

## EXHAUST FAN

PLAN DESIGNATION	EF-1	EF-2	EF-3	
MANUFACTURER	GREENHECK	GREENHECK	GREENHECK	
MODEL	SWE-115	BSQ-70	BSQ-140HP	
FAN TYPE	UTILITY	INLINE	INLINE	
SERVES	SPD	CART WASH	E10	
LOCATION	OUTSIDE AREA WELL	TOILET ROOM	PENTHOUSE	
FAN	CFM	2,250	150	2,000
	EXTERNAL STATIC PRESSURE (IN.W.C.)	1.0	0.75	3.00
	DRIVE	BELT	BELT	BELT
	MAX RPM	1,725	1,725	1,725
	NOM. FAN MOTOR (HP)	0.75	0.25	2.00
	VOLTAGE/PHASE	208 / 3	120 / 1	208 / 3
	SIZE (LxWxH) IN	31.5x38x48	21x15x15	24x23x23
	WEIGHT (LBS)	279	75	88
	SOUND POWER	81	75	85
	MAX VALUES (INTAKE)	78	63	76
CABINET	1ST OCTAVE	71	72	82
	2ND OCTAVE	70	72	81
	3RD OCTAVE	64	63	79
	4TH OCTAVE	58	56	73
	5TH OCTAVE	56	58	75
	6TH OCTAVE	48	53	74
	7TH OCTAVE	10	12	25
	8TH OCTAVE			
SONES				

- REMARKS
- MOTOR SHALL BE INVERTER DUTY PREMIUM RATED
  - SCHEDULED UNITS BASED ON SELECTIONS OF GREENHECK FANS
  - PROVIDE 1" STATIC DEFLECTION SPRING VIBRATION ISOLATORS FOR FANS
  - PROVIDE DISCONNECT
  - PROVIDE WEATHERHOOD
  - PROVIDE HINGED ACCESS DOOR
  - PROVIDE STAINLESS STEEL SHIRT
  - PROVIDE WITH HIGH PRO POLYESTER COATING
  - PLACE UNIT ON GALVANIZED STRUCTURAL FRAME
  - PROVIDE WITH VFD
  - PROVIDE WITH STARTER

## LOUVER

PLAN DESIGNATION	EAL-1
MANUFACTURER	GREENHECK
MODEL	ESD-435
CONSTRUCTION	EXHAUST
TYPE	
MATERIAL	ALUMINUM
CFM	150
SIZE (INCHES)	WIDTH 12
HEIGHT	12
DEPTH	4
MAX FREE AREA VELOCITY - FPM	500
MAX PRESSURE DROP - IN WC	0.15
REMARKS	1, 2, 3

- REMARKS
- PROVIDE WITH INSECT SCREEN
  - COORDINATE COLOR WITH ARCHITECT
  - FIELD VERIFY LOUVER SIZES BEFORE INSTALLATION

## VENTILATION SCHEDULE

ROOM NUMBER	ROOM NAME	AREA	ACH REQ'D SUPPLY	ACH REQ'D RETURN	EXHAUST	CFM REQ'D SUPPLY	CFM REQ'D RETURN	EXHAUST	CFM REQ'D BY LOAD CALCS	ROOM AIR BALANCE	CFM PROVIDED SUPPLY	CFM PROVIDED RETURN	EXHAUST	SERVED BY
NA	CLEAN STORAGE	1400	4	NA	100%	747	NA	NA	574	POSITIVE	2100	NA	1600	CV-01,02 XEF
B56	MULTIPURPOSE	118	4	NA	100%	62	NA	62	212	NEUTRAL	225	NA	225	CV-03, EF-1
B55A	ANTE ROOM (BRTV)	51	10	NA	100%	66	NA	NA	7	POSITIVE	160	NA	NA	CV-08
B56B	TOILET	99	10	NA	100%	132	NA	172	84	2X NEGATIVE	160	NA	150	CV-03, EF-1
B58B C	DECONTAMINATION	683	10	NA	100%	911	NA	1,184	1,778	2X NEGATIVE	1300	NA	1700	CV-07,08, EF-1
B53	ANTE ROOM (BRTV)	111	10	NA	100%	148	NA	NA	14	POSITIVE	150	NA	NA	CV-08
B52	GAS STERILIZER	273	10	NA	100%	394	NA	419	802	NEGATIVE	365	NA	1075	CV-03, EF-3
B53A	CART WASH	82	10	NA	100%	103	NA	141	12	NEGATIVE	125	NA	150	CV-03, EF-3
B55A	INCUBATORS	99	10	NA	100%	88	NA	101	170	NEGATIVE	160	NA	125	CV-03, EF-1
B55A	STERIL PREP	572	10	NA	100%	783	NA	534	1,151	2X POSITIVE	2400	NA	1845	CV-04, XEF
B51	ANTE ROOM (CLEAN)	64	10	NA	100%	85	NA	NA	9	POSITIVE	160	NA	NA	CV-03
B49	WORKROOM	142	4	NA	100%	78	NA	76	202	NEUTRAL	175	NA	175	CV-03, XEF
B49A	MANAGERS OFFICE	98	4	NA	100%	38	NA	36	50	NEUTRAL	75	NA	75	CV-03, XEF
B50D	EQUIPMENT CHASE	118	NA	NA	NA	NA	NA	NA	NA	NA	275	NA	325	X-AHU, EF-3
B50A,B	EQUIPMENT CHASE	84	NA	NA	NA	NA	NA	NA	NA	NA	1000	NA	1000	X-AHU, XEF
TOTAL						3902		3298	4601		9150		7120	

NA NOT APPLICABLE

## CV BOXES WITH REHEAT

PLAN DESIGNATION	CV-01	CV-02	CV-03	CV-04	CV-05	CV-06	CV-07	CV-08	CV-09	
SERVES ROOM	CLEAN STORAGE	CLEAN STORAGE	B49	B50	B52	B53A	B53C	B58	B56	
MANUFACTURER										
MODEL	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	
INLET SIZE	10	14	7	14	10	4	10	10	8	
AIRFLOW	MAX - CFM	500	1800	350	2400	1025	125	800	650	425
MIN - CFM	500	1800	350	2400	1025	125	800	650	425	
MAX PRESSURE DROP - IN WC	0.1	0.15	0.1	0.2	0.35	0.05	0.3	0.2	0.2	
MAX INLET PRESSURE - IN WC	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
SOUND POWER (RADIATED @ 3RD OCTAVE)	53	57	55	58	57	47	56	54	56	
MIN OPERATING (STATIC PRESS)	45	53	49	54	49	42	48	47	47	
4TH OCTAVE	46	51	44	52	47	40	47	47	44	
5TH OCTAVE	39	43	38	45	40	32	40	40	38	
6TH OCTAVE	34	38	34	39	35	29	35	35	32	
7TH OCTAVE	29	30	27	32	29	22	29	29	27	
NC	20	25	--	28	21	--	21	20	--	
SOUND POWER (DISCHARGE @ 3RD OCTAVE)	61	65	60	69	64	55	63	62	60	
MIN OPERATING (STATIC PRESS)	61	63	61	64	62	56	62	62	59	
4TH OCTAVE	61	64	59	65	62	564	62	61	57	
5TH OCTAVE	57	61	55	62	58	51	58	57	53	
6TH OCTAVE	52	56	50	57	52	47	53	52	49	
7TH OCTAVE	50	53	48	54	50	44	50	50	46	
NC	27	29	25	29	25	25	28	27	24	
COIL OUTPUT @ CAPACITY - MBH	16.5	44.5	14.0	49.0	44.3	5.8	40.1	36.1	23.3	
MIN AIRFLOW	ENTERING AIR TEMP - °F	55	55	55	55	55	55	55	55	
LEAVING AIR TEMP - °F	85	80	90	75	99	97	102	106	106	
ENTERING WATER TEMP - °F	180	180	180	180	180	180	180	180	180	
LEAVING WATER TEMP - °F	180	180	180	180	180	180	180	180	180	
ROWS	1	1	1	1	2	1	2	2	2	
FLOW RATE - GPM	1.7	4.5	1.5	5.1	4.6	0.6	4.25	3.75	2.5	
MAX PRESSURE DROP - FT WC	0.38	3.76	1.5	4.6	4.35	0.26	3.7	3.0	1.0	

## DIFFUSERS & GRILLES

PLAN DESIGNATION	S-1	S-2	S-3	S-4	S-5	S-6	E-1	E-2	E-3	E-4	E-5	
MANUFACTURER	TITUS	TITUS	TITUS	TITUS	TITUS	TITUS	TITUS	TITUS	TITUS	TITUS	TITUS	
MODEL	PAS	PAS	PAS	PAS	301FL	301FL	PAR	PAR	PAR	350FL	350FL	
CONSTRUCTION	PERFORATED	PERFORATED	PERFORATED	PERFORATED	GRILLE	GRILLE	PERFORATED	PERFORATED	PERFORATED	GRILLE	GRILLE	
TYPE	LAY-IN	SURFACE	LAY-IN	LAY-IN	SURFACE	SURFACE	LAY-IN	SURFACE	LAY-IN	SURFACE	SURFACE	
MOUNTING	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM	
MATERIAL	CFM	0-150	0-150	250-400	925	125	1000	0-225	0-300	850	1,500	325
GRILLE SIZE	12" x 12"	12" x 12"	24" x 24"	24" x 24"	6" x 6"	24" x 12"	12" x 12"	12" x 12"	24" x 24"	36" x 12"	12" x 12"	
DUCT CONNECTION SIZE	8" Ø	8" Ø	10" x 10"	24" x 24"	6" x 6"	24" x 12"	10" x 10"	10" x 10"	12" x 12"	36" x 12"	12" x 12"	
NC	20	20	25	15	17	24	24	24	23	20	30	
REMARKS	1,3,5	1,2,3	1,3,4	1,3,4	1,2,3	1,2,3	1,3,5	1,2,3	1,3	1,2,3	1,2,3	

- REMARKS
- COORDINATE COLOR WITH ARCHITECT
  - PROVIDE SURFACE MOUNTING FRAME
  - PROVIDE DAMPER
  - PROVIDE WITH 4-WAY PATTERN
  - PROVIDE 24x24 LAY-IN

## AIR CONTROL VALVES

PLAN DESIGNATION	ACV-1	ACV-2	ACV-3	ACV-4	ACV-5	
MANUFACTURER						
MODEL	RDV-5000	RDV-5000	PDV-5000	PDV-5000	PDV-5000	
UNIT SIZE	9" Ø	9" Ø	12" Ø	12" Ø	10" Ø	
LOCATION	B58B	B58B	B50	CLEAN STORAGE	B52	
AIR FLOW	CFM	850	1,645	1,000	1,075	
SIZE	LENGTH	20.3/8	20.3/8	23.1/8	23.1/8	20.7/8
SOUND DATA	2ND OCTAVE	48	48	48	47	48
MAX VALUES (RADIATED)	3RD OCTAVE	42	42	48	46	45
4TH OCTAVE	47	47	48	47	48	48
5TH OCTAVE	44	44	45	44	47	47
6TH OCTAVE	44	44	45	44	48	48
7TH OCTAVE	40	40	42	41	42	42
REMARKS	1	1	1	1	1	

1. STAINLESS STEEL CONSTRUCTION

## GENERAL NOTES

- MECHANICAL CONTRACTOR SHALL COORDINATE WORK WITH EXISTING CONDITIONS AND WITH THE WORK OF OTHER TRADES.
- THESE DRAWINGS ARE A DIAGRAMMATIC REPRESENTATION OF WORK TO BE ACCOMPLISHED AND AS SUCH DO NOT SHOW ALL REQUIRED DETAILS OR FINISHES. MECHANICAL CONTRACTOR SHALL INSTALL MATERIAL AND EQUIPMENT AS TO CONFORM TO THE STRUCTURE, EQUIPMENT CONNECTIONS AND MAINTAIN HEADROOM AND PASSAGEWAY.
- ALL CUTTING AND PATCHING OF EXISTING STRUCTURE TO ACCOMMODATE NEW HVAC IS BY MECHANICAL CONTRACTOR.
- MECHANICAL CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REINSTALLATION OF EXISTING CEILING UNLESS WORK PERFORMED BY GENERAL CONTRACTOR AND IDENTIFIED ON ARCHITECTURAL DRAWINGS. REPLACE ALL DAMAGED CEILING WITH NEW.
- KEYNOTES PERTAIN ONLY TO THE DRAWING THEY ARE LOCATED ON.
- DUCT SIZES ARE CLEAR INSIDE DIMENSIONS.
- MECHANICAL CONTRACTOR SHALL CLEAN ALL EXISTING DUCTWORK, COILS AND DIFFUSERS THAT ARE DESIGNATED TO REMAIN WITHIN PROJECT LIMITATIONS PER SPECS.
- ALL CONTROL WIRING SHALL BE RUN IN CONDUIT.
- MAINTAIN 25" MINIMUM DISTANCE FROM OUTSIDE AIR INTAKE TO ANY EXHAUST OR TOILET VENT.
- ALL DUCTWORK AND PIPING FITTINGS SHALL BE INSTALLED IN A MANNER WHICH VA STAFF SHALL HAVE ACCESS.
- CONTRACTOR SHALL NOT PERFORM ANY WORK OUTSIDE THE CONSTRUCTION BOUNDARY LIMITS UNLESS NOTED ON PLANS. COORDINATE SCHEDULE OF SUCH WORK WITH VA.
- THE EXISTING OR DEMOLITION PLANS ARE BASED OFF OF EXISTING AS-BUILTS, CONSTRUCTION DRAWINGS & CASUAL SITE WALK-THROUGHS. THE CONTRACTOR SHALL VISIT THE SITE, REVIEW OTHER DISCIPLINE DEMOLITION DRAWINGS & PROVIDE DISCONNECTION OR RELOCATION OF ALL NECESSARY EQUIPMENT FOR THE COMPLETION OF THIS PROJECT.
- CONTRACTOR SHALL PROVIDE OFFSETS OR TRANSITIONS OF ALL DUCTWORK AND PIPING AS NECESSARY.
- EQUIPMENT SELECTIONS ARE BASED OFF NOTED MANUFACTURERS AND MODELS LISTED ON SCHEDULES. ANY ALTERNATE EQUIPMENT SUBMITTED SHALL MEET OR EXCEED ALL PERFORMANCE CAPACITIES AND FALL WITHIN PHYSICAL DIMENSIONS AND WEIGHTS OF SCHEDULED EQUIPMENT. ALTERNATE SUBMITTALS SHALL MEET ALL SYSTEM REQUIREMENTS. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MODIFICATIONS (STRUCTURAL, ELECTRICAL, MECHANICAL, ETC.) NECESSARY TO ACCOMMODATE ALTERNATE EQUIPMENT AT NO ADDITIONAL COST TO THE OWNER.
- TEMPORARY CONNECTIONS TO 3/4" x 1/4" SA DUCTWORK AND X-COMBER PIPING SHALL BE PERFORMED DURING THE WEEKEND. CONTRACTOR SHALL COORDINATE SHUT DOWN OF X-AHU AND X-COMBER PIPING WITH VA FACILITIES. MINIMUM ONE WEEK NOTICE SHALL BE GIVEN TO VA MANAGEMENT PRIOR TO INSTALLATION AND DEMOLITION.
- AIR SUPPLY AND EXHAUST FOR THE SPD AREA CANNOT BE SHUT DOWN DURING SPD HOURS. ANY WORK THAT REQUIRES AIR SUPPLY AND EXHAUST TO BE TEMPORARILY SUSPENDED SHALL BE PERFORMED ON WEEKENDS AND NOT TO INTERRUPT SPD OPERATIONS. ONE WEEK NOTICE SHALL BE GIVEN TO VA FACILITIES AND MANAGEMENT PRIOR TO INSTALLATION OR DEMOLITION.
- CONTRACTOR SHALL REBALANCE EXISTING AHU INCLUDING EXISTING CHILLED WATER COIL, STEAM COIL, CHILLED WATER PUMP, ETC. SERVICING THE SPD AREA TO MATCH AIR FLOW INDICATED. CONTRACTOR SHALL ALSO REBALANCE EXISTING EXHAUST FAN SERVICING THE SPD AREA TO MATCH AIR FLOW INDICATED.

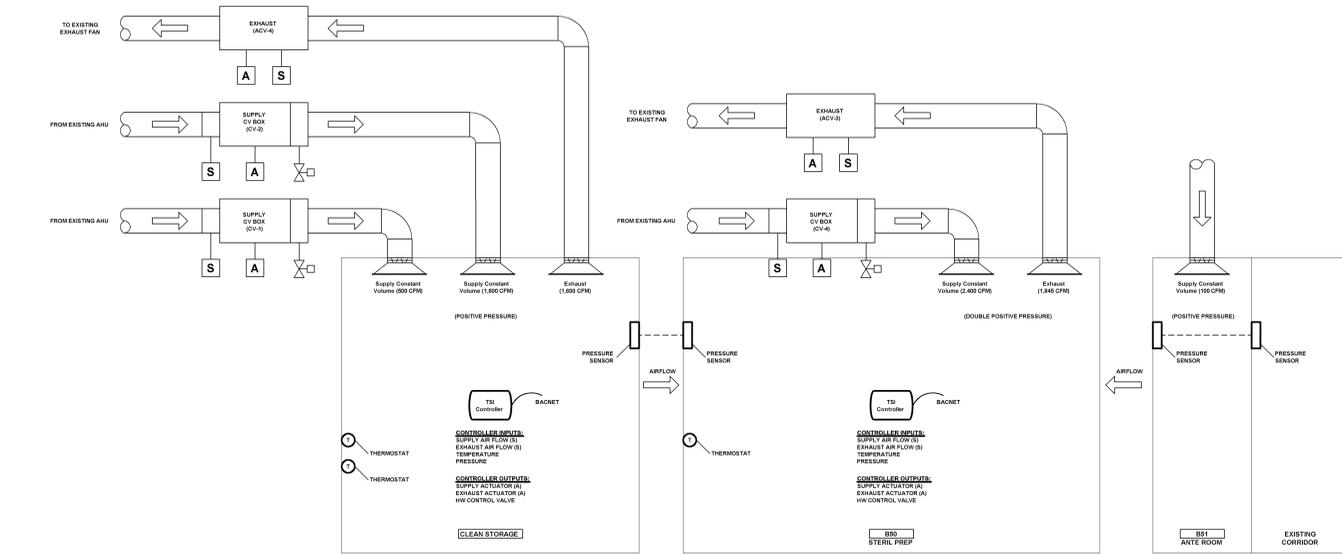
## SPD EQUIPMENT CONTACT INFORMATION

STERIS EQUIPMENT  
DUANE HUBING  
ACCOUNT MANAGER, STERIS CORPORATION  
duane.hubing@steris.com  
VA 500-685-7575 ext. 23251  
Cell: 608-358-4859

3M EQUIPMENT  
Jim Heise  
jheise@mmm.com  
800-685-5888

## LEGEND

	NEW HVAC EQUIPMENT
	EXISTING HVAC EQUIPMENT
	NEW DUCTWORK
	EXISTING DUCTWORK
	NEW SUPPLY DIFFUSER
	EXISTING SUPPLY DIFFUSER
	NEW RETURN/EXHAUST GRILLE
	EXISTING RETURN/EXHAUST GRILLE
	NEW RETURN/EXHAUST GRILLE WITH DAMPER
	EXISTING RETURN/EXHAUST GRILLE WITH DAMPER
	NEW TRANSFER GRILLE
	EXISTING TRANSFER GRILLE
	SMOKE DETECTOR
	THERMOSTAT
	STATIC PRESSURE CONTROLLER
	NEW CHILLED WATER SUPPLY PIPING
	EXISTING CHILLED WATER SUPPLY PIPING
	NEW CHILLED WATER RETURN PIPING
	EXISTING CHILLED WATER RETURN PIPING
	NEW CONDENSATE DRAIN PIPING (COOLING COIL)
	EXISTING CONDENSATE DRAIN PIPING (COOLING COIL)
	NEW LOW PRESSURE STEAM PIPING
	EXISTING LOW PRESSURE STEAM PIPING
	NEW LOW PRESSURE CONDENSATE RETURN PIPING
	EXISTING LOW PRESSURE CONDENSATE RETURN PIPING
	DUCT UP
	DUCT DOWN
	FLEX DUCT
	MOTORIZED DAMPER
	FIRE/SMOKE DAMPER



**VA MIDDLETON SPD CONTROL SEQUENCE**

**GENERAL SEQUENCE OF OPERATION:**  
 THE ROOM CONTROLLER MAINTAINS THE SUPPLY AIR CFMS AT OR ABOVE ITS MINIMUM SETPOINT.

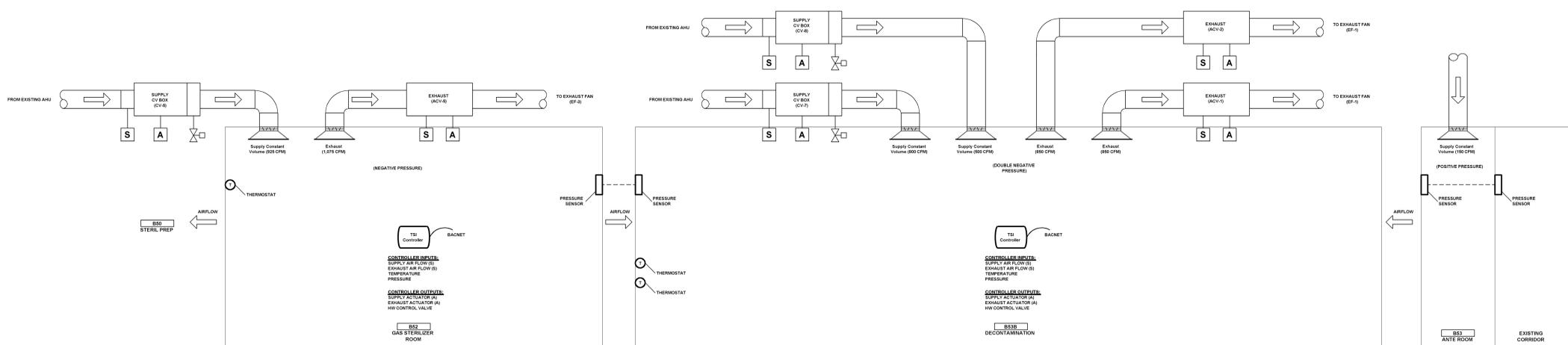
**ROOM BALANCE AND ROOM PRESSURE CONTROL SEQUENCE OF OPERATION:**

1. SEE CONTROLS SCHEMATIC FOR DIRECTION OF AIRFLOW AND PLANS FOR LOCATION OF PRESSURE SENSORS
2. EXHAUST FANS TO MODULATE TO MAINTAIN CONSTANT AIRFLOW
3. DOORS/WINDOWS TO CONTROLLED AREAS SHALL HAVE CLOSURE SWITCHES
4. MODULATE SUPPLY BOXES TO MAINTAIN PRESSURE RELATIONSHIP OF CONTROLLED AREAS
5. IF DOOR/WINDOW OF CONTROLLED AREA IS OPEN, MODULATE SUPPLY TO 100% IN POSITIVE ROOMS AND 50% IN NEGATIVE ROOMS. DISABLE ALARM UNTIL DOORS/WINDOWS AREA CLOSED AND PRESSURE IS STABILIZED

**TEMPERATURE CONTROL SEQUENCE OF OPERATION:**  
 THE ROOM CONTROLLER CONTINUOUSLY MEASURES THE ROOM TEMPERATURE. IF THE ROOM TEMPERATURE RISES ABOVE SETPOINT, THE ROOM CONTROLLER CLOSES THE REHEAT VALVE AND THEN OPENS THE SUPPLY AIR VALVE UNTIL EITHER THE ROOM TEMPERATURE REACHES SETPOINT OR THE SUPPLY AIR VOLUME REACHES ITS COOLING MAXIMUM SETPOINT. IF THE ROOM TEMPERATURE FALLS BELOW SETPOINT, THE ROOM CONTROLLER REDUCES THE SUPPLY AIR VOLUME TO ITS MINIMUM VENTILATION OR ROOM BALANCE FLOW AND THEN OPENS THE REHEAT VALVE UNTIL ROOM TEMPERATURE ACHIEVES SETPOINT.

**NOTE:** CONTRACTOR SHALL CONNECT TSI CONTROLS TO EXISTING JOHNSON METASYS CONTROLS. PROVIDE TCM OF SUPPLY & EXHAUST PER BOX/ROOM AND EXHAUST FANS TO EXISTING EXISTING JOHNSON METASYS CONTROLS FOR MONITORING.

**ALL SYSTEMS REQUIREMENTS ARE BASED ON CONTROL SYSTEM BY TSI INC. CONTRACTOR MAY SUBMIT WITH BID AN ACCEPTABLE ALTERNATE, WHICH IS SUBJECT TO VA APPROVAL. WIRING SCHEMATIC IS A DIAGRAMMATIC REPRESENTATION OF WORK TO BE COMPLETED. CONTRACTOR SHALL FIELD VERIFY INSTALLATION AND MODIFY THE CONTROL SYSTEMS AS NECESSARY TO MEET THE DESIGN INTENT.**



**SEQUENCE OF OPERATIONS  
 AIRFLOW & FIELD WIRING DIAGRAM  
 SPD EXPANSION AREA**

1 N.T.S.



DEPARTMENT OF VETERANS AFFAIRS  
 VA MEDICAL CENTER  
 2500 OVERLOOK TERRACE  
 MADISON, WISCONSIN 53705

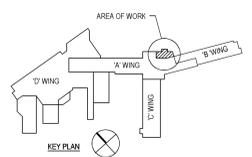
**SPD UPGRADE PROJECT**



**eppstein uhen : architects**

milwaukee 333 East Chicago Street  
 Milwaukee, Wisconsin 53202  
 tel 414 271 5350 fax 414 271 7794

madison 222 West Washington Ave, Suite 650  
 Madison, Wisconsin 53703  
 tel 608 442 5350 fax 608 442 6880



**INPUT/OUTPUT SUMMARY TABLE**

PROJECT:	HARDWARE				SOFTWARE			
	OUTPUT		INPUT		ALARMS		ENERGY MANAGEMENT SYSTEM FUNCTIONS	
VA MADISON SPD EXPANSION	DIGITAL	ANALOG	DIGITAL	ANALOG	DIGITAL	ANALOG	DIGITAL	ANALOG
ROOM CONTROLS WITH TSI MONITORING								
POINT DESCRIPTION	Control Energy	Control Energy						
TSI CONTROLLERS ALL FROM KCI TRUNK								
ROOM AIRFLOW			X					
ROOM PRESSURE			X					
CALC. AIR CHANGES/Hr							X	
STATUS INDEX					X			
LOW ALARM						X		
HIGH ALARM						X		
DATA ERROR					X			
SPACE TEMP			X					

**INPUT/OUTPUT SUMMARY TABLE**

PROJECT:	HARDWARE				SOFTWARE			
	OUTPUT		INPUT		ALARMS		ENERGY MANAGEMENT SYSTEM FUNCTIONS	
VA MADISON SPD	DIGITAL	ANALOG	DIGITAL	ANALOG	DIGITAL	ANALOG	DIGITAL	ANALOG
SYSTEM: EXHAUST FANS								
POINT DESCRIPTION	Control Energy	Control Energy						
EXHAUST FAN								
EF-1					X			
EF-2					X			
EF-3					X			
CALC. AIRFLOW							X	
CALCULATED AIRFLOW								
TOTAL AIRFLOW OF CORRESPONDING EXHAUST VALVES								

**CONTROL SCHEMATICS  
 POINT CHECKLISTS &  
 AIRFLOW SCHEMATICS**

FULLY SPRINKLERED

VA PROJECT NO. 607-10-105

IBC PROJECT NO. 2010059

BLDG. NO. VA HOSPITAL - 'B' WING  
 SCALE N.T.S.  
 DATE JUNE 15, 2011  
 DRAWN CDW

BID DOCUMENTS

**MH002**



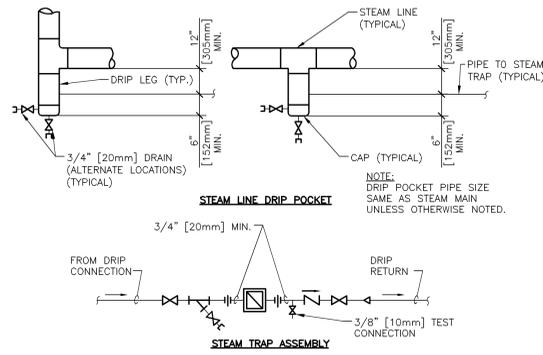




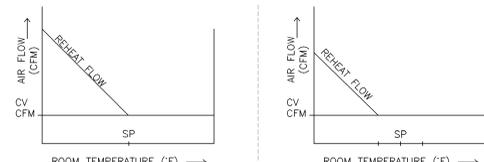








**4 STEAM LINE DRIP POCKET & STEAM TRAP ASSEMBLY DETAIL**  
N.T.S.



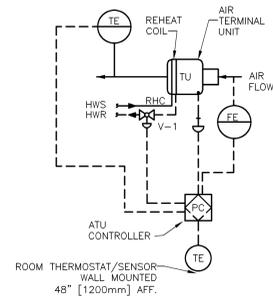
A. UPON FALL IN SPACE TEMPERATURE BELOW SET POINT VALVE V-1 WILL MODULATE TO MAINTAIN SET POINT ± .5'. THE ADJUSTABLE TOLERANCE OF ± .5' HAS BEEN SELECTED TO PREVENT VALVE HUNTING

B. THE REVERSE SHALL OCCUR ON RISE IN SPACE TEMPERATURE.

A. SET POINTS SHALL SET AS FOLLOWS: COOLING 75° F (Adj) HEATING 70° F (Adj) DEADBAND OF 5° F BETWEEN HEATING AND COOLING SET POINT WILL BE MAINTAINED

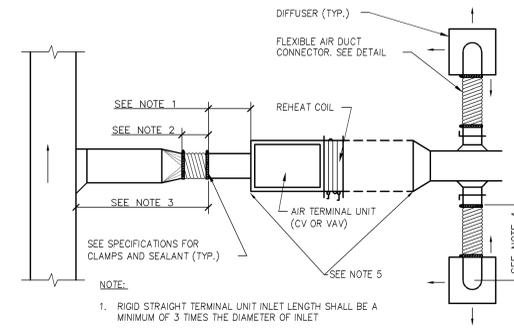
B. UPON FALL IN SPACE TEMPERATURE BELOW SET POINT VALVE V-1 WILL MODULATE TO MAINTAIN SET POINT ± .5'. THE ADJUSTABLE TOLERANCE OF ± .5' HAS BEEN SELECTED TO PREVENT VALVE HUNTING

C. THE REVERSE SHALL OCCUR ON RISE IN SPACE TEMPERATURE.



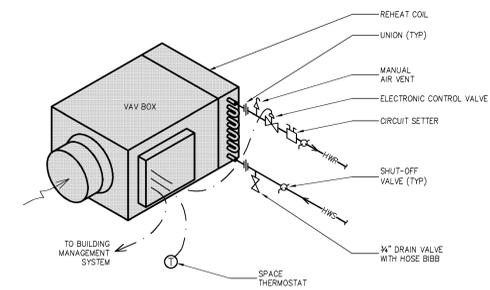
NO SUPPLEMENTAL HEATING

**5 CV BOX W/HOT WATER CONTROL DIAGRAM**  
N.T.S.

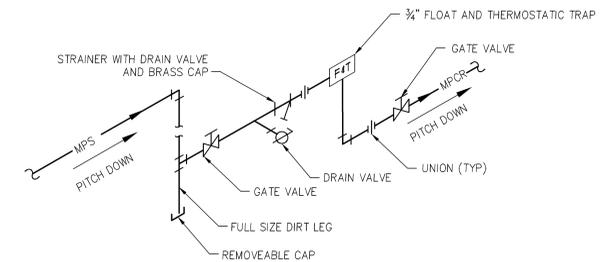


- NOTE:
1. RIGID STRAIGHT TERMINAL UNIT INLET LENGTH SHALL BE A MINIMUM OF 3 TIMES THE DIAMETER OF INLET
  2. A FLEXIBLE AIR DUCT CONNECTOR IS NOT MANDATORY FOR INLET TO THIS BOX, BUT ALLOWED TO ACCOMMODATE MINOR OFFSETS. MAXIMUM LENGTH 3'-0" [900mm].
  3. A BRANCH DUCT SERVING AN INDIVIDUAL BOX MAY BE THE SAME SIZE AS THE BOX INLET, PROVIDED THE EQUIVALENT LENGTH OF THE BRANCH DUCT, AS SHOWN, DOES NOT EXCEED 10 FEET (3 METERS). FOR LONGER LENGTHS, INCREASE THE DUCT SIZE AND PROVIDE A DUCT TRANSITION TO MAINTAIN THE DUCT STATIC PRESSURE DROP AT OR BELOW 0.2"/100' [1.64Pa/m]
  4. FLEXIBLE AIR DUCT CONNECTORS, WHEN USED FROM TERMINAL UNIT SUPPLY AIR DUCT TO DIFFUSER, SHALL NOT EXCEED 5'-0" [1500mm]. USE RIGID ELBOWS FOR CHANGE OF DIRECTION GREATER THAN 45°.
  5. COMPONENT ARRANGEMENT MAY VARY BY MANUFACTURER. PROVIDE INSULATION W/VAPOR BARRIER FOR CONNECTING DUCT SECTIONS.

**1 AIR TERMINAL DUCT CONNECTION**  
N.T.S.



**2 CV BOX W/HOT WATER DETAIL**  
N.T.S.



**3 TYPICAL END OF MAIN (E.O.M.) AND RISER DIRT TRAP MEDIUM PRESSURE STEAM PIPING DETAIL**  
N.T.S.



DEPARTMENT OF VETERANS AFFAIRS  
VA MEDICAL CENTER  
2500 OVERLOOK TERRACE  
MADISON, WISCONSIN 53705

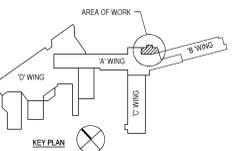
**SPD UPGRADE PROJECT**



**eppstein uhen : architects**

milwaukee 333 East Chicago Street  
Milwaukee, Wisconsin 53202  
tel 414 271 5350 fax 414 271 7794

madison 222 West Washington Ave, Suite 650  
Madison, Wisconsin 53703  
tel 608 442 5350 fax 608 442 6880



#	REVISION	DATE

**HVAC DETAILS**

**FULLY SPRINKLERED**

VA PROJECT NO. 607-10-105  
IBC PROJECT NO. 2010059

BLDG. NO. VA HOSPITAL - 'B' WING  
SCALE N.T.S.  
DATE JUNE 15, 2011  
DRAWN CDW

**BID DOCUMENTS**

**MH201**