

Date: 10/10/2024

FT#: 23-299

Technician: LF

PROJECT:

Nanuet Union Free School District
Bond Projects Phase 3
Nanuet Senior High School
Barr Middle School

PREPARED FOR:

Joe Lombardo Plumbing & Heating
321 Spook Rock Rd.
Suffern NY 10901

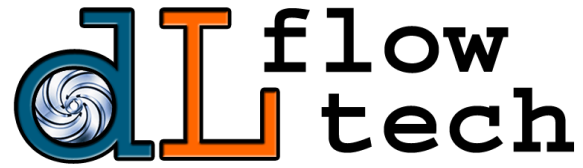
ARCHITECT:

KSQ Architects

ENGINEER:

Sage Engineering





Date: 10/10/2024

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Report Sections

- 1** *Quality Assurance*
- 2** *Summary*
- 3** *Air Balance Report*
- 4** *Hydronic Balance Report
(if applicable)*
- 5** *Definitions*
- 6** *Sketch*
- 7** *Instrumentation*
- 8** *Certifications*



CERTIFICATION FOR:
Nanuet Union Free School District
Bond Projects Phase 3
Nanuet Senior High School
Barr Middle School

The data presented in this report is a record of the system performance and was obtained in accordance with the standards and procedures as outlined by the National Environmental Balancing Bureau and has been balanced to within the physical limits of the systems. Any variances from design quantities which exceed plus or minus ten percent of design, are noted through-out the attached report.

Submitted and Certified By:



10/10/2024

A handwritten signature in black ink, appearing to read 'Luke Fountain', is written over a horizontal line.

Certified Professional: Luke Fountain





Date: 10/10/2024

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Established in 1982, dL Flow Tech, Inc is a independent Heating and Air Conditioning company specializing in HVAC system diagnostics, holding certifications from NEBB(National Environmental Balancing Bureau) , TABB (Testing Adjusting and Balancing Bureau) and IAQA (Indoor Air Quality Association) . dL Flow Tech is also affiliated wish SMACNA (Sheet Metal & Air Conditioning Contractors National Assn.) and ASHRAE (American Society of Heating, Refrigerating & Air Conditioning Engineers).

Our company offers the following services:

*Air and Hydronic Testing and Balancing
HVAC System Survey
Retro-Commissioning
Sound and Vibration Measurement
Pipe Thickness Testing
Blower Door Testing
Duct Leakage Testing
Fire Damper Testing*

For more information please visit www.dlflowtech.com or call 845-265-2828

*Thank You,
The dL Flow Tech Staff*





REPORT SUMMARY

October 10, 2024

FT #: 23-299.HS

Project: Nanuet Union Free School District
Bond Projects Phase 3
Nanuet Senior High School

Our professional services have been performed and our findings obtained in accordance with customary principles in the engineering field. It should be noted that evaluations are inherently limited in the sense that conclusions are drawn from information obtained during dL Flow Tech's visit to the site. Balancing and testing has been performed as per the Procedural Standards set forth by the National Environmental Balancing Bureau (NEBB) to within the physical limits of the system testing. In NEBB's definition of a TAB report they note it "does not guarantee that systems included are balanced to design flows." This is noted to highlight the fact as a TAB contractor we do not perform testing and balancing services and guarantee it will work as intended, as we did not design it or install it. The dL Flow Tech, Co highly recommends that any commendations or suggestions noted in this report should be reviewed with your design professional.

General Notes:

1. Where available pump or fan capacity is less than the total flow requirements or individual system parts, full flow in one part may be simulated by temporary restriction of flow to the other parts.
2. The number 1 seen in the AK column indicates a direct CFM reading.
3. Units with ECM motors are balanced proportionate with available airflow due to many manufacturers in their IOM requiring that no adjustments be made on the ECM setting.
4. Due to system effect, static pressure readings are for reference only, static pressure readings may conflict with manufacturers published data, due to field conditions.

Project Notes:

- F-HS-2: Found existing backdraft damper at louver on outside wall to be inoperable. DLF manually opened the damper for balancing purposes.
- F-HS-2: There were many issues with the existing registers noted in the report.
- Due to ATC having control to a partial system, the recorded water flow is maximum available. Unable to set the system" DP". 9/23/24.

dL flow tech

Equipment Summary

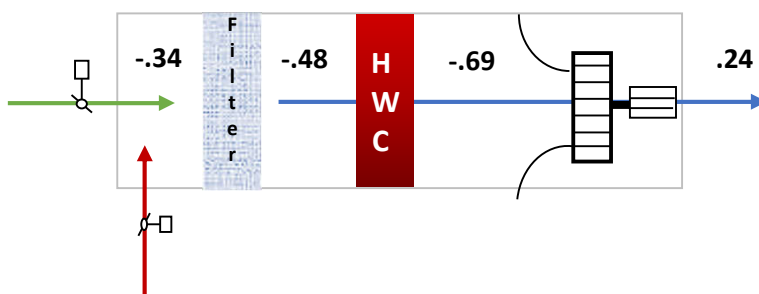
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Fan Performance

New	Supply Fan	Return /EF
System	BC-HS-2	
Service	Computer Room	
Location	Ceiling	
Manufacturer	DAIKIN	
Model	BC.H.E.030.1.D.R.W.Y.	
Sheave Position	Direct Drive	
Speed Control	73%	
System SP Set Point	N/A	
	RATED	OPERATING
Connected Load /Diversity	2645	2662
Fan CFM	2620	
Return CFM	1705	1771
Outside Air CFM	915	891
Exhaust Air CFM		
Total Static	1.84	0.93
External Static Pressure	1.00	0.58
Fan RPM	2289	2463
Motor Manuf. / HP	DELTA	4 3/7
RPM	3300	2463
Line Voltage	208	208
Amperage	10.03	3.8
Phase	3	3
Brake HP	1.14	1.67
Power Factor	Not Specified	
Motor Efficiency	Not Specified	
Service Factor	Thermal	
Frame	Self Supporting	

Remarks:

Zone	Internal Duct Size	Eff Area	Design FPM	Actual FPM	Design CFM	Actual CFM	SP	Remarks
Supply Fan Total	20 rd	2.2	1202	1221	2620	2662	0.21	
Return					1705	1771	Cal.	
OSA	36 x 18	4.5	203	198	915	891	-0.01	



Actual OSA % of SA 33%

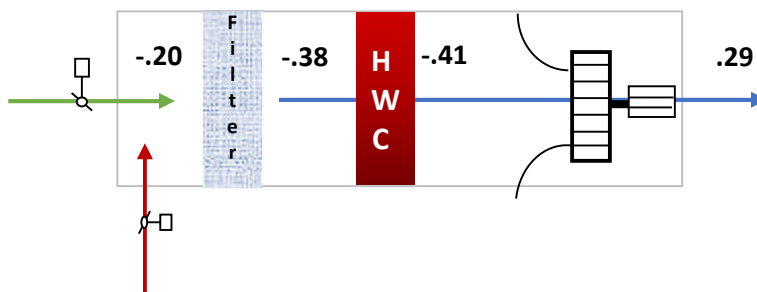
Actual OSA Damper Pos. 40%

Fan Performance

New	Supply Fan	Return /EF
System	BC-HS-1	
Service	Art Room 45	
Location	Ceiling	
Manufacturer	Dakin	
Model	BC.H.E.030.1.D.L	
Sheave Position	Direct Drive	
Speed Control	75%	
System SP Set Point	N/A	
	RATED	OPERATING
Connected Load /Diversity	2645	2731
Fan CFM	2500	
Return CFM	1690	1939
Outside Air CFM	810	792
Exhaust Air CFM		
Total Static	1.82	0.70
External Static Pressure	1.00	0.49
Fan RPM	2228	2536
Motor Manuf. / HP	Delta	4 1/5
RPM	3300	2536
Line Voltage	230	211
Amperage	10.3	3
Phase	3	3
Brake HP	1.07	1.22
Power Factor	Not Specified	
Motor Efficiency	Not Specified	
Service Factor	Thermal	
Frame	Self Supporting	

Remarks:

Zone	Internal Duct Size	Eff Area	Design FPM	Actual FPM	Design CFM	Actual CFM	SP	Remarks
Supply Fan Total	18rd	1.8	1415	1546	2500	2731	0.3	
Return					1690	1939	Cal.	
OSA	36 x 18	4.5	180	176	810	792	-0.18	



Actual OSA % of SA 29%

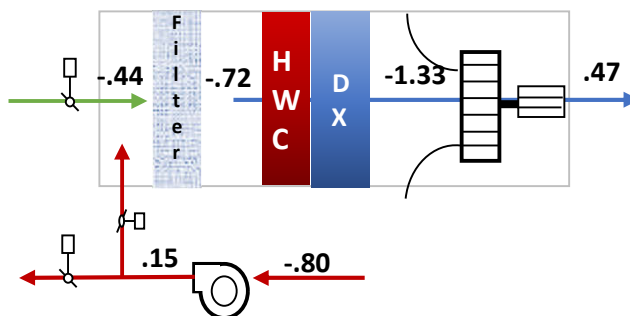
Actual OSA Damper Pos. 0%

Fan Performance

New	Supply Fan	Return /EF		
System	AHU-HS-3	F-HS-3		
Service	Gymnasium 49			
Location	Gym Mezzanine			
Manufacturer	Dakin	Penn Barry		
Model	CAH030GDQM	VCR-330 C1A10		
Sheave Position	Direct Drive	Fixed		
Speed Control	76%	VFD @ 48.3Hz		
System SP Set Point	N/A			
	RATED	OPERATING	RATED	OPERATING
Connected Load /Diversity	Not Specified	14708		14288
Fan CFM	14000		14000	
Return CFM	10800	11212		
Outside Air CFM	3200	3496		
Exhaust Air CFM			***	3077
Total Static	2.89	1.80	2.10	0.95
External Static Pressure	1.50	0.91		
Fan RPM	1825	(4) 261	937	685
Motor Manuf. / HP	(4) ECblue	4 4/5	Baldor	7 1/2
RPM	(4) 1825	Direct Drive	1770	No Safe Access
Line Voltage	230	210	230	230
Amperage	28	17.9	19.6	12.6
Phase	3	3	3	3
Brake HP	(4) 4.8	3.07	7.34	#DIV/0!
Power Factor	Not Specified		79.00%	
Motor Efficiency	Not Specified		91%	
Service Factor	Thermal		1.15	
Frame	Self Supporting		213T	

Remarks:

Zone	Internal Duct Size	Eff Area	Design FPM	Actual FPM	Design CFM	Actual CFM	SP	Remarks
Supply Fan Total					14000	14708		
DT-1	36 x 30	7.5	***	1037	***	7778	0.36	
DT-2	36 x 30	7.5	***	924	***	6930	0.36	
Return	60 x 28	11.7	926	961	10800	11212	-0.28	
OSA					3200	3496	Cal.	
Return / Relief	35 x 26	6.3	2215	2261	14000	14288	0.25	
Spill						3077	Cal.	



Actual OSA % of SA 24%

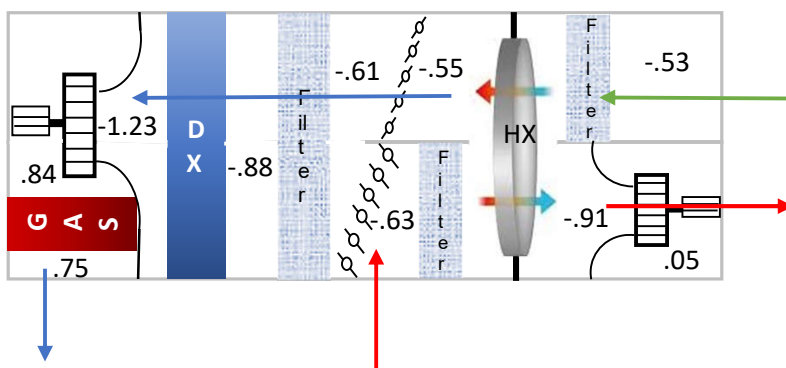
Actual OSA Damper Pos. 35%

Fan Performance

New	Supply	Exhaust		
System	RTU-HS-4			
Service	Cafeteria			
Location	Roof			
Manufacturer	Daikin			
Model	DPS016AHMG2DW-4			
Sheave Position	Direct Drive			
Speed Control	VFD @ 56Hz	45%		
System SP Set Point	N/A			
	RATED	OPERATING	RATED	OPERATING
Connected Load /Diversity	5648	5407	2500	5260
Fan CFM	5000		2500	
Return CFM	2500	3038		
Outside Air CFM	2500	2369		
Exhaust Air CFM			2500	2222
Total Static	3.40	1.03	1.40	0.96
External Static Pressure	1.20	1.28		
Fan RPM	2008	1673	1769	Direct Drive
Motor Manuf. / HP	Baldor	7 1/2	No Access	8
RPM	1770	Direct Drive	Not Specified	No Access
Line Voltage	200	189	200	210
Amperage	23.3	7.9	No Access	1.8
Phase	3	3	3	3
Brake HP	6.67	2.54	1.79	*
Power Factor	77		No Access	
Motor Efficiency	91.0%		No Access	
Service Factor	1.15		Thermal	
Frame	213T		Self Supporting	

Remarks:

Zone	Internal Duct Size	Eff Area	Design FPM	Actual FPM	Design CFM	Actual CFM	SP	Remarks
Supply	34 x 20	4.7	1059	1145	5000	5407	0.48	
Return					2500	3038	Cal.	
OSA	57 x 35	13.9	180	171	2500	2369	Vel.	Min Setpoint = 65%
Return From Space	36 x 20	5.0	1000	1052	5000	5260	-0.19	
Spill					2500	2222	Cal.	

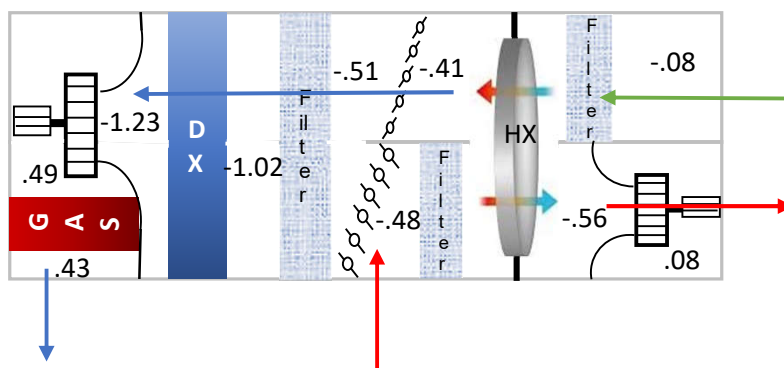


Fan Performance

New	Supply		Exhaust	
	RTU-HS-5			
	Cafeteria			
	Roof			
	Daikin			
	DPS016AHMG2DW-4			
	Direct Drive			
	VFD @ 60Hz		30%	
	N/A			
	RATED	OPERATING	RATED	OPERATING
Diversity	6300	6251	2500	5135
	6300		2500	
	2775			
	3525			
			2500	2362
	4.43	1.72	1.60	0.64
Pressure	1.65	0.51		
	2394	1795	1809	Direct Drive
Motor / HP	Baldor	10	No Access	8
RPM	1770	Direct Drive	Not Specified	No Access
Voltage	200	210	200	207
Amperage	29.5	10	No Access	0.8
Phase	3	3	3	3
Brake HP	8.07	3.39	1.96	*
Power Factor	80		No Access	
Motor Efficiency	91.7%		No Access	
Service Factor	1.15		Thermal	
Frame	215T		Self Supporting	

Remarks: .

Zone	Internal Duct Size	Eff Area	Design FPM	Actual FPM	Design CFM	Actual CFM	SP	Remarks
Supply					6300	6251		
DT-1	34 x 20	4.7	0	987		4661	0.4	
DT-2	20 x 8	1.1	0	1431		1590	0.03	
Return					2775	2773	Cal.	
OSA	57 x 35	13.9	254	251	3525	3477	Vel.	Min Setpoint = 60%
Return From Space	36 x 20	5.0	1000	1027	5000	5135	-0.15	
Spill					2500	2362	Cal.	



New

Fan Number	F-HS-2			
Location	Ceiling			
Service	Computer/Art/Lockers			
Manufacturer	Acme			
Model/Size	XD161			
Fan Type	Inline			
Speed Control	VFD @ 45Hz			
Horsepower	2			
Safety Factor	1.15			
Volts/Phase	230/3			
Rated Amperage	5.6			
Actual Amperage	3.6			
Sheave Position	Direct Drive			
Design Fan RPM	1616			
Actual Fan RPM	1212			
Design Static Pressure	1.25			
Actual Static Pressure	-.26 / .02			
Required CFM	3000			
Actual CFM	3126			
Remarks:				

[illegible]

Sys	DWG	Location / Rm #	No	Size	Type	Ak	Design		Final		Remarks
							FPM	CFM	FPM	CFM	
<u>BC-HS-1</u>							<u>2500</u>		<u>2631</u>		
	HS-M107	Art Rm 45	1	19x9	SD	0.77	810	625	850	656	
	HS-M107	Art Rm 45	2	19x9	SD	0.77	810	625	798	616	
	HS-M107	Art Rm 45	3	19x9	SD	0.77	810	625	876	676	
	HS-M107	Art Rm 45	4	19x9	SD	0.77	810	625	884	682	
<u>BC-HS-2</u>							<u>2645</u>		<u>2624</u>		
	HS-M102	Computer Rm 43	1	19x9	SD	0.77	810	625	785	606	
	HS-M102	Computer Rm 43	2	19x9	SD	0.77	810	625	789	609	
	HS-M102	Computer Rm 43	3	19x9	SD	0.77	810	625	817	631	
	HS-M102	Computer Rm 43	4	19x9	SD	0.77	810	625	831	641	
	HS-M102	Office 237	5	15x3.5	SD	0.24	612	145	580	137	
RA							1730		1733		Cal.
OA			1	38x18	DT	4.5	203	915	198	891	

[illegible]

[illegible]

[illegible]

Pump Summary

[illegible]

Pump Performance Data

Pump No P-HS-3			
Manufacturer B&G			
Size e-80SC 4x4x11B			
Impeller 11			
Service Hot Water			
Design	GPM	FT HD	BHP
	500	85	Not Specified
Valve Full Open	226	120	13.4
Discharge	74.7		
Suction	22.9		
dP	51.8 X 2.31 = 119.66		
Pump Shut-off Head	GPM	FT HD	BHP
	0	128	9.9
Discharge	82.4		
Suction	26.9		
dP	55.5 X 2.31 = 128.21		
Final	GPM	FT HD	BHP
	226	120	13.4
Discharge	74.7		
Suction	22.9		
dP	51.8 X 2.31 = 119.66		
System Static Head	28 PSI		
Discharge Valve set @ 100% open			
VFD set @ 60Hz			
System dP Set Point NA			

Motor Mfg Baldor		
Frame 256TC		
HP 20		
RPM 1765		
	Design	Actual
Amps	55	36.8
Voltage / Phase	200/3	212

Remarks:

Due to ATC having control to a partial system. The recorded GPM is max Pump HW flow currently. Unable to set system DP. 9/23/24.

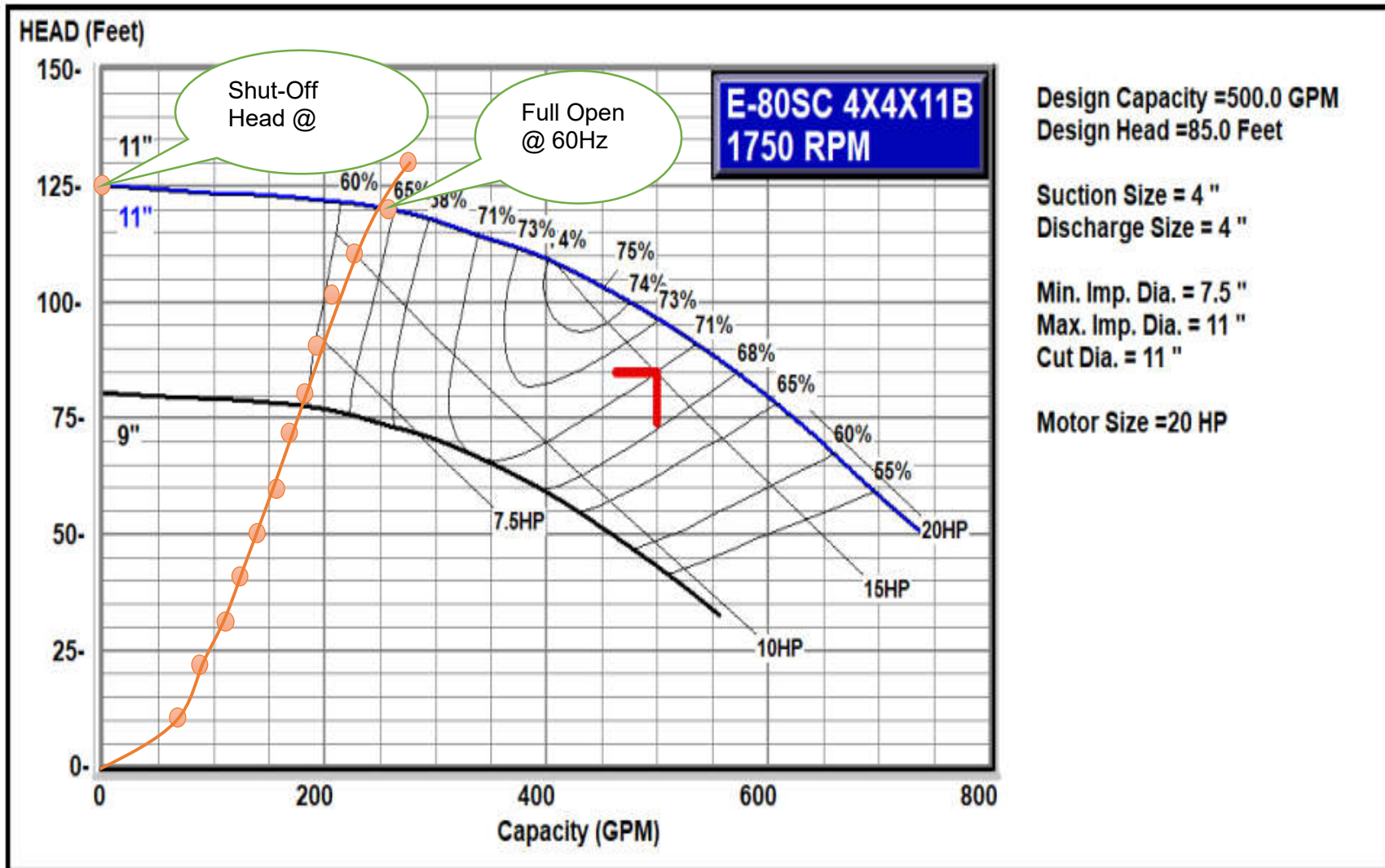
Pump Performance Data

Pump No P-HS-4				
Manufacturer B&G				
Size e-80SC 4x4x11B				
Impeller 11				
Service Hot Water				
	GPM	FT HD	BHP	
	Design	500	85	Not Specified
	Valve Full Open	226	121	13.4
	Discharge	74.4		
	Suction	22		
dP		52.4		X 2.31 = 121.04
Pump Shut-off Head				
	GPM	FT HD	BHP	
	0	128	9.9	
	Discharge	82.9		
Suction	27.7			
dP		55.2		X 2.31 = 127.51
Final				
	GPM	FT HD	BHP	
	226	121	13.4	
	Discharge	74.4		
Suction	22			
dP		52.4		X 2.31 = 121.04
System Static Head		28 PSI		
Discharge Valve set @ 100% open				
VFD set @ 60Hz				
System dP Set Point NA				

Motor Mfg Baldor		
Frame 256TC		
HP 20		
RPM 1765		
	Design	Actual
Amps	55	36.8
Voltage / Phase	200/3	211

Remarks:

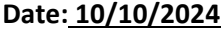
Due to ATC having control to a partial system. The recorded GPM is max Pump HW flow currently. Unable to set system DP. 9/23/24.



Place Pump # P-HS-3 & -4

Pump No.	P-HS-5	P-HS-6		
Manufacturer	B&G	B&G		
Model/Size	55-45	65-130		
Impeller	Not Specified	Not Specified		
Service	Existing AHU-1 RHC	Existing AHU-2 RHC		
Motor MFG.	ecocirc XL	ecocirc XL		
Horsepower	1/3	5/7		
Frame	Self Supporting	Self Supporting		
RPM	3408	2791		
Voltage/Phase	208/1	208/1		
Service Factor	Thermal	Thermal		
Rated Amps	Not Specified	Not Specified		
Actual Amps	No Safe Access	No Safe Access		
Design GPM	26.7	28.5		
Pump GPM	28.64	29.08		
Design FT. HD	20	40		
Pump FT. HD	20	42		
Remarks	60% Speed	80% Speed		

	Hot Water					Design		Delivered		Dial	Remarks
Dwg #	Location / Room #	Terminal	No.	Type	Size	GPM	GPM	dP	Setting		
Inches W.C.											
	Art Rm 45	BC-HS-1	1	NuTech	1"	8.0	8.04	40.1	7.5		
	Computer Rm 43	BC-HS-2	2	NuTech	1"	5.0	4.97	15.3	5.0		
	Office 237	R-3-1	3	NuTech	3/4"	0.5	0.51	14.5	1.5		
	Storage	CUH-HS-2	4	NuTech	3/4"	1.6	1.72	12.9	1.5		
	M. Locker 48	R-1-6	5	NuTech	3/4"	0.5	0.52	14.8	1.5		
	M. Toilet 227	R-1-3	6	NuTech	3/4"	0.5	0.52	15.1	1.5		
	W. Toilet 228	R-1-2	7	NuTech	3/4"	0.5	0.52	14.9	1.5		
	W. Locker 229	R-1-1	8	NuTech	3/4"	0.5	0.50	13.9	1.5		
	Office 226	R-1-7	9	NuTech	3/4"	0.5	0.51	14.3	1.5		
	MER 240	HC-HS-3	10	NuTech	1 1/2"	20	19.56	83.6	4.2		
	Vest	CUH-HS-1	11	NuTech	3/4"	1.4	1.54	10.3	1.5		
	MER 240	UH-HS-1	12	NuTech	3/4"	0.8	0.80	35.6	2.1		
	Office 243	R-1-5	13	NuTech	3/4"	0.5	0.50	13.7	1.5		
	Trainer 244	R-1-4	14	NuTech	3/4"	0.5	0.51	14.2	1.5		
	Storage-Gym Area	CV-HS-9	15	NuTech	3/4"	0.4				No CS installed; No flow 9/24/24	
	Corridor 50	CV-HS-3	15A	NuTech	3/4	0.7				No CS installed; No flow 9/24/24	
	Corridor 50	CV-HS-2	16	NuTech	3/4	0.7				No CS installed; No flow 9/24/24	
	Storage-Gym Area	CV-HS-8	17	NuTech	3/4	0.4				No CS installed; No flow 9/24/24	
	Storage-Gym Area	CV-HS-7	18	NuTech	3/4	0.4				No CS installed; No flow 9/24/24	
	Corridor 50	CV-HS-1	19	NuTech	3/4	0.7				No CS installed; No flow 9/24/24	
	Storage	CV-HS-5	20	NuTech	3/4	0.7				No CS installed; No flow 9/24/24	
	Vest	CV-HS-4	21	NuTech	3/4	0.7				No CS installed; No flow 9/24/24	
	Kitchen Storage 1	CV-HS-11	22	NuTech	3/4	0.4				No CS installed; No flow 9/24/24	
	Kitchen	CUH-HS-3	23	NuTech	3/4	1.3	1.35	8.0	2		



Sheet: Element

Report: 23-299 HS Final Rpt 10.9.24

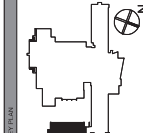
Code	Remarks
AS Req't'd	Final airflow has been adjusted to suit requests of occupants
ABV CLG	Register (ETC) is located above ceiling line
BKN DPR	Volume Damper (VD), Face Damper (OPD), Splitter Damper (SD) is broken/stuck
CC	Ceiling conflict; kinked flex duct causing low flow
CS	Circuit Setter
DD	Unit is direct drive; no adjustment can be made without a speed controller.
DD on HI	Direct drive fan set to High, medium (MED) or low (LO)
DT	Duct Traverse
DLF	DL Flow Tech Inc.
FACE	Velocity taken at the balance point
HDW MSG	Volume or splitter damper hardware is missing
Inline	Fan is an inline fan; Actual RPM can not be obtained
Long Flex	Flexible duct configuration and length is probable cause for low flow
Locked	No key available at time of balance
Max Flow	Maximum flow achievable
MAN OPN'D	Temporarily opened manually to set
New outlet	Outlet not shown on contract drawing; no CFM given; CFM assigned by DLF
Noisey	Register (ETC) has been set low to reduce objectionable air noise.
NPA	No provision to adjust; requires installation of volume damper / face damper
NI	Outlet not installed
NW	Device not working
TP	Test point location for duct traverse and/or static pressure
PT	Poor take -off / inlet flex to VAV box causing turbulence / probable cause for low flow
RAW	Raw opening -- Ductwork and collar is installed; register (etc.) is missing; tap is balanced high to compensate.
Set High	Set high due to missing register and/or to maintain total room flow (etc).
T'stat REV	The t'stat is reverse or opposite of design
T'stat LOC	T'stat not in area served
VD FO	Volume Dampers are in their maximum open position
VD FC	Volume Dampers are in their full closed position
VAV	Variable air volume box
CAV	Constant Volume Box
FPVAV	Fan powered variable air volume box
Register Types	
CD	Ceiling Diffuser
CR	Ceiling Register
EC	Egg Crate Type register
ER	Exhaust Register
FH	Fume Hood
LD	Linear Diffuser
LT	Light Troffer
WMS	Wire Mesh Screen
TR	Top Register
BR	Bottom Register
RAW	Raw opening
No CC	Flow metering device not installed, temp/pressure differential across elements used to determine flow.
Simulated flow	Where available pump or fan capacity is less than the total flow requirements, flow temporarily restricted to other parts.



NUFSD
BOND
PROJECT
PH3

High School
103 Church St.
Nanuet, NY 10954

Barr Middle School
50 Blauvelt Rd #1
Nanuet, NY 10954

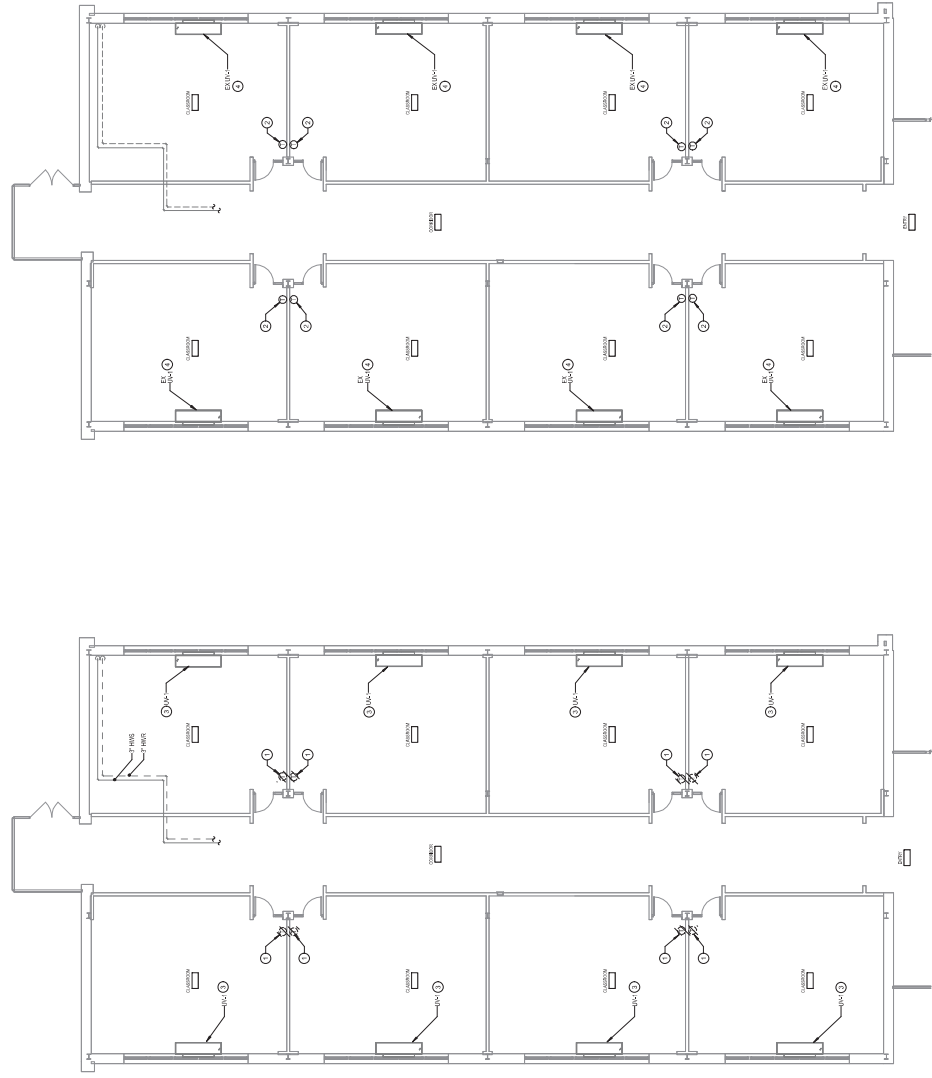
[illegible]

ISSUED: BID SET ISSUANCE
DATE: 06/06/2023
SCALE: 1/8" = 1'-0"
SHEET NAME:
004 ADDITION HVAC
REMOVAL AND INSTALL
LANS
SHEET NUMBER:

HS-M106

KEYED NOTES

- [illegible]



A12 FIRST FLOOR REMOVALS - 2004 ADDITION

FIRST FLOOR PLAN - 2004 ADDITION



TAB Equipment List dL Flow Tech NEBB CERT# 2582

FUNCTION	RANGE	MINIMUM ACCURACY	INSTRUMENT INFORMATION
Rotating Measurement	0 to 5000 RPM	+/- 2% of reading, +/- 2 RPM	Shimpo DT 207L
Temperature Measurement	Air: 40-140 Immersion: 40-140 Contact: 40-140	0.1 % + 1,4 degrees F (for all)	Make and Model: Shortridge ADM 860
Electrical Measurement	0 to 600 VAC 0 to 100 Amps	+/-2% +/-5 digits +/-2% +/- 5 digits	Make and Model: Fluke 323 Clamp On Meter
Air Pressure Measurement	0 to 10.00 in. w.g.	+/-2% +/- 0.0001 in. w.g.	Make and Model: Shortridge ADM 860
Air Velocity Measuring Rotating Vane	50-2500 FPM	+/-5% of reading	Make and Model: Testo
Humidity Measurement	10 - 90% RH	+/-3% RH	Make and Model: Extech RH390
Direct Reading Hood	100-2000 CFM	+/-5% of reading, +/- 5 cfm	Make and Model: Shortridge ADM 860
Pitot Tubes (2 required)	adequate length and width for intended use	N/A	
Hydronic Pressure Measuring	-30"hg - 60psi 0-100 psi 0-200 ps1	+/-2% of reading, +/- 1 psi +/-2% of reading, +/- 1 psi +/-2% of reading, +/- 1 psi	Shortridge HDM 250
Hydronic DP Measurement	0-100 in. W.G. 0-100 ft. W.G.	+/-2% of reading, +/- 2 in. w.g. +/-2% of reading, +/- 0.2 ft. w.g.	Shortridge HDM 250
Ultrasonic Flow Meter (Optional)	0.5" to 24" dia.	+/-1% of reading	Make and Model: Fuji FSCS

**All instrumentaion meets or exceeds NEBB Standards. Certificates are available upon request.



Firm Certification

DL FLOW TECH, INC.

**HAS MET ALL REQUIREMENTS FOR NEBB CERTIFIED
STATUS IN THE FOLLOWING DISCIPLINE**

Testing, Adjusting and Balancing of Environmental Systems

2582

NEBB Certification Number

December 31, 2024

Expiration Date

A handwritten signature in black ink, appearing to read "James A. ...".

NEBB President

A handwritten signature in black ink, appearing to read "Michael J. Kelly".

NEBB President-Elect