

SITE NAME: LAMBERT'S LANE PH.2

BUILDER: GREENPARK HOMES

TYPE: PRESTON 2 WOB

GFA: 2835

DATE: JUN-19

LO# 82666

WINTER NATURAL AIR CHANGE RATE 0.252

SUMMER NATURAL AIR CHANGE RATE 0.085

HEAT LOSS AT °F. 74

HEAT GAIN AT °F. 11

CSA-F280-12

ENERGYSTAR

ROOM USE	EXP. WALL	CLG. HT.	MDR	ENS	WIC	BED-2	BED-3	BED-4	BATH	ENS-2	LIBR
33	24	6	13	29	17	7					
8	8	8	8	8	8	8				10	10
										8	10
FACTORS											
GRS.WALL AREA	LOSS	GAIN	267	194	48	105	234	137	57	81	100
GLAZING	LOSS	GAIN								LOSS	GAIN
NORTH	18.6	15.1	0	0	0	8	148	121	0	0	0
EAST	18.6	40.7	0	0	0	0	0	0	0	0	0
SOUTH	18.6	24.1	0	0	0	0	0	0	0	0	0
WEST	18.6	40.7	32	594	1303	14	260	570	0	0	0
SKYL.T.	31.2	99.9	0	0	0	0	0	0	0	0	0
DOORS	24.7	3.7	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	3.5	0.5	235	825	122	172	605	90	48	171	25
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.5	0	0	0	0	0	0	89	313	46
EXPOSED CLG	1.3	0.8	272	341	152	144	180	80	72	90	40
NO ATTIC EXPOSED CLG	2.7	1.2	0	0	0	0	0	0	169	212	94
EXPOSED FLOOR	2.5	0.4	0	0	0	0	0	0	204	256	114
BASEMENT/CRAWL HEAT LOSS			0	0	0	0	0	0	240	301	134
SLAB ON GRADE HEAT LOSS			0	0	0	0	0	0	59	74	33
SUBTOTAL HT LOSS			1760		1193	261	822	2839	1145	464	283
SUB TOTAL HT GAIN			1677	861	65	383	1517	770	283	590	562
LEVEL FACTOR / MULTIPLIER	0.20	0.25		0.20	0.25	0.20	0.25	0.20	0.25	0.20	0.25
AIR CHANGE HEAT LOSS			443		300	66	207	513	288	149	224
AIR CHANGE HEAT GAIN			91	49	4	22	87	44	12	17	22
DUCT LOSS			0	0	0	0	255	0	0	0	0
DUCT GAIN			0	0	0	0	231	0	0	0	0
HEAT GAIN PEOPLE	240		2	480	0	0	1	240	1	240	0
HEAT GAIN APPLIANCES/LIGHTS			461	0	0	0	461	461	461	461	461
TOTAL HT LOSS BTU/H			2203		1494	326	1029	2808	1433	581	739
TOTAL HT GAIN x 1.3 BTU/H			3391		1184	90	1438	3297	1971	279	1124

ROOM USE			LIV			DIN			KIT			FAM			LAUN			WVR			FOY			MUD			BAS
EXP. WALL			11			12			24			35			42			12			34			23			135
CLG. HT.			10			10			10			10			8			10			10			10			9
FACTORS																											
GRS.WALL AREA	LOSS	GAIN	110			120			340			350			339			120			340			230			810
GLAZING	LOSS	GAIN																									
NORTH	18.6	15.1	20	371	303	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
EAST	18.6	40.7	0	0	0	0	0	0	0	0	0	0	0	30	557	1222	0	0	0	0	0	0	0	0	0	0	
SOUTH	18.6	24.1	0	0	0	20	371	481	0	0	0	0	0	0	0	0	8	148	193	0	0	0	0	0	0	0	
WEST	18.6	40.7	0	0	0	0	0	0	56	1039	2280	24	631	1384	0	0	0	0	0	0	0	0	0	0	0	0	
SKYL.T.	31.2	99.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
DOORS	24.7	3.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NET EXPOSED WALL	3.5	0.5	90	316	47	100	352	52	284	999	148	316	1111	165	309	1088	161	112	394	58	294	1034	153	210	738	109	
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	0	0	0	0	0	185	232	103	0	0	0	0	0	0	0	0	0	0	
NO ATTIC EXPOSED CLG	2.7	1.2	0	0	0	0	0	0	0	0	0	10	27	12	36	96	43	0	0	0	0	0	0	0	0	0	
EXPOSED FLOOR	2.5	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
BASEMENT/CRAWL HEAT LOSS			0			0			0			0			0			0			0			0		0	
SLAB ON GRADE HEAT LOSS			0			0			0			0			0			0			0			0		0	
SUBTOTAL HT LOSS			687			723			2038			1769			1973			542			2168			1232			
SUB TOTAL HT GAIN				350			533			2428			1561			1529			251			321			183		
LEVEL FACTOR / MULTIPLIER	0.30	0.40				0.30	0.40		0.30	0.40		0.30	0.40		0.20	0.25		0.30	0.40		0.30	0.40		0.30	0.40		
AIR CHANGE HEAT LOSS			274			288			811			704			497			216			863			490			
AIR CHANGE HEAT GAIN				20			31			140			90			88			14			18			10		
DUCT LOSS			0			0			0			0			0			0			0			0			
DUCT GAIN				0			0			0			0			0			0			0		0			
HEAT GAIN PEOPLE	240		0			0			0			0			0			0			0		0		0		
HEAT GAIN APPLIANCES/LIGHTS				461			461			461			461			461			0			0		0		0	
TOTAL HT LOSS BTU/H			961			1010			2849			2473			2470			758			3031			1722			
TOTAL HT GAIN x 1.3 BTU/H				1080			1333			3938			2746			2701			345			442			851		

RECEIVED

JUL 16 2019

TOWN OF CALEDON
BUILDING SECTION
FILE NO

75	1391	1136	9	167	136
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0

TOTAL HEAT GAIN BTU/H: 30401

TONS: 2.53

LOSS DUE TO VENTILATION LOAD BTU/H: 1693

STRUCTURAL HEAT LOSS: 40569

TOTAL COMBINED HEAT LOSS BTU/H: 42162

I REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

Michael O'Rourke

INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

SITE NAME: LAMBERT'S LANE PH.2
BUILDER: GREENPARK HOMES

TYPE: PRESTON 2 WOB

DATE: Jun-19

GFA: 2835 LO# 82666

HEATING CFM 1131 COOLING CFM 1131
TOTAL HEAT LOSS 40,569 TOTAL HEAT GAIN 30,165
AIR FLOW RATE CFM 27.88 AIR FLOW RATE CFM 37.49

furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure for s/a & r/a 0.35

#GOODMAN
GMEC960603BNA 60
FAN SPEED LOW
MEDLOW
MEDIUM
MEDIUM HIGH
HIGH 1131

AFUE = 96 %
INPUT (BTU/H) = 60,000
OUTPUT (BTU/H) = 57,600
DESIGN CFM = 1131
CFM @ .5" E.S.P.

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	11	10	4
R/A	0	0	4	3	1

All S/A diffusers 4"x10" unless noted otherwise on layout.
All S/A runs 5'Ø unless noted otherwise on layout.

RUN #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	BED-3	MBR	ENS-2	LJV	DIN	KIT	KIT	FAM	LAUN	W/R	FOY	MUD	BAS	BAS	BAS	BAS	
RM LOSS MBH	1.10	1.49	0.33	1.03	1.40	1.43	0.58	1.40	1.10	0.74	0.96	1.01	1.42	1.42	1.24	2.47	0.76	3.03	1.72	3.47	3.47	3.47	3.47	
CFM PER RUN HEAT	31	42	9	29	39	40	16	39	31	21	27	28	40	40	34	69	21	85	48	97	97	97	97	
RM GAIN MBH	1.70	1.18	0.09	1.44	1.65	1.97	0.28	1.65	1.70	1.01	1.08	1.33	1.97	1.97	1.37	2.70	0.34	0.44	0.85	0.74	0.74	0.74	0.74	
CFM PER RUN COOLING	64	44	3	54	62	74	10	62	64	38	41	50	74	74	51	101	13	17	32	28	28	28	28	
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.16	0.17	0.16	0.16	0.16	0.16	
ACTUAL DUCT LGH	52	59	38	46	55	46	46	64	45	49	34	27	39	29	34	51	60	53	31	49	44	25	54	
EQUIVALENT LENGTH	150	160	160	210	190	190	190	190	190	190	210	190	170	140	190	190	190	190	170	160	220	220	210	
TOTAL EFFECTIVE LENGTH	202	219	198	256	245	236	236	254	235	239	244	217	209	169	224	241	250	243	201	209	264	245	264	
ADJUSTED PRESSURE	0.09	0.08	0.09	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.1	0.08	0.07	0.07	0.07	0.09	0.08	0.06	0.07	0.06	
ROUND DUCT SIZE	5	5	4	5	6	6	4	6	5	4	5	5	5	5	5	6	4	6	5	6	6	6	6	
HEATING VELOCITY (ft/min)	228	308	103	213	199	204	184	199	228	241	198	206	294	294	250	352	241	433	352	495	495	495	495	
COOLING VELOCITY (ft/min)	470	323	34	396	316	377	115	316	470	436	301	367	543	543	374	515	149	87	235	143	143	143	143	
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	4X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	4X10	3X10	4X10	4X10	4X10	4X10	
TRUNK	D	C	D	B	B	B	B	B	C	D	B	B	C	C	C	A	A	A	B	D	C	B	A	

RUN #	26	27
ROOM NAME	FAM	LIBR
RM LOSS MBH	1.24	0.79
CFM PER RUN HEAT	34	22
RM GAIN MBH	1.37	1.12
CFM PER RUN COOLING	51	42
ADJUSTED PRESSURE	0.17	0.17
ACTUAL DUCT LGH	44	39
EQUIVALENT LENGTH	160	190
TOTAL EFFECTIVE LENGTH	204	229
ADJUSTED PRESSURE	0.08	0.08
ROUND DUCT SIZE	5	4
HEATING VELOCITY (ft/min)	250	252
COOLING VELOCITY (ft/min)	374	482
OUTLET GRILL SIZE	3X10	3X10
TRUNK	C	B

SUPPLY AIR TRUNK SIZE	TRUNK	STATIC	ROUND	RECT	VELOCITY	TRUNK	STATIC	ROUND	RECT	VELOCITY
	CFM	PRESS.	DUCT	DUCT	(ft/min)	CFM	PRESS.	DUCT	DUCT	(ft/min)
TRUNK A	272	0.06	9.3	10	8	490	0	0.00	0	0
TRUNK B	657	0.06	12.9	20	8	591	0	0.00	0	0
TRUNK C	318	0.06	9.8	14	8	409	0	0.00	0	0
TRUNK D	476	0.06	11.4	16	8	536	0	0.00	0	0
TRUNK E	1133	0.06	15.8	28	8	728	0	0.00	0	0
TRUNK F	0	0.00	0	0	8	0	0.00	0	0	0

RETURN AIR #	1	2	3	4	5	6	7											BR	TRUNK V	0	0.05	0	0	x	8	0
AIR VOLUME	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	TRUNK W	0	0.05	0	0	x	8	0		
PLENUM PRESSURE	155	155	85	85	135	145	185	0	0	0	0	0	0	0	0	0	TRUNK X	1131	0.05	16.5	32	x	8	636		
ACTUAL DUCT LGH.	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	TRUNK Y	450	0.06	11.7	16	x	8	506		
EQUIVALENT LENGTH	45	42	66	69	60	39	39	1	1	1	1	1	1	1	1	14	TRUNK Z	0	0.05	0	0	x	8	0		
TOTAL EFFECTIVE LH	180	175	185	185	265	145	145	0	0	0	0	0	0	0	0	175	DROP	1131	0.05	16.5	24	x	10	679		
ADJUSTED PRESSURE	225	217	251	254	325	184	184	1	1	1	1	1	1	1	1	189										
ROUND DUCT SIZE	0.07	0.07	0.06	0.06	0.05	0.08	0.08	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.08										
INLET GRILL SIZE	7.2	7.2	6	6	7.5	6.8	7.5	0	0	0	0	0	0	0	0	7.5										
INLET GRILL SIZE	8	8	8	8	8	8	8	0	0	0	0	0	0	0	0	8										
INLET GRILL SIZE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X										
INLET GRILL SIZE	14	14	14	14	14	14	14	0	0	0	0	0	0	0	0	14										

TYPE: PRESTON 2 WOB
 SITE NAME: LAMBERT'S LANE PH.2

LO # 82686

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

COMBUSTION APPLIANCES		9.32.3.1(1)
a) ☒	Direct vent (sealed combustion) only	
b) ☐	Positive venting induced draft (except fireplaces)	
c) ☐	Natural draft, B-vent or induced draft gas fireplace	
d) ☐	Solid Fuel (including fireplaces)	
e) ☐	No Combustion Appliances	

HEATING SYSTEM	
☒	Forced Air
☐	Non Forced Air
☐	Electric Space Heat

HOUSE TYPE		9.32.1(2)
☒	I Type a) or b) appliance only, no solid fuel	
☐	II Type I except with solid fuel (including fireplaces)	
☐	III Any Type c) appliance	
☐	IV Type I, or II with electric space heat	
☐	Other: Type I, II or IV no forced air	

SYSTEM DESIGN OPTIONS		O.N.H.W.P.
☐	1 Exhaust only/Forced Air System	
☐	2 HRV with Ducting/Forced Air System	
☒	3 HRV Simplified/connected to forced air system	
☐	4 HRV with Ducting/non forced air system	
☐	Part 6 Design	

TOTAL VENTILATION CAPACITY		9.32.3.3(1)
Basement + Master Bedroom	2 @ 21.2 cfm	42.4 cfm
Other Bedrooms	3 @ 10.6 cfm	31.8 cfm
Kitchen & Bathrooms	4 @ 10.6 cfm	42.4 cfm
Other Rooms	8 @ 10.6 cfm	84.8 cfm
Table 9.32.3.A.	TOTAL	201.4 cfm

PRINCIPAL VENTILATION CAPACITY REQUIRED		9.32.3.4.(1)
1 Bedroom	31.8 cfm	
2 Bedroom	47.7 cfm	
3 Bedroom	63.6 cfm	
4 Bedroom	79.5 cfm	
5 Bedroom	95.4 cfm	
TOTAL	79.5 cfm	

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.6.
Total Ventilation Capacity	201.4	cfm
Less Principal Ventil. Capacity	79.5	cfm
Required Supplemental Capacity	121.9	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANE 65H	Location: BSMT
79.5 cfm	3.0 sones
☒ HVI Approved	

PRINCIPAL EXHAUST HEAT LOSS CALCULATION				
CFM	ΔT °F	FACTOR	% LOSS	
79.5 CFM	74 F	1.08	0.25	

SUPPLEMENTAL FANS		PANASONIC		
Location	Model	cfm	HVI	Sones
ENS	FV-05-11VK1	50	☒	0.3
BATH	FV-05-11VK1	50	☒	0.3
W/R	FV-05-11VK1	50	☒	0.3

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANE 65H		
155 cfm high	64 cfm low	
75 % Sensible Efficiency @ 32 deg F (0 deg C)	☒ HVI Approved	

LOCATION OF INSTALLATION	
Lot:	Concession
Township:	Plan:
Address:	
Roll #	Building Permit #

BUILDER: GREENPARK HOMES	
Name:	
Address:	
City:	
Telephone #:	Fax #:

INSTALLING CONTRACTOR	
Name:	
Address:	
City:	
Telephone #:	Fax #:

DESIGNER CERTIFICATION	
I hereby certify that this ventilation system has been designed in accordance with the Ontario Building Code.	
Name:	HVAC Designs Ltd.
Signature:	<i>Michael O'Rourke</i>
HRAI #	001820
Date:	June-19

 I REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.
 INDIVIDUAL BCIN: 19569 *Michael O'Rourke* MICHAEL O'ROURKE

CSA F280-12 Residential Heat Loss and Heat Gain Calculations
Formula Sheet (For Air Leakage / Ventilation Calculation)

LO#: 82666

Model: PRESTON 2 WOB

Builder: GREENPARK HOMES

Date: 07/06/2019

Volume Calculation
House Volume

Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)
Bsmt	1300	9	11700
First	1300	10	13000
Second	1535	8	12407.405
Third	0	9	0
Fourth	0	9	0
Total:			37,107.4 ft³
Total:			1050.8 m³

Air Change & Delta T Data

WINTER NATURAL AIR CHANGE RATE	0.262
SUMMER NATURAL AIR CHANGE RATE	0.085

Design Temperature Difference				
	T _{in} °C	T _{out} °C	ΔT °C	ΔT °F
Winter DTD _h	22	-19	41	74
Summer DTD _c	24	30	6	11

5.2.3.1 Heat Loss due to Air Leakage

$$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$$

$$0.262 \times 291.88 \times 41^\circ\text{C} \times 1.2 = 3781 \text{ W}$$

$$= 12900 \text{ Btu/h}$$

6.2.6 Sensible Gain due to Air Leakage

$$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$$

$$0.085 \times 291.88 \times 6^\circ\text{C} \times 1.2 = 182 \text{ W}$$

$$= 621 \text{ Btu/h}$$

5.2.3.2 Heat Loss due to Mechanical Ventilation

$$HL_{valrb} = PVC \times DTD_h \times 1.08 \times (1 - E)$$

$$80 \text{ CFM} \times 74^\circ\text{F} \times 1.08 \times 0.25 = 1593 \text{ Btu/h}$$

6.2.7 Sensible heat Gain due to Ventilation

$$HL_{valrb} = PVC \times DTD_h \times 1.08 \times (1 - E)$$

$$80 \text{ CFM} \times 11^\circ\text{F} \times 1.08 \times 0.25 = 236 \text{ Btu/h}$$

5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)

$$HL_{airr} = \text{Level Factor} \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agcleve} + HL_{bgcleve})\}$$

Level	Level Factor (LF)	HL _{airbv} Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{cleve})	Air Leakage Heat Loss Multiplier (LF x HL _{airbv} / HL _{cleve})
1	0.5	12,900	7,447	0.866
2	0.3		9,720	0.398
3	0.2		10,247	0.252
4	0		0	0.000
5	0		0	0.000

*HL_{airbv} = Air leakage heat loss + ventilation heat loss

*For a balanced or supply only ventilation system HL_{airve} = 0

HEAT LOSS AND GAIN SUMMARY SHEET**MODEL:** PRESTON 2 WOB**BUILDER:** GREENPARK HOMES**SFQT:** 2835**LO#** 82666**SITE:** LAMBERT'S LANE PH.2**DESIGN ASSUMPTIONS**

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-2	OUTDOOR DESIGN TEMP.	86
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	75

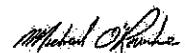
BUILDING DATA

ATTACHMENT:	DETACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	2.50	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	TIGHT	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft³):	37107.4	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.45	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 57.0 ft	WIDTH: 31.0 ft	EXPOSED PERIMETER:	135.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	41.0 ft

2012 OBC - COMPLIANCE PACKAGE Component	Compliance Package ENERGYSTAR	
	Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.20
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.70
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	R22+R5	21.10
Basement Walls Minimum RSI (R)-Value	20	21.12
Below Grade Slab Entire surface > 600 mm below grade Minimum RSI (R)-Value	-	-
Edge of Below Grade Slab ≤ 600 mm Below Grade Minimum RSI (R)-Value	10	10
Heated Slab or Slab ≤ 600 mm below grade Minimum RSI (R)-Value	10	11.13
Windows and Sliding Glass Doors Maximum U-Value	ZONE 2	-
Skylights Maximum U-Value	ZONE 2	-
Space Heating Equipment Minimum AFUE	0.96	-
HRV Minimum Efficiency	75%	-
Domestic Hot Water Heater Minimum EF	0.9	-

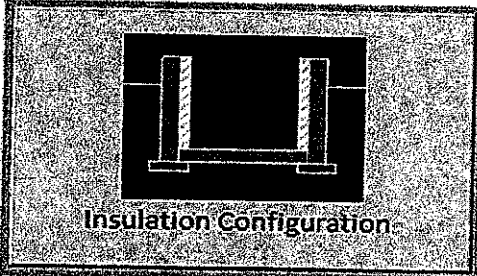
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

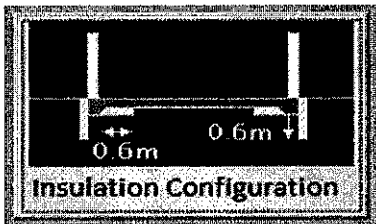
Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Brampton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	4.6	 Insulation Configuration
Floor Width (m):	9.4	
Exposed Perimeter (m):	41.1	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.53	
Window Area (m ²):	0.8	
Door Area (m ²):	1.9	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):	702	

TYPE: PRESTON 2 WOB
LO# 82666

Residential Slab on Grade Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Brampton	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Length (m):	1.5	 Insulation Configuration
Width (m):	9.4	
Exposed Perimeter (m):	12.5	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		159

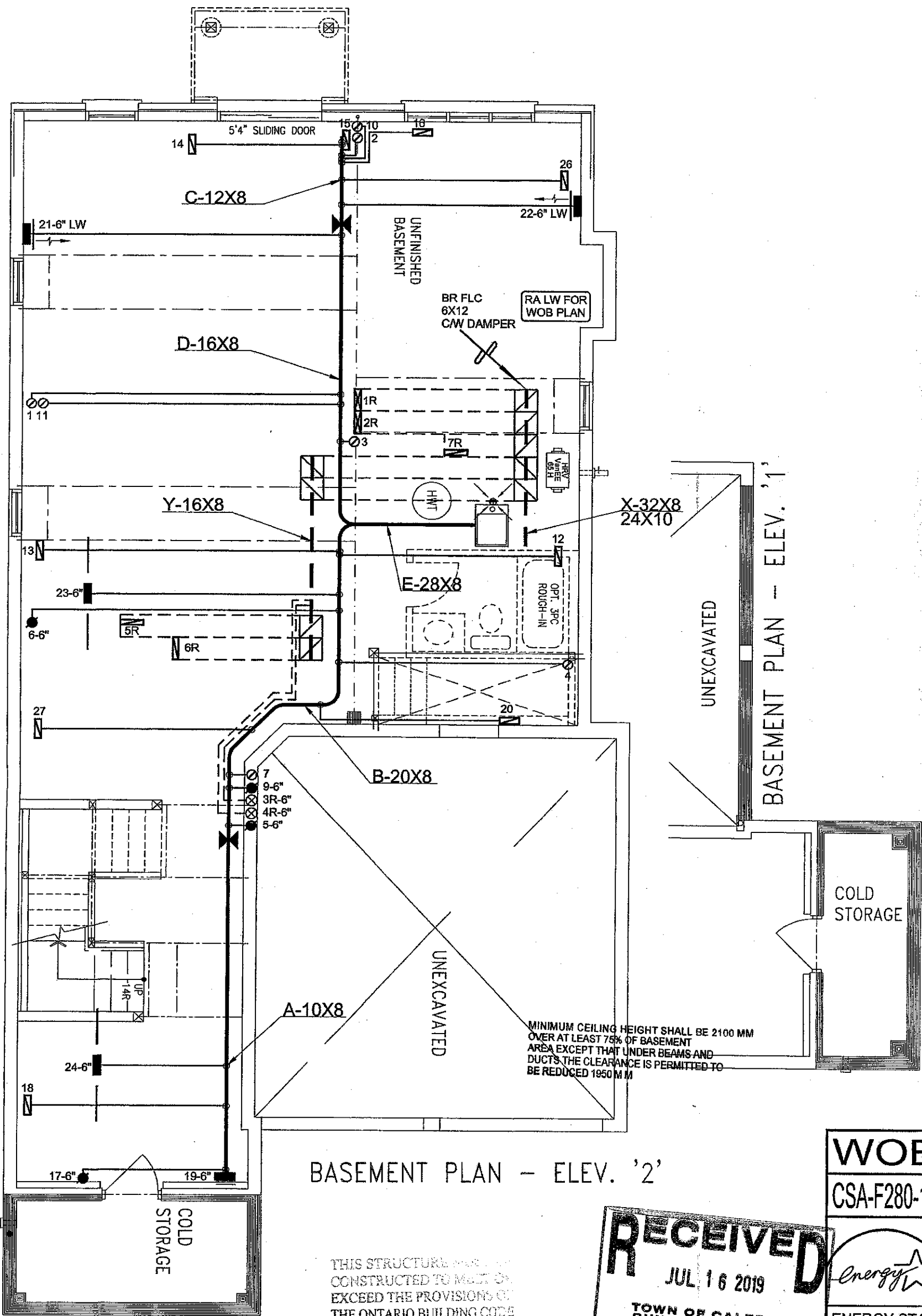
TYPE: PRESTON 2 WOB
LO# 82666

Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

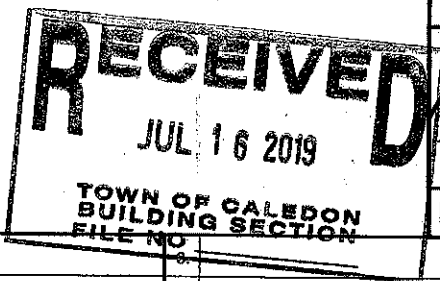
Weather Station Description				
Province:	Ontario			
Region:	Brampton			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	8.25			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1050.8			
Air Leakage/Ventilation				
Air Tightness Type:	Energy Star Detached (2.5 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	980.9 cm ²		
	2.50	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	37.5	37.5		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.262			
Cooling Air Leakage Rate (ACH/H):	0.085			

TYPE: PRESTON 2 WOB
LO# 82666



BASEMENT PLAN - ELEV. '2'

THIS STRUCTURE WAS CONSTRUCTED TO MEET OR EXCEED THE PROVISIONS OF THE ONTARIO BUILDING CODE



WOB
CSA-F280-12
ENERGY STAR

HVAC LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA - FLOOR RETURN AIR GRILLE		REDUCER

REVISIONS

ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.© AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.

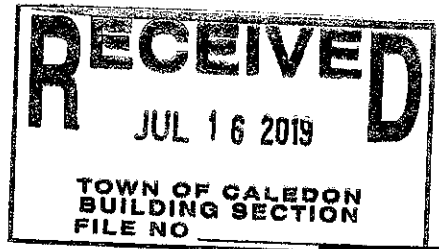
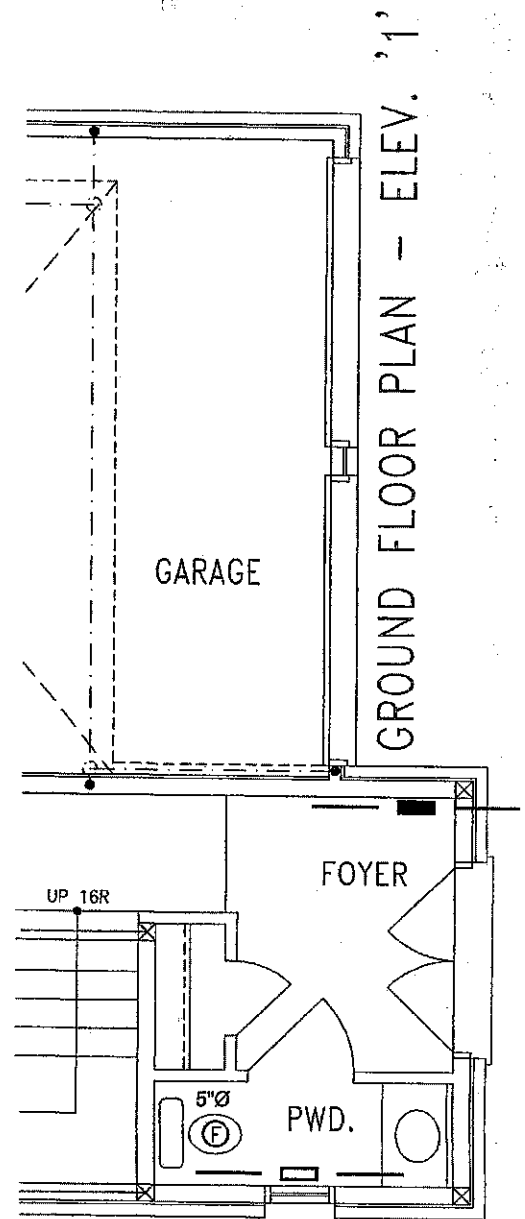
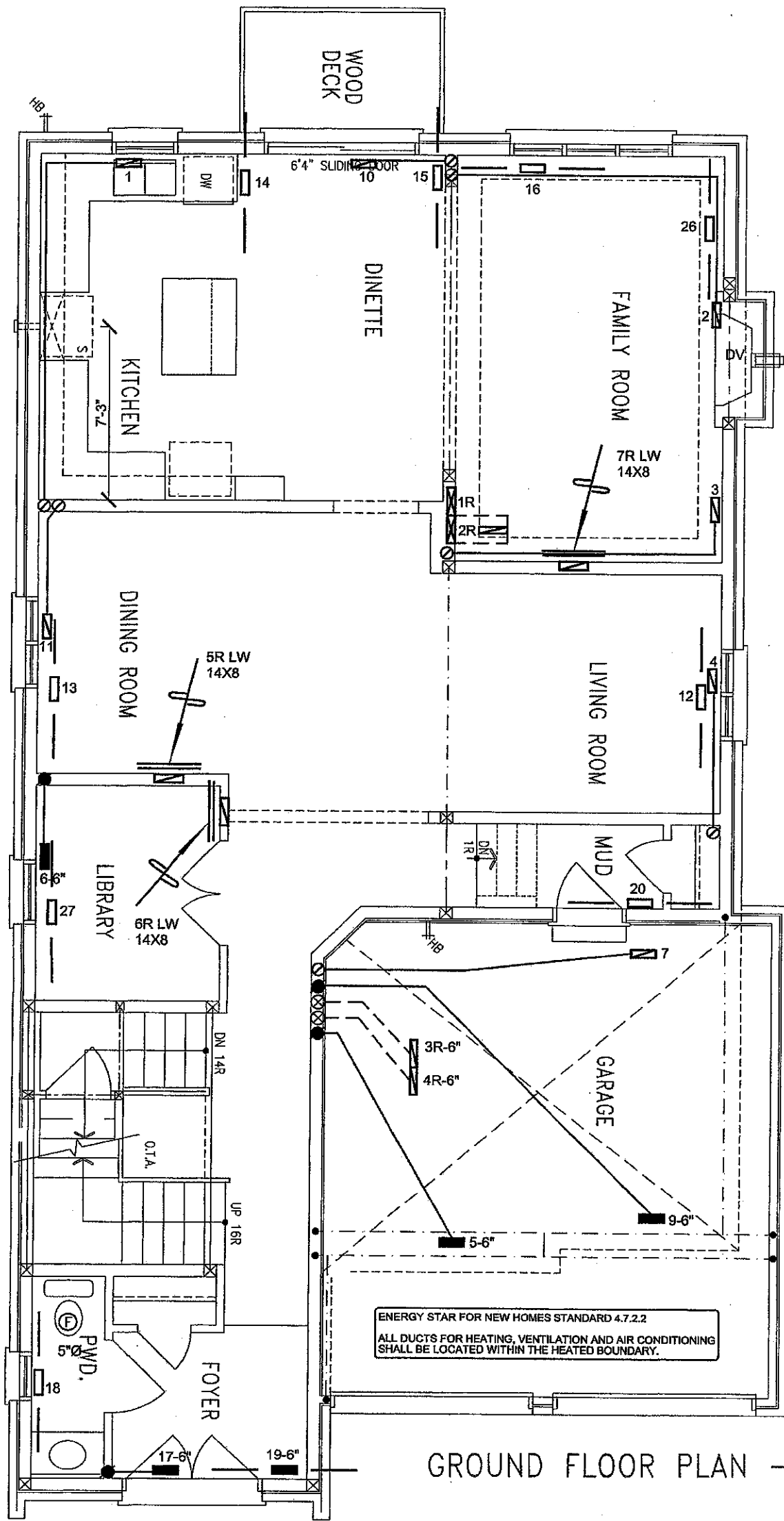
Client
GREENPARK HOMES
Project Name
LAMBERTS LANE HOME CORP PH 2
CALEDON, ONTARIO

HVACDESIGNS LTD.
375 Finley Ave. Suite 202 - Ajax, Ontario
L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
Email: info@hvacdesigns.ca
Web: www.hvacdesigns.ca
Specializing in Residential Mechanical Design Services

Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.

HEAT LOSS 42162 BTU/H	UNIT DATA	# OF RUNS	S/A	R/A	FANS	Sheet Title
MAKE	GOODMAN	3RD FLOOR				BASEMENT HEATING LAYOUT
MODEL	GMEC980603BNA-60	2ND FLOOR	11	4	3	
INPUT	60 MBTU/H	1ST FLOOR	10	3	2	
OUTPUT	57.6 MBTU/H	BASEMENT	4	1	0	
COOLING	2.5 TONS	ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5/8" UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A				Date
FAN SPEED	1131 cfm @ 0.6" w.c.					Scale
						BCIN# 19669
						LO# 82666

PRESTON 2 WOB 2835 sqft



GROUND FLOOR PLAN - ELEV. '2'

WOB
CSA-F280-12

ENERGY STAR

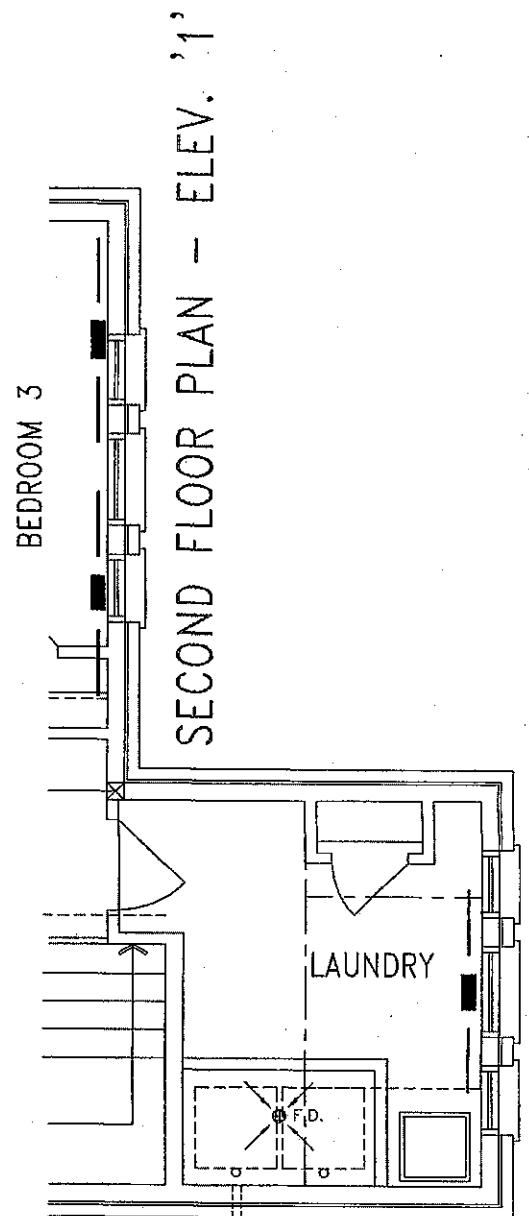
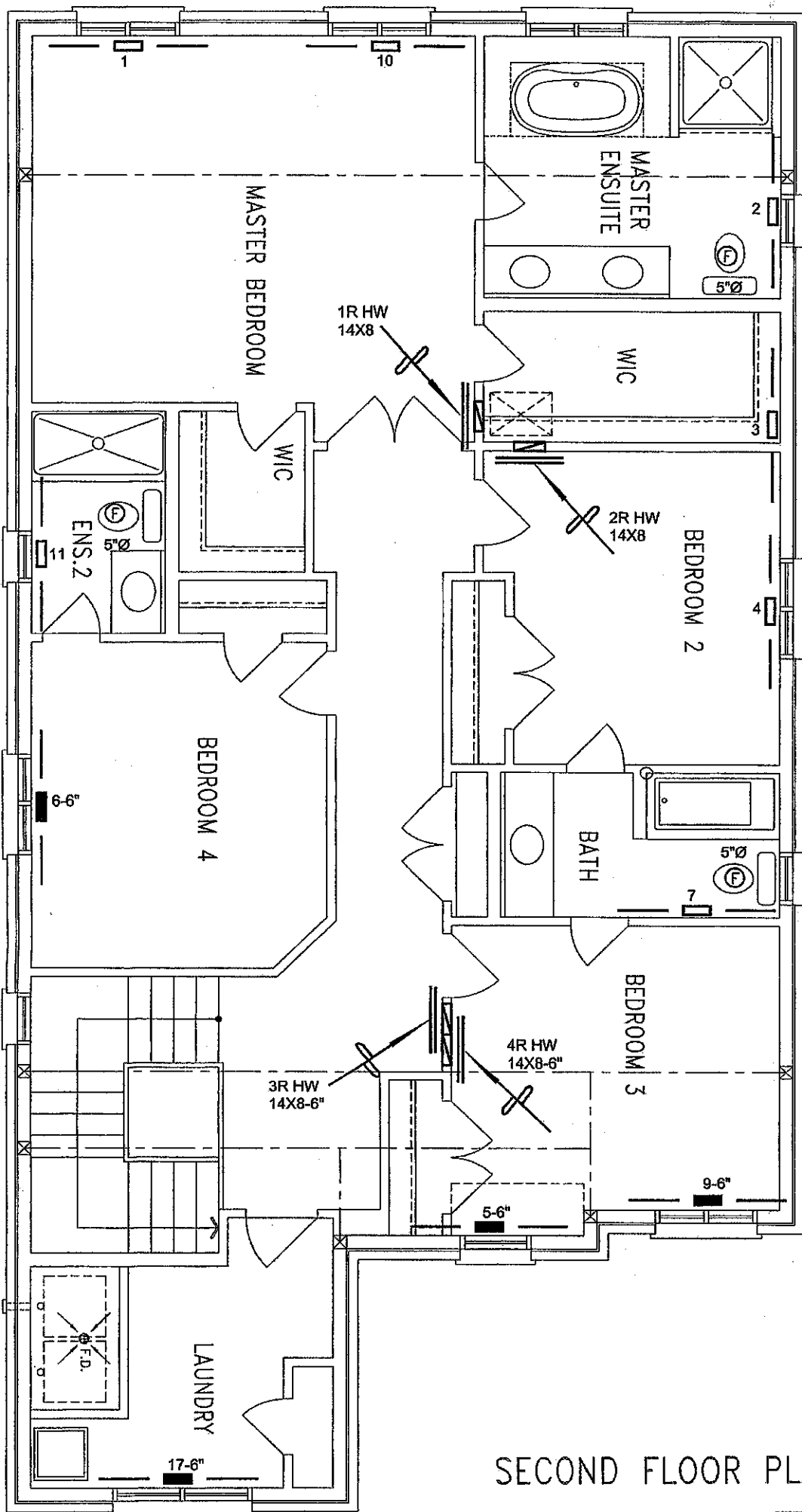
I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

DUCTS LOCATED IN UNCONDITIONED SPACES SHALL BE SEALED TO A CLASS A SEAL LEVEL IN ACCORDANCE WITH THE SMACNA MANUAL

HVAC LEGEND								3.	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA - FLOOR RETURN AIR GRILLE		REDUCER	Date	

ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.© AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.

Client GREENPARK HOMES Project Name LAMBERTS LANE HOME CORP PH 2 CALEDON, ONTARIO PRESTON 2 WOB 2835 sqft	 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdsgns.ca Web: www.hvacdsgns.ca Specializing in Residential Mechanical Design Services Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.	THIS STRUCTURE MUST BE CONSTRUCTED TO MEET OR EXCEED THE PROVISIONS OF THE ONTARIO BUILDING CODE	Sheet Title FIRST FLOOR HEATING LAYOUT Date JUNE/2019 Scale 3/16" = 1'-0" BCIN# 19669 LO# 82666
---	--	---	--



SECOND FLOOR PLAN - ELEV. '2'

RECEIVED
JUL 16 2019
TOWN OF CALEDON
BUILDING SECTION
FILE NO

WOB
CSA-F280-12

ENERGY STAR

I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.3 OF THE BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

HVAC LEGEND								REVISIONS	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	No.	Description
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	2.	
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	3.	

ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD. AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.

Client GREENPARK HOMES Project Name LAMBERTS LANE HOME CORP PH 2 CALEDON, ONTARIO PRESTON 2 WOB 2835 sqft	 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.	THIS STRUCTURE MUST BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM.	Sheet Title SECOND FLOOR HEATING LAYOUT Date JUNE/2019 Scale 3/16" = 1'-0" BCIN# 19669 LO# 82666
--	--	--	---