



# Mechanical Compliance Certificate

## Project Information

Energy Code: 2018 IECC  
Project Title: ALFF CONSTRUCTION  
Location: Omaha, Nebraska  
Climate Zone: 5a  
Project Type: New Construction

Construction Site:  
6860 S 118TH ST  
Omaha, NE

Owner/Agent:

Designer/Contractor:  
Nick Manning  
Morrissey Engineering INC  
4940 North 118th St  
Omaha, NE 68164

## Additional Efficiency Package(s)

Credits: 1.0 Required 1.0 Proposed  
Reduced Lighting Power, 1.0 credit

## Mechanical Systems List

### Quantity System Type & Description

- 1 HVAC System 1 (Single Zone):  
Heating: 1 each - Central Furnace, Gas, Capacity = 180 kBtu/h  
Proposed Efficiency = 80.00% Et, Required Efficiency: 80.00 % Et or 80% AFUE  
Cooling: 1 each - Single Package DX Unit, Capacity = 95 kBtu/h, Air-Cooled Condenser, Air Economizer  
Proposed Efficiency = 12.30 EER, Required Efficiency: 11.00 EER + 12.6 IEER  
Fan System: None
- 1 HVAC System 2 (Single Zone):  
Heating: 1 each - Central Furnace, Gas, Capacity = 108 kBtu/h  
Proposed Efficiency = 81.00% Et, Required Efficiency: 80.00 % Et or 80% AFUE  
Cooling: 1 each - Single Package DX Unit, Capacity = 70 kBtu/h, Air-Cooled Condenser, Air Economizer  
Proposed Efficiency = 12.20 EER, Required Efficiency: 11.00 EER + 12.6 IEER  
Fan System: None

## 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 2018 IECC requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Scott Vesely - Project Designer  
Name - Title

  
Signature

June 1, 2023  
Date



# Inspection Checklist

Energy Code: 2018 IECC

Requirements: 0.0% 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 |
|---------------------------|--|--|----------------------|
| C103.2 [PR2] <sup>1</sup> | 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<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |
| C406 [PR9] <sup>1</sup>   | Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options.   | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |

**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 |
|--|--|--|----------------------|
| C403.12.2 , C403.12.3 [FO9] <sup>3</sup> | Snow/ice melting system and freeze protection systems have sensors and controls configured to limit service for pavement temperature and outdoor temperature. future connection to controls. | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |

**Additional Comments/Assumptions:**

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

| Section # & Req.ID                            | Plumbing Rough-In Inspection  | Complies?  | Comments/Assumptions |
|---|---|--|----------------------|
| C404.5, C404.5.1, C404.5.2 [PL6] <sup>3</sup> | Heated water supply piping conforms to pipe length and volume requirements. Refer to section details.   | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |
| C404.5, C404.5.1, C404.5.2 [PL6] <sup>3</sup> | Heated water supply piping conforms to pipe length and volume requirements. Refer to section details.   | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |
| C404.6.3 [PL7] <sup>3</sup>                   | Pumps that circulate water between a heater and storage tank have controls that limit operation from startup to <= 5 minutes after end of heating cycle.  | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |
| C404.6.3 [PL7] <sup>3</sup>                   | Pumps that circulate water between a heater and storage tank have controls that limit operation from startup to <= 5 minutes after end of heating cycle.  | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |
| C404.7 [PL8] <sup>3</sup>                     | Demand recirculation water systems have controls that start the pump upon receiving a signal from the action of a user of a fixture or appliance and limits the temperature of the water entering the cold-water piping to 104°F. | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |
| C404.7 [PL8] <sup>3</sup>                     | Demand recirculation water systems have controls that start the pump upon receiving a signal from the action of a user of a fixture or appliance and limits the temperature of the water entering the cold-water piping to 104°F. | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |

**Additional Comments/Assumptions:**

|                        |                          |                       |
|------------------------|--------------------------|-----------------------|
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|------------------------|--------------------------|-----------------------|

| Section # & Req.ID            | Mechanical Rough-In Inspection   | Complies?  | Comments/Assumptions                        |
|-------------------------------|--|--|---|
| C402.2.6 [ME41] <sup>3</sup>  | Thermally ineffective panel surfaces of sensible heating panels have insulation $\geq R-3.5$ .   | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |   |
| C403.8.1 [ME65] <sup>3</sup>  | HVAC fan systems at design conditions do not exceed allowable fan system motor nameplate hp or fan system bhp.   | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable | See the Mechanical Systems list for values. |
| C403.8.1 [ME65] <sup>3</sup>  | HVAC fan systems at design conditions do not exceed allowable fan system motor nameplate hp or fan system bhp.   | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable | See the Mechanical Systems list for values. |
| C403.8.3 [ME117] <sup>2</sup> | Fans have efficiency grade (FEG) $\geq 67$ . The total efficiency of the fan at the design point of operation $\leq 15\%$ of maximum total efficiency of the fan.  | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |   |
| C403.8.3 [ME117] <sup>2</sup> | Fans have efficiency grade (FEG) $\geq 67$ . The total efficiency of the fan at the design point of operation $\leq 15\%$ of maximum total efficiency of the fan.  | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |   |
| C403.12.1 [ME71] <sup>2</sup> | Systems that heat outside the building envelope are radiant heat systems controlled by an occupancy sensing device or timer switch.  | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |   |
| C403.2.3 [ME55] <sup>2</sup>  | HVAC equipment efficiency verified.  | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable | See the Mechanical Systems list for values. |
| C403.2.2 [ME59] <sup>1</sup>  | Natural or mechanical ventilation is provided in accordance with International Mechanical Code Chapter 4. Mechanical ventilation has capability to reduce outdoor air supply to minimum per IMC Chapter 4.   | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |   |
| C403.7.1 [ME59] <sup>1</sup>  | Demand control ventilation provided for spaces $>500$ ft <sup>2</sup> and $>25$ people/1000 ft <sup>2</sup> 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<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |   |
| C403.7.2 [ME115] <sup>3</sup> | 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<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |   |
| C403.7.6 [ME141] <sup>3</sup> | HVAC systems serving guestrooms in Group R-1 buildings with $> 50$ guestrooms: Each guestroom is provided with controls that automatically manage temperature setpoint and ventilation (see sections C403.7.6.1 and C403.7.6.2).                         | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |   |
| C403.7.4 [ME57] <sup>1</sup>  | Exhaust air energy recovery on systems meeting Table C403.7.4(1) and C403.7.4(2).  | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><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   | Complies?  | Comments/Assumptions |
|---|--|--|----------------------|
| C403.7.5 [ME116] <sup>3</sup>                   | Kitchen exhaust systems comply with replacement air and conditioned supply air limitations, and satisfy hood rating requirements and maximum exhaust rate criteria.  | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |
| C403.11.1, C403.11.2 [ME60] <sup>2</sup>        | HVAC ducts and plenums insulated in accordance with C403.11.1 and constructed in accordance with C403.11.2, verification may need to occur during Foundation Inspection.   | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |
| C403.4.1.4 [ME63] <sup>2</sup>                  | Heating for vestibules and air curtains with integral heating include automatic controls that shut off the heating system when outdoor air temperatures > 45F. Vestibule heating and cooling systems controlled by a thermostat in the vestibule with heating setpoint <= 60F and cooling setpoint >= 80F. | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |
| C403.3.3 [ME35] <sup>1</sup>                    | Hot gas bypass limited to: <=240 kBtu/h - 50% >240 kBtu/h - 25%  | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |
| C403.3.3 [ME35] <sup>1</sup>                    | Hot gas bypass limited to: <=240 kBtu/h - 50% >240 kBtu/h - 25%  | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |
| C408.2.2.1 [ME53] <sup>3</sup>                  | Air outlets and zone terminal devices have means for air balancing.  | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |
| C403.5, C403.5.1, C403.5.2 [ME123] <sup>3</sup> | Refrigerated display cases, walk-in coolers or walk-in freezers served by remote compressors and remote condensers not located in a condensing unit, have fan-powered condensers that comply with Sections C403.5.1 and refrigeration compressor systems that comply with C403.5.2..                       | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |

**Additional Comments/Assumptions:**

|   |                      |   |                        |   |                     |
|---|----------------------|---|------------------------|---|---------------------|
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|---|----------------------|---|------------------------|---|---------------------|

| Section # & Req.ID                             | Rough-In Electrical Inspection   | Complies?  | Comments/Assumptions |
|--|--|--|----------------------|
| C405.6<br>[EL26] <sup>2</sup>                  | Low-voltage dry-type distribution electric transformers meet the minimum efficiency requirements of Table C405.6.  | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |
| C405.7<br>[EL27] <sup>2</sup>                  | Electric motors meet the minimum efficiency requirements of Tables C405.7(1) through C405.7(4). Efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist). | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |
| C405.8.2,<br>C405.8.2.1<br>[EL28] <sup>2</sup> | Escalators and moving walks comply with ASME A17.1/CSA B44 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers.   | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |
| C405.9<br>[EL29] <sup>2</sup>                  | Total voltage drop across the combination of feeders and branch circuits $\leq 5\%$ .  | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |

**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 |
|--|---|--|----------------------|
| C303.3, C408.2.5.3 [FI8] <sup>3</sup>          | Furnished O&M manuals for HVAC systems within 90 days of system acceptance.   | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |
| C403.2.2 [FI27] <sup>3</sup>                   | HVAC systems and equipment capacity does not exceed calculated loads.   | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |
| C403.2.4.1 [FI47] <sup>3</sup>                 | Heating and cooling to each zone is controlled by a thermostat control. Minimum one humidity control device per installed humidification/dehumidification system.   | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |
| C403.2.4.1 [FI47] <sup>3</sup>                 | Heating and cooling to each zone is controlled by a thermostat control. Minimum one humidity control device per installed humidification/dehumidification system.   | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |
| C403.4.1.2 [FI38] <sup>3</sup>                 | Thermostatic controls have a 5 °F deadband.   | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |
| C403.2.4.1.3 [FI20] <sup>3</sup>               | Temperature controls have setpoint overlap restrictions.  | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |
| C403.2.4.2 [FI39] <sup>3</sup>                 | Each zone equipped with setback controls using automatic time clock or programmable control system.   | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |
| C403.2.4.2.1, C403.2.4.2.2 [FI40] <sup>3</sup> | Automatic Controls: Setback to 55°F (heat) and 85°F (cool); 7-day clock, 2-hour occupant override, 10-hour backup   | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |
| C408.1.1 [FI57] <sup>1</sup>                   | Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated. | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |
| C408.2.1 [FI28] <sup>1</sup>                   | Commissioning plan developed by registered design professional or approved agency.  | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |
| C408.2.3.1 [FI31] <sup>1</sup>                 | HVAC equipment has been tested to ensure proper operation.  | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |

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



| Section # & Req.ID                | Final Inspection   | Complies?  | Comments/Assumptions |
|-----------------------------------|--|--|----------------------|
| C408.2.3.2<br>[FI10] <sup>1</sup> | HVAC control systems have been tested to ensure proper operation, calibration and adjustment of controls.      | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |
| C408.2.4<br>[FI29] <sup>1</sup>   | Preliminary commissioning report completed and certified by registered design professional or approved agency. | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |
| C408.2.5.1<br>[FI7] <sup>3</sup>  | Furnished HVAC as-built drawings submitted within 90 days of system acceptance.                                | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |
| C408.2.5.3<br>[FI43] <sup>1</sup> | An air and/or hydronic system balancing report is provided for HVAC systems.                                   | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |
| C408.2.5.4<br>[FI30] <sup>1</sup> | Final commissioning report due to building owner within 90 days of receipt of certificate of occupancy.        | <input type="checkbox"/> Complies<br><input type="checkbox"/> Does Not<br><input type="checkbox"/> Not Observable<br><input type="checkbox"/> Not Applicable |                      |

**Additional Comments/Assumptions:**

|   |                      |   |                        |   |                     |
|---|----------------------|---|------------------------|---|---------------------|
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|---|----------------------|---|------------------------|---|---------------------|

