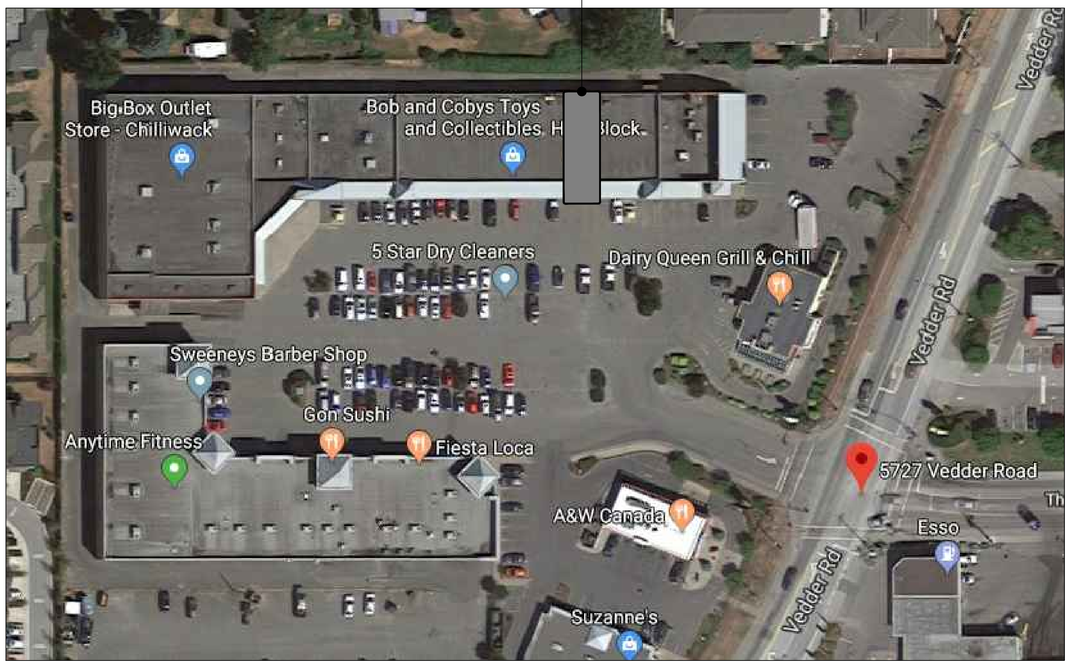
ZAFFRON RESTAURANT

UNIT #4 - TENANT IMPROVEMENT

5727 VEDDER ROAD CHILLIWACK, BC

PROPOSED ZAFFRON RESTAURANT
UNIT #4 - TENANT IMPROVEMENT



SITE PLAN
[N.T.S.]

LEGEND & ABBREVIATION

SYMBOL	DESCRIPTION
	SUPPLY AIR DIFFUSER
	SUPPLY AIR GRILLE
	RETURN AIR GRILLE
	EXHAUST AIR GRILLE
	TURNING VANES
	DUCT INTERNAL ACOUSTIC INSULATION
	DUCT EXTERNAL THERMAL INSULATION
	DUCT BALANCING DAMPER – BD
	DUCT OR PIPE CAP–OFF
	SUPPLY OR OUTDOOR AIR DUCT – UP
	SUPPLY OR OUTDOOR AIR DUCT – DOWN
	RETURN AIR DUCT – UP
	RETURN AIR DUCT – DOWN
	EXHAUST AIR DUCT – UP
	EXHAUST AIR DUCT – DOWN
	DOMESTIC COLD WATER [DCWS]
	DOMESTIC HOT WATER [DHWS]
	DOMESTIC HOT WATER RECIRC. [DHWR]
G	NATURAL GAS
F	FIRE
	SANITARY [SAN]
	SANITARY VENT [V]
	STORM DRAIN [STM]
	PIPE CLEAN–OUT
	PIPE CLEAN–OUT TO GRADE
	PIPE RISE UP
	PIPE DROP DOWN
	PIPE TEE DN
	DIRECTION OF FLOW
	PLUMBING VENT UP
	CHECK VALVE
	SHUT OFF VALVE – NORMALLY OPEN
	SHUT OFF VALVE – NORMALLY CLOSE
	PRESSURE REDUCING VALVE
	PRESSURE GAUGE
	P–TRAP
	INDIRECT DRAIN
	FLOOR DRAIN – [FD]
RAT	REVERSE ACTING THERMOSTAT
T	DIGITAL ROOM THERMOSTAT
TC	DIGITAL 7 DAY PROGRAMMABLE TIMECLOCK
MS	MOTION SENSOR
TS	TEMPERATURE SENSOR
X	EXISTING
UTR	UP TO ROOF
S/A	SUPPLY AIR
R/A	RETURN AIR
E/A	EXHAUST AIR
O/A	OUTDOOR AIR
	DRAWING/DETAIL – TAG
	GRILLE/DIFFUSER – TAG (GRILLE TYPE / NECK / GRILLE SIZE / FLOW RATE [CFM])
	EQUIPMENT/FIXTURE TAG

CIVIC ADDRESS

UNIT 4, 45619 YALE ROAD, CHILLIWACK, B.C.

WATER LOAD SUMMARY

- PIPE MATERIAL: MAIN DISTRIBUTION: COPPER TYPE L
- HOMERUN PIPE: PEX–a

BUILDING DCWS CONNECTION: 2"ø COPPER – TYPE L	LOAD	
UNIT #4	10.8 GPM	[14.6 FU]
TOTAL	10.8 GPM	[14.6 FU]

SANITARY LOAD SUMMARY

BUILDING SAN CONNECTION: 4"ø @ 1%	LOAD
UNIT #4	14.5 FU
TOTAL	14.5 FU

NATURAL GAS SUMMARY

GAS PRESSURE [2 PSI]
MAX LENGTH: [300 FT]

	LOAD
UNIT #4	
XRTU	--- CFH
KMUA–01	--- CFH
CHARBROILER	--- CFH
STOVE (4 BURNER)	--- CFH
DONAIR MACHINE	--- CFH
TOTAL	100 CFH

GREASE INTERCEPTOR LOAD SUMMARY

	LOAD (GPM)
POT SINK	35 GPM
TOTAL	35 GPM

FIRE SUPPRESSION SYSTEM

1. THE INSTALLATION OF THE FIRE SUPPRESSION SYSTEM SHALL COMPLY WITH UL300 STANDARDS, cUL/ORD–C1254.6.1995 & NFPA 96–2016 EDITION, NFPA 17A–2016 EDITION AND THE EQUIPMENT LISTINGS AND MANUFACTURER'S INSTRUCTION.
2. ELECTRICAL CONNECTION BETWEEN THE FIRE SUPPRESSION SYSTEM, THE FIRE ALARM AND ANNUNCIATOR SHALL BE VERIFIED BY A QUALIFIED INDEPENDENT AGENCY.
3. RETAIN THE SERVICE OF A PROFESSIONAL ENGINEER REGISTERED IN THE PROVENCE OF BRITISH COLUMBIA AND SPECIALIZING IN THE DESIGN OF KITCHEN HOOD FIRE SUPPRESSION SYSTEMS TO ASCERTAIN THAT THE KITCHEN HOOD FIRE SUPPRESSION SYSTEM HAS MET THE REQUIREMENTS OF THE APPLICABLE CODES AND STANDARDS.

DRAWING LIST:

#	DESCRIPTION	SCALE
M01	SITE PLAN & TITLE SHEET	---
M02	PLUMBING LAYOUT	1/4"=1'–0"
M03	HVAC LAYOUT	1/4"=1'–0"
M04.1 & M04.2	SCHEMATICS & DETAILS	N.T.S.
M05	SCHEDULES	---
M06	SPECIFICATIONS	---

#	DESCRIPTION	DATE	BY
	REVISION		
3.			
2.	ISSUED BUILDING PERMIT	2018.10.12	DH
1.	ISSUED FOR REVIEW	2018.10.11	DH
#	DESCRIPTION	DATE	BY
	ISSUED		

NOTES:

NOT FOR CONSTRUCTION

KEYPLAN:

CLIENT:

CONSULTANT:

INNOREFLECTION ENGINEERING LTD.
#10-9232 WOODBINE ST.
CHILLIWACK, BC V2P5S8
www.innoreflectioneng.ca
ph: (604) 845-7450

SEAL:

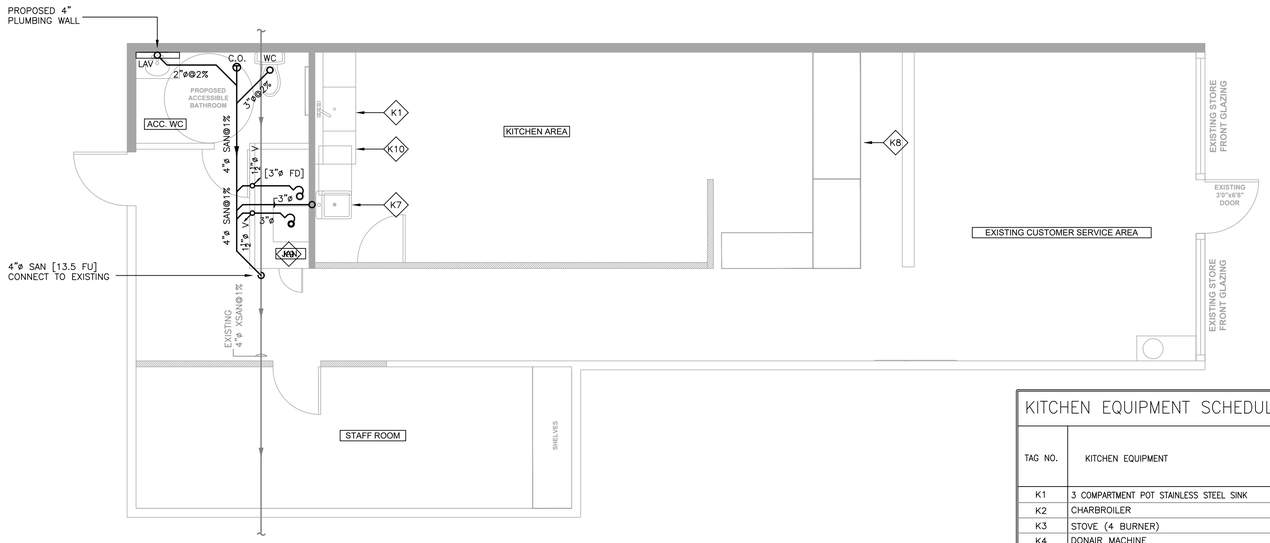
PROJECT NAME:
ZAFFRON RESTAURANT - TI
(PERSIAN CUISINE & DONAIR)
UNIT #4 - 5727 Vedder Road, Chilliwack, BC

PROJECT #: 2018-M013

TITLE:
SITE PLAN & TITLE SHEET

SCALE:	- - - -
DATE:	2018.08.28
DRAWN BY:	DH
DESIGNED BY:	DH
CHECKED BY:	DH

DWG #:
M01
1 OF 7



1 / M02

FOUNDATION PLAN - PLUMBING

1/4"=1'-0"

KITCHEN EQUIPMENT SCHEDULE

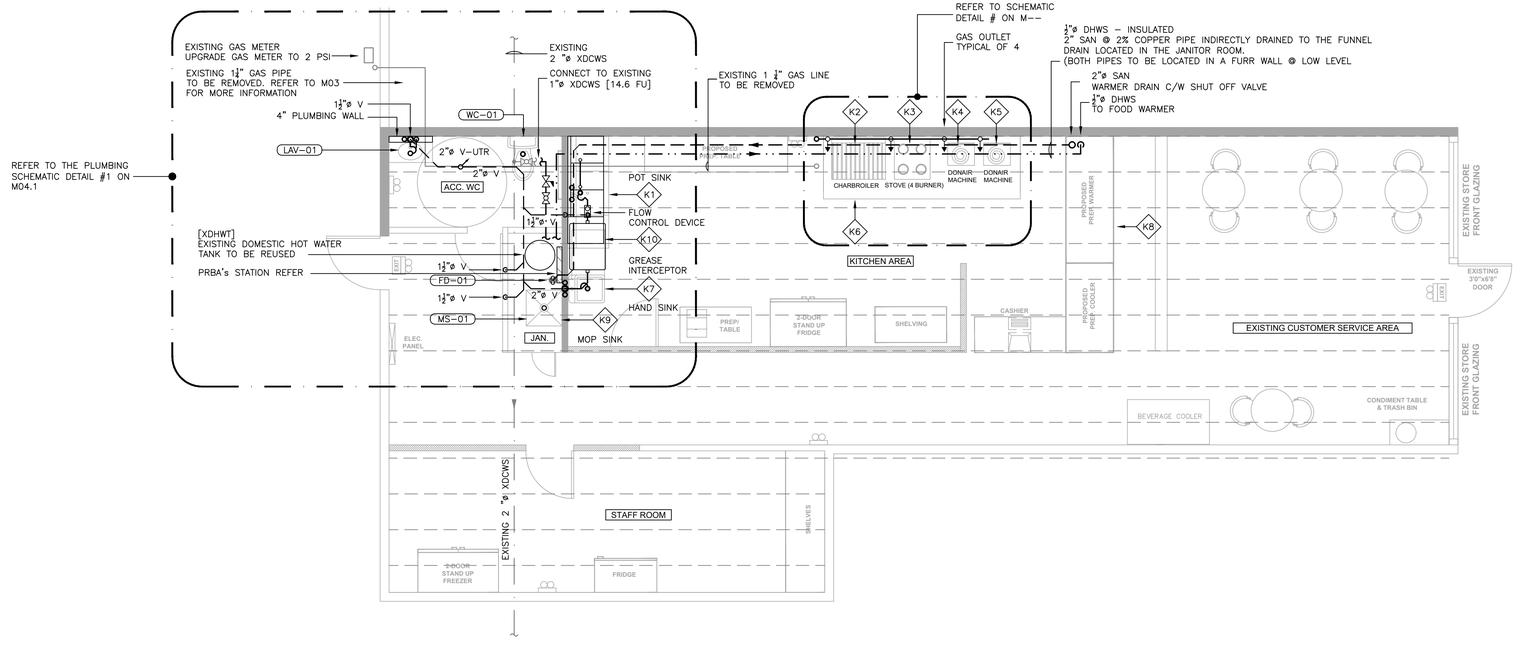
TAG NO.	KITCHEN EQUIPMENT	QTY.	SUPPLIED:	PLUMBING ROUGH IN:	INSTALLED:	RPBP	MECHANICAL SERVICES (INSTALLED & CONNECTED BY MECHANICAL CONTRACTOR)									REMARKS
							WATER		WASTE		FLOW	GAS		EXHAUST		
							HOT	COLD	SIZE	TYPE	GPM	MBH	SIZE	CFM	DUCT	
K1	3 COMPARTMENT POT STAINLESS STEEL SINK	1	K	M	M	X	¾"	¾"	2"							2,3
K2	CHARBROILER		K	M	M							108	¾"			
K3	STOVE (4 BURNER)		K	M	M							100	¾"			
K4	DONAIR MACHINE		K	M	M							48	¾"			
K5	DONAIR MACHINE		K	M	M							48	¾"			
K6	EXHAUST HOOD		K	M	M									2750	18"x18"	1
K7	STAINLESS STEEL HAND SINK		K	M	M		½"	½"	1¼"							
K8	FOOD WARMER		K	M	M	X	¾"		2"							3
K9	MOP SINK		M	M	M	X	¾"	¾"	3"							
K10	GREASE INTERCEPTOR		K	M	M				2"		35					

REMARKS:

1. KITCHEN HOOD EXHAUST SYSTEM SUPPLIED AND INSTALLED BY HVAC CONTRACTOR INCLUDING EXHAUST FAN AND DUCTING.
2. C/W RPBP – DCWS.
3. C/W RPBP – DHWS.

ABBREVIATION:

M: MECHANICAL CONTRACOR
K: KITCHEN EQUIPMENT SUPPLIER



2 / M02

MAIN FLOOR PLAN - PLUMBING

1/4"=1'-0"

GENERAL NOTES

1. PLUMBING WORKS SHALL BE INSTALLED TO THE BCBC PLUMBING CODE 2018 REQUIREMENTS.
2. BELOW & ABOVE GRADE SANITARY PIPING SHALL BE SYSTEM 15 UNLESS OTHERWISE INDICATED.
3. ALL EXPOSED DOMESTIC HOT & COLD PIPING SHALL BE COPPER TYPE L.
4. DOMESTIC HOT, COLD WATER SHALL BE INSULATED WITH 1" RIGID FIBERGLASS INSULATION C/W VAPOR BARRIER. ALL PIPE FITTINGS (EXPOSED AND CONCEALED) SHALL BE COVERED WITH WHITE PVC JACKET TO PROTECT INSULATION FROM DAMAGE.
5. ALL FLOOR DRAINS & FUNNEL DRAIN SHALL BE PRIMED.
6. NO PLUMBING PIPING IN PARTY WALLS IS PERMITTED. (WHERE REQUIRED A PLUMBING WALL TO BE PROVIDED).
7. ALL GAS FIRED EQUIPMENT SHALL BE HOOKED UP BY THE MECHANICAL CONTRACTOR.
8. MECHANICAL CONTRACTOR SHALL HOOK UP ALL APPLIANCES IN ACCORDANCE TO EQUIPMENT MANUFACTURERS INSTRUCTION PROCEDURES.
9. ALL PLUMBING FIXTURES SHALL BE INSTALLED BY THE MECHANICAL CONTRACTOR.
10. MECHANICAL CONTRACTOR TO INSTALL SOLENOID GAS SHUT OFF VALVE PROVIDED BY THE FIRE SUPPRESSION SUPPLIER.
11. MECHANICAL CONTRACTOR SHALL PROVIDE ALL OTHER FITTINGS AND ACCESSORIES NECESSARY TO HOOK UP ALL KITCHEN EQUIPMENT.
12. PROVIDE CROSS CONNECTION CONTROL DEVICES FOR KITCHEN EQUIPMENT IN ACCORDANCE WITH CAN/CSA–B64.10.01 AND AS INDICATED ON THE DWG's.
13. GAS PIPING SHALL BE BLACK STEEL SCHEDULE 40.
14. ALL EXPOSED GAS PIPING ON ROOF SHALL BE PAINTED (GRAY – MIN 2 COATS).
15. ALL EXPOSED GAS PIPING IN THE KITCHEN AREA SHALL BE PAINTED (YELLOW – MIN 2 COATS).

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	ISSUED		

NOTES:

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CONSULTANT:

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www.innoreflectioneng.ca
ph: (604) 845-7450

SEAL:

PROJECT NAME:

ZAFFRON RESTAURANT - TI
(PERSIAN CUISINE & DONAIR)
UNIT #4 - 5727 Vedder Road, Chilliwack, BC

PROJECT #: 2018-M013

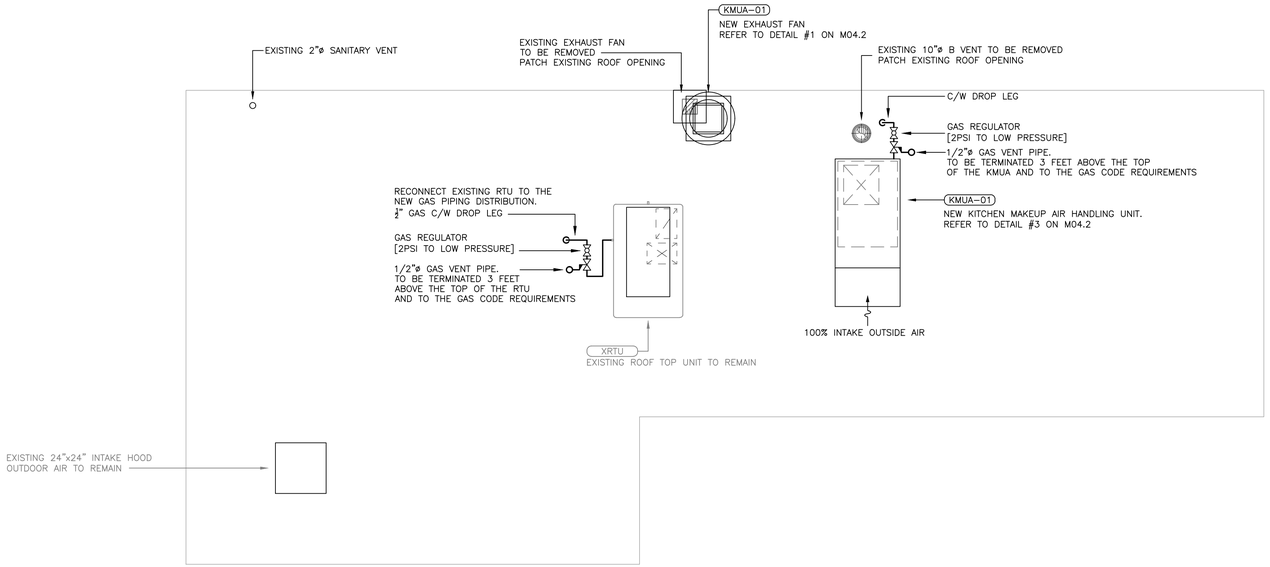
TITLE:

PLUMBING LAYOUT

SCALE:	1/4"=1'-0"
DATE:	2018.08.28
DRAWN BY:	DH
DESIGNED BY:	DH
CHECKED BY:	DH

DWG #:

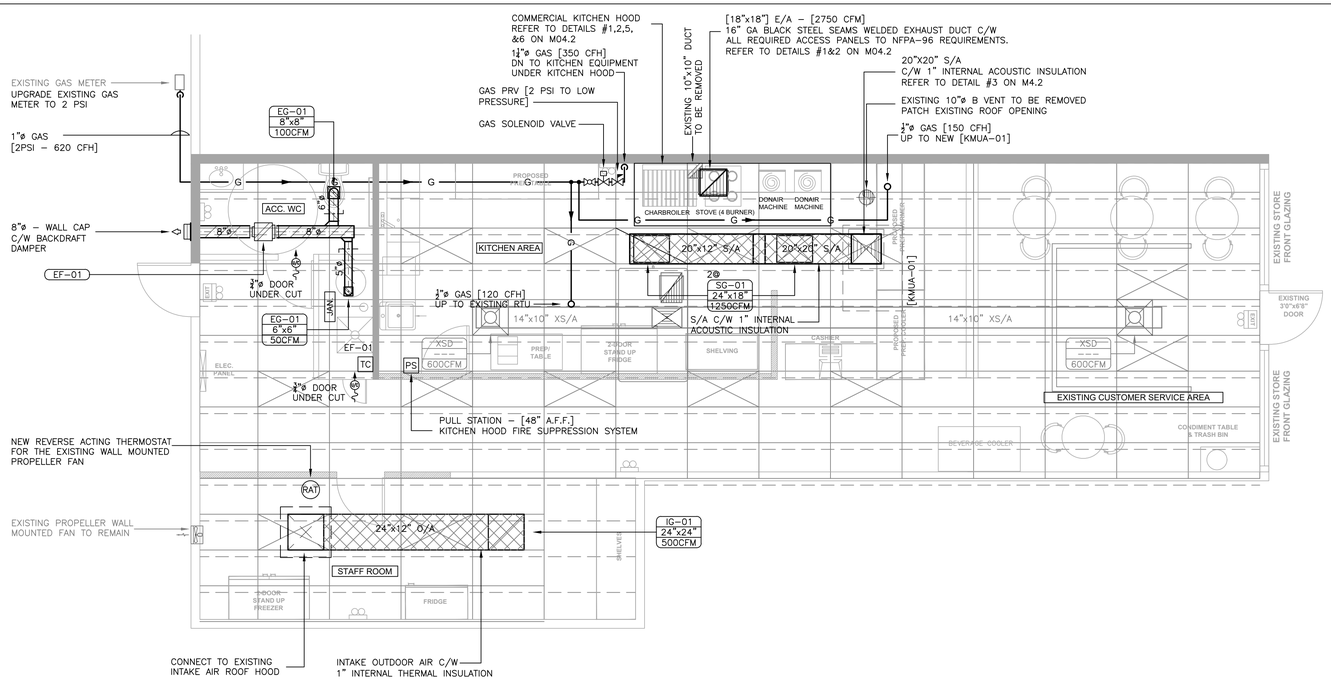
M02



1 / M03

ROOF PLAN - PLUM/HVAC

1/4"=1'-0"



2 / M03

MAIN FLOOR PLAN - HVAC

1/4"=1'-0"

GENERAL NOTES

1. PRIOR TO THE INSTALLATION OF THE NEW MECHANICAL EQUIPMENT, RETAIN THE SERVICE OF A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE PROVENCE OF BRITISH COLUMBIA TO ASCERTAIN THAT THE EXISTING STRUCTURE CAN HANDLE THE ADDITIONAL LOAD OF THE NEW EQUIPMENT (KITCHEN HOOD, KEF–01 & KMUA–01).
2. COMMERCIAL KITCHEN EXHAUST DUCTING SHALL BE 16 GA BLACK STEEL WELDED CONSTRUCTION WITH ALL REQUIRED CLEAN OUTS AS PER NFPA96–2016 REQUIREMENTS. DUCT TO BE WRAPPED WITH 2 LAYERS OF 3M FIRE BARRIER DUCT WRAP 615+ FOR COMMERCIAL KITCHEN GREASE DUCTS.
3. 3M FIRE BARRIER DUCT WRAP 615+ SHALL BE INSTALLED TO THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
4. GREASE FILTER SHALL BE cUL LISTED, INSTALLATION SHALL BE TIGHT FITTING & FIRMLY HELD IN PLACE WITH STAINLESS STEEL BRACKETS.
5. LIGHTS INSIDE KITCHEN HOOD SHALL BE EXPLOSION PROOF, cUL LISTED AND NFPA 96 APPROVED.
6. REMOTE MANUAL PULL STATION SHALL BE INSTALLED AT 48" A.F.F.L. & LOCATED AT A PATH OF EXIT OR EGRESS FROM KITCHEN AREA & CLEARLY IDENTIFY THE HAZARD PROTECTED. (A MINIMUM 10FT & A MAXIMUM 20FT FROM THE HAZARD).
7. CONTRACTOR TO PROVIDE MEANS OF RETURNING KITCHEN EQUIPMENT UNDER CANOPY TO ORIGINAL POSITION, IF MOVED, TO COMPLY WITH FIRE SUPPRESSION SYSTEM REQUIREMENTS.
8. IN CASE OF FIRE, THE FIRE SUPPRESSION SYSTEM CONTROL SHALL:
   1. ACTIVATE THE FIRE ALARM (SYSTEM SHALL BE ELECTRICALLY CONNECTED AND ANNUNCIATED AS A SEPARATE ZONE AT THE FIRE ALARM PANEL AND ANNUNCIATOR),
   2. SHUT OFF ALL SOURCE OF GAS AND ELECTRICAL POWER SUPPLY TO THE KITCHEN EQUIPMENT UNDER THE CANOPY, SHUT OFF THE LIGHTS INSIDE THE HOOD AND DISCONNECT POWER TO ALL ELECTRICAL PLUGS UNDER THE CANOPY
   3. SHUT DOWN THE MAKEUP AIR HANDLING UNIT (KITCHEN MAKEUP AIR HANDLING UNIT [KMUA–01]).
   4. KITCHEN HOOD EXHAUST FAN SHALL CONTINUE TO OPERATE AFTER FIRE EXTINGUISHING SYSTEM HAS BEEN ACTIVATED.
   5. KITCHEN HOOD EXHAUST FAN SHALL NOT BE REQUIRED TO START UPON ACTIVATION OF THE EXTINGUISHING SYSTEM IF THE EXHAUST FAN AND ALL COOKING EQUIPMENT SERVED BY THE FAN HAVE BEEN SHUT DOWN.
9. PORTABLE FIRE EXTINGUISHING:
   1. PORTABLE FIRE EXTINGUISHING SHALL BE INSTALLED IN KITCHEN AREAS IN ACCORDANCE TO NFPA 10 AND SHALL BE SPECIFICALLY LISTED FOR SUCH USE. (CLASS K EXTINGUISHING).
   2. A PLACARD SHALL BE PLACED NEAR EACH PORTABLE EXTINGUISHER THAT STATES THAT THE FIRE PROTECTION SYSTEM SHALL BE ACTIVATED PRIOR TO USING THE FIRE EXTINGUISHER. (PLACARD SHALL BE APPROVED BY THE AUTHORITY HAVING JURISDICTION)
10. ALL GAS APPLIANCES LOCATED UNDER THE KITCHEN HOOD & INSTALLED ON WHEELS OR ROLLERS SHALL BE RESTRAINED TO STRUCTURE BY A STAINLESS STEEL CHAIN.
11. HVAC & KITCHEN DUCTING LAYOUT TO BE REVIEWED ON SITE WITH THE MECHANICAL CONSULTANT BEFORE INSTALLATION.
12. ALL HVAC SUPPLY & INTAKE AIR DUCWORK SHALL BE INSULATED INTERNALLY INSULATED WITH 1" ACOUSTIC INSULATION.
13. ALL HVAC EQUIPMENT, GRILLES AND DIFFUSERS SHALL BE SEISMICALLY ATTACHED TO STRUCTURE.
14. EF–01 SHALL BE CONTROLLED BY A 24 DIGITAL PROGRAMMABLE WALL MOUNTED TIMECLOCK (INTERMATIC EI500 SERIES) SUPPLIED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

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NOTES:

NOT FOR CONSTRUCTION

KEYPLAN:

N

CLIENT:

CONSULTANT:

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CHILLIWACK, BC V2P5S8
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ph: (604) 845-7450

SEAL:

PROJECT NAME:
ZAFFRON RESTAURANT - TI
(PERSIAN CUISINE & DONAIR)
UNIT #4 - 5727 Vedder Road, Chilliwack, BC

PROJECT #: 2018-M013

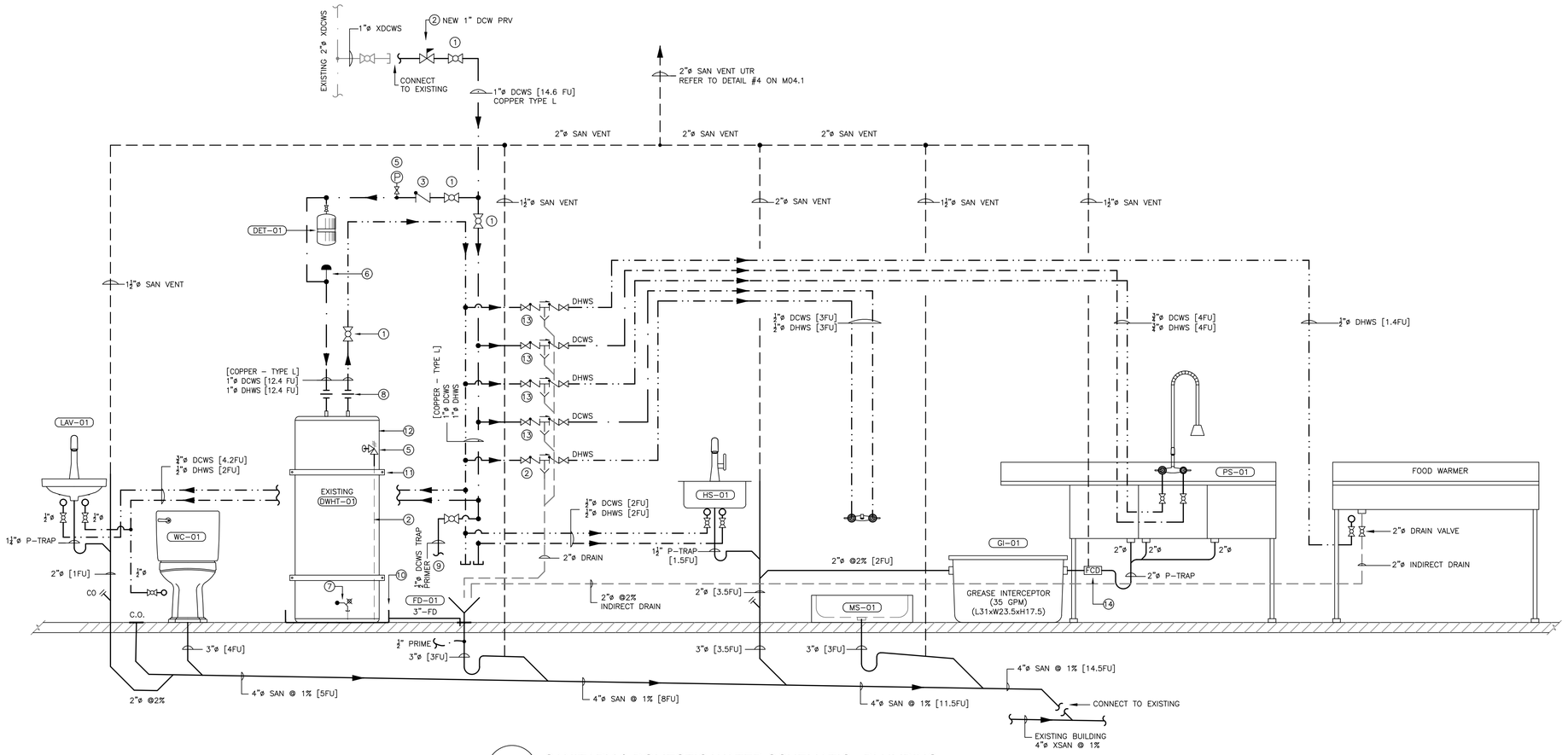
TITLE:
HVAC LAYOUT

SCALE:	1/4"=1'-0"
DATE:	2018.08.28
DRAWN BY:	DH
DESIGNED BY:	DH
CHECKED BY:	DH

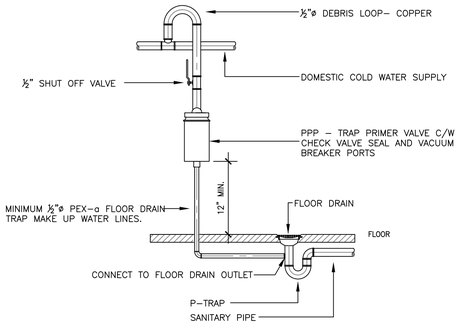
DWG #:
M03
3 OF 7

KEYNOTES:

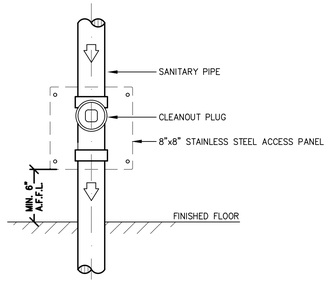
1. BALL VALVE – NORMALLY OPEN.
2. 1" PRESSURE REDUCER VALVE [PRV] – WATTS (LF25AUB-Z3).
3. CHECK VALVE.
4. PRESSURE GAUGE [RANGE 100 PSI].
5. COMBINATION TEMPERATURE & PRESSURE (T&P) RELIEF VALVE [150 PSI].
6. VACUUM RELIEF – (VACUUM BREAKER).
7. TANK DRAIN C/W CHAINED CAP.
8. DIELECTRIC UNION.
9. TRAP PRIMER – REFER TO DETAIL #2 ON M04.1.
10. ALUMINUM DRAIN PAN NOT LESS THAN 2" LARGER THAN THE TANK AND HAVE SIDE WALLS NOT LESS THAN 1" HIGH.
11. SHEET METAL STRAP ATTACHED SEISMICALLY TO STRUCTURE
12. TANK SHALL BE SEISMICALLY ATTACHED TO STRUCTURE.
13. ¾"ø RPBA – REDUCE PRESSURE BACK FLOW ASSEMBLY – WATTS (LF919) C/W AIR CAP (RPBA TO BE LOCATED MAXIMUM 5' A.F.FL.).
14. 2" FLOW CONTROL DEVICE ENDURA WITH CLEANOUT AND AIR INTAKE 10GPM MODEL (3922110A).



1 / M04.1 SANITARY & DOMESTIC WATER SCHEMATIC - PLUMBING [N.T.S.]

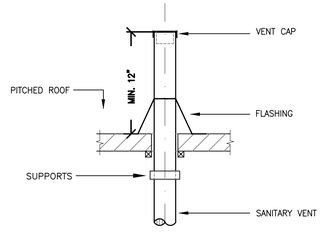


2 / M04.1 TRAP PRIMER - DETAIL [N.T.S.]



NOTE:
CLEANOUTS TO BE INSTALLED IN CONCEALED LOCATIONS WHEREVER POSSIBLE. (IN CABINETS, BELOW COUNTERS, etc...).

3 / M04.1 WALL CLEANOUT - DETAIL [N.T.S.]



4 / M04.1 SANITARY VENT TERMINATION - DETAIL [N.T.S.]

#	DESCRIPTION	DATE	BY
	REVISION		
3.			
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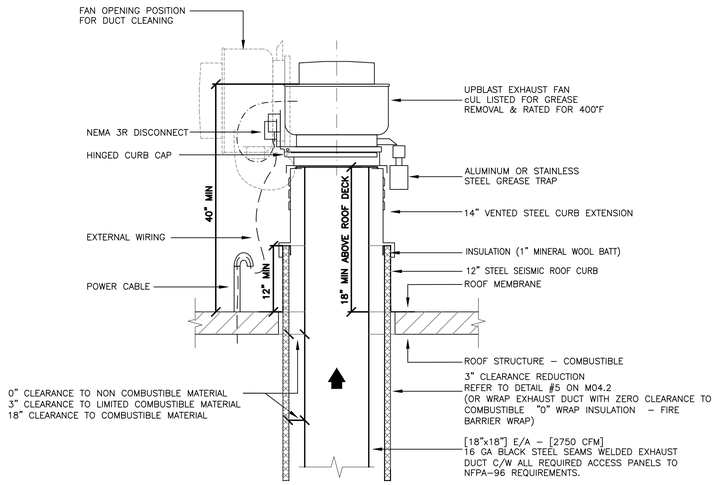
PROJECT #: 2018-M013

TITLE:
SCHEMATICS & DETAILS

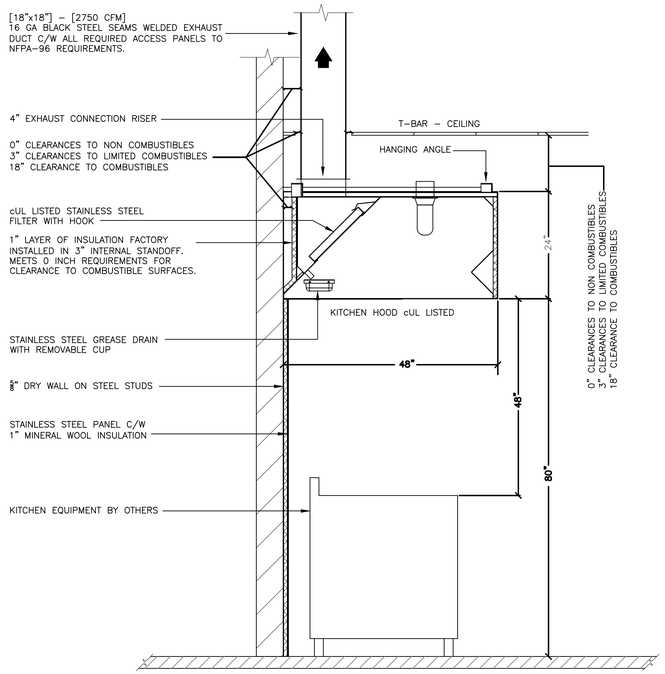
SCALE:	- - - -
DATE:	2018.08.28
DRAWN BY:	DH
DESIGNED BY:	DH
CHECKED BY:	DH

DWG #:
M04.1
4 OF 7

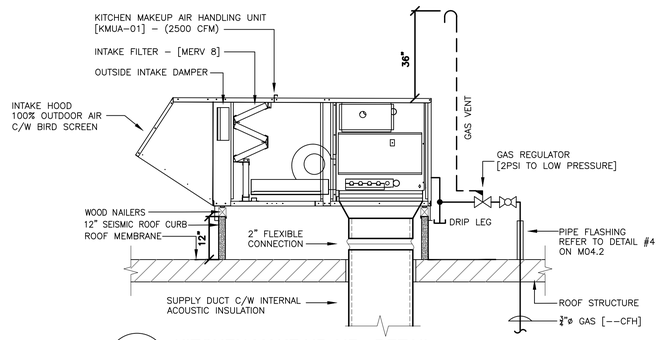


NOTE:
KITCHEN EXHAUST FAN SHALL BE INSTALLED TO THE LATEST EDITION OF NFPA 96 STANDARD

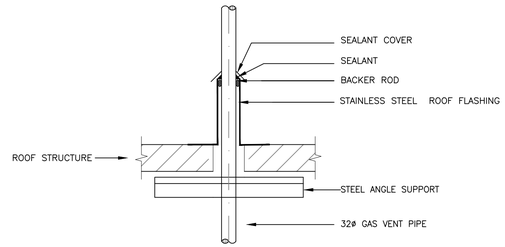
1 / M4.2 KITCHEN EXHAUST FAN - DETAIL [N.T.S.]



2 / M4.2 COMMERCIAL KITCHEN HOOD - DETAIL [N.T.S.]



3 / M4.2 KITCHEN MAKE UP AIR - DETAIL [N.T.S.]



NOTE:
MINIMUM PIPE SIZE TO MATCH THE GAS REGULATOR VENT OUTLET.

4 / M4.2 GAS PIPE ROOF PENETRATION - DETAIL [N.T.S.]

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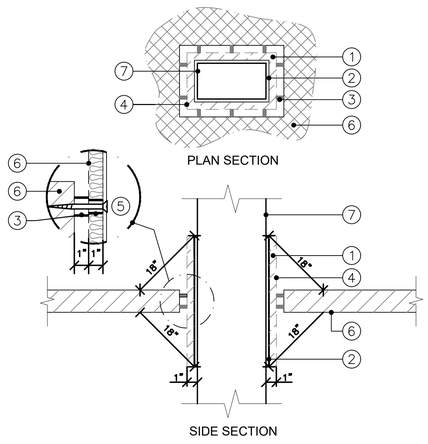
NOTES:

NOT FOR CONSTRUCTION

KEYPLAN:

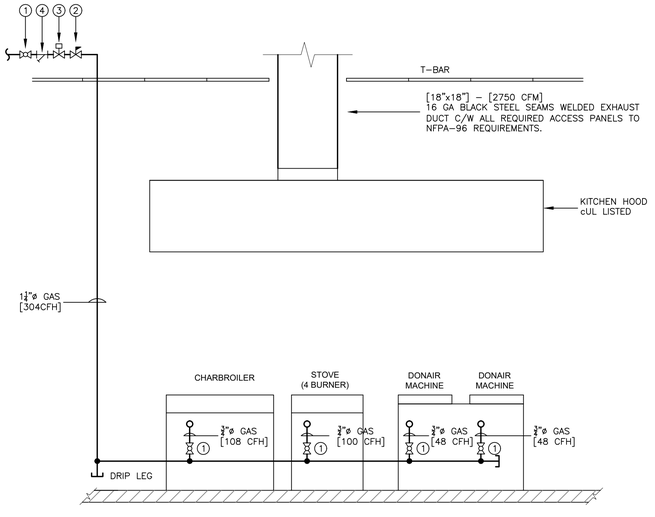
KEYNOTES:
1. 1" MINERAL WOOL BATT or CERAMIC FIBER BLANKET
2. 22 GAUGE SHEET METAL.
3. NONCOMBUSTIBLE SPACER SUCH AS STACKED WASHERS, SMALL –DIAMETER PIPE, TUBING or ELECTRICAL CONDUIT.
4. WIRE MESH.
5. NAIL OR SCREW ANCHOR.
6. COMBUSTIBLE MATERIAL.
7. KITCHEN HOOD EXHAUST DUCT.



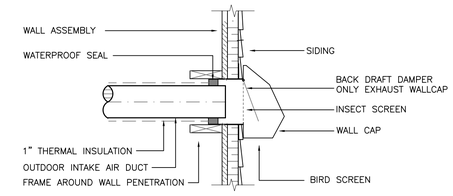
COMMERCIAL KITCHEN EXHAUST DUCT CLEARANCE REDUCTION SYSTEM (3in) CLEARANCE TO COMBUSTIBLE MATERIAL

5 / M4.2 [N.T.S.]

KEYNOTES:
1. BALL VALVE – NORMALLY OPEN.
2. GAS REGULATOR [2PSI TO LOW PRESSURE].
3. GAS SOLENOID AUTOMATIC SHUTOFF VALVE TO BE CONNECTED TO THE KITCHEN HOOD CONTROL PANEL.
4. STRAINER.

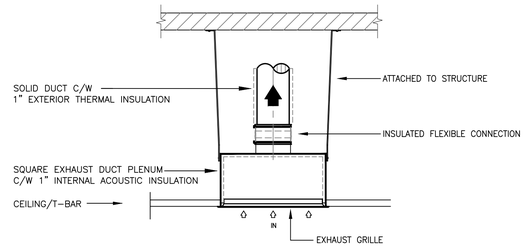


6 / M4.2 KITCHEN EQUIPMENT UNDER CANOPY - SCHEMATIC [N.T.S.]



WALLCAP – DETAIL

7 / M4.2 WALL CAP - DETAIL [N.T.S.]



8 / M4.2 EXHAUST GRILLE - DETAIL [N.T.S.]

CLIENT:

CONSULTANT:

INNOREFLECTION ENGINEERING LTD.
#10-9232 WOODBINE ST.
CHILLIWACK, BC V2P5S8
www.innoreflectioneng.ca
ph: (604) 845-7450

SEAL:

PROJECT NAME:
ZAFFRON RESTAURANT - TI
(PERSIAN CUISINE & DONAIR)
UNIT #4 - 5727 Vedder Road, Chilliwack, BC

PROJECT #: 2018-M013

TITLE:
SCHEMATICS & DETAILS

SCALE:	- - - -
DATE:	2018.08.28
DRAWN BY:	DH
DESIGNED BY:	DH
CHECKED BY:	DH

DWG #:
M04.2
5 OF 7

RTU's SCHEDULE - (EXISTING):

TAG	DESCRIPTION	MANUFACTURER	MODEL	LOCATION	UNIT CAPACITY AIR FLOW CFM	UNIT CAPACITY ESP inw.g.	UNIT CAPACITY COOLING BTUH	GAS CONNECTION TYPE	GAS CONNECTION INPUT MBTH	GAS CONNECTION OUTPUT MBTH	ELECTRICAL DATA EF. %	ELECTRICAL DATA POWER BR	POWER MCA	CONNECTION V	CONNECTION Hz	CONNECTION PH	WEIGHT LBS	REMARKS
XRTU-1	PACKAGED ROOFTOP UNIT GAS/ELECTRIC	RUUD	RKNN-A036JK12E	ROOF	1200	0.50	36,000	N	120	94.5	80%	35	24	208	60	1	--	1,2

REMARKS:

1. R-410a
2. 13 SEER

FAN SCHEDULE

TAG	MANUFACTURER	MODEL	DUTY	CAPACITY CFM	S.P. IN WG	SONES	FRPM	RPM	MOTOR LOAD	V/PH/Hz	WEIGHT LBS	REMARKS
EF-01	PANASONIC	FV-20NLF1	VENTILATION	150	0.5"	1.4	1540	1540	57 WATTS	115/1/60	17	1,2,3,4,5,6
KEF-01	GREENHECK	USGF-180HP-20	VENTILATION	2,750	1.25"	19.4	1520	1725	2 HP	208/1/60	335	6,7,8,9,10,11,12,13,14,15,16,17

REMARKS:

1. ⅔ DIGITAL PROGRAMMABLE TIMECLOCK - WALL MOUNTED (INTERMATIC EI500 SERIES).
2. INSULATED HOUSING
3. INLINE FAN.
4. BACKDRAFT DAMPER.
5. ENERGY STAR.
6. cUL LISTED.
7. REVERSE ACTING THERMOSTAT.
8. UPBLAST EXHAUST FAN FOR GREASE REMOVAL & RATED FOR 400°F
9. VENTED CURB EXTENSION TO NFPA96 REQUIREMENTS.
10. NON COMBUSTIBLE GREASE TRAP TO NFPA96 REQUIREMENTS.
11. DISCONNECT SWITCH NEMA-3R.
12. HINGED BASE.
13. CLEANOUT PORT.
14. 12" SEISMIC HIGH TEMPERATURE ROOF CURB.
15. ADJUSTABLE MOTOR PLATE.
16. MOTOR & DRIVES ISOLATED ON FLANGE SAFELY SHOCK MOUNTS.
17. BACKWARD INCLINED STEEL WHEEL WITH NON-STICK COAT.

GRILLES & DIFFUSER SCHEDULE:

TAG	MANUFACTURER	MODEL	SERVICE	NOMINAL SIZE	CONNECTION SIZE	FINISH	MOUNTING	REMARKS
SG-01	E.H. PRICE	610 / L / A / B12	SUPPLY	SEE DWG	SEE DWG	WHITE	T-Bar	
IG-01	E.H. PRICE	EGG CRATE 80 / TB / B12	RETURN	SEE DWG	SEE DWG	WHITE	SURFACE	
EG-01	E.H. PRICE	EGG CRATE 80 / TB / B12	RETURN	SEE DWG	SEE DWG	WHITE	SURFACE	

REMARKS:

1. SQUARE PLAQUE

ELECTRICAL HOT WATER TANK SCHEDULE (EXISTING) :

TAG	MANUFACTURER	TYPE	MODEL	DUTY	CAPACITY (USGAL)	ELECTRICAL DATA LOAD	ELECTRICAL DATA CONNECTION	SH. WEIGHT (Lbs)	REMARKS
DHWT-01	RHEEM	---	XE40M61ST30B	DOMESTIC HOT WATER	40	3.0 KW	208/1/60	109	1,2,3,4,5

REMARKS:

1. AQUASTAT
2. C/W T&P VALVE (150 PSI @200 °F)
3. ALUMINUM DRAIN PAN WITH 1" HIGH RIM
4. SEISMIC SUPPORT FOR WATER HEATER TANK
5. VACUUM RELIEF (VACUUM BREAKER)

EXPANSION TANK SCHEDULE :

TAG	MANUF.	MODEL	DUTY	DIMENSION DIA IN	DIMENSION HEIGHT IN	VOLUME GALLON	ACCEPTANCE VOLUME GALLON	CONNECTION IN	FACTORY PRE-CHARGED PRESSURE PSI	SHIPPING WEIGHT LBS	REMARKS
DET-01	AMTROL	ST-5	DOMESTIC HOT WATER SYSTEM	8	13	2	0.9	3/4" NPT	40	5	1,2

REMARKS:

1. SUITABLE FOR POTABLE WATER.
2. MAXIMUM OPERATION TEMPERATURE 150 PSI @ 200°F.

MUA (MAKEUP AIR HANDLING UNIT) SCHEDULE:

TAG	MANUFACTURER	MODEL	SERVICE/DUTY	LOCATION	SUPPLY AIR CFM	SUPPLY AIR ESP IN	SUPPLY AIR EAT °F	SUPPLY AIR LAT °F	GAS CONNECTION TYPE	GAS CONNECTION INPUT MBTH	GAS CONNECTION OUTPUT MBTH	ELECTRICAL DATA EF. %	ELECTRICAL DATA POWER HP	POWER MCA	CONNECTION V	CONNECTION Hz	WEIGHT LBS	REMARKS
KMUA-01	GREENHECK	IG-109-H10	KITCHEN HOOD MAKEUP AIR	ROOF	2,500	0.65	15	65	N	150	120	80%	2	18.2	208	60	1000	1,2,3,4,5,6,7,8,9,10,11,12

REMARKS:

1. INTAKE FILTER MERV 8 - PLEATED.
2. HORIZONTAL INTAKE.
3. BOTTOM DISCHARGE.
4. MOTORIZED INTAKE DAMPER - LOW LEAKAGE.
5. OUTDOOR UNIT.
6. DISCHARGE DUCT THERMOSTAT.
7. 12" SEISMIC ROOF CURB.
8. SUPPLY FAN/MOTOR C/W SEISMIC RUBBER IN SHEAR VIBRATION ISOLATION AND PILLOW BEARINGS.
9. INDIRECT STAINLESS STEEL GAS HEAT EXCHANGER
10. GAS TURN DOWN 8 STAGES.
11. UNIT CABINET: 18 GAUGE SATIN COAT GALVANIZED SHEET METAL C/W 1" 1.5lb/ft³ INSULATION ENTIRE CASING.
12. SERVICE DOOR: FLITTER, FAN ACCESS, & ELECTRICAL ACCESS - HINGED C/W LEVER TYPE DOOR HANDLES.
13. C/W DISCONNECT SWITCH.

ELECTRICAL MOTOR LIST:

UNIT #	UNIT DESCRIPTION	SERVICE	LOCATION	LOAD	VOLT	PH	HZ	STARTER S	STARTER I	STARTER W	DIS'CNECT S	DIS'CNECT I	DIS'CNECT W	STARTER TYPE	REMARKS
DHWT-01	DOMESTIC HOT WATER TANK	DHW SYSTEM	JANITOR RM	3.0 KW	208	1	60	M	E	E	E	E	E	--	AQST
EF-01	EXHAUST FAN	VENTILATION	BATHROOM CEILING	57 WATTS	115	1	60	E	E	E	E	E	E	--	DTC
KEF-01	EXHAUST FAN	KITCHEN HOOD EXHAUST FAN	ROOF	2 HP	208	1	60	E	E	E	E	E	E	MAN	WALL SWITCH
KMUA-01	MAKEUP AIR HANDLING UNIT	MAKEUP AIR - KITCHEN HOOD	ROOF	18.2 MCA	208	1	60	E	E	E	E	E	E	HOA	DTH, INTERLOCKED TO KEF-01

REMARKS:

DTC | 24/7 PROGRAMMABLE DIGITAL TIME CLOCK
RAT | REVERE ACTING THERMOSTAT
DTH | DUCT THERMOSTAT
AQST | AQUASTAT
MAN | MANUAL STARTER
HOA | MAGNETIC STARTER C/W HAND/OFF/AUTO SWITCH & AUX STATUS CONTACTS

PRELIMINARY PLUMBING FIXTURE SCHEDULE:

ITEM TAG	DESCRIPTION	MANUFACTURER	MODEL DESCRIPTION	MODEL #	FINISH/COLOR	REMARKS
LAV-01	PUBLIC LAVATORY	---	WALL HUNG LAVATORY	---	---	SELECTED BY OWNER
	TRIM	---	0.5 GPM- LAV FAUCET	591T1250	CHROME	SELECTED BY OWNER
	CARRIER	WATTS	FLOOR MOUNTED LAVATORY CARRIER	CA-411		
	WASTE	DELTA	TAILPIECE	33T260	CHROME	
	TRAP	DELTA	CHROME PLATED	33T311	CHROME	
	SUPPLIES	BRASSCRAFT				5,6,7
WC-01	WATER CLOSET - HANDICAPPED	---	ELONGATED TOILET	---	---	3,4, SELECTED BY OWNER
	SEAT	---	ELONGATED OPEN-FRONT SEAT C/W LID	---	---	3
	FLUSH TANK	---	4.8 LPF - FLUSH VALVE	---		3,4, SELECTED BY OWNER
MS-01	JANITOR SINK	MUSTEE	MOP SINK BASIN	63M	WHITE	10"x24"x24"
	TRIM	MUSTEE	SINK FAUCET WALLMOUNT	63.600A		12
	WALL GUARD	MUSTEE	SS WALL GUARD	67.2424	SS	2 PANELS & BRACKET FOR 24"x24" CORNER
	BUMPER GUARD	MUSTEE	SS BUMPER GUARD	63.403 20-3/4" LONG	SS	
	HOSE & HOSE HOLDER	MUSTEE	HOSE & HOSE HOLDER	65.700		
	SEAL	MUSTEE	SEAL	65.309		
	STRAINER	MUSTEE	STRAINER			
	MOP HANGER	MUSTEE	BRACKET	65.600		
FD-01	FLOOR DRAIN	WATTS	FUNNEL FLOOR DRAIN	FD-200-EG-1	NB	1,2
TP-01	TRAP PRIMER AUTOMATIC VALVE	PPP	FLOOR DRAIN - PRIMER VALVE	P2-500		

REMARKS:

1. ½" TRAP PRIMER CONNECTION.
2. SEDIMENT BUCKET.
3. ELONGATED BOWL.
4. VITREOUS CHINA.
5. FAUCET CONNECTION [B1-20A].
6. ¼ TURN BALL STOP [KTCR19].
7. SHALLOW ESCUTCHEON [649].
8. MIXING VALVE - DELTA MODEL # [R2910-MIXLF] WITH BUILT IN CHECK VALVE.
9. BATTERY POWERED CONTROL VALVE
10. 20 GA. STAINLESS STEEL.
11. ADA COMPLIANT
12. VACUUM BREAKER.

#	DESCRIPTION	DATE	BY
	REVISION		
3.			
2.	ISSUED BUILDING PERMIT	2018.10.12	DH
1.	ISSUED FOR REVIEW	2018.10.11	DH
#	DESCRIPTION	DATE	BY
	ISSUED		

NOTES:

NOT FOR CONSTRUCTION

KEYPLAN:

CLIENT:

CONSULTANT:

InnoReflection ENGINEERING LTD.
#10-9232 WOODBINE ST.
CHILLIWACK, BC V2P5S8
www.innoreflectioneng.ca
ph: (604) 845-7450

SEAL:

PROJECT NAME:
ZAFFRON RESTAURANT - TI
(PERSIAN CUISINE & DONAIR)
UNIT #4 - 5727 Vedder Road, Chilliwack, BC

PROJECT #: 2018-M013

TITLE:
SCHEDULES

SCALE:	- - - -
DATE:	2018.08.28
DRAWN BY:	DH
DESIGNED BY:	DH
CHECKED BY:	DH

DWG #:
M05

15000 MECHANICAL GENERAL CONDITIONS

1. GENERAL – SCOPE OF WORK:
   1. Provide complete, operational, tested and commissioned Plumbing & HVAC systems.
   2. Provide all labor, materials and products as specified herein and shown on the drawings as required to accomplish this work.
   3. Refer to the Architectural specifications and drawings and the General Conditions for other requirements of the contract.
2. CODES AND STANDARDS:
   1. Install to the requirements of the 2018 British Columbia Building & Plumbing Codes, the recommended installation procedures of SMACNA, the authorities having jurisdiction and all equipment manufacturers and suppliers.
   2. Electrical work to the requirements of the Canadian Electrical Code and the Provincial Electrical Inspector. Electrical equipment shall bear CSA and ULC labels attesting that equipment meets the testing standards of these agencies.
   3. Conform to the requirements of the plans and specifications, authorities having jurisdiction, and all applicable related codes and regulations.
3. PERMITS AND INSPECTIONS OF THE WORK:
   1. Obtain and pay for all necessary permits required to carry out the work specified.
   2. Do not conceal any installation prior to review by the consultant or the appropriate inspection authority. Ensure 72 hours written notice is provided to each of these parties prior to requirement for an inspection of the work. This includes any pressure tests of piping, drainage systems, ductwork, safety devices etc.
   3. Furnish certificates and inspection certificates received from authorities with jurisdiction, verifying that work installed conforms to necessary codes and standards.
4. QUALITY ASSURANCE:
   1. At completion of the work provide written declaration that all systems are installed and operating as per the requirements of the contract documents, and that the Contractor warranties the work, including all required parts and labor for a period of one full year from the date of Substantial Performance.
   2. Installation of all Plumbing & HVAC Systems must be carried out by skilled tradesman holding a valid TQ licence, or apprentices working under the supervision of a licensed tradesman. When apprentices are working, the licensed tradesman for each discipline must be on the site.
5. SUBMITTAL REQUIREMENTS:
   1. SHOP DRAWINGS:
      1. Provide shop drawings for the equipment listed on the mechanical schedule drawings. Shop drawings shall indicate all aspects of the construction and operating performance of the product proposed for supply.
      2. Clear mark submittal materials using arrows, underlining or circling to show ratings, capacities and options being proposed. Cross out non–applicable material.
      3. Shop drawings shall be submitted in searchable PDF format.
      4. All shop drawings shall be submitted to the Mechanical Consultant for review and approval prior ordering:
         a. Do not order equipment or material until the consultant has reviewed, approved and returned shop drawings.
         b. Do not use for construction shop drawings which do not bear the Consultant's review stamp.
      5. Shop drawings submission shall include:
         a. Date and revision date.
         b. Project title, number and address.
         c. Name of contractor or sub–contractor, supplier, manufacturer.
         d. Installation, operation and commissioning manuals, including wiring, controls, piping, service connection data, and motor size.
         e. detailed drawings of base, supports, anchor bolts and mounting arrangements.
         f. Weight of major equipment.
         g. Capacities and performance characteristics indicated on performance curves for fans and pumps.
         h. Contractor's stamp certifying approval of submission, verification of field measurements and compliance with Contractor Documents
   2. RECORD DRAWINGS:
      1. Maintain a set of record drawings at the site. Record drawings shall be drawn neatly on a set of prints provided to the Contractor. Drawings are to be maintained in an up to date condition at all times, recording all changes and deviations to the installation from those indicated on the construction issue drawings.
      2. At the completion of the project, accurately transfer each of the changes previously recorded on the site copy to a new set of prints. Vellum plots of each of the drawings will then be obtained and the notation "Certified As–Built" added and the drawings signed and dated by the Contractor, and then turned over to the Owner.
   3. OPERATING AND MAINTENANCE MANUALS:

      Supply two copies of an Operating and Maintenance Manual for the completed installation. The Operating and Maintenance manuals are to be submitted in hard cover three ring binders. Manuals will be indexed as follows:

      Section 1: Description of Systems:
      1. Title page indicating project title and the names, addresses, telephone and fax numbers of the Owner, Mechanical Engineer, General Contractor, Mechanical Contractor and the agency preparing the manuals.
      2. List of Plumbing Drawings.
      3. Description of the Plumbing & HVAC Systems, including description of system operation and components comprising the system. Describe systems operation and sequence of control operation.

      Section 2: Maintenance and Test Information
      1. Maintenance procedures and lubrication requirements, including preventative maintenance procedures, lubrication schedules and a belt schedule.
      2. List of equipment manufacturers and suppliers and sub–contractors used on the project.
      3. Copies of:
         1. Hydrostatic & pressure tests performed on, plumbing piping.
         2. Inspection certificates for plumbing & HVAC systems.
         3. Balancing Reports.
         4. Certificate of Guarantee.

      Section 3: Shop Drawings
      1. Include a copy of all Shop Drawings. Version included to be version given "Reviewed" status by consultant.
6. LIABILITY:
   1. The Mechanical Contractor shall assume full responsibility for laying out the work of Division 15 and for any damage caused by improper location or performance of the work.
   2. Protect work and building surfaces from damage due to the contractor's performance of the work. Pay particular attention to the protection of building vapour barriers and waterproof membranes.Cover floors and other finished surfaces to avoid damage. During periods of freezing weather, ensure all piping is protected from potential freeze–up and any mechanical openings in the building envelope are weather and temperature protected.
   3. Maintain the site in a clean and orderly condition at all times.
   4. At the completion of the work remove tools, waste and surplus equipment and materials from the site.
   5. Maintain $5,000,000 insurance that will fully protect the Owner, the General Contractor, the Mechanical Contractor and the Mechanical Contractor's sub–trades, from all claims which may arise from the Mechanical Contractor's performance of the work.
7. VIBRATION AND SEISMIC CONTROL:
   1. FLEXIBLE DUCT CONNECTIONS:
      1. Provide flexible duct connectors of Durodyne with Durolon fabric or approved equal on all fans and RTU's Supply/Return connections.
      2. Install flexible duct connections with a minimum 40 mm (1½ inches) metal–to–metal gap.
   2. SEISMIC RESTRAINT:
      1. Provide restraints on all ceiling hung equipment (fans, diffusers, etc.), isolated equipment, piping Guidelines for "and ductwork in accordance with National Building Code of Canada and SMACNA Seismic Restraints of Mechanical Systems and Plumbing Piping Systems.
      2. Provide seismic restraint for all mechanical and plumbing systems installed under this contract, with the following exceptions:
         1. Water piping in mechanical equipment rooms of 32 mm (NPS 1 1/4) diameter and smaller.
         2. All other piping of 65 mm (NPS 2–1/2") diameter and smaller.
         3. All piping suspended by individual hangers 300 mm (12 inches) or less in length from the top of pipe to the
         4. All rectangular air handling ducts less than 0.56 sq. meters (6 sq. ft.) in cross sectional area.
         5. All round air handling ducts less than 710 mm (28 inches) in diameter.
         6. All ducts suspended by hangers 300 mm (12 inches) or less in length from the top of the duct to the bottom of the support for the hanger.
      3. Seismic bracing and support of fire sprinkler piping is as required by NFPA 13–2013.
      4. It is the responsibility of the contractor to ascertain that an appropriate size restraint device be selected for each individual piece of equipment. Submit details on shop drawings.
      5. Bolt all non isolated equipment to the structure. Design anchors and bolts for seismic force applied horizontally through the centre of gravity.
      6. Retain the services of a Professional Engineer, registered in the Province of British Columbia, and specializing in the design of seismic restraint systems or structural engineering to ascertain that all mechanical equipment installed under this contract are adequately seismically restrained. Provide the required Schedule B & C–B for all mechanical and plumbing seismic work for insurance to the City.
      7. Design seismic restraints to meet the structural requirements of the British Columbia Building Codes Seismic Engineer to ascertain that an appropriate size.'
      8. It is the responsibility of the Contractor restraint device is selected for each piece of equipment.
      9. At the completion of the project obtain a letter bearing the seal of the Engineer, for inclusion in the Operation and Maintenance Manuals, stating that the mechanical. Installation is seismically restrained in accordance with Building Code and SMACNA requirements.
8. INSTALLATION REQUIREMENTS:
   1. The drawings are approximately to scale. They establish a scope of work only and are not intended as detailed installation instructions. Methods of construction required to attain the scope of work indicated on the drawings, confirmation of site measurements and attaining a level of quality as described in the specification are the responsibility of the Contractor.
   2. Installation of plumbing & HVAC systems shall confirm to the requirements of plans and specifications and shall be of institutional quality.
   3. Coordinate all mechanical work with the work of other sections to avoid conflict.
   4. Locate distribution systems, equipment and materials to eliminate interference, conserve headroom and leave maximum usable space.
   5. Install equipment in locations shown on the mechanical drawings with minimum interference with other services or space.
   6. Route ducting and piping in an orderly manner, as indicated on the drawings. Generally follow routes parallel and perpendicular to building structure.
   7. Sufficient space shall always be provided between piping to allow for proper installation of insulation materials.
   8. Follow all manufacturers' recommended installation details and procedures for the installation, testing and commissioning of the new equipment.
   9. Locate distribution systems, equipment and materials to eliminate interference, conserve headroom and leave maximum usable space.
   10. If interference should occur the Consultant will review relocation of equipment and materials regardless of installation order. No installation shall proceed without complete coordination between all trades.
   11. Make any necessary minor changes or additions to runs of ducts, pipes, etc., to accommodate structural conditions without additional charge or expense to the Owner.
   12. Alter location of pipes at the direction of the Consultant without charge to the Owner, so long as the change is made before installation and does not necessitate additional materials.
   13. No structural beams or joists shall be altered or cut to accommodate piping without written authorization from the Structural Engineer.
9. INSTRUCTION TO OPERATING STAFF:
   1. Provide training and instruction to facility operating and maintenance personnel. Training time to be a minimum of four hours and include instruction on complete start–up sequence of all systems and equipment and review of all modes of operation, as indicated in the control sequence of operations.
10. BALANCING:
    1. Provide balancing of Packaged Roof Top Units, & Exhaust Fans systems as indicated below.
    2. Indicate in the balance report:
       1. Operating performance (Design vs Actual) of all fans and air systems.
       2. Air flow from each overall fan system and individual supply and return air outlets.
       3. Outdoor air flow from each RTU with outdoor air damper at minimum and maximum position.
       4. Inlet and outlet pressure of each RTU & Exhaust fan (Total system pressure drop).
       5. Fan and motor RPM of each RTU and Exhaust Fan unit.
11. PIPE, AND DUCT INSULATION:
    1. Install insulation to the requirements of the latest edition of the British Columbia Insulation Contractors Association (BCICA) Standards Manual for Mechanical Insulation.
    2. Insulation shall be installed by a skilled tradesman, holding a valid Heat and Frost Insulator certificate of Qualification and licensed in the province of British Columbia.
    3. FIRE and Smoke Rating Requirements:
       1. Provide materials conforming to the latest edition of the "British Columbia Building Code and in accordance with CAN/ULC–S102 requirements:
          1. Maximum flame spread rating 25
          2. Maximum smoke developed rating 50.
    4. PIPE INSULATION:
       1. STORM WATER PIPING:
          1. Provide 25 mm (1 inch) thick mineral fibre thermal insulation on underside of roof drain bodies and all interior rain water leader piping to point of enteration through lower floor to underground. All insulation to be type A–2 as defined by BCICA Quality Standards specification 1501–C.
          2. Where exposed piping shall have a canvas covering with white PVC elbows to protect insulation from damage.
          3. On horizontal runs provide high–density type A3 calcium silicate insulation at locations of pipe hangers and sheet metal insulation shields between insulation and pipe support
       2. Domestic Water Piping:
          1. Pipe insulation shall be Performed Mineral Fiber – Low and Medium Temperature complete with integral vapour barrier jacket and longitudinal lap.
          2. Where exposed (not above dropped ceilings or inside walls) piping shall have a continuous white PVC jacket, with white PVC elbows, to protect insulation from damage.
          3. On cold and hot water lines provide high–density type A3 calcium silicate insulation at locations of pipe hangers and sheet metal insulation shields between insulation.
          4. Domestic Cold Water Piping Insulation Thickness:

             1. Pipe insulation thickness shall meet the requirement of [Table 1]:

Application	Operating Temp.(°F)	Pipe Size mm (in)	
		< 38 (1.5")	>= 38 (1.5")
Domestic Cold Water Piping	----	25 (1")	25 (1")
Domestic Hot Water Piping	105°–140°	25 (1")	38 (1.5")
Domestic Hot Water Re–circulation Piping	105°–140°	25 (1")	38 (1.5")

             2. Application for pipe insulation shall meet the requirements of [Table 2]:

Application	BCICA Quality Standards Specifications 1501–H & 1501–C	Thermal Conductivity at 24°C
All Systems	Type A–2 Miniral Fiber (Low & Medium Temperature)	0.003W

    5. DUCT INSULATION:
       1. Insulation to be type B–2 as defined by BCICA Quality Standards specification 1502, for the following systems.
          1. Supply Air Ductwork for Air Conditioned Systems:
             1. Except where ducts have internal acoustic duct lining, where supply air ductwork on air conditioned systems is concealed within ceiling plenums, chases or furrings provide 25–mm (1–inch) thick external, flexible mineral fibre thermal insulation with vapour barrier to ASTM C1290, with minimum thermal R–value of 1.9 hour–deg F–ft2/BTU. Insulation to be type B–2 as defined by BCICA Quality Standards specification 1502, for the following systems.
          2. Exhaust Ductwork for Ventilation Systems:
             1. Provide 25 mm (1 inch) thick external mineral fibre thermal insulation on all exhaust ductwork.
          3. Acoustic Duct Liner (Supply, Return & Exhaust Ductwork):
             1. Where indicated on the drawings and where required for acoustic purposes, provide 25 mm (1 inch) thick acoustic duct liner with neoprene backing. Install on mechanical fasteners 300 mm centre to centre. Cut off ends of fasteners and cover with neoprene caps and provide metal Z bars to protect all edges of insulation.
    6. EXECUTION:
       1. No insulation is to be applied prior to hydrostatic testing of pipe installations and confirmation from the Consultant and the Building Inspector that piping is installed in conformance with code and specification requirements.
       2. Ensure all surfaces to be covered are clean and dry.
       3. Clean and degrease piping, hanger rods, etc., as required to assure proper adhesion of insulation materials.
       4. Ensure that insulation is clean and dry during installation and application of all finishes.
       5. Install insulation with smooth and even surfaces.
       6. Apply insulation materials, accessories and finishes in accordance with manufacturer's recommendations.
12. PLUMBING SYSTEMS:
    1. SCOPE OF WORK:
       1. Sanitary Waste and Vent Piping.
       2. Domestic Cold, Hot and Hot Water Piping.
    2. CODES, STANDARDS AND APPROVALS:
       1. The installation shall conform to the following standards:
          1. Part 2 of the 2012 British Columbia Building Code.
       2. Do not conceal any plumbing installation, whether buried or within walls, prior to review by the consultant and the local plumbing inspector. Ensure 72 hours written notice is provided to each of these parties prior to requirement for an inspection of the work.
       3. Route piping installation in an orderly manner, as indicated on the drawings. Generally follow routes parallel and perpendicular to building structure.
    3. VALVES:
       1. Provide shut–off stops on hot and cold water connections for all individual plumbing fixtures.
       2. Ball Valves for shut–off service:
    4. EQUIPMENT SELECTIONS:
       1. Refer to Plumbing Schedules on DWG M04
    5. ALLOWABLE PIPE MATERIALS:
       1. SANITARY DRAIN & VENT SYSTEM:
          1. Sanitary Drain & Vent – Inside Building – [Table 3]:

MATERIAL	CODE REFERENCE	CONFORM TO FITTINGS
TYPE DWV COPPER	BC PLUMBING CODE	ASTM B306 WROUGHT COPPER WITH 50–50 SOLDER
CAST IRON	BC PLUMBING CODE	CAN/CSA B70–M MJ WITH SS BAND CLAMPS

          2. Sanitary Piping – Buried Below Building – [Table 4]:

MATERIAL	CODE REFERENCE	CONFORM TO
PVC (DWV)	BC PLUMBING CODE	CAN/CSA B181.2–M
PVC (<= SDR 35)	BC PLUMBING CODE	CAN/CSA B182.2–M

          3. Domestic Water Piping – Inside Building – [Table 5]:

MATERIAL	CODE REFRENCE	CONFORM TO
COPPER – TYPE L	BC PLUMBING CODE	ASTM B88 WROUGHT COPPER
		95.5% Sn, 4% Cu, 0.5% Ag
CROSSLINKED		
X–LINKED POLYETHYLENE	BC PLUMBING CODE	CSA–B137.5–M
CPVC	BC PLUMBING CODE	CSA–B137.6–M

    6. Installation:
       1. Grade sanitary piping as indicated on the drawings. Bed buried lines in minimum 150 mm bedding sand above and below pipe. Trenching and backfilling will be provided by the General contractor.
       2. Piping penetrations through drywall (other than fire rated walls) should be ¼ inch oversized and gap caulked with silicone sealant. For fire rated walls refer to the requirements for Firestopping.
       3. Do not install sanitary, vent and domestic piping in any party walls.
       4. Route piping installation in an orderly manner, as indicated on the drawings. Generally follow routes parallel and perpendicular to building structure.
       5. Copper pipe shall not be buried except where specifically noted on drawings.
       6. All connections to fixtures shall be with unions.
    7. HANGERS:
       1. For non–combustible pipe 3 inch diameter and larger use steel ring and clevis type hangers attached to galvanized steel rods to support all suspended piping.
       2. The use of perforated band iron is permitted only for combustible pipe and combustible pipe 2.5 inches and smaller.
       3. Install hangers with maximum separation as indicated in table 9 below, BC Plumbing Code, Manufacturers' requirements and where required to avoid sag in pipe installation. Hangers shall be installed to to the manufacturers' written installation requirements.
       4. Provide sheet metal shields to protect insulation from being crushed at hanger locations.
       5. Hangers for copper pipe shall be copper plated and plastic dipped, or pipe wrapped with Polyken tape at hangers.
       6. Maximum Hanger Spacing – [Table 6]:

Pipe Diameter	Rod Diameter	MAX. Spacing	
		Steel	Copper
Up to 19mm	10mm	1.8m	1.8m
25mm to 32mm	10mm	2.4m	1.8m
38mm to 50mm	10mm	3.0m	2.4m
65mm to 75mm	13mm	3.6m	2.4m
100mm to 125mm	16mm	3.6m	2.4m
150mm	19mm	3.6m	

       Note: For cast iron piping – maximum hanger spacing is 1.5m.
    8. Tests and Inspections:
       1. Tests on plumbing systems shall consist of the following: All leaks shall be corrected by remaking the joints and the systems retested until no leaks are observed.
       2. All plumbing fixtures shall be tested for soundness, stability of support and correct operation.
       3. All pressure test shall be witnessed by the Site Superintendent, and 72hrs notice shall be provided to the consultant and AHJ to witness.
       4. Pipe Pressure Testing shall be performed as per [Table 11] and to the latest BC Plumbing Code and the manufacturer's written instructions.

TABLE 7

System	Test Requirement		
	Type	Time	Pressure
Sanitary Waste and Vent System	Hydraulic Water Test	8 hr.	3 metre (10 foot)
Domestic Water System	Water Pressure Test	8 hr.	1030 kPa (150 PSIG)

13. PLUMBING FIXTURES:
    1. GENERAL:
       1. Fixtures shall be free from flaws or blemishes. Surfaces shall be clear, smooth and bright and have dimensional stability. Visible parts of the fixture supply trim shall be chrome–plated, unless otherwise noted.
       2. Exposed trim, supplies, traps, tubing, escutcheons and valves to sanitary fixtures shall be chrome–plated finish.
    2. SCOPE OF WORK:
       1. Provision, installation, set–up and testing of all Plumbing Fixtures and Trim:
    3. QUALITY ASSURANCE:
       1. All fixtures and equipment for handicapped use shall be in accordance with all applicable codes and regulations.
       2. Fixtures indicated for handicapped use shall be in accordance with section the 2012 British Columbia Building Code.
       3. Plumbing fixtures shall conform to the latest CSA B45.0 standards.
       4. Ceramic plumbing fixtures shall conform to latest CSA B45.1 standards.
       5. Enameled cast iron plumbing fixtures shall conform to the latest CSA B45.2 standards.
       6. Porcelain enameled steel plumbing fixtures shall conform to the latest CSA B45.3 standards.
       7. Stainless steel fixtures shall be in accordance with the latest CSA B45.4 standards.
       8. All fixtures shall bear stamp indicating CSA approval.
    4. INSTALLATION:
       1. Supply and install all hangers, supports, brackets, reinforcement, 14 gauge steel back–up plates, floor flanges and all accessory piping and fittings, for the proper installation and support of all fixtures and their respective supply fittings.
       2. Where plumbing fixtures come in contact with wall and/or floor, joints shall be sealed with Dow Corning 781 building sealant, made watertight and beaded smooth in a neat and workmanlike manner.
    5. SELECTION:
       1. Refer to Plumbing Drawing M04 – Plumbing Fixture Schedule.
14. CONTROLS:
    1. GENERAL REQUIREMENTS:
       1. Provide wiring between all mechanical equipment and their controls such as wall switch , time–clocks, motion sensor or reverse acting thermostats etc...
       2. Wiring is by Division 16 – provision of control device is by Division 15.
       3. Instructions for owners.
    2. INSTALLATION REQUIREMENTS:
       1. The location of all devices shall be reviewed with the consultant prior to installation.
       2. Permanently identify each wire, cable, and conduit pipe.
       3. Provide all control components, wiring devices, and labour necessary to assemble a complete control system in accordance with the control manufacturer's recommendation.
       4. All work shall be installed in accordance with the Canadian Electrical Code and the British Columbia Building Code.
       5. Division 15 is responsible for all low voltage control wiring and connections (less than 120 volts) including those between line voltage temperature controls, safety, limiting and other devices directly related to starters, holding coils, auxiliary contractors, interlocks, relays, etc., as required for the performance of the control system and sequence of operation as specified.
       6. All exposed wiring is to be run in conduit.
       7. 110 volt circuits shall be, at a minimum, of #14 AWG RX 90 copper. For runs over 150 feet in length, use #12 AWG RX 90 copper.
    3. SEQUENCE OF OPERATIONS:
       1. Bathroom exhaust fan [EF–01]: to be controlled by a 7 day digital programmable timeclock.
       2. Lunch room exhaust fan [EF–02]: to be controlled by an integrated motion sensor.
       3. Elevator machine room exhaust fan [EF–03]: to be controlled be a reverse acting thermostat.
       4. Roof Top Units – [RTU–3] to [RTU–06] : to be controlled by a 7 days digital programmable touch screen room thermostat.
       5. Domestic hot water recirculating pump [CP–01]: to be controlled by a 7 day digital programmable timeclock.

#	DESCRIPTION	DATE	BY
	REVISION		
3.			
2.	ISSUED BUILDING PERMIT	2018.10.12	DH
1.	ISSUED FOR REVIEW	2018.10.11	DH
#	DESCRIPTION	DATE	BY
	ISSUED		

NOTES:

NOT FOR CONSTRUCTION

KEYPLAN:

CLIENT:

CONSULTANT:

InnoReflection ENGINEERING LTD.
#10-9232 WOODBINE ST.
CHILLIWACK, BC V2P5S8
www.innoreflectioneng.ca
ph: (604) 845-7450

SEAL:

PROJECT NAME:
ZAFFRON RESTAURANT - TI
(PERSIAN CUISINE & DONAIR)
UNIT #4 - 5727 Vedder Road, Chilliwack, BC

PROJECT #: 2018-M013

TITLE:
SPECIFICATIONS

SCALE:	- - - -
DATE:	2018.08.28
DRAWN BY:	DH
DESIGNED BY:	DH
CHECKED BY:	DH

DWG #:
M06