

Revision/Revision	Description/Description	Date/Date
1	Issued For Tender	2016.05.24

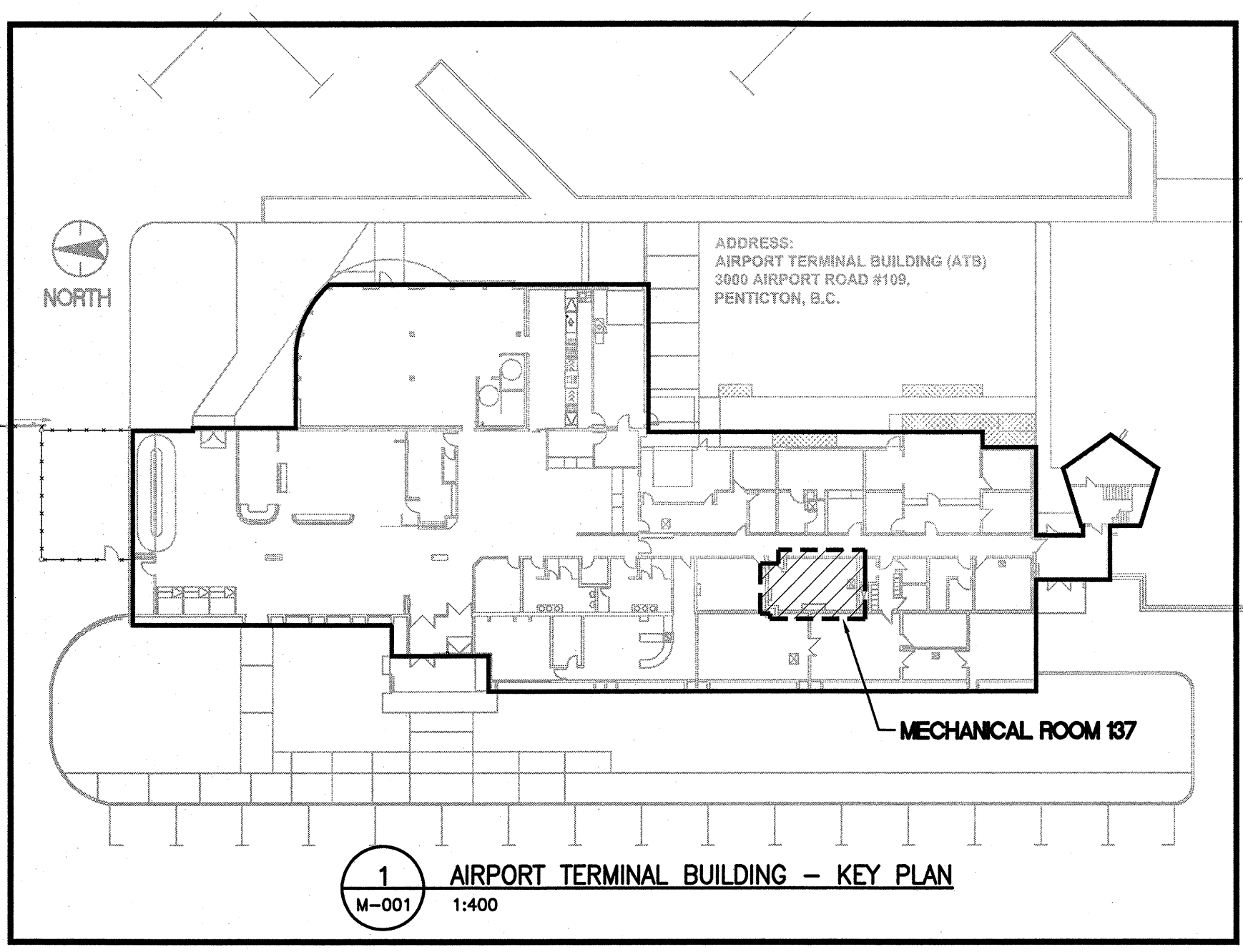
TRANSPORT CANADA

Project title/Titre du projet
**PENTICTON AIRPORT
 3000 AIRPORT ROAD #109, PENTICTON, BC
 AIR TERMINAL BUILDING (ATB)
 BOILER REPLACEMENT**

Consultant Signature Box Only
 Designed by/Concept par
JNG
 Drawn by/Dessine par
LB
 PWGSC Project Manager/Administrateur de Projets TPSGC
Julian Ho
 PWGSC Regional Manager, Architectural and Engineering Services /
 Gestionnaire régional, Services d'architectural et de génie, TPSGC
Preetipal Paul

**MECHANICAL LEGEND,
 NOTES, AND KEY PLAN**

Project No./No. du projet R.077022.001	Sheet/Feuille M-001	Revision no./ Ls Révision no. 1
--	-------------------------------	--



PROJECT DRAWING LIST:

NO.	NAME	DESCRIPTION	SCALE
1 OF 7	M-001	MECHANICAL LEGEND, NOTES AND KEY PLAN	N.T.S.
2 OF 7	M-101	MECHANICAL ROOM PLAN - DEMOLITION	1:100
3 OF 7	M-102	MECHANICAL ROOM PLAN - NEW	1:100
4 OF 7	M-103	MECHANICAL ROOM PLAN	1:100
5 OF 7	M-501	MECHANICAL SYSTEM SCHEMATICS	N.T.S.
6 OF 7	M-601	MECHANICAL EQUIPMENT SCHEDULES	N.T.S.
7 OF 7	E-101	ELECTRICAL POWER AND LIGHTING	AS NOTED.

- GENERAL NOTES:**
- CONTACT AND COORDINATE WITH THE DEPARTMENTAL REPRESENTATIVE FOR ALL WORK AFFECTING THE BASE BUILDING HVAC, PLUMBING OR LIFE SAFETY SYSTEMS. EXISTING BUILDING SYSTEMS SUCH AS FIRE ALARM, SPRINKLER, CONTROLS, COMMUNICATION, SECURITY AND BUILDING SYSTEMS, TO REMAIN FULLY OPERATIONAL DURING CONSTRUCTION.
 - PERFORM BOILER SHUTDOWN DURING NON-PEAK PERIODS TO AVOID DISRUPTION TO HEATING SYSTEM. WORK SHALL BE COMPLETED WITHIN THE NON-HEATING SEASON.
 - LOCATION OF EXISTING EQUIPMENT SHOWN ON THIS DRAWING IS FOR INFORMATION ONLY. CONTRACTOR SHOULD REVIEW AND CHECK THE EXACT LOCATION, SIZE, ELEVATION AND INVERT OF ALL EXISTING EQUIPMENT AND PIPING ON SITE PRIOR TO COMMENCING WITH WORK.
 - MODIFY THE SIZE AND ROUTING OF NEW DUCTWORK AND PIPING AS REQUIRED TO SUIT THE SITE CONDITIONS WITHOUT EXTRA COST TO THE DEPARTMENTAL REPRESENTATIVE. PROVIDE ADEQUATE OFFSETS, AND TRANSITIONS ON NEW DUCTWORK AND PIPING AS REQUIRED TO SUIT SITE CONDITIONS. CAPTURE ALL VARIATIONS ON AS-BUILT DRAWINGS. SUBMIT AS-BUILT DRAWINGS ON COMPLETION OF PROJECT.
 - COORDINATE WITH THE PRIME CONTRACTOR, AS WELL AS ALL OTHER SUB-TRADES.
 - COORDINATE WITH ELECTRICAL CONTRACTOR TO DECOMMISSION ELECTRICAL POWER, WIRING AND CIRCUITS.
 - PROVIDE FIRE STOPPING FOR ALL PENETRATIONS THROUGH FIRE RATED WALLS. SUBMIT FIRE STOPPING CERTIFICATE.
 - SEISMICALLY RESTRAIN ALL RELOCATED AND NEW MECHANICAL EQUIPMENT. SUBMIT SEISMIC LETTERS OF ASSURANCE FROM SEISMIC PROFESSIONAL ENGINEER.
 - WHERE HVAC EQUIPMENT (BOILERS, PUMPS, FANS) HAVE BEEN REMOVED, REMOVE ALL ASSOCIATED ABANDONED CONTROLS AND CONTROL WIRING, DUCTWORK AND SHEET METAL ACCESSORIES.
 - PATCH AND MAKE GOOD ALL DAMAGED CEILING/WALL/ROOF/FLOORING FOR NEW AND DEMOLITION MECHANICAL WORK. REPLACE ANY DAMAGE AND/OR CUT CEILING TILE. COORDINATE WITH GENERAL CONTRACTOR.

MECHANICAL LEGEND:

TAGS AND SYMBOLS

AIR TERMINAL TAG
 SUPPLY S
 RETURN R
 EXHAUST E
 LOUVRE L

MECHANICAL EQUIPMENT TAG

CONNECT TO EXISTING

EXISTING TO REMAIN

SPECIFIC KEY NOTE

DRAWING REVISION NO.

SECTION NO. AND CUT LINE

SECTION/DETAIL DESCRIPTION

ACCESS PANEL (450X450) U.N.O.

DOOR UNDERCUT 25MM

FLOW DIRECTION - AIR

FLOW DIRECTION - FLUID

QUANTITY
 TYPE
 FLOW (L/S)
 SIZE (MM)

EXIST. ACU

SECTION NO. ON SHEET NO.

SECTION/DETAIL SCALE: 1:50

SECTION/DETAIL NO. ON SHEET NO.

HVAC DUCTING SYMBOLS

SQUARE ELBOW WITH MULTI-BLADE TURNING VANES

SUPPLY DUCT TOWARD, AWAY

RETURN OR TRANSFER DUCT TOWARD, AWAY

EXHAUST DUCT TOWARD, AWAY

OUTDOOR AIR DUCT TOWARD, AWAY

ROUND DUCT TOWARD, AWAY

BRANCH TAKEOFF SQUARE->SQUARE

BRANCH TAKEOFF SQUARE->ROUND

BRANCH TAKEOFF ROUND->ROUND

HVAC

	NEW	EXISTING
DUCTWORK RECTANGULAR	300x400	300x400
DUCTWORK ROUND	300#	300#
SINGLE LINE DUCTWORK	300#	300#
CAPPED OFF DUCT	CAP	CAP
ACOUSTIC DUCT LINER		
BALANCING DAMPER		
BACKDRAFT DAMPER BDD = BACKDRAFT DAMPER BBD = "BALANCED" BACKDRAFT DAMPER	BDD	BDD
FIRE DAMPER	FD	FD
SUPPLY AIR GRILLE OR DIFFUSER		
RETURN AIR GRILLE		
EXHAUST AIR GRILLE		
HEATING WATER SUPPLY PIPING	HWS	HWS
HEATING WATER RETURN PIPING	HWR	HWR
REFRIGERANT PIPES	R	R
HVAC DRAINAGE PIPING	D	D
HVAC MAKE-UP WATER PIPING	MAKE-UP	MAKE-UP

PLUMBING

	NEW	EXISTING
GAS PIPING	G	G
DOMESTIC COLD WATER PIPING	DCW	DCW
DOMESTIC HOT WATER PIPING	DHW	DHW
DOM. HOT WATER RECIRC. PIPING	DHWR	DHWR
SANITARY PIPING	SAN	SAN
SANITARY PIPING BELOW SLAB	SAN	SAN
STORM PIPING	STM	STM
STORM PIPING BELOW SLAB	STM	STM
SANITARY VENT PIPING	V	V
FLOOR DRAIN	FD	FD

FIRE SUPPRESSION

	NEW	EXISTING
SPRINKLER PIPING	SP	SP
SPRINKLER HEAD - PENDANT		
SPRINKLER HEAD - UPRIGHT		

DEMOLITION

EXISTING EQUIPMENT TO BE REMOVED

EXISTING DUCTWORK OR PIPING TO BE REMOVED

EXISTING DIFFUSER OR GRILLE TO BE REMOVED

EXISTING THERMOSTAT, SENSOR, OR SWITCH TO BE REMOVED

EXISTING VALVE ACCESSORIES TO BE REMOVED

RELOCATE EXISTING EQUIPMENT

HVAC PIPING SYMBOLS

FLANGE CONNECTION

UNION CONNECTION

PIPE CAP

PIPE BREAK

PIPING ELBOW DOWN

PIPING ELBOW UP

PIPING TEE UP

PIPING TEE DOWN

PIPING TEE

GATE VALVE

GLOBE VALVE

TRIPLE DUTY VALVE

PRESSURE REDUCING VALVE

CHECK VALVE - SWING GATE TYPE

RELIEF VALVE - PRESSURE AND TEMPERATURE

CIRCUIT BALANCING VALVE C/W PRESSURE PORTS

STRAINER

RELIEF AIR VALVE (AT EACH HIGHPOINT)

PUMP WITH REDUCER ON BOTH ENDS

PIPE THERMOMETER

PIPE PRESSURE GAUGE

PIPE PRESSURE GAUGE AND COCK

BACKFLOW PREVENTER, REDUCED PRESSURE ZONE (RPZ) TYPE

2-WAY CONTROL VALVE C/W ACTUATOR - CONNECT TO DDC

3-WAY CONTROL VALVE C/W ACTUATOR - CONNECT TO DDC

SOLENOID VALVE

PIPE TEMPERATURE SENSOR - CONNECT TO DDC

PIPE PRESSURE SENSOR - CONNECT TO DDC

PIPE DIFFERENTIAL PRESSURE SENSOR - CONNECT TO DDC

PIPE FLOW SWITCH - CONNECT TO DDC

HVAC CONTROLS SYMBOLS

CONTROL WIRING

THERMOSTAT

WALL MOUNTED SWITCH

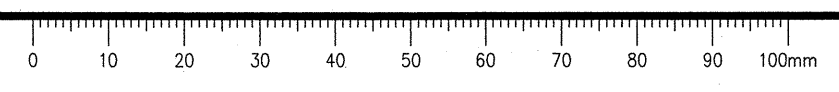
WALL MOUNTED VARIABLE SPEED SWITCH

CARBON DIOXIDE SENSOR

OCCUPANCY SENSOR

SMOKE SENSOR

MOTORIZED DAMPER C/W ACTUATOR





MAY 24 2016
PROFESSIONAL ENGINEER

- GENERAL NOTES:**
- CONTRACTOR SHALL FIELD VERIFY THE EXACT LOCATIONS OF EXISTING EQUIPMENT, PIPING, INSULATION AND PIPING ACCESSORIES.
 - KEEP EXISTING HOT WATER HEATING BOILER-B-EX (VERTICAL MOUNT), ASSOCIATED PIPING, INSULATION AND PIPING ACCESSORIES. REVISE EQUIPMENT TAG, AND LABEL AS BOILER B-3.
 - DEMOLISH REMAINING EXISTING HOT WATER HEATING BOILERS (FLOOR MOUNTED), ASSOCIATED HOT WATER HEATING CIRCULATION PUMPS, PIPING, INSULATION AND PIPING ACCESSORIES.
 - CAP-OFF EXISTING PIPE PENETRATIONS TO/FROM EXISTING SERVICES. ALLOW FOR FUTURE CONNECTION OF NEW EQUIPMENT AND PIPING. REFER TO DRAWINGS M102 FOR NEW LAYOUT.
 - RE-USE EXISTING HOUSE KEEPING (CONCRETE) PAD FOR NEW EQUIPMENT. REPAIR AND REMEDIATE AS NEEDED FOR NEW EQUIPMENT.

- SPECIFIC NOTES:**
- D1 REMOVE EXISTING HEATING BOILER.
 - D2 REMOVE EXISTING HEATING WATER PIPES, FITTINGS, & VALVES
 - D3 REMOVE EXISTING CIRCULATION PUMP.
 - D4 REMOVE EXPANSION TANK.
 - D5 REMOVE EXISTING MAKE UP WATER CONNECTIONS AND RPBP.
 - D6 REMOVE EXISTING NATURAL GAS CONNECTIONS.
 - D7 REMOVE EXISTING RELIEF VALVE DRAINS.
 - D8 REMOVE EXISTING CHEMICAL POT FEEDER AND SIDE STREAM FILTER.
 - D9 EXISTING DOMESTIC HOT WATER HEATER (TANK) TO REMAIN.
 - D10 EXISTING FLOOR DRAIN TO REMAIN.
 - D11 REMOVE EXISTING BOILER CONTROL PANEL.
 - D12 REMOVE EXISTING UNIT HEATER, ASSOCIATED PIPING AND CONTROLS.
 - D13 KEEP EXISTING BOILER, PROVIDE NEW PIPING AND FLUE VENTS.

EXISTING PUMP SCHEDULE

TAG NO.	SERVICE	LOCATION	NOTES
P-EX	BOILER RECIRCULATION	MECH. ROOM 137	REMOVE
CP-1	ZONE 1 SECONDARY LOOP	MECH. ROOM 137	REMOVE
CP-2	ZONE 2 SECONDARY LOOP	MECH. ROOM 137	REMOVE
CP-3	ZONE 3 SECONDARY LOOP	MECH. ROOM 137	REMOVE

EXISTING EXPANSION TANK SCHEDULE

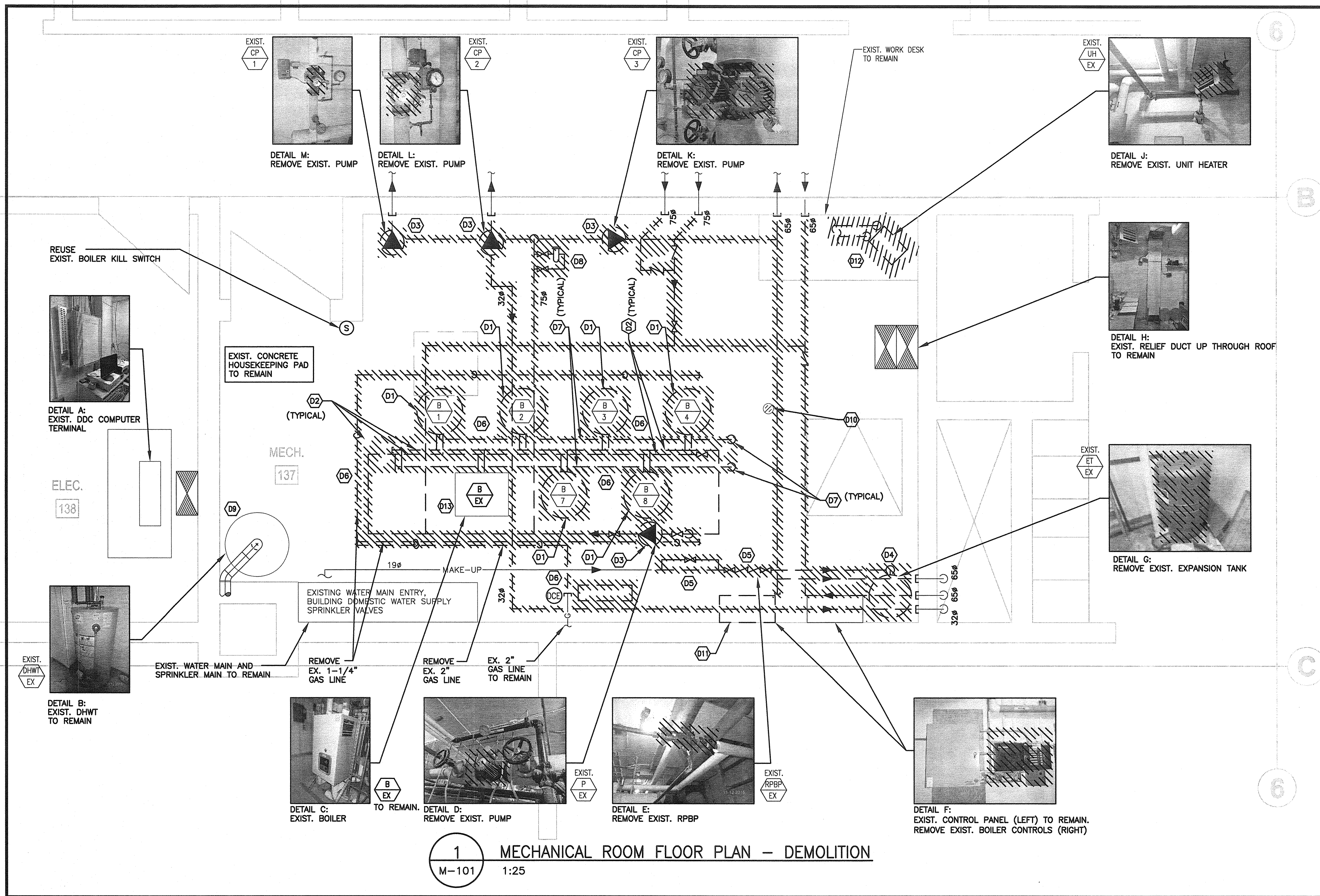
TAG NO.	SERVICE	LOCATION	NOTES
ET-EX	HEATING HOT WATER LOOP	MECH. ROOM 137	REMOVE

EXISTING UNIT HEATER SCHEDULE

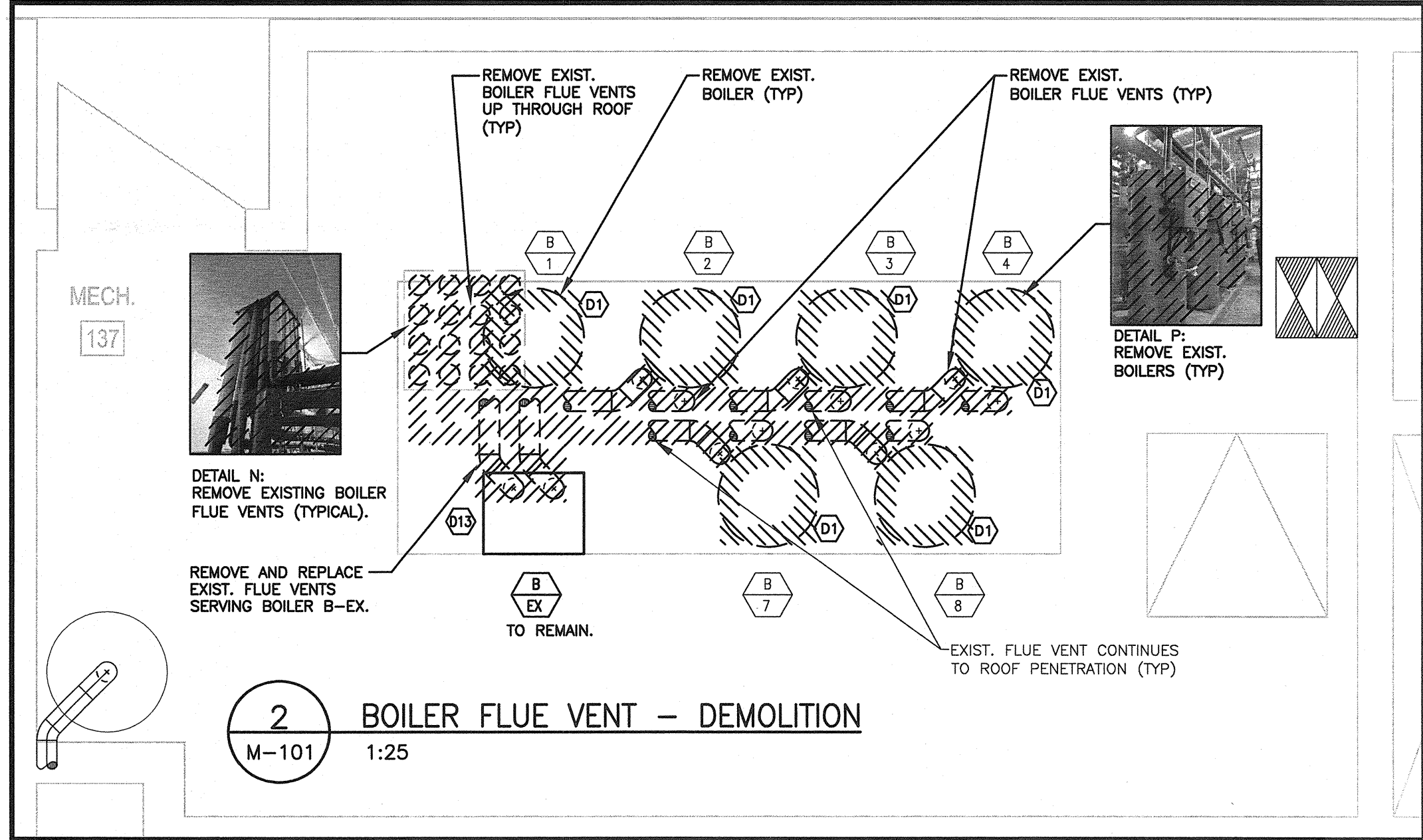
TAG NO.	SERVICE	LOCATION	NOTES
UH-EX	DECOMMISSIONED	MECH. ROOM 137	REMOVE

EXISTING BOILERS SCHEDULE

UNIT NO.	SERVICE	MAKE	MODEL	FUEL	GAS OPERATING PRESS. (IN.WC)	HEATING INPUT (MBH)	HEATING OUTPUT (MBH)	ELECTRICAL (V/PH/Hz)	SUPPLY TEMP (°F)	RETURN TEMP (°F)	EFF. (%)	FLUE OUTLET DIAMETER (MM)	NOTES
EXIST. B-1	HEATING WATER	HYDROTHERM	MULTI-PULSE	NATURAL GAS	4.5 TO 7.0	150	135.7	115/1/60	168	VARIES	90.5%	100#	REMOVE
EXIST. B-2	DECOMMISSIONED	HYDROTHERM	MULTI-PULSE	NATURAL GAS	4.5 TO 7.0	150	135.7	115/1/60	168	VARIES	90.5%	100#	REMOVE
EXIST. B-3	HEATING WATER	HYDROTHERM	MULTI-PULSE	NATURAL GAS	4.5 TO 7.0	150	135.7	115/1/60	168	VARIES	90.5%	100#	REMOVE
EXIST. B-4	HEATING WATER	HYDROTHERM	MULTI-PULSE	NATURAL GAS	4.5 TO 7.0	150	135.7	115/1/60	168	VARIES	90.5%	100#	REMOVE
EXIST. B-5	-	-	-	-	-	-	-	-	-	-	-	-	-
EXIST. B-6	-	-	-	-	-	-	-	-	-	-	-	-	-
EXIST. B-7	DECOMMISSIONED	HYDROTHERM	MULTI-PULSE	NATURAL GAS	4.5 TO 7.0	150	135.7	115/1/60	168	VARIES	90.5%	100#	REMOVE
EXIST. B-8	HEATING WATER	HYDROTHERM	MULTI-PULSE	NATURAL GAS	4.5 TO 7.0	150	135.7	115/1/60	168	VARIES	90.5%	100#	REMOVE
EXIST. B-EX	HEATING WATER	TRIANGLE TUBE	PRESTIGE SOLO PT-175	NATURAL GAS	7.4	170	163	115/1/60	168	VARIES	96%	75#	KEEP AND REVISE TAG TO BOILER B-3



1 MECHANICAL ROOM FLOOR PLAN - DEMOLITION
M-101 1:25



2 BOILER FLUE VENT - DEMOLITION
M-101 1:25

TRANSPORT CANADA
Project title/Titre du projet
**PENTICTON AIRPORT
3000 AIRPORT ROAD #109, PENTICTON, BC
AIR TERMINAL BUILDING (ATB)
BOILER REPLACEMENT**

Consultant Signature Box Only
Designed by/Concept par
JNG
Drawn by/Dessine par
LB
PWGSC Project Manager/Administrateur de Projets TPSCC
Julian Ho
PWGSC, Regional Manager, Architectural and Engineering Services/
Gestionnaire régionale, Services d'architecture et de génie, TPSCC.
Preetipal Paul

Drawing title/Titre du dessin
**MECHANICAL ROOM
PLAN - DEMOLITION**

Project No./No. du projet
R.077022.001
Sheet/Feuille
M-101
Revision no./
La Révision
no.
1
2 OF 7



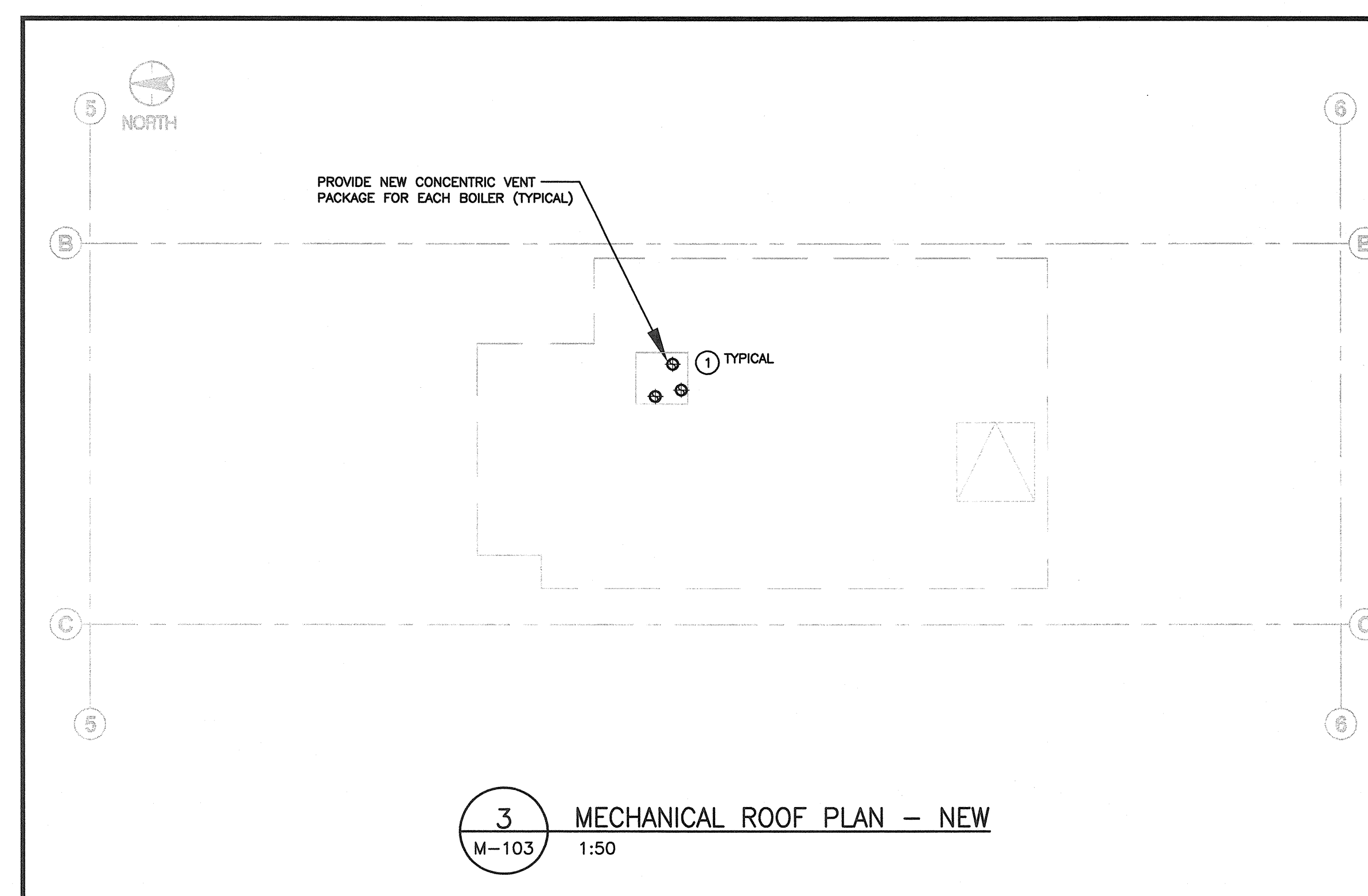
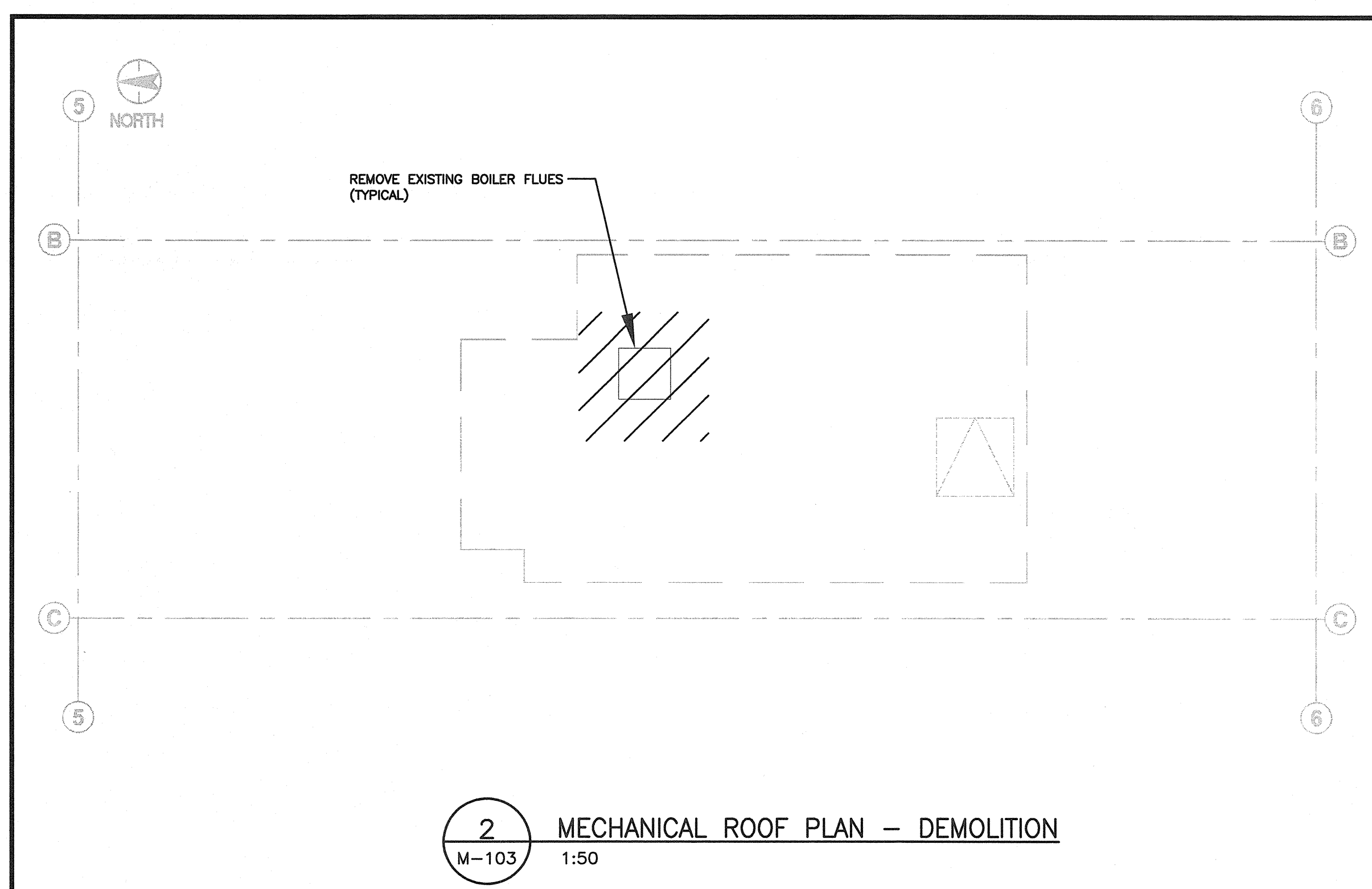
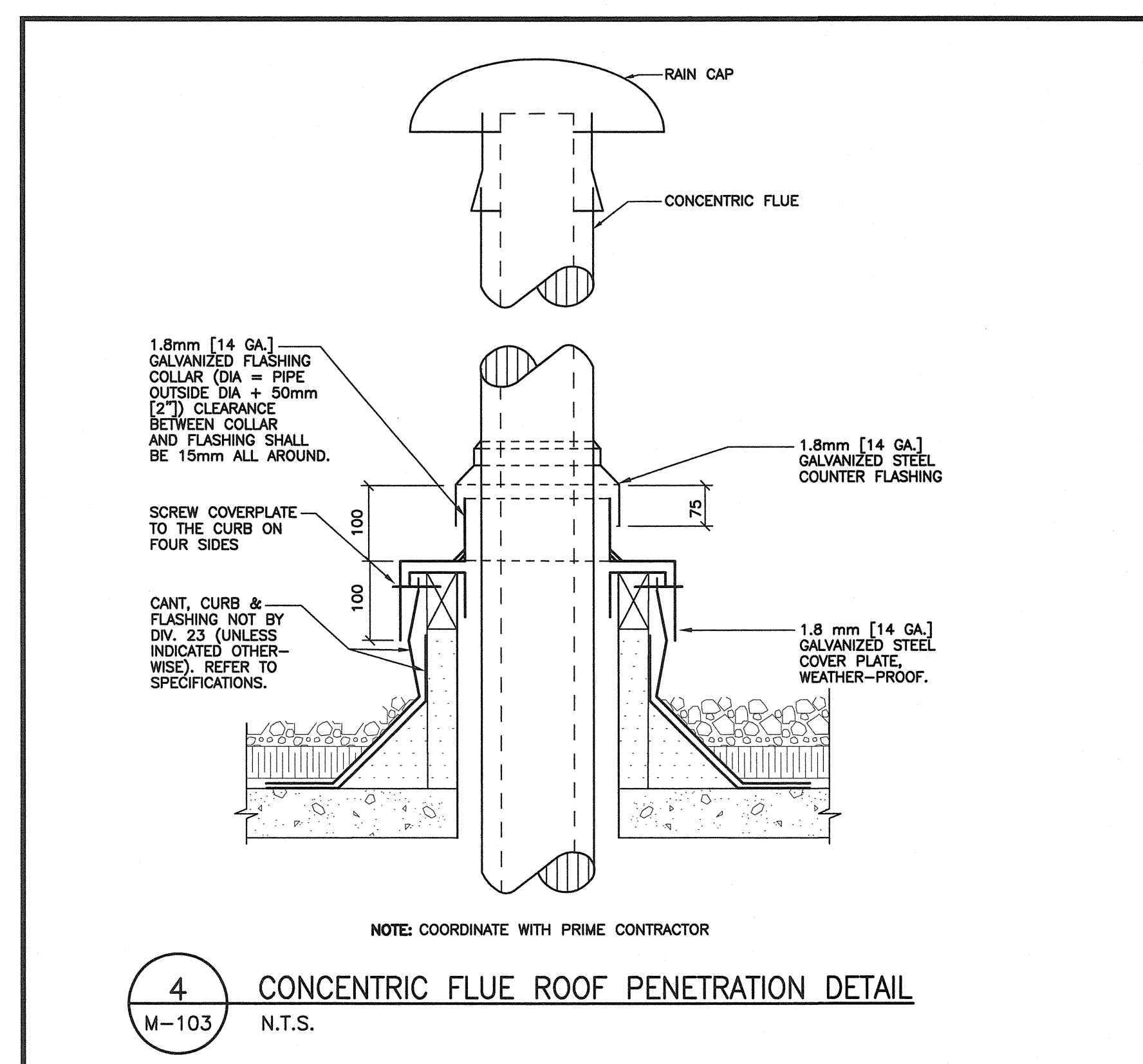
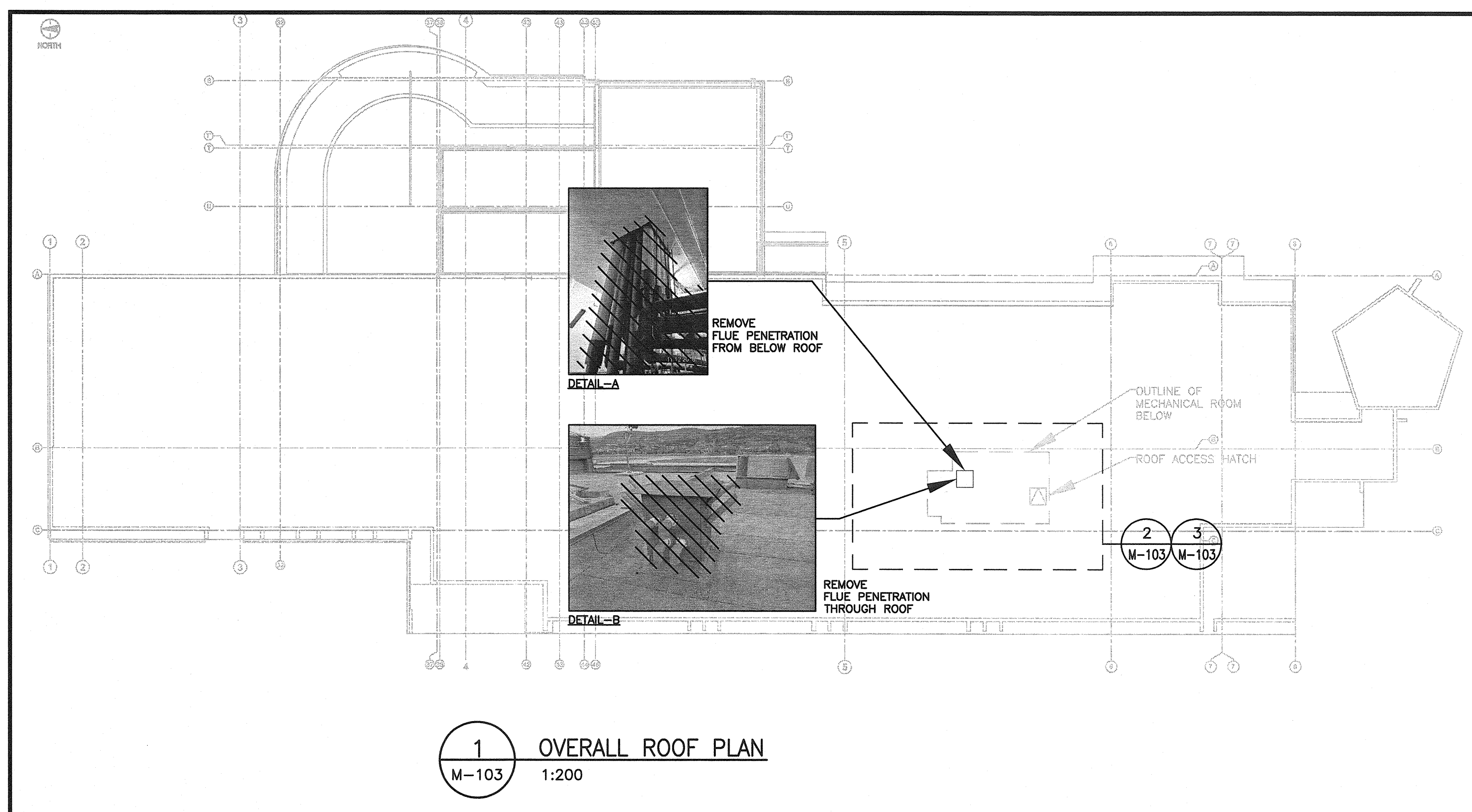
MAY 24 2016
 PROFESSIONAL ENGINEER
 J. HO

GENERAL NOTES:

- MECHANICAL CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF EXISTING MECHANICAL SYSTEMS PRIOR TO BEGINNING WORK.
- PROVIDE STRUCTURAL SUPPORTS AND REINFORCING AS REQUIRED.
- PATCH AND MAKE GOOD ROOF, WALLS, CEILINGS AND FLOORS DAMAGED BY MECHANICAL WORK.

SPECIFIC NOTES:

- PROVIDE NEW CONCENTRIC VERTICAL VENT PACKAGE BY BOILER MANUFACTURER, TERMINATION SHALL BE MINIMUM 1000MM ABOVE FINISHED ROOF DECK.



Revision/Revision	Description/Description	Date/Date
1	Issued For Tender	2016.05.24

TRANSPORT CANADA

Project title/Titre du projet
**PENTICTON AIRPORT
 3000 AIRPORT ROAD #109, PENTICTON, BC
 AIR TERMINAL BUILDING (ATB)
 BOILER REPLACEMENT**

Consultant Signature Box Only

Designed by/Concept par
JNG

Drawn by/Dessiné par
LB

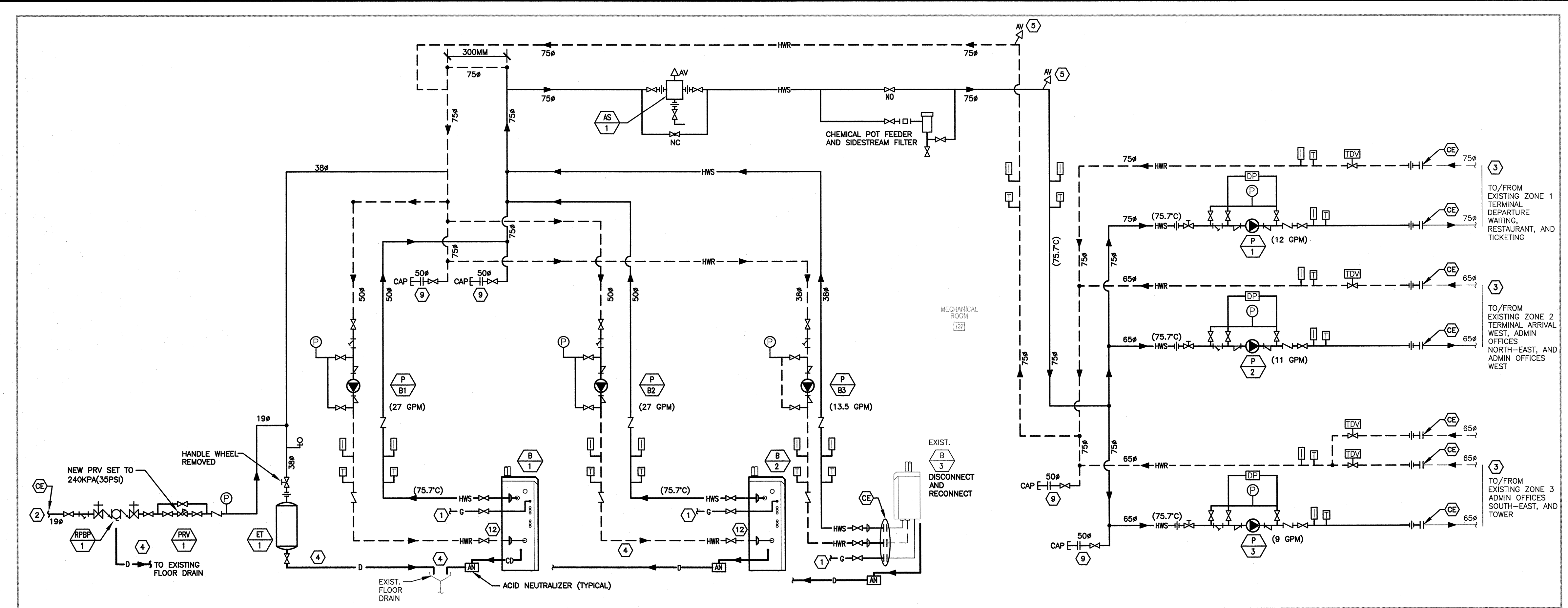
PWGSC Project Manager/Administrateur de Projets TPSGC
Julian Ho

PWGSC Regional Manager, Architectural and Engineering Services/
 Gestionnaire régionale, Services d'architectural et de génie, TPSGC
Preetipal Paul

Drawing title/Titre du dessin

MECHANICAL ROOF PLAN

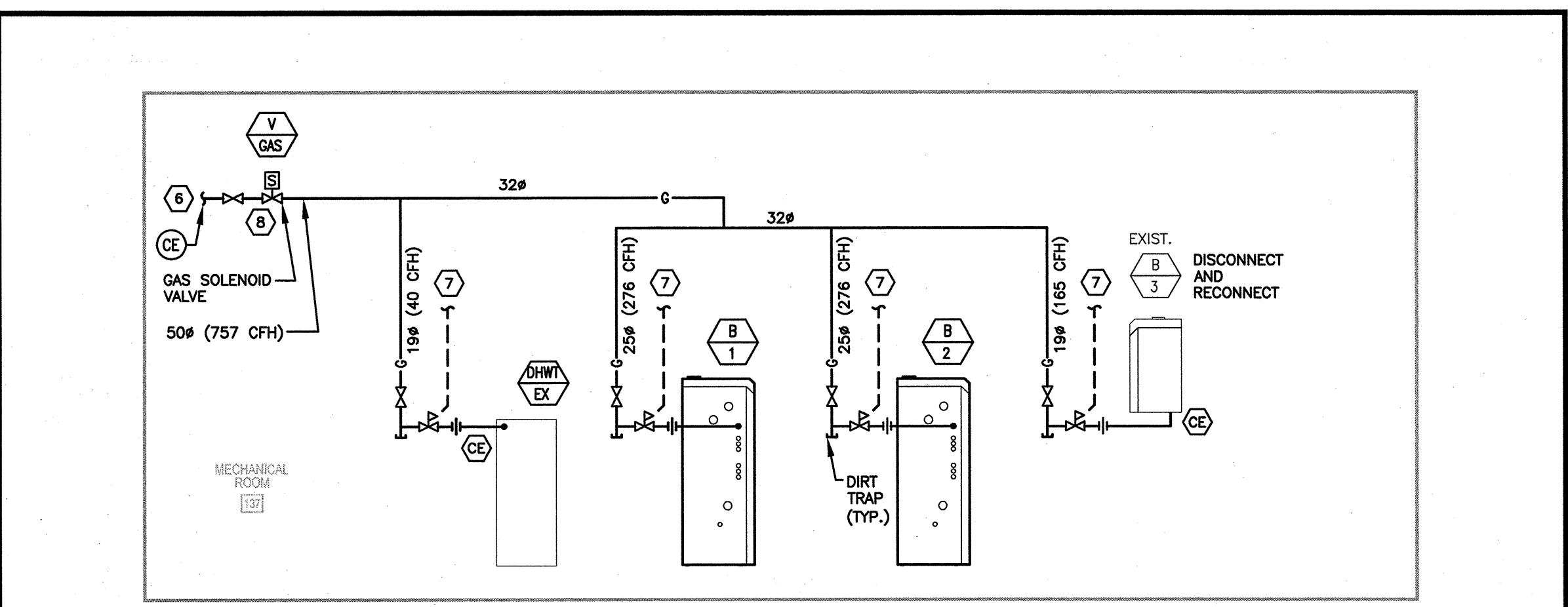
Project No./No. du projet R.077022.001	Sheet/Feuille M-103	Revision no./ La Révision no. 1
--	-------------------------------	---



1 HOT WATER HEATING SYSTEM SCHEMATIC
M-501 N.T.S.

- SPECIFIC NOTES:**
- CONNECT TO NEW GAS PIPE, SEE GAS SCHEMATIC.
 - CONNECT TO EXISTING DOMESTIC WATER SUPPLY.
 - CONNECT TO EXISTING HWS/HWR PIPING.
 - SLOPE DRAINAGE PIPE TOWARDS EXISTING FLOOR DRAIN.
 - PROVIDE AUTOMATIC AIR VENTS AT SYSTEM HIGHPOINTS (TYP).
 - CONNECT TO EXISTING GAS MAIN PIPING.
 - CONNECT TO EXISTING GAS RELIEF VENT THROUGH ROOF.
 - PROVIDE GAS SOLENOID VALVE AND CONNECT TO EMERGENCY GAS SHUT-OFF SWITCH.
 - PROVIDE ISOLATION VALVE, UNION AND CAP-OFF FOR FUTURE EQUIPMENT CONNECTION.
 - PROVIDE RELIEF VALVE (ASME RATED TO 30PSI).

- GENERAL NOTES:**
- CONNECT NEW EQUIPMENT AND PIPING TO EXISTING SERVICES.
 - PROVIDE AUTOMATIC RELIEF AIR VALVES AT ALL SYSTEM HIGHPOINTS (TYPICAL).
 - PROVIDE FUTURE BOILER CONNECTION ON PRIMARY HEATING LOOP C/W ISOLATION VALVE, UNION, AND PIPE CAP.
 - PROVIDE FUTURE CONNECTION ON SECONDARY HEATING LOOP C/W ISOLATION VALVE, UNION, AND PIPE CAP.



2 GAS PIPING SCHEMATIC
M-501 N.T.S.

Revision/	Description/Description	Date/Date
1	Issued For Tender	2016.05.24

Client/client

TRANSPORT CANADA

Project title/Titre du projet
**PENTICTON AIRPORT
3000 AIRPORT ROAD #109, PENTICTON, BC
AIR TERMINAL BUILDING (ATB)
BOILER REPLACEMENT**

Consultant Signature Box Only

Designed by/Concept par
JNG

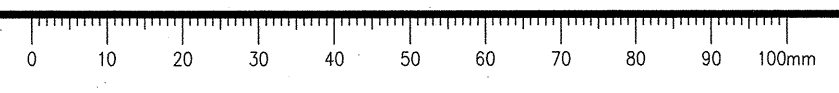
Drawn by/Dessine par
LB

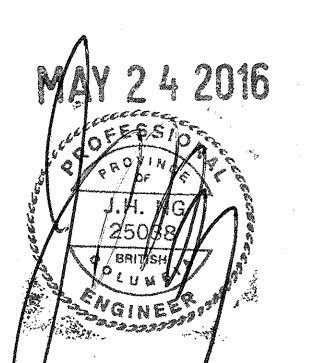
PWGSC Project Manager/Administrateur de Projets TPSGC
Julian Ho

PWGSC Regional Manager, Architectural and Engineering Services/
Gestionnaire régionale, Services d'architectural et de génie, TPSGC
Preetipal Paul

Drawing title/Titre du dessin
**MECHANICAL SYSTEM
SCHEMATICS**

Project No./No. du projet R.077022.001	Sheet/Feuille M-501	Revision no./ La Révision no. 1
--	-------------------------------	---





BOILER SCHEDULE

UNIT NO.	SERVICE	FUEL	GAS OPERATING PRESS. (IN.WC)	HEATING INPUT (MBH)	HEATING OUTPUT (MBH)	ELECTRICAL (V/PH/Hz)	SUPPLY TEMP (°F)	RETURN TEMP (°F)	EFF. (%)	FLUE OUTLET DIAMETER (MM)	MAKE	MODEL	NOTES	ACCEPTABLE MATERIALS
B-1	HEATING WATER	NATURAL GAS	4.5 TO 7.0	285	274/228	115/1/60	160	VARIABLE	95%	75#	LOCHINVAR	KNIGHT KH 285	1 TO 6	PATTERSON-KELLY, VIESSMANN
B-2	HEATING WATER	NATURAL GAS	4.5 TO 7.0	285	274/228	115/1/60	160	VARIABLE	95%	75#	LOCHINVAR	KNIGHT KH 285	1 TO 6	PATTERSON-KELLY, VIESSMANN

NOTES:

- BOILER SHALL BE ANSIZ21.13 AND CSA CERTIFIED, WATER SIDE VESSEL SHALL BE ASME COMPLIANT, AND SHALL MEET OR EXCEED ASHRAE 90.1 (2013) REQUIREMENTS FOR CONDENSING BOILERS.
- FIRE TUBE HEAT EXCHANGER SHALL BE DESIGNED FOR A SINGLE-PASS WATER FLOW AND SHALL BE CONSTRUCTED OF FULLY WELDED 316L SST OR PROVEN TO HAVE BETTER CORROSION RESISTANCE THAN 316L SST; NO BANDING MATERIAL, BOLTS, GASKETS OR "O" RINGS IN THE HEAT EXCHANGER DESIGN SHALL BE ALLOWED. BURNER SHALL BE CAPABLE OF PROVIDING A MINIMUM TURNDOWN OF = 10 : 1.
- PROVIDE WITH MANUFACTURER'S 30 PSI ASME RELIEF VALVE, MOTORIZED ISOLATION VALVE, AND AN UNIT-LEVEL CONTROLLER FOR EACH UNIT. PROVIDE AND INSTALL ADEQUATELY SIZED CONDENSATE NEUTRALIZATION TANK, AND PIPE TO NEAREST F.D.
- PROVIDE WITH MANUFACTURER'S MULTI-UNIT CONTROLLER CAPABLE OF EFFICIENCY OPTIMIZED CASCADING CONTROL OF ALL 3 BOILERS AND CAPABLE OF DIRECT COMMUNICATION WITH THE EXISTING "JCI-METASYS" BUILDING AUTOMATION SYSTEM.
- PROVIDE ALL GATEWAY(S) NECESSARY TO CONNECT TO, AND INTEGRATE THE EXISTING BOILER B-3 FOR LAG OPERATION IN CONJUNCTION WITH NEW BOILERS B-1 AND B-2 PER SPECIFICATION SECTION 23 09 33 - CONTROL SEQUENCES.
- BOILER MUST FIT THROUGH AN 850MM WIDE DOORWAY.

PUMP SCHEDULE

TAG NO.	SERVICE	LOCATION	TYPE	CAPACITY L/S (GPM)	PRESSURE DIFF. kPa (FT)	PUMP RPM	MOTOR WATT	ELECTRICAL V/PH/Hz	MAKE	MODEL	NOTES	ACCEPTABLE MATERIALS
P-B1	BOILER B-1 PRIMARY LOOP	MECH. ROOM 137	INLINE, CENTRIFUGAL	1.7 (27)	10.5 (3.5)	VARIABLE	85	208/1/60	GRUNDFOS	MAGNA3 32-60F	1, 2, & 3	ARMSTRONG, BELL GOSSETT
P-B2	BOILER B-2 PRIMARY LOOP	MECH. ROOM 137	INLINE, CENTRIFUGAL	1.7 (27)	10.5 (3.5)	VARIABLE	85	208/1/60	GRUNDFOS	MAGNA3 32-60F	1, 2, & 3	ARMSTRONG, BELL GOSSETT
P-B3	BOILER B-3 PRIMARY LOOP	MECH. ROOM 137	INLINE, CENTRIFUGAL	0.85 (13.5)	13.5 (4.5)	VARIABLE	45	115/1/60	GRUNDFOS	ALPHA 15-55F	1, 2, & 3	ARMSTRONG, BELL GOSSETT
P-1	ZONE 1 SECONDARY LOOP	MECH. ROOM 137	INLINE, CENTRIFUGAL	0.82 (12)	17.9 (6)	VARIABLE	85	208/1/60	GRUNDFOS	MAGNA3 32-60F	1, 2, & 3	ARMSTRONG, BELL GOSSETT
P-2	ZONE 2 SECONDARY LOOP	MECH. ROOM 137	INLINE, CENTRIFUGAL	0.41 (11)	23.9 (8)	VARIABLE	85	208/1/60	GRUNDFOS	MAGNA3 32-60F	1, 2, & 3	ARMSTRONG, BELL GOSSETT
P-3	ZONE 3 SECONDARY LOOP	MECH. ROOM 137	INLINE, CENTRIFUGAL	1.58 (25)	35.8 (12)	VARIABLE	180	208/1/60	GRUNDFOS	MAGNA3 32-100F	1, 2, & 3	ARMSTRONG, BELL GOSSETT

NOTES:

- PUMPS SHALL BE OF THE CANNED ROTOR TYPE (INTEGRAL PUMP AND MOTOR)
- PROVIDE PUMPS WITH INTEGRAL FREQUENCY CONVERTER OR ECM AND AN ON-BOARD PUMP SPEED CONTROLLER
- PROVIDE WITH ALL NECESSARY INTERFACE/GATEWAYS TO CONNECT ON-BOARD CONTROLLER TO THE EXISTING "JCI-METASYS" BUILDING AUTOMATION SYSTEM

EXPANSION TANK SCHEDULE

TAG NO.	SERVICE	LOCATION	TYPE	TANK VOLUME LITERS (GAL)	ACCEPTANCE VOLUME LITERS (GAL)	CONN. (MM)	MAKE	MODEL	NOTES	ACCEPTABLE MATERIALS
ET-1	HEATING HOT WATER LOOP	MECH. ROOM 137	DIAPHRAGM	167 (44)	129 (34)	38#	AMTROL	SX-90V	1 & 2	ARMSTRONG, BELL & GOSSETT

NOTES:

- ASME RATED FPR 125 PSIG
- PROVIDE WITH MANUFACTURER'S AIR PURGER AND AND AUTOMATIC AIR VENT, LOCATE AT CONNECTION TO HIGHEST POINT OF PIPING AT THE BOILER RETURN HEADER AS INDICATED IN THE DRAWINGS.

AIR SEPARATOR SCHEDULE

TAG NO.	SERVICE	LOCATION	CAPACITY (GPM)	FLUID	TEMP. (DEG.F)	CONN. (MM)	MAKE	MODEL	NOTES	ACCEPTABLE MATERIALS
AS-1	HEATING HOT WATER LOOP	MECH. ROOM 137	67.5	WATER	160	75#	SPIROTHERM	SPIROVENT VSR-300	1	GRUNDFOS, AMTROL

NOTES:

- PROVIDE STRUCTURAL SUPPORTS.

RPBP SCHEDULE

TAG NO.	REQUIREMENTS	CONN. (MM)	MAKE	MODEL	ACCEPTABLE MATERIALS
RPBP-1	REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION DEVICE, WITH INLET AND OUTLET SHUTOFF VALVES, DOUBLE CHECK VALVE ASSEMBLY, DIFFERENTIAL RELIEF OUTLET AND REPAIR/MAINTENANCE KIT TO CAN/CSA-B64.10 AND CAN/CSA-B64.10.1.	19	WATTS	909	AMES 4000 SERIES, CONBRACO 40-200

Revision/Revision	Description/Description	Date/Date
1	Issued for Tender	2016.05.24

Client/client

TRANSPORT CANADA

Project title/Titre du projet
**PENTICTON AIRPORT
3000 AIRPORT ROAD #109, PENTICTON, BC
AIR TERMINAL BUILDING (ATB)
BOILER REPLACEMENT**

Consultant Signature Box Only

Designed by/Concept par
JNG

Drawn by/Dessine par
LB

PWGS Project Manager/Administrateur de Projets TPSGC
Julian Ho

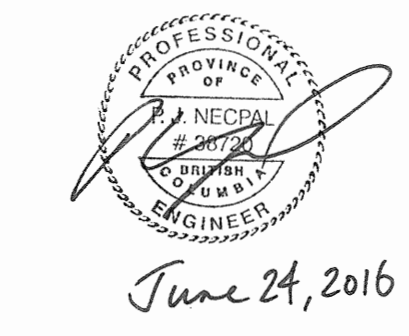
PWSSC Regional Manager, Architectural and Engineering Services/
Gestionnaire régionale, Services d'architecture et de génie, TPSGC
Preetpal Paul

Drawing title/Titre du dessin

**MECHANICAL EQUIPMENT
SCHEDULES**

Project No./No. du projet	Sheet/Feuille	Revision no./La Révision no.
R.077022.001	M-601	1
6 OF 7		





2	Issued For Building Permit	2016.06.23
1	Issued For Tender	2016.06.23

Client/client

TRANSPORT CANADA

Project Title/Titre du projet
**PENTICTON AIRPORT
 3000 AIRPORT ROAD #109, PENTICTON, BC
 AIR TERMINAL BUILDING (ATB)
 BOILER REPLACEMENT**

Consultant Signature Box Only

Designed by/Concept par
JD

Drawn by/Dessiné par
JD

PWGSC Project Manager/Administrateur de Projets TPSC
Julian Ho

PWGSC, Regional Manager, Architectural and Engineering Services/
 Gestionnaire régionale, Services d'architecture et de génie, TPSC
Preetipal Paul

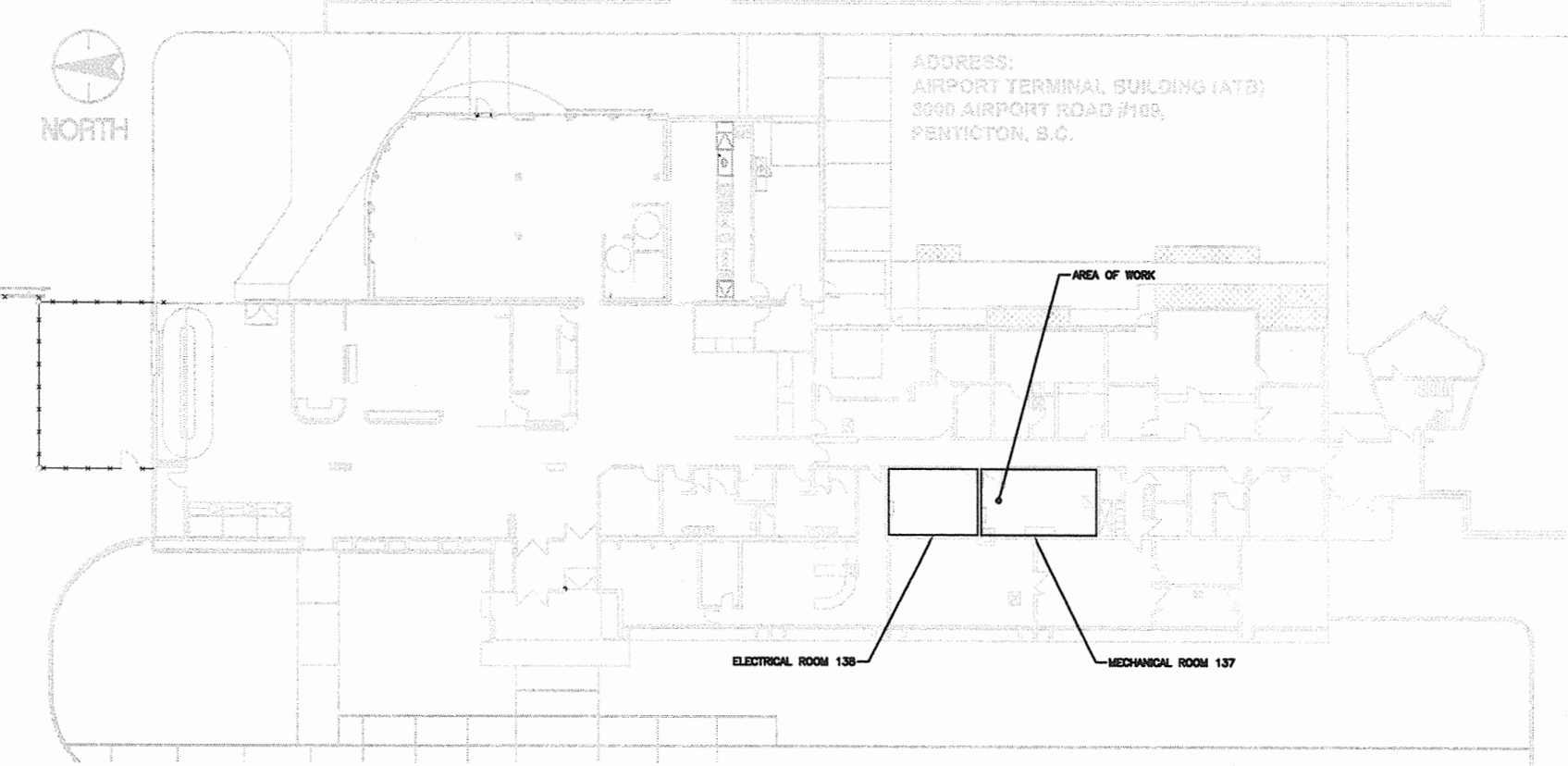
Drawing title/Titre du dessin

**ELECTRICAL
 POWER AND LIGHTING**

Project No./No. du projet
R.077022.001

Sheet/Fauille
E-101

Revision no./La Révision no.
1



1 AIRPORT TERMINAL BUILDING - KEY PLAN
 E-001 1:400

PANEL: C (EXISTING)							LOCATION: MECH ROOM 137	
NOTE	DESCRIPTION	BRKR	CCT	PHASE	CCT	BRKR	DESCRIPTION	NOTE
2	CIRCULATING PUMP 2	15A	1	A	2	15A	BOILER CONTROL	1
2	CIRCULATING PUMP 1	15A	3	B	4	15A	PUMP P-3	2
1	AIR HANDLING UNIT N. #1	15A	5	C	6	15A	AIR HANDLING UNIT S. #2	1
1	EXISTING LOAD	15A	7	A	8	15A		1
1	EXISTING LOAD	15A	9	B	10	15A	JOHNSON CONTROLS PANEL	1
2	CIRCULATING PUMP 3	15A	11	C	12	30A	SOLAR HEAT PLUG	1
1	ELECTRICAL ROOM FAN	15A	13	A	14	30A	BOILER ROOM FAN	2
1	JANITORS ROOM FAN	15A	15	B	16	15A	SPRINKLER PUMP	1
			17	C	18	15A	AVC BOILER / E-STOP	1
			19	A	20			

NOTE DESCRIPTION

- EXISTING LOAD TO BE RE-POWERED FROM NEW PANEL C. PROVIDE JUNCTION BOX AND EXTEND WIRING AS REQ'D
- EXISTING LOAD TO BE REMOVED. REMOVE ASSOCIATED CONDUIT, WIRING AND EQUIPMENT AS INDICATED ON DWG.

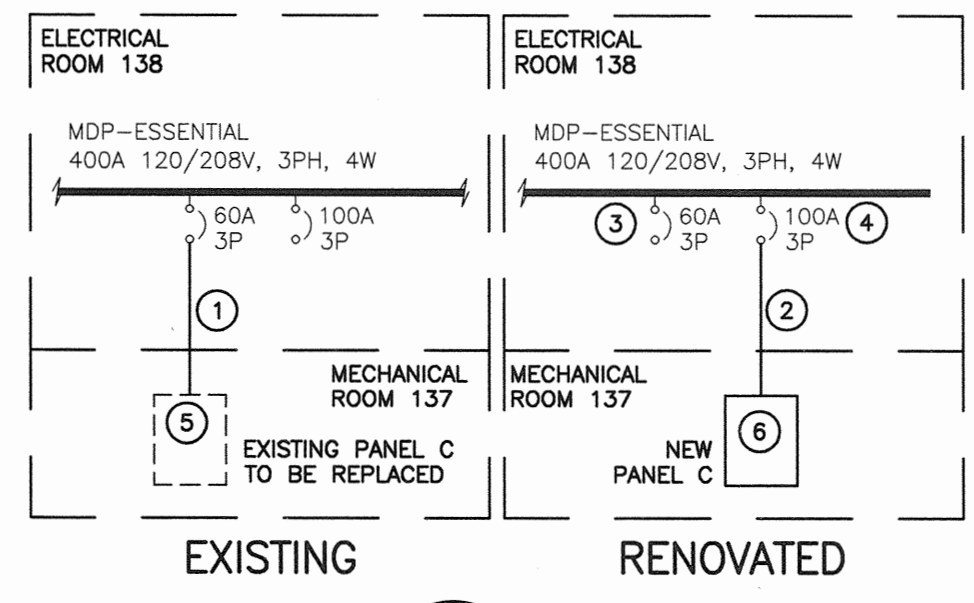
PANEL: C							LOCATION: MECH ROOM 137	
NOTE	DESCRIPTION	BRKR	CCT	PHASE	CCT	BRKR	DESCRIPTION	NOTE
	SPARE	15A	1	A	2	15A	BOILER CONTROL	4
	SPARE	15A	3	B	4	15A	P-B3	2
1	AIR HANDLING UNIT N. #1	15A	5	C	6	15A	AIR HANDLING UNIT S. #2	1
1	EXISTING LOAD	15A	7	A	8	15A		1
1	EXISTING LOAD	15A	9	B	10	15A	JOHNSON CONTROLS PANEL	1
1	SPARE	15A	11	C	12	30A	SOLAR HEAT PLUG	1
1	ELECTRICAL ROOM FAN	15A	13	A	14	15A	SPARE	1
1	JANITORS ROOM FAN	15A	15	B	16	15A	SPRINKLER PUMP	1
			17	C	18	15A	AVC BOILER / E-STOP	1
2	P-1	15A	19	A	20	15	P-B1	2
2	P-2	15A	21	B	22	15A	P-B2	2
2	P-3	15A	23	C	24	15A	P-B2	2
			25	A	26			
			27	B	28	15A	EF-4	3
			29	C	30			
3	AHU-7, AHU-8 MAINT. RECEPT.	20A	31	A	32	30A	CU-1 - AC-1	3
3	AHU-5, AHU-6 MAINT. RECEPT.	20A	33	B	34			
3	AHU-2, AHU-4 MAINT. RECEPT.	20A	35	C	36	15A	SPARE	
			37	A	38			
			39	B	40			
			41	C	42			

NOTE DESCRIPTION

- EXISTING LOAD FROM DEMOLISHED PANEL C. RECONNECT EXISTING WIRING TO NEW CIRCUIT BREAKER.
- NEW EQUIPMENT.
- FUTURE EQUIPMENT. LABEL FUTURE. PROVIDE BREAKER ONLY.
- EXISTING CIRCUIT TO BE RE-USED FOR BOILER CONTROL. PROVIDE JUNCTION BOXES AND EXTEND WIRING AS REQUIRED.

GENERAL PANEL NOTES

- PANEL TO BE SQUARE D.
- PROVIDE ALL NEW CIRCUIT BREAKERS.



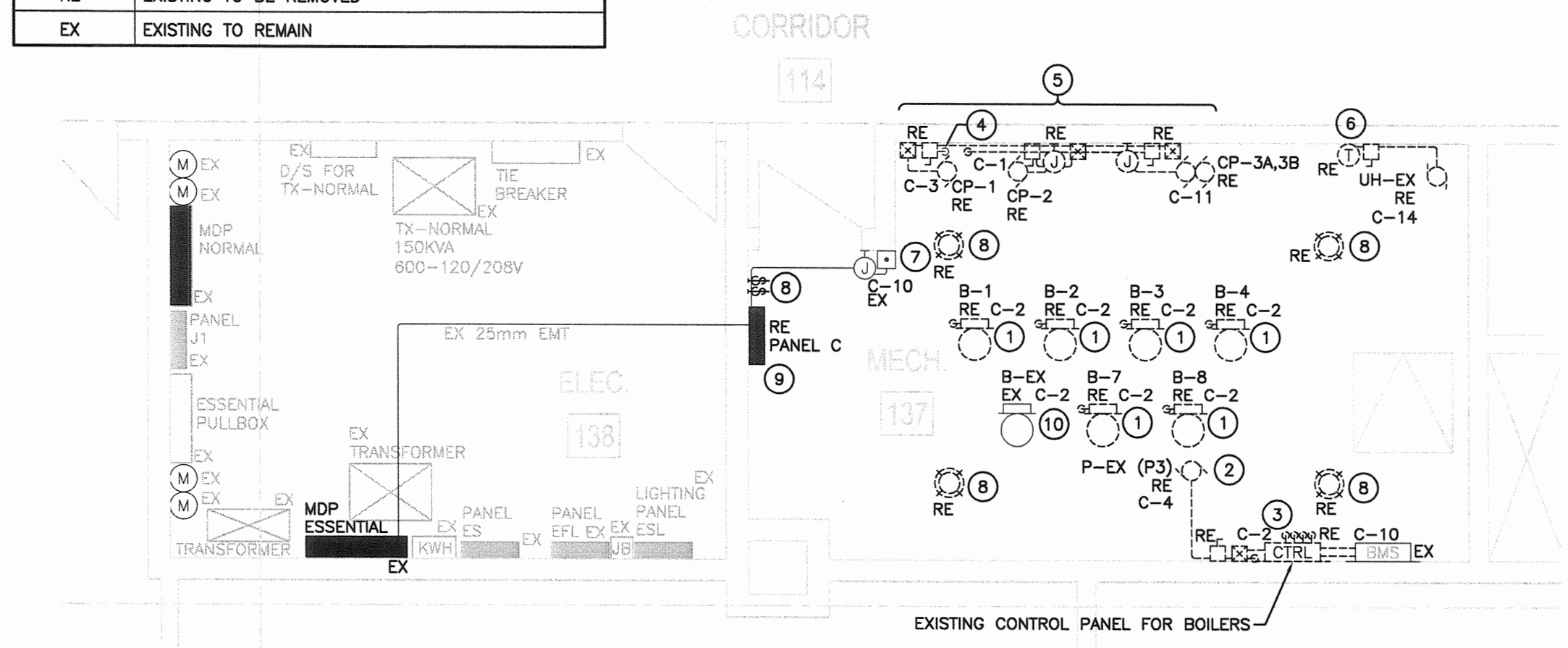
3 PARTIAL SINGLE LINE DIAGRAM
 E-101 NOT TO SCALE

- SINGLE LINE DIAGRAM KEYNOTES:**
- REMOVE EXISTING PANEL C FEEDERS. 35mm EMT CONDUIT TO BE RETAINED FOR NEW PANEL FEEDERS.
 - PROVIDE 4# 3/4 Cu R90 + BOND IN EXISTING 35mm EMT CONDUIT.
 - LABEL BREAKER SPARE USING LAMICOID LABEL LABELING TO MATCH EXISTING.
 - USE EXISTING 3P100A SPARE BREAKER FOR NEW PANEL C. PROVIDE LABEL TO MATCH EXISTING.
 - EXISTING PANEL C TO BE REMOVED AND REPLACED WITH NEW. RE-CONNECT EXISTING LOADS TO NEW PANEL AS INDICATED IN PANEL SCHEDULES.
 - NEW PANEL C TO REPLACE EXISTING. PANEL TO BE SQUARE D, 100A, 3PH, 4W, 42CCT, 120/208V.

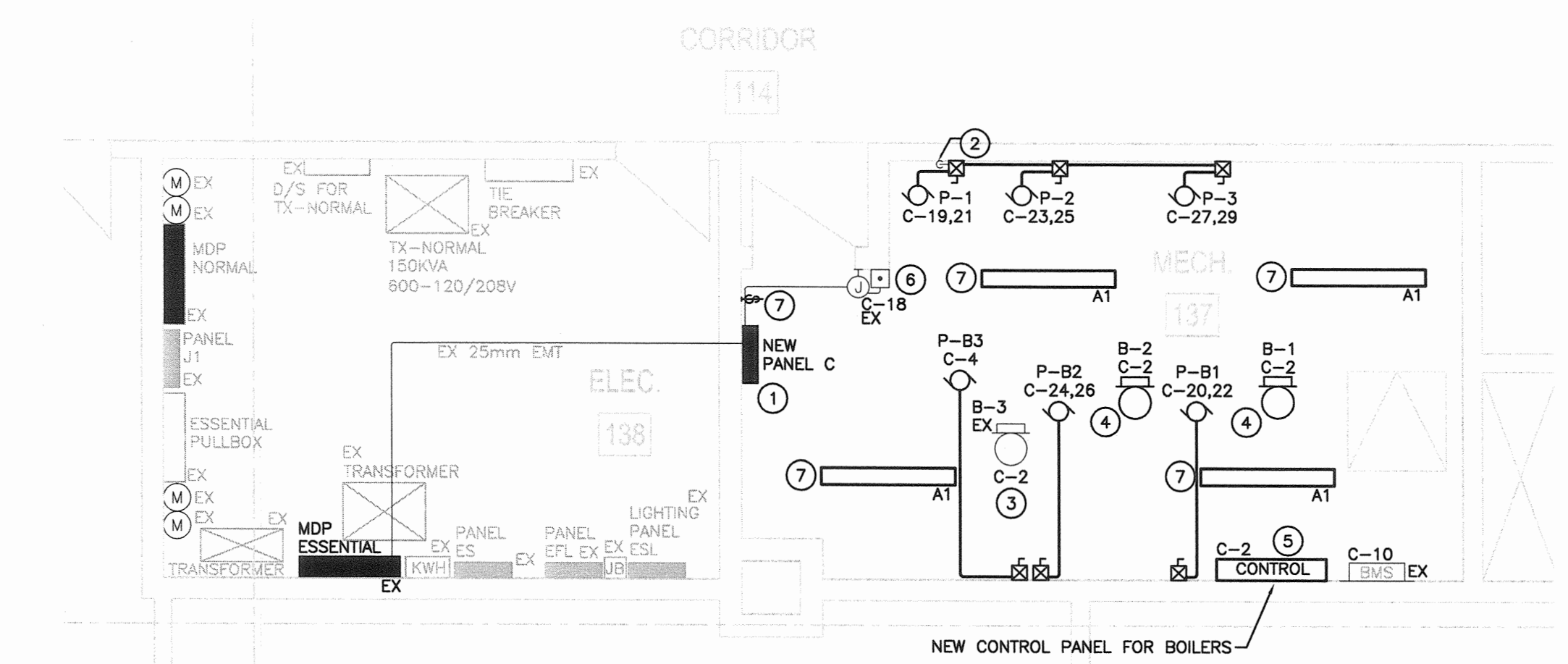
SYMBOLS

SYMBOL	NOTE REFERENCE
Ⓜ	LED STRIP LUMINAIRE, 4'
Ⓢ	SURFACE MOUNTED LUMINAIRE
Ⓛ	LINE VOLTAGE SWITCH (120V)
Ⓜ	WALL MOUNTED JUNCTION BOX
Ⓜ	POWER PANELBOARD
Ⓜ	PANEL (TYPE AS INDICATED)
Ⓜ	PUSHBUTTON (TYPE AND WIRING AS INDICATED)
Ⓜ	MOTOR
Ⓜ	COMBINATION DISCONNECT AND MAG. MOTOR STARTER
Ⓜ	DISCONNECT SWITCH
Ⓜ	MAGNETIC MOTOR STARTER
Ⓜ	THERMOSTAT
Ⓜ	CONDUIT UP
Ⓜ	CONDUIT DOWN
RE	EXISTING TO BE REMOVED
EX	EXISTING TO REMAIN

- ELECTRICAL GENERAL NOTES**
- CONTRACTOR SHALL KEEP EXISTING FIRE ALARM SYSTEM AND DEVICES ACTIVE DURING CONSTRUCTION. THERE SHALL BE NO DISRUPTION TO THE SYSTEM.
 - CONTRACTOR SHALL LOCATE AND PROTECT ALL EXISTING DEVICES AND EQUIPMENT THAT REMAIN. CONTRACTOR SHALL EXTEND, REMOVE OR RELOCATE ALL ELECTRICAL DEVICES AS NOTED AND REQUIRED TO MEET THE DESIGN INTENT.
 - FIELD COORDINATE ELECTRICAL DEVICES AND EQUIPMENT WITH OTHER DIVISIONS ON SITE. ADJUST ELECTRICAL DEVICE AND EQUIPMENT PLACEMENT AS REQUIRED TO SUIT FIELD CONDITIONS. ALL NEW ELECTRICAL INSTALLATION SHALL BE IN CONFORMANCE WITH THE CANADIAN ELECTRICAL CODE (CURRENT EDITION) AND BC BUILDING CODE (CURRENT EDITION) INCLUDING CLEARANCES AND SETBACKS.
 - CONTRACTOR SHALL COORDINATE INSTALLATION OF ELECTRICAL DEVICES AND COMPONENTS WITH EQUIPMENT MANUFACTURERS AND SUPPLIER. NOT ALL SYSTEM COMPONENTS ARE SHOWN. CONTRACTOR SHALL PROVIDE ALL COMPONENTS, DEVICES, AND MATERIAL AS REQUIRED TO ENSURE INSTALLATION OF A COMPLETE AND FUNCTIONAL SYSTEM.
 - ALL WIRING SHALL BE INSTALLED IN CONDUIT SYSTEMS AS INDICATED. ALL CONDUITS SHALL BE SECURELY FASTENED TO THE BUILDING STRUCTURE.
 - POWER, FIRE ALARM AND CONTROL WIRING TO BE IN SEPARATE CONDUIT SYSTEMS.
 - CONTRACTOR SHALL BOND ALL NON-CURRENT CARRYING METAL PARTS OF THE SYSTEM AS REQUIRED BY CODE. ENSURE ALL PARTS OF THE SYSTEM ARE GROUNDED AND EXISTING GROUNDING AND BONDING SYSTEMS ARE PROTECTED AND MAINTAIN CONDUCTIVITY. ALL BOND CONNECTIONS TO BE COPPER COMPRESSION TYPE AND GROUND CONDUCTORS TO BE COPPER.
 - CONTRACTOR SHALL VERIFY NEW AND MODIFIED ELECTRICAL SYSTEMS ARE TESTED, COMMISSIONED, AND READY FOR USE PRIOR TO TURNOVER TO THE OWNER. CONTRACTOR SHALL FIELD TEST THE ENTIRE SYSTEM AND READY IT IS OPERATIONAL AND READY FOR USE. CONTRACTOR SHALL COORDINATE WITH MANUFACTURER OF ALL SYSTEMS AND COMMISSIONING REPORTS SHALL BE SUBMITTED TO DEPARTMENTAL REPRESENTATIVE.
 - APPROXIMATE LOCATIONS OF EXISTING AND NEW DEVICES ARE SHOWN. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF EXISTING DEVICES. REFER TO MECHANICAL DRAWINGS FOR PHOTOS OF EQUIPMENT BEING REMOVED.



1 PARTIAL MAIN FLOOR PLAN - ELECTRICAL DEMOLITION
 E-101 1:50



2 PARTIAL MAIN FLOOR PLAN - ELECTRICAL RENOVATION
 E-101 1:50

MECHANICAL SCHEDULE

TAG	DESCRIPTION	LOCATION	VOLTAGE (V)	PHASE	HORSEPOWER	LOAD (kW)	FLA (A)	MCA (A)	BREAKER (A)	FEEDER	EQUIPMENT SUPPLIED	DISCONNECT SUPPLIED	STARTER SUPPLIED	NOTES
B-1	BOILER (GAS)	MECH ROOM 137	115	1	FRAC	0.10	0.9	1.1	15A	#12	M	M	E	1
B-2	BOILER (GAS)	MECH ROOM 137	115	1	FRAC	0.10	0.9	1.1	15A	#12	M	M	E	1
P-B1	PUMP	MECH ROOM 137	208	1	FRAC	0.09	0.4	0.5	15A	#12	M	M	E	MAG
P-B2	PUMP	MECH ROOM 137	208	1	FRAC	0.09	0.4	0.5	15A	#12	M	M	E	MAG
P-B3	PUMP	MECH ROOM 137	208	1	FRAC	0.09	0.7	0.9	15A	#12	M	M	E	MAG
P-1	PUMP	MECH ROOM 137	208	1	FRAC	0.09	0.4	0.5	15A	#12	M	M	E	MAG
P-2	PUMP	MECH ROOM 137	208	1	FRAC	0.09	0.4	0.5	15A	#12	M	M	E	MAG
P-3	PUMP	MECH ROOM 137	208	1	FRAC	0.18	0.9	1.1	15A	#12	M	M	E	MAG

NOTES:

- PROVIDE 120V CONNECTION AND E-STOP CONNECTION. COORDINATE WITH DIVISION 25 FOR EXACT REQUIREMENTS.

GENERAL:

- * CONFIRM EXACT SIZE, LOCATION, AND WIRING REQUIREMENTS OF ALL MECHANICAL EQUIPMENT PRIOR TO CONNECTING. COORDINATE WITH
- * MAGNETIC STARTERS TO BE C/W H.O.A. SWITCH AND PILOT LIGHT.

TYPE	A1
DESCRIPTION	4' LED STRIP LIGHTING
CATALOGUE	METALUX 4SNLED-LD4-41SL-LN-UNV-L835-CD1-U
VOLT/BALLAST	120V ELECTRONIC
LAMPS	NO. TYPE (EACH)
	1 41W/4601 LUMEN
MOUNTING	SURFACE MTD ON CEILING
REMARKS	-

