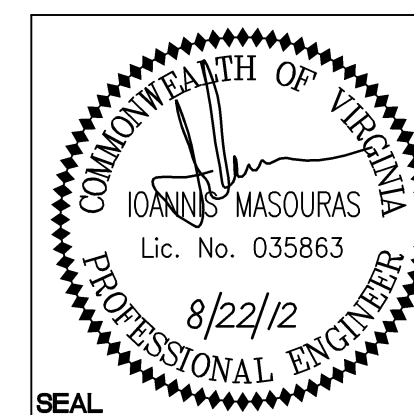
1. THE LOCATION OF ALL DUCT, PIPING AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE ANTICIPATED OR ENCOUNTERED INTERFERENCES. THESE PLANS ARE PARTIALLY DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS.
2. PROVIDE BALANCING DAMPER FOR EACH SUPPLY, RETURN AND EXHAUST BRANCH. BALANCE SYSTEM WITH INTERIOR DOORS OPEN. PROVIDE BALANCING DAMPER FOR EACH OUTSIDE AIR DUCT THAT CONNECTS TO THE RETURN OF EACH AIR HANDLER AND BALANCE TO AIR FLOWS INDICATED ON SCHEDULE.
3. MAXIMUM LENGTH OF ALLOWABLE FLEX DUCT IS 6'. DO NOT MAKE TURNS WITH FLEXIBLE DUCT. USE HARD ELBOWS.
4. PROVIDE 2" MERV 8 FILTER ASSEMBLY IN RETURN DUCT DOWNSTREAM OF THE OUTSIDE AIR CONNECTION.
5. MAINTAIN MANUFACTURER RECOMMENDED CLEARANCE AROUND ALL EQUIPMENT. MOUNT ERV-1 AS CLOSE TO MECHANICAL ROOM CEILING AS POSSIBLE. RELOCATE EXISTING LIGHT FIXTURES AS NECESSARY.
7. PROVIDE ACCESS DOOR FOR EACH HEAT PUMP AND ERV 6" LARGER THAN EQUIPMENT DIMENSIONS IN THE HARD CEILING ABOVE THE ACT CEILING.



**BUILDING 114 MECHANICAL NEW WORK PLAN**  
 1/4"=1'-0" 0 2 4 6

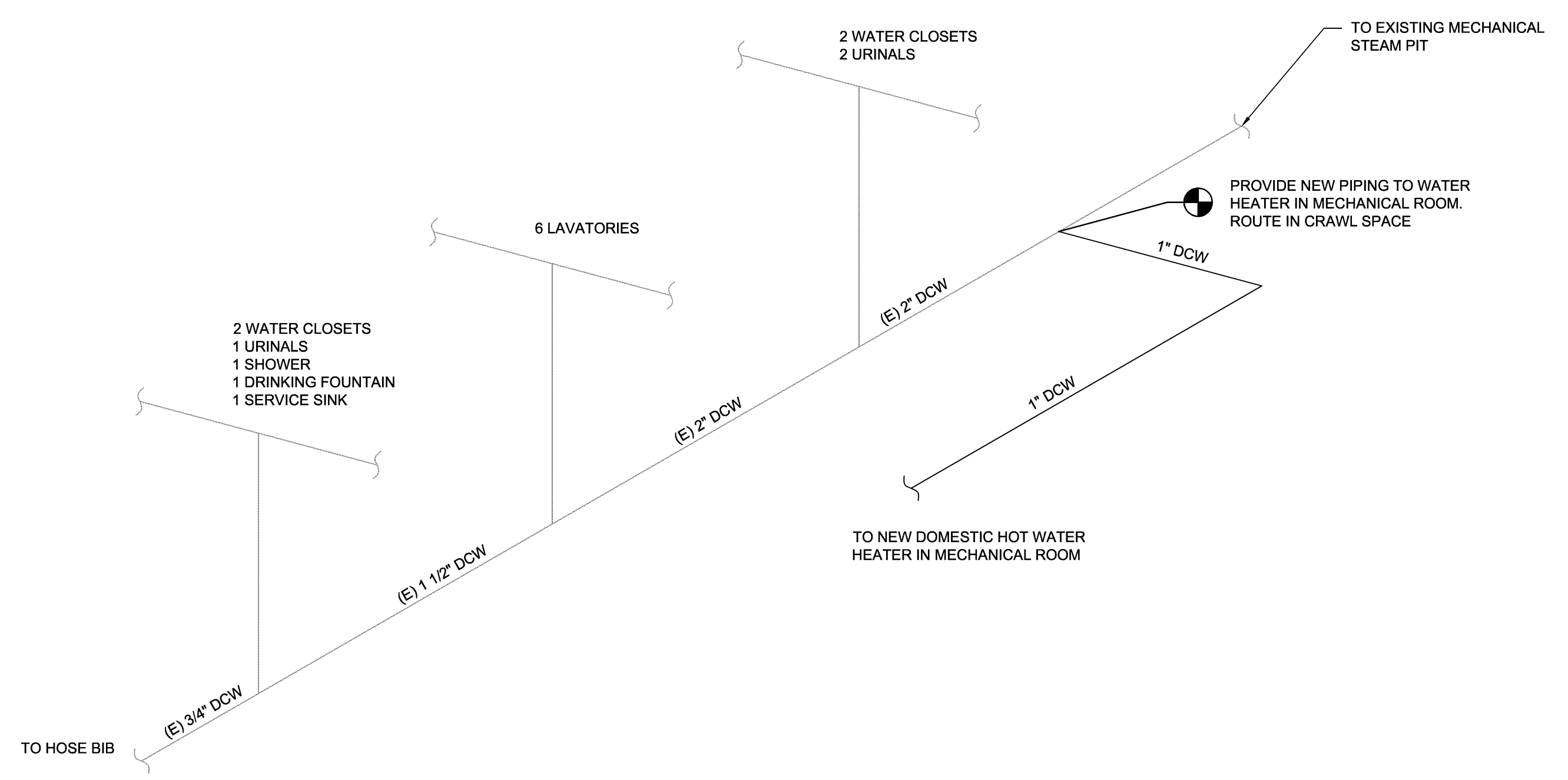
**DISCLOSURE OF INFORMATION**  
 Contractor shall comply as follows:

- (a) The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless the Contracting Officer has given prior written approval; or
  - (b) The information is otherwise in the public domain before the date of release.
  - (c) Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.
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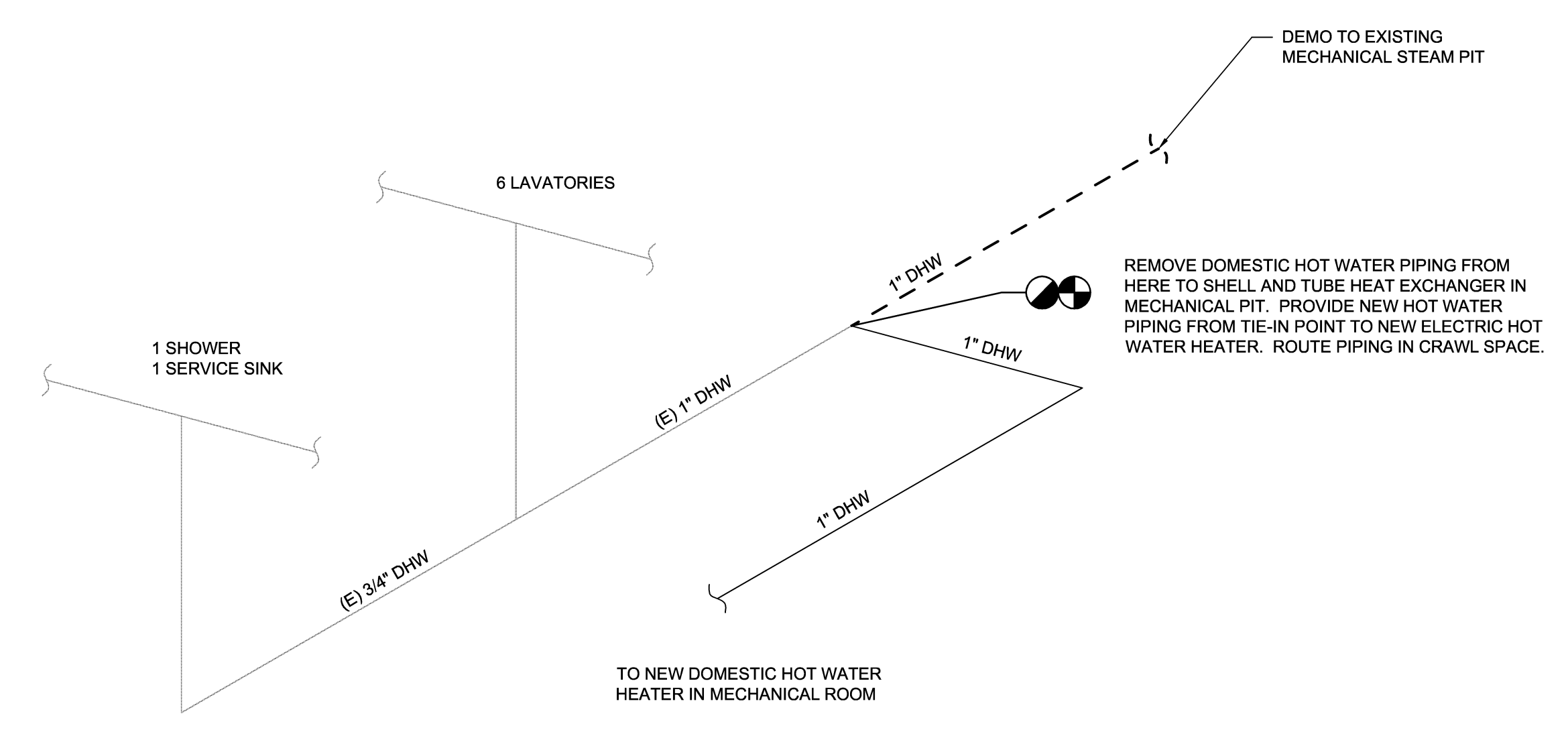


<b>WileyWilson</b> 6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.254.7242 wileywilson.com		<b>M-102B</b> PROJECT NO. CP12-0091 NAVAL FACILITIES ENGINEERING COMMAND	
DEPT OF NAVY <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA HVAC/DHW IMPROVEMENTS, VARIOUS FACILITIES, HADNOT POINT BUILDING 114 MECHANICAL NEW WORK PLAN		NAVFAC DRAWING NO. 60011353 CONSTR CONTR NO. N40085-12-B-0091	
DES. IM	DR. SWL	CHK. JHE	DESIGN DR.
APPROVED PWO OR OIC	DATE	SIZE	CODE IDENT NO.
		E	80091
SATISFACTORY TO	DATE	SCALE: AS SHOWN	SPEC No. 05-12-0091
			SHEET 09 OF 84

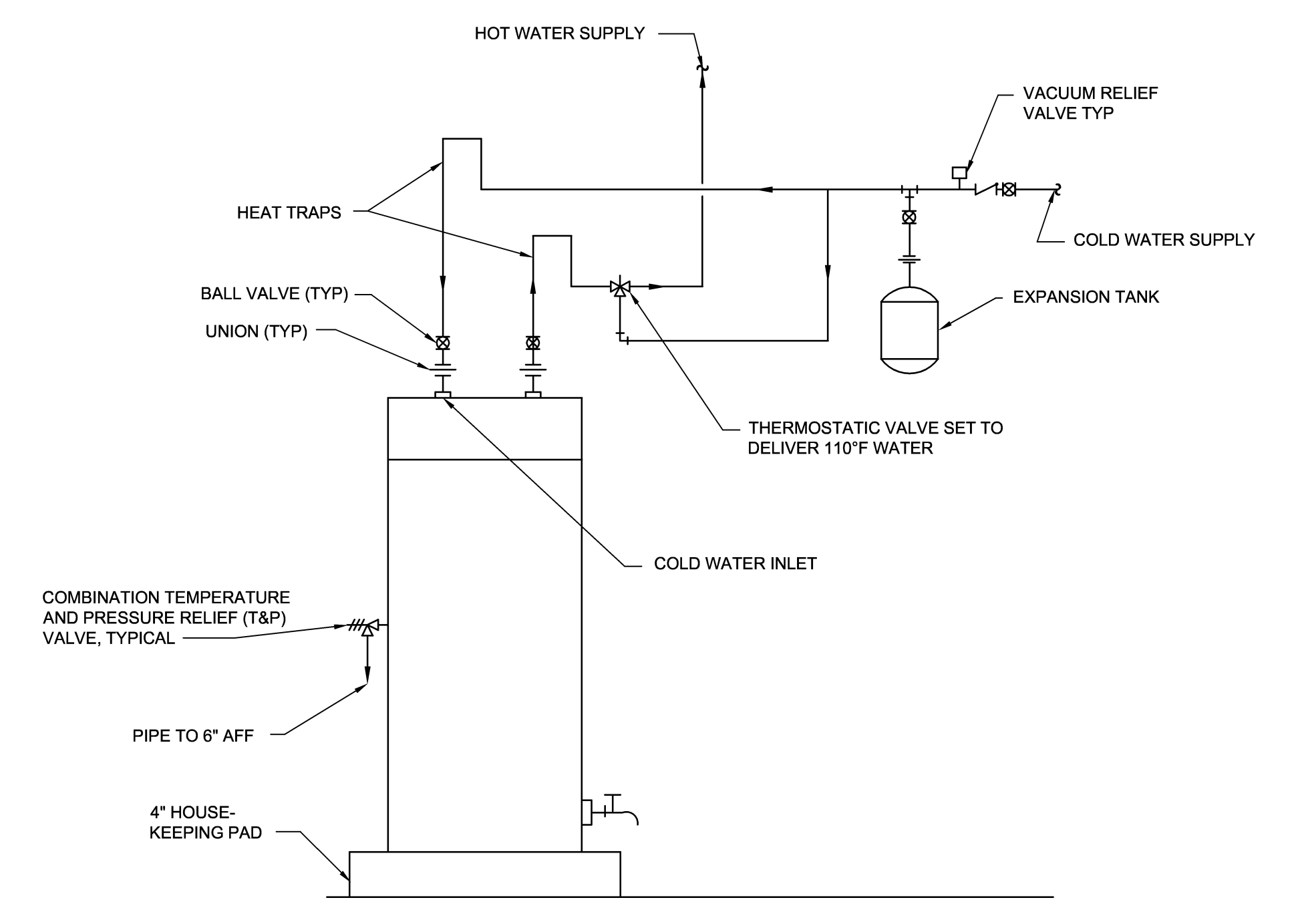
SYM.	PREP'D BY	DATE	APPROVED



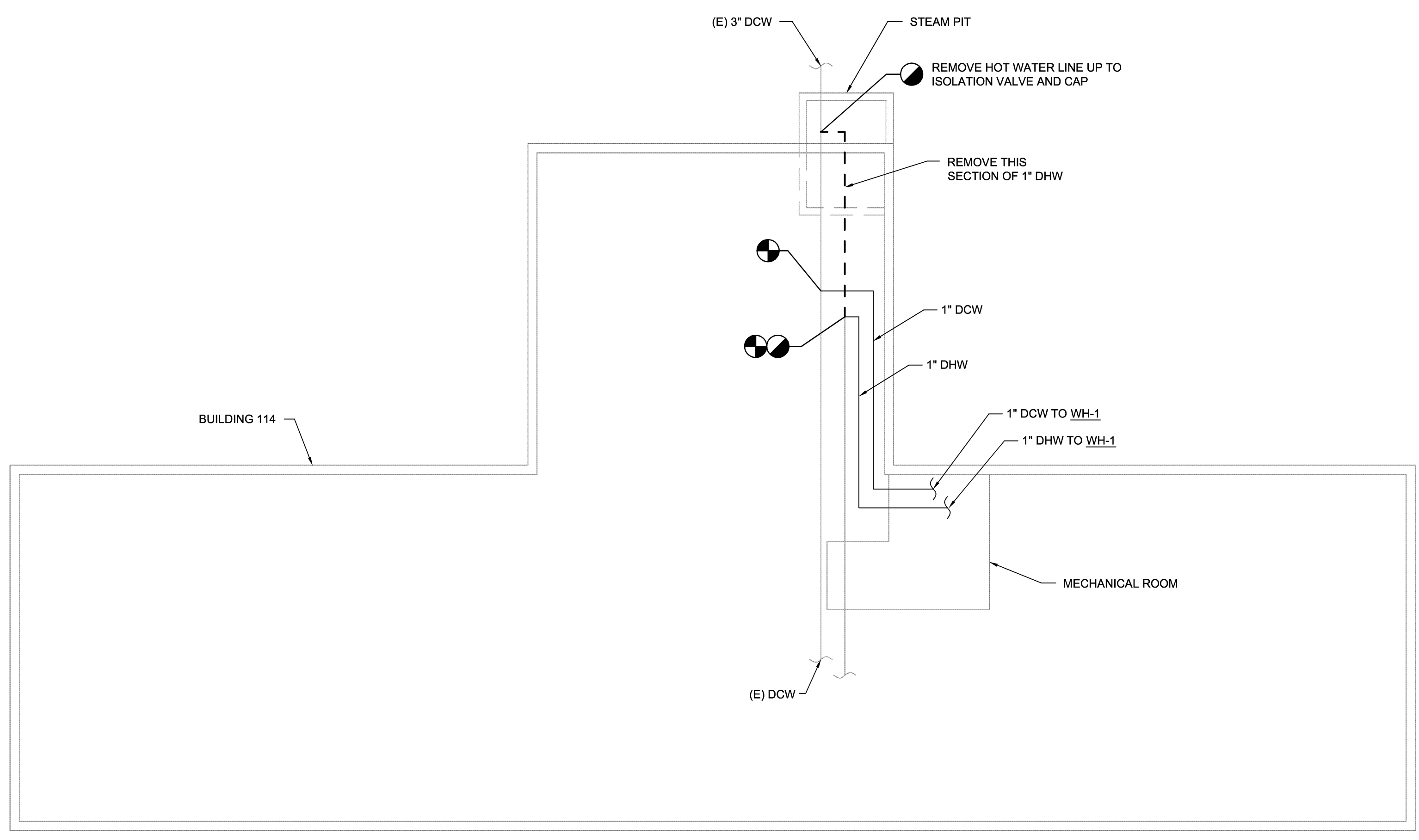
**DOMESTIC COLD WATER RISER DIAGRAM**  
NOT TO SCALE



**DOMESTIC HOT WATER RISER DIAGRAM**  
NOT TO SCALE



**ELECTRIC WATER HEATER DETAIL**  
NOT TO SCALE



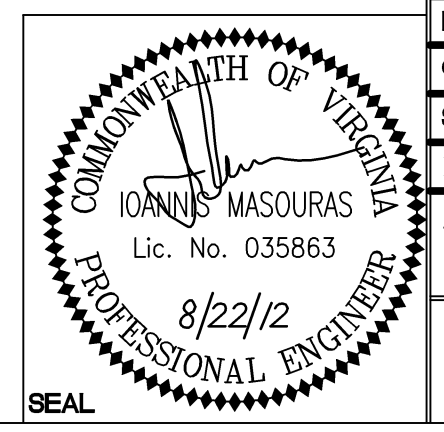
**DOMESTIC WATER SITE PLAN**  
NOT TO SCALE

- PLUMBING NOTES:
1. THE LOCATION OF ALL PIPING AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE ANTICIPATED OR ENCOUNTERED INTERFERENCES. THESE PLANS ARE PARTIALLY DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS.
  2. STORE DOMESTIC HOT WATER AT 140 DEG F AND TEMPER TO 110 DEG F BEFORE BEING SUPPLIED TO BUILDING. PROVIDE MIXING VALVE.

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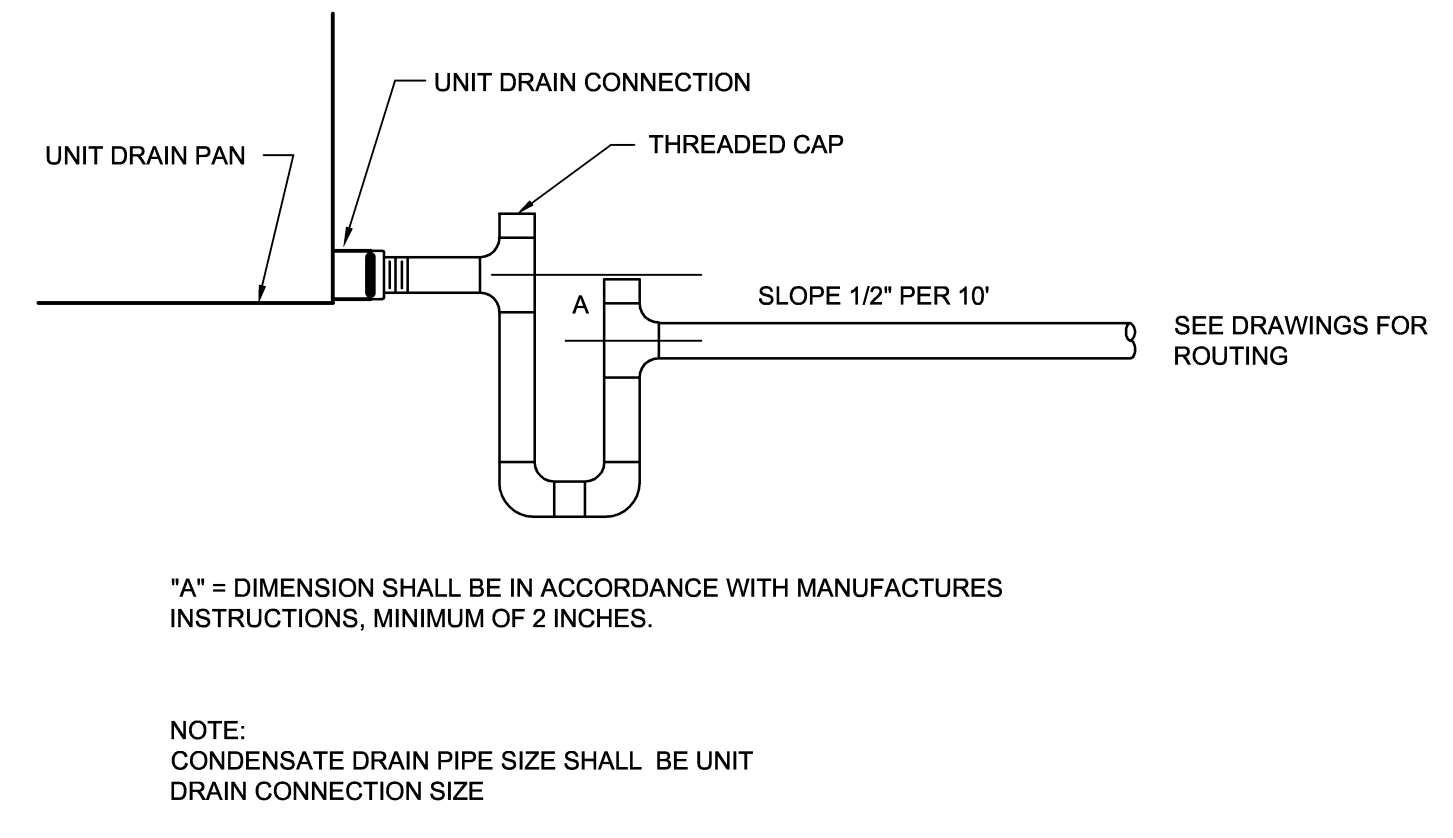


<b>WileyWilson</b> 6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.264.7242 wileywilson.com		<b>M-102C</b> PROJECT NO. CP12-0091	
DEPT OF NAVY <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA		NAVAL FACILITIES ENGINEERING COMMAND	
DES. IM DR. SWL CHK. JHE SUBMITTED BY:		HVAC/DHW IMPROVEMENTS, VARIOUS FACILITIES, HADNOT POINT BUILDING 114 PLUMBING PLAN, DIAGRAMS & DETAILS	
DESIGN DR. APPROVED PWO OR OICC DATE		SIZE <b>E</b>	CODE IDENT NO. 80091
SATISFACTORY TO DATE		NAVFAC DRAWING NO. 60011354	
SCALE: AS SHOWN		SPEC No. 05-12-0091	SHEET 10 OF 84

SYM.	PREP'D BY	DATE	APPROVED

HEAT PUMP SCHEDULE					
INDOOR UNIT DESIGNATION	HP-1A	HP-2A	HP-3A		
OUTDOOR UNIT DESIGNATION	HP-1B	HP-2B	HP-3B		
LOCATION	VARIOUS	VARIOUS	VARIOUS		
MINIMUM COMBINED SEER RATING PER ARI	17.0	17.0	17.0		
MINIMUM COMBINED EER RATING PER ARI	12.2	12.2	12.2		
INDOOR UNIT	EVAPORATOR	TOTAL AIRFLOW (CFM)	1580	1580	1580
		OUTSIDE AIRFLOW (CFM)	255	125	470
		EXTERNAL STATIC PRESSURE (IN-WC)	.6	.6	.6
		TOTAL COOLING CAPACITY (MBH)	47.5	47.5	47.5
		HEAT PUMP HEATING CAPACITY AT 17° F (MBH)	29.2	29.2	29.2
	ELECTRICAL	ELECTRIC HEATING CAPACITY (KW)	5.0	5.0	5.0
		BLOWER MOTOR FLA (A)	9.1	9.1	9.1
		TOTAL MCA (A)	27	27	27
		VOLTAGE	208	208	208
		PHASE	1	1	1
FREQUENCY (Hz)	60	60	60		
BASED ON	LENNOX	LENNOX	LENNOX		
INDOOR UNIT MODEL	CBX32MV-048	CBX32MV-048	CBX32MV-048		
REFRIGERANT	R-410A	R-410A	R-410A		
OUTDOOR UNIT	ELECTRICAL	AMBIENT DESIGN TEMPERATURE (DEG F)	95	95	95
		MINIMUM CIRCUIT AMPACITY (A)	28.5	28.5	28.5
		MAXIMUM OVERCURRENT PROTECTION (A)	45	45	45
		MINIMUM HEATING COP AT 17° F	2.5	2.5	2.5
	MINIMUM HEATING COP AT 47° F	3.32	3.32	3.32	
	MINIMUM HEAT PUMP HSPF	8.7	8.7	8.7	
	VOLTAGE (V)	208	208	208	
	PHASE	1	1	1	
FREQUENCY (Hz)	60	60	60		
BASED ON	LENNOX	LENNOX	LENNOX		
OUTDOOR SYSTEM MODEL	XP21-048-230	XP21-048-230	XP21-048-230		
REMARKS	1, 2 & 3	1, 2 & 3	1, 2 & 3		

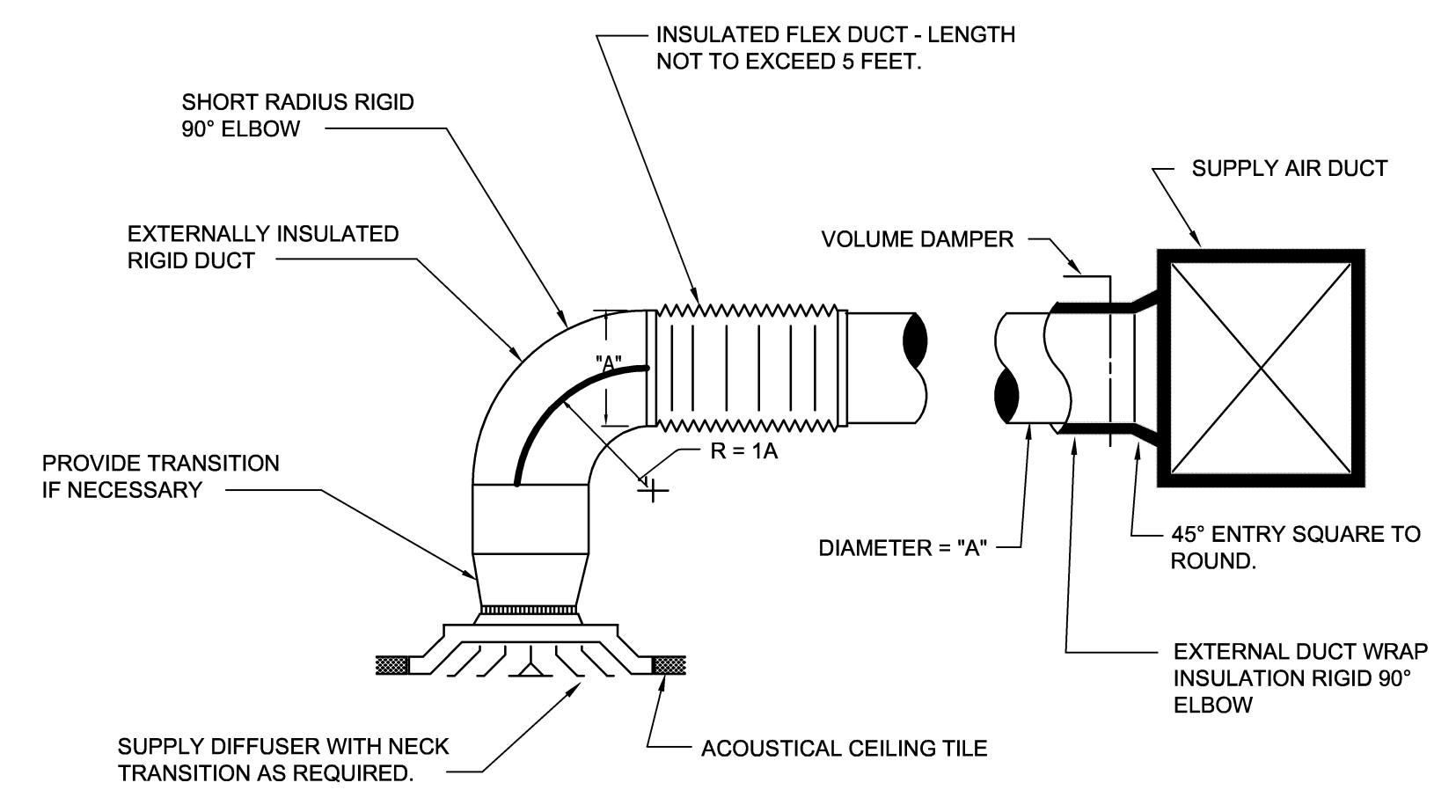
- REMARKS LEGEND:
1. PROVIDE CONDENSING UNIT SHUTOFF MOISTURE SENSOR IN AUXILIARY PORT OF INDOOR UNIT DRAIN PAN.
  2. PROVIDE SIDE RETURN UNIT STAND.
  3. PROVIDE ECM MOTOR ON INDOOR UNIT.



**AC DRAIN FOR HEAT PUMP AIR HANDLER  
NEGATIVE PRESSURE DRAIN PAN**  
NO SCALE

ENERGY RECOVERY VENTILATOR SCHEDULE	
DESIGNATION	ERV-1
SUPPLY FAN	TOTAL FAN AIRFLOW (CFM) 850 EXTERNAL STATIC PRESSURE (IN. WG) .25 TOTAL FAN AIRFLOW (CFM) 595
EXHAUST FAN	EXTERNAL STATIC PRESSURE (IN. WG) .25 OPERATING OUTSIDE AIRFLOW 850 OUTDOOR EAT DB/WB (HEATING) 20/16.6 OPERATING EXHAUST AIRFLOW 595 OUTDOOR EAT DB/WB (COOLING) 95/79
ENTHALPY WHEEL	EXHAUST EAT DB/WB (COOLING) 75/63 EXHAUST EAT DB/WB (HEATING) 70/53 DELIVERED CONDITIONS DB/WB (COOLING) 82.9/70.2 DELIVERED CONDITIONS DB/WB (HEATING) 46.6/39.6
FILTERS	SUPPLY (MERV) 8 EXHAUST (MERV) 8
ELECTRICAL	MCA (A) 60 MOCAP (A) 25 VOLTS (V) 115 PHASE 1 FREQUENCY (Hz) 60
BASED ON	GREENHECK
MODEL	MINVENT-750
REMARKS	1

- REMARKS LEGEND:
1. PROVIDE FACTORY MOUNTED CONTROLS FOR UNITS INCLUDING ALL REQUIRED MOTOR STARTERS. PROVIDE FACTORY REMOTE PANEL INCLUDING INDICATION FOR DIRTY FILTER, HAND-OFF-AUTO SWITCH, AND 7 DAY TIME CLOCK.



**TYPICAL CEILING SUPPLY  
DIFFUSER CONNECTION**  
SCALE: NONE

ELECTRIC DOMESTIC WATER HEATER	
DESIGNATION	WH-1
LOCATION	MECH ROOM
STORAGE (GALLONS)	60
TOTAL CAPACITY (KW)	6
RECOVERY RATE @ 90 DEG F (GPH)	27
ELECTRICAL	--
VOLTS	208
PHASE	1
FREQUENCY (Hz)	60
REMARKS	1

- REMARKS LEGEND:
1. PROVIDE 3.2 GALLON EXPANSION TANK OR LARGER SUCH AS AMTROL ST-8 OR SIMILAR.

HOODED GRAVITY INTAKE SCHEDULE	
DESIGNATION	HGI-1
USAGE	INTAKE
AIRFLOW (CFM)	850
STATIC PRESSURE (IN H2O)	.036
THROAT AREA (SF)	1.83
THROAT VELOCITY (FPM)	464
THROAT DIAMETER (IN)	20.25
SELECTION BASED ON	GREENHECK
MODEL	GRSI-18
REMARKS	1

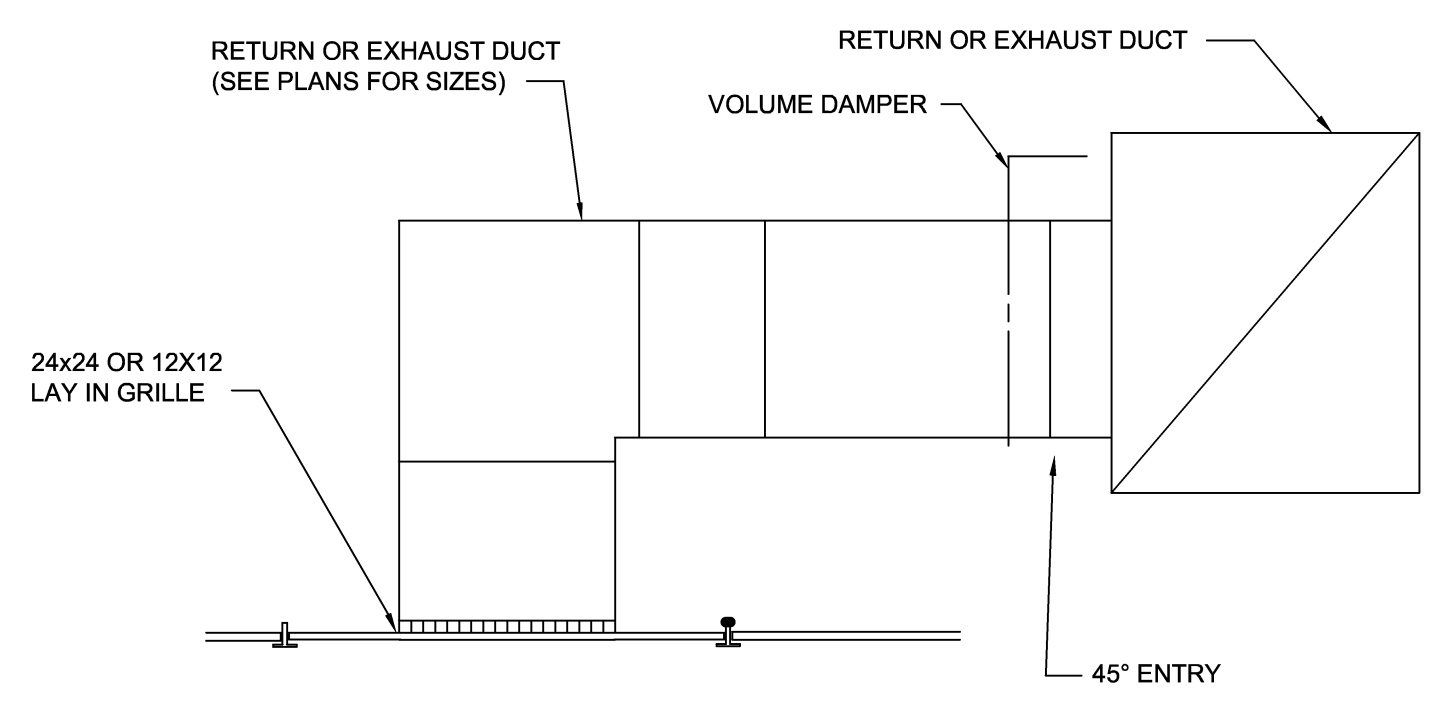
- REMARKS LEGEND:
1. PROVIDE BIRD SCREEN.

ATTIC FAN SCHEDULE		
DESIGNATION	AF-1	AF-2
LOCATION	ROOF	ROOF
USAGE	ATTIC VENTILATION	ATTIC VENTILATION
FAN DATA	--	--
AIRFLOW (SCFM)	1700	1700
EXTERNAL SP (IN-H2O)	.125	.125
RPM	1725	1725
DRIVE TYPE	DIRECT	DIRECT
MOTOR DATA	--	--
HORSEPOWER	1/2	1/2
RPM	1750	1750
VOLTS	115	115
PHASE	60	60
HERTZ	1	1
SELECTION BASED ON	GREENHECK	GREENHECK
MODEL	LD-120-VG	LD-120-VG
REMARKS	1, 2, 3 & 4	1, 2, 3 & 4

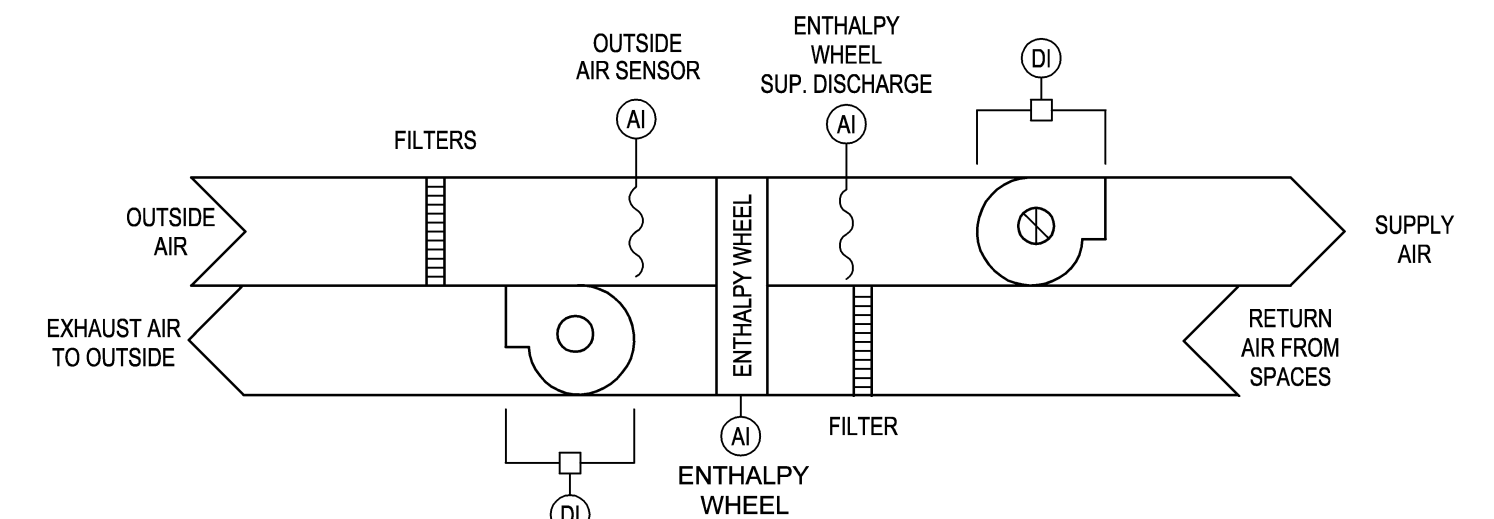
- REMARKS LEGEND:
1. PROVIDE FAN WITH INTEGRAL BACK-DRAFT DAMPER, CONTINUOUS DUTY RATED.
  2. PROVIDE FAN WITH FACTORY MOUNTED DISCONNECT.
  3. PROVIDE FAN WITH ECM MOTOR AND WITH ADJUSTABLE SPEED.
  4. PROVIDE ATTIC MOUNTED THERMOSTATIC CONTROL. SET THERMOSTAT TO OPERATE FAN WHEN ATTIC EXCEEDS 65 DEG F.

AIR TERMINAL DEVICE SCHEDULE				
DESIGNATION	S1	S2	R1	E1
TYPE	SUPPLY	SUPPLY	RETURN	EXHAUST
NECK SIZE	A=6"	A=6"	24x24	12x12
	B=8"	B=8"		
	C=10"	C=10"		
	D=12"	D=12"		
FRAME STYLE	LAY-IN	LAY-IN	LAY-IN	LAY-IN
AIR PATTERN	4 WAY	4 WAY	--	--
MAX NC RATING	25	25	25	25
MATERIAL	STEEL	STEEL	STEEL	STEEL
FINISH	BAKED ENAMEL	BAKED ENAMEL	BAKED ENAMEL	BAKED ENAMEL
BASED ON	PRICE	PRICE	PRICE	PRICE
MODEL	SCD	VPD-HC	81 SERIES	81 SERIES
REMARKS	--	1	--	--

- REMARKS LEGEND:
1. PROVIDE A SELF-MODULATING DIFFUSER WITH A COOLING SET POINT OF 75 DEG F (ADJUSTABLE) AND A HEATING SET POINT OF 68 DEG F (ADJUSTABLE).

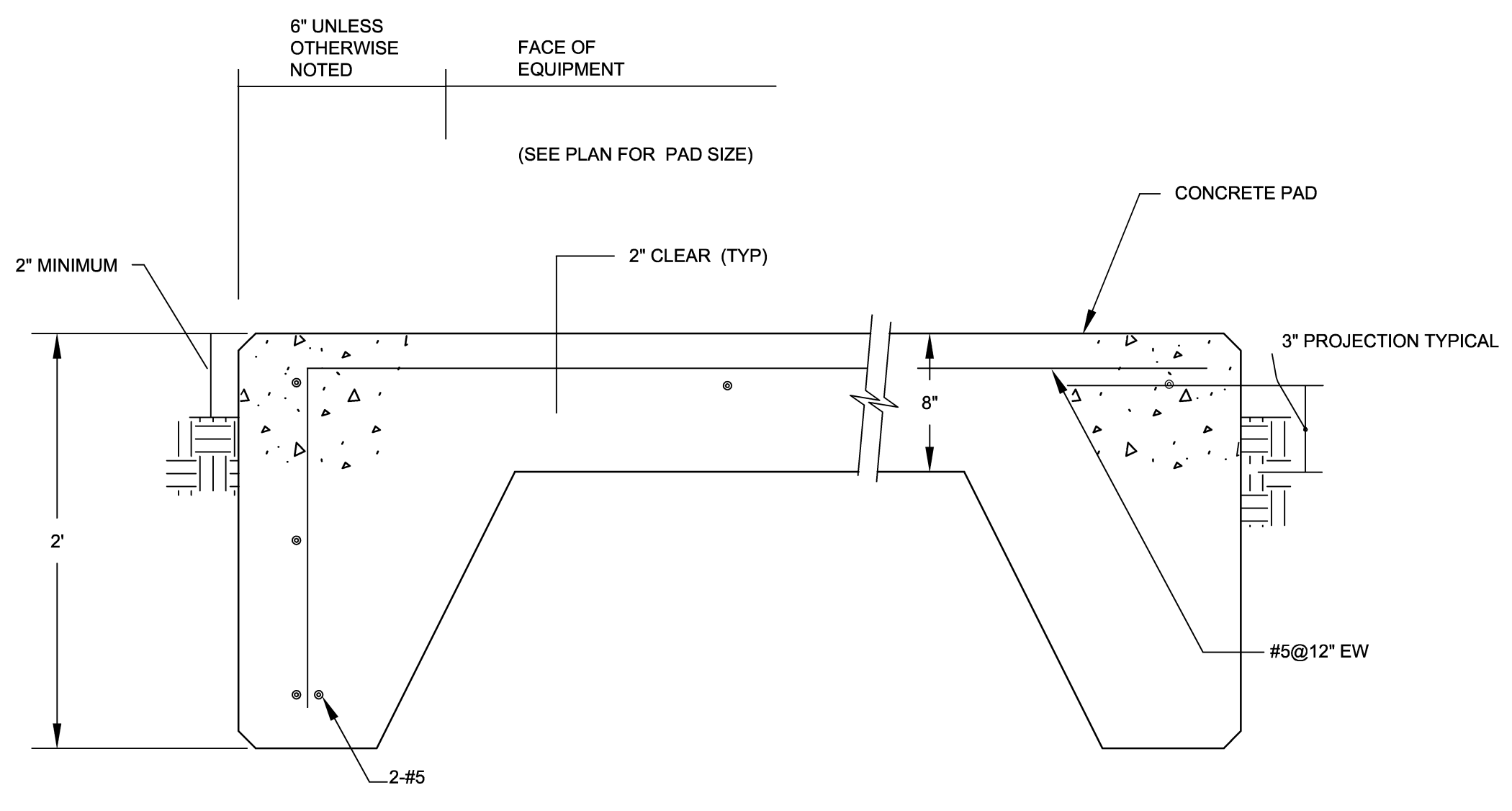


**CEILING RETURN/EXHAUST GRILLE**  
SCALE: NONE

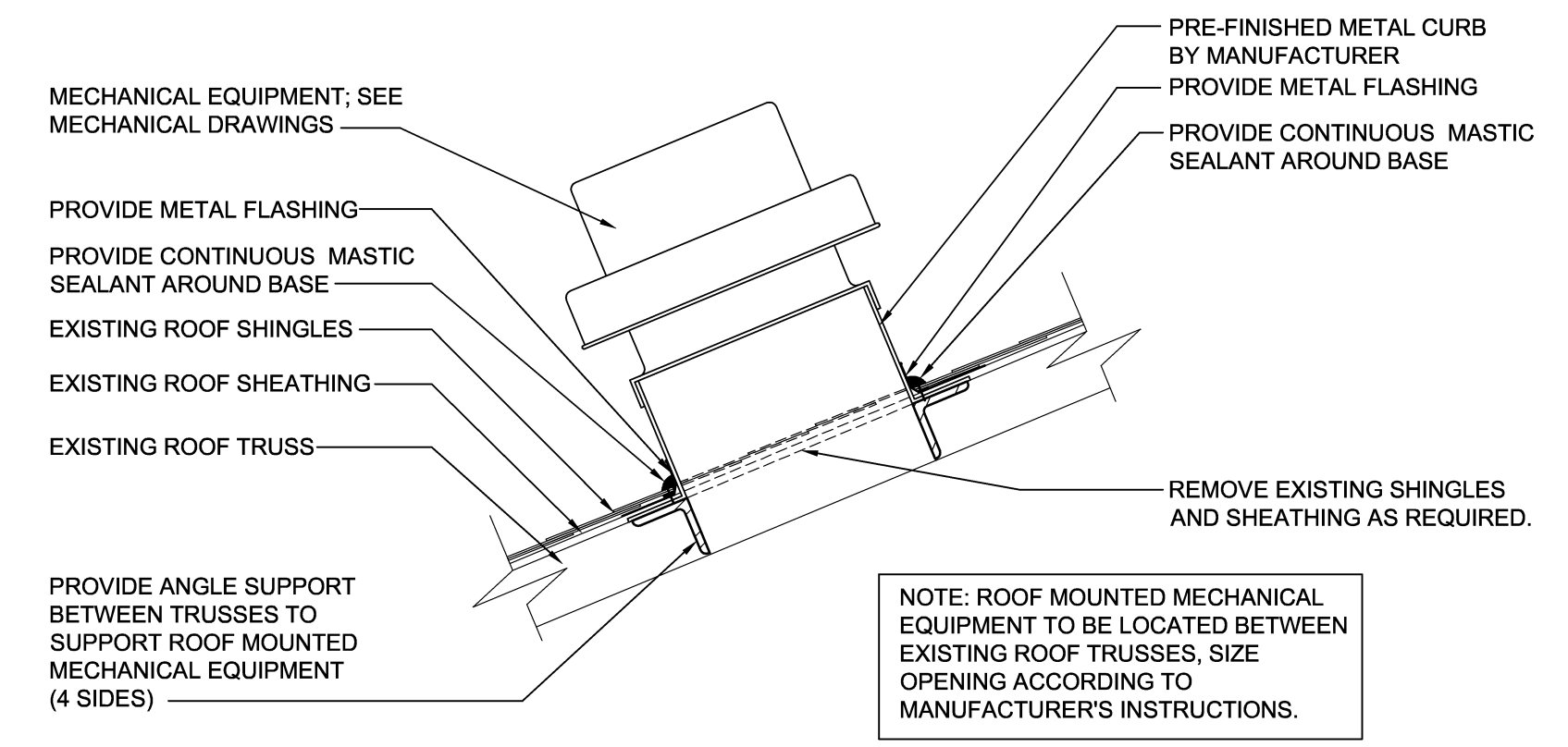


**ENERGY RECOVERY VENTILATOR CONTROL DIAGRAM**

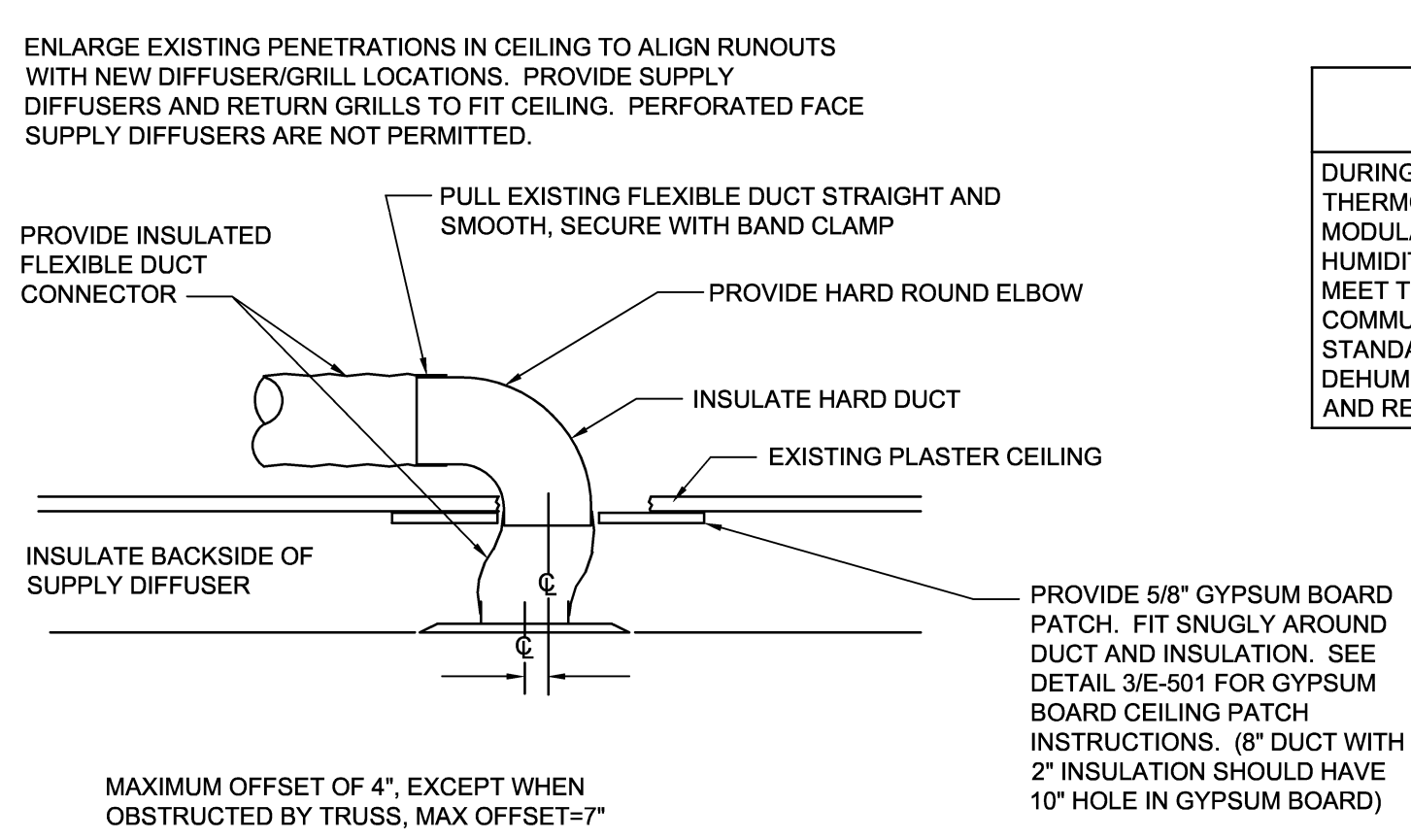
- SCALE: NONE
- SEQUENCE OF OPERATION:
- DURING THE OCCUPIED MODE, THE ENERGY RECOVERY VENTILATOR SHALL RUN CONTINUOUSLY. DURING UNOCCUPIED MODE, THE UNIT WILL BE DISABLED WHERE THE SUPPLY AND EXHAUST FANS ARE OFF AND THE WHEEL DOES NOT ROTATE.
- DURING OPERATION, DIFFERENTIAL PRESSURE SENSORS SHALL BE USED TO CONFIRM STATUS OF SUPPLY AND EXHAUST FANS. A TACHOMETER SHALL BE USED TO VERIFY WHEEL OPERATION. IF AT ANY TIME THE UNIT IS COMMANDED ON AND EITHER OF THESE THREE OPERATIONAL PIECES OF THE UNIT ARE NOT FUNCTIONING, THE ENTIRE UNIT SHALL BE SHUT DOWN AND AN ALARM SENT.



**EXTERIOR EQUIPMENT PAD DETAIL**  
SCALE: NONE



**ROOF PENETRATION DETAIL**  
SCALE: NONE



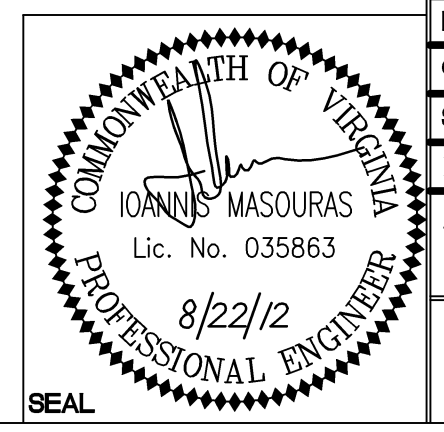
**TYP. DUCT TAKE OFF DETAIL**  
SCALE: NONE

**SPLIT SYSTEM HEAT PUMP SEQUENCE OF OPERATIONS**

DURING THE OCCUPIED MODE, THE SPLIT SYSTEM AIR HANDLER FAN SHALL RUN CONTINUOUSLY TO SATISFY ROOM COMBINED THERMOSTAT AND HUMIDISTAT. THE SUPPLY AIR FAN ECM MOTOR SHALL REMAIN ON DURING OCCUPIED MODE AND THE SPEED SHALL MODULATE ACCORDING TO THE MANUFACTURER'S STANDARD SEQUENCE OF OPERATION TO CONTROL ROOM TEMPERATURE AND LIMIT HUMIDITY. IN THE HEATING MODE, THE THERMOSTAT SHALL NOT ENERGIZE THE AUXILIARY ELECTRIC HEAT IF THE HEAT PUMP MODE CAN MEET THE DEMAND, SUCH AS DURING WARM-UP FROM NIGHT SET BACK USING A SMART RECOVERY CAPABLE THERMOSTAT. FACTORY COMMUNICATING THERMOSTAT SHALL BE PROVIDED WITH 7 DAY PROGRAMMING TO ALLOW NIGHT/WEEKEND SET-BACK, COMMUNICATE ALL STANDARD MANUFACTURER'S ALARMS FROM THE UNITS TO THE THERMOSTAT, AND INDICATE DIRTY FILTER. THERMOSTAT SHALL INCLUDE DEHUMIDIFICATION CONTROL TO INTEGRATE WITH HEAT PUMP CONTROLLER TO REDUCE FAN SPEED TO INCREASE LATENT PERFORMANCE AND REDUCE INDOOR AIR HUMIDITY.

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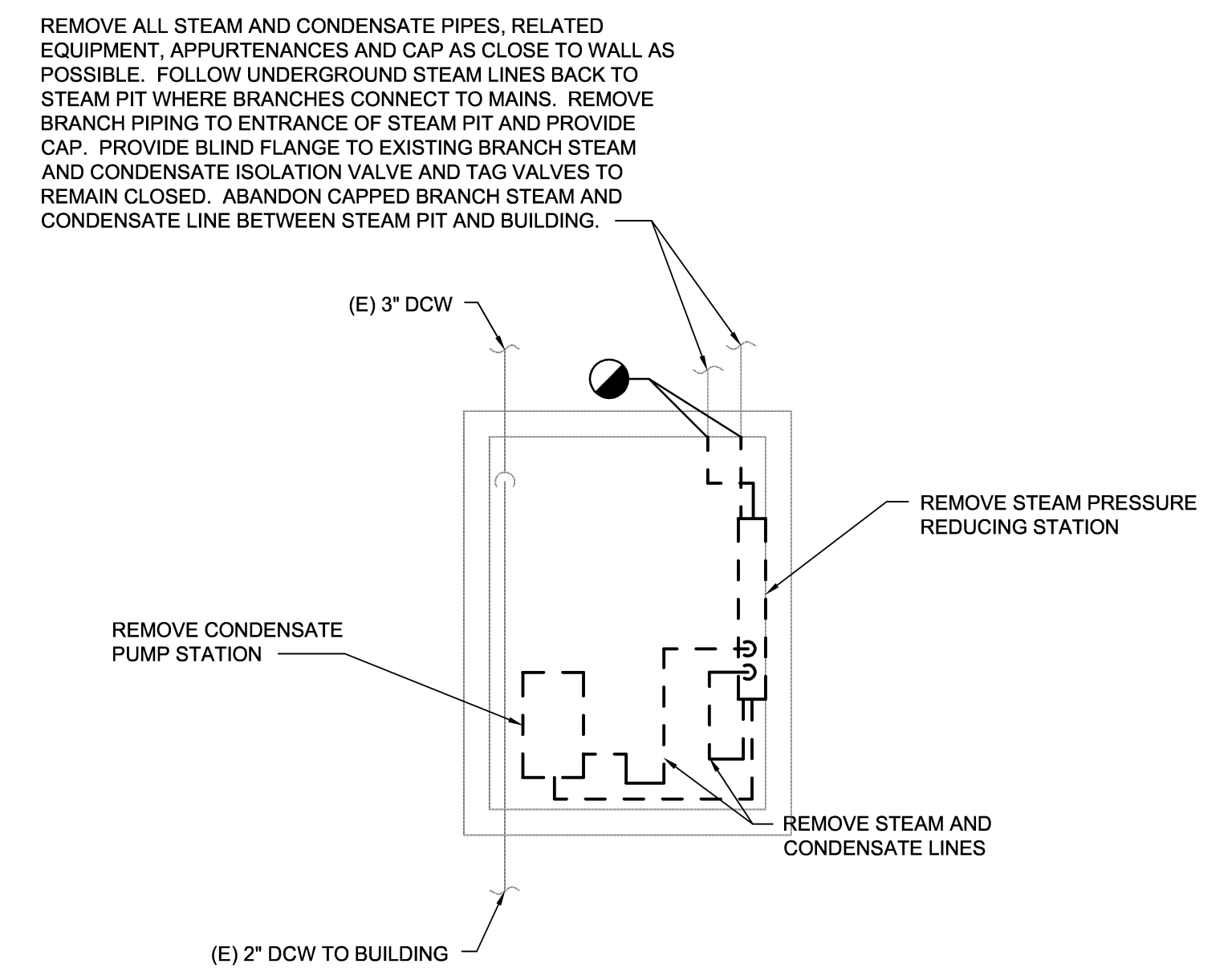
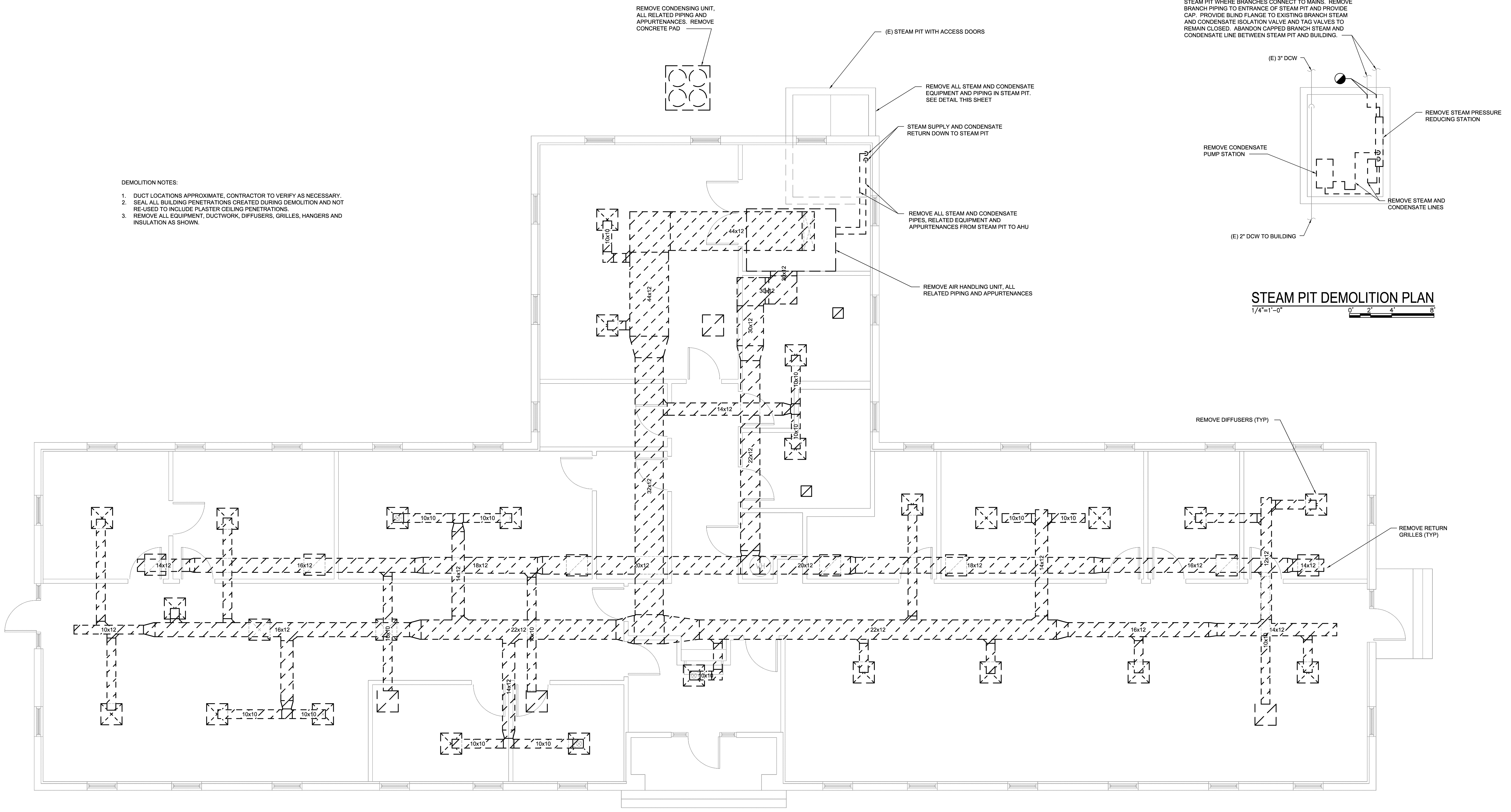


<p>WileyWilson 6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.264.7242 wileywilson.com</p>		<p><b>M-102D</b></p> <p>PROJECT NO. CP12-0091</p>	
<p>DEPT OF NAVY</p> <p><b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA</p> <p>HVAC/DHW IMPROVEMENTS, VARIOUS FACILITIES, HADNOT POINT</p>		<p>NAVAL FACILITIES ENGINEERING COMMAND</p>	
DES. IM	DR. SWL	SIZE E	CODE IDENT NO. 80091
CHK. JHE	SUBMITTED BY:	DATE	NAVFAC DRAWING NO. 60011355
DESIGN DR.	APPROVED PWO OR OIOC	DATE	CONSTR CONTR NO. N40085-12-B-0091
SATISFACTORY TO	DATE	SPEC No. 05-12-0091	SHEET 11 OF 84



SYM.	PREP'D BY	DATE	APPROVED

- DEMOLITION NOTES:
1. DUCT LOCATIONS APPROXIMATE. CONTRACTOR TO VERIFY AS NECESSARY.
  2. SEAL ALL BUILDING PENETRATIONS CREATED DURING DEMOLITION AND NOT RE-USED TO INCLUDE PLASTER CEILING PENETRATIONS.
  3. REMOVE ALL EQUIPMENT, DUCTWORK, DIFFUSERS, GRILLES, HANGERS AND INSULATION AS SHOWN.

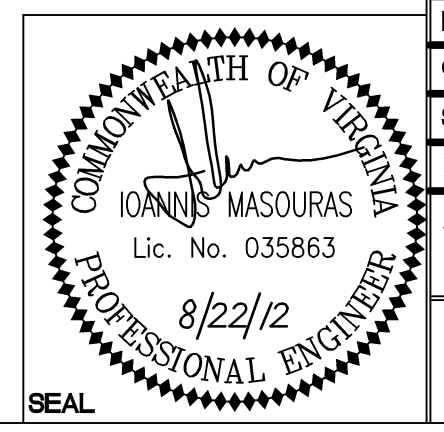


**STEAM PIT DEMOLITION PLAN**  
1/4"=1'-0"

**BUILDING 127 MECHANICAL DEMOLITION PLAN**  
1/4"=1'-0"

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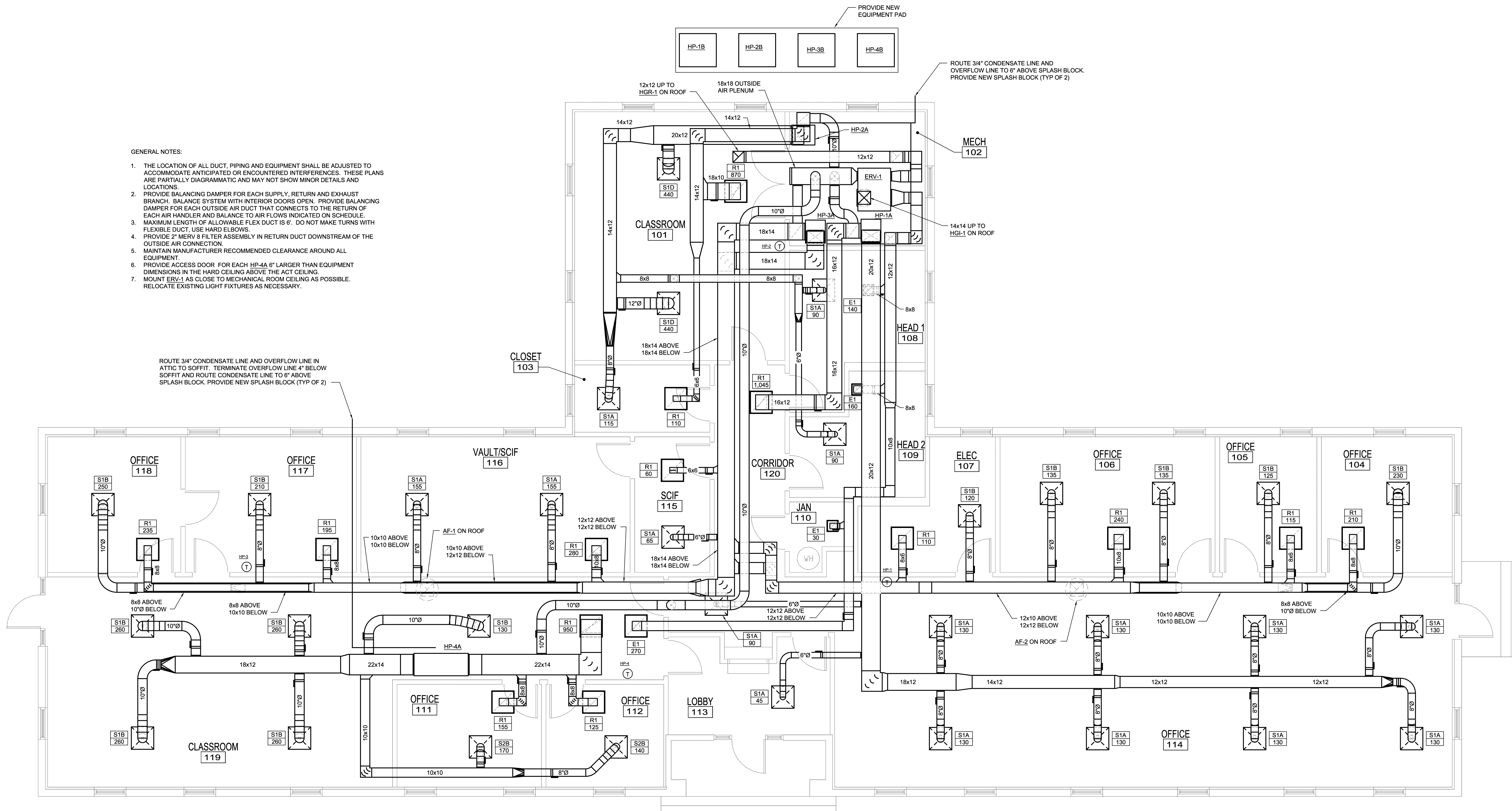
<b>WileyWilson</b> 6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.264.7242 wileywilson.com		<b>M-103A</b> PROJECT NO. CP12-0091	
DEPT OF NAVY <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA		NAVAL FACILITIES ENGINEERING COMMAND	
DES. IM	DR. SWL	<b>HVAC/DHW IMPROVEMENTS,</b> <b>VARIOUS FACILITIES,</b> <b>HADNOT POINT</b> BUILDING 127 MECHANICAL DEMOLITION PLAN	
CHK. JHE	DESIGN DR.	APPROVED PWO OR OIC	DATE
SUBMITTED BY:		SIZE E	CODE IDENT NO. 80091
NAVFAC DRAWING NO. 60011356		CONSTR CONTR NO. N40085-12-B-0091	
SATISFACTORY TO		SCALE: AS SHOWN	SPEC No. 05-12-0091
SHEET 12 OF 84			

SYM.	PREP'D BY	DATE	APPROVED

GENERAL NOTES:

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2. PROVIDE BALANCING DAMPER FOR EACH SUPPLY, RETURN AND EXHAUST BRANCH. BALANCE SYSTEM WITH INTERIOR DOORS OPEN. PROVIDE BALANCING DAMPER FOR EACH OUTSIDE AIR DUCT THAT CONNECTS TO THE RETURN OF EACH AIR HANDLER AND BALANCE TO AIR FLOWS INDICATED ON SCHEDULE.
3. MAXIMUM LENGTH OF ALLOWABLE FLEX DUCT IS 6'. DO NOT MAKE TURNS WITH FLEXIBLE DUCT, USE HARD ELBOWS.
4. PROVIDE 2" MERV 8 FILTER ASSEMBLY IN RETURN DUCT DOWNSTREAM OF THE OUTSIDE AIR CONNECTION.
5. MAINTAIN MANUFACTURER RECOMMENDED CLEARANCE AROUND ALL EQUIPMENT.
6. PROVIDE ACCESS DOOR FOR EACH HP-4A 6" LARGER THAN EQUIPMENT DIMENSIONS IN THE HARD CEILING ABOVE THE ACT CEILING.
7. MOUNT ERV-1 AS CLOSE TO MECHANICAL ROOM CEILING AS POSSIBLE. RELOCATE EXISTING LIGHT FIXTURES AS NECESSARY.

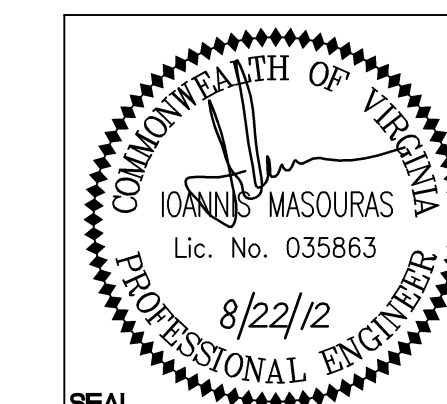
ROUTE 3/4" CONDENSATE LINE AND OVERFLOW LINE IN ATTIC TO SOFFIT. TERMINATE OVERFLOW LINE 4" BELOW SOFFIT AND ROUTE CONDENSATE LINE TO 6" ABOVE SPLASH BLOCK. PROVIDE NEW SPLASH BLOCK (TYP OF 2)



**BUILDING 127 MECHANICAL NEW WORK PLAN**  
 1/4" = 1'-0"  
 0' 2' 4' 8'

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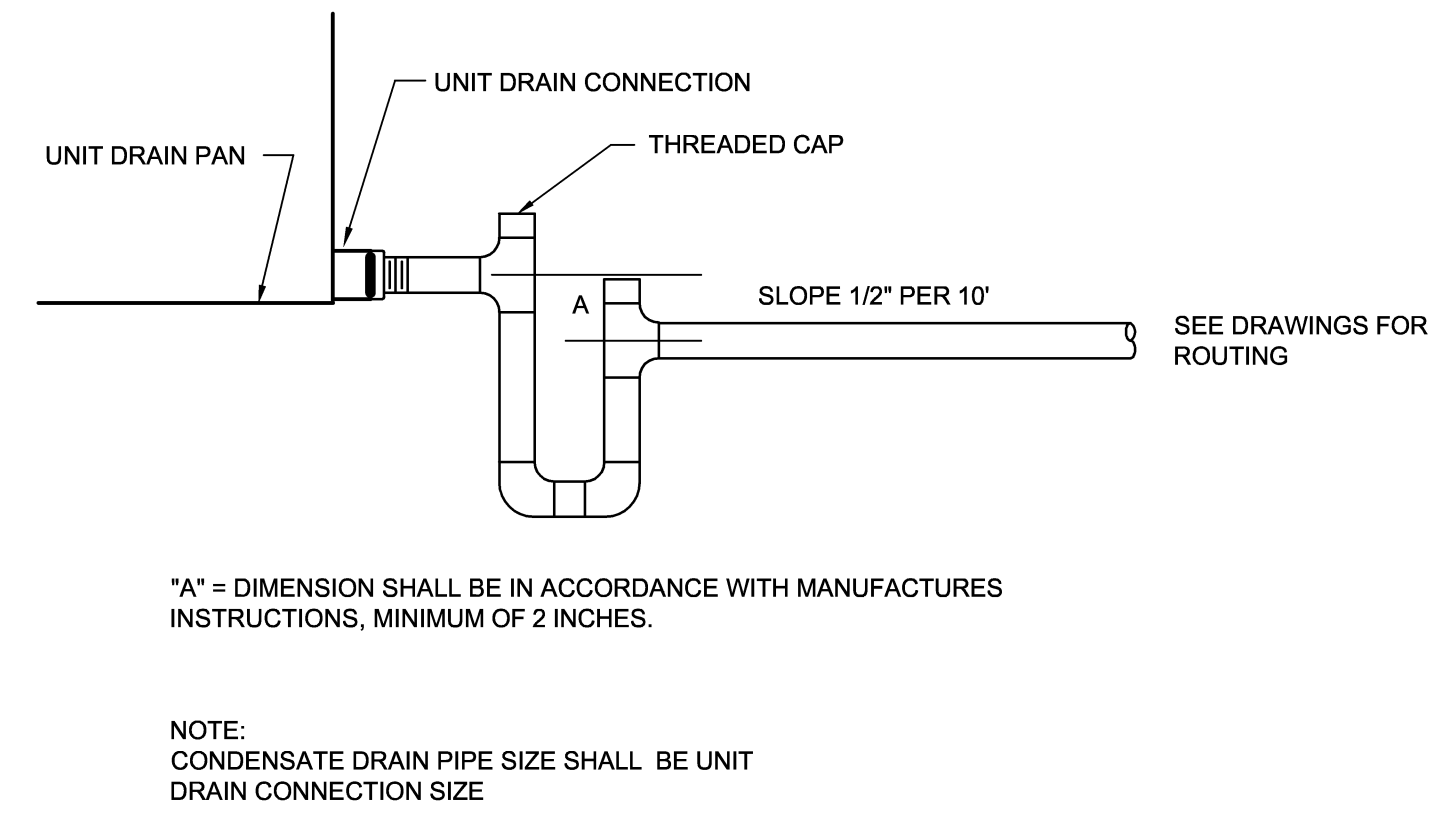
<b>WileyWilson</b> 6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.264.7242 wileywilson.com		<b>M-103B</b> PROJECT NO. CP12-0091 NAVAL FACILITIES ENGINEERING COMMAND	
DEPT OF NAVY <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA HVAC/DHW IMPROVEMENTS, VARIOUS FACILITIES, HADNOT POINT BUILDING 127 MECHANICAL NEW WORK PLAN		NAVFAC DRAWING NO. 60011357 CONSTR CONTR NO. N40085-12-B-0091	
DES. IM	DR. SWL	CHK. JHE	DESIGN DR.
APPROVED PWO OR OIC	DATE	SIZE	CODE IDENT NO.
		E	80091
SATISFACTORY TO	DATE	SCALE	SPEC No.
		AS SHOWN	05-12-0091
			SHEET 13 OF 84



SYM.	PREP'D BY	DATE	APPROVED

HEAT PUMP SCHEDULE					
INDOOR UNIT DESIGNATION	HP-1A	HP-2A	HP-3A	HP-4A	
OUTDOOR UNIT DESIGNATION	HP-1B	HP-2B	HP-3B	HP-4B	
LOCATION	VARIOUS	VARIOUS	VARIOUS	VARIOUS	
COMBINED SEER RATING PER ARI	17.5	17.5	17.0	17.0	
COMBINED EER RATING PER ARI	12.2	12.2	12.2	12.2	
INDOOR UNIT	EVAPORATOR	TOTAL AIRFLOW (CFM)	1175	1175	1580
		OUTSIDE AIRFLOW (CFM)	130	195	135
		EXTERNAL STATIC PRESSURE (IN-WC)	.6	.6	.6
		TOTAL COOLING CAPACITY (MBH)	35.2	35.2	47.5
		HEAT PUMP HEATING CAPACITY AT 17° F (MBH)	21	21	29.2
		ELECTRIC HEATING CAPACITY (KW)	5.0	5.0	5.0
	ELECTRICAL	BLOWER MOTOR FLA (A)	9.1	9.1	9.1
		TOTAL MCA (A)	27	27	27
		VOLTAGE	208	208	208
		PHASE	1	1	1
		FREQUENCY (Hz)	60	60	60
		BASED ON	LENNOX	LENNOX	LENNOX
INDOOR UNIT MODEL	CBX32MV-036	CBX32MV-036	CBX32MV-048	CBX32MV-048	
REFRIGERANT	R-410A	R-410A	R-410A	R-410A	
OUTDOOR UNIT	ELECTRICAL	AMBIENT DESIGN TEMPERATURE (DEG F)	95	95	95
		MINIMUM CIRCUIT AMPACITY (A)	28.5	28.5	28.5
		MAXIMUM OVERCURRENT PROTECTION (A)	45	45	45
		HEATING COP AT 17° F	2.56	2.56	2.5
		HEATING COP AT 47° F	3.35	3.35	3.32
		HEAT PUMP HSPF	9.2	9.2	8.7
		VOLTAGE (V)	208	208	208
		PHASE	1	1	1
		FREQUENCY (Hz)	60	60	60
		BASED ON	LENNOX	LENNOX	LENNOX
OUTDOOR SYSTEM MODEL	XP21-036-230	XP21-036-230	XP21-048-230	XP21-048-230	
REMARKS	1, 2 & 3	1, 2 & 3	1, 2 & 3	1, 2 & 3	

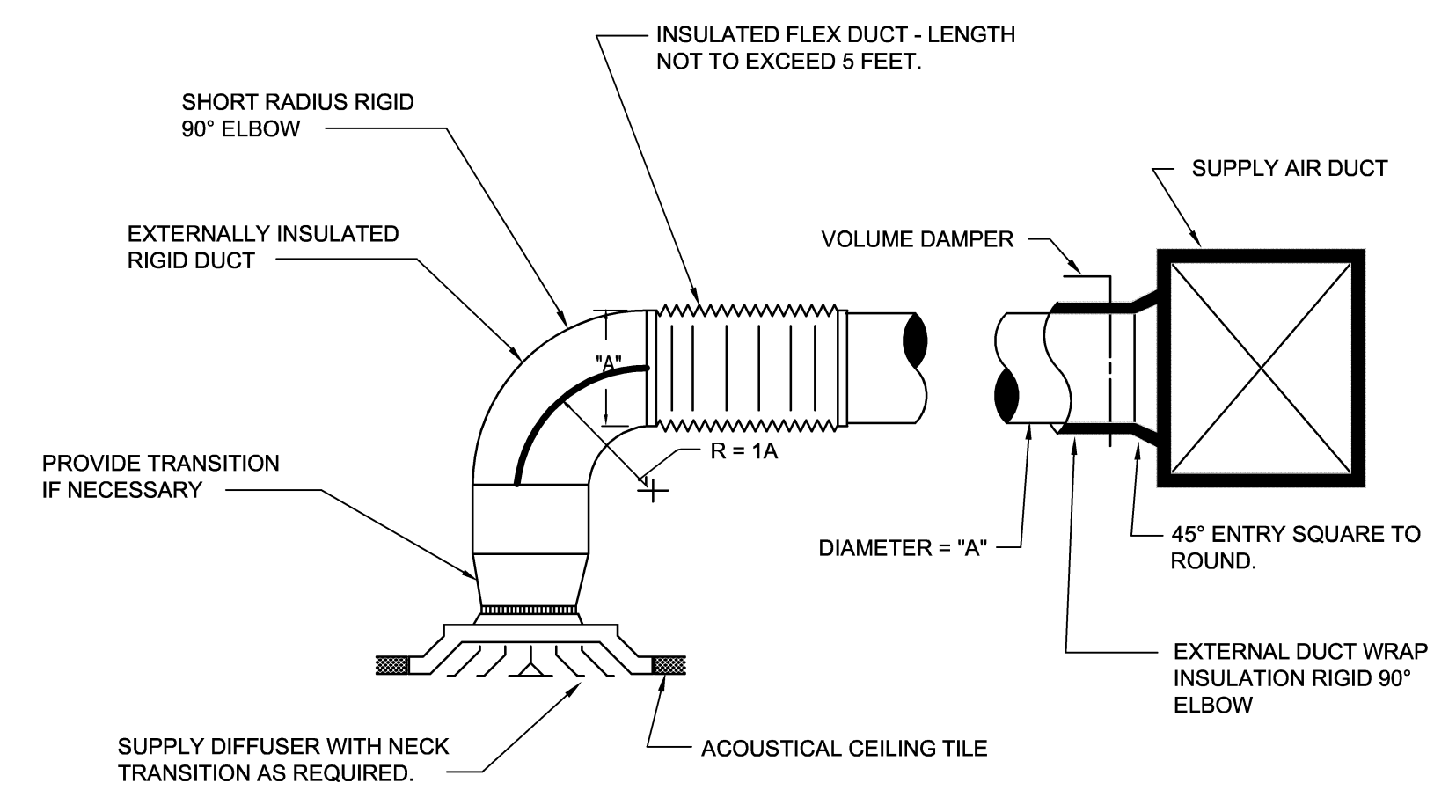
- REMARKS LEGEND:
1. PROVIDE CONDENSING UNIT SHUTOFF MOISTURE SENSOR IN AUXILIARY PORT OF INDOOR UNIT DRAIN PAN.
  2. PROVIDE SIDE RETURN UNIT STAND.
  3. PROVIDE SECONDARY DRAIN PAN EXTENDING 4" BEYOND AIR HANDLING UNIT ON ALL SIDES.



AC DRAIN FOR HEAT PUMP AIR HANDLER  
NEGATIVE PRESSURE DRAIN PAN  
NO SCALE

ENERGY RECOVERY VENTILATOR SCHEDULE		ERV-1
DESIGNATION	TOTAL FAN AIRFLOW (CFM)	810
SUPPLY FAN	EXTERNAL STATIC PRESSURE (IN. WG)	.5
EXHAUST FAN	TOTAL FAN AIRFLOW (CFM)	600
	EXTERNAL STATIC PRESSURE (IN. WG)	.5
ENTHALPY WHEEL	OPERATING OUTSIDE AIRFLOW	810
	OPERATING EXHAUST AIRFLOW	600
	OUTDOOR EAT DB/WB (COOLING)	95/79
	OUTDOOR EAT DB/WB (HEATING)	20/16.6
	EXHAUST EAT DB/WB (COOLING)	75/63
	EXHAUST EAT DB/WB (HEATING)	70/53
	DELIVERED CONDITIONS DB/WB (COOLING)	82.4/69.8
	DELIVERED CONDITIONS DB/WB (HEATING)	48.2/40.7
	SUPPLY (MERV)	8
	EXHAUST (MERV)	8
ELECTRICAL	MCA (A)	18.3
	MOCOP (A)	25
	VOLTS (V)	115
	PHASE	1
	FREQUENCY (Hz)	60
BASED ON		GREENHECK
MODEL		MINIVENT-750
REMARKS		1

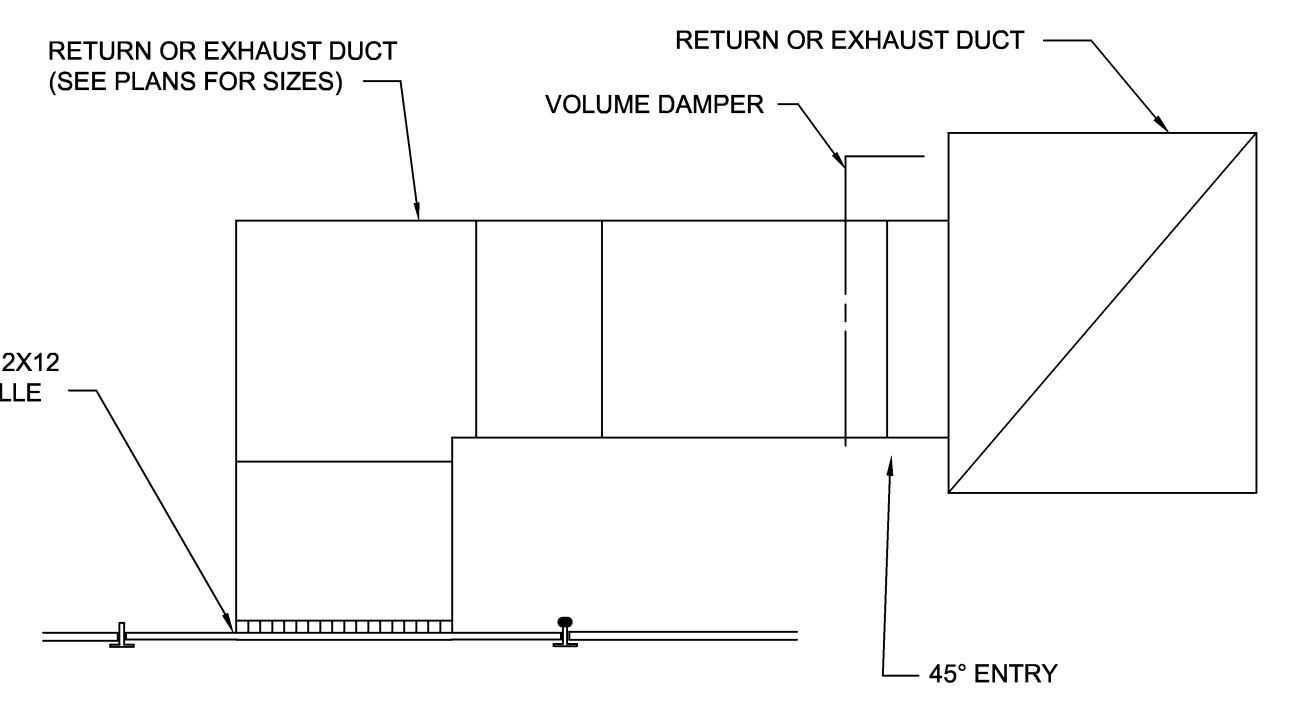
- REMARKS LEGEND:
1. PROVIDE FACTORY MOUNTED CONTROLS FOR UNITS INCLUDING ALL REQUIRED MOTOR STARTERS, PROVIDE FACTORY REMOTE PANEL INCLUDING INDICATION FOR DIRTY FILTER, HAND-OFF-AUTO SWITCH, AND 7 DAY TIME CLOCK.



TYPICAL CEILING SUPPLY  
DIFFUSER CONNECTION  
SCALE: NONE

HOODED GRAVITY INTAKE AND RELIEF SCHEDULE		
DESIGNATION	HGI-1	HGR-1
USAGE	INTAKE	RELIEF
AIRFLOW (CFM)	810	600
STATIC PRESSURE (IN H2O)	.048	.033
THROAT AREA (SF)	1.45	1.12
THROAT VELOCITY (FPM)	556	536
THROAT DIAMETER (IN)	16.25	14.25
SELECTION BASED ON	GREENHECK	GREENHECK
MODEL	GRSI-16	GRSR-15
REMARKS	1	1

- REMARKS LEGEND:
1. PROVIDE BIRD SCREEN.



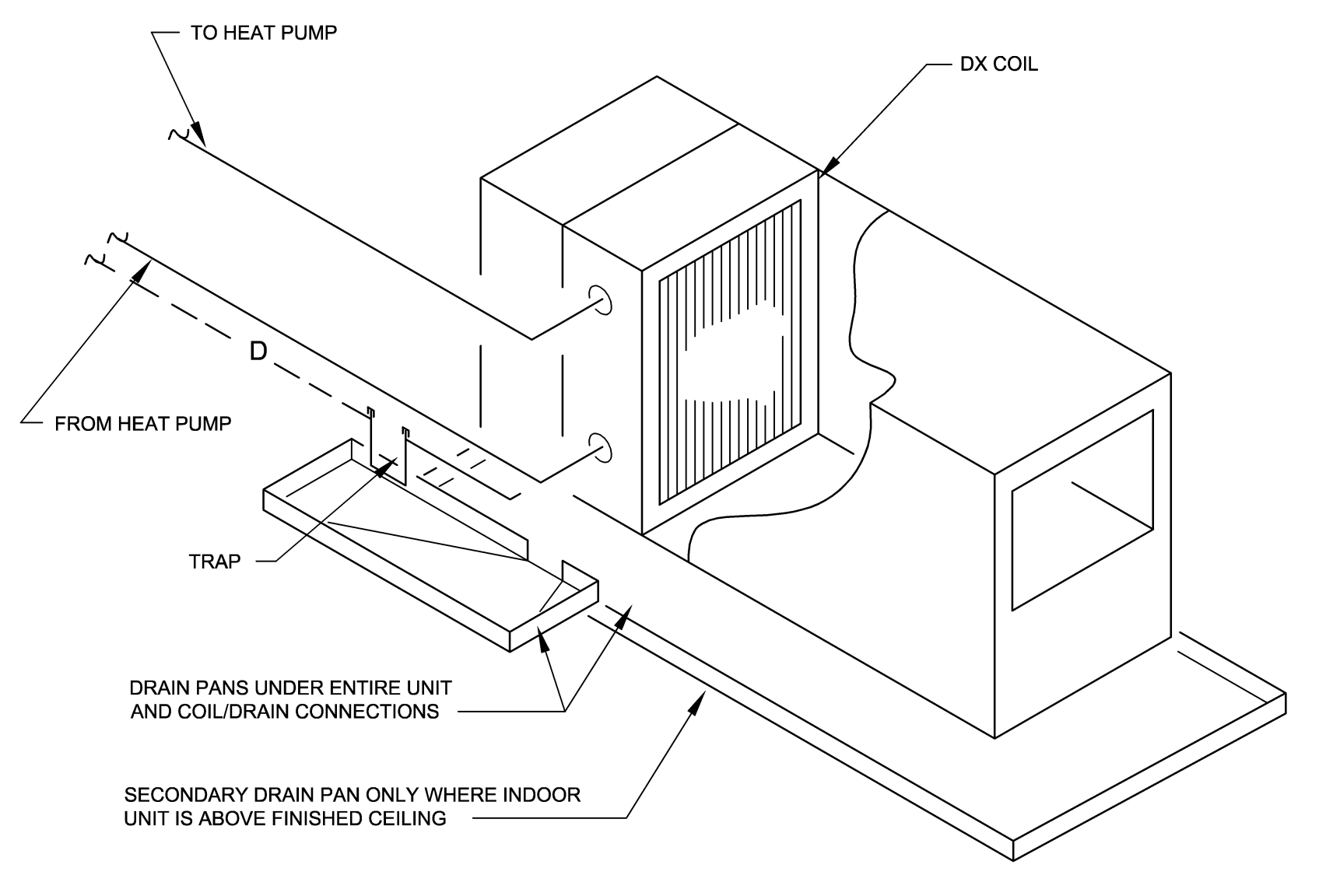
CEILING RETURN/EXHAUST GRILLE  
SCALE: NONE

ATTIC FAN SCHEDULE		
DESIGNATION	AF-1	AF-2
LOCATION	ROOF	ROOF
USAGE	ATTIC VENTILATION	ATTIC VENTILATION
FAN DATA	--	--
AIRFLOW (SCFM)	1700	1700
EXTERNAL SP (IN-H2O)	.125	.125
RPM	1725	1725
DRIVE TYPE	DIRECT	DIRECT
MOTOR DATA	--	--
HORSEPOWER	1/2	1/2
RPM	1750	1750
VOLTS	115	115
PHASE	60	60
HERTZ	1	1
SELECTION BASED ON	GREENHECK	GREENHECK
MODEL	LD-120-VG	LD-120-VG
REMARKS	1, 2, 3 & 4	1, 2, 3 & 4

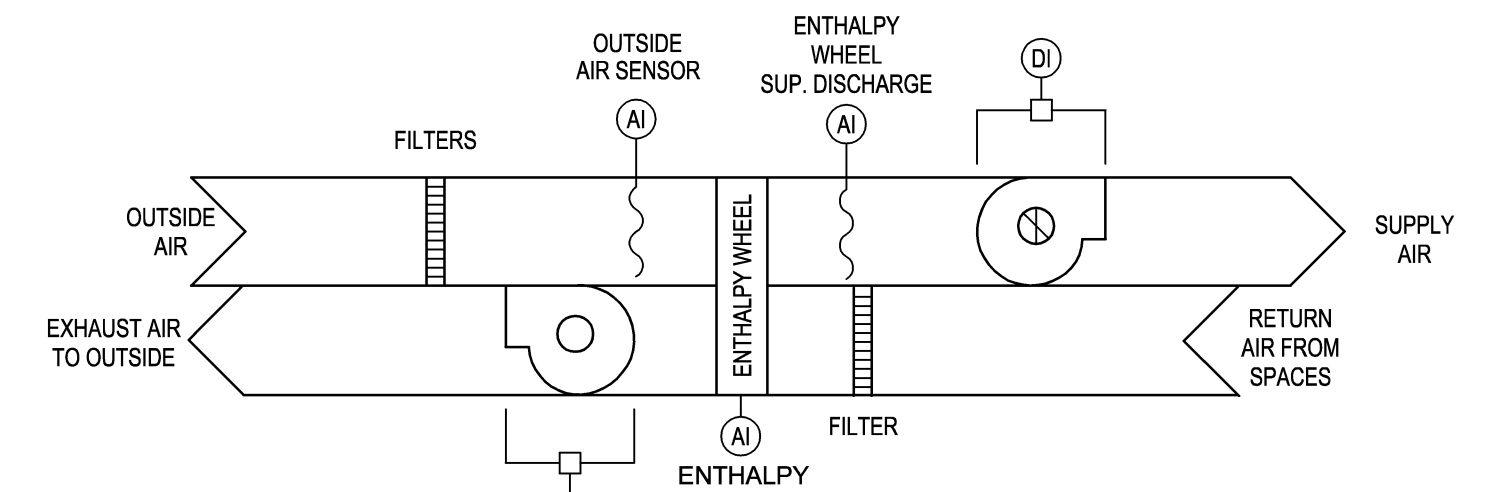
- REMARKS LEGEND:
1. PROVIDE FAN WITH INTEGRAL BACK-DRAFT DAMPER, CONTINUOUS DUTY RATED.
  2. PROVIDE FAN WITH FACTORY MOUNTED DISCONNECT.
  3. PROVIDE FAN WITH ECM MOTOR AND WITH ADJUSTABLE SPEED.
  4. PROVIDE ATTIC MOUNTED THERMOSTATIC CONTROL SET THERMOSTAT TO OPERATE FAN WHEN ATTIC EXCEEDS 65 DEG F.

AIR TERMINAL DEVICE SCHEDULE					
DESIGNATION	S1	S2	R1	E1	E2
TYPE	SUPPLY	SUPPLY	RETURN	EXHAUST	EXHAUST
NECK SIZE	A=6"	A=6"	24x24	12x12	24x24
	B=8"	B=8"			
	C=10"	C=10"			
	D=12"	D=12"			
FRAME STYLE	LAY-IN	LAY-IN	LAY-IN	LAY-IN	LAY-IN
AIR PATTERN	4 WAY	4 WAY	--	--	--
MAX NC RATING	25	25	25	25	25
MATERIAL	STEEL	STEEL	STEEL	STEEL	STEEL
FINISH	BAKED ENAMEL	BAKED ENAMEL	BAKED ENAMEL	BAKED ENAMEL	BAKED ENAMEL
BASED ON	PRICE	PRICE	PRICE	PRICE	PRICE
MODEL	SCD	VPD-4C	81 SERIES	81 SERIES	81 SERIES
REMARKS	--	1	--	--	--

- REMARKS LEGEND:
1. PROVIDE A SELF-MODULATING DIFFUSER WITH A COOLING SET POINT OF 75 DEG F (ADJUSTABLE) AND A HEATING SET POINT OF 68 DEG F (ADJUSTABLE).

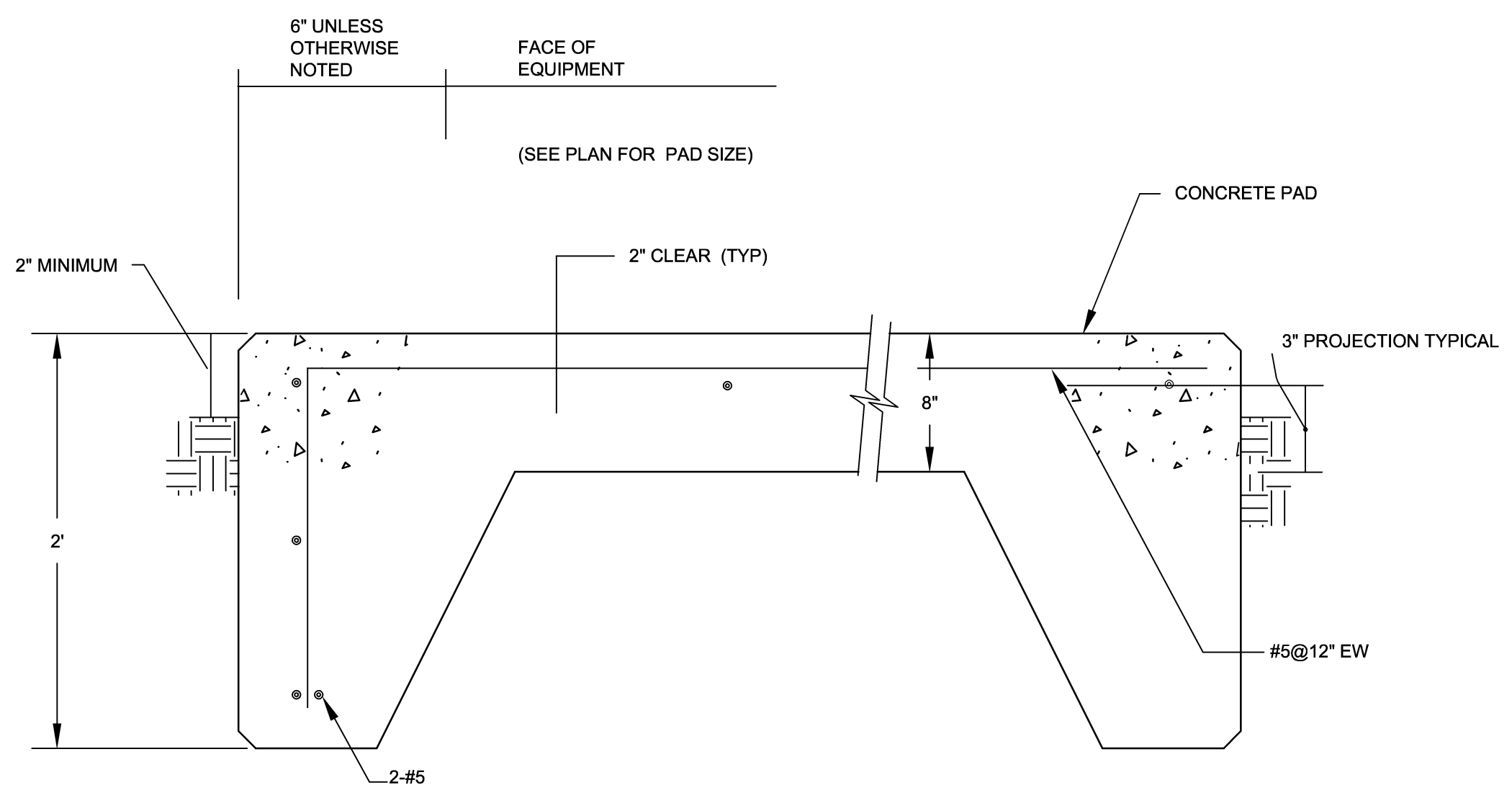


HEAT PUMP INDOOR UNIT DETAIL  
SCALE: NONE

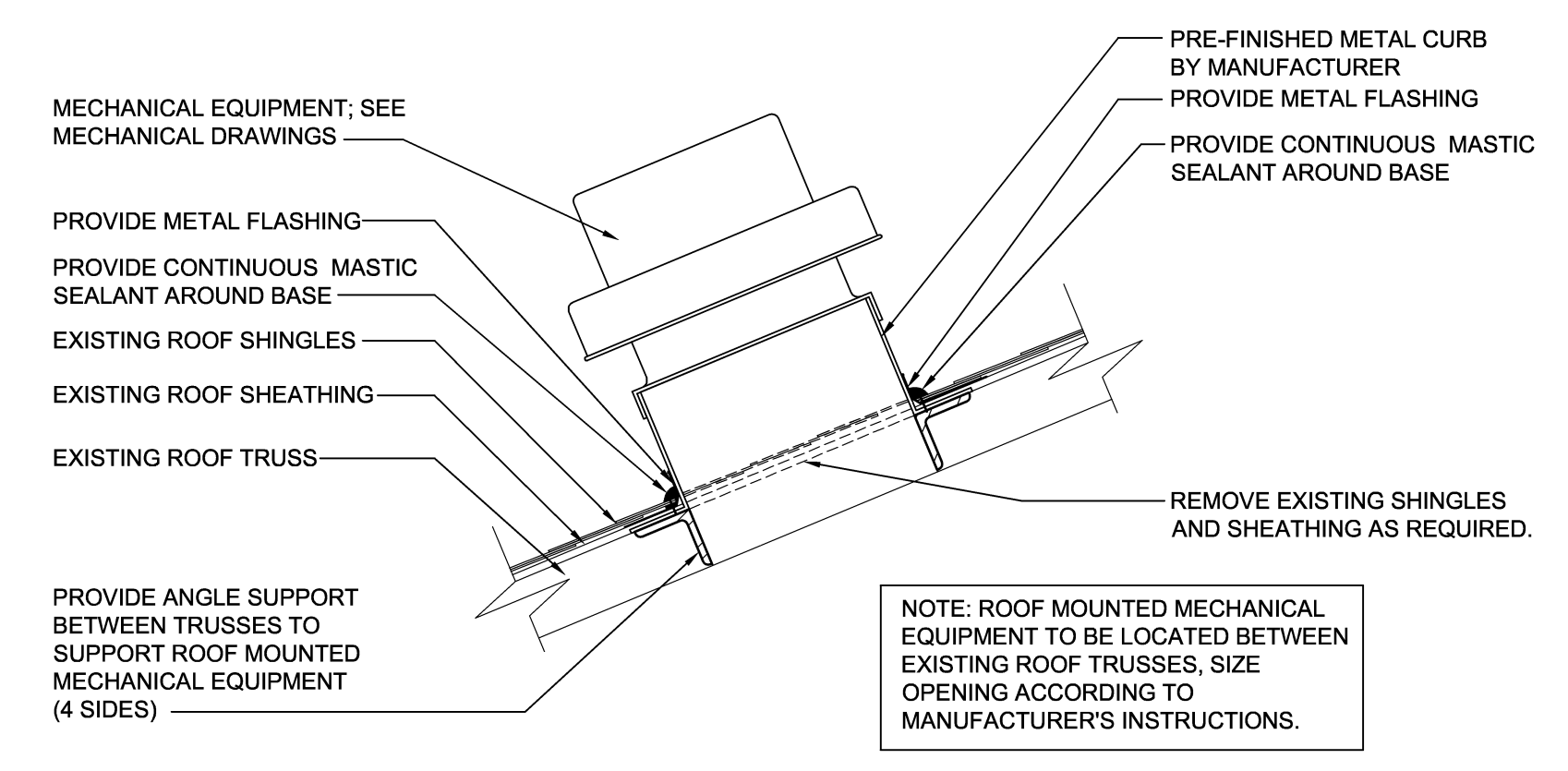


ENERGY RECOVERY VENTILATOR CONTROL DIAGRAM  
SCALE: NONE

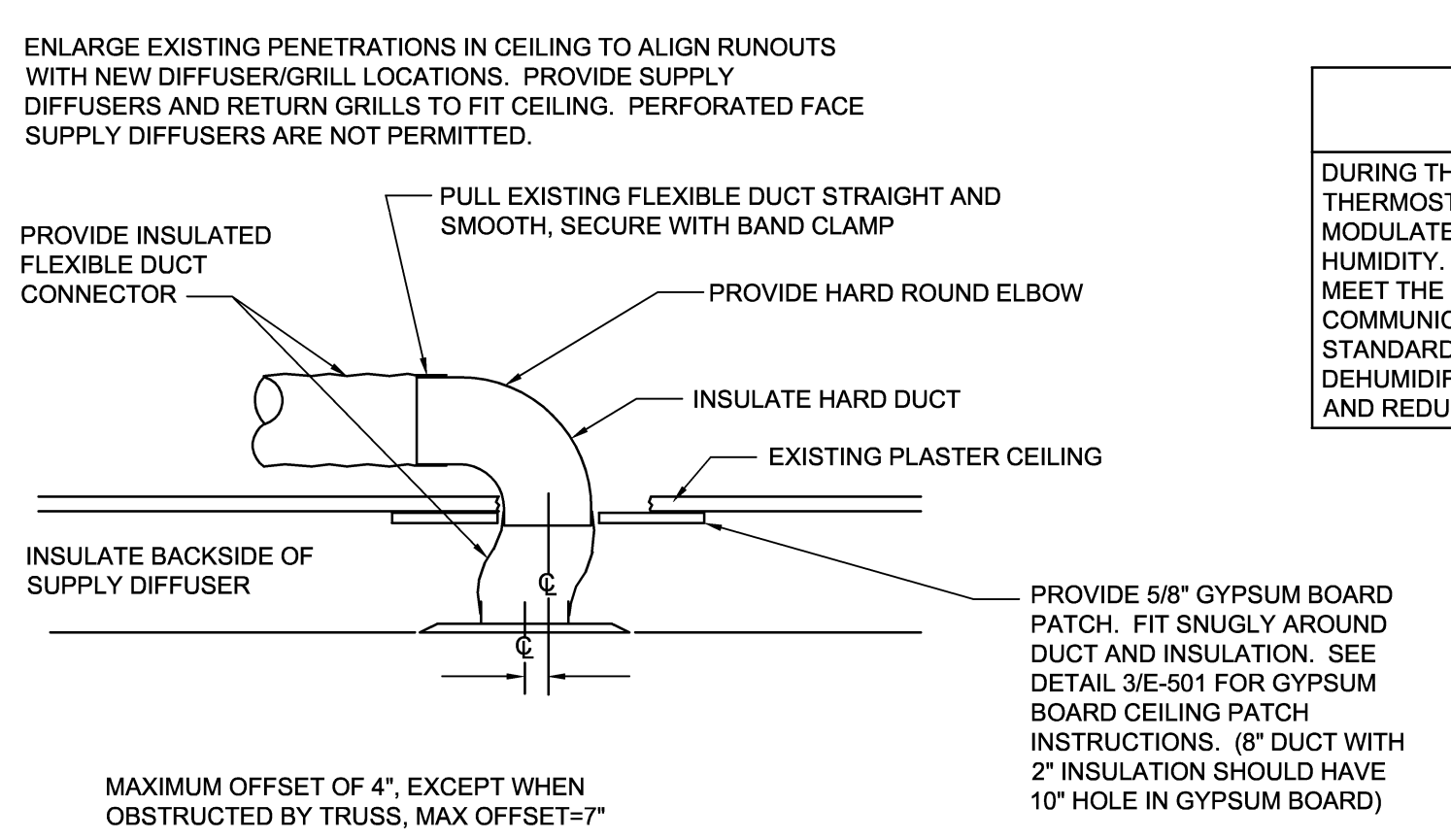
- SEQUENCE OF OPERATION:
- DURING THE OCCUPIED MODE, THE ENERGY RECOVERY VENTILATOR SHALL RUN CONTINUOUSLY. DURING UNOCCUPIED MODE, THE UNIT WILL BE DISABLED WHERE THE SUPPLY AND EXHAUST FANS ARE OFF AND THE WHEEL DOES NOT ROTATE.
- DURING OPERATION, DIFFERENTIAL PRESSURE SENSORS SHALL BE USED TO CONFIRM STATUS OF SUPPLY AND EXHAUST FANS. A TACHOMETER SHALL BE USED TO VERIFY WHEEL OPERATION. IF AT ANY TIME THE UNIT IS COMMANDED ON AND EITHER OF THESE THREE OPERATIONAL PIECES OF THE UNIT ARE NOT FUNCTIONING, THE ENTIRE UNIT SHALL BE SHUT DOWN AND AN ALARM SENT.



EXTERIOR EQUIPMENT PAD DETAIL  
SCALE: NONE



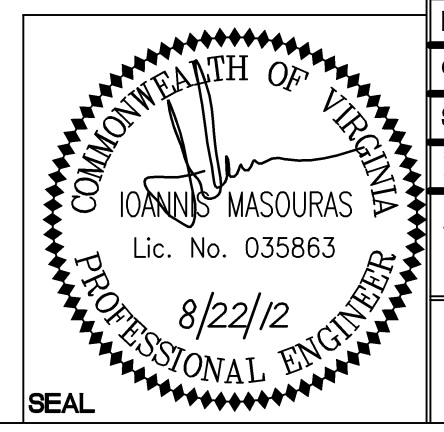
ROOF PENETRATION DETAIL  
SCALE: NONE



TYP. DUCT TAKE OFF DETAIL  
SCALE: NONE

**DISCLOSURE OF INFORMATION**  
Contractor shall comply as follows:

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- The information is otherwise in the public domain before the date of release.
- Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.
- The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.

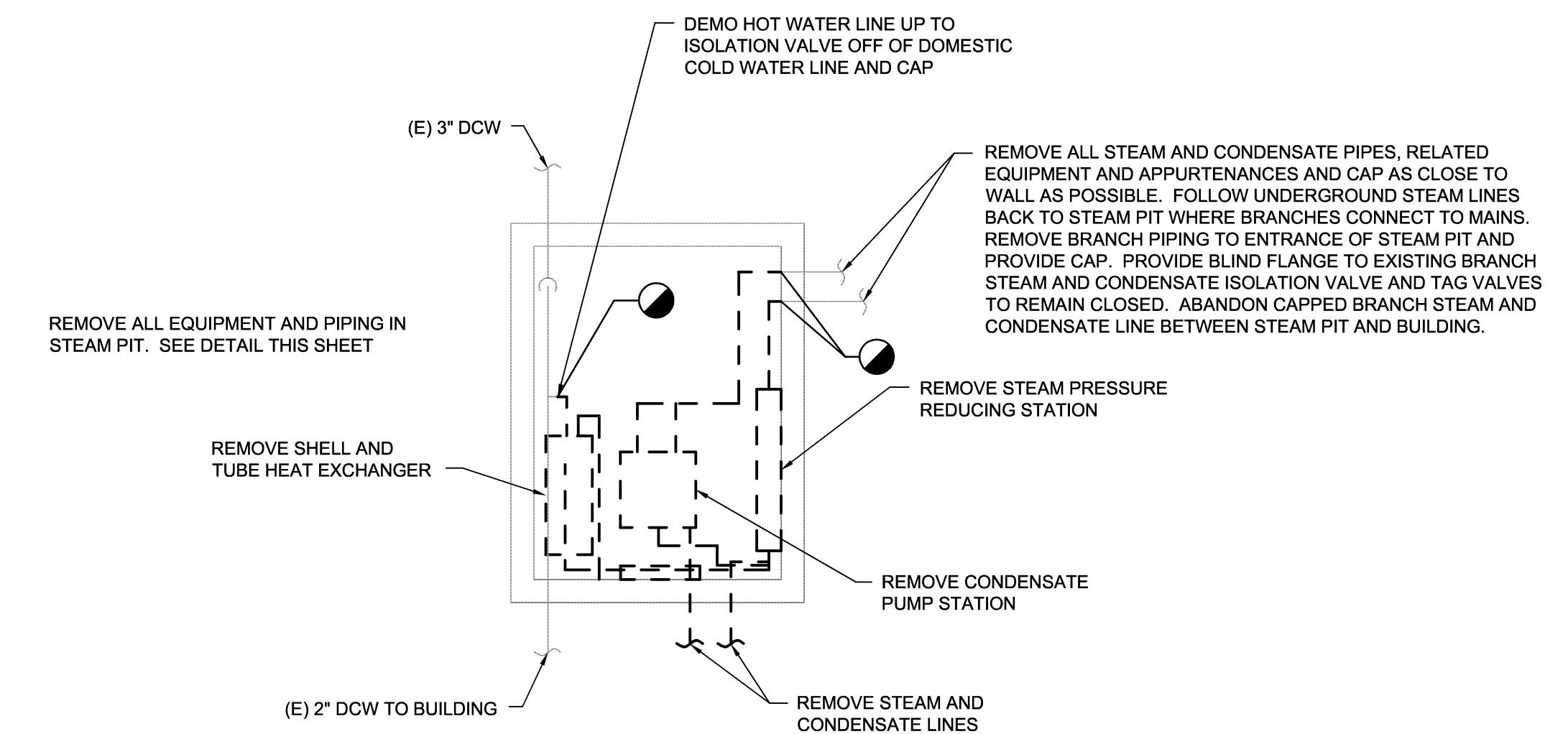
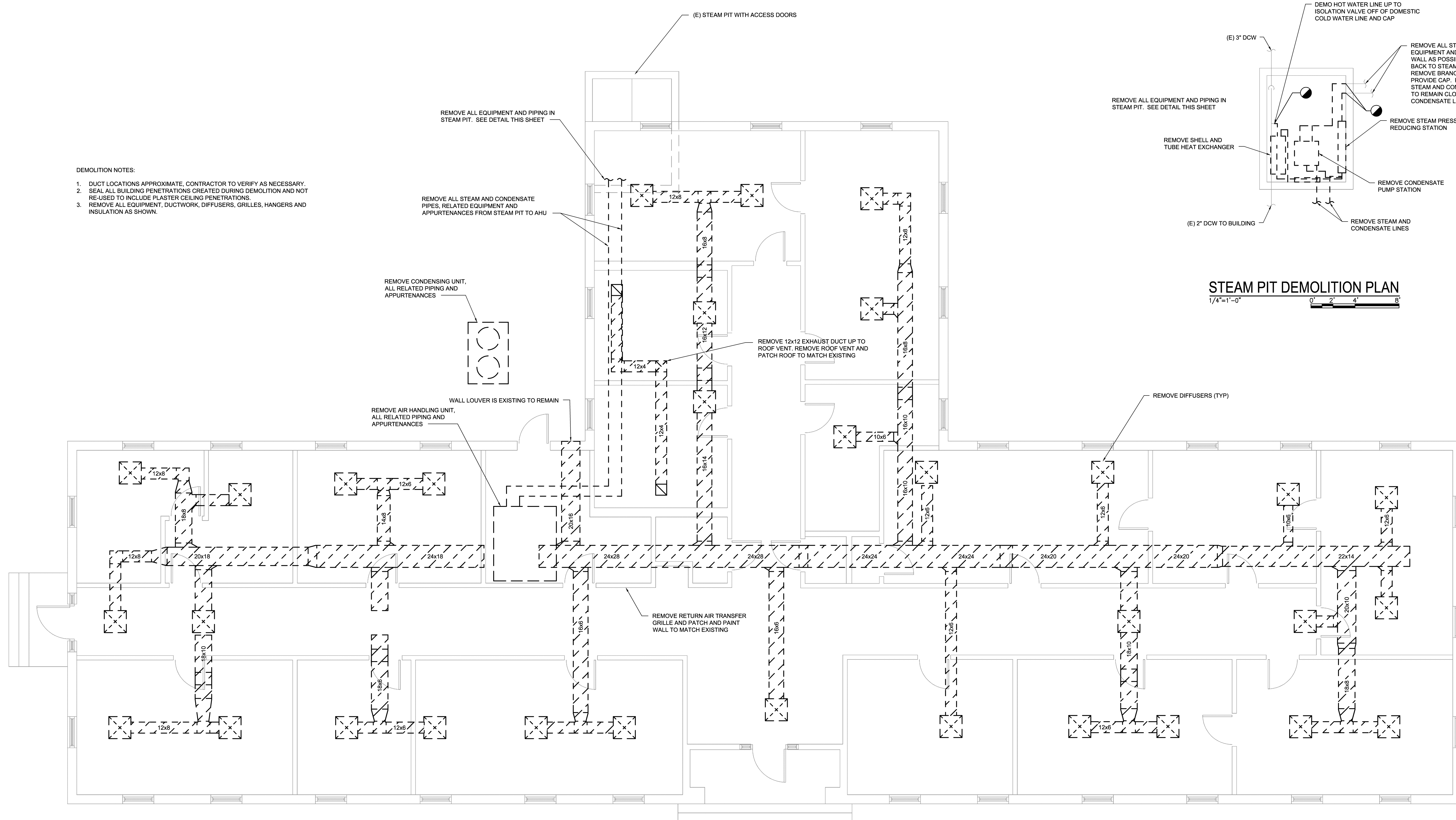


6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.264.7242 wileywilson.com		<b>M-103C</b> PROJECT NO. CP12-0091 NAVAL FACILITIES ENGINEERING COMMAND	
DEPT OF NAVY <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA HVAC/DHW IMPROVEMENTS, VARIOUS FACILITIES, HADNOT POINT BUILDING 127 SCHEDULES, DETAILS & CONTROLS		NAVFAC DRAWING NO. 60011358 CONSTR CONTR NO. N40085-12-B-0091	
DES. IM	DR. SWL	CHK. JHE	DESIGN DR.
APPROVED PWO OR OIOC	DATE	SIZE	CODE IDENT NO.
		E	80091
SATISFACTORY TO	DATE	SCALE: AS SHOWN	SPEC No. 05-12-0091
			SHEET 14 OF 84

SYM.	PREP'D BY	DATE	APPROVED

**DEMOLITION NOTES:**

- DUCT LOCATIONS APPROXIMATE. CONTRACTOR TO VERIFY AS NECESSARY.
- SEAL ALL BUILDING PENETRATIONS CREATED DURING DEMOLITION AND NOT RE-USED TO INCLUDE PLASTER CEILING PENETRATIONS.
- REMOVE ALL EQUIPMENT, DUCTWORK, DIFFUSERS, GRILLES, HANGERS AND INSULATION AS SHOWN.



**STEAM PIT DEMOLITION PLAN**  
1/4"=1'-0"

**BUILDING 214 MECHANICAL DEMOLITION PLAN**  
1/4"=1'-0"

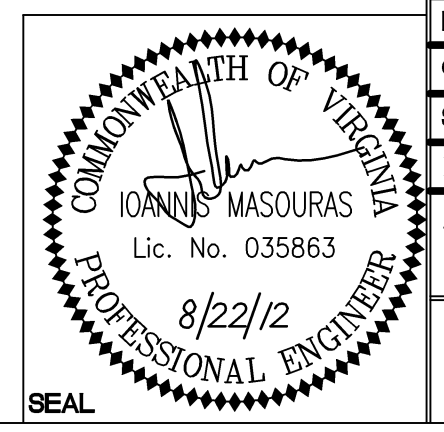
**DISCLOSURE OF INFORMATION**

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The Contracting Officer has given prior written approval; or  
The information is otherwise in the public domain before the date of release.

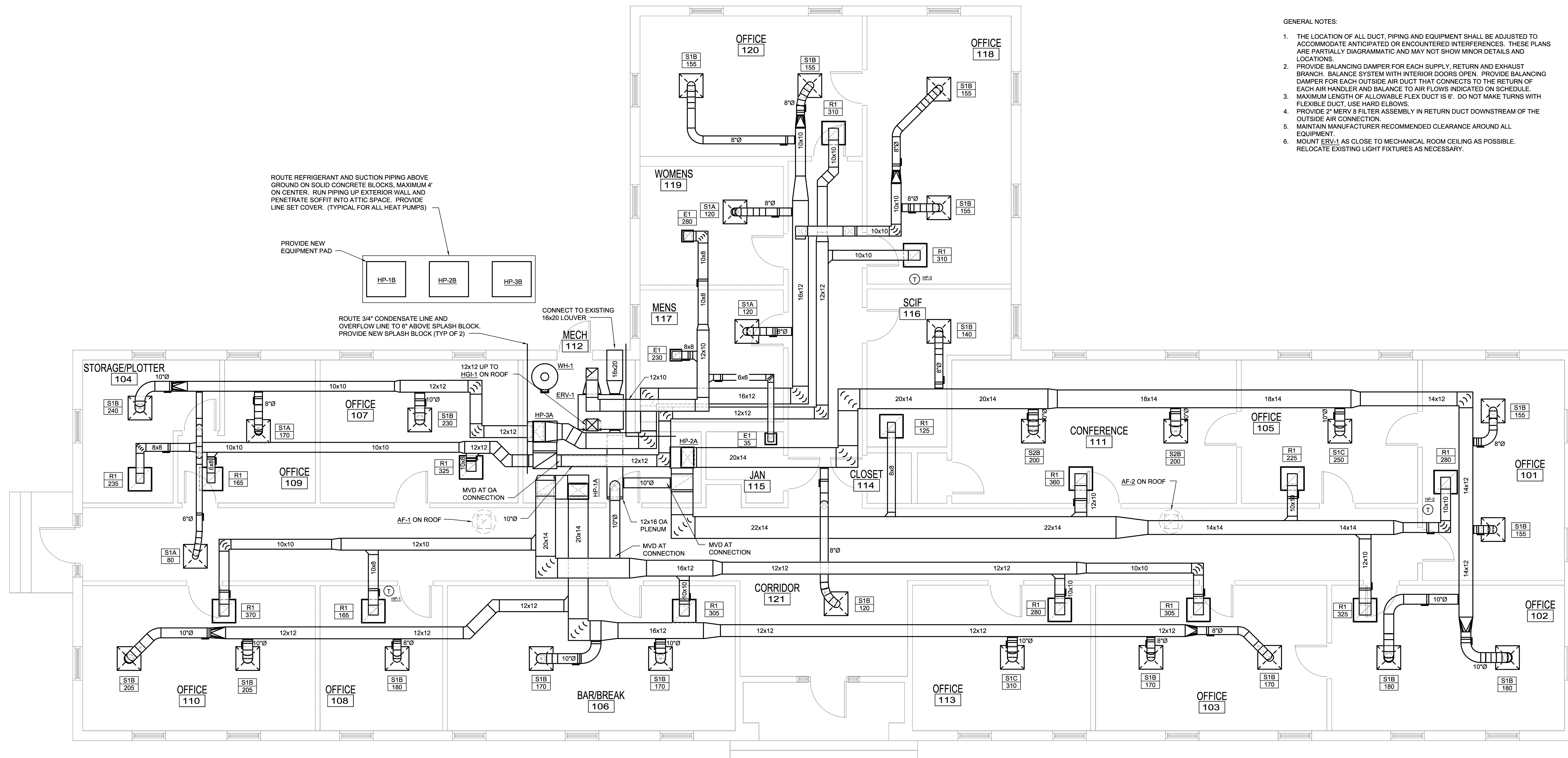
(b) Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.

(c) The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.



<b>WileyWilson</b> 6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.264.7242 wileywilson.com		<b>M-104A</b> PROJECT NO. CP12-0091	
DEPT OF NAVY <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA		NAVAL FACILITIES ENGINEERING COMMAND	
DES. IM	DR. SWL	<b>HVAC/DHW IMPROVEMENTS,</b> <b>VARIOUS FACILITIES,</b> <b>HADNOT POINT</b> BUILDING 214 MECHANICAL DEMOLITION PLAN	
CHK. JHE	SUBMITTED BY:	APPROVED PWO OR OIC	DATE
DESIGN DR.	APPROVED PWO OR OIC	DATE	DATE
SATISFACTORY TO	DATE	SIZE	CODE IDENT NO.
		E	80091
		CONSTR CONTR NO.	N40085-12-B-0091
		SPEC No.	05-12-0091
		SHEET	15 OF 84

SYM.	PREP'D BY	DATE	APPROVED

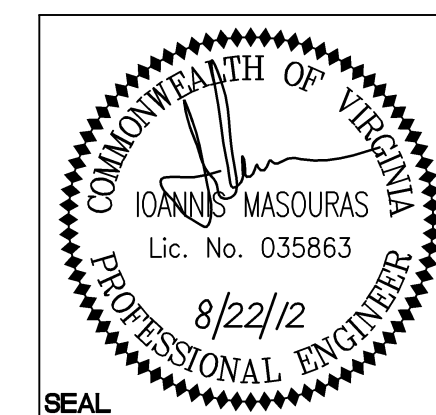


- GENERAL NOTES:
1. THE LOCATION OF ALL DUCT, PIPING AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE ANTICIPATED OR ENCOUNTERED INTERFERENCES. THESE PLANS ARE PARTIALLY DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS.
  2. PROVIDE BALANCING DAMPER FOR EACH SUPPLY, RETURN AND EXHAUST BRANCH. BALANCE SYSTEM WITH INTERIOR DOORS OPEN. PROVIDE BALANCING DAMPER FOR EACH OUTSIDE AIR DUCT THAT CONNECTS TO THE RETURN OF EACH AIR HANDLER AND BALANCE TO AIR FLOWS INDICATED ON SCHEDULE.
  3. MAXIMUM LENGTH OF ALLOWABLE FLEX DUCT IS 6'. DO NOT MAKE TURNS WITH FLEXIBLE DUCT. USE HARD ELBOWS.
  4. PROVIDE 2" MERV 8 FILTER ASSEMBLY IN RETURN DUCT DOWNSTREAM OF THE OUTSIDE AIR CONNECTION.
  5. MAINTAIN MANUFACTURER RECOMMENDED CLEARANCE AROUND ALL EQUIPMENT.
  6. MOUNT ERV-1 AS CLOSE TO MECHANICAL ROOM CEILING AS POSSIBLE. RELOCATE EXISTING LIGHT FIXTURES AS NECESSARY.

**BUILDING 214 MECHANICAL NEW WORK PLAN**  
 1/4"=1'-0"

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 6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.264.7242 wileywilson.com		<b>M-104B</b> PROJECT NO. CP12-0091	
DEPT OF NAVY <b>MARINE CORPS BASE</b> CAMP LEJEUNE, NORTH CAROLINA		NAVAL FACILITIES ENGINEERING COMMAND	
DES.	IM	HVAC/DHW IMPROVEMENTS, VARIOUS FACILITIES, HADNOT POINT BUILDING 214 MECHANICAL NEW WORK PLAN	
DR.	SWL	NAVFAC DRAWING NO. 60011360	
CHK.	JHE	CONSTR CONTR NO. N40085-12-B-0091	
SUBMITTED BY:		SIZE	CODE IDENT NO.
DESIGN DR.		E	80091
APPROVED PWO OR OIC	DATE	SCALE	SPEC No.
		AS SHOWN	05-12-0091
SATISFACTORY TO	DATE	SHEET 16 OF 84	