

## CERTIFIED TEST ADJUST AND BALANCE REPORT

DATE: AUGUST 23, 2011

PROJECT: VA SURGERY SUITES  
ADDRESS: 1011 HONOR HEIGHTS DR.  
MUSKOGEE, OK 74401

ARCHITECT: N.G.

ENGINEER: LEE & BROWN  
1207 S. SHERIDAN  
TULSA, OK. 74112

HVAC CONTRACTOR: ACS  
2780 N. HW 167  
CATOOSA, OK 74015

NEBB TAB FIRM: ENVIRONMENTAL SPECIALISTS  
ADDRESS: FORMERLY SOUTHWEST TEST AND BALANCE OF TULSA  
5832 S 129 E AVE  
TULSA, OK 74134

TAB CERTIFICATION NUMBER: 3224  
PROJECT NUMBER: 786



PROJECT: VA SURGERY SUITES  
LOCATION: 1011 HONOR HEIGHTS DR.  
MUSKOGEE, OK 74401

THE DATA PRESENTED IN THIS REPORT IS A RECORD OF SYSTEM MEASUREMENTS AND FINAL ADJUSTMENTS THAT HAVE BEEN OBTAINED IN ACCORDANCE WITH THE CURRENT EDITION OF THE NEBB PROCEDURAL STANDARDS FOR *TESTING, ADJUSTING AND BALANCING OF ENVIRONMENTAL SYSTEMS*. ANY VARIANCES FROM THE DESIGN QUANTITIES WHICH EXCEED NEBB TOLERANCES, ARE NOTED IN THE TEST - ADJUST - BALANCE REPORT PROJECT SUMMARY.

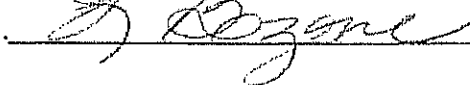
**SUBMITTED AND CERTIFIED BY:**

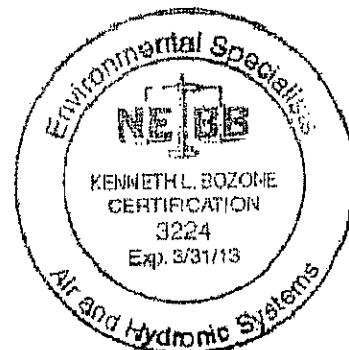
NEBB CERTIFIED TAB FIRM NAME: SOUTHWEST TEST & BALANCE OF TULSA  
TULSA, OK

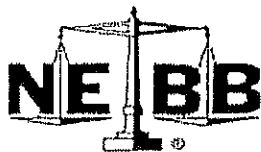
CERTIFICATION NO. 3224 CERTIFICATION EXPIRATION DATE: MARCH 31, 2013

REPORT DATE: AUGUST 23, 2011

NEBB QUALIFIED TAB SUPERVISOR: KENNY BOZONE

SIGNATURE: 





PROJECT: VA SURGERY SUITES  
LOCATION: 1011 HONOR HEIGHTS DR.  
MUSKOGEE, OK 74401

LIST OF ABBREVIATIONS:

N.G.	NOT GIVEN	GPM	GALLONS PER MINUTE
N.S.	NOT SHOWN OR NOT SPECIFIED	RPM	REVOLUTIONS PER MINUTE
N. ACC.	NOT ACCESSIBLE	BTUH	BRITISH THERMAL UNITS/HOUR
S.F.	SERVICE FACTOR	AVG	AVERAGE
A	AMPERAGE	CFM	CUBIC FEET PER MINUTE
V	VOLTAGE	DB	DRY BULB
N/A OR N. APPL.	NOT APPLICABLE	WB	WET BULB
H.P.	HORSEPOWER	EWT	ENTERING WATER TEMPERATURE
BHP	BRAKE HORSEPOWER	LWT	LEAVING WATER TEMPERATURE
D.P.	DIFFERENTIAL PRESSURE	EAT	ENTERING AIR TEMPERATURE
PSI OR #	POUNDS PER SQUARE INCH	LAT	LEAVING AIR TEMPERATURE
N.A. OR N.AVAIL.	NOT AVAILABLE	OA	OUTSIDE AIR
FR.	FRAME	RA	RETURN AIR
N. MEAS.	NOT MEASURABLE	EA	EXHAUST AIR
VEL.	VELOCITY	VEL	VELOCITY
FT OR '	FEET	BHP	BRAKE HORSE POWER
IN. OR "	INCHES	RH	RELATIVE HUMIDITY
N. VIS.	NOT VISIBLE	UNK	UNKNOWN
T.A.	THROWAWAY (FILTER)	WASH.	WASHABLE (FILTER)
D.D.	DIRECT DRIVE	B.D.	BELT DRIVE
P.I.	PRESSURE INDEPENDENT	P.D.	PRESSURE DEPENDENT

## INSTRUMENT CALIBRATION LOG

MANUFACTURER	MODEL NO.	SERIAL NUMBER		APPLICATION	DATE OF LAST USE	INSTRUMENT CALIBRATION DATE
AMPROBE	THWD-2	05031423	28	DIGITAL PSYCHROMETER		11/22/10
EXTECH	461995	Q150701	7	DIGITAL PHOTO TACHOMETER		11/17/10
FIELDPIECE	HS35/HS36	735566	66	DIGITAL MULTIMETER WITH AMP		11/17/10
SHORTRIDGE	ADM-860C	MO4161	4	DIGITAL MULTIMETER		11/29/10
UEI	INF 150/151	9455417	13	DIGITAL INFRARED THERMOMETER		11/17/10
UEI	DTH-30/31	9304239	48	DIGITAL TEMPERATURE / RH		10/29/10

# AIR HANDLING UNIT TEST DATA (CENTRAL STATION)

PROJECT: VA SURGERY SUITES

SYSTEM: AHU-1

## UNIT DATA

MANUFACTURER	MCQUAY
MODEL NUMBER	E866537010
SERIAL NUMBER	171779

FAN DATA		@25 AIR CHANGES
TEST DATA	DESIGN	ACTUAL
TOTAL DESIGN CFM	15761	17687 *
OUTSIDE AIR CFM	6300	5834
RETURN AIR CFM	9461	11853
TOTAL OUTLET CFM	20000	
FAN DISCHARGE S.P.	-	3.03"
FAN SUCTION S.P.	-	-2.57
TOTAL FAN STATIC	8.84"	5.60"
EXTERNAL FAN S.P.	3.0"	4.29"
FAN RPM	1918	1439
FILTERS - QTY/SIZE	5-20x20x2"	10-24x24x2"
DESIGN OA %	40%	32.98%
OA DAMPER POSITION	45% OPEN SEE PITOT	
PRE-COOL. EWT / LWT	43.7/57.1	
PRE-COOL. EAT DB/WB	75.2/63.1	
PRE-COOL. LAT DB/WB	50.2/42.3	
SEC. COOLING EWT/LWT	42.1/46.6	
SEC. COOL. EAT DB/WB	50.2/42.3	
SEC. COOL. LAT DB/WB	37.4/44.1	

MOTOR DATA			
MAKE/FRAME		TECO/326T	
H.P. / RPM		50/1800	
VOLT/PHASE/HZ		460/3/60	
FL AMPS / S.F.		56.9/1.0	
MOTOR OPERATING DATA			
		DESIGN	ACTUAL
MOTOR VOLTS	T1-T2	460	446.7
	T1-T3		448.3
	T2-T3		446.9
MOTOR AMPS	T1	46	30.0
	T2		30.1
	T3		30.0
			@46.03 HZ
DRIVE DATA			
MAKE MOTOR SHEAVE		BROWNING	
SIZE AND BORE		2B5V11.0x2 1/8"	
MAKE FAN SHEAVE		BROWNING	
SIZE AND BORE		25V10.3x2 11/16	
NO. BELTS / SIZE		2/5VX780	
CENTER DISTANCE		22"	

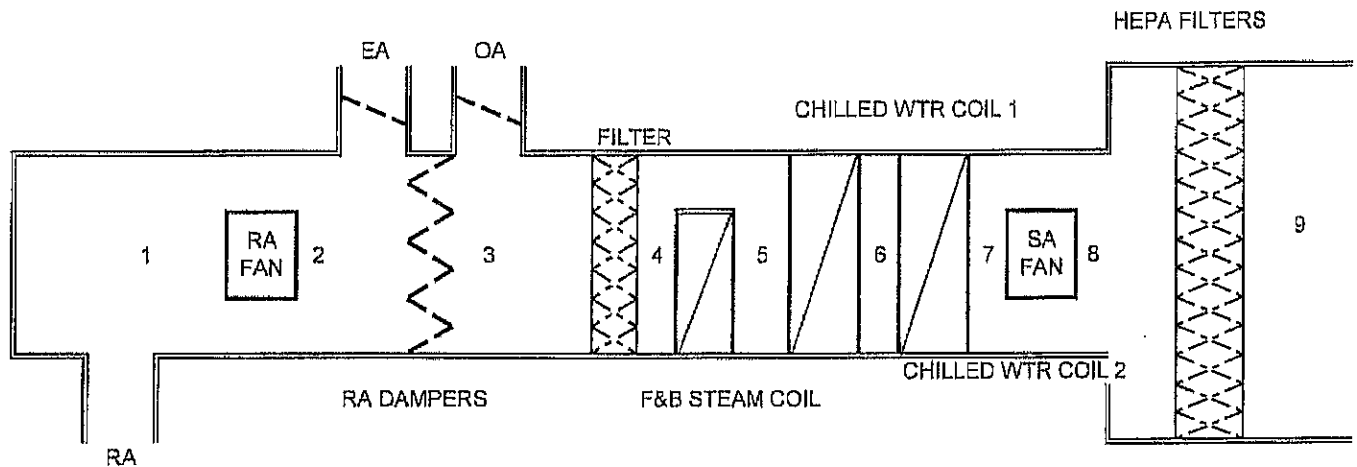
REMARKS- \* SUPPLY AIR CFM MEASUREMENTS TAKEN DETERMINED BY COIL VELOCITIES. CFM 17687 @ 46.03 HZ  
NEW SUPPLY AND RETURN AIR MOTORS/ SHEAVES INSTALLED ON 7-21,22-2011  
TOTAL FAN PERFORMANCE RETAKEN AGAIN ON 7-24-11 WITH ALL NEW DATA.  
TOTAL FAN PERFORMANCE RETAKEN AGAIN ON 8-4,9-11 WITH ALL NEW DATA.

READINGS BY: R.COLLUCI  
DATE: 7/24/2011  
RE-TEST: 8/4/2011



PROJECT: VA SURGERY SUITES  
 LOCATION: MUSKOGEE, OK.

### MISCELLANEOUS INFORMATION FORM



STATIC PRESSURES											
OCCUPIED MODE				UNOCCUPIED MODE				OCCUPIED MODE WITH LOADED FILTERS			
AHU SPEED	46.1HZ	1	-2.17		1	-2.09	AHU SPD	53 HZ	1	-2.84	
		2	-0.092		2	-0.127			2	-0.071	
DATE:	8/4/2011	3	-0.072		3	-0.113	DATE:	8/9/2011	3	-0.067	
RDGS BY:	R.COLLUCI	4	-0.272		4	-0.241			4	-2.49	
		5	-1.26		5	-0.869			5	-3.05	
		6	-1.81		6	-1.209			6	-3.63	
		7	-2.57		7	-1.68			7	-4.32	
		8	3.03		8	2.98			8	3.62	
		9	2.61		9	2.61			9	2.61	

PROJECT:	VA SURGERY SUITES
SYSTEM:	AHU1 RETURN

MANUFACTURER	MCQUAY
MODEL NUMBER	E866537010
SERIAL NUMBER	171779

[illegible]

MAKE/FRAME	TECO/256T
H.P. / RPM	20/1760
VOLT/PHASE/HZ	230/460/3/60
FL AMPS / S.F.	46/23/1.15

		DESIGN	ACTUAL
MOTOR	T1-T2	460	481.3
	T1-T3		483.5
	T2-T3		482.9
MOTOR AMPS	T1	23	10.3
	T2		10.6
	T3		10.5
		@36.77	

MAKE MOTOR SHEAVE	BROWNING
SIZE AND BORE	3B62SDx1 5/8"
MAKE FAN SHEAVE	BROWNING
SIZE AND BORE	3B6.2x2 11/16
NO. BELTS / SIZE	3/BX78
CENTER DISTANCE	30 3/4"

READINGS BY:	<u>R.COLLUCI</u>
DATE:	<u>7/24/2011</u>
RE-TEST:	<u>8/9/2011</u>

# CHILLED WATER COIL VELGRID

PROJECT: VA SURGERY SUITES  
LOCATION: CHW COIL @25 AIR CHANGES

SYSTEM/UNIT: AHU-1  
SERVICE:

DESIGN DATA					
SIZE:	101	59.5	AREA:	41.73	SQ.FT.
FPM:	419		DESIGN AIRFLOW	15761	CFM
STATIC PRESSURE:					

DISTANCE FROM BOTTOM	A	B	C	D	E	F	G	H	J	K
1	401	363	373	400	395	419				
2	435	385	399	422	401	397				
3	463	482	435	455	440	420				
4	400	382	377	418	369	392				
5	432	357	378	422	395	384				
6	460	477	515	640	492	482				
7										
8										
9										
10										
11										
12										
TOTALS	2591	2446	2477	2757	2492	2494	0	0	0	15257
DISTANCE FROM SIDE										

NOTE: READINGS TAKEN WITH AIR BLOWING TOWARD OBSERVER.

SUM OF READINGS: 15257  
NUMBER OF READINGS: 36  
TOTAL AREA (SQ. FT.) 41.73  
REMARKS:

VELOCITY AVE: 424  
TOTAL ACTUAL SCFM: 17687  
DESIGN CFM: 15761  
PERCENT OF DESIGN: 112%

READINGS BY: RCOLLUCCI  
RE-TEST-8/1/2011



# RECTANGULAR DUCT TRAVERSE REPORT

PROJECT: VA SURGERY SUITES  
 LOCATION: ROOF

SYSTEM/UNIT: AHU-1  
 SERVICE: O.A.

DESIGN DATA				
SIZE:	<u>88x28</u>	AREA:	<u>17.11</u>	SQ.FT.
FPM:	<u>365</u>	DESIGN AIRFLOW	<u>6300</u>	CFM
STATIC PRESSURE:	<u>          </u>			

DISTANCE FROM BOTTOM	A	B	C	D	E	F	G	H	J	K
1	479	404	465	552	548	487	561	473		
2	407	331	443	383	510	426	376	422		
3	362	328	206	249	210	330	276	444		
4	464	218	189	336	318	349	227	388		
5	72	154	207	105	150	163	198	429		
6										
7										
8										
9										
10										
11										
12										
TOTALS	1784	1435	1510	1625	1736	1755	1638	2156	0	13639
DISTANCE FROM SIDE										

NOTE: READINGS TAKEN WITH AIR BLOWING TOWARD OBSERVER.

SUM OF READINGS: 13639  
 NUMBER OF READINGS: 40  
 TOTAL AREA (SQ. FT.) 17.11111

VELOCITY AVE: 341  
 TOTAL ACTUAL SCFM: 5834  
 DESIGN CFM: 6300  
 PERCENT OF DESIGN: 93%

REMARKS: @25 AIR CHANGES

READINGS BY: RCOLLUCCI  
 DATE: 7/21/2011  
 RE-TEST-8/1/2011

# RECTANGULAR DUCT TRAVERSE REPORT

PROJECT: VA SURGERY SUITES  
 LOCATION: 3RD FL.

SYSTEM/UNIT: AHU-1  
 SERVICE: R.A. DUCT W/O ACV

DESIGN DATA			
SIZE:	<u>28x18</u>	AREA:	<u>3.5</u> SQ.FT.
FPM:	<u>1298</u>	DESIGN AIRFLOW	<u>4530</u> CFM
STATIC PRESSURE:	<u>0.62</u>		

DISTANCE FROM BOTTOM		A	B	C	D	E	F	G	H	J	K
	1	1453	1361	1273	1158	1054	988				
	2	1558	1456	1314	1162	1070	1173				
	3	1513	1418	1467	1393	1292	1296				
	4	1477	1529	1470	1460	1357	1343				
	5	1353	1496	1454	1432	1386	1305				
	6										
	7										
	8										
	9										
	10										
	11										
	12										
TOTALS		7354	7260	6978	6605	6159	6086	0	0	0	40441
DISTANCE FROM SIDE											

NOTE: READINGS TAKEN WITH AIR BLOWING TOWARD OBSERVER.

SUM OF READINGS: 40441  
 NUMBER OF READINGS: 30  
 TOTAL AREA (SQ. FT.): 3.5

VELOCITY AVE: 1348  
 TOTAL ACTUAL SCFM: 4718  
 DESIGN CFM: 4530  
 PERCENT OF DESIGN: 104%

REMARKS:  
 RA PITOT GENERAL RA BEFORE IT GOES TO AHU

READINGS BY: RCOLLUCCI  
 DATE: 7/21/2011

# VAV TERMINAL BOX TEST REPORT

PROJECT: VA SURGERY SUITES

AIR UNIT DESIGNATION: AHU-1

TERMINAL NO.
VVB-1

VAV TERMINAL DATA				
		DESIGN	ACTUAL	
PLAN I.D.	M-7	PRIMARY MAX AIRFLOW	260	275
TYPE	VAV	PRIMARY MIN AIRFLOW	260	261
SIZE	5			
PI OR PD?	PI	CALIBRATION FACTOR		377
DDC ADDRESS				225
04-4D-58-A7-03-00		REHEAT COIL EWT/LWT	176.9	119.3
		REHEAT COIL EAT/LAT DB	49.4	96.1

AREA SERVED	OUTLET			DESIGN	INITIAL	FINAL	PERCENT
	NO.	TYPE	SIZE	MAX CFM	CFM	CFM	DESIGN
Men's lockerroom 104	1	S1	8"	130	179	135	104%
Men's lockerroom 104	2	S1	8"	130	200	140	108%
TOTAL				260	379	275	106%

## REMARKS:

READINGS BY: R. COLLUCCI

DATE: 6-4-11

RE-CHECK 7/21-24/2011

# VAV TERMINAL BOX TEST REPORT

PROJECT: VA SURGERY SUITES

AIR UNIT DESIGNATION: AHU-1

TERMINAL NO.

VVB-2

## VAV TERMINAL DATA

PLAN I.D.	M-7
TYPE	VAV
SIZE	8
PI OR PD?	PI
DDC ADDRESS	

04-E3-14-A8-03-00

	DESIGN	ACTUAL
PRIMARY MAX AIRFLOW	750	714
PRIMARY MIN AIRFLOW	375	367
CALIBRATION FACTOR	-----	1094
		271
REHEAT COIL EWT/LWT	181.3	150.1
REHEAT COIL EAT/LAT DB	48.9	105.5

AREA SERVED	OUTLET			DESIGN	INITIAL	FINAL	PERCENT
	NO.	TYPE	SIZE	MAX CFM	CFM	CFM	DESIGN
Corridor 101	1	S1	8"	150	0	147	98%
Corridor 101	2	S1	8"	150	198	142	95%
Corridor 103	3	S1	8"	150	93	139	93%
Corridor 105	4	S1	8"	150	169	151	101%
Corridor 105	5	S1	8"	150	184	135	90%
TOTAL				750	661	714	95%

## REMARKS:

READINGS BY: R. COLLUCCI

DATE: 5-4-11

RE-CHECK 7/21-24/2011

# VAV TERMINAL BOX TEST REPORT

PROJECT: VA SURGERY SUITES

AIR UNIT DESIGNATION: AHU-1

TERMINAL NO.
VVB-3

VAV TERMINAL DATA				
PLAN I.D.	M-7	PRIMARY MAX AIRFLOW	DESIGN 1520	ACTUAL 1554
TYPE	VAV	PRIMARY MIN AIRFLOW	1350	
SIZE	12			
PI OR PD?	PI	CALIBRATION FACTOR	—	1009
DDC ADDRESS				
04-7F-19-E4-03-00		REHEAT COIL EWT/LWT	179.5	141.9
		REHEAT COIL EAT/LAT DB	48.4	112.2

AREA SERVED	OUTLET			DESIGN MAX CFM	INITIAL CFM	FINAL CFM	PERCENT DESIGN
	NO.	TYPE	SIZE				
Patient Holding 102	1	S1	8"	190	216	200	105%
Patient Holding 102	2	S1	8"	190	191	193	102%
Patient Holding 102	3	S1	8"	190	202	199	105%
Patient Holding 102	4	S1	8"	190	48	196	103%
Patient Holding 102	5	S1	8"	190	191	184	97%
Patient Holding 102	6	S1	8"	190	175	191	101%
Patient Holding 102	7	S1	8"	190	170	199	105%
Patient Holding 102	8	S1	8"	190	143	192	101%
TOTAL				1520	1336	1554	102%

REMARKS: VAV NOT INSTALLED ON 4/1/11  
\*VAV INSTALLED BUT NOT WIRED 4/7/11

READINGS BY: R. COLLUCCI  
DATE: 6-23-11  
RE-CHECK 7/21-24/2011

# VAV TERMINAL BOX TEST REPORT

PROJECT: VA SURGERY SUITES

AIR UNIT DESIGNATION: AHU-1

TERMINAL NO.
VVB-4

VAV TERMINAL DATA				
PLAN I.D.	M-7	PRIMARY MAX AIRFLOW	DESIGN 280	ACTUAL 273
TYPE	VAV	PRIMARY MIN AIRFLOW	280	273
SIZE	5			
PI OR PD?	PI	CALIBRATION FACTOR		375
DDC ADDRESS				223
04-CB-70-02-04-00		REHEAT COIL EWT/LWT	179.5	145.9
		REHEAT COIL EAT/LAT DB	49.4	87.7

AREA SERVED	OUTLET			DESIGN MAX CFM	INITIAL CFM	FINAL CFM	PERCENT DESIGN
	NO.	TYPE	SIZE				
Woman's lockerroom 1	1	S1	8"	140	155	135	96%
Woman's lockerroom 1	2	S1	8"	140	108	138	99%
TOTAL				280	263	273	98%

REMARKS:

READINGS BY: R. COLLUCCI  
RE-CHECK 7/21-24/2011

# VAV TERMINAL BOX TEST REPORT

PROJECT: VA SURGERY SUITES

AIR UNIT DESIGNATION: AHU-1

TERMINAL NO.

VVB-5

## VAV TERMINAL DATA

PLAN I.D.	M-8
TYPE	VAV
SIZE	6
PI OR PD?	PI
DDC ADDRESS	

04-55-58-A7-03-00

	DESIGN	ACTUAL
PRIMARY MAX AIRFLOW	330	341
PRIMARY MIN AIRFLOW	260	259
CALIBRATION FACTOR	-----	507
		189
REHEAT COIL EWT/LWT	177.9	141.5
REHEAT COIL EAT/LAT DB	49.7	94.6

AREA SERVED	OUTLET			DESIGN	INITIAL	FINAL	PERCENT
	NO.	TYPE	SIZE	MAX CFM	CFM	CFM	DESIGN
Conference 107	1	S1	8"	165	165	176	107%
Conference 107	2	S1	8"	165	199	165	100%
TOTAL				330	364	341	103%

REMARKS:

READINGS BY: R. COLLUGGI

RE-CHECK 7/21-24/2011

# VAV TERMINAL BOX TEST REPORT

PROJECT: VA SURGERY SUITES

AIR UNIT DESIGNATION: AHU-1

TERMINAL NO.
VVB-6

VAV TERMINAL DATA				
		DESIGN	ACTUAL	
PLAN I.D.	M-8	PRIMARY MAX AIRFLOW	350	340
TYPE	VAV	PRIMARY MIN AIRFLOW	260	265
SIZE	6			
PI OR PD?	PI	CALIBRATION FACTOR	-----	553
DDC ADDRESS				140
04-5A-71-02-04-00		REHEAT COIL EWT/LWT	178.5	143.2
		REHEAT COIL EAT/LAT DB	49.7	101.9

AREA SERVED	OUTLET			DESIGN	INITIAL	FINAL	PERCENT
	NO.	TYPE	SIZE	MAX CFM	CFM	CFM	DESIGN
Anesthesia office 108	1	S1	8"	175	170	163	93%
Anesthesia office 108	2	S1	8"	175	185	177	101%
TOTAL				350	355	340	97%

REMARKS:

READINGS BY: R. COLLUCCI

RE-CHECK 7/21-24/2011



# VAV TERMINAL BOX TEST REPORT

PROJECT: VA SURGERY SUITES

AIR UNIT DESIGNATION: AHU-1

TERMINAL NO.

VVB-7

## VAV TERMINAL DATA

PLAN I.D.	M-8
TYPE	VAV
SIZE	4
PI OR PD?	PI
DDC ADDRESS	
04-33-E0-C8-05-00	

	DESIGN	ACTUAL
PRIMARY MAX AIRFLOW	140	147
PRIMARY MIN AIRFLOW	80	84
CALIBRATION FACTOR	—	242
		119
REHEAT COIL EWT/LWT	180.6	168.4
REHEAT COIL EAT/LAT DB	49.7	107.9

AREA SERVED	OUTLET			DESIGN	INITIAL	FINAL	PERCENT
	NO.	TYPE	SIZE	MAX CFM	CFM	CFM	DESIGN
Nurse superv. 109	1	S5	8"	140	84	147	105%

REMARKS:

READINGS BY: R. COLLUCCI  
RE-CHECK 7/21-24/2011

# VAV TERMINAL BOX TEST REPORT

PROJECT: VA SURGERY SUITES

AIR UNIT DESIGNATION: AHU-1

TERMINAL NO.
VVB-8

VAV TERMINAL DATA				
			DESIGN	ACTUAL
PLAN I.D.	M-8	PRIMARY MAX AIRFLOW	200	209
TYPE	VAV	PRIMARY MIN AIRFLOW	200	210
SIZE	5			
PI OR PD?	PI	CALIBRATION FACTOR		405
DDC ADDRESS				210
04-B5-E0-E4-03-00		REHEAT COIL EWT/LWT	178.9	147.3
		REHEAT COIL EAT/LAT DB	49.7	93.5

AREA SERVED	OUTLET			DESIGN	INITIAL	FINAL	PERCENT
	NO.	TYPE	SIZE	MAX CFM	CFM	CFM	DESIGN
Anesthesia workroom	1	S5	8"	200	224	209	105%

## REMARKS:

PLUGGED COIL

READINGS BY: R. COLLUCCI

DATE: 5-4-11

RE-CHECK 7/21-24/2011

# VAV TERMINAL BOX TEST REPORT

PROJECT: VA SURGERY SUITES

AIR UNIT DESIGNATION: AHU-1

TERMINAL NO.

VVB-9

## VAV TERMINAL DATA

PLAN I.D.	M-8,9
TYPE	VAV
SIZE	14
PI OR PD?	PI
DDC ADDRESS	

04-BD-70-02-04-00

	DESIGN	ACTUAL
PRIMARY MAX AIRFLOW	1960	1934
PRIMARY MIN AIRFLOW	1960	1950
CALIBRATION FACTOR	-----	1178
REHEAT COIL EWT/LWT	178.9	109.2
REHEAT COIL EAT/LAT DB	47.8	93.7

AREA SERVED	OUTLET			DESIGN	INITIAL	FINAL	PERCENT
	NO.	TYPE	SIZE	MAX CFM	CFM	CFM	DESIGN
Corridor 110	1	S1	10"	245	241	220	90%
Corridor 110	2	S1	10"	245	211	265	108%
Corridor 111	3	S1	10"	245	162	221	90%
Corridor 111	4	S1	10"	245	292	246	100%
Corridor 120	5	S5	10"	245	253	231	94%
Corridor 111	6	S1	10"	245	256	236	96%
Corridor 111	7	S1	10"	245	294	255	104%
Corridor 111	8	S1	10"	245	284	260	106%
<b>TOTAL</b>				<b>1960</b>	<b>1993</b>	<b>1934</b>	<b>99%</b>

## REMARKS:

READINGS BY: R. COLLUCCI

DATE: 6-4-11

RE-CHECK 7/21-24/2011

# VAV TERMINAL BOX TEST REPORT

PROJECT: VA SURGERY SUITES

AIR UNIT DESIGNATION: AHU-1

TERMINAL NO.
VVB-10

VAV TERMINAL DATA				
		DESIGN	ACTUAL	
PLAN I.D.	M-8	PRIMARY MAX AIRFLOW	390	393
TYPE	VAV	PRIMARY MIN AIRFLOW	390	390
SIZE	6			
PI OR PD?	PI	CALIBRATION FACTOR	-----	430
DDC ADDRESS				430
04-EF-1E-E4-03-00		REHEAT COIL EWT/LWT	176.4	146
		REHEAT COIL EAT/LAT DB	48.9	90.1

AREA SERVED	OUTLET			DESIGN	INITIAL	FINAL	PERCENT
	NO.	TYPE	SIZE	MAX CFM	CFM	CFM	DESIGN
Clean core 116	1	S5	10"	390	334	393	101%

# VAV TERMINAL BOX TEST REPORT

PROJECT: VA SURGERY SUITES

AIR UNIT DESIGNATION: AHU-1

TERMINAL NO.
VVB-11

VAV TERMINAL DATA				
PLAN I.D.	M-8.9	PRIMARY MAX AIRFLOW	DESIGN 340	ACTUAL 334
TYPE	VAV	PRIMARY MIN AIRFLOW	340	332
SIZE	6			
PI OR PD?	PI	CALIBRATION FACTOR	-----	507
DDC ADDRESS				159
04-B1-70-02-04-00		REHEAT COIL EWT/LWT	178.1	142.7
		REHEAT COIL EAT/LAT DB	49.3	95.1

AREA SERVED	OUTLET			DESIGN	INITIAL	FINAL	PERCENT
	NO.	TYPE	SIZE	MAX CFM	CFM	CFM	DESIGN
Clean stor 119	1	S5	10"	340	379	334	98%

REMARKS:

READINGS BY: R. COLLUCCI

DATE: 6-16-11

RE-CHECK 7/21-24/2011

# VAV TERMINAL BOX TEST REPORT

PROJECT: VA SURGERY SUITES

AIR UNIT DESIGNATION: AHU-1

TERMINAL NO.
VVB-12

VAV TERMINAL DATA				
PLAN I.D.	M-8.9	PRIMARY MAX AIRFLOW	DESIGN 390	ACTUAL 414
TYPE	VAV	PRIMARY MIN AIRFLOW	390	390
SIZE	6	CALIBRATION FACTOR	-----	471
PI OR PD?	PI			471
DDC ADDRESS		REHEAT COIL EWT/LWT	176.7	139.4
04-06-1A-E4-03-00		REHEAT COIL EAT/LAT DB	49.2	92.6

AREA SERVED	OUTLET			DESIGN	INITIAL	FINAL	PERCENT
	NO.	TYPE	SIZE	MAX CFM	CFM	CFM	DESIGN
Clean core 122	1	S5	10"	390	334	414	106%

## REMARKS:

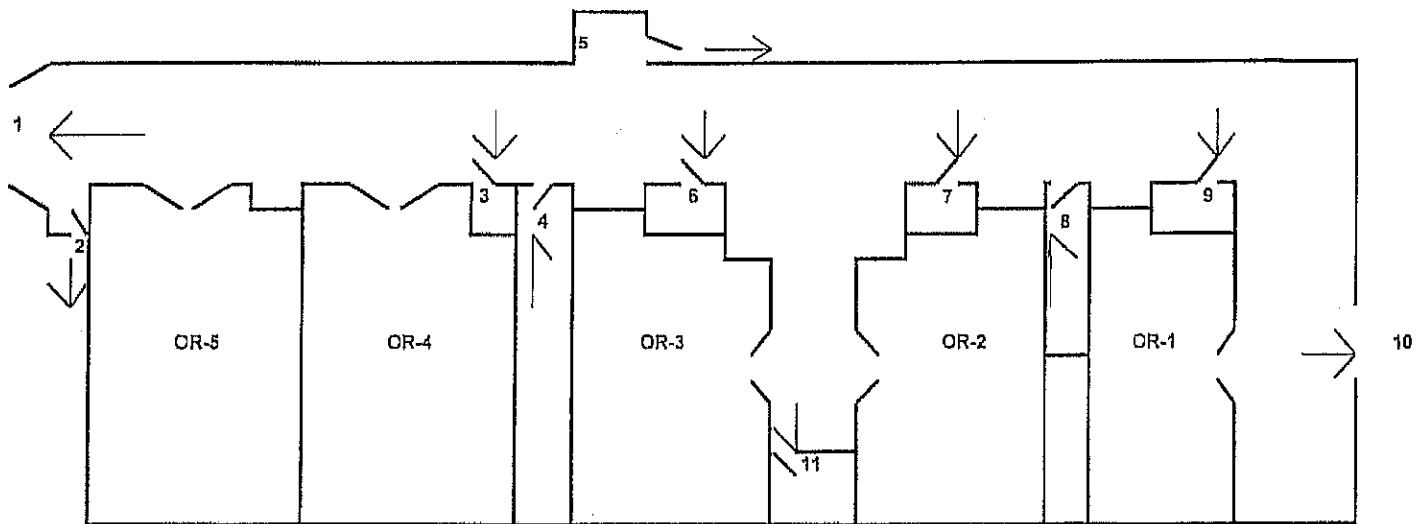
READINGS BY: R. COLLUCCI

DATE: 6-16-11

RE-CHECK 7/21-24/2011

8/9/2011

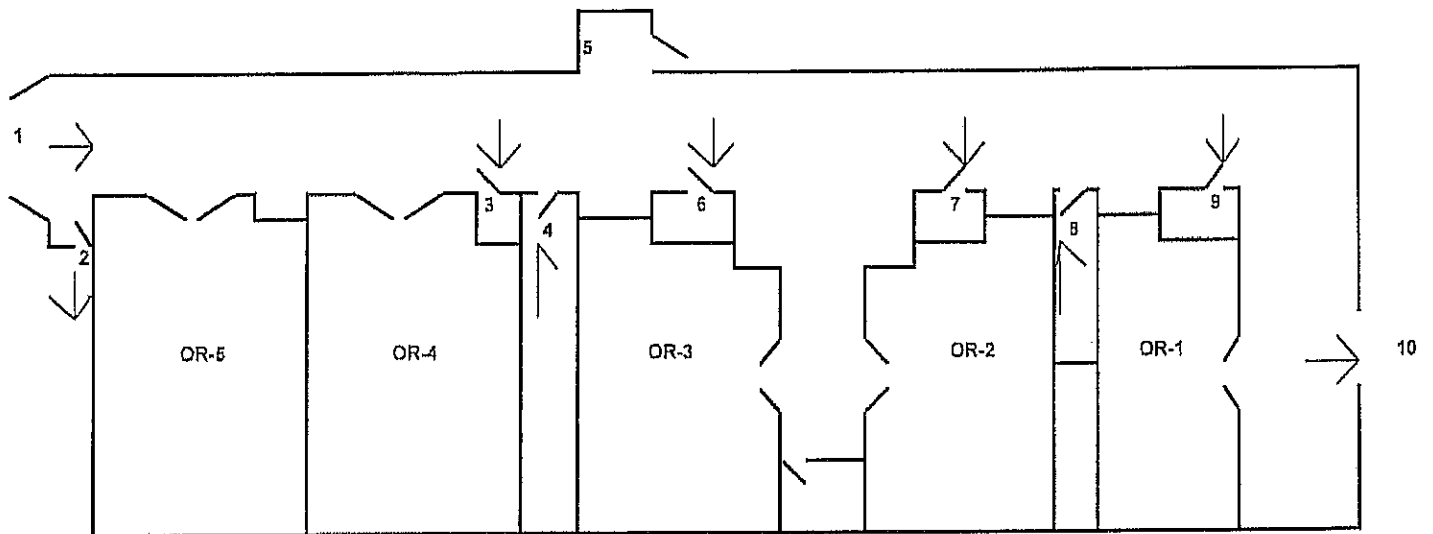
# OCCUPIED MODE ROOM PRESSURES



- 1 POS. 0.0076"
- 2 POS. 0.0175"
- 3 POS. 0.0145"
- 4 POS. 0.0247"
- 5 POS. 0.0037"
- 6 POS. 0.0371"
- 7 POS. 0.0243"
- 8 POS. 0.0252"
- 9 POS. 0.0213"
- 10 POS. 0.0003"
- 11 POS. 0.0004"

READINGS BY: R. COLLUCI  
DATE: 8/9/11

# UNOCCUPIED MODE ROOM PRESSURES

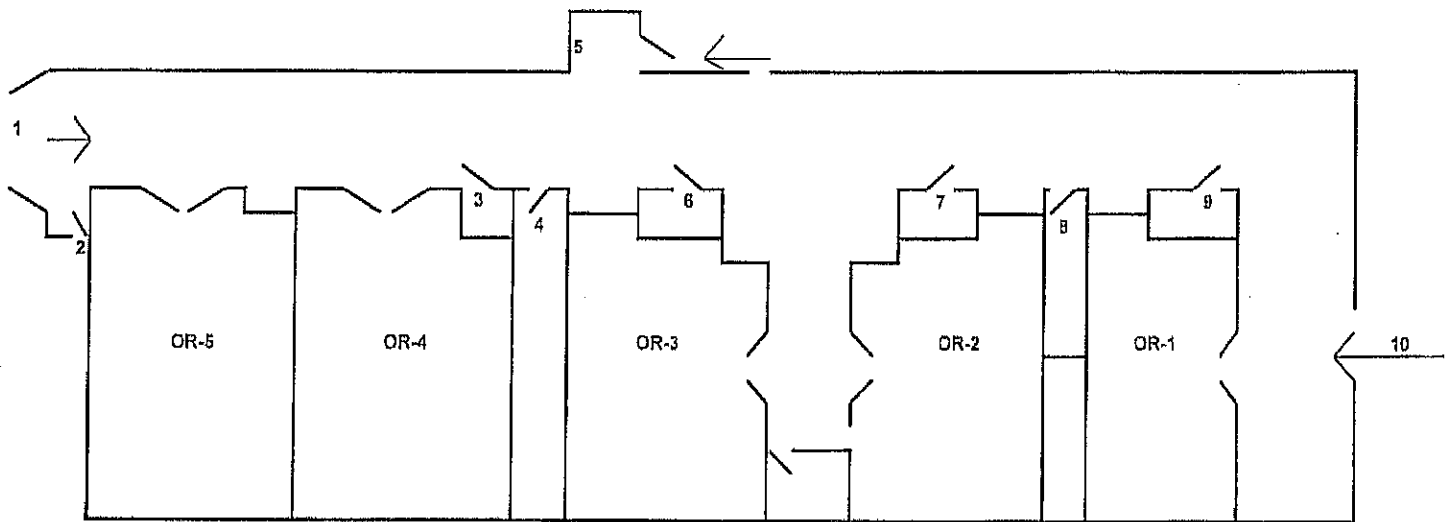


FIRE	UNOCCUPIED
1 0.0349	1 0.0024
2 NOT TAKEN	2 0.0183
3 NOT TAKEN	3 0.0151
4 NOT TAKEN	4 0.0036
5 0.0247	5 NOT TAKEN
6 NOT TAKEN	6 0.0241
7 NOT TAKEN	7 0.0220
8 NOT TAKEN	8 0.0038
9 NOT TAKEN	9 0.0253
10 0.0232	10 0.0003

READINGS BY: R. COLLUCI  
DATE: 8/3/11



# FIRE MODE ROOM PRESSURES



## FIRE

- 1 0.0349
- 2 NOT TAKEN
- 3 NOT TAKEN
- 4 NOT TAKEN
- 5 0.0247
- 6 NOT TAKEN
- 7 NOT TAKEN
- 8 NOT TAKEN
- 9 NOT TAKEN
- 10 0.0232

READINGS BY: R.COLLUCI  
DATE: 8/3/11

# AIR CHANGE PER HOUR TEST REPORT (DIRECT READING FLOWHOOD)

PROJECT: VA SURGERY SUITES (OCCUPIED MODE)  
LOCATION: MUSKOGEE, OK 74401

SYSTEM DESIGNATION: 3RD FLOOR OR'S

AREA SERVED	ROOM VOLUME CUBIC FT.	REQUIRED MINIMUM AIR CH. PER HR.	MINIMUM CFM	ACTUAL CFM	FINAL AIR CH. PER HR.	ROOM PRESSURE	ACV DP	ACV DP WITH LOADED FILTERS
OR # 1	4620.21	25	1925	1989	25.83	POS. 0.0147	2.3"	1.34"
OR # 2	4377.01	25	1824	1845	25.29	POS. 0.0132"	2.1"	1.49"
OR # 3	4416.06	25	1840	1868	25.38	POS. 0.0145"	2.2"	1.33"
OR # 4	4527.15	25	1886	1922	25.47	POS. 0.0118"	1.94"	1.25"
OR # 5	3734.51	25	1556	1564	25.13	POS. 0.0135"	2.5"	1.14"
OR TOTAL			9031					
VAV TOTAL			6730					

**REMARKS:**

TOTAL UNIT 15761  
OA. @40% 6304  
R.A. 9457  
WITH ACV # 4 HEPA FILTER LOADED ACV DP .94"

READINGS BY: R. COLLUCCI  
DATE: 8/2/11

# AIR CHANGE PER HOUR TEST REPORT (DIRECT READING FLOWHOOD)

PROJECT: VA SURGERY SUITES UN OCC.  
LOCATION: MUSKOGEE, OK 74401

SYSTEM DESIGNATION: 3RD FLOOR OR'S

AREA SERVED	ROOM VOLUME CUBIC FT.	REQUIRED MINIMUM AIR CH. PER HR.	MINIMUM CFM	ACTUAL CFM	FINAL AIR CH. PER HR.	ROOM PRESSURE	ACV DP	RM. OFFSET
OR # 1	4620.21	12.5	963	1200	15.58	POS. 0.0115"	2.51"	269
OR # 2	4377.01	12.5	912	1137	15.59	POS. 0.0123"	2.44"	333
OR # 3	4416.06	12.5	920	1095	14.88	POS. 0.0125"	2.43"	406
OR # 4	4527.15	12.5	943	1178	15.61	POS. 0.0134"	2.34"	323
OR # 5	3734.51	12.5	778	975	15.66	POS. 0.0125"	2.42"	324
OR TOTAL			4516					
VAV TOTAL			6730					

REMARKS:  
TOTAL UNIT 11246  
OA. @40% 4498  
R.A. 6747  
UNIT SA. 39.3 HZ  
UNIT RA. 33.56 HZ

READINGS BY: R. COLLUCCI  
DATE: 8/3/11

# ISOLATION AND FIRE ROOM PRESSURES

PROJECT: VA SURGERY SUITES SYSTEM/UNIT: AHU-1  
LOCATION: MUSKOGEE, OK 74401 ROOM/AREA: OR# 1-5

AREA SERVED	ISOLATION	FIRE
OR # 1	-0.005	-0.0982
OR # 2	-0.008	-0.0914
OR # 3	-0.007	-0.0918
OR # 4	-0.008	-0.1009
OR # 5	-0.006	-0.1045

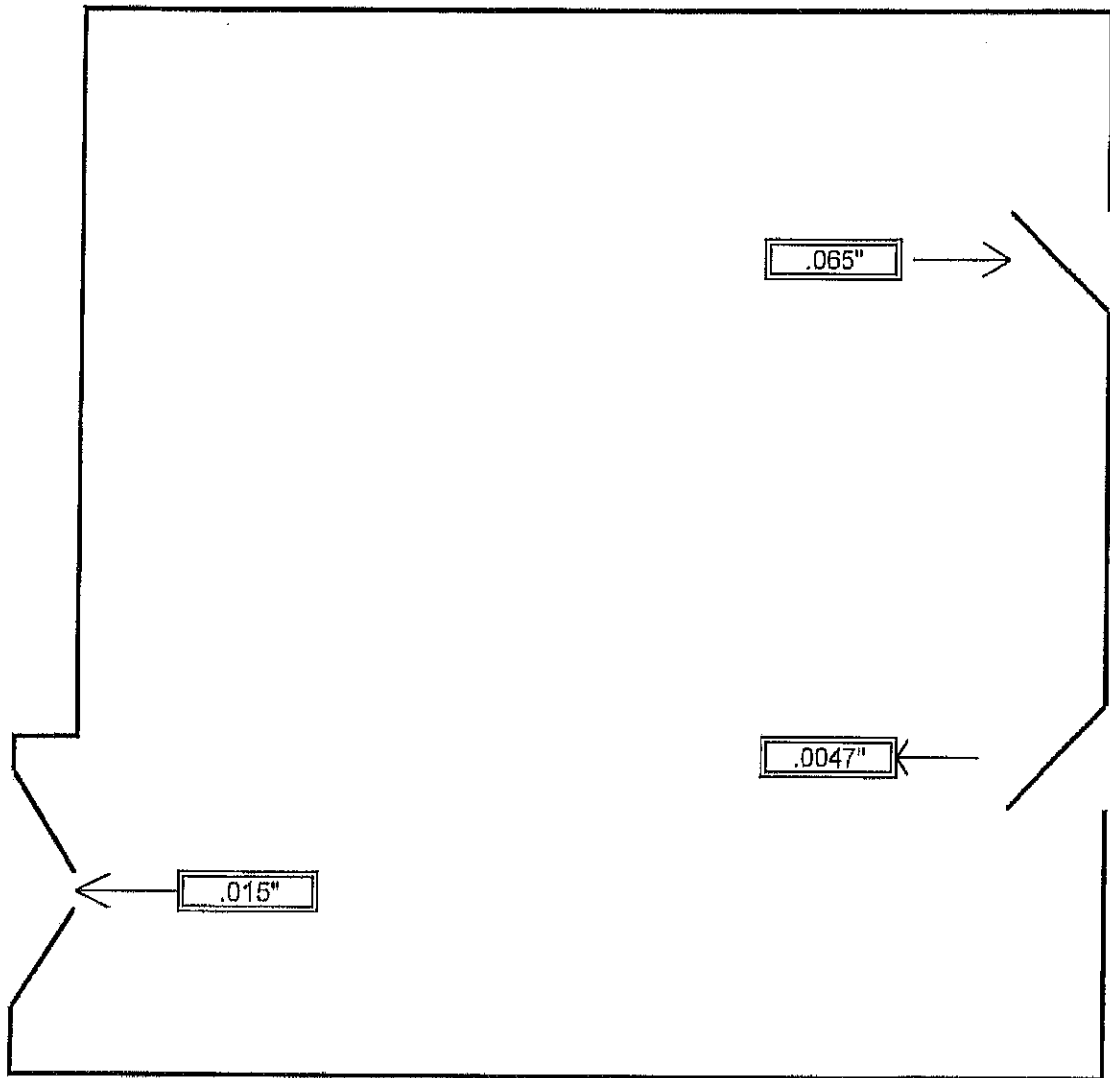
READINGS BY: R. COLLUCCI

DATE: 11/3/11

\*ISOLATION TESTED WITH OUT 100% OUTSIDE AIR ABS WILL ADD POINT IN PROGRAM AT A LATER TIME,EACH ROOM TESTED 1 AT A TIME

\* FIRE TESTED WITH 100% OUTSIDE AIR, 100% EF AIR. ALL O.R. TESTED AT SAME TIME

OR # 1 OCCUPIED MODE



# VAV TERMINAL BOX TEST REPORT

PROJECT: VA SURGERY SUITES

AIR UNIT DESIGNATION: AHU-1

TERMINAL NO.
ACV-1S

VAV TERMINAL DATA				
PLAN I.D.		M-8,9	PRIMARY MAX AIRFLOW	DESIGN 2760 ACTUAL 2530
TYPE		ACV	PRIMARY MIN AIRFLOW	SAME AS MAX
SIZE		12"	OFFSET	209
DDC ADDRESS		NA	CALIBRATION FACTOR	NA
PI OR PD?		PI	REHEAT COIL EWT/LWT	178.1 155.5
			REHEAT COIL EAT/LAT DB	48.9 113.8

AREA SERVED	OUTLET			DESIGN	INITIAL	FINAL	PERCENT
	NO.	TYPE	SIZE	MAX CFM	CFM	CFM	DESIGN
OR#1	1	4	48x12	165	170	123	75%
OR#1	2	4	48x12	165	179	140	85%
OR#1	3	4	72x12	250	252	171	68%
OR#1	4	4	72x12	250	273	147	59%
OR#1	5	4	48x12	165	171	107	65%
OR#1	6	4	48x12	165	175	121	73%
OR#1	7	4	72x12	250	248	173	69%
OR#1	8	4	72x12	250	246	157	63%
OR#1	9	4	36x24	275	273	217	79%
OR#1	10	4	36x24	275	272	212	77%
OR#1	11	4	36x24	275	268	208	76%
OR#1	12	4	36x24	275	278	213	77%
TOTAL				2760	2805	1989	72%

REMARKS: DESIGN CFM LOWERED TO ACHIEVE 25 AIR CHANGES IN SURGERY SUITES.

READINGS BY: R. COLLUCCI

DATE: 6-24-11

RE-CHECK 7/21-24/2011

@25 A.C.-8/1/11

# VAV TERMINAL BOX TEST REPORT

PROJECT: VA SURGERY SUITES

AIR UNIT DESIGNATION: AHU-1

TERMINAL NO.
ACV-1R

VAV TERMINAL DATA				
PLAN I.D.	M-8,9	PRIMARY MAX AIRFLOW	DESIGN	ACTUAL
TYPE	ACV	PRIMARY MIN AIRFLOW	2340	1780
SIZE	14"		SAME AS MAX	
DDC ADDRESS	NA	CALIBRATION FACTOR	-----	NA
PI OR PD?	PI			

AREA SERVED	OUTLET			DESIGN	INITIAL	FINAL	PERCENT
	NO.	TYPE	SIZE	MAX CFM	CFM	CFM	DESIGN
OR#1	1	R	24x36	1170	793	674	58%
OR#1	2	R	24x36	1170	1042	1106	95%
				2340	1835	1780	76%

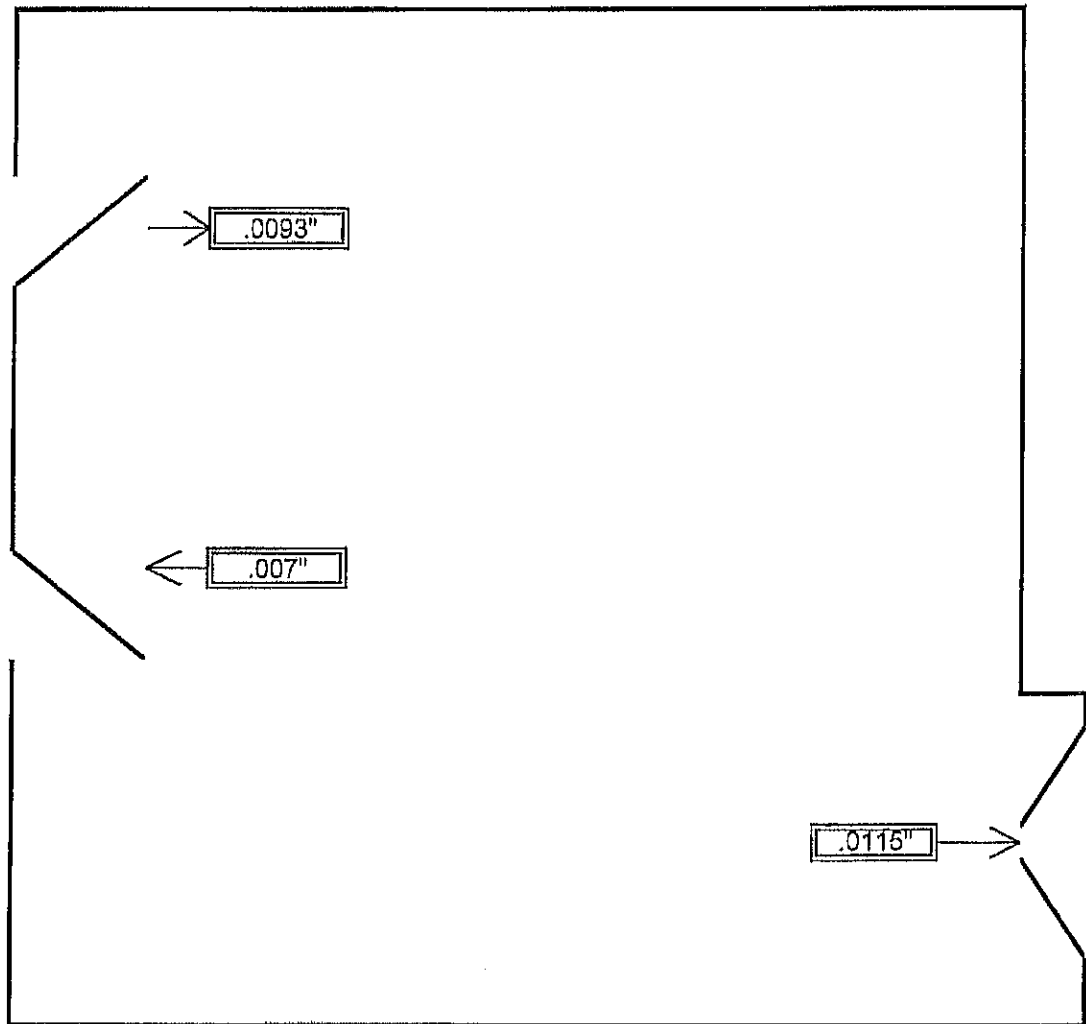
REMARKS: TO ACHIEVE A POSITIVE .01" PRESSURE TO THE ADJACEMENT CORRIDOR THE OUTSIDE AIR CFM DESIGN CHANGED FROM 5250 TO 6300 WHICH CHANGED THE RETURN AIR CFM DESIGN TO GET THE RECOMMENDED PRESSURE OF THE OPERATING SUITE.

READINGS BY: R. COLLUGGI

DATE: 6-24-11

RE-CHECK 7/21-24/2011

OR # 2 OCCUPIED MODE





# VAV TERMINAL BOX TEST REPORT

PROJECT: VA SURGERY SUITES

AIR UNIT DESIGNATION: AHU-1

TERMINAL NO.

ACV-2S

## VAV TERMINAL DATA

PLAN I.D.	M-8,9
TYPE	ACV
SIZE	12"
DDC ADDRESS	NA
PI OR PD?	PI

	DESIGN	ACTUAL
PRIMARY MAX AIRFLOW	2640	1845
PRIMARY MIN AIRFLOW	SAME AS MAX	
OFFSET	-	250
CALIBRATION FACTOR	-----	NA
REHEAT COIL EWT/LWT	180.8	131.5
REHEAT COIL EAT/LAT DB	48.3	112.2

AREA SERVED	OUTLET			DESIGN	INITIAL	FINAL	PERCENT
	NO.	TYPE	SIZE	MAX CFM	CFM	CFM	DESIGN
OR#2	1	S	48x12	160	181	123	77%
OR#2	2	S	48x12	160	169	117	73%
OR#2	3	S	72x12	235	240	165	70%
OR#2	4	S	72x12	235	244	155	66%
OR#2	5	S	48x12	160	169	110	69%
OR#2	6	S	48x12	160	174	123	77%
OR#2	7	S	72x12	235	255	160	68%
OR#2	8	S	72x12	235	248	158	67%
OR#2	9	S	36x24	265	260	170	64%
OR#2	10	S	36x24	265	261	192	72%
OR#2	11	S	36x24	265	284	188	71%
OR#2	12	S	36x12	265	270	184	69%
				2640	2755	1845	70%

REMARKS: DESIGN CFM LOWERED TO ACHIEVE 25 AIR CHANGES IN SURGERY SUITES.

READINGS BY: R. COLLUCCI

DATE: 7-21-11

RE-CHECK 7/21-24/2011

# VAV TERMINAL BOX TEST REPORT

PROJECT: VA SURGERY SUITES

AIR UNIT DESIGNATION: AHU-1

TERMINAL NO.
ACV-2R

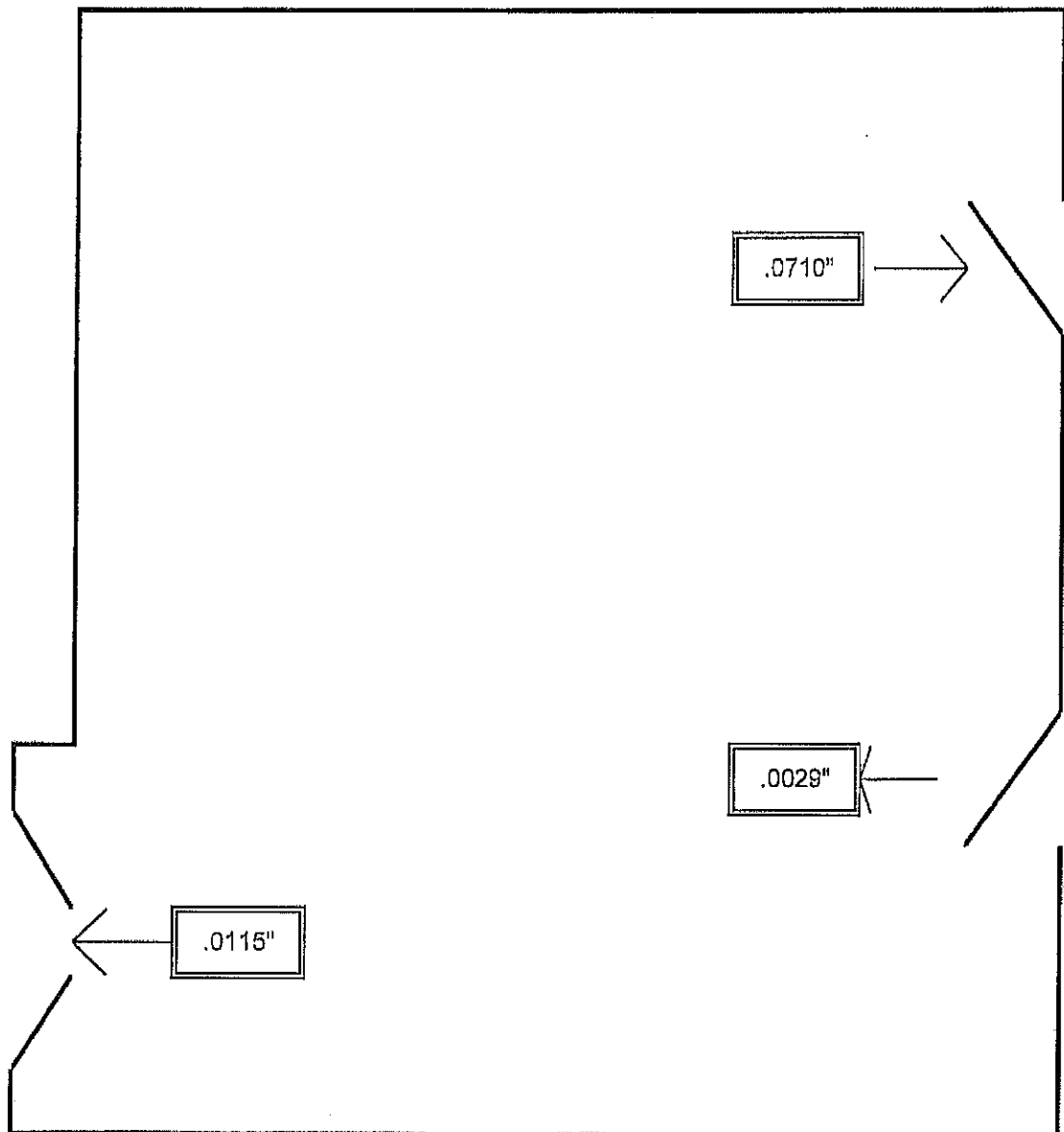
VAV TERMINAL DATA				
PLAN I.D.	M-8,9	PRIMARY MAX AIRFLOW	DESIGN 2240	ACTUAL 1595
TYPE	ACV	PRIMARY MIN AIRFLOW	SAME AS MAX	
SIZE	14"	CALIBRATION FACTOR	-----	NA
DDC ADDRESS	NA			
PI OR PD?	PI			

AREA SERVED	OUTLET			DESIGN	INITIAL	FINAL	PERCENT
	NO.	TYPE	SIZE	MAX CFM	CFM	CFM	DESIGN
OR#2	1	R	24x36	1120	1054	674	60%
OR#2	2	R	24x36	1120	784	921	82%
				2240	1838	1595	

REMARKS: TO ACHIEVE A POSITIVE .01" PRESSURE TO THE ADJACEMENT CORRIDOR THE OUTSIDE AIR CFM DESIGN CHANGED FROM 5250 TO 6300 WHICH CHANGED THE RETURN AIR CFM DESIGN TO GET THE RECOMMENDED PRESSURE OF THE OPERATING SUITE.

READINGS BY: R. COLLUGGI  
RE-CHECK 7/21-24/2011

OR # 3 OCCUPIED MODE



# VAV TERMINAL BOX TEST REPORT

PROJECT: VA SURGERY SUITES

AIR UNIT DESIGNATION: AHU-1

TERMINAL NO.

ACV-3S

## VAV TERMINAL DATA

PLAN I.D.	M-8,9
TYPE	ACV
SIZE	12"
DDC ADDRESS	NA
PI OR PD?	PI

	DESIGN	ACTUAL
PRIMARY MAX AIRFLOW	2640	1868
PRIMARY MIN AIRFLOW	SAME AS MAX	
OFFSET		319
CALIBRATION FACTOR		NA
REHEAT COIL EWT/LWT	183.1	165.2
REHEAT COIL EAT/LAT DB	49.7	119.7

AREA SERVED	OUTLET			DESIGN MAX CFM	INITIAL CFM	FINAL CFM	PERCENT DESIGN
	NO.	TYPE	SIZE				
OR#3	1	S	48x12	150	161	117	78%
OR#3	2	S	48x12	150	161	119	79%
OR#3	3	S	72x12	225	224	149	66%
OR#3	4	S	72x12	225	234	150	67%
OR#3	5	S	60x12	190	209	163	86%
OR#3	6	S	60x12	190	207	181	95%
OR#3	7	S	72x12	225	221	146	65%
OR#3	8	S	72x12	225	243	145	64%
OR#3	9	S	36x24	265	288	181	68%
OR#3	10	S	36x24	265	275	163	62%
OR#3	11	S	36x24	265	282	173	65%
OR#3	12	S	36x24	265	282	181	68%
				2640	2787	1868	71%

REMARKS: DESIGN CFM LOWERED TO ACHIEVE 25 AIR CHANGES IN SURGERY SUITES.

READINGS BY: R. COLLUCCI

RE-CHECK 7/21-24/2011

# VAV TERMINAL BOX TEST REPORT

PROJECT: VA SURGERY SUITES

AIR UNIT DESIGNATION: AHU-1

TERMINAL NO.
ACV-3R

VAV TERMINAL DATA				
			DESIGN	ACTUAL
PLAN I.D.	M-8,9	PRIMARY MAX AIRFLOW	2240	1549
TYPE	ACV	PRIMARY MIN AIRFLOW	SAME AS MAX	
SIZE	14"			
DDC ADDRESS	NA	CALIBRATION FACTOR	-----	NA
PI OR PD?	PI			

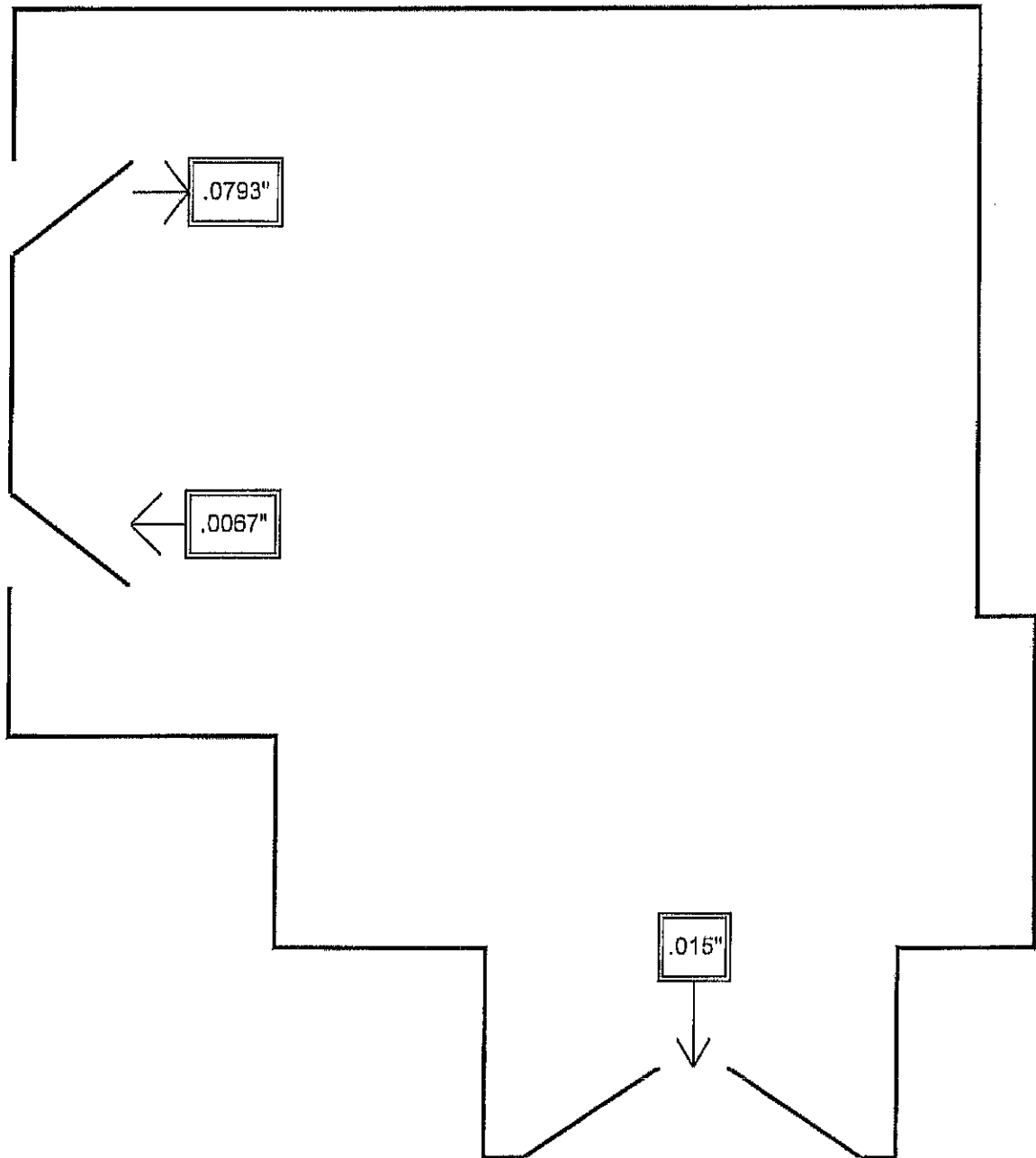
AREA SERVED	OUTLET			DESIGN	INITIAL	FINAL	PERCENT
	NO.	TYPE	SIZE	MAX CFM	CFM	CFM	DESIGN
OR#3	1	R	24x36	1120	1092	620	55%
OR#3	2	R	24x36	1120	754	929	83%
				2240	1846	1549	

REMARKS: TO ACHIEVE A POSITIVE .01" PRESSURE TO THE ADJACEMENT CORRIDOR THE OUTSIDE AIR CFM DESIGN CHANGED FROM 5250 TO 6300 WHICH CHANGED THE RETURN AIR CFM DESIGN TO GET THE RECOMMENDED PRESSURE OF THE OPERATING SUITE.

READINGS BY: R. COLLUCCI

RE-CHECK 7/21-24/2011

# OR # 4 OCCUPIED MODE



# VAV TERMINAL BOX TEST REPORT

PROJECT: VA SURGERY SUITES

AIR UNIT DESIGNATION: AHU-1

TERMINAL NO.
ACV-4S

VAV TERMINAL DATA			
		DESIGN	ACTUAL
PLAN I.D.	M-8,9	PRIMARY MAX AIRFLOW	2780
TYPE	ACV	PRIMARY MIN AIRFLOW	SAME AS MAX
SIZE	12"	OFFSET	345
DDC ADDRESS	NA	CALIBRATION FACTOR	NA
PI OR PD?	PI	REHEAT COIL EWT/LWT	183.2
		REHEAT COIL EAT/LAT DB	48.3

AREA SERVED	OUTLET			DESIGN	INITIAL	FINAL	PERCENT
	NO.	TYPE	SIZE	MAX CFM	CFM	CFM	DESIGN
OR#4	1	S	46x12	160	160	118	74%
OR#4	2	S	46x12	160	157	114	71%
OR#4	3	S	72x12	240	238	169	70%
OR#4	4	S	72x12	240	249	176	73%
OR#4	5	S	60x12	200	212	148	74%
OR#4	6	S	60x12	200	184	134	67%
OR#4	7	S	72x12	240	234	130	54%
OR#4	8	S	72x12	240	243	150	63%
OR#4	9	S	36x24	275	281	198	72%
OR#4	10	S	36x24	275	274	259	94%
OR#4	11	S	36x24	275	221	143	52%
OR#4	12	S	36x24	275	266	183	67%
				2780	2719	1922	69%

REMARKS: DESIGN CFM LOWERED TO ACHIEVE 25 AIR CHANGES IN SURGERY SUITES.

READINGS BY: R. COLLUCCI

DATE: 7-22-11

# VAV TERMINAL BOX TEST REPORT

PROJECT: VA SURGERY SUITES

AIR UNIT DESIGNATION: AHU-1

TERMINAL NO.
ACV-4R

VAV TERMINAL DATA			
		DESIGN	ACTUAL
PLAN I.D.	M-8,9	PRIMARY MAX AIRFLOW	2340 2047
TYPE	ACV	PRIMARY MIN AIRFLOW	SAME AS MAX
SIZE	14"		
DDC ADDRESS	NA	CALIBRATION FACTOR	NA
PI OR PD?	PI		

AREA SERVED	OUTLET			DESIGN	INITIAL	FINAL	PERCENT
	NO.	TYPE	SIZE	MAX CFM	CFM	CFM	DESIGN
OR#4	1	R	18x48	1170	938	646	55%
OR#4	2	R	24x36	1170	1109	931	80%
				2340	2047	1577	67%

REMARKS: TO ACHIEVE A POSITIVE .01" PRESSURE TO THE ADJACEMENT CORRIDOR THE OUTSIDE AIR CFM DESIGN CHANGED FROM 5250 TO 6300 WHICH CHANGED THE RETURN AIR CFM DESIGN TO GET THE RECOMMENDED PRESSURE OF THE OPERATING SUITE.

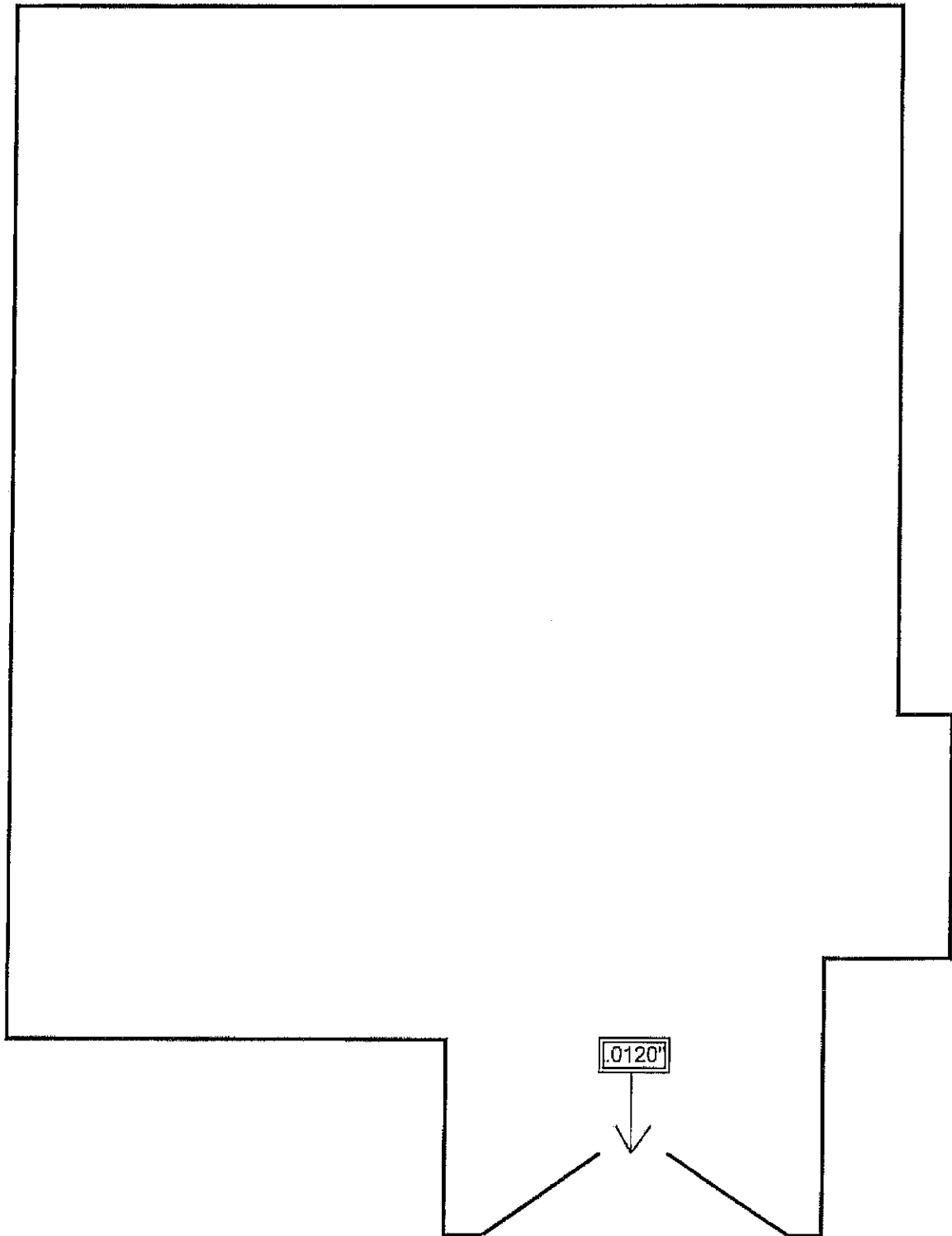
READINGS BY: R. COLLUCCI

DATE: 7-3-11

RE-CHECK 7/21-24/2011



OR # 5 OCCUPIED MODE



# VAV TERMINAL BOX TEST REPORT

PROJECT: VA SURGERY SUITES

AIR UNIT DESIGNATION: AHU-1

TERMINAL NO.
ACV-5S

VAV TERMINAL DATA				
			DESIGN	ACTUAL
PLAN I.D.	M-8,9	PRIMARY MAX AIRFLOW	2450	1564
TYPE	ACV	PRIMARY MIN AIRFLOW	SAME AS MAX	
SIZE	12"	OFFSET		340
DDC ADDRESS	NA	CALIBRATION FACTOR	-----	NA
PI OR PD?	PI	REHEAT COIL EWT/LWT	181.2	143.7
		REHEAT COIL EAT/LAT DB	48.9	119.7

AREA SERVED	OUTLET			DESIGN	INITIAL	FINAL	PERCENT
	NO.	TYPE	SIZE	MAX CFM	CFM	CFM	DESIGN
OR#5	1	S	48x12	145	145	88	61%
OR#5	2	S	48x12	145	160	100	69%
OR#5	3	S	72x12	220	209	117	53%
OR#5	4	S	72x12	220	237	101	46%
OR#5	5	S	60x12	185	191	116	63%
OR#5	6	S	60x12	185	183	103	56%
OR#5	7	S	60x12	185	179	118	64%
OR#5	8	S	60x12	185	176	134	72%
OR#5	9	S	36x24	245	250	165	67%
OR#5	10	S	36x24	245	236	145	59%
OR#5	11	S	36x24	245	249	217	89%
OR#5	12	S	36x24	245	259	160	65%
				2450	2474	1564	64%

REMARKS: DESIGN CFM LOWERED TO ACHIEVE 25 AIR CHANGES IN SURGERY SUITES.

READINGS BY: R. COLLUCCI

DATE: 7/18/11

RE-CHECK 7/21-24/2011

# VAV TERMINAL BOX TEST REPORT

PROJECT: VA SURGERY SUITES

AIR UNIT DESIGNATION: AHU-1

TERMINAL NO.

ACV-5R

## VAV TERMINAL DATA

PLAN I.D.	M-8,9
TYPE	ACV
SIZE	14"
DDC ADDRESS	NA
PI OR PD?	PI

	DESIGN	ACTUAL
PRIMARY MAX AIRFLOW	2060	1224
PRIMARY MIN AIRFLOW	SAME AS MAX	
CALIBRATION FACTOR	-----	NA

AREA SERVED	OUTLET			DESIGN	INITIAL	FINAL	PERCENT
	NO.	TYPE	SIZE	MAX CFM	CFM	CFM	DESIGN
OR#5	1	R	24x30	1030	559	539	52%
OR#5	2	R	24x30	1030	1439	685	67%
				2060	1998	1224	59%

REMARKS: TO ACHIEVE A POSITIVE .01" PRESSURE TO THE ADJACEMENT CORRIDOR THE OUTSIDE AIR CFM DESIGN CHANGED FROM 5250 TO 6300 WHICH CHANGED THE RETURN AIR CFM DESIGN TO GET THE RECOMMENDED PRESSURE OF THE OPERATING SUITE.

READINGS BY: R. COLLUCCI

DATE: 7/18/11

RE-CHECK 7/21-24/2011

# FAN TEST REPORT (BELT DRIVE)

PROJECT:

VA SURGERY SUITES

FAN DATA	FAN NO: EF-1	FAN NO: EF-2	FAN NO:	FAN NO:
MANUFACTURER	Greenheck	Greenheck		
MODEL NUMBER	GB-131-4	GB-180-7		
SERIAL NUMBER	12207875	12207874		
MOTOR MAKE/FRAME	Marathon / 48y	Marathon/ 56z		
MOTOR H.P./ RPM	1/4 / 1725	3/4 / 1725		
VOLTS /PHASE/HERTZ	115/1/60	115/208-230/ 1/ 60		
FULL LOAD AMPS/S.F	5.0/ 1.35	12/5.8-6/ 1.15		
MTR SHEAVE MAKE/MODEL	CHINA	CHINA		
MTR SHEAVE DIAM/BORE	Vp30x	1vp34x		
FAN SHEAVE MAKE	CHINA	CHINA		
FAN SHEAVE DIAM/BORE	Dk3534x	Ak59x		
NO. BELTS / SIZE	1/3/200	1/ a25		
SHEAVE CL DISTANCE	6.5	7		

TEST DATA	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL
TOTAL DESIGN CFM	1045	928	2530	2204				
TOTAL OUTLET CFM	950		2300					
FAN RPM		936		1226				
EXT. DISCHARGE S.P.	-	-	-	-	-	-	-	-
EXT. SUCTION S.P.		-.19		-.34				
EXTERNAL S.P.	0.75		0.75					
MOTOR VOLTS	115	117.6	115	118				
MOTOR AMPERAGE	5	4.8	12	11.4				

READINGS BY: R. COLLOUCI

DATE: 6-24-11

8/4/2011

# AIR INLET TEST REPORT (DIRECT READING FLOWHOOD)

PROJECT: VA SURGERY SUITES  
SYSTEM DESIGNATION: EXHAUST

AREA SERVED	OUTLET			DESIGN	INITIAL	FINAL	FINAL % OF DESIGN
	NO.	TYPE	SIZE	CFM	CFM	CFM	
EF-1							
TOILET 102A	1	E	12x12	100	135	103	103%
MENS LOCKER TOILET	2	E	24x24	400	390	395	99%
WOMENS LOCKER TOILET	3	E	24x24	450	420	430	96%
				950	945	928	98%
EF2							
DUMBWAITER	1					*	
WK RM 112	2	E	24x24	300	198	310	103%
SOILED 114	3	E	12x12	100	115	99	99%
STERILIZER 115	4	E	24x24	200	200	213	107%
RM 116	5	E	24x24	255	401	210	82%
SOIL. 118	6	E	12x12	100	138	105	105%
STOR. 119	7	E	24x12	290	339	319	110%
SOIL. 122	8	E	12x12	100	167	104	104%
CORE	9	E	24x24	255	89	201	79%
SOIL. 120	10	E	12x12	100	285	96	96%
SOIL. 128	11	E	26x6	100	64	95	95%
STER. 123	12	E	24x24	200	83	202	101%
EQUIP. 123A	13	E	12x12	100	294	108	108%
EQUIP. RM 115A	14	E	12x12	100	62	103	103%
TOTAL				2200	2435	2062	94%

REMARKS: \*DELETED  
EF-2 # 5 & 9 INLET CFM LOWERED TO ACHIEVE A POSITIVE PRESSURE.

READINGS BY: R. COLLOUCI  
DATE: 8-24-11  
RETEST: 8/9/11

# PUMP TEST REPORT

PROJECT:

VA SURGERY SUITES

DATA	PUMP NO. HWP-1	PUMP NO. HWP-2	PUMP NO.
MANUFACTURER	TACO	TACO	
MODEL NUMBER	KV2009AE2JCB683M	KV2009AE2JCB683M	
SERIAL NUM R	EC62412-1	EC62412-1	
GPM/FT. HEAD	90/60	90/60	
REQ.NPSH	10		
PUMP RPM	1750	1750	
IMPELLER DIAM.	7.9	7.9	
MOTOR MFR./FRAME	BALDOR/182JM	BALDOR/182JM	
MOTOR HP/RPM	3/1725	3/1725	
VOLTS/PHASE/HERTZ	208-230/460/3/60	208-230/460/3/60	
F.L.AMPS/S.F.	8.4-8.2/4.1/1.15	8.4-8.2/4.1/1.15	

TEST DATA	PRESSURE IN FEET		PRESSURE IN FEET		PRESSURE IN FEET	
PUMP OFF PRESSURE	113.8		134.0			
VALVE SHUT DISCHARGE PRESSURE	161.5		159.6			
VALVE SHUT SUCTION PRESSURE	96.6		97.2			
VALVE SHUT DIFFERENTIAL	64.9		62.4		0.0	
VALVE OPEN DISCHARGE PRESSURE	160.3		153.3			
VALVE OPEN SUCTION PRESSURE	97.5		103.5			
VALVE OPEN DIFFERENTIAL	62.8		49.8		0.0	
FINAL DISCHARGE PRESSURE	145.8		150.0			
FINAL SUCTION PRESSURE	86.2		90.2			
FINAL DIFFERENTIAL	59.6		59.8		0.0	
	57.8HZ		58.03HZ			
TEST DATA	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL
FINAL GPM	90	90	90	90		
FINAL T.D.H.	60	59.6	60	59.8		0.0
IMPELLER DIAMETER	7.9	7.9	7.9	7.9		
MOTOR VOLTS	T1-T2	503	460	503		
	T1-T3	503		504		
	T2-T3	505		505		
MOTOR AMPS	T1	2.8	4.1	2.8		
	T2	2.8		2.7		
	T3	2.9		2.7		

READINGS BY: R. COLLOUCI / M. WHITLOCK

DATE: 4/26/2011

RETEST: 8/4/11

## HWS CONVERTOR TEST REPORT

PROJECT: VA SURGERY SUITES

UNIT DATA	DESIGN	ACTUAL
MANUFACTURER		TACO
MODEL NUMBER		E06208-S4A1AT00
SERIAL NUMBER		Z09674
ENTERING WATER PRESSURE	*****	80PSI
LEAVING WATER PRESSURE	*****	58PSI
DIFFERENTIAL WATER PRESSURE		2PSID
ENTERING WTR TEMPERATURE		128.5
LEAVING WTR TEMPERATURE		131.3
DIFFERENTIAL WTR TEMPERATURE		3.2
FLOW RATE		

REMARKS: RCOLLUCCI  
DATE: \*8/4/11 8/9/11  
\* CAN NOT TEST WITH AHU BEING OFF./NO PT. PLUGS FOR D.P. WATER READINGS

# AUTOFLOW VALVE / FLOWMETER TEST REPORT

PROJECT:  
LOCATION:

VA SURGERY SUITES

SERVICE OR DESIGNATION	MANUFACTURER	MODEL	SIZE	DESIGN GPM	ACTUAL VALVE SETPOINT	ACTUAL VALVE PD	FINAL GPM
VVB-3.1	GRISWOLD	005	1/2"	0.50	AUTOFLO	3.95psid	0.50
VVB-3.2	GRISWOLD	007	3/4"	2	AUTOFLO	5.4psid	2
VVB-3.3	GRISWOLD	009	1"	4.5	AUTOFLO	9.9psid	4.5
VVB-3.4	GRISWOLD	011	1/2"	1	AUTOFLO	12.8psid	1
VVB-3.5	GRISWOLD	011	1/2"	1	AUTOFLO	7.86psid	1
VVB-3.6	GRISWOLD	011	1/2"	1	AUTOFLO	9.87psid	1
VVB-3.7	GRISWOLD	011	1/2"	1	AUTOFLO	11.5psid	1
VVB-3.8	GRISWOLD	005	1/2"	0.5	AUTOFLO	12.3psid	0.5
VVB-3.9	GRISWOLD	013	1"	3	AUTOFLO	5.58psid	3
VVB-3.10	GRISWOLD	011	1/2"	1	AUTOFLO	8.37psid	1
VVB-3.11	GRISWOLD	011	1/2"	1	AUTOFLO	8.52psid	1
VVB-3.12	GRISWOLD	011	1/2"	1	AUTOFLO	8.72psid	1
CC-1	GRISWOLD	QUICKSET	3"	143.4	60%.	0.601Psid	145
CC-2	GRISWOLD	QUICKSET	3"	143.4	61%.	0.591Psid	145
ACV-HC-1	GRISWOLD	QUICKSET	1 1/4"	14	3/8"	0.43	14
ACV-HC-2	GRISWOLD	QUICKSET	1 1/4"	13.5	3/8"	0.44	14
ACV-HC-3	GRISWOLD	QUICKSET	1 1/4"	13.5	1/2"	0.36	13.6'
ACV-HC-4	GRISWOLD	QUICKSET	1 1/4"	14	1/2"	0.4	13.78'
ACV-HC-5	GRISWOLD	QUICKSET	1 1/4"	13	5/8"	0.31	12.13'

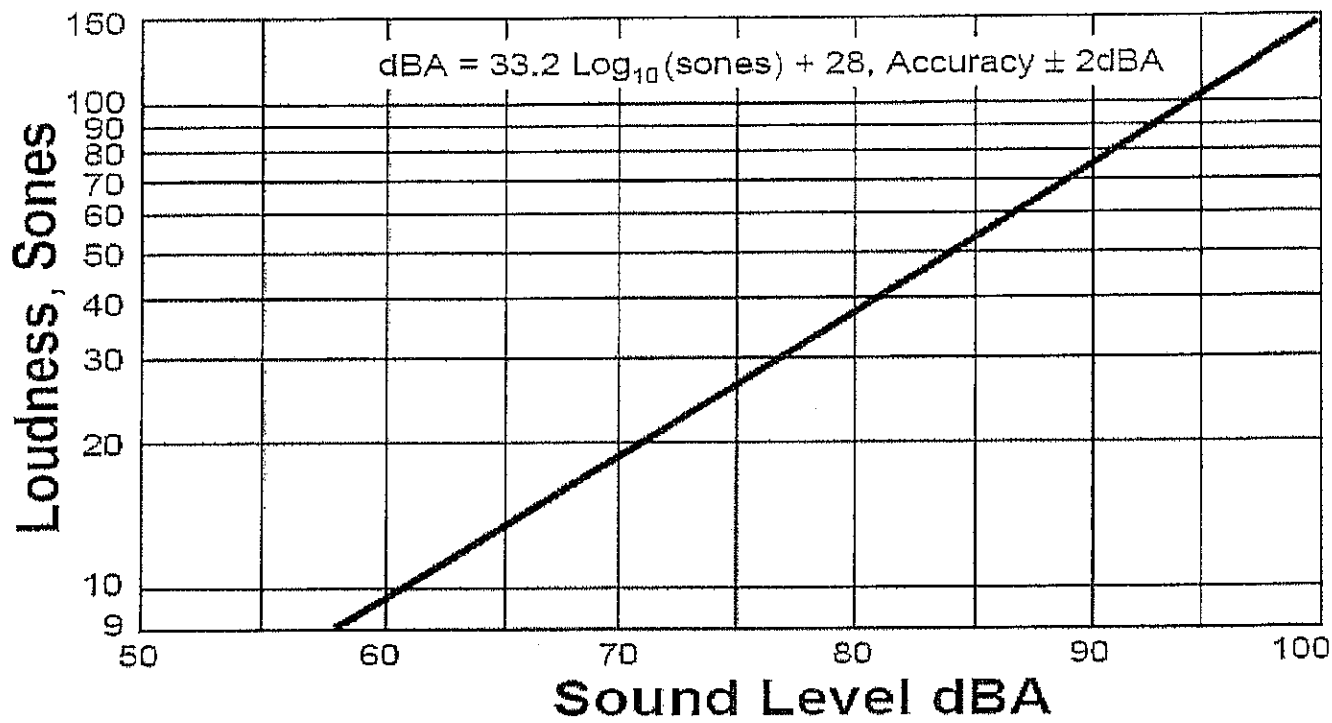
REMARKS:

READINGS BY: R. COLLOUCI / M. WHITLOCK

DATE: 4/26/2011



# Room Sones – dBA Correlation



# SOUND TEST REPORT DB LEVEL

PROJECT: VA SURGERY SUITES SYSTEM/UNIT: AHU-1  
LOCATION: MUSKOGEE, OK 74401 ROOM/AREA: OR# 1-5

AREA SERVED	DB WITH AHU-1 OFF	DB WITH AHU-1 ON
OR # 1	36.9 DB	50.9*
OR # 2	37.2 DB	52.3*
OR # 3	39.2 DB	48.5*
OR # 4	40.2 DB	46.2*
OR # 5	39.5 DB	40.9*

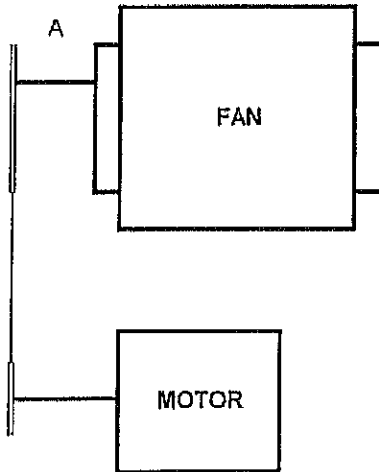
REMARKS: @ 25 AIR CHANGES  
READINGS BY: R. COLLUCCI  
DATE: 7/23/2011  
RE-TEST: 8/9/11



## MISCELLANEOUS INFORMATION REPORT

PROJECT: VA SURGERY SUITE  
 LOCATION: 1011 HONOR HEIGHTS DR.  
 MUSKOGEE, OK 74401

### AIR HANDLING UNIT SUPPLY AIR FAN



DISPLACEMENT READINGS		
LOCATION		MILS
A	H	1.70
	V	1.50
	A	1.20

### AIR HANDLING UNIT RETURN AIR FAN

DISPLACEMENT READINGS		
LOCATION		MILS
A	H	0.99
	V	1.50
	A	0.93

REMARKS:

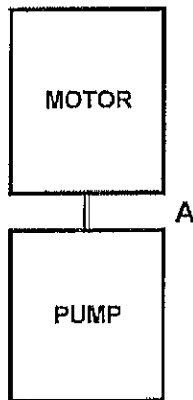
READINGS BY: R. COLLUCCI  
 DATE: 8/4/2011



## MISCELLANEOUS INFORMATION REPORT

PROJECT: VA SURGERY SUITE  
LOCATION: 1011 HONOR HEIGHTS DR.  
MUSKOGEE, OK 74401

### HEATING WATER PUMP-1



DISPLACEMENT READINGS		
LOCATION		MILS
A	H	0.79
	V	1.10
	A	

### HEATING WATER PUMP-2

DISPLACEMENT READINGS		
LOCATION		MILS
A	H	0.78
	V	1.10
	A	

REMARKS: VERTICLE IN-LINE PUMPS, NOTE THE READINGS TAKEN FOR AXIAL ARE IN THE  
VERTICAL POSITION.  
READINGS BY: R. COLLUCCI  
DATE: 8/4/2011

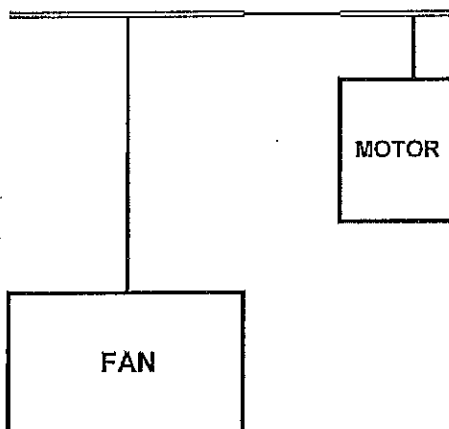


## MISCELLANEOUS INFORMATION REPORT

PROJECT: VA SURGERY SUITES  
LOCATION: 1011 HONOR HEIGHTS DR.  
MUSKOGEE, OK 74401

### EXHAUST FAN-1

DISPLACEMENT READINGS		
LOCATION		MILS
A	H	0.80
	V	2.40
	A	



### EXHAUST FAN-2

DISPLACEMENT READINGS		
LOCATION		MILS
A	H	2.30
	V	2.10
	A	

REMARKS: NOTE THE READINGS TAKEN FOR AXIAL ARE IN THE VERTICAL POSITION.  
READINGS TAKEN ON MOTOR MOUNT BRACKETS.

READINGS BY: R. COLLUCCI  
DATE: 8/4/2011