

Report By:

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



Report: CERTIFIED TAB REPORT

Function: Test, Adjust, & Balance

Date: 11/19/2024

Completed By: National TAB

PROJECT

Divert (Turlock, CA)

4407 West Main Street

Turlock, CA 95380

Client

B&M Builders, Inc.

11330 Sunrise Park Drive

Suite C

Rancho Cordova, CA 95742

National TAB

Project: Divert (Turlock, CA)

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National TAB

Project: Divert (Turlock, CA)

System/Unit: AHU/RTU



Asset: RTU-1

AREA: OFFICES

Unit Data		
	Design	Actual
MFG	NA	JOHNSON CONTROLS
Serial Num	-	N2C4238361
Model Num	NA	ZLG12E4C3AB3A224A2
Configuration	-	HORIZONTAL
Num OA Filters 1	-	1
OA Filter Size 1	-	32X9
Num PreFilter 1	-	4
PreFilter Size 1	-	20X20X2

Test Data		
	Design	Actual
SF CFM	4500	4183
SF RPM	-	925
RA CFM	3600	3292
OA CFM	900	891
RL Voltage	460	494/494/494
RL Amperage	-	3.7/3.8/3.7
OA Damper Position	-	20%
Brake Horse Power	-	2.9

Motor Data		
	Design	Actual
Motor MFG	-	BALDOR RELIANCE
Frame	-	184TZ
Horsepower	3.1	5.25
Motor Rpm	-	1750
Phase	3	3
Rated Voltage	460	460
Rated Amperage	-	6.7
Service Factor	-	1.15

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.78"
Fan Suction SP	-	-1.22"
Fan Discharge SP	-	0.65"
Total ESP	1.079	1.43"
Fan Total SP	-	1.87"

Drive Data	
	Actual
Motor Sheave Size	1VP56
Motor Bore Size	7/8"
Motor Sheave SetPt	2 TURNS OPEN
Fan Sheave Size	BK85
Fan Sheave Bore	1"
Belt CL Distance	17"
Num of Belts	1
Belt Size	BX52

Completed By: Zack Eismin on 10/18/2024

Notes:
UNIT PROPORTIONALLY BALANCED TO 4500 CFM PER UNIT SCHEDULE.

Written By: Zack Eismin on 10/17/2024

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Project: Divert (Turlock, CA)

AHU/RTU



Diffuser Supply (GRD)

RTU-1/OFFICES

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1-1	118	CD-1	6	65	122	59	90.8
1-2	120	CD-1	6	75	169	74	98.7
1-3	119	CD-4	12	350	231	321	91.7
1-4	101	CD-1	6	100	241	107	107.0
1-5	102	CD-3	10	325	376	357	109.8
1-6	115	CD-3	10	150	161	163	108.7
1-7	117	CD-2	8	250	278	269	107.6
1-8	HALL	CD-1	6	75	129	82	109.3
1-9	112	CD-1	6	55	126	58	105.5
1-10	116	CD-1	6	65	139	70	107.7
1-11	HALL	CD-1	6	75	130	82	109.3
1-12	105	CD-3	10	250	226	231	92.4
1-13	104	CD-3	10	230	328	214	93.0
1-14	103	CD-4	12	400	451	431	107.8
1-15	103	CD-4	12	400	437	437	109.3
1-16	107	CD-3	10	230	308	211	91.7
1-17	109	CD-4	12	385	335	351	91.2
1-18	109	CD-4	12	385	113	414	107.5
1-19	106	CD-3	10	230	310	252	109.6
Total				4095	4610	4183	102.15%

Diffuser Ret/Exh (GRD)

RTU-1/OFFICES

Asset								
Asset Name	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
R1-1	CR-1	12X12	680	1	711	612	612	90.0
R1-2	CR-1	12X12	680	1	521	619	619	91.0
R1-3	CR-1	10X10	250	1	381	271	271	108.4
R1-4	CR-1	10X10	250	1	371	250	250	100.0
R1-5	CR-1	6X6	90	1	101	97	97	107.8
R1-6	CR-1	12X12	250	1	171	233	233	93.2
R1-7	CR-1	12X12	250	1	175	241	241	96.4
R1-8	CR-1	12X12	375	1	222	341	341	90.9
R1-9	CR-1	12X12	675	1	691	628	628	93.0
Total			3500		3344	3292	3292	94.06%

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Project: Divert (Turlock, CA)

System/Unit: Energy Recovery Unit



Asset: ERV-1

AREA:OFFICE

Unit Data		
	Design	Actual
MFG	NA	PROVENT
Model Num	NA	PEHCPRLTDB46M
Serial Num	-	H23-040-304
Num Exh-Filters 1	-	1
Exh-Filter Size 1	-	15X19
Num Exh-Filters 2	-	N/A
Exh-Filter Size 2	-	N/A
Num OA-Filters 1	-	N/A
OA-Supply Size 1	-	N/A
Num OA-Filters 2	-	N/A
OA-Filter Size 2	-	N/A

Exhaust Fan Test Data		
	Design	Actual
Exh-ERU CFM	1076	1089
Exh-ERU RPM	-	881
Exh-ERU System SetPt	-	1 TURN OPEN
RL Voltage	-	494
RL Amperage	-	2.5
Brake Horse Power	-	1.78

Exhaust Fan Motor Data		
	Design	Actual
Motor MFG	-	BALDOR RELIANCE
Frame	-	56HZ
Horsepower	-	2
Motor Rpm	-	1760
Phase	-	3
Voltage (rated)	-	460
Amperage (rated)	-	2.8
Service Factor	-	1.15

Exhaust Fan Drive Data	
	Actual
Motor Sheave Size	3-3/4"
Motor Bore Size	5/8"
Fan Sheave Size	BK85
Fan Sheave Bore	1"
Belt CL Distance	17"
Num of Belts	1
Belt Size	LINK STYLE

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Project: Divert (Turlock, CA)

System/Unit: FAN - Exhaust



Asset: LEF-1

AREA:

Unit Data		
	Design	Actual
MFG	NA	PENNBARRY
Model Num	NA	VPLUME-090A9
Serial Num	-	G62640-001
Type	PLUME	PLUME

Motor Data		
	Design	Actual
Motor MFG	-	WEG
Frame	-	143/5T
Horsepower	0.75	1.5
Motor Rpm	-	3520
Phase	3	3
Voltage (rated)	460	460
Amperage (rated)	-	1.87
Service Factor	-	1.15

Drive Data	
	Actual
Motor Sheave Size	VL40
Motor Bore Size	7/8"
Motor Sheave SetPt	2 TURNS OPEN
Fan Sheave Size	NA
Fan Sheave Bore	NA
Belt CL Distance	NA
Num of Belts	1
Belt Size	AX44

Test Data		
	Design	Actual
CFM	775	804
Fan RPM	2979	NA
RL Voltage	-	NA
RL Amperage	-	NA
Suction ESP	-	-1.53"
Discharge ESP	-	ATM
Total ESP	2.0	1.53
Brake Horse Power	-	NA

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Project: Divert (Turlock, CA)

FAN - Exhaust



Diffuser Ret/Exh (GRD)

LEF-1/

Asset								
Asset Name	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
L1-1	DUCT	10	125	1	131	131	131	104.8
L1-2	DUCT	10	400	1	411	411	411	102.8
L1-3	DUCT	8X3	50	1	51	51	51	102.0
L1-4	DUCT	10	200	1	211	211	211	105.5
Total			775		804	804	804	103.74%

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Project: Divert (Turlock, CA)

System/Unit: FAN - Exhaust



Asset: TEF-1

AREA:

Unit Data		
	Design	Actual
MFG	NA	PENNBARRY
Model Num	NA	DX13Q
Serial Num	-	G62599-004A
Type	CRE DNBLAST	DOWNBLAST

Motor Data		
	Design	Actual
Motor MFG	-	GENTEQ
Frame	-	NL
Horsepower	-	1/4
Motor Rpm	1725	1725
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	3.8
Service Factor	-	NL

Drive Data	
	Actual
Motor Sheave Size	DD
Motor Bore Size	DD
Motor Sheave SetPt	DD
Fan Sheave Size	DD
Fan Sheave Bore	DD
Belt CL Distance	DD
Num of Belts	DD
Belt Size	DD

Test Data		
	Design	Actual
CFM	1025	111
Fan RPM	1091	1120
RL Voltage	-	NA
RL Amperage	-	NA
Suction ESP	-	-0.63"
Discharge ESP	-	ATM
Total ESP	0.50	0.63"
Brake Horse Power	-	NA

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Project: Divert (Turlock, CA)

FAN - Exhaust



Diffuser Ret/Exh (GRD)

TEF-1/

Asset								
Asset Name	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
T1-1	CR-1	10X8	225	1	283	245	245	108.9
T1-2	CR-1	8X8	150	1	124	145	145	96.7
T1-3	CR-1	8X8	150	1	144	155	155	103.3
T1-4	CR-1	6X6	50	1	75	54	54	108.0
T1-5	CR-1	10X8	450	1	389	412	412	91.6
Total			1025		1015	1011	1011	98.63%



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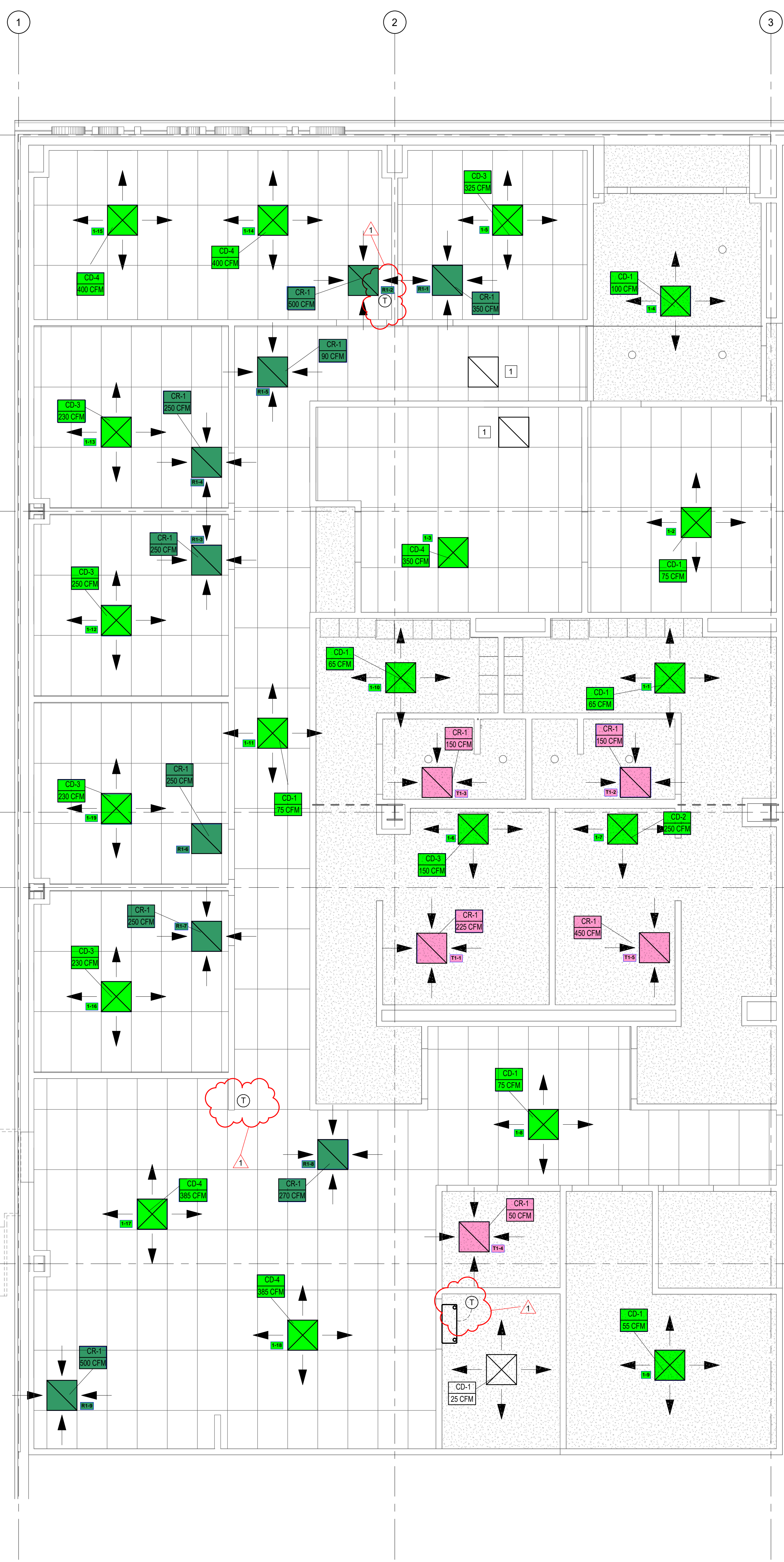
Testing, Adjusting, and Balancing Equipment



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	Evergreen S-PVF-1 24D-00509	6/17/2024	6/17/2025
	AIR VELOCITY INSTRUMENT	50 fpm to 3900 fpm	+/- 5 % +/- 7 fpm	Evergreen S-PVF-1 24D-00509	6/17/2024	6/17/2025
	DIRECT HOOD READING	100 cfm to 2000 cfm	+/- 5 % +/- 7 cfm	Evergreen S-PVF-1 24D-00509	6/17/2024	6/17/2025
TEMPERATURE	AIR METER	-20 F to 240 F	+/- .5 % 2 F	Cooper SRH77A S/N 100516003	9/18/2024	9/18/2025
	AIR PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper SRH77A S/N 100516003	9/18/2024	9/18/2025
	IMMERSION METER	-20 F to 240 F	+/- .5 % 2 F	Cooper SRH77A S/N 100516003	9/18/2024	9/18/2025
	IMMERSION PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper SRH77A S/N 100516003	9/18/2024	9/18/2025
	CONTACT METER	-20 F to 240 F	+/- .5 % 2 F	Cooper SRH77A S/N 100516003	9/18/2024	9/18/2025
	CONTACT PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper SRH77A S/N 100516003	9/18/2024	9/18/2025
HUMIDITY	HUMIDITY PROBE	10 % RH to 90 % RH	3% of reading	Cooper SRH77A S/N 100516003	9/18/2024	9/18/2025
ELECTRICAL	VOLTAGE MEASUREMENT	0 VAC to 600 VAC	2 % reading +/- 5 digits	Klein Tools CL800 S/N 1220C-C1	9/18/2024	9/18/2025
	AMPERAGE MEASUREMENT	0 Amperers to 100 Amperes	2 % reading +/- 5 digits	Klein Tools CL800 S/N 1220C-C1	9/18/2024	9/18/2025
ROTATION	ROTATION MEASUREMENT	60 rpm to 5000 rpm	2 % reading 2 rpm	Shimpo DT 207Lp S/N D1690029R	9/18/2024	9/18/2025

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
CO ₂ = 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



KEY NOTES:
 1 REFER TO M-501 DETAIL, 13 FOR TRANSFER DUCT TO BE INSTALLED BETWEEN LAB AND HALLWAY.

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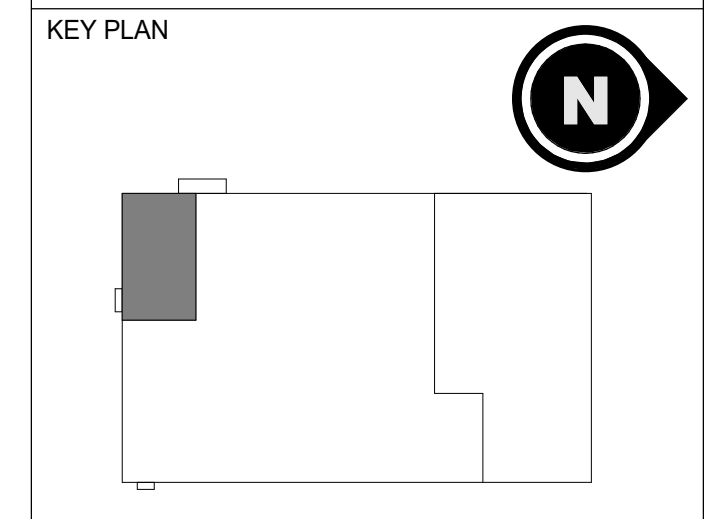
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PROJECT

divert
 INTEGRATED FOOD RECOVERY FACILITY
 4407 WEST MAIN STREET
 TURLOCK, CA 95380



REV	DESCRIPTION	DATE
0	ISSUED FOR PERMIT	10/28/2022
1	BULLETIN 2 CORE & SHELL	02/03/2023

SEAL



MECHANICAL

APPROVED
ENLARGED OFFICE DIFFUSER PLAN

BUILDING & SAFETY

DRAWN BY: RJD
 CHECKED BY: WJS
 SCALE: 1/4" = 1'-0"
 PROJECT #: XB1512

M-410

REVIEWED FOR CODE COMPLIANCE
 August 15, 2023
 BUREAU VERITAS NORTH AMERICA, INC.

