

Project Information

Project #: _____ Notes: _____
 Name: Barnett - IQ
 Location: _____

Project Summary

Load Calculation Method:	Manual J8	Total Circuit Lengths:		Component Losses:	69,066 Btu/hr
Design Location:	(User Specified) Steamboat Springs, Colorado	Barrier PEX 1/2"	5,209 ft	Infiltration/Ventilation:	19,791 Btu/hr
Outdoor Temperature:	-20.0 °F	Total RH Circuits:	24	Radiant Back Losses:	19,741 Btu/hr
Floorplans / Levels:		Total Manifolds:	10	Total Heating Load:	108,598 Btu/hr
Ground Floor	2,204 ft²	Total Zones:	2	Radiant Heating:	88,857 Btu/hr
Main Floor	3,271 ft²	Fluid Type:	30% Propylene Glycol	Radiant Back Losses:	19,741 Btu/hr
Total Area:	5,475 ft²	Total Tubing Volume:	47.96 USG	Total Heating Load:	108,598 Btu/hr
		Glycol Volume:	14.39 USG		
		Surface Temperature:	76 - 85 °F		

Zone Heating Summary

Zone #	Gross Area	Construction	Heating Types	RH' Circuits	Total Tubing	Manifolds	Flowrate	Head Loss (Circuit Only)	RH Load²	Supplemental	Zone Load³
Zone 101	2,204	Embedded Slab	RH	11	2,091	6	5.32	8.2	50,453	0	50,453
Zone 201	3,271	Gypsum Thin Slab	RH	13	3,119	4	6.49	11.6	61,244	0	61,244

(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 101	Bathroom 5	RH	130	130	Manifold 3	1/2"	1	12	132	0.5	125	38.6	5,025	0	5,025
Zone 101	Bedroom 2	RH	341	341	Manifold 5	1/2"	2	12	332	0.5	109	22.9	7,806	0	7,806
Zone 101	Bedroom 3	RH	156	154	Manifold 1	1/2"	1	12	161	0.5	127	35.1	5,430	0	5,430
Zone 101	Bedroom 4	RH	240	240	Manifold 1	1/2"	1	12	244	0.5	122	31.1	7,453	0	7,453
Zone 101	Bedroom 5	RH	196	194	Manifold 2	1/2"	1	12	192	0.5	106	18.2	3,539	0	3,539
Zone 101	Gym	RH	180	177	Manifold 6	1/2"	1	12	168	0.5	118	30.1	5,338	0	5,338
Zone 101	Laundry	RH	113	113	Manifold 5	1/2"	1	12	101	0.5	127	38.0	4,307	0	4,307
Zone 101	Living Room 2	RH	561	498	Manifold 2	1/2"	2	12	478	0.5	109	18.6	9,250	0	9,250
Zone 101	Room A-02	RH	151	151	Manifold 4	1/2"	1	12	149	0.5	100	15.3	2,305	0	2,305

(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.

Gypsum Thin 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 201	Garage	RH	876	876	Manifold 8	1/2"	4	12	853	0.5	105	19.0	16,613	0	16,613
Zone 201	Kitchen	RH	317	314	Manifold 7	1/2"	2	12	311	0.5	90	5.7	1,806	0	1,806
Zone 201	Laundry/Powder	RH	276	271	Manifold 7	1/2"	1	12	271	0.5	103	16.2	4,380	0	4,380
Zone 201	Living 1	RH	869	847	Manifold 9	1/2"	3	12	866	0.5	131	27.7	23,482	0	23,482
Zone 201	Master Bed/Bath	RH	547	547	Manifold 10	1/2"	2	12	529	0.5	118	20.9	11,424	0	11,424
Zone 201	Room B-04	RH	248	152	Manifold 8	1/2"	1	12	141	0.5	121	23.3	3,540	0	3,540

(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.

Manifold Summary

Manifold Name	# Zones	# Circuits	Flow	Head Loss ¹	Required Temp.	Supplied Temp.	Temp Drop	Manifold Type	Control Type	# Actuators	S/R Length ²	S/R Pipe
Manifold 1	1	2	1.36	9.3	127	131	20	None Selected	Manifold	0	-	-
Manifold 2	1	3	1.35	4.5	109	109	20	None Selected	Manifold	0	-	-
Manifold 3	1	1	0.53	2.8	125	131	20	None Selected	Manifold	0	-	-
Manifold 4	1	1	0.24	0.8	100	109	20	None Selected	Manifold	0	-	-

Length = ft Area = ft² Temperature = °F Flowrate = USGPM Air Flow = cfm Heat Loss = Btu/hr Unit Heat Loss = Btu/(hr·ft²) Rv = hr·ft²·°F/btu
Head Loss = ft water RH = Radiant Floor Heating BB = Baseboard FA = Forced Air OTH = Other Heating SM = Snowmelt N = Not Heated

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Version:23.0.0580 R

Manifold 5	1	3	1.28	2.1	127	131	20	None Selected	Manifold	0	-	-
Manifold 6	1	1	0.56	3.6	118	131	20	None Selected	Manifold	0	-	-
Manifold 7	1	3	0.69	4.1	103	109	20	None Selected	Manifold	0	-	-
Manifold 8	1	5	2.12	3.4	121	131	20	None Selected	Manifold	0	-	-
Manifold 9	1	3	2.47	13.0	131	131	20	None Selected	Manifold	0	-	-
Manifold 10	1	2	1.20	6.1	118	131	20	None Selected	Manifold	0	-	-
Total	2	24	11.81	13.0	-	-	-	-	-	0	-	-

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

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