Report By:

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

Report: PRELIMINARY REPORT

Function: Test, Adjust, & Balance

Date: 04/24/2024

PROJECT

DGS Ishi Conservation Camp (Paynes Creek, CA)

30500 Plum Creek Rd

Paynes Creek, CA 95811

Client

B&M Builders, Inc.

11330 Sunrise Park Drive

Suite C

Rancho Cordova, CA 95742

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Project: DGS Ishi Conservation Camp (Paynes Creek, CA)

Table Of Contents

Issue List

- EXHAUST FAN 4 UNABLE TO REACH DESIGN AIRFLOW

DGS Ishi Conservation Camp (Paynes Creek, CA)

Project Issue Information

Issue Name :	EXHAUST FAN 4 UNABLE TO REACH DESIGN AIRFLOW		
Description :	EF-4 is unable to meet design airflow. the unit is currently running at high speed at 169 cfm out of 300 cfm design. all dampers have been inspected and are 100% open, backdraft damper is operational, and no visible damage or leaks have been found. recommended to increase the size of EF-4 to compensate for the long duct run.		
Created By :	National TAB	**Assigned To :**	National TAB - Zack Eismin
Status :	Open		
Priority :	Medium	**Asset Tag :**	
Originated Date :	04/24/2024 - Zack Eismin - National TAB		

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Project: DGS Ishi Conservation Camp (Paynes Creek, CA)

System/Unit: AHU/RTU

Asset: AC-1 AREA:DINING

Unit Data		
	Design	**Actual**
MFG	NA	CARRIER
Serial Num	-	3423P36807
Model Num	NA	48FCTM12A3A5A0A9C0
Type	-	RTU
Configuration	HORIZONTAL	HORIZONTAL
Num PreFilter 1	-	1
PreFilter Size 1	-	29.5X20.5
Num Final Filter 1	-	4
Final Filter Size 1	-	20X20X2

Motor Data		
	Design	**Actual**
Motor MFG	-	NL
Frame	-	NL
Horsepower	3	NL
Motor Rpm	-	NL
Phase	3	3
Rated Voltage	208	208
Rated Amperage	12.6	12.6
Service Factor	-	NL

Test Data		
	Design	**Actual**
SF CFM	4000	4160
SF RPM	1906	1567
RA CFM	2449	2589
OA CFM	1551	1571
RL Voltage	208	208/208/209
RL Amperage	12.6	3.3/3.4/3.3
VFD Max SetPt	-	N/A
SF Motor Freq(HZ)	-	N/A
SF System SetPt	-	5.6 VDC
RA Damper Position	-	65%
OA Damper Position	-	35%
Brake Horse Power	2.41	N/A

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.47"
Fan Suction SP	-	-0.75"
Total ESP	1.0	0.53"
Fan Total SP	1.22	0.87"

Completed By: Zack Eismin on 04/24/2024

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Project:DGS Ishi Conservation Camp (Paynes Creek, CA)

AHU/RTU

Diffuser Supply (GRD)

AC-1/DINING

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1-1	DINING	E	16X16	500	517	510	102.0
1-2	DINING	E	16X16	500	608	522	104.4
1-3	DINING	E	16X16	500	728	539	107.8
1-4	DINING	E	16X16	500	647	521	104.2
1-5	DINING	E	16X16	500	795	548	109.6
1-6	DINING	E	16X16	500	725	538	107.6
1-7	DINING	E	16X16	500	727	506	101.2
1-8	DINING	E	16X16	500	594	476	95.2
Total				4000	5341	4160	104%

Diffuser Ret/Exh (GRD)

AC-1/DINING

Asset								
Asset Name	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
R1-1	I	26X26	1225	1	1297	1297	1297	105.9
R1-2	I	26X26	1225	1	1292	1292	1292	105.5
Total			2450		2589	2589	2589	105.67%

Completed By: Zack Eismin on 04/24/2024

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Project: DGS Ishi Conservation Camp (Paynes Creek, CA)

System/Unit: AHU/RTU

Asset: AC-2 AREA:102

Unit Data		
	Design	**Actual**
MFG	NA	CARRIER
Serial Num	-	3623P27694
Model Num	NA	48FCTM24AJA5A0A9C0
Type	-	RTU
Configuration	HORIZONTAL	HORIZONTAL
Num PreFilter 1	-	3
PreFilter Size 1	-	23X14.5
Num Final Filter 1	-	6
Final Filter Size 1	-	20X25X4

Motor Data		
	Design	**Actual**
Motor MFG	-	NL
Frame	-	NL
Horsepower	10	NL
Motor Rpm	-	NL
Phase	3	3
Rated Voltage	208	208
Rated Amperage	12.6	12.6
Service Factor	-	NL

Test Data		
	Design	**Actual**
SF CFM	8000	7424
SF RPM	2065	2173
RA CFM	6130	5569
OA CFM	1870	1855
RL Voltage	208	208/207/207
RL Amperage	12.6	7.7/7.8/8.0
VFD Max SetPt	-	N/A
SF Motor Freq(HZ)	-	N/A
SF System SetPt	-	8.2 VDC
RA Damper Position	-	75%
OA Damper Position	-	25%
Brake Horse Power	4.97	N/A

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.31"
Fan Suction SP	-	-0.71"
Total ESP	1.0	0.51"
Fan Total SP	-	0.91"

Diffuser Supply (GRD)

AC-2/102

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
2-1	105	E	16X16	500	624	548	109.6
2-2	104	F	20X20	900	830	825	91.7
2-3	102	F	20X20	900	685	816	90.7
2-4	102	F	20X20	900	851	819	91.0
2-5	102	F	20X20	900	871	863	95.9
2-6	102	E	16X16	700	727	668	95.4
2-7	110	C	9X9	200	175	187	93.5
2-8	102	F	20X20	900	705	821	91.2
2-9	102	F	20X20	900	153	829	92.1
2-10	108	A	6X6	75	302	80	106.7
2-11	103	D	12X12	350	362	368	105.1
2-12	113	E	16X16	700	802	768	109.7
2-13	109	A	6X6	75	320		-
Total				8000	7407	7592	94.9%

Diffuser Ret/Exh (GRD)

AC-2/102

Asset								
Asset Name	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
R2-1	C	9X9	200	1	211	211	211	105.5
R2-2	E	16X16	500	1	463	463	463	92.6
R2-3	E	16X16	700	1	634	634	634	90.6
R2-4	J	30X30	1577	1	1423	1423	1423	90.2
R2-5	J	30X30	1576	1	1417	1417	1417	89.9
R2-6	J	30X30	1577	1	1421	1421	1421	90.1
Total			6130		5569	5569	5569	90.85%

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Project: DGS Ishi Conservation Camp (Paynes Creek, CA)

System/Unit: FAN - Exhaust

Asset: EF-1 AREA:HOOD 71A

Unit Data		
	Design	**Actual**
MFG	NA	GREENHECK
Model Num	NA	CUBE-240HP-50-1-34-6
Serial Num	-	21028180
Type	CRE UPBLAST	CRE UPBLAST

Motor Data		
	Design	**Actual**
Motor MFG	-	BALDOR RELIANCE
Frame	-	184T
Horsepower	5	5
Motor Rpm	1725	1750
Phase	3	3
Voltage (rated)	208	208
Amperage (rated)	-	14.2
Service Factor	-	1.15

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	2VP50
Motor Bore Size	-	1-1/8"
Motor Sheave SetPt	-	1 TURN OPEN
Fan Sheave Size	-	SDS
Fan Sheave Bore	-	1"
Belt CL Distance	-	7.5"
Num of Belts	-	2
Belt Size	-	A30

Test Data		
	Design	**Actual**
CFM	5612	5439
Fan RPM	1221	1258
RL Voltage	-	230/231/230
RL Amperage	16.7	10.2/10.0/10.1
Suction ESP	-	-1.53"
Discharge ESP	-	ATM
Total ESP	2.0	1.53"
Brake Horse Power	-	3.57

Completed By: Zack Eismin on 04/23/2024

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Project:DGS Ishi Conservation Camp (Paynes Creek, CA)

FAN - Exhaust

Diffuser Ret/Exh (GRD)

EF-1/HOOD 71A

Asset								
Asset Name	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
E1-1	DUCT	15X12	2154	1	2202	2202	2202	102.2
E1-2	DUCT	24X12	3458	1	3237	3237	3237	93.6
Total			5612		5439	5439	5439	96.92%

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Project: DGS Ishi Conservation Camp (Paynes Creek, CA)

System/Unit: FAN - Exhaust

Asset: EF-2 AREA:HOOD 52B

Unit Data		
	Design	**Actual**
MFG	NA	GREENHECK
Model Num	NA	CUBE-220HP-30-1-34-G
Serial Num	-	21028238
Type	CRE UPBLAST	CRE UPBLAST

Motor Data		
	Design	**Actual**
Motor MFG	-	BALDOR RELIANCE
Frame	-	182T
Horsepower	3	3
Motor Rpm	1725	1765
Phase	3	3
Voltage (rated)	208	230
Amperage (rated)	-	8.4
Service Factor	-	1.15

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	1VP56
Motor Bore Size	-	1-1/8"
Motor Sheave SetPt	-	1 TURN OPEN
Fan Sheave Size	-	8"
Fan Sheave Bore	-	1"
Belt CL Distance	-	7.5"
Num of Belts	-	1
Belt Size	-	A33

Test Data		
	Design	**Actual**
CFM	4423	4193
Fan RPM	1154	1186
RL Voltage	-	230/230/231
RL Amperage	10.6	7.9/8.0/7.9
Suction ESP	-	-1.44"
Discharge ESP	-	ATM
Total ESP	2.0	1.44"
Brake Horse Power	-	2.8

Completed By: Zack Eismin on 04/23/2024

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Project:DGS Ishi Conservation Camp (Paynes Creek, CA)

FAN - Exhaust

Diffuser Ret/Exh (GRD)

EF-2/HOOD 52B

Asset								
Asset Name	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
E2-1	DUCT	12X8	1120	1	1023	1023	1023	91.3
E2-2	DUCT	23X12	3303	1	3173	3173	3173	96.1
Total			4423		4196	4196	4196	94.87%

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Project: DGS Ishi Conservation Camp (Paynes Creek, CA)

System/Unit: FAN - Exhaust

Asset: EF-3 AREA:ROOF - DISHWASHER

Unit Data		
	Design	**Actual**
MFG	NA	GREENHECK
Model Num	NA	CUE-100HP-5-VG-1-19-6
Serial Num	-	21028252
Type	CRE UPBLAST	CRE UPBLAST

Test Data		
	Design	**Actual**
CFM	600	652
RL Voltage	-	115
RL Amperage	-	5.48
Total ESP	1.0	1.1"

Motor Data		
	Design	**Actual**
Motor MFG	-	VARI-GREEN
Frame	-	NL
Horsepower	0.5	0.5
Motor Rpm	2500	2500
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	6.6
Service Factor	-	NL

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Project: DGS Ishi Conservation Camp (Paynes Creek, CA)

System/Unit: FAN - Exhaust

Asset: EF-4 AREA:109

Unit Data		
	Design	**Actual**
MFG	NA	GREENHECK
Model Num	NA	CSP-A510-QD
Serial Num	-	21510107
Type	INLINE	INLINE

Test Data		
	Design	**Actual**
CFM	300	169
RL Voltage	-	115
RL Amperage	-	3.3
Total ESP	0.517	0.55"

Motor Data		
	Design	**Actual**
Motor MFG	-	NL
Frame	-	NL
Horsepower	179W	NL
Motor Rpm	1070	1070
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	3.3
Service Factor	-	NL

Completed By: Zack Eismin on 04/24/2024

Notes:
UNIT IS RUNNING AT FULL SPEED AND IS AT 169 CFM OUT OF 300 CFM DESIGN.

Written By: Zack Eismin on 04/24/2024

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Project:DGS Ishi Conservation Camp (Paynes Creek, CA)

FAN - Exhaust

Diffuser Ret/Exh (GRD)

EF-4/109

Asset								
Asset Name	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
E4-1	B	8X8	100	1	55	55	55	55.0
E4-2	B	8X8	100	1	55	55	55	55.0
E4-3	B	8X8	100	1	59	59	59	59.0
Total			300		169	169	169	56.33%

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Project: DGS Ishi Conservation Camp (Paynes Creek, CA)

System/Unit: FAN - Exhaust

Asset: EF-5 AREA:104

Unit Data		
	Design	**Actual**
MFG	NA	GREENHECK
Model Num	NA	CSP-A510-QD
Serial Num	-	21510101
Type	INLINE	INLINE

Test Data		
	Design	**Actual**
CFM	300	306
RL Voltage	-	115
RL Amperage	-	3.3
Total ESP	0.517	0.41"

Motor Data		
	Design	**Actual**
Motor MFG	-	NL
Frame	-	NL
Horsepower	179W	NL
Motor Rpm	1070	1070
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	3.3
Service Factor	-	NL

Completed By: Zack Eismin on 04/23/2024

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Project:DGS Ishi Conservation Camp (Paynes Creek, CA)

FAN - Exhaust

Diffuser Ret/Exh (GRD)

EF-5/104

Asset								
Asset Name	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
E5-1	D	12X12	300	1	306	306	306	102.0
Total			300		306	306	306	102%

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Project: DGS Ishi Conservation Camp (Paynes Creek, CA)

System/Unit: FAN - Exhaust

Asset: EF-6 AREA:106A

Unit Data		
	Design	**Actual**
MFG	NA	GREENHECK
Model Num	NA	CSP-A410-QD
Serial Num	-	21483637
Type	INLINE	INLINE

Test Data		
	Design	**Actual**
CFM	340	297
RL Voltage	-	115
RL Amperage	-	1.5
Total ESP	0.321	0.21"

Motor Data		
	Design	**Actual**
Motor MFG	-	NL
Frame	-	NL
Horsepower	122W	NL
Motor Rpm	1000	1000
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	1.7
Service Factor	-	NL

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Project: DGS Ishi Conservation Camp (Paynes Creek, CA)

System/Unit: FAN - Supply

Asset: MUA-1 AREA:102 - HOOD 71A

Unit Data		
	Design	**Actual**
MFG	NA	GREENHECK
Model Num	NA	IGX-P127-H32-MF-S
Serial Num	-	21583750
Type	GAS FIRED	GAS FIRED
Configuration	HORIZONTAL	HORIZONTAL
Num Filters Size 1	-	2/6
Filter Size 1	-	20X20X2/16X20X2

Test Data		
	Design	**Actual**
CFM	7914	7923
SF RPM	1215	1195
RL Voltage	-	228/228/228
RL Amperage	-	22.51/22.41/22.5
Suction ESP	-	ATM
Discharge ESP	-	NA
Total ESP	1.5	NA
Brake Horse Power	-	7.5

Motor Data		
	Design	**Actual**
Motor MFG	-	BALDOR RELIANCE
Frame	-	254T
Horsepower	7.5	7.5
Motor Rpm	1180	1180
Phase	3	3
Voltage (rated)	208	230/460
Amperage (rated)	-	22.8/11.4
Service Factor	-	1.15

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Project:DGS Ishi Conservation Camp (Paynes Creek, CA)

FAN - Supply

Diffuser Supply (GRD)

MUA-1/102 - HOOD 71A

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
M1-1	102 - HOOD 52A	DUCT	12X10	896	903	903	100.8
M1-2	102 - HOOD 52B	DUCT	28X12	2536	2549	2549	100.5
M1-3	102 - HOOD 71B	DUCT	20X12	1723	1740	1740	101.0
M1-4	102 - HOOD 71A	DUCT	32X12	2759	2731	2731	99.0
Total				7914	7923	7923	100.11%

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Project: DGS Ishi Conservation Camp (Paynes Creek, CA)

System/Unit: Kitchen Hood Type I

Asset: 52A1 AREA:102

Unit Data		
	Design	**Actual**
MFG	NA	HALTON
Model Num	NA	KVE
Job / Serial Num	-	118163-292
Type	TYPE I CANOPY	TYPE I CANOPY
Hood length	67	67"
Hood Width	63	63"
Supply Plenum Type	-	N/A
Supply Plenum Width	-	N/A
Supply Plenum Length	-	N/A

Test Data Exhaust		
	Design	**Actual**
Filter Type	KSA	KSA
Filter Size 1	20X13	20X13
Filter Qty 1	3	3
CFM	1120	1023

Cooking Equipment		
	Design	**Actual**
Item 1	-	WARMER
Item 2	-	FRYER

Test Data Supply		
	Design	**Actual**
CFM	896	903

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Notes:
TAB PORT EXHAUST SP DESIGN 0.40"
TAB PORT EXHAUST SP ACTUAL 0.37"
TAB PORT SUPPLY SP DESIGN 0.25"
TAB PORT SUPPLY SP ACTUAL

Written By: Zack Eismin on 04/24/2024

National TAB

Project: DGS Ishi Conservation Camp (Paynes Creek, CA)

System/Unit: Kitchen Hood Type I

Asset: 52B1 AREA:102

Unit Data		
	Design	**Actual**
MFG	NA	HALTON
Model Num	NA	KVE
Job / Serial Num	-	118163-346
Type	TYPE I CANOPY	TYPE I CANOPY
Hood length	114	114
Hood Width	63	63
Supply Plenum Type	-	N/A
Supply Plenum Width	-	N/A
Supply Plenum Length	-	N/A

Test Data Exhaust		
	Design	**Actual**
Filter Type	KSA	KSA
Filter Size 1	20X16	20X16
Filter Size 2	11X16	11X16
Filter Qty 1	5	5
Filter Qty 2	1	1
CFM	3303	3173

Cooking Equipment		
	Design	**Actual**
Item 1	-	BOILER
Item 2	-	OVEN

Test Data Supply		
	Design	**Actual**
CFM	2536	2549

Completed By: Zack Eismin on 04/24/2024

Notes:
TAB PORT EXHAUST SP DESIGN 0.40"
TAB PORT EXHAUST SP ACTUAL 0.37"
TAB PORT SUPPLY SP DESIGN 0.25"
TAB PORT SUPPLY SP ACTUAL 0.252"

Written By: Zack Eismin on 04/24/2024

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Project: DGS Ishi Conservation Camp (Paynes Creek, CA)

System/Unit: Kitchen Hood Type I

Asset: 71A1 AREA:102

Unit Data		
	Design	**Actual**
MFG	NA	HALTON
Model Num	NA	KVE
Job / Serial Num	-	118163-406
Type	TYPE I CANOPY	TYPE I CANOPY
Hood length	124	124
Hood Width	59	59

Test Data Exhaust		
	Design	**Actual**
Filter Type	KSA	KSA
Filter Size 1	20X16	20X16
Filter Qty 1	6	6
CFM	3458	3237

Cooking Equipment		
	Design	**Actual**
Item 1	-	FLAT TOP GRILL
Item 2	-	STOVE RANGE
Item 3	-	
Item 4	-	
Item 5	-	

Test Data Supply		
	Design	**Actual**
CFM	2759	2731

Completed By: Zack Eismin on 04/24/2024

Notes:
TAB PORT EXHAUST SP DESIGN 0.47"
TAB PORT EXHAUST SP ACTUAL 0.44"
TAB PORT SUPPLY SP DESIGN 0.25"
TAB PORT SUPPLY SP ACTUAL 0.256"

Written By: Zack Eismin on 04/24/2024

National TAB

Project: DGS Ishi Conservation Camp (Paynes Creek, CA)

System/Unit: Kitchen Hood Type I

Asset: 71B1 AREA:102

Unit Data		
	Design	**Actual**
MFG	NA	HALTON
Model Num	NA	KVE
Job / Serial Num	-	118163-492
Type	TYPE I CANOPY	TYPE I CANOPY
Hood length	82	82"
Hood Width	59	59"
Supply Plenum Type	-	N/A
Supply Plenum Width	-	N/A
Supply Plenum Length	-	N/A

Test Data Exhaust		
	Design	**Actual**
Filter Type	KSA	KSA
Filter Size 1	20X16	20X16
Filter Qty 1	4	4
CFM	2154	2202

Cooking Equipment		
	Design	**Actual**
Item 1	-	WARMER
Item 2	-	OVEN

Test Data Supply		
	Design	**Actual**
CFM	1723	1740

Completed By: Zack Eismin on 04/24/2024