



**Project Summary**  
**Dn - Office**  
**Mountain Air**

Job:  
 Date: Jun 30, 2010  
 By:

616 W. 3rd Ave. Escondido, Ca 92025 Phone: 760-480-0599 Fax: 760-480-0698 Email: mcollings25@yahoo.com Web: www.mtnair.net

**Project Information**

For: Farrar Residence, Gailaud Construction Design

Notes:

**Design Information**

Weather: Escondido, CA, US

**Winter Design Conditions**

Outside db 41 °F  
 Inside db 70 °F  
 Design TD 29 °F

**Summer Design Conditions**

Outside db 85 °F  
 Inside db 75 °F  
 Design TD 10 °F  
 Daily range H  
 Relative humidity 50 %  
 Moisture difference 12 gr/lb

**Heating Summary**

Structure 10140 Btuh  
 Ducts 3105 Btuh  
 Central vent (0 cfm) 0 Btuh  
 Humidification 0 Btuh  
 Piping 0 Btuh  
 Equipment load 13245 Btuh

**Sensible Cooling Equipment Load Sizing**

Structure 9461 Btuh  
 Ducts 1510 Btuh  
 Central vent (0 cfm) 0 Btuh  
 Blower 0 Btuh  
 Use manufacturer's data n  
 Rate/swing multiplier 0.90  
 Equipment sensible load 9874 Btuh

**Infiltration**

Method Simplified  
 Construction quality Average  
 Fireplaces 0

	Heating	Cooling
Area (ft <sup>2</sup> )	909	909
Volume (ft <sup>3</sup> )	7275	7275
Air changes/hour	0.28	0.15
Equiv. AVF (cfm)	33	18

**Latent Cooling Equipment Load Sizing**

Structure 538 Btuh  
 Ducts 133 Btuh  
 Central vent (0 cfm) 0 Btuh  
 Equipment latent load 671 Btuh  
 Equipment total load 10545 Btuh

**Heating Equipment Summary**

Make ECONAR  
 Trade ECONAR  
 Model  
 ARI ref no.

Efficiency 0 HSPF  
 Heating input  
 Heating output 0 Btuh @ 47°F  
 Temperature rise 0 °F  
 Actual air flow 800 cfm  
 Air flow factor 0.060 cfm/Btuh  
 Static pressure 0.50 in H2O  
 Space thermostat

**Cooling Equipment Summary**

Make ECONAR  
 Trade ECONAR  
 Cond  
 Coil FC3-V  
 ARI ref no.

Efficiency 0 SEER  
 Sensible cooling 0 Btuh  
 Latent cooling 0 Btuh  
 Total cooling 0 Btuh  
 Actual air flow 800 cfm  
 Air flow factor 0.073 cfm/Btuh  
 Static pressure 0.50 in H2O  
 Load sensible heat ratio 0.94

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**Project Summary**  
**Living**  
**Mountain Air**

Job:  
 Date: Jun 30, 2010  
 By:

616 W. 3rd Ave, Escondido, Ca 92025 Phone: 760-480-0599 Fax: 760-480-0666 Email: mcollings25@yahoo.com Web: www.mtnair.net

**Project Information**

For: Farrar Residence, Gaitaud Construction Design

Notes:

**Design Information**

Weather: Escondido, CA, US

**Winter Design Conditions**

Outside db 41 °F  
 Inside db 70 °F  
 Design TD 29 °F

**Summer Design Conditions**

Outside db 85 °F  
 Inside db 75 °F  
 Design TD 10 °F  
 Daily range H  
 Relative humidity 50 %  
 Moisture difference 12 gr/lb

**Heating Summary**

Structure 19209 Btuh  
 Ducts 6764 Btuh  
 Central vent (0 cfm) 0 Btuh  
 Humidification 0 Btuh  
 Piping 0 Btuh  
 Equipment load 25973 Btuh

**Sensible Cooling Equipment Load Sizing**

Structure 13699 Btuh  
 Ducts 3244 Btuh  
 Central vent (0 cfm) 0 Btuh  
 Blower 0 Btuh  
 Use manufacturer's data n  
 Rate/swing multiplier 0.90  
 Equipment sensible load 15249 Btuh

**Infiltration**

Method Simplified  
 Construction quality Average  
 Fireplaces 0

	Heating	Cooling
Area (ft <sup>2</sup> )	1805	1805
Volume (ft <sup>3</sup> )	16407	16407
Air changes/hour	0.26	0.14
Equiv. AVF (cfm)	72	38

**Latent Cooling Equipment Load Sizing**

Structure 696 Btuh  
 Ducts 294 Btuh  
 Central vent (0 cfm) 0 Btuh  
 Equipment latent load 990 Btuh  
 Equipment total load 16239 Btuh

**Heating Equipment Summary**

Make ECONAR  
 Trade ECONAR  
 Model  
 ARI ref no.

Efficiency 0 HSPF  
 Heating input  
 Heating output 0 Btuh @ 47°F  
 Temperature rise 0 °F  
 Actual air flow 1200 cfm  
 Air flow factor 0.046 cfm/Btuh  
 Static pressure 0.50 in H2O  
 Space thermostat

**Cooling Equipment Summary**

Make ECONAR  
 Trade ECONAR  
 Cond  
 Coil FC3-V  
 ARI ref no.

Efficiency 0 SEER  
 Sensible cooling 0 Btuh  
 Latent cooling 0 Btuh  
 Total cooling 0 Btuh  
 Actual air flow 1200 cfm  
 Air flow factor 0.071 cfm/Btuh  
 Static pressure 0.50 in H2O  
 Load sensible heat ratio 0.94

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**Project Summary**  
**Up - Master**  
**Mountain Air**

Job:  
 Date: Jun 30, 2010  
 By:

616 W. 3rd Ave, Escondido, Ca 92025 Phone: 760-480-0699 Fax: 760-480-0698 Email: mcoffings25@yahoo.com Web: www.mtnair.net

**Project Information**

For: **Farrar Residence, Gaitaud Construction Design**

Notes:

**Design Information**

Weather: Escondido, CA, US

**Winter Design Conditions**

Outside db 41 °F  
 Inside db 70 °F  
 Design TD 29 °F

**Summer Design Conditions**

Outside db 85 °F  
 Inside db 75 °F  
 Design TD 10 °F  
 Daily range H  
 Relative humidity 50 %  
 Moisture difference 12 gr/lb

**Heating Summary**

Structure 7012 Btuh  
 Ducts 2966 Btuh  
 Central vent (0 cfm) 0 Btuh  
 Humidification 0 Btuh  
 Piping 0 Btuh  
 Equipment load 9978 Btuh

**Sensible Cooling Equipment Load Sizing**

Structure 7681 Btuh  
 Ducts 1443 Btuh  
 Central vent (0 cfm) 0 Btuh  
 Blower 0 Btuh  
 Use manufacturer's data n  
 Rate/swing multiplier 0.90  
 Equipment sensible load 8211 Btuh

**Infiltration**

Method Simplified  
 Construction quality Average  
 Fireplaces 0

	Heating	Cooling
Area (ft <sup>2</sup> )	832	832
Volume (ft <sup>3</sup> )	6953	6953
Air changes/hour	0.33	0.17
Equiv. AVF (cfm)	38	20

**Latent Cooling Equipment Load Sizing**

Structure 555 Btuh  
 Ducts 250 Btuh  
 Central vent (0 cfm) 0 Btuh  
 Equipment latent load 806 Btuh  
 Equipment total load 9017 Btuh

**Heating Equipment Summary**

Make ECONAR  
 Trade ECONAR  
 Model  
 ARI ref no.  
 Efficiency 0 HSPF  
 Heating input 0 Btuh @ 47°F  
 Heating output 0 °F  
 Temperature rise 800 cfm  
 Actual air flow 0.080 cfm/Btuh  
 Air flow factor 0.50 in H2O  
 Static pressure  
 Space thermostat

**Cooling Equipment Summary**

Make ECONAR  
 Trade ECONAR  
 Cond  
 Coil CF3-V  
 ARI ref no.  
 Efficiency 0 SEER  
 Sensible cooling 0 Btuh  
 Latent cooling 0 Btuh  
 Total cooling 0 Btuh  
 Actual air flow 800 cfm  
 Air flow factor 0.088 cfm/Btuh  
 Static pressure 0.50 in H2O  
 Load sensible heat ratio 0.92

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# Duct System Summary

## Dn - Office

### Mountain Air

Job:  
Date: Jun 30, 2010  
By:

616 W. 3rd Ave, Escondido, Ca 92025 Phone: 760-480-0599 Fax: 760-480-0696 Email: mcoolings25@yahoo.com Web: www.mtnair.net

### Project Information

For: Farrar Residence, Gaitaud Construction Design

	Heating	Cooling
External static pressure	0.50 in H2O	0.50 in H2O
Pressure losses	0.16 in H2O	0.16 in H2O
Available static pressure	0.34 in H2O	0.34 in H2O
Supply / return available pressure	0.27 / 0.07 in H2O	0.27 / 0.07 in H2O
Lowest friction rate	0.224 in/100ft	0.224 in/100ft
Actual air flow	800 cfm	800 cfm
Total effective length (TEL)		152 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
Exercise Room	c 2306	165	168	0.232	7.0	0x0	VIFx	15.2	100.0	st9
Exercise Room-A	c 2306	165	168	0.224	7.0	0x0	VIFx	19.0	100.0	st9
Guest Bath	h 2011	121	97	0.280	6.0	0x0	VIFx	10.3	85.0	st2
Guest Bedroom	h 2648	160	95	0.269	7.0	0x0	VIFx	14.1	85.0	st2
Office	c 3727	188	272	0.265	9.0	0x0	VIFx	15.7	85.0	st1

### Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st9	Peak AVF	331	336	0.224	617	10.0	0 x 0	VinIFx	st1
st1	Peak AVF	519	608	0.224	774	12.0	0 x 0	VinIFx	
st2	Peak AVF	281	192	0.269	637	9.0	0 x 0	VinIFx	

### Return Branch Detail Table

Name	Grill 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
rb3	0x0	800	800	32.5	0.224	573	16.0	0x 0		VIFx	

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# Duct System Summary

## Living

### Mountain Air

Job:  
Date: Jun 30, 2010  
By:

516 W. 3rd Ave, Escondido, Ca 92025 Phone: 760-480-0509 Fax: 760-480-0608 Email: mcollings25@yahoo.com Web: www.mtnair.net

### Project Information

For: Farrar Residence, Gaitaud Construction Design

	Heating	Cooling
External static pressure	0.50 in H2O	0.50 in H2O
Pressure losses	0.16 in H2O	0.16 in H2O
Available static pressure	0.34 in H2O	0.34 in H2O
Supply / return available pressure	0.28 / 0.06 in H2O	0.28 / 0.06 in H2O
Lowest friction rate	0.154 in/100ft	0.154 in/100ft
Actual air flow	1200 cfm	1200 cfm
Total effective length (TEL)	221 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)	Flg. Eqv Ln (ft)	Trunk
Dining Room	h 5144	238	167	0.248	8.0	0x0	VIFx	38.3	75.0	
Entry	h 1414	65	32	0.268	5.0	0x0	VIFx	19.8	85.0	st7
Family / Kitchen	c 3098	154	219	0.162	8.0	0x0	VIFx	58.1	115.0	st10
Family / Kitchen-A	c 3097	154	219	0.154	8.0	0x0	VIFx	67.7	115.0	st10
Family / Kitchen-B	c 3097	154	219	0.191	8.0	0x0	VIFx	47.2	100.0	st8
Guest Bathroom	h 1114	51	44	0.306	5.0	0x0	VIFx	6.7	85.0	st5
Guest Living Area	c 1834	118	130	0.275	6.0	0x0	VIFx	17.1	85.0	st6
Guest Living Area 2	c 1620	90	115	0.253	6.0	0x0	VIFx	25.9	85.0	st6
Guest WIC	h 413	19	5	0.281	5.0	0x0	VIFx	14.9	85.0	st5
Laundry	h 1514	70	21	0.327	5.0	0x0	VIFx	10.8	75.0	
Mech 2	h 1134	52	13	0.385	5.0	0x0	VIFx	2.9	70.0	
Powder	h 745	34	15	0.281	5.0	0x0	VIFx	14.9	85.0	st7

### Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st5	Peak AVF	71	50	0.281	517	5.0	0 x 0	VinIFix	
st6	Peak AVF	209	245	0.253	554	9.0	0 x 0	VinIFix	
st7	Peak AVF	100	47	0.268	508	6.0	0 x 0	VinIFix	
st8	Peak AVF	461	658	0.154	616	14.0	0 x 0	VinIFix	
st10	Peak AVF	307	439	0.154	804	10.0	0 x 0	VinIFix	st8

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## Return Branch Detail Table

Name	Grill 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
rb1	0x0	1200	1200	38.4	0.154	550	20.0	0x 0		VIFx	

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# Duct System Summary

## Up - Master

### Mountain Air

Job:  
Date: Jun 30, 2010  
By:

816 W. 3rd Ave, Escondido, Ca 92025 Phone: 760-480-0599 Fax: 760-480-0698 Email: mcollings25@yahoo.com Web: www.mtnair.net

### Project Information

For: Farrar Residence, Gaitaud Construction Design

	Heating	Cooling
External static pressure	0.50 in H2O	0.50 in H2O
Pressure losses	0.16 in H2O	0.16 in H2O
Available static pressure	0.34 in H2O	0.34 in H2O
Supply / return available pressure	0.25 / 0.09 in H2O	0.25 / 0.09 in H2O
Lowest friction rate	0.254 in/100ft	0.254 in/100ft
Actual air flow	800 cfm	800 cfm
Total effective length (TEL)		134 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
Master Bathroom	h 1792	144	109	0.261	7.0	0x0	VIFx	10.7	85.0	st3
Master Bedroom	c 3236	239	284	0.254	9.0	0x0	VIFx	13.2	85.0	st4
Master WIC	h 1362	109	64	0.259	6.0	0x0	VIFx	11.4	85.0	st4
Sitting Area	c 1089	59	95	0.266	6.0	0x0	VIFx	8.8	85.0	st3
Sky Light	c 0	0	0	0	0	0x0	VIFx	0	0	
Stairs 2	h 3101	249	248	0.304	9.0	0x0	VIFx	11.9	70.0	

### Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st3	Peak AVF	203	204	0.261	585	8.0	0 x 0	VinIFx	
st4	Peak AVF	349	348	0.254	639	10.0	0 x 0	VinIFx	

### Return Branch Detail Table

Name	Grill 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	0x0	800	800	35.7	0.254	573	16.0	0x 0		VIFx	

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# Load Multizone Summary Report

Job:  
Date: Jun 30, 2010  
By:

Mountain Air

616 W. 3rd Ave, Escondido, Ca 92025 Phone: 760-480-0599 Fax: 760-480-0698 Email: mcoolings25@yahoo.com Web: www.mtair.net

## Infiltration Summary

ZONE NAME	Heating				Cooling			
	Volume ft <sup>3</sup>	ACH	AVF cfm	HTM Btuh/ft <sup>3</sup>	Volume ft <sup>3</sup>	ACH	AVF cfm	HTM Btuh/ft <sup>3</sup>
Up - Master	6953	0.33	38	1.0	6953	0.17	20	0.2
Living	16407	0.26	72	1.0	16407	0.14	38	0.2
Dn - Office	7275	0.28	33	1.0	7275	0.15	18	0.2
Entire House	30635	0.28	143	1.0	30635	0.15	77	0.2

## Load and AVF Summary

ROOM NAME	Area ft <sup>2</sup>	Htg load Btuh	Clg load Btuh	Htg AVF cfm	Clg AVF cfm
Master Bathroom	205	1792	1240	144	109
Master WIC	167	1362	732	109	64
Master Bedroom	229	2985	3236	239	284
Sitting Area	107	738	1089	59	95
Sky Light	0	0	0	0	0
Stairs 2	123	3101	2826	249	248
Up - Master	832	9978	9123	800	800
Guest Hall	31	0	0	0	0
Guest Living Area	218	2564	1834	118	130
Guest Bathroom	74	1114	628	51	44
Guest WIC	54	413	75	19	5
Guest Living Area 2	135	1953	1620	90	115
Mech 2	49	1134	177	52	13
Powder	37	745	210	34	15
Entry	50	1414	455	65	32
Hall 1	108	0	0	0	0
Dining Room	208	5144	2359	238	167
Laundry	141	1514	295	70	21
Pantry	45	0	0	0	0
Family / Kitchen	656	9978	9290	461	658
Living	1805	25973	16944	1200	1200
Office	192	3112	3727	188	272
Exercise Room	179	5474	4612	331	336
Guest Bedroom	204	2648	1298	160	95
Guest Bath	125	2011	1334	121	97
Stairs	110	0	0	0	0
Hall 2	98	0	0	0	0
Dn - Office	909	13245	10971	800	800
Entire House	3546	49195	37011	2800	2800

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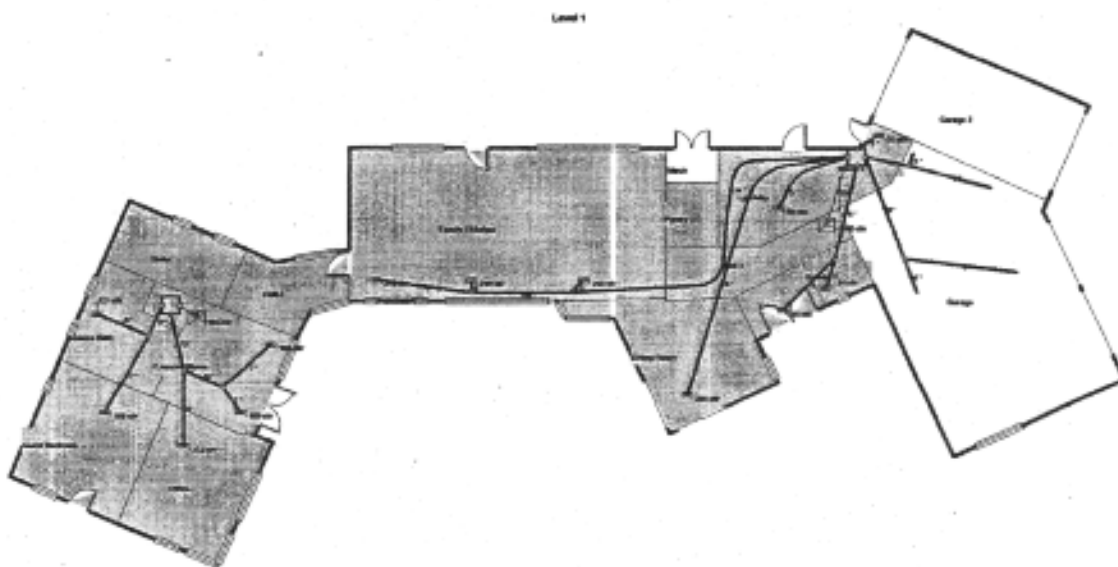
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**Job #:**  
**Performed for:**  
Farrar Residence



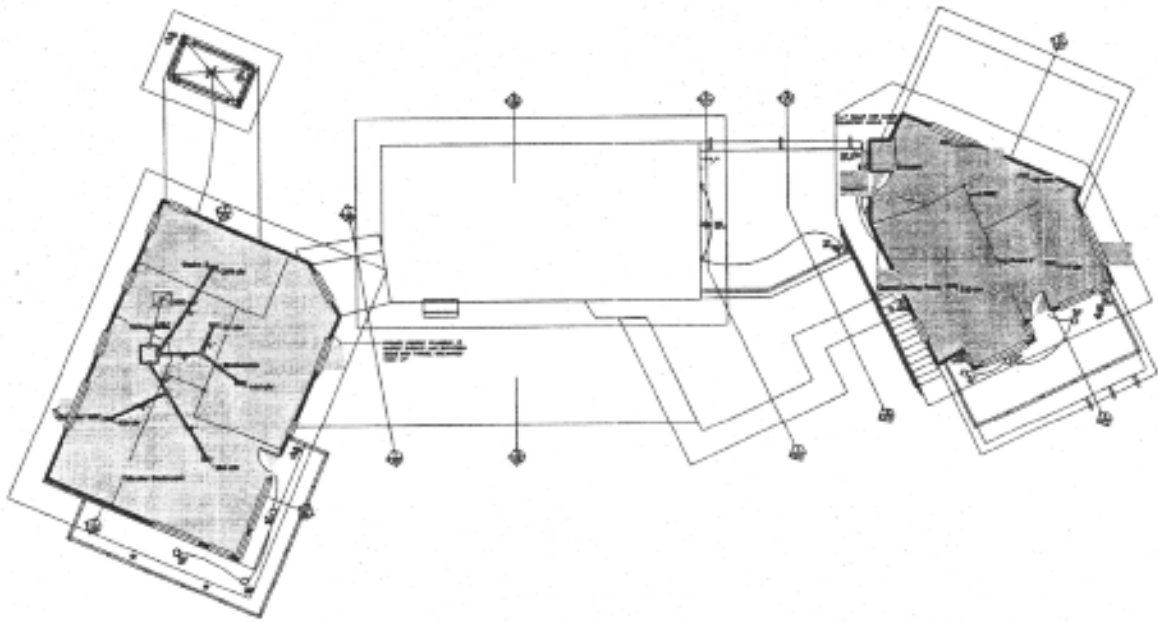
**Mountain Air**

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Performed for:  
Farrar Residence

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**Mountain Air**

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**Job #:**  
**Performed for:**  
Farrar Residence  
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