REScheck Software Version 4.6.4

Compliance Certificate

Project NEW Construction

Energy Code:	**2015 IECC**
Location:	**Steamboat Springs, Colorado**
Construction Type:	**Single-family**
Project Type:	**New Construction**
Conditioned Floor Area:	**5,652 ft2**
Glazing Area	**24%**
Climate Zone:	**7 (9779 HDD)**
Permit Date:	
Permit Number:	

Construction Site:
LOT 18, Alpine Mountain Ranch
33500 Meadow Creek Drive
Steamboat Springs, CO

Owner/Agent:
Ian Wagner
Wagner Design Studio
2740 Acre Lane, Suite 206
Steamboat Springs, CO 80487
970.846.0905
ian@wagnerdesignstudio.com

Designer/Contractor:
Ian Wagner
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2740 Acre Lane, Suite 206
Steamboat Springs, CO 80487
970.846.0905
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Compliance: Passes using UA trade-off

Compliance: **3.4% Better Than Code** Maximum UA: **872** Your UA: **842**

The % Better or Worse Than Code Index reflects how close to compliance the house is based on code trade-off rules.
It DOES NOT provide an estimate of energy use or cost relative to a minimum-code home.

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	U-Factor	UA
Basement Front Walls: Solid Concrete or Masonry Wall height: 9.8' Depth below grade: 9.8' Insulation depth: 9.8'	1,140	13.0	10.0	0.033	38
Basement Left Walls: Solid Concrete or Masonry Wall height: 9.8' Depth below grade: 6.0' Insulation depth: 9.8'	864	13.0	10.0	0.040	35
Basement Left Walls: Wood Frame, 16" o.c.	96	27.0	0.0	0.051	5
Basement Back Walls: Wood Frame, 16" o.c.	960	27.0	0.0	0.051	39
Windows: Vinyl/Fiberglass Frame:Double Pane with Low-E	142			0.320	45
Doors: Glass	48			0.320	15
Basement Back Walls: Solid Concrete or Masonry Wall height: 9.8' Depth below grade: 1.0' Insulation depth: 9.8'	184	13.0	10.0	0.045	7
Windows: Vinyl/Fiberglass Frame:Double Pane with Low-E	30			0.320	10
Basement Right Walls: Wood Frame, 16" o.c.	96	27.0	0.0	0.051	5

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	U-Factor	UA
Basement Right Walls: Solid Concrete or Masonry Wall height: 9.8' Depth below grade: 6.0' Insulation depth: 9.8'	864	13.0	10.0	0.040	33
Windows: Vinyl/Fiberglass Frame:Double Pane with Low-E	34			0.320	11
Front Walls Main Floor: Wood Frame, 16" o.c.	1,202	27.0	0.0	0.051	51
Windows: Vinyl/Fiberglass Frame:Double Pane with Low-E	139			0.320	44
Doors: Glass	58			0.320	19
Left Walls Main Floor: Wood Frame, 16" o.c.	1,040	27.0	0.0	0.051	40
Windows: Vinyl/Fiberglass Frame:Double Pane with Low-E	217			0.320	69
Door: Solid	24			0.320	8
Door: Glass	22			0.320	7
Back Walls Main Floor: Wood Frame, 16" o.c.	1,230	27.0	0.0	0.051	41
Windows: Vinyl/Fiberglass Frame:Double Pane with Low-E	192			0.320	61
Door: Glass	234			0.320	75
Right Walls Main Floor: Wood Frame, 16" o.c.	1,067	27.0	0.0	0.051	41
Windows: Vinyl/Fiberglass Frame:Double Pane with Low-E	258			0.320	83
Ceilings Main Floor: Flat Ceiling or Scissor Truss	500	49.0	7.0	0.022	11
Ceilings Main Floor: Cathedral Ceiling	2,560	49.0	7.0	0.019	49

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 2015 IECC requirements in RES*check* Version 4.6.4 and to comply with the mandatory requirements listed in the RES*check* Inspection Checklist.

Michael Allison	*Michael Allison*	*1-30-18*
Name - Title	Signature	Date

RES*check* Software Version 4.6.4

Inspection Checklist

Energy Code: 2015 IECC

Requirements: 100.0% 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
103.1, 103.2 [PR1][1]	Construction drawings and documentation demonstrate energy code compliance for the building envelope. Thermal envelope represented on construction documents.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
103.1, 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 IECC Commercial Provisions.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
302.1, 403.7 [PR2][2]	Heating and cooling equipment is sized per ACCA Manual S based on loads calculated per ACCA Manual J or other methods approved by the code official.	Heating: Btu/hr____ Cooling: Btu/hr____	Heating: Btu/hr____ Cooling: Btu/hr____	☐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	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-_____	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	Requirement will be met.
402.2.9 [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	Requirement will be met.
403.9 [FO12][2]	Snow- and ice-melting system controls installed.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement is 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, 402.3.6, 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	Requirement will be met.
402.4.1.1 [FR23][1]	Air barrier and thermal barrier installed per manufacturer's instructions.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
402.4.3 [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	Requirement will be met.
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	Requirement will be met.
403.2.1 [FR12][1]	Supply and return ducts in attics insulated >= R-8 where duct is >= 3 inches in diameter and >= R-6 where < 3 inches. Supply and return ducts in other portions of the building insulated >= R-6 for diameter >= 3 inches and R-4.2 for < 3 inches in diameter.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
403.3.3.5 [FR15][3]	Building cavities are not used as ducts or plenums.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
403.4 [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	Requirement will be met.
403.4.1 [FR24][1]	Protection of insulation on HVAC piping.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
403.5.3 [FR18][2]	Hot water pipes are insulated to ≥R-3.	R-____	R-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
403.6 [FR19][2]	Automatic or gravity dampers are installed on all outdoor air intakes and exhausts.			☐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)

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	Requirement will be met.
402.1.1, 402.2.5, 402.2.6 [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 (FR10).	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	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 Provisions	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
402.1.1, 402.2.1, 402.2.2, 402.2.6 [FI1][1]	Ceiling insulation R-value.	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	Requirement will be met.
402.2.3 [FI22][2]	Vented attics with air permeable insulation include baffle adjacent to soffit and eave vents that extends over insulation.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
402.2.4 [FI3][1]	Attic access hatch and door insulation ≥R-value of the adjacent assembly.	R-____	R-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
402.4.1.2 [FI17][1]	Blower door test @ 50 Pa. <=5 ach in Climate Zones 1-2, and <=3 ach in Climate Zones 3-8.	ACH 50 =____	ACH 50 =____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
403.2.3 [FI4][1]	Duct tightness test result of <=4 cfm/100 ft2 across the system or <=3 cfm/100 ft2 without air handler @ 25 Pa. For rough-in tests, verification may need to occur during Framing Inspection.	____ cfm/100 ft²	____ cfm/100 ft²	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
403.3.2 [FI27][1]	Ducts are pressure tested to determine air leakage with either: Rough-in test: Total leakage measured with a pressure differential of 0.1 inch w.g. across the system including the manufacturer's air handler enclosure if installed at time of test. Postconstruction test: Total leakage measured with a pressure differential of 0.1 inch w.g. across the entire system including the manufacturer's air handler enclosure.	____ cfm/100 ft²	____ cfm/100 ft²	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
403.3.2.1 [FI24][1]	Air handler leakage designated by manufacturer at <=2% of design air flow.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
403.1.1 [FI9][2]	Programmable thermostats installed for control of primary heating and cooling systems and initially set by manufacturer to code specifications.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
403.1.2 [FI10][2]	Heat pump thermostat installed on heat pumps.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
403.5.1 [FI11][2]	Circulating service hot water systems have automatic or accessible manual controls.			☐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	Final Inspection Provisions	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
403.6.1 [FI25][2]	All mechanical ventilation system fans not part of tested and listed HVAC equipment meet efficacy and air flow limits.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
403.2 [FI26][2]	Hot water boilers supplying heat through one- or two-pipe heating systems have outdoor setback control to lower boiler water temperature based on outdoor temperature.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
403.5.1.1 [FI28][2]	Heated water circulation systems have a circulation pump. The system return pipe is a dedicated return pipe or a cold water supply pipe. Gravity and thermos-syphon circulation systems are not present. Controls for circulating hot water system pumps start the pump with signal for hot water demand within the occupancy. Controls automatically turn off the pump when water is in circulation loop is at set-point temperature and no demand for hot water exists.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
403.5.1.2 [FI29][2]	Electric heat trace systems comply with IEEE 515.1 or UL 515. Controls automatically adjust the energy input to the heat tracing to maintain the desired water temperature in the piping.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
403.5.2 [FI30][2]	Water distribution systems that have recirculation pumps that pump water from a heated water supply pipe back to the heated water source through a cold water supply pipe have a demand recirculation water system. Pumps have controls that manage operation of the pump and limit the temperature of the water entering the cold water piping to 104ºF.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
403.5.4 [FI31][2]	Drain water heat recovery units tested in accordance with CSA B55.1. Potable water-side pressure loss of drain water heat recovery units < 3 psi for individual units connected to one or two showers. Potable water-side pressure loss of drain water heat recovery units < 2 psi for individual units connected to three or more showers.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
404.1 [FI6][1]	75% of lamps in permanent fixtures or 75% of permanent fixtures have high efficacy lamps. Does not apply to low-voltage lighting.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
404.1.1 [FI23][3]	Fuel gas lighting systems have no continuous pilot light.			☐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	Final Inspection Provisions	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
401.3 [FI7][2]	Compliance certificate posted.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
303.3 [FI18][3]	Manufacturer manuals for mechanical and water heating systems have been provided.			☐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)

2015 IECC Energy Efficiency Certificate

Insulation Rating	R-Value
Above-Grade Wall	27.00
Below-Grade Wall	23.00
Floor	0.00
Ceiling / Roof	56.00
Ductwork (unconditioned spaces):	_____

Glass & Door Rating	U-Factor	SHGC
Window	0.32	
Door	0.32	

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

Name: _____ **Date:**_____

Comments