Report By:

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

NATIONAL TAB

Comfort. Under control.

Report: Legent Hospital (Tomball, TX) TAB REPORT
Function: Test, Adjust, & Balance
Date: 03/20/2023

PROJECT

Legent Hospital (Tomball, TX)

24429 Tomball Parkway, Suite 100

Tomball, TX 77375

Client

Boatman Construction LLC

27905 Commercial Park Rd, Suite 100

Tomball, TX 77375

National TAB

Project: Legent Hospital (Tomball, TX)

Table Of Contents

CERTIFICATION

PROJECT: Legent Hospital (Tomball, TX)

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.

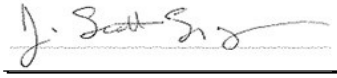
The air distribution system has been tested and balanced and final adjustments have been made in accordance with NEBB standards and the project specifications.

NEBB TAB FIRM:	National TAB-Southeast
REGISTRATION NO:	3755
CERTIFIED BY:	J. Scott Springer 23312
DATE:	3/20/2023

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:	3086
CERTIFIED BY:	J. Scott Springer 23312
DATE:	3/20/2023

Submitted and Certified by:

NEBB TAB FIRM:	National TAB-Southeast
TAB PROFESSIONAL:	J. Scott Springer
SIGNATURE:	
REGISTRATION NO:	3755 (NTAB) / 23312
CERTIFICATION EXP:	12/31/2023

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	9/28/2022	9/28/2023
	AIR VELOCITY INSTRUMENT	50 fpm to 3900 fpm	+/- 5 % +/- 7 fpm	Shortridge ADM 880C - S/N M05066	9/28/2022	9/28/2023
	DIRECT HOOD READING	100 cfm to 2000 cfm	+/- 3 % +/- 7 cfm	Shortridge ADM 880C - S/N M05066	9/28/2022	9/28/2023
TEMPERATURE	AIR METER	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - SRH77A S/N 081820093	10/12/2022	10/12/2023
	AIR PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - PD1388 7-6 S/N 5028	10/12/2022	10/12/2023
	IMMERSION METER	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - SRH77A S/N 081820093	10/12/2022	10/12/2023
	IMMERSION PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - PD1388 7-6 S/N 1075	10/12/2022	10/12/2023
	CONTACT METER	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - SRH77A S/N 081820093	10/12/2022	10/12/2023
	CONTACT PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - PD1388 7-6 S/N 4011	10/12/2022	10/12/2023
HUMIDITY	HUMIDITY PROBE	10 % RH to 90 % RH	3% of reading	Cooper ATKINS - SRH77A S/N 090315046	10/12/2022	10/12/2023
ELECTRICAL	VOLTAGE MEASUREMENT	0 VAC to 600 VAC	2 % reading +/- 5 digits	Dwyer CM-1 - S/N 190800099	10/12/2022	10/12/2023
	AMPERAGE MEASUREMENT	0 Amperers to 100 Amperes	2 % reading +/- 5 digits	Dwyer CM-1 - S/N 190800099	10/12/2022	10/12/2023
ROTATION	ROTATION MEASUREMENT	60 rpm to 5000 rpm	2 % reading 2 rpm	Dwyer TAC-L - S/N S1100123	10/12/2022	10/12/2023
HYDRONIC	PRESSURE MEASUREMENT	-30 in Hg to 200 psi	±2% of reading +/- 1 psi	Dwyer 490W-6 - S/N 01L6NK	6/29/2022	6/29/2023
	DIFFERENTIAL PRESSURE MEASUREMENT	0 psi - 80 psi	±2% of reading +/- 1 psi	Dwyer 490W-6 - S/N 01L6NK	6/29/2022	6/29/2023

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

Project Summary

Preface

The summary below provides a quick understanding of how well your HVAC systems are balanced for the design criteria. The summary concludes with a quick understanding of your building environment and possible suggestions for each of your systems after testing has been performed. Our focus is to work with the trades to remedy any issues or deficiencies during the actual field balancing and not after the balancing has occurred. Our focus is to achieve a positive environment and outcome. The level of success is determined by the availability of the trades, possible parts needed, or time constraints.

Facility Identification and TAB Requirements

The mechanical equipment to be tested, adjusted, and balanced includes All Roof Top Units (RTU), All Exhaust Fans (EF), All Variable Air Volume boxes (VAV) all Fan Coil Units (FCU), and all associated air devices.

RTUs

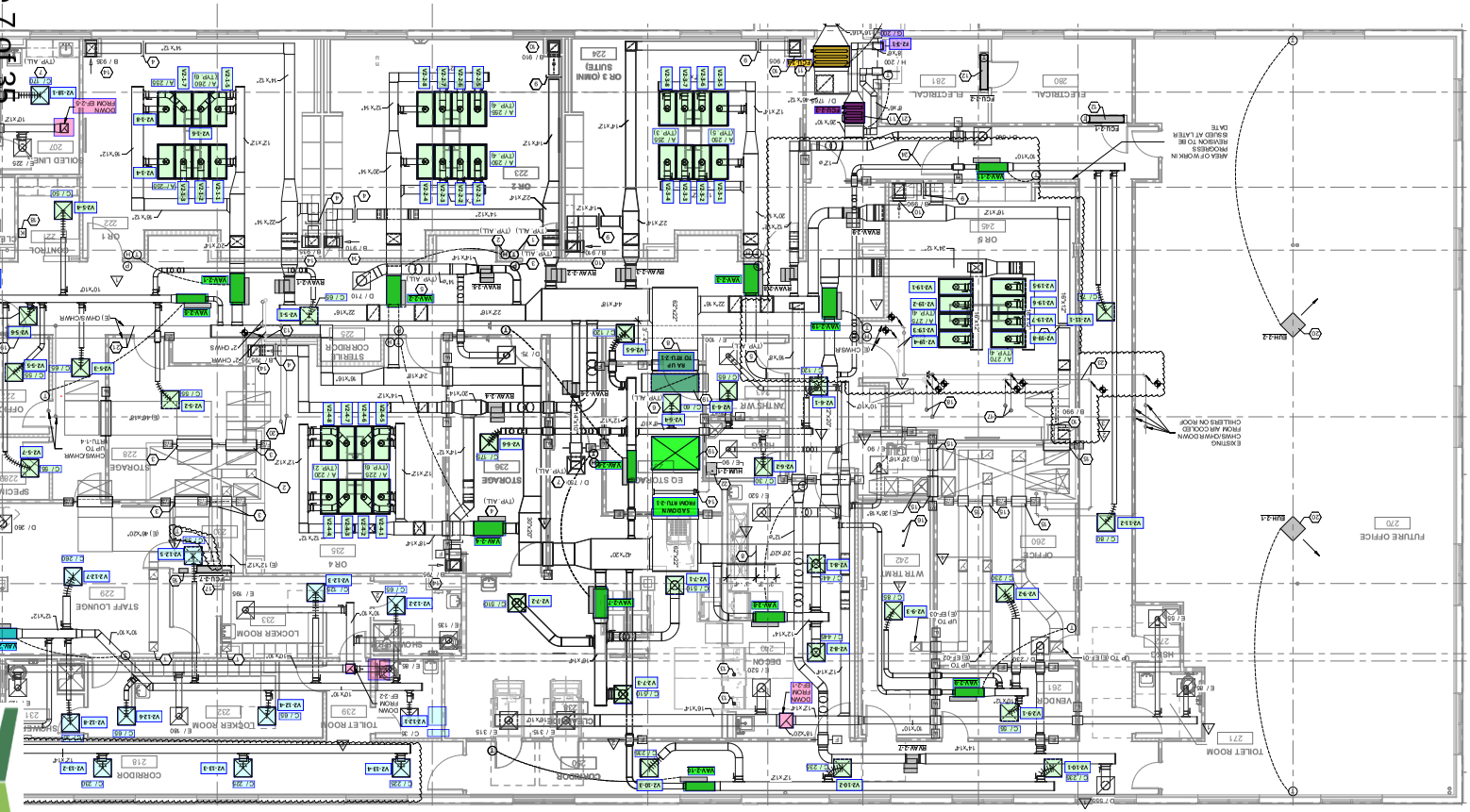
Each of the RTUs was measured at their terminal devices utilizing a flow hood. The VAVs were calibrated by creating a factor. The sum of the flow through each VAV is the total flow for the corresponding RTU. Each terminal diffuser was balanced to within +/-10% of the engineer's design volume utilizing the provided hand damper located at the takeoff of the main & branch trunk line(s). Any equipment that fell outside of this tolerance is noted throughout the report.

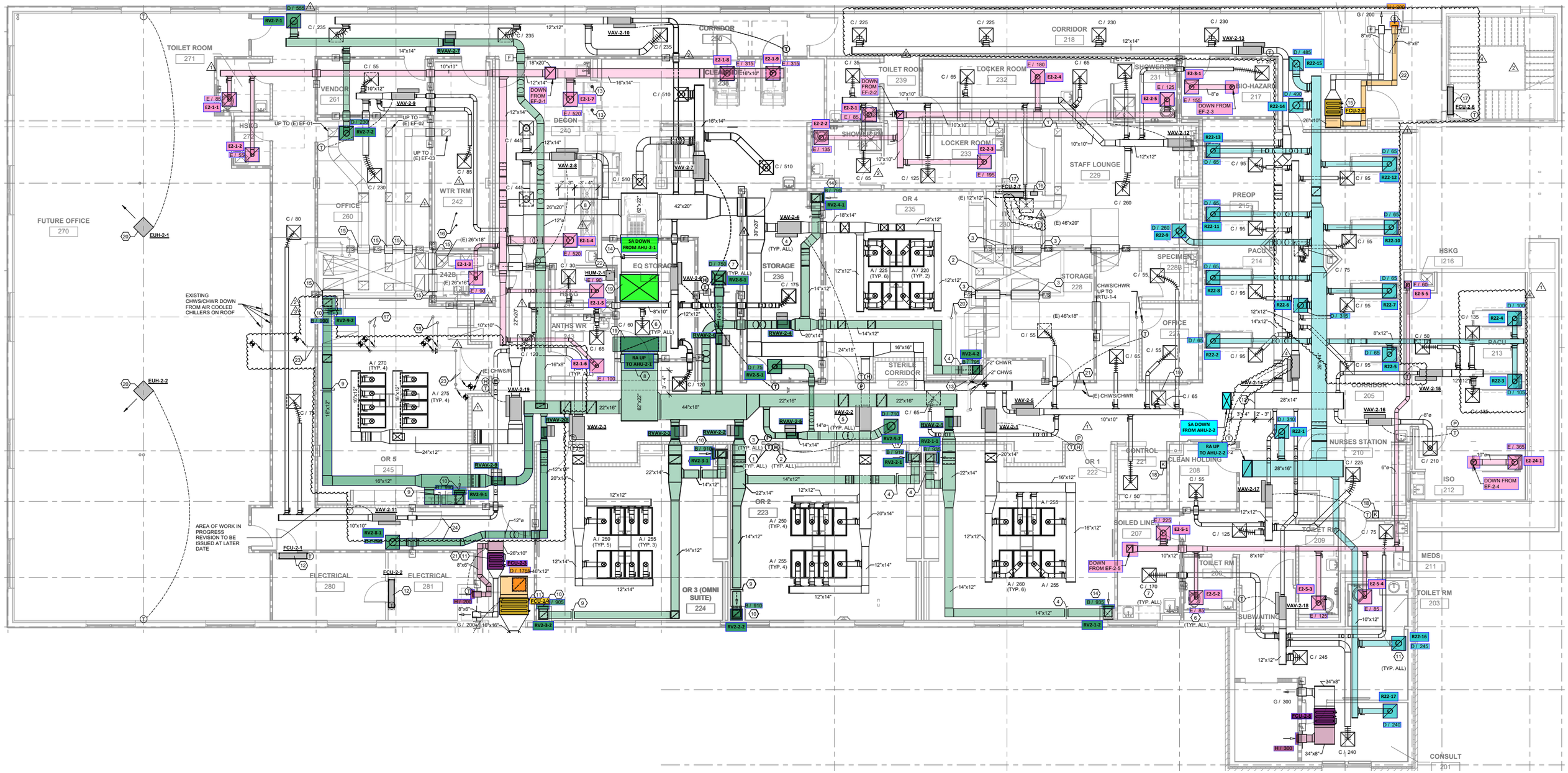
General Exhaust Fans

The general exhaust fans were measured by reading each air device with a flow hood. The total airflow for each fan is equivalent to the sum of these readings. Fan speed was then adjusted so that the airflow was within +/-10% of the design. Each terminal device was balanced to within +/-10% of the design volume using the installed volume dampers. Any equipment that fell outside of this tolerance is noted throughout the report.

Final Building Tests

After completing the test and balance, the ORs were all noted as being positively pressurized. All areas of the building are comfortable and performing as intended.





National TAB

Project: Legent Hospital (Tomball, TX)

System/Unit: AHU-DUAL FAN

Comfort. Under control.

Asset: RTU-2-1 AREA:222

UNIT DATA - SUPPLY		
	Design	**Actual**
Manufacturer	NA	AAON
Model Number	NA	RNA-070-D-0-3-EAB0B-00000
Serial Number	-	202301-BNCY22125
No. Pre-Filters / Size (1)	-	24 / 12x24x2

MOTOR DATA - SUPPLY		
	Design	**Actual**
Motor MFG / Frame	-	BALDOR / 254T
Horsepower / RPM	-	15 (x2) / 1765
Rated Volts / Phase	-	460 / 3
Rated Amperage / SF	-	18.0

DRIVE DATA - SUPPLY		
	Design	**Actual**

TEST DATA - SUPPLY		
	Design	**Actual**
Total CFM	14760	13892
OA CFM	2500	2459
Fan RPM	1733	1883
VFD Speed	-	64.0 Hz
RL Voltage	460	492/491/491
RL Amperage	18.0	13.2 // 14.0
Motor B.H.P.	9.61	11.0 // 11.7

PERFORMANCE DATA - SUPPLY		
	Design	**Actual**
Static Pressure Stpt	-	1.25"
Suction S.P.	-	-1.44"
Discharge S.P.	-	1.20"
Total S.P.	-	2.64"
DX Coil P.D.	-	0.46"
Final Filters P.D.	-	0.46"
Total ESP	3.50	2.18"

UNIT DATA - EXHAUST/RETURN		
	Design	**Actual**
Manufacturer	AAON	AAON
Model Number	-	RNA-070-D-0-3-EAB0B-00000
Serial Number	-	202301-BNCY22125

MOTOR DATA - EXHAUST/RETURN		
	Design	**Actual**
Motor MFG / FRAME	-	BALDOR / 213T
Horsepower / RPM	-	3 (x2) / 1165
Rated Volts / Phase	-	460 / 3
Rated Amperage / SF	-	4.5

DRIVE DATA - EXHAUST/RETURN		
	Design	**Actual**

TEST DATA - EXHAUST/RETURN		
	Design	**Actual**
Total CFM	12260	11433
Fan RPM	1166	1165
VFD Speed	-	60.0 Hz
RL Voltage	460	491/491/493
RL Amperage	4.5	3.9 // 3.9
Motor B.H.P.	1.71	2.6 // 2.6

PERFORMANCE DATA - EXHAUST/RETURN		
	Design	**Actual**
Suction S.P.	-	1.03"
Discharge S.P.	-	0.98"
Total S.P.	1.05	2.01"

Completed By: Wesley John

Notes:

VAV - Single Duct

RTU-2-1/222

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)**
RVAV-2-1	NAILOR	D3001	RVAV	14	1870	1865	1870	1865	-	-	1.364
RVAV-2-2	NAILOR	D3001	RVAV	14	1820	1826	1820	1826	-	-	1.104
RVAV-2-3	NAILOR	D3001	RVAV	14	1815	1810	1815	1810	-	-	1.451
RVAV-2-4	NAILOR	D3001	RVAV	14	1590	1584	1590	1584	-	-	1.303
RVAV-2-5	NAILOR	D3001	RVAV	10	785	728	785	728	-	-	1.230
RVAV-2-6	NAILOR	D3001	RVAV	10	750	754	750	754	-	-	1.726
RVAV-2-7	NAILOR	D3001	RVAV	10	790	783	790	783	-	-	1.426
RVAV-2-8	NAILOR	D3001	RVAV	10	500	497	500	497	-	-	0.720
RVAV-2-9	NAILOR	D3001	RVAV	14	1980	1996	440	448	-	-	1.350
VAV-2-1	NAILOR	D30RE	VAV	14	2070	2087	2070	2087	2070	2112	1.089
VAV-2-2	NAILOR	D30RE	VAV	14	2020	2023	2020	2023	2020	2022	0.900
VAV-2-3	NAILOR	D30RE	VAV	14	2015	2018	2015	2018	2015	1985	1.143
VAV-2-4	NAILOR	D30RE	VAV	14	1790	1805	1790	1805	1790	1760	1.223
VAV-2-5	NAILOR	D30RE	VAV	8	410	409	325	329	325	329	1.236
VAV-2-6	NAILOR	D30RE	VAV	8	570	560	525	528	525	526	0.976
VAV-2-7	NAILOR	D30RE	VAV	14	1530	1514	1530	1514	1170	1172	1.296
VAV-2-8	NAILOR	D30RE	VAV	10	890	892	890	892	710	714	1.030
VAV-2-9	NAILOR	D30RE	VAV	6	370	375	195	192	195	197	0.943
VAV-2-10	NAILOR	D30RE	VAV	10	705	693	140	148	400	385	1.217
VAV-2-11	NAILOR	D30RE	VAV	6	210	211	210	211	210	214	1.023
VAV-2-19	NAILOR	D30RE	VAV	14	2180	2136	440	452	800	782	0.908

Diffuser Supply (GRD)

VAV-2-1/222

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
V2-1-1	222	A	10	260	222	258	99.2
V2-1-2	222	A	10	260	234	264	101.5
V2-1-2	222	A	10	260	230	268	103.1
V2-1-4	222	A	10	255	217	263	103.1
V2-1-5	222	A	10	260	219	253	97.3
V2-1-6	222	A	10	260	248	268	103.1
V2-1-7	222	A	10	260	240	259	99.6
V2-1-8	222	A	10	255	237	254	99.6

VAV-2-10/250

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
V2-10-1	250	C	10	235	258	234	99.6
V2-10-2	250	C	10	235	255	225	95.7
V2-10-2	250	C	10	235	300	234	99.6

VAV-2-11/HALL

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
V2-11-1	HALL	C	6	105	109	106	101.0
V2-11-2	HALL	C	6	105	109	105	100.0

VAV-2-19/245

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
V2-19-1	245	A	10	275	212	281	102.2
V2-19-2	245	A	10	275	224	289	105.1
V2-19-3	245	A	10	275	253	261	94.9
V2-19-4	245	A	10	275	240	274	99.6
V2-19-5	245	A	10	270	257	250	92.6
V2-19-6	245	A	10	270	264	258	95.6
V2-19-7	245	A	10	270	267	254	94.1
V2-19-8	245	A	10	270	248	269	99.6

VAV-2-3/224

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
V2-2-1	223	A	10	250	215	239	95.6
V2-2-2	223	A	10	250	232	256	102.4
V2-2-2	223	A	10	250	198	244	97.6
V2-2-4	223	A	10	250	267	238	95.2
V2-2-5	223	A	10	255	241	267	104.7
V2-2-6	223	A	10	255	240	271	106.3
V2-2-7	223	A	10	255	231	253	99.2
V2-2-8	223	A	10	255	247	250	98.0

VAV-2-2/224

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
V2-3-1	224	A	10	250	228	264	105.6
V2-3-2	224	A	10	250	234	260	104.0
V2-3-2	224	A	10	250	240	257	102.8
V2-3-4	224	A	10	250	231	258	103.2
V2-3-5	224	A	10	250	252	248	99.2
V2-3-6	224	A	10	255	230	242	94.9
V2-3-7	224	A	10	255	216	253	99.2
V2-3-8	224	A	10	255	220	241	94.5

VAV-2-4/235

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
V2-4-1	235	A	10	225	259	219	97.3
V2-4-2	235	A	10	225	249	218	96.9
V2-4-2	235	A	10	225	242	211	93.8
V2-4-4	235	A	10	220	238	217	98.6
V2-4-5	235	A	10	225	219	227	100.9
V2-4-6	235	A	10	225	237	242	107.6
V2-4-7	235	A	10	225	240	243	108.0
V2-4-8	235	A	10	220	251	228	103.6

VAV-2-5/228B

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
V2-5-1	225	C	6	65	64	67	103.1
V2-5-2	228	C	6	55	69	58	105.5
V2-5-2	HALL	C	6	65	61	62	95.4
V2-5-4	221	C	6	50	70	52	104.0
V2-5-5	227	C	6	55	81	51	92.7
V2-5-6	HALL	C	65	65	79	64	98.5
V2-5-7	228B	C	6	55	63	55	100.0

VAV-2-6/236

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
V2-6-1	HALL	C	8	120	121	112	93.3
V2-6-2	243	C	6	30	50	32	106.7
V2-6-2	244	C	6	65	40	62	95.4
V2-6-4	237	C	6	60	57	62	103.3
V2-6-5	HALL	C	8	120	117	124	103.3
V2-6-6	236	C	8	175	115	168	96.0

VAV-2-7/238

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
V2-7-1	238	C	10	510	394	502	98.4
V2-7-2	238	C	10	510	350	518	101.6
V2-7-2	238	C	10	510	440	494	96.9

VAV-2-8/240

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
V2-8-1	240	C	10	445	500	443	99.6
V2-8-2	240	C	10	445	408	449	100.9

VAV-2-9/260

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
V2-9-1	261	C	6	55	54	58	105.5
V2-9-2	242	C	6	85	42	83	97.6
V2-9-2	260	C	10	230	183	234	101.7

Diffuser Ret/Exh (GRD)

RVAV-2-1/222

Asset						
Asset Name	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
RV2-1-1	B	16X24	935	799	917	98.1
RV2-1-2	B	16X24	935	1021	948	101.4

RVAV-2-2/224

Asset						
Asset Name	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
RV2-2-1	B	16X24	910	947	929	102.1
RV2-2-2	B	16X24	910	1201	897	98.6

RVAV-2-3/235

Asset						
Asset Name	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
RV2-3-1	B	16X24	910	1704	919	101.0
RV2-3-2	B	16X24	905	1292	891	98.5

RVAV-2-4/225

Asset						
Asset Name	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
RV2-4-1	B	16X24	795	588	803	101.0
RV2-4-2	B	16X24	795	781	781	98.2

RVAV-2-5/225

Asset						
Asset Name	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
RV2-5-1	D	6	75	33	64	85.3
RV2-5-2	D	14	710	683	664	93.5

RVAV-2-6/HALL

Asset						
Asset Name	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
RV2-6-1	D	10	750	991	754	100.5

RVAV-2-7/250

Asset						
Asset Name	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
RV2-7-1	D	12	555	398	540	97.3
RV2-7-2	D	10	230	278	243	105.7

RVAV-2-8/HALL

Asset						
Asset Name	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
RV2-8-1	D	12	500	458	497	99.4

RVAV-2-9/245

Asset						
Asset Name	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
RV2-9-1	B	16X24	990	1058	972	98.2
RV2-9-2	B	16X24	990	765	1024	103.4

Completed By: Wesley John on

National TAB

Project: Legent Hospital (Tomball, TX)

System/Unit: AHU/RTU

Comfort. Under control.

Asset: RTU-2-2 AREA:201

Unit Data		
	Design	**Actual**
MFG	TEMTROL	TEMTROL
Serial Num	-	N0021998-001
Model Num	CUSTOM	ITF-RDH9
Configuration	HORIZONTAL	HORIZONTAL DISCHARGE
Num OA Filters 1	-	N/A
OA Filter Size 1	-	N/A
Num PreFilter 1	-	4
PreFilter Size 1	-	20x20x2

Motor Data		
	Design	**Actual**
Motor MFG	-	TOSHIBA
Frame	-	182T
Horsepower	-	3
Motor Rpm	-	1760
Phase	-	3
Rated Voltage	-	460
Rated Amperage	-	4.0
Service Factor	-	1.15

Drive Data		
	Design	**Actual**

Test Data		
	Design	**Actual**
SF CFM	4085	4100
SF RPM	3862	1995
RA CFM	2605	2641
OA CFM	1480	1459
RL Voltage	460	489/490/491
RL Amperage	4.0	3.5/3.4/3.5
OA Damper Position	-	72%
Brake Horse Power	3.50	2.60

Performance Data		
	Design	**Actual**
MA Plenum SP	-	0.56"
Fan Suction SP	-	1.23"
Fan Discharge SP	-	1.19"
Total ESP	3.0	1.75"
Fan Total SP	3.72	2.42"

Completed By: Wesley John

Notes:

National TAB

Project:Legent Hospital (Tomball, TX)

AHU/RTU

Comfort. Under control.

VAV - Single Duct

RTU-2-2/201

Asset									
Asset Name	MFG	Model Num	Type	Inlet Size	Design Max CFM	Max CFM	Design Min CFM	Min CFM	Ak (max)
VAV-2-12	NAILOR	D30RE	VAV	10	685	689	500	504	0.938
VAV-2-13	NAILOR	D30RE	VAV	10	910	904	220	227	0.820
VAV-2-14	NAILOR	D30RE	VAV	10	835	831	735	730	1.167
VAV-2-15	NAILOR	D30RE	VAV	6	320	317	250	256	0.538
VAV-2-16	NAILOR	D30RE	VAV	6	210	212	210	212	1.066
VAV-2-17	NAILOR	D30RE	VAV	8	405	409	250	254	1.023
VAV-2-18	NAILOR	D30RE	VAV	10	730	738	420	417	1.017

Diffuser Ret/Exh (GRD)

RTU-2-2/201

Asset								
Asset Name	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design	AK	CFM(2)
R22-1	D		310	411	302	97.4		
R22-2	D		65	144	69	106.2		
R22-3	D		105	200	114	108.6		
R22-4	D		100	93	107	107.0		
R22-5	D		65	106	67	103.1		
R22-6	D		315	187	342	108.6		
R22-7	D		65	104	68	104.6		
R22-8	D		65	124	67	103.1		
R22-9	D		260	296	281	108.1		
R22-10	D		65	90	70	107.7		
R22-11	D		65	113	66	101.5		
R22-12	D		65	84	61	93.8		
R22-13	D		65	92	71	109.2		
R22-14	D		490	222	491	100.2		
R22-15	D		485	261	509	104.9		
R22-16	D		245	403	261	106.5		
R22-17	D		240				1.0	

Diffuser Supply (GRD)

VAV-2-12/217

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
V2-12-1	239	C	6	35	34	36	102.9
V2-12-2	234	C	6	65	70	71	109.2
V2-12-3	233	C	8	125	129	119	95.2
V2-12-4	232	C	6	130	73	124	95.4
V2-12-7	229	C	10	260	214	269	103.5
V2-12-8	231	C	6	35	73	33	94.3
V2-12-9	217	C	6	35	59	37	105.7

VAV-2-13/218

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
V2-13-1	218	C	10	225	198	220	97.8
V2-13-2	218	C	10	225	196	217	96.4
V2-13-2	218	C	10	230	162	237	103.0
V2-13-4	218	C	10	230	168	230	100.0

VAV-2-14/214

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
V2-14-1	215	C	6	95	97	90	94.7
V2-14-2	215	C	6	95	105	99	104.2
V2-14-3	215	C	6	95	115	92	96.8
V2-14-4	215	C	6	95	101	96	101.1
V2-14-5	214	C	6	95	127	90	94.7
V2-14-6	215	C	6	95	127	89	93.7
V2-14-7	215	C	6	95	115	97	102.1
V2-14-8	215	C	6	95	108	98	103.2
V2-14-9	215	C	6	75	96	80	106.7

VAV-2-15/213

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
V2-15-1	213	C	6	50	32	53	106.0
V2-15-2	213	C	8	135	61	130	96.3
V2-15-3	213	C	8	135	57	134	99.3

VAV-2-16/212

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
V2-16-1	212	C	10	210	225	212	101.0

VAV-2-17/210

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
V2-17-1	208	C	6	55	34	58	105.5
V2-17-2	HALL	C	8	125	153	132	105.6
V2-17-2	210	C	10	225	217	219	97.3

VAV-2-18/201

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
V2-18-1	207	C	8	170	138	173	101.8
V2-18-2	201	C	10	245	278	242	98.8
V2-18-2	200	C	10	240	263	249	103.8
V2-18-4	211	C	6	75	56	74	98.7

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National TAB

Project: Legent Hospital (Tomball, TX)

System/Unit: Fan Coil

Comfort. Under control.

Asset: FCU-2-3 AREA:ELEV MACH RM

Unit Data		
	Design	**Actual**
MFG	NA	LG
Model Num	NA	LD097HV4
Serial Num	-	NL
Configuration	HORIZONTAL	HORIZONTAL

Motor Data		
	Design	**Actual**
Horsepower	-	NL
Phase	1	1
Voltage (rated)	208	208
Amperage (rated)	-	0.40

Test Data		
	Design	**Actual**
SFAN CFM	200	187
Motor Speed SetPt	-	HIGH
RL Voltage	-	212
RL Amperage	-	0.13
RA CFM	200	187
OA CFM	0	0

Performance Data		
	Design	**Actual**
Suction ESP	-	0.01
Discharge ESP	-	0.07
Total ESP	0.1	0.08

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Notes:

National TAB

Project:Legent Hospital (Tomball, TX)

Fan Coil

Comfort. Under control.

Diffuser Supply (GRD)

FCU-2-3/ELEV MACH RM

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
F2-3-1	ELEV MACH RM	G	8X6	200	187	187	93.5

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National TAB

Project: Legent Hospital (Tomball, TX)

System/Unit: Fan Coil

Comfort. Under control.

Asset: FCU-2-4 AREA:STAIR ST1

Unit Data		
	Design	**Actual**
MFG	NA	LG
Model Num	NA	LHN488HHV
Serial Num	-	NL
Configuration	HORIZONTAL	HORIZONTAL

Motor Data		
	Design	**Actual**
Horsepower	-	NL
Phase	1	1
Voltage (rated)	208	208
Amperage (rated)	-	1.3

Test Data		
	Design	**Actual**
SFAN CFM	1765	1315
Motor Speed SetPt	-	HIGH
RL Voltage	-	211
RL Amperage	-	1.1
RA CFM	1765	1315
OA CFM	0	0

Performance Data		
	Design	**Actual**
Suction ESP	-	0.02
Discharge ESP	-	0.20
Total ESP	0.24	0.22

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Notes:

National TAB

Project:Legent Hospital (Tomball, TX)

Fan Coil

Comfort. Under control.

Diffuser Supply (GRD)

FCU-2-4/STAIR ST1

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
F2-4-1	STAIR ST1	EX		885	1315	1315	148.6
F2-4-2	STAIR ST1	EX		880	0	0	0.0

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National TAB

Project: Legent Hospital (Tomball, TX)

System/Unit: Fan Coil

Comfort. Under control.

Asset: FCU-2-5 AREA:ELEV MACH RM

Unit Data		
	Design	**Actual**
MFG	NA	LG
Model Num	NA	LD097HV4
Serial Num	-	NL
Configuration	HORIZONTAL	HORIZONTAL

Motor Data		
	Design	**Actual**
Horsepower	-	NL
Phase	1	1
Voltage (rated)	208	208
Amperage (rated)	-	0.4

Test Data		
	Design	**Actual**
SFAN CFM	200	191
Motor Speed SetPt	-	HIGH
RL Voltage	-	210
RL Amperage	-	0.16
RA CFM	200	191
OA CFM	0	0

Performance Data		
	Design	**Actual**
Suction ESP	-	0.13
Discharge ESP	-	0.06
Total ESP	0.1	0.19

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Notes:

National TAB

Project:Legent Hospital (Tomball, TX)

Fan Coil

Comfort. Under control.

Diffuser Supply (GRD)

FCU-2-5/ELEV MACH RM

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
F2-5-1	ELEV MACH RM	G	8X6	200	142	191	95.5

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National TAB

Project: Legent Hospital (Tomball, TX)

System/Unit: Fan Coil

Comfort. Under control.

Asset: FCU-2-8 AREA:ELEVATOR 3

Unit Data		
	Design	**Actual**
MFG	NA	LG
Model Num	NA	LD127HV4
Serial Num	-	NL
Configuration	HORIZONTAL	HORIZONTAL

Motor Data		
	Design	**Actual**
Horsepower	-	NL
Phase	1	1
Voltage (rated)	208	208
Amperage (rated)	-	0.8

Test Data		
	Design	**Actual**
SFAN CFM	300	315
Motor Speed SetPt	-	HIGH
RL Voltage	-	212
RL Amperage	-	0.20
RA CFM	300	315
OA CFM	0	0

Performance Data		
	Design	**Actual**
Suction ESP	-	0.14
Discharge ESP	-	0.02
Total ESP	0.1	0.16

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Notes:

National TAB

Project:Legent Hospital (Tomball, TX)

Fan Coil

Comfort. Under control.

Diffuser Supply (GRD)

FCU-2-8/ELEVATOR 3

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
F2-8-1	ELEVATOR 3	G	8X6	300	315	315	105.0

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National TAB

Project: Legent Hospital (Tomball, TX)

System/Unit: FAN - Exhaust

Comfort. Under control.

Asset: EF-2-1 AREA:238

Unit Data		
	Design	**Actual**
MFG	NA	PENN BARRY
Model Num	NA	FX16Q2GP
Serial Num	-	H22YZ41206
Type	CRE UPBLAST	UPBLAST

Test Data		
	Design	**Actual**
CFM	1910	1933
RL Voltage	-	121
RL Amperage	-	8.1
Total ESP	1.0	0.78

Motor Data		
	Design	**Actual**
Motor MFG	-	MCMILLAN
Frame	-	NL
Horsepower	0.75	649 W
Motor Rpm	1725	1725
Phase	1	1
Voltage (rated)	230	120
Amperage (rated)	-	11.2
Service Factor	-	NL

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Notes:

National TAB

Project:Legent Hospital (Tomball, TX)

FAN - Exhaust

Comfort. Under control.

Diffuser Ret/Exh (GRD)

EF-2-1/238

Asset						
Asset Name	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
E2-1-1	E	6	85	74	78	91.8
E2-1-2	E	6	90	91	91	101.1
E2-1-2	E	6	55	83	51	92.7
E2-1-4	E	12	430	319	409	95.1
E2-1-5	E	6	90	82	97	107.8
E2-1-6	E	6	100	56	94	94.0
E2-1-7	E	12	430	389	471	109.5
E2-1-8	E	10	315	333	345	109.5
E2-1-9	E	10	315	479	297	94.3

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National TAB

Project: Legent Hospital (Tomball, TX)

System/Unit: FAN - Exhaust

Comfort. Under control.

Asset: EF-2-2 AREA:231

Unit Data		
	Design	**Actual**
MFG	NA	PENN BARRY
Model Num	NA	DX13RGP
Serial Num	-	L22AK38236
Type	CRE DNBLAST	DOWNBLAST

Test Data		
	Design	**Actual**
CFM	720	707
RL Voltage	-	121
RL Amperage	-	2.5
Total ESP	0.6	0.49

Motor Data		
	Design	**Actual**
Motor MFG	-	MCMILLAN
Frame	-	NL
Horsepower	0.167	283 W
Motor Rpm	1550	1725
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	5.2
Service Factor	-	NL

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Notes:

National TAB

Project:Legent Hospital (Tomball, TX)

FAN - Exhaust

Comfort. Under control.

Diffuser Ret/Exh (GRD)

EF-2-2/231

Asset								
Asset Name	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**	**AK**	**CFM(2)**
E2-2-1	E	8	85	97	86	101.2		
E2-2-2	E	8	195	205	180	92.3		
E2-2-2	E	8	135	150	138	102.2		
E2-2-4	E	8	180	198	179	99.4		
E2-2-5	E	8	125				1.0	

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National TAB

Project: Legent Hospital (Tomball, TX)

System/Unit: FAN - Exhaust

Comfort. Under control.

Asset: EF-2-3 AREA:217

Unit Data		
	Design	**Actual**
MFG	NA	PENNBARRY
Model Num	NA	F11QGP
Serial Num	-	J22AB47048
Type	CRE UPBLAST	UPBLAST

Test Data		
	Design	**Actual**
CFM	155	148
RL Voltage	-	121
RL Amperage	-	0.37
Total ESP	0.3	0.20"

Motor Data		
	Design	**Actual**
Motor MFG	-	MCMILLAN
Frame	-	NL
Horsepower	0.25	283W
Motor Rpm	1725	1725
Phase	1	1
Voltage (rated)	230	120
Amperage (rated)	-	5.2
Service Factor	-	NL

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Notes:

National TAB

Project:Legent Hospital (Tomball, TX)

FAN - Exhaust

Comfort. Under control.

Diffuser Ret/Exh (GRD)

EF-2-3/217

Asset						
Asset Name	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
E2-3-1	E	8	155	455	148	95.5

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National TAB

Project: Legent Hospital (Tomball, TX)

System/Unit: FAN - Exhaust

Comfort. Under control.

Asset: EF-2-4 AREA:212

Unit Data		
	Design	**Actual**
MFG	NA	PENNBARRY
Model Num	NA	VCR-105 C1A4
Serial Num	-	F22845-001
Type	CENT FUME	CENT FUME

Test Data		
	Design	**Actual**
CFM	365	375
RL Voltage	-	490/488/491
RL Amperage	-	0.26/0.25/0.22
Total ESP	0.47	NA

Motor Data		
	Design	**Actual**
Motor MFG	-	US MOTORS
Frame	-	56
Horsepower	0.25	0.25
Motor Rpm	1200	1140
Phase	3	3
Voltage (rated)	460	460
Amperage (rated)	-	0.76
Service Factor	-	1.15

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Notes:

National TAB

Project:Legent Hospital (Tomball, TX)

FAN - Exhaust

Comfort. Under control.

Diffuser Ret/Exh (GRD)

EF-2-4/212

Asset						
Asset Name	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
E2-4-1	E	10	365	113	375	102.7

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National TAB

Project: Legent Hospital (Tomball, TX)

System/Unit: FAN - Exhaust

Comfort. Under control.

Asset: EF-2-5 AREA:216

Unit Data		
	Design	**Actual**
MFG	NA	PENNBARRY
Model Num	NA	DX11QGP
Serial Num	-	H22YZ41205
Type	CRE DNBLAST	UPBLAST

Test Data		
	Design	**Actual**
CFM	580	577
RL Voltage	-	121
RL Amperage	-	2.7
Total ESP	0.5	0.27"

Motor Data		
	Design	**Actual**
Motor MFG	-	GENTEQ
Frame	-	NL
Horsepower	0.25	NL
Motor Rpm	1725	1800
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	6.5
Service Factor	-	NL

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Notes:

National TAB

Project:Legent Hospital (Tomball, TX)

FAN - Exhaust

Comfort. Under control.

Diffuser Ret/Exh (GRD)

EF-2-5/216

Asset						
Asset Name	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
E2-5-1	E	10	225	292	214	95.1
E2-5-2	E	8	85	71	86	101.2
E2-5-2	E	6	125	121	132	105.6
E2-5-4	E	6	85	47	79	92.9
E2-5-5	F	6	60	43	66	110.0

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Circuit Setter

CHW CS/

Asset						
Asset Name	**Size**	**Type**	**Design GPM**	**Delta P**	**Final GPM**	**% to Design**
CS-1	2"	CIRCUIT SETTER	39.3	12.80'	39.6	100.8