Load Multizone Summary Report

Job:
Date: Apr 11, 2023
By:

Infiltration Summary

ZONE NAME	Heating Volume ft³	Heating ACH	Heating AVF cfm	Heating HTM Btuh/ft²	Cooling Volume ft³	Cooling ACH	Cooling AVF cfm	Cooling HTM Btuh/ft²
AHU-01	36693	0.24	145	1.7	36693	0.13	78	0.8
AHU-02	11213	0.42	79	1.7	11213	0.23	42	0.8
Entire House	47906	0.28	224	1.7	47906	0.15	120	0.8

Load and AVF Summary

ROOM NAME	Area ft²	Htg load Btuh	Clg load Btuh	Htg AVF cfm	Clg AVF cfm
G. bath	69	479	769	50	46
G. bedroom	239	2116	3712	219	222
Great Room	656	3897	6742	404	403
Toilet	20	170	173	18	10
Guest Bath	62	386	449	40	27
Guest BR	256	2249	3905	233	233
hallway	177	0	0	0	0
Entry/Dining	719	4349	7564	450	452
kitchen	553	3089	5551	320	331
Bath 2	72	550	675	57	40
B. Bedroom	237	2023	3948	210	236
AHU-01	3058	19308	33489	2000	2000
M. Bedroom	372	3885	6958	860	907
M. Closet	151	1416	2284	313	298
Office	74	948	1961	210	256
M . Bath	116	679	807	150	105
Activity RM	222	2109	3330	467	434
AHU-02	934	9037	15340	2000	2000
Entire House	3992	28344	48828	4000	4000

wrightsoft

Project Summary
Entire House

Job:
Date: Apr 11, 2023
By:

Project Information

For: Kasraee Residece
6804 E Gold Dus Ave, Paradise Valley, AZ 85253

Notes:

Design Information

Weather: Phoenix Co, AZ, US

Winter Design Conditions

Outside db	35	°F
Inside db	68	°F
Design TD	33	°F

Summer Design Conditions

Outside db	106	°F
Inside db	75	°F
Design TD	31	°F
Daily range	H	
Relative humidity	50	%
Moisture difference	1	gr/lb

Heating Summary

Structure	28344	Btuh
Ducts	0	Btuh
Central vent (0 cfm)	0	Btuh
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	28344	Btuh

Sensible Cooling Equipment Load Sizing

Structure	48828	Btuh
Ducts	0	Btuh
Central vent (0 cfm)	0	Btuh
Blower	0	Btuh
Use manufacturer's data	n	
Rate/swing multiplier	1.11	
Equipment sensible load	54200	Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

	Heating	Cooling
Area (ft²)	3992	3992
Volume (ft³)	47906	47906
Air changes/hour	0.28	0.15
Equiv. AVF (cfm)	224	120

Latent Cooling Equipment Load Sizing

Structure	2860	Btuh
Ducts	0	Btuh
Central vent (0 cfm)	0	Btuh
Equipment latent load	2860	Btuh
Equipment Total Load (Sen+Lat)	57060	Btuh
Req. total capacity at 0.70 SHR	6.5	ton

Heating Equipment Summary

Make	n/a
Trade	n/a
Model	n/a
AHRI ref.	n/a
Efficiency	n/a
Heating input	
Heating output	0 Btuh
Temperature rise	0 °F
Actual air flow	0 cfm
Air flow factor	0 cfm/Btuh
Static pressure	0 in H2O
Space thermostat	n/a

Cooling Equipment Summary

Make	n/a
Trade	n/a
Cond	n/a
Coil	n/a
AHRI ref.	n/a
Efficiency	n/a
Sensible cooling	0 Btuh
Latent cooling	0 Btuh
Total cooling	0 Btuh
Actual air flow	0 cfm
Air flow factor	0 cfm/Btuh
Static pressure	0 in H2O
Load sensible heat ratio	0

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

Project Summary
AHU-01

Job:
Date: Apr 11, 2023
By:

Project Information

For: Kasraee Residece
6804 E Gold Dus Ave, Paradise Valley, AZ 85253

Notes:

Design Information

Weather: Phoenix Co, AZ, US

Winter Design Conditions

Outside db	35	°F
Inside db	68	°F
Design TD	33	°F

Summer Design Conditions

Outside db	106	°F
Inside db	75	°F
Design TD	31	°F
Daily range	H	
Relative humidity	50	%
Moisture difference	1	gr/lb

Heating Summary

Structure	19308	Btuh
Ducts	0	Btuh
Central vent (0 cfm) (none)	0	Btuh
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	19308	Btuh

Sensible Cooling Equipment Load Sizing

Structure	33489	Btuh
Ducts	0	Btuh
Central vent (0 cfm) (none)	0	Btuh
Blower	0	Btuh
Use manufacturer's data	n	
Rate/swing multiplier	1.11	
Equipment sensible load	37172	Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

	Heating	Cooling
Area (ft²)	3058	3058
Volume (ft³)	36693	36693
Air changes/hour	0.24	0.13
Equiv. AVF (cfm)	145	78

Latent Cooling Equipment Load Sizing

Structure	2239	Btuh
Ducts	0	Btuh
Central vent (0 cfm) (none)	0	Btuh
Equipment latent load	2239	Btuh
Equipment Total Load (Sen+Lat)	39411	Btuh
Req. total capacity at 0.70 SHR	4.4	ton

Heating Equipment Summary

Make	Trane
Trade	TRANE
Model	4TVH0060C1000CA
AHRI ref	202181203

Efficiency	9.9 HSPF	
Heating input		
Heating output	66000	Btuh @ 47°F
Temperature rise	31	°F
Actual air flow	2000	cfm
Air flow factor	0.104	cfm/Btuh
Static pressure	0.30	in H2O
Space thermostat		

Capacity balance point = 3 °F

Cooling Equipment Summary

Make	Trane
Trade	TRANE
Cond	4TVH0060C1000CA
Coil	
AHRI ref	202181203

Efficiency	9.5 EER, 17.2 SEER	
Sensible cooling	42000	Btuh
Latent cooling	18000	Btuh
Total cooling	60000	Btuh
Actual air flow	2000	cfm
Air flow factor	0.060	cfm/Btuh
Static pressure	0.30	in H2O
Load sensible heat ratio	0.94	

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

Project Summary
AHU-02

Job:
Date: Apr 11, 2023
By:

Project Information

For: Kasraee Residece
6804 E Gold Dus Ave, Paradise Valley, AZ 85253

Notes:

Design Information

Weather: Phoenix Co, AZ, US

Winter Design Conditions

Outside db	35	°F
Inside db	68	°F
Design TD	33	°F

Summer Design Conditions

Outside db	106	°F
Inside db	75	°F
Design TD	31	°F
Daily range	H	
Relative humidity	50	%
Moisture difference	1	gr/lb

Heating Summary

Structure	9037	Btuh
Ducts	0	Btuh
Central vent (0 cfm) (none)	0	Btuh
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	9037	Btuh

Sensible Cooling Equipment Load Sizing

Structure	15340	Btuh
Ducts	0	Btuh
Central vent (0 cfm) (none)	0	Btuh
Blower	0	Btuh
Use manufacturer's data	n	
Rate/swing multiplier	1.11	
Equipment sensible load	17027	Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

	Heating	Cooling
Area (ft²)	934	934
Volume (ft³)	11213	11213
Air changes/hour	0.42	0.23
Equiv. AVF (cfm)	79	42

Latent Cooling Equipment Load Sizing

Structure	621	Btuh
Ducts	0	Btuh
Central vent (0 cfm) (none)	0	Btuh
Equipment latent load	621	Btuh
Equipment Total Load (Sen+Lat)	17648	Btuh
Req. total capacity at 0.70 SHR	2.0	ton

Heating Equipment Summary

Make	Trane
Trade	TRANE
Model	4TVH0060C1000CA
AHRI ref	202181203

Efficiency	9.9 HSPF	
Heating input		
Heating output	66000	Btuh @ 47°F
Temperature rise	31	°F
Actual air flow	2000	cfm
Air flow factor	0.221	cfm/Btuh
Static pressure	0.30	in H2O
Space thermostat		

Capacity balance point = -13 °F

Cooling Equipment Summary

Make	Trane
Trade	TRANE
Cond	4TVH0060C1000CA
Coil	
AHRI ref	202181203

Efficiency	9.5 EER, 17.2 SEER	
Sensible cooling	42000	Btuh
Latent cooling	18000	Btuh
Total cooling	60000	Btuh
Actual air flow	2000	cfm
Air flow factor	0.130	cfm/Btuh
Static pressure	0.30	in H2O
Load sensible heat ratio	0.96	

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

Project Information

For: Kasraee Residece
6804 E Gold Dus Ave, Paradise Valley, AZ 85253

Design Conditions

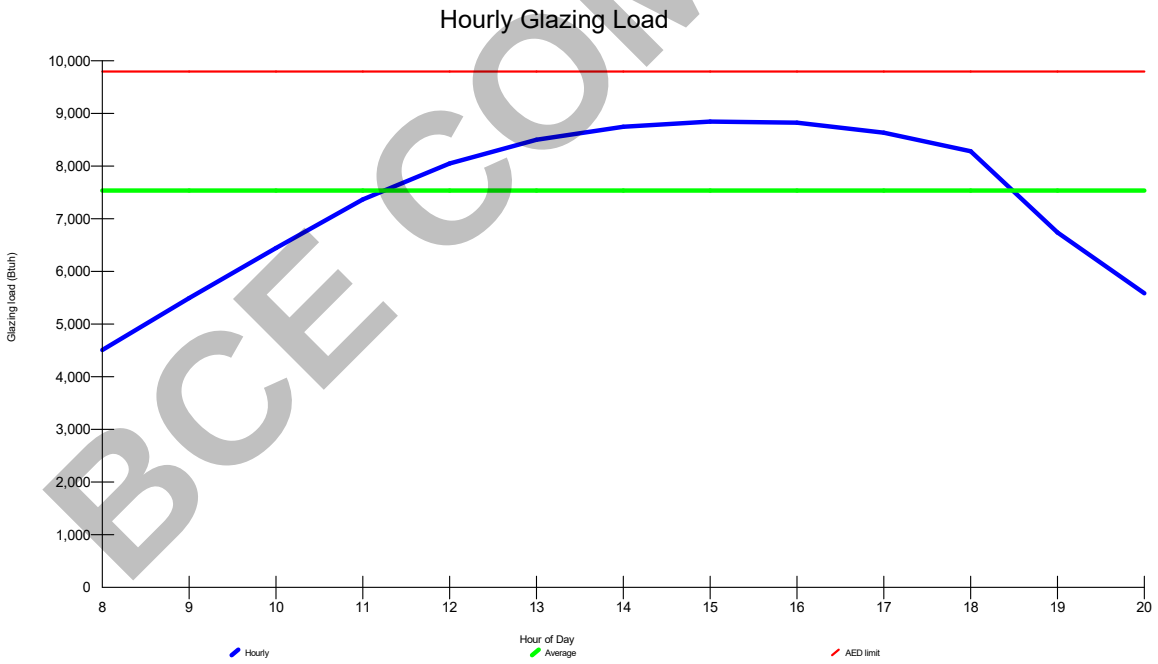
Location:
Phoenix Co, AZ, US
Elevation: 1083 ft
Latitude: 33 °N

Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	35	106
Daily range (°F)	-	26 (H)
Wet bulb (°F)	-	72
Wind speed (mph)	15.0	7.5

Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	68	75
Design TD (°F)	33	31
Relative humidity (%)	50	50
Moisture difference (gr/lb)	28.1	0.8

Infiltration:

Test for Adequate Exposure Diversity



Maximum hourly glazing load exceeds average by 17.4%.

House has adequate exposure diversity (AED), based on AED limit of 30%.

AED excursion: 0 Btuh

Project Information

For: Kasraee Residece
6804 E Gold Dus Ave, Paradise Valley, AZ 85253

Design Conditions

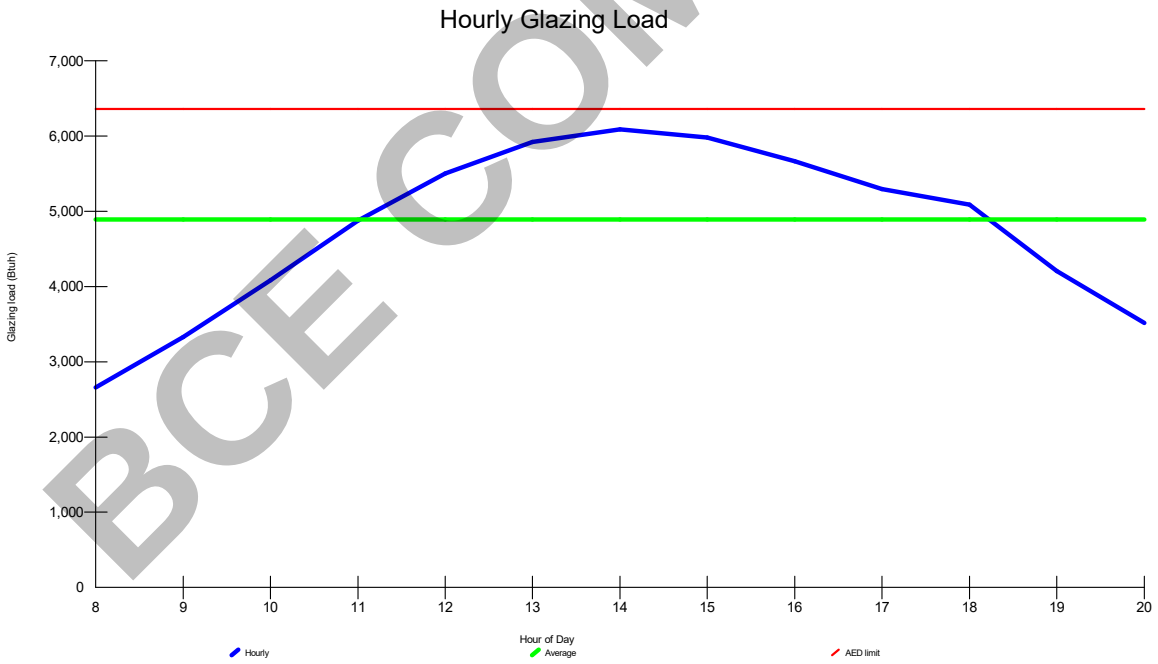
Location:
Phoenix Co, AZ, US
Elevation: 1083 ft
Latitude: 33 °N

Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	35	106
Daily range (°F)	-	26 (H)
Wet bulb (°F)	-	72
Wind speed (mph)	15.0	7.5

Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	68	75
Design TD (°F)	33	31
Relative humidity (%)	50	50
Moisture difference (gr/lb)	28.1	0.8

Infiltration:

Test for Adequate Exposure Diversity



Maximum hourly glazing load exceeds average by 24.5%.

Zone has adequate exposure diversity (AED), based on AED limit of 30%.

AED excursion: 0 Btuh

Project Information

For: Kasraee Residece
6804 E Gold Dus Ave, Paradise Valley, AZ 85253

Design Conditions

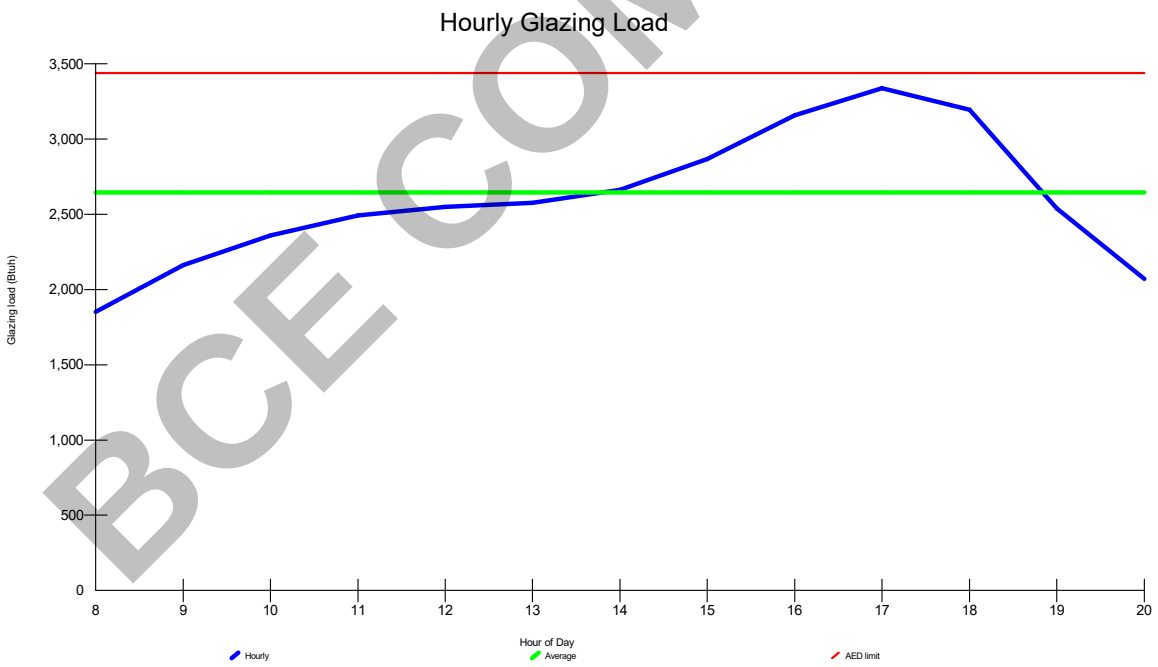
Location:
Phoenix Co, AZ, US
Elevation: 1083 ft
Latitude: 33 °N

Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	35	106
Daily range (°F)	-	26 (H)
Wet bulb (°F)	-	72
Wind speed (mph)	15.0	7.5

Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	68	75
Design TD (°F)	33	31
Relative humidity (%)	50	50
Moisture difference (gr/lb)	28.1	0.8

Infiltration:

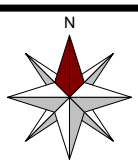
Test for Adequate Exposure Diversity



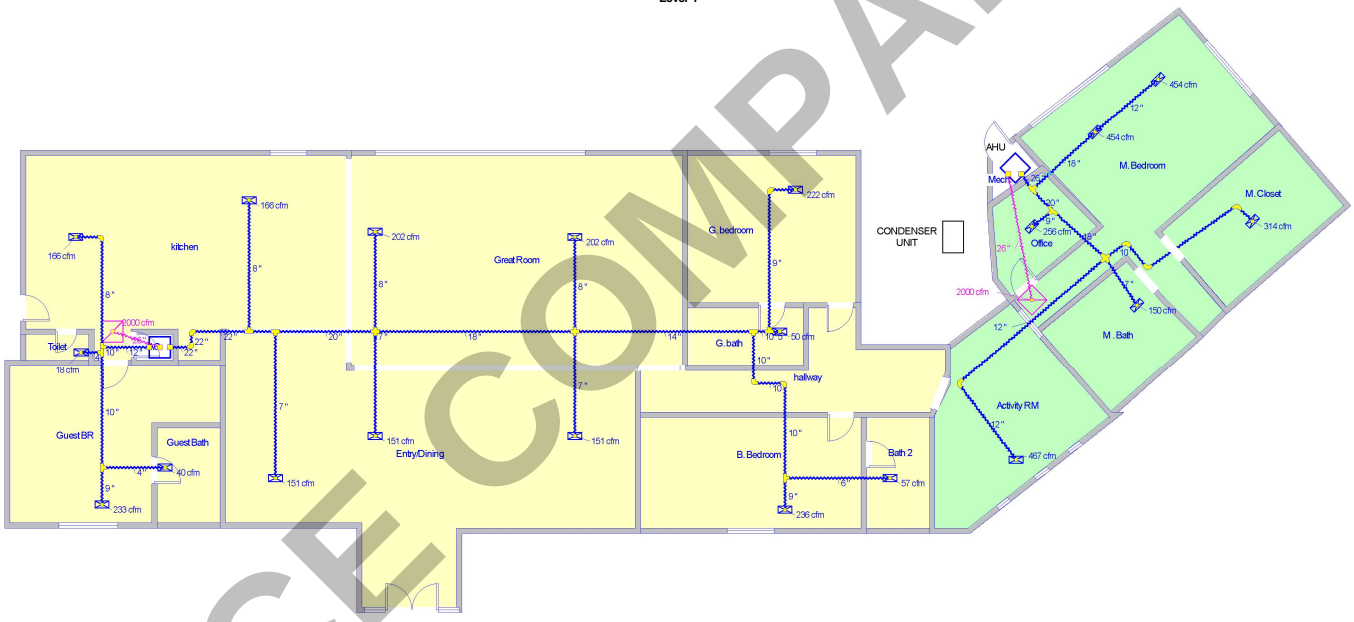
Maximum hourly glazing load exceeds average by 26.2%.

Zone has adequate exposure diversity (AED), based on AED limit of 30%.

AED excursion: 0 Btuh



Level 1



Job #:

Performed for:

Kasraee Residece
6804 E Gold Dus Ave
Paradise Valley, AZ 85253

Scale: 1 : 220

Right-Suite® Universal 2022
22.0.07 RSU62812
2023-May-01 15:33:57
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Duct System Summary
AHU-01

Job:
Date: Apr 11, 2023
By:

Project Information

For: Kasraee Residece
6804 E Gold Dus Ave, Paradise Valley, AZ 85253

	Heating	Cooling
External static pressure	0.30 in H2O	0.30 in H2O
Pressure losses	0 in H2O	0 in H2O
Available static pressure	0.30 in H2O	0.30 in H2O
Supply / return available pressure	0.267 / 0.033 in H2O	0.267 / 0.033 in H2O
Lowest friction rate	0.094 in/100ft	0.094 in/100ft
Actual air flow	2000 cfm	2000 cfm
Total effective length (TEL)	319 ft	

Supply Branch Detail Table

Name	Design (Btuh)		Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	H x W (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
B. Bedroom	c	3948	210	236	0.096	9.0	0x 0	MtFx	77.0	200.0	st21
Bath 2	h	550	57	40	0.094	6.0	0x 0	MtFx	84.0	200.0	st21
Entry/Dining	c	2521	150	151	0.161	7.0	0x 0	MtFx	31.0	135.0	st13
Entry/Dining-A	c	2521	150	151	0.134	7.0	0x 0	MtFx	50.0	150.0	st15
Entry/Dining-B	c	2521	150	151	0.184	7.0	0x 0	MtFx	25.5	120.0	st12
G. bath	h	479	50	46	0.112	5.0	0x 0	MtFx	59.5	180.0	st17
G. bedroom	c	3712	219	222	0.101	9.0	0x 0	MtFx	74.5	190.0	st17
Great Room	h	1949	202	201	0.162	8.0	0x 0	MtFx	30.5	135.0	st13
Great Room-A	h	1949	202	201	0.134	8.0	0x 0	MtFx	49.0	150.0	st15
Guest BR	c	3905	233	233	0.199	9.0	0x 0	MtFx	19.5	115.0	st24
Guest Bath	h	386	40	27	0.195	4.0	0x 0	MtFx	22.0	115.0	st24
Toilet	h	170	18	10	0.250	4.0	0x 0	MtFx	7.0	100.0	st23
kitchen-A	c	2775	160	166	0.181	8.0	0x 0	MtFx	17.5	130.0	st3
kitchen-B	c	2775	160	166	0.211	8.0	0x 0	MtFx	21.5	105.0	st12

Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st16	Peak AVF	535	544	0.094	509	14.0	0 x 0	MetlFlx	st15
st17	Peak AVF	269	268	0.101	493	10.0	0 x 0	MetlFlx	st16
st2	Peak AVF	1549	1564	0.094	592	22.0	0 x 0	MetlFlx	
st13	Peak AVF	1239	1248	0.094	572	20.0	0 x 0	MetlFlx	st12
st19	Peak AVF	267	276	0.094	506	10.0	0 x 0	MetlFlx	st16
st12	Peak AVF	1549	1564	0.094	592	22.0	0 x 0	MetlFlx	st11
st11	Peak AVF	1549	1564	0.094	592	22.0	0 x 0	MetlFlx	st2
st21	Peak AVF	267	276	0.094	506	10.0	0 x 0	MetlFlx	st20
st20	Peak AVF	267	276	0.094	506	10.0	0 x 0	MetlFlx	st19
st23	Peak AVF	291	270	0.195	533	10.0	0 x 0	MetlFlx	st3
st24	Peak AVF	273	260	0.195	500	10.0	0 x 0	MetlFlx	st23
st3	Peak AVF	451	436	0.181	574	12.0	0 x 0	MetlFlx	
st15	Peak AVF	887	896	0.094	507	18.0	0 x 0	MetlFlx	st13

Return Branch Detail Table

Name	Grille Size (in)	Htg (cfm)	Clg (cfm)	TEL (ft)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Stud/Joist Opening (in)	Duct Matl	Trunk
rb4	0x 0	2000	2000	34.7	0.094	542	26.0	0x 0		MtFx	

Duct System Summary
AHU-02

Job:
Date: Apr 11, 2023
By:

Project Information

For: Kasraee Residece
6804 E Gold Dus Ave, Paradise Valley, AZ 85253

	Heating	Cooling
External static pressure	0.30 in H2O	0.30 in H2O
Pressure losses	0 in H2O	0 in H2O
Available static pressure	0.30 in H2O	0.30 in H2O
Supply / return available pressure	0.241 / 0.059 in H2O	0.241 / 0.059 in H2O
Lowest friction rate	0.140 in/100ft	0.140 in/100ft
Actual air flow	2000 cfm	2000 cfm
Total effective length (TEL)	214 ft	

Supply Branch Detail Table

Name	Design (Btuh)	Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	H x W (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
Activity RM	h 2109	467	434	0.147	12.0	0x 0	MtFx	38.9	125.0	st9
M . Bath	h 679	150	105	0.183	7.0	0x 0	MtFx	16.8	115.0	st5
M. Bedroom	c 3479	430	454	0.185	12.0	0x 0	MtFx	9.9	120.0	st10
M. Bedroom-A	c 3479	430	454	0.234	12.0	0x 0	MtFx	17.8	85.0	st10
M. Closet	h 1416	314	298	0.140	10.0	0x 0	MtFx	29.6	142.0	st5
Office	c 1961	210	256	0.225	9.0	0x 0	MtFx	7.1	100.0	st4

Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st1	Peak AVF	2000	2000	0.140	542	26.0	0 x 0	MetlFlx	
st4	Peak AVF	1140	1093	0.140	523	20.0	0 x 0	MetlFlx	st1
st10	Peak AVF	860	907	0.185	513	18.0	0 x 0	MetlFlx	st1
st5	Peak AVF	931	837	0.140	527	18.0	0 x 0	MetlFlx	st4
st9	Peak AVF	467	434	0.147	594	12.0	0 x 0	MetlFlx	st5

Return Branch Detail Table

Name	Grille Size (in)	Htg (cfm)	Clg (cfm)	TEL (ft)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Stud/Joist Opening (in)	Duct Matl	Trunk
rb6	0x 0	2000	2000	42.2	0.140	542	26.0	0x 0		MtFx	