

SITE NAME: SECONDO
BUILDER: GREENPARK HOMES
DATE: Nov-17
LO# 76857
TYPE: HOLLAND 3A
GFA: 1822
WINTER NATURAL AIR CHANGE RATE 0.286
SUMMER NATURAL AIR CHANGE RATE 0.086
HEAT LOSS AT °F. 81
HEAT GAIN AT °F. 14
CSA-F280-12
ENERGY STAR

ROOM USE	EXP. WALL	CLG. HT.	MBR	ENS	TYPE: HOLLAND 3A	GFA: 1822	LO# 76857	DATE: Nov-17	WINTER NATURAL AIR CHANGE RATE 0.286	SUMMER NATURAL AIR CHANGE RATE 0.086	HEAT LOSS AT °F. 81	HEAT GAIN AT °F. 14	CSA-F280-12	ENERGY STAR
GRS WALL AREA	16	9	144	63	108	12	11							
GLAZING	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN							
NORTH	20.4	15.9	0	0	0	0	0							
EAST	20.4	41.5	0	0	0	0	0							
SOUTH	20.4	24.8	0	0	0	0	0							
WEST	20.4	41.5	30	11	224	456	1124							
SKYLT.	34.2	101.2	0	0	0	0	0							
DOORS	27.0	4.7	0	0	0	0	0							
NET EXPOSED WALL	5.4	0.9	114	614	106	52	280	48						
NET EXPOSED BMT WALL ABOVE GR	3.9	0.7	0	0	0	0	0	0						
EXPOSED CLG	1.6	0.7	310	498	220	112	180	79						
NO ATTIC EXPOSED CLG	4.0	1.8	0	0	0	0	0	0						
EXPOSED FLOOR	3.3	0.6	0	0	0	0	0	0						
BASEMENT CRAWL HEAT LOSS														
SLAB ON GRADE HEAT LOSS														
SUBTOTAL HT LOSS	1722	1570		684		1239	1132	1194						
SUB TOTAL HT GAIN	0.20	0.42		0.20	0.42		0.20	0.42						
LEVEL FACTOR / MULTIPLIER	721	189		286		136	519	500						
AIR CHANGE HEAT LOSS														
AIR CHANGE HEAT GAIN														
DUCT LOSS														
DUCT GAIN														
HEAT GAIN PEOPLE	240													
HEAT GAIN APPLIANCES/LIGHTS														
TOTAL HT LOSS BTUH	2443	914		970		1933	914	1694						
TOTAL HT GAIN x 1.3 BTUH	4098			850		3463	914	1694						

ROOM USE	EXP. WALL	CLG. HT.	LVIDN	KTIFM	FOY	BAS	LOSS	GAIN
GRS WALL AREA	17	10	170	260	60	306	LOSS	GAIN
GLAZING	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS GAIN	LOSS	GAIN
NORTH	0	0	0	0	0	0	0	0
EAST	20.4	41.5	43	875	7	142	290	3
SOUTH	20.4	24.8	0	0	0	0	0	0
WEST	20.4	41.5	0	0	0	0	0	0
SKYLT.	34.2	101.2	0	0	0	0	0	0
DOORS	27.0	4.7	0	0	0	0	0	0
NET EXPOSED WALL	5.4	0.9	127	884	33	178	31	20
NET EXPOSED BMT WALL ABOVE GR	3.9	0.7	0	0	0	0	0	0
EXPOSED CLG	1.6	0.7	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	4.0	1.8	0	0	0	0	0	0
EXPOSED FLOOR	3.3	0.6	0	0	0	0	0	0
BASEMENT CRAWL HEAT LOSS								
SLAB ON GRADE HEAT LOSS								
SUBTOTAL HT LOSS	1589			2526	861			1733
SUB TOTAL HT GAIN	0.30	0.65		0.30	0.65			0.60
LEVEL FACTOR / MULTIPLIER	1006			1631	556			5322
AIR CHANGE HEAT LOSS								
AIR CHANGE HEAT GAIN								
DUCT LOSS								
DUCT GAIN								
HEAT GAIN PEOPLE	240							0
HEAT GAIN APPLIANCES/LIGHTS								0
TOTAL HT LOSS BTUH	2585	914		4157	1417			8307
TOTAL HT GAIN x 1.3 BTUH	3956			4431	603			1833

TYPE: HOLLAND 3A
SITE NAME: SECONDO

LO # 76857

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>2</u> @ 10.6 cfm	<u>21.2</u> cfm
Kitchen & Bathrooms	<u>4</u> @ 10.6 cfm	<u>42.4</u> cfm
Other Rooms	<u>4</u> @ 10.6 cfm	<u>42.4</u> cfm
Table 9.32.3.A.	TOTAL	148.4 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	63.6	cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>148.4</u>	cfm
Less Principal Ventil. Capacity	<u>155</u>	cfm
Required Supplemental Capacity	<u>-6.6</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANEE 65H	Location: BSMT
<u>155.0</u> cfm	<u>3.0</u> sones
☒ HVI Approved	

PRINCIPAL EXHAUST HEAT LOSS CALCULATION			
CFM	ΔT °F	FACTOR	% LOSS
155.0 CFM	X 81 F	X 1.08	X 0.25

SUPPLEMENTAL FANS		NUTONE	
Location	Model	cfm	HVI
ENS	QTXEN050C	50	☒
BATH	QTXEN050C	50	☒

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANEE 65H		
<u>155</u>	cfm high	<u>64</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:	November-17

HEAT LOSS AND GAIN SUMMARY SHEET**MODEL:** HOLLAND 3A**BUILDER:** GREENPARK HOMES**SFQT:** 1822**LO#** 76857**SITE:** SECONDO**DESIGN ASSUMPTIONS**

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-9	OUTDOOR DESIGN TEMP.	86
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	72

BUILDING DATA

ATTACHMENT:	ATTACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	3.00	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	TIGHT	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft³):	25588.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	4
INTERIOR LIGHTING LOAD (Btu/h/ft²):	2.00	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 47.0 ft	WIDTH: 22.0 ft	EXPOSED PERIMETER:	51.0 ft

2012 OBC - COMPLIANCE PACKAGE**Component****Compliance Package
ENERGYSTAR****Nominal Min. Eff.**

Ceiling with Attic Space Minimum RSI (R)-Value	50	50.72
Ceiling Without Attic Space Minimum RSI (R)-Value	31	20.54
Exposed Floor Minimum RSI (R)-Value	31	24.58
Walls Above Grade Minimum RSI (R)-Value	20 + 5	15.12
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	0.95	-
HRV Minimum Efficiency	65%	-
Domestic Hot Water Heater Minimum EF	0.75	-

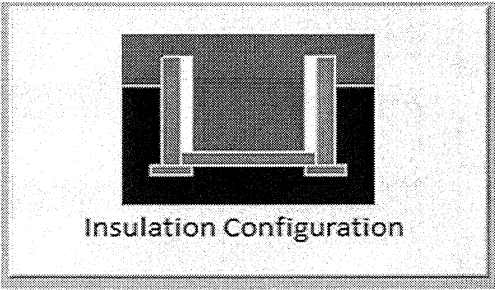
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Bradford	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	14.3	 Insulation Configuration
Floor Width (m):	6.7	
Exposed Perimeter (m):	15.5	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	0.6	
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):		508

TYPE: HOLLAND 3A
LO# 76857

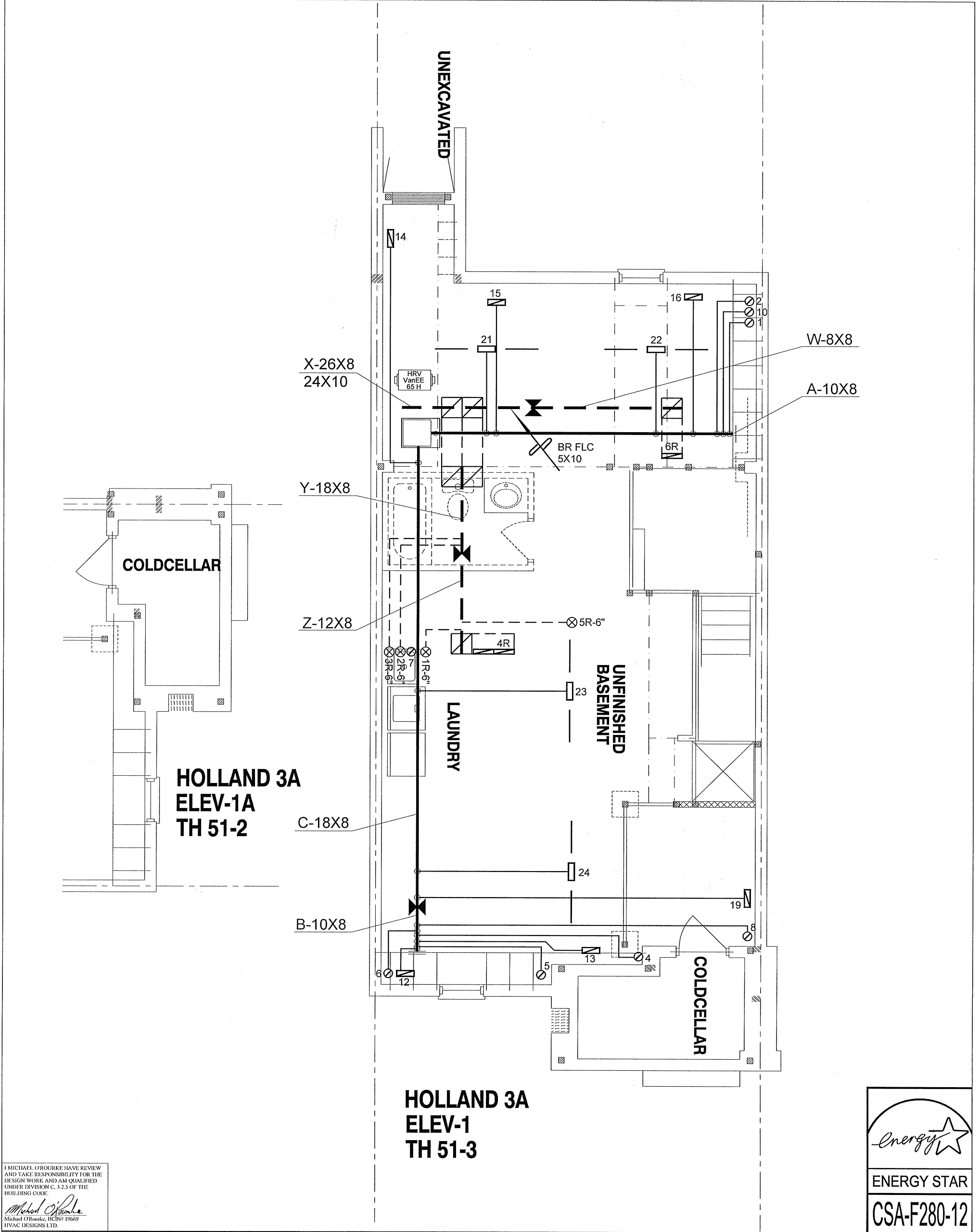
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description				
Province:	Ontario			
Region:	Bradford			
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):	6.71			
Building Configuration				
Type:	Semi			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	724.6			
Air Leakage/Ventilation				
Air Tightness Type:	Energy Star Attached (3.0 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	811.7 cm ²		
	3.00	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	73.2	73.2		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.286			
Cooling Air Leakage Rate (ACH/H):	0.086			

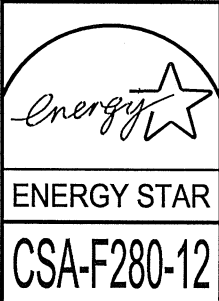
TYPE: HOLLAND 3A

LO# 76857



I MICHAEL O'ROURKE HAVE REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

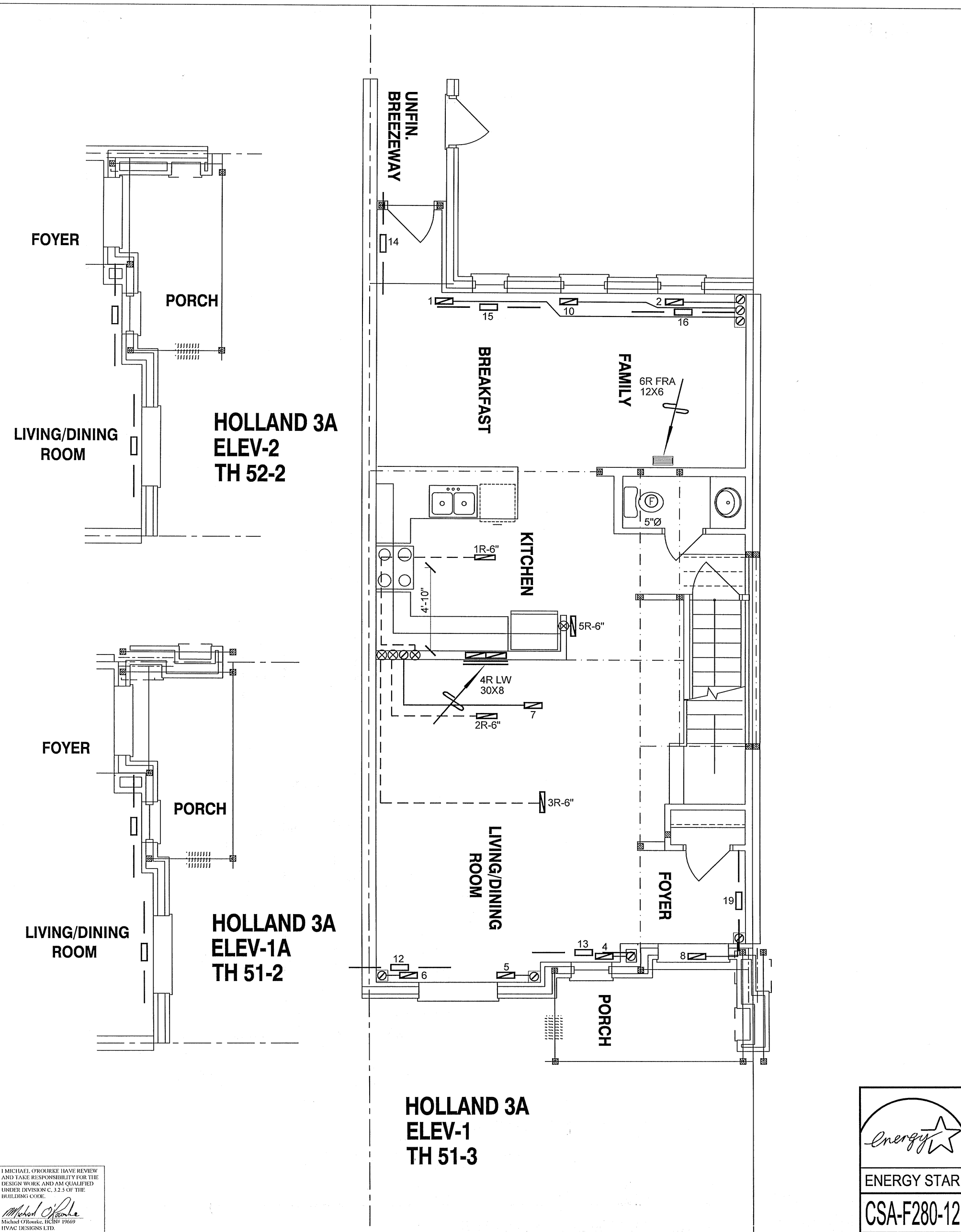
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.



HVAC LEGEND							3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	
	FLOOR 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		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 27242 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS				Sheet Title	
GREENPARK HOMES			MAKE GOODMAN	3RD FLOOR					BASEMENT HEATING LAYOUT	
Project Name SECONDO EAST GWILLIMBURY, ONTARIO			MODEL GMEC960302BNA	2ND FLOOR		8	4	2		
			INPUT 30 MBTU/H	1ST FLOOR		6	2	2		
			OUTPUT 28 MBTU/H	BASEMENT		4	1	0	Date NOV/2017	
		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				Scale 3/16" = 1'-0"	
		FAN SPEED 895 cfm @ 0.6" w.c.							BCIN# 19669	
HOLLAND 3A 1822 sqft								LO# 76857		



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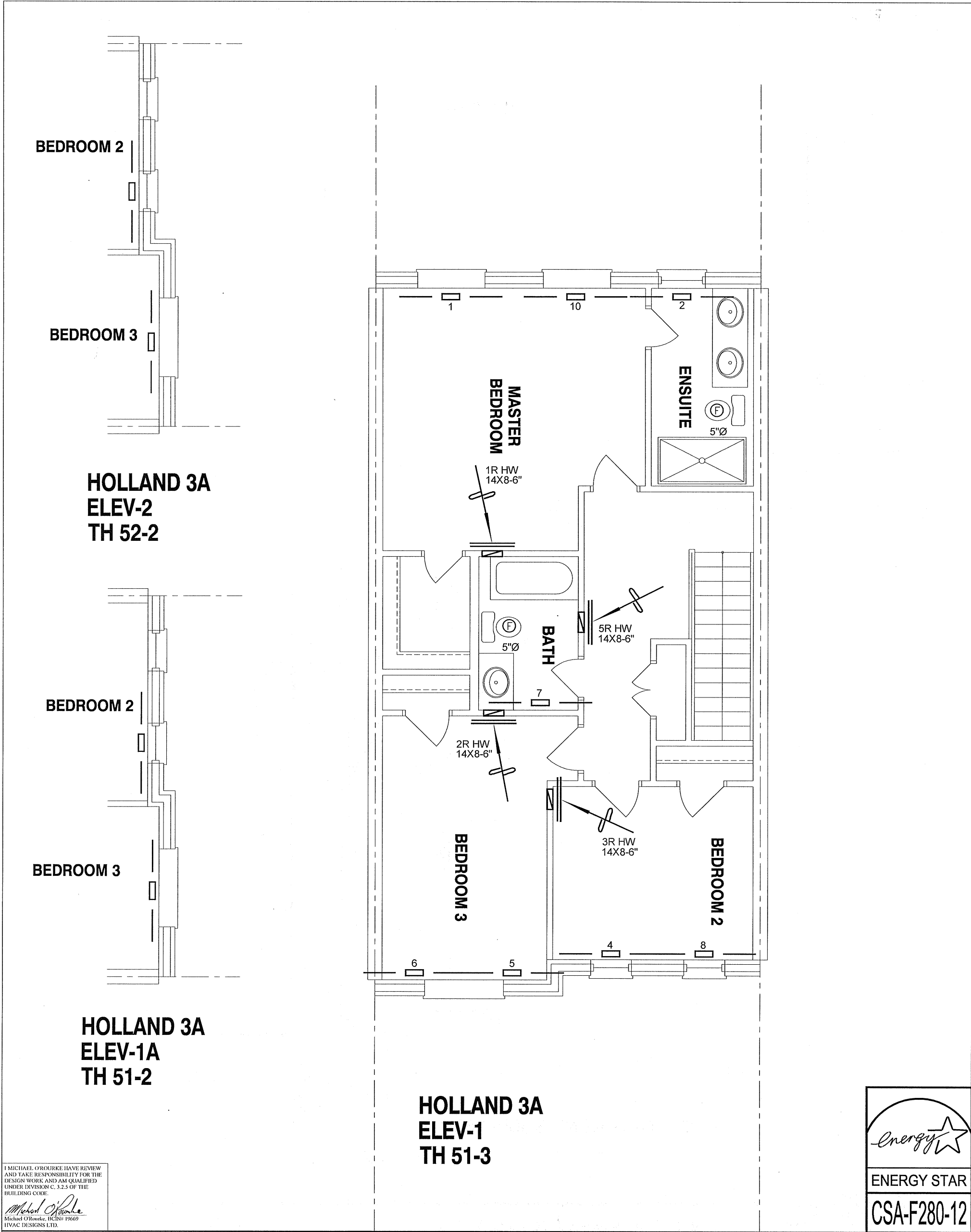
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.



HVAC LEGEND							3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	
	FLOOR 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	REVISIONS	

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Client GREENPARK HOMES		 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.	Sheet Title FIRST FLOOR HEATING LAYOUT	
Project Name SECONDO EAST GWILLIMBURY, ONTARIO			Date NOV/2017	
HOLLAND 3A			Scale 3/16" = 1'-0"	
1822 sqft			BCIN# 19669	
			LO#	76857



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.



HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	FLOOR 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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Project Name	SECONDO EAST GWILLIMBURY, ONTARIO			Date	NOV/2017		
				Scale	3/16" = 1'-0"		
				BCIN# 19669			
HOLLAND 3A	1822 sqft			LO#	76857		