



Mechanical Compliance Certificate

Project Information

Energy Code: 90.1 (2013) Standard
 Project Title: Taco Bell
 Location: Marlette, Michigan
 Climate Zone: 6a
 Project Type: New Construction

Construction Site: 2717 Main Street Marlette, MI 48453	Owner/Agent: Bob Grabowski Dortch Enterprises, LLC 8487 Retreat Dr. Grand Blanc, MI 48439 810-771-4500 ext 1018 bgrabowski@dortchenterprises.com	Designer/Contractor: Michael Carpenter EAM Engineers 180 High Oak Road Bloomfield, Hills, MI, MI 48304 248-526-2670 mcarpenter@eam-engineers.com
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Mechanical Systems List

Quantity System Type & Description

- 1 RTU-1 (Single Zone):
 Heating: 1 each - Central Furnace, Gas, Capacity = 240 kBtu/h
 Proposed Efficiency = 80.00% Et, Required Efficiency: 80.00 % Et
 Cooling: 1 each - Single Package DX Unit, Capacity = 90 kBtu/h, Air-Cooled Condenser, Air Economizer
 Proposed Efficiency = 12.20 EER, Required Efficiency: 11.00 EER + 12.7 IEER
 Fan System: RTU-1 -- Compliance (Motor nameplate HP method) : Passes

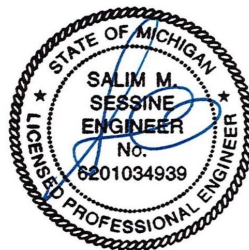
 Fans:
 FAN 1 Supply, Single-Zone VAV, 2800 CFM, 2.0 motor nameplate hp, 0.0 fan efficiency grade
- 1 RTU-2 (Single Zone):
 Heating: 1 each - Central Furnace, Gas, Capacity = 360 kBtu/h
 Proposed Efficiency = 80.00% Et, Required Efficiency: 80.00 % Et
 Cooling: 1 each - Single Package DX Unit, Capacity = 191 kBtu/h, Air-Cooled Condenser, Air Economizer
 Proposed Efficiency = 12.00 EER, Required Efficiency: 10.80 EER + 12.2 IEER
 Fan System: RTU-2 -- Compliance (Motor nameplate HP method) : Passes

 Fans:
 FAN 2 Supply, Constant Volume, 6800 CFM, 5.0 motor nameplate hp, 0.0 fan efficiency grade
- 1 Water Heater 1:
 Gas Storage Water Heater, Capacity: 60 gallons, Input Rating: 120 kBtu/h w/ Circulation Pump
 Proposed Efficiency: 95.00 % Et, Required Efficiency: 80.00 % Et

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical design 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 (2013) Standard requirements in COMcheck Version 4.1.5.4 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Salim Sessine, P.E. _____
 Name - Title Signature



2022.06.23
 Date



Inspection Checklist

Energy Code: 90.1 (2013) Standard

Requirements: 1.0% were addressed directly in the COMcheck software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck 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, 6.4.4.2.1, 6.7.2 [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.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
4.2.2, 7.7.1, 10.4.2 [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.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.7.2.4 [PR5] ¹	Detailed instructions for HVAC systems commissioning included on the plans or specifications for projects >=50,000 ft ² .	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)
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Section # & Req.ID	Footing / Foundation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
6.4.3.7 [FO9] ³	Freeze protection and snow/ice melting system sensors for future connection to controls.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

Additional Comments/Assumptions:

1 High Impact (Tier 1)	2 Medium Impact (Tier 2)	3 Low Impact (Tier 3)
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Section # & Req.ID	Plumbing Rough-In Inspection	Complies?	Comments/Assumptions
7.4.4.1 [PL2] ³	Temperature controls installed on service water heating systems (<=120°F to maximum temperature for intended use).	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
7.4.4.2 [PL3] ¹	Automatic time switches installed to automatically switch off the recirculating hot-water system or heat trace.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

Additional Comments/Assumptions:

1 High Impact (Tier 1)	2 Medium Impact (Tier 2)	3 Low Impact (Tier 3)
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Section # & Req.ID	Mechanical Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
6.4.1.4, 6.4.1.5 [ME1] ²	HVAC equipment efficiency verified. Non-NAECA HVAC equipment labeled as meeting 90.1.	Efficiency: _____	Efficiency: _____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> 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.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.4.3.4.2, 6.4.3.4.3 [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.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.4.3.4.5 [ME39] ³	Enclosed parking garage ventilation has automatic contaminant detection and capacity to stage or modulate fans to 50% or less of design capacity.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.4.3.4.4 [ME5] ³	Ventilation fans >0.75 hp have automatic controls to shut off fan when not required.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.4.3.8 [ME6] ¹	Demand control ventilation provided for spaces >500 ft ² and >25 people/1000 ft ² occupant density and served by systems with air side economizer, auto modulating outside air damper control, or design airflow >3,000 cfm.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.5.3.2.1 [ME40] ²	DX cooling systems ≥ 75 kBtu/h (≥ 65 kBtu/h effective 1/2016) and chilled-water and evaporative cooling fan motor hp ≥ ¼ designed to vary indoor fan airflow as a function of load and comply with operational requirements.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Mechanical Systems list for values.
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.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.4.4.1.2 [ME8] ²	HVAC ducts and plenums insulated. Where ducts or plenums are installed in or under a slab, verification may need to occur during Foundation Inspection.	R- _____	R- _____	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.4.4.1.3 [ME9] ²	HVAC piping insulation thickness. Where piping is installed in or under a slab, verification may need to occur during Foundation Inspection.	_____ in.	_____ in.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

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
6.4.4.1.4 [ME41] ³	Thermally ineffective panel surfaces of sensible heating panels have insulation \geq R-3.5.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.4.4.2.1 [ME10] ²	Ducts and plenums sealed based on static pressure and location.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.4.4.2.2 [ME11] ³	Ductwork operating >3 in. water column requires air leakage testing.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.4.4.2.2 [ME11] ³	Ductwork operating >3 in. water column requires air leakage testing.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
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.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.5.2.4.1 [ME68] ³	Humidifiers with airstream mounted preheating jackets have preheat auto-shutoff value set to activate when humidification is not required.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.5.2.4.2 [ME69] ³	Humidification system dispersion tube hot surfaces in the airstreams of ducts or air-handling units insulated \geq R-0.5.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.5.2.5 [ME70] ³	Preheat coils controlled to stop heat output whenever mechanical cooling, including economizer operation, is active.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.5.3.5 [ME72] ²	Motors for fans \geq 1/12 hp and $<$ 1 hp are electronically-commutated motors or have a minimum motor efficiency of 70%. These motors are also speed adjustable for either balancing or remote control.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.5.3.5 [ME72] ²	Motors for fans \geq 1/12 hp and $<$ 1 hp are electronically-commutated motors or have a minimum motor efficiency of 70%. These motors are also speed adjustable for either balancing or remote control.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.5.3.3 [ME42] ³	Multiple zone VAV systems with DDC of individual zone boxes have static pressure setpoint reset controls.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Mechanical Systems list for values.
6.5.3.3 [ME42] ³	Multiple zone VAV systems with DDC of individual zone boxes have static pressure setpoint reset controls.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Mechanical Systems list for values.

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
6.5.4.2 [ME25] ³	HVAC pumping systems >10 hp designed for variable fluid flow.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
7.5.3 [ME78] ²	Gas-fired water-heating equipment installed in new buildings: where a singular piece of water-heating equipment \geq 1,000 kBtu/h serves the entire building, thermal efficiency must be \geq 90 Et. Where multiple pieces of water-heating equipment serve the building with combined rating is \geq 1,000 kBtu/h, the combined input-capacity-weighted-average thermal efficiency, thermal efficiency must be \geq 90 Et. Exclude input rating of equipment in individual dwelling units and equipment \leq 100 kBtu/h.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.5.6.1 [ME56] ¹	Exhaust air energy recovery on systems meeting Tables 6.5.6.1-1, and 6.5.6.1-2.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.5.7.1.1 [ME32] ²	Kitchen hoods >5,000 cfm have make up air \geq 50% of exhaust air volume.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.5.7.1.2 [ME46] ³	Conditioned supply air to space with a kitchen hood shall not exceed the greater of a) supply flow required to meet space heating or cooling, or b) hood exhaust flow minus the available air transfer from available spaces.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.5.7.1.2 [ME46] ³	Conditioned supply air to space with a kitchen hood shall not exceed the greater of a) supply flow required to meet space heating or cooling, or b) hood exhaust flow minus the available air transfer from available spaces.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.5.7.1.5 [ME49] ³	Approved field test used to evaluate design air flow rates and demonstrate proper capture and containment of kitchen exhaust systems.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.5.8.1 [ME34] ²	Unenclosed spaces that are heated use only radiant heat.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.5.9 [ME35] ¹	Hot gas bypass limited to: \leq 240 kBtu/h - 15% $>$ 240 kBtu/h - 10%			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

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 - 15% >240 kBtu/h - 10%			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
7.4.2 [ME36] ²	Service water heating equipment meets efficiency requirements.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.4.3.9 [ME63] ²	Heating for vestibules and air curtains include automatic controls that shut off the heating system when outdoor air temperatures > 45F. Vestibule heating systems controlled by a thermostat in the vestibule with setpoint <= 60F.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.5.10 [ME73] ³	Doors separating conditioned space from the outdoors have controls that disable/reset heating and cooling system when open.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)
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Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
10.4.1 [EL9] ²	Electric motors meet requirements where applicable.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

Additional Comments/Assumptions:

1 High Impact (Tier 1)	2 Medium Impact (Tier 2)	3 Low Impact (Tier 3)
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Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
6.4.3.1.2 [FI3] ³	Thermostatic controls have a 5 °F deadband.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.4.3.2 [FI20] ³	Temperature controls have setpoint overlap restrictions.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.4.3.3.1 [FI21] ³	HVAC systems equipped with at least one automatic shutdown control.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.4.3.3.2 [FI22] ³	Setback controls allow automatic restart and temporary operation as required for maintenance.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.4.3.6 [FI6] ³	When humidification and dehumidification are provided to a zone, simultaneous operation is prohibited. Humidity control prohibits the use of fossil fuel or electricity to produce RH > 30% in the warmest zone humidified and RH < 60% in the coldest zone dehumidified.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.7.2.1 [FI7] ³	Furnished HVAC as-built drawings submitted within 90 days of system acceptance.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.7.2.2 [FI8] ³	Furnished O&M manuals for HVAC systems within 90 days of system acceptance.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.7.2.3 [FI9] ¹	An air and/or hydronic system balancing report is provided for HVAC systems serving zones >5,000 ft ² of conditioned area.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
6.7.2.4 [FI10] ¹	HVAC control systems have been tested to ensure proper operation, calibration and adjustment of controls.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
7.4.4.3 [FI11] ³	Public lavatory faucet water temperature ≤110°F.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
7.4.4.4 [FI12] ³	Controls are installed that limit the operation of a recirculation pump installed to maintain temperature of a storage tank.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
10.4.3 [FI24] ²	Elevators are designed with the proper lighting, ventilation power, and standby mode.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

Additional Comments/Assumptions:

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