

Project Information

Project #: Cranwell Residence
Name: 26355 Hidden Mesa Drive
Location: Oak Creek, CO 8,000'

Notes: *** Assumed ***

Floor Coverings - Vinyl Plank Flooring

In-Floor & Staple Up for Upper & Lower Additions

Electric Baseboard for Existing Lower & Upper Levels

Project Summary

Load Calculation Method:	Manual J8	Total Circuit Lengths:		Component Losses:	27,952 Btu/hr
Design Location:	(User Specified) Oak Creek, Colorado	Barrier PEX 1/2"	2,815 ft	Infiltration/Ventilation:	18,706 Btu/hr
Outdoor Temperature:	-15.0 °F	Total RH Circuits:	13	Radiant Back Losses:	2,122 Btu/hr
Floorplans / Levels:		Total Manifolds:	2	Total Heating Load:	48,780 Btu/hr
Basement	2,611 ft²	Total Zones:	4	Radiant Heating:	23,643 Btu/hr
Main Floor	2,691 ft²	Fluid Type:	100% Water	Radiant Back Losses:	2,122 Btu/hr
Total Area:	5,302 ft²	Total Tubing Volume:	25.91 USG	Baseboard:	23,015 Btu/hr
				Total Heating Load:	48,780 Btu/hr

Zone Heating Summary

Zone #	Gross Area	Construction	Heating Types	RH¹ Circuits	Total Tubing	Manifolds	Flowrate	Head Loss (Circuit Only)	RH Load²	Supplemental	Zone Load³
Zone 101	1,522	N/A	BB	0	0	0	0.00	0.0	0	8,931	8,931
Zone 102	1,089	Embedded Slab	RH	5	1,067	1	1.01	0.6	10,033	0	10,033
Zone 201	1,597	N/A	BB	0	0	0	0.00	0.0	0	14,084	14,084
Zone 202	1,093	Staple-Up	RH	8	1,747	1	1.67	0.7	16,650	0	16,650

(1) Complete circuits assigned to this zone. (2) Total Radiant heating load for rooms in zone, including all panel back loss. (3) Total load for zone including all panel back loss. Does not account for reclaimed loss within building envelope.

Room Heating Summary (By Construction Type)**Embedded Slab**

Zone #	Room Name	Heating Type	Floor Area	Heated Area	Manifold #	Tube Size	RH Circuits ¹	Tube Spacing	Tubing In Room	Floor Cover RV	Required Temp.	Unit RH Load	RH Load ²	Supplemental	Total Load ³
Zone 102	Rec Room Addition	RH	1,050	1,036	Manifold 1	1/2"	5	12	1,025	0.1	91	9.7	10,033	0	10,033

(1) Circuits assigned to this room. Leaders from other rooms may not be counted. (2) Includes panel back loss. (3) Total load including panel back loss. Does not account for reclaimed loss within building envelope.

Staple-Up

Zone #	Room Name	Heating Type	Floor Area	Heated Area	Manifold #	Tube Size	RH Circuits ¹	Tube Spacing	Tubing In Room	Floor Cover RV	Required Temp.	Unit RH Load	RH Load ²	Supplemental	Total Load ³
Zone 202	Great Room Addition	RH	1,055	1,055	Manifold 2	1/2"	8	8	1,689	0.1	128	15.8	16,650	0	16,650

(1) Circuits assigned to this room. Leaders from other rooms may not be counted. (2) Includes panel back loss. (3) Total load including panel back loss. Does not account for reclaimed loss within building envelope.

Non-Radiant Heated Rooms

Zone #	Room Name	Heating Type	Floor Area	Heated Area	Manifold #	Tube Size	RH Circuits	Tube Spacing	Tubing In Room	Floor Cover RV	Required Temp.	Unit RH Load	RH Load	Supplemental	Total Load
Zone 101	Existing Lower Level	BB	1,472	0	n/a	n/a	0	n/a	0	0.5	0		0	8,931	8,931
Zone 201	Existing Upper Level	BB	1,546	0	n/a	n/a	0	n/a	0	0.5	0		0	14,084	14,084

Manifold Summary

Manifold Name	# Zones	# Circuits	Flowrate	Head Loss ¹	Required Temp.	Supplied Temp.	Temp Drop	Manifold Type	Control Type	# Actuators	S/R Length ²	S/R Pipe
Manifold 1	1	5	1.01	1.6	91	130	20	None Selected	Manifold	0	-	-
Manifold 2	1	8	1.67	1.7	128	130	20	None Selected	Manifold	0	-	-
Total	2	13	2.68	1.7	128	-	20	-	-	0	-	-

(1) Total Head loss includes manifold, circuits and supply/return piping if specified. (2) S/R Length = one way

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