

Load Short Form BASEMENT AH GOUVIS ENGINEERING

65671 Job:

Date:

Ву:

Plan: Borstein Residence

15 STUDEBAKER, IRVINE, CA 92618 Phone: 949.752.1612 Fax: 949.752.5321

Project Information

For:

Design Information								
	Htg	Clg		Infiltration				
Outside db (°F)	46	80	Method		Simplified			
Inside db (°È)	68	75	Construction quality		Semi-tight			
Design TD (°F)	22	5	Fireplaces		1 (Average)			
Daily range	-	L	·		, ,			
Inside humidity (%)	50	50						
Moisture difference (gr/lb)	14	-3						

HEATING EQUIPMENT

COOLING EQUIPMENT

Make			Make		
Trade			Trade		
Model			Cond		
AHRI ref			Coil		
			AHRI ref		
Efficiency	80 AFUE		Efficiency	0 SEER	
Heating input	0	Btuh	Sensible cooling	0	Btuh
Heating output	0	Btuh	Latent cooling	0	Btuh
Temperature rise	0	°F	Total cooling	0	Btuh
Actual air flow	1400	cfm	Actual air flow	1400	cfm
Air flow factor	0.315	cfm/Btuh	Air flow factor	0.110	cfm/Btuh
Static pressure	0	in H2O	Static pressure	0	in H2O
Space thermostat			Load sensible heat ratio	0.74	

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
THEATER	444	1260	2050	396	225
GYM	256	494	2050	155	225
BILLIARDS	230	764	2050	240	225
ENTERTAINMENT	639	499	4550	157	499
AV	25	0	0	0	0
STO.	24	0	0	0	0
ELEV. 3	29	0	0	0	0
HALL 0A	60	0	0	0	0
CRAFTS ROOM	202	763	1838	240	202
BA. 6	87	218	230	69	25
STAIR	56	0	0	0	0
SAUNA	50	0	0	0	0
WET BAR	127	451	0	142	0
STOR.	39	0	0	0	0

BASEMENT AH Other equip loads Equip. @ 0.85 RSM Latent cooling	2266	4449 0	12768 0 10904 4400	1400	1400
TOTALS	2266	4449	15304	1400	1400



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Daily range	-	L	•		, ,			
Inside humidity (%)	50	50						
Moisture difference (gr/lb)	14	-3						

HEATING EQUIPMENT

COOLING EQUIPMENT

Make Trade Model AHRI ref			Make Trade Cond Coil AHRI ref		
Efficiency Heating input Heating output Temperature rise Actual air flow Air flow factor Static pressure Space thermostat	80 AFUE 0 0 0 2000 0.123 0	Btuh Btuh °F cfm cfm/Btuh in H2O	Efficiency Sensible cooling Latent cooling Total cooling Actual air flow Air flow factor Static pressure Load sensible heat ratio	0 SEER 0 0 2000 0.085 0 0.84	Btuh Btuh cfm cfm/Btuh

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
GUEST ROOM	210	1367	329	168	28
PDR.	36	0	0	0	0
BA. 5	73	9	1024	1	87
DEN	251	2864	3161	351	270
PARLOR	335	1430	3985	175	340
OFFICE	241	1878	2922	230	249
HALL 1A+1B	87	0	0	0	0
GALLERY	171	0	0	0	0
ELEV. 2	28	0	0	0	0
FAMILY	512	1445	3231	177	276
BREAK & KIT	616	5180	5506	636	470
PANTRY	70	0	0	0	0
DROP	59	0	0	0	0
BUTLER'S PANTRY	l 89	0	0	0	0

DINING	287	2124	3276	261	280
MAIN AH Other equip loads Equip. @ 0.85 RSM Latent cooling	3064	16298 0	23203 0 19816 4295	2000	2000
TOTALS	3064	16298	24110	2000	2000



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Inside db (°F)	68	75	Construction quality		Semi-tight			
Design TD (°F)	22	5	Fireplaces		1 (Average)			
Daily range	-	L	•		(3 ,			
Inside humidity (%)	50	50						
Moisture difference (gr/lb)	14	-3						

HEATING EQUIPMENT

COOLING EQUIPMENT

Make			Make		
Trade			Trade		
Model			Cond		
AHRI ref			Coil		
			AHRI ref		
Efficiency	80 AFUE		Efficiency	0 SEER	
Heating input	0	Btuh	Sensible cooling	0	Btuh
Heating output	0	Btuh	Latent cooling	0	Btuh
Temperature rise	0	°F	Total cooling	0	Btuh
Actual air flow	1600	cfm	Actual air flow	1600	cfm
Air flow factor	0.055	cfm/Btuh	Air flow factor	0.047	cfm/Btuh
Static pressure	0	in H2O	Static pressure	0	in H2O
Space thermostat			Load sensible heat ratio	0.94	

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
MASTER BEDROOM	459	5100	5022	281	236
MASTER BATH	224	1883	3345	104	157
MASTER W.I.C	163	0	0	0	0
ELEV	27	0	0	0	0
BATH 2	51	1557	1611	86	76
W.I.C. 2	29	0	0	0	0
CONNOR	250	4972	5336	274	251
HALL 2A	158	0	0	0	0
BEDROOM 4	198	2436	2376	134	112
W.I.C 4	26	0	0	0	0
BA.4	70	1773	1558	98	73
SAMANTHA	240	3145	3189	174	150
HALL 2B	78	0	0	0	0
W.I.C 3	36	0	0	0	0

BA. 3 LAU. TEEN ROOM STAIRS. 2	54 96 292 312	1341 1695 5091 0	1419 2284 7874 0	74 94 281 0	67 107 370 0
UPPER AH Other equip loads Equip. @ 0.85 RSM Latent cooling	2764	28993 0	34015 0 29049 2284	1600	1600
TOTALS	2764	28993	31333	1600	1600



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Moisture difference (gr/lb)	14	-3					

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COOLING EQUIPMENT

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Trade			Trade		
Model			Cond		
AHRI ref			Coil		
			AHRI ref		
Efficiency	80 AFUE		Efficiency	0 SEER	
Heating input	0	Btuh	Sensible cooling	0	Btuh
Heating output	0	Btuh	Latent cooling	0	Btuh
Temperature rise	0	°F	Total cooling	0	Btuh
Actual air flow	0	cfm	Actual air flow	0	cfm
Air flow factor	0	cfm/Btuh	Air flow factor	0	cfm/Btuh
Static pressure	0	in H2O	Static pressure	0	in H2O
Space thermostat			Load sensible heat ratio	0	

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
WINE	74	201	0	0	0
WINE AH Other equip loads Equip. @ 0.85 RSM Latent cooling	74	201	0 0 0 0	0	0
TOTALS	74	201	0	0	0



Loads for Multiple Orientations MAIN AH GOUVIS ENGINEERING

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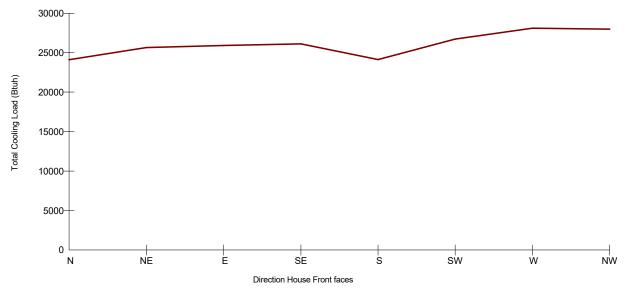
Project Information

For:

Design Conditions											
Location: Los Angeles Intl, CA, US Elevation: 325 ft Latitude: 34°N			Indoor: Indoor temperature (°F) Design TD (°F) Relative humidity (%)	Heating 68 22 50	Cooling 75 5 50						
Outdoor:	Heating	Cooling	Moisture difference (gr/lb)	13.8	-3.5						
Dry bulb (°F)	46	80	Infiltration:								
Daily range (°F)	-	11 (L)									
Wet bulb (°F)	-	64									
Wind speed (mph)	15.0	7.5									

House Front	North	Northeast	East	Southeast	South	Southwest	West	Northwest
Sensible Load (Btuh)	19816	21356	21630	21830	19832	22417		23693
Latent Load (Btuh)	4295	4295	4295	4295	4295	4295		4295
Total Load (Btuh)	24110	25651	25925	26124	24126	26711		27987
Heating AVF (cfm)	2000	2000	2000	2000	2000	2000		2000
Cooling AVF (cfm)	2000	2000	2000	2000	2000	2000		2000

Building Orientation Cooling Load



Current Orientation: House Front faces North Highest Cooling Load: House Front faces West



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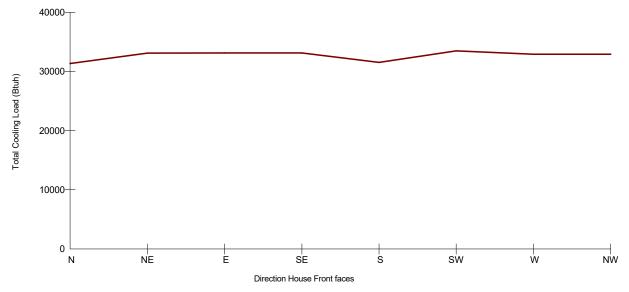
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Design Conditions											
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Outdoor:	Heating	Cooling	Moisture difference (gr/lb)	13.8	-3.5						
Dry bulb (°F)	46	80	Infiltration:								
Daily range (°F)	-	11 (L)									
Wet bulb (°F)	-	64									
Wind speed (mph)	15.0	7.5									

House Front	North	Northeast	East	Southeast	South	Southwest	West	Northwest
Sensible Load (Btuh) Latent Load (Btuh) Total Load (Btuh) Heating AVF (cfm) Cooling AVF (cfm)	29049 2284 31333 1600 1600	30809 2284 33093 1600 1600	30842 2284 33126 1600 1600	2284 33108 1600	29254 2284 31539 1600 1600	31186 2284 33471 1600 1600	30615 2284 32899 1600 1600	30633 2284 32917 1600 1600

Building Orientation Cooling Load



Current Orientation: House Front faces North House Front faces Southwest Highest Cooling Load:

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



2021-Mar-24 16:25:15



Loads for Multiple Orientations BASEMENT AH GOUVIS ENGINEERING

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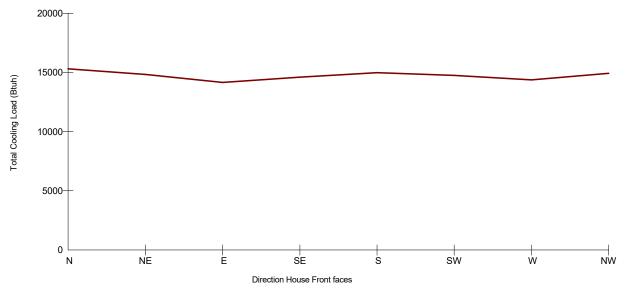
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Design Conditions											
Location: Los Angeles Intl, CA, US Elevation: 325 ft Latitude: 34°N			Indoor: Indoor temperature (°F) Design TD (°F) Relative humidity (%)	Heating 68 22 50	Cooling 75 5 50						
Outdoor:	Heating	Cooling	Moisture difference (gr/lb)	13.8	-3.5						
Dry bulb (°F)	46	80	Infiltration:								
Daily range (°F)	-	11 (L)									
Wet bulb (°F)	-	64									
Wind speed (mph)	15.0	7.5									

House Front	North	Northeast	East	Southeast	South	Southwest	West	Northwest
Sensible Load (Btuh) Latent Load (Btuh) Total Load (Btuh) Heating AVF (cfm) Cooling AVF (cfm)	10904 4400 15304 1400 1400	10430 4400 14830 1400 1400	9754 4400 14154 1400 1400	14609 1400	4400 14990 1400	4400	4400 14372 1400	10533 4400 14933 1400 1400

Building Orientation Cooling Load



Current Orientation: House Front faces North House Front faces North Highest Cooling Load:

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



2021-Mar-24 16:25:15



Loads for Multiple Orientations WINE AH GOUVIS ENGINEERING

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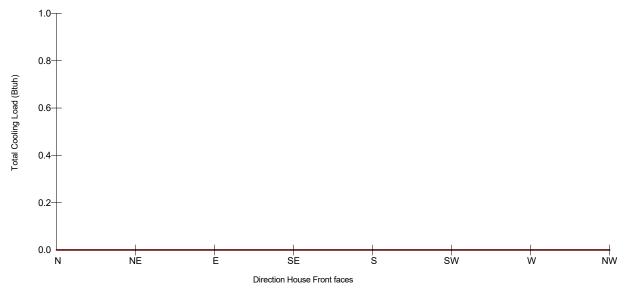
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Outdoor:	Heating	Cooling	Moisture difference (gr/lb)	13.8	-3.5						
Dry bulb (°F)	46	80	Infiltration:								
Daily range (°F)	-	11 (L)									
Wet bulb (°F)	-	64									
Wind speed (mph)	15.0	7.5									

House Front	North	Northeast	East	Southeast	South	Southwest	West	Northwest
Sensible Load (Btuh) Latent Load (Btuh) Total Load (Btuh) Heating AVF (cfm) Cooling AVF (cfm)	0 0 0	0000	0 0 0 0	0000	0 0 0 0	0000	0 0 0 0	0 0 0 0

Building Orientation Cooling Load



Current Orientation: House Front faces North Highest Cooling Load: House Front faces North



Building Analysis BASEMENT AH GOUVIS ENGINEERING

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Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	46 - - 15.0	80 11 (L) 64 7.5	Infiltration: Method Construction quality Fireplaces	Simplified Semi-tight 1 (Average)						

Heating

Component	Btuh/ft²	Btuh	% of load
Walls Glazing Doors	2.2 12.3 0	3543 222 0	79.6 5.0 0
Ceilings Floors Infiltration Ducts	0.3	685 0 0	15.4 0 0
Piping Humidification Ventilation		0	0
Adjustments Total		0 4449	100.0



Cooling

Component	Btuh/ft ²	Btuh	% of load
Walls	0	0	0
Glazing	89.4	1608	12.6
Doors	0	0	0
Ceilings	0	0	0
Floors	0	0	0
Infiltration	0	0	0
Ducts		0	0
Ventilation		0	0
Internal gains		11160	87.4
Blower		0	0
Adjustments		0	
Total		12768	100.0



Latent Cooling Load = 4400 Btuh Overall U-value = 0.055 Btuh/ft²-°F

WARNING: window to floor area ratio = 0.8% - less than 5%.



Building Analysis *MAIN AH* **GOUVIS ENGINEERING**

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Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	46 - - 15.0	80 11 (L) 64 7.5	Infiltration: Method Construction quality Fireplaces	Simplified Semi-tight 1 (Average)		

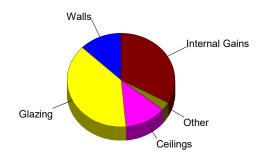
Heating

Component	Btuh/ft²	Btuh	% of load
Walls Glazing Doors Ceilings Floors Infiltration Ducts Piping Humidification Ventilation Adjustments	2.3 6.7 0 2.3 2.4 0.8	5917 5330 0 1580 1986 2195 0 0 0 -710	34.8 31.3 0 9.3 11.7 12.9 0 0
Adjustments Total		-710 16298	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	1.3	3342	12.8
Glazing Doors	12.7 0	10136 0	38.7 0
Ceilings	4.9	3303	12.6
Floors Infiltration	0.6 0.1	496 266	1.9 1.0
Ducts		0	0
Ventilation Internal gains		8660	33.0
Blower		0	0
Adjustments Total		-3000 23203	100.0



Latent Cooling Load = 4295 Btuh Overall U-value = 0.170 Btuh/ft2-°F

WARNING: window to floor area ratio = 26.0% - more than 25%.



Building Analysis UPPER AH **GOUVIS ENGINEERING**

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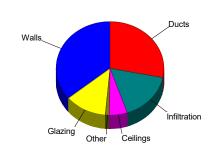
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Design Conditions						
Location: Los Angeles Intl, CA, US Elevation: 325 ft Latitude: 34°N Outdoor:	Heating	Cooling	Indoor: Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb)	Heating 68 22 50 13.8	Cooling 75 5 50 -3.5	
Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	46 - - 15.0	80 11 (L) 64 7.5	Infiltration: Method Construction quality Fireplaces	Simplified Semi-tight 1 (Average)		

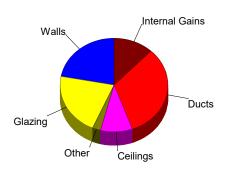
Heating

Walls 1.8	10436	36.0
Glazing 6.7 Doors 8.4 Ceilings 0.6 Floors 2.2 Infiltration 0.8 Ducts Piping Humidification Ventilation Adjustments Total	3660 227 1550 115 4831 8172 0 0 0 0	12.6 0.8 5.3 0.4 16.7 28.2 0 0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	1.3	7502	22.1
Glazing	13.3	7293	21.4
Doors	8.4	228	0.7
Ceilings	1.2	3240	9.5
Floors	0.5	29	0.1
Infiltration	0.1	586	1.7
Ducts		11046	32.5
Ventilation		0	0
Internal gains		4090	12.0
Blower		0	0
Adjustments		0	
Total		34015	100.0



Latent Cooling Load = 2284 Btuh Overall U-value = 0.082 Btuh/ft²-°F

Data entries checked.



Building Analysis WINE AH **GOUVIS ENGINEERING**

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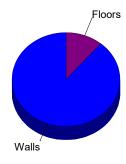
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Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	46 - - 15.0	80 11 (L) 64 7.5	Infiltration: Method Construction quality Fireplaces	Simplified Semi-tight 1 (Average)	

Heating

Component	Btuh/ft²	Btuh	% of load
Walls Glazing Doors Ceilings Floors Infiltration Ducts Piping Humidification Ventilation	2.4 0 0 0 0 0 0.3	179 0 0 0 23 0 0	88.8 0 0 0 11.2 0 0
Adjustments Total		0 201	1 00.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls Glazing Doors Ceilings Floors Infiltration Ducts Ventilation Internal gains Blower Adjustments	8tun/it* 0 0 0 0 0 0	8tun 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	% of load 0 0 0 0 0 0 0 0 0
Total		Ō	0

Latent Cooling Load = 0 Btuh Overall U-value = 0.062 Btuh/ft²-°F

WARNING: window to floor area ratio = 0.0% - less than 5%.



Component Constructions *MAIN AH* **GOUVIS ENGINEERING**

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Location: Los Angeles Intl, CA, US Elevation: 325 ft Latitude: 34°N Outdoor: Daubulb (°E)	Heating	Cooling	Indoor: Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb)	Heating 68 22 50 13.8	Cooling 75 5 50 -3.5
Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	46 - - 15.0	80 11 (L) 64 7.5	Infiltration: Method Construction quality Fireplaces	Simplified Semi-tight 1 (Average)	

Construction descriptions	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls 12C-0sw: Frm wall, stucco ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	n	278	0.091	13.0	1.97	546	1.52	421
12E-0sw: Frm wall, stucco ext, 3/8" wood shth, r-19 cav ins, 1/2" gypsum board int fnsh, 2"x6" wood frm, 16" o.c. stud	n e	466 502	0.068 0.068	19.0 19.0	1.47 1.47	684 737	0.85 0.85	397 428
	se s	22 258	0.068 0.068	19.0 19.0	1.47 1.47	33 379	0.85 0.85	19 220
	sw w	25 549	0.068 0.068	19.0 19.0	1.47 1.47	37 806	0.85 0.85	21 469
	all	1822	0.068	19.0	1.47	2677	0.85	1555
Partitions 12A-0sw: Frm wall, 2"x4" wood frm, 16" o.c. stud		520	0.240	0	5.18	2694	2.63	1366
Windows								
2 glazing, clr outr, air gas, wd frm mat, clr innr, 1/4" gap, 1/4" thk: 2 glazing, clr outr, air gas, wd frm mat, clr innr, 1/4" gap, 1/4" thk; 9 ft head ht	n n	5 24	0.310 0.310	0 0	6.70 6.70	33 161	6.17 6.17	31 148
	n e	324 19	0.310 0.310	0 0	6.70 6.70	2170 127	6.17 22.7	1998 432
	e e	15 48	0.310 0.310	0 0	6.70 6.70	100 321	22.7 15.9	341 763
	se s	11 90	0.310 0.310	0	6.70 6.70	71 603	18.0 9.00	190 810
	sw w	10 85	0.310 0.310	0	6.70 6.70	68 569	18.0 22.7	182 1931
	w all	165 796	0.310 0.310	0 0	6.70 6.70	1107 5330	15.9 11.9	2629 9455
Doors (none)								
Ceilings 16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh		388	0.026	38.0	0.56	218	1.17	456

C part ceiling,: C part ceiling, carpet flr fnsh, frm flr, 12" thkns, 1/2" gypsum board int fnsh	285	0.221	1.0	4.78	1362	9.99	2847
Floors 19A-0bscp: Part floor, carpet flr fnsh, frm flr, 12" thkns, 1/2" gypsum board int fnsh	830	0.295	0	2.39	1986	0.60	496



Component Constructions UPPER AH **GOUVIS ENGINEERING**

65671 Job:

Date:

By:

Plan: Borstein Residence

15 STUDEBAKER, IRVINE, CA 92618 Phone: 949.752.1612 Fax: 949.752.5321

Project Information

For:

Design Conditions								
Location: Los Angeles Intl, CA, US Elevation: 325 ft Latitude: 34°N Outdoor:	Heating	Cooling	Indoor: Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb)	Heating 68 22 50 13.8	Cooling 75 5 50 -3.5			
Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	46 - - 15.0	80 11 (L) 64 7.5	Infiltration: Method Construction quality Fireplaces	Simplified Semi-tight 1 (Average)				

Construction descriptions	Or	Area	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12C-0sw: Frm wall, stucco ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum	n	338	0.091	13.0	1.97	664	1.52	512
board int fnsh, 2"x4" wood frm, 16" o.c. stud	е	1321	0.091	13.0	1.97	2597	1.52	2002
	S	1845	0.091	13.0	1.97	3627	1.52	2795
	W	352	0.091	13.0	1.97	692	1.52	533
	all	3856	0.091	13.0	1.97	7580	1.52	5843
12E-0sw: Frm wall, stucco ext, 3/8" wood shth, r-19 cav ins, 1/2" gypsum	n	475	0.068	19.0	1.47	698	0.85	406
board int fnsh, 2"x6" wood frm, 16" o.c. stud	е	367	0.068	19.0	1.47	539	0.85	313
	S	642	0.068	19.0	1.47	942	0.85	548
	W	461	0.068	19.0	1.47	677	0.85	393
	all	1945	0.068	19.0	1.47	2857	0.85	1660
Partitions (none)								
Windows								
2 glazing, clr outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/4" thk: 2 glazing,		173	0.310	0	6.70	1158		1067
clr outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/4" thk; 8 ft head ht	е	6	0.310	0	6.70	40	22.7	136
	е	19	0.310	0	6.70	129	22.7	437
	е	126	0.310	0	6.70	844	22.7	2863
	S	28	0.310	0	6.70	184	9.00	247
	S	98	0.310	0	6.70	655	9.00	880
	W	58	0.310	0	6.70	385	22.7	1306
	all	507	0.310	0	6.70	3395	13.7	6937
2 glazing, clr outr, air gas, wd frm mat, clr innr, 1/4" gap, 1/4" thk: 2 glazing, clr outr, air gas, wd frm mat, clr innr, 1/4" gap, 1/4" thk; 9 ft head ht	S	40	0.310	0	6.70	266	9.00	357
Doors 11D0: Door, wd sc type	s	27	0.390	0	8.42	227	8.44	228
	-		0.000	ŭ	· · · -			
Ceilings 16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh		2760	0.026	38.0	0.56	1550	1.17	3240

Floors

19A-0bscp: Part floor, carpet fir fnsh, frm fir, 12" thkns, 1/2" gypsum board int fnsh	47	0.295	0	2.39	113	0.60	28
19C-19cscp: Fir floor, frm flr, 6" thkns, carpet flr fnsh, r-2 ext ins, r-19 cav	5	0.049	30.0	0.37	2	0.09	1



Component Constructions BASEMENT AH **GOUVIS ENGINEERING**

65671 Job:

Date:

By:

Plan: Borstein Residence

15 STUDEBAKER, IRVINE, CA 92618 Phone: 949.752.1612 Fax: 949.752.5321

Project Information

For:

Design Conditions								
Location: Los Angeles Intl, CA, US Elevation: 325 ft Latitude: 34°N Outdoor:	Heating	Cooling	Indoor: Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb)	Heating 68 22 50 13.8	Cooling 75 5 50 -3.5			
Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	46 - - 15.0	80 11 (L) 64 7.5	Infiltration: Method Construction quality Fireplaces	Simplified Semi-tight 1 (Average)				

Construction descriptions	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
15A-0oc-10: Bg wall, light dry soil, empty core, concrete block wall, 8" thk,	n	499	0.109	0	2.35	1174	0	0
1/2" gypsum board int fnsh	е	285	0.109	0	2.35	670	0	0
	S	375	0.109	0	2.35	883	0	0
	W	425	0.109	0	1.92	816	0	0
	all	1583	0.109	0	2.24	3543	0	0
Partitions (none)								
Windows 2 glazing, clr outr, air gas, wd frm mat, clr innr, 1/4" gap, 1/4" thk: 2 glazing, clr outr, air gas, wd frm mat, clr innr, 1/4" gap, 1/4" thk; 8 ft head ht	W	18	0.570	0	12.3	222	56.6	1020
Doors (none)								
Ceilings (none)								
Floors 21B-32c: Bg floor, heavy dry or light damp soil, prm int ins cov, 10' depth, r-3 ins, carpet flr fnsh		2265	0.014	3.0	0.30	685	0	0



Component Constructions WINE AH **GOUVIS ENGINEERING**

65671 Job:

Date:

By:

Plan: Borstein Residence

15 STUDEBAKER, IRVINE, CA 92618 Phone: 949.752.1612 Fax: 949.752.5321

Project Information

For:

Design Conditions								
Location: Los Angeles Intl, CA, US Elevation: 325 ft Latitude: 34°N Outdoor:	Heating	Cooling	Indoor: Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb)	Heating 68 22 50 13.8	Cooling 75 5 50 -3.5			
Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	46 - - 15.0	80 11 (L) 64 7.5	Infiltration: Method Construction quality Fireplaces	Simplified Semi-tight 1 (Average)				

Construction descriptions	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss (Clg HTM Btuh/ft²	Gain Btuh
Walls 15A-0oc-10: Bg wall, light dry soil, empty core, concrete block wall, 8" thk, 1/2" gypsum board int fnsh	S	76	0.109	0	2.35	179	0	0
Partitions								

(none)

Windows

(none)

Doors

(none)

Ceilings

(none)

Floors

21B-32c: Bg floor, heavy dry or light damp soil, prm int ins cov, 10' depth, 74 0.014 3.0 0.30 23 0 0 r-3 ins, carpet flr fnsh



Project Summary BASEMENT AH GOUVIS ENGINEERING

Job: 65671

Date: By:

Plan: Borstein Residence

15 STUDEBAKER, IRVINE, CA 92618 Phone: 949.752.1612 Fax: 949.752.5321

Project Information

For:

Notes:

Design Information

Weather: Los Angeles Intl, CA, US

Winter Design Conditions

Summer Design Conditions

Outside db Inside db	46 °F 68 °F	Outside db Inside db	80 °F 75 °F
Design TD	22 °F	Design TD Daily range	5 °F L
		Relative humidity Moisture difference	50 % -3 gr/lb

Heating Summary

Sensible Cooling Equipment Load Sizing

Structure	4449	Btuh	Structure	12768	Btuh
Ducts	0	Btuh	Ducts	0	Btuh
Central vent (0 cfm)	0	Btuh	Central vent (0 cfm)	0	Btuh
(none)			(none) ` ´		
Humidification	0	Btuh	Blower ´	0	Btuh
Piping	0	Btuh			
Piping Equipment load	4449	Btuh	Use manufacturer's data	r	1
			Rate/swing multiplier	0.85	
	Infiltration		Equipment sensible load	10904	Btuh

Infiltration

Latent Cooling	Equipment	Load	Sizing
3			

Construction quality		Semi-tight	Laterit Cooling Equipmen	LUAU S	ızırıy
Fireplaces		1 (Average)	Structure	4400	Btuh
·		` ,	Ducts	0	Btuh
			Central vent (0 cfm)	0	Btuh
	Heating	Cooling	(none) `´		
Area (ft²)	2266	2266	Equipment latent load	4400	Btuh
Volume (ft³)	2122	2122	1 1		
Air changes/hour	0	0	Equipment Total Load (Sen+Lat)	15304	Btuh
Equiv. AVF (cfm)	0	0	Reg. total capacity at 0.70 SHR	1.3	ton
. , ,					

Simplified

Heating Equipment Summary

Cooling Equipment Summary

	Make Trade		
	Cond Coil		
80 VELIE	AHRI ref	0 SEED	
0 Btuh	Sensible cooling	0	Btuh
0 °F	Total cooling	0	Btuh Btuh
			cfm cfm/Btuh
0 in H2O	Static pressure	0	in H2O
	0 Btuh 0 °F 400 cfm .315 cfm/Btuh	Trade Cond Coil AHRI ref 80 AFUE Efficiency 0 Btuh Sensible cooling 0 \$F Total cooling 400 cfm Actual air flow 315 cfm/Btuh Air flow factor	Trade

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



Method



Project Summary MAIN AH **GOUVIS ENGINEERING**

Job: 65671

Date: By:

Plan: Borstein Residence

15 STUDEBAKER, IRVINE, CA 92618 Phone: 949.752.1612 Fax: 949.752.5321

Project Information

For:

Notes:

Design Information

Weather: Los Angeles Intl, CA, US

Winter Design Conditions

Summer Design Conditions

Outside db Inside db	46 °F 68 °F	Outside db Inside db	80 °F 75 °F
Design TD	22 °F	Design TD Daily range	5 °F L
		Relative humidity Moisture difference	50 % -3 gr/lb

Heating Summary

Sensible Cooling Equipment Load Sizing

Structure	16298	Btuh	Structure	23203 Btuh
Ducts	0	Btuh	Ducts	0 Btuh
Central vent (0 cfm)	0	Btuh	Central vent (0 cfm)	0 Btuh
(none)			(none)	
Humidification	0	Btuh	Blower ´	0 Btuh
Piping	0	Btuh		
Piping Equipment load	16298	Btuh	Use manufacturer's data	n
• •			Rate/swing multiplier	0.85
	Infiltration		Equipment sensible load	19816 Btuh

Simplified

Semi-tight

1 (Average)

Infiltration

Latent Cooling Equip	oment Load Sizing
Structure	4295 Btuh

			Ducts Central vent (0 cfm)	0	Btuh Btuh
Area (ft²) Volume (ft³)	Heating 3064 33699	Cooling 3064 33699	(none) Equipment latent load	4295	Btuh
Air changes/hour Equiv. AVF (cfm)	0.17 93	0.08 45	Equipment Total Load (Sen+Lat) Req. total capacity at 0.70 SHR	24110 2.4	Btuh ton

Heating Equipment Summary

Cooling Equipment Summary

Make Trade Model AHRI ref		Make Trade Cond Coil AHRI ref	
Efficiency Heating input Heating output Temperature rise Actual air flow Air flow factor Static pressure Space thermostat	80 AFUE 0 Btuh 0 Btuh 0 °F 2000 cfm 0.123 cfm/Btuh 0 in H2O	Efficiency Sensible cooling Latent cooling Total cooling Actual air flow Air flow factor Static pressure Load sensible heat ratio	0 SEER 0 Btuh 0 Btuh 2000 cfm 0.085 cfm/Btuh 0 in H2O 0.84

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



Method

Fireplaces

Construction quality



Project Summary UPPER AH **GOUVIS ENGINEERING**

Job: 65671

Date: By:

Plan: Borstein Residence

15 STUDEBAKER, IRVINE, CA 92618 Phone: 949.752.1612 Fax: 949.752.5321

Project Information

For:

Notes:

Design Information

Weather: Los Angeles Intl, CA, US

Winter Design Conditions

Summer Design Conditions

Outside db Inside db	46 °F 68 °F	Outside db Inside db	80 °F 75 °F
Design TD	22 °F	Design TD Daily range	5 °F L
		Relative humidity Moisture difference	50 % -3 gr/lb

Heating Summary

Sensible Cooling Equipment Load Sizing

Structure	20820	Btuh	Structure	22969 Btuh
Ducts	8172	Btuh	Ducts	11046 Btuh
Central vent (0 cfm)	0	Btuh	Central vent (0 cfm)	0 Btuh
(none) ` ´			(none) ` ´	
Humidification	0	Btuh	Blower ´	0 Btuh
Piping Equipment load	0	Btuh		
Equipment load	28993	Btuh	Use manufacturer's data	n
			Rate/swing multiplier	0.85
Ir	nfiltration		Equipment sensible load	29049 Btuh

Infiltration

Method Construction quality		Simplified Semi-tight	Latent Cooling Equipmer	nt Load S	izing
Fireplaces		1 (Average)	Structure	1968	Btuh
			Ducts (2 f)	316	Btuh
		.	Central vent (0 cfm)	0	Btuh
. (60)	Heating	Cooling	_ (none)		-
Area (ft²)	2764	2764	Equipment latent load	2284	Btuh
Volume (ft³)	31189	31189			
Air changes/hour	0.40	0.19	Equipment Total Load (Sen+Lat)	31333	Btuh
Equiv. AVF (cfm)	206	100	Req. total capacity at 0.70 SHR	3.5	ton

Heating Equipment Summary

Cooling Equipment Summary

Make Trade Model		Make Trade Cond	
AHRI ref		Coil AHRI ref	
Efficiency	80 AFUE	Efficiency	0 SEER
Heating input	0 Btuh	Sensible cooling	0 Btuh
Heating output	0 Btuh	Latent cooling	0 Btuh
Temperature rise	0 °F	Total cooling	0 Btuh
Actual air flow	1600 cfm	Actual air flow	1600 cfm
Air flow factor	0.055 cfm/Btuh	Air flow factor	0.047 cfm/Btuh
Static pressure	0 in H2O	Static pressure	0 in H2O
Space thermostat		Load sensible heat ratio	0.94



Project Summary WINE AH **GOUVIS ENGINEERING**

Job: 65671

Date: By:

Plan: Borstein Residence

15 STUDEBAKER, IRVINE, CA 92618 Phone: 949.752.1612 Fax: 949.752.5321

Project Information

For:

Notes:

Design Information

Weather: Los Angeles Intl, CA, US

Winter Design Conditions

Summer Design Conditions

Outside db Inside db Design TD	46 °F 68 °F 22 °F	Outside db Inside db Design TD Daily range Relative humidity Moisture difference	80 °F 75 °F 5 °F L 50 % -3 gr/lb
		Moisture difference	-3 gr/lb

Heating Summary

Sensible Cooling Equipment Load Sizing

Structure	201	Btuh	Structure	0 Btuh
Ducts	0	Btuh	Ducts	0 Btuh
Central vent (0 cfm) (none)	0	Btuh	Central vent (0 cfm) (none)	0 Btuh
Humidification	0	Btuh	Blower	0 Btuh
Piping	0	Btuh		
Equipment load	201	Btuh	Use manufacturer's data	n
Infili	tration		Rate/swing multiplier Equipment sensible load	0.85 0 Btuh

Method Construction quality	Simplified Semi-tight	Latent Cooling	g Equipment Load Sizing
Fireplaces	1 (Average)	Structure	0 Btuh

·		(0 /	Ducts Central vent (0 cfm)	0 Btuh 0 Btuh
	Heating	Cooling	(none) `´	
Area (ft²)	74	74	Equipment latent load	0 Btuh
Volume (ft³)	0	0		
Air changes/hour	0	0	Equipment Total Load (Sen+Lat)	0 Btuh
Equiv. AŬF (cfm)	0	0	Req. total capacity at 0.70 SHR	0 ton

Heating Equipment Summary

Cooling Equipment Summary

Make Trade Model AHRI ref		Make Trade Cond Coil AHRI ref		
Efficiency Heating input Heating output Temperature rise Actual air flow Air flow factor Static pressure Space thermostat	80 AFUE 0 Btuh 0 Btuh 0 °F 0 cfm 0 cfm/Btuh 0 in H2O	Efficiency Sensible cooling Latent cooling Total cooling Actual air flow Air flow factor Static pressure Load sensible heat ratio	0 SEER 0 0 0 0 0 0 0	Btuh Btuh Btuh cfm cfm/Btuh in H2O





65671 Job:

Date:

Ву:

Plan: Borstein Residence

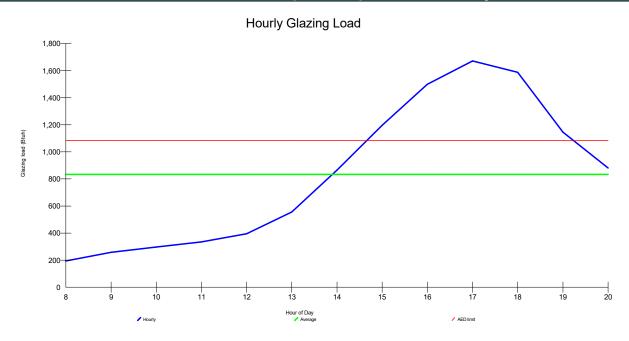
15 STUDEBAKER, IRVINE, CA 92618 Phone: 949.752.1612 Fax: 949.752.5321

Project Information

For:

Design Conditions								
Location: Los Angeles Intl, CA, US Elevation: 325 ft Latitude: 34°N Outdoor: Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	Heating 46 15.0	Cooling 80 11 (L) 64 7.5	Indoor: Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb) Infiltration:	68 22 50 13.8	Cooling 75 5 50 -3.5			

Test for Adequate Exposure Diversity



Maximum hourly glazing load exceeds average by 100.6%.

Zone does not have adequate exposure diversity (AED), based on AED limit of 30%.

AED excursion: 589 Btuh (PFG - 1.3*AFG)



65671 Job:

Date:

Ву:

Plan: Borstein Residence

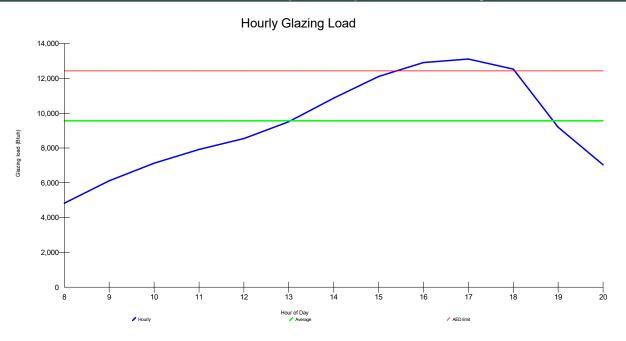
15 STUDEBAKER, IRVINE, CA 92618 Phone: 949.752.1612 Fax: 949.752.5321

Project Information

For:

Design Conditions								
Location: Los Angeles Intl, CA, US Elevation: 325 ft Latitude: 34°N Outdoor: Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	Heating 46 15.0	Cooling 80 11 (L) 64 7.5	Indoor: Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb) Infiltration:	Heating 68 22 50 13.8	Cooling 75 5 50 -3.5			

Test for Adequate Exposure Diversity



Maximum hourly glazing load exceeds average by 37.1%.

Zone does not have adequate exposure diversity (AED), based on AED limit of 30%.

AED excursion: 681 Btuh (PFG - 1.3*AFG)



65671 Job:

Date:

Ву:

Plan: Borstein Residence

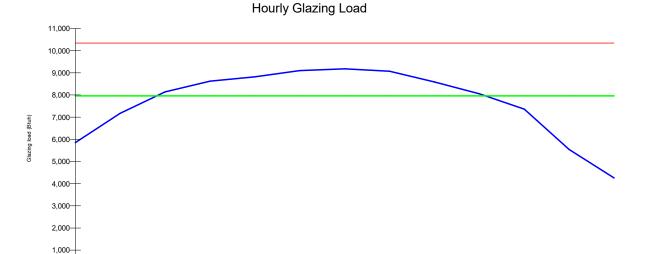
15 STUDEBAKER, IRVINE, CA 92618 Phone: 949.752.1612 Fax: 949.752.5321

Project Information

For:

Design Conditions								
Location: Los Angeles Intl, CA, US Elevation: 325 ft Latitude: 34°N Outdoor: Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	Heating 46 15.0	Cooling 80 11 (L) 64 7.5	Indoor: Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb) Infiltration:	Heating 68 22 50 13.8	Cooling 75 5 50 -3.5			

Test for Adequate Exposure Diversity



Maximum hourly glazing load exceeds average by 15.3%.

11

10

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

12

13

/ AED limit

AED excursion: 0 Btuh

0



65671 Job:

Date:

Ву:

Plan: Borstein Residence

15 STUDEBAKER, IRVINE, CA 92618 Phone: 949.752.1612 Fax: 949.752.5321

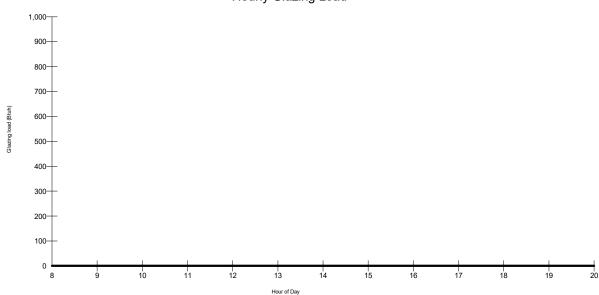
Project Information

For:

Design Conditions								
Location: Los Angeles Intl, CA, US Elevation: 325 ft Latitude: 34°N Outdoor: Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	Heating 46 15.0	Cooling 80 11 (L) 64 7.5	Indoor: Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb) Infiltration:	Heating 68 22 50 13.8	Cooling 75 5 50 -3.5			

Test for Adequate Exposure Diversity





Maximum hourly glazing load exceeds average by 0.0%.

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

AED excursion: 0 Btuh



Manual S Compliance Report BASEMENT AH

GOUVIS ENGINEERING

65671 Job:

Date:

By:

Plan: Borstein Residence

15 STUDEBAKER, IRVINE, CA 92618 Phone: 949.752.1612 Fax: 949.752.5321

Project Information

For:

Cooling Equipment							
Design Conditions							
Outdoor design DB:	80.4°F	Sensible gain:	12768	Btuh	Entering coil DB:	75.0°F	
Outdoor design WB:	63.6°F	Latent gain:	4400	Btuh	Entering coil WB:	62.5°F	
Indoor design DB:	75.0°F	Total gain:	17168	Btuh	_		
Indoor RH:	50%	Estimated airflow:	1400	cfm			

Manufacturer's Performance Data at Actual Design Conditions

Equipment type: Split AC

Manufacturer: Model:

Actual airflow: 1400 cfm

0% of load Sensible capacity: 0 Btuh Latent capacity: 0 0% of load Btuh

Total capacity: 0 **Btuh** 0% of load SHR: 0%

Heating Equipment

Design Conditions

Outdoor design DB: 46.4°F Heat loss: 4449 **Btuh** Entering coil DB: 68.0°F Indoor design DB: 68.0°F

Manufacturer's Performance Data at Actual Design Conditions

Equipment type: Gas furnace

Manufacturer: Model:

Actual airflow: 1400 cfm

Output capacity: **Btuh** 0% of load 0 °F 0 Temp. rise:

Meets all requirements of ACCA Manual S.



Manual S Compliance Report MAIN AH

GOUVIS ENGINEERING

65671 Job:

Date:

By:

Plan: Borstein Residence

15 STUDEBAKER, IRVINE, CA 92618 Phone: 949.752.1612 Fax: 949.752.5321

Project Information

For:

Cooling Equipment							
Design Conditions							
Outdoor design DB:	80.4°F	Sensible gain:	23203	Btuh	Entering coil DB:	75.0°F	
Outdoor design WB:	63.6°F	Latent gain:	4295	Btuh	Entering coil WB:	62.5°F	
Indoor design DB:	75.0°F	Total gain:	27498	Btuh			
Indoor RH:	50%	Estimated airflow:	2000	cfm			

Manufacturer's Performance Data at Actual Design Conditions

Equipment type: Split AC

Manufacturer: Model:

Actual airflow: 2000 cfm

0% of load Sensible capacity: 0 Btuh Latent capacity: 0 0% of load Btuh

Total capacity: 0 **Btuh** 0% of load SHR: 0%

Heating Equipment

Design Conditions

Outdoor design DB: 46.4°F Heat loss: 16298 **Btuh** Entering coil DB: 68.0°F Indoor design DB: 68.0°F

Manufacturer's Performance Data at Actual Design Conditions

Equipment type: Gas furnace

Manufacturer: Model:

Actual airflow: 2000 cfm

Output capacity: **Btuh** 0% of load 0 °F 0 Temp. rise:

Meets all requirements of ACCA Manual S.



Manual S Compliance Report UPPER AH

GOUVIS ENGINEERING

65671 Job:

Date:

By:

Plan: Borstein Residence

15 STUDEBAKER, IRVINE, CA 92618 Phone: 949.752.1612 Fax: 949.752.5321

Project Information

For:

Cooling Equipment							
Design Conditions							
Outdoor design DB:	80.4°F	Sensible gain:	34015	Btuh	Entering coil DB:	77.0°F	
Outdoor design WB:	63.6°F	Latent gain:	2284	Btuh	Entering coil WB:	63.1°F	
Indoor design DB:	75.0°F	Total gain:	36299	Btuh	· ·		
Indoor RH:	50%	Estimated airflow:	1600	cfm			

Manufacturer's Performance Data at Actual Design Conditions

Equipment type: Split AC

Manufacturer: Model:

Actual airflow: 1600 cfm

0% of load Sensible capacity: 0 Btuh Latent capacity: 0 0% of load Btuh

Total capacity: 0 **Btuh** 0% of load SHR: 0%

Heating Equipment

Design Conditions

Outdoor design DB: 46.4°F Heat loss: 28993 **Btuh** Entering coil DB: 67.5°F Indoor design DB: 68.0°F

Manufacturer's Performance Data at Actual Design Conditions

Equipment type: Gas furnace

Manufacturer: Model:

Actual airflow: 1600 cfm

Output capacity: **Btuh** 0% of load Temp. rise: 0 °F 0

Meets all requirements of ACCA Manual S.



Manual S Compliance Report WINE AH

GOUVIS ENGINEERING

65671 Job:

Date:

By:

Plan: Borstein Residence

15 STUDEBAKER, IRVINE, CA 92618 Phone: 949.752.1612 Fax: 949.752.5321

Project Information

For:

Cooling	Equip	ment
	_96161	

Design Conditions

Outdoor design DB:	80.4°F	Sensible gain:	0	Btuh	Entering coil DB:	75.0°F
Outdoor design WB:	63.6°F	Latent gain:	0	Btuh	Entering coil WB:	62.5°F
Indoor design DR:	75.0°F	Total gain:	Λ	Rtub	Ğ	

rotal gain: indoor design DB: 50% 0 Indoor RH: Estimated airflow: cfm

Manufacturer's Performance Data at Actual Design Conditions

Equipment type: Split AC

Manufacturer: Model:

Actual airflow: 0 cfm Sensible capacity: 0 Btuh

0% of load Latent capacity: 0 0% of load Btuh

Total capacity: **Btuh** 0% of load SHR: 0%

Heating Equipment

Design Conditions

Outdoor design DB: 46.4°F Heat loss: 201 **Btuh** Entering coil DB: 68.0°F

Indoor design DB: 68.0°F

Manufacturer's Performance Data at Actual Design Conditions

Equipment type: Gas furnace

Manufacturer: Model:

Actual airflow: 0 cfm

0 Btuh 0% of load 0 °F Output capacity: Temp. rise:

Meets all requirements of ACCA Manual S.

Page 4



GOUVIS ENGINEERING

Contractor:

Residential Plans Examiner Review Form for HVAC System Design (Loads, Equipment, Ducts)

Form RPER 1 15 Mar 09

ATTACHED

Header Information

REQUIRED ATTACHMENTS

Mechanical license: Building plan #: Borste Resid Home address (Street or Lot#,	ence Block, Subdivision):	, BASEMENT AH	Manual J1 Form or MJ1AE Form OEM performal Manual D Fricti Duct distribution	n* (and supp nce data (ho on Rate Wo	oorting w eating, c	orksheets): ooling, blower):	Yes
HVAC LOAD CALCUL	ATION (IRC M140	1.3)					
Design Conditions		<u>Buildir</u>	ng Construct	tion Infor	matio	<u>n</u>	
Winter Design Conditions Outdoor temperature: Indoor temperature: Total heat loss: Summer Design Condition Outdoor temperature: Indoor temperature: Grains difference: Sensible heat gain:	46 68 4449	°F Nord Num Cond Num °F	ntation: th, East, West, South, Naber of bedrooms ditioned floor area aber of occupants	lortheast, Northw 5: a: s:		nt faces North ast, Southwest 0 2266 ft² 22 0 ft none	Roof
Latent heat gain: Total heat gain:	5152 20103	Btuh Blin	nds, drapes, etc.			0	Eave Depth Window
HVAC EQUIPMENT S Heating Equipment Da Equipment type:	-	Cooling Equipn			Split AC	Blower Data Heating cfm:	1400
Furnace, Heat pump, Boiler, etc. Model:	3 40 (41)	Air Conditioner, Heat	t pump, etc.		-p	Cooling cfm: Static pressure:	1400 0 in H2O
Heating output capacity: Heat pumps - capacity at winter des Aux. heating output capacit		Total cooling cap Sensible cooling Latent cooling ca	capacity:	0 0 0	+ Btuh Btuh Btuh		etatic pressure for design
HVAC DUCT DISTRIE	BUTION SYSTEM	DESIGN (IRC M16	601.1)				
Design airflow: Equipment design ESP: Total device pressure losses: Available static pressure (A	1400 cfm 0 in H2O 0 in H2O SP): 0 in H2O	Longest supply duct: Longest return duct: Total effective length (1 Friction rate: Friction Rate = AS	0 (TEL): 0	ft ft ft in/100ft	Duct M Trunk of Branch		Round flex vinyl
I declare the load calculation understand the claims made	on these forms will be s			ly performe	d based	on the building plan li	sted above. I
Contractor's printed name:							
Contractor's signature:						Date:	
Reserved for County, Town	Municipality or Autho <u>rity l</u>	naving jurisdiction use.					

*Home qualifies for MJ1AE Form based on Abridged Edition Checklist



GOUVIS ENGINEERING

Contractor:

Residential Plans Examiner Review Form for HVAC System Design (Loads, Equipment, Ducts)

Form RPER 1 15 Mar 09

ATTACHED

Header Information

REQUIRED ATTACHMENTS

Mechanical license: Building plan #: Borstein Residenc Home address (Street or Lot#, Block		, MAIN AH	or MJ1AE OEM perfo	Forn rma Frict	n* (and sup nce data (h ion Rate W	porting v eating, o	vorksheets): vorksheets): cooling, blower): t:	Yes Yes Yes Yes Yes		No No No No No No No No
HVAC LOAD CALCULAT	ION (IRC M140	1.3)								
Design Conditions			Building Consti	uc	tion Info	<u>rmatio</u>	<u>n</u>			
Winter Design Conditions Outdoor temperature: Indoor temperature: Total heat loss: Summer Design Conditions	46 68 16298	°F °F Btuh	Building Orientation: North, East, West, So Number of bedre Conditioned floo Number of occup	oms r are	Northeast, North S: ea:		nt faces North east, Southwest 1 3064 ft² 22			
Outdoor temperature: Indoor temperature: Grains difference: Sensible heat gain: Latent heat gain: Total heat gain:	80 75 -3 gr/lb @ 50% 27170 5029 32199	°F °F RH Btuh Btuh Btuh	Windows Eave overhang depth: 0 ft Internal shade: none Blinds, drapes, etc. Number of skylights: 0				Roof Eave Depth	- 	dow	
HVAC EQUIPMENT SEL	ECTION (IRC N	Л1401.3)								
Heating Equipment Data		Cooling	Equipment Data	<u>a</u>			Blower Data			
Equipment type: Furnace, Heat pump, Boiler, etc. Model:	Gas fumace	Equipm Air Con Model:	Equipment type: Air Conditioner, Heat pump, etc. Model:			Split AC	Heating cfm: Cooling cfm: Static pressure: Fan's rated external s	static pres	2000 2000 0 in	n H2O
Heating output capacity: Heat pumps - capacity at winter design or	0 Btuh		oling capacity:		0		airflow			·
Aux. heating output capacity:	0 Btuh		e cooling capacity: cooling capacity:		0					
HVAC DUCT DISTRIBUT	TION SYSTEM	DESIGN (IF	RC M1601.1)							
Design airflow: Equipment design ESP: Total device pressure losses:	2000 cfm 0 in H2O 0 in H2O	Longest sup	. ,	0	ft ft ft	Duct N Trunk	⁄laterials Used duct:			
Available static pressure (ASP):	•	Friction rat	• , ,	0	in/100ft	Branch	n duct:	F	Round	flex vinyl
I declare the load calculation, eq understand the claims made on				rous	ly performe	ed based	d on the building plan li	sted a	oove.	I
Contractor's printed name:										
Contractor's signature:							Date:			
Reserved for County, Town Mun	icipality or Authority h	naving jurisdicti	on use.							

*Home qualifies for MJ1AE Form based on Abridged Edition Checklist



Residential Plans Examiner Review Form for HVAC System Design (Loads, Equipment, Ducts)

Form RPER 1 15 Mar 09

Header Information

Contractor:	GOUVIS E	NGINEERING	REQUIRED ATTACHMENTS ATTA Manual J1 Form (and supporting worksheets): Yes						
Mechanical license:				or MJ1AE	For	n* (and sup	porting v	vorksheets):	Yes No Yes No
Building plan #:	Borstein			Manual D	Frict	ion Rate W	_	cooling, blower): ::	Yes No Yes No
Home address (Street of	Residence or Lot#, Block,	Subdivision):	, UPPER AH	Duct distrik	outio	n sketch:			Yes No
HVAC LOAD CA	LCULATIO	ON (IRC M140	1.3)						
Design Condition	<u>18</u>		<u> </u>	Building Const	ruc	tion Infor	matio	<u>n</u>	
Winter Design Con Outdoor temperature Indoor temperature Total heat loss: Summer Design Co Outdoor temperature Indoor temperature Grains difference: Sensible heat gain: Latent heat gain: Total heat gain:	re: : onditions re: :	46 68 28993 80 75 -3 gr/lb @ ⁵⁰ % 39830 2675 42505	°F Btuh °F °F RH Btuh Btuh Btuh	Building Orientation: North, East, West, S Number of bedre Conditioned floo Number of occup Windows Eave overhang of Internal shade: Blinds, drapes, etc. Number of skylig	oom: or are pant dept	Northeast, Northw S: e:a: S:		nt faces North past, Southwest 4 2764 ft² 11 0 ft none	Roof Eave Depth Window
			14 404 0						·
HVAC EQUIPM		CTION (IRC I	, , , , , , , , , , , , , , , , , , ,						
Heating Equipme	ent Data		Cooling E	<u>iquipment Data</u>	<u>a</u>			Blower Data	
Equipment type: Furnace, Heat pump, Bo	iler, etc.	Gas furnace		nt type: ioner, Heat pump, etc.		:	Split AC	Heating cfm: Cooling cfm:	1600 1600
Model:			Model:				+	Static pressure: Fan's rated external airflow	0 in H2O static pressure for design
Heating output cap Heat pumps - capacity a Aux. heating output		0 Btuh oor conditions 0 Btuh	Sensible	ing capacity: cooling capacity: oling capacity:		0 0 0	Btuh Btuh Btuh		
HVAC DUCT DI	STRIBUTI	ON SYSTEM I	DESIGN (IR	C M1601.1)					
Design airflow: Equipment design ES Total device pressure Available static pres	losses:	1600 cfm 0 in H2O 0 in H2O 0 in H2O	Longest supp Longest retur Total effective Friction rate: Friction	n duct: length (TEL):	0 0 0	ft ft ft in/100ft	Duct N Trunk		Round flex vinyl
I declare the load cal understand the claim					rous	sly performe	ed based	l on the building plan l	isted above. I
Contractor's printed	name:								
Contractor's signatu	re:							Date:	
Reserved for County	, Town Munic	ipality or Authority h	naving jurisdiction	ı use.					



Residential Plans Examiner Review Form for HVAC System Design (Loads, Equipment, Ducts)

Form RPER 1 15 Mar 09

Header Information

Contractor:	GOUVIS EI	NGINEERIN	G		Manua		REQUIR						ATTAC	
Mechanical license:					or MJ1	AE For	m* (and s	upp	orting wo	orksheets): orksheets):		Yes Yes	\exists	No 🗆
Building plan #:	Borstein				Manua	D Frict	tion Rate	Wo	_	ooling, blower)		Yes Yes		No 🗌
Home address (Street	Residence or Lot#, Block,	Subdivision):		, WINE AH	Duct d	stributio	on sketch:					Yes		No 🗌
HVAC LOAD CA	ALCULATIO	ON (IRC M	1401	1.3)										
Design Condition		•		,	Building Cor	struc	tion Inf	orr	mation	1			,	
Winter Design Con Outdoor temperature Indoor temperature Total heat loss: Summer Design Co Outdoor temperature Indoor temperature Grains difference: Sensible heat gain: Latent heat gain: Total heat gain:	re: : onditions re: :	-3 gr/lb@	46 68 201 80 75 50% 0 0	°F Btuh °F °F RH Btuh Btuh Btuh	Building Orientation: North, East, We Number of be Conditioned Number of o Windows Eave overha Internal shade Blinds, drapes,	edroom floor are ecupant ng dept e:	Northeast, No s: ea: ts:			(74 () ft²)	Roc Eave Dept		ndow
HVAC EQUIPM	ENT SELE	CTION (I	RC M	11401 3)										
Heating Equipme				,	Equipment D	ata				Blower Da	ata			
Equipment type: Furnace, Heat pump, Bo Model: Heating output cap Heat pumps - capacity a	oiler, etc. Pacity: at winter design outd		Btuh	Equipm Air Con Model: Total co Sensible	nent type: ditioner, Heat pump, etc. poling capacity: e cooling capacity	_		0	+ Btuh Btuh	Heating of Cooling of Static pre Fan's rater airflow	ofm: ofm: ossure:	static pre	0	0 0 in H2O r design
Aux. heating output	, ,	ŭ	Btuh EM Γ		cooling capacity:			0	Btuh					
Design airflow: Equipment design ES Total device pressure Available static pres	SP: losses:	0 cfm 0 in l	n H2O H2O	Longest sup Longest ret Total effectiv Friction rat	pply duct: um duct: ve length (TEL):	0	ft ft ft in/100ft		Duct Ma Trunk d Branch			ļ	Round	l flex vinyl
I declare the load ca understand the claim	lculation, equi ns made on th	pment, equipr ese forms will	nent s I be su	election and d lbject to reviev	luct design were i w and verification	igorous	sly perfor	med	d based	on the buildin	g plan	listed a	above.	I
Contractor's printed	name:													
Contractor's signatu	_									Date:				
									_					

Reserved for County, Town Municipality or Authority having jurisdiction use.

^{*}Home qualifies for MJ1AE Form based on Abridged Edition Checklist





Static Pressure and Friction Rate BASEMENT AH

GOUVIS ENGINEERING

65671 Job:

Date:

By:

Plan: Borstein Residence

15 STUDEBAKER, IRVINE, CA 92618 Phone: 949.752.1612 Fax: 949.752.5321

Project Information

For:

	Available Static Pressure	
	Heating (in H2O)	Cooling (in H2O)
External static pressure	0	0
Pressure losses		
Coil	0	0
Heat exchanger	0	0
Supply diffusers	0	0
Return grilles	0	0
Filter	0	0
Humidifier	0	0
Balancing damper	0	0
Other device	0	0
Available static pressure	0	0

	Total Effective Length		
Measured length of run-out Measured length of trunk	Supply (ft) 0 0	Return (ft) 0 0	
Equivalent length of fittings Total length Total effective length	0 0		

	Friction Rate			
	Heating (in/100ft)		Cooling (in/100ft)	
Supply Ducts	` ó	< 0.06	` Ó	< 0.06
Return Ducts	0	< 0.06	0	< 0.06

Fitting Equivalent Length Details

Supply	TotalEL=0
Return	TotalEL=0





Static Pressure and Friction Rate GOUVIS ENGINEERING

Date:

65671 Job:

By:

Plan: Borstein Residence

15 STUDEBAKER, IRVINE, CA 92618 Phone: 949.752.1612 Fax: 949.752.5321

Project Information

For:

	Available Static Pressure			
	Heating (in H2O)	Cooling (in H2O)		
External static pressure	0	0		
Pressure losses				
Coil	0	0		
Heat exchanger	0	0		
Supply diffusers	0	0		
Return grilles	0	0		
Filter	0	0		
Humidifier	0	0		
Balancing damper	0	0		
Other device	0	0		
Available static pressure	0	0		

	Total Ellective Leligill		
Measured length of run-out Measured length of trunk Equivalent length of fittings	Supply (ft) 0 0 0	Return (ft) 0 0 0	
Total length Total effective length	0	 0 0	

	Friction Rate			
	Heating (in/100ft)		Cooling (in/100ft)	
Supply Ducts	Ó	< 0.06	Ó	< 0.06
Return Ducts	0	< 0.06	0	< 0.06

Fitting Equivalent Length Details

Supply TotalEL=0 Return TotalEL=0



Static Pressure and Friction Rate

GOUVIS ENGINEERING

65671 Job:

Date:

By:

Plan: Borstein Residence

15 STUDEBAKER, IRVINE, CA 92618 Phone: 949.752.1612 Fax: 949.752.5321

Project Information

For:

	Available Static Pressure			
	Heating (in H2O)	Cooling (in H2O)		
External static pressure	0 ′	0		
Pressure losses				
Coil	0	0		
Heat exchanger	0	0		
Supply diffusers	0	0		
Return grilles	0	0		
Filter	0	0		
Humidifier	0	0		
Balancing damper	0	0		
Other device	0	0		
Available static pressure	0	0		

	Total Effective Length	
	Supply	Return
	(ft)	(ft)
Measured length of run-out	Ó	Ó
Measured length of trunk	0	0
Equivalent length of fittings	0	0
Total length	0	0
Total effective length	-	0

	Friction Rate			
	Heating (in/100ft)		Cooling (in/100ft)	
Supply Ducts	` ó	< 0.06	` Ó	< 0.06
Return Ducts	0	< 0.06	0	< 0.06

Fitting Equivalent Length Details

Supply TotalEL=0

Return TotalEL=0



Static Pressure and Friction Rate

GOUVIS ENGINEERING

65671 Job:

Date:

Ву:

0

Plan: Borstein Residence

15 STUDEBAKER, IRVINE, CA 92618 Phone: 949.752.1612 Fax: 949.752.5321

Project Information

For:

Available	Static	Pressure
	Heat	ing

	Heating (in H2O)	Cooling (in H2O)
External static pressure	` 0 ′	` o´
Pressure losses		
Coil	0	0
Heat exchanger	0	0
Supply diffusers	0	0
Return grilles	0	0
Filter	0	0
Humidifier	0	0
Balancing damper	0	0
Other device	0	0

Available static pressure

Total Effective Length

0

Measured length of run-out Measured length of trunk Equivalent length of fittings	Supply (ft) 0 0 0	Return (ft) 0 0 0
Total length Total effective length	0	0 0

Friction Rate

	Heating (in/100ft)		Cooling (in/100ft)	
Supply Ducts	Ú	< 0.06	` Ó	< 0.06
Return Ducts	0	< 0.06	0	< 0.06

Fitting Equivalent Length Details

Supply TotalEL=0

TotalEL=0 Return



Duct System Summary BASEMENT AH GOUVIS ENGINEERING

65671 Job:

Date:

By:

Plan: Borstein Residence

15 STUDEBAKER, IRVINE, CA 92618 Phone: 949.752.1612 Fax: 949.752.5321

Project Information

For:

Heating Cooling 0 in H2O 0 in H2O External static pressure 0 in H2O 0 in H2O Pressure losses Available static pressure 0 in H2O 0 in H2O Supply / return available pressure 0.000 / 0.000 in H2O 0.000 / 0.000 in H2O Lowest friction rate 0 in/100ft 0 in/100ft Actual air flow 1400 cfm 1400 cfm Total effective length (TEL)

0 ft

Supply Branch Detail Table

Name	1	Design (Btuh)	Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	HxW (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
BA. 6-A	h	230	69	25	0	0	0x 0	VIFx	0	0	
BILLIARDS-A	h	2050	240	225	0	0	0x 0	VIFx	0	0	
CRAFTS ROOM-A	h	1838	240	202	0	0	0x 0	VIFx	0	0	
ENTERTAINMENT-A	c	1517	52	166	0	0	0x 0	VIFx	0	0	
ENTERTAINMENT-B	c	1517	52	166	0	0	0x 0	VIFx	0	0	
ENTERTAINMENT-C	c	1517	52	166	0	0	0x 0	VIFx	0	0	
GYM-A	С	2050	155	225	0	0	0x 0	VIFx	0	0	İ
THEATER	h	1025	198	112	0	0	0x 0	VIFx	0	0	İ
THEATER-A	h	1025	198	112	0	0	0x 0	VIFx	0	0	
WETBAR-A	h	0	142	0	0	0	0x 0	VIFx	0	0	

Return Branch Detail Table

Name	Grille Size (in)	Htg (cfm)	Clg (cfm)	TEL (ft)	Design FR	Veloc (fpm)	Diam (in)	HxW (in)	Stud/Joist Opening (in)	Duct Matl	Trunk
rb2	0x 0	1400	1400	0	0	0	0	0x 0		VIFx	



Duct System Summary GOUVIS ENGINEERING

65671 Job:

Date:

By:

Plan: Borstein Residence

15 STUDEBAKER, IRVINE, CA 92618 Phone: 949.752.1612 Fax: 949.752.5321

Project Information

For:

Heating Cooling 0 in H2O **0** in H2O External static pressure 0 in H2O 0 in H2O Pressure losses Available static pressure 0 in H2O 0 in H2O Supply / return available pressure 0.000 / 0.000 in H2O 0.000 / 0.000 in H2O Lowest friction rate 0 in/100ft 0 in/100ft Actual air flow 2000 cfm 2000 cfm Total effective length (TEL) 0 ft

Supply Branch Detail Table

Name		esign Btuh)	Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	HxW (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
BA. 5	С	1024	1	87	0	0	0x 0	VIFx	0	0	
BREAK & KIT-A	h	2753	318	235	0	0	0x 0	VIFx	0	0	
BREAK & KIT-B	h	2753	318	235	0	0	0x 0	VIFx	0	0	İ
DEN-A	h	3161	351	270	0	0	0x 0	VIFx	0	0	
DINING-A	c	3276	261	280	0	0	0x 0	VIFx	0	0	
FAMILY-A	c	3231	177	276	0	0	0x 0	VIFx	Ō	0	
GUEST ROOM	h	329	168	28	0	Ö	0x 0	VIFx	Ō	l 0	İ
OFFICE-A	C	2922	230	249	l o	ĺ		VIFx	Ö	l 0	İ
PARLOR-A	С	3985	175	340	0	0	0x 0	VIFx	0	Ö	

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	0	0	0	0	0x	0		VIFx	

Bold/italic values have been manually overridden



Duct System Summary GOUVIS ENGINEERING

65671 Job:

Date:

By:

Plan: Borstein Residence

15 STUDEBAKER, IRVINE, CA 92618 Phone: 949.752.1612 Fax: 949.752.5321

Project Information

For:

Heating Cooling 0 in H2O 0 in H2O External static pressure 0 in H2O 0 in H2O Pressure losses Available static pressure 0 in H2O 0 in H2O Supply / return available pressure 0.000 / 0.000 in H2O 0.000 / 0.000 in H2O Lowest friction rate 0 in/100ft 0 in/100ft Actual air flow 1600 cfm 1600 cfm Total effective length (TEL) 0 ft

Supply Branch Detail Table

Name	ı	Design (Btuh)	Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	HxW (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
BA. 3	h	1419	74	67	0	0	0x 0	VIFx	0	0	
BA.4	h	1558	98	73	0	0	0x 0	VIFx	0	0	
BATH 2	h	1611	86	76	0	0	0x 0	VIFx	0	0	İ
BEDROOM 4-A	h	2376	134	112	0	0	0x 0	VIFx	0	0	İ
CONNOR	h	5336	274	251	0	0	0x 0	VIFx	0	0	İ
LAU.	С	2284	94	107	0	0	0x 0	VIFx	0	0	İ
MASTER BATH	С	3345	104	157	0	0	0x 0	VIFx	0	0	İ
MASTER BEDROOM	h	5022	281	236	0	0	0x 0	VIFx	0	0	İ
SAMANTHA-A	h	3189	174	150	0	0	0x 0	VIFx	0	0	
TEEN ROOM-A	С	7874	281	370	0	0	0x 0	VIFx	0	0	

Return Branch Detail Table

Name	Grille Size (in)	Htg (cfm)	Clg (cfm)	TEL (ft)	Design FR	Veloc (fpm)	Diam (in)	HxW (in)	Stud/Joist Opening (in)	Duct Matl	Trunk
rb1	0x 0	1600	1600	0	0	0	0	0x 0		VIFx	



Duct System Summary WINE AH GOUVIS ENGINEERING

65671 Job:

Date:

By:

Plan: Borstein Residence

15 STUDEBAKER, IRVINE, CA 92618 Phone: 949.752.1612 Fax: 949.752.5321

Project Information

For:

Heating Cooling 0 in H2O 0 in H2O External static pressure 0 in H2O 0 in H2O Pressure losses Available static pressure 0 in H2O 0 in H2O Supply / return available pressure 0.000 / 0.000 in H2O 0.000 / 0.000 in H2O Lowest friction rate 0 in/100ft 0 in/100ft Actual air flow 0 cfm 0 cfm Total effective length (TEL) 0 ft

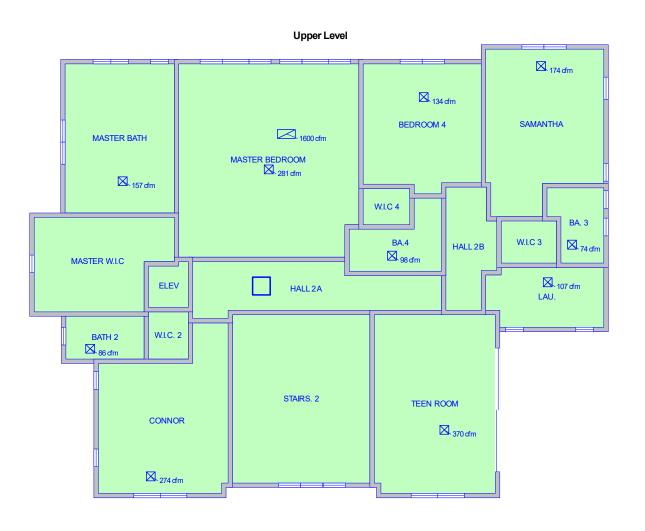
Supply Branch Detail Table

	Name	Desig (Btuh		Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	HxW (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
Ī	WINE	С	0	0	0	0	0	0x 0	VIFx	0	0	

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
rb3	0x 0	0	0	0	0	0	0	0x	0		VIFx	



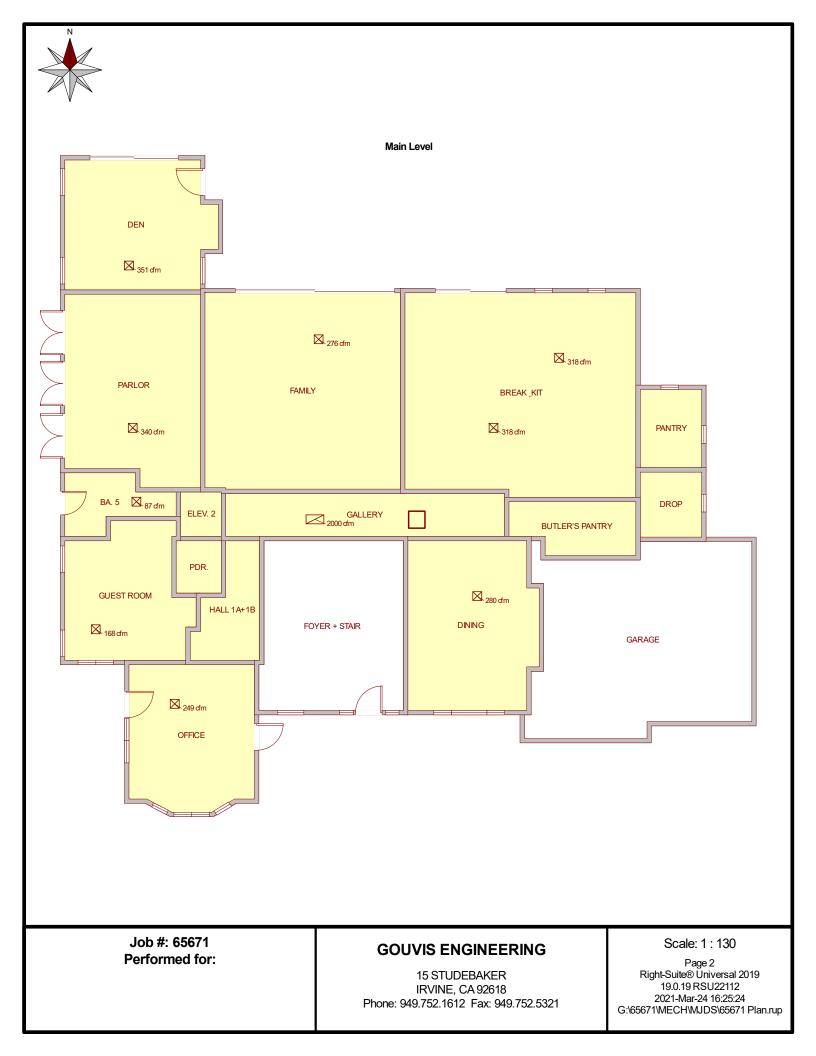


Job #: 65671 Performed for:

GOUVIS ENGINEERING

15 STUDEBAKER IRVINE, CA 92618 Phone: 949.752.1612 Fax: 949.752.5321 Scale: 1:130

Page 1 Right-Suite® Universal 2019 19.0.19 RSU22112 2021-Mar-24 16:25:24 G:\65671\MECH\MJDS\65671 Plan.rup





Basement **⊠** 198 cfm ≥ 225 dm GYM BILLIARDS 1400 dm THEATER ≥ 240 cfm 198 cfm **⊠** _{166 cfm} ENTERTAINMENT ELEV. 3 A/V STO. HALL 0A STAIR CRAFTS ROOM SAUNA $\boxtimes_{240\,\mathrm{dm}}$ AUTOLIFT BA. 6 ⊠_{69 cfm} WET BAR 142 dm \boxtimes STOR. MECH

Job #: 65671 Performed for:

GOUVIS ENGINEERING

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Page 3 Right-Suite® Universal 2019 19.0.19 RSU22112 2021-Mar-24 16:25:24 G:\65671\MECH\MJDS\65671 Plan.rup