

VAUGHAN
CITY OF VAUGHAN
BUILDING PERMIT DRAWINGS

ALL CONSTRUCTION SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF ONTARIO REGULATION 332/12, (AS AMENDED), THE 2012 BUILDING CODE, MADE UNDER THE BUILDING CODE ACT

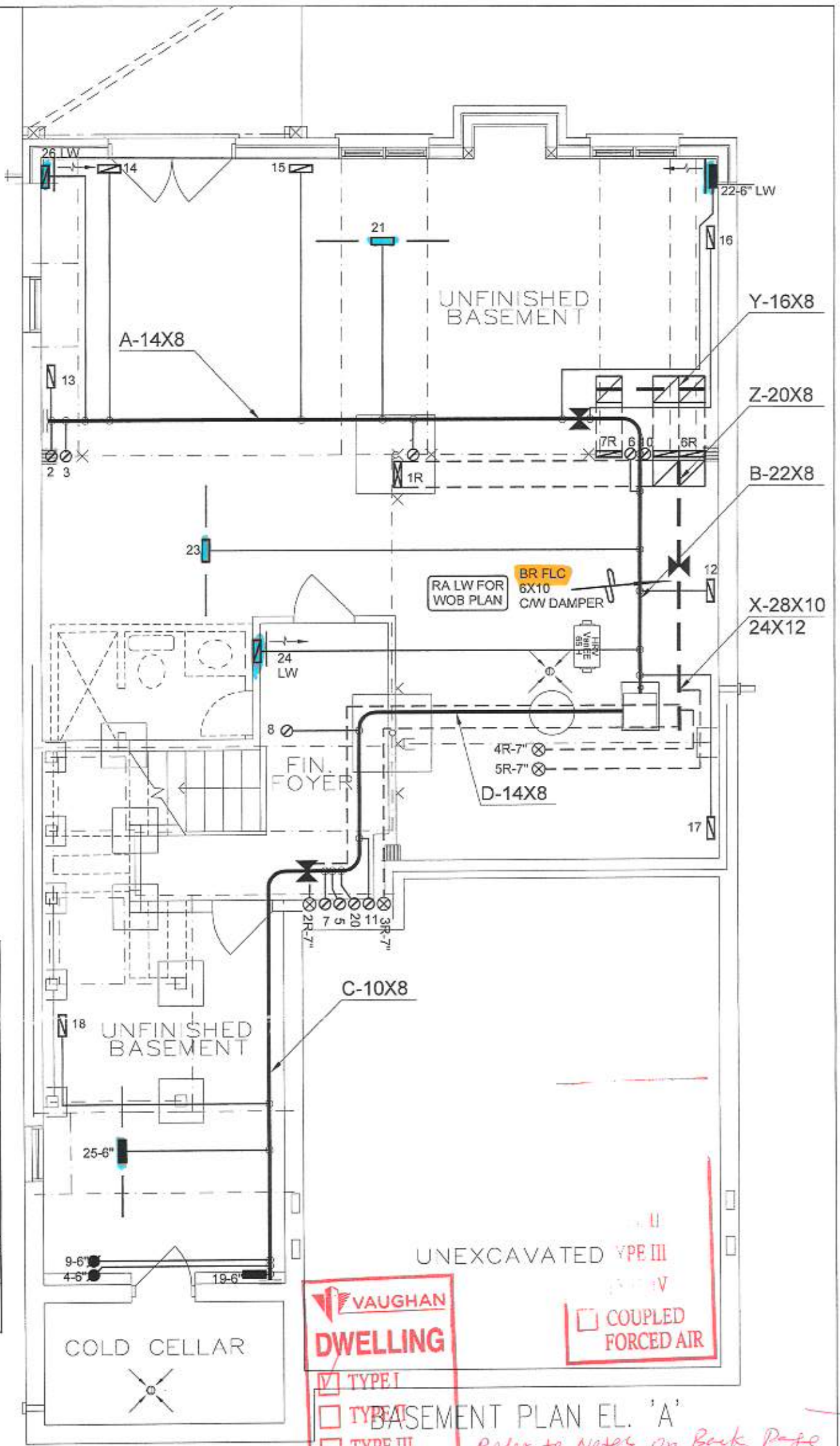
HEATING, VENTILATING AND AIR-CONDITIONING SYSTEMS SHALL BE DESIGNED, CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH THE PROVISIONS OF DIVISION B - SECTION 6.2, OF THE 2012 BUILDING CODE COMPENDIUM

VAUGHAN

The Principal Exhaust Fan shall be controlled by a manual switch centrally located in the dwelling unit and identified by the words "Ventilation Fan."

VAUGHAN

The forced air heating system circulation fan shall be controlled by a manual switch located adjacent to the ventilation fan switch and identified by the words "Circulation Fan."



PART. BASEMENT
PLAN EL. 'A'
LOGGIA CONDITION
(EL. 'B' SIMILAR)

I MICHAEL OROURKE 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, P.Eng. 15669
HVAC DESIGNS LTD.

VAUGHAN
DWELLING

☒ TYPE I
☐ TYPE II
☐ TYPE III
☐ TYPE IV
☐ COUPLED
☐ FORCED AIR

☐ COUPLED
☐ FORCED AIR

BASEMENT PLAN EL. 'A'
Refer to Notes on Back Page

CSA-F280-12

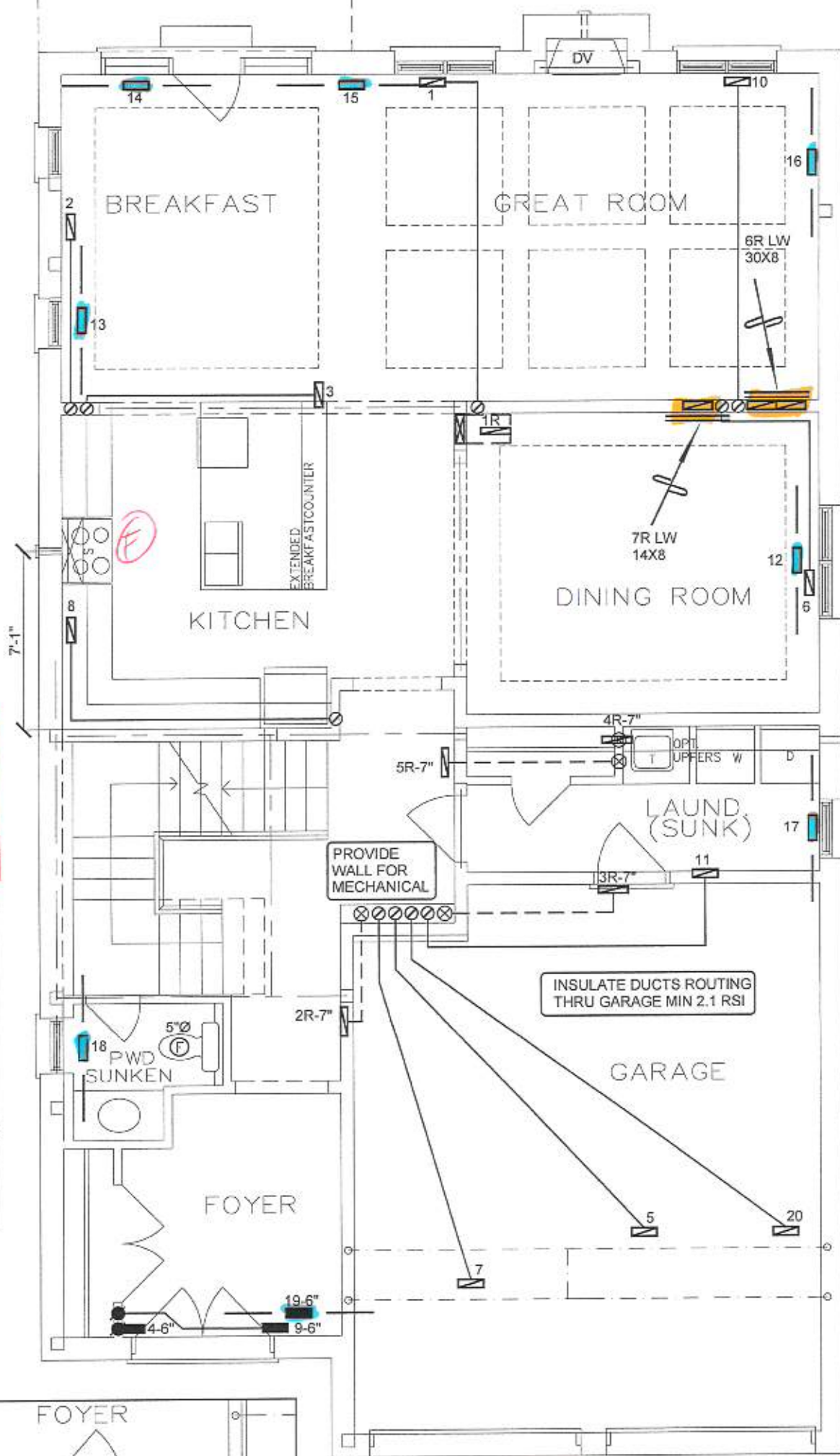
WOB PACKAGE A1

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

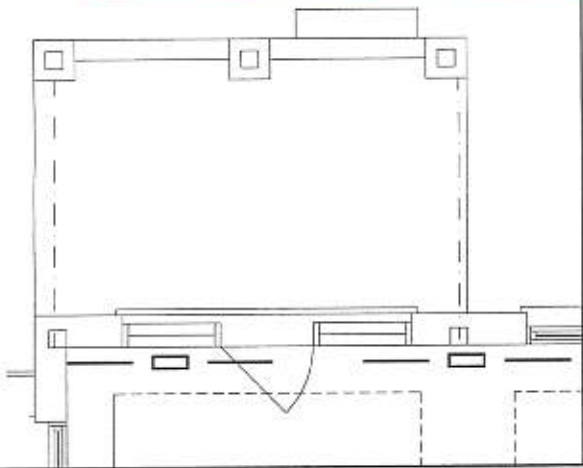
ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD. AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS 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 GOLD PARK HOMES Project Name PINE VALLEY & TESTON VAUGHAN, ONTARIO THE VALLEYVIEW - WOB 4002 2968 sqft	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 65398 BTU/H UNIT DATA MAKE LENNOX MODEL EL296UH090XE48C INPUT 88 MBTU/H OUTPUT 85 MBTU/H COOLING 3.5 TONS FAN SPEED 1255 cfm @ 0.5" w.c.	# OF RUNS S/A R/A FANS 3RD FLOOR 2ND FLOOR 12 5 3 1ST FLOOR 8 2 2 BASEMENT 5 1 0	Date OCT/2018 Scale 3/16" = 1'-0" BCIN# 19669 LO# 80231

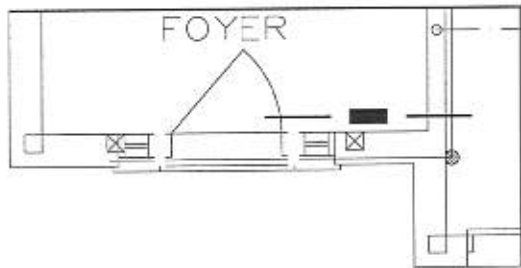
OPT. COVERED LOGGIA



HEATING VENTILATING AND AIR-
CONDITIONING SYSTEMS SHALL
BE DESIGNED, CONSTRUCTED AND
INSTALLED IN ACCORDANCE WITH
THE PROVISIONS OF DIVISION B -
SECTION 6.2. OF THE 2012 BUILDING
CODE COMPENDIUM



PART. GROUND FLOOR
PLAN EL. 'A'
LOGGIA CONDITION
(EL. 'B' SIMILAR)



GROUND FLOOR PLAN EL. 'B'

VAUGHAN
CITY OF VAUGHAN
BUILDING PERMIT DRAWINGS
ALL CONSTRUCTION SHALL
COMPLY WITH THE APPLICABLE
REQUIREMENTS OF ONTARIO
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CSA-F280-12

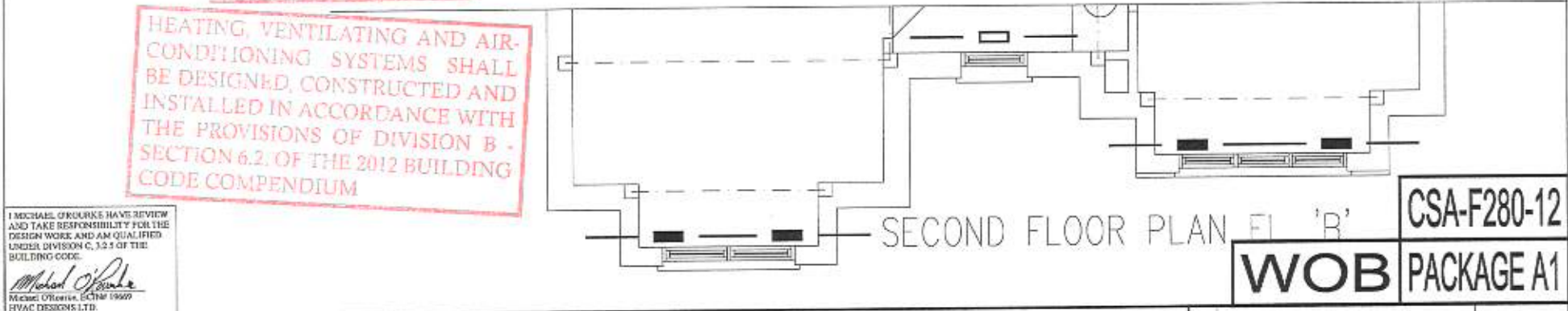
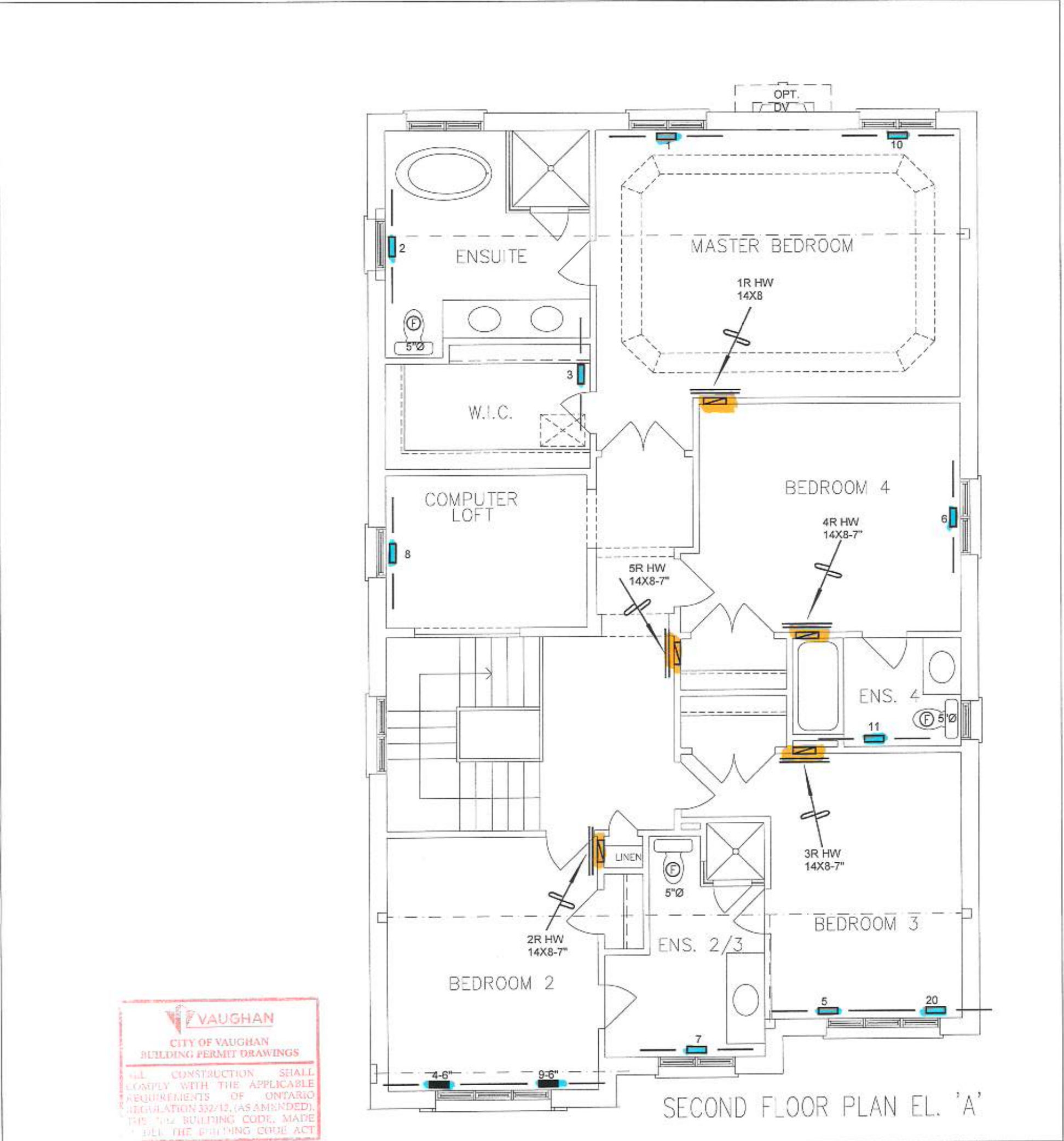
WOB PACKAGE A1

MICHAEL OROURKE 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
	8" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	2.	
	SUPPLY AIR GRILLE 6" BOOT		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	1.	
	SUPPLY AIR BOOT ABOVE		FRA- FLOOR RETURN AIR GRILLE		REDUCER	No.	Description Date

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GOLD PARK HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name			Date	OCT/2018
PINE VALLEY & TESTON VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"
THE VALLEYVIEW - WOB 4002 2968 sqft		BCIN# 19669		
		LO#	80231	



HVAC LEGEND						3.	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE	1.	
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		20"x8" RETURN AIR GRILLE	No.	Description
	SUPPLY AIR BOOT ABOVE		8" SUPPLY AIR STACK 2nd FLOOR		FRA - FLOOR RETURN AIR GRILLE		Date
					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 STANDARDS 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

GOLD PARK HOMES

Project Name

PINE VALLEY & TESTON
VAUGHAN, ONTARIO

THE VALLEYVIEW - WOB
4002 2968 sqft

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.

Sheet Title

SECOND FLOOR
HEATING
LAYOUT

Date

OCT/2018

Scale

3/16" = 1'-0"

BCIN# 19669

LO# 80231

20-120002-6LD-00-CM

Schedule 1: Designer Information

Use one form for each individual who reviews and takes responsibility for design activities with respect to the project.

A. Project Information																	
Building number, street name		Unit no.	Lot/con.														
Municipality VAUGHAN (WOODBIDGE)	Postal code	Plan number/ other description M4647															
B. Individual who reviews and takes responsibility for design activities																	
Name MICHAEL O'ROURKE		Firm HVAC DESIGNS LTD.															
Street address 375 FINLEY AVE		Unit no. 202	Lot/con. N/A														
Municipality AJAX	Postal code L1S 2E2	Province ONTARIO	E-mail info@hvacdsgns.ca														
Telephone number (905) 619-2300	Fax number (905) 619-2375	Cell number ()															
C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 OF Division C]																	
☐ House ☐ Small Buildings ☐ Large Buildings ☐ Complex Buildings ☒ HVAC – House ☐ Building Services ☐ Detection, Lighting and Power ☐ Fire Protection ☐ Building Structural ☐ Plumbing – House ☐ Plumbing – All Buildings ☐ On-site Sewage Systems																	
Description of designer's work HEAT LOSS / GAIN CALCULATIONS DUCT SIZING RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY RESIDENTIAL SYSTEM DESIGN per CSA-F280-12		Model: 4002 THE VALLEYVIEW (wob) Project: PINE VALLEY & TESTON															
D. Declaration of Designer																	
I, <u>MICHAEL O'ROURKE</u> (print name)		declare that (choose one as appropriate):															
☐ I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4. of Division C, of the Building Code. I am qualified, and the firm is registered, in the classes/categories: Individual BCIN: _____ Firm BCIN: _____		FOR OFFICE USE ONLY CITY OF VAUGHAN BUILDING STANDARDS DEPARTMENT PLANS EXAMINATION RECEIVED FEB 20 2020 <table border="1"><thead><tr><th>DATE REVIEWED</th><th>INITIAL</th></tr></thead><tbody><tr><td>3.2.4.1 (4)</td><td></td></tr><tr><td>GRADING</td><td></td></tr><tr><td>BUILDING CODE</td><td></td></tr><tr><td>MECHANICAL</td><td>Feb 29/20</td></tr><tr><td>PLUMBING</td><td>4/3</td></tr><tr><td>FIRE</td><td></td></tr></tbody></table>		DATE REVIEWED	INITIAL	3.2.4.1 (4)		GRADING		BUILDING CODE		MECHANICAL	Feb 29/20	PLUMBING	4/3	FIRE	
DATE REVIEWED	INITIAL																
3.2.4.1 (4)																	
GRADING																	
BUILDING CODE																	
MECHANICAL	Feb 29/20																
PLUMBING	4/3																
FIRE																	
☒ I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5. of Division C, of the Building Code. Individual BCIN: <u>19669</u> Basis for exemption from registration and qualification: _____																	
☐ The design work is exempt from the registration and qualification requirements of the Building Code. Basis for exemption from registration and qualification: _____																	
I certify that: 1. The information contained in this schedule is true to the best of my knowledge. 2. I have submitted this application with the knowledge and consent of the firm.																	
October 5, 2018 Date		 Signature of Designer															

NOTE:

- For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1) d) of Division C, Article 3.2.5.1. of Division C, and all other persons who are exempt from qualification under Subsections 3.2.4. and 3.2.5. of Division C.
- Schedule 1 is not required to be completed by a holder of a license, temporary license, or a certificate of authorization, issued by the Ontario Association of Architects. Schedule 1 is also not required to be completed by a holder of a license to practise, a limited license to practise, or a certificate of authorization, issued by the Association of Professional Engineers of Ontario.

Application for a Permit Construct or Demolish – Effective January 1, 2015

SITE NAME: PINE VALLEY & TESTON

BUILDER: GOLD PARK HOMES

TYPE: 4092 THE VALLEYVIEW

GFA: 2968

DATE: Oct-18

LOF 30231

WINTER NATURAL AIR CHANGE RATE 0.407

SUMMER NATURAL AIR CHANGE RATE 0.137

HEAT LOSS AT °F. 75

HEAT GAIN AT °F. 13

CSA-F280-12

SB-12 PACKAGE A1

ROOM USE	EXP. WALL	CLG. HT.	MBR	ENS	WIC	BED-2	BED-3	BED-4	ENS-3/3	COMP	ENS-4
FACTORS	40	10	5	5	5	5	5	5	5	5	5
GRS.WALL AREA	LOSS	GAIN	409	275	54	342	330	117	99	125	54
GLAZING	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS
NORTH	21.3	15.6	0	0	0	0	0	0	0	0	0
EAST	21.3	40.5	0	0	0	0	0	18	363	281	0
SOUTH	21.3	24.3	0	0	0	45	568	1821	50	1064	2023
WEST	21.3	40.5	58	766	1457	20	425	309	0	0	0
SKYL.	37.2	101.5	0	0	0	0	0	0	0	0	0
DOORS	25.2	4.3	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.5	0.8	344	1624	274	191	852	144	54	241	41
NET EXPOSED BMT WALL ABOVE GR	3.6	0.6	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	320	411	108	155	200	92	72	92	42
NO ATTIC EXPOSED CLG	2.7	1.3	10	27	13	0	0	0	0	0	0
EXPOSED FLOOR	2.6	0.4	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			2829		1776		333		2938	3117	
SUB TOTAL HT GAIN			1931		1385		83		2464	2455	
LEVEL FACTOR / MULTIPLIER	0.20	0.31		0.20	0.31		0.20	0.31	0.20	0.31	
AIR CHANGE HEAT LOSS			573		548		103		107	962	
AIR CHANGE HEAT GAIN			155		111		7		198	198	
DUCT LOSS			0		0		0		41	41	
DUCT GAIN			0		0		0		187	187	
HEAT GAIN PEOPLE	240	2	480	0	0	0	0	0	0	128	0
HEAT GAIN APPLIANCES/LIGHTS			683	0	0	0	0	0	0	0	0
TOTAL HT LOSS BTU/H			3702		2324		436		4229	4487	
TOTAL HT GAIN x 1.3 BTU/H			4224		1845		116		5127	5113	

ROOM USE	EXP. WALL	CLG. HT.	WIC	KT/GT	LAUN	PWD	FOY	WOB	BAS
FACTORS	13	11	11	11	12	13	11	42	132
GRS.WALL AREA	LOSS	GAIN	143	590	274	78	495	420	924
GLAZING	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS
NORTH	21.3	15.6	28	553	408	0	0	0	0
EAST	21.3	40.5	0	0	0	0	0	0	0
SOUTH	21.3	24.3	0	0	0	0	0	0	0
WEST	21.3	40.5	0	0	0	0	0	0	0
SKYL.	37.2	101.5	0	0	0	0	0	0	0
DOORS	25.2	4.3	0	0	0	0	0	0	0
NET EXPOSED WALL	4.5	0.8	117	522	88	349	3789	638	0
NET EXPOSED BMT WALL ABOVE GR	3.6	0.6	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0	0
EXPOSED FLOOR	2.6	0.4	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS			0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS			0	0	0	0	0	0	0
SUBTOTAL HT LOSS			1075		6857		1816		463
SUB TOTAL HT GAIN			494		5606		426		247
LEVEL FACTOR / MULTIPLIER	0.30	0.53		0.30	0.53		0.30	0.53	0.30
AIR CHANGE HEAT LOSS			567		3613		957		254
AIR CHANGE HEAT GAIN			40		451		34		20
DUCT LOSS			0		0		0		0
DUCT GAIN			0		0		0		0
HEAT GAIN PEOPLE	240	0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS			683	0	0	0	0	0	0
TOTAL HT LOSS BTU/H			1642		10469		2772		737
TOTAL HT GAIN x 1.3 BTU/H			1582		8762		1436		347



TOTAL HEAT GAIN BTU/H: 42943

TONS: 3.58

LOSS DUE TO VENTILATION LOAD BTU/H: 3181

STRUCTURAL HEAT LOSS: 42218

TOTAL COMBINED HEAT LOSS BTU/H: 65195

SITE NAME: PINE VALLEY & TESTON
 BUILDER: GOLD PARK HOMES

TYPE: 4002 THE VALLEYVIEW

DATE: Oct-18

GFA: 2968

LO# 80231

 HEATING CFM 1255
 TOTAL HEAT LOSS 62,218
 AIR FLOW RATE CFM 20.17
 COOLING CFM 1255
 TOTAL HEAT GAIN 42,412
 AIR FLOW RATE CFM 29.59

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

 plenum pressure s/a 0.18
 max s/a dif press. loss 0.02
 min adjusted pressure s/a 0.16

 r/a pressure 0.17
 r/a grille press. Loss 0.02
 adjusted pressure r/a 0.15

 ALLENNOX
 EL296UH090XE48C 90
 FAN SPEED
 LOW 0
 MEDLOW 0
 MEDIUM 1105
 MEDIUM HIGH 1255
 HIGH 1525

 AFUE = 96 %
 INPUT (BTU/H) = 88,000
 OUTPUT (BTU/H) = 85,000
 DESIGN CFM = 1255
 CFM @ 0.5" E.S.P.

TEMPERATURE RISE 63 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	12	8	5
R/A	0	0	5	2	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	ENS-2/3	COMP	BED-2	MBR	ENS-4	DIN	KT/GT	KT/GT	KT/GT	KT/GT	LAUN	PWD	FOY	BED-3	BAS	BAS	BAS	BAS
RM LOSS MBH	1.85	2.32	0.44	2.11	2.24	1.52	2.06	1.48	2.11	1.85	0.84	1.64	2.62	2.62	2.62	2.62	2.77	0.74	4.91	2.24	4.12	4.12	4.12	4.12
CFM PER RUN HEAT	37	47	9	43	45	31	42	30	43	37	17	33	53	53	53	53	56	15	99	45	83	83	83	83
RM GAIN MBH	2.11	1.94	0.12	2.56	2.56	1.91	1.83	1.85	2.56	2.11	0.37	1.58	2.19	2.19	2.19	2.19	1.49	0.35	2.57	2.56	1.03	1.03	1.03	1.03
CFM PER RUN COOLING	62	58	3	76	76	57	54	55	76	62	11	47	65	65	65	65	44	10	76	31	31	31	31	31
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	0.16	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH	50	58	58	61	51	38	48	42	67	35	47	10	41	48	40	30	11	48	44	57	35	42	26	28
EQUIVALENT LENGTH	210	150	150	180	170	180	140	190	190	120	180	130	130	130	150	130	200	210	140	160	140	220	120	150
TOTAL EFFECTIVE LENGTH	260	208	208	241	221	218	188	232	257	155	227	140	171	178	190	160	211	258	184	217	175	262	146	178
ADJUSTED PRESSURE	0.07	0.08	0.08	0.07	0.08	0.08	0.08	0.07	0.07	0.11	0.08	0.12	0.1	0.1	0.09	0.11	0.08	0.07	0.09	0.08	0.09	0.06	0.11	0.09
ROUND DUCT SIZE	5	5	4	6	5	5	5	5	6	5	4	4	5	5	5	5	5	4	6	5	5	6	5	5
HEATING VELOCITY (ft/min)	272	345	103	219	330	228	308	220	219	272	195	379	389	389	389	389	411	172	505	330	609	423	609	609
COOLING VELOCITY (ft/min)	455	426	34	388	558	419	396	404	388	455	126	539	477	477	477	477	323	115	388	558	228	158	228	228
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	4X10	3X10	3X10
TRUNK	A	A	A	C	D	B	D	D	C	B	D	B	A	A	A	B	B	C	C	D	A	A	B	B

RUN #	25
ROOM NAME	BAS
RM LOSS MBH	4.12
CFM PER RUN HEAT	83
RM GAIN MBH	1.03
CFM PER RUN COOLING	31
ADJUSTED PRESSURE	0.16
ACTUAL DUCT LGH	43
EQUIVALENT LENGTH	150
TOTAL EFFECTIVE LENGTH	193
ADJUSTED PRESSURE	0.08
ROUND DUCT SIZE	6
HEATING VELOCITY (ft/min)	423
COOLING VELOCITY (ft/min)	158
OUTLET GRILL SIZE	4X10
TRUNK	C



SUPPLY AIR TRUNK SIZE

TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	418	0.05	10.9	14	537
TRUNK B	794	0.05	13.8	22	650
TRUNK C	283	0.07	9	10	509
TRUNK D	462	0.07	10.9	14	594
TRUNK E	0	0.00	0	0	0
TRUNK F	0	0.00	0	0	0

RETURN AIR TRUNK SIZE

TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK G	0	0.00	0	0	0
TRUNK H	0	0.00	0	0	0
TRUNK I	0	0.00	0	0	0
TRUNK J	0	0.00	0	0	0
TRUNK K	0	0.00	0	0	0
TRUNK L	0	0.00	0	0	0
TRUNK O	0	0.05	0	0	8
TRUNK P	0	0.05	0	0	8
TRUNK Q	0	0.05	0	0	8
TRUNK R	0	0.05	0	0	8
TRUNK S	0	0.05	0	0	8
TRUNK T	0	0.05	0	0	8
TRUNK U	0	0.05	0	0	8
TRUNK V	0	0.05	0	0	8
TRUNK W	0	0.05	0	0	8
TRUNK X	1255	0.05	17.2	28	645
TRUNK Y	475	0.05	11.9	16	534
TRUNK Z	610	0.05	13.1	20	549
DROP	1255	0.05	17.2	24	628

RETURN AIR

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
AIR VOLUME	135	110	120	120	110	300	175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH	51	58	57	34	42	28	35	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	235	205	165	185	225	190	185	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	286	263	222	219	267	218	220	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.05	0.06	0.07	0.07	0.06	0.07	0.07	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80
ROUND DUCT SIZE	7.5	6.8	6.6	6.6	6.6	9.2	7.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	8	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	14	30	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TYPE: 4002 THE VALLEYVIEW
 SITE NAME: PINE VALLEY & TESTON

LO # 80231

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 9.32.3.1(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 5 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	5 @ 10.6 cfm 53.0 cfm
Other Rooms	5 @ 10.6 cfm 53.0 cfm
Table 9.32.3.4	TOTAL 180.2 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 9.32.3.5	
Total Ventilation Capacity	180.2 cfm
Less Principal Ventil. Capacity	155 cfm
Required Supplemental Capacity	25.2 cfm

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

PRINCIPAL EXHAUST HEAT LOSS CALCULATION	
CFM	155.0 CFM
ΔT °F	76 F
FACTOR	1.08
% LOSS	0.25

SUPPLEMENTAL FANS NUTONE	
Location	Model
ENS	QTXEN050C
ENS-2/3	QTXEN050C
ENS-4	QTXEN050C
PWD	QTXEN050C

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

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

BUILDER: GOLD PARK 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:	October 18

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

LO#: 80231

Model: 4002 THE VALLEYVIEW

Builder: GOLD PARK HOMES

Date: 10/5/2018

Volume Calculation
House Volume

Level	Floor Area (ft ²)	Floor Height (ft)	Volume (ft ³)
Bsmt	1322	10	13220
First	1322	11	14542
Second	1657	9	14913
Third	0	9	0
Fourth	0	9	0
Total:			42,675.0 ft ³
Total:			1208.4 m ³

Air Change & Delta T Data

WINTER NATURAL AIR CHANGE RATE	0.407
SUMMER NATURAL AIR CHANGE RATE	0.137

Design Temperature Difference				
	T _{in} °C	T _{out} °C	ΔT °C	ΔT °F
Winter DTD _h	22	-20	42	76
Summer DTD _c	24	31	7	13

5.2.3.1 Heat Loss due to Air Leakage

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

0.407 x 335.67 x 42 °C x 1.2 = 6920 W

= 23611 Btu/h

6.2.6 Sensible Gain due to Air Leakage

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

= 0.137 x 335.67 x 7 °C x 1.2 = 391 W

= 1334 Btu/h

5.2.3.2 Heat Loss due to Mechanical Ventilation

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

155 CFM x 76 °F x 1.08 x 0.25 = 3181 Btu/h

6.2.7 Sensible heat Gain due to Ventilation

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

155 CFM x 13 °F x 1.08 x 0.25 = 536 Btu/h

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

$$HL_{airr} = \text{Level Factor} \times HL_{airbv} \times ((HL_{ager} + HL_{bger}) \div (HL_{agclevel} + HL_{bgclevel}))$$

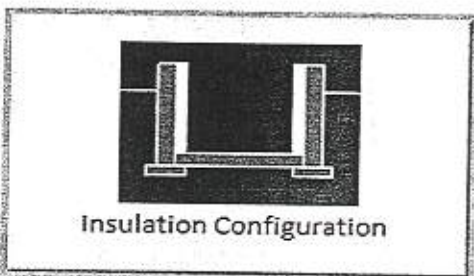
Level	Level Factor (LF)	HL _{airb} Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{level})	Air Leakage Heat Loss Multiplier (LF x HL _{airbv} / HL _{level})
1	0.5	23,611	8,280	1.426
2	0.3		13,444	0.527
3	0.2		15,294	0.309
4	0		0	0.000
5	0		0	0.000

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

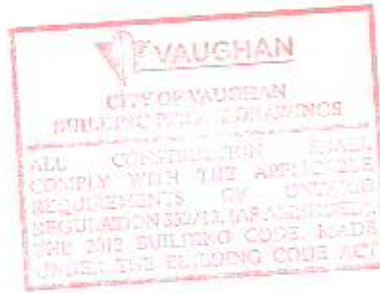
*For a balanced or supply only ventilation system HL_{airve} = 0


Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Vaughan (Woodbridge)	
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):	9.8	
Exposed Perimeter (m):	40.2	
Wall Height (m):	3.0	
Depth Below Grade (m):	1.79	
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):	702	

TYPE: 4002 THE VALLEYVIEW
 LO# 80231



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Vaughan (Woodbridge)	
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	A diagram showing a cross-section of a foundation with two vertical walls. The distance between the inner faces of the walls is labeled "0.6m". The width of the walls is also labeled "0.6m". Below the diagram is the text "Insulation Configuration".
Width (m):	9.8	
Exposed Perimeter (m):	12.8	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		156

TYPE: 4002 THE VALLEYVIEW
LO# 80231



Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description			
Province:	Ontario		
Region:	Vaughan (Woodbridge)		
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):	9.14		
Building Configuration			
Type:	Detached		
Number of Stories:	Two		
Foundation:	Full		
House Volume (m ³):	1208.4		
Air Leakage/Ventilation			
Air Tightness Type:	Present (1961-) (3.57 ACH)		
Custom BDT Data:	ELA @ 10 Pa.	1610.9 cm ²	
	3.57	ACH @ 50 Pa	
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust	
	73.2	73.2	
Flue Size			
Flue #:	#1	#2	#3
Diameter (mm):	0	0	0
Natural Infiltration Rates			
Heating Air Leakage Rate (ACH/H):	0.407		
Cooling Air Leakage Rate (ACH/H):	0.137		

TYPE: 4002 THE VALLEYVIEW
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