

Report By:

National TAB
1329 E. KEMPER ROAD
SUITE 4210
CINCINNATI, OH 45246



Report: prelim

Function: Test, Adjust, & Balance

Date: 11/11/2024

Completed By: National TAB

PROJECT

NKU Nunn Hall (Highland Heights, KY)

Louie B Nunn Dr

Highland Heights, KY 41076

Client

Triton Services, Inc.

8162 Duke Boulevard

Mason, OH 45040

National TAB

Project: NKU Nunn Hall (Highland Heights, KY)

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Project: NKU Nunn Hall (Highland Heights, KY)

System/Unit: AHU-DUAL FAN



Asset: (E)AC-1

AREA:120

UNIT DATA - SUPPLY		
	Design	Actual
Manufacturer	NA	NA
Model Number	NA	NA
Serial Number	-	
No. Pre-Filters / Size (1)	-	
No. Pre-Filters / Size (2)	-	
No. Pre-Filters / Size (3)	-	
No. Final Filters / Size (1)	-	
No. Final Filters / Size (2)	-	
No. Final Filters / Size (3)	-	

MOTOR DATA - SUPPLY		Actual
Motor MFG / Frame		
Horsepower / RPM		
Rated Volts / Phase		
Rated Amperage / SF		

DRIVE DATA - SUPPLY		
	Design	Actual
Motor Sheave Size / Bore	-	
Fan Sheave Size / Bore	-	
Belt CL Distance	-	
No. Belts / Size	-	

TEST DATA - SUPPLY		
	Design	Actual
Total CFM	50000	
OA CFM	-	
Fan RPM	-	
VFD Speed	-	
RL Voltage	-	
RL Amperage	-	
Motor B.H.P.	-	

PERFORMANCE DATA - SUPPLY		
	Design	Actual
Static Pressure Stpt	-	
Suction S.P.	-	
Discharge S.P.	-	
Total S.P.	4.75	
Reheat Coil P.D.	-	
DX Coil P.D.	-	
Condenser Coil P.D.	-	
Chilled Water Coil P.D.	-	
Pre Heat Coil P.D.	-	
Final Filters P.D.	-	
Heat Wheel P.D.	-	
Pre-Filters P.D.	-	
Air Blender P.D.	-	
Total ESP	-	

UNIT DATA - EXHAUST/RETURN		
	Design	Actual
Manufacturer	-	
Model Number	-	
Serial Number	-	
No. Pre-Filters / Size (1)	-	
No. Pre-Filters / Size (2)	-	
No. Pre-Filters / Size (3)	-	
No. Pre-Filters / Size (4)	-	
No. Pre-Filters / Size (5)	-	
No. Pre-Filters / Size (6)	-	

MOTOR DATA - EXHAUST/RETURN		Actual
Motor MFG / FRAME		
Horsepower / RPM		
Rated Volts / Phase		
Rated Amperage / SF		

DRIVE DATA - EXHAUST/RETURN		
	Design	Actual
Motor Sheave Size / Bore	-	
Fan Sheave Size / Bore	-	
Belt CL Distance	-	
No. Belts / Size	-	

TEST DATA - EXHAUST/RETURN		
	Design	Actual
Total CFM	39000	
Fan RPM	-	
VFD Speed	-	
RL Voltage	-	
RL Amperage	-	
Motor B.H.P.	-	

PERFORMANCE DATA - EXHAUST/RETURN		
	Design	Actual
Static Pressure Stpt	-	
Suction S.P.	-	
Discharge S.P.	-	
Total S.P.	1.75	
Heat Wheel P.D.	-	
Pre-Filters P.D.	-	
Total ESP	-	



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Project: NKU Nunn Hall (Highland Heights, KY)

AHU-DUAL FAN



VAV - Single Duct

(E)AC-1/120

Asset											
Asset Name	MFG	Model Num	Type	Inlet Size	Design Max CFM	Max CFM	Design Min CFM	Min CFM	Design Heat CFM	Heat CFM	Ak (max)
V1-100	TITUS	DESV	REHEAT	8	400		100		175		
V1-117	TITUS	DESV	REHEAT	8	400		125		200		
V1-118	TITUS	DESV	REHEAT	24X16	2700		1025		1950		
V1-205	TITUS	DESV	REHEAT	12	1200		375		375		
V1-207	TITUS	DESV	REHEAT	10	600		200		625		
V1-210	TITUS	DESV	REHEAT	14	1960		600		600		
V1-212	TITUS	DESV	REHEAT	14	2250		675		675		
V1-213	TITUS	DESV	REHEAT	8	500		150		150		
V1-215	TITUS	DESV	REHEAT	6	250		75		250		
V1-216	TITUS	DESV	REHEAT	8	650		200		625		
V1-217	TITUS	DESV	REHEAT	6	300		100		300		
V1-100A 1	TITUS	DESV	REHEAT	8	750		225		625		
V1-100B 1	TITUS	DESV	REHEAT	8	650		200		625		
V1-100C 1	TITUS	DESV	REHEAT	6	125		50		125		
V1-100D 1	TITUS	DESV	REHEAT	6	250		75		110		
V1-100E 1	TITUS	DESV	REHEAT	10	600		200		300		
V1-100F 1	TITUS	DESV	REHEAT	10	600		200		300		
V1-100G 1	TITUS	DESV	REHEAT	8	450		150		225		
V1-100H 1	TITUS	DESV	REHEAT	8	450		100		160		
V1-119A 1	TITUS	DESV	REHEAT	12	1110		350		500		
V1-119B 1	TITUS	DESV	REHEAT	12	1110		350		500		
V1-119C 1	TITUS	DESV	REHEAT	12	1200		350		400		
V1-200A 1	TITUS	DESV	REHEAT	6	400		75		125		
V1-200B 1	TITUS	DESV	REHEAT	14	1650		525		1500		
V1-200C 1	TITUS	DESV	REHEAT	14	1650		525		1500		
V1-200D 1	TITUS	DESV	REHEAT	14	1650		525		1500		
V1-200E 1	TITUS	DESV	REHEAT	14	1650		525		1500		
V1-200F 1	TITUS	DESV	REHEAT	14	1375		525		1500		
V1-200G 1	TITUS	DESV	REHEAT	14	1650		525		1500		
V1-200H 1	TITUS	DESV	REHEAT	14	1650		525		1500		
V1-200Q 1	TITUS	DESV	REHEAT	8	400		125		200		

Diffuser Supply (GRD)

V1-100/121

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1100-1	121H	LD	8	100			-
1100-2	100	S-2	8	150			-
1100-2	100	S-2	8	150			-
Total				400	0	0	0%

V1-100A 1/125

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1100A-1	121H	LD	8	100			-
1100A-2	125	S-3	10	325			-
1100A-2	125	S-3	10	325			-
Total				750	0	0	0%

V1-100B 1/102

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1100B-1	125	S-3	10	325			-
1100B-2	125	S-3	10	325			-
Total				650	0	0	0%

V1-100C 1/103

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1100C-1	102	S-2	8	125			-
Total				125	0	0	0%

V1-100D 1/120

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1100D-1	104	S-2	8	100			-
1100D-2	103	S-2	8	150			-
Total				250	0	0	0%

V1-100E 1/120

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1100E-1	120	S-3	10	300			-
1100E-2	120	S-3	10	300			-
Total				600	0	0	0%

V1-100F 1/120A

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1100F-1	120	S-3	10	300			-
1100F-2	120	S-3	10	300			-
Total				600	0	0	0%

V1-100G 1/120F

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1100G-1	120B	S-2	8	150			-
1100G-2	120C	S-2	8	150			-
1100G-2	120A	S-2	8	150			-
Total				450	0	0	0%

V1-100H 1/140

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1100H-1	120E	S-2	8	150			-
1100H-2	120F	S-2	8	150			-
1100H-2	120D	S-2	8	150			-
Total				450	0	0	0%

V1-117/138

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1117-1	121	S-2	8	200			-
1117-2	121	S-2	8	200			-
Total				400	0	0	0%

V1-118/125

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1118-1	138	EX-SA		300			-
1118-2	138	EX-SA		300			-
1118-2	138	EX-SA		300			-
1118-4	138	EX-SA		300			-
1118-4	138	EX-SA		300			-
1118-6	138	EX-SA		300			-
1118-7	138	EX-SA		300			-
1118-8	138	EX-SA		300			-
1118-9	138	EX-SA		300			-
Total				2700	0	0	0%

V1-119A 1/140

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1119A-1	140	S-5	18X14	1110			-
Total				1110	0	0	0%

V1-119B 1/140

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1119B-1	140	S-5	18X14	1110			-
Total				1110	0	0	0%

V1-119C 1/130

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1119C-1	130	EX-SA		425			-
1119C-2	130	EX-SA		175			-
1119C-2	130	EX-SA		425			-
1119C-4	130	EX-SA		175			-
Total				1200	0	0	0%

V1-200A 1/202

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1200A-1	202	S-1	6	200			-
1200A-2	209	S-1	6	200			-
Total				400	0	0	0%

V1-200B 1/200

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1200B-1	200	S-3	10	275			-
1200B-2	200	S-3	10	275			-
1200B-2	200	S-3	10	275			-
1200B-4	200	S-3	10	275			-
1200B-4	200	S-3	10	275			-
1200B-6	200	S-3	10	275			-
Total				1650	0	0	0%

V1-200C 1/200

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1200C-1	200	S-3	10	275			-
1200C-2	200	S-3	10	275			-
1200C-2	200	S-3	10	275			-
1200C-4	200	S-3	10	275			-
1200C-4	200	S-3	10	275			-
1200C-6	200	S-3	10	275			-
Total				1650	0	0	0%

V1-200D 1/200

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1200D-1	200	S-3	10	275			-
1200D-2	200	S-3	10	275			-
1200D-2	200	S-3	10	275			-
1200D-4	200	S-3	10	275			-
1200D-4	200	S-3	10	275			-
1200D-6	200	S-3	10	275			-
Total				1650	0	0	0%

V1-200E 1/200

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1200D-1	200	S-3	10	275			-
1200D-2	200	S-3	10	275			-
1200D-2	200	S-3	10	275			-
1200D-4	200	S-3	10	275			-
1200D-4	200	S-3	10	275			-
1200D-6	200	S-3	10	275			-
Total				1650	0	0	0%

V1-200F 1/200

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1200F-1	200	S-3	10	275			-
1200F-2	200	S-3	10	275			-
1200F-2	200	S-3	10	275			-
1200F-4	200	S-3	10	275			-
1200F-4	200	S-3	10	275			-
Total				1375	0	0	0%

V1-200G 1/200

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1200G-1	200	S-3	10	275			-
1200G-2	200	S-3	10	275			-
1200G-2	200	S-3	10	275			-
1200G-4	200	S-3	10	275			-
1200G-4	200	S-3	10	275			-
1200G-6	200	S-3	10	275			-
Total				1650	0	0	0%

V1-200H 1/200

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1200H-1	200	S-3	10	275			-
1200H-2	200	S-3	10	275			-
1200H-2	200	S-3	10	275			-
1200H-4	200	S-3	10	275			-
1200H-4	200	S-3	10	275			-
1200H-6	200	S-3	10	275			-
Total				1650	0	0	0%

V1-200Q 1/211

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1200Q-1	211	S-2	8	200			-
1200Q-2	HALL	S-1	6	100			-
1200Q-2	210	S-1	6	100			-
Total				400	0	0	0%

V1-205/205

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1205-1	205	EX-SA		400			-
1205-2	203	EX-SA		400			-
1205-2	201	EX-SA		400			-
Total				1200	0	0	0%

V1-207/207

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1207-1	200A	EX-SA		200			-
1207-2	207	EX-SA		200			-
1207-2	207	EX-SA		200			-
Total				600	0	0	0%

V1-210/210 LOBBY

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1210-1	210			490			-
1210-2	210			490			-
1210-2	210			490			-
1210-4	210			490			-
Total				1960	0	0	0%

V1-212/212

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1212-1	212	EX-SA		450			-
1212-2	212	EX-SA		450			-
1212-2	212	EX-SA		450			-
1212-4	212	EX-SA		450			-
1212-4	212	EX-SA		450			-
Total				2250	0	0	0%

V1-213/213

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1213-1	212	EX-SA		200			-
1213-2	213	EX-SA		300			-
Total				500	0	0	0%

V1-215/215

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1215-1	215	S-2	8	125			-
1215-2	215	S-2	8	125			-
Total				250	0	0	0%

V1-216/216

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1216-1	216	S-2	8	200			-
1216-2	216	S-2	8	200			-
1216-2	216A	S-2	8	125			-
1216-4	216A	S-2	8	125			-
Total				650	0	0	0%

V1-217/217

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1217-1	217	S-2	8	150			-
1217-2	217	S-2	8	150			-
Total				300	0	0	0%



National TAB

Project: NKU Nunn Hall (Highland Heights, KY)

System/Unit: AHU-DUAL FAN



Asset: (E)AC-2

AREA:MECH 351

UNIT DATA - SUPPLY		
	Design	Actual
Manufacturer	NA	NA
Model Number	NA	NA
Serial Number	-	
No. Pre-Filters / Size (1)	-	
No. Pre-Filters / Size (2)	-	
No. Pre-Filters / Size (3)	-	
No. Final Filters / Size (1)	-	
No. Final Filters / Size (2)	-	
No. Final Filters / Size (3)	-	

MOTOR DATA - SUPPLY	
	Actual
Motor MFG / Frame	
Horsepower / RPM	
Rated Volts / Phase	
Rated Amperage / SF	

DRIVE DATA - SUPPLY		
	Design	Actual
Motor Sheave Size / Bore	-	
Fan Sheave Size / Bore	-	
Belt CL Distance	-	
No. Belts / Size	-	

TEST DATA - SUPPLY		
	Design	Actual
Total CFM	22415	
OA CFM	-	
Fan RPM	-	
VFD Speed	-	
RL Voltage	-	
RL Amperage	-	
Motor B.H.P.	-	

PERFORMANCE DATA - SUPPLY		
	Design	Actual
Static Pressure Stpt	-	
Suction S.P.	-	
Discharge S.P.	-	
Total S.P.	5.75	
Reheat Coil P.D.	-	
DX Coil P.D.	-	
Condenser Coil P.D.	-	
Chilled Water Coil P.D.	-	
Pre Heat Coil P.D.	-	
Final Filters P.D.	-	
Heat Wheel P.D.	-	
Pre-Filters P.D.	-	
Air Blender P.D.	-	
Total ESP	-	

UNIT DATA - EXHAUST/RETURN		
	Design	Actual
Manufacturer	-	
Model Number	-	
Serial Number	-	
No. Pre-Filters / Size (1)	-	
No. Pre-Filters / Size (2)	-	
No. Pre-Filters / Size (3)	-	
No. Pre-Filters / Size (4)	-	
No. Pre-Filters / Size (5)	-	
No. Pre-Filters / Size (6)	-	

MOTOR DATA - EXHAUST/RETURN	
	Actual
Motor MFG / FRAME	
Horsepower / RPM	
Rated Volts / Phase	
Rated Amperage / SF	

DRIVE DATA - EXHAUST/RETURN		
	Design	Actual
Motor Sheave Size / Bore	-	
Fan Sheave Size / Bore	-	
Belt CL Distance	-	
No. Belts / Size	-	

TEST DATA - EXHAUST/RETURN		
	Design	Actual
Total CFM	27500	
Fan RPM	-	
VFD Speed	-	
RL Voltage	-	
RL Amperage	-	
Motor B.H.P.	-	

PERFORMANCE DATA - EXHAUST/RETURN		
	Design	Actual
Static Pressure Stpt	-	
Suction S.P.	-	
Discharge S.P.	-	
Total S.P.	1.75	
Heat Wheel P.D.	-	
Pre-Filters P.D.	-	
Total ESP	-	



National TAB

Project: NKU Nunn Hall (Highland Heights, KY)

AHU-DUAL FAN



VAV - Single Duct

(E)AC-2/MECH 351

Asset											
Asset Name	MFG	Model Num	Type	Inlet Size	Design Max CFM	Max CFM	Design Min CFM	Min CFM	Design Heat CFM	Heat CFM	Ak (max)
V3-300	TITUS	DESV	REHEAT	6	150		75		150		
V3-304	TITUS	DESV	REHEAT	10	800	796	300	298	480	478	1581-1.10
V3-306	TITUS	DESV	REHEAT	10	400	415	250	260	400	415	1376-0.96
V3-307	TITUS	DESV	REHEAT	8	400	406	175	178	300	304	920-1.02
V3-309	TITUS	DESV	REHEAT	10	400	391	250	245	400	391	1498-1.04
V3-310	TITUS	DESV	REHEAT	12	1480	1429	450	435	450	435	2247-1.19
V3-311	TITUS	DESV	REHEAT	12	1580	1591	500	505	500	505	2218-1.17
V3-312	TITUS	DESV	REHEAT	12	1480	1459	450	440	500	490	2277-1.20
V3-313	TITUS	DESV	REHEAT	12	1480	1506	500	505	500	505	2122-1.12
V3-317	TITUS	DESV	REHEAT	10	625	603	200	190	625	603	1526-1.06
V3-319	TITUS	DESV	REHEAT	6	200	201	75	75	100	100	430-0.96
V3-320	TITUS	DESV	REHEAT	12	1200		375		630		
V3-325	TITUS	DESV	REHEAT	6	150	145	50	49	75	73	555-1.24
V3-326	TITUS	DESV	REHEAT	8	400	403	125	126	350	352	929-1.03
V3-329	TITUS	DESV	REHEAT	8	300	296	75	74	150	148	966-1.07
V3-309A 1	TITUS	DESV	REHEAT	6	275	273	100	99	225	224	500-1.12
V3-310A 1	TITUS	DESV	REHEAT	8	750	757	225	227	225	227	933-1.03
V3-314A 1	TITUS	DESV	REHEAT	12	1260		375		375		
V3-314B 1	TITUS	DESV	REHEAT	10	1080		325		325		
V3-314C 1	TITUS	DESV	REHEAT	14	1540		525		525		
V3-314D 1	TITUS	DESV	REHEAT	10	1040		300		300		
V3-322A 1	TITUS	DESV	REHEAT	12	1125		350		500		
V3-322B 1	TITUS	DESV	REHEAT	12	1125		350		500		
V3-324A 1	TITUS	DESV	REHEAT	12	1710		400		400		
V3-324B 1	TITUS	DESV	REHEAT	12	1440		400		400		

Diffuser Supply (GRD)

V3-300/300

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
3300-1	302	S-1	6	75	51	68	90.7
3300-2	303	S-1	6	75	43	78	104.0
3300-2	300	S-2	8	125			-
Total				275	94	146	53.09%

V3-304/306

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
3304-1	100CCC	S-2	8	200	164	194	97.0
3304-2	304	S-2	8	150	178	155	103.3
3304-2	304	S-2	8	150	171	149	99.3
3304-4	305	S-2	8	150	184	138	92.0
3304-4	305	S-2	8	150	177	160	106.7
Total				800	874	796	99.5%

V3-306/307

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
3306-1	306	S-2	8	200	183	205	102.5
3306-2	306	S-2	8	200	210	210	105.0
Total				400	393	415	103.75%

V3-307/309

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
3307-1	307	S-2	8	200	224	216	108.0
3307-2	307	S-2	8	200	190	190	95.0
Total				400	414	406	101.5%

V3-309/309

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
3309-1	309	S-2	8	200	184	196	98.0
3309-2	309	S-2	8	200	225	195	97.5
Total				400	409	391	97.75%

V3-309A 1/310

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
3309A-1	309A	S-1	6	100	101	96	96.0
3309A-2	309B	S-2	8	175	196	177	101.1
Total				275	297	273	99.27%

V3-310/310

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
3310-1	310	EX-SA		370	288	234	63.2
3310-2	310	EX-SA		370	528	433	117.0
3310-2	310	EX-SA		370	439	362	97.8
3310-4	310	EX-SA		370	488	400	108.1
Total				1480	1743	1429	96.55%

V3-310A 1/311

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
3310A-1	100CCC			375	396	384	102.4
3310A-2	100CCC			375	382	373	99.5
Total				750	778	757	100.93%

V3-311/311

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
3311-1	311	EX-SA		370	137	121	32.7
3311-2	311	EX-SA		370	367	300	81.1
3311-2	311	EX-SA		370	380	297	80.3
3311-4	311	EX-SA		370	533	424	114.6
V3-311-SGRD5		EX-SA		100	563	449	449.0
Total				1580	1980	1591	100.7%

V3-312/312

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
3312-1	312	EX-SA		370	178	145	39.2
3312-2	312	EX-SA		370	484	395	106.8
3312-2	312	EX-SA		370	645	522	141.1
3312-4	312	EX-SA		370	475	397	107.3
Total				1480	1782	1459	98.58%

V3-313/313

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
3313-1	313	EX-SA		370	420	332	89.7
3313-2	313	EX-SA		370	431	361	97.6
3313-2	313	EX-SA		370	483	388	104.9
3313-4	313	EX-SA		370	551	425	114.9
Total				1480	1885	1506	101.76%

V3-314A 1/LOUNGE

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
3314A-1	VENDING	EX-SA		315			-
3314A-2	LOUNGE	EX-SA		315			-
3314A-2	LOUNGE	EX-SA		315			-
3314A-4	LOUNGE	EX-SA		315			-
Total				1260	0	0	0%

V3-314B 1/LOUNGE

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
3314B-1	LOUNGE	EX-SA		220			-
3314B-2	LOUNGE	EX-SA		220			-
3314B-2	LOUNGE	EX-SA		220			-
3314B-4	LOUNGE	EX-SA		200			-
3314B-4	LOUNGE	EX-SA		220			-
Total				1080	0	0	0%

V3-314C 1/LOUNGE

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
3314C-1	LOUNGE	EX-SA		385			-
3314C-2	LOUNGE	EX-SA		385			-
3314C-2	LOUNGE	EX-SA		385			-
3314C-4	LOUNGE	EX-SA		385			-
Total				1540	0	0	0%

V3-314D 1/327

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
3314D-1	LOUNGE	EX-SA		260			-
3314D-2	LOUNGE	EX-SA		260			-
3314D-2	LOUNGE	EX-SA		260			-
3314D-4	LOUNGE	EX-SA		260			-
Total				1040	0	0	0%

V3-317/318

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
3317-1	317	S-2	8	225	195	219	97.3
3317-2	327	S-2	8	150	193	140	93.3
3317-2	316	S-3	10	250	270	244	97.6
Total				625	658	603	96.48%

V3-319/320

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
3319-1	319	S-1	6	100	110	96	96.0
3319-2	318	S-1	6	100	80	105	105.0
Total				200	190	201	100.5%

V3-320/322

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
3320-1	320	S-3	10	300			-
3320-2	320	S-3	10	300			-
3320-2	320	S-3	10	300			-
3320-4	320	S-3	10	300			-
Total				1200	0	0	0%

V3-322A 1/322

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
3322A-1	322	S-3	10	375			-
3322A-2	322	S-3	10	375			-
3322A-2	322	S-3	10	375			-
Total				1125	0	0	0%

V3-322B 1/324

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
3322B-1	322	S-3	10	375			-
3322B-2	322	S-3	10	375			-
3322B-2	322	S-3	10	375			-
Total				1125	0	0	0%

V3-324A 1/324

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
3324A-1	324	EX-SA		285			-
3324A-2	324	EX-SA		285			-
3324A-2	324	EX-SA		285			-
3324A-4	324	EX-SA		285			-
3324A-4	324	EX-SA		285			-
3324A-6	324	EX-SA		285			-
Total				1710	0	0	0%

V3-324B 1/325

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
3324B-1	324	EX-SA		360			-
3324B-2	324	EX-SA		360			-
3324B-2	324	EX-SA		360			-
3324B-4	324	EX-SA		360			-
Total				1440	0	0	0%

V3-325/326

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
3325-1	323	S-1	6	75	90	73	97.3
3325-2	325	S-1	6	75	91	72	96.0
Total				150	181	145	96.67%

V3-326/329

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
3326-1	326	S-2	8	200	210	206	103.0
3326-2	326	S-2	8	200	201	197	98.5
Total				400	411	403	100.75%

V3-329/329

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
3329-1	314	S-1	6	100	108	108	108.0
3329-2	329	S-1	6	100	118	97	97.0
3329-2	314	S-1	6	100	99	91	91.0
Total				300	325	296	98.67%

Asset	Notes	Date	Written By
V3-300	CLEAR K FACTOR AND REDO, MISSED DEVICE 3.	10/17/2024	Riley Frady
V3-311	NO DAMPERS LOCATED, UNABLE TO BALANCE DEVICES INTO DESIGN	10/17/2024	Riley Frady



National TAB

Project: NKU Nunn Hall (Highland Heights, KY)

System/Unit: AHU-DUAL FAN



Asset: (E)AC-3

AREA:MECH 427

UNIT DATA - SUPPLY		
	Design	Actual
Manufacturer	NA	NA
Model Number	NA	NA
Serial Number	-	
No. Pre-Filters / Size (1)	-	
No. Pre-Filters / Size (2)	-	
No. Pre-Filters / Size (3)	-	
No. Final Filters / Size (1)	-	
No. Final Filters / Size (2)	-	
No. Final Filters / Size (3)	-	

MOTOR DATA - SUPPLY	
	Actual
Motor MFG / Frame	
Horsepower / RPM	
Rated Volts / Phase	
Rated Amperage / SF	

DRIVE DATA - SUPPLY		
	Design	Actual
Motor Sheave Size / Bore	-	
Fan Sheave Size / Bore	-	
Belt CL Distance	-	
No. Belts / Size	-	

TEST DATA - SUPPLY		
	Design	Actual
Total CFM	27490	
OA CFM	-	
Fan RPM	-	
VFD Speed	-	
RL Voltage	-	
RL Amperage	-	
Motor B.H.P.	-	

PERFORMANCE DATA - SUPPLY		
	Design	Actual
Static Pressure Stpt	-	
Suction S.P.	-	
Discharge S.P.	-	
Total S.P.	5.75	
Reheat Coil P.D.	-	
DX Coil P.D.	-	
Condenser Coil P.D.	-	
Chilled Water Coil P.D.	-	
Pre Heat Coil P.D.	-	
Final Filters P.D.	-	
Heat Wheel P.D.	-	
Pre-Filters P.D.	-	
Air Blender P.D.	-	
Total ESP	-	

UNIT DATA - EXHAUST/RETURN		
	Design	Actual
Manufacturer	-	
Model Number	-	
Serial Number	-	
No. Pre-Filters / Size (1)	-	
No. Pre-Filters / Size (2)	-	
No. Pre-Filters / Size (3)	-	
No. Pre-Filters / Size (4)	-	
No. Pre-Filters / Size (5)	-	
No. Pre-Filters / Size (6)	-	

MOTOR DATA - EXHAUST/RETURN	
	Actual
Motor MFG / FRAME	
Horsepower / RPM	
Rated Volts / Phase	
Rated Amperage / SF	

DRIVE DATA - EXHAUST/RETURN		
	Design	Actual
Motor Sheave Size / Bore	-	
Fan Sheave Size / Bore	-	
Belt CL Distance	-	
No. Belts / Size	-	

TEST DATA - EXHAUST/RETURN		
	Design	Actual
Total CFM	27500	
Fan RPM	-	
VFD Speed	-	
RL Voltage	-	
RL Amperage	-	
Motor B.H.P.	-	

PERFORMANCE DATA - EXHAUST/RETURN		
	Design	Actual
Static Pressure Stpt	-	
Suction S.P.	-	
Discharge S.P.	-	
Total S.P.	1.75	
Heat Wheel P.D.	-	
Pre-Filters P.D.	-	
Total ESP	-	

Notes:
VAV UNITS 406 & 408 SWITCHED IN SOFTWARE, SETPOINTS CHANGED TO REFLECT SWITCH

Written By: Riley Frady on 08/22/2024



National TAB

Project: NKU Nunn Hall (Highland Heights, KY)

AHU-DUAL FAN



VAV - Single Duct

(E)AC-3/MECH 427

Asset											
Asset Name	MFG	Model Num	Type	Inlet Size	Design Max CFM	Max CFM	Design Min CFM	Min CFM	Design Heat CFM	Heat CFM	Ak (max)
V4-400	TITUS	DESV	REHEAT	12	1660	1669	500	502	800	804	2241-1.18
V4-401	TITUS	DESV	REHEAT	12	1200	1185	425	420	650	640	2125-1.12
V4-402	TITUS	DESV	REHEAT	14	1800	1771	500	490	750	735	3035-1.01
V4-405	TITUS	DESV	REHEAT	6	100	101	50	50	50	50	444-0.99
V4-406	TITUS	DESV	REHEAT	6	300	299	100	99	200	199	482-1.08
V4-407	TITUS	DESV	REHEAT	6	100	103	50	52	100	103	507-1.13
V4-408	TITUS	DESV	REHEAT	6	100	102	25	26	25	26	502-1.12
V4-410	TITUS	DESV	REHEAT	8	750	742	225	223	340	337	928-1.03
V4-412	TITUS	DESV	REHEAT	8	400	402	125	126	200	201	915-1.01
V4-414	TITUS	DESV	REHEAT	10	1080		325		500		
V4-415	TITUS	DESV	REHEAT	8	350	344	124	124	125	124	1002-1.11
V4-417	TITUS	DESV	REHEAT	12	1980		425		640		2186-1.16
V4-422	TITUS	DESV	REHEAT	6	100		25		25		
V4-424	TITUS	DESV	REHEAT	8	450		125		175		
V4-425	TITUS	DESV	REHEAT	14	1740		200		375		
V4-404A 1	TITUS	DESV	REHEAT	12	1480	1438	400	390	600	580	2041-1.08
V4-404B 1	TITUS	DESV	REHEAT	12	1480	1490	500	502	725	730	2224-1.18
V4-406A 1	TITUS	DESV	REHEAT	10	600	594	175	173	275	272	1503-1.05
V4-419A 1	TITUS	DESV	REHEAT	12	1480	1513	425	435	640	655	2101-1.11
V4-419B 1	TITUS	DESV	REHEAT	12	1260	1223	200	190	330	317	2273-1.20
V4-420A 1	TITUS	DESV	REHEAT	12	1740	1715	200	199	330	328	2175-1.15
V4-420B 1	TITUS	DESV	REHEAT	12	1740		200		330		
V4-420C 1	TITUS	DESV	REHEAT	12	1440	1456	200	202	330	333	2173-1.13
V4-426A 1	TITUS	DESV	REHEAT	10	1040	1044	200	201	300	301	1455-1.01
V4-426B 1	TITUS	DESV	REHEAT	12	1680	1670	200	198	330	227	2198-1.16
V4-426C 1	TITUS	DESV	REHEAT	12	1440	1434	200	199	330	328	2140-1.13

Diffuser Supply (GRD)

V4-400/400

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
4400-1	400	EX-SA		415	478	445	107.2
4400-2	400	EX-SA		415	473	432	104.1
4400-2	400	EX-SA		415	444	426	102.7
4400-4	400	EX-SA		415	387	366	88.2
Total				1660	1782	1669	100.54%

V4-401/401

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
4401-1	401	EX-SA		300	316	269	89.7
4401-2	401	EX-SA		300	274	253	84.3
4401-2	401	EX-SA		300	408	360	120.0
4401-4	401	EX-SA		300	344	303	101.0
Total				1200	1342	1185	98.75%

V4-402/402

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
4402-1	402	EX-SA		300	67	75	25.0
4402-2	402	EX-SA		300	397	391	130.3
4402-2	402	EX-SA		300	119	110	36.7
4402-4	402	EX-SA		300	410	383	127.7
4402-4	402	EX-SA		300	422	412	137.3
4402-6	402	EX-SA		300	408	400	133.3
Total				1800	1823	1771	98.39%

V4-404A 1/404

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
4404A-1	404	EX-SA		370	376	335	90.5
4404A-2	404	EX-SA		370	376	388	104.9
4404A-2	404	EX-SA		370	246	334	90.3
4404A-4	404	EX-SA		370	475	382	103.2
Total				1480	1473	1439	97.23%

V4-404B 1/404

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
4404B-1	404	EX-SA		370	386	370	100.0
4404B-2	404	EX-SA		370	454	395	106.8
4404B-2	404	EX-SA		370	506	337	91.1
4404B-4	404	EX-SA		370	525	388	104.9
Total				1480	1871	1490	100.68%

V4-405/405

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
4405-1	405	S-1	6	100	105	101	101.0
Total				100	105	101	101%

V4-406/406

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
4406-1	406	S-2	8	150	53	151	100.7
4406-2	406	S-2	8	150	49	148	98.7
Total				300	102	299	99.67%

V4-406A 1/406

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
4406A-1	406A	S-2	8	150	174	142	94.7
4406A-2	406A	S-2	8	150	153	157	104.7
4406A-2	406A	S-2	8	150	139	144	96.0
4406A-4	406A	S-2	8	150	164	151	100.7
Total				600	630	594	99%

V4-407/407

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
4407-1	407	S-1	6	100	112	103	103.0
Total				100	112	103	103%

V4-408/408

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
4408-1	408	S-1	6	100	323	102	102.0
Total				100	323	102	102%

V4-410/LOBBY

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
4410-1	LOBBY			375	469	358	95.5
4410-2	LOBBY			375	297	384	102.4
Total				750	766	742	98.93%

V4-412/LOBBY

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
4412-1	412	S-2	8	200	196	194	97.0
4412-2	412	S-2	8	200	213	208	104.0
Total				400	409	402	100.5%

V4-414/414

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
4414-1	LOBBY	EX-SA		540			-
4414-2	LOBBY	EX-SA		540			-
Total				1080	0	0	0%

V4-415/415

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
4415-1	415	S-2	8	175	171	165	94.3
4415-2	415	S-2	8	175	219	179	102.3
Total				350	390	344	98.29%

V4-417/417

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
4417-1	417	EX-SA		495			-
4417-2	417	EX-SA		495			-
4417-2	417	EX-SA		495			-
4417-4	417	EX-SA		495			-
Total				1980	0	0	0%

V4-419A 1/419

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
4419A-1	419	EX-SA		370	397	389	105.1
EX-SA2	419	EX-SA		370	382	382	103.2
EX-SA2	419	EX-SA		370	410	381	103.0
EX-SA4	419	EX-SA		370	425	361	97.6
Total				1480	1614	1513	102.23%

V4-419B 1/

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
4419B-1	419	EX-SA		315	340	302	95.9
4419B-2	419	EX-SA		315	324	291	92.4
4419B-2	419	EX-SA		315	431	299	94.9
4419B-4	419	EX-SA		315	406	331	105.1
Total				1260	1501	1223	97.06%

V4-420A 1/420

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
4420A-1	HALL	EX-SA		100	64	55	55.0
4420A-2	420	EX-SA		410	397	406	99.0
4420A-2	420	EX-SA		410	518	443	108.0
4420A-4	420	EX-SA		410	455	412	100.5
4420A-4	420	EX-SA		410	437	399	97.3
Total				1740	1871	1715	98.56%

V4-420B 1/420

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
4420B-1	HALL	EX-SA		100			-
4420B-2	420	EX-SA		410			-
4420B-2	420	EX-SA		410			-
4420B-4	420	EX-SA		410			-
4420B-4	420	EX-SA		410			-
Total				1740	0	0	0%

V4-420C 1/422

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
4420C-1	420	EX-SA		360	455	429	119.2
4420C-2	420	EX-SA		360	372	346	96.1
4420C-2	420	EX-SA		360	355	308	85.6
4420C-4	420	EX-SA		360	435	373	103.6
Total				1440	1617	1456	101.11%

V4-422/

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
4422-11	422	S-1	6	100			-
Total				100	0	0	0%

V4-424/424

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
4424-1	424	S-3	10	225			-
4424-2	424	S-3	10	225			-
Total				450	0	0	0%

V4-425/426

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
4425-1	425	EX-SA		870			-
4425-2	425	EX-SA		870			-
Total				1740	0	0	0%

V4-426A 1/426

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
4426A-1	426	EX-SA		260	236	242	93.1
4426A-2	426	EX-SA		260	308	284	109.2
4426A-2	426	EX-SA		260	246	259	99.6
4426A-4	426	EX-SA		260	259	259	99.6
Total				1040	1049	1044	100.38%

V4-426B 1/426

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
4426B-1	426	EX-SA		420	353	333	79.3
4426B-2	426	EX-SA		420	462	428	101.9
4426B-2	426	EX-SA		420	490	454	108.1
4426B-4	426	EX-SA		420	497	455	108.3
Total				1680	1802	1670	99.4%

V4-426C 1/

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
4426C-1	426	EX-SA		360	409	361	100.3
4426C-2	426	EX-SA		360	434	395	109.7
4426C-2	426	EX-SA		360	386	332	92.2
4426C-4	426	EX-SA		360	406	346	96.1
Total				1440	1635	1434	99.58%

Asset	Notes	Date	Written By
V4-406	Swapped in software with V4-408. Control V4-408 to adjust these diffusers.	10/15/2024	Riley Frady
V4-408	Swapped in software with V4-406. Control V4-406 to adjust these diffusers.	10/15/2024	Riley Frady
V4-410	DEVICE DESIGNS TAKEN FROM VAV SCHEDULE.	10/17/2024	Riley Frady
V4-417	Unit struggling to make flow. Software and hood agree on flow, dampers appear to be open, no suspicion of leaks.	10/14/2024	Riley Frady
V4-420A 1	Swapped for 420B in software, program 420B to control these diffusers. No damper for hallway diffuser.	10/14/2024	Riley Frady
V4-420B 1	No flow at devices. VAV 420B controls 420A's devices, and 420A reads all 0s in software, suspect they got swapped in software and VAV 420A is not functioning.	10/14/2024	Riley Frady
V4-426B 1	No dampers present. Diffuser 1 low due to long bending run below ceiling beams.	10/15/2024	Riley Frady



National TAB

Project: NKU Nunn Hall (Highland Heights, KY)

System/Unit: AHU-DUAL FAN



Asset: (E)AC-4

AREA:S PENTHOUSE

UNIT DATA - SUPPLY		
	Design	Actual
Manufacturer	NA	NA
Model Number	NA	NA
Serial Number	-	
No. Pre-Filters / Size (1)	-	
No. Pre-Filters / Size (2)	-	
No. Pre-Filters / Size (3)	-	
No. Final Filters / Size (1)	-	
No. Final Filters / Size (2)	-	
No. Final Filters / Size (3)	-	

MOTOR DATA - SUPPLY	
	Actual
Motor MFG / Frame	
Horsepower / RPM	
Rated Volts / Phase	
Rated Amperage / SF	

DRIVE DATA - SUPPLY		
	Design	Actual
Motor Sheave Size / Bore	-	
Fan Sheave Size / Bore	-	
Belt CL Distance	-	
No. Belts / Size	-	

TEST DATA - SUPPLY		
	Design	Actual
Total CFM	28320	
OA CFM	-	
Fan RPM	-	
VFD Speed	-	
RL Voltage	-	
RL Amperage	-	
Motor B.H.P.	-	

PERFORMANCE DATA - SUPPLY		
	Design	Actual
Static Pressure Stpt	-	
Suction S.P.	-	
Discharge S.P.	-	
Total S.P.	5.75	
Reheat Coil P.D.	-	
DX Coil P.D.	-	
Condenser Coil P.D.	-	
Chilled Water Coil P.D.	-	
Pre Heat Coil P.D.	-	
Final Filters P.D.	-	
Heat Wheel P.D.	-	
Pre-Filters P.D.	-	
Air Blender P.D.	-	
Total ESP	-	

UNIT DATA - EXHAUST/RETURN		
	Design	Actual
Manufacturer	-	
Model Number	-	
Serial Number	-	
No. Pre-Filters / Size (1)	-	
No. Pre-Filters / Size (2)	-	
No. Pre-Filters / Size (3)	-	
No. Pre-Filters / Size (4)	-	
No. Pre-Filters / Size (5)	-	
No. Pre-Filters / Size (6)	-	

MOTOR DATA - EXHAUST/RETURN	
	Actual
Motor MFG / FRAME	
Horsepower / RPM	
Rated Volts / Phase	
Rated Amperage / SF	

DRIVE DATA - EXHAUST/RETURN		
	Design	Actual
Motor Sheave Size / Bore	-	
Fan Sheave Size / Bore	-	
Belt CL Distance	-	
No. Belts / Size	-	

TEST DATA - EXHAUST/RETURN		
	Design	Actual
Total CFM	26450	
Fan RPM	-	
VFD Speed	-	
RL Voltage	-	
RL Amperage	-	
Motor B.H.P.	-	

PERFORMANCE DATA - EXHAUST/RETURN		
	Design	Actual
Static Pressure Stpt	-	
Suction S.P.	-	
Discharge S.P.	-	
Total S.P.	1.75	
Heat Wheel P.D.	-	
Pre-Filters P.D.	-	
Total ESP	-	



National TAB

Project: NKU Nunn Hall (Highland Heights, KY)

AHU-DUAL FAN



VAV - Single Duct

(E)AC-4/S PENTHOUSE

Asset											
Asset Name	MFG	Model Num	Type	Inlet Size	Design Max CFM	Max CFM	Design Min CFM	Min CFM	Design Heat CFM	Heat CFM	Ak (max)
V5-100	NA	NA	REHEAT	12	1200		100		200		
V5-500	NA	NA	REHEAT	10	1040	1057	150	152	250	256	1463-1.02
V5-501	NA	NA	REHEAT	8	580	572	200	198	330	327	920-1.02
V5-502	NA	NA	REHEAT	10	900	896	270	269	600	598	1578-1.10
V5-506	NA	NA	REHEAT	12	1700	1706	510	512	950	954	2354-1.24
V5-509	NA	NA	REHEAT	10	600	598	180	180	500	498	1576-1.10
V5-510	NA	NA	REHEAT	10	830	805	200	195	300	290	1356-0.94
V5-511	NA	NA	REHEAT	12	1300	1262	275	268	700	687	2089-1.10
V5-516	NA	NA	REHEAT	12	1605	1593	200	199	300	298	2093-1.11
V5-518	NA	NA	REHEAT	8	750		225		340		
V5-521	NA	NA	REHEAT	10	1200	1221	200	204	300	306	1446-1.01
V5-525	NA	NA	REHEAT	8	750	740	225	223	340	337	897-0.99
V5-526	NA	NA	REHEAT	8	750	748	200	200	380	379	900-1.00
V5-529	NA	NA	REHEAT	12	1450	1458	200	202	300	303	1839-0.97
V5-530	NA	NA	REHEAT	10	950	954	200	501	300	301	1505-1.05
V5-541	NA	NA	REHEAT	8	450	451	100	100	312	313	888-0.98
V5-542	NA	NA	REHEAT	8	450	452	150	151	275	276	492-0.54
V5-543	NA	NA	REHEAT	8	450	452	150	151	350	352	922-1.02
V5-546	NA	NA	REHEAT	6	250		75		200		
V5-547	NA	NA	REHEAT	6	100	104	25	26	50	52	473-1.06
V5-551	NA	NA	REHEAT	8	400	406	200	203	165	167	802-0.89
V5-553	NA	NA	REHEAT	10	950		200		300		
V5-555	NA	NA	REHEAT	10	630	623	200	198	350	347	1466-1.02
V5-558	NA	NA	REHEAT	8	750		225		350		
V5-561	NA	NA	REHEAT	8	540		150		225		
V5-563	NA	NA	REHEAT	8	540	534	170	168	225	222	926-1.02
V5-565	NA	NA	REHEAT	14	1830		500		860		
V5-516B 1	NA	NA	REHEAT	12	1050		200		300		
V5-521D 1	NA	NA	REHEAT	12	800	810	328	333	328	333	1974-1.04
V5-534A 1	NA	NA	REHEAT	8	450	449	133	133	225	224	824-0.91
V5-534B 1	NA	NA	REHEAT	10	900	885	267	262	450	445	914-1.01
V5-540A 1	NA	NA	REHEAT	12	690	686	328	326	328	326	1891-1.00
V5-540B 1	NA	NA	REHEAT	12	1450	1394	300	297	450	445	1591-0.84

Diffuser Supply (GRD)

V5-100/MEETING 500

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5100-1	CORR 100	EX-SA		300			-
5100-2	CORR 100	EX-SA		300			-
5100-2	CORR 100	EX-SA		300			-
5100-4	CORR 100	EX-SA		300			-
Total				1200	0	0	0%

V5-516B 1/OFC 518

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
516B-1	LOUNGE 516	EX-SA		375			-
516B-2	STORAGE 521A	EX-SA		150			-
516B-2	LOUNGE 516	EX-SA		375			-
516B-4	OFC 522	EX-SA		150			-
Total				1050	0	0	0%

V5-500/OFC 501

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5500-1	COOR 100	EX-SA		570	717	583	102.3
5500-2	MEETING 500	EX-SA		470	348	474	100.9
Total				1040	1065	1057	101.63%

V5-501/OFC 502

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5501-1	OFC 501	EX-SA		290	347	297	102.4
5501-2	OFC 501	EX-SA		290	243	275	94.8
Total				580	590	572	98.62%

V5-502/STUDY 508

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5502-1	OFC 502	S-4	12	450	497	442	98.2
5502-2	OFC 502	S-4	12	450	505	454	100.9
Total				900	1002	896	99.56%

V5-506/OFC 509

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5506-1	STUDY 507	S-2	8	125	74	128	102.4
5506-2	OFC 506	S-3	10	225	283	226	100.4
5506-2	STUDY 507	S-2	8	125	236	117	93.6
5506-4	OFC 503	S-3	10	275	281	294	106.9
5506-4	OFC 506	S-3	10	225	330	224	99.6
5506-6	OFC 503	S-3	10	275	355	289	105.1
5506-7	STUDY 508	S-2	8	225	214	224	99.6
5506-8	STUDY 508	S-2	8	225	185	204	90.7
Total				1700	1958	1706	100.35%

V5-509/CORR 100

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5509-1	OFC 509	S-3	10	300	341	306	102.0
5509-2	OFC 509	S-3	10	300	323	292	97.3
Total				600	664	598	99.67%

V5-510/CORR 100

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5510-1	CORR 100			415	436	400	96.4
5510-2				415	339	405	97.6
Total				830	775	805	96.99%

V5-511/PRINT 505

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5511-1	514	S-4	12	450	514	441	98.0
5511-2	511	S-4	12	450	496	431	95.8
5511-2	510	S-3	10	400	445	390	97.5
Total				1300	1455	1262	97.08%

V5-516/OFC 522

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5516-1	LOUNGE 516	EX-SA		640	940	1155	180.5
5516-2	LOUNGE 516	EX-SA		640	74	89	13.9
5516-2	PRINT 505	EX-SA		325	387	349	107.4
Total				1605	1401	1593	99.25%

V5-518/OFC 521

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5518-1	OFC 515	EX-SA		125			-
5518-2	OFC 517	EX-SA		125			-
5518-2	OFC 515	EX-SA		125			-
5518-4	OFC 518	EX-SA		125			-
5518-4	OFC 517	EX-SA		125			-
5518-6	OFC 518	EX-SA		125			-
Total				750	0	0	0%

V5-521/OFC 521

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5521-1	OFC 521B	EX-SA		150	178	209	139.3
5521-2	STO 521C	EX-SA		50	67	110	220.0
5521-3	OFC 521	EX-SA		400	283	319	79.8
5521-4	OFC 521	EX-SA		400	217	237	59.3
5521-5	OFC 521D	EX-SA		200	315	346	173.0
Total				1200	1060	1221	101.75%

V5-521D 1/CLASS 534

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5521D-4	LOUNGE 516	EX-SA		400	391	389	97.3
5521D-6	LOUNGE 516	EX-SA		400	441	421	105.3
Total				800	832	810	101.25%

V5-525/OFC 525

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5525-1	OFC-519	EX-SA		125	115	116	92.8
5525-2	OFC-519	EX-SA		125	129	130	104.0
5525-2	OFC-520	EX-SA		125	114	114	91.2
5525-4	OFC-525	EX-SA		125	131	132	105.6
5525-4	OFC-520	EX-SA		125	136	137	109.6
5525-6	OFC-525	EX-SA		125	115	115	92.0
Total				750	740	744	99.2%

V5-526/OFC 528

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5526-1	OFC 526	EX-SA		125	129	131	104.8
5526-2	OFC 527	EX-SA		125	132	129	103.2
5526-2	OFC 526	EX-SA		125	115	114	91.2
5526-4	OFC 527	EX-SA		125	130	131	104.8
5526-4	OFC 528	EX-SA		125	112	113	90.4
5526-6	OFC 528	EX-SA		125	128	130	104.0
Total				750	746	748	99.73%

V5-529/OFC 531

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5529-1	OFC 529	EX-SA		440	512	531	120.7
5529-2	CORR 100	EX-SA		330	342	351	106.4
5529-2	OFC 531	EX-SA		440	240	249	56.6
5529-4	COOR 100	EX-SA		240	321	327	136.3
Total				1450	1415	1458	100.55%

V5-530/OFC 530

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5530-1	LOUNGE 533	EX-SA		750	542	529	70.5
5530-2	OFC 530	EX-SA		200	443	423	211.5
Total				950	985	952	100.21%

V5-534A 1/CLASS 534

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5534A-1	CLASS 534	EX-SA	EX-SA	225	216	234	104.0
5534A-2	CLASS 534	EX-SA	EX-SA	225	195	215	95.6
Total				450	411	449	99.78%

V5-534B 1/CLASS 534

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5534B-1	CLASS 534	EX-SA		225	194	226	100.4
5534B-2	CLASS 534	EX-SA		225	218	209	92.9
5534B-2	CLASS 534	EX-SA		225	258	223	99.1
5534B-4	CLASS 534	EX-SA		225	241	227	100.9
Total				900	911	885	98.33%

V5-540A 1/CORR

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5540A-1	544	EX-SA		220	226	226	102.7
5540A-2	546	EX-SA		250	190	190	76.0
5540A-2	542	EX-SA		220	270	270	122.7
Total				690	686	686	99.42%

V5-540B 1/RECPT 540

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5540B-1	540 RECEPTION				430	450	129.8
5540B-2	540 RECEPTION				430	271	80.0
5540B-2	540A UNISEX RR				80	59	77.2
5540B-4	540 RECEPTION				430	259	77.2
5540B-4	540B MENS RR				80	187	102.5
Total					1450	1226	96.14%

V5-541/OFC 542

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5541-1	OFC 541	EX-SA		225	203	204	90.7
5541-2	OFC 541	EX-SA		225	245	247	109.8
Total				450	448	451	100.22%

V5-542/OFC 542

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5542-1	OFC 542	EX-SA		220	137	241	109.5
5542-2	OFC 542	EX-SA		220	109	211	95.9
Total				440	246	452	102.73%

V5-543/OFC 543

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5543-1	OFC 543	EX-SA		225	212	207	92.0
5543-2	OFC 543	EX-SA		225	251	245	108.9
Total				450	463	452	100.44%

V5-546/OFC 546

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5546-1	OFC 546	EX-SA		125			-
5546-2	OFC 546	EX-SA		125			-
Total				250	0	0	0%

V5-547/OFC 547

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5547-1	OFC 547	S-1	6	100	112	104	104.0
Total				100	112	104	104%

V5-551/OFC 551

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5551-1	OFC 551	PLENUM SUPPLY	7"x15"	400		353	101.5
Total				400		353	101.5%

V5-553/OFC 555

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5553-1	STOR 551	EX-SA		150			-
5553-2	ROOM 553	EX-SA		400			-
5553-2	CORR 100	EX-SA		400			-
Total				950	0	0	0%

V5-555/LOUNGE 558

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5555-1	OFC 557	EX-SA		105	108	103	98.1
5555-2	OFC 557	EX-SA		105	93	95	90.5
5555-2	OFC 556	EX-SA		105	107	103	98.1
5555-4	OFC 556	EX-SA		105	103	107	101.9
5555-4	OFC 555	EX-SA		105	118	112	106.7
5555-6	OFC 555	EX-SA		105	113	103	98.1
Total				630	642	623	98.89%

V5-558/OFC 561

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5558-1	LOUNGE 558	EX-SA		105			-
5558-2	LOUNGE 558	EX-SA		105			-
5558-2	CORR	EX-SA		330			-
5558-4	LOUNGE 558	EX-SA		105			-
5558-4	LOUNGE 558	EX-SA		105			-
Total				750	0	0	0%

V5-561/MEETING 563

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5561-1	OFC 561	EX-SA		135			-
5561-2	OFC 562	EX-SA		135			-
5561-2	OFC 562	EX-SA		135			-
5561-4	OFC 561	EX-SA		135			-
Total				540	0	0	0%

V5-563/MEETING 563

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5563-1	MEETING 563	EX-SA		135	121	114	84.4
5563-2	OFC 564	EX-SA		135	155	146	108.1
5563-2	OFC 564	EX-SA		135	137	137	101.5
5563-4	MEETING 563	EX-SA		135	140	137	101.5
Total				540	553	534	98.89%

V5-565/PRINT 566

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
5565-1	MEETING 565	EX-SA		305			-
5565-2	MEETING 565	EX-SA		305			-
5565-2	MEETING 565	EX-SA		305			-
5565-4	MEETING 565	EX-SA		305			-
5565-4	PRINT 566	EX-SA		305			-
5565-6	PRINT 566	EX-SA		305			-
Total				1830	0	0	0%

Asset	Notes	Date	Written By
V5-100	100-1 MISSING DEVICE	10/16/2024	Riley Frady
V5-510	TWO DIFFUSERS LOCATED, CFM TAKEN FROM VAV SCHEDULE	10/17/2024	Riley Frady
V5-516	NO DAMPERS LOCATED ON DIFFUSERS 1 OR 2.	09/05/2024	Riley Frady
V5-518	DIFFUSERS 518-3 AND 518-4 NOT ATTACHED TO DUCTWORK ABOVE CEILING.	10/16/2024	Riley Frady
V5-521	DEVICES IN FIELD DO NOT MATCH DRAWING, UPDATED IN GRID VIEW TO MATCH OBSERVED DEVICES	10/17/2024	Riley Frady
V5-529	NO DAMPERS LOCATED, UNABLE TO BRING DEVICES INTO DESIGN.	10/16/2024	Riley Frady
V5-530	NO DAMPERS LOCATED, UNABLE TO BRING DEVICES INTO DESIGN	10/16/2024	Riley Frady
V5-542	DEVICES DO NOT MATCH DRAWING AS INSTALLED. DEVICE LIST UPDATED TO MATCH FIELD INSTALLATION.	10/17/2024	Riley Frady
V5-546	VAV REMOVED FROM SYSTEM	10/16/2024	Riley Frady
V5-553	553-2 FLEX DISCONNECTED FROM DUCTWORK	10/16/2024	Riley Frady
V5-558	558-1 DEVICE MISSING	10/16/2024	Riley Frady
V5-561	561-1 DEVICE MISSING	10/16/2024	Riley Frady
V5-563	No dampers observed, unable to bring diffuser 1 into design.	10/16/2024	Riley Frady
V5-565	DIFFUSERS 565-5 AND 565-6 MISSING DEVICES	10/16/2024	Riley Frady
V5-516B 1	DIFFUSER 516B-1 NOT ATTACHED, ZIP TIE BROKEN AT DEVICE	10/16/2024	Riley Frady
V5-521D 1	DESIGN DEVIATION: ONE DIFFUSER PER ROOM. ASSUMED ROOM TOTAL CFMS REMAINED THE SAME. DAMPER 1 FULL OPEN, NO DAMPER LOCATED FOR DEVICE 2, NO BRANCH DAMPER LOCATED.	09/06/2024	Riley Frady
V5-540A 1	DEVICES DO NOT MATCH DRAWING AS INSTALLED. DEVICE LIST UPDATED TO MATCH FIELD INSTALLATION. NO DAMPERS	10/17/2024	Riley Frady
V5-540B 1	DEVICES DO NOT MATCH DRAWING AS INSTALLED. DEVICE LIST UPDATED TO MATCH FIELD INSTALLATION. NO DAMPERS FOR RECEPTION DIFFUSERS	10/17/2024	Riley Frady