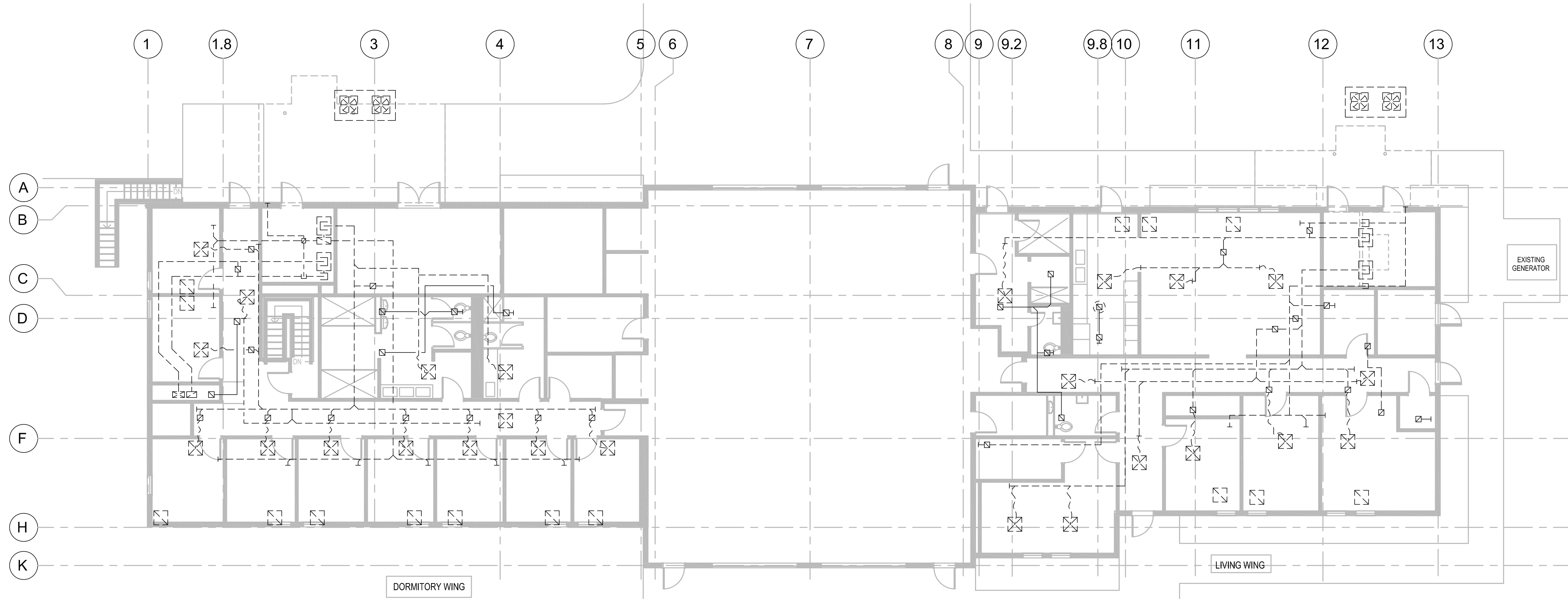
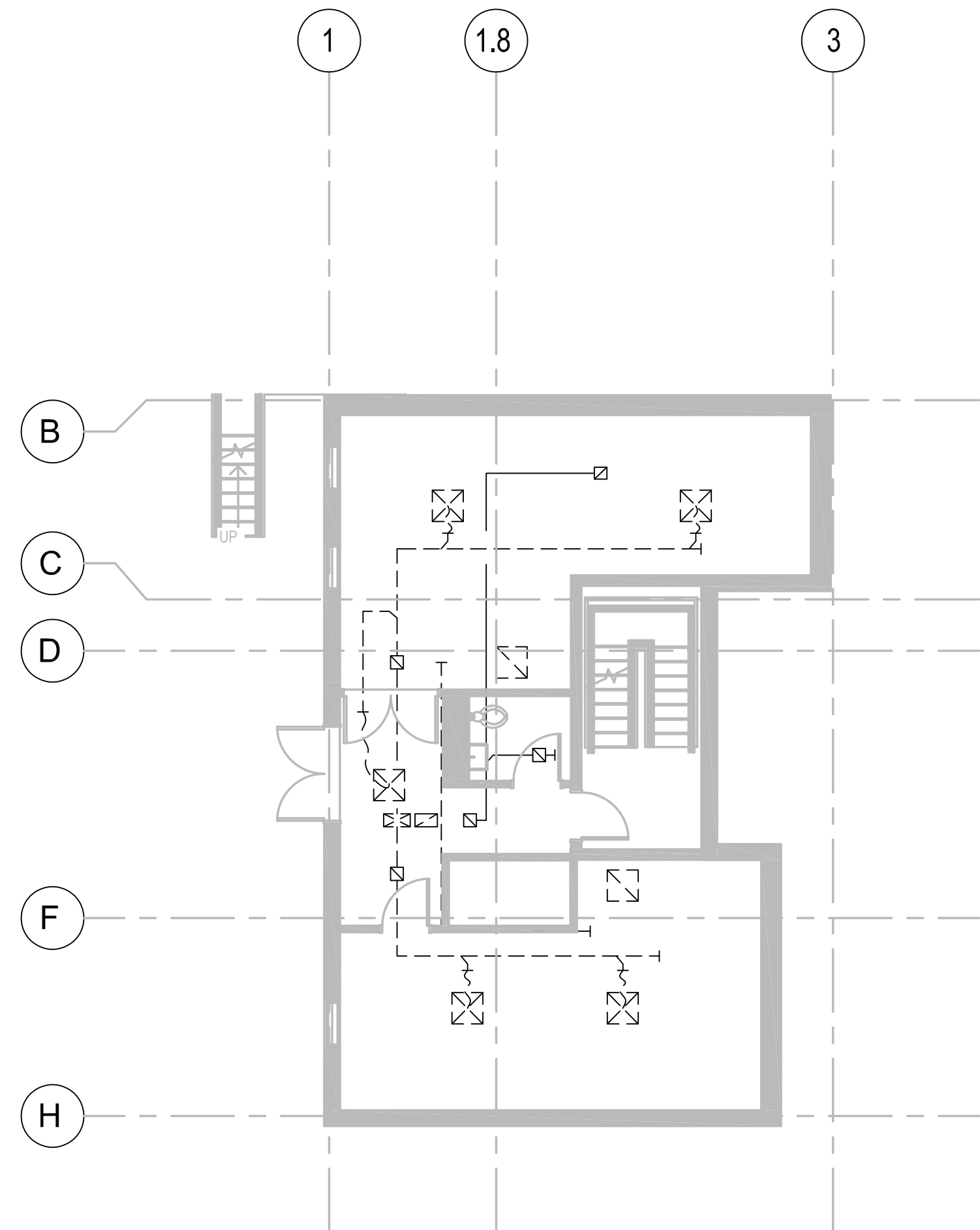


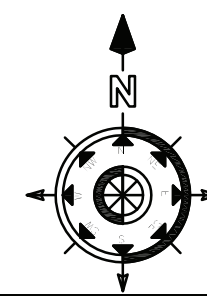
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1 MD01 - LEVEL 1
1/8"=1'-0"



2 MDB01 - BASEMENT LEVEL 1
1/8"=1'-0"



500 SUMMIT LAKE DRIVE, SUITE 500
VAL HALL, NEW YORK 10995-1552

SCALE: 1/8"=1'-0"	P.M.:
DATE: MAY 18, 2022	CHECKED:
DRAWN: VS	SUBMITTED:
DESIGNED: SW	APPROVED:

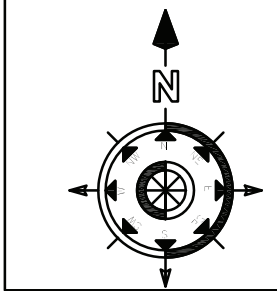
#	REVISIONS	DATE	BY

RENOVATION/ UPGRADE OF
FIRE STATION 2 (BLDG 1203)
US ARMY GARRISON WEST POINT, NY

HVAC DEMOLITION PLANS

SHEET
NUMBER:

MD101



EYP

SCALE: 1/8" = 1'-0"	P.L.:
DATE: MAY 18, 2022	CHECKED:
DRAWN: VS	SUBMITTED:
DESIGNED: SW	APPROVED:

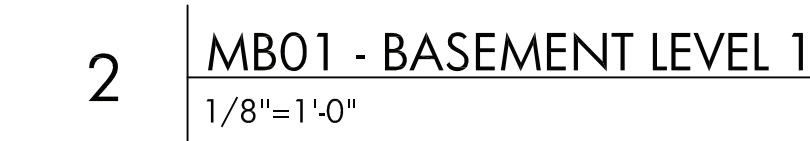
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#	DESCRIPTION	DATE BY

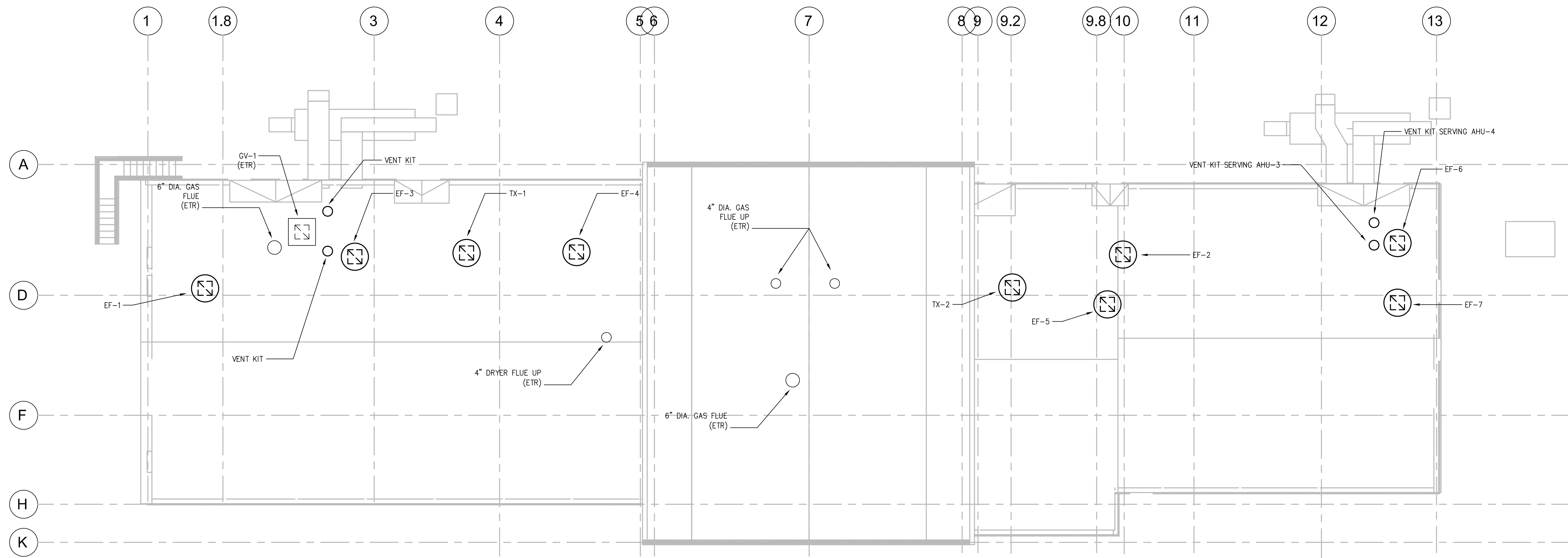
HVAC DUCTWORK PLANS

M101

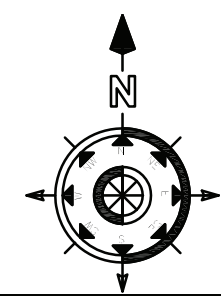


1 1.8 3





1 | M03 - ROOF LEVEL
1/8"=1'-0"



600 SUMMIT LAKE DRIVE, SUITE 500
VAL HALL, NEW YORK 10982-1882



SCALE: 1/8"=1'-0"	P.L.:
DATE: MAY 18, 2022	CHECKED:
DRAWN: VS	SUBMITTED:
DESIGNED: SW	APPROVED:

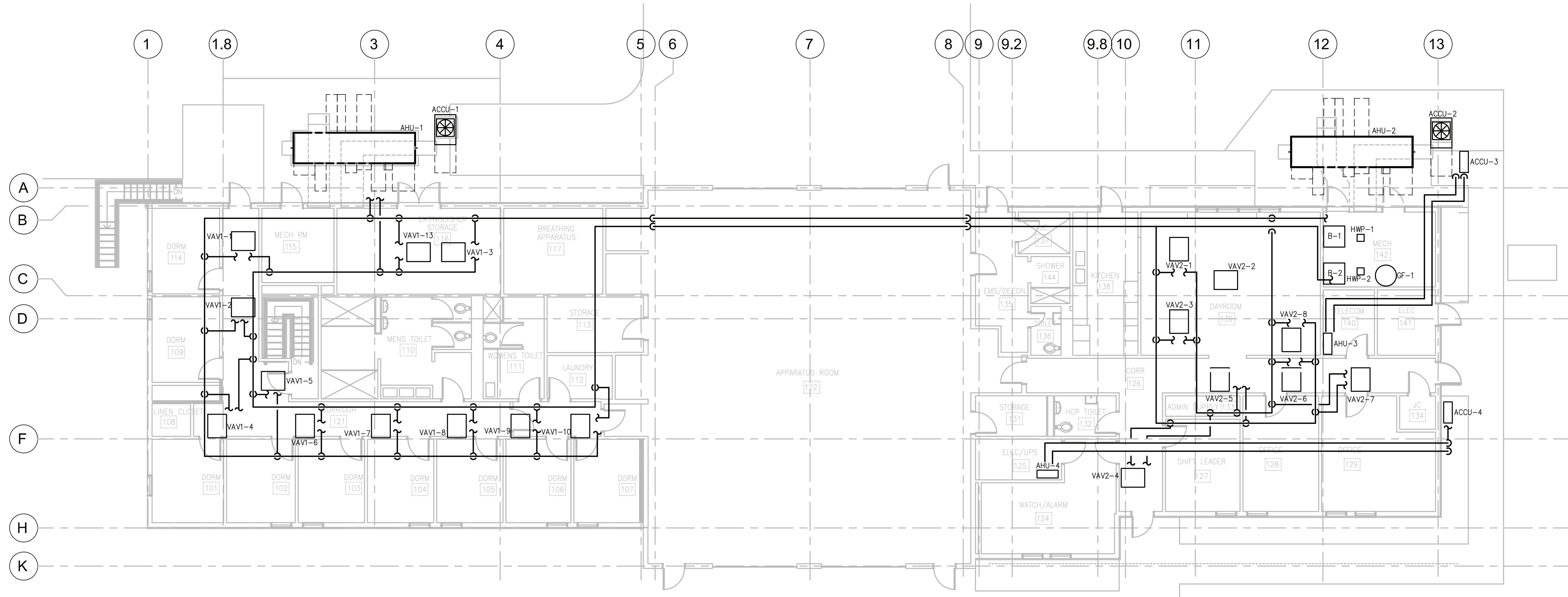
REVISIONS		DATE	BY
#	DESCRIPTION		

RENOVATION/ UPGRADE OF
FIRE STATION 2 (BLDG 1203)
US ARMY GARRISON WEST POINT, NY

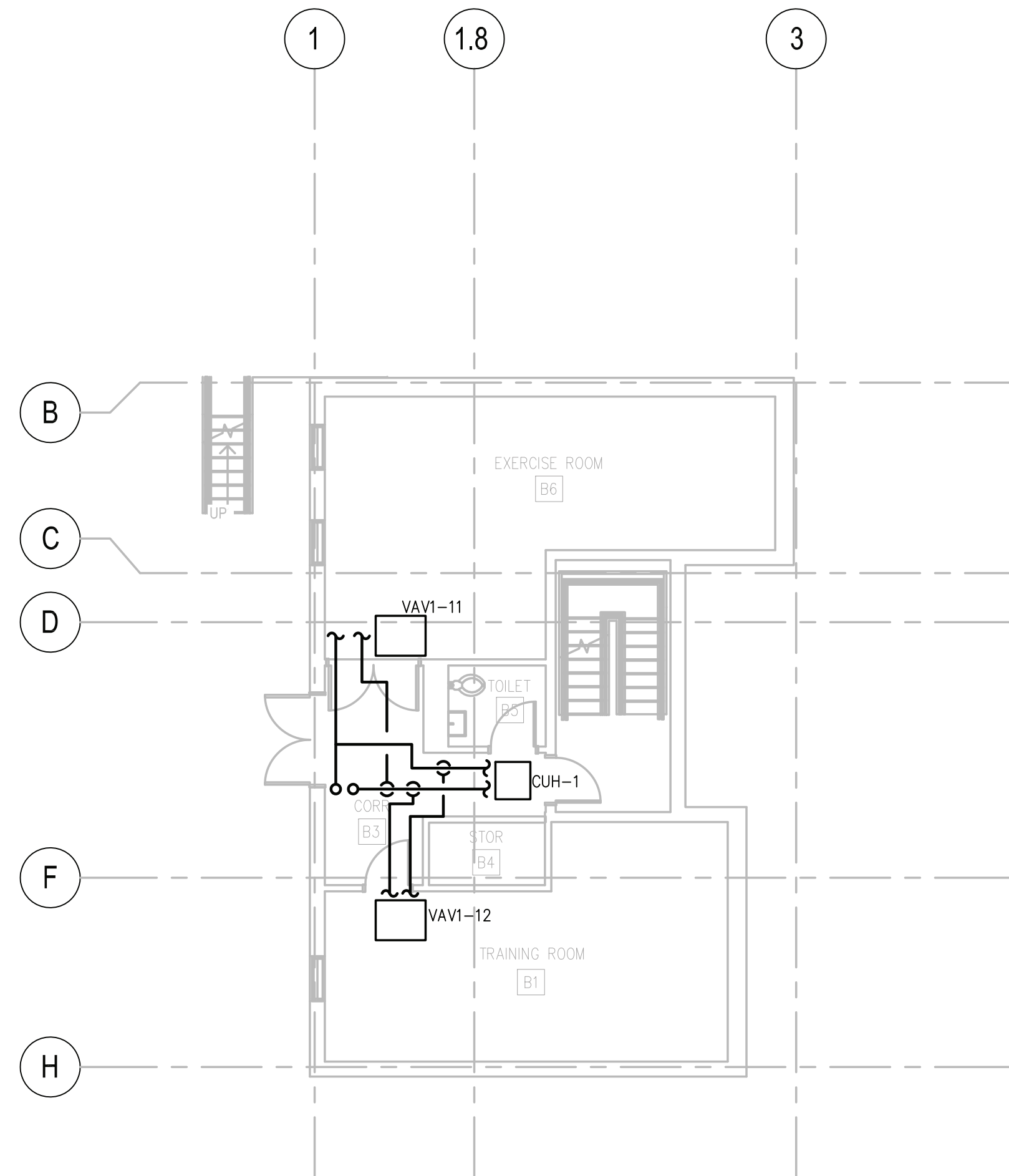
HVAC ROOF PLAN

SHEET
NUMBER:

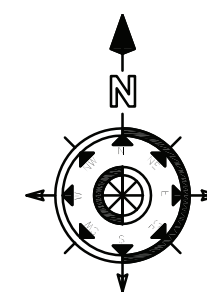
M102



1 M01 - LEVEL 1
1/8"=1'-0"



2 MB01 - BASEMENT LEVEL 1
1/8"=1'-0"



500 SUMMIT LAKE DRIVE, SUITE 500
VAL HALL, NEW YORK 10985-1552

SCALE: 1/8"=1'-0"	P.M.:
DATE: MAY 18, 2022	CHECKED:
DRAWN: VS	SUBMITTED:
DESIGNED: SW	APPROVED:

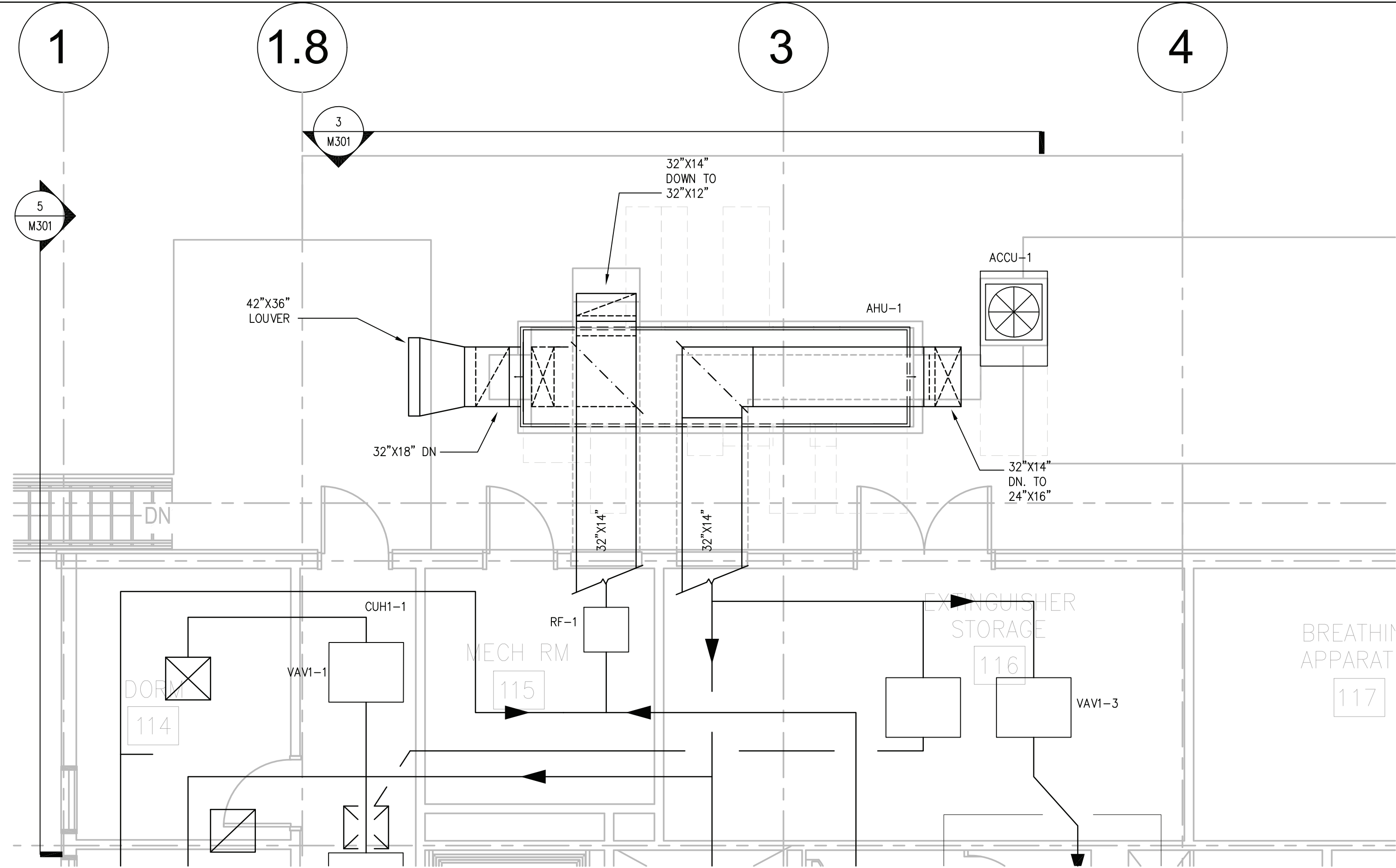
REVISIONS	
#	DESCRIPTION

RENOVATION/ UPGRADE OF
FIRE STATION 2 (BLDG 1203)
US ARMY GARRISON WEST POINT, NY

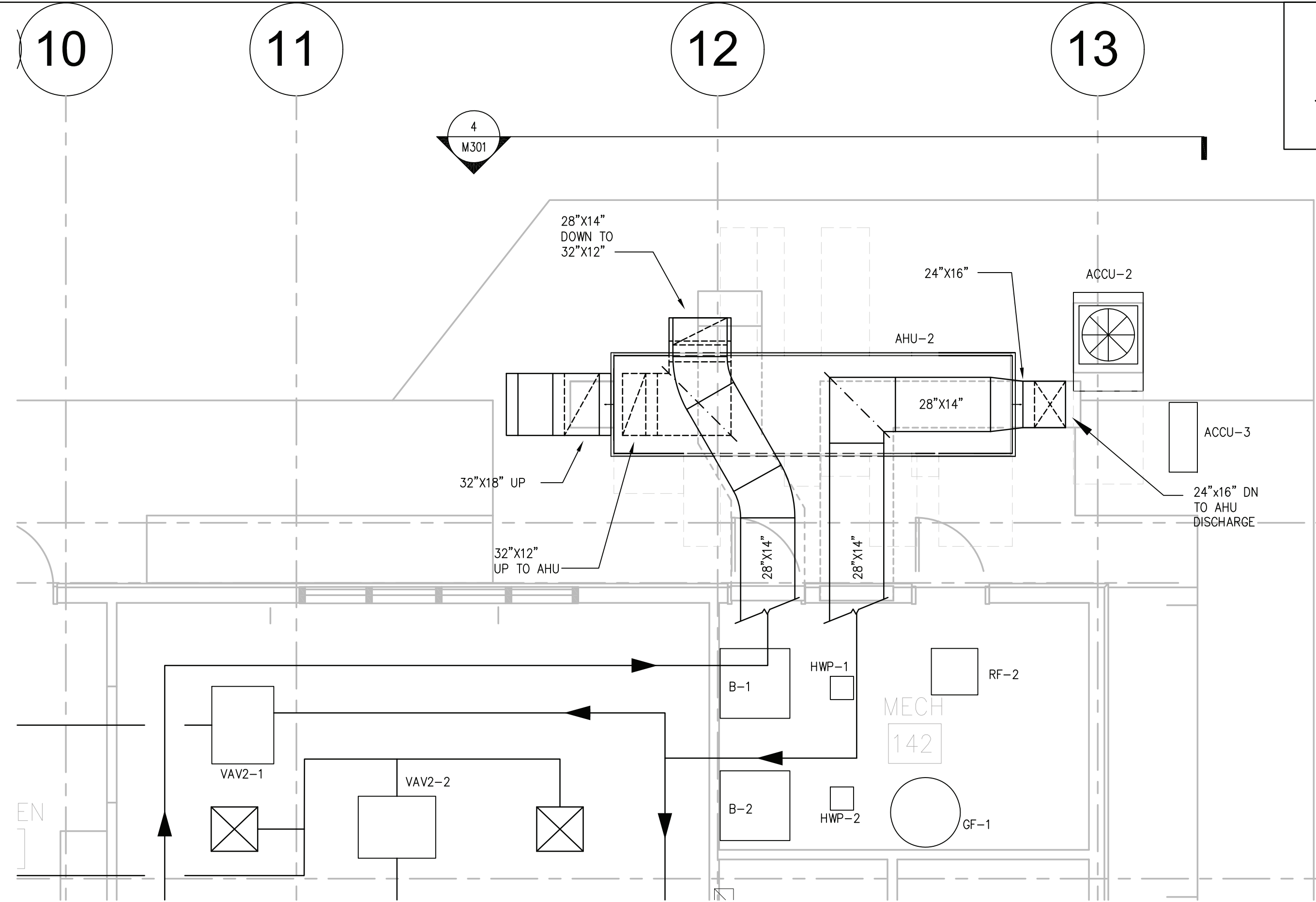
HVAC PIPING PLANS



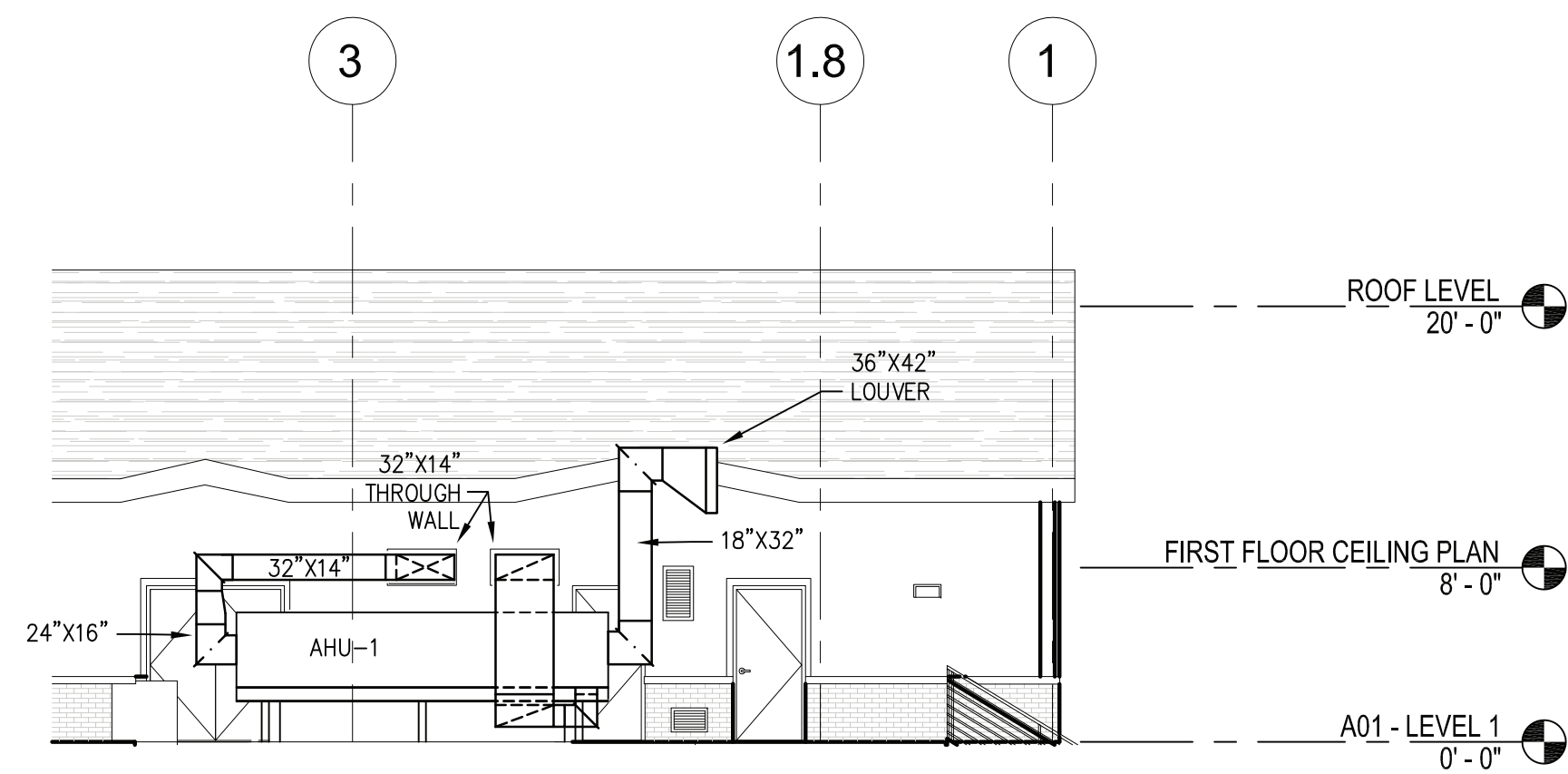
SHEET
NUMBER:
M201



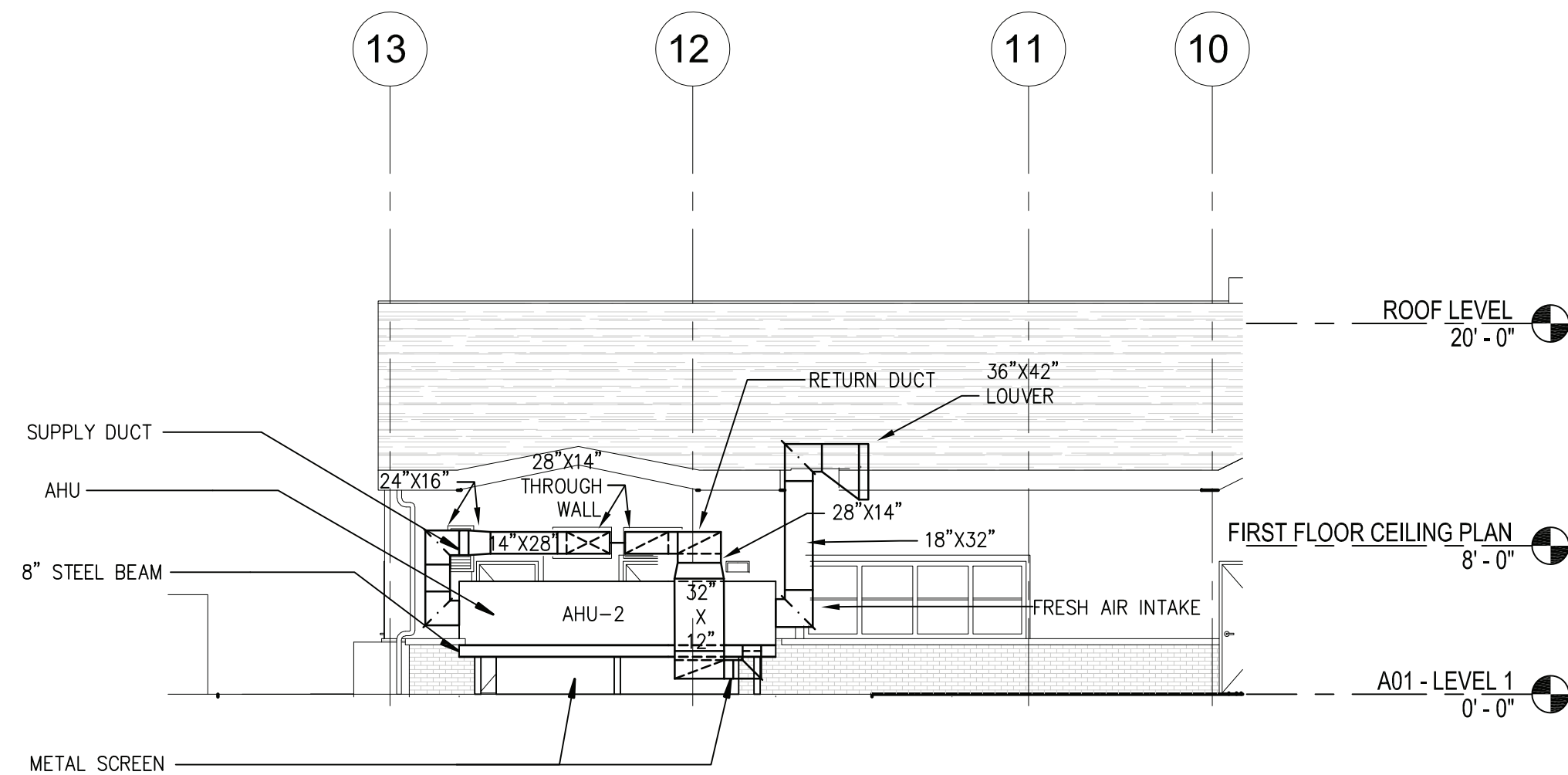
1 M01 - ENLARGED LEVEL 1 DORM WING PLAN
1/4"=1'-0"



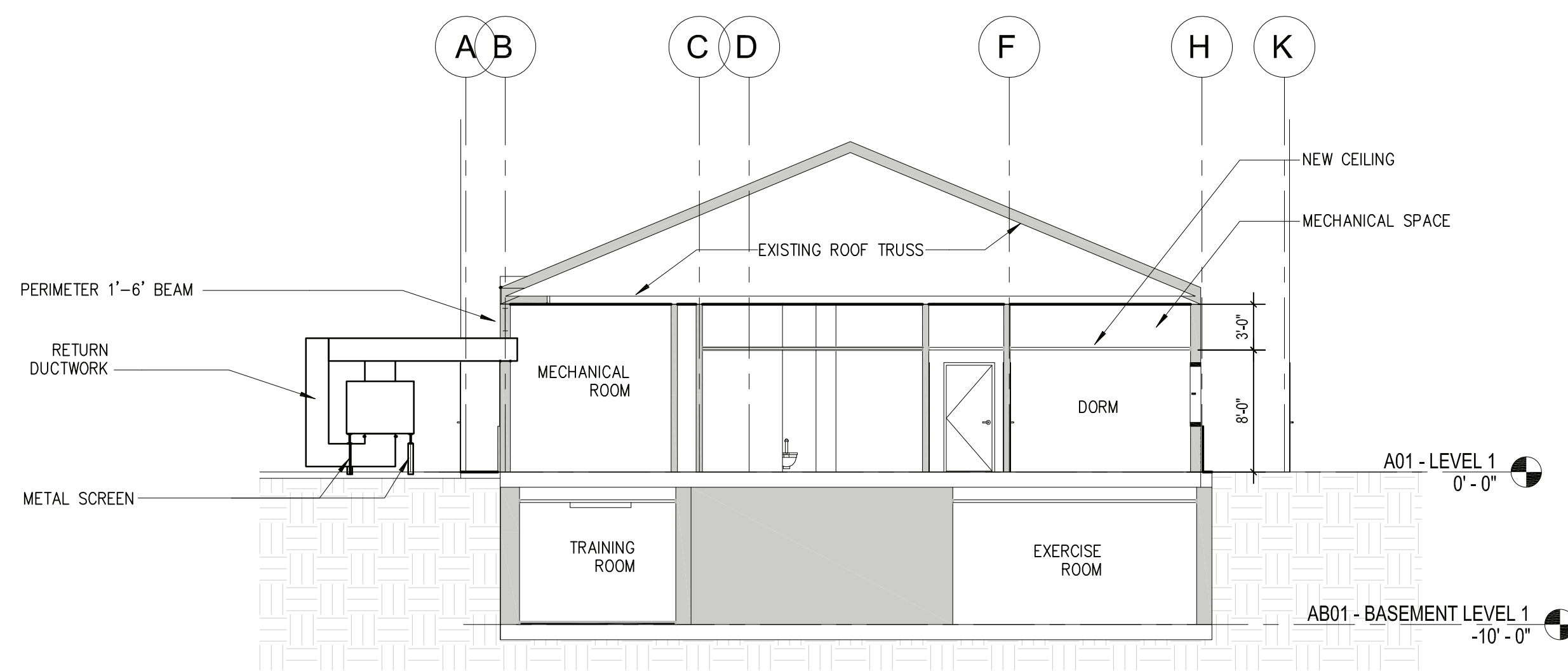
2 M01 - ENLARGED LEVEL 1 LIVING WING PLAN
1/4"=1'-0"



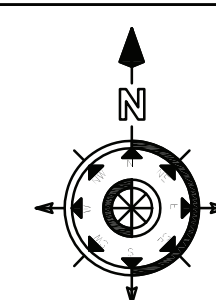
3 NORTH ELEVATION - DORM WING
1/8"=1'-0"



4 NORTH ELEVATION - LIVING WING
1/8"=1'-0"



5 MECH ROOM SECTION
1/8"=1'-0"



500 SUMMIT LAKE DRIVE, SUITE 500
VAL HALL, NEW YORK 10982-1582

SCALE:	1/8"=1'-0"	P.L.:	
DATE:	MAY 18, 2022	CHECKED:	
DRAWN:	VS	SUBMITTED:	
DESIGNED:	SW	APPROVED:	

#	REVISIONS	DATE	BY
	DESCRIPTION		

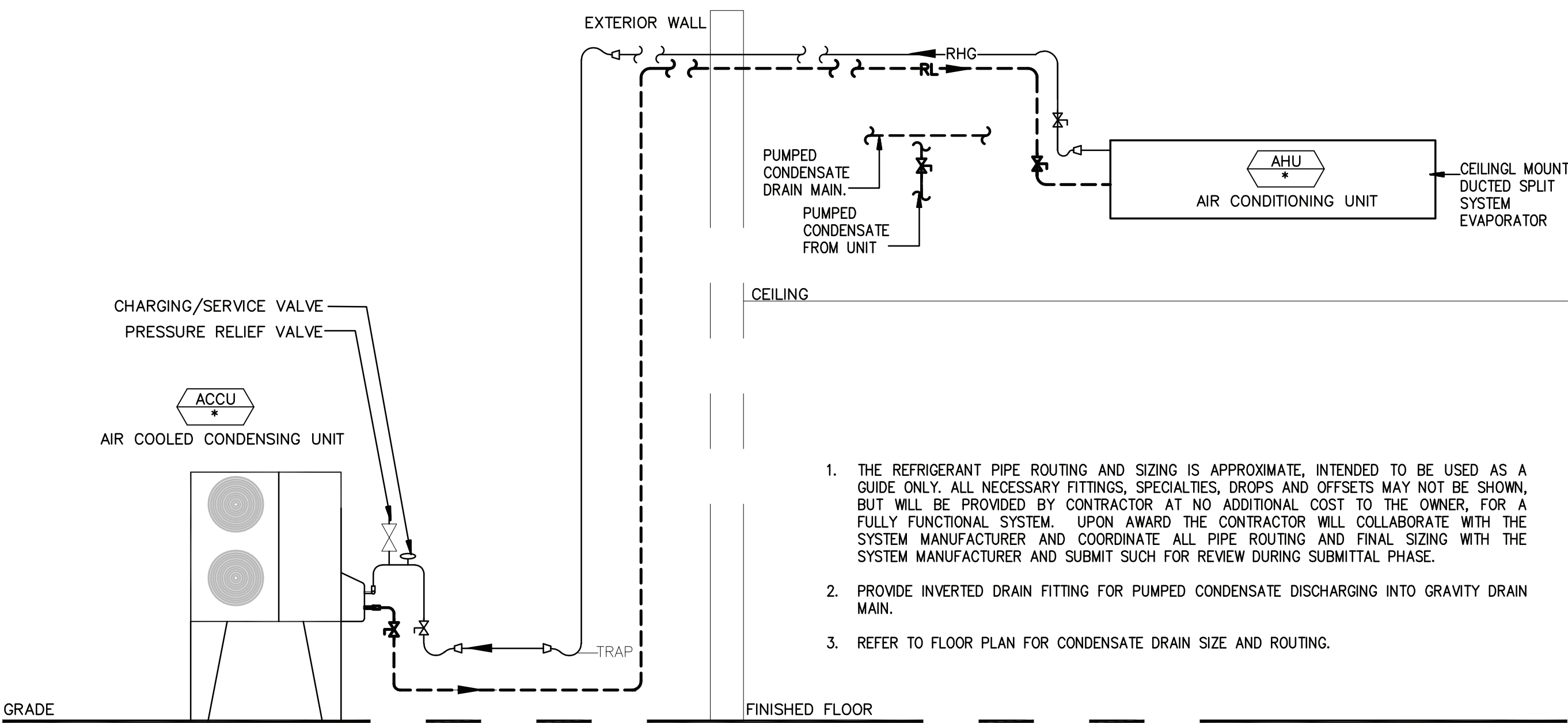
RENOVATION/ UPGRADE OF
FIRE STATION 2 (BLDG 1203)
US ARMY GARRISON WEST POINT, NY

HVAC ENLARGED PLANS
AND SECTIONS



SHEET
NUMBER:

M301



1. THE REFRIGERANT PIPE ROUTING AND SIZING IS APPROXIMATE, INTENDED TO BE USED AS A GUIDE ONLY. ALL NECESSARY FITTINGS, SPECIALTIES, DROPS AND OFFSETS MAY NOT BE SHOWN, BUT WILL BE PROVIDED BY CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER, FOR A FULLY FUNCTIONAL SYSTEM. UPON AWARD THE CONTRACTOR WILL COLLABORATE WITH THE SYSTEM MANUFACTURER AND COORDINATE ALL PIPE ROUTING AND FINAL SIZING WITH THE SYSTEM MANUFACTURER AND SUBMIT SUCH FOR REVIEW DURING SUBMITTAL PHASE.
2. PROVIDE INVERTED DRAIN FITTING FOR PUMPED CONDENSATE DISCHARGING INTO GRAVITY DRAIN MAIN.
3. REFER TO FLOOR PLAN FOR CONDENSATE DRAIN SIZE AND ROUTING.

1 | MINI-SPLIT SYSTEM
N.T.S



500 SUMMIT LAKE DRIVE, SUITE 500
VAL HALLA, NEW YORK 10995-1552

SCALE: NONE	P.M.:
DATE: MAY 18, 2022	CHECKED:
DRAWN: VS	SUBMITTED:
DESIGNED: SW	APPROVED:

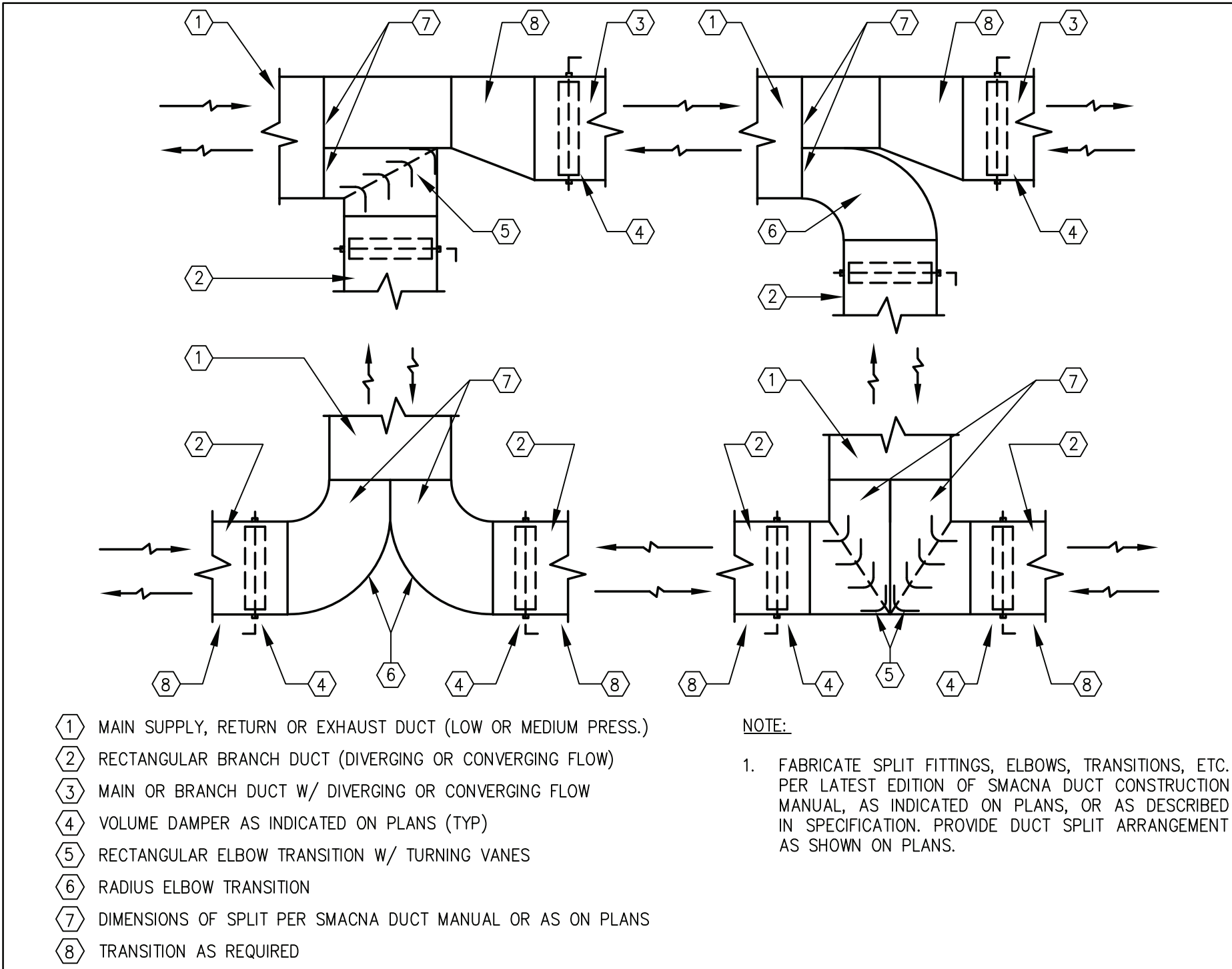
#	REVISIONS	DESCRIPTION	DATE	BY

RENOVATION/ UPGRADE OF
FIRE STATION 2 (BLDG 1203)
US ARMY GARRISON WEST POINT, NY

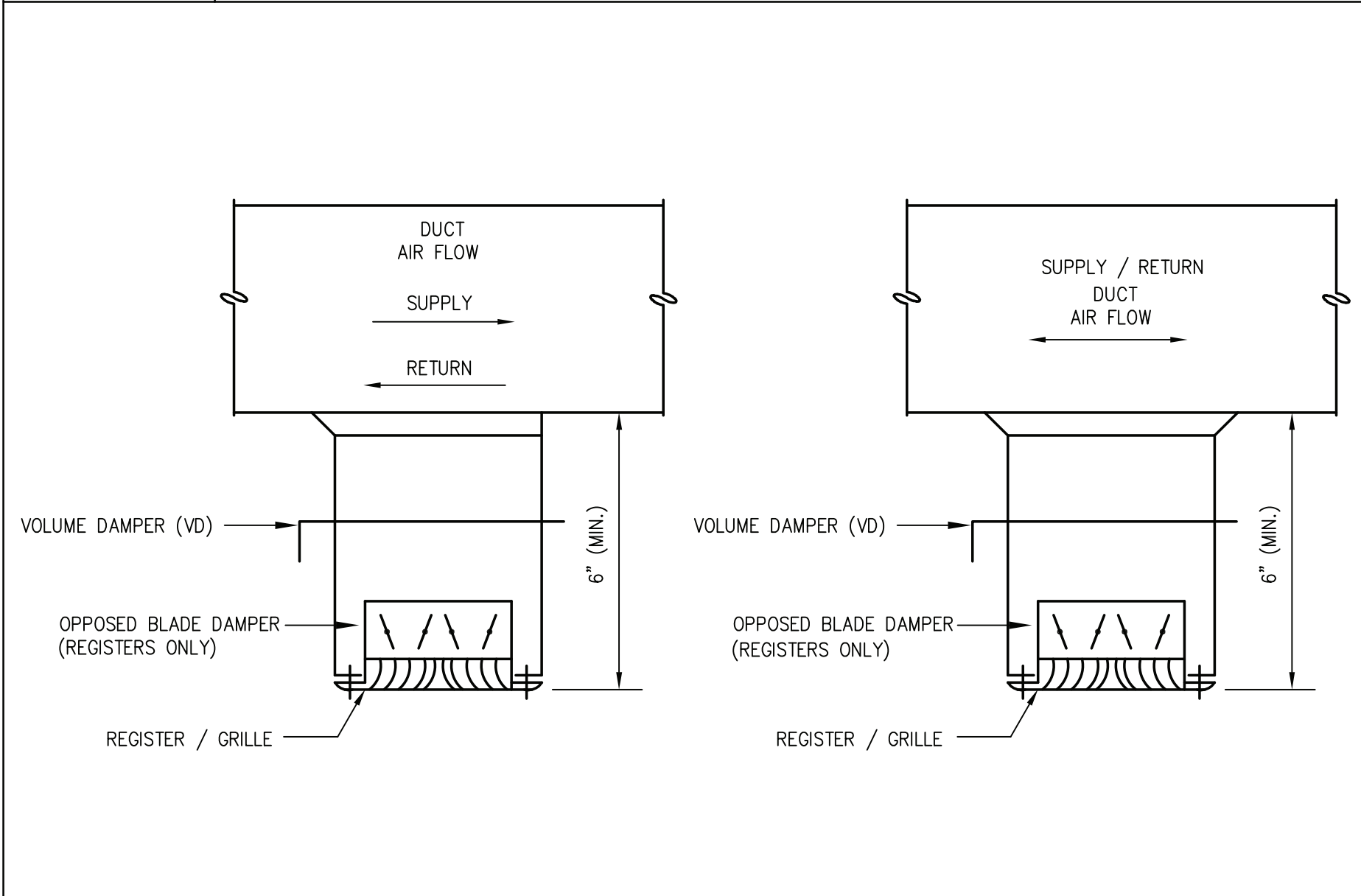
HVAC DIAGRAMS

SHEET
NUMBER:

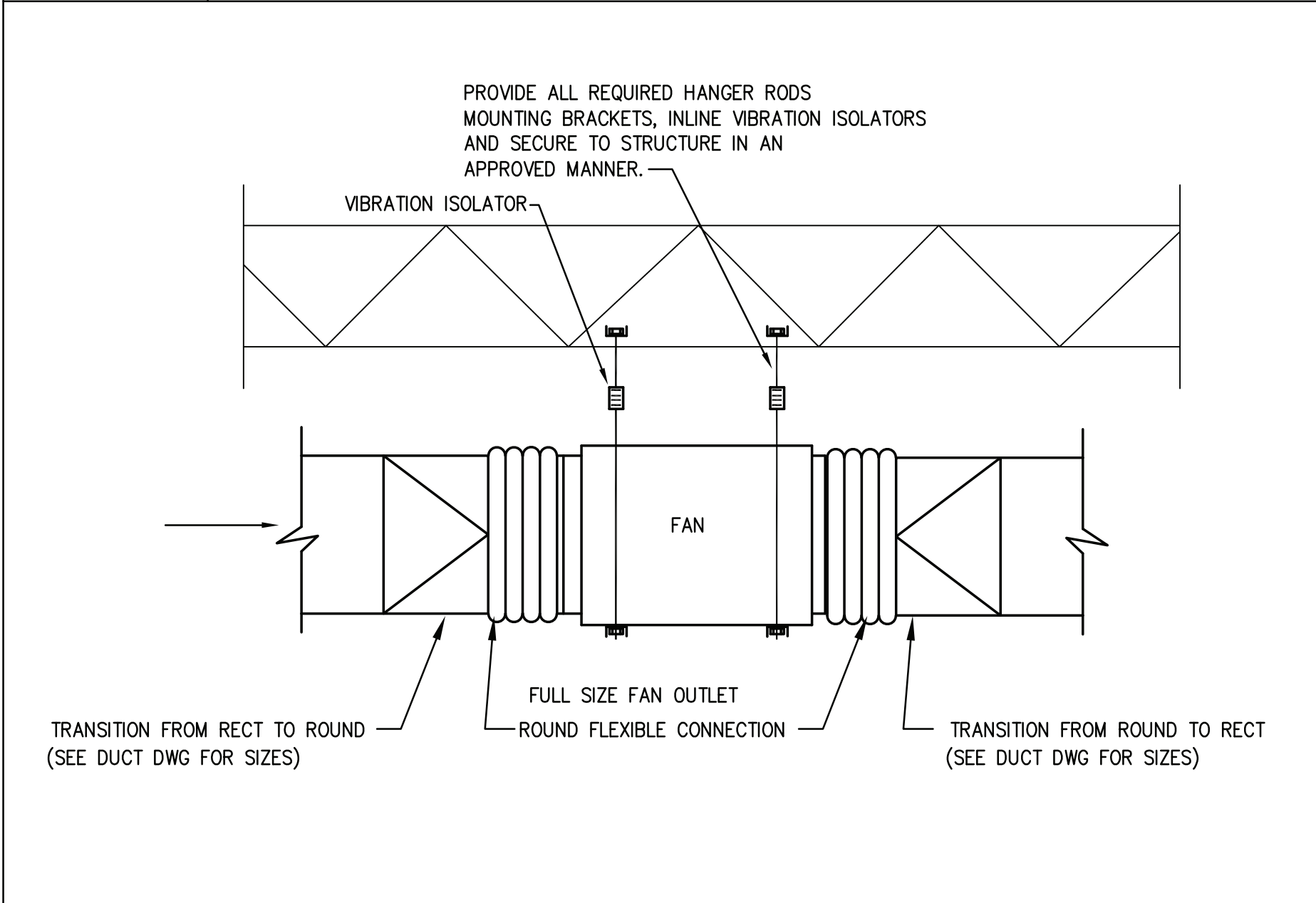
M401



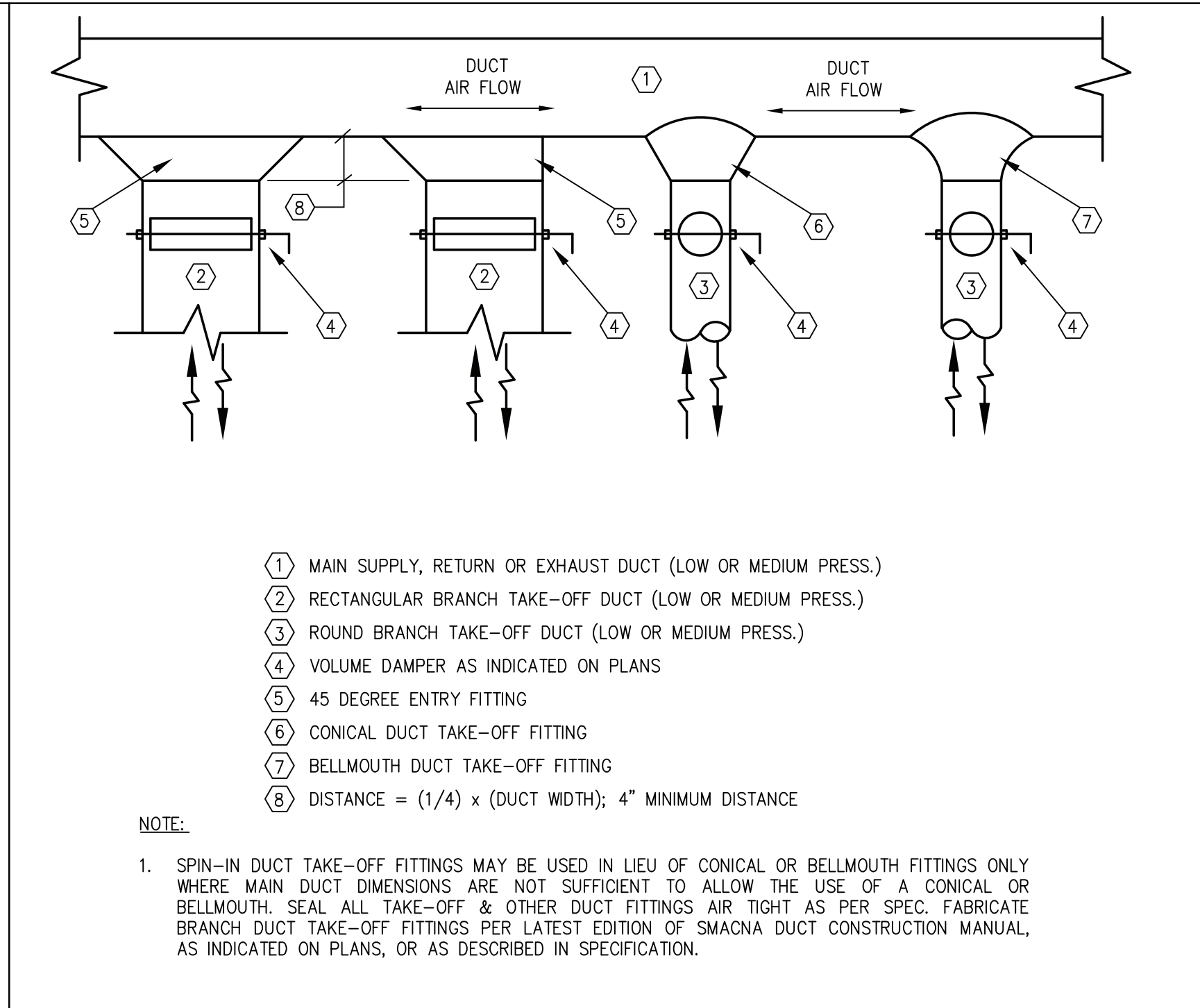
1	SPLIT DUCT DETAIL
N.T.S.	



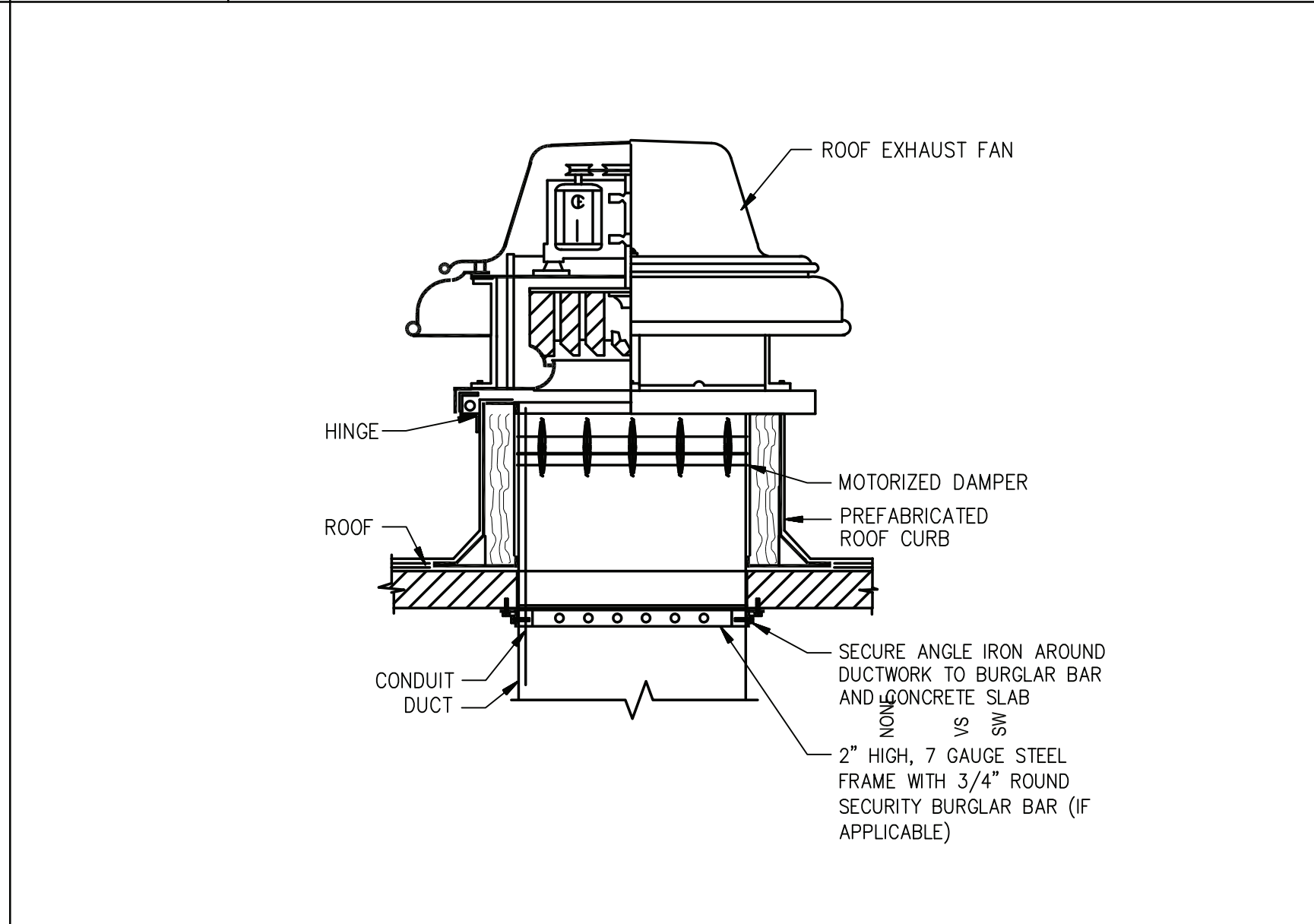
4	REGISTER / GRILLE DETAIL
N.T.S.	



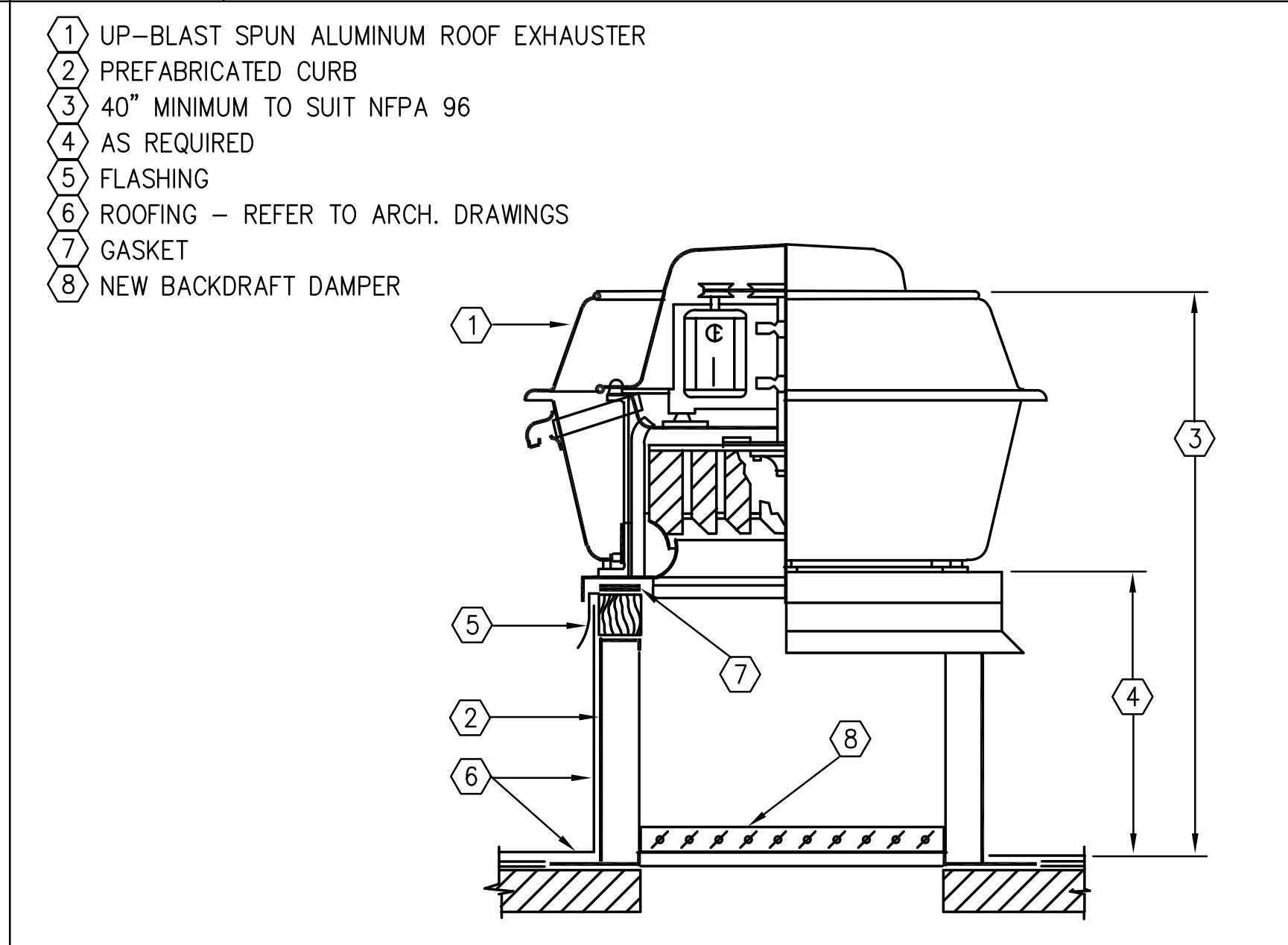
7	INLINE FAN DETAIL
N.T.S.	



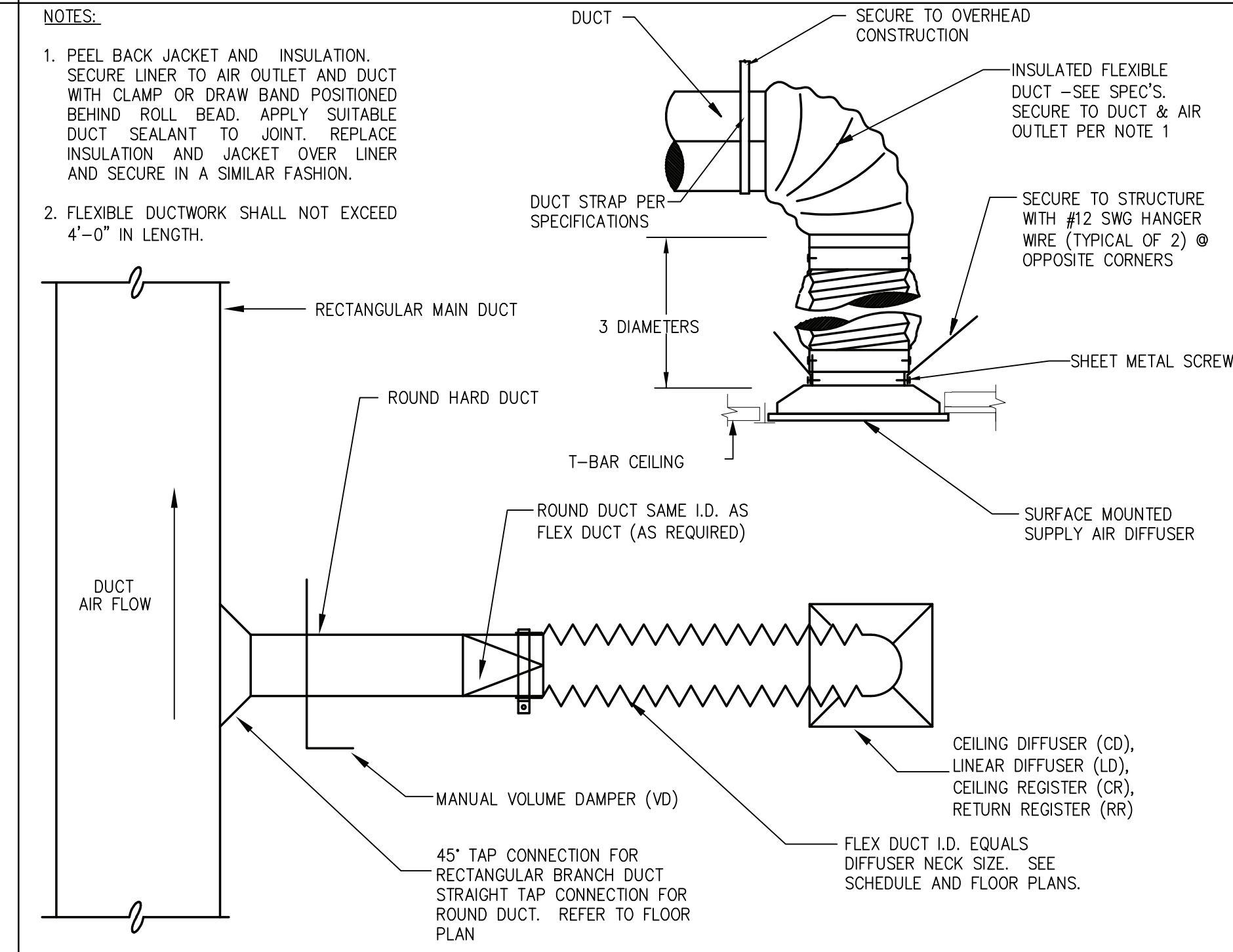
2	DUCT BRANCH DETAIL
N.T.S.	



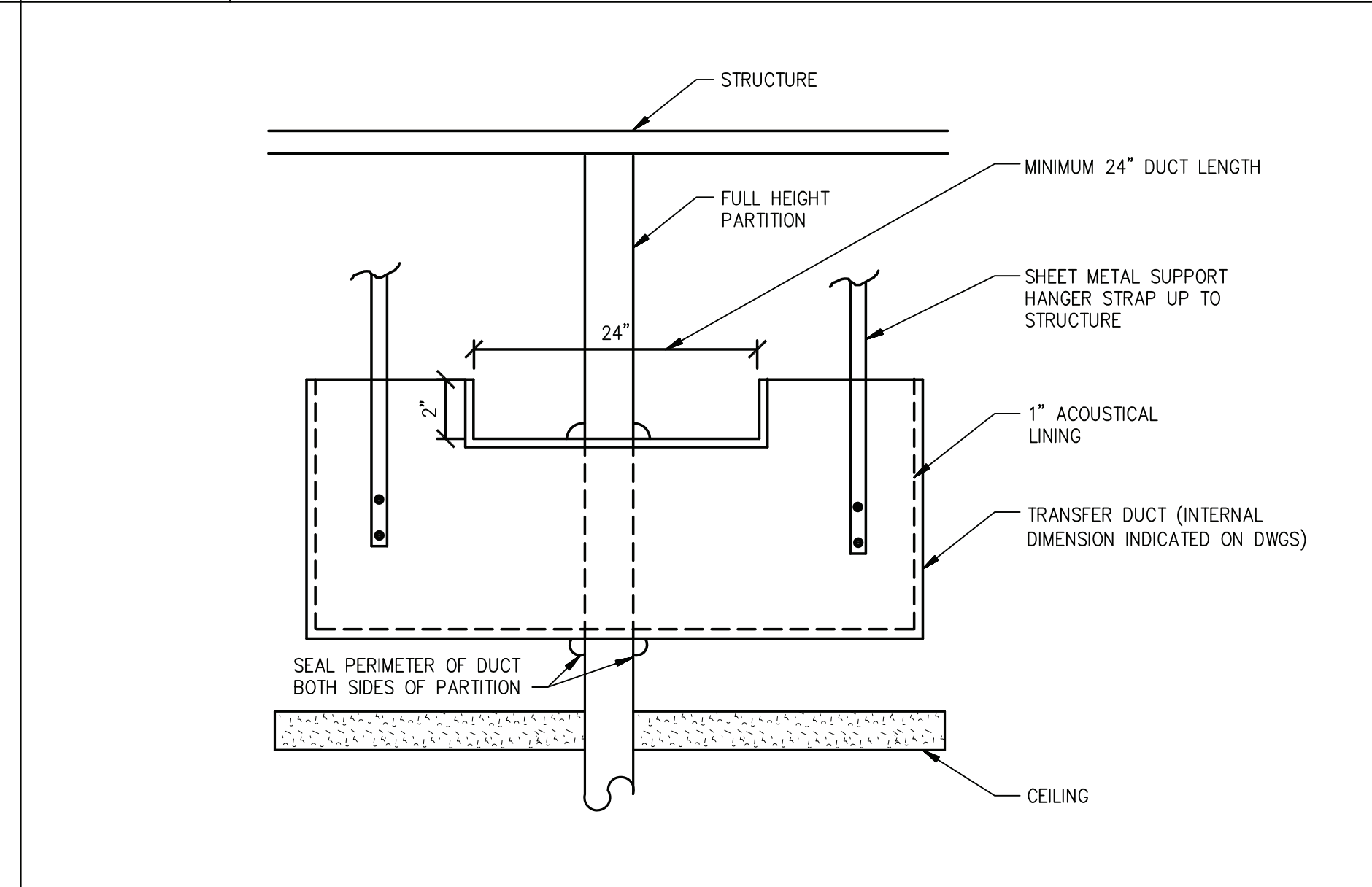
5	ROOF EXHAUST FAN DETAIL
N.T.S.	



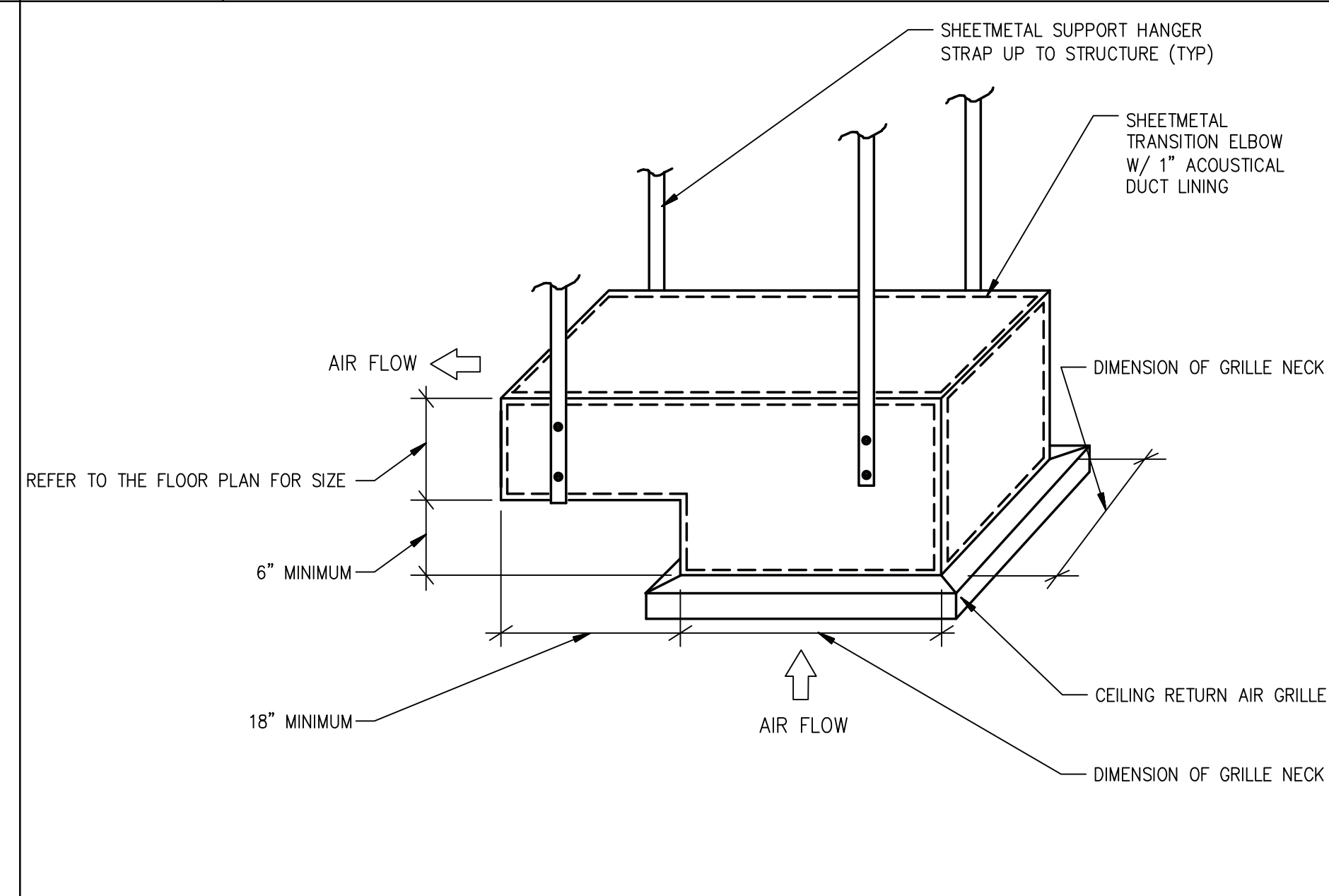
8	UPBLAST EXHAUST FAN DETAIL
N.T.S.	



3	AIR OUTLET DETAIL
N.T.S.	



6	TRANSFER DUCT DETAIL
N.T.S.	

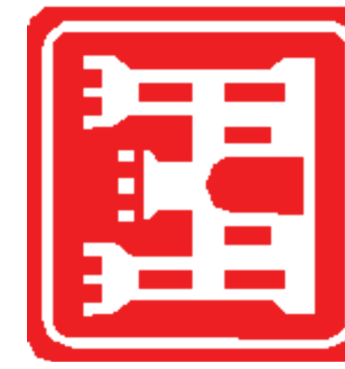


9	AIR OUTLET W / TRANSFER DUCT DETAIL
N.T.S.	





Directorate of Public Works



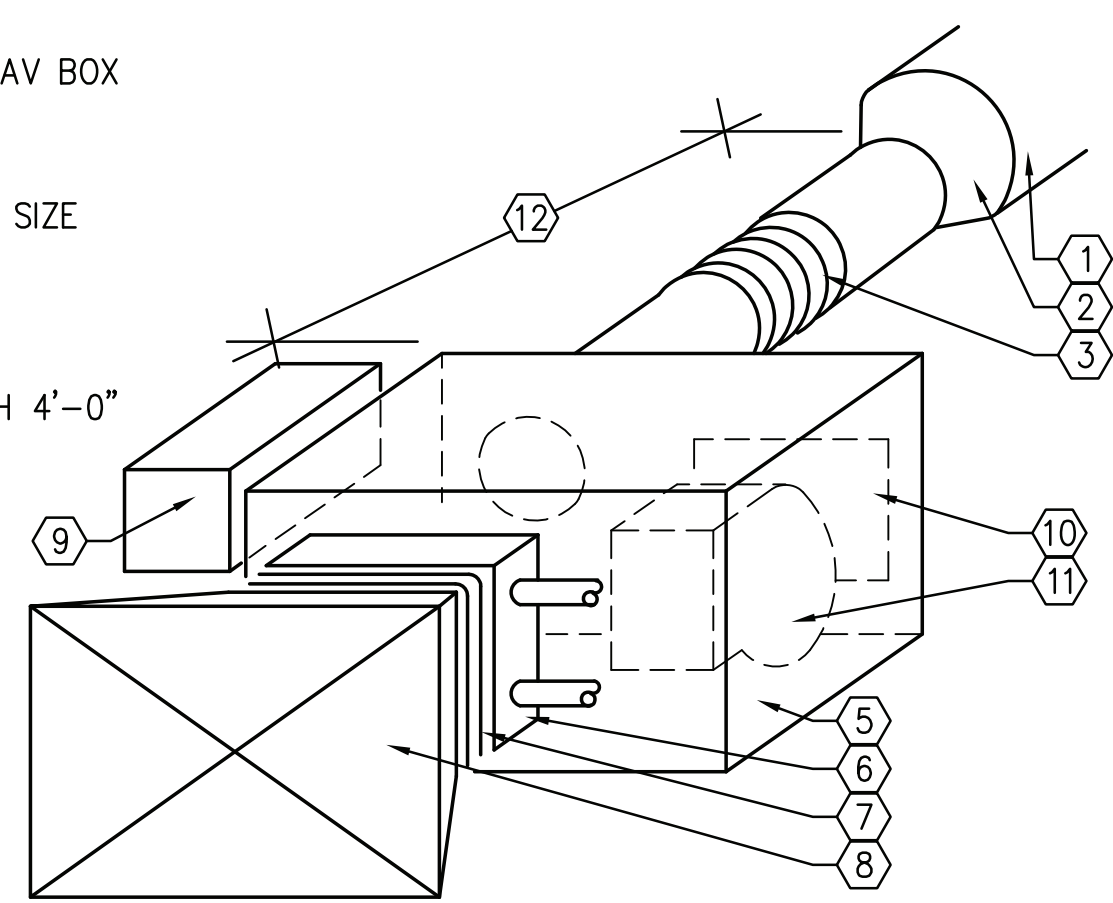
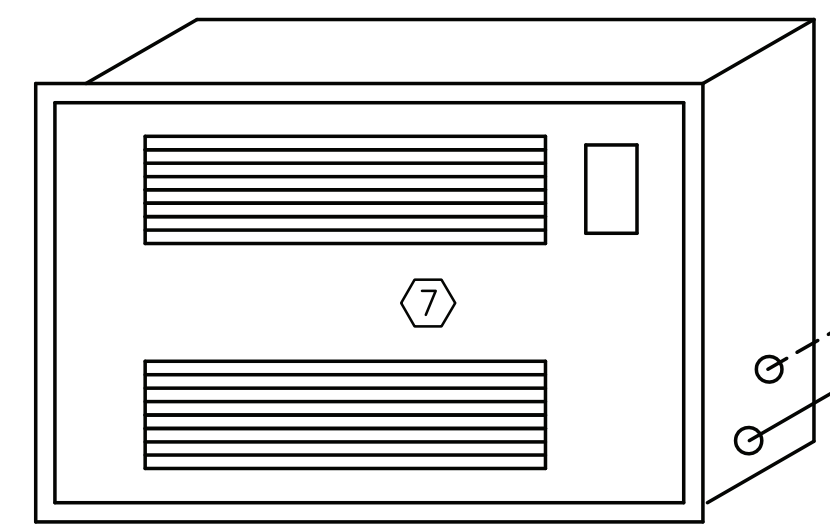
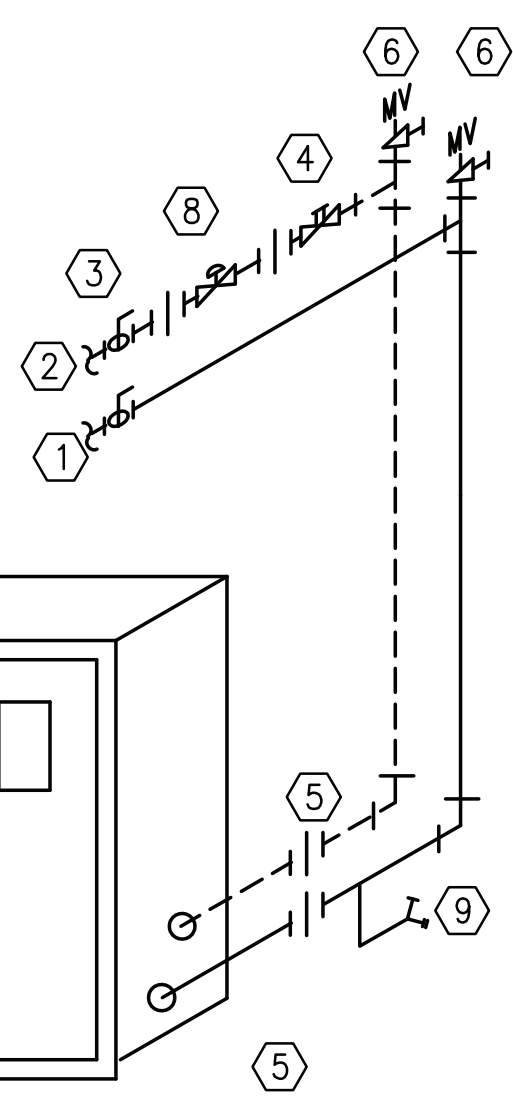
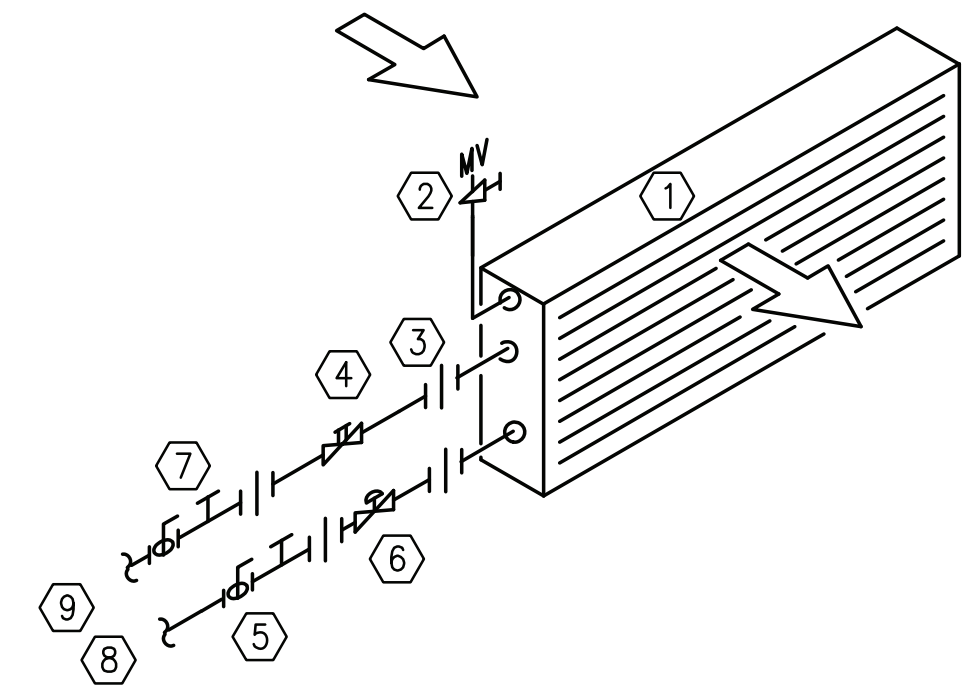
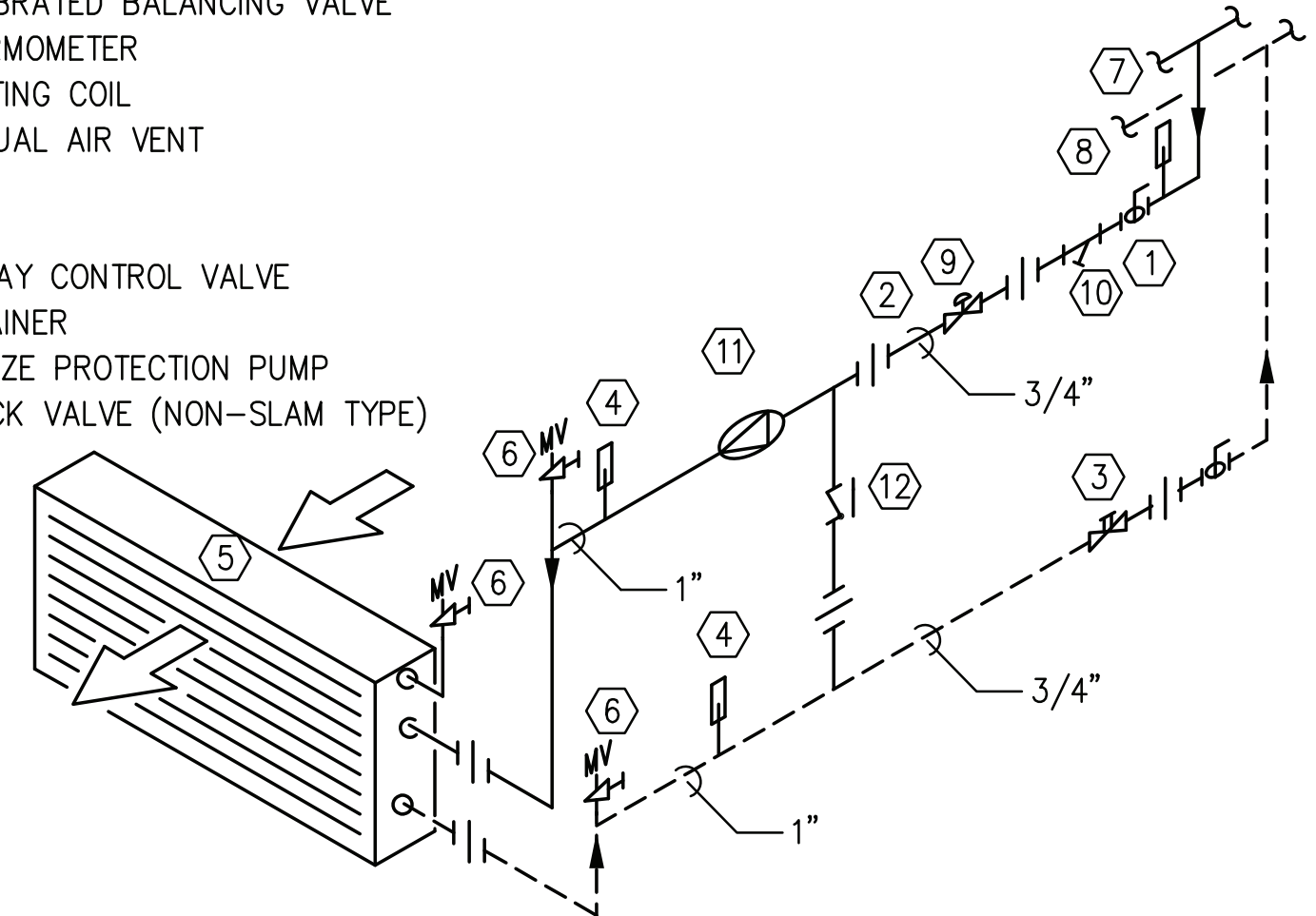
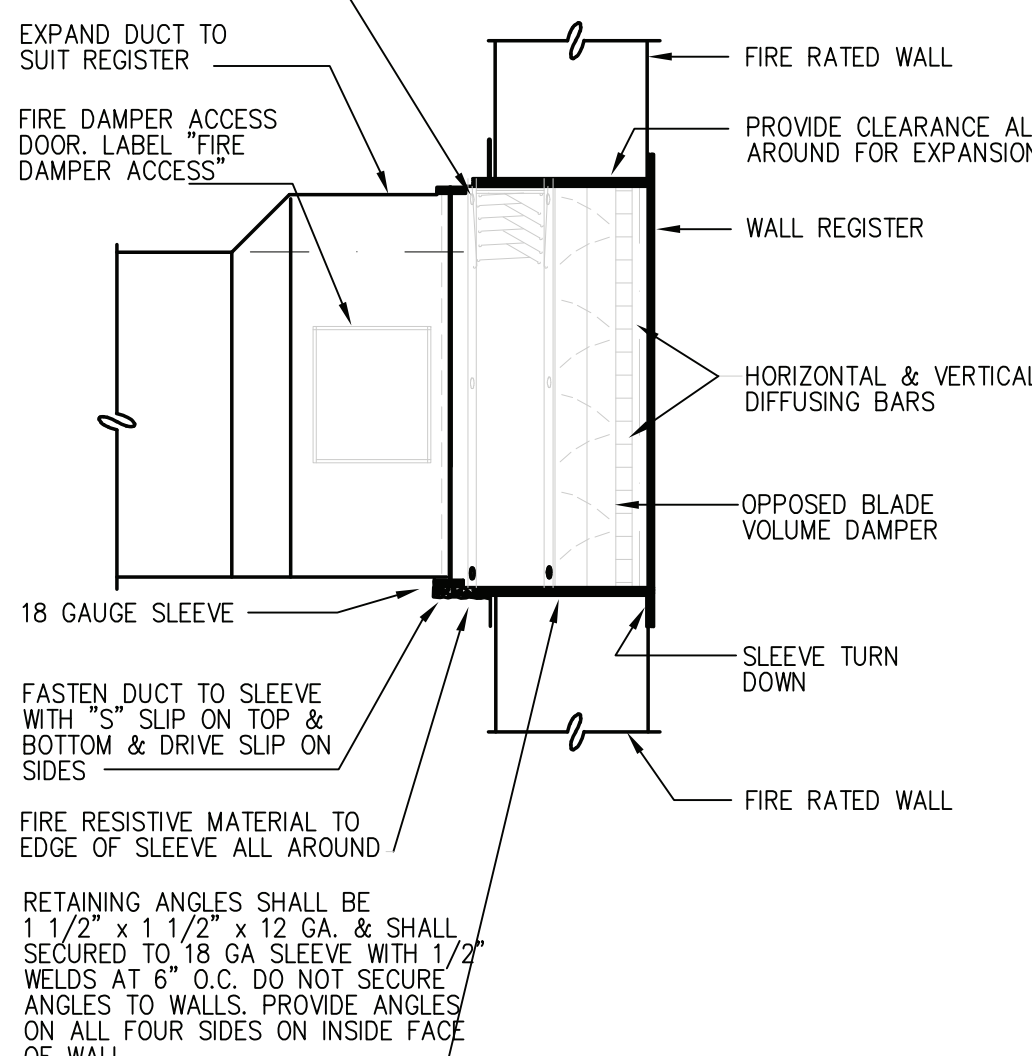
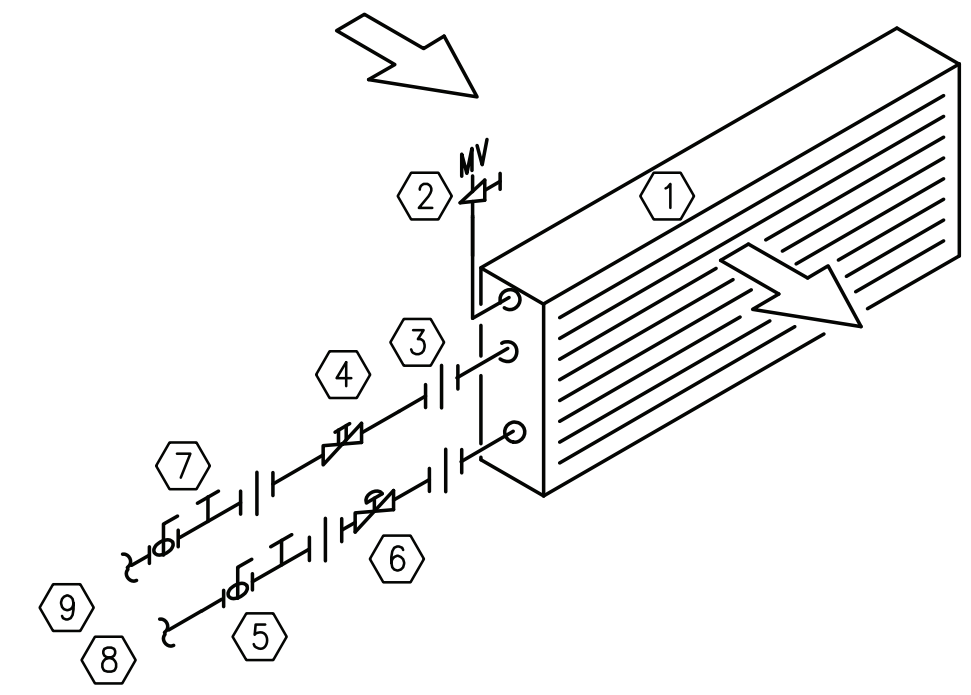
500 SUMMIT LAKE DRIVE, SUITE 500
VAL HALLA, NEW YORK 10995-1582

SCALE:	P.M.I.:	REVISIONS	BY
DATE: MAY 18, 2022	CHECKED:	DESCRIPTION	DATE
DRAWN:	SUBMITTED:		
DESIGNED:	APPROVED:		
#			

RENOVATION/ UPGRADE OF
FIRE STATION 2 (BLDG 1203)
US ARMY GARRISON WEST POINT, NY

HVAC DETAILS

SHEET
NUMBER:
M501

1 SUPPLY AIR DUCT (SIZE AS SHOWN ON PLANS) 2 TRANSITION TO VAV BOX INLET DIMENSION 3 MEDIUM PRESSURE FLEXIBLE DUCT CONNECTION 4 NOT USED 5 PARALLEL FAN POWERED TYPE VAV BOX 6 H.W. REHEAT COIL (SEE DETAIL) 7 FLEXIBLE DUCT CONNECTION 8 TRANSITION TO DISCHARGE DUCT SIZE 9 UNIT MOUNTED CONTROLS 10 PLENUM AIR INLET 11 PARALLEL FAN 12 MIN. LENGTH 1'-6"; MAX. LENGTH 4'-0"  NOTES: 1) MAXIMUM INSTALLED FLEXIBLE DUCT LENGTH SHALL BE 3'-0". FLEX. DUCT AT BOX INLET SHALL BE STRAIGHT; AVOID RADIUSSED FLEX. DUCT AT VAV BOX INLET. MAINTAIN FLEX. DUCT CROSS-SECTIONAL AREA. 2) VAV BOXES SHALL BE SUPPORTED FROM BLDG. STRUCTURE W/ VIBRATION ISOLATOR HANGERS.		1 HWS 2 HWR 3 BALL VALVE (TYPICAL) 4 CALIBRATED BALANCING VALVE 5 UNION (TYPICAL) 6 MANUAL AIR VENT 7 RECESSED CABINET UNIT HEATER 8 CONTROL VALVE 9 DRAIN VALVE W/HOSE END,CAP AND CHAIN PROVIDE ONLY ON HORIZ. RECESSED UNIT  		1 HEATING COIL 2 MANUAL AIR VENT (TYPICAL) 3 UNION (TYPICAL) 4 CALIBRATED BALANCING VALVE 5 BALL VALVE (TYPICAL) 6 TWO WAY CONTROL VALVE 7 TEMPERATURE / PRESSURE CONNECTOR PLUG (TYPICAL) 8 HWS 9 HWR 									
1	FAN POWERED VAV DETAIL	2	CABINET UNIT HEATER DETAIL	3	VAV HEATING COIL DETAIL								
N.T.S.		N.T.S.		N.T.S.									
1 BALL VALVE FOR 2" AND SMALLER BUTTERFLY VALVE FOR 2 1/2" AND LARGER. 2 UNION 3 CALIBRATED BALANCING VALVE 4 THERMOMETER 5 HEATING COIL 6 MANUAL AIR VENT 7 HWS 8 HWR 9 2-WAY CONTROL VALVE 10 STRAINER 11 FREEZE PROTECTION PUMP 12 CHECK VALVE (NON-SLAM TYPE) 		1 FASTEN FIRE DAMPER FRAME TO SLEEVE WITH 1/2" WELDS AT 6" O.C. 2 EXPAND DUCT TO SUIT REGISTER 3 FIRE DAMPER ACCESS DOOR. LABEL "FIRE DAMPER ACCESS" 4 PROVIDE CLEARANCE ALL AROUND FOR EXPANSION 5 WALL REGISTER 6 HORIZONTAL & VERTICAL DIFFUSING BARS 7 OPPOSED BLADE VOLUME DAMPER 8 SLEEVE TURN DOWN 9 FIRE RATED WALL 10 18 GAUGE SLEEVE 11 FASTEN DUCT TO SLEEVE WITH "S" SLIP ON TOP & BOTTOM & DRIVE SLIP ON SIDES 12 FIRE RESISTIVE MATERIAL TO EDGE OF SLEEVE ALL AROUND 13 RETAINING ANGLES SHALL BE 1 1/2" x 1 1/2" x 12 GA. & SHALL SECURED TO 18 GA SLEEVE WITH 1/2" WELDS AT 6" O.C. DO NOT SECURE ANGLES TO WALLS. PROVIDE ANGLES ON ALL FOUR SIDES ON INSIDE FACE OF WALL 											
4	AHU HEATING COIL DETAIL	5	NOT USED	6	FIRE DAMPER (FD) AT RATED WALL DETAIL								
N.T.S.		N.T.S.		N.T.S.									
NOTES: 1. DETAILS SHOWN ARE FOR FIRE DAMPERS IN HORIZONTAL DUCTWORK. FOR DAMPERS IN VERTICAL DUCTWORK, DETAIL IS SIMILAR. 2. FOLLOW THIS DETAIL, UNLESS THE DAMPER MANUFACTURER'S INSTALLATION DETAILS AND INSTRUCTIONS (AS TESTED AND APPROVED BY UL) IS MORE STRINGENT. 3. WHERE ACCESS DOORS ARE INSTALLED ON THE SIDE OF A DUCT, PROVIDE A LABEL OR SIGN AT THE BOTTOM OF THE DUCT WITH AN ARROW AND "FIRE DAMPER ACCESS DOOR" TEXT POINTING TO THE ACCESS DOOR. WHERE ACCESS DOORS ARE INSTALLED ON THE TOP OF THE DUCT, PROVIDE A LABEL OR SIGN AT THE BOTTOM OF THE DUCT WITH "FIRE DAMPER ACCESS DOOR ON TOP OF DUCT." 4. SEQUENCE OF OPERATION: A. FIRE DAMPER MODE: HIGH TEMPERATURE MELTS FUSIBLE LINK, CLOSING FIRE DAMPER. 1 FACTORY SUPPLIED DAMPER SLEEVE, 16 GAUGE FOR DAMPERS NOT EXCEEDING 36" WIDE OR 24" HIGH. 14 GAUGE FOR DAMPERS LARGER THAN 36" WIDE OR 24" HIGH 2 AIR FLOW 3 FIRE DAMPERS ACCESS DOOR. LABEL "FIRE DAMPER ACCESS" LOCATE DAMPER ACCESS DOOR IN BOTTOM OF DUCT AT AN ACCESSIBLE LOCATION. DOOR SIZE AS REQUIRED TO PROPERLY SERVICE DAMPER. ALTERNATE LOCATION: SIDE OF DUCT 4 DUCTWORK: REFER TO FLOOR PLAN FOR SIZE 5 INTERIOR WALL CONSTRUCTION. REFER TO ARCHITECTURAL DRAWINGS FOR THICKNESS, TYPE, AND FIRE RATING 6 1/8" MAXIMUM CLEARANCE FOR ALL FOUR SIDES. DO NOT FILL OR SEAL WITH FIRE CAULK OR FIRE STOP MATERIALS 7 WALL SLEEVE--SIZE AS REQUIRED. WELD OR BOLT AIR TIGHT TO ANGLES (BOTH SIDES OF WALL) 8 UL APPROVED BREAK-AWAY "S" SLIP JOINT TO CONNECT DUCTWORK TO SLEEVE, MAXIMUM OF 6" FROM WALL (BOTH SIDES) 9 FUSIBLE LINK -- 165°F TEMPERATURE RATING, UNLESS NOTED OTHERWISE 10 FIRE DAMPER ASSEMBLY (UL-555 APPROVED FOR VERTICAL INSTALLATION AND INSTALL TO COMPLY WITH NFPA-90A) SECURE ANGLE IRON FRAME ON ALL FOUR SIDES AND ON BOTH SIDES OF WALL. FASTENED TO DUCT SLEEVE WITHOUT ATTACHING DIRECTLY TO WALL CONSTRUCTION. WELD OR USE 1/4" X 20 X 3/4" LONG ROUND HEAD STOVE BOLTS AT 12" O.C. MAXIMUM. SEE TABLE FOR ANGLES SIZE 11 RETAINING ANGLES MUST LAP STRUCTURAL OPENING 1" MIN. AND COVER CORNERS OF OPENINGS <table><tr><th colspan="2">ANGLE IRON TABLE</th></tr><tr><th>WALL OPENING</th><th>ANGLE SIZE</th></tr><tr><td>UP TO 54"</td><td>1 1/2" x 1 1/2" x 1/8"</td></tr><tr><td>55" TO 84"</td><td>3"x2" x 3/16"</td></tr><tr><td>85" TO 120"</td><td>3"x2" x 3/16"</td></tr></table>		ANGLE IRON TABLE		WALL OPENING	ANGLE SIZE	UP TO 54"	1 1/2" x 1 1/2" x 1/8"	55" TO 84"	3"x2" x 3/16"	85" TO 120"	3"x2" x 3/16"	1 HEATING COIL 2 MANUAL AIR VENT (TYPICAL) 3 UNION (TYPICAL) 4 CALIBRATED BALANCING VALVE 5 BALL VALVE (TYPICAL) 6 TWO WAY CONTROL VALVE 7 TEMPERATURE / PRESSURE CONNECTOR PLUG (TYPICAL) 8 HWS 9 HWR 	
ANGLE IRON TABLE													
WALL OPENING	ANGLE SIZE												
UP TO 54"	1 1/2" x 1 1/2" x 1/8"												
55" TO 84"	3"x2" x 3/16"												
85" TO 120"	3"x2" x 3/16"												
7	FIRE DAMPER (FD) AT RATED WALL DETAIL	8	NOT USED										
N.T.S.		N.T.S.											

RENOVATION/ UPGRADE OF
FIRE STATION 2 (BLDG 1203)
US ARMY GARRISON WEST POINT, NY

HVAC DETAILS

STATE OF NEW YORK
SCOTT A WILSON
LICENSED PROFESSIONAL ENGINEER
071771

SHEET
NUMBER:

M502



DPW

Directorate of Public Works

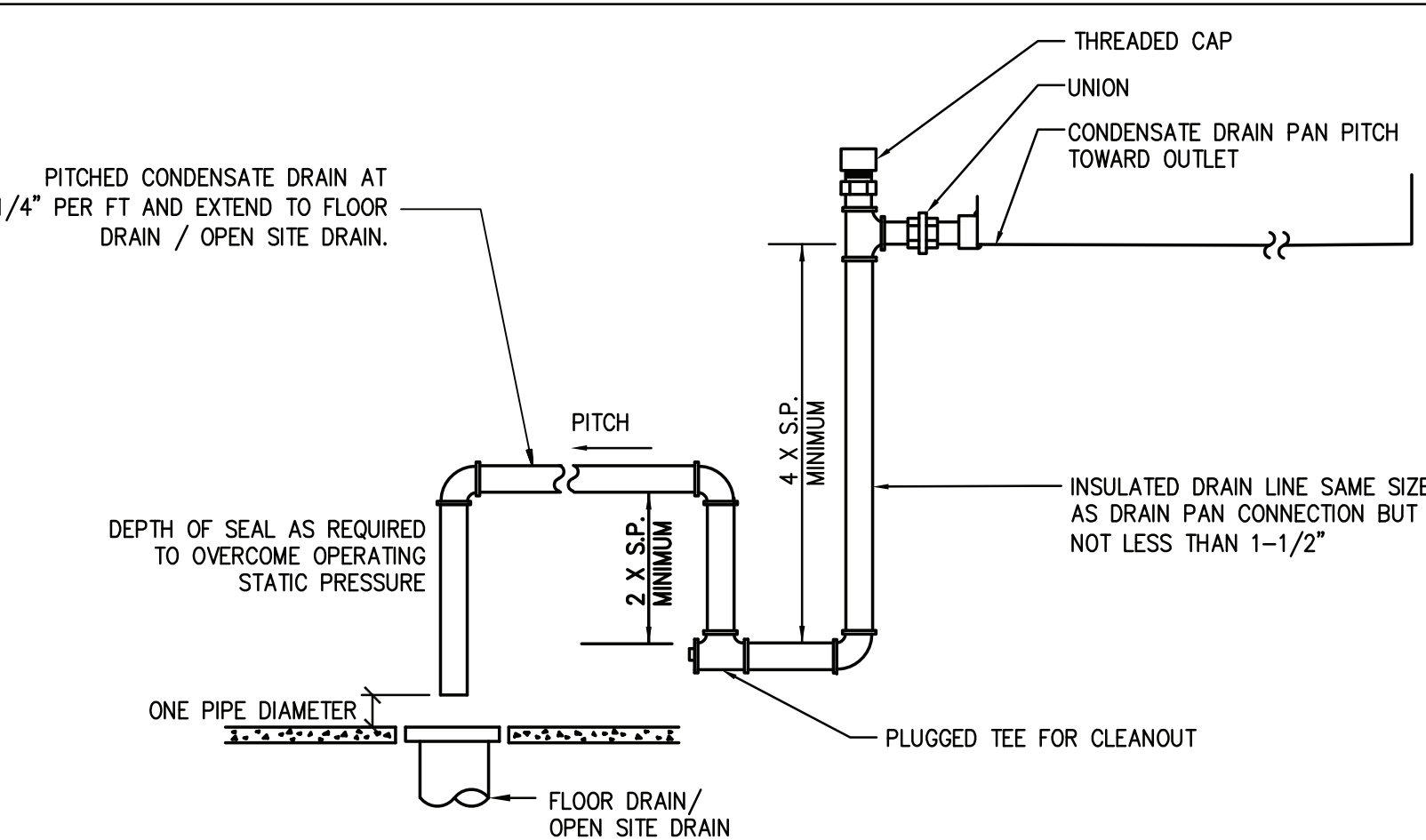
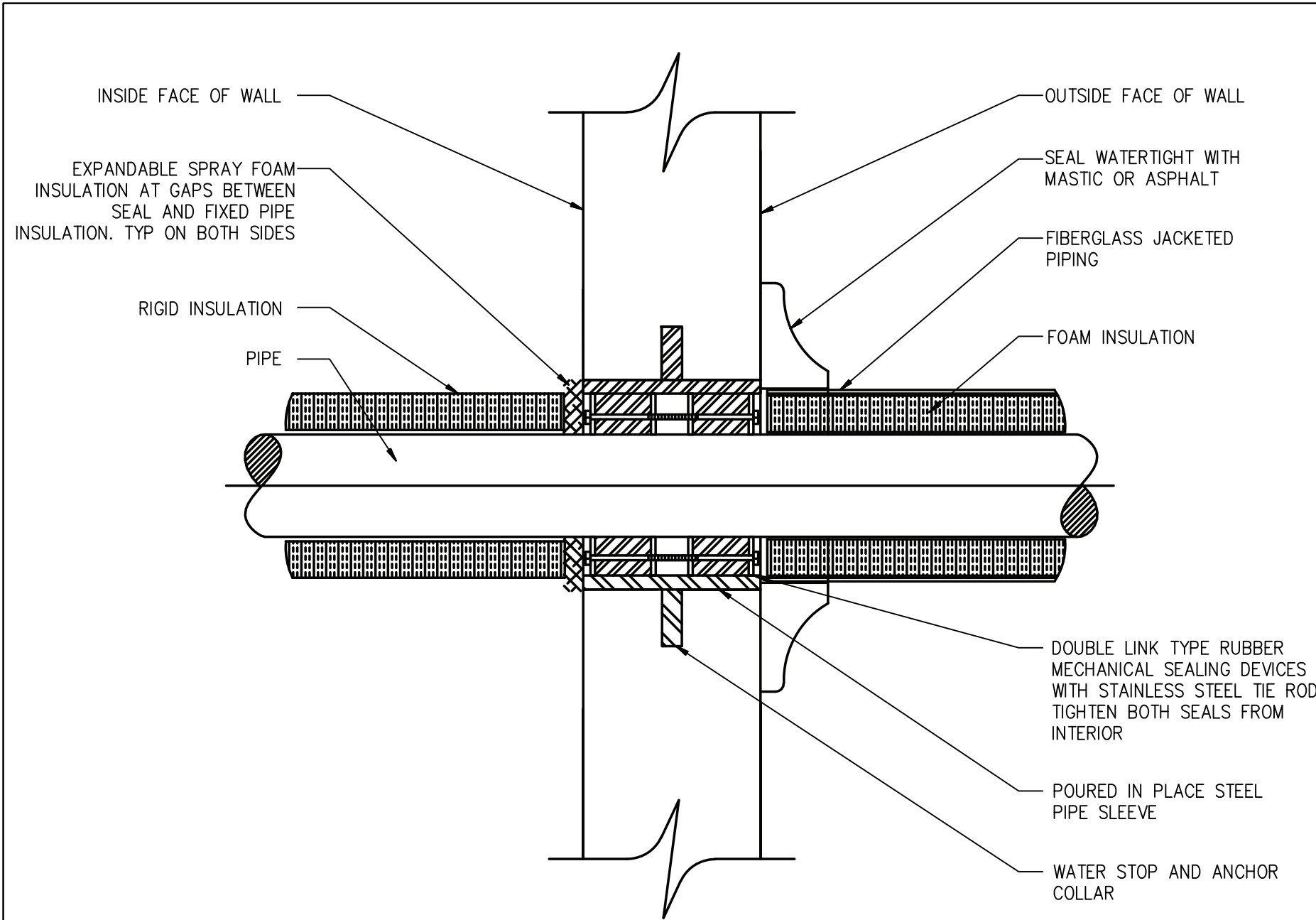
500 SUMMIT LAKE DRIVE, SUITE 500
VAL HALLA, NEW YORK 10995-1552

SCALE: DATE: MAY 18, 2022	P.M.I.: CHECKED: SUBMITTED: APPROVED:	REVISIONS	DESCRIPTION	DATE	BY

RENOVATION/ UPGRADE OF
FIRE STATION 2 (BLDG 1203)
US ARMY GARRISON WEST POINT, NY

HVAC DETAILS

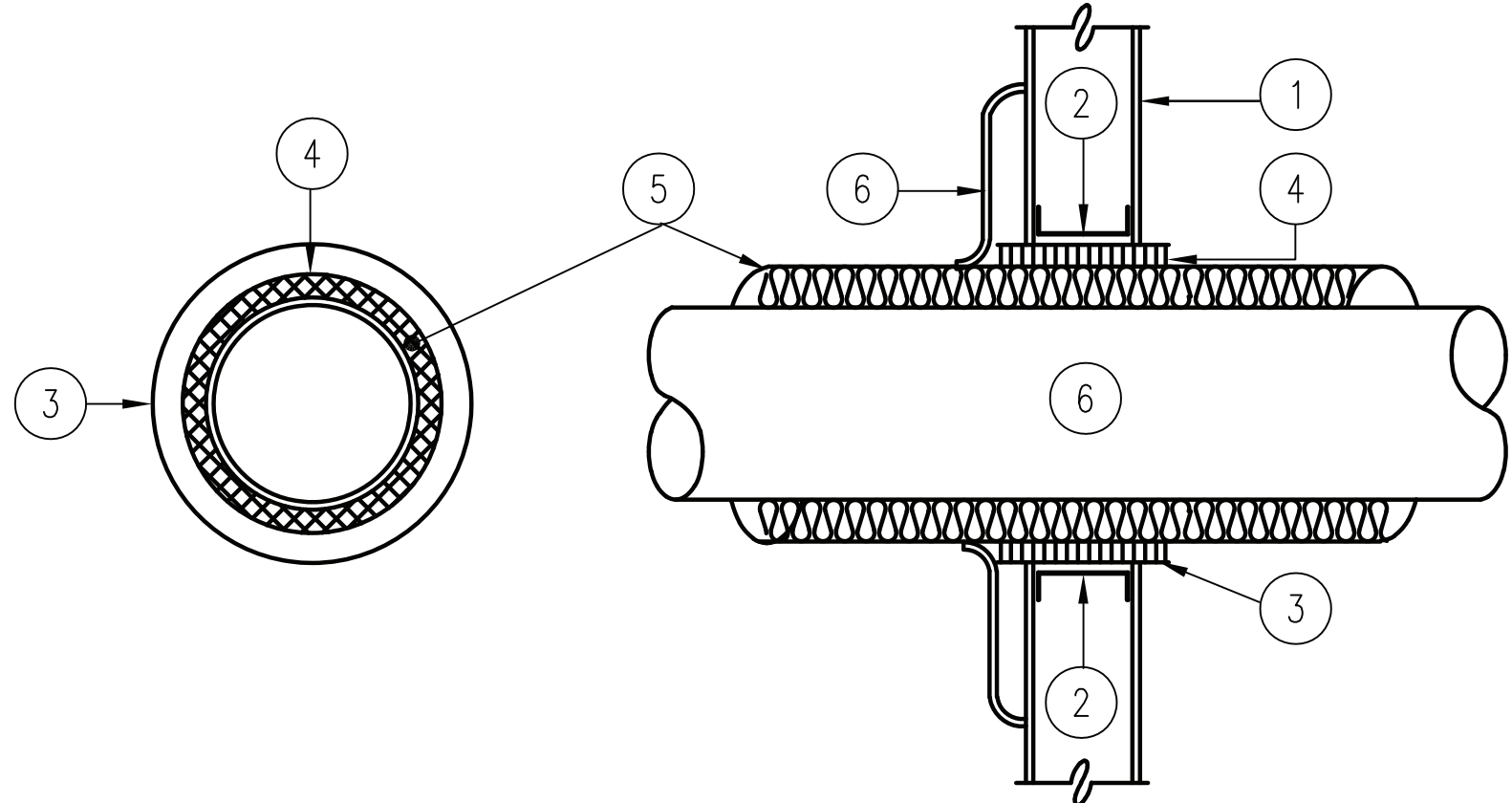
SHEET
NUMBER:
M502



NOTES:

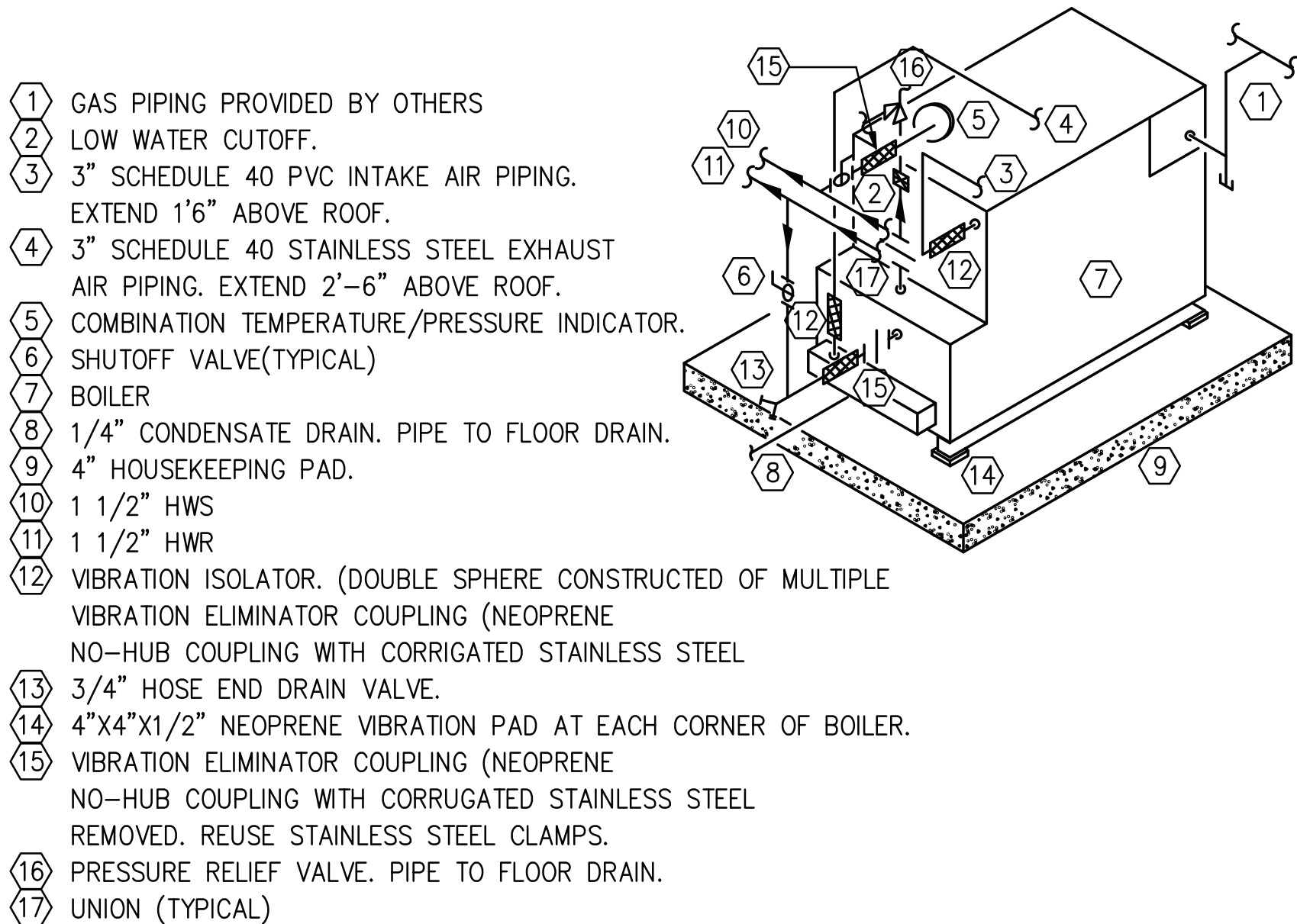
1. CONDENSATE DRAIN SYSTEM SHOWN APPLIES TO BOTH BLOW THROUGH AND DRAW THROUGH TYPE AIR HANDLING UNITS.
2. DRAIN PIPING OF SCHEDULE 40 PVC PIPING WITH SOLVENT CEMENT TYPE FITTINGS OR HARD DRAWN TYPE L COPPER TUBING WITH SWEAT FITTINGS.
3. DRAIN PIPING TO BE 1-1/2 IN. MINIMUM OR LARGER AS REQUIRED TO MAINTAIN MAXIMUM PRESSURE DROP OF 1.0" W.C. AT MAXIMUM CONDENSATE FLOW RATE.
4. S.P. STANDS FOR DIFFERENTIAL STATIC PRESSURE BETWEEN INTERIOR OF AIR HANDLING UNIT DRAIN PAN OUTLET AND EXTERNAL ATMOSPHERIC PRESSURE (INCHES WATER COLUMN).

1. INTERIOR WALL OR PARTITION
2. FRAMING FOR SLEEVE OPENING, 4 SIDES OF SLEEVE BY FRAMING CONTRACTOR.
3. 14 GA GALVANIZED SLEEVE WITH BUTT WELDED JOINTS
4. 1" ANNULAR SPACE FOR FIRESTOPPING THROUGH FIRE & SMOKE BARRIER, OR 1" ANNULAR SPACE FOR AIRTIGHT ACOUSTIC CAULK SEAL FOR ALL OTHER INTERIOR WALL OR PARTITION PENETRATIONS.
5. FULL THICK INSULATION WITH SPECIFIED JACKETING CARRIED THROUGH SLEEVE
6. ESCUTCHEONS: PROVIDE FOR ALL PIPING PENETRATIONS EXPOSED TO VIEW.



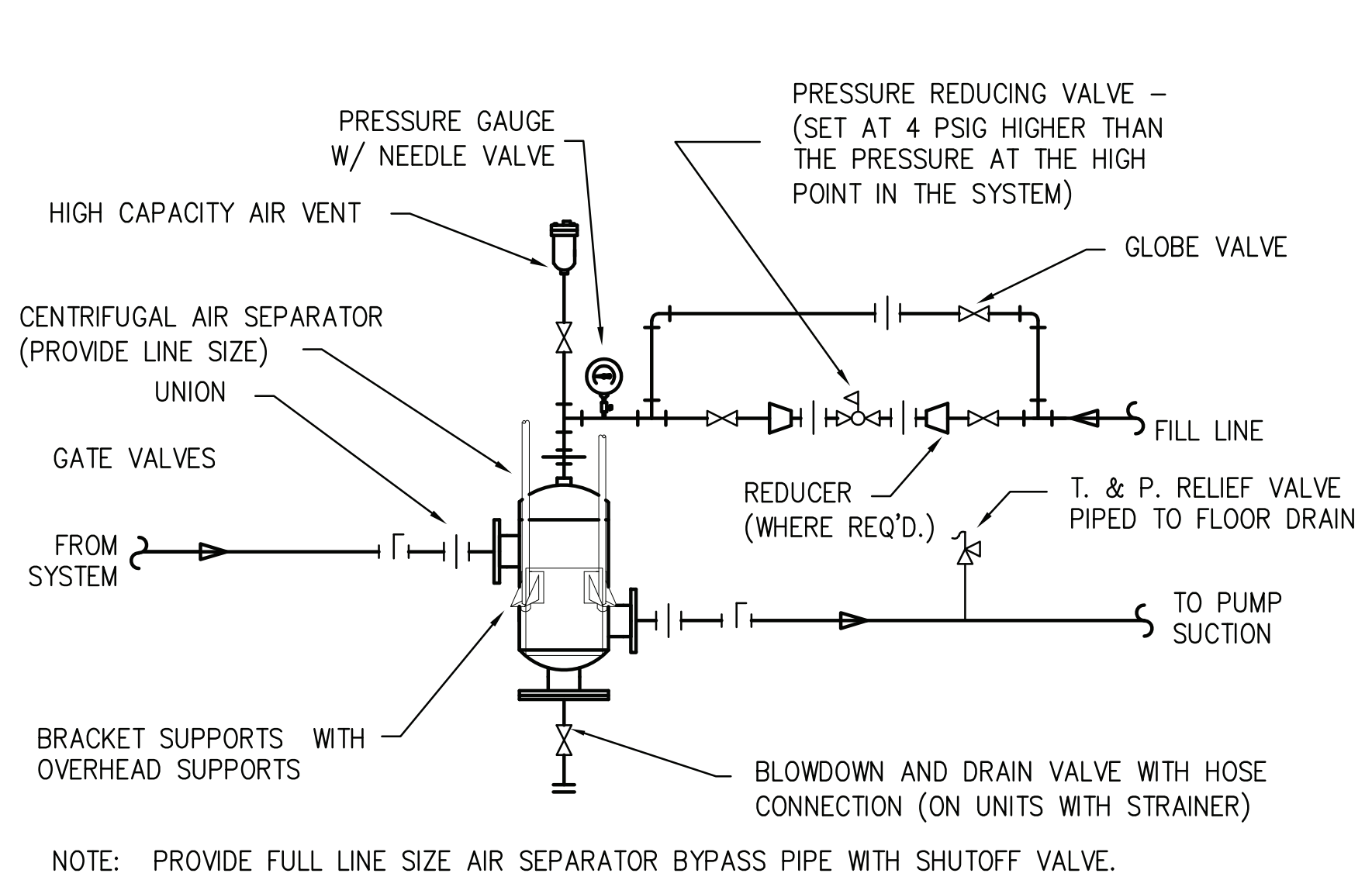
1 PIPE SLEEVE THRU EXTERIOR WALL DETAIL

N.T.S.



4 GAS FIRED BOILER DETAIL

N.T.S.



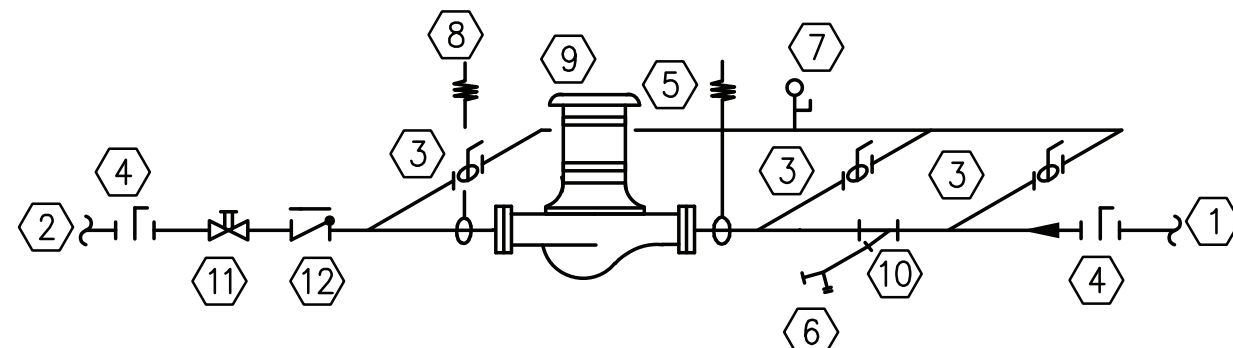
7 AIR SEPARATOR DETAIL

N.T.S.

2 CONDENSATE DRAIN PIPING DETAIL

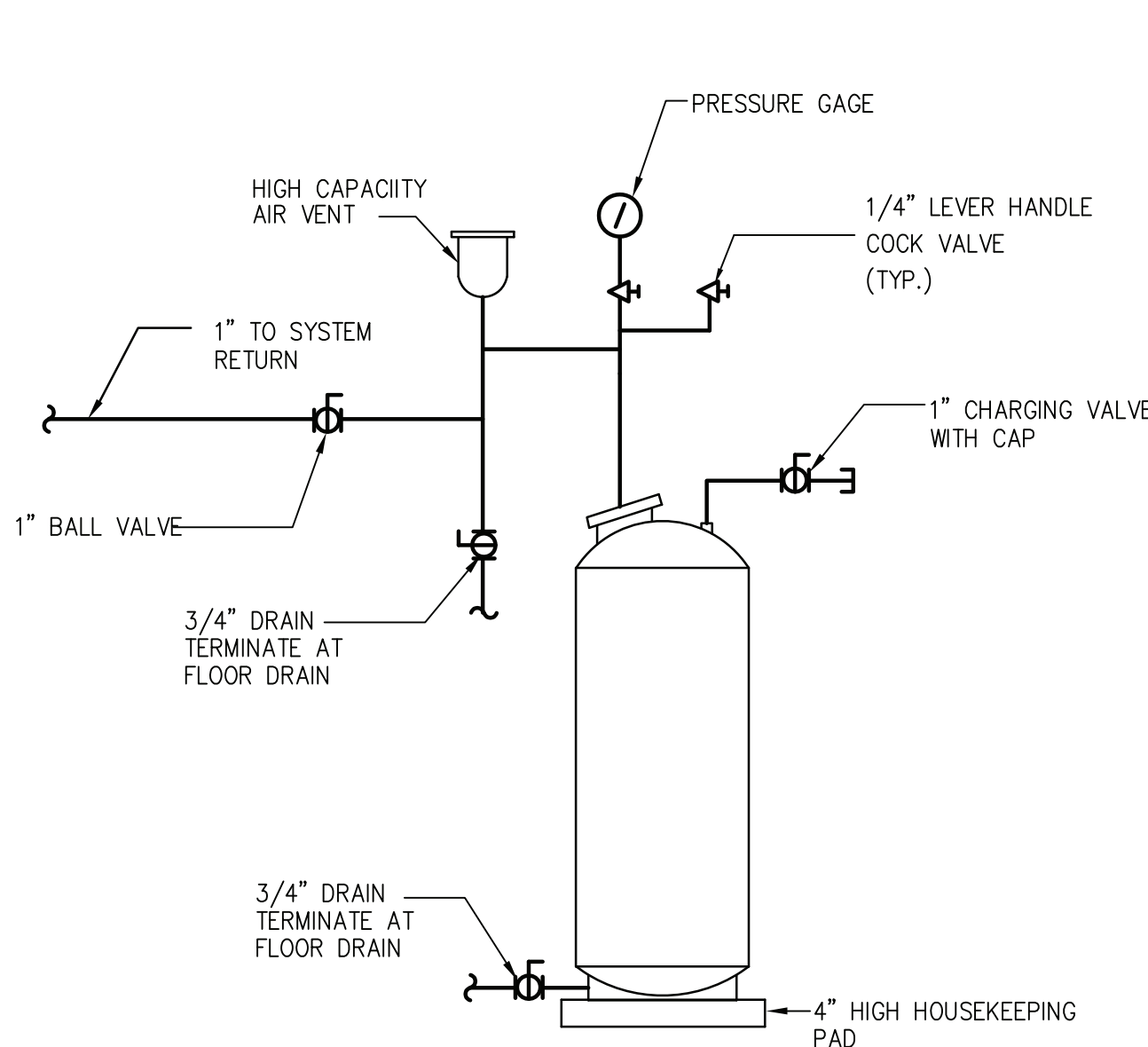
N.T.S.

- 1 SUCTION PIPING
- 2 DISCHARGE PIPING
- 3 GAUGE COCK
- 4 BALL VALVE FOR 2" AND SMALLER BUTTERFLY VALVE FOR 2 1/2" AND LARGER.
- 5 GAUGE MANIFOLD
- 6 DRAIN VALVE W/HOSE END
- 7 PRESSURE GAGE
- 8 VIBRATION ISOLATORS (TYPICAL)
- 9 PUMP
- 10 STRAINER
- 11 CALIBRATED BALANCING VALVE
- 12 LIFT CHECK VALVE



5 INLINE PUMP DETAIL

N.T.S.

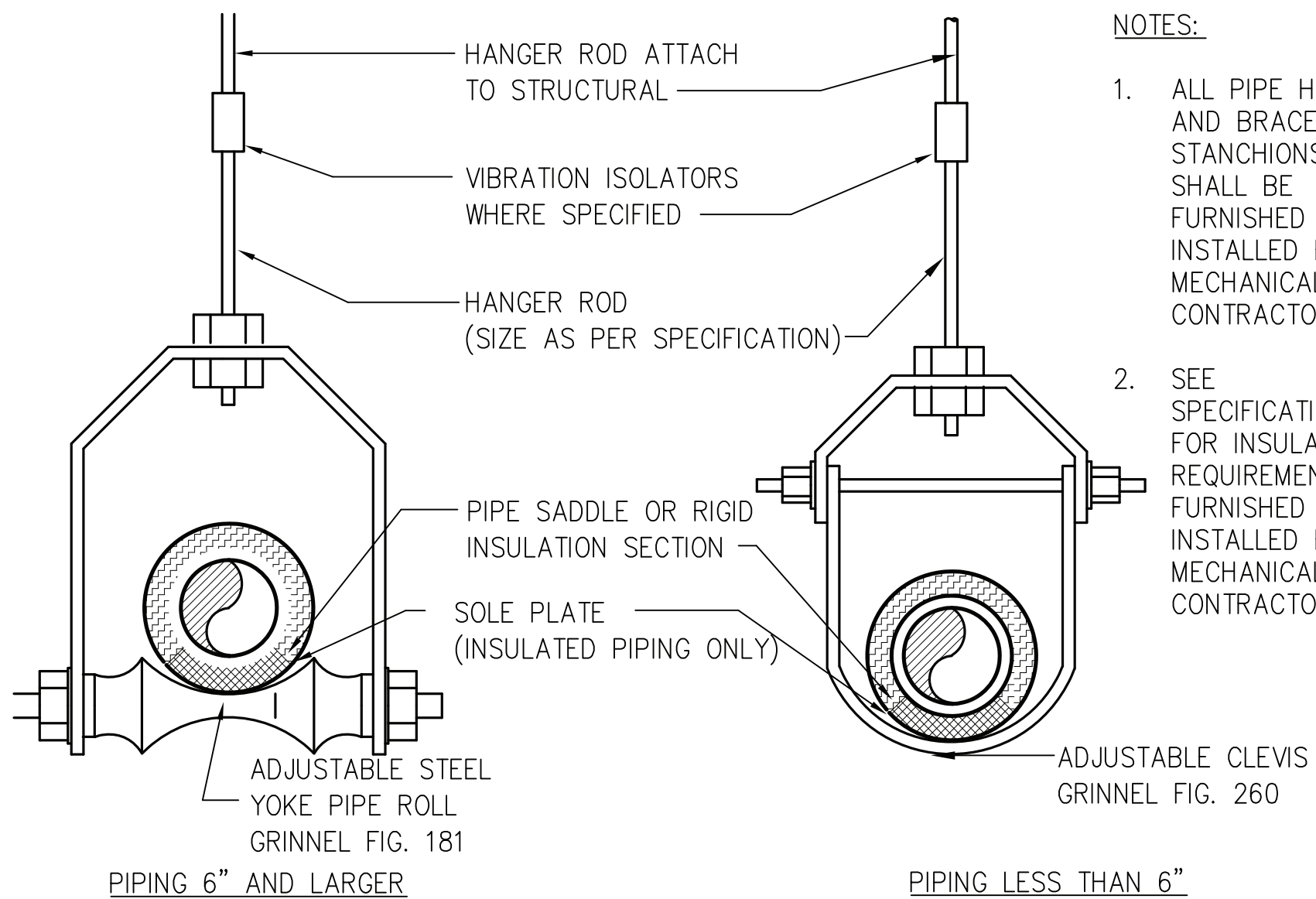


8 EXPANSION TANK DETAIL

N.T.S.

3 PIPE THRU INTERIOR WALL DETAIL

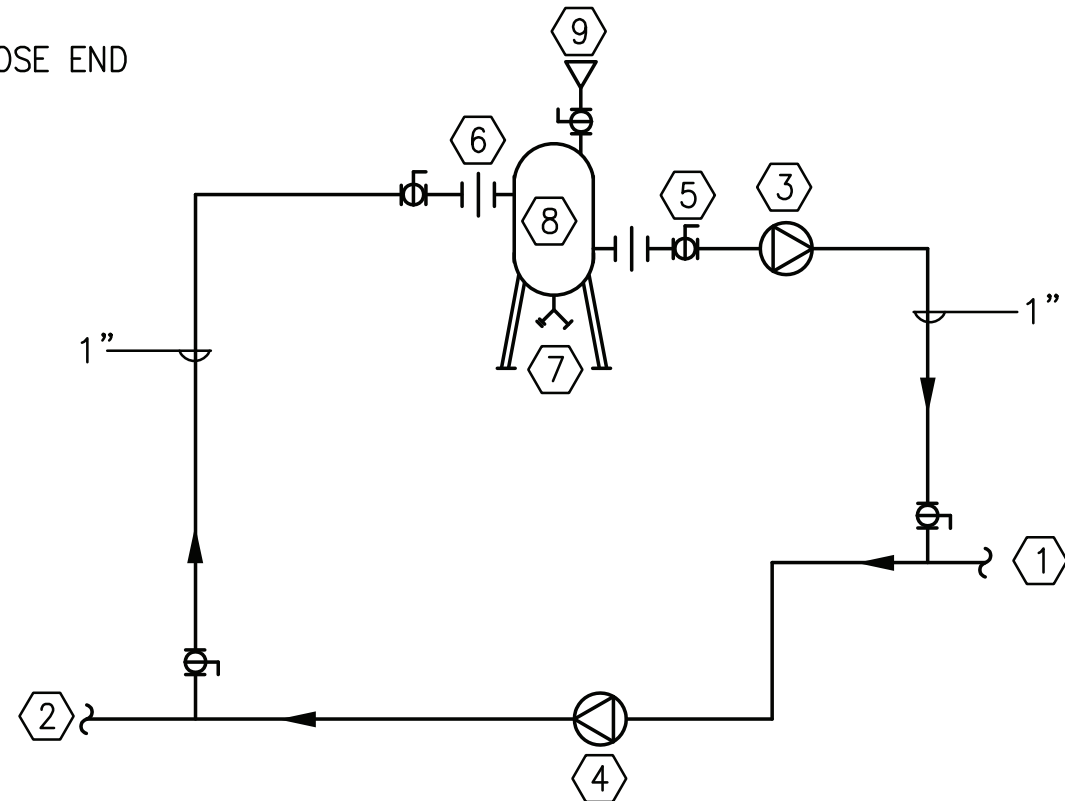
N.T.S.



6 SUSPENDED PIPING SUPPORT DETAIL

N.T.S.

- 1 SYSTEM SUCTION
- 2 SYSTEM DISCHARGE
- 3 GLYCOL FEED PUMP
- 4 MAIN SYSTEM PUMP
- 5 BALL VALVE (TYP)
- 6 UNION (TYP)
- 7 DRAIN VALVE W/ HOSE END
- 8 GLYCOL FEED UNIT
- 9 FUNNEL



9 GLYCOL FEED UNIT DETAIL

N.T.S.



500 SUMMIT LAKE DRIVE, SUITE 500
VAL HALLA, NEW YORK 10995-1582



SCALE:	P.M.I.:	CHECKED:	SUBMITTED:	REVISIONS	DATE	BY
DATE: MAY 18, 2022						
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DESIGNED:						
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RENOVATION/ UPGRADE OF
FIRE STATION 2 (BLDG 1203)
US ARMY GARRISON WEST POINT, NY
HVAC DETAILS

SHEET
NUMBER:

M503

GAS FIRED BOILER SCHEDULE																																				
TAG	LOCATION	SERVES	DESCRIPTION	FUEL				NORMINAL CAPACITY			ACTUAL CAPACITY			WATER TEMPERATURE		EQUIPMENT EFFICIENCY %	TURNDOWN RATIO	FLUID	WATER VOLUME GALS	FLOW RATE GPM	MAXIMUM WORKING PRESSURE PSI	PRESSURE DROP FT. W.C.	COMBUSTION AIR		FLUE EXHAUST		ELECTRICAL				PHYSICAL SIZE		MANUFACTURER	MODEL	STATUS	REMARKS
				TYPE	CONNECTION SIZE	INLET PRESSURE		INPUT MBH	OUTPUT MBH	BOILER HP	INPUT MBH	OUTPUT MBH	BOILER HP	ENTERING DEG F	LEAVING DEG F								FLOW RATE CFM	SIZE INCHES	FLOW RATE CFM	SIZE INCHES	VOLT	PH	HZ	FLA	SHIPPING LBS	OPERATING LBS				
						MINIMUM W.C.	MAXIMUM W.C.																													
B-1	EAST MER 142	HEATING	WATER TUBE BOILER	NATURAL GAS	1	4	14	500	485	14.5	500	485	14.5	160	180	97	10:1	30% PG	4.9	50	160	15		4		4	120	1	60	3.1			LOCHINVAR	KNIGHT XL	NEW	NOTES 1
B-2	EAST MER 142	HEATING	WATER TUBE BOILER	NATURAL GAS	1	4	14	500	485	14.5	500	485	14.5	160	180	97	10:1	30% PG	4.9	50	160	15		4		4	120	1	60	3.1			LOCHINVAR	KNIGHT XL	NEW	NOTES 1

PRESSURE FILL STATION SCHEDULE																							
TAG	LOCATION	SERVES	PERFORMANCE				PUMP		ELECTRICAL					PHYSICAL SIZE					MANUFACTURER	MODEL	STATUS	REMARKS	
			FLUID	PURPOSE	FLOW RATE GPM	FILL PRESSURE PSI	ROTATION SPEED RPM	MOTOR SIZE HP	VOLT	PH	HZ	CONTROLLER TYPE	UPS POWERED	UNIT HEIGHT INCHES	TANK DIA INCHES	TANK VOLUME GAL	SHIPPING WEIGHT LBS	OPERATING WEIGHT LBS					
GF-1	EAST MER	HOT WATER HEATING SYSTEM	30% PG	FLUID MAKEUP	1.5	100		1/2	120	1	60	INTERGAL	NO			50				NEPTUNE	G-50-1A	NEW	NOTES 1,2,3

- NOTES:
1. PACKAGED AND ASSEMBLED MAKE-UP ASSEMBLY INCLUDING 55 GALLON TANK , PUMP, PRV VALVE, CHECK VALVE, AND CONTROL PANEL WITH ALARM OUTPUTS.
 2. TANK FILLED FROM THE TOP WITH PREMIXED 30% PROPYLENE GLYCOL (PG) SOLUTION.
 3. PROVIDE UNIT WITH LOW LEVEL ALARM CONTACT.

AIR HANDLING UNIT SCHEDULE																																										
TAG	LOCATION	SERVE	COOLING COIL	HEATING COIL	HUMIDIFIER	HUMIDIFIER	OUTSIDE AIR SETTING		SUPPLY FAN CAPACITY		SUPPLY FAN MOTOR				SUPPLY FAN						PRE-FILTER				FINAL FILTER				PHYSICAL SIZE		DISCHARGE SOUND DATA								MANUFACTURER	MODEL	STATUS	REMARKS
							MINIMUM FLOWRATE CFM	MAXIMUM FLOWRATE CFM	FLOW RATE CFM	PRESSURE DROP		SIZE		VOLT	PH	HZ	RPM	TYPE	CLASS	CONTROLLER TYPE	DUAL FEED	UPS POWERED	FILTRATION EFFICIENCY MERV	PRESSURE DROP		FILTRATION EFFICIENCY MERV	PRESSURE DROP		SHIPPING WEIGHT LBS.	OPERATING WEIGHT LBS.	63 HZ	125 HZ	250 HZ	500 HZ	1000 HZ	2000 HZ	4000 HZ	8000 HZ				
										E.S.P. IN. WC.	T.S.P. IN. WC.	BHP	HP											CLEAN IN. WC.	DIRTY IN. WC.		CLEAN IN. WC.	DIRTY IN. WC.														
AHU-1	OUTSIDE WEST WING	WEST WING	CC-1	HC-1	H-1	CC-1	600	4,000	4,000	1.5	3.5	3.8	5	308	3	60	1800	IND	PREM	VFD	NO	NO	8	.65	1.00	11.00	0.65	1.00	2254	2534									TRANE	CSAA008	NEW	NOTES 1-6
AHU-2	OUTSIDE EAST WING	EAST WING	CC-2	HC-2	H-2	CC-2	600	3,500	3,500	1.5	3.5	3.3	5	308	1	60	1800	IND	PREM	VFD	NO	NO	8	0.65	1.00	11.00	0.65	1.00	2254	2534									TRANE	CSAA008	NEW	NOTES 1-6
AHU-3	TELCOM RM 140	RM 140	NOTE 7	NOTE 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-											SAMSUNG	RNS09YBT	NEW	NOTE 7	
AHU-4	ELEC/UPS RM 125	RM 125	NOTE 7	NOTE 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-											SAMSUNG	RNS09YBT	NEW	NOTE 7	

- NOTES:
1. FAN TOTAL STATIC PRESSURE DROP SHALL BE BASED ON DIRTY FILTER RATING OF 1.0 IN.W.G.
 2. PROVIDE LEFT HAND SIDE ACCESS DOORS AND RIGHT HAND SIDE COIL CONNECTIONS. COIL REMOVAL FROM THE RIGHT HAND SIDE.
 3. PROVIDE PREMIUM HIGH EFFICIENCY DIRECT DRIVE FAN MOTOR COMPATIBLE WITH VFD
 4. PROVIDE TWO SPARE SETS OF AIR FILTERS
 5. VFD SHALL BE PROVIDED BY MECHANICAL CONTRACTOR AND SHALL COMPLY WITH SPECIFICATION 232923- VARIABLE FREQUENCY MOTOR CONTROLLERS
 6. PROVIDE AIR HANDLING UNIT SECTIONS IN THE FOLLOWING ORDER: OA (BACK) AND RA (BOTTOM) MIXING SECTION, FILTER SECTION, HEATING COIL SECTION, HUMIDIFIER SECTION, ACCESS SECTION, COOLING COIL SECTION, VFD/CONTROL PANEL SECTION AND FRONT TOP DISCHARGE FAN SECTION
 7. AHU-3 AND AHU-4 ARE THE FAN COIL SIDE OF TWO MINI SPLIT SYSTEMS. REFER TO SPLIT SYSTEM AIR COOLED CONDENSING UNIT SCHEDULE FOR ADDITIONAL REQUIREMENTS.

AIR SEPARATOR SCHEDULE											
TAG	LOCATION	SERVES	CAPACITY		PHYSICAL SIZE			MANUFACTURER	MODEL	STATUS	REMARKS
			FLOW RATE GPM	CONNECTION SIZES INCHES	HEIGHT INCHES	DIAMETER INCHES	OPERATING WEIGHT LBS				
AS-1	EAST MER	HEATING HOT WATER SYSTEM	60	3	27	11	188	BELL & GOSSETT	R-3F	NEW	NOTES 1,2

- NOTES:
1. FIELD FABRICATE FLOOR STAND CAPABLE OF SUPPORTING THE AIR SEPARATOR AND ACCESSORIES.
 2. AIR SEPARATOR AND CONNECTING PIPING SHALL BE BOTH SUPPORTED THRU MINIMIZE THE SHEAR STRESS AT THE CONNECTION LOCATION.
 3. FLUID IS 30% PROPYLENE GLYCOL SOLUTION.

HEATING COIL SCHEDULE																						
TAG	UNIT	CAPACITY TOTAL MBH	AIR SIDE								WATER SIDE (30% PROPYLENE GLYCOL SOLUTION)								MANUFACTURER	MODEL	STATUS	REMARKS
			FLOW RATE CFM	PRESSURE DROP IN W.C.	VELOCITY FT/MIN	ENTERING AIR TEMP		LEAVING AIR TEMP		FLOW RATE GPM	PRESSURE DROP FT	EWT DEG F	LWT DEG F	FLUID	NO. OF COIL	NO. OF ROW	FIN DENSITY FPI					
						DB DEG F	WB DEG F	DB DEG F	WB DEG F													
HC-1	AHU-1	186	4,000	0.15	547	7		50		19.5	1.5	180	160	30% PG	1	1	9.8	AHU MANUFACTURER	5W	NEW	NOTES 1	
HC-2	AHU-2	178	3,500	0.15	478	7		50		17	1.3	180	160	30% pg	1	1	9.8	AHU MANUFACTURER	5W	NEW	NOTES 1	

- NOTES:
1. REFER TO AIR HANDLING UNIT DETAIL DRAWING FOR COIL PULL SIDE AND ACCESS.
 2. .



500 SUMMIT LAKE DRIVE, SUITE 500
VAL HALLA, NEW YORK 10995-1552

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#				

RENOVATION/ UPGRADE OF
FIRE STATION 2 (BLDG 1203)
US ARMY GARRISON WEST POINT, NY

HVAC SCHEDULES

SHEET NUMBER:
M601

AIR FLOW MEASURING STATION SCHEDULE

TAG	LOCATION	SERVICE	LOCATION	AIRFLOW CFM	MANUFACTURER	MODEL	STATUS	REMARKS
AFM-SA-1	NEAR AHU-1	AHU-1	DUCTWORK	4,000	AIR MONITOR	FAN E/VELTRON II	NEW	NOTES 1
AFM-RA-1	NEAR RF-1	AHU-1	DUCTWORK	4,000	AIR MONITOR	FAN E/VELTRON II	NEW	NOTES 1
AFM-OA-1	NEAR AHU-1	AHU-1	DUCTWORK	4,000	AIR MONITOR	FAN E/VELTRON II	NEW	NOTES 1
AFM-SA-2	NEAR AHU-2	AHU-2	DUCTWORK	3,500	AIR MONITOR	FAN E/VELTRON II	NEW	NOTES 1
AFM-RA-2	NEAR RF-1	AHU-2	DUCTWORK	3,500	AIR MONITOR	FAN E/VELTRON II	NEW	NOTES 1
AFM-OA-2	NEAR AHU-2	AHU-2	DUCTWORK	3,500	AIR MONITOR	FAN E/VELTRON II	NEW	NOTES 1

NOTES:

1. PROVIDE FACTORY ASSEMBLED UNIT WITH FLOW CONDITIONER, DUCT SLEEVE AND AIR FLOW MEASURING STATION.

PUMP SCHEDULE

[illegible]

REMARKS:

2. PUMP DISCONNECT SHALL HAVE INDIVIDUAL, PERMANENT, LOCK OUT / TAG OUT FUNCTION IN COMPLIANCE WITH NEC 70E, ARTICLE 430.102, EXCEPTION A

FAN SCHEDULE

[illegible]

REMARKS:

1. INSTALL IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
2. REFER TO DIVISION 23 SPECIFICATION SECTIONS FOR ADDITIONAL REQUIREMENTS.
3. INSTALL CURB ADAPTER TO SUPPORT NEW FAN ON THE EXISTING CURB.

SPLIT SYSTEM AIR COOLED CONDENSING UNIT (CU) SCHEDULE

[illegible]

NOTES:

1. PROVIDE MANUFACTURER'S HAIL GUARD PROTECTION KIT, MULTI-UNIT PIPING CONNECTION KIT, DIGITAL INPUT / OUTPUT UNITS, CENTRAL REMOTE CONTROLLER AND BMS (LON) INTERFACE GATEWAY.
2. UNIT TO BE MOUNTED ON GRADE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. MAINTAIN MINIMUM MANUFACTURER REQUIRED CLEARANCE BETWEEN THE UNITS.
3. MANUFACTURER FOR THE AIR HANDLING UNIT AND THE AIR COOLED CONDENSING UNIT SHALL BE THE SAME.



500 SUMMIT LAKE DRIVE, SUITE 500
VALHALLA, NEW YORK 10595-1352



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#	DESCRIPTION	DATE

RENOVATION/ UPGRADE OF
FIRE STATION 2 (BLDG 1203)
US ARMY GARRISON WEST POINT, NY

MY GARRISON WEST
HVAC SCHEDULES

SHEET
NUMBER:

M602

FAN POWERED TERMINAL SCHEDULE																											
TAG	TERMINAL TYPE	PRIMARY AIRFLOW		FAN								CONNECTION			HOT WATER COIL (30% PROPYLENE GLYCOL SOLUTION)							SOUND		MANUFACTURER	MODEL	REMARKS.	
		MIN CFM	MAX CFM	MIN CFM	MAX CFM	MOTOR HP	TYPE	FLA	VOLT	PH	HZ	PRIMARY INLET		OUTLET SIZE INCHES	FLOW RATE GPM	PRESSURE		EWT DEG F	LWT DEG F	FLUID	NO. OF ROW	FIN DENSITY FPI	MAX DISCHARGE NC				MAX RADIATED NC
												PRESSURE IN W.C.	SIZE INCHES			FT											
VAV1-1	PARALLEL	135	185	135	185	1/8	PSC	1.6	110	1	60	0.5	5	15.5"x20"	1.0	0.22	180		30% PG	1	12	21	19	TRANE	VP	NOTES 1-5	
VAV1-2	PARALLEL	55	170	55	170	1/8	PSC	1.6	110	1	60	0.5	5	15.5"x20"	1.0	0.22	180		30% PG	1	12	25	13	TRANE	VP	NOTES 1-5	
VAV1-3	PARALLEL	45	480	45	480	1/3	PSC	4.3	110	1	60	0.5	8	17.5"x20"	1.0	0.22	180		30% PG	1	12	24	17	TRANE	VP	NOTES 1-5	
VAV1-4	PARALLEL	70	180	70	180	1/8	PSC	1.6	110	1	60	0.5	5	15.5"x20"	1.0	0.22	180		30% PG	1	12	27	15	TRANE	VP	NOTES 1-5	
VAV1-5	PARALLEL	50	175	50	175	1/8	PSC	1.6	110	1	60	0.5	5	15.5"x20"	1.0	0.22	180		30% PG	1	12	21	19	TRANE	VP	NOTES 1-5	
VAV1-6	PARALLEL	50	170	50	170	1/8	PSC	1.6	110	1	60	0.5	5	15.5"x20"	1.0	0.22	180		30% PG	1	12	21	19	TRANE	VP	NOTES 1-5	
VAV1-7	PARALLEL	75	170	75	170	1/8	PSC	1.6	110	1	60	0.5	5	15.5"x20"	1.0	0.22	180		30% PG	1	12	21	19	TRANE	VP	NOTES 1-5	
VAV1-8	PARALLEL	75	170	75	170	1/8	PSC	1.6	110	1	60	0.5	5	15.5"x20"	1.0	0.22	180		30% PG	1	12	21	19	TRANE	VP	NOTES 1-5	
VAV1-9	PARALLEL	75	170	75	170	1/8	PSC	1.6	110	1	60	0.5	5	15.5"x20"	1.0	0.22	180		30% PG	1	12	21	19	TRANE	VP	NOTES 1-5	
VAV1-10	PARALLEL	75	170	75	170	1/8	PSC	1.6	110	1	60	0.5	5	15.5"x20"	1.0	0.22	180		30% PG	1	12	21	19	TRANE	VP	NOTES 1-5	
VAV1-11	PARALLEL	370	860	370	860	1/3	PSC	4.3	110	1	60	0.5	10	17.5"x20"	1.0	0.22	180		30% PG	1	12	34	24	TRANE	VP	NOTES 1-5	
VAV1-12	PARALLEL	285	600	285	600	1/3	PSC	4.3	110	1	60	0.5	8	17.5"x20"	1.0	0.22	180		30% PG	1	12	21	19	TRANE	VP	NOTES 1-5	
VAV1-13	PARALLEL	155	290	155	290	1/3	PSC	4.3	110	1	60	0.5	6	17.5"x20"	1.0	0.22	180		30% PG	1	12	25	13	TRANE	VP	NOTES 1-5	
VAV2-1	PARALLEL	115	200	115	200	1/8	PSC	1.6	110	1	60	0.5	6	15.5"x20"	1.0	0.22	180		30% PG	1	12	24	17	TRANE	VP	NOTES 1-5	
VAV2-2	PARALLEL	375	1050	375	1050	1/3	PSC	4.3	110	1	60	0.5	10	17.5"x20"	1.0	0.22	180		30% PG	1	12	27	15	TRANE	VP	NOTES 1-5	
VAV2-3	PARALLEL	225	225	225	225	1/3	PSC	4.3	110	1	60	0.5	6	17.5"x20"	1.0	0.22	180		30% PG	1	12	34	24	TRANE	VP	NOTES 1-5	
VAV2-4	PARALLEL	185	630	185	630	1/3	PSC	4.3	110	1	60	0.5	8	17.5"x20"	1.0	0.22	180		30% PG	1	12	21	19	TRANE	VP	NOTES 1-5	
VAV2-5	PARALLEL	85	180	85	180	1/8	PSC	1.6	110	1	60	0.5	5	15.5"x20"	1.0	0.22	180		30% PG	1	12	21	19	TRANE	VP	NOTES 1-5	
VAV2-6	PARALLEL	95	250	95	250	1/3	PSC	4.3	110	1	60	0.5	6	17.5"x20"	1.0	0.22	180		30% PG	1	12	25	13	TRANE	VP	NOTES 1-5	
VAV2-7	PARALLEL	145	340	145	340	1/3	PSC	4.3	110	1	60	0.5	8	17.5"x20"	1.0	0.22	180		30% PG	1	12	25	13	TRANE	VP	NOTES 1-5	
VAV2-8	PARALLEL	55	150	55	150	1/8	PSC	1.6	110	1	60	0.5	5	15.5"x20"	1.0	0.22	180		30% PG	1	12	25	13	TRANE	VP	NOTES 1-5	

NOTES:

- PROVIDE SINGLE POINT POWER CONNECTION.
- PROVIDE 24 V AC INTERNAL CONTROL TRANSFORMER.
- PROVIDE SCR FAN SPEED CONTROLLER.
- PROVIDE UNIT DISCONNECT.
- FAN POWERED BOXES HAVE A 915mm INLET AND 915mm DISCHARGE ATTENUATOR TO ACHIEVE THE NC LISTED ON THE SCHEDULE. THESE ARE STANDARD NON-BAFFLED ATTENUATORS.

HOT WATER CABINET UNIT HEATER SCHEDULE																	
TAG	LOCATION	AIR	HOT WATER COIL (40% PROPYLENE GLYCOL SOLUTION)						ELECTRICAL DATA					MOUNTING	MANUFACTURER	MODEL	REMARKS
		FLOW RATE CFM	FLOW RATE GPM	PRESSURE DROP FT	EWT DEG F	LWT DEG F	FLUID	NO. OF ROW	FIN DENSITY FPI	VOLT	PH	HZ	SAFETY DISCONNECT SWITCH				
CUH1-1	CORRIDOR B3	250	2	0.5	180		30%PG	2	12	120	1	60	BY MECH	CEILING MOUNT	TRANE	E	1, 2, 3
REMARKS:																	
1. ENCLOSURES AND ACCESSORIES COLOR SHALL BE SELECTED AND APPROVED BY ARCHITECT.																	
2. PROVIDE INTEGRAL THERMOSTAT AND CONTROLS.																	

DIRECT EXPANSION (DX) COIL SCHEDULE															
TAG	UNIT	COOLING										MANUFACTURER	AIR COOLED CONDENSING UNIT	STATUS	REMARKS
		SENSIBLE MBH	TOTAL MBH	PRESSURE DROP IN W.C.	VELOCITY FT/MIN	AIRFLOW CFM	ENTERING AIR TEMP		LEAVING AIR TEMP		REFRIGERANT TYPE				
							DB DEG F	WB DEG F	DB DEG F	WB DEG F					
CC-1	AHU-1	117	177	0.4	500	4000	80.0	67.0	53.0	52.5	R410A	AHU MANUFACTURER	ACCU-1	NEW	NOTES 1
CC-2	AHU-2	102	152	0.3	438	3500	80.0	67.0	53.0	52.5	R410A	AHU MANUFACTURER	ACCU-2	NEW	NOTES 1

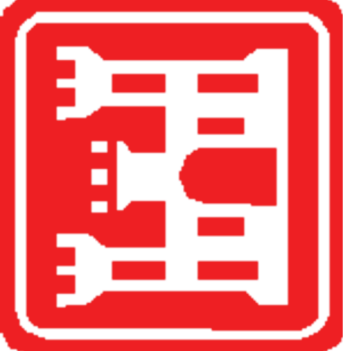
NOTES:

- COIL IS PART OF MATCHED SPLIT SYSTEM WITH AIR COOLER CONDENSING UNIT SUITBLE FOR VAV AHU OPERATION AND PROVIDED BY THE AHU MANUFACTURER.

EXPANSION TANK SCHEDULE																		
TAG	LOCATION	SERVE	TYPE	CAPACITY					PHYSICAL SIZE				MOUNTING	POSITION	MANUFACTURER	MODEL	STATUS	REMARKS
				TANK VOLUME GAL	SYSTEM PRESSURE		TEMPERATURE		HEIGHT INCHES	DIAMETER INCHES	WEIGHT							
					MINIMUM PSI	MAXIMUM PSI	MINIMUM DEG F	MAXIMUM DEG F			DRY LBS	OPERATING LBS						
ET-1	EAST MER	HEATING HOT WATER SYSTEM	BLADDER TANK	36.99	30	100	70	180	36	24	240	500	H/V	H/V	BELL & GOSSETT	b165	NEW	NOTES 1,2

NOTES:

- EXPANSION TANKS SHALL BE REPLACEABLE HEAVY DUTY BLADDER TYPE.
- EXPANSION TANKS MUST BE CONSTRUCTED WITH SECTION VIII OF THE ASME BOILER AND PRESSURE VESSEL CODE.
- FLUID IS 30% PROPYLENE GLYCOL SOLUTION.



500 SUMMIT LAKE DRIVE, SUITE 500
VAL HALLA, NEW YORK 10994-1582



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RENOVATION/ UPGRADE OF
FIRE STATION 2 (BLDG 1203)
US ARMY GARRISON WEST POINT, NY

HVAC SCHEDULES

SHEET
NUMBER:

M603

DIFFUSER - REGISTER - GRILLE SCHEDULE

MARK	TYPE	SERVICE	NECK SIZE	FACE SIZE	MANUFACTURER MODEL NUMBER	DIRECTION DISCHARGE	DAMPER TYPE	FINISH	REMARKS
EG-1	EXHAUST REGISTER SURFACE MOUNT ALUMINUM	EXHAUST	8"X6"	Nominal 10"x8"	35/L/O	1-WAY LONG	YES	STANDARD WHITE	NOTES 1,2
EG-2	EXHAUST REGISTER SURFACE MOUNT ALUMINUM	EXHAUST	12"X8"	Nominal 14"x8"	35/L/O	1-WAY LONG	YES	STANDARD WHITE	SEE 1,2
SD-2	CEILING DIFFUSER LAY-IN CEILING ALUMINUM	SUPPLY	6" DIA.	24"X24"	EPLA	4-WAY	YES	STANDARD WHITE	SEE 1,2
SD-3	CEILING DIFFUSER LAY-IN CEILING ALUMINUM	SUPPLY	8" DIA.	24"X24"	EPLA	4-WAY	YES	STANDARD WHITE	SEE 1,2
SD-4	CEILING DIFFUSER LAY-IN CEILING ALUMINUM	SUPPLY	10" DIA.	24"X24"	EPLA	4-WAY	YES	STANDARD WHITE	SEE 1,2
SD-5	CEILING DIFFUSER LAY-IN CEILING ALUMINUM	SUPPLY	12" DIA.	24"X24"	EPLA	4-WAY	YES	STANDARD WHITE	SEE 1,2
RG-1	RETURN EGGRATE LAY-IN CEILING ALUMINUM	RETURN	23"X23"	24"X24"	GC5L	1-WAY	NONE	STANDARD WHITE	NOTES 1,2

NOTES
1. EQUAL TO ANEMOSTAT (SCHEDULED MANUFACTURER MODEL NUMBER)
2. INSTALL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS



RENOVATION/ UPGRADE OF
FIRE STATION 2 (BLDG 1203)
US ARMY GARRISON WEST POINT, NY
HVAC SCHEDULES

SHEET
NUMBER:
M604

SCALE:	NONE	P.M.:	
DATE:	MAY 18, 2022	CHECKED:	
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