H.V.A.C. GENERAL NOTES 1. PROCURE AND PAY ALL NECESSARY PERMITS AND LICENSES REQUIRED TO CARRY OUT THE WORK SHOWN. OBTAIN AND PAY FOR ALL FEES. 2. COMPLY WITH ALL FEDERAL, STATE AND MUNICIPAL LAWS AND CODES, ORDINANCES, RULES AND REGULATIONS OF HEALTH, PUBLIC OR OTHER AUTHORITIES CONTROLLING OR LIMITING THE METHODS, MATERIALS TO BE USED OR ACTIONS OF THOSE EMPLOYED. 3. GUARANTEE H.V.A.C. SYSTEMS FOR A PERIOD OF ONE YEAR FROM OWNER'S ACCEPTANCE TO BE FREE FROM DEFECTS AND REPAIR OR REPLACE, AT NO COST TO OWNER, FAILURES OR DEFECTS. 4. H.V.A.C. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL HIS DEBRIS. 5. BALANCE AIR AND UNITS TO QUANTITIES INDICATED. CONTRACTOR TO SUBMIT SIX (6) SETS OF AIR AND UNIT BALANCING REPORT TO ARCH./ENGR./OWNER PRIOR TO FINAL ACCEPTANCE OF THE SYSTEM. 6. BIDDERS FOR THIS WORK SHALL VISIT THE PREMISES AND CAREFULLY EXAMINE ALL EXISTING CONDITIONS BEFORE SUBMITTING BIDS. NOT ALL EXISTING CONDITIONS HAVE BEEN IDENTIFIED ON DRAWINGS. CONTRACTOR SHALL NOTIFY ARCH. & ENGR. OF ALL DISCREPANCIES PRIOR TO SUBMITTING 7. ALL BIDDERS SHALL ALSO FAMILIARIZE THEMSELVES WITH THE MEANS OF ENTRANCE AND EXIT AT THE PROPERTY AND ALL OTHER INFORMATION NECESSARY TO PROPERLY CARRY OUT THE WORK. 8. THE CONTRACTOR SHALL, WITH THE APPROVAL OF THE ENGINEER AND WITHOUT ADDITIONAL COST TO THE OWNER, MAKE ALL NECESSARY CHANGES OR MODIFICATIONS TO LOCATIONS AS MAY BE NECESSARY TO SUIT REQUIREMENTS AND CONDITIONS FOR THE PROPER AND CONVENIENTLY ACCESSIBLE LOCATIONS OF ALL PARTS OF EACH SYSTEM. 9. SMALL DETAILS ARE NOT USUALLY SHOWN OR SPECIFIED BUT ALL MATERIALS & COMPONENTS NECESSARY FOR THE PROPER INSTALLATION AND OPERATION OR WORK SHALL BE FURNISHED AND INSTALLED AT NO ADDITIONAL COST. 10. THE CONTRACTOR SHALL NOTE THAT ALL SERVICE CONNECTIONS MAY NOT BE SHOWN IN TRUE POSITIONS. EACH BIDDER IS CAUTIONED, THEREFORE, TO VERIFY SAME WITH FIELD CONDITIONS. 11. CONTRACTOR SHALL CHECK FOR INTERFERENCE AND VERIFY ALL DIMENSIONS PRIOR TO FABRICATION OR INSTALLATION OF PIPING AND DUCTWORK. 12. IF AN ITEM OF EQUIPMENT OTHER THAN THE ITEM(S) SPECIFIED IS APPROVED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ADDITIONAL COST ARISING OUT OF ADDITIONAL OR CHANGED GENERAL CONSTRUCTION AND MECHANICAL WORK REQUIRED TO ACCOMMODATE THE SUBSTITUTED EQUIPMENT. 13. ALL EQUIPMENT INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS DIRECTIONS AND RECOMMENDATIONS. 14. PROVIDE ONE SET OF SPARE FILTERS FOR ALL INSTALLED HV/HVAC UNITS. 15. PROVIDE TWO YEAR MAINTENANCE SERVICE FOR ALL INSTALLED HV/HVAC/MECHANICAL SYSTEMS. THIS INCLUDES A MINIMUM OF THREE PERIODIC SERVICE VISITS TO INSPECT, TEST & CHECK ALL COMPONENTS OF HVAC/HV UNITS AND ANY ADDITIONAL VISITS REQUIRED IF ANY HVAC/HV UNIT FAILS. ALL NECESSARY BELT ALIGNMENTS, PROPER OPERATIONS OF ALL DAMPERS, ETC IS INCLUDED IN THIS 16. PROVIDE FIRE DAMPERS/ACCESS DOORS AT ALL DUCT PENETRATIONS THROUGH CORRIDORS, SLABS AND OTHER RATED PARTITIONS, IRRESPECTIVE OF WHETHER IT IS INDICATED ON THE DRAWINGS OR 17. PROVIDE FIRE STOPPING AROUND ALL OPENINGS FOR DUCT, PIPING, CONDUIT, ETC. PENETRATIONS THROUGH CORRIDORS, SLABS AND OTHER RATED PARTITIONS. 18. CONTRACTOR IS RESPONSIBLE FOR ALL DEMOLITION AND RESTORATION OF AREAS OF MECHANICAL REMOVALS. 19. CONTRACTOR IS RESPONSIBLE FOR ALL CONTAINER SERVICES AND LABOR TO KEEP THE BUILDING FREE 20. CONTRACTOR TO PROVIDE NEW WALL MOUNTED THERMOSTATS IN TAMPER PROOF ENCLOSURES FOR ALL AHU'S, RADIATORS ETC. IRRESPECTIVE OF WHETHER THEY ARE INDICATED ON ALL DRAWINGS OR NOT. CONTRACTOR TO INDICATE THERMOSTAT LOCATIONS ON ALL SHOP DRAWINGS. 21. CONTRACTOR IS TO PROVIDE TAGS FOR ALL NEW EQUIPMENT, STEAM & CONDENSATE PIPES, VALVES, ETC. PER SPEC SECTION 15075. GENERAL CONSTRUCTION NOTES LOCATIONS ON MECHANICAL DEMOLITION PLAN. 3. CONTRACTOR TO REFER TO MECHANICAL DRAWINGS FOR PAINTING OF DUCTWORK, FURNISHING AND FIRE ALARM & COMMUNICATION DEVICES TO ACCOMMODATE THE INSTALLATION OF NEW UNITS, PIPING &

- 1. CONTRACTOR IS RESPONSIBLE FOR THE CUTTING OF ALL WALLS, FLOORS, CEILING ETC. FOR ALL PIPE & DUCT PENETRATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR CUTTING HOLES IN ROOF FOR EQUIPMENT AND DUCTWORK AND PROVIDING ROOF/FLOOR/WALL STRUCTURAL SUPPORT. GENERAL CONTRACTOR SHALL PROVIDE BLOCKING, ROOFING, DUNNAGE.
- 2. CONTRACTOR IS REQUIRED TO PATCH (TO MATCH EXISTING), IMMEDIATELY AFTER REMOVAL, ALL WALL, FLOOR & CLG. OPENINGS WHERE EXISTING PIPE, PNEUMATIC LINES, DUCT, RADIATORS, BASEBOARDS, ETC. ARE BEING REMOVED. SEAL OPENING WITH 3 HOUR FIRE BARRIER CAULK. SEE GENERAL
- INSTALLING ACCESS PANELS, CUTOUT LOCATIONS, ETC.
- 4. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING & RELOCATING EXISTING ELECTRICAL DUCTWORK. CHECK IN FIELD.
- 5. GENERAL CONTRACTOR SHALL REMOVE EXISTING CEILING TILES AND CEILING GRID TO ACCOMMODATE THE INSTALLATION OF NEW UNITS, PIPING & DUCTWORK. RE-INSTALL ALL CEILING TILES BACK TO MATCH EXISTING WHERE NEW CEILINGS ARE NOT CALLED FOR. REMOVE & REPLACE ALL DAMAGED TILES & CEILING GRID. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES AND LOCATIONS OF
- 6. GENERAL CONTRACTOR SHALL PROVIDE ROOFING PATCH WORK AND TIE-IN FOR ALL NEW PLUMBING, MECHANICAL AND ELECTRICAL EQUIPMENT AND CONDUIT THAT PENETRATES THE EXISTING ROOF.
- 7. GENERAL CONTRACTOR TO PATCH FLOORS & WALLS WHERE EXISTING THERMOSTAT & PNEUMATIC TUBING IS BEING REMOVED W/ NON-SHRINK GROUT. PAINT TO MATCH EXISTING.
- 8. GENERAL CONTRACTOR IS RESPONSIBLE TO DEMOLISH EXISTING HOUSEKEEPING CONCRETE PADS FOR EXISTING MECHANICAL/PLUMBING EQUIPMENT WHICH ARE TO BE DEMOLISHED AND NOT TO BE USED.

GENERAL NOTES

GENERAL MECH

FEET PER MINUTE

- I. ALL WORK SHALL CONFORM TO THE LATEST EDITIONS OF THE NEW YORK STATE ENERGY CODE, INTERNATIONAL MECHANICAL CODE, ASHRAE GUIDELINES, SMACNA, WESTCHESTER COUNTY GUIDELINES, NEC, NATIONAL STANDARD PLUMBING CODE, AND ALL OTHER APPLICABLE CODES, ORDINANCES, ETC. FOR NEW YORK STATE AND THE LOCAL AUTHORITY HAVING JURISDICTION.
- 2. CONTRACTOR SHALL BE RESPONSIBLE FOR VISITING THE SITE AND FAMILIARIZING HIMSELF WITH THE EXISTING CONDITIONS AND SCOPE OF THE WORK PRIOR TO SUBMITTING BIDS AND COMMENCING WORK, AND INCLUDE ALL SUCH NECESSARY WORK BASED ON THIS SITE FAMILIARIZATION IN THIS BID.
- 5. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL SAFE WORKING CONDITIONS AND SHALL OBSERVE ALL SAFETY REQUIREMENTS ESTABLISHED BY JURISDICTIONAL AGENCIES AND THE OWNER. WHERE CONFLICTS EXIST, THE MORE STRINGENT REQUIREMENT SHALL APPLY. CARE SHALL BE EXERCISED TO AVOID ENDANGERING PERSONNEL OR STRUCTURES.
- 4. CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION METHODS. PROCEDURES AND JOB SITE CONDITIONS INCLUDING SAFETY. CONSTRUCTION SHALL BE PERFORMED IN SUCH A MANNER TO PROTECT WORKMEN, OCCUPANTS AND THE PUBLIC FROM INJURY AND ADJOINING PROPERTY SHALL BE PROTECTED FROM DAMAGE BY USE OF SCAFFOLDING, UNDERPINNING OR OTHER APPROVED METHOD. THE CONTRACTOR SHALL REPAIR ANY AND ALL DAMAGE CAUSED DURING OR RESULTING FROM HIS OPERATIONS IN KIND TO THE SATISFACTION OF THE OWNER AT NO ADDITIONAL COST TO THE OWNER.
- 5. CONTRACTOR SHALL MAINTAIN THE JOB SITE IN A CLEAN, DEBRIS FREE CONDITION. THE DUST RESULTING FROM REMOVALS SHALL BE CONTROLLED SO AS TO PREVENT ITS SPREAD TO OCCUPIED PORTIONS OF THE BUILDING AND TO AVOID CREATION OF A NUISANCE IN
- 6. CONTRACTOR SHALL SECURE AND PAY FOR ALL REQUIRED PERMITS. FEES. APPROVALS. ETC. PRIOR TO COMMENCING WORK AND SHALL SECURE CERTIFICATE OF OCCUPANCY UPON COMPLETION OF WORK.
- 7. CONTRACTOR SHALL BE RESPONSIBLE TO DISPOSE OF ALL DEMOLISHED MATERIAL OFF SITE IN AN APPROVED MANNER. THE OWNER SHALL BE CONSULTED PRIOR TO DISPOSAL OF
- ANY SALVAGED OR EXCESS MATERIALS AT THE COMPLETION OF THE PROJECT.

8. UPON COMPLETION OF WORK, ALL EXCESS MATERIAL, DEBRIS, ETC. SHALL BE REMOVED

- AND THE WORK AREA SHALL BE LEFT CLEAN TO THE OWNER'S SATISFACTION. 9. ALL WORK SHALL BE SCHEDULED IN COMPLIANCE WITH THE OWNER'S REQUIREMENTS FOR
- THE USE OF THE EXISTING FACILITY. 10. CONTRACTOR SHALL FURNISH ALL EQUIPMENT THAT MAY BE REQUIRED TO PERFORM THE WORK INDICATED IN A SAFE AND ORDERLY MANNER, AND AS NECESSARY FOR A PROPER
- OPERATIONAL SYSTEM. 11. CONTRACTOR SHALL BE RESPONSIBLE FOR THE RELOCATION AND TEMPORARY SUPPORT OF ANY UTILITIES ENCOUNTERED DURING THE COURSE OF HIS WORK AND TO ENSURE THE
- 12. CONTRACTOR SHALL REVIEW DRAWINGS AND FIELD VERIFY ALL DIMENSIONS, CONDITIONS AND ELEVATIONS PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES AND ADDRESS ALL QUESTIONS TO ARCHITECT PRIOR TO COMMENCING
- 13. CONTRACTOR SHALL BE RESPONSIBLE FOR CUTTING, PATCHING, FILLING AND CLEANING UPON COMPLETION OF WORK.
- 14. CONTRACTOR SHALL NOT SCALE DRAWINGS FOR DIMENSIONS, ALL WRITTEN OR DIMENSIONED INFORMATION TAKES PRECEDENCE OVER THE DRAWING.

OWNER'S FACILITY TO BE OPERATIONAL.

- 15. CONTRACTOR SHALL SUBMIT, WHERE REQUIRED BY THE ARCH/ENGR, SHOP DRAWINGS AND SUBMITTALS FOR APPROVAL PRIOR TO THE START OF FABRICATION OF THOSE ITEMS. THIS INCLUDES ALL EQUIPMENT. SCHEMATIC DUCTWORK AND PIPING LAYOUT. ETC. CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL EQUIPMENT ETC WILL FIT (WITH PROPER MAINTENANCE CLEARANCES) AT ALL LOCATIONS. REVIEW OF SHOP DRAWINGS/SUBMITTALS BY THE ARCH/ENGR DOES NOT RELIEVE THE CONTRACTOR FROM PROVIDING THE CURRENT MODEL
- 16. CONTRACTOR SHALL PROVIDE THE OWNER AND ARCHITECT WITH CERTIFICATES OF INSURANCE PRIOR TO STARTING THE WORK.

NUMBERS, TYPE, & FEATURES OF ALL EQUIPMENT'S & MATERIALS.

STRUCTURES AS NEEDED TO COMPLETE THE NEW WORK.

- 17. CONTRACTOR SHALL SHALL BE RESPONSIBLE FOR SHORING AND BRACING OF EXISTING
- 18. ALL MANUFACTURER'S MATERIALS, COMPONENTS, FASTENERS, ASSEMBLIES, ETC. SHALL BE HANDLED AND INSTALLED IN ACCORDANCE TO WITH MANUFACTURERS INSTRUCTIONS AND RECOMMENDATIONS. WHERE BRAND NAMES AND MANUFACTURED PRODUCTS ARE CALLED FOR. APPROVED EQUALS WHICH MEET APPLICABLE STANDARDS AND SPECIFICATIONS MAY BE SUBSTITUTED WITH WRITTEN PERMISSION OF THE ARCHITECT AND THE OWNER. WHENEVER BRAND NAMES OR SPECIFIC PRODUCT SYSTEMS ARE INDICATED IT SHALL BE CLEARLY UNDERSTOOD THAT SUCH IDENTIFICATION IS FOR THE PURPOSE OF ILLUSTRATING THE TYPE OF PRODUCT AND DEGREE OF QUALITY DESIRED. SUCH IDENTIFICATION IN NO WAY PRECLUDES THE CONTRACTOR FROM USING PRODUCTS OF OTHER MANUFACTURERS WHICH CAN BE SHOWN IN ADVANCE TO BE OF LIKE AND OF EQUAL OR BETTER QUALITY.
- 19. ALL CHANGES SHALL BE REQUESTED IN WRITING AND MAY ONLY BE APPROVED IN WRITING BY THE ARCHITECT AND THE OWNER PRIOR TO ANY CHANGES BEING MADE.
- 20. THE ARCHITECT/ENGINEER HAS THE RIGHT TO REJECT ANY PORTION OF WORK THAT IS POORLY INSTALLED, DOES NOT MEET INDUSTRY STANDARD, UNAUTHORIZED, OR WORK DONE CONTRARY TO THE THE INTENT OF THE CONTRACT DOCUMENTS. SUCH WORK SHALL BE REPLACED, REPAIRED OR REMOVED AT THE CONTRACTOR'S EXPENSE.
- 21. CONTRACTOR SHALL GUARANTEE ALL HIS WORK AND THE WORK OF HIS SUBCONTRACTORS FOR A PERIOD TWO (2) YEARS AFTER RECEIVING FINAL ACCEPTANCE AND DO ALL REPAIR WORK AND REPLACEMENT AS NECESSARY DURING THAT PERIOD AT THE CONTRACTOR'S EXPENSE.
- 22. IN NO EVENT SHALL STRUCTURAL MEMBERS BE CUT OR DRILLED WITHOUT THE WRITTEN APPROVAL OF A LICENSED STRUCTURAL ENGINEER.
- 23. CONTRACTOR SHALL PROVIDE SAFE AND SANITARY CONDITIONS WHERE DEMOLITION AND WRECKING OPERATIONS ARE BEING CARRIED ON. WORK SHALL BE EXECUTED IN SUCH A MANNER THAT HAZARD FROM FIRE, POSSIBILITY OF INJURY, DANGER TO HEALTH AND CONDITIONS WHICH MAY CONSTITUTE A PUBLIC NUISANCE SHALL BE MINIMIZED.
- 24. ENGINEER/OWNER MAY ASK THE CONTRACTOR TO PROVIDE DETAILED SHOP DRAWINGS & SUBMITTALS OF ANY/ALL PARTS OF THIS PROJECT WHICH THE ENGINEER/OWNER DEEMS

ARCHITECT/ENGINEERS:

H.V.A.C. MATERIALS

- EXTERNAL DUCT INSULATION: 1" THICK, MIN. 2LB. DENSITY FLEXIBLE FIBERGLASS DUCT INSULATION WITH REINFORCED FOIL FACED FLAME RESISTANT KRAFT VAPOR BARRIER, ADHERED TO DUCT W/ SEALED LAPS AND TAPED JOINTS.
- FRESH AIR INTAKE AND EXPOSED DUCT: 1" THICK, MIN. 2 LB. DENSITY RIGID FIBERGLASS DUCT INSULATION WITH FOIL FACING VAPOR BARRIER FASTENED WITH WELDED CLIPS. CEMENTED JOINTS WITH ALUMINUM TAPE.
- STEAM/CD PIPES SHOULD BE INSULATED WITH FIBERGLASS PIPE INSULATION WITH FACTORY APPLIED ASJ JACKET. INSTALL WITH APPROVED ADHESIVE AND STAPLES. REFER TO SPECIFICATIONS FOR INSULATION THICKNESS.

AIR DEVICES:

CONSULTANTS:

- SAD TITUS MAKE, MODEL TMS
- FIRE DAMPER: PHILLIPS SERIES 2 U.L. LABELED DAMPER OR APPROVED EQUAL.

• FLEXIBLE DUCTWORK: SHALL NOT EXCEED FOUR (4) FEET IN

• REFER TO SCHEDULES FOR UNIT MANUFACTURER, SIZE, AND

• INDOOR SUPPLY, RETURN AND EXHAUST DUCTWORK, EXCEPT AS

WEIGHTS AND CONSTRUCTION DETAIL SHALL BE IN

OUTDOOR AIR INTAKE DUCTWORK SHALL BE ALUMINUM

CONSTRUCTION, CLASS "A" SEALED.

INDICATED BELOW, SHALL BE GALVANIZED STEEL CONSTRUCTION.

ACCORDANCE WITH THE LATEST ASHRAE GUIDE AND/OR SMACNA

- LOW PRESSURE STEAM PIPING: SHALL BE SCHEDULE 80 BLACK STEEL WITH STANDARD WELDED FITTINGS.
- LOW PRESSURE CONDENSATE RETURN PIPING: SHALL BE HARD COPPER TYPE "L" WITH WROUGHT COPPER FITTINGS.
- AIR CONDITIONING CONDENSATE DRAIN PIPING: SHALL BE HARD COPPER TYPE "L" WITH WROUGHT COPPER FITTINGS. OR

08-17-2021

08-16-2021

05-21-2021

02-26-2021 08-25-2018

10-05-2017

SCHEDULE 40 PVC WITH PVC FITTINGS (PRIMED & CEMENTED). • REFRIGERANT PIPING: SHALL BE COPPER TYPE ACR

INSULATION:

- RAR TITUS MAKE, MODEL 355-RL (PROVIDE 24x24 TYPE 3 BORDER FOR CEILING
- GRG TITUS MAKE, MODEL 355-RL (PROVIDE 24x24 TYPE 3 BORDER FOR CEILING LAY IN APPLICATIONS)
- NOTES:
 - ALL SAD, RAR, EAR SHALL BE PROVIDED WITH INTEGRAL OPPOSED BLADE DAMPERS FOR BALANCING. 2. ALL CEILING DIFFUSERS LOCATED IN GYPSUM BOARD AND/OR CONCEALED
 - SPLINE CEILINGS SHALL BE PROVIDED WITH FRAME TYPE FOR SURFACE 3. PROVIDE FACTORY INSTALLED 90° BLANK-OFF PLATE(S) IN ALL 2 AND 3 WAY
 - DIFFUSERS.
 - 4. COLOR OF AIR OUTLETS/INLETS SHALL MATCH THE CEILING COLOR. REFER TO MH101 FOR COLORS OF THE LSD IN GYPSUM BOARD CEILINGS. 5. FOR ALL SAD. LSD. RAR THE NC RATING SHALL NOT BE GREATER THAN 22.

NORTH:

		l .				
APPROVED:	APPROVED:	Drawing Title	Project Title			Project Number
		Mechanical Notes, Abbreviations, & Symbols			620-20-206	
APPROVED:	APPROVED:	Steam Distribution & HVAC Systems	Firehouse En	at FDR	Building(s) Number	
		Drawing Scale: N.T.S.				19
APPROVED:	APPROVED:	Approved: Facility Director , VAHVHCS:	Location			Drawing Number
			Montros	e, NY 105	548	NALOOO
APPROVED:	APPROVED:	Approved: John Cliffe, Facility Chief of Engineering	Date	Checked	Drawn	MI 000
			08-30-2021	LS	AMI	Dwg. 25 of 61

GENE	:RAL	MECH.	FPM FT	- FEET PER MINUTE - FEET	PSI	- POUNDS PER SQUARE INCH	GENERAL ME	ECH. SYMBOLS		EXHAUST/RETURN DUCT	
ABBR	EVIA	ATIONS:	FSCP	- FLAME SAFEGUARD	PSIG	- POUNDS PER		MD OTEAM HEAT DIDING (LABELED)		SUPPLY DIFFUSER	
/ (22) (<u> </u>	FSS	CONTROL SWITCH - FUSED SAFETY	PTRV	SQUARE INCH GUAGE - POWER TYPE ROOF	\	M.P. STEAM HEAT PIPING (LABELED)		RETURN GRILLE/REGISTER	
A.D.	-	ACCESS DOOR	1 33	SWITCH	FINV	VENTILATION	\	H.P. STEAM SUPPLY PIPING (LABELED)		INETOININ GIVILLE/INEGISTEIN	
ADL	-	ACOUSTIC DUCT LINING	GAL	- GALLON	PWR	- POWER)	M.P. STEAM SUPPLY PIPING (LABELED)		3-WAY DIFFUSER	
APD	-	AIR PRESSURE DROP	GEN GFI	GENERATORGROUND FAULT	RA R/A	- RETURN AIR		W.I. OTEAW OUT ETT II INO (LADELED)		3" THICK TWO-HOUR FIRE-RATED	
ALD	-	AUTOMATIC ELECTRICAL		INTERUPTER	RADO	- RETURN AIR DUCT	\	VACUUM OR GRAVITY RETURN PIPING	<u> </u>	INSULATED DUCTWORK (SHOWN IN SINGLE	
		OPERATED DAMPER	GND GPH	GROUNDGALLON PER HOUR	RATO	OPENING - RETURN AIR	<u>) </u>	DRIP RETURN M.P. OR H.P. STEAM PIPING		LINE DUCT REPRESENTATION)	
A.F.F.	-	ABOVE FINISHED	GPM	- GALLON PER MINUTE	RATO	TRANSFER OPENING				FLEXIBLE CONNECTION	
AC		FLOOR WINDOW AIR	GTB	- GROUND TERMINAL		ABOVE CEILING	├	PUMPED RETURN PIPING			
AC	-	CONDITIONING UNIT	GYP	BOX - GYPSUM	RECEPT REF	- RECEPTACLE	<i>></i> —— ∨ ——→	VENT PIPING		VOLUME DAMPER IN DUCT	
AHU	=	AIR HANDLING UNIT	G.W.B.	- GYPSUM WALL	KEF	- RETURN/EXHAUST FAN	V				
AL./ALUM. AMS	-	ALUMINUM AIR MEASURING	5,,,,,	BOARD	1 (1	- RETURN FAN	\longrightarrow D \longrightarrow	CONDENSATE DRAIN PIPE		INDICATES SUPPLY AIR	
AIVIO	-	STATION	HACR	- HEATING AIR	REG ROGP	REGISTERREFRIGERANT HOT	}	REFRIGERANT PIPING			
APPROX.	-	APPROXIMATE	ПАСК	- REATING AIR CONDITION	RUGP	GAS PIPE					
AT ATS	-	AMPERE TRIP AUTOMATIC		REFRIGERATION	RGIP	- REMOTE GROUND	├	RETURN RISER	<u> </u>	INDICATES EXHAUST OR RETURN AIR	
AIS	-	TRANSFER SWITCH	HH	- HANDHOLE	D D	INDICATOR PANEL		STEAM RISER			
AVG.	-	AVERAGE	HM HOA	HOLLOW METALHAND OFF	R.D. RM	ROOF DRAINROOM		OTE/ANTAIGER		DOOR UNDERCUT	
DAG		DUIU DINO	11071	AUTOMATIC	RR	- RETURN AIR	├───(SR)	STEAM SUPPLY AND RETURN RISER			
BAS	-	BUILDING AUTOMATION	HP	- HOURSEPOWER		REGISTER	<u> </u>	SIDE CONNECTIION		DOOR LOUVER	
		CONTROL SYSTEM	HPS	- HIGH PRESSURE SYSTEM	S	- SUPPLY		CIBE CONNECTION		ACCESS DOOR IN DUCT	
BC	-	BARE COPPER	HT	- HEIGHT	S/S	- STATUS SENSOR	├ ├ ├ ├ ├ ├ ├ ├ ├ ├	TOP CONNECTION - 90° OR 45°		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
BHP	-	BRAKE HORSEPOWER	HV	- HIGH VOLTAGE	SA	- SUPPLY AIR		BOTTOM CONNECTION - 90° OR 45°	, [,	DUCT MOUNTED COUND ATTENUATOR	
BR	-	BOTTOM REGISTER	HVU	- HEATING & VENTILATIONG UNIT	SAR	- SUPPLY AIR REGISTER		BOTTOM CONNECTION - 90 OIX 43		DUCT MOUNTED SOUND ATTENUATOR	
ВОТ.	-	BOTTOM	HWS	- HOT WATER SUPPLY	SADO	- SUPPLY AIR DUCT	\ 	UNION CONNECTION			
BRIP	_	CONNECTION BOILER PLANT	HWR	- HOT WATER RETURN		OPENING	, •	CAPPED OUTLET	TT.	FIDE DAMPED IN A DUCT WITH ACCEC	
DIXII		INSTRUMENTATION	ID	- INTERNAL DIAMETER	SCCU	- SPLIT-SYSTEM COMPRESSURE/		CAFFED OUTLET		FIRE DAMPER IN A DUCT WITH ACCESS DOOR	
		PANEL	IN	- INCH		CONDENSOR UNIY	├	ECCENTRIC REDUCER IN STEAM PIPING	<u> </u>		
BTU	-	BRITISH THERMAL UNIT	INCAND	- INCANDESCENT	05	- SMOKE DAMPER	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ 	EXPANSION JOINT			
BTUH	_	BRITISH THERMAL	INTR	- INTERIOR	SF	- SUPPLY FAN		EXPANSION JOINT	T/T	FIRE/SMOKE DAMPER IN A DUCT WITH	
		UNIT PER HOUR	JB	- JUNCTION BOX	0.0	SIGNALSTATIC PRESSURE	\longrightarrow	ANCHOR		ACCESS DOOR	
CAV		CONCTANT AID			SPT	- STATIC PRESSURE		DICE OF DOOR IN CTEAM DIDING	\perp_{\downarrow}		
CAV	-	CONSTANT AIR VOLUME THERMAL	KHEF	- KITCHEN HOOD		TRANSMITTER, DUCT	├───┼	RISE OR DROP IN STEAM PIPING	<u> </u>		
		UNIT	KW	EXHAUST FAN - KILOWATT	SS	MOUNTED - STAINLESS STEEL		STRAINER, STRAINER WITH BLOW-OFF		DIRECTIONAL VANES	
CC	-	COOLING COIL	1777	MESWATT	0010	- SPLIT-SYSTEM AIR		VALVE			
CD CFM	-	CEILING DIFFUSER CUBIC FEET PER	LD	- LINEAR DIFFUSER OR		CONDITIONING UNIT	$\qquad \qquad \longleftarrow \longleftarrow \longleftarrow \longleftarrow$	GATE VALVE	□	UNIT HEATER	
O1 1V1		MINUTE		SLOT-DIFFUSER WITH PLENUM	00	SAFETY SWITCHSTEAM RETURN LINE	'	CATE VALVE		ONIT HEATER	
CG	=	CEILING GRILLE	LL	- LOW LIMIT	0.7	- SOUND ATTENUATOR	├	GLOBE VALVE		ELECTRIC CABINET HEATER (ECH), CEILING	
CR CP	-	CEILING REGISTER CONDENSATE PUMP	LLT	- LOW LIMIT		(SOUND TRAP)	<u></u> → +Ø+ → →	CHECK VALVE		MOUNTED	
CO	-	CLEAN OUT		TEMPERATURE SENSOR	STA SQ. FT.	STATIONSQUARE FEET		SHESK VILVE		ELECTRIC CABINET HEATER (ECH),	
CHWS	-	CHILLED WATER	LTCP	- LOCAL	30.11.	- SQUAINETELT				RECESSED IN WALL	
CHWR	_	SUPPLY CHILLED WATER		TEMPERATURE	•	- TEMPERATURE	}1^T1 	PRESSURE REDUCING VALVE AND BYPASS		SQUARE DIFFUSER WITH CYLINDRICAL	
OHWIX		RETURN	LTG	CONTROL PANEL - LIGHTING	TCC	- TEMPERATURE CONTROL	<u></u>			NECK	
CUH	-	CABINET UNIT	LTS	- LIGHTS		CONNECTION		AUTOMATIC ZONE CONTROL VALVE AND			
CWR	_	HEATER CONDENSATE	LV	- LOW VOLTAGE	TCP	- REMOTE	}+ [†] + → + + → + + → + + + + + + + + + + + +	→ BYPASS	\$		
OVVIX		WATER RETURN	MATV	- MASTER ANTENNA		TEMPERATURE CONTROL PANEL	$\longrightarrow \longrightarrow \longrightarrow$	THERMOSTATIC STEAM TRAP	~~ CD ~~	EXISTING SQUARE CEILING DIFFUSER	
CWS	-	CONDENSATE	1017 (1 0	TELEVISION	TG	- TOP GRILLE/			<u> </u>		
		WATER SUPPLY	MAX	- MAXIMUM		TRANSFER GRILLE	├	FLOAT AND THERMOSTATIC STEAM TRAP	\		
D	-	DRAIN	MBH	- THOUSAND BTU PER HOUR	TH/THK TM	THICKNESSTERMINATION		TWO-WAY TEMPERATURE CONTROL	CR	EXISTING SQUARE CEILING REGISTER	
DA	-	DIRECT ACTING	MCB	- MAIN CIRCUIT	I IVI	MODULE		(MODULATING) VALVE			
DAC	-	DOOR AIR CURTAIN UNIT		BREAKER	TREG	- TOP REGISTER		THERMOMETER		DOLIND DIFFLIOED WITH OVENIDDIOAL	
DDC	-	DIRECT DIGITAL	MCC	- MOTOR CONTROL CENTER	101711	- THERMOSTAT		THERMOMETER		ROUND DIFFUSER WITH CYLINDRICAL NECK	
		CONTROL	MDP	- MAIN DISTRIBUTION	TT	TEMPERATURE SENSOR (TEMP		PRESSURE GAUGE WITH NEEDLE VALVE			
DIA DN	-	DIAMETER DOWN		PANEL		TRANSMITTER)	-X	COCK.		DETUDN OD EVILALIST ODILLE OD	
DHWH	-	DOWN DOMESTIC HOT	MECH	- MECHANICAL	TYP	- TYPICAL	(co)	CARBON MONOXIDE GAS SENSOR		RETURN OR EXHAUST GRILLE OR REGISTER	
		WATER HEATER	MER	- MECHANICAL EQUIPMENT ROOM	UH	- UNIT HEATER			T/T /	(AESIG FEIX	
DPG	-	DIFFERENTIAL PRESSURE GAUGE	MIN	- MINIMUM	UON	- UNLESS OTHERWISE	\bigcirc	CARBON DIOXIDE GAS SENSOR	, Щ,	CALIBRATED BALANCE AND SHUTOFF	
DPT	-	DIFFERENTIAL	MLO	- MAIN LUGS ONLY		NOTED	$\langle S \rangle$	SMOKE DETECTOR	<u> </u>	VALVE WITH MEMORY STOP AND PRESSURE PORTS	
		PRESSURE	MH MIN	- MANHOLE - MINIMUM	V	- VOLTAGE					
DWG.	_	TRANSMITTER DRAWING	MO	- MASONRY OPENING	VAV	- FAN-POWERED	ALD	AUTOMATIC ELECTRICAL OPERATING DAMPER		THERMOMETER WITH WELL	
DWG. DWTR	-	DUMB WAITER	MOD	- MOTORIZED OUTSIDE		VARIABLE AIR		DAMPER		PRESSURE GAUGE	
			MTD	AIR DAMPER - MOUNTED	V.C.A.	VOLUME - VINYIL COMPOSITE		PRESSURE GAUGE			
EA EA E/A	-	EXHAUST AIR EXHAUST ARE DUCT	MTG HT	- MOUNTING HEIGHT		TILE		VOLUME DAMPER	<u> </u>	TEST PLUG FOR PRESSURE/TEMPERATURE	
LA E/A	-	OPENING	N	- NORTH	VD VENT	- VOLUME DAMPER		V OLOWIE DAWN EIX	. ,		
EAT	-	ENTERING AIR	N N/A	- NOT APPLICABLE	\	VENTILATIONVESTIBULE	T	THERMOSTAT - ELECTRIC (24V) -		PRESSURE SENSOR INPUT SIGNAL TO DDC	
EB		TEMPERATURE EXISTING BUILDING	NC	- NORMALLY CLOSED	\	- VARIABLE		NON-PROGRAMMABLE		TEMPERATURE CONTROL	
EC ER	-	EXISTING BUILDING EMPTY CONDUIT	NFSS	- NON-FUSED SAFETY	\/.I=	FREQUENCY DRIVE	(T7)	THERMOSTAT - 7 DAY PROGRAMMABLE			
EF	-	EXHAUST FAN	N.I.C.	SWITCH - NOT IN CONTRACT	V.I.F. VTF	VERIFY IN FIELDVENT THROUGH				NEW CONNECTION POINT	
EG	-	EQUIPMENT GROUND	NL NL	- NON-CONTROLLED		ROOF	(TS)	TEMPERATURE SENSOR			
EXH EJ	-	EXHAUST EXPANSION JOINT	NO	24 HR LIGHT	VP	- VAPOR PROOF	(H)	SPACE HUMIDISTAT		DISCONNECTION POINT	
EL	-	ELEVATION	NO NUMB	NORMALLY OPENNUMBER	W	- WIRE				355E0110111 01111	
ELEC.	-	ELECTRIC	N.T.S.	- NOT TO SCALE	W/	- WITH	(HT)	SPACE HUMIDITY SENSOR			
ELEV. EMERG	-	ELEVATOR EMERGENCY			WG	- WATER GAUGE	CSP	UNIT CONTROL SYSTEM PILOT			
EQPM	-	EQUIPMENT	OAI O/A OC	OUTSIDE AIR INTAKEON CENTER	WM WMS	WIRE MESHWIRE MESH SCREEN					
EXP, XP	-	EXPANSION PROOF	OPP	- OPPOSITE	WPR	- WORKING PRESSURE		LOW/HIGH LIMIT DUCT THERMOSTAT			
EXT. EXTG	-	EXTERIOR EXISTING			WT	- WATER TIGHT	(PSH)	PRESSURE SENSOR SWITCH HIGH			
EWC	-	ELECTRIC WATER	P PB	- POLE - PULL BOX	XFMR	- TRANSFORMER					
		COOLER	PBPU	- PREFABRICATED	AL WILL	TIVATOL OLIVILIA	PSL	PRESSURE SENSOR SWITCH LOW			
FA	_	FIRE ALARM		BEDSIDE PATIENT			├	DROP IN DUCT			
FACP	-	FIRE ALARM	PC	POWER UNIT - PUMPED			, - ,				
	-		ru	- PUMPED CONDENSATE				RISE IN DUCT			
FCU FC	-	CONTROL PANEL		· · -							
1 0	- - -	FAN COIL UNIT	PCHWS	- PRIMARY CHILLED							
	- - -			WATER SUPPLY				PITCH DUCT UP			
FD	- - -	FAN COIL UNIT FLEXIBLE CONNECTION FLOOR DRAIN	PCHWS PCHWR				SET UP	PITCH DUCT UP			
FD FDAD	-	FAN COIL UNIT FLEXIBLE CONNECTION FLOOR DRAIN FIRE DAMPER	PCHWR PD	WATER SUPPLY - PRIMARY CHILLED WATER RETURN - PRESSURE DROP			SET UP				
	-	FAN COIL UNIT FLEXIBLE CONNECTION FLOOR DRAIN	PCHWR PD PNL	WATER SUPPLY - PRIMARY CHILLED WATER RETURN - PRESSURE DROP - PANEL			SET UP	PITCH DUCT UP PITCH DUCT DN			
FDAD FI FIXT	-	FAN COIL UNIT FLEXIBLE CONNECTION FLOOR DRAIN FIRE DAMPER ACCESS DOOR FILM ILLUSTRATOR FIXTURE	PCHWR PD	WATER SUPPLY - PRIMARY CHILLED WATER RETURN - PRESSURE DROP			SET DN.	PITCH DUCT DN			
FDAD FI	-	FAN COIL UNIT FLEXIBLE CONNECTION FLOOR DRAIN FIRE DAMPER ACCESS DOOR FILM ILLUSTRATOR	PCHWR PD PNL POD	WATER SUPPLY - PRIMARY CHILLED WATER RETURN - PRESSURE DROP - PANEL - POWER OPERATED						KEY DI ANI	
FDAD FI FIXT	-	FAN COIL UNIT FLEXIBLE CONNECTION FLOOR DRAIN FIRE DAMPER ACCESS DOOR FILM ILLUSTRATOR FIXTURE	PCHWR PD PNL POD	WATER SUPPLY - PRIMARY CHILLED WATER RETURN - PRESSURE DROP - PANEL - POWER OPERATED - PRESSURE			SET DN.	PITCH DUCT DN		KEY PLAN	

POUNDS PER

GENERAL MECH. SYMBOLS

100% Preliminary Design Submission Revisions

VA FORM 08-6231, OCT 1978

100% Working Drawings Submission

95% Working Drawings Submission 65% Working Drawings Submission

35% Working Drawings Submission

Bid Documents

16

EQUIPMENT:

CAPACITY DATA.

STANDARDS.

Submission ents

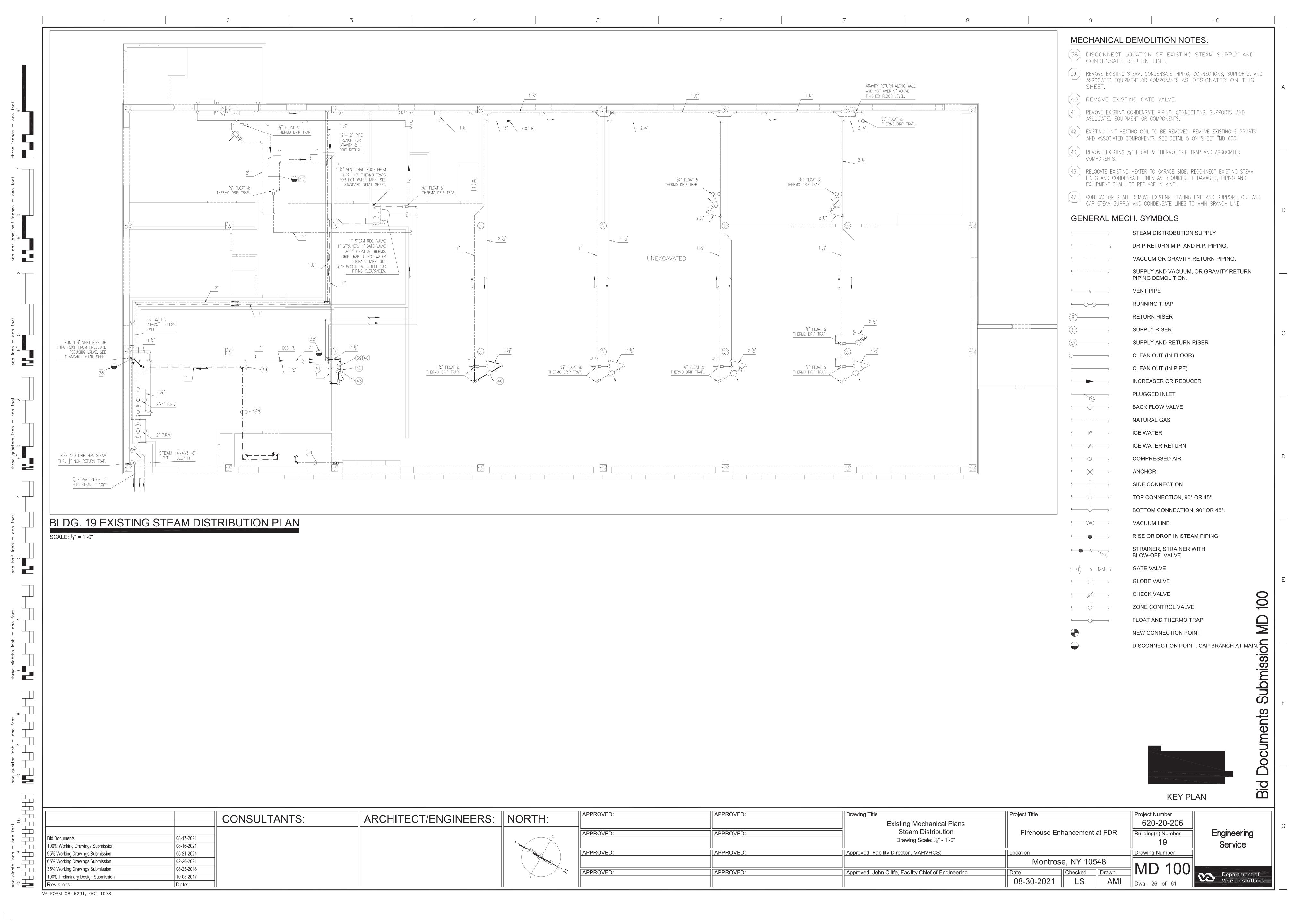
8

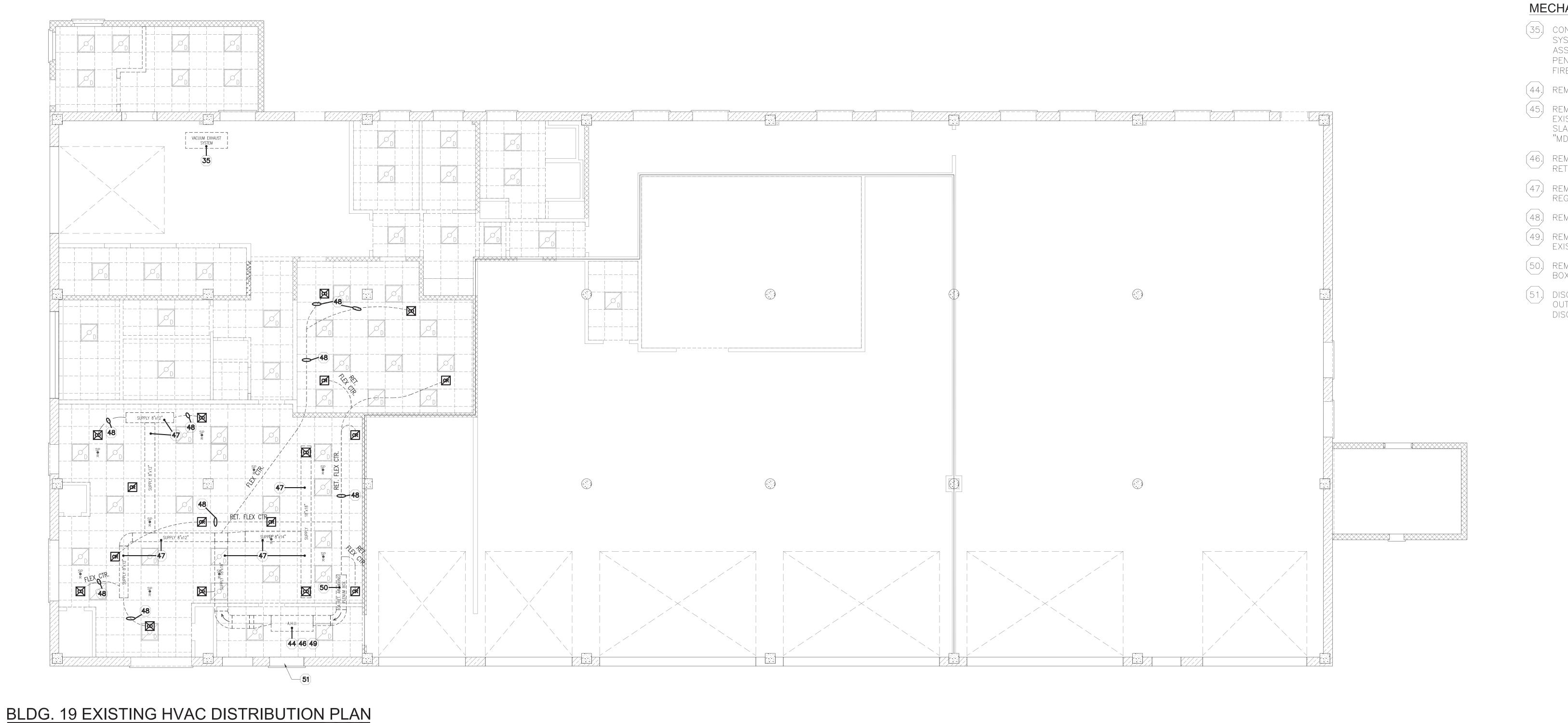
EXHAUST/RETURN DUCT

Big

Engineering Service

Department of Veterans Affairs





SCALE: 1/4" = 1'-0"

VA FORM 08-6231, OCT 1978

MECHANICAL DEMOLITION NOTES:

(35), CONTRACTOR SHALL DEMOLISH EXISTING VACUUM EXHAUST SYSTEM IN IT'S ENTIRETY. REMOVE ALL SUPPORTS AND ASSOCIATED WIRING TO THE SOURCE. PATCH ALL PENETRATIONS W/FIRE RATED PLYWOOD AND FIRE-STOPPING

10

(44) REMOVE EXISTING CEILING HUNG A.H.U. AND SUPPORTS.

(45) REMOVE CONDINSATE LINE FROM EXISTING A.H.U. TO EXISTING TRENCH DRAIN IN CAR WASH BAY. PLUG HOLE IN SLAB WITH NON-SHRINK CONCRETE. SEE NOTE 41 ON SH. "MD 100".

(46.) REMOVE EXISTING STEAM SUPPLY AND CONDENSATE RETURN PIPIING. SEE NOTES 39 & 41 ON SH. "MD 100".

47. REMOVE ALL RIGID DUCTING, CEILING DIFFUSERS AND REGISTERS, AND DUCT SUPPORTS.

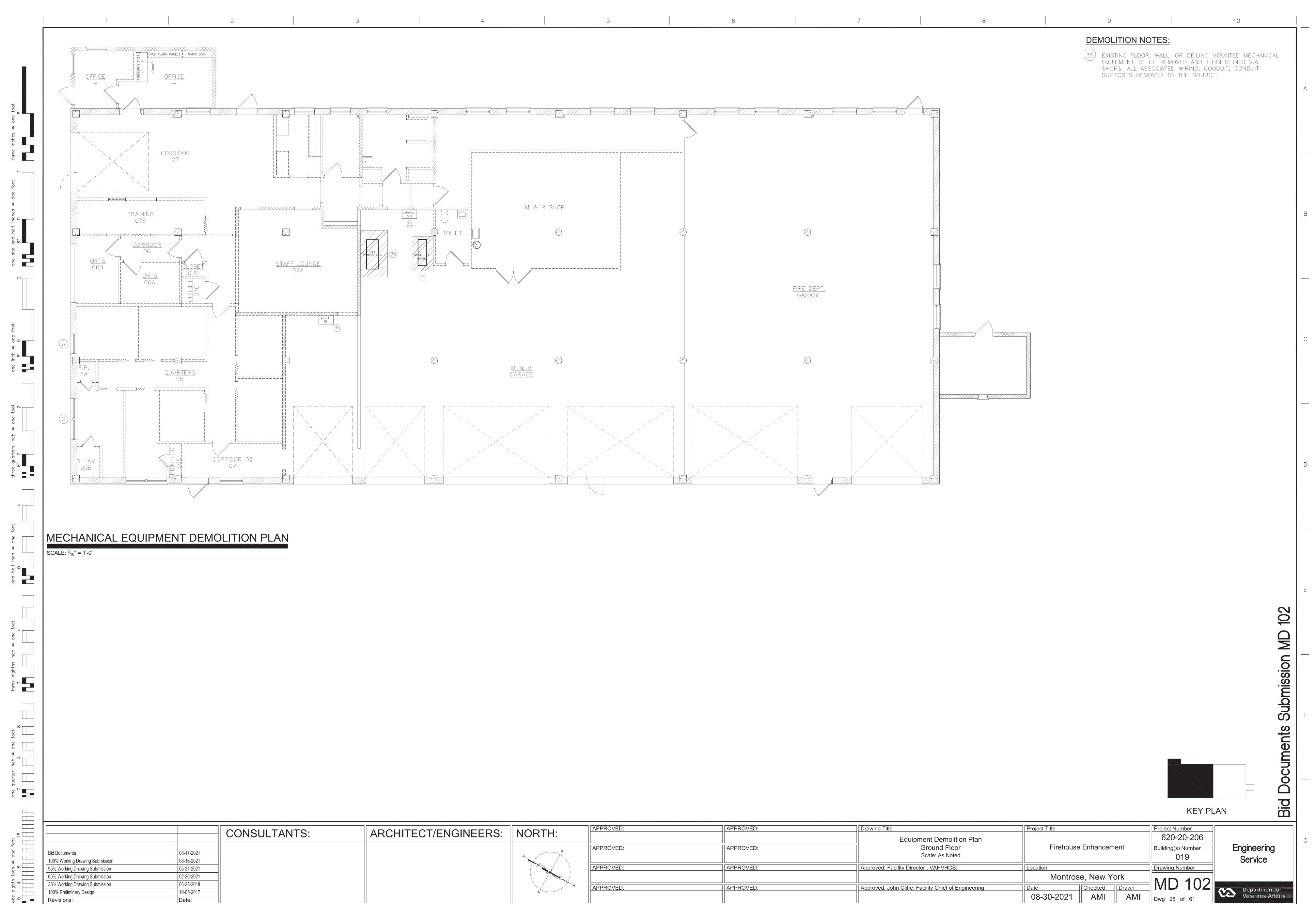
(48) REMOVE ALL FLEX DUCTING AND SUPPORTS.

(49) REMOVE ALL REFRIDGERANT LINES AND SUPPORTS FROM EXISTING A.H.U. TO ROOFTOP CONDENSERS.

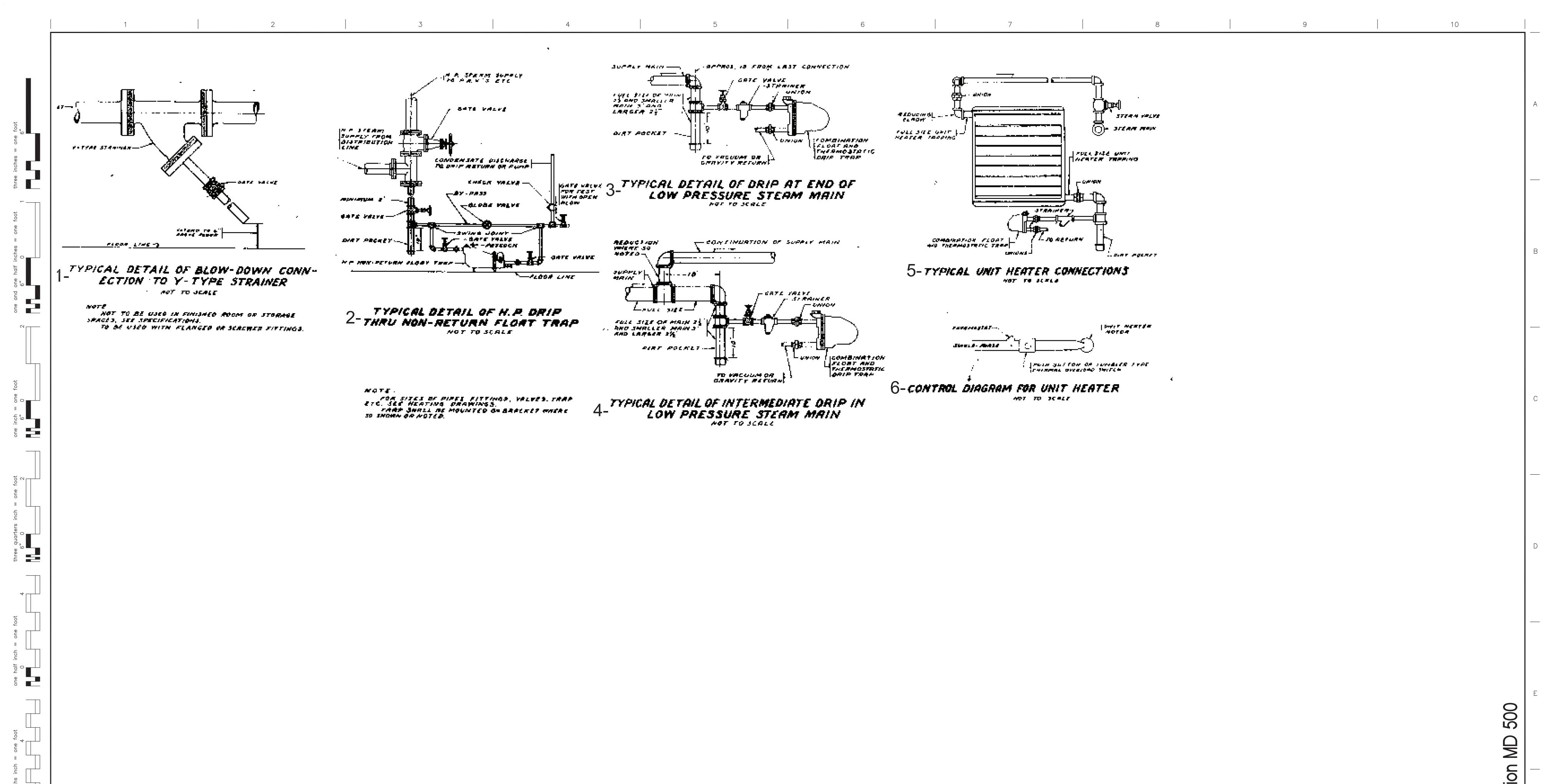
(50) REMOVE RETURN AIR AND OUTSIDE AIR MIXING PLENUM BOX.

(51) DISCONNECT EXISTING OUTSIDE AIR DUCT FLANGE BY OUTSIDE AIR INTAKE LOUVER AND REMOVE DUCT FROM DISCONNECTED FLANGE TO R.A./O.A. MIXING PLENUM BOX.

										KEY PI	_AN
			CONSULTANTS:	ADCHITECT/ENCINEEDC:	NODTH	APPROVED:	APPROVED:	Drawing Title	Project Title	Project Number	
9			CONSULTANTS.	ARCHITECT/ENGINEERS:	NORTH:			Existing Mechanical HVAC Plan		620-20-206	G
	Pid Documents	08-17-2021			£	APPROVED:	APPROVED:	Ground Floor	Firehouse Enhancement	Building(s) Number	Engineering
	100% Working Drawings Submission	08-16-2021						Drawing Scale: As Noted		19	Service
$_{\infty}$	95% Working Drawings Submission	05-21-2021				APPROVED:	APPROVED:	Approved: Facility Director , VAHVHCS:	Location	Drawing Number	
	65% Working Drawings Submission	02-26-2021							Montrose, NY 10548		
7	35% Working Drawings Submission	08-25-2018 10-05-2017				APPROVED:	APPROVED:	Approved: John Cliffe, Facility Chief of Engineering	Date Checked Drawn		Department of
	Revisions:	Date:			",				08-30-2021 LS AMI	Dwg. 28 of 61	Department of Veterans Affairs



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KEY PLAN

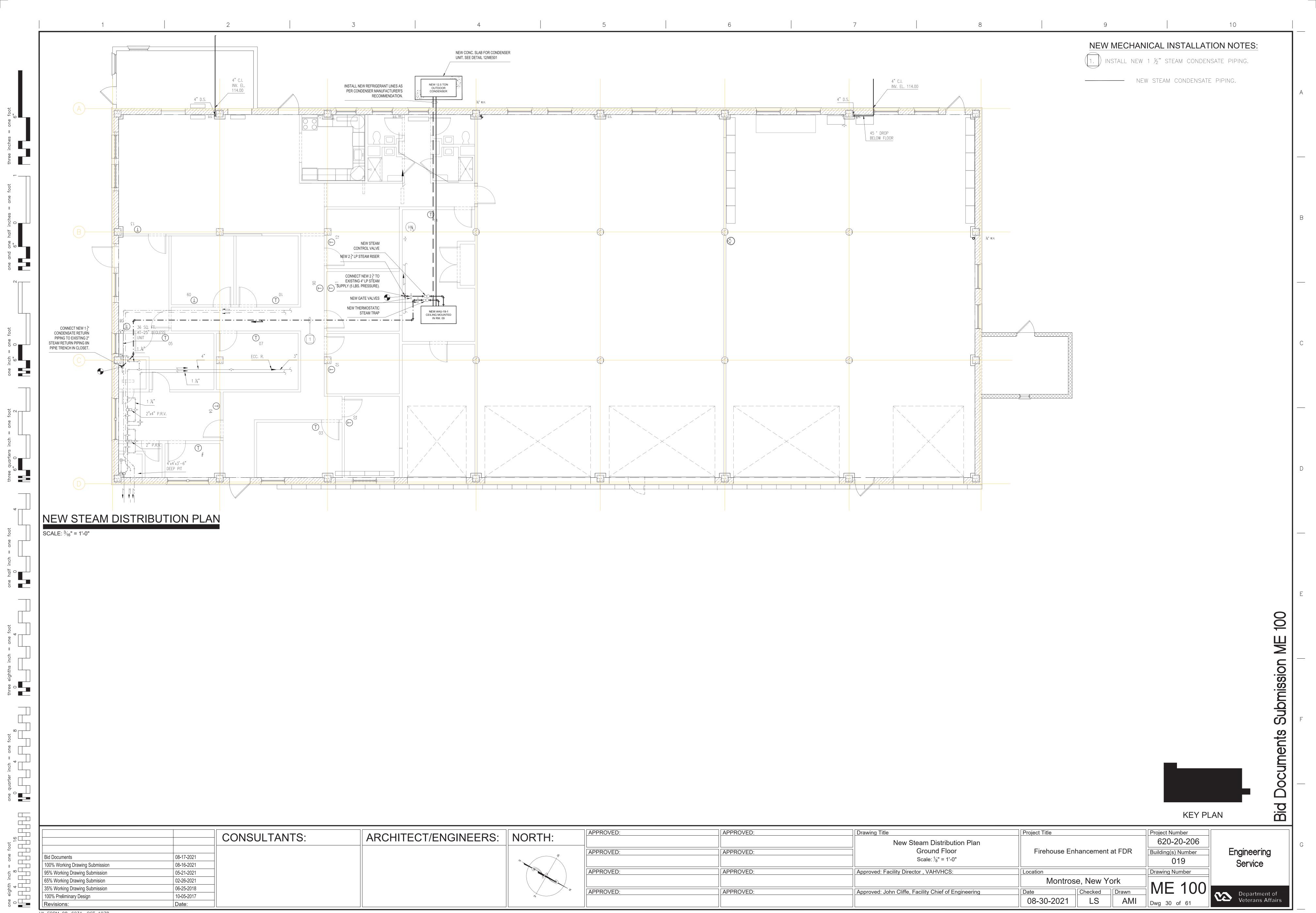
Bid

APPROVED: Project Number APPROVED: Drawing Title Project Title ARCHITECT/ENGINEERS: NORTH: CONSULTANTS: 620-20-206 Existing Standard Mechanical Details Firehouse Enhancement at FDR Steam Distribution Engineering APPROVED: APPROVED: Building(s) Number Bid Documents 08-17-2021 Drawing Scale: N.T.S. 19 Service 100% Working Drawings Submission 08-16-2021 APPROVED: APPROVED: Approved: Facility Director , VAHVHCS: Drawing Number Location 95% Working Drawings Submission 05-21-2021 Montrose, NY 10548 65% Working Drawings Submission 02-26-2021 06-25-2018 35% Working Drawings Submission APPROVED: APPROVED: Approved: John Cliffe, Facility Chief of Engineering Department of Veterans Affairs 100% Preliminary Design Submission 10-05-2017 08-30-2021 LS

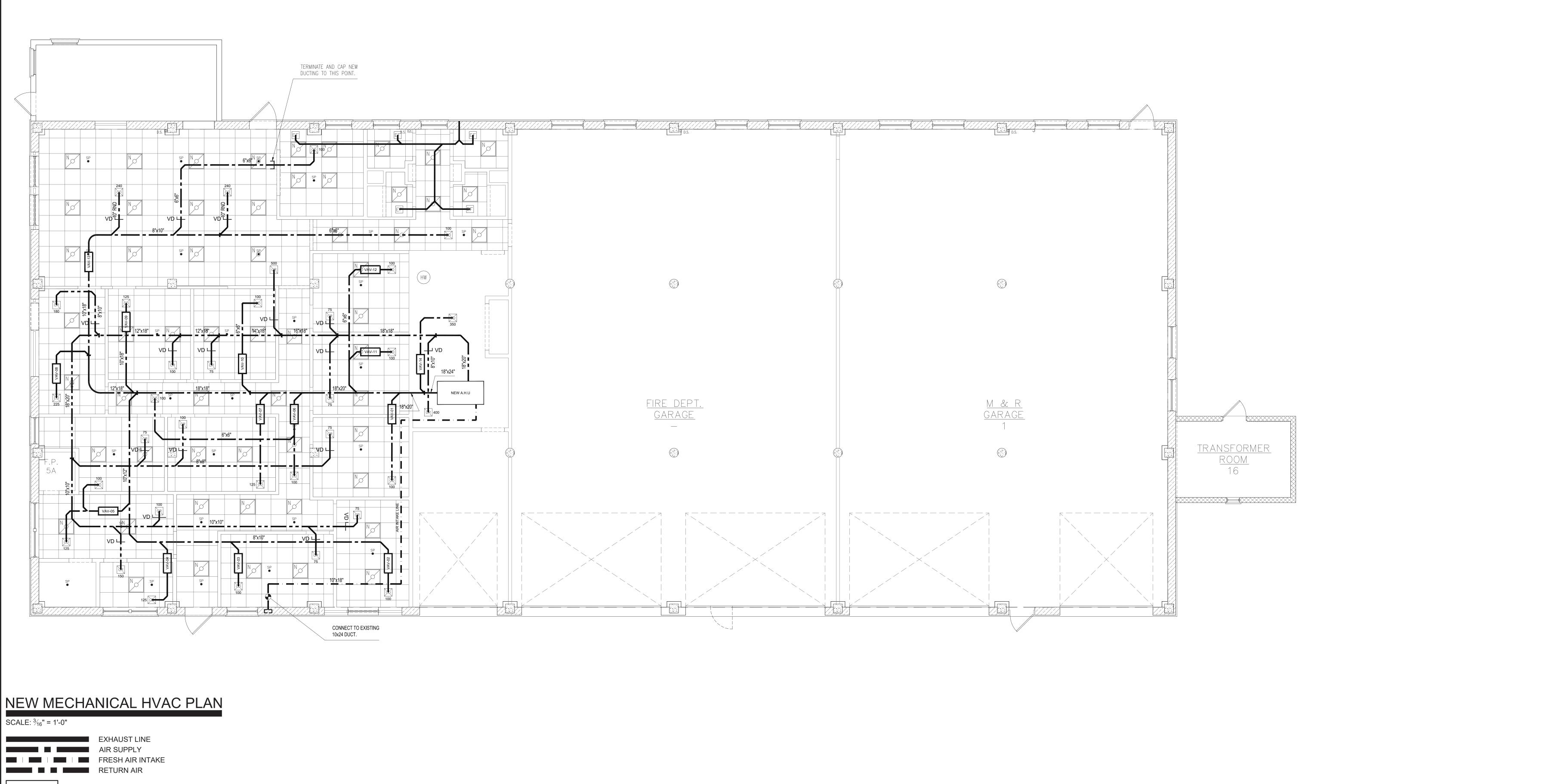
one eighth inch = one foot

0 4 8 16 VA FORM 08-6231, OCT 1978

Date:



VA FORM 08-6231, OCT 1978



HEATING COIL

FOR THERMOSTATS SEE SHEET "ME 100".



KEY PLAN

<u></u>									
<u> </u>		CONCLUTANTO.	ADCLUTECT/ENICINIEEDC.	NODTII.	APPROVED:	APPROVED:	Drawing Title	Project Title	Project Number
		CONSULTANTS:	ARCHITECT/ENGINEERS:	NORTH:			New Mechanical HVAC Plan		620-20-206
					APPROVED:	APPROVED:	Ground Floor	Firehouse Enhancement at FDR	Building(s) Number
☐ Bid Documents	08-17-2021			s vu			Scale: As Noted		019
100% Working Drawing Submission	08-16-2021								
	05-21-2021				APPROVED:	APPROVED:	Approved: Facility Director , VAHVHCS:	Location	Drawing Number
65% Working Drawing Submission	02-26-2021							Montrose, New York	
35% Working Drawing Submision	06-25-2018				APPROVED:	APPROVED:	Approved: John Cliffe, Facility Chief of Engineering	Date Checked Drawn	ME 101
100% Preliminary Design	10-05-2017			7	ATTIOVED.	ALLINOVED.	Approved. John Onne, I donity Office of Engineering		
Revisions:	Date:							08-17-2021 LS AMI	Dwg 31 of 61

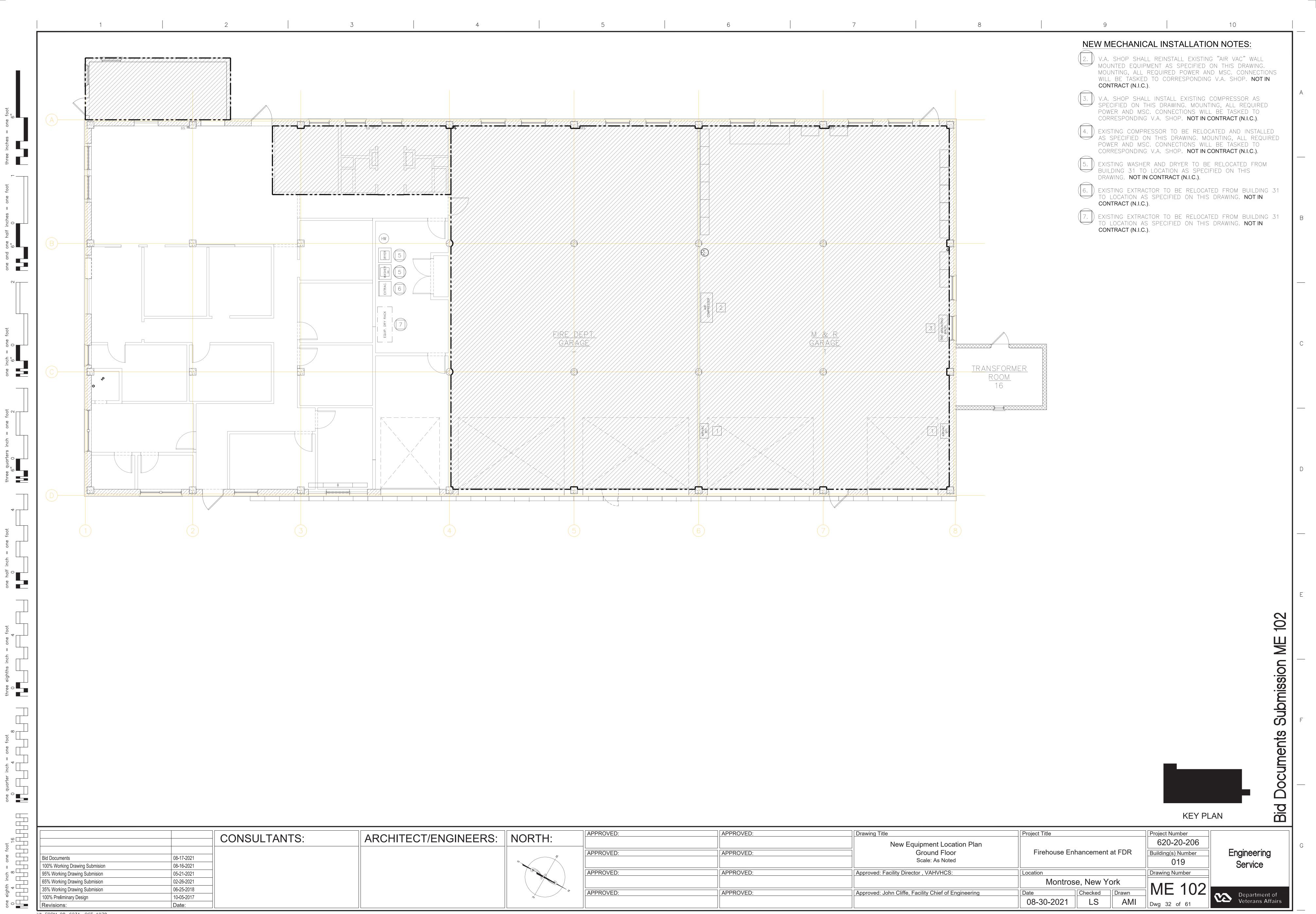
VA FORM 08-6231, OCT 1978

Engineering Service

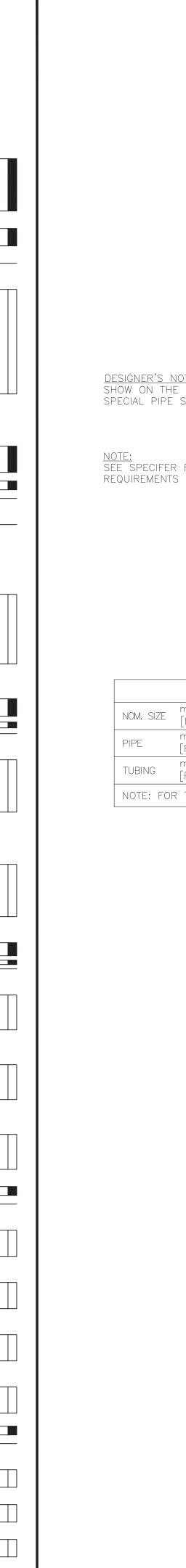
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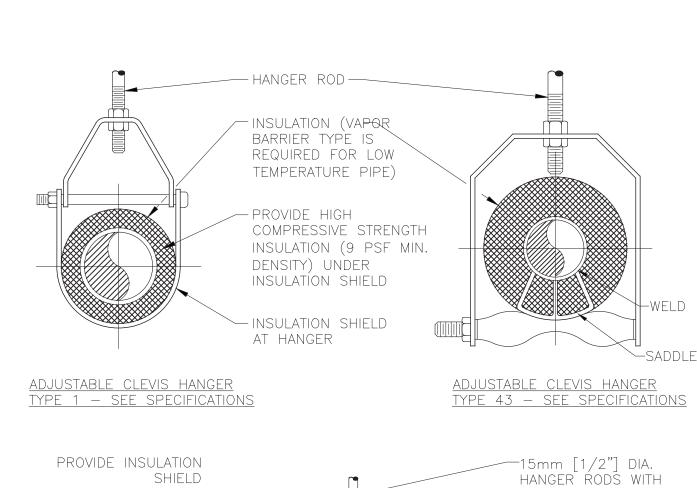
10

Department of Veterans Affairs



VA FORM 08-6231, OCT 1978





<u>DESIGNER'S NOTE:</u> SHOW ON THE DRAWINGS OTHER SPECIFIED AND PROVIDE INSULATION SPECIAL PIPE SUPPORTS WHERE REQUIRED. & INSERT FOR ALL (200mm [8"] MIN.) <u>NOTE:</u> SEE SPECIFER FOR DETAILED HANGER

SIDE VIEW TRAPEZE HANGER FOR UP TO 453KG [1000 LB.] UNIFORM LOAD

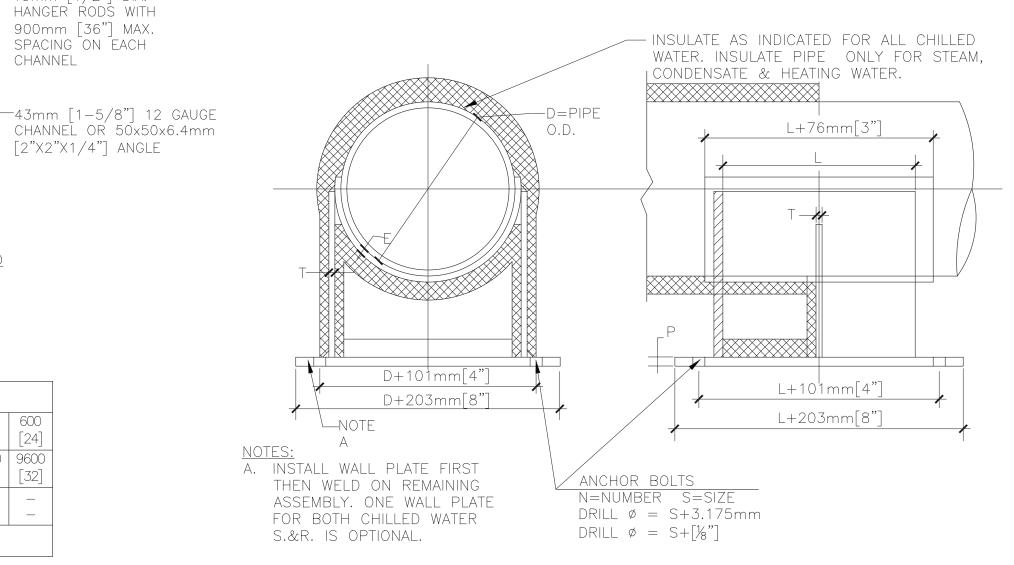
900mm [36"] MAX. SPACING ON EACH CHANNEL

[2"X2"X1/4"] ANGLE

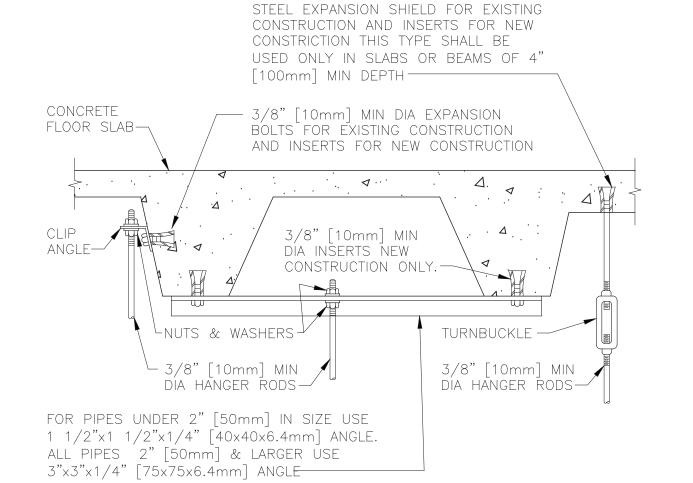
	MAXIMUM PIPE/TUBING SUPPORT SPACING																		
NOM. SIZE	mm	THRU 20	25	32	40	50	65	75	100	125	150	200	250	300	350	400	450	500	600
I NOIVI. SIZE	[IN]	[THRU 34]	[1]	[11/4]	[1½]	[2]	$[2\frac{1}{2}]$	[3]	[4]	[5]	[6]	[8]	[10]	[12]	[14]	[16]	[18]	[20]	[24]
DIDE	mm	2100	2100	2100	2700	3000	3400	3700	4100	4900	5200	5800	6700	7000	7600	8200	8500	9100	9600
PIPE	[FT]	[7]	[7]	[7]	[9]	[10]	[11]	[12]	[14]	[16]	[17]	[19]	[22]	[23]	[25]	[27]	[28]	[30]	[32]
TUDINO	mm	1500	1800	2100	2400	2400	2700	3000	3700	4000	4100	4900	_	_	_	_	_	_	_
TUBING	[FT]	[5]	[6]	[7]	[8]	[8]	[9]	[10]	[12]	[13]	[14]	[16]	_	_	_	_	_	_	_
NOTE: FOR	NOTE: FOR TRAPEZE HANGER TAKE SPACING OF SMALLEST SIZE ON TRAPEZE.																		



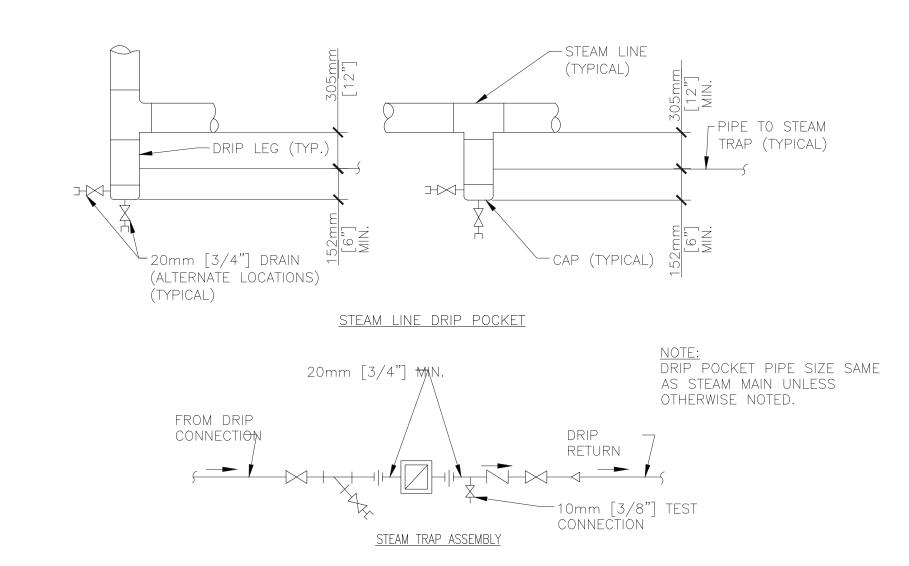
PII	PE A	NCHC	OR SO	CHED	JLE									
)		_	F)				_	<u> </u>	1)	BOLT PATTERN
mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	19
152	6	216	8½	19	3/4	10	3/8	6	1/4	102	4	22	7/8	
203	8	254	10	19	3/4	13	1/2	6	1/4	102	4	22	7/8	
254	10	305	12	19	3/4	13	1/2	6	1/4	102	4	22	7/8	
305	12	356	14	19	3/4	13	1/2	6	1/4	102	4	22	7/8	
356	14	406	16	19	3/4	13	1/2	13	1/2	102	4	22	7/8	
406	16	457	18	19	3/4	13	1/2	13	1/2	102	4	22	7/8	
457	18	508	20	25	1	13	5/8	13	1/2	152	6	25	1	© 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0



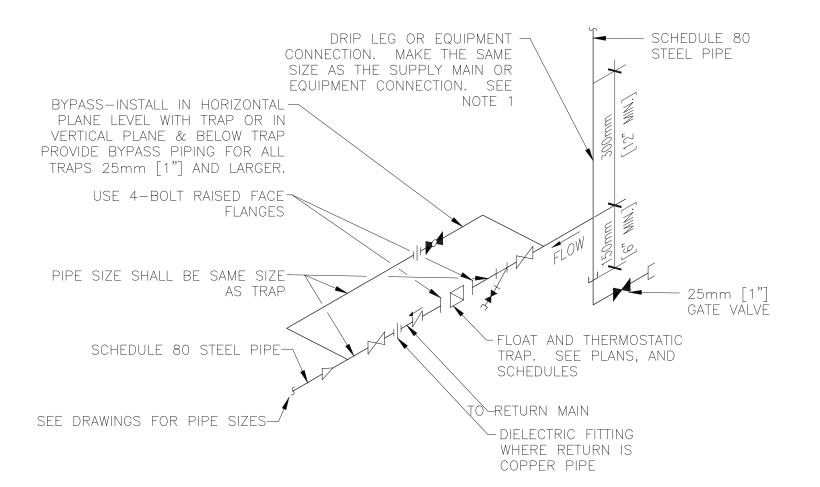
LARGE PIPE ANCHOR 152-457mm [6" -18"]



SECURING HANGER RODS IN CONCRETE



STEAM LINE DRIP POCKET AND STEAM TRAP ASSEMBLY



ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A 300mm [12"] MINIMUM HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 150mm [6"] SCALE POCKET BELOW TRAP INLET.



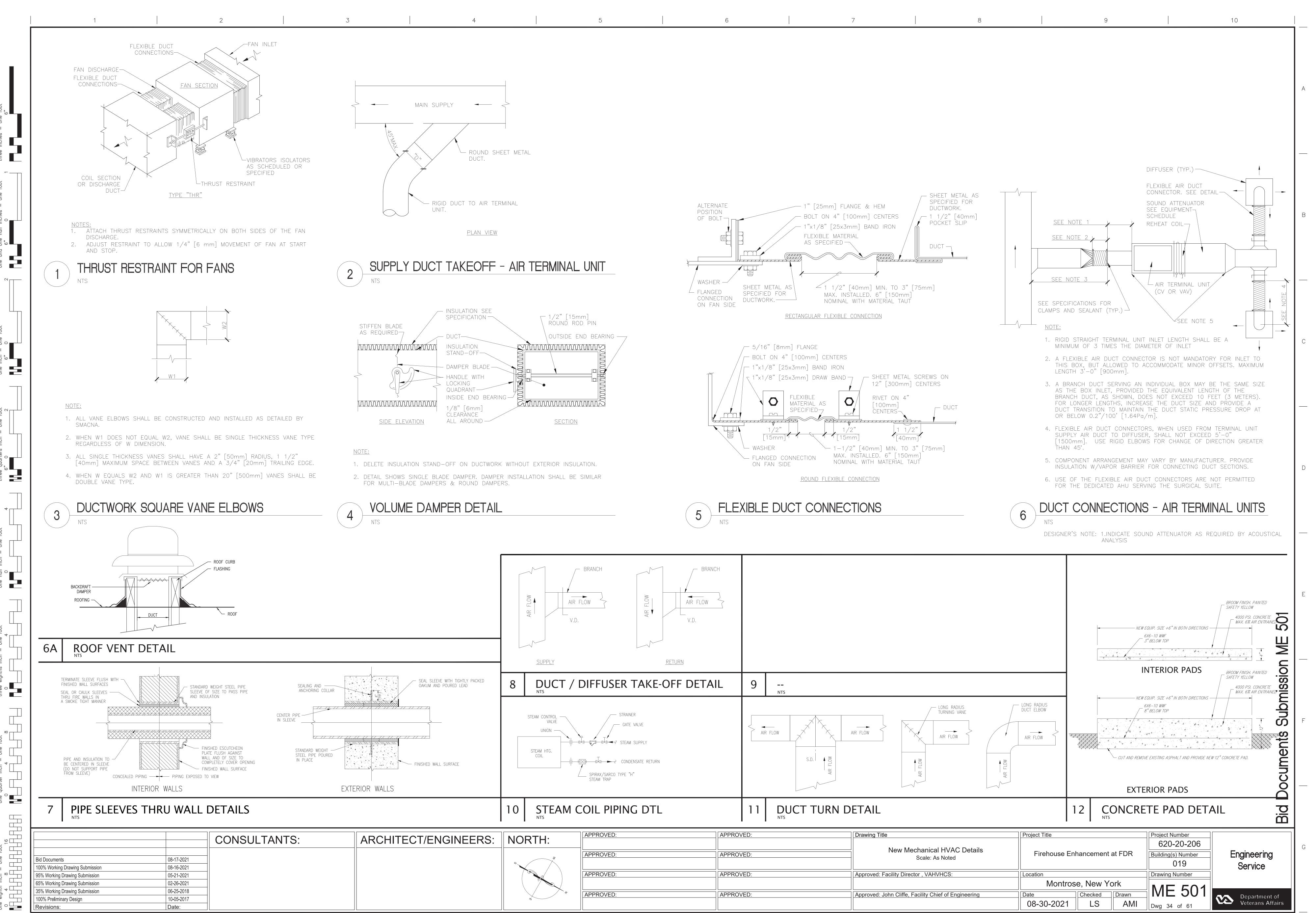
LOAD RATED		HANGER STRAPS (OR RODS								
FASTENERS — BAND OF SAME SIZE AS HANGER	MAX. DUCT Ø	QUANTITY/SIZE IN. [mm]	MAX. LOAD LBS. [kg]	MAX. SPACING IN. [mm]							
STRAP	26 [650]	ONE 1 [25] x 22 GA STRAP	260 [119]	144 [3600]							
50" [1250mm]ø	36 [900] 50 [1250]	ONE 1 [25] x 18 GA STRAP ONE 1 [25] x 16 GA STRAP	420 [190] 700 [317]	144 [3600] 144 [3600]							
& UNDER —	60 [1500] 84 [2100]	TWO 3/8 [10]ø. RODS TWO 1/2 [13]ø RODS	1320 [598] 2500 [1133]	144 [3600] 144 [3600]							
HANGER RODS NOTE: TABULATED DATA FROM SMACNA ALLOWS FOR DUCT REINFORCING AND INSULATION, BUT NO EXTERNAL LOAD.											
OVER 50" [1250mm]ø											

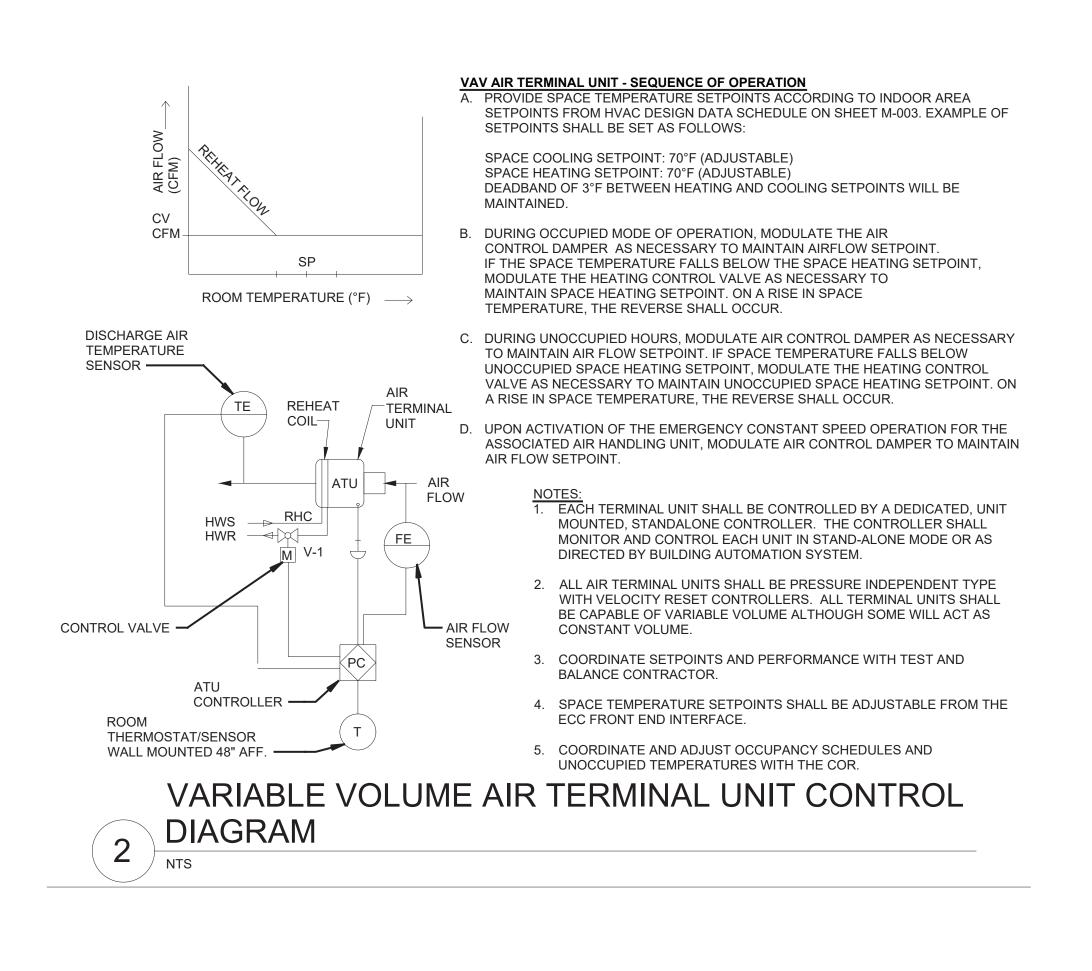
ROUND DUCT HANGERS

											B.
		CONCLUTANTO.	A DOLUTEOT/ENIONIEEDO.	NODTU	APPROVED:	APPROVED:	Drawing Title	Project Title		Project Number	
		CONSULTANTS:	ARCHITECT/ENGINEERS:	NORTH:						620-20-206	
Bid Documents	08-17-2021			*	APPROVED:	APPROVED:	New Mechanical Steam Distribution Details Scale: As Noted	Firehouse En	hancement at FDR		Engineering
100% Working Drawing Submission	08-16-2021									019	Service
95% Working Drawing Submission	05-21-2021				APPROVED:	APPROVED:	Approved: Facility Director , VAHVHCS:	Location		Drawing Number	\exists
65% Working Drawing Submission	02-26-2021							Montros	se, New York		
35% Working Drawing Submission	06-25-2018			*	APPROVED:	APPROVED:	Approved: John Cliffe, Facility Chief of Engineering	Date	Checked Drawn	ME 500	
100% Preliminary Design Revisions:	10-05-2017			77	74 TROVES.	74THOVED.	7, ppreved. defin dime, r demity ether of Engineering	08-30-2021	1 -	41	Veterans Affairs
Revisions:	Date:							00-30-2021	LO Alv	11 Dwg 33 of 61	— Veterans Anans

one eighth inch = one foot

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					POIN	IT TYPE			S	ETPOINT	s		
POINT TAG	POINT DESCRIPTION	UNITS	BIN	IARY	ANA	LOG	N/IDTI IAI	451	INITIAL		10)4/	ALARM CONDITION	NOTES
IAG			IN	OUT	IN	OUT	VIRTUAL	ADJ.	INITIAL	HIGH	LOW		
	OCCUPIED MODE STATUS	ON/OFF											
	UNOCCUPIED MODE STATUS	ON/OFF											
	HUMIDIFICATION MODE STATUS	ON/OFF											
	DEHUMIDIFICATION MODE STATUS	ON/OFF											
	SUPPLY FAN START/STOP	ON/OFF		Х									
C-1	SUPPLY FAN STATUS	ON/OFF	Х									SUPPLY FAN PROOF FAILED	
	SUPPLY FAN SPEED COMMAND	%				Х							
	SUPPLY FAN MINIMUM SPEED SETPOINT	%					Х	Χ	50				
	SUPPLY FAN VFD ALARM	ON/OFF	X										
PSH-1	SUPPLY DUCT PRESSURE SWITCH HIGH LIMIT SAFETY	NORMAL/ALARM	Х					Χ	5.0			ALARM	
DD-1	SUPPLY AIR DUCT SMOKE DETECTOR	NORMAL/ALARM	Х									ALARM	
-T-1	SUPPLY AIR FLOW	CFM			Х								
	SUPPLY AIR FLOW SETPOINT	CFM					Х						
SPS-1	SUPPLY AIR STATIC PRESSURE	IN. W.G.			X							MORE THAN 20% ABOVE OR BELOW SETPOINT	
	SUPPLY AIR STATIC PRESSURE SETPOINT	IN. W.G.					Х	Х	2.0	2.5	1.0		
ГТ-1	SUPPLY AIR TEMPERATURE	DEG. F			х							MORE THAN 10 DEG F ABOVE OR BELOW SETPOINT	AVERAGING
	SUPPLY AIR TEMPERATURE SETPOINT	DEG. F					Х	Χ	55	60	49		
DD-2	SUPPLY AIR DUCT SMOKE DETECTOR	NORMAL/ALARM	Х									ALARM	
T-3	RETURN AIR FLOW	CFM			Х								
	RETURN AIR FLOW SETPOINT	CFM					X						
TT-4	RETURN AIR TEMPERATURE	DEG. F			Х								
D-2	RETURN AIR DAMPER COMMAND	% OPEN				X							N.O.
ZC-2	RETURN AIR DAMPER POSITION	% OPEN	X			, , , , , , , , , , , , , , , , , , ,							14.0.
		70 21 210											
T-2	OUTSIDE AIR FLOW	CFM			х							OA FLOW LESS THAN 80% OF SETPOINT	
	OUTSIDE AIR FLOW SETPOINT	CFM					Х	Х	Х				PER SCHEDUL
T-2	OUTSIDE AIR TEMPERATURE	DEG. F			Х								
DS-1	PRE-FILTER 1 DIFFERENTIAL PRESSURE	IN. W.G.			X								
PDS-2	PRE-FILTER 2 DIFFERENTIAL PRESSURE	IN. W.G.			X								
TT-5	MIXED AIR TEMPERATURE	DEG. F			X							MODE THAN 10 DEC 5	AVERAGING
T-6	COOLING COIL LEAVING AIR TEMPERATURE	DEG. F			X							MORE THAN 10 DEG F ABOVE OR BELOW SETPOINT	AVERAGING
HCV-1	PREHEAT STEAM CONTROL VALVE COMMAND	% OPEN				Х							N.O.

19-AHU-01 - SEQUENCE OF OPERATION

1. GENERAL

a. 19-AHU-01 SHALL BE STANDALONE AND SHALL OPERATE WITH STANDALONE BACNET CONTROLS. UNIT SHALL BE STARTED AND STOPPED BY THE DIRECT DIGITAL CONTROL PANEL (DCP). DCP SHALL BE CAPABLE OF BEING CONNECTED TO FUTURE ENGINEERING CONTROL CENTER (ECC) AND ME MONITORED AND CONTROLLED VIA BACNET CONTROLS.

b. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF COMPLETE HVAC CONTROLS SYSTEM TO

VA COR FOR APPROVAL. c. INTERLOCK THE AIR HANDLING UNIT SYSTEM WITH THE EXISTING FIRE ALARM SYSTEM.

d. ALL DIRECT DIGITAL CONTROL PANELS (DCP) SHALL BE FED FROM AN EMERGENCY POWER

2. RUN CONDITION

a. <u>COOLING MODE:</u> IF SPACE TEMPERATURE IS ABOVE THE COOLING SETPOINT, ENTER COOLING MODE UNTIL TEMPERATURE FALLS BELOW SETPOINT MINUS A 2°F DEADBAND.

b. <u>HEATING MODE:</u> IF SPACE TEMPERATURE IS BELOW THE HEATING SETPOINT, ENTER HEATING MODE UNTIL TEMPERATURE RISES ABOVE SETPOINT PLUS A 2°F DEADBAND.

3. AIR FLOW CONTROL

a. THE SUPPLY AIR FLOW SHALL BE CONTROLLED BY THE DCP AND MODULATE THE SUPPLY FAN VARIABLE FREQUENCY DRIVE (VFD) SPEED TO MAINTAIN A SPACE TEMPERATURE SETPOINT, AS MEASURED BY FREQUENCY DRIVE (VFD) SPEED TO MAINTAIN A SPACE TEMPERATURE SETPOINT, AS MEASURED BY FREQUENCY DRIVE (VFD) SPEED TO MAINTAIN A SPACE TEMPERATURE SETPOINT, AS MEASURED BY TEMPERATURE SENSORS LOCATED IN THE SPACE. WHEN MULTIPLE SENSORS ARE INDICATED, POLL ALL SENSORS AND CONTROL TO THE MOST DEMANDING READING.

4. TEMPERATURE CONTROL

a. SUPPLY AIR TEMPERATURE, SENSED BY TT-1, SHALL BE MAINTAINED AT SETPOINT (55 DEG

b. A FIXED VOLUME OF OUTSIDE AIR FLOW SHALL BE MAINTAINED AT 20% (600 CFM) AT ALL

F.) VIA DIGITAL CONTROL PANEL WHILE MINIMIZING THE FAN SPEED.

7. SMOKE CONTROL AUTOMATIC SHUTDOWN/RESTART

a. WHEN SMOKE IS DETECTED BY ANY ASSOCIATED DUCT MOUNTED SMOKE DETECTOR, THE SUPPLY FAN AND INTERLOCKED RETURN/EXHAUST FAN(S) SHALL SHUT "OFF", AN ALARM SIGNAL SHALL BE TRANSMITTED TO THE FIRE ALARM SYSTEM.

b. SUPPLY FAN(S) SHALL AUTOMATICALLY RESTART WHEN FIRE ALARM CIRCUIT IS RESET.

8. EMERGENCY CONSTANT SPEED OPERATION

a. UPON FAILURE OF SUPPLY FAN VFD(S), THE SUPPLY FAN(S) SHALL BE STARTED/STOPPED MANUALLY AT THE DCP AND ECC THROUGH A BY-PASS STARTER. ACTIVATION OF CONSTANT SPEED OPERATION SHALL CAUSE THE SUPPLY FAN(S) TO OPERATE AT CONSTANT SPEED.

a. HIGH PRESSURE LIMIT: THE DCP, USING HIGH PRESSURE LIMIT SWITCH PSH-1 LOCATED AT THE SUPPLY FAN DISCHARGE, SHALL PREVENT THE SUPPLY FAN(S) FROM DEVELOPING OVER 4 IN. W.G. OF POSITIVE STATIC PRESSURE (FIELD ADJUSTABLE). IF STATIC PRESSURE AT PSH-1 DOES EXCEED 4 IN. W.G., THE SWITCH WILL OVERRIDE ALL CONTROLS AND SHUT DOWN THE SUPPLY FAN(S), AND A "HIGH PRESSURE" ALARM SIGNAL SHALL BE INDICATED AT THE DCP AND ECC. PSH-1 SHALL BE HARDWIRED TO THE SUPPLY FAN VFD(S) AND UNIT SHALL BE SHUTDOWN IN HAND, AUTO, OR BYPASS MODE. PSH-1 WILL REQUIRE MANUAL RESET AT THE DEVICE.

b. FILTER STATUS: THE DCP SHALL MONITOR AND INDICATE THE DIFFERENTIAL PRESSURE ACROSS EACH AIR HANDLING UNIT FILTER SECTION. PROGRAM A HIGH LIMIT SETPOINT FOR EACH FILTER SECTION IN ACCORDANCE WITH FILTER MANUFACTURER'S RECOMMENDATION. IF THE DIFFERENTIAL PRESSURE ACROSS A FILTER SECTION IS GREATER THAN THE HIGH LIMIT SETPOINT, THE DCP AND ECC SHALL REPORT A FILTER MAINTENANCE ALARM WITH MESSAGE INDICATING THAT THE FILTER NEEDS TO BE

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		CONSULTANTS:
Bid Documents	08-17-2021	
100% Working Drawing Submission	08-16-2021	
95% Working Drawing Submission	05-21-2021	
65% Working Drawing Submission	02-26-2021	
35% Working Drawing Submission	06-25-2018	
100% Preliminary Design	10-05-2017	
Revisions:	Date:	

ARCHITECT/ENGINEERS: | NORTH:

ROVED:	APPROVED:	Draw
ROVED:	APPROVED:	
ROVED:	APPROVED:	Appr
ROVED:	APPROVED:	Appr
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Drawing Title	Project Title
New Mechanical HVAC Controls Information Scale: As Noted	Firehouse Enhancement at FDR
Approved: Facility Director , VAHVHCS:	Location
	Montrose, New York
Approved: John Cliffe, Facility Chief of Engineering	Date Checked Drawn

08-30-2021



Project Number

620-20-206

Building(s) Number

Drawing Number

VA FORM 08-6231, OCT 1978

one eighth inch = one foot

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ROUNI	D FLOOR ROOM NAME	FLOOR	ROOM	REQ'D	REQ'S	DESIGN AIR	REQ'D AREA	REQ'D AREA	\mathbb{R}^2	R	REMARKS
		AREA SQ. FT.	VOLUME CU. FT.	AC/HR	CFM**	VELOCITY FT./MIN.	of DUCT SQ. FT.	of DUCT SQ. IN.			
01	COMMINICATIONS	140	1,104	12	224	600	.38	54	17	4	_
01A	ROOM CHIEF OFFICE	125	CU. FT.	6	100	600	.17	24	37	6	
02	COMMUNITY ROOM	SQ. FT.	CU. FT. 5,913	6	480	600	.80	115.20	8	3	_
03	STAFF KITCHEN	SQ. FT.	1,089	6	96	600	.16	23.04			N.I.C.
04	W. SHOWER ROOM	SQ. FT.	224								N.I.C.
05	W. TOILET	SQ. FT.	224								N.I.C.
06	M. TOILET	SQ. FT.	280								N.I.C.
07	M. SHOWER ROOM	SQ. FT.	256								N.I.C.
08	FIRE DEPT. GARAGE	SQ. FT.	33,592								N.I.C.
09	LAUNDRY/EQIUIP	SQ. FT. 253 SQ. FT.	CU. FT. 3,289 CU. FT.	10	352	600	.59	84.48	27	5	_
09A	ROOM ELEC. PANEL	18	180	_	_	_		_			_
10	CLOSET AMBULANCE BAY	SQ. FT. 280 SQ. FT.	3,640 CU. FT.	_	_	_	_	_			_
11	BUNK 01	125 SQ. FT.	1,000 CU. FT.	6	100	600	.17	24	8	3	_
12	BUNK 02	125 SQ. FT.	1,000 CU. FT.	6	100	600	.17	24	8	3	_
13	BUNK 03	125 SQ. FT.	1'008 CU. FT.	6	100	600	.17	24	8	3	_
14	BUNK 04	130 SQ. FT.	1,032 CU. FT.	6	104	600	.17	24.96	8	3	_
15	BUNK 05	130 SQ. FT.	1,096 CU. FT.	6	104	600	.17	24.96	8	3	_
16	CHIEF BUNK	145 SQ. FT.	1,144 CU. FT.	6	104	600	.17	24.96	15	4	_
16A	TELECOMMINUCATION CLOSET	55 SQ. FT.	550 CU. FT.						10	3	
16B	STEAM PIT CLOSET	43 SQ. FT.	430 CU. FT.								
16C	FIRE SPRINKLER CLOSET	24 SQ. FT.	240 CU. FT.								
17	BUNK 06	133 SQ. FT.	1,064 CU. FT.	6	100	600	.17	24.96	10	3	_
18	BUNK 07	124 SQ. FT.	992 CU. FT.	6	100	600	.17	24	8	3	_
19	BUNK 08	125 SQ. FT.	1,000 CU. FT.	6	100	600	.17	24	8	3	_
20	NEW STORAGE	230 SQ. FT.	2,300 CU. FT.								N.I.C.
21	NEW M & R GARAGE	SQ. FT.	- CU. FT.								N.I.C.
22	EXISTING TRANSFORMER RM.	184 SQ. FT.	2,392 CU. FT.								N.I.C.
C01	CORRIDOR A	103 SQ. FT.	824 CU. FT.	6	92	600	.15	22.08	8	3	_
C02	CORRIDOR B	58 SQ. FT.	464 CU. FT.	6	60	600	.10	14.40	6	2	_
C03	CORRIDOR C	108 SQ. FT.	864 CU. FT.	6	80	600	.13	19.20	8	3	_
C04	CORRIDOR D	146 SQ. FT.	536 CU. FT.	6	104	600	.17	24.96	8	3	_
C05	CORRIDOR E	90 SQ. FT.	720 CU. FT.	6	92	600	.15	22.08	8	3	_
	TOTAL	6,327 SQ. FT.	70,111 CU. FT.		2,592						

HVAC EQUIPMENT SCHEDULE - VAV AIR TERMINAL UNIT SCHEDULE

GROUND FLOOR

TAG #	NOMINAL SIZE	AREA	AIR FLOW	DESIGN AIR	MAX. PRESSURE	CONTROL	CONTROL	VOLT. FOR ELEC.	POWER (KW) FOR	AMP. FOR ELEC.	REMARKS
"	(IN.)	SERVED	MAX.	FLOW	DROP	TYPE	SEQUENCE	HEAT COIL	ELEC. HEAT COIL	HEAT COIL	
VAV-01	4"	BUNK 3	229	100	.25 INWG	DDC	VAV	208-1-60	1	4.8	WITH ELECTRIC REHEAT
VAV-02	4"	BUNK 4	229	100	.25 INWG	DDC	VAV	208-1-60	1	4.8	WITH ELECTRIC REHEAT
VAV-03	4"	BUNK 5	229	100	.25 INWG	DDC	VAV	208-1-60	1	4.8	WITH ELECTRIC REHEAT
VAV-04	4"	TELE. CL. RM.16A	229	125	.25 INWG	DDC	VAV	208-1-60	1	4.8	WITH ELECTRIC REHEAT
VAV-05	5"	CHIEF BUNK /OFFICE RM. 16	515	225	.25 INWG	DDC	VAV	208-1-60	2	9.6	WITH ELECTRIC REHEAT
VAV-06	5"	CORR. CDE	515	200	.25 INWG	DDC	VAV	208-1-60	2	9.6	WITH ELECTRIC REHEAT
VAV-07	4"	BUNK 6	229	120	.25 INWG	DDC	VAV	208-1-60	1	4.8	WITH ELECTRIC REHEAT
VAV-08	5"	COMM. RM. 01	515	225	.25 INWG	DDC	VAV	208-1-60	2	9.6	WITH ELECTRIC REHEAT
VAV-09	4"	BUNK 8	229	125	.25 INWG	DDC	VAV	208-1-60	1	4.8	WITH ELECTRIC REHEAT
VAV-10	4"	BUNK 7	229	100	.25 INWG	DDC	VAV	208-1-60	1	4.8	WITH ELECTRIC REHEAT
VAV-11	4"	BUNK 2	229	100	.25 INWG	DDC	VAV	208-1-60	1	4.8	WITH ELECTRIC REHEAT
VAV-12	4"	BUNK 1	229	100	.25 INWG	DDC	VAV	208-1-60	1	4.8	WITH ELECTRIC REHEAT
VAV-13	6"	COMM. RM. 02, KITCHEN RM. 03, & CORR. AB	916	580	.25 IN.—WG	DDC	VAV	208-1-60	4	19.25	WITH ELECTRIC REHEAT
VAV-14	5"	LAUNDRY/UTILITY	916	350	.25 IN.—WG	DDC	VAV	208-1-60	2	9.6	WITH ELECTRIC REHEAT

- ALL AIR TERMINAL UNITS SHALL BE PRESSURE INDEPENDENT TYPE WITH VELOCITY RESET CONTROLLER. PROVIDE WITH ARI 880 RATED MAXIMUM DAMPER LEAKAGE OF 2% NOMINAL AIRFLOW AT 3 IN. W.G. INLETS
- STATIC PRESSURE.
- INSTALL UNIT WITH CLEARANCE FOR ELECTRICAL AND MAINTAINANCE ACCESS. PROVIDE CEILING PANEL
- ACCESS WHERE NEEDED FOR ACCESS TO UNIT. PROVIDE SPACE PRESSURE CPMTRPLLER AMD DISPLAY, PRESSURE DIFFERENTIAL SENSORS, AND
- INTERLOCKS TO MAINTAIN REQUIRED SPACE PRESSURE DIFFERENTIAL. SEE CONTROLS SHEET. PROVIDE A STANDALONE DDC CONTROLS SYSTEM WITH THE CAPABILITY TO BE CONNECTED TO A BMS
- SYSTEM IN THE FUTURE.
- SUSPEND VAV UNITS ABOVE ACCOUSTICAL CEIINGS FROM THE BUILDINGS STRUCTURE AS PER
- MANUFACTURER'S INSTALLATION IINSTRUCTIONS.
- BASIS OF DESIGN: CARRIER AXIS 35E SINGLE DUCT TERMINALS.

GROUND FLOOR

TAG #	LOCATION	UNIT	COOLING	AMBIENT TEMP.	SUCTION TEMP.	ELECTRIC	COMPRESS.	COND. FAN	MCA	MOP	MODEL/MANUFACTURER	DIMENSIONS	APPROX. UNIT	EER	REMARKS
"		SERVED	(TMBH)	(°F)	(°F)	VOLT./PH/HZ	NO./RLA (EA)	NO./FLA				$(L \times W \times H)$	WT. (LBS.)		BASIS OF DESIGN AS LISTED. O DEGREES F° LOW AMBIENT CONTROL. 6" HIGH CONCRETE PAD,
ACC-01	PAD MTD.	AHU-01	123.8	95	39.2	208/3/60	2/22.4	2/3	60.80	80	CARRIER 38AUD14A0AS-0A-0-C-0	60"x46"x50"	654	11.5	DICONNECT SWITCH, GFI CONVENIENCE OUTLET, INTERLOCK WITH AHU—
	PARKING SIDE					, ,	,	,							

ARCHITECT/ENGINEERS:

HVAC EQUIPMENT SCHEDULE - AIR HANDLING UNIT SCHEDULE

GROUND FLOOR

	GENERAL							DX COOLING							SUPPLY FAN DATA DIMENSIO			DIMENSIONS	APPROX. UNIT	ELECTRICAL	REMARKS			
				INFORMATI	ON																$(L \times W \times H)$	WT. (LBS.)	(V/PH/HZ)	
	TAG #	AREA SERVED	LOCATION	MFG'R	MODEL NO	. SUPPLY CFA	// OUTSIDE AIR	MAKE	MODEL	COOLING	COOLING	EADB	EAWB	LADB	LAWB	MAKE	MODEL	OUTPUT	EAT		7'-10" ×	787	208/3/60	PROVIDE SUPPORT TO HANG AHU FROM UNDERSIDE OF ROOF DECK. SUPPORT ASSEMBLY SHALL
	"						CFM			(TMBH)	(SMBH)	(DEG. F)	(DEG. F)	(DEG. F)	(DEG. F)			(MBH)	(DEG. F)		4'-3"x 2'-5"		, ,	HAVE VIBRATION ISOLATORS PER MANUFACTURER'S RECOMMENDATION. DISCONNECT SWITCH,
A	HU-01	FIREHOUSE QUARTERS			39LA06	3,000	600	CARRIER	28NE	131	89	82	68	55	54	CARRIER	28LZ	106	53	86				DOUBLE WALL CONSTRUCTION WITH PERFORATED INNER WALL FOR FAN SECTION, ACCESS DOORS, AND HIGH EFFICIENCY MOTORS, VFD. PROVIDE 2—WAY CONTROL VALVES AND THERMOSTATS.

HVAC EQUIPMENT SCHEDULE - STEAM TRAP SCHEDULE

GROUND FLOOR

TAG #	LOCATION	UNIT SERVED	EQUIP. DEMAND (#/HR)	EQUIP. PRESSURE (PSI)	PIPE CONNECTION SIZE	REMARKS
ST-1	LAUNDRY ROOM UTILITY ROOM	AHU-01	115	5	1 ½" INLET	SPIRAX—SARCO BELL FLOAT—THERMOSTATION TYPE "H"

CONSULTANTS:



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o U	Bid Documents	08-17-2021
	100% Working Drawing Submission	08-16-2021
i ch	95% Working Drawing Submission	05-21-2021
	65% Working Drawing Submission	02-26-2021
eighth 4	35% Working Drawing Submission	06-25-2018
	100% Preliminary Design	10-05-2017
one O	Revisions:	Date:
	VA FORM 08-6231, OCT 1978	

NORTH:

Engineering	
Service	
1E 600 Department of	
Department of	
Department of Veterans Affairs	