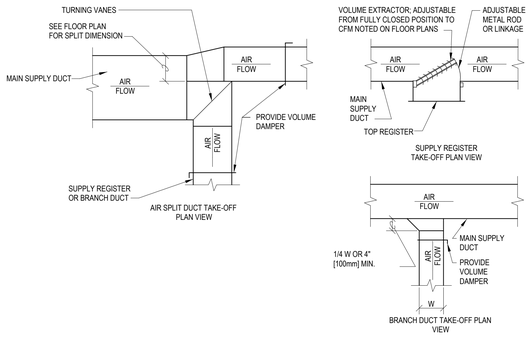
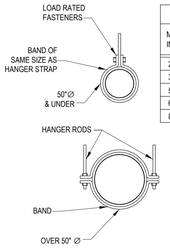
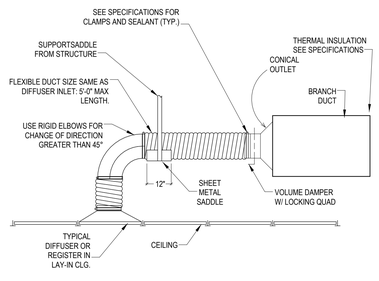




HANGER STRAPS OR RODS			
MAX. DUCT Ø IN. [mm]	QUANTITY/SIZE IN. [mm]	MAX. LOAD LBS.	MAX. SPACING IN. [mm]
26 [650]	ONE 1 [25] x 22 GA STRAP	260 [119]	144 [3600]
36 [900]	ONE 1 [25] x 18 GA STRAP	420 [190]	144 [3600]
50 [1250]	ONE 1 [25] x 16 GA STRAP	700 [317]	144 [3600]
60 [1500]	TWO 3/8 [10] Ø. RODS	1320 [598]	144 [3600]
84 [2100]	TWO 1/2 [13] Ø RODS	2500 [1133]	144 [3600]

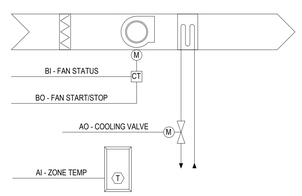
NOTE: TABULATED DATA FROM SMACNA ALLOWS FOR DUCT REINFORCING AND INSULATION, BUT NO EXTERNAL LOAD.

2 ROUND DUCT HANGERS
NTS



NOTE: THE USE OF FLEXIBLE AIR DUCT CONNECTORS ARE NOT PERMITTED FOR THE DEDICATED AHU SERVING THE SURGICAL SUITE.

1 FLEXIBLE AIR DUCT CONNECTOR
NTS



FAN COIL UNIT

RUN CONDITIONS - SCHEDULED:
THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE. ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH ZONE TEMP: IF THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).
- LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).

FAN:
THE FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN, UNLESS SHUTDOWN ON SAFETIES.

COOLING COIL VALVE:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND MODULATE THE COOLING COIL VALVE TO MAINTAIN ITS COOLING SETPOINT.

FAN STATUS:
THE CONTROLLER SHALL MONITOR THE FAN STATUS.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.

4 FAN COIL UNIT CONTROL DIAGRAM
NTS

MECHANICAL ABBREVIATIONS

AC	ABOVE CEILING	GEF	GENERAL EXHAUST FAN
AFF	ABOVE FINISHED FLOOR	IBT	INVERTED BUCKET TRAP
AI	ANALOG INPUT	IN HG	INCHES MERCURY (PRESSURE)
AO	ANALOG OUTPUT	IN WC	INCHES WATER COLUMN (PRESSURE)
BF	BELOW FLOOR, BLIND FLANGE	LE	LAUNDRY EQUIPMENT
BFC	BELOW FINISHED CEILING	MA	MIXED AIR
BG	BELOW GRADE	MVD	MOTORIZED VOLUME DAMPER
BV	BUTTERFLY VALVE	N	NEW
CHW	CHILLED WATER	OA	OUTSIDE AIR
CRU	COMPUTER ROOM UNIT	OBD	OPPOSED BLADE DAMPER
CRU	CONDENSATE RETURN UNIT	PRV	PRESSURE RELIEF VALVE
CU	CONDENSING UNIT	R	RELOCATED
DI	DIGITAL INPUT	RA	RETURN AIR
DO	DIGITAL OUTPUT	RCA	RECIRCULATED (RETURN) AIR
DS	DISCONNECT SWITCH	RLA	RELIEF AIR
E	EXISTING	SA	SUPPLY AIR
EDH	ELECTRIC DUCT HEATER	SF	SUPPLY FAN
EUH	ELECTRIC UNIT HEATER	SV	SAFETY VALVE
EA	EXHAUST AIR	TAV	THERMOSTATIC AIR VENT (STEAM SYSTEM)
EF	EXHAUST FAN	UH	UNIT HEATER
FCU	FAN COIL UNIT	UNO	UNLESS NOTED OTHERWISE
FMB	FILTER MIXING BOX	VAV	VARIABLE AIR VOLUME
FPB	FAN POWERED BOX	VD	VOLUME DAMPER
FPI	FINS PER INCH	WH	WATER HEATER
GC	GENERAL CONTRACTOR	WHP	WATER-SOURCE HEAT PUMP

AIR DEVICE SCHEDULE

BASE: UNLESS NOTED OTHERWISE, AIR DEVICES SHALL BE ALUMINUM CONSTRUCTION WITH WHITE, BAKED POWER-COAT, 2-MIL FINISH (SEE FINISH). REFER TO PLANS AND RCP TO DETERMINE MOUNTING FRAME OPTIONS.

OPTIONS: REFER TO TYPE & REMARKS COLUMNS, ST = STEEL, AST = ALUMINIZED STEEL, IBP=INSULATED BACK PAN (MEET UL 181/NFPA 90A SMOKE REQUIREMENTS), LT = LOW TEMPERATURE DISIGN WITH INSULATED PAN AND INDUCTION CHAMBER.

NOTES:
1. EXISTING AIR DEVICES ARE SQUARE NECKS UNLESS NOTED OTHERWISE. REPLACEMENT DEVICES MAY BE EITHER SQUARE OR EQUIVALENT ROUND SIZE.

TYPICAL TAG:
AA, BB"e AA=MARK, BB=NECK SIZE
CCC CFM CCC=MAX DESIGN FLOW

MARK	TYPE	PANEL/FRAME SIZE (INxIN)	NECK TYPE	DAMPER	FINISH	BASIS OF DESIGN		REMARKS
						MANUFACTURER	MODEL	
E1	PERFORATED	24"x24"	NOTE 1	--	WHITE	APDDR / 56690 / PAR-AA	PRICE / KRUEGER / TITUS	
R1	PERFORATED	24"x24"	NOTE 1	--	WHITE	APDDR / 56690 / PAR-AA	PRICE / KRUEGER / TITUS	
S1	PLAQUE	24"x24"	ROUND	--	WHITE	ASPD / 5PLQ / OMNI-AA	PRICE / KRUEGER / TITUS	
S2	PLAQUE	24"x24"	NOTE 1	--	WHITE	ASPD / 5PLQ / OMNI-AA	PRICE / KRUEGER / TITUS	
S3	PLAQUE	24"x24"	NOTE 1	--	WHITE	ASPD / 5PLQ / OMNI-AA	PRICE / KRUEGER / TITUS	

FAN COIL UNIT SCHEDULE

NOTES:
1. INSTALL FAN COIL UNIT ABOVE CEILING TO REPLACE EXISTING EXPOSED FCU BELOW CEILING. RECONNECT TO EXISTING PIPING.

MARK	LOCATION	TYPE	AIR FLOW		COOLING REQUIREMENTS	FILTER (MERV RATING)	ELECTRICAL			BASIS OF DESIGN		REMARKS
			FAN AIR FLOW (CFM)	EXTERNAL APD (IN WG)	CAPACITY TOTAL (MBH)		VOLT	PHASE	CIRCUIT FLA	MANUFACTURER	MODEL	
FCU-1	AREA B	2-PIPE, PLENUM	1200	0.5	40000.0 Btu/h	MERV8	115	1	2.5	Johnson Controls, Inc.	FHP 40	1

MECHANICAL SYMBOLS

ALL SYMBOLS SHOWN MAY NOT APPEAR IN ALL DRAWINGS.
SYMBOLS ARE SHOWN SCHEMATICALLY AND MAY NOT BE TO SCALE.

SYMBOL	DESCRIPTION
A #	NEW EQUIPMENT DESIGNATION (TOP - EQUIP. ABBREV., BOTTOM - MARK)
A #	NEW DIFFUSER DESIGNATION (TOP - SCHEDULE DESIGN., BOTTOM - CFM)
	NEW EQUIPMENT
	EXISTING EQUIPMENT
	NEW DUCT
	EXISTING DUCT
	EXISTING DUCT TO BE REMOVED OR RELOCATED
	NEW SUPPLY DIFFUSER
	EXISTING SUPPLY DIFFUSER
	EXISTING SUPPLY DIFFUSER TO BE REMOVED OR RELOCATED
	NEW R/A OR EXHAUST GRILLE
	EXISTING R/A OR EXHAUST GRILLE
	EXISTING R/A OR EXHAUST GRILLE TO BE REMOVED OR RELOCATED
	NEW SLOT DIFFUSER
	FLEXIBLE DUCT
	EXISTING SLOT DIFFUSER
	EXISTING SLOT DIFFUSER TO BE REMOVED OR RELOCATED
T	THERMOSTAT W/ BACKBOX AND CONDUIT TO ABOVE CEILING
T	EXISTING THERMOSTAT TO BE REMOVED OR RELOCATED
	45 DEGREE PRESSURE TAP W/ VOLUME DAMPER
	CONICAL TAP W/ VOLUME DAMPER
	CONICAL TAP W/O VOLUME DAMPER
	MANUAL DAMPER
FD	FIRE DAMPER
SD	SMOKE DAMPER
FSD	FIRE/SMOKE DAMPER
M	MOTORIZED DAMPER
BD	BAROMETRIC DAMPER
HWS	HEATING WATER SUPPLY
HWR	HEATING WATER RETURN
HPS	HIGH PRESSURE STEAM
HPR	HIGH PRESSURE CONDENSATE RETURN
LPS	LOW PRESSURE STEAM
LPR	LOW PRESSURE CONDENSATE RETURN
PCR	PUMPED CONDENSATE RETURN
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	DOMESTIC HOT WATER RETURN
SS	SANITARY WASTE LINE
CD	CONDENSATE DRAIN
P	PUMPED SANITARY LINE
	VENT LINE
	DIRECTION OF SLOPE
	DIRECTION OF FLOW
	TEMPERATURE AND PRESSURE RELIEF VALVE
	BALANCING VALVE
	AUTOMATIC 2-WAY CONTROL VALVE
	AUTOMATIC 3-WAY CONTROL VALVE
	PLUG VALVE/BALANCING COCK
	SOLENOID VALVE
	CHECK VALVE
	HYDRAULIC SHOCK ARRESTOR
	UNION
V	VACUUM BREAKER
FCO GCO	FLOOR CLEANOUT OR GRADE CLEANOUT
WCO	CLEANOUT OR WALL CLEANOUT
	PETE'S PLUG
	GAUGE COCK
	THERMOMETER
	THERMOMETER WELL
	CONNECT TO EXISTING

GENERAL NOTES

A. ALL MECHANICAL, ELECTRICAL, AND PLUMBING WORK SHALL COMPLY WITH ALL APPLICABLE STATE AND LOCAL BUILDING CODES. REFER TO SPECIFICATIONS FOR MATERIALS AND METHODS FOR MECHANICAL CONSTRUCTION.
B. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS, PAY ALL FEES, AND COMPLY WITH ALL NATIONAL, STATE, AND MUNICIPAL LAWS, CODES, AND ORDINANCES RELATING TO BUILDING AND PUBLIC SAFETY.
C. CONTRACTOR SHALL FURNISH ALL MATERIALS, EQUIPMENT, AND LABOR REQUIRED FOR A COMPLETE WORKING AND COORDINATED SYSTEM.
D. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF WALLS WHICH EXTEND TO STRUCTURE. EACH HVAC DUCT OR PIPE PENETRATION THROUGH THESE WALLS SHALL BE INSTALLED AS DETAILED. WHERE FLEXIBLE DUCT WOULD PENETRATE A WALL WHICH EXTENDS TO STRUCTURE, PROVIDE INSULATED RIGID DUCT EXTENDING 12 INCHES ON EITHER SIDE OF THE PARTITION.
E. COORDINATE THE EXACT LOCATION OF MECHANICAL EQUIPMENT WITH THE LOCATIONS OF LIGHT FIXTURES, PIPING, CONDUIT AND OTHER CONSTRUCTION, TO ALLOW FOR PROPER ACCESS TO SERVICE EQUIPMENT.
F. COORDINATE THE LOCATION OF DUCTWORK AND PIPING WITH OTHER TRADES AND PROVIDE OFFSETS IN DUCTWORK AND PIPING AS REQUIRED.
G. IT IS THE INTENT OF THESE DOCUMENTS TO ALLOW ALL CEILING CONSTRUCTION AND HEIGHTS TO BE AS SHOWN ON THE ARCHITECTURAL DRAWINGS. COORDINATE THE LOCATION OF DUCTWORK AND PIPING AND PROVIDE OFFSETS IN DUCTWORK AND PIPING AS REQUIRED TO MEET THIS INTENT.
H. CONDUIT, PIPING, AND DUCTWORK SHALL BE INDEPENDENTLY SUPPORTED, AND EACH SUPPORT SHALL BE INDEPENDENT OF PARTITION AND CEILING SYSTEMS SUPPORTS.
I. REFER TO RISER DIAGRAMS AND FLOW DIAGRAMS FOR PIPE SIZES NOT SHOWN ON THE PLANS.
J. INSTALL ALL FLOOR MOUNTED EQUIPMENT ON PADS AS SPECIFIED. PAD BY GENERAL CONTRACTOR. COORDINATE REQUIREMENTS WITH GENERAL CONTRACTOR.
K. PROTECT EQUIPMENT FROM DAMAGE DURING HANDLING AND INSTALLATION UNTIL COMPLETION OF CONSTRUCTION.
L. REMOVE ALL EXCESS MATERIAL AND DEBRIS AND CLEAN ALL EQUIPMENT UPON COMPLETION OF WORK. TOUCH UP WITH PAINT WHERE REQUIRED.
M. CONTRACTOR SHALL VISIT JOBSITE AND VERIFY SIZE AND LOCATION OF ALL EXISTING ITEMS AND CONDITIONS.
N. ALL CONNECTIONS BETWEEN PIPES OF DISSIMILAR MATERIALS SHALL BE MADE WITH DIELECTRIC UNIONS.
O. ALL EXISTING FACILITIES SHALL BE PROTECTED DURING THE CONSTRUCTION ACTIVITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE AND STORE ITEMS WHICH ARE SUBJECT TO DAMAGE.
P. ARCHITECT SHALL HAVE FINAL APPROVAL OF ALL GRILLE, DIFFUSER, AND THERMOSTAT LOCATIONS.
Q. COORDINATE ALL AIR DEVICE LOCATIONS AND MOUNTING FRAME STYLES WITH LIGHTING PLANS AND ARCHITECTURAL REFLECTED CEILING PLANS. PROVIDE 6'-0" FROM CENTER TO CENTER FROM SUPPLY TO EXHAUST/RETURN GRILLES FOR PROPER AIRFLOW.
R. COORDINATE ALL WALL MOUNTED DEVICE LOCATIONS WITH ARCHITECTURAL INTERIOR ELEVATIONS.
S. ANY DEVIATIONS FROM SCHEDULED EQUIPMENT RESULTING IN ADDITIONAL COST DUE TO THE LACK OF COORDINATION WITH DIMENSIONS AND WEIGHTS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
T. ALL FIRE/SMOKE COMBINATION DAMPERS AND/OR FIRE DAMPERS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION DETAILS THAT WERE TESTED AT U.L. LABORATORIES AND U.L. LISTED.
Y. PROVIDE VOLUME AND BALANCING DAMPERS AS REQUIRED BY IMC 603.17 FOR EACH BRANCH OR DIFFUSER. PROVIDE LINKAGE VOLUME DAMPERS TO DAMPERS LOCATED ABOVE HARD-LID CEILINGS SIMILAR TO YOUNG REGULATOR MODEL 927C OR EQUIVALENT SOLID LINKAGE DAMPER.
Z. VENTILATION SYSTEMS SHALL BE BALANCED USING A NATIONALLY ACCEPTED AIR BALANCING TEST METHOD.

Revision	DATE
PRE-BID RFIs	06/09/2026

CONSULTANTS:

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NO. 82497
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PROFESSIONAL ENGINEER
06/09/2026
Expires 02/28/2025

ARCHITECT/ENGINEERS:

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Drawing Title: **MECHANICAL SYMBOLS, ABBREVIATIONS & SCHEDULES**

Final Bid Set

Project Title: AE RENOVATE GROUND FLOOR HALLS AND WALLS

Location: JAMES A. HALEY VA HOSPITAL
13000 BRUCE B. DOWNS BLVD. TAMPA, FL, 33612

Date: August 23, 2024 | Checked: AESUS | Drawn: AESUS

Project Number: 673-21-153
Building Number: 1
Drawing Number: **M001**
Dwg. of

Office of Construction and Facilities Management
Department of Veterans Affairs

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