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COM*check* Software Version 4.1.1.0
Mechanical Compliance Certificate

Project Information

Energy Code:	90.1 (2007) Standard
Project Title:	My Salon Suites - Murfreesboro
Location:	Murfreesboro, Tennessee
Climate Zone:	4a
Project Type:	Alteration

Construction Site:	Owner/Agent:	Designer/Contractor:
	My Salon Suites Murfreesboro, TN	KLH Engineers Fort Thomas, KY

Mechanical Systems List

Quantity System Type & Description

1 RTU-1
Heating: 1 each - Central Furnace, Gas, Capacity = 72 kBtu/h
Proposed Efficiency = 82.00% Et, Required Efficiency: 80.00 % Et (or 78% AFUE)
Cooling: 1 each - Single Package DX Unit, Capacity = 36 kBtu/h, Air-Cooled Condenser
Proposed Efficiency = 14.00 SEER, Required Efficiency: 13.00 SEER
Fan System: FAN SYSTEM 1 -- Compliance (Motor nameplate HP method) : Passes

Fans:
FAN 1 Supply, Constant Volume, 1600 CFM, 1.0 motor nameplate hp

SYSTEM VERIFICATION REQUIRED.

1 RTU-2
Heating: 1 each - Central Furnace, Gas, Capacity = 72 kBtu/h
Proposed Efficiency = 82.00% Et, Required Efficiency: 80.00 % Et (or 78% AFUE)
Cooling: 1 each - Single Package DX Unit, Capacity = 48 kBtu/h, Air-Cooled Condenser
Proposed Efficiency = 14.00 SEER, Required Efficiency: 13.00 SEER
Fan System: FAN SYSTEM 2 -- Compliance (Motor nameplate HP method) : Passes

Fans:
FAN 2 Supply, Constant Volume, 1500 CFM, 1.5 motor nameplate hp

SYSTEM VERIFICATION REQUIRED.

1 RTU-3
Heating: 1 each - Central Furnace, Gas, Capacity = 120 kBtu/h
Proposed Efficiency = 82.00% Et, Required Efficiency: 80.00 % Et (or 78% AFUE)
Cooling: 1 each - Single Package DX Unit, Capacity = 72 kBtu/h, Air-Cooled Condenser
Proposed Efficiency = 12.00 EER, Required Efficiency: 11.00 EER
Fan System: FAN SYSTEM 3 -- Compliance (Motor nameplate HP method) : Passes

Fans:
FAN 3 Supply, Single-Zone VAV, 2200 CFM, 2.0 motor nameplate hp

SYSTEM VERIFICATION REQUIRED.

1 RTU-4
Heating: 1 each - Central Furnace, Gas, Capacity = 115 kBtu/h
Proposed Efficiency = 82.00% Et, Required Efficiency: 80.00 % Et (or 78% AFUE)
Cooling: 1 each - Single Package DX Unit, Capacity = 48 kBtu/h, Air-Cooled Condenser
Proposed Efficiency = 14.00 SEER, Required Efficiency: 13.00 SEER
Fan System: FAN SYSTEM 2 -- Compliance (Motor nameplate HP method) : Passes

Quantity System Type & Description

Fans:
FAN 2 Supply, Constant Volume, 1600 CFM, 1.0 motor nameplate hp

SYSTEM VERIFICATION REQUIRED.

1 RTU-5
Heating: 1 each - Central Furnace, Gas, Capacity = 115 kBtu/h
Proposed Efficiency = 82.00% Et, Required Efficiency: 80.00 % Et (or 78% AFUE)
Cooling: 1 each - Single Package DX Unit, Capacity = 60 kBtu/h, Air-Cooled Condenser
Proposed Efficiency = 14.00 SEER, Required Efficiency: 13.00 SEER
Fan System: FAN SYSTEM 4 -- Compliance (Motor nameplate HP method) : Passes

Fans:
FAN 4 Supply, Constant Volume, 1900 CFM, 2.0 motor nameplate hp

SYSTEM VERIFICATION REQUIRED.

1 RTU-6
Heating: 1 each - Central Furnace, Gas, Capacity = 72 kBtu/h
Proposed Efficiency = 82.00% Et, Required Efficiency: 80.00 % Et (or 78% AFUE)
Cooling: 1 each - Single Package DX Unit, Capacity = 72 kBtu/h, Air-Cooled Condenser
Proposed Efficiency = 12.00 EER, Required Efficiency: 11.00 EER
Fan System: FAN SYSTEM 3 -- Compliance (Motor nameplate HP method) : Passes

Fans:
FAN 3 Supply, Single-Zone VAV, 2200 CFM, 2.0 motor nameplate hp

SYSTEM VERIFICATION REQUIRED.

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 90.1 (2007) Standard requirements in COM*check* Version 4.1.1.0 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Robert A Lonneman, P.E.
Name - Title Signature Date

COM*check* Software Version 4.1.1.0
Inspection Checklist
Energy Code: 90.1 (2007) Standard

Requirements: 100.0% were addressed directly in the COM*check* software

Text in the "Comments/Assumptions" column is provided by the user in the COM*check* Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
4.2.2, 6.4.2 [PR2][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the mechanical systems and equipment and document where exceptions to the standard are claimed. Load calculations per acceptable engineering standards and handbooks.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
4.2.2, 7.4.1 [PR3][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the service water heating systems and equipment and document where exceptions to the standard are claimed. Hot water system sized per manufacturer's sizing guide.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.7.2.4 [PR5][2]	Detailed instructions for HVAC systems commissioning included on the plans or specifications for projects >=50,000 ft2.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Footing / Foundation Inspection	Complies?	Comments/Assumptions
6.4.3.8 [FO9][3]	Freeze protection and snow/ice melting system sensors for future connection to controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Mechanical Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
6.4.1.4, 6.4.1.5 [ME3][1]	HVAC equipment efficiency verified. Non-NAECA HVAC equipment labeled as meeting 90.1.	Efficiency: ____	Efficiency: ____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Mechanical Systems list for values.*
6.4.3.4.1 [ME3][3]	Stair and elevator shaft vents have motorized dampers that automatically close.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
6.4.3.4.2, 6.4.3.4.3, 6.4.3.4.4 [ME4][3]	Outdoor air and exhaust systems have motorized dampers that automatically shut when not in use and meet maximum leakage rates. Check gravity dampers where allowed.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.3.4.5 [ME5][3]	Ventilation fans >0.75 hp have automatic controls to shut off fan when not required.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.3.9 [ME6][1]	Demand control ventilation provided for spaces >500 ft2 and >40 people/1000 ft2 occupant density and served by systems with air side economizer, auto modulating outside air damper control, or design airflow >3,000 cfm.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Spaces where the supply airflow rate minus any makeup or outgoing transfer air requirement is less than 1200 cfm.
6.4.4.1.1 [ME7][3]	Insulation exposed to weather protected from damage. Insulation outside of the conditioned space and associated with cooling systems is vapor retardant.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.4.1.2 [ME8][3]	HVAC ducts and plenums insulated.	R-____	R-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.4.1.3 [ME9][3]	HVAC piping insulation thickness.	____ in.	____ in.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Piping within HVAC equipment.
6.4.4.2.1 [ME10][3]	Ducts and plenums sealed based on static pressure and location.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.4.2.2 [ME11][3]	Ductwork operating >3 in. water column requires air leakage testing.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
6.4.4.2.2 [ME11][3]	Ductwork operating >3 in. water column requires air leakage testing.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
6.4.4.2.2 [ME11][3]	Ductwork operating >3 in. water column requires air leakage testing.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Mechanical Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
6.4.4.2.2 [ME11][3]	Ductwork operating >3 in. water column requires air leakage testing.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
6.4.4.2.2 [ME11][3]	Ductwork operating >3 in. water column requires air leakage testing.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
6.4.4.2.2 [ME11][3]	Ductwork operating >3 in. water column requires air leakage testing.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
6.5.2.3 [ME19][3]	Dehumidification controls provided to prevent reheating, recooling, mixing of hot and cold airstreams or concurrent heating and cooling of the same airstream.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.5.4.1 [ME25][3]	HVAC pumping systems >10 hp designed for variable fluid flow.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Systems with three or fewer control valves.
6.5.6.1 [ME50][1]	Exhaust air energy recovery on systems >=5,000 cfm and 70% of design supply air.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
6.5.7.1 [ME52][3]	Kitchen hoods >5,000 cfm have make up air >=50% of exhaust air volume.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
6.5.7.2 [ME53][1]	Fume hoods exhaust systems >=15,000 cfm have VAV hood exhaust and supply systems, direct make-up air or heat recovery.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
6.5.8.1 [ME24][3]	Unenclosed spaces that are heated use only radiant heat.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
6.5.9 [ME35][1]	Hot gas bypass limited to: <=240 kBtu/h - 50% >240 kBtu/h - 25%			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.5.9 [ME35][1]	Hot gas bypass limited to: <=240 kBtu/h - 50% >240 kBtu/h - 25%			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.5.9 [ME35][1]	Hot gas bypass limited to: <=240 kBtu/h - 50% >240 kBtu/h - 25%			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Mechanical Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
6.5.9 [ME35][1]	Hot gas bypass limited to: <=240 kBtu/h - 50% >240 kBtu/h - 25%			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.5.9 [ME35][1]	Hot gas bypass limited to: <=240 kBtu/h - 50% >240 kBtu/h - 25%			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.5.9 [ME35][1]	Hot gas bypass limited to: <=240 kBtu/h - 50% >240 kBtu/h - 25%			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
10.4.1 [EL9][2]	Electric motors meet requirements where applicable.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
[illegible]	Heating and cooling to each zone is controlled by a thermostat control.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.3.1.2, 6.4.3.2, 6.4.2.3, 6.4.3.3.1, 6.4.3.3.2 [FI3][1]	Thermostatic controls have a 5 °F deadband.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.3.7 [FI8][3]	When humidification and dehumidification are provided to a zone, simultaneous operation is prohibited.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.7.2.1 [FI7][3]	Furnished HVAC as-built drawings submitted within 90 days of system acceptance.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.7.2.2 [FI8][3]	Furnished O&M manuals for HVAC systems within 90 days of system acceptance.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.7.2.3 [FI9][1]	An air and/or hydronic system balancing report is provided for HVAC systems serving zones >5,000 ft2 of conditioned area.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.7.2.4 [FI10][1]	HVAC control systems have been tested to ensure proper operation, calibration and adjustment of controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.3.2 [FI20][1]	Temperature controls have setpoint overlap restrictions.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.3.3.1 [FI21][1]	HVAC systems equipped with at least one automatic shutdown control.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.3.3.2 [FI22][1]	Setback controls allow automatic restart and temporary operation as required for maintenance.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

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MY SALON Suite®

ISSUE INFORMATION
1.10.2019
REVISIONS

FRCH / ARCHITECTURE, INC., P.C.

PROJECT INFORMATION
Marketplace Center
MSS #5158
1948 Old Fort Pkwy
Murfreesboro, TN 37129

PROJECT #: 20994

SHEET INFORMATION
MECHNANICAL ENERGY COMPLIANCE

DRAWN BY: DMT
REVIEWED BY: MCD
SCALE: As Noted
AUTHORIZED FOR: Bid/Permit/LL

M-5.0

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