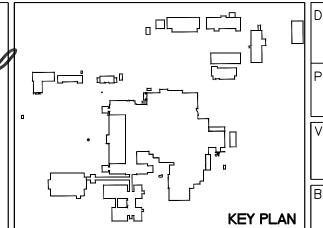


- MECHANICAL NOTES: CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING WORK AND NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES BETWEEN THE "AS-BUILT" CONDITIONS AND THESE DRAWINGS. COORDINATE ALL HVAC PIPING AND DUCTWORK INSTALLATION WITH GENERAL, PLUMBING, FIRE PROTECTION, AND ELECTRICAL CONTRACTORS. INSTALL ALL HVAC PIPING AND DUCTWORK AS HIGH AS POSSIBLE. PROVIDE ALL NECESSARY OFFSETS (DROPS AND RISES) TO KEEP HVAC PIPING AND DUCTWORK TIGHT TO THE STRUCTURE ABOVE AND INSTALLATION BY ALL TRADES. OFFSET HVAC PIPING AND DUCTWORK TO AVOID BEAMS.
- THIS CONTRACTOR SHALL OPEN ALL EXISTING WALLS AND/OR CEILINGS FOR INSTALLATION OF NEW HVAC PIPING AND VENTILATION DUCTWORK, EQUIPMENT, ETC. AS REQUIRED. PATCH WALLS AND/OR CEILINGS TO MATCH EXISTING.
- MAINTAIN 3'-0" CLEAR SPACE IN FRONT OF ALL ELECTRICAL, CONTROL, AND ACCESS PANELS FOR ACCESSIBILITY.
- ALL SHUT-OFF VALVES, CONTROL VALVES, STRAINERS, DAMPERS, ETC... SHALL BE INSTALLED IN ACCESSIBLE CEILINGS. VALVES SHALL BE LOCATED NOT MORE THAN 2 FEET ABOVE ACOUSTICAL CEILINGS. PROVIDE 1/2" DRAIN VALVE AT ALL LOW POINTS OF EACH SYSTEM TO ENABLE COMPLETE DRAINAGE. PROVIDE 1/2" VENT VALVES AT ALL HIGH POINTS OF EACH SYSTEM TO ENABLE COMPLETE VENTING.
- ALL OPEN ENDS OF DUCTS SHALL BE CAPPED AT THE END OF CONSTRUCTION EACH DAY. ALL NEW PIPING SHALL BE INSTALLED AS HIGH AS POSSIBLE TO AVOID TRIPPING HAZARDS IN WALKWAYS BUT AT A HEIGHT TO REMAIN ACCESSIBLE. KEEP ALL EQUIPMENT ACCESS PATHS CLEAR.
- ALL EXISTING DIFFUSERS, GRILLES, AND FLEX DUCTS AFFECTED BY CEILING REMOVAL AND RE-INSTALLATION SHALL BE TEMPORARILY SUPPORTED DURING CONSTRUCTION AND RE-INSTALLED AFTER CEILING WORK IS COMPLETE. ALL SPRINKLER ESCUTCHEONS SHALL BE REMOVED AND REINSTALLED AS REQUIRED FOR CEILING WORK.
- 1 REPLACE EXISTING HUMIDIFIER INCLUDING DUCT DISTRIBUTION TUBE, ON/OFF CONTROL VALVE, MODULATING CONTROL VALVE, SEPARATOR, CONDENSATE TEMP SENSOR, STRAINER, VALVES, AND TRAPS. RECONNECT TO EXISTING STEAM AND CONDENSATE
- 2 CUT OUT THE CORNER OF EXISTING 50X20 RETURN DUCT IN ORDER TO ROUTE NEW EXHAUST DUCT IN THE SAME LOCATION. RELOCATE EXISTING DUCT SENSOR TO THE OTHER SIDE OF THE RETURN DUCT IN ORDER TO FACILITATE WORK. (3) RE-INSTALL EXISTING LOUVER AFTER INSTALLATION OF $^{-\!\!\!/}$ air handler and connect to ductwork inside the |
- BUILDING. SEAL AROUND LOUVER AIR AND WATER \langle 4 \rangle DISCONNECT AND REMOVE EXISTING MOTORIZED DAMPER
- AND ALL ASSOCIATED CONTROLS, ACTUATOR, ETC PRIOR TO RE-INSTALLATION OF DUCTWORK.

EXISTING LAYOUT 2A-OI REMODELING PLAN







Drawing Title BASEMENT, SECOND FI	OOD & TUIDD ELOOD
LARGE SCALE REN	MODELING PLANS
Project Phase	
PHAS	SE 2
VA Project No.	Contract No. VA263-P-1218
437-13-111	VA263-C-
Building No.	AutoCAD File Name

2012273-PH2.3.DWG

		CE OR UPGRADE HV TEM COMPONENTS	AC
	Designed By JP	Checked By JP	Drawn By JF
$\bar{\ \ }$	Location FARGO	VA HEALTH CARE	SYSTEM

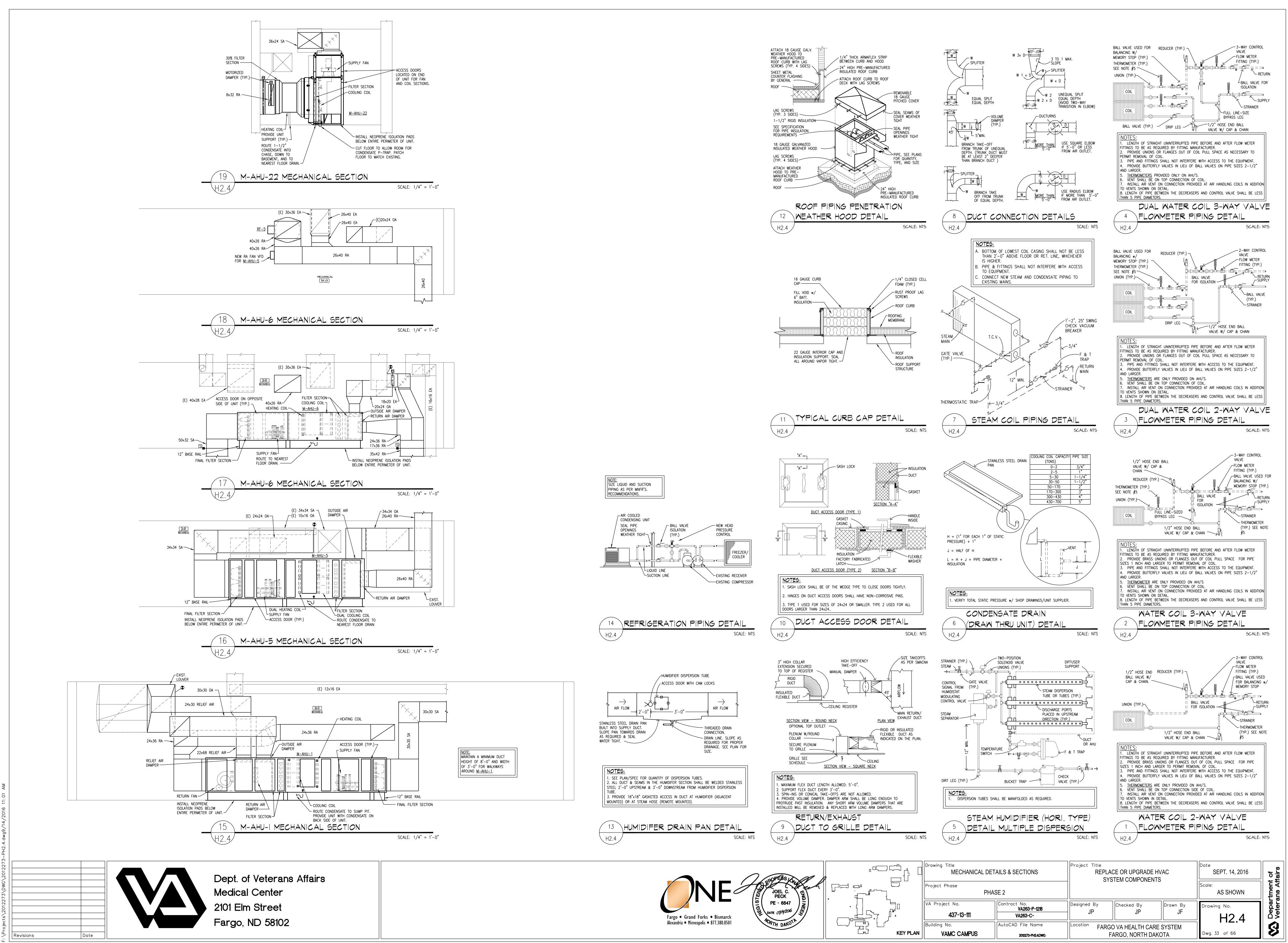
FARGO, NORTH DAKOTA

SEPT. 14, 2016 AS SHOWN 8

Revisions

Date

rawing No.



UNIT			NECK	FRAME				
NO.	MATERIAL	TYPE	SIZE	SIZE	MOUNTING	AIR	OBD	REMARKS
EG-1	STEEL	ECG	_	12x24	SURF	EA	Y	1
SPD	SQUARE PLAQUE DI	FFUSER		SA	SUPPLY AIR		1	
REG	REGISTER			RA	RETURN AIR			
GR	GRILLE			EA	EXHAUST AIR			
ECG	EGG CRATE GRILLE			SURF	SURFACE MOUNT			
LIT	LAY-IN TILE							
GYP	GYPSUM WALL OR (CEILING	1. P	PROVIDE WITH OPPOSED BL	ADE DAMPER.			
OBD	OPPOSED BLADE DA	MPER						

WATER	R COILS, H	EATING										
COIL			MAX	MAX	AIR	TEMP		CIRC	ULATING F	LUID		MIN.
NO.	SYSTEM	CFM	FV	APD	ENTERING	LEAVING	FLUID	GPM	EWT	LWT	WPD	ВТИН
HC-1	M-AHU-1	9500	494	0.10	50	65	PG50	11.2	180	149	1.0	156,040
HC-5	M-AHU-5	12000	514	0.10	45	66	PG50	18.8	180	148	2.5	269,405
HC-6	M-AHU-6	6250	545	0.10	53	67	PG50	6	180	144	1.0	94,541
HC-22	M-AHU-22	9500	863	0.9	-15	81.2	STEAM	1,002 #/HR	_	_	_	962,951
						ON 5 PSI STEAM. MORE INFORMATION		BE INTEGRAL FACE	AND BYPAS	S.		

COIL			MAX	MAX	EA ⁻	Γ	LAT			CIRC	ULATING F	LUID		MIN.
NO.	SYSTEM	CFM	FV	APD	DB	WB	DB	WB	FLUID	GPM	EWT	LWT	WPD	BTUH
CC-1	M-AHU-1	9500	472	1.3	79.0	65.0	53.0	52.5	PG30	65.7	44	56	10.0	348,791
CC-5	M-AHU-5	12000	493	1.4	80.0	65.5	52.1	51.9	PG30	86.5	44	56	12.3	477,330
CC-6	M-AHU-6	6250	515	1.6	78.0	65.0	52.4	52.2	PG30	43	44	56	11.5	234,051
CC-22	M-AHU-22	9500	398	0.8	90.3	71.5	53.0	52.5	PG30	95	44	56	9.8	580,800
CC-22	M-AHU-22	9500	398	0.8	90.3	71.5	53.0	52.5	PG30	95	44	56	9.8	580,8

FILTER			VA	RATED	MAX S.P.	DROP	HOUSING		CARTRIDGES	
NO.	CFM	SYSTEM	GRADE	EFF %	INITIAL	FINAL	TYPE	NO.	SIZE	ARRANGE
1-AF-1	9500	M-AHU-1	Α	30	0.3	1.0	AH CASING	NA	24"x 20"x 2"	NA
1-AF-2	9500	M-AHU-1	В	60	0.3	1.5	AH CASING	NA	20"x 20"x 4"	NA
1-AF-3	9500	M-AHU-1	D	90	0.4	2.0	AH CASING	NA	24"x 24"x 12"	NA
5-AF-1	12000	M-AHU-5	Α	30	0.3	1.0	AH CASING	NA	24"x 20"x 2"	NA
5-AF-2	12000	M-AHU-5	В	60	0.3	1.5	AH CASING	NA	20"x 20"x 4"	NA
5-AF-3	12000	M-AHU-5	D	90	0.4	2.0	AH CASING	NA	24"x 24"x 12"	NA
6-AF-1	6250	M-AHU-6	Α	30	0.3	1.0	AH CASING	NA	24"x 20"x 2"	NA
6-AF-2	6250	M-AHU-6	В	60	0.3	1.5	AH CASING	NA	20"x 20"x 4"	NA
6-AF-3	6250	M-AHU-6	D	90	0.4	2.0	AH CASING	NA	24"x 24"x 12"	NA
22-AF-1	9500	M-AHU-22	А	30	0.3	1.0	DUCT MOUNT	NA	24"x 20"x 2"	NA
22-AF-2	9500	M-AHU-22	D	85	0.4	2.0	AH CASING	NA	24"x 24"x 4"	NA

AIR HANDI	LING UNIT SOUN	D POWE	R SCHEI	JULE						
UNIT				OCTAVE	BAND					
NO.		63	125	250	500	1000	2000	4000	8000	
		1	2	3	4	5	6	7	8	NOTES
	RADIATED	87	84	81	81	72	65	52	45	
M-AHU-1	UNIT DISCHARGE	94	80	80	89	79	71	64	50	
	UNIT RETURN	89	91	91	89	87	83	83	78	
	RADIATED	88	81	78	81	70	64	49	40	
M-AHU-5	UNIT DISCHARGE	96	83	82	90	78	71	63	48	
	UNIT RETURN	85	79	76	82	67	63	53	40	
	RADIATED	83	77	75	80	70	65	50	41	
M-AHU-6	UNIT DISCHARGE	91	79	79	88	78	72	64	49	
	UNIT RETURN	82	73	74	85	69	64	54	40	
	RADIATED	_	_	_	_	_	_	_	_	
M-AHU-22	UNIT DISCHARGE	96	93	99	92	86	84	81	75	
	UNIT RETURN	88	86	95	87	79	75	71	61	
		NOTE:		ı		ı	1			1

AIR COO	LED CONDEN	ISER SCHEDUL	_E							
UNIT		MIN. REFRIG.	REFRIGERANT	O.A.	UNIT	ELECTRICAL DAT	A	CC	ONDENSER FAN MOT	OR
NO.	LOCATION	EFFECT BTUH	CIRCUITS	TEMP	RPM	MCA	MOPD	# OF FANS	HP INPUT	PHASE VOLT
1-AC-1	ON GRADE	71 M BH	4	95	830	15	25	1	1.5	208/3
1-AC-2	2ND FLR ROOF	71 M BH	3	95	830	15	25	1	1.5	208/3
	NOTE:									

1. UNIT MOUNTED DISCONNECTS SHALL BE FURNISHED BY MANUFACTURER OF EQUIPMENT. PROVIDE PRESSURE FAN CYCLING CONTROLS. 2. CONDENSER COILS SHALL BE SELECTED AT 10 FINS PER INCH AND SEPARATE REFRIGERATION CIRCUITS SHALL BE PROVIDED. 3. FAN AIRFLOW EQUAL TO 8,400 CFM.

		AMBIENT OUTD	000R	COOLING		HEATING		ELECTRI	CAL				
UNIT		TEMPERATURE										DISC	
NO.	UNIT TYPE	DB	WB	MBH	IEER	MBH	COP	MCA	VOLT	PH	MOCP	BY	NOTES
AC-4	VERTICAL DISCHARGE	95	73	96.0	18.8	_	_	43	208	3	50	EC	1
		95	73	120.0	18.8	_	_	43	208	3	50	EC	1
IEER	INTEGRATED ENERGY EFFICIENCY RATIO		DISC	DISCONNEC	Т			NOTES:					
COP	COEFFICIENT OF PERFORMANCE		MC	MECHANICA	L CONTRAC	TOR		1.	PROVIDE 2	2 OUTDO	OR CONDEN	SING	
MCA	MINIMUM CIRCUIT AMPACITY		EC	ELECTRICAL							TAL SYSTEM		
			WPD	WATER PRE	SSURE DRO	OP, FT			CAPACITY	FOR AC-	·4.		

STEM FAN COIL UNIT	SCHEDU	JLE											
				COOLING			HEATING		E	LECTRICA	\L		
INDOOR UNIT					TOTAL	SENS						DISC	
TYPE	TYPE	CFM	ESP	SETPOINT	MBH	MBH	SETPOINT	MBH	MCA	VOLT	PH	BY	NOTES
WALL MOUNTED	H/WM	260	0.4	75/63	7.5	6.4	_	1	0.4	208	1	EC	1,3
WALL MOUNTED	H/WM	280	0.4	75/63	9.5	7.3	_	-	0.4	208	1	EC	1,3
WALL MOUNTED	H/WM	290	0.4	75/63	12.0	8.9	_	-	0.4	208	1	EC	1,3
CEILING MOUNTED	СМ	495	0.4	75/63	18.0	13.0	_	-	0.9	208	1	EC	1,2,3
WALL MOUNTED	H/WM	500	0.4	75/63	18.0	13.7	_	_	0.5	208	1	EC	1,3
	INDOOR UNIT TYPE WALL MOUNTED WALL MOUNTED WALL MOUNTED CEILING MOUNTED	INDOOR UNIT TYPE TYPE WALL MOUNTED H/WM WALL MOUNTED H/WM WALL MOUNTED H/WM CEILING MOUNTED CM	TYPE TYPE CFM WALL MOUNTED H/WM 260 WALL MOUNTED H/WM 280 WALL MOUNTED H/WM 290 CEILING MOUNTED CM 495	INDOOR UNIT TYPE TYPE CFM ESP WALL MOUNTED H/WM 260 0.4 WALL MOUNTED H/WM 280 0.4 WALL MOUNTED H/WM 290 0.4 CEILING MOUNTED CM 495 0.4	COOLING COOLING COOLING INDOOR UNIT TYPE TYPE CFM ESP SETPOINT	COOLING TOTAL TYPE TYPE CFM ESP SETPOINT MBH	COOLING TOTAL SENS TYPE TYPE CFM ESP SETPOINT MBH MB	COOLING	COOLING	COOLING	COOLING	COOLING	NDOOR UNIT TYPE CFM ESP SETPOINT MBH MBH SETPOINT MBH MCA VOLT PH BY

DISC DISCONNECT CM CEILING MOUNTED MC MECHANICAL CONTRACTOR EC ELECTRICAL CONTRACTOR h HORIZONTAL WM WALL MOUNTED

MCA MINIMUM CIRCUIT AMPACITY

2. UNIT SHALL BE A 2'X2' CEILING CASETTE MODULE. 3. PROVIDE WITH UNIT MOUNTED CONDENSATE PUMP.

1. UNIT SHALL HAVE AN MOP OF 15A.

FAN SCH	HEDULE														
UNIT				FAN	ARRANGEMENT,		WHEEL	MAX.		MAX.		MOTOR			VARIABLE
NO.	LOCATION	CFM	E.S.P.	TYPE	ROTATION, & DISCHARGE	TYPE	MIN. DIA.	RPM	DRIVE	BHP	HP	VOLT	PH	SONES	CONTROL TYPE
SF-1	ROOM BA-01	9500	2.75	PL	PLENUM FAN	ALUM	24.50	2183	BELT	15.50	20	208	3	_	YES
RF-1	ROOM BA-01	8000	2.25	FC	FORWARD CURVED	ALUM	15.00	1725	BELT	8.00	10	208	3	_	YES
SF-5	ROOM 2A-01	12000	2.75	PL	PLENUM FAN	ALUM	27.00	1860	BELT	20.50	25	208	3	_	YES
RF-5	ROOM 2A-01	11000	2.5	MF	TUBULAR INLINE	STEEL	33.00	1505	BELT	6.75	7.5	208	3	_	YES
SF-6	ROOM 3A-01	6250	2.75	PL	PLENUM FAN	ALUM	20.00	2674	BELT	11.50	15	208	3	_	YES
RF-6	ROOM 3A-01	5250	2	BI	SQUARE INLINE	ALUM	24.50	1194	BELT	3.50	5	208	3	_	YES
SF-22	ROOM 3E-08	9500	3.5	PL	PLENUM FAN	ALUM	22 (2)	2200	DIRECT	7.5 (2)	10 (2)	208	3	_	YES
												•			

1. SCHEDULED MAXIMUM BHP IS FOR SCHEDULED SP PLUS TEN PERCENT. FORWARD CURBED WHEEL MAY BE SUBMITTED IN LIEU OF AIR FOIL WHEEL FOR AIR HANDLING UNITS IF SCHEDULED MAXIMUM BHP IS MET. IF UNIT COIL PRESSURE DROPS SUBMITTED ARE LESS THAN SCHEDULED, THE SP REQUIREMENT MAY BE REDUCED ACCORDINGLY. MAXIMUM BHP MAY BE BASED ON THE REVISED SP PLUS TEN PERCENT. SMALLER DIAMETER FAN MAY BE SUBMITTED PROVIDED IT MEETS SPECIFIED SOUND LEVEL. 2. FANS SHALL BE PROVIDED WITH VARIABLE FREQUENCY DRIVES AND SHAFT GROUNDING KITS.

4. SUPPLY FAN SF-22 SHALL BE SUPPLIED WITH 2 VFDs, ONE SERVING EACH SUPPLY FAN IN THE AIR HANDLER.

3. RF-5 SHALL BE A MIXED FLOW (MF) INLINE FAN. RF-6 SHALL BE A BACKWARD INCLINED (BI) INLINE FAN.

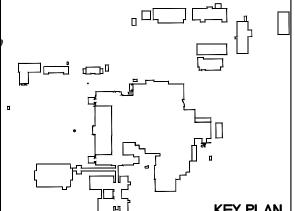
			SUPPLY	RETURN		CFM	EXTERNAL	SPECIFIED	UNSPECIFIED	
UNIT	LOCATION	AREA	FAN	FAN	SUPPLY	MIN.	STATIC	INTERNAL	INTERNAL	TYPE
NO.		SERVED	NO.	NO.		OA	PRESSURE, 1.	LOSSES, 2.	LOSSES, 3.	SYSTEM
M-AHU-1	BLDG. 46	BASEMENT	SF-1	RF-1	9500	1900	2.75	4.44	0.04	VAV
	BASEMENT	BLDG. 46 AREA								
M-AHU-5	BLDG. 46	2ND FLOOR	SF-5	RF-5	12000	3000	2.75	4.67	0.07	VAV
	2ND FLOOR	PROCEDURE AREA								
M-AHU-6	BLDG. 46	3RD FLOOR	SF-6	RF-6	6250	1000	2.75	4.49	0.07	VAV
	3RD FLOOR	RECOVERY								
M-AHU-22	BLDG. 1	1ST FLOOR	SF-22	N/A	9500	8000	3.5	1.5	0.07	VAV
	3RD FLOOR	LAB								

1. EXTERNAL STATIC PRESSURE REQUIRED AT DUCT CONNECTIONS TO INLET AND OUTLET OF AHU. MEASUREMENTS SHALL BE TAKEN WITHIN 3 FT OF INLET AND OUTLET AT A POINT OF MAXIMUM ACCURACY. 2 TOTAL OF MAXIMUM PRESSURE DROPS OF COMPONENTS WHICH ARE SPECIFIED SEPARATELY, IE., PREFILTERS, AFTERFILTERS, HEATING AND COOLING COILS. 3 INTERNAL LOSS ALLOWANCE SHALL INCLUDE LOSSES DUE TO ENTRANCE AND EXIT OF AHU, MIXING BOXES, DIFFUSER SECTION

INCLUDING LOSSES DUE TO FAILURE TO PROPERLY CONVERT FAN DISCHARGE VELOCITY PRESSURE TO STATIC PRESSURE, FAN INLET CONDITIONS, CASINGS, HUMIDIFIERS, DAMPERS, ETC.

Date





	Drawing Title MECHANICAL SCHEDULES			Project Title REPLACE OR UPGRADE HVAC SYSTEM COMPONENTS	
	Project Phase PHASE 2				
	VA Project No. 437-13-111	Contract No. VA263-P-1218 VA263-C-	Designed By JP	Checked By JP	Draw
AN	Building No. VAMC CAMPUS	AutoCAD File Name 2012273-PH2.5.DWG		O VA HEALTH CA FARGO, NORTH D	

SEPT. 14, 2016 AS SHOWN Drawn By rawing No. FARGO VA HEALTH CARE SYSTEM Dwg. 34 of 66