Report By:

National TAB
105 Stone Village Drive
Fort Mill, SC 29708

Report: TAB REPORT

Function: Test, Adjust, & Balance

Date: 09/12/2025

Completed By: National TAB

PROJECT

Charlotte Firehouse #30 (Charlotte, NC)

3019 Beam Road

Charlotte, NC 28217

Client

Action Mechanical Inc.

PO Box 7325

CHARLOTTE, NC 28241

National TAB

Project: Charlotte Firehouse #30 (Charlotte, NC)

Table Of Contents

CERTIFICATION

PROJECT: Charlotte Firehouse #30 (Charlotte, NC)

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 design quantities, which exceed NEBB tolerances, are noted in the Test-Adjust-Balance Report Project Summary.

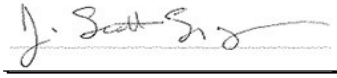
The air distribution system has been tested and balanced and final adjustments have been made in accordance with NEBB standards and the project specifications.

NEBB TAB FIRM:	National TAB-Southeast
REGISTRATION NO:	3755
CERTIFIED BY:	J. Scott Springer 23312
DATE:	9/12/2025

The hydronic distribution system has been tested and balanced and final adjustments have been made in accordance with NEBB standards and the project specifications.

NEBB TAB FIRM:	National TAB-Southeast
REGISTRATION NO:	3755
CERTIFIED BY:	J. Scott Springer 23312
DATE:	

Submitted and Certified by:

NEBB TAB FIRM:	National TAB-Southeast
TAB PROFESSIONAL:	J. Scott Springer
SIGNATURE:	
REGISTRATION NO:	3755 (NTAB) / 23312
CERTIFICATION EXP:	12/31/2025

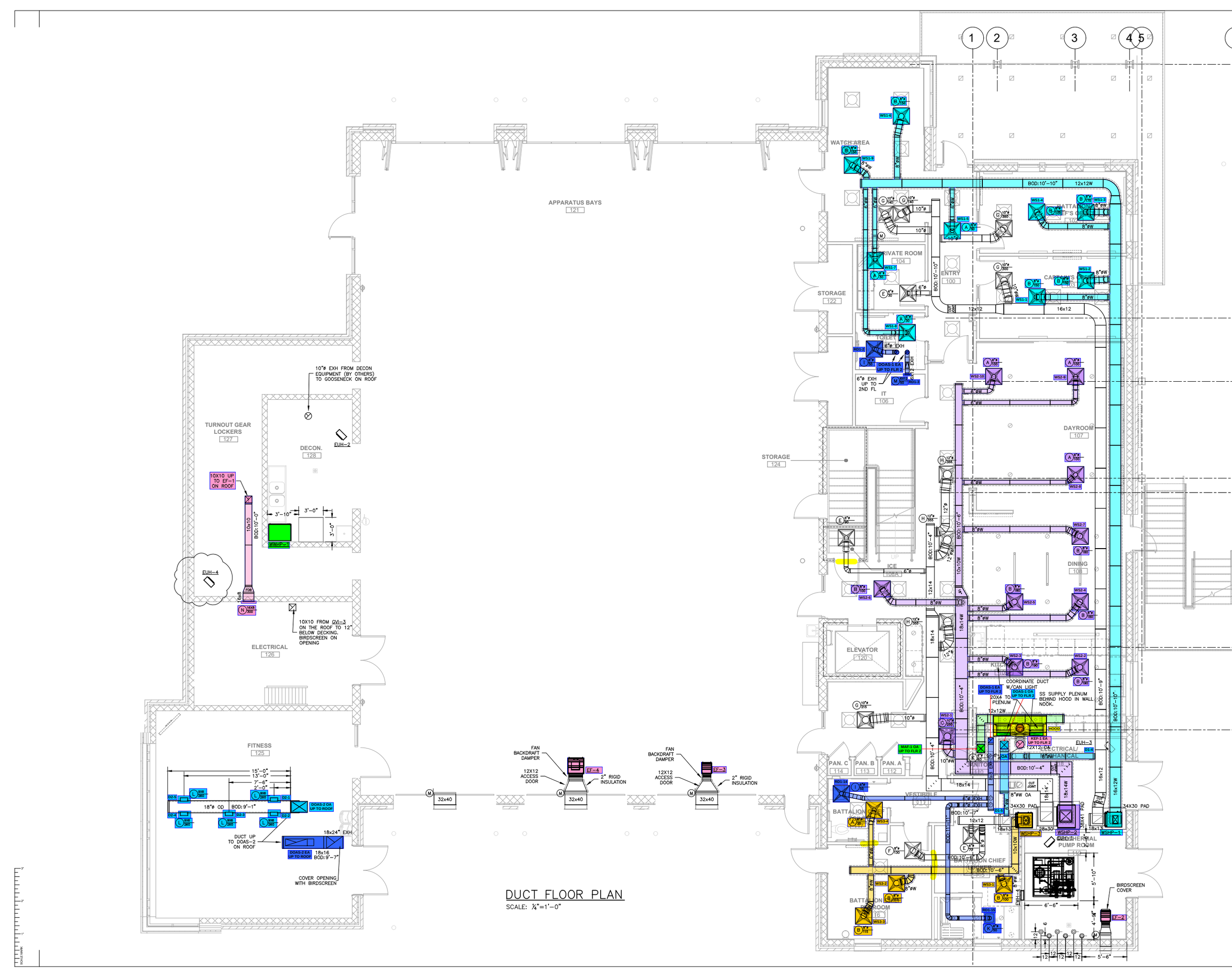
Abbreviation List

A = Area (ft^2)	S.F. = Service Factor
AHU = Air Handling Unit	SF = Supply Fan
A_k = Effective Area	SP = Static Pressure
BHP = Brake Horsepower (IP) HP	SR = Supply Register
Btu = British Thermal Unit	T = Temperature
Btu/h = Btuh = BTUH = BTU/Hour	T_{ma} = Mixed Air Temperature
CL = Center Distance (used in belt formula)	T_{oa} = Outside Air Temperature
CD = Ceiling Diffuser	T_{ra} = Return Air Temperature
CF = Correction Factor	H = Head (in wc, ft wc, psi)
CFM = Volumetric Flow: Cubic Feet Per Minute	h = Enthalpy
CO2 = Carbon Dioxide	HP = Horsepower
CO = Carbon Monoxide	hr = Hour
C_v = Flow Constant	K_v = Flow constant (SI)
d = Diameter (in.) IP	kW = Kilowatt = 1000 Watts
Δ = Difference or Change (Final - Initial)	LAT = Leaving Air Temperature
DB = Dry Bulb	lb = Pounds
EA = Exhaust Air	LWT = Leaving Water Temperature
EAT = Entering Air Temperature	ma = Mixed Air
EF = Exhaust Fan	MIN = Minimum
Eff = Efficiency	MAX = Maximum
EG = Exhaust Grille	N/A = Not Applicable
ESP = External Static Pressure	NA = No Access
EWT = Entering Water Temperature	NL = Not Listed
°F = Degrees Fahrenheit, °F	NPSHA = Net Positive Suction Head Available
FPB = Fan Powered Box	NS = Not Specified
FLA = Full Load Amps	OA = Outside Air
fpm = Feet per Minute (fpm)	OAT = Outside Air Temperature
ft = Foot	PD = Sheave Pitch Diameter
gal = Gallons	P.D. = Pressure Drop
GPM = Gallons Per Minute (GPM)	PF = Power Factor
h = Enthalpy (BTU/lb dry air)	SG = Supply Grille
P = Pressure	SR = Supply Register
ppm = parts per million	TP = Total Pressure
psi = Pounds Per Square Inch	T_{ra} = Return Air Temperature
psid = PSI Differential	TS = Tip Speed (fpm) IP, (m/s) SI
r = Radius (in)	TSP = Total Static Pressure
$\%_{ra}$ = % of Return Air	V = Velocity
RA = Return Air	VAV = Variable Air Volume
RAT = Return Air Temperature	VD = Volume Damper
RF = Return Fan	VFD = Variable Frequency Drive
RG = Return Grille	W = Watt
RH = Relative Humidity	WB = Wet Bulb
RPM = Revolutions Per Minute	wg = wc = water gauge = water column
RTU = Roof Top Unit	WHP = Water Horsepower (IP)
SA = Supply Air	ω = Humidity Ratio

National TAB

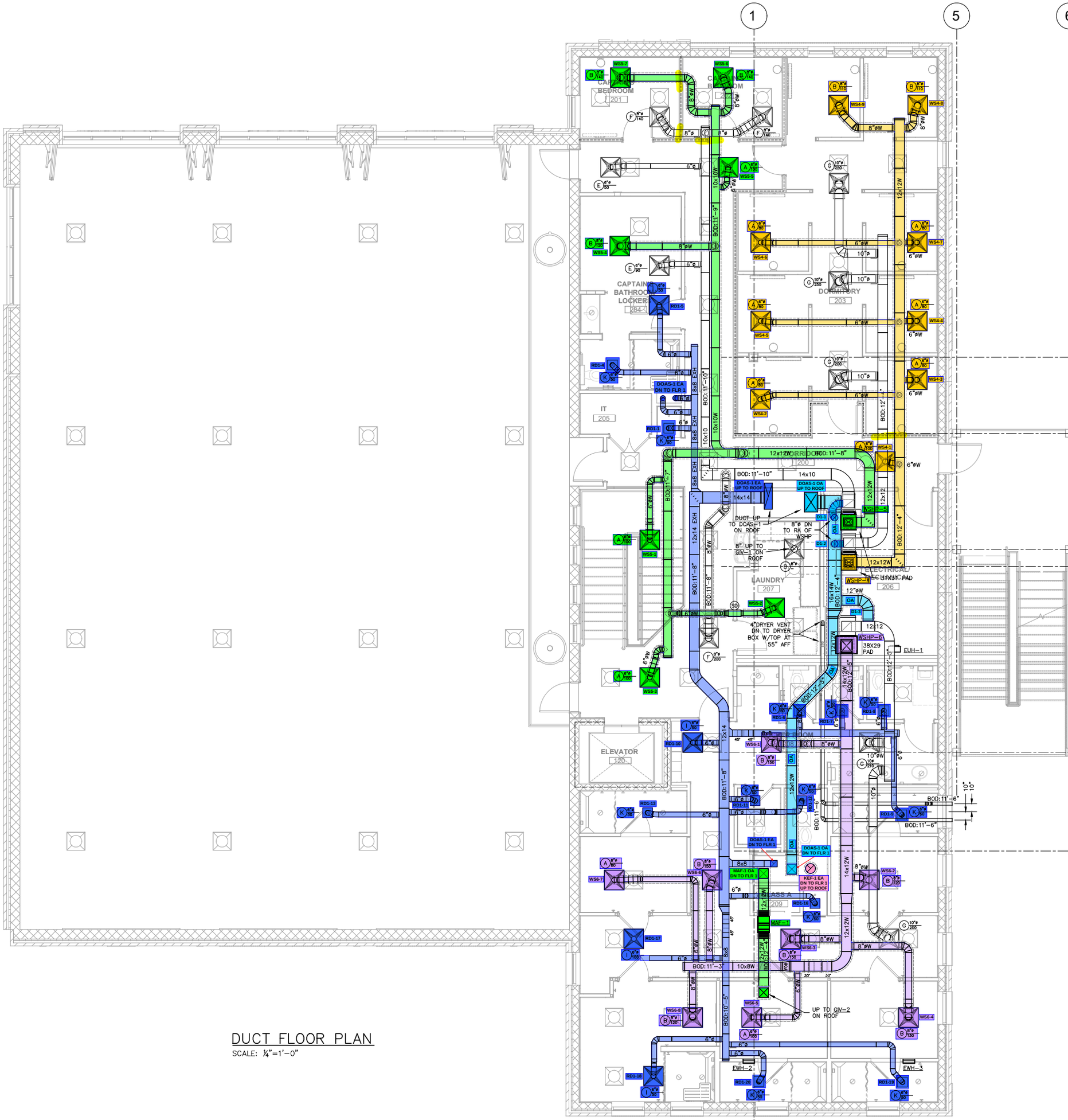
Testing, Adjusting, and Balancing Equipment

Function		Range	Minimum Accuracy	Instrument Information	Calibration Date	Date Due
AIR	AIR PRESSURE	0 in wg to 10 in wg	2% +/- 0.001 in wg	Shortridge ADM-880C S/N M05066	10/15/2024	10/15/2025
	AIR VELOCITY INSTRUMENT	50 fpm to 3900 fpm	+/- 5 % +/- 7 fpm	Shortridge ADM-880C S/N M05066	10/15/2024	10/15/2025
	DIRECT HOOD READING	100 cfm to 2000 cfm	+/- 3 % +/- 7 cfm	Shortridge Flow Hood	10/15/2024	10/15/2025
TEMPERATURE	AIR METER	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - SRH77A S/N 081820093	10/15/2024	10/15/2025
	AIR PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - PD1388 7-6 S/N 5028	10/15/2024	10/15/2025
	IMMERSION METER	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - SRH77A S/N 081820093	10/15/2024	10/15/2025
	IMMERSION PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - PD1388 7-6 S/N 1075	10/15/2024	10/15/2025
	CONTACT METER	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - SRH77A S/N 081820093	10/15/2024	10/15/2025
	CONTACT PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - PD1388 7-6 S/N 4011	10/15/2024	10/15/2025
HUMIDITY	HUMIDITY PROBE	10 % RH to 90 % RH	3% of reading	Cooper ATKINS - SRH77A S/N 090315046	10/15/2024	10/15/2025
ELECTRICAL	VOLTAGE MEASUREMENT	0 VAC to 600 VAC	2 % reading +/- 5 digits	Dwyer CM-1 - S/N 190800099	10/15/2024	10/15/2025
	AMPERAGE MEASUREMENT	0 Amperers to 100 Amperes	2 % reading +/- 5 digits	Dwyer CM-1 - S/N 190800099	10/15/2024	10/15/2025
ROTATION	ROTATION MEASUREMENT	60 rpm to 5000 rpm	2 % reading 2 rpm	Dwyer TAC-L - S/N S1100123	10/15/2024	10/15/2025
HYDRONIC	PRESSURE MEASUREMENT	-30 in Hg to 200 psi	±2% of reading +/- 1 psi	Shortridge HDM 250 - S/N W25059	6/18/2025	6/18/2026
	DIFFERENTIAL PRESSURE MEASUREMENT	0 psi - 80 psi	±2% of reading +/- 1 psi	Shortridge HDM 250 - S/N W25059	6/18/2025	6/18/2026
DALT	DUCT LEAKAGE	-10"- +10" wc	±1% of reading +/- 0.004" wc	Kanomax DALT 6900 S/N: 080439	3/7/2025	3/7/2026



DUCT FLOOR PLAN

SCALE: ¼"=1'-0"



DUCT FLOOR PLAN

SCALE: 1/4"=1'-0"

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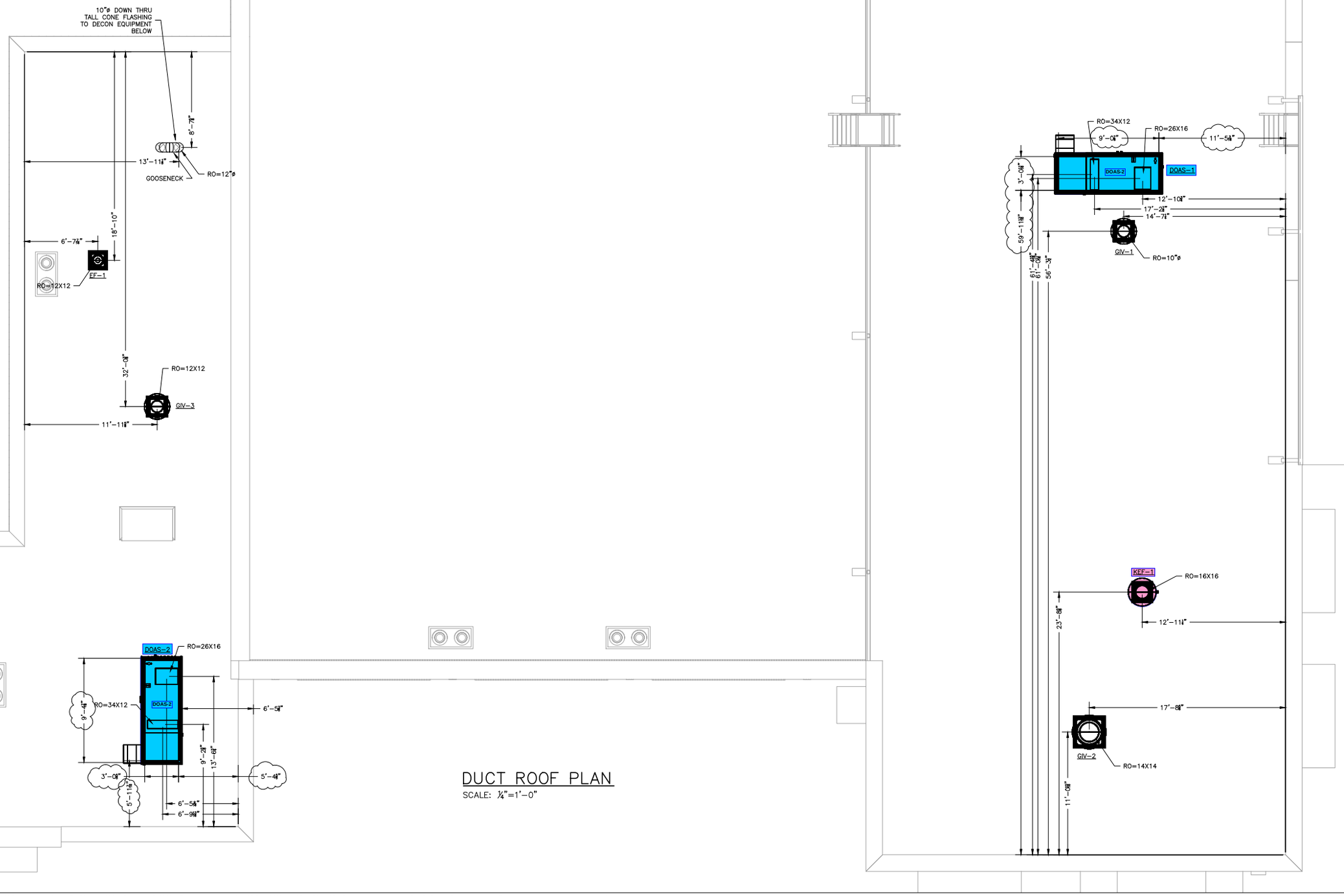

DUCT ROOF PLAN

SCALE: ¼"=1'-0"

National TAB

Project: Charlotte Firehouse #30 (Charlotte, NC)

System/Unit: AHU-DUAL FAN

Asset: DOAS-1 AREA:BLDG EAST

UNIT DATA - SUPPLY		
	Design	**Actual**
Manufacturer	AAON	AAON
Model Number	RQ-005	NA
Serial Number	-	202411-AYCE06452
No. Pre-Filters / Size (1)	-	1/ 12X24X2
No. Final Filters / Size (1)	-	2/ 20X20X4
No. Final Filters / Size (2)	-	2/ 20X20X2

MOTOR DATA - SUPPLY	
	Actual
Motor MFG / Frame	BALDOR/ 56Z
Horsepower / RPM	2 / 1770
Rated Volts / Phase	208/ 3
Rated Amperage / SF	5.8/ 1.15

TEST DATA - SUPPLY		
	Design	**Actual**
Total CFM	1380	1311
VFD Speed	65.7	78
RL Voltage	208	220/219/220
RL Amperage	5.8	5.32/5.5/ 5.49
Motor B.H.P.	1.20	1.86

PERFORMANCE DATA - SUPPLY		
	Design	**Actual**
Suction S.P.	-	-3.15"
Discharge S.P.	-	0.06"
Total S.P.	2.81	3.21"
DX Coil P.D.	0.22	1.16"
Heat Wheel P.D.	1.09	1.78"
Pre-Filters P.D.	0.25	COMBINED*
Total ESP	0.50	0.30"

UNIT DATA - EXHAUST/RETURN		
	Design	**Actual**
Manufacturer	-	AAON
Model Number	-	NA
Serial Number	-	202411-AYCE06452
No. Pre-Filters / Size (1)	-	2/ 20X20X4
No. Pre-Filters / Size (2)	-	2/ 20X20X2

MOTOR DATA - EXHAUST/RETURN	
	Actual
Motor MFG / FRAME	AAON/ 143T
Horsepower / RPM	1 / 1760
Rated Volts / Phase	200/ 3
Rated Amperage / SF	3.5/ 1.15

TEST DATA - EXHAUST/RETURN		
	Design	**Actual**
Total CFM	1050	1059
VFD Speed	49.2	51
RL Voltage	208	219/220/219
RL Amperage	3.5	2.5/2.5/2.7
Motor B.H.P.	0.35	0.73

PERFORMANCE DATA - EXHAUST/RETURN		
	Design	**Actual**
Suction S.P.	-	-0.34"
Discharge S.P.	-	0.24"
Total S.P.	1.06	0.58"
Heat Wheel P.D.	0.74	0.50"
Total ESP	0.25	0.08"

Notes:
Flow Station 1: 1.21 gain
Flow Station 2: 0.547 gain

National TAB

Project:Charlotte Firehouse #30 (Charlotte, NC)

AHU-DUAL FAN

Diffuser Supply (GRD)

DOAS-1/BLDG EAST

Asset								
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	WSHP-5	DUCT	8	180	199	-	169	93.9
SGRD2	WSHP-4	DUCT	8	100	137	-	104	104.0
SGRD3	WSHP-6	DUCT	12	590	601	-	578	98.0
SGRD4	WSHP-1	DUCT	8	100	140	-	95	95.0
SGRD5	WSHP-3	DUCT	6	160	198	-	167	104.4
SGRD6	WSHP-2	DUCT	10	200	220		198	99.0
Total				1330			**1311**	**98.5**

Diffuser Ret/Exh (GRD)

DOAS-1/BLDG EAST

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
EGRD1		K	6	50	75	51	102.0
EGRD2	RR 105	I	6	50	68	49	98.0
EGRD3	IT 106	M	6X12	50	65	52	104.0
EGRD4	LOCKER 204	K	6	50	64	52	104.0
EGRD5	LOCKER 204	I	6	50	52	54	108.0
EGRD6	LOCKER 208	K	6	50	69	50	100.0
EGRD7	LOCKER 208	K	6	50	55	50	100.0
EGRD8	LOCKER 208	K	6	50	50	51	102.0
EGRD9		K	6	50	44	49	98.0
EGRD10	LOCKER 208	I	6	50	48	53	106.0
EGRD11	LOCKER 208	K	6	50	45	51	102.0
EGRD12	LOCKER 208	K	6	50	50	49	98.0
EGRD13		K	6	50	45	52	104.0
EGRD14	RR 117	I	6	50	42	48	96.0
EGRD15	LCKR 115	K	6	50	60	52	104.0
EGRD16	CLASS A 209	K	6	50	58	51	102.0
EGRD17	HALL	I	6	100	62	98	98.0
EGRD18		I	6	50	44	50	100.0
EGRD19		K	6	50	45	49	98.0
EGRD20		K	6	50	40	48	96.0
Total				1050	1081	1059	100.86

National TAB

Project: Charlotte Firehouse #30 (Charlotte, NC)

System/Unit: AHU-DUAL FAN

Asset: DOAS-2 AREA:FITNESS 125

UNIT DATA - SUPPLY		
	Design	**Actual**
Manufacturer	AAON	AAON
Model Number	RQ-005	NA
Serial Number	-	202411-AYCE06453
No. Pre-Filters / Size (1)	-	1/ 12X24X2
No. Final Filters / Size (1)	-	2/ 20X20X4
No. Final Filters / Size (2)	-	2/ 20X20X2

MOTOR DATA - SUPPLY	
	Actual
Motor MFG / Frame	BALDOR/ 56Z
Horsepower / RPM	2 / 1770
Rated Volts / Phase	208/ 3
Rated Amperage / SF	5.8/ 1.15

TEST DATA - SUPPLY		
	Design	**Actual**
Total CFM	1300	1262
VFD Speed	63.2	75
RL Voltage	208	220/219/220
RL Amperage	5.8	4.8/5.0/4.9
Motor B.H.P.	1.07	1.68

PERFORMANCE DATA - SUPPLY		
	Design	**Actual**
Suction S.P.	-	-2.69"
Discharge S.P.	-	0.42"
Total S.P.	2.65	3.11"
DX Coil P.D.	0.22	1.17"
Heat Wheel P.D.	1.08	1.35"*
Pre-Filters P.D.	0.25	COMBINED*
Total ESP	0.50	0.59"

UNIT DATA - EXHAUST/RETURN		
	Design	**Actual**
Manufacturer	-	AAON
Model Number	-	NA
Serial Number	-	202411-AYCE06453
No. Pre-Filters / Size (1)	-	2/ 20X20X4
No. Pre-Filters / Size (2)	-	2/ 20X20X2

MOTOR DATA - EXHAUST/RETURN	
	Actual
Motor MFG / FRAME	AAON/ 143T
Horsepower / RPM	1/ 1760
Rated Volts / Phase	200/ 3
Rated Amperage / SF	3.5/ 1.15

TEST DATA - EXHAUST/RETURN		
	Design	**Actual**
Total CFM	962	964
VFD Speed	45	30
RL Voltage	208	220, 220,219
RL Amperage	3.4	3.3/3.3/3.4
Motor B.H.P.	0.27	0.97

PERFORMANCE DATA - EXHAUST/RETURN		
	Design	**Actual**
Suction S.P.	-	-0.07"
Discharge S.P.	-	0.10"
Total S.P.	1.03	0.17"
Heat Wheel P.D.	0.74	0.15"
Total ESP	0.25	0.02"

Completed By: Antonio Flores-De La Cruz on 09/11/2025

Notes:
Flow station: 1.12

National TAB

Project:Charlotte Firehouse #30 (Charlotte, NC)

AHU-DUAL FAN

Diffuser Supply (GRD)

DOAS-2/FITNESS 125

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
SGRD1	FITNESS 125	L	9X6	260	250	250	96.2
SGRD2	FITNESS 125	L	9X6	260	248	248	95.4
SGRD3	FITNESS 125	L	9X6	260	255	255	98.1
SGRD4	FITNESS 125	L	9X6	260	244	244	93.8
SGRD5	FITNESS 125	L	9X6	260	265	265	101.9
Total				1300	1262	1262	97.08%

Diffuser Ret/Exh (GRD)

DOAS-2/FITNESS 125

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
EGRD1	125	Duct	24X18	962	1122	964	100.2
Total				962	1122	964	100.21%

National TAB

Project: Charlotte Firehouse #30 (Charlotte, NC)

System/Unit: Heat Pump

Asset: WSHP-1 AREA:ELEC/MECH 118

Unit Data		
	Design	**Actual**
Unit MFG	NA	CLIMATEMASTER
Model Num	NA	TEV038
Serial Num	-	245111043
Type	-	WSHP
Configuration	-	HORIZONTAL
Num Filters Size 1	-	1
Filter Size 1	-	27.625X29.625X2

Motor Data		
	Design	**Actual**
Motor MFG	-	GREENHECK
Frame	-	NA
Horsepower	-	NA
Motor Rpm	-	NA
Phase	-	3
Voltage	-	208
Amperage	-	3.9
Service Factor	-	1

Test Data		
	Design	**Actual**
SA CFM	1060	1113
Motor Speed Setpt	-	611 RPM
RL Voltage	208	213
RL Amperage	3.9	1.6
RA CFM	960	1018
OA CFM	100	95

Performance Data		
	Design	**Actual**
Suction ESP	-	0.11”
Discharge ESP	-	0.05”
Total ESP	0.50"	0.16”

Completed By: Antonio Flores-De La Cruz on 09/11/2025

National TAB

Project:Charlotte Firehouse #30 (Charlotte, NC)

Heat Pump

Diffuser Supply (GRD)

WSHP-1/ELEC/MECH 118

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
SGRD1	CPT OFC 103	B	8	150	92	142	94.7
SGRD2	CPT OFC 103	B	8	150	148	165	110.0
SGRD3	CHIEF OFC 102	B	8	175	150	189	108.0
SGRD4	CHIEF OFC 102	B	8	175	137	170	97.1
SGRD5	ENTRY 100	A	6	50	74	55	110.0
SGRD6	WATCH 101	B	8	150	158	163	108.7
SGRD7	PRIV RM 104	A	6	30	0	31	103.3
SGRD8	RR 105	A	6	30	59	33	110.0
SGRD9	WATCH 101	B	8	150	133	165	110.0
Total				1060	951	1113	105%

National TAB

Project: Charlotte Firehouse #30 (Charlotte, NC)

System/Unit: Heat Pump

Asset: WSHP-2 AREA:ELEC/MECH 118

Unit Data		
	Design	**Actual**
Unit MFG	NA	CLIMATEMASTER
Model Num	NA	TEV072
Serial Num	-	245011110
Type	-	WSHP
Configuration	-	HORIZONTAL
Num Filters Size 1	-	1
Filter Size 1	-	29.375X35.750X2

Motor Data		
	Design	**Actual**
Motor MFG	-	GREENHECK
Frame	-	NA
Horsepower	-	NA
Motor Rpm	-	NA
Phase	-	3
Voltage	-	208
Amperage	-	6.9
Service Factor	-	1

Test Data		
	Design	**Actual**
SA CFM	1570	1635
Motor Speed Setpt	-	677
RL Voltage	208	214
RL Amperage	6.9	1.58
RA CFM	1370	1437
OA CFM	200	198

Performance Data		
	Design	**Actual**
Suction ESP	-	-0.25”
Discharge ESP	-	0.02”
Total ESP	0.50"	0.27”

Completed By: Antonio Flores-De La Cruz on 09/11/2025

National TAB

Project:Charlotte Firehouse #30 (Charlotte, NC)

Heat Pump

Diffuser Supply (GRD)

WSHP-2/ELEC/MECH 118

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
SGRD1	HALL	C	10	250	164	256	102.4
SGRD2	KITCHEN 109	B	8	190	166	195	102.6
SGRD3	KITCHEN 109	B	8	190	151	191	100.5
SGRD4	DINING 108	B	8	180	166	188	104.4
SGRD5	DINING 108	B	8	180	101	185	102.8
SGRD6	HALL	B	8	100	179	99	99.0
SGRD7	DINING 108	B	8	180	165	195	108.3
SGRD8	DAY RM 107	A	6	100	72	109	109.0
SGRD9	DAY RM 107	A	6	100	90	109	109.0
SGRD10	DAY RM 107	A	6	100	90	108	108.0
Total				1570	1344	1635	104.14%

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Project: Charlotte Firehouse #30 (Charlotte, NC)

System/Unit: Heat Pump

Asset: WSHP-3 AREA:ELEC/MECH 118

Unit Data		
	Design	**Actual**
Unit MFG	NA	CLIMATEMASTER
Model Num	NA	TCV018
Serial Num	-	244611171
Type	-	WSHP
Configuration	-	HORIZONTAL
Num Filters Size 1	-	1
Filter Size 1	-	20X20X2

Motor Data		
	Design	**Actual**
Motor MFG	-	GREENHECK
Frame	-	NA
Horsepower	-	NA
Motor Rpm	-	NA
Phase	-	3
Voltage	-	208
Amperage	-	0.91
Service Factor	-	1

Test Data		
	Design	**Actual**
SA CFM	360	390
RL Voltage	208	214
RL Amperage	0.91	0.50
RA CFM	200	223
OA CFM	160	167

Performance Data		
	Design	**Actual**
Suction ESP	-	-0.18”
Discharge ESP	-	0.17”
Total ESP	0.50"	0.35”

Completed By: Antonio Flores-De La Cruz on 09/11/2025

National TAB

Project:Charlotte Firehouse #30 (Charlotte, NC)

Heat Pump

Diffuser Supply (GRD)

WSHP-3/ELEC/MECH 118

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
SGRD1	CHIEF LKR 115	B	8	100	58	105	105.0
SGRD2	CHIEF BED 116	B	8	115	119	127	110.4
SGRD3	CHIEF BED 116	B	8	115	151	126	109.6
SGRD4	CHIEF RR 117	A	6	30	90	32	106.7
Total				360	418	390	108.33%

National TAB

Project: Charlotte Firehouse #30 (Charlotte, NC)

System/Unit: Heat Pump

Asset: WSHP-4 AREA:ELEC/MECH 206

Unit Data		
	Design	**Actual**
Unit MFG	NA	CLMATEMASTER
Model Num	NA	TCV024
Serial Num	-	244611097
Type	-	WSHP
Configuration	-	HORIZONTAL
Num Filters Size 1	-	1
Filter Size 1	-	20X20

Motor Data		
	Design	**Actual**
Motor MFG	-	NA
Frame	-	NA
Horsepower	-	NA
Motor Rpm	-	NA
Phase	-	1
Voltage	-	208
Amperage	-	1.5
Service Factor	-	1.0

Test Data		
	Design	**Actual**
SA CFM	800	806
RL Voltage	208	214
RL Amperage	1.5	1.5
RA CFM	700	702
OA CFM	100	104

Performance Data		
	Design	**Actual**
Suction ESP	-	-0.09"
Discharge ESP	-	0.10"
Total ESP	0.22"	0.19"

Completed By: Antonio Flores-De La Cruz on 09/11/2025

National TAB

Project:Charlotte Firehouse #30 (Charlotte, NC)

Heat Pump

Diffuser Supply (GRD)

WSHP-4/ELEC/MECH 206

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
SGRD1	CORR 200	A	6	100	70	105	105.0
SGRD2	DORM 203	A	6	80	60	84	105.0
SGRD3	DORM 203	A	6	80	73	80	100.0
SGRD4	DORM 203	A	6	80	74	83	103.8
SGRD5	DORM 203	A	6	80	50	78	97.5
SGRD6	DORM 203	A	6	80	66	79	98.8
SGRD7	DORM 203	A	6	80	70	83	103.8
SGRD8	DORM 203	B	8	110	124	109	99.1
SGRD9	DORM 203	B	8	110	117	105	95.5
Total				800	704	806	100.75%

National TAB

Project: Charlotte Firehouse #30 (Charlotte, NC)

System/Unit: Heat Pump

Asset: WSHP-5 AREA:ELEC/MECH 206

Unit Data		
	Design	**Actual**
Unit MFG	NA	CLIMATEMASTER
Model Num	NA	TCV024
Serial Num	-	244611096
Type	-	WSHP
Configuration	-	HORIZONTAL
Num Filters Size 1	-	1
Filter Size 1	-	20X20X2

Motor Data		
	Design	**Actual**
Motor MFG	-	NA
Frame	-	NA
Horsepower	-	NA
Motor Rpm	-	NA
Phase	-	1
Voltage	-	208
Amperage	-	1.5
Service Factor	-	1.0

Test Data		
	Design	**Actual**
SA CFM	800	809
RL Voltage	208	214
RL Amperage	1.5	1.2
RA CFM	620	640
OA CFM	180	169

Performance Data		
	Design	**Actual**
Suction ESP	-	-0.13"
Discharge ESP	-	0.22"
Total ESP	0.22	0.35

Completed By: Jearod Ferrette on 08/28/2025

Diffuser Supply (GRD)

WSHP-5/ELEC/MECH 206

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
SGRD1	STAIRS	A	6	100	131	107	107.0
SGRD2	LAUNDRY 207	A	6	100	118	95	95.0
SGRD3	STAIRS	A	6	100	132	107	107.0
SGRD4	RR/LOCKER 204	B	8	120	155	121	100.8
SGRD5	HALL	A	6	100	132	103	103.0
SGRD6	CPT BED 201	B	8	140	176	140	100.0
SGRD7	CPT BED 202	B	8	140	166	136	97.1
Total				800	1010	809	101.12%

National TAB

Project: Charlotte Firehouse #30 (Charlotte, NC)

System/Unit: Heat Pump

Asset: WSHP-6 AREA:ELEC/MECH 206

Unit Data		
	Design	**Actual**
Unit MFG	NA	CLIMATEMASTER
Model Num	NA	TEV038
Serial Num	-	245110470
Type	-	WSHP
Configuration	-	HORIZONTAL
Num Filters Size 1	-	1
Filter Size 1	-	27.625X29.625X2

Motor Data		
	Design	**Actual**
Motor MFG	-	GREENHECK
Frame	-	NA
Horsepower	-	0.5
Motor Rpm	-	NA
Phase	-	1
Voltage	-	208
Amperage	-	4.2
Service Factor	-	1

Test Data		
	Design	**Actual**
SA CFM	1000	1039
Motor Speed Setpt	-	715 RPM
RL Voltage	208	214
RL Amperage	4.2	2.57
RA CFM	410	461
OA CFM	590	578

Performance Data		
	Design	**Actual**
Suction ESP	-	-0.10”
Discharge ESP	-	0.08”
Total ESP	0.70"	0.18”

Completed By: Antonio Flores-De La Cruz on 09/11/2025

National TAB

Project:Charlotte Firehouse #30 (Charlotte, NC)

Heat Pump

Diffuser Supply (GRD)

WSHP-6/ELEC/MECH 206

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
SGRD1	LOCKER 208	B	8	150	174	156	104.0
SGRD2		B	8	120	141	126	105.0
SGRD3	CLASS A 209	B	8	150	169	152	101.3
SGRD4		B	8	130	174	142	109.2
SGRD5		A	6	100	123	110	110.0
SGRD6	HALL	B	8	150	151	139	92.7
SGRD7		A	6	80	122	87	108.8
SGRD8		B	8	120	142	127	105.8
Total				1000	1196	1039	103.9%

National TAB

Project: Charlotte Firehouse #30 (Charlotte, NC)

System/Unit: FAN - Supply

Asset: MAF-1 AREA:CLASS A 209

Unit Data		
	Design	**Actual**
MFG	NA	COOK
Model Num	NA	100SQN28D (VF)
Type	-	INLINE

Motor Data		
	Design	**Actual**
Motor MFG	-	NA
Frame	-	NA
Horsepower	-	0.33
Motor Rpm	-	2800
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	NA
Service Factor	-	NA

Test Data		
	Design	**Actual**
CFM	800	867
SF RPM	1859	DD
RL Voltage	115	117
Suction ESP	-	-0.54"
Discharge ESP	-	0.10"
Total ESP	0.50	0.64"

Completed By: Jearod Ferrette on 08/21/2025

National TAB

Project: Charlotte Firehouse #30 (Charlotte, NC)

System/Unit: FAN - Exhaust

Asset: EF-1 AREA:ELEC 126

Unit Data		
	Design	**Actual**
MFG	NA	COOK
Model Num	NA	90C17DEC
Serial Num	-	410PL31712-01
Type	-	CRE

Motor Data		
	Design	**Actual**
Motor MFG	-	COOK
Frame	-	NA
Horsepower	-	0.17
Motor Rpm	-	1725
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	2.36
Service Factor	-	1

Test Data		
	Design	**Actual**
CFM	300	577
RL Voltage	208	210
RL Amperage	1.5	0.6
Suction ESP	-	-0.23"
Total ESP	0.25	0.23"

Completed By: Jearod Ferrette on 08/19/2025

Notes:
NO SPEED CONTROLLER

National TAB

Project: Charlotte Firehouse #30 (Charlotte, NC)

System/Unit: FAN - Exhaust

Asset: EF-2 AREA:GEO PUMP 119

Unit Data		
	Design	**Actual**
MFG	NA	COOK
Model Num	NA	90SQN17DEC
Serial Num	-	410PL31712-01
Type	INLINE	INLINE

Motor Data		
	Design	**Actual**
Motor MFG	-	COOK
Frame	-	NA
Horsepower	-	0.167
Motor Rpm	-	1725
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	NA
Service Factor	-	1

Test Data		
	Design	**Actual**
CFM	250	593
RL Voltage	208	212
RL Amperage	1.5	0.7
Suction ESP	-	-0.09"
Discharge ESP	-	0.06"
Total ESP	0.50	014"

Completed By: Jearod Ferrette on 08/19/2025

Notes:
NO SPEED CONTROLLER

National TAB

Project: Charlotte Firehouse #30 (Charlotte, NC)

System/Unit: FAN - Exhaust

Asset: EF-3 AREA:APPARATUS 121

Unit Data		
	Design	**Actual**
MFG	NA	COOK
Model Num	NA	90SQN17DEC
Type	INLINE	INLINE

Motor Data		
	Design	**Actual**
Motor MFG	-	DD
Frame	-	DD
Horsepower	-	DD
Motor Rpm	-	DD
Phase	-	DD
Voltage (rated)	-	DD
Amperage (rated)	-	DD
Service Factor	-	DD

Test Data		
	Design	**Actual**
CFM	250	330
RL Voltage	208	210
RL Amperage	1.5	0.8
Suction ESP	-	-0.15"
Discharge ESP	-	0.28"
Total ESP	0.50	0.43"

Completed By: Jearod Ferrette on 08/19/2025

Notes:
NO SPEED CONTROLLER

National TAB

Project: Charlotte Firehouse #30 (Charlotte, NC)

System/Unit: FAN - Exhaust

Asset: EF-4 AREA:APPARATUS 121

Unit Data		
	Design	**Actual**
MFG	NA	COOK
Model Num	NA	150SQN17D (VF)
Serial Num	-	410SL31712-00
Type	INLINE	INLINE

Motor Data		
	Design	**Actual**
Motor MFG	-	COOK
Frame	-	NA
Horsepower	-	0.625
Motor Rpm	-	1725
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	NA
Service Factor	-	1

Test Data		
	Design	**Actual**
CFM	2250	2107
Fan RPM	1373	1099
RL Voltage	208	211
Suction ESP	-	-0.07
Discharge ESP	-	0.04"
Total ESP	0.50	0.11"

Completed By: Jearod Ferrette on 08/19/2025

National TAB

Project: Charlotte Firehouse #30 (Charlotte, NC)

System/Unit: FAN - Exhaust

Asset: KEF-5 AREA:KITCHEN 109

Unit Data		
	Design	**Actual**
MFG	NA	COOK
Model Num	NA	120V3B
Serial Num	-	410SL31712-00
Type	-	CEV

Motor Data		
	Design	**Actual**
Motor MFG	-	US MOTOR
Frame	-	NA
Horsepower	-	0.25
Motor Rpm	-	1725
Phase	-	1
Voltage (rated)	-	208
Amperage (rated)	-	4.9
Service Factor	-	1

Drive Data	
	Actual
Motor Sheave Size	VP34
Motor Bore Size	0.50
Motor Sheave SetPt	MAX TURNS IN
Fan Sheave Size	MA33X3
Fan Sheave Bore	0.75
Belt CL Distance	5.25
Num of Belts	1
Belt Size	4L200

Test Data		
	Design	**Actual**
CFM	1000	800
Fan RPM	-	1580
RL Voltage	208	212
RL Amperage	-	4.8
Suction ESP	-	-0.91"
Total ESP	0.50	0.90"
Brake Horse Power	-	0.90"

Completed By: Jearod Ferrette on 08/20/2025

National TAB

Project: Charlotte Firehouse #30 (Charlotte, NC)

System/Unit: Kitchen Hood Type II

Asset: HOOD-1 AREA:

Unit Data		
	Design	**Actual**
MFG	NA	WOLF
Model Num	NA	PW662418
Type	TYPE II CANOPY	TYPE II CANOPY
Hood length	66	66
Hood Width	24	24

Test Data		
	Design	**Actual**
Exhaust CFM	1000	800

Completed By: Jearod Ferrette on 08/20/2025

National TAB

Project: Charlotte Firehouse #30 (Charlotte, NC)

System/Unit: Pump

Asset: P-1 AREA:

Unit Data		
	Design	**Actual**
MFG	NA	TACO
Model Num	NA	CI1206E
Serial Num	-	F0477736
Service	-	WSHP Loop
Pump RPM	-	3450
GPM/HD	-	90/120
Impeller Diameter	-	5.60"

Motor Data		
	Design	**Actual**
Motor MFG	-	BALDOR
Frame	-	184JM
Horsepower	-	7.5
Motor Rpm	-	3450
Phase	-	3
Voltage	-	208
Amperage	-	17.2
Service Factor	-	1.15
Efficiency	-	88.5
Power Factor	-	89

Test Data		
	Design	**Actual**
Pump Off Pres	-	16 psi
Act Impeller Dia (IN)	-	5.6
Valve Open GPM	-	91
Valve Open Diff (FT)	-	93.7
Final Suction Pres (FT)	-	36.2
Final Discharge Pres (FT)	-	127.8
Total Head Pres (FT)	120	91.6
Final GPM	90	97.4
Motor RPM	-	3419
Pump RPM	-	3419
Motor Frequency	-	57 Hz
System SetPt	-	28 psi
RL Voltage	208	199 VFD
RL Amperage	-	12.56 VFD
Brake Horse Power	-	5.5

Completed By: Antonio Flores-De La Cruz on 09/11/2025

National TAB

Project: Charlotte Firehouse #30 (Charlotte, NC)

System/Unit: Pump

Asset: P-2 AREA:

Unit Data		
	Design	**Actual**
MFG	NA	TACO
Model Num	NA	CI1206D
Serial Num	-	F0477736
Service	-	WSHP Loop
Pump RPM	-	3450
GPM/HD	-	90/120
Impeller Diameter	-	5.60"

Motor Data		
	Design	**Actual**
Motor MFG	-	BALDOR
Frame	-	184JM
Horsepower	-	7.5
Motor Rpm	-	3450
Phase	-	3
Voltage	-	208
Amperage	-	17.2
Service Factor	-	1.15
Efficiency	-	88.5
Power Factor	-	89

Test Data		
	Design	**Actual**
Pump Off Pres	-	11
Act Impeller Dia (IN)	-	5.6
Valve Open GPM	-	94
Valve Open Diff (FT)	-	98.3
Final Suction Pres (FT)	-	27.7
Final Discharge Pres (FT)	-	117.1
Total Head Pres (FT)	120	89.4
Final GPM	90	97.4
Motor RPM	-	3419
Pump RPM	-	3419
Motor Frequency	-	57
System SetPt	-	28 psi
RL Voltage	208	199 VFD
RL Amperage	-	12.6 VFD
Brake Horse Power	-	5.5

Completed By: Antonio Flores-De La Cruz on 09/11/2025

National TAB

Project:Charlotte Firehouse #30 (Charlotte, NC)

Circuit Setter

GW CS/

Asset								
Asset Name	**Location**	**Size**	**Type**	**Design GPM**	**Design P.D.(In")**	**Actual P.D.(In")**	**Final GPM**	**% to Design**
CS-1	WSHP-1	1.0	Auto Control Valve	7.5	na	61 ft	7.5	100.0
CS-2	WSHP-2	1.25	Auto Control Valve	16	na	61.7 ft	16.0	100.0
CS-3	WSHP-3	0.75	Auto Control Valve	3	na	69.7 ft	3.0	100.0
CS-4	WSHP-4	1.0	Auto Control Valve	7.5	na	63.8 ft	7.5	100.0
CS-5	WSHP-5	1.0	Auto Control Valve	7.5	na	60.4 ft	7.5	100.0
CS-6	WSHP-6	1.25	Auto Control Valve	16	na	55.3 ft	16.0	100.0
CS-7	DOAS-1	1.5	Manual	20	36.8 "	36.1 "	19.8	99.0
CS-8	DOAS-2	1.5	Manual	20	36.8 "	37.2 "	20.1	100.5
Total				97.5			97.4	99.9%

Completed By: Antonio Flores-De La Cruz on 09/02/2025

HW CS/

Asset									
Asset Name	**Location**	**Size**	**Type**	**Service**	**Design GPM**	**Setting**	**Delta P**	**Final GPM**	**% to Design**
CS-1	Mech Rm	1.0	Manual	Condenser	15.0	0	7.4	10.5	70.0
CS2	Mech Rm	1.0	Manual	Evap	15.0	0	9.5	11.8	78.7
Total					30			22.3	74.33%

Completed By: Antonio Flores-De La Cruz on 09/11/2025

0 setting is 100 % open