wrightsoft®

Load Short Form
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:

Design Information

	Htg	Clg
Outside db (°F)	46	80
Inside db (°F)	68	75
Design TD (°F)	22	5
Daily range	-	L
Inside humidity (%)	50	50
Moisture difference (gr/lb)	14	-3

Infiltration

Method	Simplified
Construction quality	Semi-tight
Fireplaces	1 (Average)

HEATING EQUIPMENT

Make		
Trade		
Model		
AHRI ref		
Efficiency	80 AFUE	
Heating input	0	Btuh
Heating output	0	Btuh
Temperature rise	0	°F
Actual air flow	1400	cfm
Air flow factor	0.315	cfm/Btuh
Static pressure	0	in H2O
Space thermostat		

COOLING EQUIPMENT

Make		
Trade		
Cond		
Coil		
AHRI ref		
Efficiency	0 SEER	
Sensible cooling	0	Btuh
Latent cooling	0	Btuh
Total cooling	0	Btuh
Actual air flow	1400	cfm
Air flow factor	0.110	cfm/Btuh
Static pressure	0	in H2O
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
A/V	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

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

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

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

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MAIN AH
GOUVIS ENGINEERING

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Project Information

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Design Information

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

Infiltration

Method	Simplified
Construction quality	Semi-tight
Fireplaces	1 (Average)

HEATING EQUIPMENT

Make		
Trade		
Model		
AHRI ref		
Efficiency	80 AFUE	
Heating input	0	Btuh
Heating output	0	Btuh
Temperature rise	0	°F
Actual air flow	2000	cfm
Air flow factor	0.123	cfm/Btuh
Static pressure	0	in H2O
Space thermostat		

COOLING EQUIPMENT

Make		
Trade		
Cond		
Coil		
AHRI ref		
Efficiency	0 SEER	
Sensible cooling	0	Btuh
Latent cooling	0	Btuh
Total cooling	0	Btuh
Actual air flow	2000	cfm
Air flow factor	0.085	cfm/Btuh
Static pressure	0	in H2O
Load sensible heat ratio	0.84	

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	89	0	0	0	0

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

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

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

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Load Short Form
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:

Design Information

	Htg	Clg
Outside db (°F)	46	80
Inside db (°F)	68	75
Design TD (°F)	22	5
Daily range	-	L
Inside humidity (%)	50	50
Moisture difference (gr/lb)	14	-3

Infiltration

Method	Simplified
Construction quality	Semi-tight
Fireplaces	1 (Average)

HEATING EQUIPMENT

Make		
Trade		
Model		
AHRI ref		
Efficiency	80 AFUE	
Heating input	0	Btuh
Heating output	0	Btuh
Temperature rise	0	°F
Actual air flow	1600	cfm
Air flow factor	0.055	cfm/Btuh
Static pressure	0	in H2O
Space thermostat		

COOLING EQUIPMENT

Make		
Trade		
Cond		
Coil		
AHRI ref		
Efficiency	0 SEER	
Sensible cooling	0	Btuh
Latent cooling	0	Btuh
Total cooling	0	Btuh
Actual air flow	1600	cfm
Air flow factor	0.047	cfm/Btuh
Static pressure	0	in H2O
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

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

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

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

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For:

Design Information

	Htg	Clg
Outside db (°F)	46	80
Inside db (°F)	68	75
Design TD (°F)	22	5
Daily range	-	L
Inside humidity (%)	50	50
Moisture difference (gr/lb)	14	-3

Infiltration

Method	Simplified
Construction quality	Semi-tight
Fireplaces	1 (Average)

HEATING EQUIPMENT

Make		
Trade		
Model		
AHRI ref		
Efficiency	80 AFUE	
Heating input	0	Btuh
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		

COOLING EQUIPMENT

Make		
Trade		
Cond		
Coil		
AHRI ref		
Efficiency	0 SEER	
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	

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

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

Loads for Multiple Orientations
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:

Design Conditions

Location:
Los Angeles Intl, CA, US
Elevation: 325 ft
Latitude: 34 °N

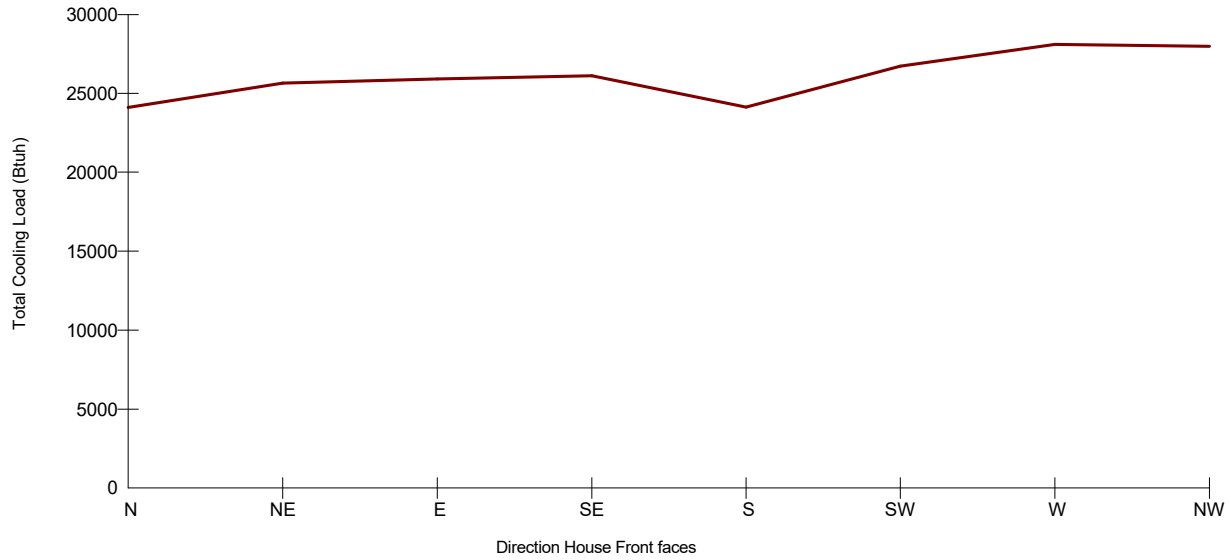
Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	46	80
Daily range (°F)	-	11 (L)
Wet bulb (°F)	-	64
Wind speed (mph)	15.0	7.5

Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	68	75
Design TD (°F)	22	5
Relative humidity (%)	50	50
Moisture difference (gr/lb)	13.8	-3.5

Infiltration:

House Front	North	Northeast	East	Southeast	South	Southwest	West	Northwest
Sensible Load (Btuh)	19816	21356	21630	21830	19832	22417	23812	23693
Latent Load (Btuh)	4295	4295	4295	4295	4295	4295	4295	4295
Total Load (Btuh)	24110	25651	25925	26124	24126	26711	28106	27987
Heating AVF (cfm)	2000	2000	2000	2000	2000	2000	2000	2000
Cooling AVF (cfm)	2000	2000	2000	2000	2000	2000	2000	2000

Building Orientation Cooling Load



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

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

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

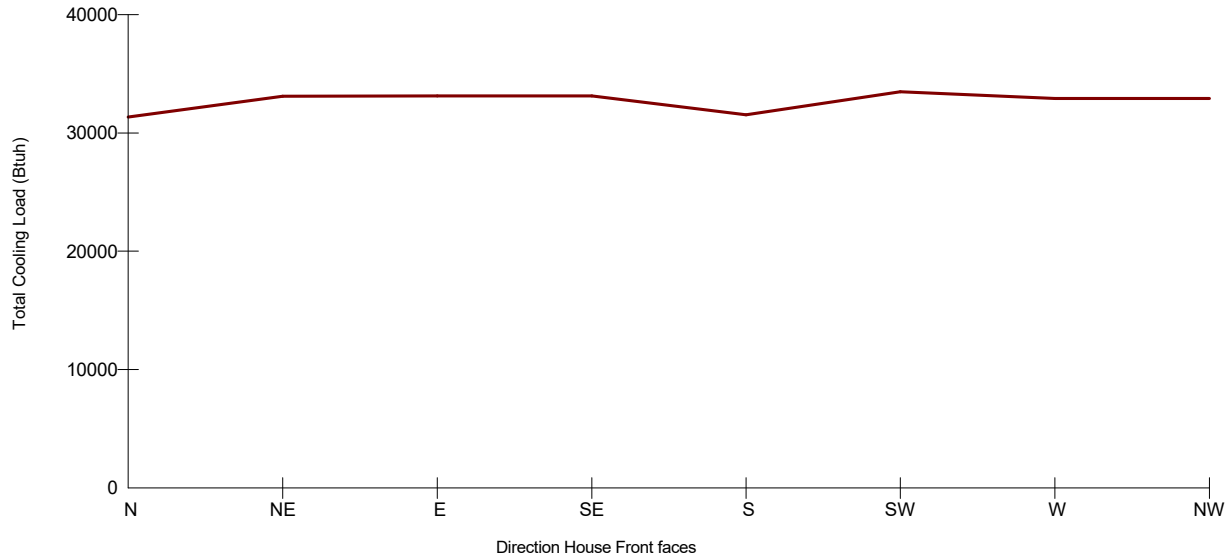
Outdoor:	Heating	Cooling
Dry bulb (°F)	46	80
Daily range (°F)	-	11 (L)
Wet bulb (°F)	-	64
Wind speed (mph)	15.0	7.5

Indoor:	Heating	Cooling
Indoor temperature (°F)	68	75
Design TD (°F)	22	5
Relative humidity (%)	50	50
Moisture difference (gr/lb)	13.8	-3.5

Infiltration:

House Front	North	Northeast	East	Southeast	South	Southwest	West	Northwest
Sensible Load (Btuh)	29049	30809	30842	30824	29254	31186	30615	30633
Latent Load (Btuh)	2284	2284	2284	2284	2284	2284	2284	2284
Total Load (Btuh)	31333	33093	33126	33108	31539	33471	32899	32917
Heating AVF (cfm)	1600	1600	1600	1600	1600	1600	1600	1600
Cooling AVF (cfm)	1600	1600	1600	1600	1600	1600	1600	1600

Building Orientation Cooling Load



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

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

Loads for Multiple Orientations
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:

Design Conditions

Location:
Los Angeles Intl, CA, US
Elevation: 325 ft
Latitude: 34 °N

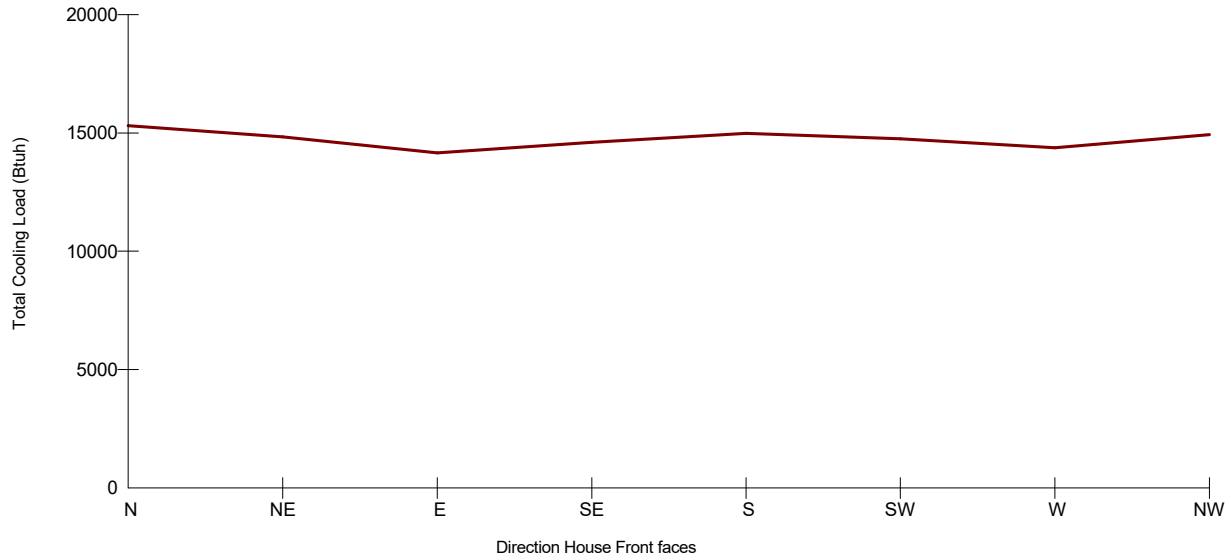
Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	46	80
Daily range (°F)	-	11 (L)
Wet bulb (°F)	-	64
Wind speed (mph)	15.0	7.5

Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	68	75
Design TD (°F)	22	5
Relative humidity (%)	50	50
Moisture difference (gr/lb)	13.8	-3.5

Infiltration:

House Front	North	Northeast	East	Southeast	South	Southwest	West	Northwest
Sensible Load (Btuh)	10904	10430	9754	10209	10590	10345	9972	10533
Latent Load (Btuh)	4400	4400	4400	4400	4400	4400	4400	4400
Total Load (Btuh)	15304	14830	14154	14609	14990	14745	14372	14933
Heating AVF (cfm)	1400	1400	1400	1400	1400	1400	1400	1400
Cooling AVF (cfm)	1400	1400	1400	1400	1400	1400	1400	1400

Building Orientation Cooling Load



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

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

Loads for Multiple Orientations
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:

Design Conditions

Location:
Los Angeles Intl, CA, US
Elevation: 325 ft
Latitude: 34 °N

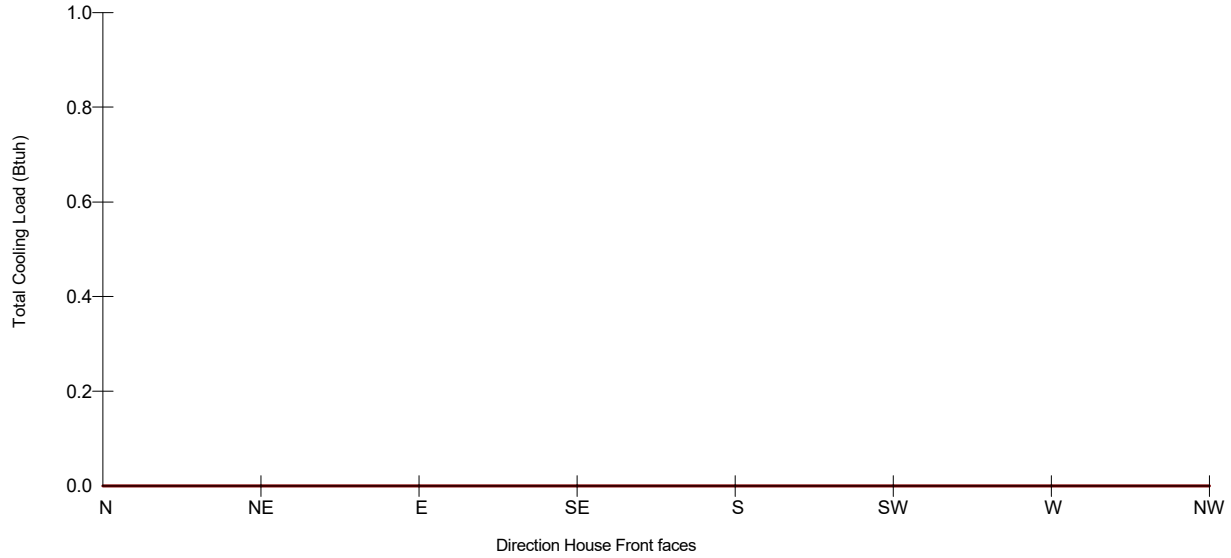
Outdoor:	Heating	Cooling
Dry bulb (°F)	46	80
Daily range (°F)	-	11 (L)
Wet bulb (°F)	-	64
Wind speed (mph)	15.0	7.5

Indoor:	Heating	Cooling
Indoor temperature (°F)	68	75
Design TD (°F)	22	5
Relative humidity (%)	50	50
Moisture difference (gr/lb)	13.8	-3.5

Infiltration:

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

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

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Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	46	80
Daily range (°F)	-	11 (L)
Wet bulb (°F)	-	64
Wind speed (mph)	15.0	7.5

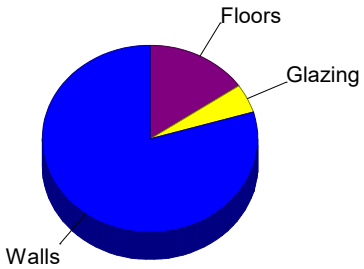
Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	68	75
Design TD (°F)	22	5
Relative humidity (%)	50	50
Moisture difference (gr/lb)	13.8	-3.5

Infiltration:

Method	Simplified
Construction quality	Semi-tight
Fireplaces	1 (Average)

Heating

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



Cooling

Component	Btuh/ft²	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%.

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Project Information

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Design Conditions

Location:
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Elevation: 325 ft
Latitude: 34 °N

Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	46	80
Daily range (°F)	-	11 (L)
Wet bulb (°F)	-	64
Wind speed (mph)	15.0	7.5

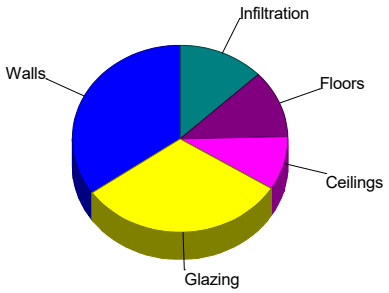
Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	68	75
Design TD (°F)	22	5
Relative humidity (%)	50	50
Moisture difference (gr/lb)	13.8	-3.5

Infiltration:

Method	Simplified
Construction quality	Semi-tight
Fireplaces	1 (Average)

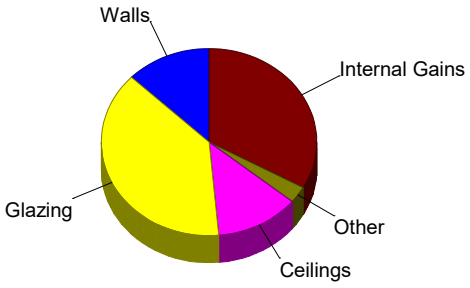
Heating

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



Cooling

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

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Project Information

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Latitude: 34 °N

Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	46	80
Daily range (°F)	-	11 (L)
Wet bulb (°F)	-	64
Wind speed (mph)	15.0	7.5

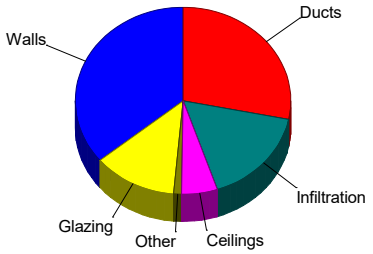
Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	68	75
Design TD (°F)	22	5
Relative humidity (%)	50	50
Moisture difference (gr/lb)	13.8	-3.5

Infiltration:

Method	Simplified
Construction quality	Semi-tight
Fireplaces	1 (Average)

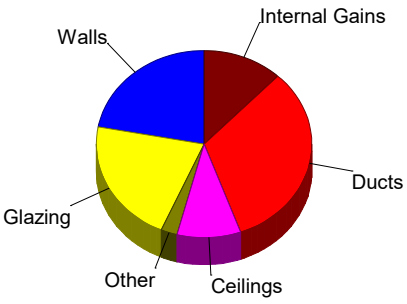
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	1.8	10436	36.0
Glazing	6.7	3660	12.6
Doors	8.4	227	0.8
Ceilings	0.6	1550	5.3
Floors	2.2	115	0.4
Infiltration	0.8	4831	16.7
Ducts		8172	28.2
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	
Total		**28993**	**100.0**



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.

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**
Dry bulb (°F)	46	80
Daily range (°F)	-	11 (L)
Wet bulb (°F)	-	64
Wind speed (mph)	15.0	7.5

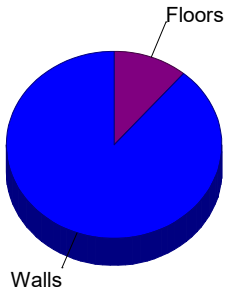
Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	68	75
Design TD (°F)	22	5
Relative humidity (%)	50	50
Moisture difference (gr/lb)	13.8	-3.5

Infiltration:

Method	Simplified
Construction quality	Semi-tight
Fireplaces	1 (Average)

Heating

Component	Btuh/ft²	Btuh	% of load
Walls	2.4	179	88.8
Glazing	0	0	0
Doors	0	0	0
Ceilings	0	0	0
Floors	0.3	23	11.2
Infiltration	0	0	0
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	
Total		**201**	**100.0**



Cooling

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

Job: 65671
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**
Dry bulb (°F)	46	80
Daily range (°F)	-	11 (L)
Wet bulb (°F)	-	64
Wind speed (mph)	15.0	7.5

Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	68	75
Design TD (°F)	22	5
Relative humidity (%)	50	50
Moisture difference (gr/lb)	13.8	-3.5

Infiltration:

Method	Simplified
Construction quality	Semi-tight
Fireplaces	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	466	0.068	19.0	1.47	684	0.85	397
	e	502	0.068	19.0	1.47	737	0.85	428
	se	22	0.068	19.0	1.47	33	0.85	19
	s	258	0.068	19.0	1.47	379	0.85	220
	sw	25	0.068	19.0	1.47	37	0.85	21
	w	549	0.068	19.0	1.47	806	0.85	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	5	0.310	0	6.70	33	6.17	31
	n	24	0.310	0	6.70	161	6.17	148
	n	324	0.310	0	6.70	2170	6.17	1998
	e	19	0.310	0	6.70	127	22.7	432
	e	15	0.310	0	6.70	100	22.7	341
	e	48	0.310	0	6.70	321	15.9	763
	se	11	0.310	0	6.70	71	18.0	190
	s	90	0.310	0	6.70	603	9.00	810
	sw	10	0.310	0	6.70	68	18.0	182
	w	85	0.310	0	6.70	569	22.7	1931
	w	165	0.310	0	6.70	1107	15.9	2629
	all	796	0.310	0	6.70	5330	11.9	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

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Project Information

For:

Design Conditions

Location:
Los Angeles Intl, CA, US
Elevation: 325 ft
Latitude: 34 °N

Outdoor:	Heating	Cooling
Dry bulb (°F)	46	80
Daily range (°F)	-	11 (L)
Wet bulb (°F)	-	64
Wind speed (mph)	15.0	7.5

Indoor:	Heating	Cooling
Indoor temperature (°F)	68	75
Design TD (°F)	22	5
Relative humidity (%)	50	50
Moisture difference (gr/lb)	13.8	-3.5

Infiltration:

Method	Simplified
Construction quality	Semi-tight
Fireplaces	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	338	0.091	13.0	1.97	664	1.52	512
	e	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 board int fnsh, 2"x6" wood frm, 16" o.c. stud	n	475	0.068	19.0	1.47	698	0.85	406
	e	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, clr outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/4" thk; 8 ft head ht	n	173	0.310	0	6.70	1158	6.17	1067
	e	6	0.310	0	6.70	40	22.7	136
	e	19	0.310	0	6.70	129	22.7	437
	e	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
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 flr fnsh, frm flr, 12" thkns, 1/2" gypsum board int fnsh	47	0.295	0	2.39	113	0.60	28
19C-19cscp: Flr floor, frm flr, 6" thkns, carpet flr fnsh, r-2 ext ins, r-19 cav ins, tight crwl ovr, r-11 wall insul	5	0.049	30.0	0.37	2	0.09	1

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Project Information

For:

Design Conditions

Location:
Los Angeles Intl, CA, US
Elevation: 325 ft
Latitude: 34 °N

Outdoor:	Heating	Cooling
Dry bulb (°F)	46	80
Daily range (°F)	-	11 (L)
Wet bulb (°F)	-	64
Wind speed (mph)	15.0	7.5

Indoor:	Heating	Cooling
Indoor temperature (°F)	68	75
Design TD (°F)	22	5
Relative humidity (%)	50	50
Moisture difference (gr/lb)	13.8	-3.5

Infiltration:

Method	Simplified
Construction quality	Semi-tight
Fireplaces	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, 1/2" gypsum board int fnsh	n	499	0.109	0	2.35	1174	0	0
	e	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

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Project Information

For:

Design Conditions

Location:
Los Angeles Intl, CA, US
Elevation: 325 ft
Latitude: 34 °N

Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	46	80
Daily range (°F)	-	11 (L)
Wet bulb (°F)	-	64
Wind speed (mph)	15.0	7.5

Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	68	75
Design TD (°F)	22	5
Relative humidity (%)	50	50
Moisture difference (gr/lb)	13.8	-3.5

Infiltration:

Method	Simplified
Construction quality	Semi-tight
Fireplaces	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, 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, r-3 ins, carpet flr fnsh		74	0.014	3.0	0.30	23	0	0

wrightsoft®

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

Outside db	46	°F
Inside db	68	°F
Design TD	22	°F

Summer Design Conditions

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

Heating Summary

Structure	4449	Btuh
Ducts	0	Btuh
Central vent (0 cfm) (none)	0	Btuh
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	4449	Btuh

Sensible Cooling Equipment Load Sizing

Structure	12768	Btuh
Ducts	0	Btuh
Central vent (0 cfm) (none)	0	Btuh
Blower	0	Btuh
Use manufacturer's data	n	
Rate/swing multiplier	0.85	
Equipment sensible load	10904	Btuh

Infiltration

Method	Simplified
Construction quality	Semi-tight
Fireplaces	1 (Average)

	Heating	Cooling
Area (ft²)	2266	2266
Volume (ft³)	2122	2122
Air changes/hour	0	0
Equiv. AVF (cfm)	0	0

Latent Cooling Equipment Load Sizing

Structure	4400	Btuh
Ducts	0	Btuh
Central vent (0 cfm) (none)	0	Btuh
Equipment latent load	4400	Btuh
Equipment Total Load (Sen+Lat)	15304	Btuh
Req. total capacity at 0.70 SHR	1.3	ton

Heating Equipment Summary

Make		
Trade		
Model		
AHRI ref		
Efficiency	80	AFUE
Heating input	0	Btuh
Heating output	0	Btuh
Temperature rise	0	°F
Actual air flow	1400	cfm
Air flow factor	0.315	cfm/Btuh
Static pressure	0	in H2O
Space thermostat		

Cooling Equipment Summary

Make		
Trade		
Cond		
Coil		
AHRI ref		
Efficiency	0	SEER
Sensible cooling	0	Btuh
Latent cooling	0	Btuh
Total cooling	0	Btuh
Actual air flow	1400	cfm
Air flow factor	0.110	cfm/Btuh
Static pressure	0	in H2O
Load sensible heat ratio	0.74	

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

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

Outside db	46	°F
Inside db	68	°F
Design TD	22	°F

Summer Design Conditions

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

Heating Summary

Structure	16298	Btuh
Ducts	0	Btuh
Central vent (0 cfm) (none)	0	Btuh
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	16298	Btuh

Sensible Cooling Equipment Load Sizing

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

Infiltration

Method	Simplified
Construction quality	Semi-tight
Fireplaces	1 (Average)

	Heating	Cooling
Area (ft²)	3064	3064
Volume (ft³)	33699	33699
Air changes/hour	0.17	0.08
Equiv. AVF (cfm)	93	45

Latent Cooling Equipment Load Sizing

Structure	4295	Btuh
Ducts	0	Btuh
Central vent (0 cfm) (none)	0	Btuh
Equipment latent load	4295	Btuh
Equipment Total Load (Sen+Lat)	24110	Btuh
Req. total capacity at 0.70 SHR	2.4	ton

Heating Equipment Summary

Make		
Trade		
Model		
AHRI ref		
Efficiency	80	AFUE
Heating input	0	Btuh
Heating output	0	Btuh
Temperature rise	0	°F
Actual air flow	2000	cfm
Air flow factor	0.123	cfm/Btuh
Static pressure	0	in H2O
Space thermostat		

Cooling Equipment Summary

Make		
Trade		
Cond		
Coil		
AHRI ref		
Efficiency	0	SEER
Sensible cooling	0	Btuh
Latent cooling	0	Btuh
Total cooling	0	Btuh
Actual air flow	2000	cfm
Air flow factor	0.085	cfm/Btuh
Static pressure	0	in H2O
Load sensible heat ratio	0.84	

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

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

Outside db	46	°F
Inside db	68	°F
Design TD	22	°F

Summer Design Conditions

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

Heating Summary

Structure	20820	Btuh
Ducts	8172	Btuh
Central vent (0 cfm) (none)	0	Btuh
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	28993	Btuh

Sensible Cooling Equipment Load Sizing

Structure	22969	Btuh
Ducts	11046	Btuh
Central vent (0 cfm) (none)	0	Btuh
Blower	0	Btuh
Use manufacturer's data	n	
Rate/swing multiplier	0.85	
Equipment sensible load	29049	Btuh

Infiltration

Method	Simplified
Construction quality	Semi-tight
Fireplaces	1 (Average)

	Heating	Cooling
Area (ft²)	2764	2764
Volume (ft³)	31189	31189
Air changes/hour	0.40	0.19
Equiv. AVF (cfm)	206	100

Latent Cooling Equipment Load Sizing

Structure	1968	Btuh
Ducts	316	Btuh
Central vent (0 cfm) (none)	0	Btuh
Equipment latent load	2284	Btuh
Equipment Total Load (Sen+Lat)	31333	Btuh
Req. total capacity at 0.70 SHR	3.5	ton

Heating Equipment Summary

Make		
Trade		
Model		
AHRI ref		
Efficiency	80	AFUE
Heating input	0	Btuh
Heating output	0	Btuh
Temperature rise	0	°F
Actual air flow	1600	cfm
Air flow factor	0.055	cfm/Btuh
Static pressure	0	in H2O
Space thermostat		

Cooling Equipment Summary

Make		
Trade		
Cond		
Coil		
AHRI ref		
Efficiency	0	SEER
Sensible cooling	0	Btuh
Latent cooling	0	Btuh
Total cooling	0	Btuh
Actual air flow	1600	cfm
Air flow factor	0.047	cfm/Btuh
Static pressure	0	in H2O
Load sensible heat ratio	0.94	

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

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

Outside db	46	°F
Inside db	68	°F
Design TD	22	°F

Summer Design Conditions

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

Heating Summary

Structure	201	Btuh
Ducts	0	Btuh
Central vent (0 cfm) (none)	0	Btuh
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	201	Btuh

Sensible Cooling Equipment Load Sizing

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

Infiltration

Method	Simplified
Construction quality	Semi-tight
Fireplaces	1 (Average)

	Heating	Cooling
Area (ft²)	74	74
Volume (ft³)	0	0
Air changes/hour	0	0
Equiv. AVF (cfm)	0	0

Latent Cooling Equipment Load Sizing

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

Heating Equipment Summary

Make		
Trade		
Model		
AHRI ref		
Efficiency	80	AFUE
Heating input	0	Btuh
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		

Cooling Equipment Summary

Make		
Trade		
Cond		
Coil		
AHRI ref		
Efficiency	0	SEER
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.

AED Assessment
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:

Design Conditions

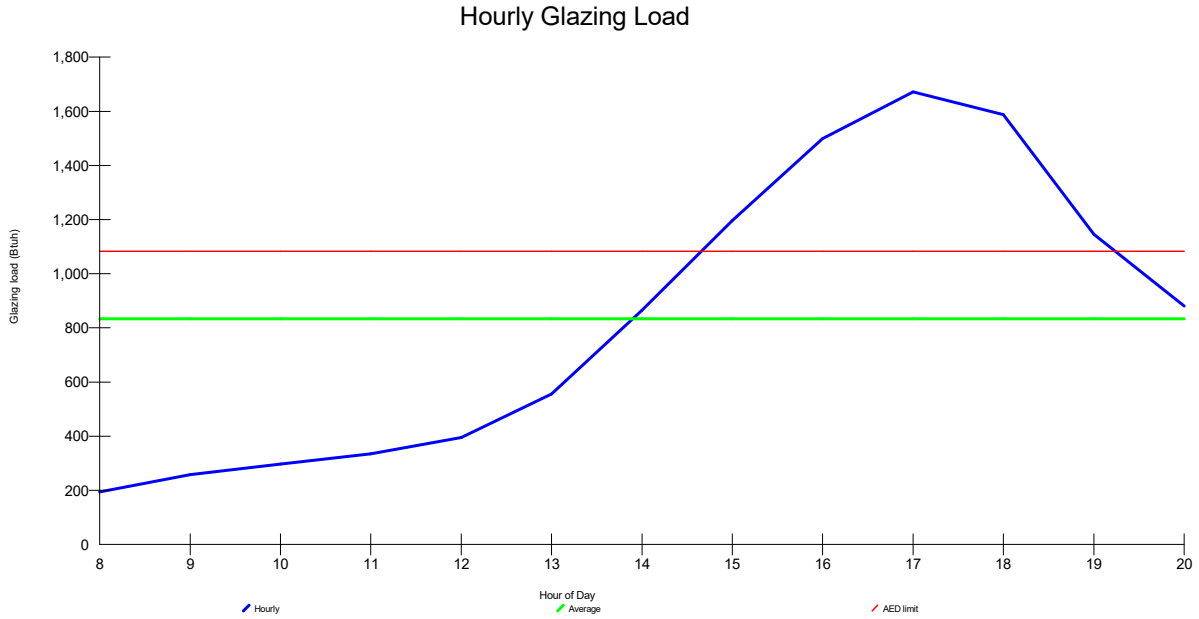
Location:
Los Angeles Intl, CA, US
Elevation: 325 ft
Latitude: 34 °N

Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	46	80
Daily range (°F)	-	11 (L)
Wet bulb (°F)	-	64
Wind speed (mph)	15.0	7.5

Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	68	75
Design TD (°F)	22	5
Relative humidity (%)	50	50
Moisture difference (gr/lb)	13.8	-3.5

Infiltration:

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)

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Project Information

For:

Design Conditions

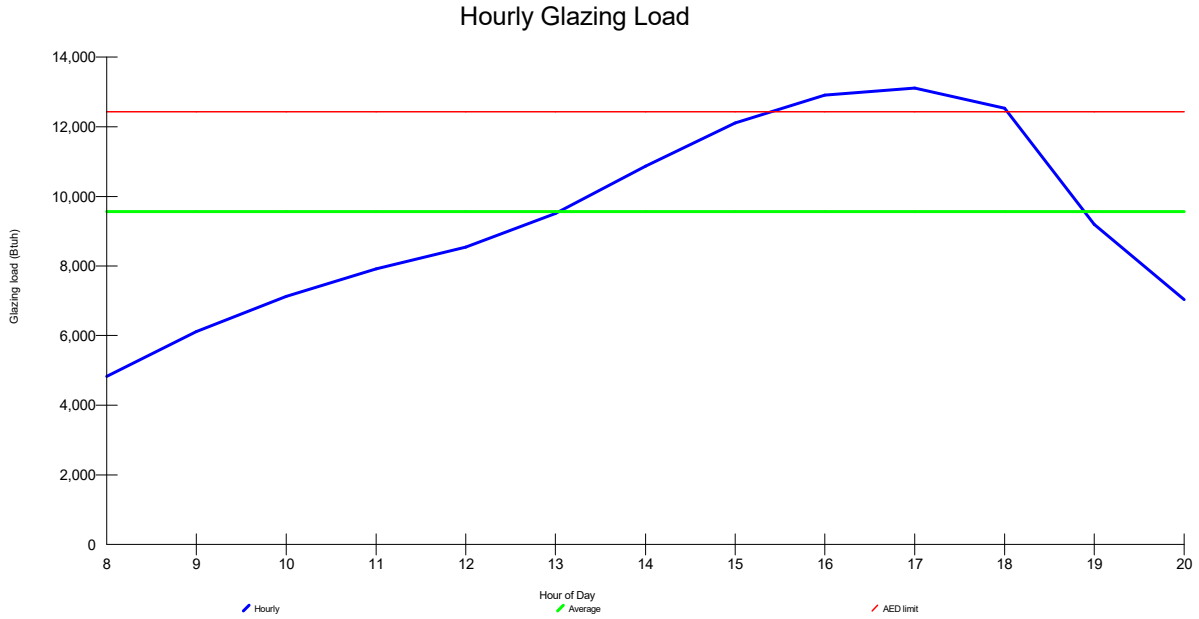
Location:
Los Angeles Intl, CA, US
Elevation: 325 ft
Latitude: 34 °N

Outdoor:	Heating	Cooling
Dry bulb (°F)	46	80
Daily range (°F)	-	11 (L)
Wet bulb (°F)	-	64
Wind speed (mph)	15.0	7.5

Indoor:	Heating	Cooling
Indoor temperature (°F)	68	75
Design TD (°F)	22	5
Relative humidity (%)	50	50
Moisture difference (gr/lb)	13.8	-3.5

Infiltration:

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)

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

Project Information

For:

Design Conditions

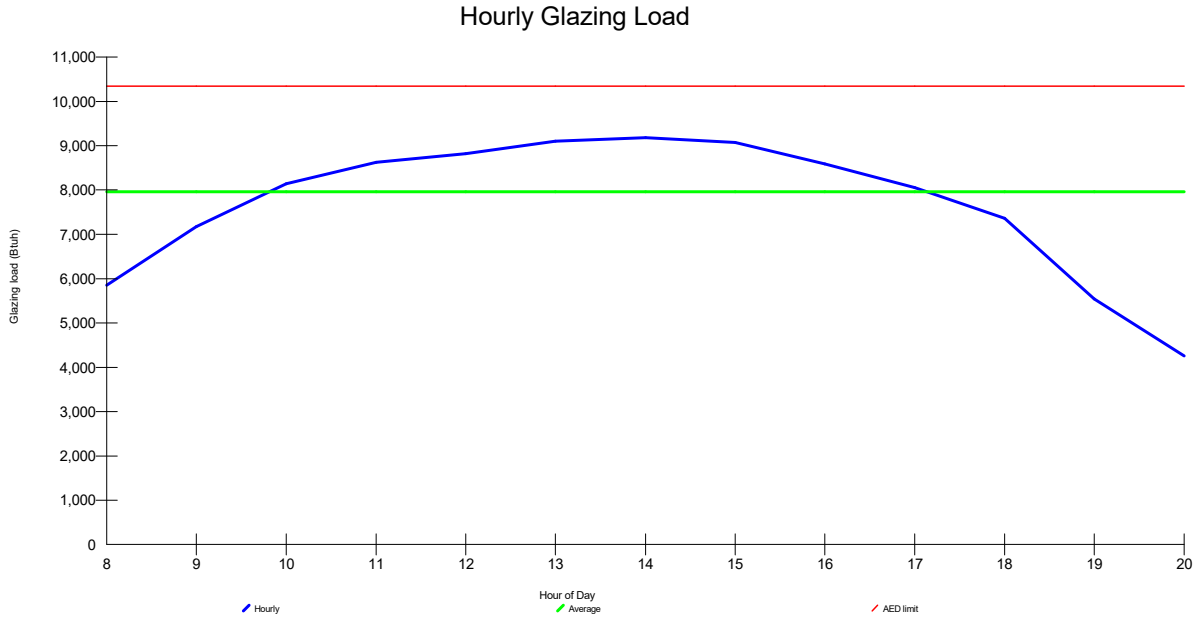
Location:
Los Angeles Intl, CA, US
Elevation: 325 ft
Latitude: 34 °N

Outdoor:	Heating	Cooling
Dry bulb (°F)	46	80
Daily range (°F)	-	11 (L)
Wet bulb (°F)	-	64
Wind speed (mph)	15.0	7.5

Indoor:	Heating	Cooling
Indoor temperature (°F)	68	75
Design TD (°F)	22	5
Relative humidity (%)	50	50
Moisture difference (gr/lb)	13.8	-3.5

Infiltration:

Test for Adequate Exposure Diversity



Maximum hourly glazing load exceeds average by 15.3%.

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

AED excursion: 0 Btuh

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

Project Information

For:

Design Conditions

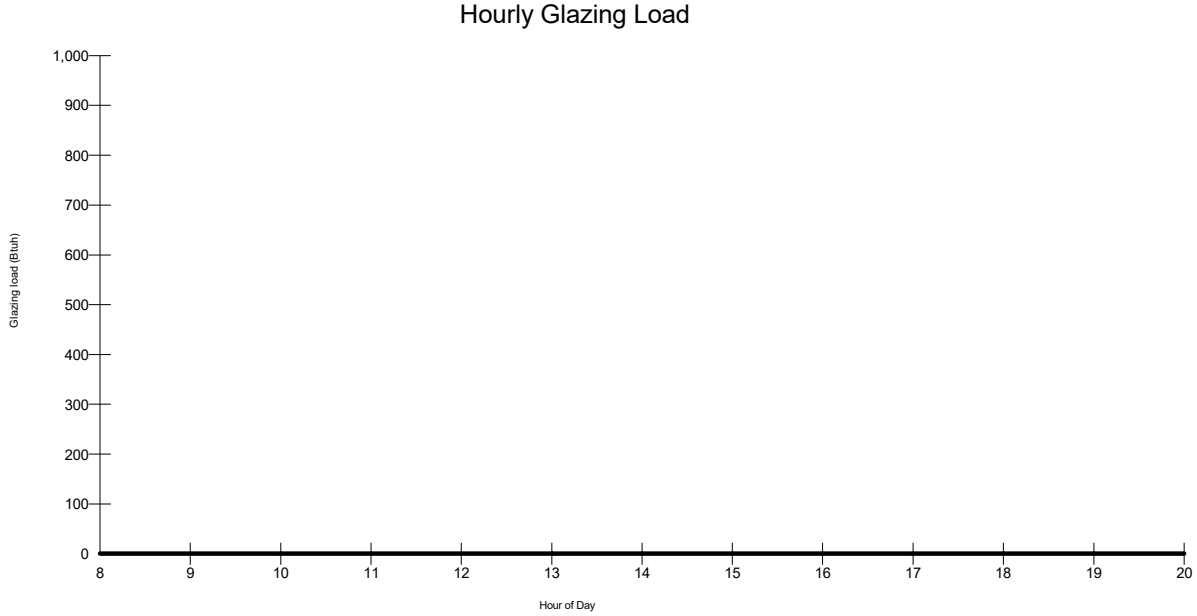
Location:
Los Angeles Intl, CA, US
Elevation: 325 ft
Latitude: 34 °N

Outdoor:	Heating	Cooling
Dry bulb (°F)	46	80
Daily range (°F)	-	11 (L)
Wet bulb (°F)	-	64
Wind speed (mph)	15.0	7.5

Indoor:	Heating	Cooling
Indoor temperature (°F)	68	75
Design TD (°F)	22	5
Relative humidity (%)	50	50
Moisture difference (gr/lb)	13.8	-3.5

Infiltration:

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

Job: 65671
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			
Sensible capacity:	0	Btuh	0% of load		
Latent capacity:	0	Btuh	0% of load		
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:	0	Btuh	0% of load	Temp. rise:	0 °F

Meets all requirements of ACCA Manual S.

Manual S Compliance Report
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:

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

Meets all requirements of ACCA Manual S.

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

Meets all requirements of ACCA Manual S.

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:	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 DB:	75.0 °F	Total gain:	0	Btuh		
Indoor RH:	50%	Estimated airflow:	0	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	Btuh	0% of load		
Total capacity:	0	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			
Output capacity:	0	Btuh	0% of load	Temp. rise:	0 °F

Meets all requirements of ACCA Manual S.

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

Form RPER 1 15 Mar 09

Air Conditioning Contractors of America

Header Information

Contractor: GOUVIS ENGINEERING

Mechanical license:

Building plan #: Borstein Residence

Home address (Street or Lot#, Block, Subdivision): , BASEMENT AH

REQUIRED ATTACHMENTS	ATTACHED
Manual J1 Form (and supporting worksheets):	Yes ☐ No ☐
or MJ1AE Form* (and supporting worksheets):	Yes ☐ No ☐
OEM performance data (heating, cooling, blower):	Yes ☐ No ☐
Manual D Friction Rate Worksheet:	Yes ☐ No ☐
Duct distribution sketch:	Yes ☐ No ☐

HVAC LOAD CALCULATION (IRC M1401.3)

Design Conditions

Winter Design Conditions

Outdoor temperature:	46	°F
Indoor temperature:	68	°F
Total heat loss:	4449	Btuh

Summer Design Conditions

Outdoor temperature:	80	°F
Indoor temperature:	75	°F
Grains difference:	-3 gr/lb @ 50% RH	
Sensible heat gain:	14951	Btuh
Latent heat gain:	5152	Btuh
Total heat gain:	20103	Btuh

Building Construction Information

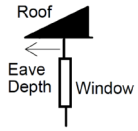
Building

Orientation: House Front faces North
North, East, West, South, Northeast, Northwest, Southeast, Southwest

Number of bedrooms:	0	
Conditioned floor area:	2266	ft²
Number of occupants:	22	

Windows

Eave overhang depth:	0	ft
Internal shade: (Blinds, drapes, etc.)	none	
Number of skylights:	0	



HVAC EQUIPMENT SELECTION (IRC M1401.3)

Heating Equipment Data

Equipment type: (Furnace, Heat pump, Boiler, etc.)	Gas furnace	
Model:		
Heating output capacity: (Heat pumps - capacity at winter design outdoor conditions)	0	Btuh
Aux. heating output capacity:	0	Btuh

Cooling Equipment Data

Equipment type: (Air Conditioner, Heat pump, etc.)	Split AC	
Model:		
Total cooling capacity:	0	Btuh
Sensible cooling capacity:	0	Btuh
Latent cooling capacity:	0	Btuh

Blower Data

Heating cfm:	1400
Cooling cfm:	1400
Static pressure: (Fan's rated external static pressure for design airflow)	0 in H2O

HVAC DUCT DISTRIBUTION SYSTEM DESIGN (IRC M1601.1)

Design airflow:	1400	cfm	Longest supply duct:	0	ft	Duct Materials Used	
Equipment design ESP:	0	in H2O	Longest return duct:	0	ft	Trunk duct:	
Total device pressure losses:	0	in H2O	**Total effective length (TEL):**	0	ft		
Available static pressure (ASP):	0	in H2O	**Friction rate:** (Friction Rate = ASP ÷ (TEL x 100))	0	in/100ft	Branch duct:	Round flex vinyl

I declare the load calculation, equipment, equipment selection and duct design were rigorously performed based on the building plan listed above. I understand the claims made on these forms will be subject to review and verification.

Contractor's printed name: _____

Contractor's signature: _____ Date: _____

Reserved for County, Town Municipality or Authority having jurisdiction 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

Air Conditioning Contractors of America

Header Information

Contractor: GOUVIS ENGINEERING

Mechanical license:

Building plan #: Borstein Residence

Home address (Street or Lot#, Block, Subdivision): , MAIN AH

REQUIRED ATTACHMENTS	ATTACHED
Manual J1 Form (and supporting worksheets):	Yes ☐ No ☐
or MJ1AE Form* (and supporting worksheets):	Yes ☐ No ☐
OEM performance data (heating, cooling, blower):	Yes ☐ No ☐
Manual D Friction Rate Worksheet:	Yes ☐ No ☐
Duct distribution sketch:	Yes ☐ No ☐

HVAC LOAD CALCULATION (IRC M1401.3)

Design Conditions

Winter Design Conditions

Outdoor temperature:	46	°F
Indoor temperature:	68	°F
Total heat loss:	16298	Btuh

Summer Design Conditions

Outdoor temperature:	80	°F
Indoor temperature:	75	°F
Grains difference:	-3 gr/lb @ 50% RH	
Sensible heat gain:	27170	Btuh
Latent heat gain:	5029	Btuh
Total heat gain:	32199	Btuh

Building Construction Information

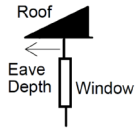
Building

Orientation: House Front faces North
North, East, West, South, Northeast, Northwest, Southeast, Southwest

Number of bedrooms:	1	
Conditioned floor area:	3064	ft²
Number of occupants:	22	

Windows

Eave overhang depth:	0	ft
Internal shade: Blinds, drapes, etc.	none	
Number of skylights:	0	



HVAC EQUIPMENT SELECTION (IRC M1401.3)

Heating Equipment Data

Equipment type: Furnace, Heat pump, Boiler, etc.	Gas furnace	
Model:		
Heating output capacity: Heat pumps - capacity at winter design outdoor conditions	0	Btuh
Aux. heating output capacity:	0	Btuh

Cooling Equipment Data

Equipment type: Air Conditioner, Heat pump, etc.	Split AC	
Model:		
Total cooling capacity:	0	Btuh
Sensible cooling capacity:	0	Btuh
Latent cooling capacity:	0	Btuh

Blower Data

Heating cfm:	2000
Cooling cfm:	2000
Static pressure: Fan's rated external static pressure for design airflow	0 in H2O

HVAC DUCT DISTRIBUTION SYSTEM DESIGN (IRC M1601.1)

Design airflow:	2000	cfm	Longest supply duct:	0	ft	Duct Materials Used	
Equipment design ESP:	0	in H2O	Longest return duct:	0	ft	Trunk duct:	
Total device pressure losses:	0	in H2O	**Total effective length (TEL):**	0	ft		
Available static pressure (ASP):	0	in H2O	**Friction rate:** Friction Rate = ASP ÷ (TEL x 100)	0	in/100ft	Branch duct:	Round flex vinyl

I declare the load calculation, equipment, equipment selection and duct design were rigorously performed based on the building plan listed above. I understand the claims made on these forms will be subject to review and verification.

Contractor's printed name: _____

Contractor's signature: _____ Date: _____

Reserved for County, Town Municipality or Authority having jurisdiction 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

Air Conditioning Contractors of America

Header Information

Contractor: GOUVIS ENGINEERING

Mechanical license:

Building plan #: Borstein Residence

Home address (Street or Lot#, Block, Subdivision): , UPPER AH

REQUIRED ATTACHMENTS	ATTACHED
Manual J1 Form (and supporting worksheets):	Yes ☐ No ☐
or MJ1AE Form* (and supporting worksheets):	Yes ☐ No ☐
OEM performance data (heating, cooling, blower):	Yes ☐ No ☐
Manual D Friction Rate Worksheet:	Yes ☐ No ☐
Duct distribution sketch:	Yes ☐ No ☐

HVAC LOAD CALCULATION (IRC M1401.3)

Design Conditions

Winter Design Conditions

Outdoor temperature:	46	°F
Indoor temperature:	68	°F
Total heat loss:	28993	Btuh

Summer Design Conditions

Outdoor temperature:	80	°F
Indoor temperature:	75	°F
Grains difference:	-3 gr/lb @ 50% RH	
Sensible heat gain:	39830	Btuh
Latent heat gain:	2675	Btuh
Total heat gain:	42505	Btuh

Building Construction Information

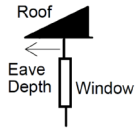
Building

Orientation: House Front faces North
North, East, West, South, Northeast, Northwest, Southeast, Southwest

Number of bedrooms:	4	
Conditioned floor area:	2764	ft²
Number of occupants:	11	

Windows

Eave overhang depth:	0	ft
Internal shade: Blinds, drapes, etc.	none	
Number of skylights:	0	



HVAC EQUIPMENT SELECTION (IRC M1401.3)

Heating Equipment Data

Equipment type: Furnace, Heat pump, Boiler, etc.	Gas furnace	
Model:		
Heating output capacity: Heat pumps - capacity at winter design outdoor conditions	0	Btuh
Aux. heating output capacity:	0	Btuh

Cooling Equipment Data

Equipment type: Air Conditioner, Heat pump, etc.	Split AC	
Model:		
Total cooling capacity:	0	Btuh
Sensible cooling capacity:	0	Btuh
Latent cooling capacity:	0	Btuh

Blower Data

Heating cfm:	1600
Cooling cfm:	1600
Static pressure: Fan's rated external static pressure for design airflow	0 in H2O

HVAC DUCT DISTRIBUTION SYSTEM DESIGN (IRC M1601.1)

Design airflow:	1600	cfm	Longest supply duct:	0	ft	Duct Materials Used	
Equipment design ESP:	0	in H2O	Longest return duct:	0	ft	Trunk duct:	
Total device pressure losses:	0	in H2O	**Total effective length (TEL):**	0	ft		
Available static pressure (ASP):	0	in H2O	**Friction rate:** Friction Rate = ASP ÷ (TEL x 100)	0	in/100ft	Branch duct:	Round flex vinyl

I declare the load calculation, equipment, equipment selection and duct design were rigorously performed based on the building plan listed above. I understand the claims made on these forms will be subject to review and verification.

Contractor's printed name: _____

Contractor's signature: _____ Date: _____

Reserved for County, Town Municipality or Authority having jurisdiction 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

Air Conditioning Contractors of America

Header Information

Contractor: GOUVIS ENGINEERING

Mechanical license:

Building plan #: Borstein Residence

Home address (Street or Lot#, Block, Subdivision): , WINE AH

REQUIRED ATTACHMENTS	ATTACHED
Manual J1 Form (and supporting worksheets):	Yes ☐ No ☐
or MJ1AE Form* (and supporting worksheets):	Yes ☐ No ☐
OEM performance data (heating, cooling, blower):	Yes ☐ No ☐
Manual D Friction Rate Worksheet:	Yes ☐ No ☐
Duct distribution sketch:	Yes ☐ No ☐

HVAC LOAD CALCULATION (IRC M1401.3)

Design Conditions

Winter Design Conditions

Outdoor temperature:	46	°F
Indoor temperature:	68	°F
Total heat loss:	201	Btuh

Summer Design Conditions

Outdoor temperature:	80	°F
Indoor temperature:	75	°F
Grains difference:	-3 gr/lb @ 50% RH	
Sensible heat gain:	0	Btuh
Latent heat gain:	0	Btuh
Total heat gain:	0	Btuh

Building Construction Information

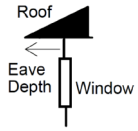
Building

Orientation: House Front faces North
North, East, West, South, Northeast, Northwest, Southeast, Southwest

Number of bedrooms:	0	
Conditioned floor area:	74	ft²
Number of occupants:	0	

Windows

Eave overhang depth:	0	ft
Internal shade: Blinds, drapes, etc.	none	
Number of skylights:	0	



HVAC EQUIPMENT SELECTION (IRC M1401.3)

Heating Equipment Data

Equipment type: Furnace, Heat pump, Boiler, etc.	Gas furnace	
Model:		
Heating output capacity: Heat pumps - capacity at winter design outdoor conditions	0	Btuh
Aux. heating output capacity:	0	Btuh

Cooling Equipment Data

Equipment type: Air Conditioner, Heat pump, etc.	Split AC	
Model:		
Total cooling capacity:	0	Btuh
Sensible cooling capacity:	0	Btuh
Latent cooling capacity:	0	Btuh

Blower Data

Heating cfm:	0	
Cooling cfm:	0	
Static pressure: Fan's rated external static pressure for design airflow	0	in H2O

HVAC DUCT DISTRIBUTION SYSTEM DESIGN (IRC M1601.1)

Design airflow:	0	cfm	Longest supply duct:	0	ft	Duct Materials Used	
Equipment design ESP:	0	in H2O	Longest return duct:	0	ft	Trunk duct:	
Total device pressure losses:	0	in H2O	**Total effective length (TEL):**	0	ft		
Available static pressure (ASP):	0	in H2O	**Friction rate:** Friction Rate = ASP ÷ (TEL x 100)	0	in/100ft	Branch duct:	Round flex vinyl

I declare the load calculation, equipment, equipment selection and duct design were rigorously performed based on the building plan listed above. I understand the claims made on these forms will be subject to review and verification.

Contractor's printed name: _____

Contractor's signature: _____ 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

Job: 65671
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 (ft)	Return (ft)
Measured length of run-out	0	0
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	0	< 0.06	0	< 0.06
Return Ducts	0	< 0.06	0	< 0.06

Fitting Equivalent Length Details

Supply TotalEL=0

Return TotalEL=0

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 (ft)	Return (ft)
Measured length of run-out	0	0
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	0	< 0.06	0	< 0.06
Return Ducts	0	< 0.06	0	< 0.06

Fitting Equivalent Length Details

Supply TotalEL=0

Return TotalEL=0

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 (ft)	Return (ft)
Measured length of run-out	0	0
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	0	< 0.06	0	< 0.06
Return Ducts	0	< 0.06	0	< 0.06

Fitting Equivalent Length Details

Supply TotalEL=0

Return TotalEL=0

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 (ft)	Return (ft)
Measured length of run-out	0	0
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	0	< 0.06	0	< 0.06
Return Ducts	0	< 0.06	0	< 0.06

Fitting Equivalent Length Details

Supply TotalEL=0

Return TotalEL=0

Duct System 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:

	Heating	Cooling
External static pressure	0 in H2O	0 in H2O
Pressure losses	0 in H2O	0 in H2O
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	Design (Btuh)	Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	H x W (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
BA. 6-A	h 230	69	25	0	0	0x 0	VlFx	0	0	
BILLIARDS-A	h 2050	240	225	0	0	0x 0	VlFx	0	0	
CRAFTS ROOM-A	h 1838	240	202	0	0	0x 0	VlFx	0	0	
ENTERTAINMENT-A	c 1517	52	166	0	0	0x 0	VlFx	0	0	
ENTERTAINMENT-B	c 1517	52	166	0	0	0x 0	VlFx	0	0	
ENTERTAINMENT-C	c 1517	52	166	0	0	0x 0	VlFx	0	0	
GYM-A	c 2050	155	225	0	0	0x 0	VlFx	0	0	
THEATER	h 1025	198	112	0	0	0x 0	VlFx	0	0	
THEATER-A	h 1025	198	112	0	0	0x 0	VlFx	0	0	
WET BAR-A	h 0	142	0	0	0	0x 0	VlFx	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
rb2	0x 0	1400	1400	0	0	0	0	0x 0		VlFx	

Duct System 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:

	Heating	Cooling
External static pressure	***0*** in H2O	***0*** in H2O
Pressure losses	0 in H2O	0 in H2O
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	Design (Btuh)	Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	H x W (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
BA. 5	c 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	
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	0	0	
GUEST ROOM	h 329	168	28	0	0	0x 0	VIFx	0	0	
OFFICE-A	c 2922	230	249	0	0	0x 0	VIFx	0	0	
PARLOR-A	c 3985	175	340	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
rb4	0x 0	2000	2000	0	0	0	0	0x 0		VIFx	

Bold/italic values have been manually overridden

Duct System 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:

	Heating	Cooling
External static pressure	0 in H2O	0 in H2O
Pressure losses	0 in H2O	0 in H2O
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	Design (Btuh)	Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	H x W (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
BA. 3	h 1419	74	67	0	0	0x 0	VlFx	0	0	
BA.4	h 1558	98	73	0	0	0x 0	VlFx	0	0	
BATH 2	h 1611	86	76	0	0	0x 0	VlFx	0	0	
BEDROOM 4-A	h 2376	134	112	0	0	0x 0	VlFx	0	0	
CONNOR	h 5336	274	251	0	0	0x 0	VlFx	0	0	
LAU.	c 2284	94	107	0	0	0x 0	VlFx	0	0	
MASTER BATH	c 3345	104	157	0	0	0x 0	VlFx	0	0	
MASTER BEDROOM	h 5022	281	236	0	0	0x 0	VlFx	0	0	
SAMANTHA-A	h 3189	174	150	0	0	0x 0	VlFx	0	0	
TEEN ROOM-A	c 7874	281	370	0	0	0x 0	VlFx	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
rb1	0x 0	1600	1600	0	0	0	0	0x 0		VlFx	

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

Project Information

For:

	Heating	Cooling
External static pressure	0 in H2O	0 in H2O
Pressure losses	0 in H2O	0 in H2O
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

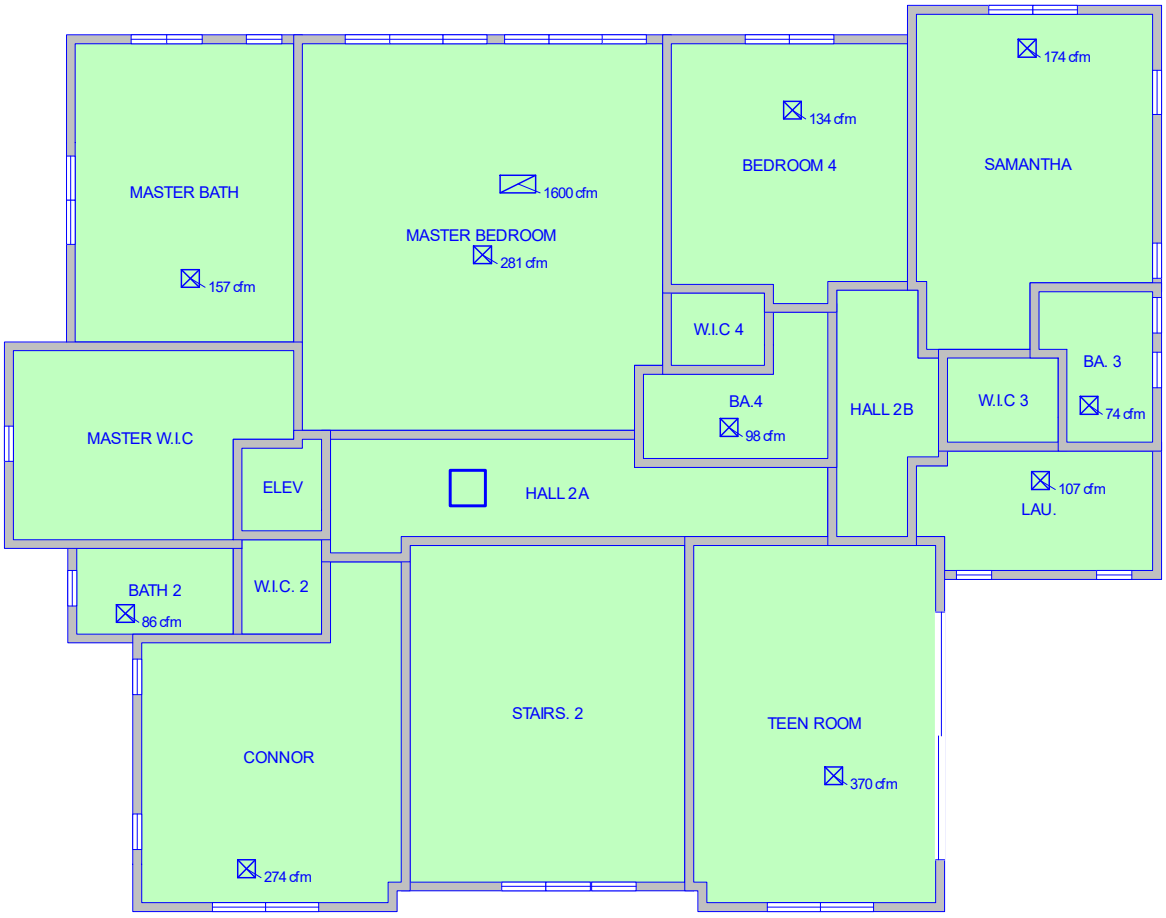
Name	Design (Btuh)	Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	H x W (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
WINE	c 0	0	0	0	0	0x 0	VlFx	0	0	

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		VlFx	

N

Upper Level



Job #: 65671
Performed for:

GOUVIS ENGINEERING

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Phone: 949.752.1612 Fax: 949.752.5321

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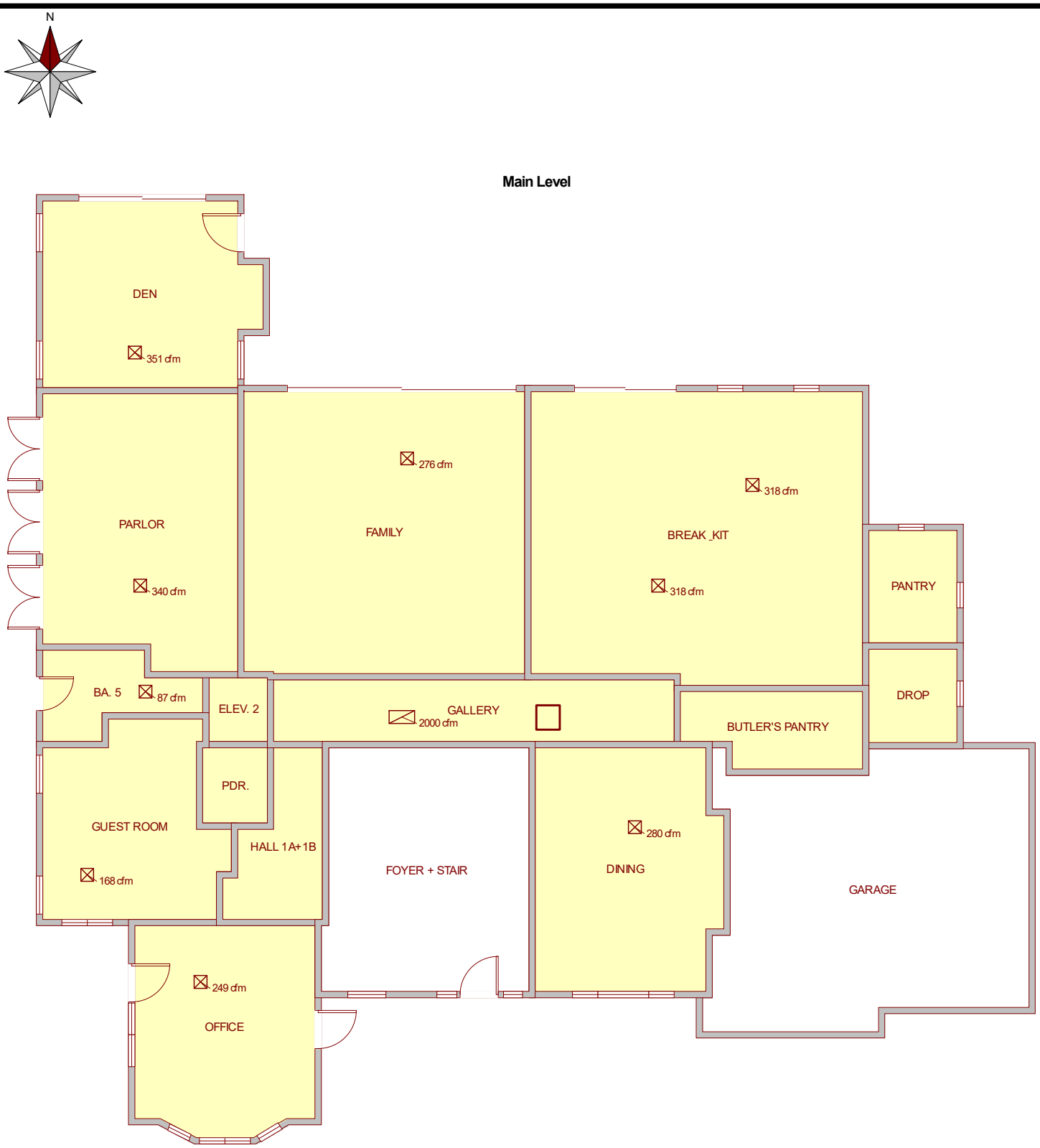

Job #: 65671
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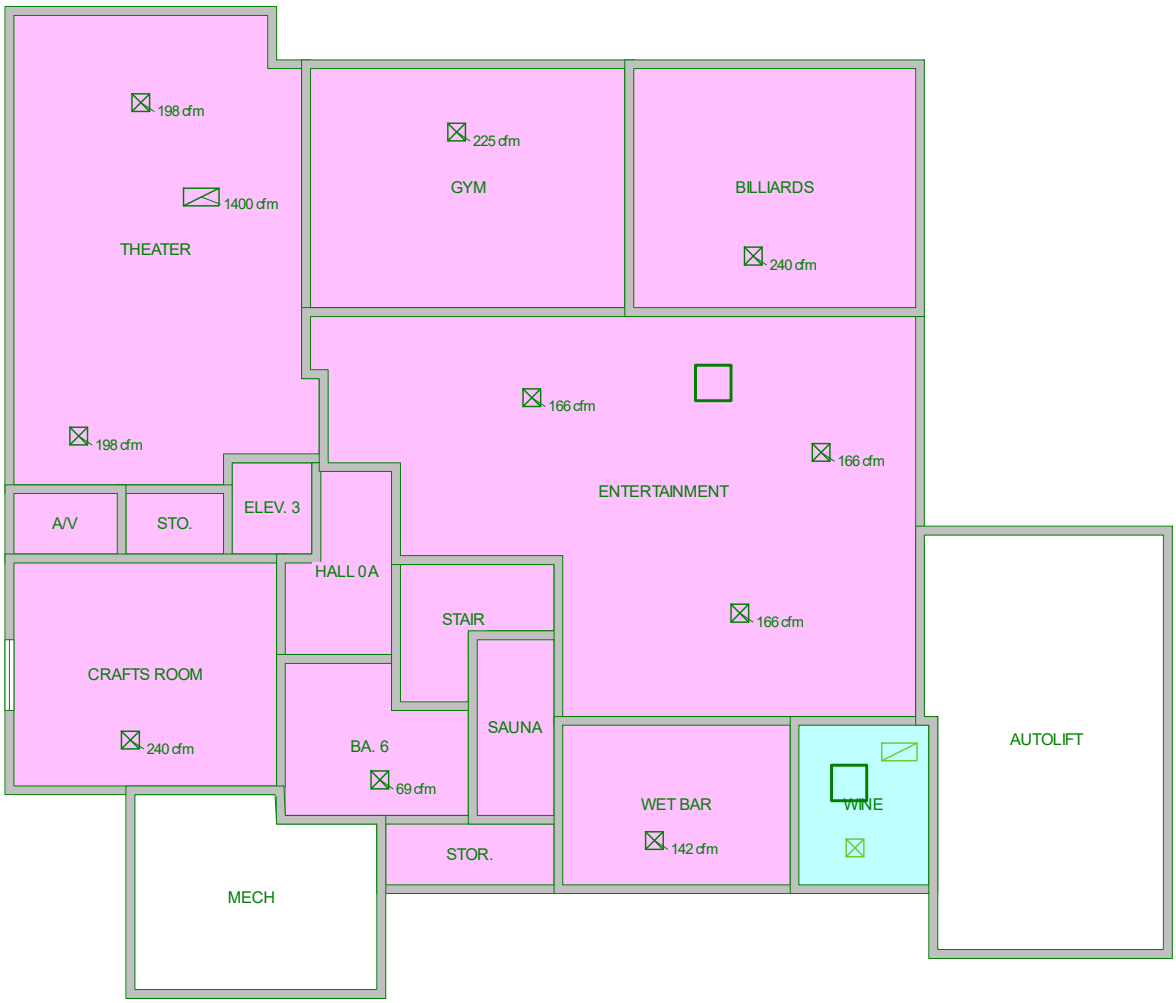

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