

THOMAS BALANCING SERVICE

8249 Rivoli Road

P.O. Box 597

Bolingbroke Georgia 31004

Certification #2272

CERTIFIED TEST AND BALANCE REPORT

September 4, 2010

PROJECT

IMPROVE A/C BUILDING 77

JAMES H. QUILLEN V.A. MEDICAL CENTER

MOUNTAIN HOME, TENNESSEE

HVAC CONTRACTOR

**PIEDMONT MECHANICAL, INC.
HARRISBURG, NORTH CAROLINA**

CERTIFICATION

PROJECT NAME: IMPROVE A/C BUILDING 77
JAMES H. QUILLEN V.A. MEDICAL CENTER
MOUNTAIN HOME, TENNESSEE

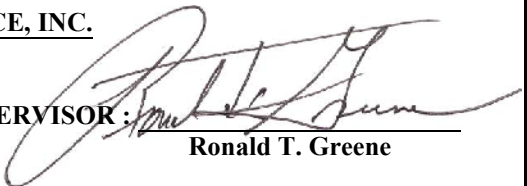
THE DATA PRESENTED IN THIS REPORT IS AN EXACT RECORD OF SYSTEM PERFORMANCE AND WAS OBTAINED IN ACCORDANCE WITH "NEBB" STANDARD PROCEDURES. ANY VARIANCES FROM DESIGN QUANTITIES WHICH EXCEED "NEBB" AND/OR SPECIFICATION TOLERANCES ARE NOTED THROUGHOUT THIS REPORT.

THE HVAC SYSTEMS HAVE BEEN TESTED AND BALANCED AND FINAL ADJUSTMENTS HAVE BEEN MADE IN ACCORDANCE WITH "NEBB" STANDARDS FOR TESTING-ADJUSTING-BALANCING OF ENVIRONMENTAL SYSTEMS" AND THE PROJECT SPECIFICATIONS.



SUBMITTED AND CERTIFIED BY:

NEBB CONTRACTOR : THOMAS BALANCING SERVICE, INC.

CERTIFICATION NUMBER: 2272 TAB SUPERVISOR : 
Ronald T. Greene

GENERAL NOTES

PROJECT: IMPROVE A/C BUILDING 77

1. This is an initial test and balance report documenting present performance of the HVAC systems associated with this project along with notes and comments concerning deficiencies and abnormalities.
2. System AHU-3 is low supply on both supply and exhaust air flow and the chilled water coil is low on water flow.

Supply Air: The supply fan is delivering 7774 cfm of supply air verses the specified 8800 cfm. Also, constant volume terminal boxes served by this system have a total requirement of 9005 CFM As a result, several of the constant volume air boxes do not meet individual design air flow requirements. Based upon our testing, we project that a supply air static pressure at the control system pressure sensor of approximately 1.80" will be required to deliver specified supply air flow to each constant volume terminal box. Presently the supply air static pressure is maintaining 1.22" with the supply fan VFD operating at 60 Hz. Other specific operating data for the supply system may be found on page 4 of this report.

Exhaust Air: This fan is exhausting an air flow of 5204 cfm verses the specified 7485 cfm. Exhaust grilles served by this fan have a total specified air flow of 7755 cfm. At the 5204 cfm, the system ESP (external static pressure) is 2.09" which exceeds the specified 1.00". As directed by the mechanical contractor, Piedmont Mechanical, associated exhaust grille air flows were balanced to provide a more positive pressure in the Prep. and Sterilization Workshop than in Soil Receiving & Decontamination. Other specific operating data for the exhaust system may be found on page 5 of this report.

Chilled Water: Chilled water flow to this coil was tested on August 3, 2010 and measured 68.8 GPM verses the specified flow rate of 79.0 GPM. Flow was tested again on August 29, 2010 and flow had reduced to 42.7 GPM. During each test, balancing valves were set full open. Other specified operating data for the chilled water coil may be found on page 6 of this report.
3. System AHU-4 has a specified supply air flow of 11880 cfm and a return air flow of 10720 cfm. No outside air flow rate was specified, but based upon the scheduled supply and return air flow is intended to be 1160 cfm. However, present return air flow is only 8746 cfm with the return fan motor VFD operating at 60 Hz. Other specific operating data for this system may be found on pages 7 and 8 of this report.

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GENERAL NOTES

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4. System AHU-5 has a specified supply air flow of 13200 cfm and a return air flow of 12770 cfm. No outside air flow rate was specified, but based upon the scheduled supply and return air flows is intended to be 430 cfm. However, during testing, supply air flow demand from the connected existing system did not appear to require the 13200 cfm as the supply fan motor VFD was operating at 53.9 Hz with a supply air static pressure leaving the air handler of 3.30". At this condition, the return air fan air flow was 8532 cfm with an inlet static pressure of -.57". Projecting an increase in return air flow to 12770 cfm will result in an inlet static pressure of -1.28" which will exceed the .75" listed in the fan schedule. Other specific operating data for this system may be found on pages 9 and 10 of this report.
5. Water flow rates were set for each constant volume terminal box reheat coil, with the exception of VAV-10 as it had no water flow. This lack of flow may be due to a defective supply pipe gate valve. Water flow for VAV-8 reheat coil was slightly below design with all valves open. Measured flow was 7.5 verses the specified 9.3 GPM. Temperature testing was done for each coil using available water temperature from the existing building hot water heating system.
6. Existing EF-11 was adjusted to provide 1270 cfm per note 8, page T5.1 of the project drawings. Exhaust grilles associated with this fan were balanced proportionately above specified design values as the two inlets from the sterilizers exhausted no air flow with the sterilizers off.

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AIR HANDLER DATA

PROJECT: IMPROVE A/C BUILDING 77

SUPPLY SIDE

Item	AHU-3
Manufacturer	Trane
Model number	MCCB021UA0D0UA
Serial number	K10A01266
Motor horsepower	20.0
Motor design voltage	460/3/60
Motor actual voltage	462/3/60
Motor VFD operating HZ	60.0
Motor nameplate amps	23.5
Motor actual amps	18.9
Number of belts / size	2 / 5VX450
Driver pulley number / bore	2B5V64 / 1 5/8"
Driven pulley number / bore	2B5V50 / 1 11/16"
Design supply air flow, CFM	8,800
Actual supply air flow, CFM	7,774
Design ESP	4.30"
Actual ESP	3.71"
Design fan RPM	2280
Actual fan RPM	2240
Filter condition	Average

Supply Air Static Pressure Readings

In pre-filters	-1.53"
In energy recovery wheel	-1.74"
In pre-heat coil	-2.40"
In chilled water coil	-2.77"
In humidifier	-3.41"
In fan	-3.51"
In final filters	+3.80"
In discharge air plenum	+2.59"
In supply air duct	+2.18"

Notes:

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AIR HANDLER DATA

PROJECT: IMPROVE A/C BUILDING 77

EXHAUST SIDE

Item	AHU-3
Manufacturer	Trane
Model number	MCCB021UA0D0UA
Serial number	K10A01266
Motor horsepower	5.0
Motor design voltage	460/3/60
Motor actual voltage	462/3/60
Motor VFD operating HZ	59.0
Motor nameplate amps	6.6
Motor actual amps	5.5
Number of belts / size	1 / BX53
Driver pulley number / bore	BK55 / 1 1/8"
Driven pulley number / bore	1T60 / 1 1/2"
Design exhaust air flow, CFM	7,485
Actual exhaust air flow, CFM	5,204
Design ESP	1.00"
Actual ESP	2.09"
Design fan RPM	1413
Actual fan RPM	1457
Filter condition	Average

Exhaust Air Static Pressure Readings

In filters	-1.27"
In energy recovery wheel	-1.69"
In fan	-2.13"
In discharge duct	+.82"

Notes:

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AIR HANDLER DATA

PROJECT: IMPROVE A/C BUILDING 77

STEAM PRE-HEAT COIL

Item	AHU-3
Design steam pressure	30.0#
Actual steam pressure	(1)
Design entering air temperature, DB	47.0°
Actual entering air temperature, DB	(1)
Design leaving air temperature, DB	57.0°
Actual leaving air temperature, DB	(1)
Design air flow, CFM	8,800
Actual air flow, CFM	7,774

CHILLED WATER COIL

Design water flow, GPM	79.0
Actual water flow, GPM	42.7
Design water pressure drop	13.71'
Actual water pressure drop	4.0'
Design entering water temperature	48.0°
Actual entering water temperature	(1)
Design leaving water temperature	58.0°
Actual leaving water temperature	(1)
Design entering air temperature, DB/WB	81.3°/68.4°
Actual entering air temperature, DB/WB	(1)
Design leaving air temperature, DB/WB	53.0°/52.9°
Actual leaving air temperature, DB/WB	(1)
Design air flow, CFM	8,800
Actual air flow, CFM	7,774

Notes:

1. Due to low supply air flow, actual operating temperatures were not documented.

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AIR HANDLER DATA

PROJECT: IMPROVE A/C BUILDING 77

Item	AHU-4
Manufacturer	Trane
Model number	MCCB025UA0D0UA
Serial number	K10A01285
Supply fan motor horsepower	25.0
Supply fan motor design voltage	460/3/60
Supply fan motor actual voltage	462/3/60
Supply fan motor VFD operating HZ	60.0
Supply fan motor nameplate amps	30.0
Supply fan motor actual amps	23.2
Supply fan number of belts / size	2 / BX66
Supply fan driver pulley number / bore	2B5V86 / 1 7/8"
Supply fan driven pulley number / bore	2B5V66 / 1 11/16"
Supply fan design speed, RPM	2272
Supply fan actual speed, RPM	2272
Supply fan design air flow, CFM	11,880
Supply fan actual air flow, CFM	12,528
Supply fan design TSP	6.44"
Supply fan actual TSP	5.18"
Return fan motor horsepower	3.0
Return fan motor design voltage	460/3/60
Return fan motor actual voltage	462/3/60
Return fan motor VFD operating HZ	60.0
Return fan motor nameplate amps	4.0
Return fan motor actual amps	3.42
Return fan number of belts / size	2 / AX69
Return fan driver pulley number / bore	2BK28 / 1 1/8"
Return fan driven pulley number / bore	2B5V110 / 1 11/16"
Return fan design air flow, CFM	10,720
Return fan actual air flow, CFM	8,746
Return fan design speed, RPM	385
Return fan actual speed, RPM	356
Return fan design TSP	.86"
Return fan actual TSP	.81"
Filter condition	Average

Notes:

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AIR HANDLER DATA

PROJECT: IMPROVE A/C BUILDING 77

STATIC PRESSURE READINGS

Item	AHU-4
In return fan	-.81"
Out return fan	.00"
In supply fan	-2.15"
Out supply fan	+3.03"

STEAM PRE-HEAT COIL

Design steam pressure	30.0#
Actual steam pressure	(1)
Design entering air temperature, DB	48.0°
Actual entering air temperature, DB	(1)
Design leaving air temperature, DB	58.0°
Actual leaving air temperature, DB	(1)
Design air flow, CFM	11,880
Actual air flow, CFM	12,528

CHILLED WATER COIL

Design water flow, GPM	111.0
Actual water flow, GPM	(2)
Design water pressure drop	8.85'
Actual water pressure drop	(2)
Design entering water temperature	48.0°
Actual entering water temperature	(1)
Design leaving water temperature	58.0°
Actual leaving water temperature	(1)
Design entering air temperature, DB/WB	86.0°/68.0°
Actual entering air temperature, DB/WB	(1)
Design leaving air temperature, DB/WB	53.0°/52.9°
Actual leaving air temperature, DB/WB	(1)
Design air flow, CFM	11,880
Actual air flow, CFM	12,528

Notes:

1. Due to air flow issues, temperatures were not documented.
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AIR HANDLER DATA

PROJECT: IMPROVE A/C BUILDING 77

Item	AHU-5
Manufacturer	Trane
Model number	MCCB030UA0D0UA
Serial number	K10A01299
Supply fan motor horsepower	25.0
Supply fan motor design voltage	460/3/60
Supply fan motor actual voltage	462/3/60
Supply fan motor VFD operating HZ	53.9
Supply fan motor nameplate amps	30.0
Supply fan motor actual amps	19.0
Supply fan number of belts / size	2 / 5VX630
Supply fan driver pulley number / bore	2B5V62 / 1 7/8"
Supply fan driven pulley number / bore	2B5V58 / 1 11/16"
Supply fan design speed, RPM	1909
Supply fan actual speed, RPM	1679
Supply fan design air flow, CFM	13,200
Supply fan actual air flow, CFM	11,360
Supply fan design TSP	6.24"
Supply fan actual TSP	4.45"
Return fan motor horsepower	5.0
Return fan motor design voltage	460/3/60
Return fan motor actual voltage	462/3/60
Return fan motor VFD operating HZ	47.0
Return fan motor nameplate amps	6.6
Return fan motor actual amps	
Return fan number of belts / size	1 / BX80
Return fan driver pulley number / bore	BK36 / 1 1/8"
Return fan driven pulley number / bore	1B5V160 / 1 11/16"
Return fan design air flow, CFM	12,770
Return fan actual air flow, CFM	8,532
Return fan design speed, RPM	397
Return fan actual speed, RPM	291
Return fan design TSP	.84"
Return fan actual TSP	.57"
Filter condition	Average

Notes:

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AIR HANDLER DATA

PROJECT: IMPROVE A/C BUILDING 77

STATIC PRESSURE READINGS

Item	AHU-5
In return fan	-.57"
Out return fan	-.15"
In supply fan	-1.15"
Out supply fan	+3.30"

STEAM PRE-HEAT COIL

Design steam pressure	30.0#
Actual steam pressure	(1)
Design entering air temperature, DB	470°
Actual entering air temperature, DB	(1)
Design leaving air temperature, DB	570°
Actual leaving air temperature, DB	(1)
Design air flow, CFM	13,200
Actual air flow, CFM	11,360

CHILLED WATER COIL

Design water flow, GPM	124.0
Actual water flow, GPM	114.1
Design water pressure drop	11.95'
Actual water pressure drop	10.16'
Design entering water temperature	48.0°
Actual entering water temperature	(1)
Design leaving water temperature	58.0°
Actual leaving water temperature	(1)
Design entering air temperature, DB/WB	85.1°/68.2°
Actual entering air temperature, DB/WB	(1)
Design leaving air temperature, DB/WB	53.0°/52.9°
Actual leaving air temperature, DB/WB	(1)
Design air flow, CFM	13,200
Actual air flow, CFM	11,360

Notes:

1. Due to air flow issues, temperatures were not documented.
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CONSTANT VOLUME TERMINAL BOX DATA

PROJECT: IMPROVE A/C BUILDING 77

Item	VAV-1	VAV-2
Size	CVB-08	CVB-08
Area served	Breakroom (GA104)	Office (GA103A)
Manufacturer	Trane	Trane
Model number	VCWF	VCWF
Serial number	R10B17062	R10B17063
Design air flow, CFM	470	680
Actual air flow, CFM	370 (1)	590 (2)
Computer flow coefficient	.630	.654
HW coil design GPM	1.50	2.20
HW coil actual GPM	1.50	2.25
HW coil CBV manufacturer/size	B&G/1/2"	B&G/1/2"
HW coil CBV setting/actual pressure drop	27°/40.0'	25°/65.0'
HW coil design entering water temperature	180.0°	180.0°
HW coil actual entering water temperature	112.4°	112.3°
HW coil design leaving water temperature	159.5°	159.8°
HW coil actual leaving water temperature	100.6°	103.7°
HW coil design entering air temperature	55.0°	55.0°
HW coil actual entering air temperature	54.5°	55.2°
HW coil design leaving air temperature	85.1°	85.2°
HW coil actual leaving air temperature	79.3°	71.7°

Notes :

1. Grilles associated with this constant volume terminal box have a total design air flow of 370 CFM.
2. VAV-2 actual air flow documented with primary damper full open and a duct static pressure of 1.21".

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CONSTANT VOLUME TERMINAL BOX DATA

PROJECT: IMPROVE A/C BUILDING 77

Item	VAV-3	VAV-4
Size	CVB-14	CVB-10
Area served	Sterile/Non-Sterile (GA106)	Cleaning/Receiving (GA107)
Manufacturer	Trane	Trane
Model number	VCWF	VCWF
Serial number	R10B17065	R10B17064
Design air flow, CFM	1450	750
Actual air flow, CFM	1475	725
Computer flow coefficient	.762	.748
HW coil design GPM	4.70	2.40
HW coil actual GPM	4.84	2.40
HW coil CBV manufacturer/size	Nibco/3/4"	Watts/1/2"
HW coil CBV setting/actual pressure drop	Set & marked	36°/18.0'
HW coil design entering water temperature	180.0°	180.0°
HW coil actual entering water temperature	115.9°	112.0°
HW coil design leaving water temperature	159.9°	159.7°
HW coil actual leaving water temperature	98.1°	96.6°
HW coil design entering air temperature	55.0°	55.0°
HW coil actual entering air temperature	55.5°	54.1°
HW coil design leaving air temperature	85.1°	85.1°
HW coil actual leaving air temperature	79.2°	82.1°

Notes :

1. Hot water coil flow rate of VAV-3 is based upon coil water pressure drop. At 4.7 GPM, coil design water pressure drop is .94'. Actual coil pressure drop measured 1.0'.

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CONSTANT VOLUME TERMINAL BOX DATA

PROJECT: IMPROVE A/C BUILDING 77

Item	VAV-5	VAV-6
Size	CVB-06	CVB-14
Area served	Sterilizer Room	Workshop (GA108)
Manufacturer	Trane	Trane
Model number	VCWF	VCWF
Serial number	R10B17060	R10B17066
Design air flow, CFM	260	1800
Actual air flow, CFM	260	1360 (1)
Computer flow coefficient	.823	.562
HW coil design GPM	.90	6.0
HW coil actual GPM	.90	6.0
HW coil CBV manufacturer/size	Watts/1/2"	Nibco/3/4"
HW coil CBV setting/actual pressure drop	57°/56.3'	Set & Marked
HW coil design entering water temperature	180.0°	180.0°
HW coil actual entering water temperature	112.9°	111.1°
HW coil design leaving water temperature	158.7°	160.0°
HW coil actual leaving water temperature	105.7°	96.3°
HW coil design entering air temperature	55.0°	55.0°
HW coil actual entering air temperature	55.1°	55.5°
HW coil design leaving air temperature	86.7°	85.9°
HW coil actual leaving air temperature	70.7°	79.2°

Notes :

1. VAV-6 actual air flow documented with primary damper full open and a duct static pressure of 1.21".
2. Hot water coil flow rate of VAV-6 is based upon coil water pressure drop. At 6.0 GPM, coil design water pressure drop is 1.52'. Actual coil pressure drop measured 1.54'.

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CONSTANT VOLUME TERMINAL BOX DATA

PROJECT: IMPROVE A/C BUILDING 77

Item	VAV-7	VAV-8
Size	CVB-06	CVB-16
Area served	Lounge (GA110)	Soil. Rec. & Decon. (GA108)
Manufacturer	Trane	Trane
Model number	VCWF	VCWF
Serial number	R10B17059	R10B17067
Design air flow, CFM	220	2875
Actual air flow, CFM	225	2875
Computer flow coefficient	.513	.683
HW coil design GPM	.80	9.3
HW coil actual GPM	.84	7.5
HW coil CBV manufacturer/size	B&G/1/2"	B&G/1/2"
HW coil CBV setting/actual pressure drop	38°/61.1'	0°/49.5'
HW coil design entering water temperature	180.0°	180.0°
HW coil actual entering water temperature	112.8°	112.8°
HW coil design leaving water temperature	159.3°	159.8°
HW coil actual leaving water temperature	101.5°	95.7°
HW coil design entering air temperature	55.0°	55.0°
HW coil actual entering air temperature	54.5°	55.3°
HW coil design leaving air temperature	89.9°	85.2°
HW coil actual leaving air temperature	69.3°	77.1°

Notes :

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CONSTANT VOLUME TERMINAL BOX DATA

PROJECT: IMPROVE A/C BUILDING 77

Item	VAV-9	VAV-10
Size	CVB-06	CVB-06
Area served	Manual Cart Wash (GA110)	New Laser (GA116)
Manufacturer	Trane	Trane
Model number	VCWF	VCWF
Serial number	R10B17058	R10B17061
Design air flow, CFM	220	280
Actual air flow, CFM	220	270
Computer flow coefficient	.442	.480
HW coil design GPM	.80	1.3
HW coil actual GPM	.86	(1)
HW coil CBV manufacturer/size	B&G/1/2"	(1)
HW coil CBV setting/actual pressure drop	38°/65.0'	(1)
HW coil design entering water temperature	180.0°	180.0°
HW coil actual entering water temperature	115.6°	(1)
HW coil design leaving water temperature	159.0°	159.1°
HW coil actual leaving water temperature	102.5°	(1)
HW coil design entering air temperature	55.0°	55.0°
HW coil actual entering air temperature	54.3°	(1)
HW coil design leaving air temperature	89.9°	100.0°
HW coil actual leaving air temperature	72.1°	(1)

Notes :

1. No data taken on VAV-10 hot water coil as no water flow is present. This may be due to a broken stem on the supply pipe gate valve.

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EXHAUST FANS DATA

PROJECT: IMPROVE A/C / BUILDING 77

Item	Existing EF-11
Service	Sterilizer Room Exhaust
Manufacturer	Greenheck
Model number	GB-180-LMDX-QD
Motor horsepower	1.0
Motor design voltage	460/3/60
Motor actual voltage	485/3/60
Motor nameplate amps	1.8
Motor actual amps	1.2/1.3/1.4
Belt size / number	4L260 / 1
Driver pulley number / bore	1VL40 / 5/8"
Driven pulley number / bore	AK54 / 3/4"
Design fan speed, RPM	Unknown
Actual fan speed, RPM	982
Design air flow, CFM	1270
Actual air flow, CFM	1272
Design TSP	Not specified
Actual TSP	1.03"

Notes :

1. Per note 8, sheet T5.1 of the project drawings, existing EF-11 air flow was adjusted for 1270 CFM.

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AIR TERMINAL DATA

PROJECT IMPROVE A/C - BUILDING 77

<u>SYSTEM NUMBER</u>	<u>GRILLE NUMBER</u>	<u>GRILLE SERVICE</u>	<u>DESIGN CFM</u>	<u>ACTUAL CFM</u>	<u>DAMPER SETTING</u>
VAV-1	1	Supply	185	185	Open
VAV-1	2	Supply	185	185	½ Open
VAV-2	3	Supply	170	145	¾ Open
VAV-2	4	Supply	170	145	½ Open
VAV-2	5	Supply	180	155	Open
VAV-2	6	Supply	170	145	Open
VAV-3	7	Supply	185	185	¾ Open
VAV-3	8	Supply	185	185	Open
VAV-3	9	Supply	185	185	½ Open
VAV-3	10	Supply	185	185	Open
VAV-3	11	Supply	185	185	¼ Open
VAV-3	12	Supply	185	185	¼ Open
VAV-3	13	Supply	185	185	Open
VAV-3	14	Supply	185	185	¼ Open
VAV-4	15	Supply	200	200	Open
VAV-4	16	Supply	200	200	¾ Open
VAV-4	17	Supply	350	325	Open
VAV-5	18	Supply	260	260	Open
VAV-6	19	Supply	375	340	¾ Open
VAV-6	20	Supply	375	340	Open
VAV-6	21	Supply	375	340	Open
VAV-6	22	Supply	375	340	½ Open
VAV-6	23	Supply	100	105	Open
VAV-6	24	Supply	60	60	¼ Open
VAV-6	25	Supply	60	60	Open

Notes:

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AIR TERMINAL DATA

PROJECT IMPROVE A/C - BUILDING 77

<u>SYSTEM NUMBER</u>	<u>GRILLE NUMBER</u>	<u>GRILLE SERVICE</u>	<u>DESIGN CFM</u>	<u>ACTUAL CFM</u>	<u>DAMPER SETTING</u>
VAV-8	26	Supply	575	580	Open
VAV-8	27	Supply	575	575	$\frac{7}{8}$ Open
VAV-8	28	Supply	575	570	$\frac{3}{4}$ Open
VAV-8	29	Supply	575	570	$\frac{3}{4}$ Open
VAV-8	30	Supply	575	575	$\frac{1}{2}$ Open
VAV-9	31	Supply	100	100	$\frac{1}{2}$ Open
VAV-9	32	Supply	120	120	Open
VAV-10	33	Supply	100	100	Closed
VAV-10	34	Supply	180	170	Open
AHU-3	35	Exhaust	500	450	Closed
AHU-3	36	Exhaust	100	25	Closed
AHU-3	37	Exhaust	800	400	Open
AHU-3	38	Exhaust	5200	160	$\frac{1}{4}$ Open
AHU-3	39	Exhaust	375	280	Closed
AHU-3	40	Exhaust	150	140	Open
AHU-3	41	Exhaust	850	335	Open
AHU-3	42	Exhaust	40	25	Closed
AHU-3	43	Exhaust	40	220	Closed
AHU-3	44	Exhaust	200	155	Closed
AHU-3	45	Exhaust	475	670	Open
AHU-3	46	Exhaust	200	100	Closed
AHU-3	47	Exhaust	1100	300	Open
AHU-3	48	Exhaust	475	400	Open
AHU-3	49	Exhaust	90	50	Open
AHU-3	50	Exhaust	90	70	Open

Notes:

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(478) 994-4300

Date 09-04-10

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AIR TERMINAL DATA

PROJECT IMPROVE A/C - BUILDING 77

<u>SYSTEM NUMBER</u>	<u>GRILLE NUMBER</u>	<u>GRILLE SERVICE</u>	<u>DESIGN CFM</u>	<u>ACTUAL CFM</u>	<u>DAMPER SETTING</u>
AHU-3	51	Exhaust	320	175	¼ Open
AHU-3	52	Exhaust	300	160	¼ Open
AHU-3	53	Exhaust	100	50	Open
AHU-3	54	Exhaust	170	105	Open
AHU-3	55	Exhaust	170	130	Open
AHU-3	56	Exhaust	170	30	Open
AHU-3	57	Exhaust	180	140	½ Open
AHU-3	58	Exhaust	185	120	Open
AHU-3	59	Exhaust	185	10	Open
AHU-3	60	Exhaust	200	25	Open

Notes:

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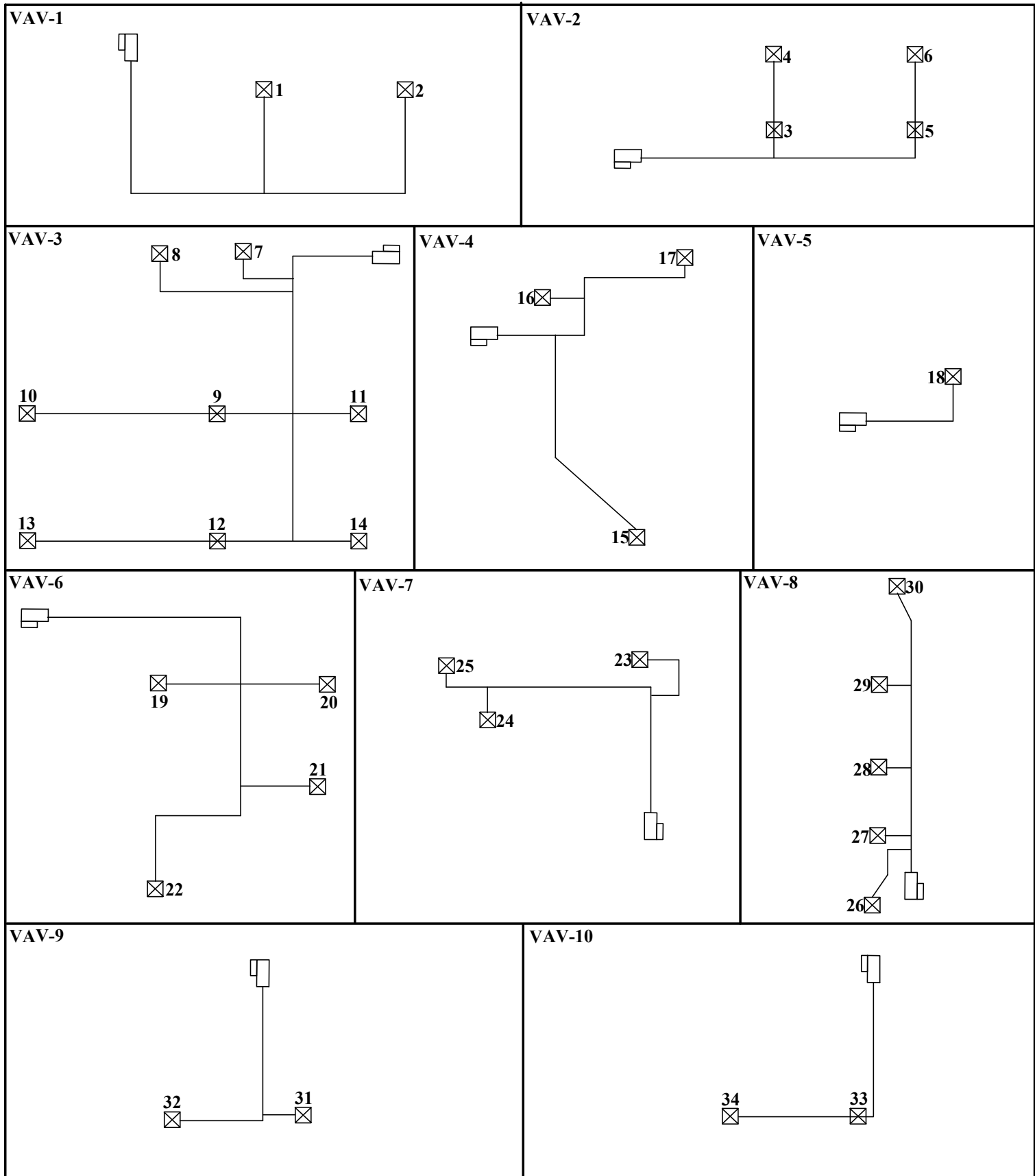
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PROJECT: BUILDING 77

LOCATION: MOUNTAIN HOME, TENNESSEE

DATE: 09-04-10

SYSTEM: VAV-1---VAV-10



PROJECT: BUILDING 77

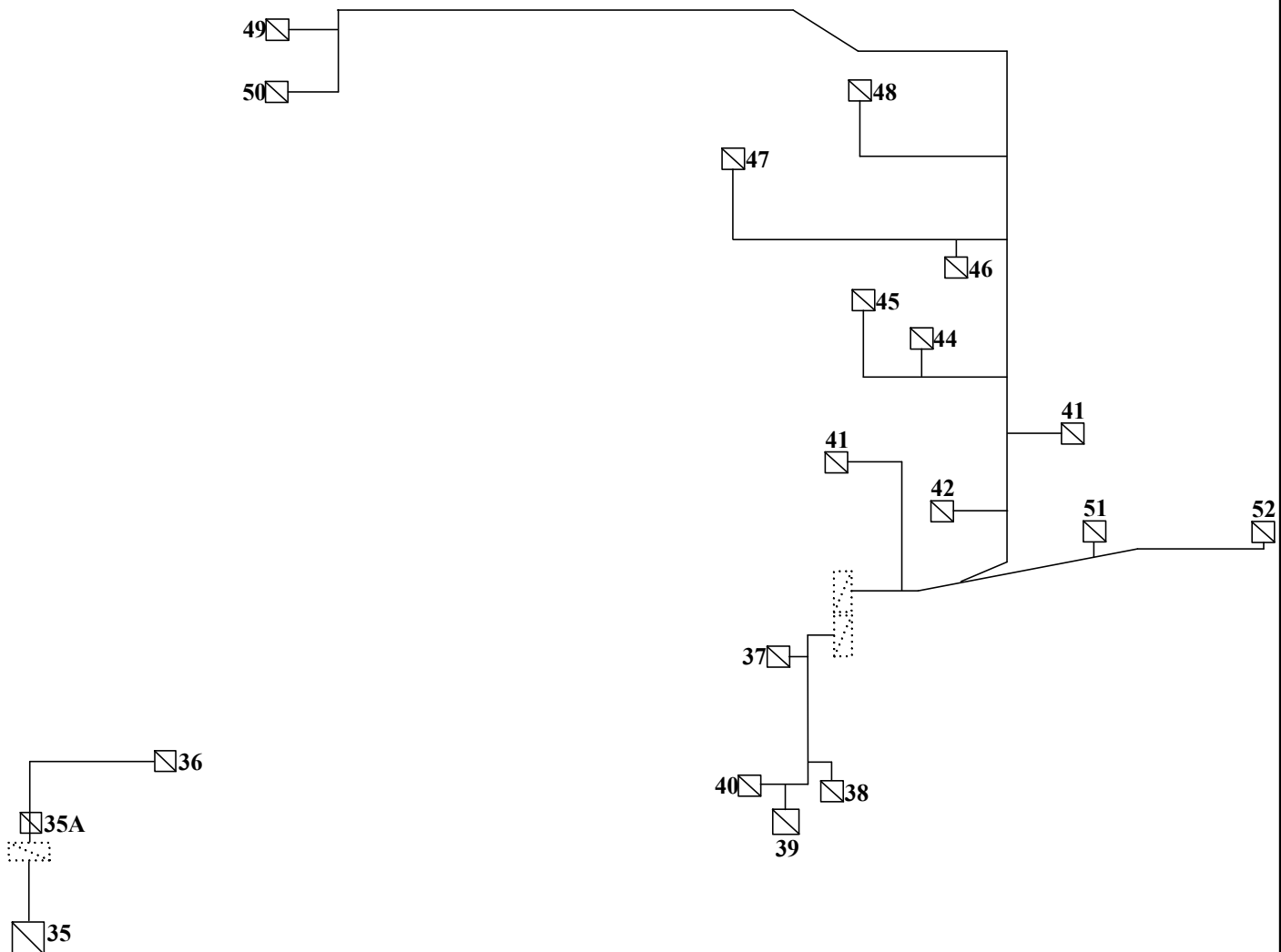
LOCATION: MOUNTAIN HOME, TENNESSEE

DATE: 09-04-10

SYSTEM: AHU-RETURN



AHU-RETURN

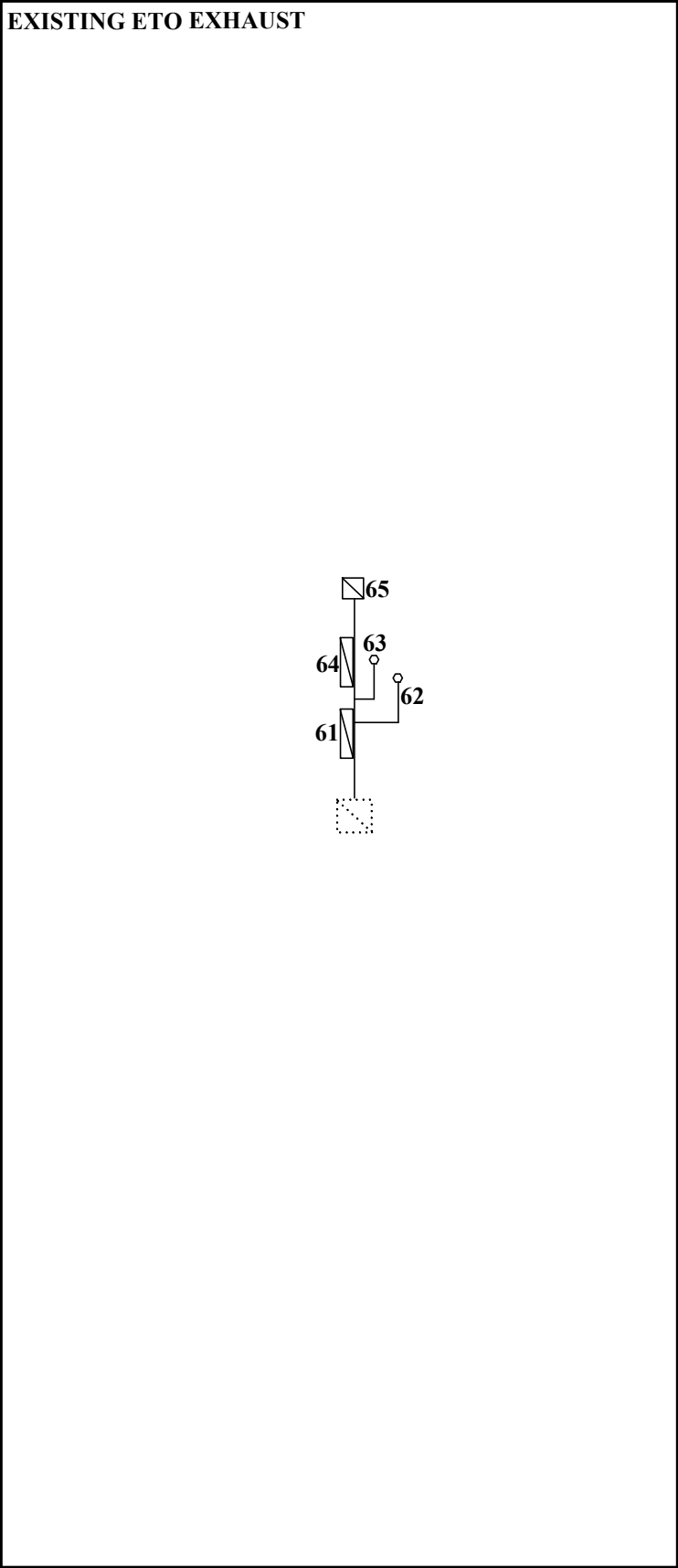
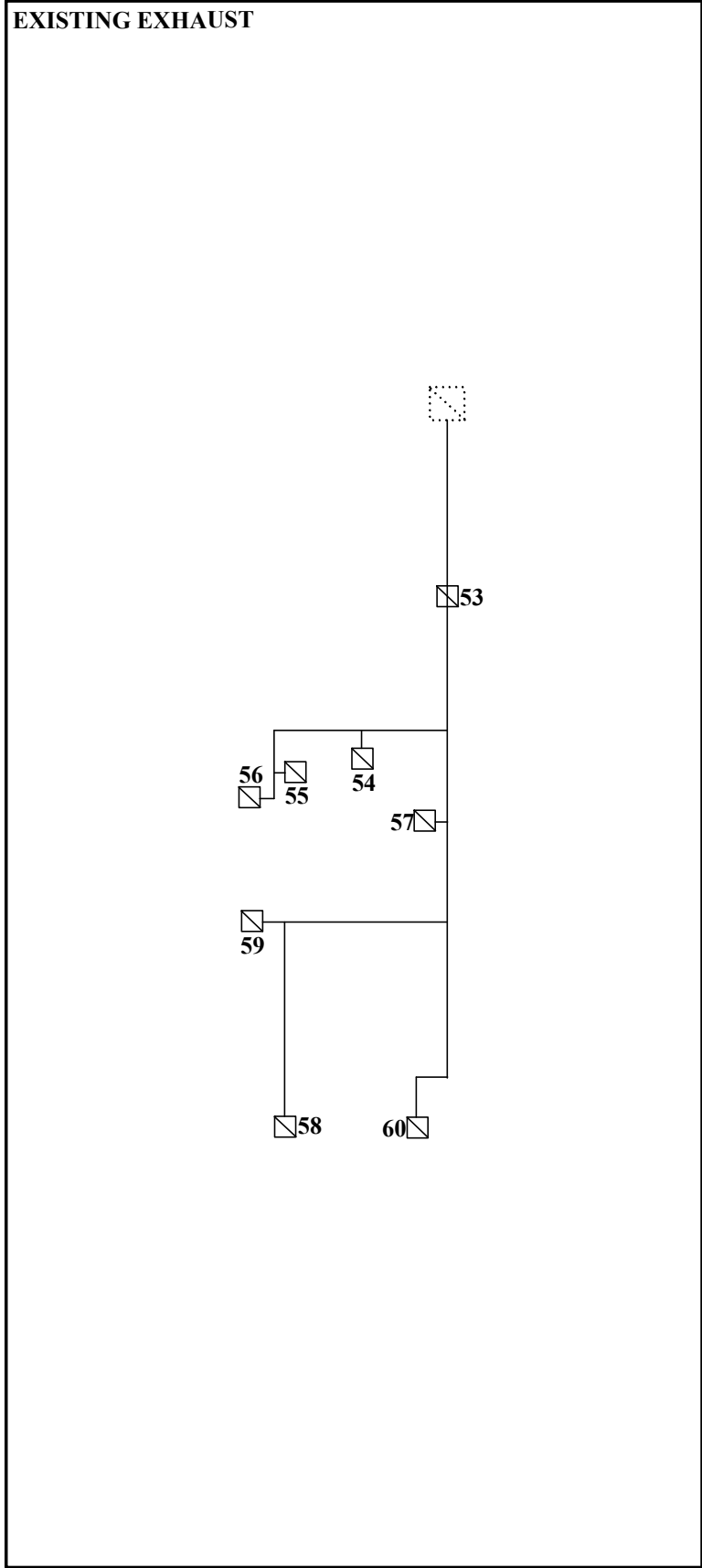


PROJECT: BUILDING 77

LOCATION: MOUNTAIN HOME, TENNESSEE

DATE: 09-04-10

SYSTEM: AHU-RETURN



INSTRUMENTS DATA

PROJECT: IMPROVE A/C BUILDING 77

INSTRUMENT	HOW USED	CALIBRATION
Shortridge ADM 880C w/flow hood kit	Grille air flow readings	03-04-10
Shortridge ADM 880C	Static pressure readings	03-04-10
Shimpo Digital Stroboscopic Tachometer	Rotational speed readings	03-25-10
Fluke 322 digital volt-ohm-amp meter	Voltage/amperage readings	05-15-10
Fluke #52 digital thermometer	Temperature readings	04-02-10
Shortridge HDM-300 differential pressure meter	Hydronic pressure readings	04-21-10

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