

Report By:

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



Report: TAB REPORT
Function: Test, Adjust, & Balance
Date: 10/25/2023

PROJECT

**09-04-23 CHICK-FIL-A #05049 -
CHRISTIANSBURG, VA (CHRISTIANSBURG
FSU) NEW STORE**

2580 NORTH FRANKLIN ST

CHRISTIANSBURG, VA 24073

Client

Chick-fil-A (CFA)
5200 BUFFINGTON ROAD
ATLANTA, GA 30349-2998

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.

Inspections and Commissioning Light

The HVAC equipment, ductwork, and other building assets were inspected per Chick Fil A requirements. The results of this inspection is included in checklists within the report. Operational tests were also performed on the HVAC controls to ensure occupied and unoccupied sequence of operation.

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 (Halton)

Each kitchen exhaust fan was measured by taking static pressure at the exhaust plenum and comparing to OEM performance data. The total flow of the exhaust was then adjusted to tolerance of the engineer's design flow.

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 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.

Issue List

- Non-Critical - AC2 / GFI Outlet
- Non-Critical - Ansul Pull Station / Labels
- Non-Critical - EF2 / Cleanout Door
- Non-Critical - T500 Panel / High Voltage Cover
- Review+Rectify - AC1, AC2, AC3 / Enthaly Offeset
- Review+Rectify - AC3 & AC1 / Compressor 1 & Compressor 2
- Review+Rectify - EF1 / Grease Cleanout Door
- Review+Rectify - T500 Panel / Capture Jets



09-04-23 CHICK-FIL-A #05049 - CHRISTIANSBURG, VA (CHRISTIANSBURG FSU) NEW STORE

Project Issue Information

Issue Name : Non-Critical - AC2 / GFI Outlet
Description : AC2 GFI outlet is not installed. This is a Lennox factory issue. Page: M-401 Detail: Rooftop Unit Schedule Note: 17
Created By : National TAB **Assigned To :** National TAB - Dale Wheeler
Status : Open
Originated Date : 09/06/2023 - Dale Wheeler - National TAB

Project Issue File Details



AC2
09/06/2023



09-04-23 CHICK-FIL-A #05049 - CHRISTIANSBURG, VA (CHRISTIANSBURG FSU) NEW STORE

Project Issue Information

Issue Name : Non-Critical - Ansul Pull Station / Labels
Description : Ansul pull stations are not labeled. Page: M-301 Detail: 1 / Notes
Created By : National TAB **Assigned To :** National TAB - Dale Wheeler
Status : Open
Originated Date : 09/05/2023 - Dale Wheeler - National TAB

Project Issue File Details



ANSUL
09/05/2023



09-04-23 CHICK-FIL-A #05049 - CHRISTIANSBURG, VA (CHRISTIANSBURG FSU) NEW STORE

Project Issue Information

Issue Name : Non-Critical - EF2 / Cleanout Door
Description : EF2 grease duct installed slightly different then shown on prints causing one grease cleanout door to be located in a different location then shown on prints. Page: M-250 Detail: 1
Created By : National TAB **Assigned To :** National TAB - Dale Wheeler
Status : Open
Originated Date : 09/06/2023 - Dale Wheeler - National TAB

Project Issue File Details



EF2
09/06/2023

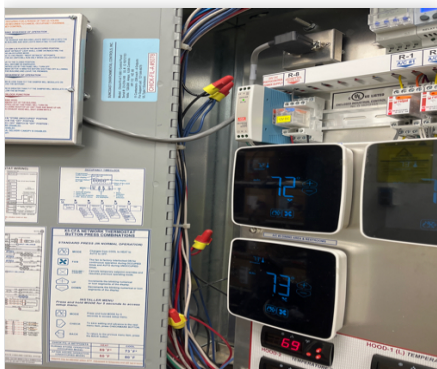


09-04-23 CHICK-FIL-A #05049 - CHRISTIANSBURG, VA (CHRISTIANSBURG FSU) NEW STORE

Project Issue Information

Issue Name : Non-Critical - T500 Panel / High Voltage Cover
Description : High voltage wiring cover is not installed on the T-500 panel.
Created By : National TAB **Assigned To :** National TAB - Dale Wheeler
Status : Open
Originated Date : 09/05/2023 - Dale Wheeler - National TAB

Project Issue File Details



Cover
09/05/2023



09-04-23 CHICK-FIL-A #05049 - CHRISTIANSBURG, VA (CHRISTIANSBURG FSU) NEW STORE

Project Issue Information

Issue Name : Review+Rectify - AC1, AC2, AC3 / Enthaly Offeset
Description : Prodigy boards for all units would not allow the enthalpy offset to be set lower than 10.0. Lennox needs to provide information / solution as to why their boards will not allow the enthalpy offset to be set to 5.0
Created By : National TAB **Assigned To :** National TAB - Dale Wheeler
Status : Open
Originated Date : 09/07/2023 - Dale Wheeler - National TAB

Project Issue File Details



ENRHALPY
09/07/2023



09-04-23 CHICK-FIL-A #05049 - CHRISTIANSBURG, VA (CHRISTIANSBURG FSU) NEW STORE

Project Issue Information

Issue Name : Review+Rectify - AC3 & AC1 / Compressor 1 & Compressor 2
Description : AC3 compressor 1 will not run due an alarm for high pressure. AC1 compressor 2 contactor engages, but compressor will not turn on. Mechanical has been made aware of these issues.

Created By : National TAB **Assigned To :** National TAB - Dale Wheeler

Status : Open

Originated Date : 09/07/2023 - Dale Wheeler - National TAB

Project Issue File Details



COMPRESSOR2
09/07/2023



09-04-23 CHICK-FIL-A #05049 - CHRISTIANSBURG, VA (CHRISTIANSBURG FSU) NEW STORE

Project Issue Information

Issue Name : Review+Rectify - EF1 / Grease Cleanout Door
Description : EF1 is missing one grease cleanout door per prints. Page: M-250 Detail: 1
Created By : National TAB **Assigned To :** National TAB - Dale Wheeler
Status : Open
Originated Date : 09/06/2023 - Dale Wheeler - National TAB

Project Issue File Details



EF1
09/06/2023



09-04-23 CHICK-FIL-A #05049 - CHRISTIANSBURG, VA (CHRISTIANSBURG FSU) NEW STORE

Project Issue Information

Issue Name : Review+Rectify - T500 Panel / Capture Jets
Description : Capture jets do not turn off on Hood1L, Hood1R, Hood2, Hood3 when store is placed into unoccupied mode.
Created By : National TAB **Assigned To :** National TAB - Dale Wheeler
Status : Open
Originated Date : 09/11/2023 - Dale Wheeler - National TAB

Project Issue File Details



T-500
09/11/2023

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
AC-1	KITCHEN	9500	8801	8050	7446	1450	1355	15.3%	15.4%						
AC-2	SERVING, DRIVE THRU	5250	5317	3675	3846	1575	1471	30.0%	27.7%						
AC-3	DINING	6000	6271	4250	4616	1750	1655	29.2%	26.4%						
EF-1	HD1 L+R PRESS COOKER											1913	1851		
EF-2	HD2/HD3 FRYERS											1402	1466		
EF-3	RESTROOM													300	307
TOTALS		20750	20389	15975	15908	4775	4481			0	0	3315	3317	300	307

NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	4775	4481
TOTAL EXHAUST	3615	3624
NET AIRFLOW	1160	857

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H2O)
FRONT	0.0129
SIDE	0.009
REAR	0.011
AVERAGE	0.011

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:

CheckList List

- TECH - 01: INSPECTION: LENNOX RTU'S
- TECH - 02: INSPECTION: EXHAUST FANS
- TECH - 03: INSPECTION: CONTROLS
- TECH - 04: INSPECTION: HOOD/GREASE DUCT
- TECH - 05: INSPECTION: HVAC DUCTWORK
- TECH - 06: INSPECTION: OTHER
- TECH - 07: TAB CHECKS
- TECH - 08: LENNOX PRODIGY SETTINGS
- TECH - 09: CONTROLS COMMISSIONING
- TECH - 10: SMOKE CAPTURE AND PRESSURIZATION TESTS
- TECH - SITE PICTURES



09-04-23 CHICK-FIL-A #05049 - CHRISTIANSBURG, VA (CHRISTIANSBURG FSU) NEW STORE

CheckList Information

Name : TECH - 01: INSPECTION: LENNOX RTU'S **Status :** Completed
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB
Created Date : 08/31/2023 - Brianna Biggs - National TAB
Completed Date : 09/07/2023 - Dale Wheeler - National TAB

CheckList Item Details

OVERALL CHECKS

-All doors and panels are free from damage?

Comment:

NO DAMAGE TO NOTE AT THIS TIME FOR ALL UNITS

-Any other physical damage to note?

Comment:

NO DAMAGE TO NOTE AT THIS TIME FOR ALL UNITS

-Units are level? (Use a bubble level)

Comment:

YES / AC1, AC2, AC3

-OA filters are installed?

Comment:

YES / AC1, AC2, AC3

-Caulking at corners of "hinge" on the OA hood?

Comment:

YES / AC1, AC2, AC3

-Piping (condensate and gas) does not obstruct doors or access panels?

Comment:

NO PIPING OBSTRUCTS ANY DOORS ON ALL UNITS

-Clean filters installed in the units?

Comment:

YES / AC1, AC2, AC3

-GFI outlet (if installed) is wired and operational?

Comment:

YES / AC1 & AC3 NO / AC2 GFI NOT INSTALLED

-Grommets installed for GFI outlet wiring? (If applicable)

Comment:

YES / AC1, AC2, AC3

-Transformers are set to the correct voltage (typ. 208)

Comment:

YES / AC1, AC2, AC3

Additional comments:

Comment:

N/A

MECHANICAL CHECKS

-Gas piping installed and valves turned on?

Comment:

GAS PIPING IS INSTALLED BUT VALVES ARE OFF DUE TO NO GAS NOT BEING SUPPLIED TO THE BUILDING AT THIS TIME

-Gas piping grommets are installed?

Comment:

YES / AC1, AC2, AC3

-Gas piping is painted with coat Aluminum base paint (should also have a coat of zinc rust primer but likely won't be visible).
As per Plumbing specs

Comment:

YES / AC1, AC2, AC3

-Hail Guards are installed on the condenser coils

Comment:

YES / AC1, AC2, AC3

-Condenser coil is clean and fins are straight?

Comment:

YES / AC1, AC2, AC3

-Economizers are functional?

Comment:

YES / AC1, AC2, AC3

-Evaporator coil is clean and fins are straight?

Comment:

YES / AC1, AC2, AC3

-Turn off unit and spot check high voltage wiring lugs are tight, no loose wires, etc.

Comment:

YES / AC1, AC2, AC3

-Belts are properly tensioned? (Rotated to 3 tick marks)

Comment:

YES / AC1, AC2, AC3

-Belts and pulleys are all aligned?

Comment:

YES / AC1, AC2, AC3

-Are tensioner pulleys at an adequate angle? If fully horizontal or fully vertical notify Will so that new belts can be shipped to site ASAP and installed by NT technician

Comment:

YES / AC1, AC2, AC3

Additional comments:

Comment:

N/A

CONDENSATE DRAINS - CHECK THAT THEY MATCH DETAIL IN THE PLUMBING DRAWINGS

-Cleanout plug is installed for the lower T fitting

Comment:

YES / AC1, AC2, AC3

-Condensate drains are properly pitched to drain away from the units?

Comment:

YES / AC1, AC2, AC3

-Condensate drains have at least 2" rise between connection to unit and the pipe after the P-trap?

Comment:

YES / AC1, AC2, AC3

-Do condensate lines for each RTU match the sizing shown on the plumbing rooftop drawing? (There should be no reduction in size at any point including the P-trap.)

Comment:

YES / AC1, AC2, AC3

-Condensate drains are installed and have union on both sides of P-trap? (per plumbing drawings)

Comment:

YES / AC1, AC2, AC3

Upper T fitting is open to the atmosphere and the top of the opening is below the pipe connection to the RTU

Comment:

YES / AC1, AC2, AC3

Additional comments:

Comment:

N/A

LOW VOLTAGE WIRING

-Low voltage wiring is ran through wire hub?

Comment:

YES / AC1, AC2, AC3

-Grommets are installed around penetrations for low voltage wiring that is not in conduit?

Comment:

YES / AC1, AC2, AC3

-Wire landed to OCP (and not jumpered)?

Comment:

YES / AC1, AC2, AC3

-Wires landed to R, G, Y1, Y2, W1, W2, C on thermostat terminal strip?

Comment:

YES / AC1, AC2, AC3

-Wire from terminal GND in the panel as well as both shield wires are landed at the drain terminal?

Comment:

YES / AC1, AC2, AC3

-Wire is landed to HUM?

Comment:

YES / AC1, AC2, AC3

-Wire for humidstats is landed at 24VAC R terminal on the "Sensor" strip?

Comment:

YES / AC1, AC2, AC3

-Wire landed to DI-1 smoke detector?

Comment:

YES / AC1, AC2, AC3

Additional comments:

Comment:

N/A

OTHER

Has the mechanical contractor completed the startups?

Comment:

YES / AC1, AC2, AC3

-Laminated copy of the control wiring is included in each RTU electrical cabinet as per the Controls M Sheet

Comment:

YES / AC1, AC2, AC3

-Has mechanical contractor provided a second set of filters for owner (should be stored in space somewhere)

Comment:

NO

-Annunciators are the specified Suncoast Keyless type?

Comment:

YES / AC1, AC2, AC3

-All annunciators are labeled?

Comment:

YES / AC1, AC2, AC3

-What is the drive kit # for each RTU? Take from Lennox options stickers

Comment:

AC1 DRIVE KIT #7 AC2 DRIVE KIT #3 AC3 DRIVE KIT #3

Additional comments:

Comment:

N/A

SEISMIC DETAILS

Seismic clips attached to both sides of the unit and secured with screws when specified. Typically two per side (four total).

Comment:

NO / AC1, AC2, AC3

Additional comments:

Comment:

N/A

Notes/Comments :

N/A

Date :09/07/2023



09-04-23 CHICK-FIL-A #05049 - CHRISTIANSBURG, VA (CHRISTIANSBURG FSU) NEW STORE

CheckList Information

Name : TECH - 02: INSPECTION: EXHAUST FANS **Status :** Completed
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB
Created Date : 08/31/2023 - Brianna Biggs - National TAB
Completed Date : 09/07/2023 - Dale Wheeler - National TAB

CheckList Item Details

RESTROOM EXHAUST FAN

-Rectangular duct is lined?

Comment:

YES

-Round duct is externally insulated?

Comment:

YES

-Backdraft damper is installed in duct and operates correctly?

Comment:

YES

-Flexible conduit is run up through duct to raceway in fan?

Comment:

YES

-Fan is secured to the curb with screws?

Comment:

YES

-Speed controller installed and wired?

Comment:

YES

Additional comments:

Comment:

N/A

UTILITY SET GREASE FANS

-1' high nozzle is installed? If the fan is within 10' of parapet walls, RTU's, or condensing units, ensure that it extends at least 2" above them.

Comment:

YES / EF1 & EF2

-Joint between the nozzle and the exhaust fan collar has welded bead (not tack weld) so that grease will not accumulate? Caulking not preferred as it falls off.

Comment:

YES / EF1 & EF2

-G2 drip guard is installed and drain is piped to center of the guard?

Comment:

YES / EF1 & EF2

-Transitions from duct to fan, and from fan to nozzle, are bolted and either have fire caulking or gasket?

Comment:

YES / EF1 & EF2

-Service disconnect is installed on the outside of the fan and functional?

Comment:

YES / EF1 & EF2

-Belts are properly tensioned? (rotated to 2 tick marks)

Comment:

YES / EF1 & EF2

-PVC grease drains pieces are glued together?

Comment:

YES / EF1 & EF2

-Pulleys are aligned?

Comment:

YES / EF1 & EF2

-Spare belt provided for each fan? (Relocate spare belt to the inside of the door.)

Comment:

YES / EF1 & EF2

-What other defects or quality control issues observed with the fans? For instance - access door missing, name plate wrong/missing, bolts or nuts missing from motor mount, etc

Comment:

NO DEFECTS TO NOTE AT THIS TIME

-Walk around unit and ensure fan is free of damage?

Comment:

NO DAMAGE TO NOTE AT THIS TIME

-Verify that the nameplate matches design and that the store # matches

Comment:

YES / MODEL NUMBERS ON FANS MATCH MODEL NUMBERS LISTED IN PRINTS

-Blower wheel spins freely?

Comment:

YES / EF1 & EF2

-Fan is free of noise and vibration?

Comment:

YES / EF1 & EF2

Additional comments:

Comment:

N/A

UPBLAST GREASE FANS

-Curb extensions installed?

Comment:

N/A

-Grease duct is terminated flush with top of curb?

Comment:

N/A

-Fire caulking around the grease duct flange on top of curb?

Comment:

N/A

-Drip guard is installed and drain is piped to center of the guard?

Comment:

N/A

-Conduit is long enough so that fan can fully hinge back?

Comment:

N/A

-Fan hinges in correct direction as specified in mechanical plans? If not shown on plans, are they all hinged in the same direction?

Comment:

N/A

-Belts are properly tensioned? (rotated to 3 tick marks)

Comment:

N/A

-Service disconnect is installed and functional?

Comment:

N/A

-PVC grease drains pieces are glued together?

Comment:

N/A

-Pulleys are aligned?

Comment:

N/A

-Spare belt provided for each fan?

Comment:

N/A

-Walk around unit and ensure fan is free of damage?

Comment:

N/A

-Verify that the nameplate matches design and that the store # matches

Comment:

N/A

-Blower wheel spins freely?

Comment:

N/A

-No major leakage around the base of the fan?

Comment:

N/A

-Fan is free of noise and vibration?

Comment:

N/A

Additional comments:

Comment:

N/A

Notes/Comments :

N/A

Date :09/07/2023



09-04-23 CHICK-FIL-A #05049 - CHRISTIANSBURG, VA (CHRISTIANSBURG FSU) NEW STORE

CheckList Information

Name : TECH - 03: INSPECTION: CONTROLS **Status :** Completed
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB
Created Date : 08/31/2023 - Brianna Biggs - National TAB
Completed Date : 09/07/2023 - Dale Wheeler - National TAB

CheckList Item Details

SENSORS (OVERALL CHECKS)

-Sensors labeled on wall adjacent to sensors (unless plans specifically state otherwise) and have the correct unit number and indicate whether they are temp or humidity?

Comment:

YES / AC1, AC2, AC3

-Temperature and humidity sensors are installed where shown on the drawing?

Comment:

YES / AC1, AC2, AC3

Additional comments:

Comment:

N/A

TEMPERATURE SENSORS

-Temperature sensors are wired to the correct thermostat? (Check by having someone hold a handwarming pad or lighter under the sensor from a safe distance and verifying temperature rise on the thermostat)

Comment:

YES / AC1, AC2, AC3

-Verify that manufacturer/model stamped on the outer jacket of the temperature sensor wiring cables is Connect Air model W221P-2003OR. The wire should be a shielded twisted pair (i.e., only two wires), with one drain wire. If other manufacturers are used, note the manufacturer/model and take picture for report.

Comment:

YES / AC1, AC2, AC3

-Is RS1 on each temperature sensor wired to RS-1 in the Suncoast panel?

Comment:

YES / AC1, AC2, AC3

-Is RS+V on each temperature sensor wired to RS+V in the Suncoast panel?

Comment:

YES / AC1, AC2, AC3

-Is RS2 on each temperature sensor wired with DRAIN wire to RS2 in the Suncoast panel?

Comment:

YES / AC1, AC2, AC3

Additional comments:

Comment:

N/A

HUMIDITY SENSORS

-Verify that manufacturer/model stamped on the outer jacket of the humidity sensor wiring cables matches the specification (Connect Air model W221P-2003 is preferred)

Comment:

YES / AC1, AC2, AC3

-Covers of humidstats are secured?

Comment:

YES / AC1, AC2, AC3

-LENNOX: For all humidity sensors: 2 conductor shielded cable has one wire landed to Vin, one to GND, and the shield wire is not connected.

Comment:

YES / AC1, AC2, AC3

-LENNOX: For all humidity sensors: For second shielded cable, one wire is landed to Vout and the shield wire is not connected.

Comment:

YES / AC1, AC2, AC3

-TRANE: For all humidity sensors, one wire landed to + and one wire landed to - and the shield wire is not connected.

Comment:

N/A

Additional comments:

Comment:

N/A

PANEL

-High voltage wiring is run through the cable routing compartment and cover is installed?

Comment:

NO

-Low voltage wiring installed at all terminals shown on specification for each RTU—E1, DI-1, G, Y2, Y1, W2, W1, R, C, RS2, RS1, RS+V

Comment:

YES / ALL TERMINALS ARE WIRED FOR ALL UNITS AND JUMPER IS INSTALLED IN THE CORRECT LOCATIONS ON EACH THERMOSTAT

-Thermostats are powered?

Comment:

YES / AC1, AC2, AC3

-Overall, is panel is completely wired with no jumpers, installation complete, and is fully operational?

Comment:

YES / PANEL IS WIRED AND JUMPERS ARE INSTALLED IN THE CORRECT LOCATIONS CALLED FOR IN PRINTS

-LENNOX units - Is OCP wired to P terminal in SEC panel, and P1 jumpered to R in the SEC panel

Comment:

YES / AC1, AC2, AC3

-TRANE units - Are P & P1 terminals landed between the SEC panel and economizer module

Comment:

N/A

-Are R-1, R-2, and R-3 (R-4 and R-5 if applicable) ice cube relays factory wired properly from SEC inside the panel. Take photo and include in TAB report

Comment:

YES

-Is R-6 (fire interlock) relay factory wired properly from SEC inside the panel. Take photo and include in TAB report.

Comment:

YES

Additional comments:

Comment:

N/A

Notes/Comments :

N/A

Date :09/07/2023



09-04-23 CHICK-FIL-A #05049 - CHRISTIANSBURG, VA (CHRISTIANSBURG FSU) NEW STORE

CheckList Information

Name : TECH - 04: INSPECTION: HOOD/GREASE DUCT **Status :** Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 08/31/2023 - Brianna Biggs - National TAB

Completed Date : 09/07/2023 - Dale Wheeler - National TAB

CheckList Item Details

Picture document all issues with full description. Needs to include the location of the specification (ex:Page, specification #, detail #) in the drawings. If you see something, say something. If there are any other issues you identify outside of these checklists note those in the report as well. All issues should be communicated with the MC onsite

HOODS

-Are hoods hung at the correct height? (check Halton spec for exact dimension - typically 64". Halton spec supercedes mechanical drawings)

Comment:

HOOD1L / 65" HOOD1R / 64.5" HOOD2 / 64.0" HOOD3 / 63.75"

-Make sure pin and sleeve electrical box is assembled correctly on all hoods

Comment:

YES / HOOD2 & HOOD3

-Take filters out of bank. Are there any parts laying in the grease trough and if so do they need to be installed?

Comment:

NO PARTS LAYING IN GREASE TROUGH NEED TO BE INSTALLED

-Adjust the slider on filter bank so that the filters have tight fit? Ensure no pieces are missing from the slider

Comment:

YES / HOOD1L, HOOD1R, HOOD2, HOOD3

-Side brackets installed in between hoods and counters?

Comment:

YES / HOOD2 & HOOD3

-Any threaded holes underneath hood canopy are filled?

Comment:

NO THREADED HOLES UNDER HOOD CANOPY NEED TO BE FILLED.

-All hoods supported at factory support points with threaded rod (3/8" typ.)?

Comment:

YES / HOOD2, HOOD3, HOOD1R NO / HOOD1L NOT ALL SUPPORT POINTS HAVE 0.50" THREADED ROD RAN TO THEM, BUT BACK OF HOOD IS SECURED TO WALL WITH SCREWS

-If threaded rod is exposed below ceiling, is it inside stainless steel tubing and is the escutcheon installed?

Comment:

N/A

-ANSUL pull stations are labeled with red bakelite label with 1/4" high white letters indicating the hoods served?

Comment:

NO

Is the ANSUL system installation complete?

Comment:

NO

-Curb caps secured to the curb where roof top grease duct penetrates into space? (if no roof top grease duct put N/A)

Comment:

YES / EF1 & EF2

-Capture jet fans are hard piped?

Comment:

YES / HOOD1L, HOOD1R, HOOD2, HOOD3

-Capture jet speed controllers are wired and functional.

Comment:

YES / HOOD1L, HOOD1R, HOOD2, HOOD3

-Capture jet fans are installed the correct direction (so they supply air to hood canopy and do NOT exhaust)

Comment:

YES / HOOD1L, HOOD1R, HOOD2, HOOD3

-Side Capture jet (if applicable) is installed with fan guard and stand?

Comment:

N/A

-Hoods are secured to the wall at all pre-punch hole locations?

Comment:

YES / HOOD2 & HOOD3

-Is the fry chute installed?

Comment:

YES / HOOD2 & HOOD3

-Are the grease cups installed?

Comment:

YES / HOOD1L, HOOD1R, HOOD2, HOOD3

-Are gusset bracket bolts installed (typically on Hood 2)?

Comment:

YES / HOOD2 & HOOD3

-Ensure there is no damage to the hoods?

Comment:

NO / DAMAGE TO NOTE AT THIS TIME

Additional comments:

Comment:

N/A

GREASE DUCTWORK

-EF-1 main drop is equal distance between both risers unless specified otherwise on drawings

Comment:

N/A

-Unifrax Fyrewrap brand is used on all grease ductwork

Comment:

YES / HOOD1L, HOOD1R, HOOD2, HOOD3

-All turns in grease duct are long radius type elbows and follow equation $\text{Radius} = (3 * W) / 2$. (Measured to the duct centerline). No mitered fitting allowed. (Both in space and on roof)

Comment:

YES / EF1 & EF2

-Each grease cleanout doors meets specifications, is assembled correctly, and is the correct size? (Outer plate is not required for rooftop ductwork - indoors only)

Comment:

YES / EF1 & EF2

-Each grease cleanout doors are installed in the location shown on drawing?

Comment:

EF2 / GREASE DUCT IS INSTALLED SLIGHTLY DIFFERENT THEN SHOWN IN PRINTS, ONE CLEANOUT DOOR IS INSTALLED IN A DIFFERENT LOCATION THEN SHOWN ON PRINTS. EF1 / IS MISSING ONE GREASE CLEANOUT DOOR

-Balancing dampers are installed if specified?

Comment:

YES / HOOD1L, HOOD1R, HOOD2, HOOD3

-Roof top grease duct is painted white in a professional manner? If grease duct is not painted, recommend that all rust be removed prior to painting.

Comment:

YES / EF1 & EF2

-Rooftop grease duct is supported at 6' intervals maximum with supports shown in specification?

Comment:

YES / EF1 & EF2

-Rooftop grease duct is supported at each duct drop into the space?

Comment:

YES / HOOD1L, HOOD1R, HOOD2, HOOD3

Additional comments:

Comment:

N/A

Notes/Comments :

N/A

Date :09/07/2023



09-04-23 CHICK-FIL-A #05049 - CHRISTIANSBURG, VA (CHRISTIANSBURG FSU) NEW STORE

CheckList Information

Name : TECH - 05: INSPECTION: HVAC DUCTWORK **Status :** Completed
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB
Created Date : 08/31/2023 - Brianna Biggs - National TAB
Completed Date : 09/07/2023 - Dale Wheeler - National TAB

CheckList Item Details

Picture document all issues with full description. Needs to include the location of the specification (ex:Page, specification #, detail #) in the drawings. If you see something, say something. If there are any other issues you identify outside of these checklists note those in the report as well. All issues should be communicated with the MC onsite

MAIN TRUNKS (SPOT CHECK)

-All ductwork (w/ exception of RR fan) is externally insulated. No liners are allowed and must be removed.

Comment:

YES / AC1, AC2, AC3

-Ductwork insulation has minimum 6 R-Value installed?

Comment:

YES / AC1, AC2, AC3

-Canvas connector installed between the main supply & return drops and RTU's.

Comment:

YES / AC1, AC2, AC3

-Check that base-pan connections are seated and aligned correctly (i.e., duct connections at the RTU)?

Comment:

YES / AC1, AC2, AC3

-Turning vanes on main supply drop should be single thickness and not double thickness? (not necessary in returns)

Comment:

YES / AC1, AC3 AC2 HAS RADIUS ELBOW INSTALLED

-Ducts 24" or wider have stick pins and stick pins are covered with duct tape or mastic?

Comment:

YES / AC1, AC2, AC3

-All seams in insulation are taped?

Comment:

YES / AC1, AC2, AC3

-Is the insulation wet?

Comment:

NO INSULATION IS NOT WET

-Does the return air drop span-out with a transition per specification where applicable (i.e., is it a tapered transition from opening at unit to full size on plans and NOT hard mitred transition)

Comment:

YES / AC1 RETURN AIR DUCT DOES SLIGHTLY TRANSITION OUT AC2 & AC3 PLANS DO NOT CALL FOR THIS STYLE OF TRANSITION

-Check that sealant used on ductwork connections (spot check 1)

Comment:

YES / AC1, AC2, AC3

Additional comments:

Comment:

N/A

GRILLE TAKEOFFS (SPOT CHECK)

-Damper handles are located on the left or right of the duct?

-Do all start collars and Rusking In-Line dampers match specification and appear to be purchased thru Tom Barrow Co

Comment:

YES / AC1, AC2, AC3

-Fluorescent ribbon is attached to each damper handle?

Comment:

YES / AC1, AC2, AC3

-Minimum 1' rigid duct after start collar?

Comment:

YES / AC1, AC2, AC3

-Flex duct is installed on each duct run after rigid duct and is less than 48" in length?

Comment:

YES / AC1, AC2, AC3

-Rigid hard pipe with 90 degree fitting and riser connecting to the grille?

Comment:

YES / AC1, AC2, AC3

-Drawband and tape are used to secure inner core of the flex duct? (Spot check)

Comment:

YES / AC1, AC2, AC3

-Drawband or tape is used on outer jacket?

Comment:

YES / AC1, AC2, AC3

-Tops of diffusers are insulated?

Comment:

YES / AC1, AC2, AC3

-Mastic at rigid connections to diffuser?

Comment:

YES / AC1, AC2, AC3

Additional comments:

Comment:

N/A

OVERALL

-Any leaky ductwork observed?

Comment:

NO LEAKY DUCTWORK WAS OBSERVED

-Ductwork supported properly?

Comment:

YES / AC1, AC2, AC3

Additional comments:

Comment:

N/A

GRD'S

-Do all diffusers match specified models and appear to be purchased thru Tom Barrow Co.?

Comment:

YES / AC1, AC2, AC3

-Do all diffusers appear to be clean of dust and debris?

Comment:

YES / AC1, AC2, AC3

-Any damage to diffusers?

Comment:

NO DAMAGE TO NOTE

-All diffusers installed at the correct locations?

Comment:

YES / AC1, AC2, AC3

-Ensure that deflectors for diffusers in entires, Drive thru cockpit, office, adjacent to soffits, restrooms, RR vesibule are closed as shown on the mechanical plan.

Comment:

YES / AC1, AC2, AC3

-Look at plans and adjust pattern deflectors to throw straight down for diffusers near hood where noted.

Comment:

YES

-Adjust pattern deflectors for any other diffusers where noted on plans (Either included as a note in plans or as blacked out triangle sections of diffuser.)

Comment:

YES

-Air diffuser air pattern blades adjusted uniformly?

Comment:

YES / AC1, AC2, AC3

-Is space free of drafting?

Comment:

YES

-Notice any squeaking damper noise? If so, tighten wing-nut on opposite side of stand-off.

Comment:

NO SQUEAKING DAMPERS TO NOTE

Additional comments:

Comment:

N/A

Notes/Comments :

N/A

Date :09/07/2023



09-04-23 CHICK-FIL-A #05049 - CHRISTIANSBURG, VA (CHRISTIANSBURG FSU) NEW STORE

CheckList Information

Name : TECH - 06: INSPECTION: OTHER Status : Completed
Assigned Organization : National TAB Asset :
Requesting Organization : National TAB
Created Date : 08/31/2023 - Brianna Biggs - National TAB
Completed Date : 09/07/2023 - Dale Wheeler - National TAB

CheckList Item Details

Picture document all issues with full description. Needs to include the location of the specification (ex:Page, specification #, detail #) in the drawings. If you see something, say something. If there are any other issues you identify outside of these checklists note those in the report as well. All issues should be communicated with the MC onsite

AIR DOORS

Does the hanging height of the air doors match design?

Comment:

BACK DOOR / 86.5"

-Installed in proper location?

Comment:

YES

-Correct model/manufacturer?

Comment:

POWERED AIR

-Is the Drive-thru air curtain diverter box installed and allows enough room for servicing the air filter?

Comment:

YES

-Timer is set to minimum position (0)?

Comment:

YES

-They are operating correctly?

Comment:

YES / BACK DOOR IS OPERATIONAL

-Are switches installed?

Comment:

YES / SWITCHES INSTALLED AND FUNCTIONING

-For drive thru air door, if MP-1-30 type or similar, door is adjusted so it is not noisy and directed at the center of the drive thru window?

Comment:

N/A

-For drive thru air door, if Chameleon type, fan speed is set as high as possible without creating disruptive noise, and air is directed to center of walkway?

Comment:

YES

Additional comments:

Comment:

N/A

CANOPY

Are canopy fans and heaters installed and controls complete?

Comment:

PARCIALLY COMPLETE

Additional comments:

Comment:

N/A

Notes/Comments :

N/A



09-04-23 CHICK-FIL-A #05049 - CHRISTIANSBURG, VA (CHRISTIANSBURG FSU) NEW STORE

CheckList Information

Name : TECH - 07: TAB CHECKS **Status :** Completed
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB
Created Date : 08/31/2023 - Brianna Biggs - National TAB
Completed Date : 09/07/2023 - Dale Wheeler - National TAB

CheckList Item Details

TEST, ADJUST, AND BALANCE ALL EQUIPMENT:

Is space free of drafting?

Comment:

YES

Is space comfortable in all areas?

Comment:

YES

Is the space free of ventilation noise?

Comment:

YES

All balancing dampers final position marked with permanent marker after balancing complete?

Comment:

YES

Notice any squeaking damper noise? If so, tighten wing-nut on opposite side of stand-off.

Comment:

NO SQUEAKING TO NOTE AT THIS TIME

Additional Comments

Comment:

N/A

ZONE DAMPER - OFFICE

Maximum airflow set to design?

Comment:

YES/ OFFICE YES / TEAM ROOM

Thermostat is installed and functional?

Comment:

YES/ OFFICE YES / TEAM ROOM

Additional Comments

Comment:

N/A

OVERALL

Is there anything outside of the checklists that appears out of sort?

Comment:

NO

Notes/Comments :

N/A

Date :09/07/2023



09-04-23 CHICK-FIL-A #05049 - CHRISTIANSBURG, VA (CHRISTIANSBURG FSU) NEW STORE

CheckList Information

Name : TECH - 08: LENNOX PRODIGY SETTINGS **Status :** Completed
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB
Created Date : 08/31/2023 - Brianna Biggs - National TAB
Completed Date : 09/07/2023 - Dale Wheeler - National TAB

CheckList Item Details

PRODIGY BOARD SETTINGS (MECHANICAL CONTRACTOR TO COMPLETE, TAB TO VERIFY AND CORRECT AS REQUIRED)

For all AC's EXCEPT the kitchen RTU, change parameter 65 to 1 (58 on LCH Units). This will cause the OA damper to open on "occupied" start. At kitchen AC (LGH Type) leave the setting at the default value so the OA damper will remain closed for the first 60 minutes after occupied start. At kitchen AC (LCH Type) change the value to 5400 so the OA dam

Comment:

YES / AC1, AC2, AC3

At Humiditrol RTU's, set the Prodigy M3 Board control parameter #105 for dehumidification operation to a value of 7

Comment:

YES / AC1, AC2, AC3

At Humiditrol RTU's, set the Prodigy M3 Board control parameter 106 to value of 60

Comment:

YES / AC1, AC2, AC3

At Humiditrol RTU's, set the Prodigy M3 Board control parameter 107 to value of 2.

Comment:

YES / AC1, AC2, AC3

Set TSTAT COM Switch on prodigy board to open position. (Newer Prodigy will not have this setting--put N/A)

Comment:

N/A

Complete the damper calibration in the Damper menu prior to setting OA (Only needs to be done once)

Comment:

YES / AC1, AC2, AC3

Enthalpy offset set to 5.0 for all AC's?

Comment:

NO / ALL UNITS WILL ONLY LET ENTHALPY OFFSET TO BE SET AS LOW AS 10.0 FOR ALL UNITS

Free cooling supply air setpoint set to 55.0 F?

Comment:

YES / AC1, AC2, AC3

Damper max opening set to the same position as min position?

Comment:

YES / AC1, AC2, AC3

Power exhaust on by econ travel set higher than min damper position (typ. 50%)?

Comment:

YES / AC1, AC2, AC3

Fresh air cooling enable FAC = No?

Comment:

YES / AC1, AC2, AC3

At MSAV Units, set the MSAV Low speed setting to the same value as the high speed setting after TAB is completed. (If not applicable put N/A)

Comment:

N/A

Note any alarms present on the prodigy board:

Comment:

YES / AC3 COMPRESSOR 1 S4 / HIGH PRESSURE

Additional Comments

Comment:

N/A

FRESH AIR HEATING (FAH) SETTINGS

Comment:

YES / AC1, AC2, AC3

FAH = Yes (On units with fresh air tempering only - verify on M sheets. Typ mandatory in Northeast, Midwest, Northwest, VA, KY, and some areas of NC/TN.) (If not applicable put N/A)

Comment:

YES / AC1, AC2, AC3

If FAH, change prodigy parameter 156 to: 60 for the kitchen, 62 for serving, and 63 for dining

Comment:

YES / AC1, AC2, AC3

If FAH, change prodigy parameter 157 to 5 for all units

Comment:

YES / AC1, AC2, AC3

If FAH, change prodigy parameter 158 to a value of 300 for all units

Comment:

YES / AC1, AC2, AC3

If FAH, is the discharge sensor installed AFTER the first elbow on main supply drop?

Comment:

YES / AC1, AC2, AC3

If FAH, is the wiring harness connected to the sensor wiring?

Comment:

YES / AC1, AC2, AC3

PRODIGY INSTALL MENU SETTINGS (GO TO SETTINGS > INSTALL)

Language = English?

Comment:

YES / AC1, AC2, AC3

Date/Time is correct?

Comment:

YES / AC1, AC2, AC3

Display units F/C set to Farenheit?

Comment:

YES / AC1, AC2, AC3

Model Number correct?

Comment:

YES / AC1, AC2, AC3

Configuration ID 1 & 2 is correct? (On white sticker titled "Original factory unit configuration" on right side of control box)

Comment:

YES / AC1, AC2, AC3

Catalog number is correct (Located on the unit nameplate)

Comment:

YES / AC1, AC2, AC3

Serial number is correct?

Comment:

YES / AC1, AC2, AC3

Set to Control type to "Wired Thermostat"

Comment:

YES / AC1, AC2, AC3

Set Dehum to "No Conditions"

Comment:

NO / AC3 DEHUM WILL NOT ALLOW "NO CONDITIONS" SETTING TO BE SET YES /. AC1, AC2

Set Dehum deadband to 2

Comment:

YES / AC1, AC2 NO / AC3 BOARD DOES NOT BRING UP OPTION TO SET DEADBAND

Go to Service > Test > Damper > Power Exhaust and make sure fan operates with no issues

Comment:

YES / AC1, AC2, AC3

Go to Service > Test > Cool and test each stage of cooling

Comment:

AC1/ COMPRESSOR 2 WILL NOT TURN ON AC3/ COMPRESSOR 1 HAS HIGH PRESSOR WILL NOT TURN ON YES / AC2

Additional comments:

Comment:

N/A

PRODIGY NETWORK INTEGRATION (GO TO SETUP > NETWORK INTEGRATION)

Set Network = L-Connection/Address-2/Monitor Only

Comment:

YES / AC1, AC2, AC3

Additional comments:

Comment:

YES / AC1, AC2, AC3

Notes/Comments :

N/A

Date :09/07/2023



09-04-23 CHICK-FIL-A #05049 - CHRISTIANSBURG, VA (CHRISTIANSBURG FSU) NEW STORE

CheckList Information

Name : TECH - 09: CONTROLS COMMISSIONING **Status :** Completed
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB
Created Date : 08/31/2023 - Brianna Biggs - National TAB
Completed Date : 09/07/2023 - Dale Wheeler - National TAB

CheckList Item Details

OCCUPIED / UNOCCUPIED SEQUENCE OF OPERATION

Turn switch on Suncoast panel to occupied mode and check the following for all RTU's:

All blowers turn on (I.e., signal to G)? (Except the Playroom unit which will stay in auto blower)

Comment:

YES / AC1, AC2, AC3

All economizers open to minimum position? (I.e., signal to OCP terminal)

Comment:

YES / AC1, AC2, AC3

Temperatures on thermostats at occupied settings (73 cooling / 69 heating)

Comment:

YES / AC1, AC2, AC3

Hood exhaust and Capture Jets turn on?

Comment:

CAPTURE JETS STAY ON AT ALL TIMES THEY DO NOT SHUT OFF EVEN WHEN STORE IS PLACED INTO UNOCCUPIED MODE

Additional comments:

Comment:

N/A

Turn switch on Suncoast panel to unoccupied mode and check the following for all RTU's:

All blowers go to auto mode?

Comment:

YES / AC1, AC2, AC3

All economizers close? (I.e., no signal to the OCP terminal)

Comment:

YES / AC1, AC2, AC3

Temperatures on thermostats at unoccupied settings (80 cooling / 55 heating). Unoccupied cooling may need to be manually changed to 80.

Comment:

YES / AC1, AC2, AC3

Hood exhaust and Capture Jets turn off?

Comment:

CAPTURE JETS STAY ON AT ALL TIMES THEY DO NOT SHUT OFF EVEN WHEN STORE IS PLACED INTO UNOCCUPIED MODE

Additional comments:

Comment:

N/A

TEMPERATURES

Turn on temp sensor reading for all thermostats

Comment:

YES / AC1, AC2, AC3

Measured temperature at each sensor matches actual temperature on thermostat?

Comment:

YES / AC1, AC2, AC3

Measured temperature at each zone damper thermostat matches displayed temperature?

Comment:

YES / AC1, AC2, AC3

Additional comments:

Comment:

N/A

ZONE DAMPER

Zone damper closes and opens correctly when a change is made at the thermostat?

Comment:

YES / AC1, AC2, AC3

Zone damper thermostats are installed and functional?

Comment:

YES / AC1, AC2, AC3

Additional comments:

Comment:

N/A

Notes/Comments :

N/A

Date :09/07/2023



09-04-23 CHICK-FIL-A #05049 - CHRISTIANSBURG, VA (CHRISTIANSBURG FSU) NEW STORE

CheckList Information

Name : TECH - 10: SMOKE CAPTURE AND PRESSURIZATION TESTS Status : Completed
Assigned Organization : National TAB Asset :
Requesting Organization : National TAB
Created Date : 08/31/2023 - Brianna Biggs - National TAB
Completed Date : 09/07/2023 - Dale Wheeler - National TAB

CheckList Item Details

FINAL TESTS

CONFIRM BEFORE COMPLETING FINAL TESTS

Roof hatch, exterior doors, and windows all installed? Yes

Comment:

YES

Ceiling tiles and hard ceilings are completed with no openings to the attic space? Yes

Comment:

YES

Additional comments:

Comment:

N/A

HOOD CAPTURE TEST

List kitchen equipment turned on for testing

Comment:

NO / UNABLE TO TURN EQUIPMENT ON FOR TEST

List smoke candle type used

Comment:

SMOKE EMITTER

Smoke test capture - Perimeter of hood (%)

Comment:

100%

Smoke test capture - Top of cooking surface (%)

Comment:

100%

WITNESS

Date test was completed

Comment:

9/7/2023

TAB tech name / Firm

Comment:

DALE WHEELER / NTAB

Site super name / Firm

Comment:

BOB MCDONALD / W.H. BASS

Owner representative name / Firm (if Applicable)

Comment:

N/A

Video taken of smoke tests?

Yes

Comment:

YES

BUILDING PRESSURE TEST

Building pressure at front & back doors (All Systems On)

Comment:

FRONT DOOR +0.0129" / SIDE DOOR +0.009" / BACK DOOR +0.011" / ALL SYSTEMS ON

Do actual net building airflow, design net building airflow, and pressure coincide? If not why? (All three should either be positive or negative)

Yes

Comment:

YES

VELOCITY OF SERVING WINDOW

Transfer velocity for Serving Window (window between kitchen and serving) is 50-80FPM

Comment:

YES

Notes/Comments :

N/A

Date :09/07/2023



09-04-23 CHICK-FIL-A #05049 - CHRISTIANSBURG, VA (CHRISTIANSBURG FSU) NEW STORE

CheckList Information

Name : TECH - SITE PICTURES **Status :** Completed
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB
Created Date : 08/31/2023 - Brianna Biggs - National TAB
Completed Date : 09/07/2023 - Dale Wheeler - National TAB

CheckList Item Details

STORE FRONT

Comment:



**STOREFRONT
09/07/2023**

AC-1

Comment:



AC1
09/07/2023

AC-2

Comment:



AC2
09/07/2023

AC-3

Comment:



AC3
09/07/2023

EACH AC BELT TENSIONER POSITION MARKED

Comment:



AC2
09/07/2023

ECONOMIZER POSITIONS MARKED AND DATED FOR EACH AC

Comment:



AC2
09/07/2023

EF-1

Comment:



EF1
09/07/2023

EF-2

Comment:



EF2
09/07/2023

EACH EF BELT TENSIONER POSITION MARKED

Comment:



EF1
09/07/2023

EF-3

Comment:



EF3(1)
09/07/2023

HOOD 1

Comment:



HOOD1
09/07/2023

HOOD 2

Comment:



HOOD2
09/07/2023

HOOD 3

Comment:



HOOD3
09/07/2023

CAPTURE JET FINAL SETTINGS (MARKED AND DATED)

Comment:



HOOD2
09/07/2023

ONE MARKED BALANCING DAMPER

Comment:



DAMPER
09/07/2023

ONE OF EACH KIND OF TAB STICKER

Comment:



A36
09/07/2023



EF1
09/07/2023



AC3
09/07/2023

ONE OF EACH KIND OF TAB STICKER

Comment:



BELTS
09/07/2023



CJ
09/07/2023



HOOD2
09/07/2023

National TAB

Project: 09-04-23 CHICK-FIL-A #05049 - CHRISTIANSBURG, VA
(CHRISTIANSBURG FSU) NEW STORE



System/Unit: AHU/RTU

Asset: AC1

AREA:KITCHEN

Unit Data		
	Design	Actual
MFG	LENNOX	LENNOX
Serial Num	-	5622D05973
Model Num	LGH300S4B	LGH300S4BH4Y
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	69.75X13"
Num Final Filter 1	-	6
Final Filter Size 1	-	24X24X2

Motor Data		
	Design	Actual
Motor MFG	-	US MOTORS
Frame	-	215TZ
Horsepower	10	10.0
Motor Rpm	-	1765
Phase	-	3
Rated Voltage	-	208
Rated Amperage	-	26.3

Drive Data		
	Design	Actual
Motor Sheave Size	-	VP60
Motor Bore Size	-	1 3/8"
Motor Sheave SetPt	-	MAXIMIZED
Fan Sheave Size	-	8 3/8"
Fan Sheave Bore	-	1 3/16"
Belt CL Distance	-	21.50"
Num of Belts	-	1
Belt Size	-	BX64
Belt Alignment	-	GOOD

Test Data		
	Design	Actual
SF CFM	9500	8801
SF RPM	-	1117
RA CFM	8050	7446
OA CFM	1450	1355
RL Voltage	-	210/212/212
RL Amperage	-	21.9/ 19.7/21.2
SF Rotation	-	CCW
RA Damper Position	-	66%
Min OA Damper Position	-	34%
Min OA Damper Type	-	ECON
OA Enthalpy Setpt	-	10.0

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.655"
Fan Suction SP	-	-1.2"
Fan Discharge SP	-	0.321"
Total ESP	0.80"	0.976"
Fan Total SP	-	1.521"

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

Completed By: Dale Wheeler on 09/07/2023

Notes:

- [1] EGRD2 & EGRD3 DAMPERS ARE 100% OPEN. GRILLS ARE UNABLE TO REACH DESIGN CFM.
- [2] SGRD15 DAMPER IS 100% OPEN. UNABLE TO FORCE ENOUGH AIR BACK TO GRILL TO RAISE GRILL TO WITHIN DESIGN CFM. UNIT PULLEY IS MAXIMIZED. UNIT TOTAL IS WITHIN DESIGN CFM.

Written By: Dale Wheeler on 09/07/2023

National TAB

Project:09-04-23 CHICK-FIL-A #05049 - CHRISTIANSBURG, VA
(CHRISTIANSBURG FSU) NEW STORE



AHU/RTU

Diffuser Supply (GRD)

AC1/KITCHEN

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	KITCHEN	A	14"	600	1	494	530	558	93.0
SGRD2	KITCHEN	A	14"	825	1	671	734	763	92.5
SGRD3	KITCHEN	A	14"	825	1	708	776	792	96.0
SGRD4	KITCHEN	A	14"	825	1	740	745	775	93.9
SGRD5	KITCHEN	A	14"	825	1	693	788	777	94.2
SGRD6	KITCHEN	A	14"	825	1	743	742	766	92.8
SGRD7	KITCHEN	A	14"	825	1	859	767	758	91.9
SGRD8	KITCHEN	A	14"	825	1	751	799	752	91.2
SGRD9	KITCHEN	A	14"	700	1	552	607	711	101.6
SGRD10	KITCHEN	A	12"	425	1	405	399	401	94.4
SGRD11	WAREWASH	A	14"	500	1	551	434	475	95.0
SGRD12	STORAGE	A	12"	400	1	423	371	361	90.3
SGRD13	STORAGE	A	8"	165	1	176	161	161	97.6
SGRD14	OFFICE	A	12"	400	1	263	333	362	90.5
SGRD15	SERVICE	A	12"	535	1	290	357	389	72.7
Total				9500		8319	8543	8801	92.64%

Diffuser Ret/Exh (GRD)

AC1/KITCHEN

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
EGRD1	OFFICE	F	12"	400	1	478	361	365	91.3
EGRD2	STORAGE	F	12"	625	1	329	338	349	55.8
EGRD3	DINING	F	16"	1305	1	920	913	925	70.9
Total				2330		1727	1612	1639	70.34%

National TAB

Project: 09-04-23 CHICK-FIL-A #05049 - CHRISTIANBURG, VA
(CHRISTIANBURG FSU) NEW STORE



System/Unit: AHU/RTU

Asset: AC2

AREA:SERVING, DRIVE THRU

Unit Data		
	Design	Actual
MFG	LENNOX	LENNOX
Serial Num	-	5622g02647
Model Num	LGH210H4B	LGH210H4BM3Y
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	69.75"X13
Num Final Filter 1	-	6
Final Filter Size 1	-	24X24X2

Motor Data		
	Design	Actual
Motor MFG	-	US MOTORS
Frame	-	184TZ
Horsepower	5	5.0
Motor Rpm	-	1765
Phase	-	3
Rated Voltage	-	208
Rated Amperage	-	13.8

Drive Data		
	Design	Actual
Motor Sheave Size	-	4 5/8"
Motor Bore Size	-	1 3/8"
Motor Sheave SetPt	-	MAXIMIZED
Fan Sheave Size	-	AK100
Fan Sheave Bore	-	1 3/8"
Belt CL Distance	-	21.0"
Num of Belts	-	1
Belt Size	-	5VX660
Belt Alignment	-	GOOD

Test Data		
	Design	Actual
SF CFM	5250	5317
SF RPM	-	856
RA CFM	3675	3846
OA CFM	1575	1471
RL Voltage	-	212/211/212
RL Amperage	-	8.7/8.6/9.8
SF Rotation	-	CCW
RA Damper Position	-	68%
Min OA Damper Position	-	32%
Min OA Damper Type	-	ECON
OA Enthalpy Setpt	-	10.0

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.61"
Fan Suction SP	-	-0.883"
Fan Discharge SP	-	0.407"
Total ESP	0.65"	1.017"
Fan Total SP	-	1.29"

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

Completed By: Dale Wheeler on 09/07/2023

Notes:

[1] EGRD1 DAMPER IS 100% GRILL UNABLE TO REACH DESIGN CFM. I DID NOT REDUCE OTHER RETURN DAMPERS TO PREVENT REDUCING UNIT TOTAL.

Written By: Dale Wheeler on 09/07/2023

National TAB

Project:09-04-23 CHICK-FIL-A #05049 - CHRISTIANSBURG, VA
(CHRISTIANSBURG FSU) NEW STORE



AHU/RTU

Diffuser Supply (GRD)

AC2/SERVING, DRIVE THRU

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	SERVING	A	14"	700	1	585	642	652	93.1
SGRD2	SERVING	A	14"	700	1	648	708	713	101.9
SGRD3	DRIVE THRU	A	14"	770	1	757	832	819	106.4
SGRD4	DRIVE THRU	A	14"	770	1	631	699	702	91.2
SGRD5	DRIVE THRU	A	14"	770	1	688	754	782	101.6
SGRD6	DRIVE THRU	A	14"	770	1	771	802	838	108.8
SGRD7	DRIVE THRU	A	14"	770	1	769	811	811	105.3
Total				5250		4849	5248	5317	101.28%

Diffuser Ret/Exh (GRD)

AC2/SERVING, DRIVE THRU

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
EGRD1	DRIVE THRU	F	16"	1225	1	829	834	855	69.8
Total				1225		829	834	855	69.8%

National TAB

Project: 09-04-23 CHICK-FIL-A #05049 - CHRISTIANSBURG, VA
(CHRISTIANSBURG FSU) NEW STORE



System/Unit: AHU/RTU

Asset: AC3

AREA:DINING

Unit Data		
	Design	Actual
MFG	LENNOX	LENNOX
Serial Num	-	5622G07147
Model Num	LGH240H4B	LGH240H4B
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	69.75X13
Num Final Filter 1	-	6
Final Filter Size 1	-	24X24X2

Motor Data		
	Design	Actual
Motor MFG	-	US MOTORS
Frame	-	184TZ
Horsepower	5	5.0
Motor Rpm	-	1765
Phase	-	3
Rated Voltage	-	208
Rated Amperage	-	13.8

Drive Data		
	Design	Actual
Motor Sheave Size	-	4 5/8"
Motor Bore Size	-	1 3/8"
Motor Sheave SetPt	-	MAXIMIZED
Fan Sheave Size	-	BK100
Fan Sheave Bore	-	1 3/16"
Belt CL Distance	-	21.0"
Num of Belts	-	1
Belt Size	-	5VX660
Belt Alignment	-	GOOD

Test Data		
	Design	Actual
SF CFM	6000	6271
SF RPM	-	866
RA CFM	4250	4616
OA CFM	1750	1655
RL Voltage	-	210/212/212
RL Amperage	-	9.1/9.7/8.8
SF Rotation	-	CCW
RA Damper Position	-	60%
Min OA Damper Position	-	40%
Min OA Damper Type	-	ECON
OA Enthalpy Setpt	-	10.0

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.489"
Fan Suction SP	-	-0.863"
Fan Discharge SP	-	0.355"
Total ESP	0.65"	0.844"
Fan Total SP	-	1.218"

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

Completed By: Dale Wheeler on 09/07/2023

Notes:

[1] EGRD2 DAMPER IS 100% OPEN GRILL IS UNABLE TO REACH DESIGN CFM. OTHER RETURN DAMPERS WERE NOT REDUCED TO PREVENT REDUCING UNIT TOTAL.

Written By: Dale Wheeler on 09/07/2023

National TAB

Project:09-04-23 CHICK-FIL-A #05049 - CHRISTIANSBURG, VA
(CHRISTIANSBURG FSU) NEW STORE



AHU/RTU

Diffuser Supply (GRD)

AC3/DINING

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	ENTRY VESTIBULE	C	10"	350	1	410	314	348	99.4
SGRD2	ORDERING	A	14"	550	1	521	500	593	107.8
SGRD3	ORDERING	A	14"	550	1	497	495	572	104.0
SGRD4	DINING	A	12"	475	1	481	447	505	106.3
SGRD5	DINING	A	12"	475	1	431	447	494	104.0
SGRD6	DINING	A	12"	475	1	358	443	496	104.4
SGRD7	DINING	A	12"	475	1	422	429	483	101.7
SGRD8	DINING	A	12"	475	1	406	428	479	100.8
SGRD9	MULTI-PURPOSE	A	10"	150	1	171	144	161	107.3
SGRD10	TEAM MEMBER ROOM	A	12"	350	1	294	344	378	108.0
SGRD11	TEAM MEMBER ROOM	A	12"	350	1	246	356	380	108.6
SGRD12	WOMENS RR	J	8"	100	1	145	88	97	97.0
SGRD13	MENS RR	J	8"	100	1	121	87	104	104.0
SGRD14	DINING	A	12"	350	1	346	360	377	107.7
SGRD15	DINING	A	12"	350	1	446	358	359	102.6
SGRD16	DINING	A	12"	425	1	425	445	445	104.7
Total				6000		5720	5685	6271	104.52%

Diffuser Ret/Exh (GRD)

AC3/DINING

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
EGRD1	ENTRY VESTIBULE	K	10"	300	1	479	333	321	107.0
EGRD2	TEAM MEMBER ROOM	F	12"	700	1	517	523	542	77.4
EGRD3	RR VESTIBULE	F	12"	530	1	532	521	509	96.0
Total				1530		1528	1377	1372	89.67%

National TAB

Project: 09-04-23 CHICK-FIL-A #05049 - CHRISTIANSBURG, VA
(CHRISTIANSBURG FSU) NEW STORE



System/Unit: FAN - Exhaust

Asset: EF1

AREA:HOOD 1

Unit Data		
	Design	Actual
MFG	LOREN COOK	LOREN COOK
Model Num	150 CPS	150 CPS
Serial Num	-	050SK26182-01
Type	UPBLAST	UTILITY
Configuration	VERTICAL	HORIZONTAL

Motor Data		
	Design	Actual
Motor MFG	-	CENTURY
Frame	-	J56
Horsepower	3/4	0.75
Motor Rpm	-	1725
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	11.0
Service Factor	-	1.25

Drive Data		
	Design	Actual
Motor Sheave Size	-	VL44
Motor Bore Size	-	5/8"
Motor Sheave SetPt	-	2.5 TURNS OUT
Fan Sheave Size	-	AK61
Fan Sheave Bore	-	1.0"
Belt CL Distance	-	11 5/8"
Num of Belts	-	1
Belt Size	-	A36

Test Data		
	Design	Actual
CFM	1913	1851
Fan RPM	1331	1290
Fan Rotation	-	CCW
Motor RPM	-	1763
RL Voltage	-	122
RL Amperage	-	10.6
Suction ESP	-	-0.416"
Discharge ESP	-	ATM
Total ESP	0.75"	0.416"

Completed By: Dale Wheeler on 09/06/2023

National TAB

Project: 09-04-23 CHICK-FIL-A #05049 - CHRISTIANBURG, VA
(CHRISTIANBURG FSU) NEW STORE



System/Unit: FAN - Exhaust

Asset: EF2

AREA:HOOD 3 AND HOOD 3

Unit Data		
	Design	Actual
MFG	LOREN COOK	LOREN COOK
Model Num	150 CPS	150 CPS
Serial Num	-	050sk26245
Type	UPBLAST	UTILITY
Configuration	VERTICAL	HORIZONTAL

Motor Data		
	Design	Actual
Motor MFG	-	CENTURY
Frame	-	J56
Horsepower	3/4	0.75
Motor Rpm	-	1725
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	11.0
Service Factor	-	1.25

Drive Data		
	Design	Actual
Motor Sheave Size	-	VL44
Motor Bore Size	-	5/8"
Motor Sheave SetPt	-	MAXIMIZED
Fan Sheave Size	-	AK51
Fan Sheave Bore	-	1.0"
Belt CL Distance	-	11.75
Num of Belts	-	1
Belt Size	-	A36

Test Data		
	Design	Actual
CFM	1402	1466
Fan RPM	1199	1383
Fan Rotation	-	CCW
Motor RPM	-	1755
RL Voltage	-	120
RL Amperage	-	10.4
Suction ESP	-	-1.19"
Discharge ESP	-	ATM
Total ESP	0.95"	1.19"

Completed By: Dale Wheeler on 09/06/2023

National TAB

Project: 09-04-23 CHICK-FIL-A #05049 - CHRISTIANBURG, VA
(CHRISTIANBURG FSU) NEW STORE



System/Unit: FAN - Exhaust

Asset: EF3

AREA:RESTROOMS

Unit Data		
	Design	Actual
MFG	LOREN COOK	LOREN COOK
Model Num	ACED-90C15DH	ACED-90C15DH
Serial Num	-	050PK52903-00
Type	DOWNBLAST	DOWNBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	US MOTORS
Frame	-	48Y
Horsepower	1/8	1/8
Motor Rpm	-	1600
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	1.7
Service Factor	-	1.0

Test Data		
	Design	Actual
CFM	300	307
Fan RPM	1294	1600/ DD
Fan Rotation	-	CCW
Motor RPM	-	1600/ DD
System SetPt	-	LOW
RL Voltage	-	121
RL Amperage	-	1.1
Total ESP	0.375"	0.12"
Fan Inlet SP	-	-0.12"
Fan Discharge SP	-	ATM

Completed By: Dale Wheeler on 09/07/2023

National TAB

Project:09-04-23 CHICK-FIL-A #05049 - CHRISTIANSBURG, VA
(CHRISTIANSBURG FSU) NEW STORE



FAN - Exhaust

Diffuser Ret/Exh (GRD)

EF3/RESTROOMS

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
EGRD1	MENS RR	K	8"	150	1	75	255	159	106.0
EGRD2	WOMENS RR	K	8"	150	1	76	287	148	98.7
Total				300		151	542	307	102.33%

Completed By: Dale Wheeler on 09/07/2023

National TAB

Project: 09-04-23 CHICK-FIL-A #05049 - CHRISTIANSBURG, VA
(CHRISTIANSBURG FSU) NEW STORE



System/Unit: Kitchen Hood Type I

Asset: HD2

AREA:

Unit Data		
	Design	Actual
MFG	HALTON	HALTON
Model Num	KVL-C-IC	KVL-C-IC
Job / Serial Num	-	115768-568
Type	TYPE I CANOPY	TYPE I CANOPY
Hood length	42"	42"
Hood Width	34"	34"

Test Data Supply		
	Design	Actual
TAB SP	0.29"	0.279"

Test Data Exhaust		
	Design	Actual
Filter Size 1	SS FILTERS (KSA)	SS FILTERS (KSA)
Filter Qty 1	2	2
TAB SP	0.295"	-0.293"
CFM	701	698

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

Completed By: Dale Wheeler on 09/05/2023

National TAB

Project: 09-04-23 CHICK-FIL-A #05049 - CHRISTIANSBURG, VA
(CHRISTIANSBURG FSU) NEW STORE



System/Unit: Kitchen Hood Type I

Asset: HD3

AREA:

Unit Data		
	Design	Actual
MFG	HALTON	HALTON
Model Num	KVL-C-IC	KVL-C-IC
Job / Serial Num	-	115768-620
Type	TYPE I CANOPY	TYPE I CANOPY
Hood length	42"	42"
Hood Width	34"	34"

Test Data Supply		
	Design	Actual
TAB SP	0.29"	0.271"

Test Data Exhaust		
	Design	Actual
Filter Size 1	SS FILTERS (KSA)	SS FILTERS (KSA)
Filter Qty 1	2	2
TAB SP	0.295"	-0.355"
CFM	701	768

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

Completed By: Dale Wheeler on 09/05/2023

National TAB

Project: 09-04-23 CHICK-FIL-A #05049 - CHRISTIANBURG, VA
(CHRISTIANBURG FSU) NEW STORE



System/Unit: Kitchen Hood Type I

Asset: HD-L1

AREA:

Unit Data		
	Design	Actual
MFG	HALTON	HALTON
Model Num	KVL-2-IC	KVL-2-IC
Job / Serial Num	-	115768-482
Type	TYPE I CANOPY	TYPE I CANOPY
Hood length	107"	107"
Hood Width	37"	37"

Test Data Supply		
	Design	Actual
TAB SP	0.30"	0.302"

Test Data Exhaust		
	Design	Actual
Filter Size 1	SS FILTERS (KSA)	SS FILTERS (KSA)
Filter Qty 1	5	5
TAB SP	0.128"	-0.118"
CFM	1204	1156

Cooking Equipment		
	Design	Actual
Item 1	-	PRESSURE FRYER
Item 2	-	PRESSURE FRYER

Completed By: Dale Wheeler on 09/05/2023

National TAB

Project: 09-04-23 CHICK-FIL-A #05049 - CHRISTIANBURG, VA
(CHRISTIANBURG FSU) NEW STORE



System/Unit: Kitchen Hood Type I

Asset: HD-R1

AREA:

Unit Data		
	Design	Actual
MFG	HALTON	HALTON
Model Num	KVL-2-IC	KVL-2-IC
Job / Serial Num	-	115768-229
Type	TYPE I CANOPY	TYPE I CANOPY
Hood length	63"	63"
Hood Width	37"	37"

Test Data Supply		
	Design	Actual
TAB SP	0.30"	0.319"

Test Data Exhaust		
	Design	Actual
Filter Size 1	SS FILTERS	SS FILTRERS (KSA)
Filter Qty 1	3	3
TAB SP	0.129"	-0.124"
CFM	709	695

Cooking Equipment		
	Design	Actual
Item 1	-	PRESSURE FRYER
Item 2	-	PRESSURE FRYER

Completed By: Dale Wheeler on 09/05/2023

MECHANICAL FLOOR PLAN

