

**Report By:**

National TAB  
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**Report: CERTIFIED TAB REPORT**

**Function: Test, Adjust, & Balance**

**Date: 04/24/2025**

**Completed By: National TAB**

# PROJECT

## 8589 Hesperian & S St (Hayward CA)

20473 Hesperian Blvd

Hayward, CA 94541

### Client

B&M Builders, Inc.

11330 Sunrise Park Drive

Suite C

Rancho Cordova, CA 95742

# National TAB

Project: 8589 Hesperian & S St (Hayward CA)

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# CERTIFICATION



**PROJECT:** T-moble (Hayward, CA)

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 Standard for Testing, Adjusting and Balancing of Environmental Systems. The measurements shown, and the information given, in this report are certified to be accurate and complete, at the time and date information was gathered. Any variances from design quantities, which exceed NEBB tolerances, are noted in the TAB report project summary.

**NEBB TAB FIRM:** National TAB - Kansas City  
**REGISTRATION NO:** 3768  
**CERTIFIED BY:** Will Turnbough  
**DATE:** 4/28/2025

## Submitted and Certified by:

**NEBB TAB FIRM:** National TAB - Kansas City  
**TAB PROFESSIONAL:** Will Turnbough  
**REGISTRATION NO:** CP-24289  
**CERTIFICATION EXP:** 12/31/2025





# National TAB

## Project Summary

The summary below provides a quick understanding of our scope of work and general testing procedures. Enclosed in the report are further details 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.

### Ceiling Exhaust Fans

The ceiling exhaust fans were measured using a flow hood. If speed adjustment was provided, the fan speed was adjusted to within design tolerance. 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.

## **Issue List**

- RTU-1, 2, AND 3 DO NOT HAVE ECONOMIZER CONTROLLERS INSTALLED
- RTU-2 FAN AND HEATING ISSUES.



**8589 Hesperian & S St (Hayward CA)**

**Project Issue Information**

**Issue Name :** RTU-1, 2, AND 3 DO NOT HAVE ECONOMIZER CONTROLLERS INSTALLED  
**Description :** RTU-1, 2, and 3 do not have economizer controllers installed. Units had to have OA manually set. Recommend to have controllers installed for proper operations.  
**Created By :** National TAB                      **Assigned To :** National TAB - Zack Eismin  
**Status :** Pending  
**Priority :** High                                      **Asset Tag :**  
**Originated Date :** 04/24/2025 - Zack Eismin - National TAB

Project Issue File Details





**8589 Hesperian & S St (Hayward CA)**

**Project Issue Information**

**Issue Name :** RTU-2 FAN AND HEATING ISSUES.  
**Description :** RTU-2's fan will ramp up and down periodically causing inconsistent airflows. The unit also trips its internal transformer when heating is energized. Recommend to have unit serviced for proper operations.  
**Created By :** National TAB                      **Assigned To :** National TAB - Zack Eismin  
**Status :** Pending  
**Priority :** High                                      **Asset Tag :**  
**Originated Date :** 04/24/2025 - Zack Eismin - National TAB

# National TAB

Project: 8589 Hesperian & S St (Hayward CA)

System/Unit: AHU/RTU



Asset: RTU-1

AREA:BACK OF HOUSE

Unit Data		
	Design	Actual
MFG	EXISTING	CARRIER
Serial Num	-	2821C56577
Model Num	EXISTING	48FCL04A2A5A0A0C0
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	28X14
Num PreFilter 1	-	2
PreFilter Size 1	-	16X25X2

Motor Data		
	Design	Actual
Motor MFG	-	NL
Frame	-	NL
Horsepower	-	NL
Motor Rpm	-	NL
Phase	3	1
Rated Voltage	208	208
Rated Amperage	-	5.1
Service Factor	-	NL

Test Data		
	Design	Actual
SF CFM	1200	1144
SF RPM	-	1447
RA CFM	1115	1063
OA CFM	85	81
RL Voltage	208	213
RL Amperage	-	2.71
VFD Max SetPt	-	N/A
VFD Min SetPt	-	N/A
SF Motor Freq(HZ)	-	N/A
OA Damper Position	-	~5% OPEN
Brake Horse Power	-	NA

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.24"
Fan Suction SP	-	-0.33"
Fan Discharge SP	-	0.20"
Total ESP	0.50	0.44"
Fan Total SP	-	0.53"
Cooling Coil P.D.	-	N/A

Completed By: Zack Eismin on 04/24/2025

## Unit Data - PHOTO LOG



04/23/2025

# National TAB

Project: 8589 Hesperian & S St (Hayward CA)

## AHU/RTU



**Diffuser Supply (GRD)**

**RTU-1/BACK OF HOUSE**

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
SGRD1	HALLWAY	A	8	150	266	153	102.0
SGRD2	HALLWAY	A	8	200	221	183	91.5
SGRD3	HALLWAY	A	10	350	392	323	92.3
SGRD4	HALLWAY	A	10	350	460	340	97.1
SGRD5	STORAGE	B	8	150	350	145	96.7
Total				1200	1689	1144	95.33%

**Diffuser Ret/Exh (GRD)**

**RTU-1/BACK OF HOUSE**

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
EGRD1	HALLWAY	D	6X6	150	1	152	152	152	101.3
EGRD2	HALLWAY	D	16X16	965	1	959	911	911	94.4
Total				1115		1111	1063	1063	95.34%

Completed By: Zack Eismin on 04/24/2025

# National TAB

Project: 8589 Hesperian & S St (Hayward CA)

## System/Unit: AHU/RTU



Asset: RTU-2

AREA:SALES FLOOR

Unit Data		
	Design	Actual
MFG	EXISTING	CARRIER
Serial Num	-	2821C56576
Model Num	EXISTING	48FCLA04A2A50A0C0
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	28X14
Num PreFilter 1	-	2
PreFilter Size 1	-	16X25X2

Motor Data		
	Design	Actual
Motor MFG	-	NL
Frame	-	NL
Horsepower	-	NL
Motor Rpm	-	NL
Phase	3	1
Rated Voltage	208	208
Rated Amperage	-	5.1
Service Factor	-	NL

Test Data		
	Design	Actual
SF CFM	1200	1159
SF RPM	-	1456
RA CFM	990	952
OA CFM	210	207
RL Voltage	208	213
RL Amperage	-	2.36
VFD Max SetPt	-	N/A
VFD Min SetPt	-	N/A
SF Motor Freq(HZ)	-	N/A
OA Damper Position	-	~18%
Brake Horse Power	-	NA

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.32"
Fan Suction SP	-	-0.38"
Fan Discharge SP	-	0.19"
Total ESP	0.50	0.51"
Fan Total SP	-	0.57"
Cooling Coil P.D.	-	N/A

Completed By: Zack Eismin on 04/24/2025

### Unit Data - PHOTO LOG



04/23/2025

# National TAB

Project: 8589 Hesperian & S St (Hayward CA)

## AHU/RTU



**Diffuser Supply (GRD)**

**RTU-2/SALES FLOOR**

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
SGRD1	SALES FLOOR	E	12X8	150	211	154	102.7
SGRD2	SALES FLOOR	E	12X8	150	191	142	94.7
SGRD3	SALES FLOOR	E	12X8	150	122	153	102.0
SGRD4	SALES FLOOR	E	12X8	150	131	139	92.7
SGRD5	SALES FLOOR	E	12X8	150	177	137	91.3
SGRD6	SALES FLOOR	E	12X8	150	121	142	94.7
SGRD7	SALES FLOOR	E	12X8	150	111	151	100.7
SGRD8	SALES FLOOR	E	12X8	150	77	141	94.0
Total				1200	1141	1159	96.58%

Completed By: Zack Eismin on 04/24/2025

# National TAB

Project: 8589 Hesperian & S St (Hayward CA)

## System/Unit: AHU/RTU



Asset: RTU-3

AREA:SALES FLOOR

Unit Data		
	Design	Actual
MFG	EXISTING	CARRIER
Serial Num	-	2821C56581
Model Num	EXISTING	48FCLA05A2A5A0A0C
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	28X14
Num PreFilter 1	-	2
PreFilter Size 1	-	16X25X2

Motor Data		
	Design	Actual
Motor MFG	-	NL
Frame	-	NL
Horsepower	-	NL
Motor Rpm	-	NL
Phase	3	1
Rated Voltage	208	208
Rated Amperage	-	7.1
Service Factor	-	NL

Test Data		
	Design	Actual
SF CFM	1200	1212
SF RPM	-	1478
RA CFM	990	1001
OA CFM	210	211
RL Voltage	208	213
RL Amperage	-	3.01
VFD Max SetPt	-	N/A
VFD Min SetPt	-	N/A
SF Motor Freq(HZ)	-	N/A
OA Damper Position	-	~18% OPEN
Brake Horse Power	-	NA

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.29"
Fan Suction SP	-	-0.39"
Fan Discharge SP	-	0.21"
Total ESP	0.50	0.50"
Fan Total SP	-	0.60"
Cooling Coil P.D.	-	N/A

Completed By: Zack Eismin on 04/24/2025

### Unit Data - PHOTO LOG



04/23/2025

# National TAB

Project: 8589 Hesperian & S St (Hayward CA)

## AHU/RTU



**Diffuser Supply (GRD)**

**RTU-3/SALES FLOOR**

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
SGRD1	SALES FLOOR	E	12X8	150	159	157	104.7
SGRD2	SALES FLOOR	E	12X8	150	162	140	93.3
SGRD3	SALES FLOOR	E	12X8	150	169	153	102.0
SGRD4	SALES FLOOR	E	12X8	150	133	161	107.3
SGRD5	SALES FLOOR	E	12X8	150	177	137	91.3
SGRD6	SALES FLOOR	E	12X8	150	131	144	96.0
SGRD7	SALES FLOOR	E	12X8	150	141	163	108.7
SGRD8	SALES FLOOR	E	12X8	150	150	157	104.7
Total				1200	1222	1212	101%

Completed By: Zack Eismin on 04/24/2025

# National TAB

Project: 8589 Hesperian & S St (Hayward CA)

## System/Unit: FAN - Exhaust



Asset: EF1

AREA:RESTROOM

Unit Data		
	Design	Actual
MFG	NA	BROAN
Model Num	NA	QTXE110150DCL-A
Serial Num	-	NL
Type	CEILING	CEILING

Test Data		
	Design	Actual
CFM	110	109
RL Voltage	208	NA
RL Amperage	-	NA
Discharge ESP	-	0.12"
Total ESP	0.1	0.12"

Motor Data		
	Design	Actual
Motor MFG	-	NL
Frame	-	NL
Horsepower	-	NL
Motor Rpm	-	NL
Phase	3	1
Voltage (rated)	208	120
Amperage (rated)	-	0.5
Service Factor	-	NL

Completed By: Zack Eismin on 04/23/2025

### Unit Data - PHOTO LOG



04/23/2025

# National TAB

Project: 8589 Hesperian & S St (Hayward CA)

System/Unit: FAN - Exhaust



Asset: EF2

AREA:RESTROOM

Unit Data		
	Design	Actual
MFG	NA	BROAN
Model Num	NA	QTXE110150DCL-A
Serial Num	-	NL
Type	CEILING	CEILING

Test Data		
	Design	Actual
CFM	110	111
RL Voltage	208	NA
RL Amperage	-	NA
Discharge ESP	-	0.13"
Total ESP	0.1	0.13"

Motor Data		
	Design	Actual
Motor MFG	-	NL
Frame	-	NL
Horsepower	-	NL
Motor Rpm	-	NL
Phase	3	1
Voltage (rated)	208	120
Amperage (rated)	-	0.5
Service Factor	-	NL

Completed By: Zack Eismin on 04/23/2025

## Unit Data - PHOTO LOG



04/23/2025

## Abbreviation List

A = Area (ft <sup>2</sup> )	S.F. = Service Factor
AHU = Air Handling Unit	SF = Supply Fan
A <sub>k</sub> = 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 <sub>ma</sub> = Mixed Air Temperature
CL = Center Distance (used in belt formula)	T <sub>oa</sub> = Outside Air Temperature
CD = Ceiling Diffuser	T <sub>ra</sub> = Return Air Temperature
CF = Correction Factor	H = Head (in wc, ft wc, psi)
CFM = Volumetric Flow: Cubic Feet Per Minute	h = Enthalpy
CO <sub>2</sub> = Carbon Dioxide	HP = Horsepower
CO = Carbon Monoxide	hr = Hour
C <sub>v</sub> = Flow Constant	K <sub>v</sub> = 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 <sub>ra</sub> = Return Air Temperature
psid = PSI Differential	TS = Tip Speed (fpm) IP, (m/s) SI
r = Radius (in)	TSP = Total Static Pressure
% <sub>ra</sub> = % 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



# National TAB

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

**SAP 8589**

PROTOTYPE RELEASE: Q3 2024

ARCHITECT:



**FUZION**

20551 N. PIMA ROAD  
SUITE 200  
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PROJECT #: 24.09.213441

CONSULTING ENGINEER:

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Carroll Blvd. #200  
Denton, TX 76201  
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#	DESCRIPTION	DATE
1	CITY COMMENTS	1/17/2025
3	CLIENT COMMENTS	3/25/2025

DATE: 11.19.2019  
DRAWN BY: GEG

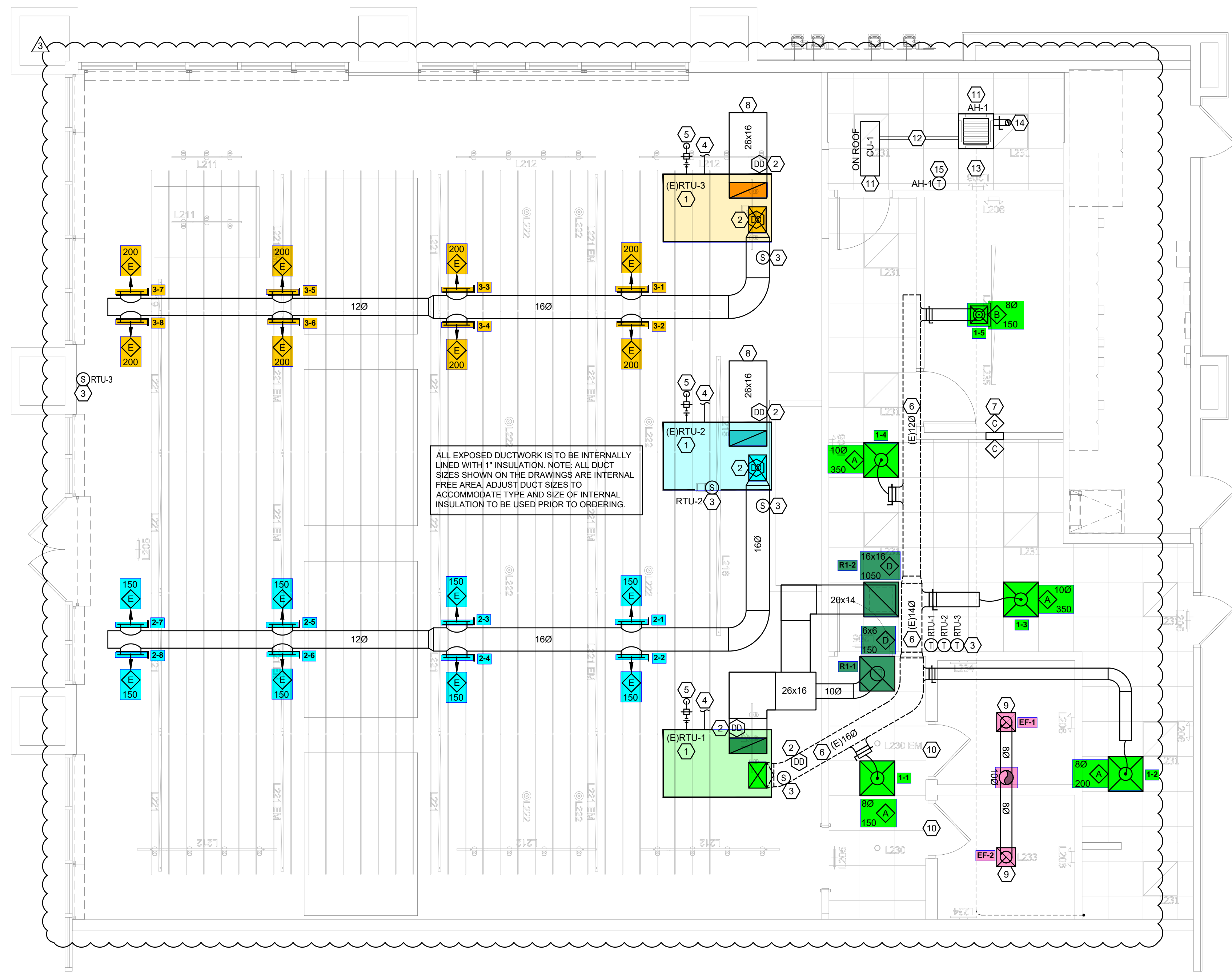
**MECHANICAL FLOOR PLAN**

**M101**

KEYED NOTES	
#	NOTES
1	EXISTING ROOFTOP UNIT. CONNECT NEW DUCTWORK TO SUPPLY AND RETURN DROPS DOWN THRU ROOF. VERIFY EXACT LOCATION IN FIELD.
2	PROVIDE NEW DUCT MOUNTED SMOKE DETECTOR (IF NOT EXISTING) WITH REMOTE TEST STATION IN THE SUPPLY DUCT DOWNSTREAM OF AIR FILTERS AND AHEAD OF ANY BRANCH CONNECTIONS AND RETURN DUCT UPSTREAM OF ANY FILTERS. DETECTOR SHALL SHUT DOWN UNIT UPON DETECTION OF SMOKE. INSTALL REMOTE TEST STATION IN CEILING GRID BENEATH UNIT.
3	INSTALL OWNER SUPPLIED ENTOUCH ONE MASTER CONTROLLER THERMOSTAT, ZONE TEMPERATURE SENSOR AND DUCT TEMPERATURE SENSOR. MOUNT THERMOSTAT AT 48" A.F.F., PROVIDE AND PULL CAT5 CABLE FROM ET1 THERMOSTAT TO OPEN PORT ON CUSTOMER NETWORK SWITCH. MOUNT ZONE TEMPERATURE SENSOR AT 60" A.F.F. AND WIRE TO THE S2 & S2 RTN. MOUNT DUCT TEMPERATURE SENSOR IN THE MAIN SUPPLY DUCT WITHIN 6 FEET FROM UNIT AND WIRE TO S2 & S2 RTN. CABLE RUNS AND TERMINATIONS BY MC/GC (CABLE PULL).
4	EXISTING CONDENSATE TO REMAIN.
5	EXISTING GAS LINE TO REMAIN.
6	EXISTING DUCTWORK TO REMAIN IF IT MEETS OR EXCEEDS SIZES SHOWN. REPLACE WITH NEW IF EXISTING SIZES ARE SMALLER THAN SHOWN ON PLANS. PATCH AND REPAIR AS REQUIRED TO MAINTAIN AN AIR TIGHT SYSTEM. PROVIDE INSULATION TO MATCH EXISTING.
7	PROVIDE NEW TRANSFER GRILLE THRU INVENTORY/TELCO ROOM WALL. INSTALL TOP OF GRILLE 6" BELOW FINISHED CEILING. PROVIDE MESH SCREENING OVER OPENING IN WALL - SEE SCHEDULE FOR SIZE.
8	LINED RETURN AIR DUCT. PROVIDE MINIMUM 4'-0" OF RETURN AIR DUCT. PROVIDE FULL SIZE OPENING WITH 1/4" X 1/4" HARDWARE SCREEN.
9	NEW CEILING EXHAUST FANLIGHT COMBO PROVIDED WITH THE LIGHTING PACKAGE. ROUTE EXHAUST DUCT UP THROUGH ROOF. MAINTAIN 10'-0" FROM ANY FRESH AIR INTAKE. PROVIDE GOOSENECK FITTING WITH INSECT SCREEN AT DISCHARGE. PROVIDE INSULATED DUCT CURB AT ROOF PENETRATION. SEE SCHEDULE.
10	UNDERCUT DOOR A MINIMUM OF 1" (MAXIMUM 1-1/4").
11	PROVIDE AND INSTALL NEW DUCTLESS SPLIT SYSTEM UNITS PER SCHEDULE. CU LOCATED ON ROOF. G.C. TO COORDINATE WITH LANDLORD AS REQUIRED FOR ALL LANDLORD ROOF WORK RULES AND REGULATIONS.
12	PROVIDE AND INSTALL CONDENSER LINES AND OIL RETURN LOOP.
13	PROVIDE AND INSTALL CONDENSATE LINES PER LOCAL CODE REQUIREMENTS. ROUTE LINE TO TERMINATE AT UTILITY SINK.
14	PROVIDE 4" OUTSIDE AIR DUCT TO ROOF. MAINTAIN 10'-0" FROM ANY EXHAUST DISCHARGE. PROVIDE GOOSENECK FITTING WITH INSECT SCREEN. PROVIDE INSULATED DUCT CURB AT ROOF PENETRATION.
15	INSTALL OWNER SUPPLIED ENTOUCH ONE MASTER CONTROLLER THERMOSTAT. PROVIDE MITSUBISHI PAC-US444CN-1 THERMOSTAT INTERFACE FOR CN105-IT TERMINAL CONNECTION TO ENTOUCH CONTROLS. MC WILL NEED INSTALL INTERFACE CARD AT EACH UNIT AND RUN THERMOSTAT WIRES DOWN TO EACH LOCATION. EACH UNIT WILL NEED A STEP-DOWN TRANSFORMER TO CONVERT 120VAC TO 24VAC TO POWER THE T-STAT INTERFACE AND SUPPLY POWER TO THE ENTOUCH T-STAT.

GENERAL NOTES	
A.	ALL ROOF WORK IS TO BE DONE BY THE LANDLORD'S ROOFING CONTRACTOR AND AT THE TENANT'S EXPENSE.
B.	ALL DUCTWORK SHALL BE GALVANIZED SHEETMETAL PER SMACNA STANDARDS. NO DUCTBOARD PERMITTED.
C.	ALL DUCT WORK SHALL BE INSULATED WITH A MINIMUM R-8 INSULATION FOR INTERIOR DUCTWORK AND A MINIMUM R-8 INSULATION FOR EXTERIOR DUCTWORK PER IECC (IN CALIFORNIA PROVIDE MINIMUM R-8 INTERIOR / EXTERIOR.)
D.	PROVIDE INSULATED FLEXIBLE DUCT CONNECTIONS TO DIFFUSERS. FLEX DUCT LENGTH NOT TO EXCEED 5 FT.
E.	VERIFY THE EXACT MOUNTING FRAME REQUIRED FOR EACH DIFFUSER.
F.	PROVIDE ALL MANUAL BALANCE DAMPERS REQUIRED TO BALANCE THE ENTIRE SYSTEM.
G.	ALL NEW RESTROOM DOORS SHALL BE UNDERCUT A MINIMUM 1". TENANT GENERAL CONTRACTOR SHALL ENSURE THAT EXISTING DOORS COMPLY.
H.	PROVIDE AND SIZE CONDENSATE LINES AS REQUIRED. ROUTE TO NEAREST ROOF DRAIN WHERE PERMITTED, ELSE TO THE NEAREST APPROVED RECEPTOR.
I.	MODIFY THE SPRINKLER SYSTEM (WHERE EXISTING) TO ACCOMMODATE NEW FLOOR PLAN LAYOUT PER NFPA 13. REPLACE SPRINKLER HEADS AS REQUIRED. ALL HEADS IN THE SALES AREA ARE TO BE CONCEALED PENDANT TYPE. NON-SALES AREAS ARE TO BE PENDANT TYPE. CONTACT THE LANDLORD FOR ADDITIONAL REQUIREMENTS AND A LIST OF APPROVED FIRE PROTECTION CONTRACTORS.
J.	REPLACE FILTERS PRIOR TO TURNOVER.
K.	PROVIDE RFI/RFO TO P.M. & ARCHITECT FOR ALL DISCREPANCIES PRIOR TO COMMENCING WORK.
L.	TENANT GENERAL CONTRACTOR SUB TO PROVIDE REDLINES OF ALL DEVIATIONS FROM THE PLANS AND PROVIDE A COMPLETE TEST & BALANCE REPORT AS REQUIRED BY THE CONTRACT.

MECHANICAL LEGEND	
	MANUAL BALANCING DAMPER TO BE PLACED IN ACCESSIBLE LOCATION
NOTE: SEE SHEET M102 FOR MECHANICAL SCHEDULES AND SHEET M501 FOR MECHANICAL DETAILS	



**A4 MECHANICAL FLOOR PLAN**  
1/4" = 1'-0"

**FIELD VERIFY ALL CONDITIONS**

DESIGN DRAWINGS ARE DIAGRAMMATIC. CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING OR AWARD OF CONTRACT TO INSPECT EXISTING FIELD CONDITIONS. CONTRACT SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING CONDITIONS. WHERE EXISTING CONDITIONS EXIST THAT PREVENT COMPLETION OF WORK, CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD.

THE CONTRACTOR SHALL CONTACT THE ARCHITECT, ENGINEER OR OWNER PRIOR TO BIDDING FOR INTERPRETATIONS AND CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT. CLARIFICATIONS MADE BY THE ARCHITECT, ENGINEER OR OWNER AFTER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTOR'S COST.

BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES. THE PLANS AND SPECIFICATIONS NOT WITHSTANDING, THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.