AUER STEEL
SERVING SINCE 1940 & HEATING SUPPLY CO.

Date: March 5, 2026

To: Interstate Heating

Moore Designs Inc.

Subject: Riordan Residence

In order for this house to pass the 2009 IECC Code, the following conditions were used in figuring the heat loss:

- The **full** foundation wall measured from the top of the wall down to the basement floor is insulated with **1" Styrofoam (R-5)** or greater.
- Exterior walls are insulated with **R-23** or greater.
- The ceiling is insulated with **R-50** or greater.
- Windows and patio doors are **Low – E** glass with a U-value of **0.3** (R-3.33) and a minimum SHGF value of **0.4** or greater.

- TOTAL HEAT LOAD: 59,576 BTUH

Thank you,

Erick Fisher

Erick Fisher

REScheck Software Version 4.6.2

Compliance Certificate

Project 260165 - Auer Steel and Heating Supply - Erick Fisher

Energy Code:	**2009 IECC**
Location:	**Sussex, Wisconsin**
Construction Type:	**Single-family**
Project Type:	**New Construction**
Orientation:	**Bldg. faces 90 deg. from North**
Conditioned Floor Area:	**3,463 ft2**
Glazing Area	**18%**
Climate Zone:	**6 (7754 HDD)**
Permit Date:	
Permit Number:	

Construction Site:

Owner/Agent:
Riordan Residence
Ranch

Designer/Contractor:
Interstate Heating
Moore Designs Inc.

Compliance: Passes using performance alternative

Compliance: **2.3% Better Than Code**

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	U-Factor	UA
Ceiling 1: Flat Ceiling or Scissor Truss	2,124	50.0	0.0	0.026	55
Wall 1: Wood Frame, 16" o.c. Orientation: Front	694	23.0	0.0	0.055	32
Window 1: Metal Frame with Thermal Break:Double Pane with Low-E SHGC: 0.40 Orientation: Front	95			0.300	29
Door 1: Solid Orientation: Front	20			0.200	4
Wall 2: Wood Frame, 16" o.c. Orientation: Right side	442	23.0	0.0	0.055	17
Window 2: Metal Frame with Thermal Break:Double Pane with Low-E SHGC: 0.40 Orientation: Right side	132			0.300	40
Wall 3: Wood Frame, 16" o.c. Orientation: Back	663	23.0	0.0	0.055	28
Window 3: Metal Frame with Thermal Break:Double Pane with Low-E SHGC: 0.40 Orientation: Back	80			0.300	24
Door 4: Glass SHGC: 0.40 Orientation: Back	60			0.300	18
Door 3: Solid Orientation: Back	20			0.200	4
Wall 4: Wood Frame, 16" o.c. Orientation: Left side	456	23.0	0.0	0.055	25

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	U-Factor	UA
Window 5: Metal Frame with Thermal Break:Double Pane with Low-E SHGC: 0.40 Orientation: Left side	7			0.300	2
Basement Wall 1: Wood Frame, 16" o.c. Orientation: Front	18	23.0	0.0	0.055	1
Basement Wall 2: Wood Frame, 16" o.c. Orientation: Right side	432	23.0	0.0	0.055	18
Window 4: Metal Frame with Thermal Break:Double Pane with Low-E SHGC: 0.40 Orientation: Right side	56			0.300	17
Door 2: Glass SHGC: 0.40 Orientation: Right side	40			0.300	12
Basement Wall 3: Solid Concrete or Masonry Orientation: Front Wall height: 9.0' Depth below grade: 8.3' Insulation depth: 9.0'	432	0.0	5.0	0.082	35
Basement Wall 4: Solid Concrete or Masonry Orientation: Back Wall height: 9.0' Depth below grade: 8.3' Insulation depth: 9.0'	99	0.0	5.0	0.082	6
Window 6: Metal Frame with Thermal Break:Double Pane with Low-E SHGC: 0.40 Orientation: Back	24			0.300	7
Basement Wall 5: Solid Concrete or Masonry Orientation: Left side Wall height: 9.0' Depth below grade: 8.3' Insulation depth: 9.0'	432	0.0	5.0	0.082	35
Basement Wall 6: Solid Concrete or Masonry Orientation: Front Wall height: 9.0' Depth below grade: 4.5' Insulation depth: 9.0'	153	0.0	5.0	0.124	19
Basement Wall 7: Solid Concrete or Masonry Orientation: Back Wall height: 9.0' Depth below grade: 4.5' Insulation depth: 9.0'	504	0.0	5.0	0.124	62

Compliance Statement: The proposed building design described here is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the 2009 IECC requirements in RES*check* Version 4.6.2 and to comply with the mandatory requirements listed in the RES*check* Inspection Checklist.

Erick Fisher - Heat Calc. Technician — Name - Title

Erick Fisher — Signature

03/05/2026 — Date

Project Notes:

Total Heat Load: 59,576 BTUH

RES*check* Software Version 4.6.2

Inspection Checklist

Energy Code: 2009 IECC

Requirements: 0.0% were addressed directly in the RES*check* software

Text in the "Comments/Assumptions" column is provided by the user in the REScheck 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	Pre-Inspection/Plan Review	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
103.2 [PR1][1]	Construction drawings and documentation demonstrate energy code compliance for the building envelope.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
103.2, 403.7 [PR3][1]	Construction drawings and documentation demonstrate energy code compliance for lighting and mechanical systems. Systems serving multiple dwelling units must demonstrate compliance with the commercial code.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.6 [PR2][2]	Heating and cooling equipment is sized per ACCA Manual S based on loads per ACCA Manual J or other approved methods.	Heating: Btu/hr____ Cooling: Btu/hr____	Heating: Btu/hr____ Cooling: Btu/hr____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

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

Section # & Req.ID	Foundation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
402.1.1 [FO4][1]	Conditioned basement wall insulation R-value. Where interior insulation is used, verification may need to occur during Insulation Inspection. Not required in warm-humid locations in Climate Zone 3.	R-____	R-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
303.2 [FO5][1]	Conditioned basement wall insulation installed per manufacturer's instructions.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.2.7 [FO6][1]	Conditioned basement wall insulation depth of burial or distance from top of wall.	____ ft	____ ft	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
303.2.1 [FO11][2]	A protective covering is installed to protect exposed exterior insulation and extends a minimum of 6 in. below grade.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.8 [FO12][2]	Snow- and ice-melting system controls installed.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

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

Section # & Req.ID	Framing / Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
402.1.1, 402.3.4 [FR1][1]	Door U-factor.	U-____	U-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
402.1.1, 402.3.1, 402.3.3, 402.5 [FR2][1]	Glazing U-factor (area-weighted average).	U-____	U-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
303.1.3 [FR4][1]	U-factors of fenestration products are determined in accordance with the NFRC test procedure or taken from the default table.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.4.4 [FR20][1]	Fenestration that is not site built is listed and labeled as meeting AAMA/WDMA/CSA 101/I.S.2/A440 or has infiltration rates per NFRC 400 that do not exceed code limits.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.4.5 [FR16][2]	IC-rated recessed lighting fixtures sealed at housing/interior finish and labeled to indicate ≤2.0 cfm leakage at 75 Pa.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
405.2 [FR25][1]	All ducts in unconditioned spaces or outside the building envelope are insulated to ≥R-6.	R-____	R-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.2.2 [FR13][1]	All joints and seams of air ducts, air handlers, filter boxes, and building cavities used as return ducts are sealed.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.2.3 [FR15][3]	Building cavities are not used for supply ducts.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.3 [FR17][2]	HVAC piping conveying fluids above 105 ºF or chilled fluids below 55 ºF are insulated to ≥R-3.	R-____	R-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.4 [FR18][2]	Circulating service hot water pipes are insulated to R-2.	R-____	R-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.5 [FR19][2]	Automatic or gravity dampers are installed on all outdoor air intakes and exhausts.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

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

Section # & Req.ID	Insulation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
303.1 [IN13][2]	All installed insulation is labeled or the installed R-values provided.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.1.1, 402.2.4, 402.2.5 [IN3][1]	Wall insulation R-value. If this is a mass wall with at least ½ of the wall insulation on the wall exterior, the exterior insulation requirement applies.	R-____ ☐ Wood ☐ Mass ☐ Steel	R-____ ☐ Wood ☐ Mass ☐ Steel	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
303.2 [IN4][1]	Wall insulation is installed per manufacturer's instructions.			☐Complies ☐Does Not ☐Not Observable ☐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 Provisions	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
402.1.1, 402.2.1, 402.2.2 [FI1][1]	Ceiling insulation R-value. Where > R-30 is required, R-30 can be used if insulation is not compressed at eaves. R-30 may be used for 500 ft² or 20% (whichever is less) where sufficient space is not available.	R-____ ☐ Wood ☐ Steel	R-____ ☐ Wood ☐ Steel	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
303.1.1.1, 303.2 [FI2][1]	Ceiling insulation installed per manufacturer's instructions. Blown insulation marked every 300 ft².			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.4.2, 402.4.2.1 [FI17][1]	Building envelope tightness verified by blower door test result of <7 ACH at 50 Pa. This requirement may instead be met via visual inspection, in which case verification may need to occur during Insulation Inspection.	ACH 50 =_____	ACH 50 =_____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.2.2 [FI4][1]	Post construction duct tightness test result of ≤8 cfm to outdoors, or ≤12 cfm across systems. Or, rough-in test result of ≤6 cfm across systems or ≤4 cfm without air handler. Rough-in test verification may need to occur during Framing Inspection.	_____ cfm	_____ cfm	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.6 [FI5][1]	Heating and cooling equipment type and capacity as per plans.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.1.1 [FI9][2]	Programmable thermostats installed on forced air furnaces.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.1.2 [FI10][2]	Heat pump thermostat installed on heat pumps.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.4 [FI11][2]	Circulating service hot water systems have automatic or accessible manual controls.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
401.3 [FI7][2]	Compliance certificate posted.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
303.3 [FI18][3]	Manufacturer manuals for mechanical and water heating equipment have been provided.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

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

2009 IECC Energy Efficiency Certificate

Insulation Rating	R-Value
Above-Grade Wall	23.00
Below-Grade Wall	5.00
Floor	0.00
Ceiling / Roof	50.00
Ductwork (unconditioned spaces):	_____

Glass & Door Rating	U-Factor	SHGC
Window	0.30	0.40
Door	0.30	0.40

Heating & Cooling Equipment	Efficiency
Heating System:_____	_____
Cooling System:_____	_____
Water Heater:_____	_____

Name: _____ **Date:**_____

Comments

Heating Equipment Sizing Summary

General Information		
Project Name/Address	Riordan Residence	
County	Waukesha	
Design Temperature	-10	Degrees (F)
"Your UA" from ResCheck	490	UA
Conditioned Floor Area	3463	SqFt
Average Wall Height	10	Ft
Infiltration Rate	0.30	ACH (typ 0.30)
Equipment Oversizing Factor	10	%

Load Summary		
Conductive Losses	39200	Btu/Hr
Infiltration Losses	14960	Btu/Hr
Oversizing Factor Losses	5416	Btu/Hr
Total Building Heating Load	**59576**	**Btu/Hr**

Enter Items in Yellow to get your total Heat Loss. Print and attach with your completed ResCheck Form