Report By:

National TAB
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Report: TAB REPORT

Function: Test, Adjust, & Balance

Date: 07/07/2023

PROJECT

07-03-23 MENDOCINO FARMS - GLENDALE, CA

769 AMERICANA WAY

GLENDALE, CA 91210

Client

Chill - Factor Mechanical

PO BOX 5756

SAN DIEGO, CA 92165

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Project: 07-03-23 MENDOCINO FARMS - GLENDALE, CA

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Project Summary

The summary below provides a quick understanding of our scope of work and general testing procedures. Enclosed in the report is further detail about your building performance including recommendations, asset data, and pictures. 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 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.

RTU's (Roof Top Units) w/ Diffusers
Each of the RTU's were measured at their terminal devices or via traverse to establish a total flow for that unit. Each RTU was adjusted to within tolerance of the engineer's design flow. Each outlet was then adjusted to within tolerance of the design flow. Outside air was measured by reading the intake air opening with a velocity grid and multiplying by the free area. The outside air damper was adjusted until the airflow was within the design requirements. Any equipment that fell outside of that tolerance is noted throughout the report.

Kitchen Exhaust Hood & Associated Fans
Each kitchen exhaust fan was measured at the hood filter bay utilizing a velocity matrix and a manufacturer's correction factor. Each filter velocity is multiplied by the manufacturer's corrected area. The sum of these readings equals the total flow of the exhaust fans. The total flow of the exhaust was then adjusted to within tolerance of the design flow. . Any EF's that fell outside of this tolerance is noted throughout the report.

MUA (Make Up Air Unit) w/ PSP
Total flow for the MAU (Make-up Air Unit) unit was measured by readings taken at the discharge of the hood's perforated supply plenum. Readings taken with a velocity matrix were averaged and multiplied by a manufacturer's corrected area. Adjustments to the fan speed were made in order to bring the unit to within design tolerance. Any MUA's that fell outside of this tolerance is noted throughout the report.

General Exhaust Fans w/ Grilles
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 tolerance of design. Each terminal device was balanced to within tolerance 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 final building pressure was measured. It was confirmed that the building pressure fell within acceptable tolerances of -0.02" wc to +0.02" wc and that the pressure measurement coincides with the actual and design net airflow. Any deviations from these standards are noted throughout the report.
The hood capture was tested at the perimeter of the hood and the cook top level with the equipment heat on to ensure satisfactory hood capture and containment.

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Project: 07-03-23 MENDOCINO FARMS - GLENDALE, CA

System/Unit: AHU/RTU

Asset: FCU1 AREA:DINING

Unit Data		
	Design	**Actual**
MFG	TRANE	TRANE
Serial Num	-	31R0058930P915
Model Num	TPEFY054	TPEFY054MA144A
Type	FCU	FCU
Configuration	VERTICAL	HORIZONTAL
Num OA Filters 1	-	10"
Num Final Filter 1	-	2
Final Filter Size 1	-	14X20X2

Motor Data		
	Design	**Actual**
Motor MFG	-	NL
Frame	-	NL
Horsepower	-	0.402
Motor Rpm	-	NL
Phase	3	1
Rated Voltage	208	208
Rated Amperage	-	3.09

Drive Data		
	Design	**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
Belt Alignment	-	DD

Test Data		
	Design	**Actual**
SF CFM	1400	1473
SF RPM	-	NA
RA CFM	1100	1152
OA CFM	300	321
RL Voltage	-	210
RL Amperage	-	1.33
SF Rotation	-	CCW
RA Damper Position	-	N/A
Min OA Damper Position	-	20%
Min OA Damper Type	-	MOTORIZED
OA Enthalpy Setpt	-	N/A

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.13"
Fan Suction SP	-	-0.21"
Fan Discharge SP	-	0.15"
Total ESP	0.06"	0.28"
Fan Total SP	-	0.36"

General		
	Design	**Actual**
Fan Rotation Correct	-	YES
Unit Filters Clean	-	YES
Condensate Drain Installed	-	YES

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AHU/RTU

Diffuser Supply (GRD)

FCU1/DINING

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	ORDERING	SR2	22/6	575	1	592	610	610	106.1
SGRD2	ORDERING	SR2	22/6	575	1	757	602	602	104.7
SGRD3	SERVING	CD1	8"	250	1	126	261	261	104.4
Total				1400		1475	1473	1473	105.21%

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Project: 07-03-23 MENDOCINO FARMS - GLENDALE, CA

System/Unit: AHU/RTU

Asset: FCU2 AREA:DINING

Unit Data		
	Design	**Actual**
MFG	TRANE	TRANE
Serial Num	-	31R0058830P915
Model Num	TPEFY054	TPEFY054MA144A
Type	FCU	FCU
Configuration	VERTICAL	HORIZONTAL
Num OA Filters 1	-	10"
Num Final Filter 1	-	2
Final Filter Size 1	-	14X20X2

Motor Data		
	Design	**Actual**
Motor MFG	-	NL
Frame	-	NL
Horsepower	-	0.402
Motor Rpm	-	NL
Phase	3	1
Rated Voltage	208	208
Rated Amperage	-	3.09

Drive Data		
	Design	**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
Belt Alignment	-	DD

Test Data		
	Design	**Actual**
SF CFM	1400	1436
SF RPM	-	NA
RA CFM	1100	1125
OA CFM	300	311
RL Voltage	-	210
RL Amperage	-	1.25
SF Rotation	-	CCW
RA Damper Position	-	N/A
Min OA Damper Position	-	25%
Min OA Damper Type	-	MOTORIZED
OA Enthalpy Setpt	-	N/A

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.11"
Fan Suction SP	-	-0.19"
Fan Discharge SP	-	0.15"
Total ESP	0.06"	0.26"
Fan Total SP	-	0.34"

General		
	Design	**Actual**
Fan Rotation Correct	-	YES
Unit Filters Clean	-	YES
Condensate Drain Installed	-	YES

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Project:07-03-23 MENDOCINO FARMS - GLENDALE, CA

AHU/RTU

Diffuser Supply (GRD)

FCU2/DINING

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	DINING	SR1	33/6	467	1.4	389	481	481	103.0
SGRD2	DINING	SR1	33/6	467	1.4	501	493	493	105.6
SGRD3	DINING	SR1	33/6	467	1.4	552	462	462	98.9
Total				1401		1442	1436	1436	102.5%

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Project: 07-03-23 MENDOCINO FARMS - GLENDALE, CA

System/Unit: AHU/RTU

Asset: FCU3 AREA:KITCHEN

Unit Data		
	Design	**Actual**
MFG	TRANE	TRANE
Serial Num	-	31R0056130P915
Model Num	TPEFY054	TPEFY054MA144A
Type	FCU	FCU
Configuration	VERTICAL	HORIZONTAL
Num OA Filters 1	-	10"
Num Final Filter 1	-	2
Final Filter Size 1	-	14X20X2

Motor Data		
	Design	**Actual**
Motor MFG	-	NL
Frame	-	NL
Horsepower	-	0.402
Motor Rpm	-	NL
Phase	3	1
Rated Voltage	208	208
Rated Amperage	-	3.09

Drive Data		
	Design	**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
Belt Alignment	-	DD

Test Data		
	Design	**Actual**
SF CFM	1400	1361
SF RPM	-	NA
RA CFM	1150	1119
OA CFM	250	242
RL Voltage	-	210
RL Amperage	-	1.13
SF Rotation	-	CCW
RA Damper Position	-	N/A
Min OA Damper Position	-	20%
Min OA Damper Type	-	MOTORIZED
OA Enthalpy Setpt	-	N/A

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.13"
Fan Suction SP	-	-0.19"
Fan Discharge SP	-	0.17"
Total ESP	0.06"	0.3"
Fan Total SP	-	0.34"

General		
	Design	**Actual**
Fan Rotation Correct	-	YES
Unit Filters Clean	-	YES
Condensate Drain Installed	-	YES

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AHU/RTU

Diffuser Supply (GRD)

FCU3/KITCHEN

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	KITCHEN	CD1	14"	500	1	478	478	478	95.6
SGRD2	KITCHEN	CD1	14"	500	1	491	491	491	98.2
SGRD3	KITCHEN	CD1	14"	400	1	392	392	392	98.0
Total				1400		1361	1361	1361	97.21%

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Project: 07-03-23 MENDOCINO FARMS - GLENDALE, CA

System/Unit: AHU/RTU

Asset: FCU4 AREA:KITCHEN

Unit Data		
	Design	**Actual**
MFG	TRANE	TRANE
Serial Num	-	31R0058730P915
Model Num	TPEFY054	TPEFY054MA144A
Type	FCU	FCU
Configuration	VERTICAL	HORIZONTAL
Num OA Filters 1	-	10"
Num Final Filter 1	-	2
Final Filter Size 1	-	14X20X2

Motor Data		
	Design	**Actual**
Motor MFG	-	NL
Frame	-	NL
Horsepower	-	0.402
Motor Rpm	-	NL
Phase	3	3
Rated Voltage	208	230
Rated Amperage	-	3.09

Drive Data		
	Design	**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
Belt Alignment	-	DD

Test Data		
	Design	**Actual**
SF CFM	1400	1406
SF RPM	-	NA
RA CFM	1150	1161
OA CFM	250	245
RL Voltage	-	209
RL Amperage	-	1.21"
SF Rotation	-	CCW
RA Damper Position	-	N/A
Min OA Damper Position	-	20%
Min OA Damper Type	-	MOTORIZED
OA Enthalpy Setpt	-	N/A

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.14"
Fan Suction SP	-	0.21"
Fan Discharge SP	-	0.17"
Total ESP	0.06"	0.31"
Fan Total SP	-	0.38"

General		
	Design	**Actual**
Fan Rotation Correct	-	YES
Unit Filters Clean	-	YES
Condensate Drain Installed	-	YES

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Project:07-03-23 MENDOCINO FARMS - GLENDALE, CA

AHU/RTU

Diffuser Supply (GRD)

FCU4/KITCHEN

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	KITCHEN	CD1	14"	450	1	476	476	476	105.8
SGRD2	KITCHEN	CD1	14"	450	1	469	469	469	104.2
SGRD3	HOOD 1	ACPSP	8"	500	5.8	461	461	461	92.2
Total				1400		1406	1406	1406	100.43%

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Project: 07-03-23 MENDOCINO FARMS - GLENDALE, CA

System/Unit: FAN - Exhaust

Asset: EF-A1 AREA:

Unit Data		
	Design	**Actual**
MFG	PANASONIC	GREENHECK
Model Num	FV-0511VQ1	SP-A200-QD
Serial Num	-	22042329
Type	CEILING	CEILING
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	GREENHECK
Frame	-	NL
Horsepower	7.2W	NL
Motor Rpm	-	NL
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	0.46
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	75	71
Fan RPM	-	SINGLE SPEED
Fan Rotation	-	SINGLE SPEED
Motor RPM	-	SINGLE SPEED
System SetPt	-	SINGLE SPEED
RL Voltage	-	120
RL Amperage	-	0.42
Total ESP	0.25"	NA
Fan Inlet SP	-	NA
Fan Discharge SP	-	ATM

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Project: 07-03-23 MENDOCINO FARMS - GLENDALE, CA

System/Unit: FAN - Exhaust

Asset: EF-B1 AREA:RESTROOM

Unit Data		
	Design	**Actual**
MFG	PANASONIC	GREENHECK
Model Num	FV-0511VQ1	SP-A200-QD
Serial Num	-	22099216
Type	CEILING	CEILING
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	GREENHECK
Frame	-	NL
Horsepower	7.2W	NL
Motor Rpm	-	NL
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	0.46
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	75	73
Fan RPM	-	SINGLE SPEED
Fan Rotation	-	SINGLE SPEED
Motor RPM	-	SINGLE SPEED
System SetPt	-	SINGLE SPEED
RL Voltage	-	120
RL Amperage	-	0.45
Total ESP	0.25"	NA
Fan Inlet SP	-	NA
Fan Discharge SP	-	NA

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Project: 07-03-23 MENDOCINO FARMS - GLENDALE, CA

System/Unit: FAN - Exhaust

Asset: PCU1 AREA:COOKLINE

Unit Data		
	Design	**Actual**
MFG	NA	SPRING AIR
Model Num	NA	KES-ISH
Serial Num	-	23A0
Type	-	PCU
Configuration	-	HORIZONTAL

Motor Data		
	Design	**Actual**
Motor MFG	-	BALDOR RELIANCE
Frame	-	215T
Horsepower	-	10
Motor Rpm	-	1770
Phase	-	3
Voltage (rated)	-	230/460
Amperage (rated)	-	25/12.5
Service Factor	-	1.15

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	2BK110H
Motor Bore Size	-	1-5/16"
Motor Sheave SetPt	-	FIXED
Fan Sheave Size	-	6"
Fan Sheave Bore	-	1-5/16"
Belt CL Distance	-	19.5"
Num of Belts	-	2
Belt Size	-	BX63

Test Data		
	Design	**Actual**
CFM	2250	3831
Fan RPM	-	
Fan Rotation	-	CW
Motor RPM	-	
RL Voltage	-	208/207/208
RL Amperage	-	40.5/41.1/40.1
Suction ESP	-	
Discharge ESP	-	
Total ESP	-	

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Project: 07-03-23 MENDOCINO FARMS - GLENDALE, CA

System/Unit: FAN - Supply

Asset: MUA1 AREA:COOKLINE

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	A1-15D	A2-20D
Serial Num	-	5727845
Type	MUA	MUA
Configuration	VERTICAL	HORIZONTAL

Motor Data		
	Design	**Actual**
Motor MFG	-	TECO
Frame	-	145T
Horsepower	1.5	1
Motor Rpm	-	1150
Phase	3	3
Voltage (rated)	208	230/460
Amperage (rated)	-	3.44/1.72
Service Factor	-	1.15

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Fan Sheave Size	-	DD
Fan Sheave Bore	-	DD
Belt CL Distance	-	DD
Num of Belts	-	DD
Belt Size	-	DD
Belt Alignment Verified	-	DD

Gas Heat		
	Design	**Actual**

Test Data		
	Design	**Actual**
CFM	2475	2420
SF RPM	-	1109
Motor RPM	-	1109
RL Voltage	-	207/206/207
RL Amperage	-	2.98/3.2/3.3
Total ESP	-	0.52"
Fan Discharge SP	-	0.52"

General		
	Design	**Actual**
Fan Rotation Correct	-	YES

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Project: 07-03-23 MENDOCINO FARMS - GLENDALE, CA

System/Unit: Kitchen Hood Type I

Asset: HD1 AREA:

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	5424 ND-2-ACPSP-F	5424 ND-2-ACPSP-F
Job / Serial Num	-	5727845
Type	TYPE I CANOPY	TYPE I CANOPY
Hood length	108	108"
Hood Width	54	54"
Supply Plenum Type	-	PERFORATED
Supply Plenum Width	12"	12"
Supply Plenum Length	120"	120"

Test Data Exhaust		
	Design	**Actual**
Filter Type	SS FILTERS	SS FILTERS
Filter Size 1	20X16	20X16
Filter Qty 1	7	6
Filter AK factor size 1	2.08"	2.08
Filter Total AK Area	14.56	12.48
Filter1 FPM	-	285
Filter2 FPM	-	297
Filter3 FPM	-	329
Filter4 FPM	-	329
Filter5 FPM	-	297
Filter6 FPM	-	307
Filter Ave FPM(corr)	-	307
CFM	2250	3831

Cooking Equipment		
	Design	**Actual**
Item 1	-	PANINI PRESS
Item 2	-	FLAT TOP GRILL
Item 3	-	BROILER
Item 4	-	
Item 5	-	

Test Data Supply		
	Design	**Actual**
Total AK Area	10	10
Kv factor (Vel)	0.87"	0.87
Num of Readings	-	8
Reading1 FPM	-	193
Reading2 FPM	-	170
Reading3 FPM	-	166
Reading4 FPM	-	174
Reading5 FPM	-	168
Reading6 FPM	-	108
Reading7 FPM	-	138
Reading8 FPM	-	165
Ave FPM(corr)	-	160
CFM	1375	1392

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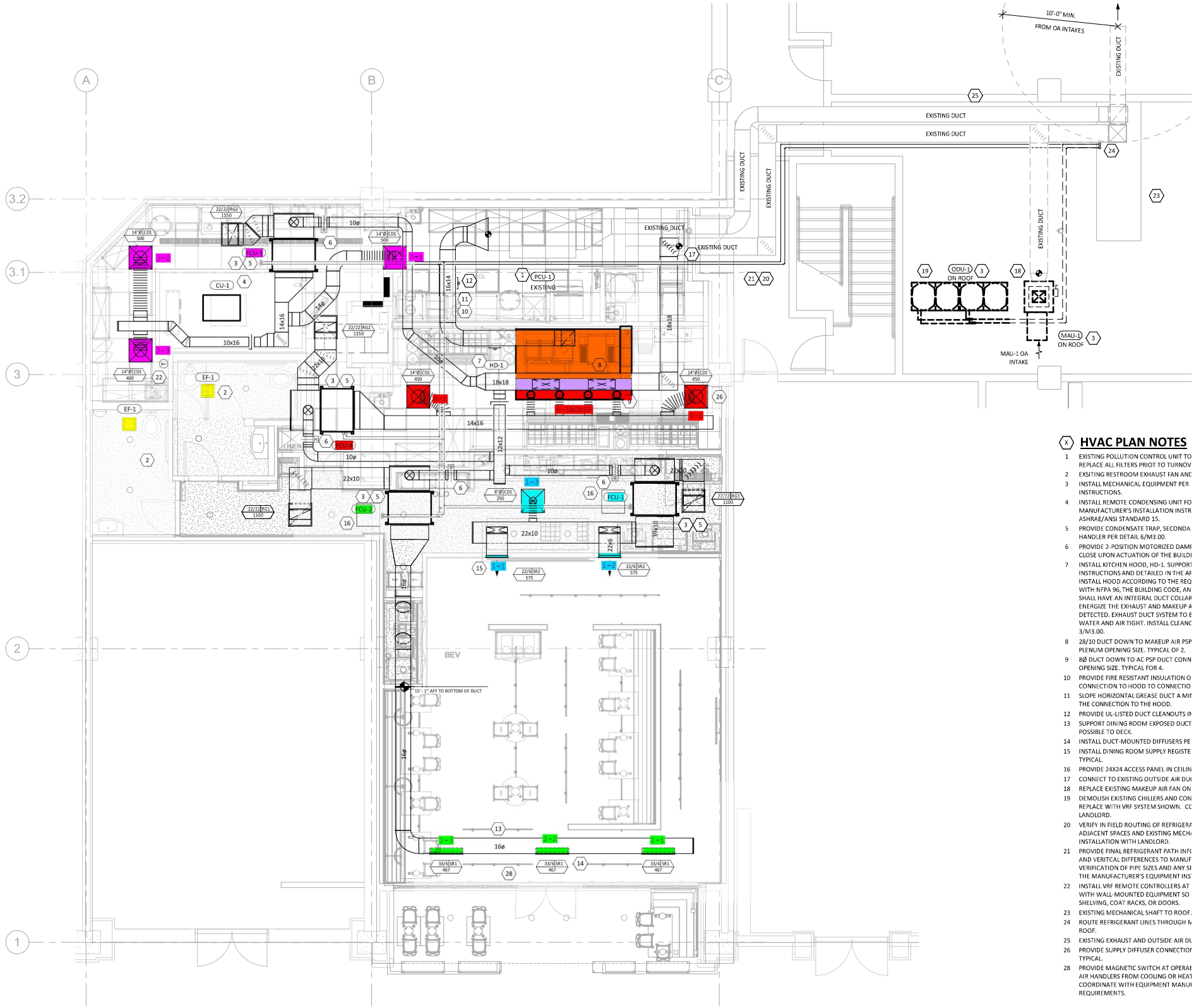

HVAC PLAN NOTES

1 EXISTING POLLUTION CONTROL UNIT TO REPLACE ALL FILTERS PRIOT TO TURNOV
2 EXSITING RESTROOM EXHAUST FAN ANC
3 INSTALL MECHANICAL EQUIPMENT PER INSTRUCTIONS.
4 INSTALL REMOTE CONDENSING UNIT FO MANUFACTURER'S INSTALLATION INSTR ASHRAE/ANSI STANDARD 15.
5 PROVIDE CONDENSATE TRAP, SECONDA HANDLER PER DETAIL 6/M3.00.
6 PROVIDE 2-POSITION MOTORIZED DAMI CLOSE UPON ACTUATION OF THE BUILDI
7 INSTALL KITCHEN HOOD, HD-1. SUPPORT INSTRUCTIONS AND DETAILED IN THE AF INSTALL HOOD ACCORDING TO THE REQ WITH NFPA 96, THE BUILDING CODE, AN SHALL HAVE AN INTEGRAL DUCT COLLAR ENERGIZE THE EXHAUST AND MAKEUP A DETECTED. EXHAUST DUCT SYSTEM TO E WATER AND AIR TIGHT. INSTALL CLEANC 3/M3.00.
8 28/10 DUCT DOWN TO MAKEUP AIR PSP PLENUM OPENING SIZE. TYPICAL OF 2.
9 8Ø DUCT DOWN TO AC PSP DUCT CONN OPENING SIZE. TYPICAL FOR 4.
10 PROVIDE FIRE RESISTANT INSULATION O CONNECTION TO HOOD TO CONNECTIO
11 SLOPE HORIZONTAL GREASE DUCT A MI THE CONNECTION TO THE HOOD.
12 PROVIDE UL-LISTED DUCT CLEANOUTS I
13 SUPPORT DINING ROOM EXPOSED DUCT POSSIBLE TO DECK.
14 INSTALL DUCT-MOUNTED DIFFUSERS PE
15 INSTALL DINING ROOM SUPPLY REGISTE TYPICAL.
16 PROVIDE 24X24 ACCESS PANEL IN CEILIN
17 CONNECT TO EXISTING OUTSIDE AIR DU
18 REPLACE EXISTING MAKEUP AIR FAN ON
19 DEMOLISH EXISTING CHILLERS AND CON REPLACE WITH VRF SYSTEM SHOWN. CO LANDLORD.
20 VERIFY IN FIELD ROUTING OF REFRIGERA ADJACENT SPACES AND EXISTING MECHA INSTALLATION WITH LANDLORD.
21 PROVIDE FINAL REFRIGERANT PATH INFO AND VERITCAL DIFFERENCES TO MANUF VERIFICATION OF PIPE SIZES AND ANY SI THE MANUFACTURER'S EQUIPMENT INS
22 INSTALL VRF REMOTE CONTROLLERS AT WITH WALL-MOUNTED EQUIPMENT SO SHELVING, COAT RACKS, OR DOORS.
23 EXISTING MECHANICAL SHAFT TO ROOF.
24 ROUTE REFRIGERANT LINES THROUGH N ROOF.
25 EXISTING EXHAUST AND OUTSIDE AIR DU
26 PROVIDE SUPPLY DIFFUSER CONNECTIO TYPICAL.
28 PROVIDE MAGNETIC SWITCH AT OPERAB AIR HANDLERS FROM COOLING OR HEAT COORDINATE WITH EQUIPMENT MANUI REQUIREMENTS.

Date: 7/7/2023