Report By:

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

NATIONAL TAB

Comfort. Under control.

Report: FINAL TAB REPORT
Function: Test, Adjust, & Balance
Date: 10/03/2022

PROJECT

09-26 NIKE - CARLSBAD, CA

5620 PASEO DEL NORTE

CARLSBAD, CA 92008

Client

Gray

2521 Port Street

West Sacramento, CA 95691

National TAB

Project: 09-26 NIKE - CARLSBAD, CA

Table Of Contents

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

Each of the RTU's were measured at their terminal devices utilizing a flow hood. The sum of these readings is equal to the total flow for that particular unit. The total flow of each RTU was then adjusted within tolerance of the specified design. Each terminal diffuser was balanced to within tolerance 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.

Variable Air Volume (VAV) Terminals

The VAV's were calibrated in a call for max cooling and the correction factors are reported on the individual asset. While in a call for full cooling, the individual air devices were then balanced within design tolerance. The VAVs were then stroked to minimum cool and the airflow values reported. The VAV was then stroked to heating and the airflow values reported. It was verified that there was a sufficient temp rise on each VAV.

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 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.

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09-26 NIKE - CARLSBAD, CA

Project Issue Information

Issue Name : Dirty filters

Description : Most RTU'S have significant filter loading

Created By : National TAB **Assigned To :** National TAB - Will Turnbough

Status : Open

Originated Date : 09/27/2022 - Zack Eismin - National TAB

Project Issue File Details

20220926_121606.jpg

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09-26 NIKE - CARLSBAD, CA

Project Issue Information

Issue Name : RTU-1 DUCTWORK DAMPERS

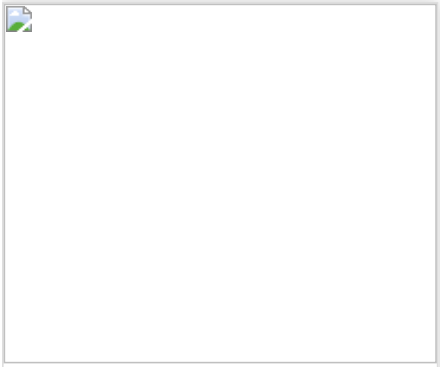
Description : DUCTWORK FOR RTU-1 DOES NOT HAVE DAMPERS CANNOT BALANCE

Created By : National TAB **Assigned To :** National TAB - Will Turnbough

Status : Open

Originated Date : 09/28/2022 - Zack Eismin - National TAB

Project Issue File Details



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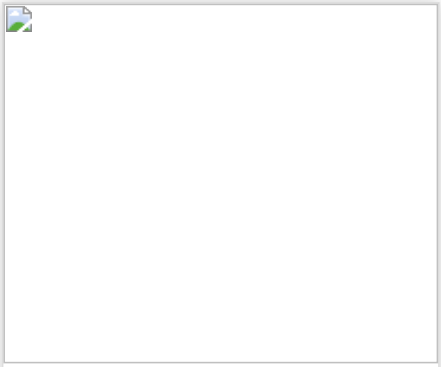

20220928_160942.jpg

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09-26 NIKE - CARLSBAD, CA

Project Issue Information

Issue Name : RTU-2 phases

Description : RTU-2 has a blown fuse. Replacement required

Created By : National TAB **Assigned To :** National TAB - Will Turnbough

Status : Open

Originated Date : 09/27/2022 - Zack Eismin - National TAB

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Project Issue Information

Issue Name : RTU-2 ECONOMIZER NOT FUNCTIONAL

Description : OA DAMPERS ARE NOT FUNCTIONAL

Created By : National TAB **Assigned To :** National TAB - Will Turnbough

Status : Open

Originated Date : 09/29/2022 - Zack Eismin - National TAB

Comfort. Under control.

09-26 NIKE - CARLSBAD, CA

Project Issue Information

Issue Name : RTU-2 OA FILTER CONDITION

Description : OA filter is damaged replacement needed

Created By : National TAB **Assigned To :** National TAB - Will Turnbough

Status : Open

Originated Date : 09/27/2022 - Zack Eismin - National TAB

Project Issue File Details

20220926_123617.jpeg

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09-26 NIKE - CARLSBAD, CA

Project Issue Information

Issue Name : RTU-3 ECONOMIZER NOT INSTALLED

Description : OA ECONOMIZER NOT INSTALLED

Created By : National TAB **Assigned To :** National TAB - Will Turnbough

Status : Open

Originated Date : 09/29/2022 - Zack Eismin - National TAB

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09-26 NIKE - CARLSBAD, CA

Project Issue Information

Issue Name : RTU-5 belt replacement required

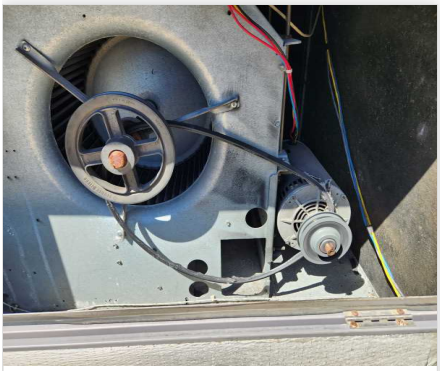
Description : RTU-5's does not have a functional belt, replacement required.

Created By : National TAB **Assigned To :** National TAB - Brianna Biggs

Status : Open

Originated Date : 09/27/2022 - Zack Eismin - National TAB

Project Issue File Details



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NATIONAL TAB

AIR BALANCE SCHEDULE

UNIT	AREA SERVED	HVAC SUPPLY		HVAC RETURN		HVAC OUTDOOR		OA %		HOOD MAKE-UP		HOOD EXHAUST		GENERAL EXH.	
		DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL
RTU-1	BOH	1050	1057	590	452	460	605	43.8%	57.2%						
RTU-2	STOCKROOM	1540	1624	970	1624	570	0	37.0%	0.0%						
RTU-3	SALES	1800	1716	1110	1716	690	0	38.3%	0.0%						
RTU-4	SALES	1800	1689	1110	1010	690	679	38.3%	40.2%						
RTU-5	SALES	1800	1921	1110	1220	690	701	38.3%	36.5%						
RTU-6	SALES	1800	1959	1110	1249	690	710	38.3%	36.2%						
RTU-7	SALES	2000	2122	2000	2122	0	0	0.0%	0.0%						
EF-1	RESTROOM													250	228
EF-2	IT CLOSET													1000	983
TOTALS		11790	12088	8000	9393	3790	2695			0	0	0	0	1250	1211

NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	3790	2695
TOTAL EXHAUST	1250	1211
NET AIRFLOW	2540	1484

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H20)
FRONT	0.005
SIDE	NA
REAR	0.0101
AVERAGE	**0.0076**

FINAL CHECKS

ACTUAL NET AIRFLOW COINCIDES WITH DESIGN: ✓

MEASURED PRESSURES COINCIDES WITH ACTUAL NET AIRFLOW: ✓

PRESSURE FALLS WITHIN IMC TOLERANCE OF +/-0.02" W.C. ✓

NOTES:

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09-26 NIKE - CARLSBAD, CA

CheckList Information

Name :	TECH - SITE PICTURES	**Status :**	NotSubmitted
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		

CheckList Item Details

STORE FRONT

20220929_135805.jpg

RTU-1

20220929_095017.jpg

RTU-2

20220929_095037.jpg

RTU-3

20220929_095051.jpg

RTU-4

20220929_095104.jpg

RTU-5

20220929_095120.jpg

RTU-6

20220929_095131.jpg

RTU-7

20220929_095152.jpg

EF-1

20220929_095009.jpg

EF-2

20220929_094547.jpg

Notes/Comments :

Comfort. Under control.

09-26 NIKE - CARLSBAD, CA

CheckList Information

Name :	TECH - STEP 1: INITIAL WALKTHROUGH	**Status :**	NotSubmitted
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		

CheckList Item Details

INITIAL SITE WALKTHROUGH

Review Plan Review Checklist, has it been signed off and meets our standards to start balancing? If not contact processor to ensure job is ready.	YES
All diffusers and grilles are installed and match design?	YES
Thermostats have power?	YES
All HVAC units and fans and powered and operational?	NO
VAV diffusers (if applicable) are powered and responding to adjustment at thermostat?	N/A
Have trades/general contractor been notified about any issues and are they created on FaciliBuild?	YES

Notes/Comments :

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09-26 NIKE - CARLSBAD, CA

CheckList Information

Name :	TECH - STEP 2: UNIT DATA AND EVAL	**Status :**	NotSubmitted
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		

CheckList Item Details

UNIT DATA AND EVALUATION WHILE GATHERING UNIT DATA CHECK THE FOLLOWING:

RTU's/AHU's	
Economizers are assembled and functional?	NO
Motors are all operating below the FLA rating?	YES
Are belts tight?	YES
If direct drive unit is the speed controller working.	N/A
Is gas piping installed and valves turned on?	YES
Unit free of noticeable noise and vibration	YES
EF's	
Rotation is correct?	YES
Belts are tight?	N/A
Grease cup installed on hood fan	N/A
Hinge kit installed installed on hood fan?	N/A
Lean fan back. Is grease duct installation adequate and is duct ran all the way to the base of the fan?	N/A
Flex conduit is long enough so that fan can be completely tilted back?	YES
There is no major leakage around base of fan?	YES
Is the motor operating below the motor FLA rating?	YES

For restroom fan(s) is the back draft damper installed and can it fully open?	YES
Unit free of noticeable noise and vibration?	YES
DOCUMENTATION	
Have trades/general contractor been notified about any issues and are they created on FaciliBuild?	YES

Notes/Comments :

Comfort. Under control.

09-26 NIKE - CARLSBAD, CA

CheckList Information

Name :	TECH - STEP 3: TEST, ADJUST AND BALANCE	**Status :**	NotSubmitted
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		

CheckList Item Details

TEST, ADJUST, AND BALANCE ALL EQUIPMENT:	
DURING TESTING MAKE NOTE OF THE FOLLOWING:	
Is space free of drafting?	YES
Is space comfortable in all areas?	YES
Is the space free of ventilation noise?	YES
If deviations from design were necessary to resolve 1-3 what were they? Otherwise put "NA".	N/A
FABRIC DUCT STATIC PRESSURES (IF APPLICABLE)	
Take static pressures near takeoff for each fabric duct once balancing is completed. Input this into the "VEL (1)" field on the diffuser asset. If not a fabric duct then, put "N/A" into the "VEL (1)" field instead.	N/A

Notes/Comments :

Comfort. Under control.

09-26 NIKE - CARLSBAD, CA

CheckList Information

Name :	TECH - STEP 4: FINAL TESTS	**Status :**	NotSubmitted
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		

CheckList Item Details

FINAL TESTS	
BUILDING PRESSURE	
Building pressure at front & back doors (All Systems On)	0.0076"
Do actual net building airflow, design net building airflow, and pressure coincide? If not why? (All three should either be positive or negative)	YES
CARRIER VFD PARAMETERS (IF APPLICABLE)	
Use Carrier provided VFD cable to verify VFD speed parameters for each unit (Defaults - high speed = 60Hz, low speed = 40Hz). Can adjust high speed parameter for balancing but requires that the low speed is proportionally adjusted. Record VFD speeds on the individual assets	N/A
TEMPERATURES/HUMIDITIES	
Measure temperatures/humidities for outside air (taken in shade), return air, and supply air for each HVAC unit during full cooling and input into appropriate fields on the individual asset	CONFIRMED
VAV DIFFUSERS (IF APPLICABLE)	
Each VAV-diffuser is calibrated for max airflow?	YES
Each VAV diffuser is set for minimum airflow? Record value in notes on the individual diffuser asset	YES 47%

Notes/Comments :

National TAB

Project: 09-26 NIKE - CARLSBAD, CA

System/Unit: AHU/RTU

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Asset: RTU1 AREA:BOH

Unit Data		
	Design	**Actual**
MFG	CARRIER	CARRIER
Serial Num	-	2114C86359
Model Num	50GCQM05	50HCQA05D
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	28X14
Num Final Filter 1	-	4
Final Filter Size 1	-	16X16X2

Motor Data		
	Design	**Actual**
Motor MFG	-	MARATHON
Frame	-	56HZ
Horsepower	-	NL
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	208	230/460
Rated Amperage	-	4.9/2.5

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	4"
Motor Bore Size	-	5/8"
Fan Sheave Size	-	AFD49
Fan Sheave Bore	-	5/8"
Belt CL Distance	-	14"
Num of Belts	-	1
Belt Size	-	A38

Electrical		
	Design	**Actual**
VFD Min Setpt	-	N/A
VFD Max Setpt	-	N/A

Test Data		
	Design	**Actual**
SF CFM	1050	1057
SF RPM	-	1169
RA CFM	590	605
OA CFM	460	452
RL Voltage	-	200/201/201
RL Amperage	-	2.5/2.54
SF Rotation	-	CCW
RA Damper Position	-	60%
Min OA Damper Position	-	40%
Min OA Damper Type	-	MOTORIZED

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.97"
Fan Suction SP	-	-1.05"
Fan Discharge SP	-	0.24"
Total ESP	0.6"	1.23"
OA Temp (db/wb)	-	73.1/70.9
RA Temp (db/wb)	-	73.1/66.6
SA Temp (db/wb)	-	67.9/64.7

General		
	Design	**Actual**
Fan Rotation Correct	-	YES
Unit Filters Clean	-	NO

Completed By: Zack Eismin

Notes:

National TAB

Project:09-26 NIKE - CARLSBAD, CA

AHU/RTU

Comfort. Under control.

Diffuser Supply (GRD)

RTU1/BOH

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	EMPLOYEE LOUNGE	CSD2	8"	200	1	225	213	213	106.5
SGRD2	EMPLOYEE LOUNGE	CSD2	8"	200	1	236	214	214	107.0
SGRD3	EMPLOYEE LOUNGE	CSD2	8"	200	1	194	201	201	100.5
SGRD4	RESTROOM	CSD3	6"	50	1	30	54	54	108.0
SGRD5	RESTROOM	CSD3	6"	50	1	146	52	52	104.0
SGRD6	ASM OFFICE	CSD1	8"	200	1	30	182	182	91.0
SGRD7	HC OFFICE	CSD1	8"	150	1	0	141	141	94.0

Completed By: Brianna Biggs on

National TAB

Project: 09-26 NIKE - CARLSBAD, CA

System/Unit: AHU/RTU

Comfort. Under control.

Asset: RTU2 AREA:STOCKROOM

Unit Data		
	Design	**Actual**
MFG	CARRIER	CARRIER
Serial Num	-	0815P60552
Model Num	50GCQM06	50TCQD12A
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	2
OA Filter Size 1	-	15X20
Num Final Filter 1	-	4
Final Filter Size 1	-	20X20X2

Motor Data		
	Design	**Actual**
Motor MFG	-	CENTURY
Frame	-	56HZ
Horsepower	-	3
Motor Rpm	-	1750
Phase	3	3
Rated Voltage	208	230/460
Rated Amperage	-	10.6

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	5"
Motor Bore Size	-	7/8"
Fan Sheave Size	-	AFD74
Fan Sheave Bore	-	1"
Belt CL Distance	-	16"
Num of Belts	-	1
Belt Size	-	A48

Electrical		
	Design	**Actual**
VFD Min Setpt	-	N/A
VFD Max Setpt	-	N/A

Test Data		
	Design	**Actual**
SF CFM	1540	1624
SF RPM	-	886
RA CFM	970	1624
OA CFM	570	0
RL Voltage	-	201
RL Amperage	-	7.0/7.0
SF Rotation	-	CCW
RA Damper Position	-	100%
Min OA Damper Position	-	0%
Min OA Damper Type	-	MOTORIZED

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.36"
Fan Suction SP	-	-0.58"
Fan Discharge SP	-	0.99"
Total ESP	0.6"	1.35"
OA Temp (db/wb)	-	79.4/68.5
RA Temp (db/wb)	-	75.4/62.5
SA Temp (db/wb)	-	75.6/62.5

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

Completed By: Zack Eismin

Notes:

National TAB

Project:09-26 NIKE - CARLSBAD, CA

AHU/RTU

Comfort. Under control.

Diffuser Supply (GRD)

RTU2/STOCKROOM

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	STOCKROOM	CSD2	8"	215	1	302	231	231	107.4
SGRD2	STOCKROOM	CSD2	8"	215	1	257	228	228	106.0
SGRD3	STOCKROOM	CSD2	8"	215	1	152	212	212	98.6
SGRD4	STOCKROOM	CSD2	8"	215	1	200	231	231	107.4
SGRD5	STOCKROOM	CSD2	8"	215	1	252	229	229	106.5
SGRD6	STOCKROOM	CSD2	8"	215	1	270	222	222	103.3
SGRD7	IT EQ ROOM	CSD3	8"	250	1	400	271	271	108.4

Completed By: Brianna Biggs on

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Project: 09-26 NIKE - CARLSBAD, CA

System/Unit: AHU/RTU

Comfort. Under control.

Asset: RTU3 AREA:SALES

Unit Data		
	Design	**Actual**
MFG	CARRIER	CARRIER
Serial Num	-	0208G50722
Model Num	50GCQM06	50HJQ012
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	N/A
OA Filter Size 1	-	N/A
Num Final Filter 1	-	4
Final Filter Size 1	-	20X20X2

Motor Data		
	Design	**Actual**
Motor MFG	-	MARATHON
Frame	-	56HZ
Horsepower	-	5
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	208	230/460
Rated Amperage	-	15.0/7.5

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	5"
Motor Bore Size	-	7/8"
Fan Sheave Size	-	6.5"
Fan Sheave Bore	-	1"
Belt CL Distance	-	15.5"
Num of Belts	-	1
Belt Size	-	BX46

Electrical		
	Design	**Actual**
VFD Min Setpt	-	N/A
VFD Max Setpt	-	N/A

Test Data		
	Design	**Actual**
SF CFM	1800	1716
SF RPM	-	1103
RA CFM	1110	1716
OA CFM	690	0
RL Voltage	-	199/199/200
RL Amperage	-	9.48/8.9
SF Rotation	-	CCW
RA Damper Position	-	60%
Min OA Damper Position	-	40%
Min OA Damper Type	-	MOTORIZED

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-1.06"
Fan Suction SP	-	-1.44"
Fan Discharge SP	-	1.15"
Total ESP	0.6"	-
OA Temp (db/wb)	-	77/69
RA Temp (db/wb)	-	76.7/64.5
SA Temp (db/wb)	-	79.2/65.8

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

Completed By: Zack Eismin

Notes: No economizers installed

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Project:09-26 NIKE - CARLSBAD, CA

AHU/RTU

Comfort. Under control.

Diffuser Supply (GRD)

RTU3/SALES

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	SALES	DSG1	10X6	225	0.313	172	207	207	92.0
SGRD2	SALES	DSG1	10X6	225	0.313	200	227	227	100.9
SGRD3	SALES	DSG1	10X6	225	0.313	160	210	210	93.3
SGRD4	SALES	DSG1	10X6	225	0.313	150	220	220	97.8
SGRD5	SALES	DSG1	10X6	225	0.313	150	217	217	96.4
SGRD6	SALES	DSG1	10X6	225	0.313	205	205	205	91.1
SGRD7	SALES	DSG1	10X6	225	0.313	122	217	217	96.4
SGRD8	SALES	DSG1	10X6	225	0.313	118	213	213	94.7

Completed By: Brianna Biggs on

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Project: 09-26 NIKE - CARLSBAD, CA

System/Unit: AHU/RTU

Comfort. Under control.

Asset: RTU4 AREA:SALES

Unit Data		
	Design	**Actual**
MFG	CARRIER	CARRIER
Serial Num	-	2114C86289
Model Num	50GCQM06	50HCQA04D2
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	28X15
Num Final Filter 1	-	2
Final Filter Size 1	-	16X25X2

Motor Data		
	Design	**Actual**
Motor MFG	-	MARATHON
Frame	-	56HZ
Horsepower	-	NL
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	208	230/460
Rated Amperage	-	5.2/2.6

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	3"
Motor Bore Size	-	5/8"
Fan Sheave Size	-	AFD44
Fan Sheave Bore	-	5/8"
Belt CL Distance	-	14.5"
Num of Belts	-	1
Belt Size	-	A38

Electrical		
	Design	**Actual**
VFD Min Setpt	-	N/A
VFD Max Setpt	-	N/A

Test Data		
	Design	**Actual**
SF CFM	1800	1689
SF RPM	-	1060
RA CFM	1110	1010
OA CFM	690	679
RL Voltage	-	200/201/201
RL Amperage	-	2.5/2.54
SF Rotation	-	CCW
RA Damper Position	-	60%
Min OA Damper Position	-	40%
Min OA Damper Type	-	MOTORIZED

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.23"
Fan Suction SP	-	-0.42"
Fan Discharge SP	-	0.53"
Total ESP	0.6"	0.76"
OA Temp (db/wb)	-	76.4/70.8
RA Temp (db/wb)	-	74.6/69.9
SA Temp (db/wb)	-	75.7/67.3

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

Completed By: Zack Eismin

Notes:

National TAB

Project:09-26 NIKE - CARLSBAD, CA

AHU/RTU

Comfort. Under control.

Diffuser Supply (GRD)

RTU4/SALES

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	SALES	DSG1	10X6	225	0.313	229	229	229	101.8
SGRD2	SALES	DSG1	10X6	225	0.313	213	213	213	94.7
SGRD3	SALES	DSG1	10X6	225	0.313	227	227	227	100.9
SGRD4	SALES	DSG1	10X6	225	0.313	207	207	207	92.0
SGRD5	SALES	DSG1	10X6	225	0.313	209	209	209	92.9
SGRD6	SALES	DSG1	10X6	225	0.313	217	217	217	96.4
SGRD7	SALES	DSG1	10X6	225	0.313	223	223	223	99.1
SGRD8	SALES	DSG1	10X6	225	0.313	229	229	229	101.8

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National TAB

Project: 09-26 NIKE - CARLSBAD, CA

System/Unit: AHU/RTU

Comfort. Under control.

Asset: RTU5 AREA:SALES

Unit Data		
	Design	**Actual**
MFG	CARRIER	CARRIER
Serial Num	-	2314P869Q3
Model Num	50GCQM06	50HCOD08
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	34X19
Num Final Filter 1	-	4
Final Filter Size 1	-	20X20X2

Motor Data		
	Design	**Actual**
Motor MFG	-	MARATHON
Frame	-	56HZ
Horsepower	-	NL
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	208	230/460
Rated Amperage	-	6.7/3.4

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	4"
Motor Bore Size	-	5/8"
Fan Sheave Size	-	AFD74
Fan Sheave Bore	-	1"
Belt CL Distance	-	17"
Num of Belts	-	1
Belt Size	-	AX48

Electrical		
	Design	**Actual**
VFD Min Setpt	-	N/A
VFD Max Setpt	-	N/A

Test Data		
	Design	**Actual**
SF CFM	1800	1921
SF RPM	-	832
RA CFM	1110	1220
OA CFM	690	701
RL Voltage	-	201/200/200
RL Amperage	-	4.0/4.0
SF Rotation	-	CCW
RA Damper Position	-	60%
Min OA Damper Position	-	40%
Min OA Damper Type	-	MOTORIZED

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.42"
Fan Suction SP	-	-0.67"
Fan Discharge SP	-	0.67"
Total ESP	0.6"	1.09"
OA Temp (db/wb)	-	74.1/69.3
RA Temp (db/wb)	-	73.5/66.3
SA Temp (db/wb)	-	67.6/61.6

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

Completed By: Zack Eismin

Notes:

National TAB

Project:09-26 NIKE - CARLSBAD, CA

AHU/RTU

Comfort. Under control.

Diffuser Supply (GRD)

RTU5/SALES

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	SALES	DSG1	10X6	225	0.313	227	223	223	99.1
SGRD2	SALES	DSG1	10X6	225	0.313	222	228	228	101.3
SGRD3	SALES	DSG1	10X6	225	0.313	223	229	229	101.8
SGRD4	SALES	DSG1	10X6	225	0.313	222	220	220	97.8
SGRD5	SALES	DSG1	10X6	225	0.313	232	226	226	100.4
SGRD6	SALES	DSG1	10X6	225	0.313	242	220	220	97.8
SGRD7	SALES	DSG1	10X6	225	0.313	272	231	231	102.7
SGRD8	SALES	DSG1	10X6	225	0.313	235	232	232	103.1

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National TAB

Project: 09-26 NIKE - CARLSBAD, CA

System/Unit: AHU/RTU

Comfort. Under control.

Asset: RTU6 AREA:SALES

Unit Data		
	Design	**Actual**
MFG	CARRIER	CARRIER
Serial Num	-	2314P86912
Model Num	50GCQM06	50HCOD08D2
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	34X19
Num Final Filter 1	-	4
Final Filter Size 1	-	20X20X2

Motor Data		
	Design	**Actual**
Motor MFG	-	MARATHON
Frame	-	56HZ
Horsepower	-	NL
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	208	230/460
Rated Amperage	-	10.6/5.3

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	4"
Motor Bore Size	-	7/8"
Fan Sheave Size	-	AFD74
Fan Sheave Bore	-	1"
Belt CL Distance	-	17"
Num of Belts	-	1
Belt Size	-	A48

Electrical		
	Design	**Actual**

Test Data		
	Design	**Actual**
SF CFM	1800	1959
SF RPM	-	738
RA CFM	1110	1249
OA CFM	690	710
RL Voltage	-	196/196/197
RL Amperage	-	4.9/4.57
SF Rotation	-	CCW
RA Damper Position	-	60%
Min OA Damper Position	-	40%
Min OA Damper Type	-	MOTORIZED

Performance Data		
	Design	**Actual**
Fan Suction SP	-	-0.57"
Fan Discharge SP	-	0.53"
Total ESP	0.6"	0.89"
RA Temp (db/wb)	-	73.0/67.2
SA Temp (db/wb)	-	71.6/64.5

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

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Notes:

National TAB

Project:09-26 NIKE - CARLSBAD, CA

AHU/RTU

Comfort. Under control.

Diffuser Supply (GRD)

RTU6/SALES

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	SALES	DSG1	10X6	235	0.313	241	252	252	107.2
SGRD2	SALES	DSG1	10X6	235	0.313	401	258	258	109.8
SGRD3	SALES	DSG1	10X6	235	0.313	200	243	243	103.4
SGRD4	SALES	DSG1	10X6	235	0.313	195	258	258	109.8
SGRD5	SALES	DSG1	10X6	235	0.313	224	247	247	105.1
SGRD6	SALES	DSG1	10X6	235	0.313	252	251	251	106.8
SGRD7	FITTING RM VEST	CSD4	8"	75	1	77	81	81	108.0
SGRD8	FITTING RM 1	CSD4	8"	50	1	32	53	53	106.0
SGRD9	FITTING RM VES	CSD4	8"	75	1	120	80	80	106.7
SGRD10	FITTING RM 2	CSD4	8"	50	1	115	53	53	106.0
SGRD11	FITTING RM 3	CSD4	8"	75	1	53	81	81	108.0
SGRD12	ACCESSIBLE FITTING ROOM	CSD4	8"	75	1	121	82	82	109.3

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National TAB

Project: 09-26 NIKE - CARLSBAD, CA

System/Unit: AHU/RTU

Comfort. Under control.

Asset: RTU7 AREA:SALES

Unit Data		
	Design	**Actual**
MFG	CARRIER	CARRIER
Serial Num	-	2314P86911
Model Num	50GCQM05	50HCQD08D2
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	35X19
Num Final Filter 1	-	4
Final Filter Size 1	-	20X20X2

Motor Data		
	Design	**Actual**
Motor MFG	-	MARATHON
Frame	-	56HZ
Horsepower	-	NL
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	208	230/460
Rated Amperage	-	6.7/3.4

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	4"
Motor Bore Size	-	5/8"
Fan Sheave Size	-	AFD74
Fan Sheave Bore	-	1"
Belt CL Distance	-	17"
Num of Belts	-	1
Belt Size	-	AX48

Electrical		
	Design	**Actual**
VFD Min Setpt	-	N/A
VFD Max Setpt	-	N/A

Test Data		
	Design	**Actual**
SF CFM	2000	2122
SF RPM	-	805
RA CFM	2000	2122
OA CFM	0	0
RL Voltage	-	196/199/200
RL Amperage	-	3.44/3.5
SF Rotation	-	CCW
RA Damper Position	-	100%
Min OA Damper Position	-	0%
Min OA Damper Type	-	MOTORIZED

Performance Data		
	Design	**Actual**
MA Plenum SP	-	0.42"
Fan Suction SP	-	-0.88"
Fan Discharge SP	-	0.49"
Total ESP	0.6"	0.91"
OA Temp (db/wb)	-	72.5/71.8
RA Temp (db/wb)	-	72.5/64.5
SA Temp (db/wb)	-	55.9/52.3

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

Completed By: Zack Eismin

Notes:

Diffuser Supply (GRD)

RTU7/SALES

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	SALES	DSG1	12X8	250	0.54	373	271	271	108.4
SGRD2	SALES	DSG1	12X8	250	0.54	328	274	274	109.6
SGRD3	SALES	DSG1	12X8	250	0.54	330	265	265	106.0
SGRD4	SALES	DSG1	12X8	250	0.54	293	272	272	108.8
SGRD5	SALES	DSG1	12X8	250	0.54	214	245	245	98.0
SGRD6	SALES	DSG1	12X8	250	0.54	240	252	252	100.8
SGRD7	SALES	DSG1	12X8	250	0.54	297	269	269	107.6
SGRD8	SALES	DSG1	12X8	250	0.54	283		274	109.6

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National TAB

Project: 09-26 NIKE - CARLSBAD, CA

System/Unit: FAN - Exhaust

Comfort. Under control.

Asset: EF1 AREA:RESTROOMS

Unit Data		
	Design	**Actual**
MFG	GREENHECK	GREENHECK
Model Num	G-080-VG	G-080-VG
Serial Num	-	20765880
Type	DOWNBLAST	DOWNBLAST
Configuration	HORIZONTAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	VARI-GREEN
Frame	-	NL
Horsepower	1/10	0.1
Motor Rpm	-	1750
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	1.38
Service Factor	-	1.15

Test Data		
	Design	**Actual**
CFM	250	228
Fan RPM	1711	1750
Fan Rotation	-	CCW
Motor RPM	-	1750
System SetPt	-	10
RL Voltage	-	NA
RL Amperage	-	1.3
Total ESP	0.5"	0.39"
Fan Inlet SP	-	-0.39"
Fan Discharge SP	-	ATM

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Notes:

National TAB

Project:09-26 NIKE - CARLSBAD, CA

FAN - Exhaust

Comfort. Under control.

Diffuser Ret/Exh (GRD)

EF1/RESTROOMS

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
EGRD1	RESTROOM	CEG1	6"	100	1	86	96	96	96.0
EGRD2	RESTROOM	CEG1	6"	100	1	99	102	102	102.0
EGRD3	JANITOR CLOSET	CEG1	6"	50	1	44	47	47	94.0

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National TAB

Project: 09-26 NIKE - CARLSBAD, CA

System/Unit: FAN - Exhaust

Comfort. Under control.

Asset: EF2 AREA:IT CLOSET

Unit Data		
	Design	**Actual**
MFG	GREENHECK	GREENHECK
Model Num	SQ-100-VG	SQ-100-VG
Serial Num	-	20765898
Type	INLINE	INLINE
Configuration	HORIZONTAL	HORIZONTAL

Motor Data		
	Design	**Actual**
Horsepower	1/4	NA
Phase	1	NA
Voltage (rated)	120	NA

Test Data		
	Design	**Actual**
CFM	1000	983
Fan RPM	1385	N/A
Fan Rotation	-	CCW
Motor RPM	-	NA
System SetPt	-	9
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	0.3"	0.47"
Fan Inlet SP	-	-0.43"
Fan Discharge SP	-	0.04"

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Notes:

AND/OR CEILING SUPPORTS IMPEDE ACCESS IN ANY WAY. INSTALL HVAC EQUIPMENT WITHIN 24" ABOVE CEILING FOR SERVICEABILITY.

M19 SMOKE DETECTORS AND WIRING IN SUPPLY AND RETURN AIR DUCTS SHALL BE PROVIDED BY DIVISION 26 CONTRACTOR. SMOKE DETECTORS SHALL SHUT-DOWN UNIT UPON ALARM.

M22 PROVIDE NEW ROOF-MOUNTED EXHAUST FAN AS SCHEDULED FOR GENERAL RESTROOM EXHAUST. INSTALL ROOF-MOUNTED FAN IN EXISTING FAN LOCATION AND REUSE ROOF PENETRATION. COORDINATE EXACT LOCATION PRIOR TO CONSTRUCTION.

M23 EXHAUST FAN SERVES TO PROVIDE TRANSFER AIR ONLY AND SHALL DISCHARGE AIR INTO THE STOCKROOM.

M24 INSTALL VAV POWER MODULE FOR CONTROL OF OFFICE VAV DIFFUSERS IN AN ACCESSIBLE LOCATION ABOVE THE CEILING. DIVISION 26 CONTRACTOR SHALL PROVIDE 120V POWER TO MODULE. REFER TO ELECTRICAL DRAWINGS FOR DETAILS.

M29 PROVIDE NEW ROOFTOP UNIT AS SCHEDULED ON EXISTING CURB. PROVIDE A NEW SET OF MERV 13 AIR FILTERS IN UNIT BEFORE TURNING SYSTEM OVER TO OWNER. COORDINATE CONDENSATE PIPING WITH DIVISION 22.

M30 ROUTE SHEET METAL RETURN AIR DUCT AS SHOWN WITH TERMINATION DIRECTED UPWARD. SIZE PLENUM FULL SIZE OF RETURN AIR INLET. PROVIDE DUCT LINER IN RETURN AIR DUCTWORK FOR SOUND ATTENUATION.

M31 ROUTE SHEET METAL RETURN AIR DUCT AS SHOWN FULL SIZE OF RETURN AIR INLET. PROVIDE DUCT LINER IN RETURN AIR DUCTWORK FOR SOUND ATTENUATION.

M34 DO NOT ROUTE DUCTWORK OVER ELECTRICAL EQUIPMENT. NOTIFY ENGINEER OF CONFLICTS IN FIELD.

M41 COORDINATE DUCT ROUTING WITH LIGHTS AND STRUCTURE. ROUTE ALL SALES DUCTWORK AT SAME ELEVATION BELOW UNDERSIDE OF DECK.

M42 ROUTE SUPPLY AND RETURN DUCTWORK TO ROOF CURB DUCT CONNECTIONS AND TRANSITION DUCTWORK IN RISER AS NECESSARY.

M46 TRANSITION DUCTWORK BEFORE WALL PENETRATION. REFER TO SIZES INDICATED ON PLAN.

M65 LOUVERED DOOR FOR MAKEUP AIR BY GENERAL CONTRACTOR. REFER TO ARCHITECTURAL DRAWINGS FOR MORE INFORMATION.

M67 COORDINATE LOCATION OF FITTING ROOM DIFFUSERS WITH LIGHTS, SPRINKLERS, SPEAKERS, AND OTHER CEILING DEVICES FOR A NEAT AND ORDERLY INSTALLATION. INSTALL CEILING DEVICES IN-LINE WITH EACH OTHER WHERE POSSIBLE.

M68 PROVIDE 1" UNDERCUT ON DOOR TO ALLOW FOR MAKEUP AIR TRANSFER.

M70 PROVIDE 1" UNDERCUT ON DOOR TO ALLOW FOR RETURN AIR TRANSFER.

M90 SMOKE/HEAT VENT IS PROVIDED BY DIVISION 21. DO NOT INSTALL DUCTWORK, PIPING, SUPPORTS, OR EQUIPMENT BELOW VENT LOCATION. COORDINATE EXACT LOCATION PRIOR TO CONSTRUCTION.

M92 PROVIDE NEW ROOFTOP UNIT ENCLOSURE SCREENS.

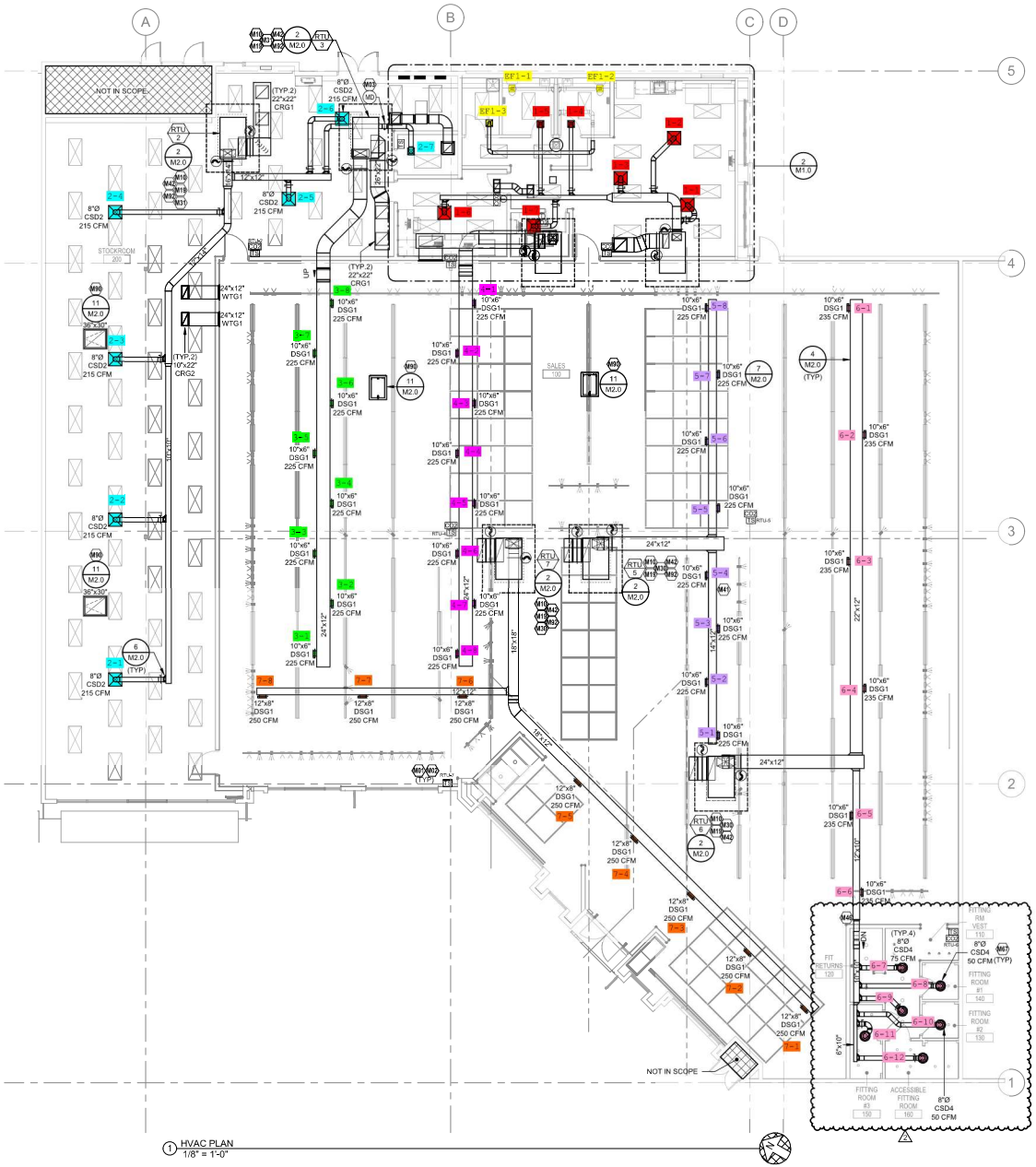
LANDLORD REQUIREMENTS:
LANDLORD APPROVED ROOFING CONTRACTOR SH
MAKING ALL CUTS THROUGH THE EXISTING ROOF,
OPENINGS, AND/OR ALTERING CURB FLASHING AT
EXPENSE. COORDINATE WITH GENERAL CONTRAC

EMS CONTROLS:
CONTRACTORS ARE RESPONSIBLE FOR COORDINA
CONTROLS WITH EMS VENDOR PRIOR TO PURCHA
CONTRACTORS SHALL COORDINATE WITH EMS VE
NECESSARY EQUIPMENT AND ACCESSORIES FOR A
SYSTEM.

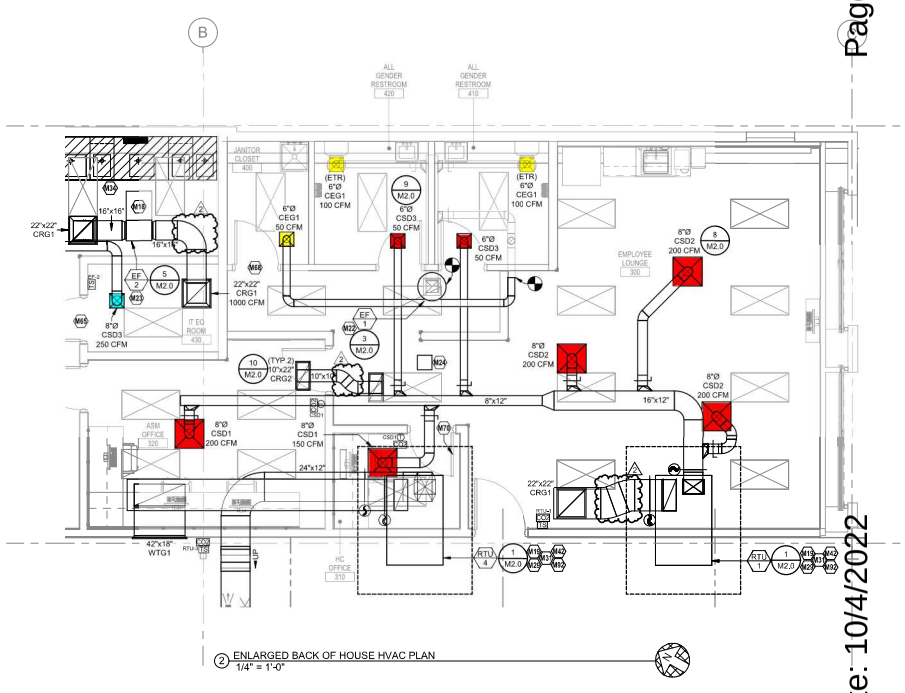
TEMPERATURE CONTROLS:
EMS VENDOR SHALL FURNISH SENSORS AND CON
INDICATED ON PLANS AND AS NECESSARY TO ACCOMPLISH THE INTE
THE DRAWINGS. ALL CONTROLS SHALL BE TIED INTO THE EMS SYSTE
UNLESS NOTED OTHERWISE.

GENERAL CONTRACTOR SHALL INSTALL CARRIER FURNISHED TEMPO
THERMOSTATS AND FEED THE WIRING DOWN INTO THE SPACE FOR S
UP AND CONTROL OF RTU(S) UNTIL THE EMS SYSTEM IS OPERABLE. F
TO M3.0 FOR CARRIER CONTACT INFORMATION.

INSTALL DUCTWORK AND PIPING AS TIGHT TO STRUCTURE A POSSIBLE. COORDINATE WITH OTHER TRADES TO AVOID CONFLICTS. COORDINATE INSTALLATION OF DUCTWORK AN PIPING TO AVOID CONFLICTS WITH ELECTRICAL PANELS, LIGHTING FIXTURES, ETC. DO NOT INSTALL DUCTWORK BELOW THE BOTTOM OF THE LIGHT FIXTURES.



1 HVAC PLAN
1/8" = 1'-0"



2 ENLARGED BACK OF HOUSE HVAC PLAN
1/4" = 1'-0"

Date: 10/4/2022