

NOT THE GRANTING OF A PERMIT NOR REVIEWING OF SPECS
& DRAWINGS NOR INSPECTIONS MADE DURING INSTALLATION
BY THE OFFICIAL HAVING JURISDICTION SHALL RELIEVE THE
OWNER FROM REQUIREMENTS OF THE ONTARIO BUILDING
CODE AND ANY OTHER REFERENCED REQUIREMENTS.

Garden 3 - Elevation 2

SITE NAME: BARLASSINA

OPT 4 BED

DATE: Jan-23

WINTER NATURAL AIR CHANGE RATE 0.352

HEAT LOSS ΔT °F. 72

CSA-F280-12

BUILDER: GREENPARK HOMES

TYPE: GARDEN 3 - WOB

GFA: 2415

LO# 99996

SUMMER NATURAL AIR CHANGE RATE 0.096

HEAT GAIN ΔT °F. 9

SB-12 PACKAGE A1

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	LOSS	GAIN	MBR	ENS	BED-2	BED-3	BED-4	BATH				
						46	23	33	34	13	12				
						9	9	9	9	9	9				
GRS.WALL AREA	LOSS	GAIN				414	207	297	306	117	108				
GLAZING	LOSS	GAIN				LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN		
NORTH	20.3	14.4	0	0	0	0	0	0	0	0	0	0	0	0	0
EAST	20.3	38.7	0	0	0	0	0	33	669	1278	30	608	1162	0	0
SOUTH	20.3	22.9	0	0	0	0	0	0	0	0	16	324	366	14	284
WEST	20.3	38.7	20	405	775	14	284	0	0	0	0	0	0	0	0
SKYLT.	35.5	99.8	0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	19.1	2.4	0	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.3	0.5	394	1675	213	193	821	264	1122	143	276	1173	149	101	429
NET EXPOSED BSMT WALL ABOVE GR	3.4	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.2	0.5	303	370	160	182	223	213	260	112	194	237	102	167	204
NO ATTIC EXPOSED CLG	2.6	1.1	0	0	0	0	0	15	39	17	15	39	17	0	0
EXPOSED FLOOR	2.4	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS			0			0		0			0			0	
SLAB ON GRADE HEAT LOSS			0			0		0			0			0	
SUBTOTAL HT LOSS			2451			1327		2091			2566			1043	
SUB TOTAL HT GAIN				1147		742			1550		1495			519	
LEVEL FACTOR / MULTIPLIER	0.20	0.27				0.20	0.27	0.20	0.27		0.20	0.27		0.20	0.27
AIR CHANGE HEAT LOSS			659			357		562			690			280	
AIR CHANGE HEAT GAIN				64		41		86			83			29	
DUCT LOSS			0			0		0			132			0	
DUCT GAIN				0		0		0			231			128	
HEAT GAIN PEOPLE	240		2			480	0	1			240	1		240	0
HEAT GAIN APPLIANCES/LIGHTS						494	0				494			494	0
TOTAL HT LOSS BTU/H			3110			1683		2653			3581			1456	
TOTAL HT GAIN x 1.3 BTU/H				2841		1019			3082		3307			1834	

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	LOSS	GAIN	LIV/DIN	K/F/B	LAUN	W/R	FOY	MUD				
						32	77	6	6	33	22				
						10	10	9	10	11	11				
GRS.WALL AREA	LOSS	GAIN				320	770	54	60	363	242				
GLAZING	LOSS	GAIN				LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN		
NORTH	20.3	14.4	0	0	0	0	0	0	0	0	0	0	0	0	0
EAST	20.3	38.7	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	20.3	22.9	28	568	641	28	568	7	142	160	7	142	160	0	0
WEST	20.3	38.7	0	0	0	26	527	0	0	0	0	0	0	0	0
SKYLT.	35.5	99.8	0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	19.1	2.4	0	0	0	55	1051	0	0	0	33	630	80	21	401
NET EXPOSED WALL	4.3	0.5	292	1241	158	661	2810	47	200	25	53	225	29	315	1339
NET EXPOSED BSMT WALL ABOVE GR	3.4	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.2	0.5	0	0	0	0	0	48	59	25	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.6	1.1	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.4	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS			0			0		0			0			0	
SLAB ON GRADE HEAT LOSS			0			0		0			0			0	
SUBTOTAL HT LOSS						1809		400			367			2274	
SUB TOTAL HT GAIN				798		2138			211		189			831	
LEVEL FACTOR / MULTIPLIER	0.30	0.40				0.30	0.40	0.20	0.27		0.30	0.40		0.30	0.40
AIR CHANGE HEAT LOSS			727			1991		108			148			914	
AIR CHANGE HEAT GAIN				44		119		12			10			46	
DUCT LOSS			0			0		0			0			0	
DUCT GAIN				0		0		0			0			0	
HEAT GAIN PEOPLE	240		0			0	0	0			0	0		0	0
HEAT GAIN APPLIANCES/LIGHTS						494	494				494			494	0
TOTAL HT LOSS BTU/H						2536		508			515			3187	
TOTAL HT GAIN x 1.3 BTU/H						1738		3577			932			259	

TOTAL HEAT GAIN BTU/H:

25215

TONS: 2.10

LOSS DUE TO VENTILATION LOAD BTU/H: 1554

STRUCTURAL HEAT LOSS: 42693

TOTAL COMBINED HEAT LOSS BTU/H: 44247



SITE NAME: BARLASSINA
BUILDER: GREENPARK HOMES

OPT 4 BED
TYPE: GARDEN 3 - WOB

DATE: Jan-23

GFA: 2415 LO# 99996

HEATING CFM 928 COOLING CFM 928
TOTAL HEAT LOSS 42,693 TOTAL HEAT GAIN 25,018
AIR FLOW RATE CFM 21.74 AIR FLOW RATE CFM 37.09

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 928
MEDIUM HIGH 1017
HIGH 1131

AFUE = 96 %
INPUT (BTU/H) = 60,000
OUTPUT (BTU/H) = **57,600**

DESIGN CFM = **928**
CFM @ .6" E.S.P.

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	11	7	4
R/A	0	0	5	1	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	4	5	6	7	8	9	10	11	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	BED-2	BED-3	BED-4	BATH	BED-2	BED-3	MBR	BATH	LIV/DIN	K/F/B	K/F/B	K/F/B	LAUN	W/R	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.55	1.68	1.33	1.79	1.46	0.53	1.33	1.79	1.55	0.53	2.54	2.32	2.32	2.32	0.51	0.51	3.19	1.88	3.40	3.40	3.40	3.40
CFM PER RUN HEAT	34	37	29	39	32	11	29	39	34	11	55	50	50	50	11	11	69	41	74	74	74	74
RM GAIN MBH.	1.42	1.02	1.54	1.65	1.83	0.30	1.54	1.65	1.42	0.30	1.74	1.19	1.19	1.19	0.93	0.26	1.14	0.88	0.95	0.95	0.95	0.95
CFM PER RUN COOLING	53	38	57	61	68	11	57	61	53	11	64	44	44	44	35	10	42	33	35	35	35	35
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	0.17	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	30	53	64	70	40	35	70	77	41	63	29	38	27	31	57	48	63	51	40	28	33	47
EQUIVALENT LENGTH	140	160	150	160	140	200	140	170	170	170	150	120	170	110	180	160	130	140	110	130	130	170
TOTAL EFFECTIVE LENGTH	170	213	214	230	180	235	210	247	211	233	179	158	197	141	237	208	193	191	150	158	163	217
ADJUSTED PRESSURE	0.1	0.08	0.08	0.07	0.1	0.07	0.08	0.07	0.08	0.07	0.1	0.11	0.09	0.12	0.07	0.08	0.09	0.09	0.11	0.11	0.11	0.08
ROUND DUCT SIZE	5	4	5	5	6	4	5	5	5	4	5	4	5	5	5	4	5	4	5	5	5	5
HEATING VELOCITY (ft/min)	250	424	213	286	163	126	213	286	250	126	404	574	367	367	81	126	507	470	543	543	543	543
COOLING VELOCITY (ft/min)	389	436	419	448	347	126	419	448	389	126	470	505	323	323	257	115	308	379	257	257	257	257
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	D	C	A	A	C	B	A	A	D	B	B	C	D	C	B	A	A	B	C	D	B	A

RUN #	
ROOM NAME	
RM LOSS MBH.	
CFM PER RUN HEAT	
RM GAIN MBH.	
CFM PER RUN COOLING	
ADJUSTED PRESSURE	
ACTUAL DUCT LGH.	
EQUIVALENT LENGTH	
TOTAL EFFECTIVE LENGTH	
ADJUSTED PRESSURE	
ROUND DUCT SIZE	
HEATING VELOCITY (ft/min)	
COOLING VELOCITY (ft/min)	
OUTLET GRILL SIZE	
TRUNK	

SUPPLY AIR TRUNK SIZE													RETURN AIR TRUNK SIZE													
		TRUNK	STATIC	ROUND	RECT						TRUNK	STATIC	ROUND	RECT						TRUNK	STATIC	ROUND	RECT			
		CFM	PRESS.	DUCT	DUCT	(ft/min)					CFM	PRESS.	DUCT	DUCT	(ft/min)					CFM	PRESS.	DUCT	DUCT	(ft/min)		
TRUNK A	290	0.07	9.1	10	x	8	522	TRUNK G	0	0.00	0	0	x	8	0	TRUNK O	0	0.05	0	0	x	8	0			
TRUNK B	493	0.07	11.1	14	x	8	634	TRUNK H	0	0.00	0	0	x	8	0	TRUNK P	0	0.05	0	0	x	8	0			
TRUNK C	243	0.08	8.3	8	x	8	547	TRUNK I	0	0.00	0	0	x	8	0	TRUNK Q	0	0.05	0	0	x	8	0			
TRUNK D	435	0.08	10.3	12	x	8	653	TRUNK J	0	0.00	0	0	x	8	0	TRUNK R	0	0.05	0	0	x	8	0			
TRUNK E	0	0.00	0	0	x	8	0	TRUNK K	0	0.00	0	0	x	8	0	TRUNK S	0	0.05	0	0	x	8	0			
TRUNK F	0	0.00	0	0	x	8	0	TRUNK L	0	0.00	0	0	x	8	0	TRUNK T	0	0.05	0	0	x	8	0			

RETURN AIR #	1	2	3	4	5	6	0	0	0	0	0	0	0	0	0	BR
AIR VOLUME	105	85	85	95	330	80	0	0	0	0	0	0	0	0	0	148
PLENUM PRESSURE	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
ACTUAL DUCT LGH.	39	73	74	63	49	83	1	1	1	1	1	1	1	1	1	16
EQUIVALENT LENGTH	155	225	230	200	200	215	0	0	0	0	0	0	0	0	0	175
TOTAL EFFECTIVE LH	194	298	304	263	249	298	1	1	1	1	1	1	1	1	1	191
ADJUSTED PRESSURE	0.08	0.05	0.05	0.06	0.06	0.05	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.08
ROUND DUCT SIZE	6	6.3	6.3	6.2	9.9	6.1	0	0	0	0	0	0	0	0	0	6.9
INLET GRILL SIZE	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	8
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	30	14	0	0	0	0	0	0	0	0	0	14

TYPE: GARDEN 3 - WOB
SITE NAME: BARLASSINA

LO # 99996
OPT 4 BED

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	<u>2</u> @ 21.2 cfm	<u>42.4</u> cfm
Other Bedrooms	<u>3</u> @ 10.6 cfm	<u>31.8</u> cfm
Kitchen & Bathrooms	<u>4</u> @ 10.6 cfm	<u>42.4</u> cfm
Other Rooms	<u>5</u> @ 10.6 cfm	<u>53.0</u> cfm
Table 9.32.3.A.	TOTAL	<u>169.6</u> 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		<u>79.5</u> cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>169.6</u>	cfm
Less Principal Ventil. Capacity	<u>79.5</u>	cfm
Required Supplemental Capacity	<u>90.1</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANEE V150H	Location: BSMT
<u>79.5</u> cfm	☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION			
CFM	ΔT °F	FACTOR	% LOSS
79.5 CFM	X 72 F	X 1.08	X 0.25

SUPPLEMENTAL FANS		BY INSTALLING CONTRACTOR		
Location	Model	cfm	HVI	Sones
ENS	BY INSTALLING CONTRACTOR	50	☒	3.5
BATH	BY INSTALLING CONTRACTOR	50	☒	3.5
W/R	BY INSTALLING CONTRACTOR	50	☒	3.5

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANEE V150H		
<u>150</u> cfm high	<u>35</u> cfm low	
<u>75</u> % Sensible Efficiency	☒ HVI Approved	
@ 32 deg F (0 deg C)		

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:	January-23

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																												
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																												
LO#: 99996	Model: GARDEN 3 - WOB	Builder: GREENPARK HOMES	Date: 1/18/2023																																																									
Volume Calculation			Air Change & Delta T Data																																																									
House Volume <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Level</th> <th>Floor Area (ft²)</th> <th>Floor Height (ft)</th> <th>Volume (ft³)</th> </tr> </thead> <tbody> <tr> <td>Bsmt</td> <td>1088</td> <td>8</td> <td>8704</td> </tr> <tr> <td>First</td> <td>1088</td> <td>10</td> <td>10880</td> </tr> <tr> <td>Second</td> <td>1327</td> <td>9</td> <td>11943</td> </tr> <tr> <td>Third</td> <td>0</td> <td>9</td> <td>0</td> </tr> <tr> <td>Fourth</td> <td>0</td> <td>9</td> <td>0</td> </tr> <tr> <td colspan="3" style="text-align: right;">Total:</td> <td>31,527.0 ft³</td> </tr> <tr> <td colspan="3" style="text-align: right;">Total:</td> <td>892.7 m³</td> </tr> </tbody> </table>			Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	1088	8	8704	First	1088	10	10880	Second	1327	9	11943	Third	0	9	0	Fourth	0	9	0	Total:			31,527.0 ft³	Total:			892.7 m³	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%;">WINTER NATURAL AIR CHANGE RATE</td> <td style="width: 30%;">0.352</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td>0.096</td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="5" style="text-align: center;">Design Temperature Difference</th> </tr> <tr> <th></th> <th>Tin °C</th> <th>Tout °C</th> <th>ΔT °C</th> <th>ΔT °F</th> </tr> </thead> <tbody> <tr> <td>Winter DTDh</td> <td>22</td> <td>-18</td> <td>40</td> <td>72</td> </tr> <tr> <td>Summer DTDc</td> <td>24</td> <td>29</td> <td>5</td> <td>9</td> </tr> </tbody> </table>		WINTER NATURAL AIR CHANGE RATE	0.352	SUMMER NATURAL AIR CHANGE RATE	0.096	Design Temperature Difference						Tin °C	Tout °C	ΔT °C	ΔT °F	Winter DTDh	22	-18	40	72	Summer DTDc	24	29	5	9
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5.2.3.1 Heat Loss due to Air Leakage			6.2.6 Sensible Gain due to Air Leakage																																																									
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.352 x 247.98 x 40 °C x 1.2 = 4218 W = 14392 Btu/h			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.096 x 247.98 x 5 °C x 1.2 = 147 W = 500 Btu/h																																																									
5.2.3.2 Heat Loss due to Mechanical Ventilation			6.2.7 Sensible heat Gain due to Ventilation																																																									
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 80 CFM x 72 °F x 1.08 x 0.25 = 1554 Btu/h			$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 80 CFM x 9 °F x 1.08 x 0.25 = 197 Btu/h																																																									
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																												
$HL_{airr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$																																																												
Level	Level Factor (LF)	HLairve Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{clevel})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)																																																								
1	0.5	14,392	6,388	1.126																																																								
2	0.3		10,746	0.402																																																								
3	0.2		10,709	0.269																																																								
4	0		0	0.000																																																								
5	0		0	0.000																																																								
*HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairve = 0																																																												
				Michael O'Rourke BCIN# 19669 																																																								

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL:	GARDEN 3 - WOB	OPT 4 BED	BUILDER:	GREENPARK HOMES
SFQT:	2415	LO#	99996	SITE: BARLASSINA

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	0	OUTDOOR DESIGN TEMP.	84
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	75
		WINDOW SHGC	0.50

BUILDING DATA

ATTACHMENT:	DETACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	3.57	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	AVERAGE	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft³):	31527.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	5.0 ft
LENGTH: 57.0 ft	WIDTH: 24.0 ft	EXPOSED PERIMETER:	128.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	34.0 ft

2012 OBC - COMPLIANCE PACKAGE		Compliance Package A1	
Component		Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value		60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value		31	27.65
Exposed Floor Minimum RSI (R)-Value		31	29.80
Walls Above Grade Minimum RSI (R)-Value		22	17.03
Basement Walls Minimum RSI (R)-Value		20 ci	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		0.28	-
Skylights Maximum U-Value		0.49	-
Space Heating Equipment Minimum AFUE		96%	-
HRV/ERV Minimum Efficiency		75%	-
Domestic Hot Water Heater Minimum EF		0.8	-

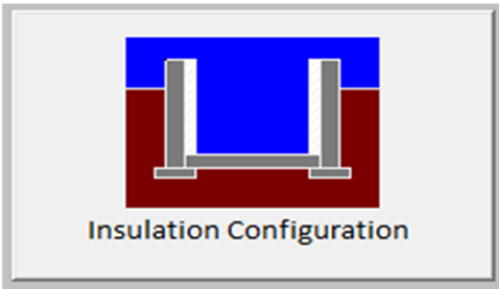
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Cambridge	
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):	7.3	
Exposed Perimeter (m):	39.0	
Wall Height (m):	2.4	
Depth Below Grade (m):	1.24	
Window Area (m ²):	0.9	
Door Area (m ²):	2.0	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		567

TYPE: GARDEN 3 - WOB
LO# 99996

OPT 4 BED



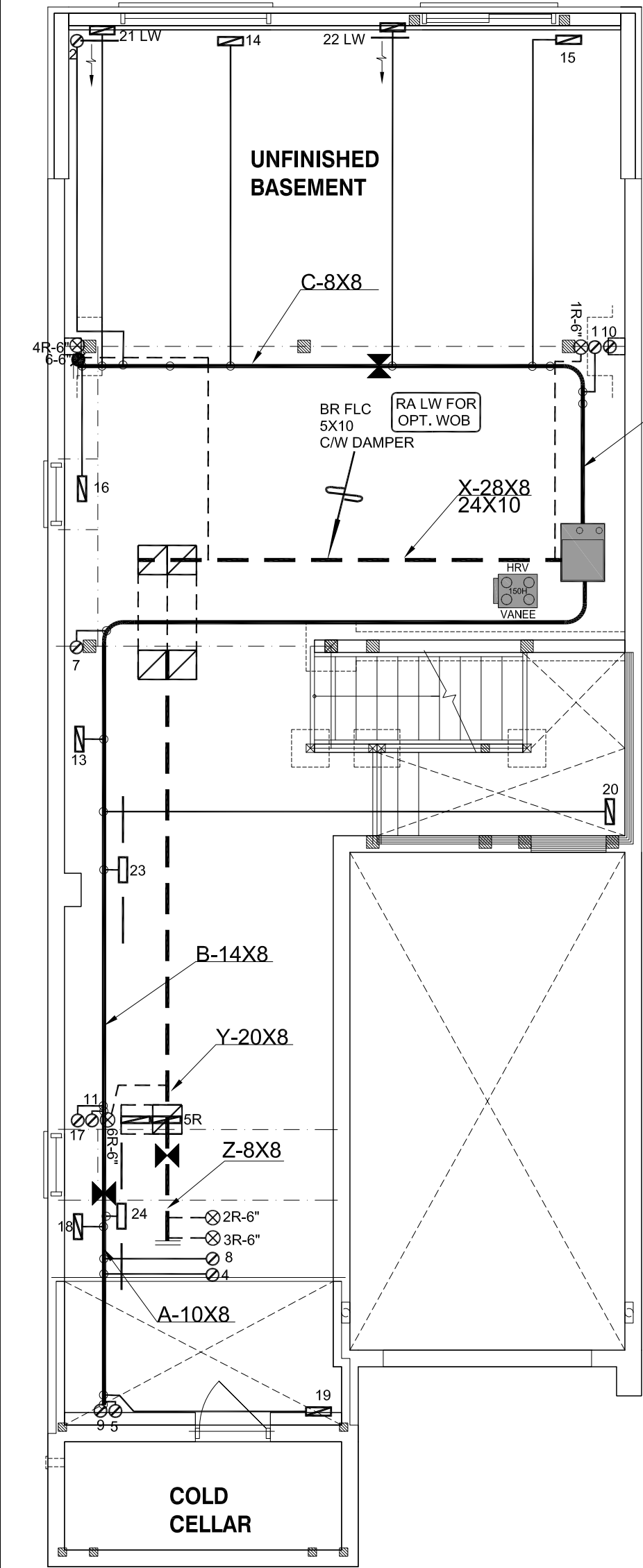
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

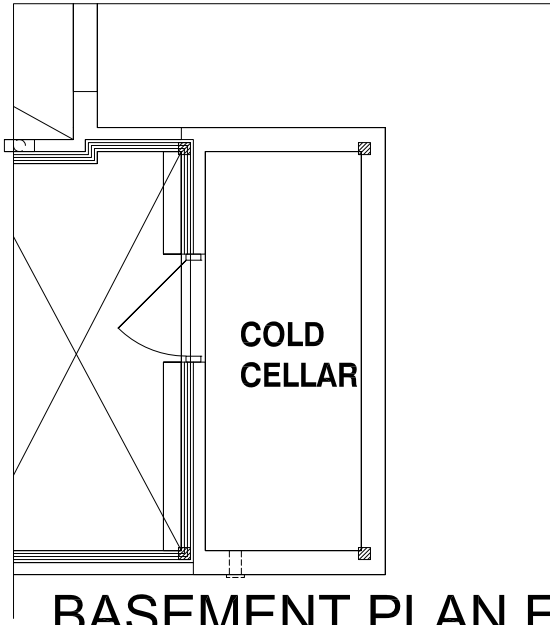
Weather Station Description				
Province:	Ontario			
Region:	Cambridge			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	8.23			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	892.7			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1190.1 cm ²		
	3.57	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):	0.352			
Cooling Air Leakage Rate (ACH/H):	0.096			

TYPE: GARDEN 3 - WOB
LO# 99996

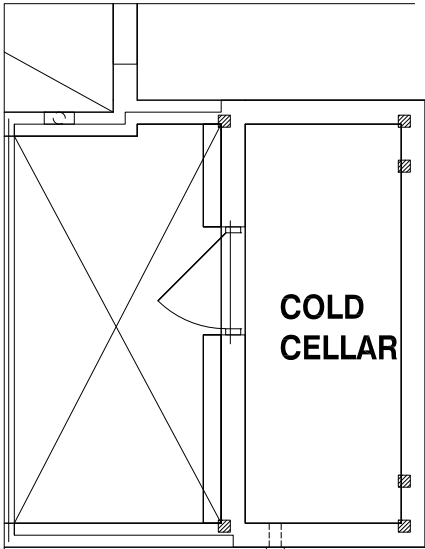
OPT 4 BED



BASEMENT PLAN EL-1 WOB



BASEMENT PLAN EL-2



BASEMENT PLAN EL-3

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.

CSA-F280-12

WOB

PACKAGE A1

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 Date
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS	

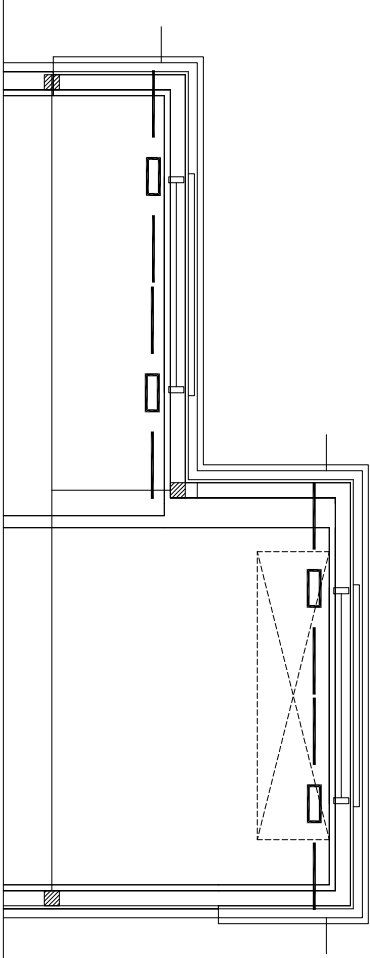
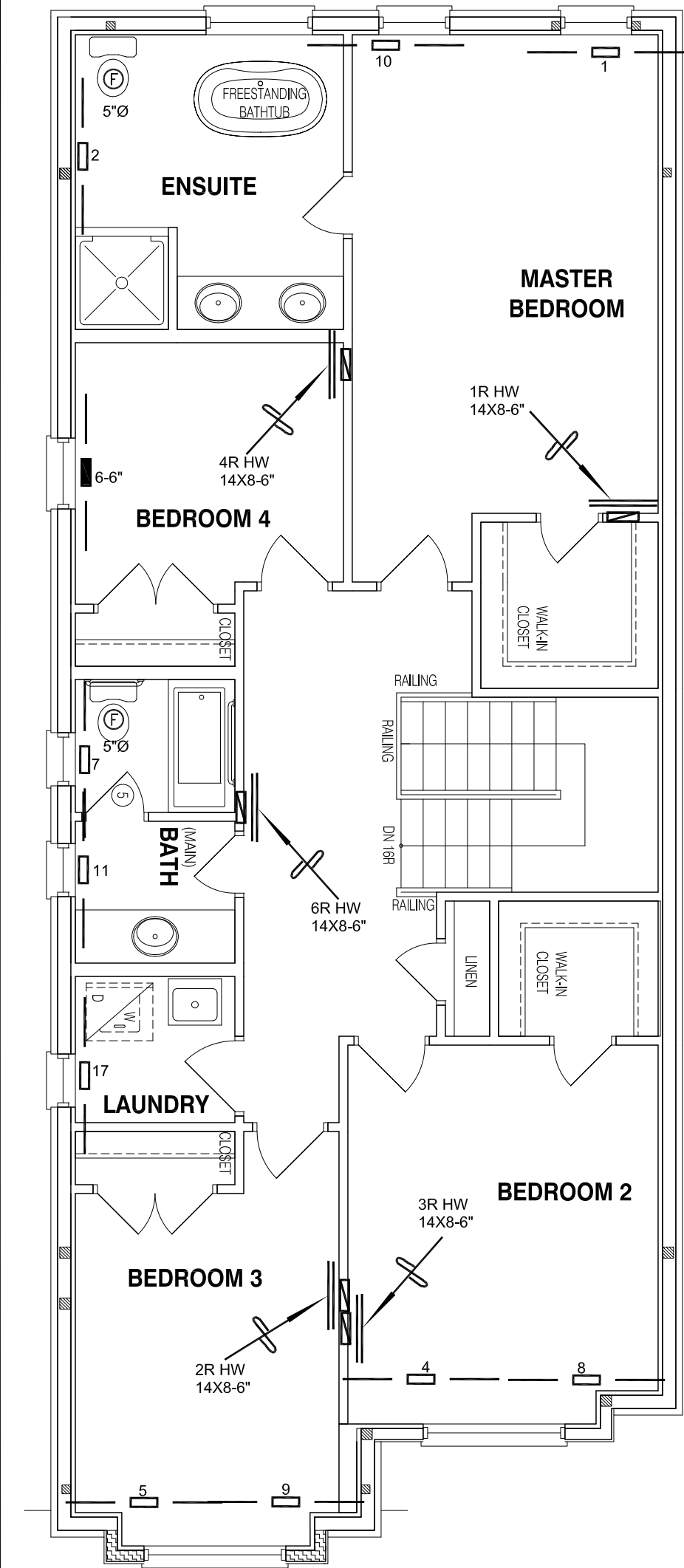
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Client	 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services	HEAT LOSS 44247 BTU/H UNIT DATA		# OF RUNS			S/A	R/A	FANS	Sheet Title		
GREENPARK HOMES		MAKE GOODMAN	3RD FLOOR							BASEMENT HEATING LAYOUT		
Project Name		MODEL GMEC960603BNA	2ND FLOOR		11	5	3					
BARLASSINA CAMBRIDGE, ONTARIO		INPUT 60 MBTU/H	1ST FLOOR		7	1	2			Date JAN/2023		
Garden 3 - Elevation 2		OUTPUT 57.6 MBTU/H	BASEMENT		4	1	0			Scale 3/16" = 1'-0"		
OPT 4 BED		COOLING 2.0 TONS			ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5"Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A						BCIN# 19669	
GARDEN 3 WOB 2415 sqft		FAN SPEED 928 cfm @ 0.6" w.c.									LO#	99996

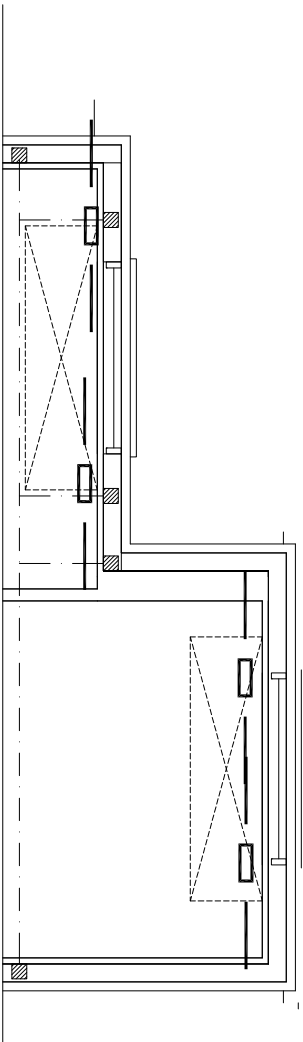


LO#	99996
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SECOND FLOOR PLAN EL-2



SECOND FLOOR PLAN EL-3

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.

CSA-F280-12

WOB

PACKAGE A1

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	Date
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS		

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GREENPARK HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name		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.	Date	JAN/2023
BARLASSINA CAMBRIDGE, ONTARIO			Scale	3/16" = 1'-0"
Garden 3 - Elevation 2			BCIN# 19669	
OPT 4 BED			LO#	99996
GARDEN 3 WOB 2415 sqft				