

Report By:



National TAB
1329 E Kemper Rd, Ste 4210
Cincinnati, OH 45246

Report: Test and Balance
Date: 1/21/2021

PROJECT
FREDDY'S - BRIDGETON, MO

947 NW PLAZA DR
BRIDGETON, MO

Client

Freddy's Frozen Custard & Steakburgers (CORPORATE)
260 N Rock Rd
Suite 200
Wichita, KS 67206

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National TAB

Project: FREDDY'S - BRIDGETON, MO

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REMARKS

Assigned Organization: National TAB

Status: Not Submitted

Asset:

| PRIORITY (HIGH/LOW/INFO ONLY) | |
|-------------------------------|---|
| LOW | The balancing on all equipment was successfully completed but it was noted that the humidity sensors appear to be wired incorrectly. There are two schematics shown on sheet M2.1 depending on length of wire runs (less than or greater than 150'). Currently they are wired for the schematic showing >150' of wire but it appears there is less. Recommend correcting. |

Notes/Comments:



Project Summary

Preface

The summary below provides a quick understanding of how well your HVAC systems balanced in respect to the design criteria. The summary concludes with a quick understanding of your building environment and possible suggestions for each of your systems after testing has been performed. 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. Our focus is 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. Also, enclosed are pictures of building assets and items listed below that will provide your team with more insight.

Facility Identification and TAB Requirements

The mechanical equipment to be tested, adjusted, and balanced includes: All Roof Top Units (RTU), All Exhaust Fans (EF), All Make Up Air Units (MUA), All Kitchen Hoods, and all associated air devices.

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 to +/-10% of the specified design. Each terminal diffuser was balanced to within +/-10% 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.

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 +/-10% of the engineers design flow. 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 +/-10% of design criteria. Any EF's or MUA's that fell outside of this tolerance is noted throughout the report.

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 +/-10% of design. Each terminal device was balanced to within +/-10% 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 recorded at 0.004" W.C. average. This pressure falls within the recommended tolerances by the International Mechanical Code of +0.02" W.C. to -0.02" W.C. The building is designed for a net positive pressure and this measurement coincides with that requirement. The hood capture was tested at the perimeter of the hood and the cook top level with the equipment heat "off" and 100% capture was observed.

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 | KITCHEN | 5000 | 5372 | 4100 | 4443 | 900 | 929 | 18.0% | 17.3% | | | | | | |
| RTU-2 | DINING | 4500 | 4797 | 3600 | 3878 | 900 | 919 | 20.0% | 19.2% | | | | | | |
| MUA-1 | HD1/HD2 | | | | | | | | | 1900 | 1987 | | | | |
| KEF-1 | GRIDDLE | | | | | | | | | | | 1600 | 1644 | | |
| KEF-2 | FRYER | | | | | | | | | | | 775 | 797 | | |
| KEF-3 | DISH | | | | | | | | | | | 525 | 536 | | |
| EF-1 | RESTROOM | | | | | | | | | | | | | 150 | 145 |
| EF-2 | RESTROOM | | | | | | | | | | | | | 150 | 135 |
| TOTALS | | 9500 | 10169 | 7700 | 8321 | 1800 | 1848 | | | 1900 | 1987 | 2900 | 2977 | 300 | 280 |

NET BUILDING AIRFLOW CALCULATION

| TOTALS | DESIGN | ACTUAL |
|--------------------|------------|------------|
| TOTAL OA | 3700 | 3835 |
| TOTAL EXHAUST | 3200 | 3257 |
| NET AIRFLOW | 500 | 578 |

| DOOR TESTED | BUILDING PRESSURE MEASUREMENTS (IN. H2O) |
|----------------|--|
| FRONT | 0.005 |
| SIDE | |
| REAR | 0.003 |
| AVERAGE | 0.004 |

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:

RTU2



RTU1



KEF1



KEF2



KEF3



MAU



HD2



HD3



EF1



EF2

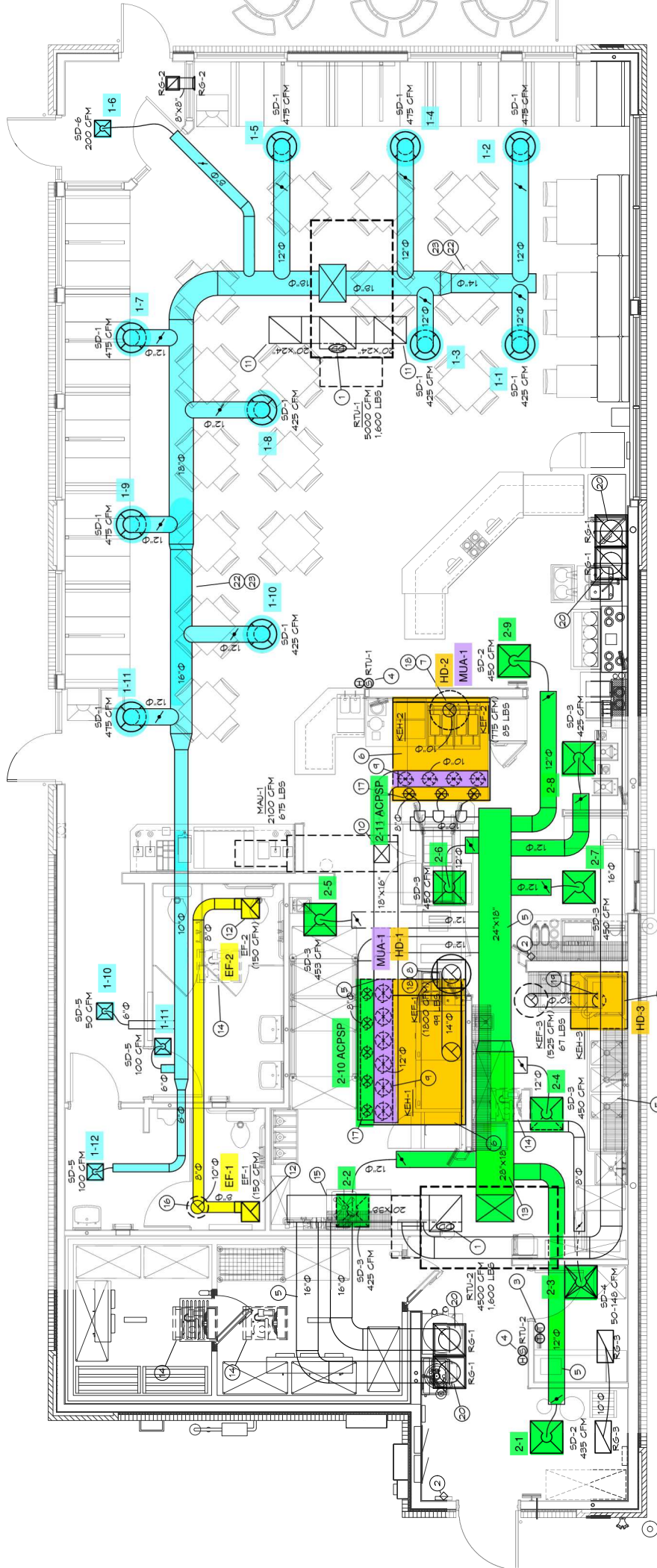


Front Of Store



HD1





MECHANICAL FLOOR PLAN



MECHANICAL PLAN NOTES:



TECH - STEP 1: INITIAL SITE WALKTHROUGH

Assigned Organization: National TAB

Status: Submitted

Asset:

| INITIAL SITE WALKTHROUGH | |
|--|-----|
| All diffusers and grilles are installed and match design? | YES |
| All hood filters installed and accounted for? | YES |
| Hoods are wired and have power? | YES |
| Hood is free of alarms? | YES |
| Thermostats have power? | YES |
| Have trades/general contractor been notified about any issues and are they created on FaciliBuild? | YES |

Notes/Comments:



TECH - STEP 2: UNIT DATA AND EVALUATION

Assigned Organization: National TAB

Status: Submitted

Asset:

| UNIT DATA AND EVALUATION WHILE GATHERING UNIT DATA CHECK THE FOLLOWING: | |
|---|---------------|
| RTU's/AHU's | |
| Economizers are assembled and functional? | YES |
| DCV Max damper opening position is set to minimum? | PRODIGY BOARD |
| Free cooling enthalpy set point set for lowest setting (Typically "D") | PRODIGY BOARD |
| Motors are all operating below the FLA rating? | YES |
| Are belts tight? | YES |
| If direct drive unit is the speed controller working. | NA |
| 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? | DD |
| Grease cup installed on hood fan? | YES |
| Hinge kit installed installed on hood fan? | YES |
| Lean fan back. Is grease duct installation adequate and is duct ran all the way to the base of the fan? | YES |
| 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 |
| If there is a dish exhaust fan, is a back draft damper installed? (If no dish EF then put NA) | NO |
| MUA | |



| | |
|--|-----|
| Rotation is correct? | YES |
| Gas piping is installed and valves are in on position? | YES |
| Heater tested and is functional? | YES |
| Internal motorized damper is fully opening? | YES |
| Motor is operating below the FLA rating? | YES |
| Unit free of noticeable noise and vibration? | YES |
| HOODS | |
| Kitchen equipment installed in proper places? | YES |
| Can kitchen equipment be turned on for final smoke test? | NO |
| Griddle is completely centered underneath hood? | YES |
| PSPs | |
| Are the dampers tightened down? (Round collars with a wingnut, not the rectangular dampers with the allen adjustment.) | YES |
| DOCUMENTATION | |
| Have trades/general contractor been notified about any issues and are they created on FaciliBuild? | YES |
| PICTURES TAKEN OF: | |
| All Issues | YES |
| Each Piece of equipment | YES |
| Each Hood | YES |
| Front of Store | YES |

Notes/Comments:



**TECH - STEP 3: TEST
ADJUST AND BALANCE**

Assigned Organization: National TAB

Status: Submitted

Asset:

| | |
|---|-----|
| 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". | NA |

Notes/Comments:



TECH - STEP 4: FINAL TESTS

Assigned Organization: National TAB

Status: Submitted

Asset:

| | |
|---|---|
| FINAL TESTS | |
| HOOD CAPTURE TEST | |
| List equipment turned on for testing | NONE, EQUIPMENT HAVE NOT BEEN STARTED UP YET |
| List smoke candle type used | SMOKE EMITTER |
| Smoke test capture - Perimeter of hood | 100% |
| Smoke test capture - Top of cooking surface | 100% |
| WITNESS | |
| Date test was completed | 1/20/2021 |
| TAB tech name / Firm | TRAVIS HALTER / NATIONAL TAB |
| Site super name / Firm | KEVIN HANNEMAN / LAUER CONSTRUCTION |
| Owner representative name / Firm (if Applicable) | NA |
| Video taken of the smoke test? | YES |
| Building pressure at front & back doors (All Systems On) | 0.005" / 0.003" |
| ADDITIONAL | |
| Do actual net building airflow, design net building airflow, and pressure coincide? If not why? (All three should either be positive or negative) | YES |
| Is the kitchen negative to the dining (use balance schedule sheet for calculation)? | YES |
| Thermostats are programmed? | YES OCC 68 HEAT - 74 COOL (8:00AM - 11:45PM) UNOCC 64 HEAT - 78 COOL (11:45PM - 8:00AM)*UNITS ARE HUMIDITY CONTROLLED |
| Prodigy parameter 131 is set to the same as the minimum damper position for all RTU's? | YES |

Notes/Comments:



Asset: RTU-1

AREA: DINING

| Unit Data | | |
|---------------------|-----------|--------------|
| | Design | Actual |
| MFG | LENNOX | LENNOX |
| Model Num | LGH150H4B | LGH150H4BH2Y |
| Serial Num | - | 5620K02342 |
| Type | RTU | RTU |
| Configuration | VERTICAL | VERTICAL |
| Num OA Filters 1 | - | 2 |
| OA Filter Size 1 | - | 14.25X23 |
| Num Final Filter 1 | - | 4 |
| Final Filter Size 1 | - | 20X25X2 |
| Num Final Filter 2 | - | NA |
| Final Filter Size 2 | - | NA |

| Test Data | | |
|------------------------|--------|----------------|
| | Design | Actual |
| SF CFM | 5000 | 5372 |
| SF RPM | - | 1037 |
| RA CFM | 4100 | 4443 |
| OA CFM | 900 | 929 |
| RL Voltage | - | 210/210/211 |
| RL Amperage | - | 10.8/11.2/10.8 |
| SF Rotation | - | CW, CORRECT |
| RA Damper Position | - | 70% |
| Min OA Damper Position | - | 30% |
| Min OA Damper Type | - | ECONOMIZER |

| Motor Data | | |
|----------------|--------|-----------|
| | Design | Actual |
| Motor MFG | - | NIDEC |
| Frame | - | 184TZ |
| Horsepower | - | 5 |
| Motor Rpm | - | 1765 |
| Phase | 3 | 3 |
| Rated Voltage | 208 | 208-230 |
| Rated Amperage | - | 13.8-13.0 |

| Performance Data | | |
|------------------|--------|--------|
| | Design | Actual |
| MA Plenum SP | - | -0.39" |
| Fan Suction SP | - | -1.01" |
| Fan Discharge SP | - | 0.86" |
| Total ESP | 1.00" | 1.25" |
| Fan Total SP | - | 1.87" |

| Drive Data | | |
|--------------------|--------|--------|
| | Design | Actual |
| Motor Sheave Size | - | VP50 |
| Motor Bore Size | - | 1.125" |
| Motor Sheave SetPt | - | 6 |
| Fan Sheave Size | - | 6.75" |
| Fan Sheave Bore | - | 1" |
| Belt CL Distance | - | 21" |
| Num of Belts | - | 1 |
| Belt Size | - | BX57 |
| Belt Alignment | - | GOOD |

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

Completed By: Travis Halter on 01/20/2021

Notes: [1] Humidity sensor and humidity wiring at roof is correct (less than 150')



Diffuser Supply (GRD)

RTU-1 / DINING

| Asset | Area Served | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) | FINAL CFM | % to design |
|--------|-------------|------|------|------------|----|--------|--------|-----------|-------------|
| SGRD1 | DINING | SD-1 | 12" | 425 | 1 | 590 | 517 | 466 | 109.6 |
| SGRD2 | DINING | SD-1 | 12" | 475 | 1 | 595 | 550 | 517 | 108.8 |
| SGRD3 | DINING | SD-1 | 12" | 425 | 1 | 627 | 489 | 460 | 108.2 |
| SGRD4 | DINING | SD-1 | 12" | 475 | 1 | 560 | 564 | 521 | 109.7 |
| SGRD5 | DINING | SD-1 | 12" | 475 | 1 | 337 | 511 | 480 | 101.1 |
| SGRD6 | DINING | SD-6 | 12" | 200 | 1 | 162 | 215 | 202 | 101.0 |
| SGRD7 | DINING | SD-1 | 12" | 475 | 1 | 483 | 530 | 498 | 104.8 |
| SGRD8 | DINING | SD-1 | 12" | 425 | 1 | 469 | 532 | 459 | 108.0 |
| SGRD9 | DINING | SD-1 | 12" | 475 | 1 | 512 | 562 | 519 | 109.3 |
| SGRD10 | DINING | SD-1 | 12" | 425 | 1 | 541 | 507 | 461 | 108.5 |
| SGRD11 | DINING | SD-1 | 12" | 475 | 1 | 544 | 592 | 518 | 109.1 |
| SGRD12 | CORRIDORS | SD-5 | 6" | 50 | 1 | 107 | 60 | 55 | 110.0 |
| SGRD13 | CORRIDORS | SD-5 | 6" | 100 | 1 | 133 | 122 | 109 | 109.0 |
| SGRD14 | CORRIDORS | SD-5 | 6" | 100 | 1 | 177 | 120 | 107 | 107.0 |

Completed By: Travis Halter on 01/20/2021

| Asset | Area Served | Notes |
|-------|-------------|-------|
| | | |



Asset: RTU-2

AREA: KITCHEN

| Unit Data | | |
|---------------------|-----------|--------------|
| | Design | Actual |
| MFG | LENNOX | LENNOX |
| Model Num | LGH150H4B | LGH150H4BH2Y |
| Serial Num | - | 5620K02343 |
| Type | RTU | RTU |
| Configuration | VERTICAL | VERTICAL |
| Num OA Filters 1 | - | 2 |
| OA Filter Size 1 | - | 14.25X23 |
| Num Final Filter 1 | - | 4 |
| Final Filter Size 1 | - | 20X25X2 |
| Num Final Filter 2 | - | NA |
| Final Filter Size 2 | - | NA |

| Test Data | | |
|------------------------|--------|----------------|
| | Design | Actual |
| SF CFM | 4500 | 4797 |
| SF RPM | - | 1035 |
| RA CFM | 3600 | 3878 |
| OA CFM | 900 | 919 |
| RL Voltage | - | 213/213/215 |
| RL Amperage | - | 11.6/11.6/11.6 |
| SF Rotation | - | CW, CORRECT |
| RA Damper Position | - | 73% |
| Min OA Damper Position | - | 27% |
| Min OA Damper Type | - | ECONOMIZER |

| Motor Data | | |
|----------------|--------|-----------|
| | Design | Actual |
| Motor MFG | - | NIDEC |
| Frame | - | 184TZ |
| Horsepower | - | 5 |
| Motor Rpm | - | 1765 |
| Phase | 3 | 3 |
| Rated Voltage | 208 | 208-230 |
| Rated Amperage | - | 13.8-13.0 |

| Performance Data | | |
|------------------|--------|--------|
| | Design | Actual |
| MA Plenum SP | - | -0.92" |
| Fan Suction SP | - | -1.33" |
| Fan Discharge SP | - | 0.29" |
| Total ESP | 1.00" | 1.21" |
| Fan Total SP | - | 1.62" |

| Drive Data | | |
|--------------------|--------|--------|
| | Design | Actual |
| Motor Sheave Size | - | VP50 |
| Motor Bore Size | - | 1.125" |
| Motor Sheave SetPt | - | 6 |
| Fan Sheave Size | - | 6,75" |
| Fan Sheave Bore | - | 1" |
| Belt CL Distance | - | 21" |
| Num of Belts | - | 1 |
| Belt Size | - | BX57 |
| Belt Alignment | - | GOOD |

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

Completed By: Travis Halter on 01/20/2021

Notes: [1] Humidity sensor and humidity wiring at roof is correct (less than 150')



Diffuser Supply (GRD)

RTU-2 / KITCHEN

| Asset | Area Served | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) | FINAL CFM | % to design |
|--------|-------------|-------|---------|------------|-------|--------|--------|-----------|-------------|
| SGRD1 | OFFICE | SD-2 | 12" | 435 | 1 | 402 | 488 | 464 | 106.7 |
| SGRD2 | KITCHEN | SD-3 | 12" | 425 | 1 | 406 | 499 | 461 | 108.5 |
| SGRD3 | KITCHEN | SD-4 | 12" | 148 | 1 | 82 | 156 | 148 | 100.0 |
| SGRD4 | KITCHEN | SD-3 | 12" | 450 | 1 | 557 | 489 | 465 | 103.3 |
| SGRD5 | KITCHEN | SD-3 | 12" | 453 | 1 | 511 | 495 | 470 | 103.8 |
| SGRD6 | KITCHEN | SD-3 | 12" | 450 | 1 | 643 | 502 | 477 | 106.0 |
| SGRD7 | KITCHEN | SD-3 | 12" | 450 | 1 | 488 | 501 | 476 | 105.8 |
| SGRD8 | KITCHEN | SD-3 | 12" | 425 | 1 | 653 | 492 | 467 | 109.9 |
| SGRD9 | KITCHEN | SD-2 | 12" | 450 | 1 | 597 | 514 | 488 | 108.4 |
| SGRD10 | ACPSP | ACPSP | 108"X6" | 505 | 3.51 | 508 | 601 | 549 | 108.7 |
| SGRD11 | ACPSP | ACPSP | 42"X6" | 309 | 1.365 | 306 | 349 | 332 | 107.4 |

Completed By: Travis Halter on 01/20/2021

| Asset | Area Served | Notes |
|-------|-------------|-------|
|-------|-------------|-------|



Asset: MAU1

AREA: HOOD 1&2

| Unit Data | | |
|---------------|--------------|--------------|
| | Design | Actual |
| MFG | CAPITVE AIRE | CAPITVE AIRE |
| Model Num | NA | A1-D.250-15D |
| Serial Num | - | 4125456 |
| Type | - | MAU |
| Configuration | - | VERTICAL |

| Test Data | | |
|------------------|--------|-------------|
| | Design | Actual |
| CFM | 1900 | 1987 |
| SF RPM | - | 1633 |
| Motor RPM | - | 1633 |
| SF System SetPt | - | 56.3 HZ |
| RL Voltage | - | 216/216/216 |
| RL Amperage | - | 2.5/2.5/2.5 |
| Total ESP | - | NA |
| Fan Discharge SP | - | NA |

| Motor Data | | |
|------------------|--------|-----------|
| | Design | Actual |
| Motor MFG | - | TECO |
| Frame | - | 145T |
| Horsepower | - | 2 |
| Motor Rpm | - | 1740 |
| Phase | - | 3 |
| Voltage (rated) | - | 230/460 |
| Amperage (rated) | - | 5.48/2.74 |
| Service Factor | - | 1.15 |

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

| Gas Heat | | |
|---------------------------|--------|--------|
| | Design | Actual |
| Heater Operates (y/n) | - | YES |
| Flame Status (pass/fail) | - | PASS |
| Inlet Air Temp SetPt | - | 55 |
| Discharge Air Temp SetPt | - | 60 |
| Air Flow Switch SP Actual | - | 0.40" |

Completed By: Travis Halter on 01/19/2021

Notes:



Asset: EF-1

AREA: RR

| Unit Data | | |
|---------------|----------|-------------------|
| | Design | Actual |
| MFG | COOK | COOK |
| Model Num | GC-168 | GEMINI 160 SERIES |
| Serial Num | - | NL |
| Type | CEILING | CEILING |
| Configuration | VERTICAL | VERTICAL |

| Test Data | | |
|------------------|--------|-------------|
| | Design | Actual |
| CFM | 150 | 145 |
| Fan RPM | 1099 | DD |
| Fan Rotation | - | CW, CORRECT |
| Motor RPM | - | DD |
| System SetPt | - | HIGHEST |
| RL Voltage | - | 121 |
| RL Amperage | - | 0.43 |
| Total ESP | 0.25" | [1] |
| Fan Inlet SP | - | ATM |
| Fan Discharge SP | - | [1] |

| Motor Data | | |
|------------------|--------|--------|
| | Design | Actual |
| Motor MFG | - | QUEACE |
| Frame | - | NL |
| Horsepower | 50.5 W | 16W |
| Motor Rpm | - | 1100 |
| Phase | 1 | 1 |
| Voltage (rated) | 120 | 115 |
| Amperage (rated) | - | 0.51 |
| Service Factor | - | 1.0 |

Completed By: Travis Halter on 01/19/2021

Notes: [1] Ductwork above hard ceiling, Unable to take SPs.



Asset: EF-2

AREA: RR

| Unit Data | | |
|---------------|----------|-------------------|
| | Design | Actual |
| MFG | COOK | COOK |
| Model Num | GC-168 | GEMINI 160 SERIES |
| Serial Num | - | NL |
| Type | CEILING | CEILING |
| Configuration | VERTICAL | VERTICAL |

| Test Data | | |
|------------------|--------|-------------|
| | Design | Actual |
| CFM | 150 | 135 |
| Fan RPM | 1099 | DD |
| Fan Rotation | - | CW, CORRECT |
| Motor RPM | - | DD |
| System SetPt | - | HIGHEST |
| RL Voltage | - | 121 |
| RL Amperage | - | 0.43 |
| Total ESP | 0.25" | [1] |
| Fan Inlet SP | - | ATM |
| Fan Discharge SP | - | [1] |

| Motor Data | | |
|------------------|--------|--------|
| | Design | Actual |
| Motor MFG | - | QUEACE |
| Frame | - | NL |
| Horsepower | 50.5 W | 16W |
| Motor Rpm | - | 1100 |
| Phase | 1 | 1 |
| Voltage (rated) | 120 | 115 |
| Amperage (rated) | - | 0.51 |
| Service Factor | - | 1.0 |

Completed By: Travis Halter on 01/19/2021

Notes: [1] Ductwork above hard ceiling, Unable to take SPs.



Asset: KEF-1

AREA: HD-1-GRIDDLE

| Unit Data | | |
|----------------------|--------------|--------------|
| | Design | Actual |
| MFG | CAPTIVE-AIRE | CAPTIVE-AIRE |
| Model Num | DU85HFA | DU85HFA |
| Serial Num | - | 4125456 |
| Type | UPBLAST | UPBLAST |
| Configuration | VERTICAL | VERTICAL |

| Motor Data | | |
|-------------------------|--------|-------------|
| | Design | Actual |
| Motor MFG | - | TELCO GREEN |
| Frame | - | NL |
| Horsepower | 0.75 | 0.75 |
| Motor Rpm | - | 1800 |
| Phase | 1 | 1 |
| Voltage (rated) | 115 | 115 |
| Amperage (rated) | - | 11.2 |
| Service Factor | - | 1.0 |

| Test Data | | |
|-------------------------|--------|-----------------|
| | Design | Actual |
| CFM | 1600 | 1644 |
| Fan RPM | 1441 | 1440 |
| Fan Rotation | - | CCW, CORRECT |
| Motor RPM | - | 1440 |
| System SetPt | - | 80% |
| RL Voltage | - | 122 |
| RL Amperage | - | 8.0 |
| Total ESP | 1.20" | 1.02" |
| Fan Inlet SP | - | -1.02" |
| Fan Discharge SP | - | ATM |

Completed By: Travis Halter on 01/19/2021

Notes:



Asset: KEF-2

AREA: HD-2-FRYER

| Unit Data | | |
|----------------------|--------------|--------------|
| | Design | Actual |
| MFG | CAPTIVE-AIRE | CAPTIVE-AIRE |
| Model Num | DU50HFA | DU50HFA |
| Serial Num | - | 4125456 |
| Type | UPBLAST | UPBLAST |
| Configuration | VERTICAL | VERTICAL |

| Motor Data | | |
|-------------------------|--------|-------------|
| | Design | Actual |
| Motor MFG | - | TELCO GREEN |
| Frame | - | NL |
| Horsepower | 0.50 | 0.5 |
| Motor Rpm | - | 1800 |
| Phase | 1 | 1 |
| Voltage (rated) | 115 | 115 |
| Amperage (rated) | - | 7.9 |
| Service Factor | - | 1.0 |

| Test Data | | |
|-------------------------|--------|-----------------|
| | Design | Actual |
| CFM | 775 | 797 |
| Fan RPM | 1656 | 1080 |
| Fan Rotation | - | CCW, CORRECT |
| Motor RPM | - | 1080 |
| System SetPt | - | 60% |
| RL Voltage | - | 123 |
| RL Amperage | - | 2.6 |
| Total ESP | 1.25" | 0.67" |
| Fan Inlet SP | - | -0.67" |
| Fan Discharge SP | - | ATM |

Completed By: Travis Halter on 01/19/2021

Notes:



Asset: KEF-3

AREA: HD-3-DISH

| Unit Data | | |
|----------------------|--------------|--------------|
| | Design | Actual |
| MFG | CAPTIVE-AIRE | CAPTIVE AIRE |
| Model Num | DU33HFA | DU33HFA |
| Serial Num | - | 4125456 |
| Type | UPBLAST | UPBLAST |
| Configuration | VERTICAL | VERTICAL |

| Motor Data | | |
|-------------------------|--------|-------------|
| | Design | Actual |
| Motor MFG | - | TELCO GREEN |
| Frame | - | NL |
| Horsepower | 0.33 | 0.33 |
| Motor Rpm | - | 1800 |
| Phase | 1 | 1 |
| Voltage (rated) | 115 | 115 |
| Amperage (rated) | - | 5.4 |
| Service Factor | - | 1.0 |

| Test Data | | |
|-------------------------|--------|-----------------|
| | Design | Actual |
| CFM | 525 | 536 |
| Fan RPM | 1656 | 1026 |
| Fan Rotation | - | CCW, CORRECT |
| Motor RPM | - | 1026 |
| System SetPt | - | 57% |
| RL Voltage | - | 123 |
| RL Amperage | - | 0.90 |
| Total ESP | 0.80" | 0.34" |
| Fan Inlet SP | - | -0.34" |
| Fan Discharge SP | - | ATM |

Completed By: Travis Halter on 01/19/2021

Notes:

System/Unit: Kitchen Hood Type I



Asset: HD-1

AREA: GRIDDLE

| Unit Data | | |
|----------------------|-------------------|--------------|
| | Design | Actual |
| MFG | CAPTIVE-AIRE | CAPTIVE-AIRE |
| Model Num | 5424 ND-2-ACPSP-F | 5424 ND-2 |
| Job / Serial Num | - | 4125456 |
| Type | TYPE I CANOPY | TYPE I |
| Hood length | 96 | 96" |
| Hood Width | 54 | 54" |
| Supply Plenum Type | ACPSP | ACPSP |
| Supply Plenum Width | 14 | 14" |
| Supply Plenum Length | 108 | 108" |

| Test Data Exhaust | | |
|-------------------------|---------------|---------------|
| | Design | Actual |
| Filter Type | CAPTRATE SOLO | CAPTRATE SOLO |
| Filter Size 1 | 16X16 | 16X16 |
| Filter Qty 1 | 5 | 5 |
| Filter AK factor size 1 | 1.62 | 1.62 |
| Filter Total AK Area | 8.1 | 8.1 |
| Filter1 FPM | - | 196 |
| Filter2 FPM | - | 209 |
| Filter3 FPM | - | 206 |
| Filter4 FPM | - | 206 |
| Filter5 FPM | - | 200 |
| Filter Ave FPM(corr) | - | 203 |
| CFM | 1600 | 1644 |

| Cooking Equipment | | |
|-------------------|--------|---------|
| | Design | Actual |
| Item 1 | - | GRIDDLE |
| Item 2 | - | GRIDDLE |

| Test Data Supply | | |
|------------------|--------|--------|
| | Design | Actual |
| AK factor | 1 | 1 |
| Total AK Area | 10.5 | 10.5 |
| Kv factor (Vel) | 0.90 | 0.90 |
| Num of Readings | - | 8 |
| Reading1 FPM | - | 159 |
| Reading2 FPM | - | 162 |
| Reading3 FPM | - | 139 |
| Reading4 FPM | - | 159 |
| Reading5 FPM | - | 143 |
| Reading6 FPM | - | 128 |
| Reading7 FPM | - | 133 |
| Reading8 FPM | - | 129 |
| Ave FPM(corr) | - | 144 |
| CFM | 1280 | 1361 |

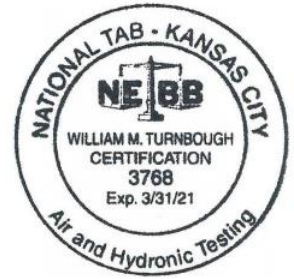
| Performance Data | | |
|-----------------------------|--------|---------------|
| | Design | Actual |
| Exh-Supply Net CFM | 320 | 283 |
| Smoke Generation Type | - | SMOKE EMITTER |
| Cooking Equip Heat On | - | NO |
| Hood Capture % | - | 100% |
| End Panels Installed (Y/N) | - | YES |
| Space Offset Temp Riser 1 | - | 15.0 |
| Riser Temp F (idle) Riser 1 | - | 72.8 |
| Ambient Room Temp | - | 63.1 |

| General | | |
|---------------------|--------|--------------------|
| | Design | Actual |
| Third Party Witness | - | KEVIN HANNEMAN |
| Third Party Company | - | LAUER CONSTRUCTION |
| Tech Witness | - | TRAVIS HALTER |
| Tech Company | - | NATIONAL TAB |

Completed By: Travis Halter on 01/20/2021

Notes:

System/Unit: Kitchen Hood Type I



Asset: HD-2

AREA: FRYER

| Unit Data | | |
|----------------------|-------------------|--------------|
| | Design | Actual |
| MFG | CAPTIVE-AIRE | CAPTIVE-AIRE |
| Model Num | 5424 ND-2-ACPSP-F | 5424 ND-2 |
| Job / Serial Num | - | 4125456 |
| Type | TYPE I CANOPY | TYPE I |
| Hood length | 60 | 60" |
| Hood Width | 54 | 54" |
| Supply Plenum Type | ACPSP | ACPSP |
| Supply Plenum Width | 12 | 12" |
| Supply Plenum Length | 60 | 60" |

| Test Data Exhaust | | |
|-------------------------|---------------|---------------|
| | Design | Actual |
| Filter Type | CAPTRATE SOLO | CAPTRATE SOLO |
| Filter Size 1 | 16X16 | 16X16 |
| Filter Qty 1 | 3 | 3 |
| Filter AK factor size 1 | 1.62 | 1.62 |
| Filter Total AK Area | 4.86 | 4.86 |
| Filter1 FPM | - | 158 |
| Filter2 FPM | - | 166 |
| Filter3 FPM | - | 169 |
| Filter4 FPM | - | NA |
| Filter5 FPM | - | NA |
| Filter Ave FPM(corr) | - | 164 |
| CFM | 775 | 797 |

| Cooking Equipment | | |
|-------------------|--------|--------|
| | Design | Actual |
| Item 1 | - | FRYER |
| Item 2 | - | NA |

| Test Data Supply | | |
|------------------|--------|--------|
| | Design | Actual |
| AK factor | 1 | 1 |
| Total AK Area | 5 | 5 |
| Kv factor (Vel) | 0.90 | 0.90 |
| Num of Readings | - | 5 |
| Reading1 FPM | - | 136 |
| Reading2 FPM | - | 136 |
| Reading3 FPM | - | 149 |
| Reading4 FPM | - | 141 |
| Reading5 FPM | - | 133 |
| Reading6 FPM | - | NA |
| Reading7 FPM | - | NA |
| Reading8 FPM | - | NA |
| Ave FPM(corr) | - | 139 |
| CFM | 620 | 626 |

| Performance Data | | |
|-----------------------------|--------|---------------|
| | Design | Actual |
| Exh-Supply Net CFM | 155 | 171 |
| Smoke Generation Type | - | SMOKE EMITTER |
| Cooking Equip Heat On | - | NO |
| Hood Capture % | - | 100% |
| End Panels Installed (Y/N) | - | YES |
| Space Offset Temp Riser 1 | - | 15.0 |
| Riser Temp F (idle) Riser 1 | - | 77.0 |
| Ambient Room Temp | - | 63.1 |

| General | | |
|---------------------|--------|--------------------|
| | Design | Actual |
| Third Party Witness | - | KEVIN HANNEMAN |
| Third Party Company | - | LAUER CONSTRUCTION |
| Tech Witness | - | TRAVIS HALTER |
| Tech Company | - | NATIONAL TAB |

Completed By: Travis Halter on 01/20/2021

Notes:

System/Unit: Kitchen Hood Type II



Asset: HD-3

AREA: DISH

| Unit Data | | |
|--------------------|-------------------|--------------|
| | Design | Actual |
| MFG | CAPTIVE-AIRE | CAPTIVE-AIRE |
| Model Num | 4224 VHB-G | 4224 VHB |
| Serial Num | - | 4125456 |
| Type | TYPE II CANOPY | TYPE II |
| Hood length | 42 | 42" |
| Hood Width | 42 | 42" |

| Test Data | | |
|--------------------|--------|--------|
| | Design | Actual |
| Exhaust CFM | 525 | 536 |

Completed By: Travis Halter on 01/19/2021

Notes: