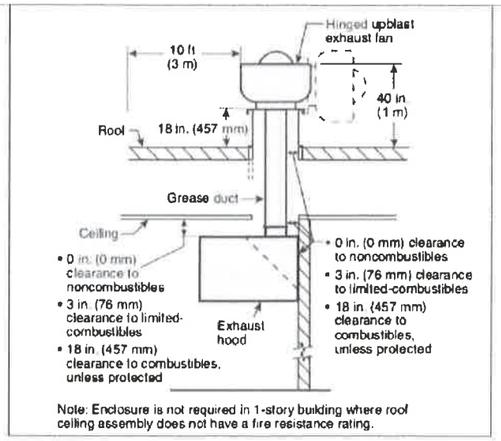
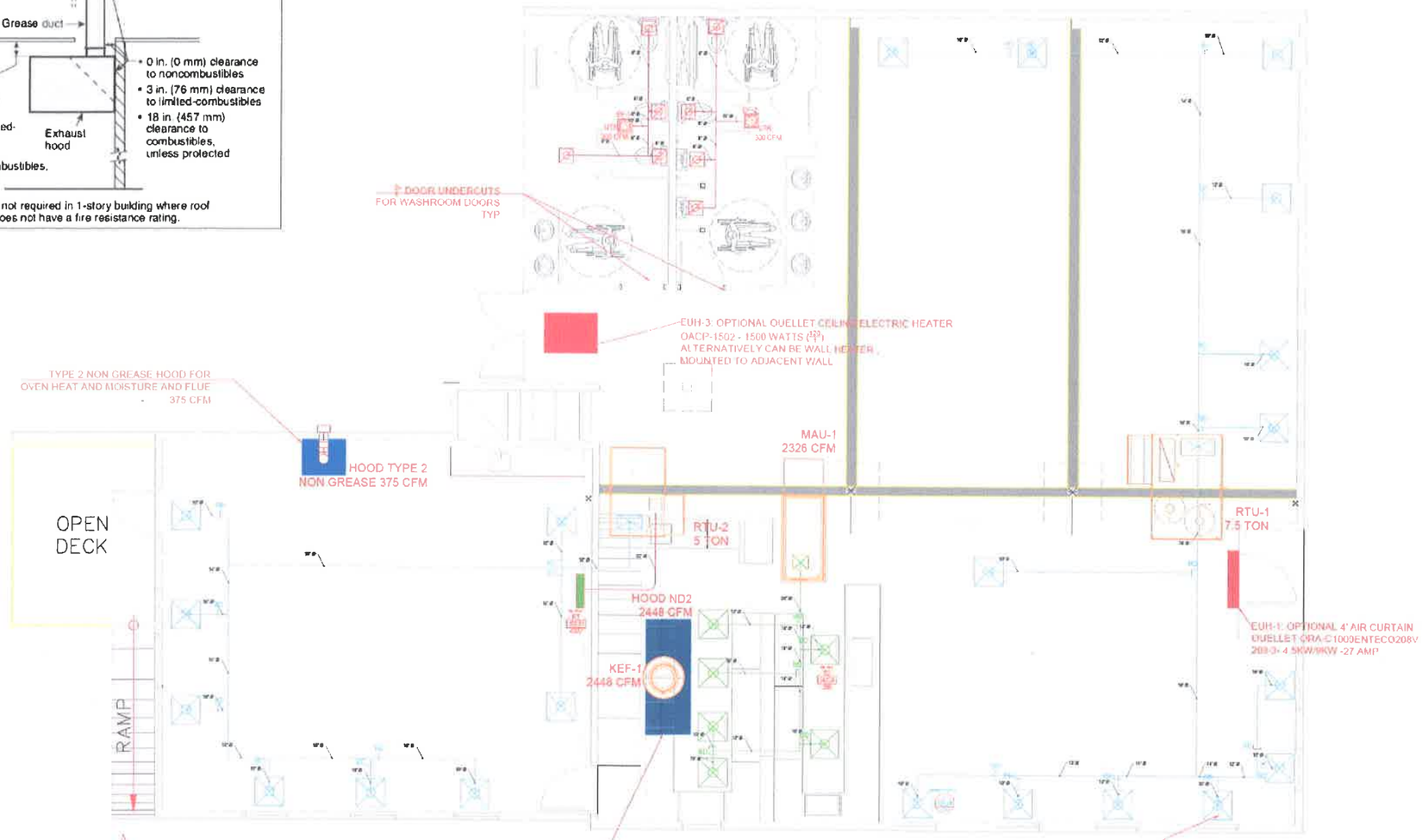


Note: Enclosure is not required in 1-story building where roof ceiling assembly does not have a fire resistance rating.



PN

VENTILATION PLAN
SCALE: 1/4"=1'-0"

MECHANICAL GENERAL NOTES:

1. THIS IS SHOWN AS A GENERAL ARRANGEMENT AND SCHEMATIC ONLY, CONTRACTOR SHALL MAKE SITE MEASUREMENTS BEFORE FABRICATING DUCT/PIPE AND ALLOW FOR SITE FIT-UP AND DUCT/PIPE SUPPORTS
2. ALL DUCT WORK, FITTINGS, TRANSITIONS, CONNECTIONS AND METHOD OF INSULATION SHALL BE TO SMACNA GUIDELINES
3. COORDINATE FINAL LOCATION OF EQUIPMENT, AIR OUTLETS, AND DUCTS WITH STRUCTURE, REFLECTED CEILING PLAN, LIGHTING LAYOUT
4. ALL SUPPLY DUCTS TO DIFFUSERS C/W BALANCING DAMPERS
5. INSTALL EQUIPMENT TO PROVIDE SERVICE CLEARANCES AS RECOMMENDED BY MANUFACTURER AND AS REQUIRED BY CODE. PROVIDE CLEAR LABELING OF FILTER PANELS VERIFY ADEQUATE ACCESS FOR ROUTINE MAINTENANCE
6. INSTALL NG LINE AND VENTING AS PER LATEST VERSION OF CSA B149.1 NATURAL GAS AND PROPANE INSTALLATION CODE
7. DUCTWORK TO RUN U/S OF JOISTS WHERE INDICATED
8. CONTRACTOR TO CONFIRM ALLOWABLE HOLES AND SPACING THOUGH STRUCTURE PRIOR TO RUNNING DUCTS AND VENTING.
9. EXHAUST FAN TO BE MANUALLY ACTIVATED BY A LOCAL SWITCH.
10. MOUNT ALL THERMOSTATS 5'-0" A.F.F.
11. ALTERNATIVELY EQUIVALENTLY SIZED SPIRAL DUCTS OR RECTANGULAR DUCTS CAN BE USED
12. NO FIRE STOP IS NEEDED FOR FIRE RATED CEILING MEMBRANE PENETRATION IF PRESCRIPTIONS OF NBC-AE 2019-VOLUME 2 DIV B-APPENDIX 2.3.10 ARE SATISFIED
13. INSTALLATION OF KITCHEN EXHAUST DUCT AND HOOD W/ FIRE SUPPRESSION TO MEET ALL APPLICABLE CODE REQUIREMENTS OF NFPA 96 AND NBC-AE-2019

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LEXUS ENGINEERING
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PERMIT TO PRACTICE
LEXUS ENGINEERING LTD
Date 2021-03-12
PERMIT NUMBER: 11387
The Association of Professional Engineers, Geoscientists of Alberta

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PROFESSIONAL ENGINEER BARRY GOSEK ALBERTA
2021-03-12

NO	Description	Date (Y/M/D)
4	ISSUED FOR PERMIT	2021-03-11
3	ISSUED FOR PERMIT	2021-02-23
2	ISSUED FOR REVIEW	2021-01-29
1	ISSUED FOR REVIEW	2020-09-24

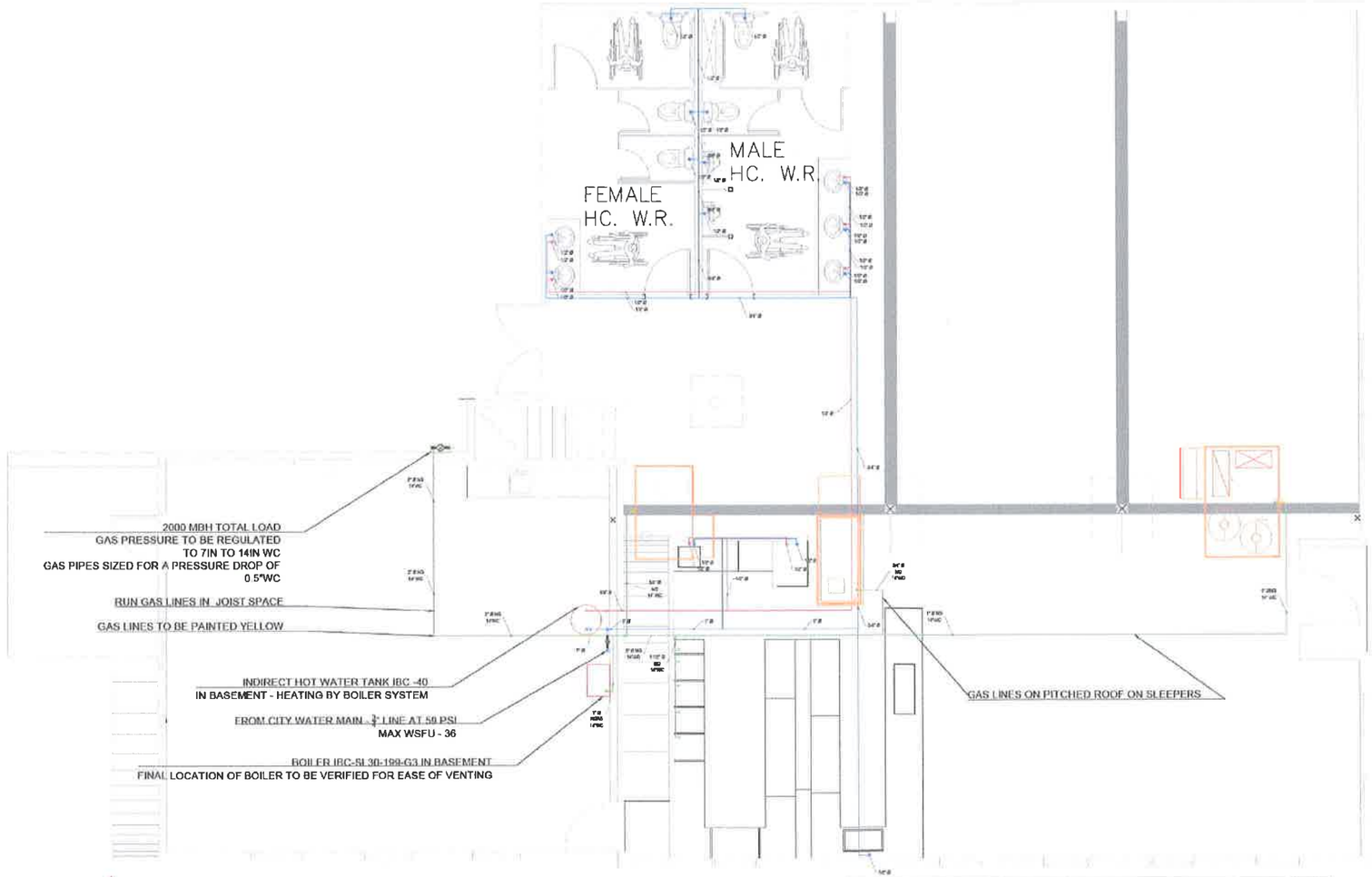
Revisions

PROJECT TITLE
THE FOUNDRY - ONOWAY

PROJECT ADDRESS
4904 - 50 STREET,
ONOWAY, ALBERTA, T0E 1V0

DRAWING TITLE
VENTILATION PLAN

DRAWN MC	PROJECT NUMBER C395
CHECKED GG	SCALE N.T.S
DATE 2020-09-24	SHEET NO 2 OF 17



PN PLUMBING PLAN
SCALE: 1/4"=1'-0"

M3 TYP
2.26 FU DCW, 1/2" SUPPLY
2.26 FU DHW, 1/2" SUPPLY
3 FU DRAIN, 3" DRAIN

WC TYP
2.20 FU DCW, 1/2" SUPPLY
4 FU DRAIN, 3" DRAIN

FD TYP
3 FU DRAIN, 3" DRAIN

LAV TYP
1.5 FU DCW, 1/2" SUPPLY
1.5 FU DHW, 1/2" SUPPLY
1.5 FU DRAIN, 1 1/4" DRAIN

KITCHEN SINK TYP
3 FU DCW, 1/2" SUPPLY
3 FU DHW, 1/2" SUPPLY
2 FU DRAIN, 1 1/2" DRAIN

UR TYP
2 FU DCW, 1/2" SUPPLY
4 FU DRAIN, 3" DRAIN

SHOWER/BATH TYP
2 FU DCW, 1/2" SUPPLY
2 FU DHW, 1/2" SUPPLY
1.5 FU DRAIN, 1 1/4" DRAIN

PLUMBING GENERAL NOTES:

1. PROVIDE AND INSTALL PLUMBING IN ACCORDANCE WITH CURRENT EDITION OF NATIONAL PLUMBING CODE
2. DOMESTIC PIPING SHALL BE EITHER COPPER OR CPVC OR PEX OR WRSBD
3. INSTALL TRAP GUARDS ON ALL FLOOR DRAINS
4. PROVIDE SHUT OFF VALVES ON ALL DCW AND DHW SUPPLIES TO ALL LAV'S, SINKS AND WATER CLOSETS
5. DCW & DHW PIPES - DRILL HOLES THROUGH JOIST AS REQUIRED
6. PIPING PENETRATION THRU RATED WALL OR CEILING TO BE FIRE STOP SEALED
7. CONDENSATE PIPING MUST BE CORROSION RESISTANT MATERIAL
8. CONTRACTOR TO COORDINATE U/G LINES WITH LATEST STRUCTURAL FOUNDATION DRAWINGS
9. DRAIN SLOPES ARE INDICATED AS A MINIMUM SLOPE AND CAN BE INSTALLED AT A GREATER SLOPE IF NEEDED
10. ALL INVERT DEPTHS MEASURED FROM GRADE FLOOR
11. PLUMBING AND DRAINS TO BE INSTALLED WITHIN PLUMBING WALL NOT THE PARTY WALL
12. FIRE RATED ACCESS PANEL TO BE PROVIDED TO ACCESS ALL VALVES, ALL CLEAN OUTS, ETC
13. INSTALL NG LINE AND VENTING AS PER LATEST VERSION OF CSA B149.1 NATURAL GAS AND PROPANE INSTALLATION CODE
14. REFER TO SITE PLAN FOR EXACT LOCATION AND SIZE OF BUILDING WATER SERVICE
15. DRAWING SHOWS WATER, AND GAS CONNECTIONS. CONTRACTOR TO USE CORRECT CONFIGURATION AND CONNECTION FOR THE APPROPRIATE BUILDING

PLUMBING FIXTURE CONNECTION SCHEDULE (MIN)

FIXTURE	DCW (FU)	DHW (FU)	DRAIN (FU)	VENT
PRIVATE LAVATORY	1/2" (0.5)	1/2" (0.5)	1 1/4" (1)	1 1/4"
PUBLIC LAVATORY	1/2" (1.5)	1/2" (1.5)	1 1/4" (1.5)	1 1/4"
KITCHEN SINK	1/2" (3)	1/2" (3)	1 1/2" (2)	1 1/4"
BATH / SHOWER	1/2" (2)	1/2" (2)	1 1/4"(1.5)	1 1/4"
LAUNDRY STAND PIPE	1/2" (3)	1/2" (3)	2" (2)	1 1/4"
DISH WASHER	---	1/2" (1.4)	5/8" (1.5)	1 1/4"
WATER CLOSET	1/2" (2.2)	---	3" (4)	1 1/2"
FLOOR DRAIN	---	---	3" (3)	1 1/2"

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PROFESSIONAL ENGINEER GURPREET GOSAL
2021-03-12

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Revisions

PROJECT TITLE
THE FOUNDRY - ONOWAY

PROJECT ADDRESS
4904 - 50 STREET,
ONOWAY, ALBERTA, T0E 1V0

DRAWING TITLE
PLUMBING PLAN

DRAWN: MB	PROJECT NUMBER: C395
CHECKED: GG	SCALE: N.T.S
DATE: 2020-09-24	SHEET NO: 4 OF 17

FOR QUESTIONS, CALL THE
Western Canada Mechanical
Michael Lee
PHONE: (403) 289-9251
EMAIL: mgl125@captivaire.com

PATENT NUMBERS

EXHAUST HOODS ND-2/BD-2/SND-2 (CANADA) - CA PATENT 2520436 C.

HOOD INFORMATION – JOB#24697932

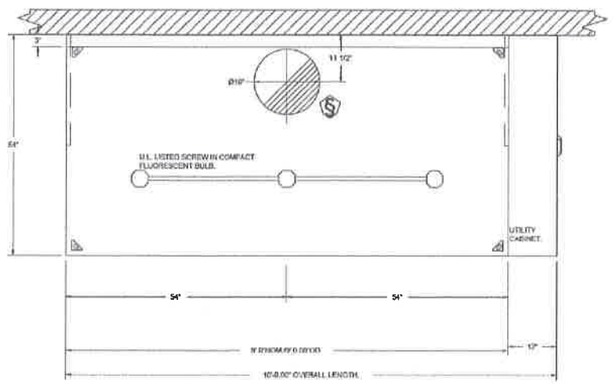
HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM RISER(S)							HOOD CONSTRUCTION	HOOD CONFIG	
										WIDTH	LENG	HEIGHT	DIA	CFM	VEL	SP		END TO END	ROW
1		5424 ND-2	CAPTIVEAIRE	9' 0"	600 DEG	I	HEAVY	272	2448			4"	16"	2448	1753	-0.932"	430 SS WHERE EXPOSED	ALONE	ALONE

HOOD INFORMATION

HOOD NO	TAG	FILTER(S)					LIGHT(S)			UTILITY CABINET(S)					SWITCHES	FIRE SYSTEM PIPING	HOOD HANGING WEIGHT
		TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	QTY	TYPE	WIRE GUARD	LOCATION	SIZE	FIRE SYSTEM		ELECTRICAL			
												TYPE	SIZE	MODEL #	QUANTITY		
1		CAPTRATE SOLO FILTER	6	20"	16"	65% SEE FILTER SPEC	3	SCREW IN COMPACT	NO	RIGHT	12"x54"x24"	ANSUL R102	3.0			YES	575 LBS

HOOD OPTIONS

HOOD NO	TAG	OPTION
1		RIGHT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS
		LEFT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS



PLAN VIEW – HOOD #1
9' 0.00" LONG 5424ND-2

SPECIFICATION: CAPTRATE GREASE-STOP SOLO FILTER

THE CAPTRATE GREASE-STOP SOLO FILTER IS A SINGLE-STAGE FILTER FEATURING A UNIQUE S-BAFFLE DESIGN IN CONJUNCTION WITH A SLOTTED REAR BAFFLE DESIGN, TO DELIVER EXCEPTIONAL FILTRATION EFFICIENCY.

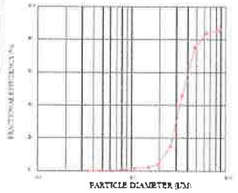
FILTER IS STAINLESS STEEL CONSTRUCTION, AND SIZED TO FIT INTO STANDARD 2-INCH DEEP HOOD CHANNEL(S).

UNITS SHALL INCLUDE STAINLESS STEEL HANDLES AND A FASTENING DEVICE TO SECURE THE TWO COMPONENTS WHEN ASSEMBLED.

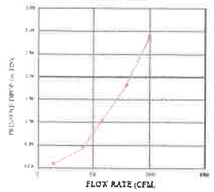
GREASE EXTRACTION EFFICIENCY PERFORMANCE SHALL REMOVE AT LEAST 75% OF GREASE PARTICLES FIVE MICRONS IN SIZE, AND 65% GREASE PARTICLES SEVEN MICRONS IN SIZE AND LARGER, WITH A CORRESPONDING PRESSURE DROP NOT TO EXCEED 1.0 INCHES OF WATER GAUGE.

THE CAPTRATE GREASE-STOP SOLO WAS TESTED TO ASTM STANDARD ASTM F2519-05. MANUFACTURER APPROVED FOR USE IN SOLID FUEL APPLICATIONS AS A SPARK ARRESTER.

EFFICIENCY VS PARTICLE DIAMETER

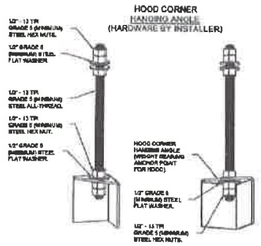


PRESSURE DROP VS FLOW RATE



CAPTRATE FILTERS ARE BUILT IN COMPLIANCE WITH:
NFPA #96.
NSF STANDARD #2
UL STANDARD #1046
INT. MECH. CODE (IMC).
ULC-S649.

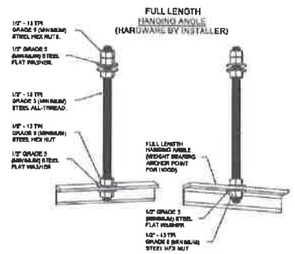
HOOD CORNER
HANGING ANGLE
(HARDWARE BY INSTALLER)



ASSEMBLY INSTRUCTIONS

HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD, SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION BENEATH HOOD HANGING ANGLES AND ABOVE CEILING ANCHORS. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.

FULL LENGTH
HANGING ANGLE
(HARDWARE BY INSTALLER)



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1	ISSUED FOR REVIEW	2020-09-24

Revisions

PROJECT TITLE
THE FOUNDRY - ONOWAY

PROJECT ADDRESS
4904 - 50 STREET,
ONOWAY, ALBERTA, T0E 1V0

DRAWING TITLE
KITCHEN HVAC EQUIPMENT - HOOD

DRAWN	PROJECT NUMBER
MG	C395
CHECKED	SCALE
GG	N.T.S
DATE	SHEET NO
2020-09-24	6 OF 17

EXHAUST FAN INFORMATION – JOB#4697932

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR ENCL	HP	BHP	Ø	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS)	SONES
1		1	SA-NGA15FA	SUNAIR	2448	1.500	1297	ODP,PREMIUM	1.500	1.2500	3	208	4.4	565 FPM	168	18.7

MUA FAN INFORMATION – JOB#4697932

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	BLOWER	HOUSING	MIN CFM	DESIGN CFM	ESP	RPM	MOTOR ENCL	HP	BHP	Ø	VOLT	FLA	MCA	MOCP	WEIGHT (LBS)	SONES
2		1	SA-A1-D 250-G10	G10	A1-D 250	1000	2326	0 500	1192	ODP,PREMIUM	1 500	1 1300	3	208	4.4	6.7A	15A	483	22

GAS FIRED MAKE-UP AIR UNIT(S)

FAN UNIT NO	TAG	INPUT BTUs	OUTPUT BTUs	TEMP RISE	REQUIRED INPUT GAS PRESSURE	GAS TYPE	BURNER EFFICIENCY(%)
2		226939	205784	91°F	7 IN W.C - 14 IN W.C	NATURAL	92

FAN OPTIONS

FAN UNIT NO	TAG	QTY	DESCRIPTION
1		1	GREASE BOX
2		1	UPSTREAM PILOT FOR SIZES 1-3.
		1	MOTORIZED BACKDRAFT DAMPER FOR A1-D HOUSING. MEETS AMCA CLASS 1A RATING.
		1	LOW FIRE START
		1	INLET PRESSURE GAUGE, 0-35".
		1	MANIFOLD PRESSURE GAUGE, 5 TO 15" WC.
		1	FREEZESTAT (1B)

FAN ACCESSORIES

FAN UNIT NO	TAG	EXHAUST			SUPPLY			
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT
1		YES						
2							YES	

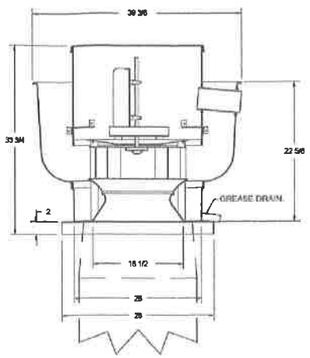
CURB ASSEMBLIES

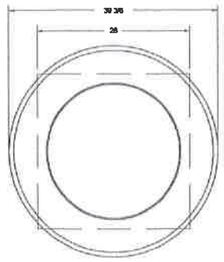
NO	ON FAN	WEIGHT	ITEM	SIZE
1	# 1	38 LBS	CURB	26.500"W X 26.500"L X 24.000"H VENTED HINGED
2	# 2	74 LBS	CURB	21.000"W X 71.000"L X 24.000"H INSULATED

FAN SOUND DATA

FAN UNIT NO	TAG	MOTOR	SOUND DATA			OCTAVE BAND SOUND DATA								
			LWA	SONES @ 5 FT	DBA @ 6FT	DISTANCE (FT)	63 HZ	125 HZ	250 HZ	500 HZ	1 KHZ	2 KHZ	4 KHZ	8 KHZ
1		EXHAUST	82.6	18.7	71	5	76.7	81.5	80.3	79	71.7	69.3	63.2	57.3
2		SUPPLY	83.6	22	72.3	5	85.4	85.3	83.7	80.3	76.6	77	72.7	69.3

FAN #1 SUNCASTER - EXHAUST FAN





TOP VIEW

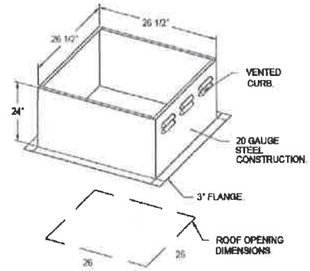
FEATURES:

- ROOF MOUNTED FANS
- RESTAURANT MODEL.
- UL705 AND UL762 AND ULC-S645
- AMCA SOUND AND AIR CERTIFIED.
- WIRING FROM MOTOR TO DISCONNECT SWITCH
- NEMA 3R SAFETY DISCONNECT SWITCH
- HIGH HEAT OPERATION 300°F (149°C)
- GREASE CLASSIFICATION TESTING.

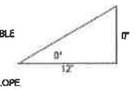
NORMAL TEMPERATURE TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

ABNORMAL FLARE-UP TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING BURNING GREASE VAPORS AT 600°F (316°C) FOR A PERIOD OF 15 MINUTES WITHOUT THE FAN BECOMING DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNSAFE CONDITION.

OPTIONS
GREASE BOX.



PITCHED CURBS ARE AVAILABLE FOR PITCHED ROOFS.



SPECIFY PITCH:
EXAMPLE: 7/12 PITCH = 30° SLOPE

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LEXUS ENGINEERING
UNIT #208 8716 - 48 AVENUE NW
EDMONTON, ALBERTA, T6E 5L1
BUS (780) 435-4544

PERMIT TO PRACTICE
LEXUS ENGINEERING LTD
Date 2021-03-12
PERMIT NUMBER: 11367
The Association of Professional Engineers, Geoscientists of Alberta

stamp / permit

2021-03-12

NO	Description	Date (YMD)
4	ISSUED FOR PERMIT	2021-03-11
3	ISSUED FOR PERMIT	2021-02-23
2	ISSUED FOR REVIEW	2021-01-25
1	ISSUED FOR REVIEW	2020-09-24

Revisions

PROJECT TITLE
THE FOUNDRY - ONOWAY

PROJECT ADDRESS
4904 - 50 STREET,
ONOWAY, ALBERTA, T0E 1V0

DRAWING TITLE
KITCHEN HVAC EQUIPMENT - SCHEDULES- MAKE UP AIR AND EXHAUST FAN

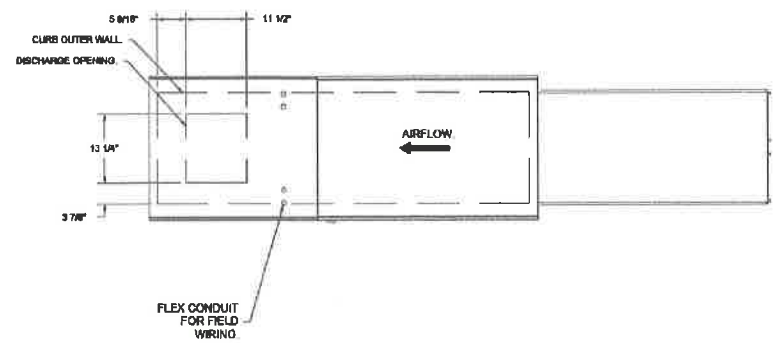
DRAWN MC	PROJECT NUMBER C395
CHECKED GG	SCALE N T S
DATE 2020-09-24	SHEET NO 8 OF 17

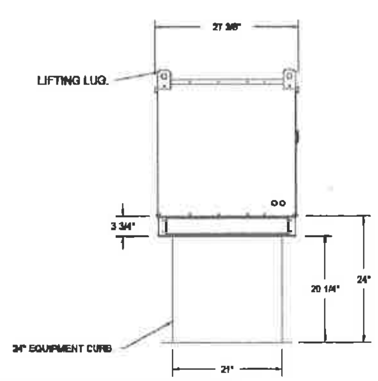
FAN #2 SA-A1-D.250-G10 - HEATER
1. DIRECT GAS FIRED HEATED MAKE UP AIR UNIT WITH 10" BLOWER.
2. INTAKE HOOD WITH EZ FILTERS.
3. DOWN DISCHARGE - AIR FLOW RIGHT -> LEFT
4. PILOT LOCATED UPSTREAM OF FIRST REDUNDANT SOLENOID VALVE OF SIZE 1.3 MAX GAS PRESSURE OF 14" WC.
5. MOTORIZED BACK DRAFT DAMPER 10" X 10" FOR SIZE 1 STANDARD & MODULAR HEATER UNITS W/EXTENDED SHAFT, STANDARD GALVANIZED CONSTRUCTION, 3/4" REAR FLANGE, LOW LEAKAGE, TFB120S ACTUATOR INCLUDED.
6. LOW FIRE START. ALLOWS THE BURNER CIRCUIT TO ENERGIZE WHEN THE MODULATION CONTROL IS IN A LOW FIRE POSITION.
7. GAS PRESSURE GAUGE, 0-35", 2.5" DIAMETER, 1/4" THREAD SIZE.
8. GAS PRESSURE GAUGE, -5 TO +15 INCHES WC., 2.5" DIAMETER, 1/4" THREAD SIZE.
9. FREEZESTAT WITH 10' SENSOR. FACTORY SET AT 35°F AND 10 MINUTES.

*NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE THROAT/SQUARE BACK ELBOWS SHOULD NOT BE USED. ANY TRANSITION AND/OR TURNS IN THE DUCTWORK WILL CAUSE SYSTEM EFFECT. SYSTEM EFFECT WILL DRASTICALLY INCREASE STATIC PRESSURE AND REDUCE AIRFLOW. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT. SUGGESTED STRAIGHT DUCT SIZE IS 14" x 14".

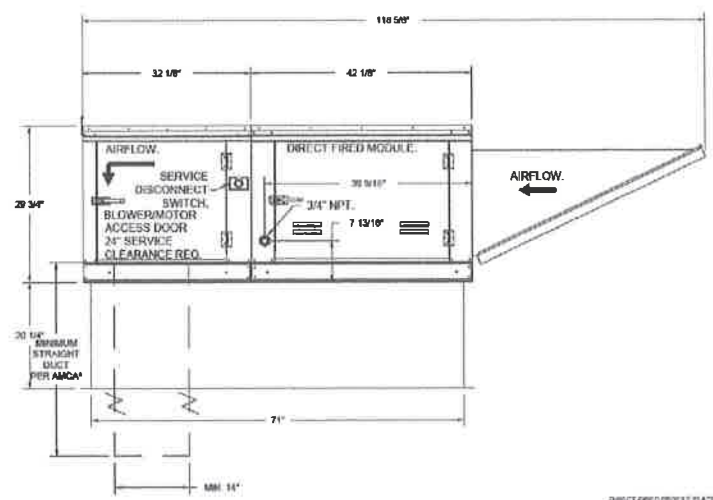
SUPPLY SIDE HEATER INFORMATION:

WINTER TEMPERATURE = -16°F. TEMP. RISE = 91°F.
BTUs CALCULATED OFF ACTUAL AIR DENSITY.
OUTPUT BTUs AT ALTITUDE OF 0.0 FT. = 226131
INPUT BTUs AT ALTITUDE OF 0.0 FT. = 245795
OUTPUT BTUs AT ALTITUDE OF 2192 FT. = 208784
INPUT BTUs AT ALTITUDE OF 2192 FT. = 226939





ROOF OPENING 2" SMALLER THAN CURB DIMENSION.



DIRECT FIRED (DF) PROFILE PLATE ASSEMBLY

DIRECT FIRED PROFILE PLATE SPECIFICATIONS:
DESCRIPTION:
DIRECT FIRED BURNERS SHALL HAVE PATENTED (US PATENT NO. [illegible]) SELF-ADJUSTING PROFILE PLATES DESIGNED TO ENSURE PROPER AIR VELOCITY AND PRESSURE DROP ACROSS THE BURNER. PROFILE PLATES SHALL ALLOW BURNERS TO ACHIEVE CLEAN COMBUSTION BY LIMITING BY PRODUCT LEVELS TO A MAXIMUM OF [illegible] PPM OF CARBON MONOXIDE (CO) AND [illegible] PPM OF NITROGEN DIOXIDE (NO2). DIRECT FIRED UNITS SHALL BE CONFIGURED WITH THE BLOWER MOUNTED DOWNSTREAM OF THE BURNER. THIS ARRANGEMENT WILL ENSURE A CONSISTENT AIRFLOW REGARDLESS OF INLET AIR TEMPERATURE.

APPLICATION:
SPRING LOADED BURNER PROFILE PLATES ARE ENGINEERED TO AUTOMATICALLY REACT TO THE MOMENTUM OF A FRESH AIR STREAM, WITHOUT THE NEED FOR ANY MOTORS OR ACTUATORS TO MECHANICALLY ADJUST THEM. WITH THIS FEATURE, ALL DF UNITS ARE DESIGNED FOR DEMAND CONTROL VENTILATION (DCV) REQUIREMENTS.

CERTIFICATIONS:
ALL PROFILE PLATE ASSEMBLIES SHALL BE INCLUDED IN THE DF UNITS ETL LISTING AND COMPLY WITH COMBINED SAFETY STANDARDS ANSI Z83.4 AND CSA 3.7 (NON-RECIRCULATING OF HEATERS) AND ANSI Z83.18 (RECIRCULATING OF HEATERS).

GENERAL CONSTRUCTION:
-PROFILE PLATES SHALL BE FORMED FROM G90 GALVANIZED STEEL.
-PROFILE PLATES SHALL VARY IN SIZE PER UNIT.
-PROFILE PLATES SHALL BE MOUNTED ALONG THE SAME PLANE AS THE DISCHARGE OF THE BURNER.
-DESIGN SHALL INCORPORATE PROPERLY TORQUED, PERMANENTLY MOUNTED SPRING HINGES.
-SPRING HINGES SHALL BE MADE FROM PLATED STEEL.

NOTE:
THESE DRAWINGS ARE CONCEPTUAL AND ARE NOT INTENDED TO DEPICT EACH AND EVERY DETAIL BUT RATHER TO SHOW THE DESIGN INTENT OF THE ENGINEER. THEY ARE NOT A COMPLETE SET OF INSTRUCTIONS ON HOW TO CONSTRUCT OR ASSEMBLE THIS BUILDING. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL THE MATERIALS AND LABOUR TO FURNISH A COMPLETE BUILDING TO THE SATISFACTION OF THE ENGINEER. ALL BUILDING MATERIAL SPECIFICATIONS, PROCEDURES AND PRACTICES SHALL BE GOVERNED AND EXECUTED AS DESCRIBED IN APPROPRIATE PART OF THE ALBERTA BUILDING CODE IN ALL CASES WHETHER DEPICTED IN THIS SET OF DRAWINGS OR INCIDENTAL.

THE IMPERIAL SCALE INDICATED ON THE REFERENCE SYMBOLS APPLY TO DRAWINGS PRINTED FULL SIZE ON 36" X 24" (ARCH D) SHEET SIZE. THE GIVEN SCALE DOES NOT APPLY TO REDUCTIONS OR ENLARGEMENTS OF THE DRAWING SHEETS.
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PROFESSIONAL ENGINEER
GERRY GOBEL
ALBERTA
2021-03-12

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Revisions

PROJECT TITLE
THE FOUNDRY - ONOWAY

PROJECT ADDRESS
4904 - 50 STREET,
ONOWAY, ALBERTA, T0E 1V0

DRAWING TITLE
KITCHEN HVAC
EQUIPMENT - WIRING

DRAWN MC	PROJECT NUMBER C395
CHECKED GG	SCALE NTS
DATE 2020-09-24	SHEET NO 10 OF 17

DUCTWORK #1 PARTS – JOB#4697932

TAG	PART #	CFM	SP	WEIGHT	VELOCITY	QTY	DESCRIPTION
P1	DW1645ASY	2448	-0.0508	7.22	1753.25	1	SINGLE WALL DUCT 45 DEGREE ELBOW, 16" DUCT, ASSEMBLY.
P2	DW1645ASY	2448	-0.0725	7.22	1763.25	1	SINGLE WALL DUCT 45 DEGREE ELBOW, 16" DUCT, ASSEMBLY.
P3	DW1647LT	2448	-0.019	24.80	1753.25	1	SINGLE WALL DUCT 16" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P4 ASSEMBLED W/P5	DW16TEASY	2448	-0.011	19.23	1753.25	1	SINGLE WALL DUCT TEE, 16" DUCT, ASSEMBLY.
P5 ASSEMBLED W/P4 O=T	DW1617ADKIT			4.59		1	DUCT ACCESS DOOR WITH HANDLE & GREASE DAM, FOR 16" DUCT USE 17" DOOR. STAINLESS STEEL
P6	DW1629LT	2448	-0.0116	16.68	1753.25	1	SINGLE WALL DUCT 16" DIAMETER, 29" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P7 ASSEMBLED W/P9	DW1648AJDKIT	2448	-0.0124	30.39	1753.25	1	SINGLE WALL DUCT ADJUSTABLE, 16" DIAMETER, 47.5" LONG, FLANGE AT ONE END WITH A 16" ADJUSTABLE COLLAR - STAINLESS STEEL
P8	DW16VESU18			22.80		1	DUCT VERTICAL SUPPORT KIT, 16" DUCT, 18" CLEARANCE TO COMBUSTIBLES. PARTS ARE ZINC COATED. HARDWARE KIT #3 USED ON DW3XVESU & DW9XVESU18.
P9 ASSEMBLED W/P7	DW2616TPDBEX	2448		9.00	1753.25	1	DUCT TO CURB TRANSITION 3/4" DOWN TURN, 26 1/2" CURB TO 16" DUCT, 16 GA ALUMINIZED. USED ON NCA16FA / NCA18HPFA & NCA18FA / NCA18HPFA. TRANSITION PLATE OD IS 27.00" DESIGNED FOR USE WITH EXHAUST FAN. NON-STANDARD PART.
SYSTEM AT P9			-1.1068	0.00			
	3M-2000PLUS			0.80		2	DUCT - 3M FIRE BARRIER 2000 PLUS SILICONE - USED AS SEALANT TO SEAL DUCT JOINTS.
	DW16CLASY			1.18		7	DUCT "V" CLAMP WITH NEW DESIGN 14 GA BRACKETS, 16" DUCT, ASSEMBLY.
TOTAL WEIGHT				150.88			

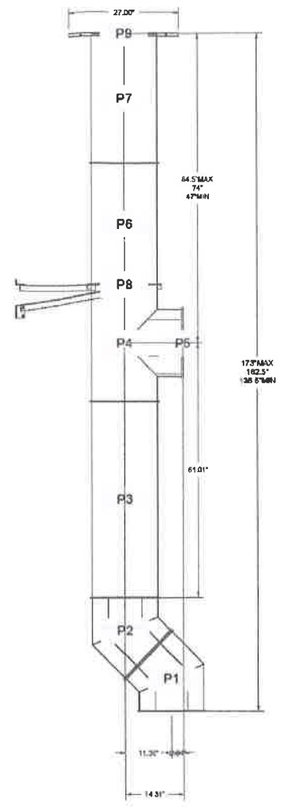
SINGLE WALL FACTORY BUILT DUCTWORK

- ALL DUCTWORK IS REQUIRED TO BE INSTALLED WITH THE MAXIMUM SUPPORT SPACING LISTED BELOW.
- FOR A COMPLETE LIST OF APPROVED SUPPORT METHODS, SEE THE INSTALLATION AND OPERATION MANUAL.
- DUCTWORK SHALL SLOPE NOT LESS THAN 1/16" PER LINEAR FOOT TOWARDS THE HOOD OR AN APPROVED GREASE COLLECTION RESERVOIR.
- WHERE HORIZONTAL DUCTS EXCEED 75 FEET IN LENGTH, THE SLOPE SHALL NOT BE LESS THAN 3/16" PER LINEAR FOOT.

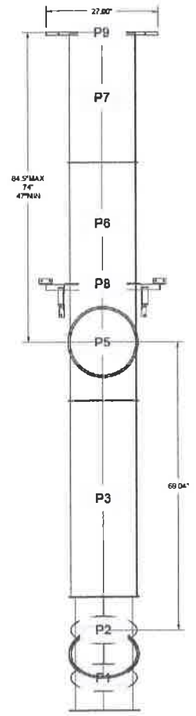
DUCT DIAMETER	HORIZONTAL SUPPORT (FT)	VERTICAL WALL SUPPORT (FT)	VERTICAL CURB SUPPORT (FT)
5"	10'	10'	24'
6"	10'	10'	24'
7"	10'	10'	24'
8"	10'	10'	24'
10"	10'	10'	24'
12"	10'	10'	24'
14"	10'	10'	24'
16"	10'	10'	24'
18"	10'	10'	24'
20"	10'	10'	24'
22"	10'	10'	24'
24"	10'	10'	24'
26"	10'	10'	24'
28"	10'	10'	24'
30"	10'	10'	24'
32"	10'	10'	24'
34"	10'	10'	24'
36"	10'	10'	24'

DO NOT LEAK TEST USING SMOKE BOMBS CONTAINING CHLORINES/CHLORIDES. CONSULT WITH CAPTIVEAIRE FOR PROPER LEAK TESTING METHODS.

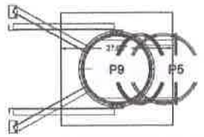
DUCTWORK #1 FRONT VIEW



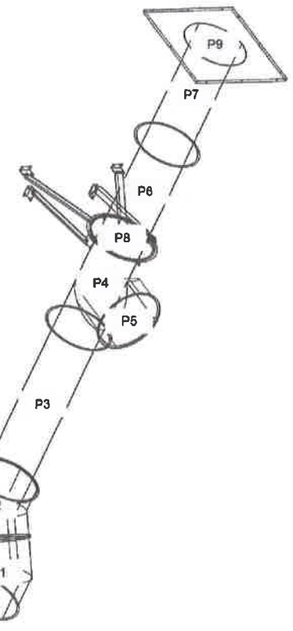
DUCTWORK #1 SIDE VIEW



DUCTWORK #1 TOP VIEW



DUCTWORK #1 SE VIEW



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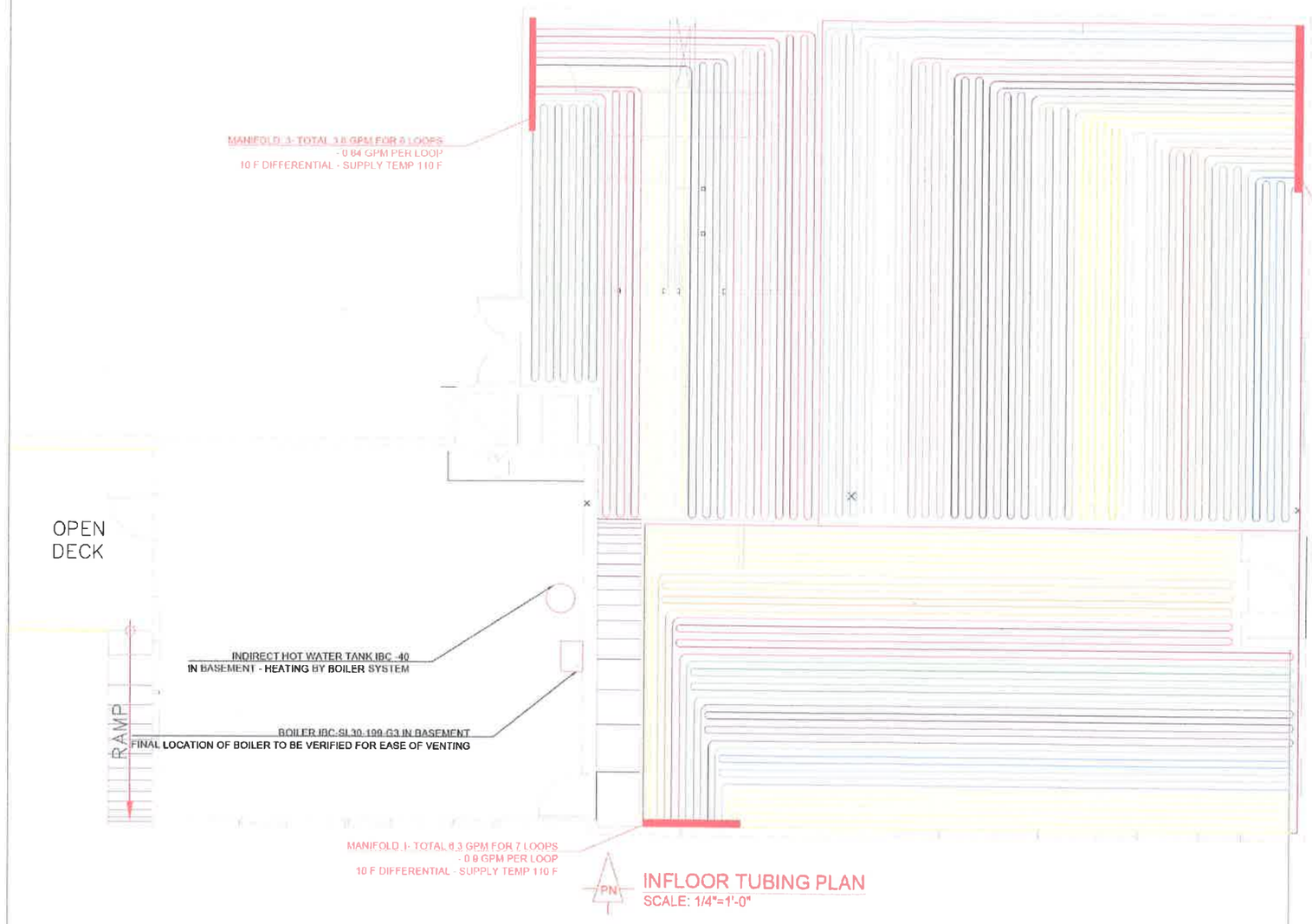
PROJECT TITLE
THE FOUNDRY - ONOWAY

PROJECT ADDRESS
4904 - 50 STREET,
ONOWAY, ALBERTA, T0E 1V0

DRAWING TITLE
KITCHEN HVAC HOOD DUCTING

DRAWN: MG	PROJECT NUMBER: C395
CHECKED: RD	SCALE: N.T.S.
DATE: 2020-09-24	SHEET NO: 12 OF 17



INFLOOR TUBING PLAN
SCALE: 1/4"=1'-0"

NOTE

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PROFESSIONAL ENGINEER
GARRY GORDON
ALBERTA
2021-03-12

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Revisions

PROJECT TITLE
THE FOUNDRY - ONOWAY

PROJECT ADDRESS
4904 - 50 STREET,
ONOWAY, ALBERTA, T0E 1V0

DRAWING TITLE
HYDRONIC SCHEMATIC FOR INFLOOR AND DHW

DRAWN MC	PROJECT NUMBER C395
CHECKED GG	SCALE N.T.S
DATE 2020-09-24	SHEET NO 14 OF 17

GENERAL

1. IT IS THE INTENTION OF THE SPECIFICATION AND DRAWINGS TO PROVIDE COMPLETE, FULLY TESTED AND OPERATIONAL MECHANICAL SYSTEMS TO MEET THE OWNER'S REQUIREMENTS AS DESCRIBED HEREIN AND IN ACCORDANCE WITH THE APPLICABLE CODES. THE WORK SHALL INCLUDE THE PROVISION OF ALL LABOUR, MATERIALS, TOOLS AND EQUIPMENT REQUIRED, WHETHER OR NOT DIRECTLY SPECIFIED OR SHOWN ON THE PLANS.
2. THE SPECIFICATION AND DRAWINGS ARE NOT DETAILED INSTALLATION INSTRUCTIONS, BUT A GUIDE TO ESTABLISHING QUALITY OF EQUIPMENT, MATERIAL, WORKMANSHIP AND PERFORMANCE. REFER TO ARCHITECTURAL, STRUCTURAL, AND ELECTRICAL DRAWINGS, AS WELL AS, MECHANICAL DRAWINGS FOR DETAILS AFFECTING THE MECHANICAL WORK. DRAWINGS AND SPECIFICATIONS ARE COMPLIMENTARY TO ONE ANOTHER, AND THAT WHICH IS SHOWN ON ONE IS AS BINDING AS THAT WHICH IS SHOWN ON BOTH. THE TERM "PROVIDE" SHALL MEAN TO SUPPLY AND INSTALL.
3. ANY DISCREPANCIES BETWEEN DRAWINGS OR SPECIFICATIONS, LEAVING IN DOUBT THE INTENT OF WORK, SHALL BE BROUGHT TO THE ATTENTION OF THE CONSULTANT, IN WRITING, PRIOR TO CLOSING OF TENDERS.
4. AFTER THE WORK IS COMPLETE, BUT PRIOR TO FINAL PAYMENT, FURNISH A WRITTEN GUARANTEE STATING THAT ALL EQUIPMENT SUPPLIED AND ALL WORK EXECUTED UNDER THIS CONTRACT WILL BE FREE FROM DEFECTS OF MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL PERFORMANCE. ANY DEFECTIVE MATERIALS OR WORKMANSHIP THAT BECOME EVIDENT DURING THE GUARANTEE PERIOD WILL BE CORRECTED AT NO ADDITIONAL COST TO THE OWNER.
5. ONLY FIRST CLASS WORKMANSHIP WILL BE ACCEPTED. PIPEWORK AND DUCTWORK MUST BE LINED UP PARALLEL TO OR AT RIGHT ANGLES TO BUILDING WALLS. EQUIPMENT MUST BE ACCURATELY SET, PLUMBED AND WELDED, AND HANGER RODS MUST BE IN TRUE VERTICAL ADJUSTMENT. THE ENTIRE WORK SHALL PRESENT A NEAT AND CLEAN APPEARANCE ON COMPLETION.
6. ALL MATERIAL USED SHALL BE NEW AND THE BEST OF THE RESPECTIVE KIND.
7. MAKE ANY NECESSARY CHANGES OR ADDITIONS TO THE PLACEMENT OF EQUIPMENT AND ROUTING OF PIPING AND DUCTWORK TO ACCOMMODATE STRUCTURAL, ELECTRICAL AND ARCHITECTURAL CONDITIONS.
8. ALL NECESSARY PIPE SLEEVES, HANGER INSERTS, EQUIPMENT SUPPORTS, ETC., SHALL BE INSTALLED AT THE PROPER TIME AND PROVIDED WHERE NECESSARY TO CARRY OUT THE MECHANICAL WORK.
9. FLASH, COUNTER FLASH AND PROVIDE SLEEVES FOR ALL PIPING AND DUCTWORK THROUGH ROOF. ALL CUTTING, PATCHING, ROOF REPAIR, CAULKING, ETC., REQUIRED FOR THE COMPLETION OF THE INSTALLATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. SUBMIT SHOP DRAWINGS OF ALL EQUIPMENT PRIOR TO ORDERING. EQUIPMENT THAT HAS NOT BEEN REVIEWED BY THE CONSULTANT WILL NOT BE ACCEPTED.
11. PROVIDE ISOLATION VALVES AND MAKE CONNECTIONS TO EQUIPMENT, FIXTURES, ETC., PROVIDED AS PART OF THIS CONTRACT AND SUPPLIED BY OTHERS AND LEAVE IN FULL OPERATING CONDITION.
12. FOLLOW THE RECOMMENDED INSTALLATION DETAILS AND PROCEDURES FOR EQUIPMENT AS FOUND IN SUPPLIERS TECHNICAL DATA, SUPPLEMENTED BY DETAILS GIVEN HEREIN AND ON PLANS.
13. PROVIDE ADDITIONAL MATERIAL FOR MODIFICATIONS THAT MAY BE REQUIRED TO CORRECT MINOR JOB CONFLICTS, FOR NORMALLY ACCEPTED PROCEDURES IN THE RESPECTIVE TRADE.
14. UPON COMPLETION OF PROJECT, SUBMIT ONE SET OF MARKED-UP RECORD DRAWINGS, AS WELL AS, THREE SETS OF APPROVED SHOP DRAWINGS AND EQUIPMENT MAINTENANCE INSTRUCTIONS, IN THREE-RING BINDERS NEATLY BOUND AND LABELED. MAINTENANCE MANUALS SHALL BE PREPARED SO THAT THEY ARE EASY TO USE, CONTAIN TABLE OF CONTENTS, NUMBERED PAGES, TABBED DIVIDERS AND TYPEWRITTEN INFORMATION. MANUALS SHALL INCLUDE THE FOLLOWING INFORMATION: INDEX, LIST OF CONTRACTORS AND EQUIPMENT SUPPLIERS, SYSTEMS DESCRIPTION, MAINTENANCE TASKS, LUBRICATION INFORMATION, PARTS AND TROUBLE SHOOTING DATA, TESTING AND INSPECTION CERTIFICATES, BALANCE REPORTS, SHOP DRAWINGS, AND MANUFACTURER'S INSTALLATION AND MAINTENANCE DATA SHEETS.
15. INSTALL ALL PIPING, DUCTWORK, ETC., GENERALLY IN LOCATIONS AND ROUTES SHOWN ON THE DRAWINGS, CLOSE TO THE BUILDING STRUCTURE TO MINIMIZE FURRING (WHERE NECESSARY) AND INTERFERENCE WITH OTHER SERVICES OR FREE SPACE. PIPING, DUCTWORK, ETC. THAT IS NOT PROPERLY INSTALLED WILL BE REMOVED AND REPLACED, TO THE SATISFACTION OF THE CONSULTANT.
16. THE DETAILED LAYOUT OF WORK WITH RESPECT TO OTHER WORK IS THE RESPONSIBILITY OF THE CONTRACTOR. NO PRICE CHANGE WILL BE CONSIDERED WHICH IS DUE TO INTERFERENCE WITH THE WORK OF OTHER TRADES.
17. GIVE ALL NECESSARY NOTICES, OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM AUTHORITIES HAVING JURISDICTION, AND PAY ALL FEES, IN ORDER THAT THE WORK HEREIN SPECIFIED AND SHOWN ON THE DRAWINGS, MAY BE CARRIED OUT. FURNISH ANY CERTIFICATES NECESSARY AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH CODES AND REGULATIONS OF ALL AUTHORITIES BEFORE FINAL CERTIFICATES ARE ISSUED. ALL CHANGES AND ALTERATIONS REQUIRED BY AN AUTHORIZED INSPECTOR OF ANY AUTHORITY, SHALL BE CARRIED OUT WITHOUT CHARGE OR EXPENSE TO THE OWNER. UPON COMPLETION OF THE WORK, PROVIDE A CERTIFICATE OF FINAL APPROVAL FROM THE INSPECTION AUTHORITY.
18. PROVIDE ALL NECESSARY INFORMATION TO THE RESPECTIVE SUBCONTRACTORS FOR OPENINGS AND CHASES. ALL DRILLING FOR EXPANSION SHIELDS, HANGER RODS, BRACKETS, OR SLEEVES SHALL BE BY THE CONTRACTOR.
19. THE USE OF AN EQUIVALENT MANUFACTURER SHALL IN NO WAY RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY OF FURNISHING ANY WORK THAT MAY BE REQUIRED BY REASON OF DIFFERENT SPACE, WEIGHT, ELECTRICAL REQUIREMENTS, ETC., FROM THAT OF THE SPECIFIED MANUFACTURER. IF, IN THE OPINION OF THE CONSULTANT, SUCH WORK IS NECESSARY AND IS NOT CARRIED OUT IN A MANNER THAT WILL ENSURE SATISFACTORY OPERATION AND PERFORMANCE OF THE PRODUCT, THEN THE CONTRACTOR SHALL BE REQUIRED TO USE THE SPECIFIED MANUFACTURER.
20. BE RESPONSIBLE FOR THE PROTECTION AND MAINTENANCE OF THE WORK OF THIS PROJECT UNTIL THE BUILDING HAS BEEN COMPLETED AND ACCEPTED BY THE OWNER, AND FOR THE STORING OF MATERIALS ON SITE AND THE CLEANUP ALL REFUSE CAUSED BY THIS WORK.
21. PROTECT ALL PARTS OF THE BUILDING FROM DAMAGE DUE TO THE CARRYING OUT OF THE WORK AND MAKE GOOD, OR PAY FOR, ANY DAMAGES SUSTAINED.
22. THOROUGHLY CLEAN WALLS, CEILINGS, FLOORS, PIPING, DUCTS, CONDUITS AND EQUIPMENT OF DIRT, CUTTINGS AND OTHER FOREIGN SUBSTANCES. DISCONNECT, CLEAN AND RECONNECT WHEREVER NECESSARY, FOR THE PURPOSE OF LOCATING AND REMOVING OBSTRUCTIONS. REPAIR WORK DAMAGED IN THE COURSE OF REMOVING OBSTRUCTIONS.
23. NO ALTERATION BY MEANS OF CUTTING, DRILLING OR OTHERWISE TO COLUMNS, FLOORS, ROOF OR WALLS OF THE STRUCTURE WILL BE PERMITTED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE STRUCTURAL CONSULTANT. PROPER PROTECTION WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
24. BE RESPONSIBLE FOR TRANSPORTATION, STORAGE, AND PROTECTION OF ALL MATERIAL AND EQUIPMENT SUPPLIED UNDER THIS CONTRACT, UP TO THE TIME THE PROJECT IS COMPLETE AND ACCEPTED BY THE OWNER.
25. PROVIDE ALL REQUIRED SCAFFOLDING, HOISTS, AND RIGGING NECESSARY FOR THE ERECTION AND DELIVERY OF THE MECHANICAL WORK.
26. EQUIPMENT SPECIFIED SETS A STANDARD OF QUALITY. OTHER MANUFACTURERS MUST MAKE APPLICATION, IN WRITING, TOGETHER WITH COMPLETE DETAILED TECHNICAL SUBMISSION TO HAVE THEIR EQUIPMENT APPROVED. REQUEST FOR APPROVAL SHALL BE MADE TO THE CONSULTANT DURING THE TENDER PERIOD, AT LEAST THREE WORKING DAYS PRIOR TO CLOSING OF TENDERS.
27. SUPPLY MECHANICAL EQUIPMENT WITH MOTORS OPERATING AT 1800 RPM, UNLESS OTHERWISE SPECIFIED. REFER TO ELECTRICAL CONSTRUCTION DOCUMENTS FOR VOLTAGE, PHASE, AND CYCLES. WHERE VOLTAGES ARE INDICATED IN MECHANICAL DOCUMENTS, CONFIRMATION SHALL BE MADE BY REFERENCE TO ELECTRICAL DOCUMENTS PRIOR TO ORDERING MOTORS.
28. BE RESPONSIBLE FOR ALL EXCAVATION AND BACKFILLING FOR ALL UNDERGROUND MECHANICAL SERVICES.
29. PRIOR TO COMMENCING WORK, CONFIRM LOCATION AND INVERT OF EXISTING MAIN SERVICES.
30. DO NOT USE THE PERMANENT HEATING SYSTEM FOR TEMPORARY HEATING PURPOSES WITHOUT WRITTEN PERMISSION FROM THE CONSULTANT. ALL AIR HANDLING EQUIPMENT ASSOCIATED WITH THE WORK OF THIS CONTRACT SHALL BE PROVIDED WITH NEW FILTERS
PRIOR TO TAKEOVER OF THE PROJECT.
31. PROVIDE CHROME PLATED ESCUTCHEON PLATES ON PIPING PASSING THROUGH FINISHED WALLS, PARTITIONS, FLOORS AND CEILINGS.
32. PROVIDE ACUDOOR OR EQUAL ACCESS DOORS FOR CONCEALED MECHANICAL COMPONENTS SUCH AS VALVES, DAMPERS, CLEANOUTS, CONTROLS, ETC., THAT REQUIRES SERVICING AND MAINTENANCE.

PIPING AND PIPE FITTINGS

1. DOMESTIC WATER ABOVE GRADE: TYPE 'L' HARD COPPER TO ASTM B-88 WITH WROUGHT COPPER, BRONZE OR CAST BRASS FITTINGS, 95-5 'LEAD FREE' SOLDER JOINTS.
2. STORM, SANITARY & VENT (BURRIED): PVC 'SDR35' WITH PVC FITTINGS AND SOLVENT WELDED JOINTS. CAST IRON TO CAN3-B70 WITH HUB & SPIGOT OR MECHANICAL JOINTS.
3. STORM, SANITARY & VENT ABOVE GRADE: DWV COPPER TO ASTM B306 WITH WROUGHT COPPER OR CAST BRASS FITTINGS, 50-50 SOLDER CAST IRON TO CAN3-B70 WITH HUB & SPIGOT OR MECHANICAL JOINTS.
4. HYDRONIC PIPING: SCHEDULE 40 BLACK STEEL, GRADE B, ASTM A-53. SCREWED FITTINGS TO BE CLASS 150 MALLEABLE IRON TO ANSI B16.3. PIPE FLANGES AND FLANGED FITTINGS TO ANSI B16.1 AND B16.5. BUTT WELDED FITTINGS TO ANSI B16.5.
5. NATURAL GAS: SCHEDULE 40 BLACK STEEL WITH CLASS 150 MALLEABLE IRON FITTINGS, SCREWED OR WELDED JOINTS. WELD ALL CONCEALED PIPING REGARDLESS OF SIZE. PAINT ALL PIPING ON ROOF WITH YELLOW RUST RESISTANT PANT. PROVIDE 'YELLOW JACKET' PIPE
COVERING ON ALL BURIED GAS PIPING.

PIPE AND DUCT HANGERS

1. HANGERS AND HANGER RODS SHALL BE SUPPLIED AND INSTALLED BY THIS CONTRACTOR. USE OF PERFORATED STRAP, WIRE OR CHAIN HANGERS IS NOT PERMITTED.
2. CAST IRON AND STEEL PIPES: CLEVIS TYPE HANGERS.
3. COPPER PIPES: HANGERS WITH COPPER PLATE FINISH.
4. HANGERS TO BE SUITABLE FOR SERVICE AND SELECTED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDED MAXIMUM LOADING; MINIMUM SAFETY FACTOR OF 5 TO 1.
5. PROVIDE CLEARANCES FOR PROPER INSTALLATION OF INSULATION, AND FOR ACCESS TO VALVES, DRAINS, ETC.
6. SUPPORT PIPES IN ACCORDANCE WITH ASHRAE AND/OR APPLICABLE CODES.
7. PROVIDE HANGERS AND SUPPORTS FOR ALL DUCTWORK IN ACCORDANCE WITH SMACNA – "HVAC DUCT CONSTRUCTION STANDARDS – METAL AND FLEXIBLE", LATEST EDITION.

IDENTIFICATION

1. ALL INTERIOR GAS PIPING IS TO BE BANDED IN ACCORDANCE WITH CSA B149.1 – LATEST EDITION. ALL EXTERIOR GAS PIPING TO BE PAINTED WITH YELLOW RUST RESISTANT PAINT.
2. IDENTIFY ALL PIPING AND DUCTWORK WITH 50MM (2") HIGH BLACK STENCILED LETTERING. INDICATE MEDIUM BEING CONVEYED AND DIRECTION OF FLOW. PROVIDE IDENTIFICATION AT A MAXIMUM OF EVERY 5M (15'), ON BOTH SIDES OF WALLS AND FLOORS, AND AT EVERY CHANGE IN DIRECTION.

VALVES

1. VALVES SHALL BE INSTALLED AS INDICATED ON THE DRAWINGS, AS SPECIFIED, AND AS REQUIRED TO ISOLATE ALL FIXTURES, EQUIPMENT, ETC.
2. HYDRONIC SYSTEM VALVES:
3. SHUT-OFF VALVE 50MM AND UNDER: BALL VALVES: RED AND WHITE 5044A OR EQUIVALENT, 600# WOG, FULL PORT, 2-PIECE BRASS BODY, CHROMIUM PLATED BRASS BALL, TEFLON SEAT, LEVER HANDLE, SCREWED OR SOLDERED END.
4. SHUT-OFF VALVE OVER 50MM: KITZ DJ SERIES OR KEYSTONE EQUAL, ANSI CLASS 150, 200 PSIG PRESSURE RATING, LUG BODY BUTTERFLY VALVE FOR DEAD END SERVICE, DUCTILE IRON BODY, 316 STAINLESS STEEL DISC AND TRIM, EDPM SEAT, LEVER HANDLE.
5. SILENT SWING CHECK VALVES 50MM AND UNDER: CLASS 150, BRONZE BODY, RENEWABLE NROTATING DISC, STAINLESS STEEL SPRING, SCREWED OR SOLDER END.
6. SILENT SWING CHECK VALVES 50MM AND OVER: DUO-CHECK II, NON-SLAM CHECK VALVE, CLASS 150, LUG DUCTILE IRON BODY, EDPM SEAT, STAINLESS STEEL SPRING.
7. CIRCUIT BALANCING VALVES: PRESO B-PLUS SERIES METERING / BALANCING, HIGH FLOW SERIES.
8. PROVIDE CHROME PLATED RIGID OR FLEXIBLE SUPPLIES TO ALL PLUMBING FIXTURES WITH STOPS, REDUCERS, AND ESCUTCHEONS SECURELY ATTACHED TO WALL OR FLOOR SURFACE.
9. DOMESTIC WATER VALVES: RED & WHITE OR EQUAL, BRONZE BODY, STAINLESS STEEL BALL, TEFLON SEAT, LEVER HANDLE.
10. NATURAL GAS VALVES: WRENCH OPERATED PLUG TYPE, CLASS 125, ROCKWELL OR EQUAL. VALVES SHALL BE CGA APPROVED AND SUITABLE FOR INDOOR AND OUTDOOR INSTALLATIONS.
11. PRESSURE REDUCING VALVES FOR GAS SERVICE: FISHER OR EQUAL, SIZED FOR MAXIMUM OF 75 PERCENT OF FULL RATED CAPACITY C/W PRESSURE RELIEF. PIPE RELIEF TO ATMOSPHERE IN ACCORDANCE WITH CSA B149.1.

INSULATION

1. DOMESTIC WATER LINES: 25MM (1") THICK FIBREGLASS HEAVY DENSITY PIPE INSULATION WITH ASJ JACKET.
2. HYDRONIC SYSTEM LINES: 25MM (1") THICK FIBREGLASS HEAVY DENSITY PIPE INSULATION WITH ASJ JACKET.
3. INSULATE FIRST 3M (10') OF STORM AND VENT PIPING FROM THE ROOF TERMINAL, AND ALL HORIZONTAL STORM AND VENT PIPING LOCATED IN CEILING SPACES BELOW ROOF DECK WITH 25MM (1") THICK FIBREGLASS HEAVY DENSITY INSULATION WITH ASJ JACKET.
4. RECTANGULAR SUPPLY AND RETURN DUCTWORK: 25MM (1") THICK RIGID FIBREGLASS INTERIOR DUCT INSULATION.
5. ROUND SUPPLY DUCTWORK: 25MM (1") FLEXIBLE FOIL FACED FIBREGLASS EXTERIOR DUCT INSULATION. EXPOSED DUCTS ARE NOT REQUIRED TO BE INSULATED.
6. INSULATE FIRST 3M (10') OF EXHAUST DUCTWORK FROM ROOF OR WALL TERMINAL, LOCATED INDOORS, WITH 50MM (2") FLEXIBLE FOIL FACED FIBREGLASS EXTERIOR DUCT INSULATION.
7. INSULATE ALL DUCTWORK LOCATED OUTDOORS OR SUBJECT TO OUTDOOR TEMPERATURES WITH 50MM (2") THICK RIGID FIBREGLASS INTERIOR DUCT INSULATION.
8. BREECHING: 50MM (2") THICK HIGH TEMPERATURE RIGID FIBREGLASS INSULATION WITH ALUMINUM JACKET.
9. INSULATE ALL PIPE FITTINGS, ELBOWS, ETC., WITH PREFORMED FIBROUS GLASS INSULATION FITTINGS OR INSULATING CEMENT TO THE SAME THICKNESS AS ADJACENT INSULATION.
10. PROVIDE PVC JACKET FOR ALL EXPOSED INSULATED PIPING AND FITTINGS. PROVIDE CANVAS JACKET FOR ALL EXPOSED INSULATED DUCTWORK.

HYDRONIC SYSTEM INSTALLATION

1. CONNECT TO EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS UNLESS OTHERWISE INDICATED.
2. INSTALL CONCEALED PIPING CLOSE TO BUILDING STRUCTURE TO KEEP FURRING SPACE TO MINIMUM.
3. INSTALL TO CONSERVE HEADROOM AND SPACE. RUN EXPOSED PIPING PARALLEL TO WALLS. GROUP PIPES WHERE POSSIBLE.
4. SLOPE PIPING IN DIRECTION OF DRAINAGE AND PROVIDE POSITIVE VENTING. INSTALL AIR VENTS AT HIGH POINTS IN SYSTEM AND DRAIN VALVES AT LOW POINTS.
5. USE ECCENTRIC REDUCERS AT PIPE SIZE CHANGES.
6. PROVIDE CLEARANCE FOR INSTALLATION OF INSULATION AND ACCESS FOR MAINTENANCE OF EQUIPMENT, VALVES AND FITTINGS.
7. REAM PIPES, CLEAN SCALE AND DIRT, INSIDE AND OUTSIDE, BEFORE AND AFTER ASSEMBLY. ASSEMBLE PIPING USING FITTINGS MANUFACTURED TO ANSI STANDARDS.
8. SADDLE TYPE BRANCH FITTINGS MAY BE USED ON MAINS IF BRANCH IS NO LARGER THAN ONE HALF OF THE SIZE OF MAIN. HOLE SAW OR DRILL AND REAM MAIN TO MAINTAIN FULL INSIDE DIAMETER OR BRANCH LINE PRIOR TO WELDING SADDLE.
9. INSTALL BALL VALVE AT BRANCH TAKE-OFFS AND TO ISOLATE EACH PIECE OF EQUIPMENT. INSTALL BALL VALVES FOR BALANCING. PROVIDE SILENT CHECK VALVES ON DISCHARGE OF PUMPS.
10. THOROUGHLY CLEAN ALL NEW AND EXISTING PIPING SYSTEM AND PROVIDE COMPLETE CHEMICAL TREATMENT SYSTEM. TOP UP CHEMICAL TREATMENT AFTER ALL NEW WORK IS COMPLETED.

PLUMBING GENERAL

1. SANITARY SEWERS SHALL HAVE A MINIMUM SLOPE OF 1% FOR LINES 100MM (4") AND OVER. FOR LINES 75MM (3") AND UNDER USE MINIMUM 2% SLOPE.
2. PROVIDE BARRETT TYPE CLEANOUTS OF MATERIALS COMPATIBLE TO PIPING MATERIALS AT BASES OF STACKS.
3. PLUMBING INSTALLATION SHALL COMPLY WITH LOCAL BUILDING REGULATIONS. SUCH REQUIREMENTS SHALL HAVE PRECEDENCE OVER THE DRAWINGS AND SPECIFICATIONS.
4. ALL CLEANOUTS SHALL BE ACCESSIBLE.
5. ALL PIPES SHALL BE LOCATED AWAY FROM LOAD BEARING FOOTINGS.
6. PROVIDE CHROME PLATED RIGID OR FLEXIBLE SUPPLIES TO ALL PLUMBING FIXTURES WITH STOPS, REDUCERS, AND ESCUTCHEONS SECURELY ATTACHED TO WALL OR FLOOR SURFACE.
7. PROVIDE WALL MOUNTED PLUMBING FIXTURES WITH FACTORY MANUFACTURED FLOOR MOUNTED CHAIR CARRIER SYSTEM.
8. PROVIDE BRASS TRAPS COMPLETE WITH CLEANOUTS FOR ALL FIXTURES THAT ARE NOT EQUIPPED WITH BUILT-IN TRAPS. CHROME PLATED IN ALL EXPOSED AREAS.
9. FIT WATER SUPPLY PIPING TO EACH FIXTURE OR GROUP OF FIXTURES WITH AN AIR CHAMBER. PROVIDE AIR CHAMBERS TWO PIPE SIZES LARGER THAN INSTALLED ON AND MINIMUM 600 MM LONG, OR PROVIDE ZURN 'SHOKTROL' OR APPROVED EQUAL WATER HAMMER ARRESTERS SIZED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
10. WHERE STEEL PIPE IS USED, EXTREME CARE SHALL BE EXERCISED TO INSULATE BETWEEN STEEL PIPING AND COPPER PIPING OR VESSELS, BY THE USE OF DIELECTRIC UNIONS.
11. PROVIDE APPROVED POTABLE WATER PROTECTION DEVICES ON PLUMBING LINES WHERE CONTAMINATION OF POTABLE DOMESTIC WATER MAY OCCUR. THESE DEVICES SHALL BE GENERALLY PROVIDED FOR JANITOR'S SINKS, HOSE BIBBS, FLUSH VALVES, FIRE PROTECTION SYSTEMS, IRRIGATION SYSTEMS AND WHERE REQUIRED BY CODE. PROTECTION DEVICES SHALL COMPLY WITH CSA B64.
12. PROVIDE TRAP PRIMERS OR TRAP GUARDS FOR ALL FLOOR DRAINS.

FIRE PROTECTION

1. FIRE EXTINGUISHERS MULTI-PURPOSE ABC 4.5 KG (10 LBS), DRY CHEMICAL WITH CHARGEABLE CYLINDER, HOSE AND SHUT-OFF NOZZLE PRESSURE GUAGE, MOUNT IN FULLY RECESSED CABINET WITH GLASS DOOR.

HVAC DUCTWORK, EQUIPMENT & ACCESSORIES

1. UNLESS NOTED OTHERWISE, CONSTRUCT AND SEAL DUCTWORK IN ACCORDANCE WITH SMACNA, "HVAC DUCT CONSTRUCTION STANDARDS – METAL AND FLEXIBLE", AND ASHRAE STANDARDS. DUCTWORK TO BE GALVANIZED STEEL, ASTM DESIGNATION A-527 WITH G60 COATING. LOW PRESSURE DUCTWORK (UP TO 500 PA) TO BE CONSTRUCTED TO SMACNA CLASS B.
2. PRIOR TO FABRICATION, CHECK CEILING SPACES, HEIGHTS AND CONFLICTS WITH OTHER TRADES AT THE SITE AND OFF DRAWINGS. PROVIDE ADDITIONAL OFFSETS AND CHANGES IN DIRECTION REQUIRED, WITHOUT ADDITIONAL COST.
3. FLEXIBLE DUCTWORK SHALL BE COATED WOVEN FIBREGLAS TYPE, HELICALLY SUPPORTED BY SPRING STEEL WIRE, ULC LISTED, 25MM (1") THICK FLEXIBLE INSULATION WITH JACKET. LENGTH NOT TO EXCEED 1M (3').
4. BALANCING DAMPERS SHALL BE FABRICATED OF GALVANIZED STEEL, TWO GAUGES HEAVIER THAN DUCT WITH END BEARING, LOCKING QUADRANT AND EXTENDER FOR INSULATION. DAMPERS FOR RECTANGULAR DUCTS SHALL HAVE OPPOSED BLADE TYPE. DAMPERS FOR ROUND DUCTS SHALL HAVE BUTTERFLY TYPE. PROVIDE BALANCING DAMPER ON EACH LOW VELOCITY SUPPLY, RETURN AND EXHAUST DUCTS INCLUDING RUN-OUTS TO ROOM INLETS AND OUTLETS.
5. FIRE DAMPERS SHALL COMPLY WITH ULC S112 WITH BLADES OUTSIDE OF AIRSTREAM. FIRE DAMPERS ARE TO BE INSTALLED WHERE DUCTS AND GRILLES PASS THROUGH FIRE RATED ASSEMBLIES. THE CONTRACTOR SHALL REVIEW ARCHITECTURAL PLANS AND CONFIRM FIRE DAMPER REQUIREMENTS. PROVIDE APPROVED ACCESS PANELS AT EACH FIRE DAMPER.
6. DUCTS SHALL NOT, UNDER ANY CIRCUMSTANCES, BE SUPPORTED BY MEANS OF PERFORATED BAND IRON, WIRE OR CHAIN. DUCTS SHALL NOT BE SUPPORTED FROM HANGERS SUPPLIED BY OTHER TRADES.
7. CONNECTIONS BETWEEN DUCTS AND FANS SHALL BE MADE WITH 150 MM LONG FLEXIBLE NEOPRENE.
8. SUPPLY AND INSTALL FOR EACH ROOFTOP & MAKE-UP AIR UNIT, A MINIMUM OF THREE GUM CUPS FOR SERVICE CONNECTIONS TO THE EACH SERVICES TO THE UNIT (GAS, POWER AND CONTROL) SHALL BE RUN THROUGH A SEPARATE GUM CUP.
9. PACKAGED ROOFTOP UNITS: TRANE OR APPROVED EQUAL, FACTORY ASSEMBLED AND TESTED, PRE-WIRED, GAS HEATING / DX COOLING, SUPPLY FAN AND MOTOR WITH BELT DRIVE, 50MM (2") THICK DISPOSABLE FILTERS, ECONOMIZER WITH 100% BAROMETRIC RELIEF, HAIL GUARD, ROOF CURB, DISCONNECT SWITCH, CONTROLS, 2 STAGE PROGRAMMABLE THERMOSTAT.
10. MAKE-UP AIR UNITS: ENGINEERED AIR OR APPROVED EQUAL, FACTORY ASSEMBLED AND TESTED, PRE-WIRED, DIRECT-FIRED, SUPPLY FAN AND MOTOR WITH BELT DRIVE, 50MM (2") THICK DISPOSABLE FILTERS, INTAKE HOOD WITH MOTORIZED DAMPER, ROOF CURB, DISCONNECT SWITCH AND CONTROLS. PROVIDE REMOTE CONTROL PANEL WITH BLOWER ON/OFF SWITCH & LIGHT, HEAT ON/OFF SWITCH & LIGHT, DISCHARGE TEMPERATURE SET POINT ADJUSTMENT, DIRTY FILTER LIGHT. REVERSE INTERLOCK MAKE-UP AIR UNIT WITH PARKADE EXHAUST FAN.
11. GENERAL AND WASHROOM EXHAUST FANS: COOK OR APPROVED EQUAL. TYPE AS INDICATED ON SCHEDULE COMPLETE WITH BACKDRAFT OR MOTORIZED DAMPER. PROVIDE ROOF CURB AND DISCONNECT SWITCH FOR ALL ROOF MOUNTED FANS. PROVIDE SPRING HANGERS FOR ALL IN-LINE FANS.
12. KITCHEN EXHAUST FANS: COOK OR APPROVED EQUAL, ULC LISTED FOR COMMERCIAL COOKING WITH ROOF CURB AND DISCONNECT SWITCH.
13. CHIMNEY AND BREECHING: TYPE "B" FACTORY FABRICATED METAL, SECTIONAL DOUBLE WALL CERTIFIED TO ULC STANDARD S605. FACTORY SUPPLIED FITTINGS AND ACCESSORIES INCLUDING THIMBLES, COLLARS, SUPPORT PLATES AND RAIN CAP.

AUTOMATIC CONTROLS

1. ALL CONTROLS FOR MECHANICAL EQUIPMENT SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR.
2. PROVIDE A COMPLETE CO NOX GAS DETECTION SYSTEM FOR ENTIRE PARKADE. PROVIDE ALL SENSORS AND CONTROLS FOR A COMPLETE INSTALLATION. INTERLOCK WITH ALL PARKADE VENTILATION SYSTEM EQUIPMENT.
3. PROVIDE A DUPLEX HEATING PLANT CONTROL SYSTEM COMPLETE OUTDOOR AIR RESET, DUPLEX BOILER AND PUMP CONTROL, HEATING PUMP CONTROL AND ALL REQUIRED CONTROLS DEVICES, WIRING AND PROGRAMMING FOR A COMPLETE INSTALLATION.
4. PROVIDE ALL NECESSARY WIRING DIAGRAMS AND INSTRUCTIONS IN ORDER THAT THE ELECTRICAL WORK CAN BE SATISFACTORILY COMPLETED.
5. INSTALLATION OF CONTROL WORK BY THE ELECTRICAL TRADE SHALL BE DONE UNDER THE SUPERVISION OF THE MECHANICAL TRADE.
6. CONTROL WIRING AND ELECTRICAL DEVICES SHALL COMPLY WITH THE REQUIREMENTS OF THE ELECTRICAL CONSULTANTS DOCUMENTS.
7. THERMOSTATS SHALL BE MOUNTED 1.5M (5') ABOVE THE FLOOR LEVEL AND ON LOCK SIDE OF DOORS (IF ADJACENT THERETO) IN LINE WITH THE LIGHT SWITCH, UNLESS OTHERWISE SPECIFIED. THERMOSTATS MOUNTED ON OUTSIDE WALLS SHALL BE STOOD OFF FROM THE WALL BY INSULATED BLOCKS OR BRACKETS WHICH ALLOW FREE AIR MOVEMENT BEHIND THE THERMOSTAT. THERMOSTATS IN PUBLIC SPACES SHALL BE PROVIDED WITH CLEAR PLASTIC LOCKING COVERS.
8. IT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO ENSURE THAT, ALL CONTROL DEVICES SERVING MECHANICAL EQUIPMENT ARE INSTALLED CORRECTLY AND FUNCTION PROPERLY AND THAT ALL MECHANICAL EQUIPMENT OPERATES AS DESIGNED AND SPECIFIED, IN CONJUNCTION WITH THE CONTROLS.

TESTING AND BALANCING

1. TEST EQUIPMENT, PIPING, AND MATERIALS AS REQUIRED BY SPECIFICATION OR AUTHORITY HAVING JURISDICTION, TO DEMONSTRATE ITS PROPER AND SAFE OPERATION. PROVIDE EQUIPMENT, MATERIAL, AND LABOUR FOR TESTS AND PAY EXPENSES.
2. TAKE CHARGE DURING TESTS, ASSUME RESPONSIBILITY FOR DAMAGES IN THE EVENT OF INJURY TO PERSONNEL, BUILDING OR EQUIPMENT AND BEAR COSTS OF LIABILITY, REPAIRS AND RESTORATIONS.
3. MAKE CHANGES IMMEDIATELY TO CORRECT DEFECTS SHOULD TESTS INDICATE DEFECTIVE WORK. CORRECT LEAKS BY REMAKING JOINTS AND RETEST.
4. CONDUCT PERFORMANCE TESTS TO DEMONSTRATE EQUIPMENT AND SYSTEMS MEET SPECIFIED REQUIREMENTS AFTER MECHANICAL INSTALLATIONS ARE COMPLETED AND PRESSURE TESTED. CONDUCT TESTS AS SOON AS CONDITIONS PERMIT. MAKE CHANGES, REPAIRS, ADJUSTMENTS AND REPLACEMENTS REQUIRED AS TESTS MAY INDICATE, PRIOR TO OPERATING.
5. PRESSURE TEST SHALL BE AS FOLLOWS:
6. CARRY OUT HYDRAULIC TESTS FOR 8 HOUR PERIOD AND MAINTAIN PRESSURE WITHOUT PRESSURE DROP. WHERE LEAKAGE OCCURS, REPAIR AND RETEST.
7. DOMESTIC WATER PIPING: TEST TO 1035 KPA (150 PSI) WATER PRESSURE MEASURED AT SYSTEM LOW POINT.
8. SANITARY DRAINAGE: TEST BY FILLING WITH WATER TO PRODUCE WATER PRESSURE OF 5M (15'). CHECK FOR PROPER GRADE AND OBSTRUCTION BY BALL TEST.
9. GAS PIPING: TEST AS REQUIRED BY AUTHORITIES HAVING JURISDICTION.
10. LOW VELOCITY DUCTS: TEST FOR TIGHTNESS SUCH THAT LEAKAGE IS INAUDIBLE AND NOT DETECTABLE BY FEEL.
11. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE TO BALANCE SYSTEMS TO WITHIN 5% OF THE SPECIFIED VALUES. BALANCING OF SYSTEMS SHALL INCLUDE MAKING CHANGES TO PULLEYS, BELTS, DAMPERS, VALVES, ETC. AT NO EXTRA COST TO THE CONTRACT. THE CONTRACTOR SHALL PREPARE AND SUBMIT TO THE CONSULTANT THREE COPIES OF BALANCING REPORTS FOR ALL SYSTEMS IN ACCORDANCE WITH THE NATIONAL STANDARDS FOR TESTING AND BALANCING OF HVAC SYSTEMS.

3 / M6.1 **SPECIFICATIONS**
NTS

NOTE:
THESE DRAWINGS ARE CONCEPTUAL AND ARE NOT INTENDED TO DEPICT EACH AND EVERY DETAIL BUT RATHER TO SHOW THE DESIGN INTENT OF THE ENGINEER. THEY ARE NOT A COMPLETE SET OF INSTRUCTIONS ON HOW TO CONSTRUCT OR ASSEMBLE THIS BUILDING. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL THE MATERIALS AND LABOUR TO FURNISH A COMPLETE BUILDING TO THE SATISFACTION OF THE ENGINEER. ALL BUILDING MATERIAL SPECIFICATIONS, PROCEDURES AND PRACTICES SHALL BE GOVERNED AND EXECUTED AS DESCRIBED IN APPROPRIATE PART OF THE ALBERTA BUILDING CODE IN ALL CASES WHETHER DEPICTED IN THIS SET OF DRAWINGS OR INCIDENTAL.

THE IMPERIAL SCALE INDICATED ON THE REFERENCE SYMBOLS APPLY TO DRAWINGS PRINTED FULL SIZE ON 36"x24" (ARCH D) SHEET SIZE. THE GIVEN SCALE DOES NOT APPLY TO REDUCTIONS OR ENLARGEMENTS OF THE DRAWING SHEETS.
ALL DIMENSIONS SHALL BE VERIFIED BY THE CONTRACTOR.
ALL DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER PRIOR TO COMMENCEMENT OF WORK.
DRAWINGS ARE NOT TO BE SCALED FOR MEASUREMENTS.

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PERMIT TO PRACTICE
LEXUS ENGINEERING LTD
Date 2021-03-12
PERMIT NUMBER: 11367
The Association of Professional Engineers, Geoscientists of Alberta

stamp / permit

PROFESSIONAL ENGINEER – GERRY ROBEL – ALBERTA
2021-03-12

NO.	Description	Date (YYMDD)
4	ISSUED FOR PERMIT	2021-03-11
3	ISSUED FOR PERMIT	2021-02-23
2	ISSUED FOR REVIEW	2021-01-25
1	ISSUED FOR REVIEW	2020-09-24

Revisions

PROJECT TITLE
THE FOUNDRY - ONOWAY

PROJECT ADDRESS
4904 - 50 STREET,
ONOWAY, ALBERTA, T0E 1V0

DRAWING TITLE
SPECIFICATIONS

DRAWN: MG	PROJECT NUMBER: C395
CHECKED: GG	SCALE: N.T.S.
DATE: 2020-09-24	SHEET NO: 16 OF17