

LACOMBE RESEARCH FACILITY ABATTOIR RENOVATON

LACOMBE, ALBERTA

STANTEC PROJECT NO.: 115302873

ISSUED FOR TENDER
2016.11.25

CLIENT

AAFC LACOMBE MEAT RESEARCH FACILITY
AND ABATTOIR
600 C AND E TRAIL
LACOMBE, ALBERTA

MECHANICAL

STANTEC CONSULTANT LTD.
1100-4900 50TH STREET
RED DEER, ALBERTA T4N 1X7

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NUMBER	NAME
H100	MECHANICAL LEGENDS & SCHEDULES
H101	ENLARGED MECHANICAL ROOM PLANS - DEMOLITION
H102	ENLARGED MECHANICAL ROOM PLANS - RENOVATION
H103	ENLARGED MECHANICAL PENTHOUSE PLAN - RENOVATION
H104	MECHANICAL SCHEMATIC AND DETAIL

ELECTRICAL

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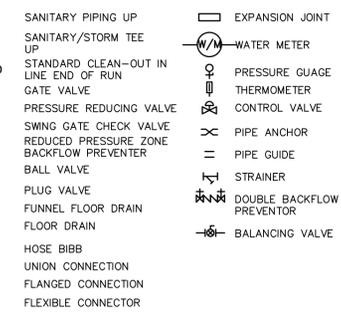
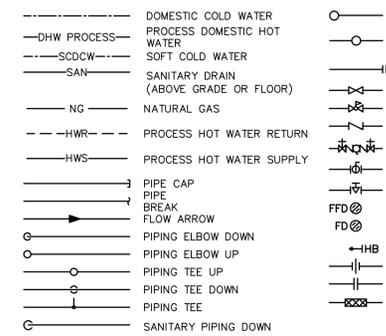
NUMBER	NAME
E001	SYMBOL LEGEND, GENERAL NOTES AND DRAWING LIST
E100	ELECTRICAL DEMOLITION & RENOVATION



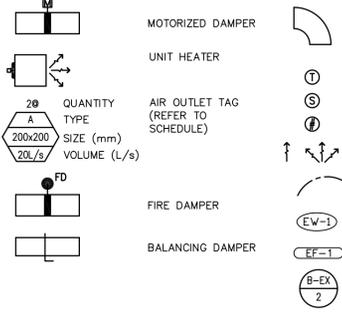
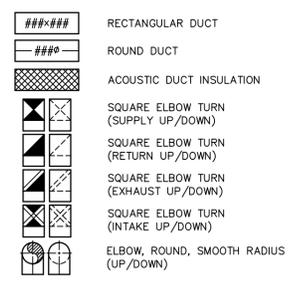
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PIPING IDENTIFICATION AND SYMBOLS



HVAC SYMBOLS



MAKE-UP AIR UNIT SCHEDULE

UNIT No.	SERVICE	MANUFACTURER	MODEL No.	AIR					MOTOR		HEATING		REMARKS
				FAN SIZE	CAPACITY (L/s)	EXIT STATIC PRESS. (Pa)	OUTLET VELOCITY (m/s)	ENT. AIR DB (°C)	LVR. AIR DB (°C)	ENT. FLUID (°C)	LVR. FLUID (°C)	TOTAL FLOW (L/s)	
MUA-1	WORKSHOP/MECHANICAL ROOM	GREENHECK	MSCF-15L-FC-4	-	209	125	1.25	0.19	208/3/60	3.46	MODULAR SMALL CABINET FAN C/W FILTER, MOTORIZED DAMPER, AND HOT WATER HEATING COIL HC-1, CONTROL CENTRE WITH DISCONNECT, 24V TRANSFORMER & TERMINAL STRIP.		

PROCESS HOT WATER TANK SCHEDULE

TAG No.	SERVICE	LOCATION	MANUFACTURER	MODEL No.	FLUID	WORKING PRESS. (kPaG)	MAX PRESS. (kPaG)	CAPACITY (L)	DIMENSIONS		REMARKS
									DIAMETER (mm)	HEIGHT (mm)	
TK-1	PROCESS HOT WATER	NEW MECH. ROOM	AO SMITH	T200A	WATER	938	1103.2	757.1	776	1854	SUPPLIED BY OWNER, FOR INFORMATION ONLY.
TK-2	PROCESS HOT WATER	NEW MECH. ROOM	AO SMITH	T200A	WATER	938	1103.2	757.1	776	1854	EXISTING TANK IN MECHANICAL PENTHOUSE TO BE RELOCATED TO NEW MECHANICAL ROOM. FOR INFORMATION ONLY.

COIL SCHEDULE

TAG No.	SERVICE	MANUFACTURER	COIL SIZE (mm x mm)	CAPACITY (kW)	AIR			TEMPERATURE			FLUID			REMARKS	
					FLOW (L/s)	PRESS. DROP (PaG)	FACE VEL. (m/s)	ENT. AIR DB (°C)	LVR. AIR DB (°C)	ENT. FLUID (°C)	LVR. FLUID (°C)	TOTAL FLOW (L/s)	VEL. (L/s)		PRESSURE DROP (kPaG)
HC-1	MUA-1	GREENHECK	187.5 x 775	3.46	209	-	1.31	-40	24.40	82.20	71.10	0.08	-	5.38	50% ETHYLENE GLYCOL

PUMP SCHEDULE

TAG No.	SERVICE	LOCATION	MANUFACTURER	MODEL No.	TYPE	FLUID	FLOW (L/s)	HEAD (kPaG)	MOTOR (kW)	RPM	ELECTRICAL (V/Ph/Hz)	REMARKS

EXPANSION TANK SCHEDULE

TAG No.	SERVICE	LOCATION	MANUFACTURER	MODEL No.	FLUID	WORKING PRESS. (kPaG)	MAX PRESS. (kPaG)	CAPACITY (L)	DIMENSIONS		REMARKS
									DIAMETER (mm)	HEIGHT (mm)	
ET-1	PROCESS HOT WATER	NEW MECH. ROOM	FLEXCON	PH12	WATER	938	1103.2	8.1	280	370	POTABLE WATER EXPANSION TANK

EYEWASH STATION SCHEDULE

FIXTURE TAG	TYPE	FIXTURE CONNECTIONS (mm)				DESCRIPTION
		DCW	DHW	DTHW	DRAIN	
EW-1	EYEWASH STATION	-	-	-	-	BRADLEY EMERGENCY FIXTURE S19-921, SELF-CONTAINED EYEWASH UNIT, FLUSHES EYES FOR 15 MINUTES AT A MINIMUM OF 0.4 GALLONS/MINUTE, 7 GALLON TANK CAPACITY, TRANSPARENT TANK ASSEMBLY, MADE OF IMPACT RESISTANT PLASTIC, COLORED BRIGHT YELLOW FOR HIGH VISIBILITY, STURDY PEDESTAL WITH HINGED EYEWASH TRAY, PULLS DOWN IN ONE QUICK MOTION, REMOVABLE TANK IS INVERTED ONTO PEDESTAL, PIERCING A LINER. STAINLESS STEEL CLAMPS HOLD TANK TO PEDESTAL. WHEN ARM IS PULLED DOWN, WATER FLOW IS ACTIVATED. STAINLESS STEEL BRACKET, WASTE NIPPLE FOR 1/2" I.D. TUBE.

GRILLE & DIFFUSER SCHEDULE

GRILLE TYPE	DESCRIPTION
S-1	E.H. PRICE MODEL 620 DOUBLE DEFLECTION LOUVRED FACE SUPPLY; TO BE SUITABLE FOR SURFACE OR EXPOSED DUCT MOUNTING; REFER TO DRAWINGS FOR GRILLE SIZES AND CAPACITIES.
E-1	E.H. PRICE MODEL 80 ALUMINUM EGG CRATE EXHAUST GRILLE, 1/2" CORE; TO BE SUITABLE FOR SURFACE OR EXPOSED DUCT MOUNTING; REFER TO DRAWINGS FOR GRILLE SIZES AND CAPACITIES.

NOTES:
NOTE 1: COLOURS SHALL BE STANDARD, CONFIRM COLOUR SELECTIONS PRIOR TO ORDERING.

FAN SCHEDULE

FAN No.	SERVICE	LOCATION	MANUFACTURER	MODEL No.	AIR FLOW (L/s)	TOTAL STATIC PRESS. (Pa)	MOTOR (kW)	RPM	ELECTRICAL (V/Ph/Hz)	TYPE	REMARKS
EF-1	EXHAUST	WORKSHOP	GREENHECK	BSQ-90-4	190	125	0.19	1725	120/1/60	INLINE	INTERLOCKED WITH MUA-1, C/W SPRING ISOLATION KIT.

MOTORIZED DAMPER SCHEDULE

TAG No.	LOCATION	MANUFACTURER	SERVICE	MODEL No.	NOMINAL SIZE (mm x mm)	BLADE ARR'GT	REMARKS
MD-1	WORKSHOP	TAMCO	OUTSIDE AIR LOUVRE	SERIES 9000	AS NOTED ON DRAWING	PARALLEL	INSULATED LOW LEAKAGE AND THERMALLY BROKEN, AUTOMATIC CONTROL DAMPER WITH EXTRUDED SILICONE SEALS, INTERLOCKED AS NOTED, FAST ACTING, BELIMO ACTUATOR MODEL LF-120, 120V.
MD-2	WORKSHOP	TAMCO	EXHAUST FAN EE-1 EXHAUST HOOD	SERIES 9000	AS NOTED ON DRAWING	PARALLEL	INSULATED LOW LEAKAGE AND THERMALLY BROKEN, AUTOMATIC CONTROL DAMPER WITH EXTRUDED SILICONE SEALS, INTERLOCKED AS NOTED, BELIMO ACTUATOR MODEL LF-120, 120V.

LOUVRE SCHEDULE

TAG No.	MANUFACTURER	MODEL No.	FREE AREA (m²) (Ø1200x1200)	CONSTRUCTION	FINISH	REMARKS
L-1	E.H. PRICE	DE635	51	ALUMINUM	OPTIONAL	STORM RESISTANT DRAINABLE BLADE CONSTRUCTION, COLOUR AS SELECTED BY DEPARTMENT REPRESENTATIVE, CONFIRM BEFORE ORDERING, SUBMIT APPROVAL SAMPLE, SIZE AS PER DRAWINGS, C/W BIRD SCREEN

ELECTRIC BASEBOARD HEATER SCHEDULE

TAG No.	LOCATION	MANUFACTURER	MODEL No.	OUTPUT (W)	VOLTS	PHASE	ACCESSORIES & REMARKS
EBB-1	NEW MECHANICAL ROOM	OUELLET	OFM2508	2500	208	1	ELECTRIC BASEBOARD HEATER C/W BUILT IN LINE VOLTAGE THERMOSTAT, OPTION OFM-TB6.

WATER SOFTENER SCHEDULE

TAG No.	SERVICE	LOCATION	MANUFACTURER	MODEL No.	FLUID	DESIGN FLOW (L/s)	MAX FLOW RATE (L/s)	MAX OPERATING PRESS. (PSIG)	MAX OPERATING TEMP. (°C)	SALT STORAGE CAPACITY (KG)	DIMENSIONS		ELECTRICAL (V/Ph/Hz)	REMARKS		
											DIAMETER (mm)	HEIGHT (mm)				
WS-1	SOFT COLD WATER SUPPLY	MECHANICAL ROOM	FLECK	140-29-120-DX-7	BRINE	0.9	2.5	150	48.9	2041	1250	1500	900	1800	120/1/60	DUPLEX ALTERNATING METERED SOFTENER C/W FULL 2.0" VALVE FOR HIGH FLOW RATES, 8% CROSS-LINKED HIGH-CAPACITY ION-EXCHANGE RESIN, 3200 NXT PROGRAMMABLE CONTROLLER, FLECK 2900S CONTROL VALVE, SAFETY BRINE VALVE WITH AIR CHECK, 100% COMPOSITE FIBERGLASS CONSTRUCTION, NSF CERTIFIED.

HEAT EXCHANGER SCHEDULE

TAG No.	SERVICE	LOCATION	MANUFACTURER	MODEL No.	TRANSFER MEDIUMS		HEATING				HEATED				CONSTRUCTION			REMARKS
					HEATING	HEATED	ENT. FLUID (°C)	LVR. FLUID (°C)	FLUID FLOW (L/s)	PRESS. DROP (kPa)	ENT. FLUID (°C)	LVR. FLUID (°C)	FLUID FLOW (L/s)	PRESS. DROP (kPa)	STYLE	PLATES	GASKETS	
HE-1	PROCESS HOT WATER	MECHANICAL ROOM	BELL & GOSSET	P37DW	WATER	WATER	95	88.1	9.5	23.4	5	90	0.8	0.7	PLATE & FRAME	1588mm x 521mm, 316 STAINLESS STEEL	NITRILE HT	DOUBLE WALL CONSTRUCTION FOR POTABLE WATER

GENERAL NOTE:
1. INSTALL EQUIPMENT AS PER MANUFACTURER'S RECOMMENDATIONS.
2. SUBMIT ALL SHGP DRAWINGS IN METRIC UNITS.

Revision	Description	Date
5	Issued for Tender	2016.11.25
4	Issued for Client Review	2016.09.14
3	Issued for 100% review	2016.08.11
2	Issued for Client review	2016.05.31
1	Issued for Client review	2016.03.28
0	Design Completion	

Permit to Seal

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STANTEC CONSULTING LTD.
Signature: [Signature]
Date: 25 Nov 16
PERMIT NUMBER: P 0258
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

Client: client

LACOMBE RESEARCH FACILITY

600 C And E Trail, Lacombe, AB

Project title: Lacombe, AB 600 C And E Trail ABATTOIR

ABATTOIR MECHANICAL EQUIPMENT ROOM PLANS

Designed by: IG Conçu par

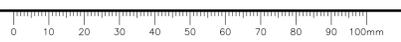
Drawn by: FH Dessiné par

Approved by: TH Approuvé par

PWSSC Project Manager / Administrateur de Projets TPSGC

Drawing title: MECHANICAL LEGENDS & SCHEDULES

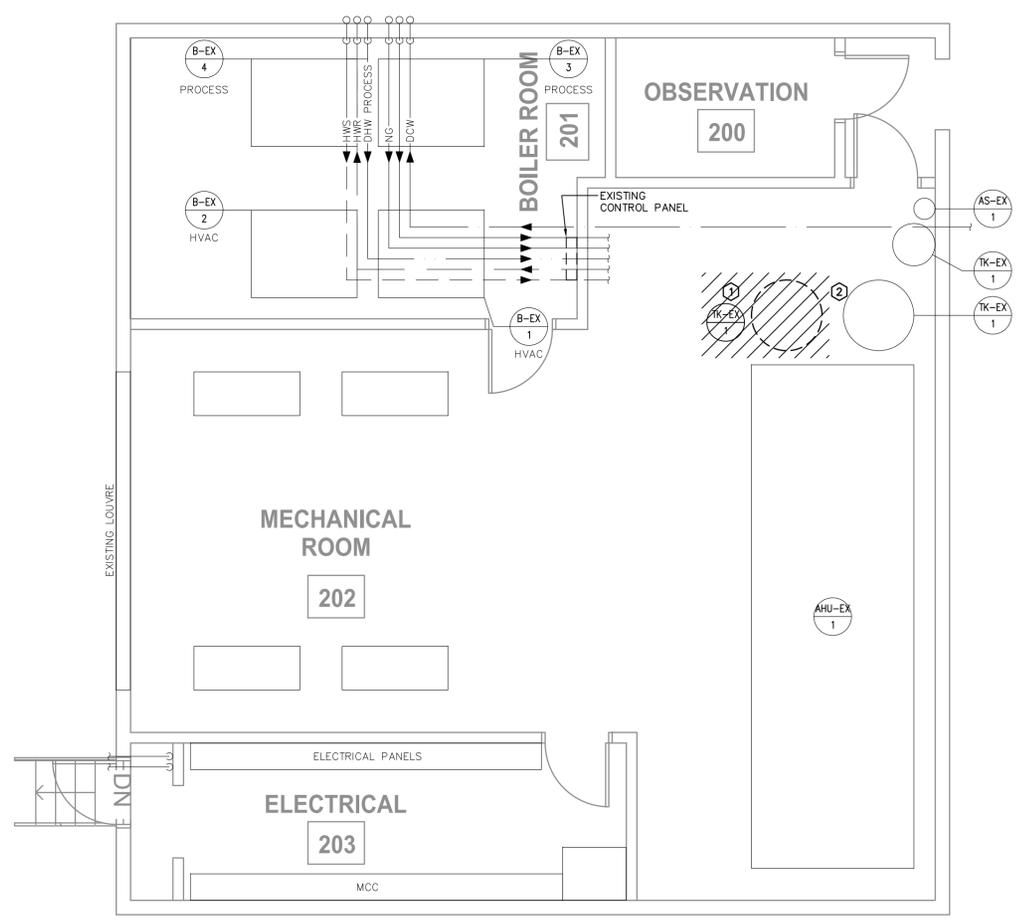
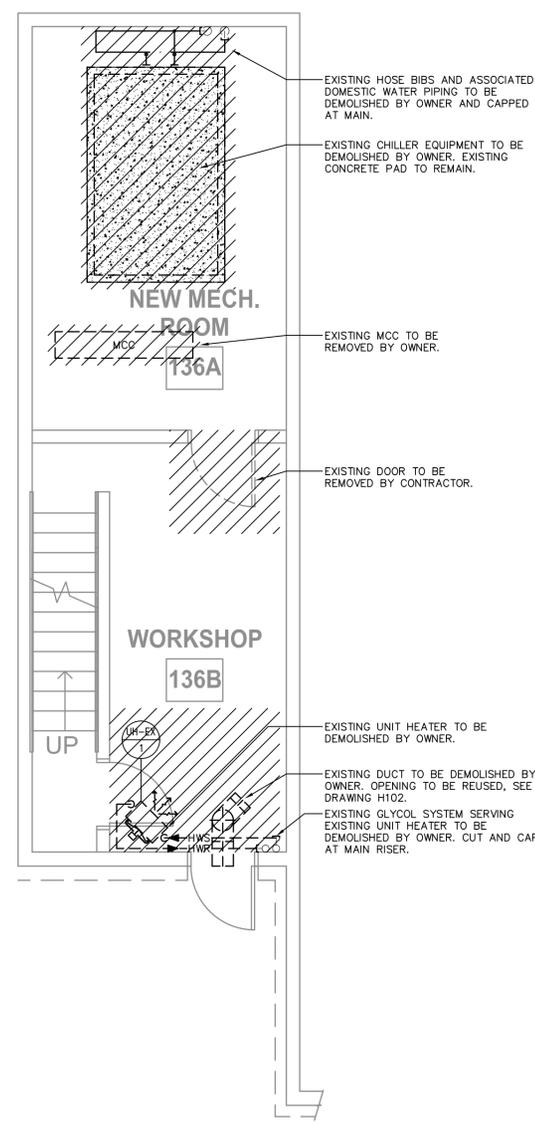
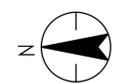
Project no./No. du projet	Drawing no./No. du dessin	Revision no.
	H100	0
	2 OF 08	





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- DEMOLITION GENERAL NOTES**
- ALL DEMOLITION WORK AND RELOCATION OF MECHANICAL EQUIPMENT BY OWNER, CONTRACTOR TO COORDINATE NEW EQUIPMENT LOCATIONS AND SYSTEM TIE INS WITH OWNER.
 - ANY EXISTING MECHANICAL WORK ON THESE DRAWINGS SHALL NOT BE CONSIDERED 'AS BUILT'. CONTRACTOR TO NOTIFY DEPARTMENT REPRESENTATIVE OF DISCREPANCIES. EXTRAS WILL NOT BE CONSIDERED BASED ON THE GROUNDS OF DIFFERENCES ON SITE.
 - ALL EQUIPMENT REMOVED DURING DEMOLITION TO BE TURNED OVER TO OWNER.
 - EQUIPMENT SHOWN DARK & HATCHED IS TO BE REMOVED AS NOTED.

- KEY NOTES**
- EXISTING PROCESS HOT WATER TANK TO BE RELOCATED TO NEW MECHANICAL ROOM BY OWNER. SEE DRAWING H102 FOR CONTINUATION.
 - EXISTING PROCESS HOT WATER TANK TO REMAIN. OWNER TO CUT AND CAP ALL ASSOCIATED PIPING.

A
H101
ENLARGED MECHANICAL ROOM PLAN - MAIN FLOOR DEMOLITION
1:50

B
H101
ENLARGED MECHANICAL PENTHOUSE PLAN - DEMOLITION
1:50

Revision	Description	Date
5	Issued for Tender	2016.11.25
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0	Design Completion	

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Client client
LACOMBE RESEARCH FACILITY

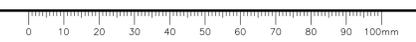
600 C And E Trail, Lacombe, AB

Project title Projet
**Lacombe, AB
600 C And E Trail
ABATTOIR**
**ABATTOIR MECHANICAL
EQUIPMENT ROOM PLANS**

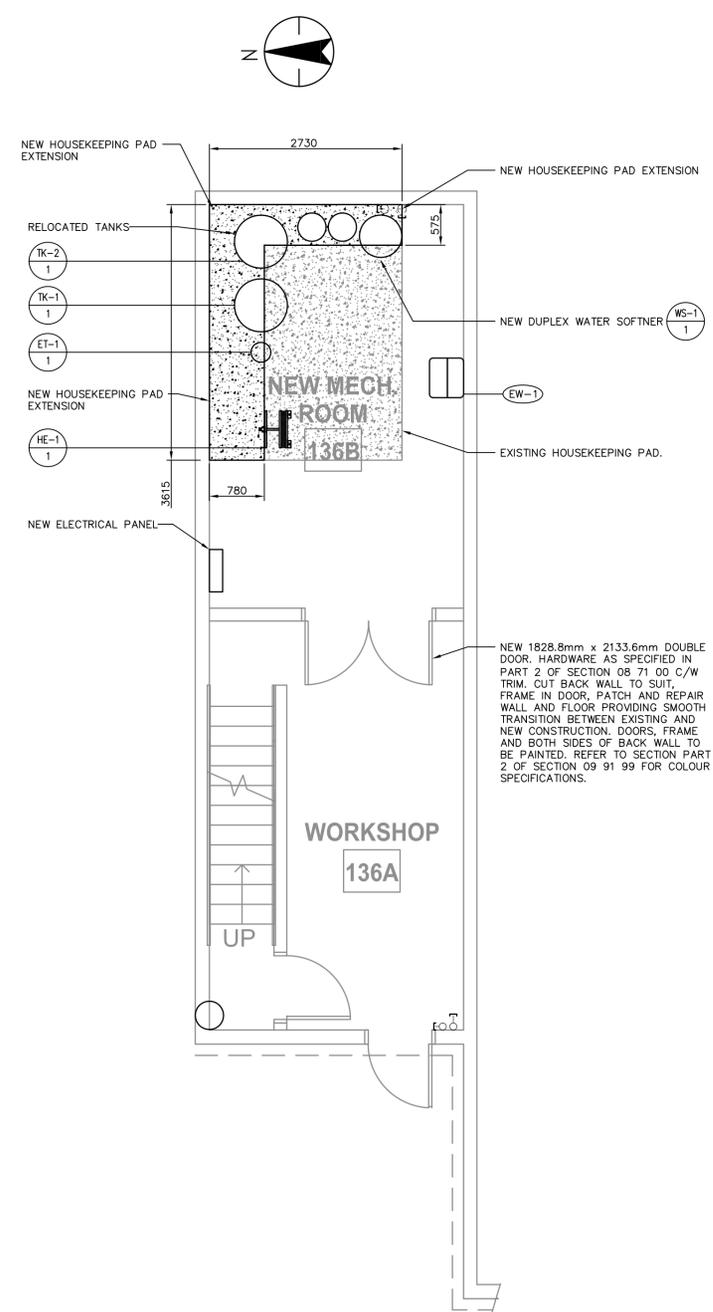
Designed by Conçu par
IG
Drawn by Dessiné par
FH
Approved by Approuvé par
TH
PWSC Project Manager Administrateur de Projets TPSGC

Drawing title Titre du dessin
**ENLARGED
MECHANICAL ROOM PLANS
DEMOLITION**

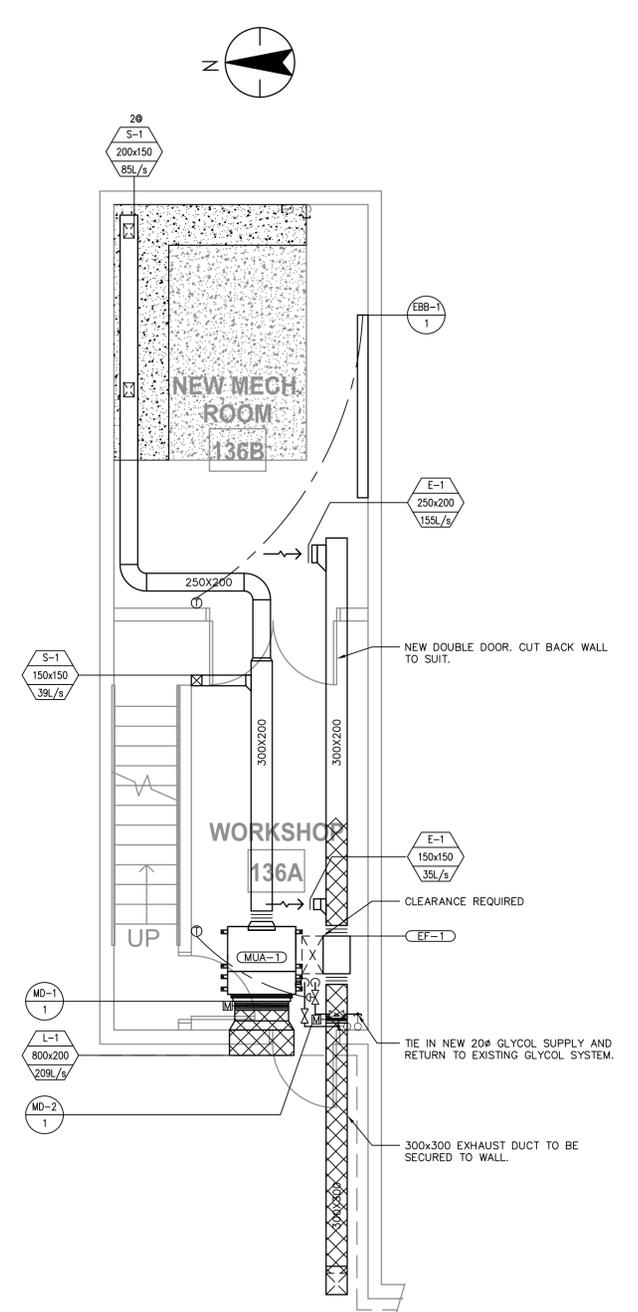
Project no./No. du projet	Drawing no./No. du dessin	Revision no.
	H101	0
	3 OF 8	



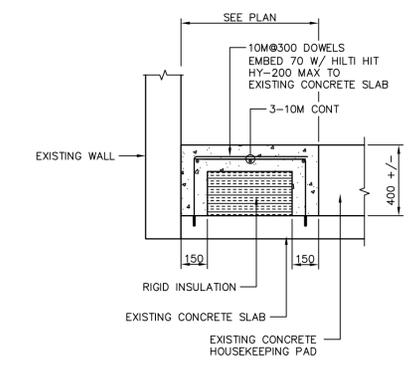
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A
 ENLARGED MAIN FLOOR MECHANICAL ROOM PLAN - EQUIPMENT LAYOUT RENOVATION PLAN
 H102 1:50

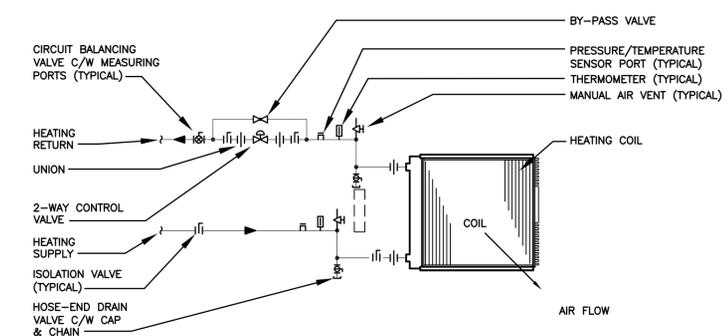


B
 ENLARGED MAIN FLOOR MECHANICAL ROOM PLAN - HVAC RENOVATION PLAN
 H102 1:50



GENERAL NOTES
 REFER TO SPECIFICATION SECTIONS:
 03 10 00 - CONCRETE FORMING AND ACCESSORIES
 03 20 00 - CONCRETE REINFORCING
 03 30 00 - CAST-IN-LACE CONCRETE

C
 ENLARGED CONCRETE PAD DETAIL
 H102 1:20



NOTE:
 FOR COIL ARRANGEMENT AND SIZING REFER TO PLAN B ON THIS DRAWING.
 SINGLE COIL: PIPED SIMILARLY

D
 HEATING COIL WITH 2-WAY CONTROL VALVE DETAIL
 H102 N.T.S

Revision	Description	Date
5	Issued for Tender	2016.11.25
4	Issued for Client Review	2016.09.14
3	Issued for 100% review	2016.08.11
2	Issued for Client review	2016.05.31
1	Issued for Client review	2016.03.28
0	Design Completion	

Professional Engineer
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 Signature: [Signature]
 Date: 25 NOV 16
 PERMIT NUMBER: P 0258
 The Association of Professional Engineers, Geologists and Geophysicists of Alberta

Client
LACOMBE RESEARCH FACILITY
 600 C And E Trail, Lacombe, AB

Project title
Lacombe, AB
600 C And E Trail
ABATTOIR
ABATTOIR MECHANICAL
EQUIPMENT ROOM PLANS

Designed by
IG
 Conçu par

Drawn by
FH
 Dessiné par

Approved by
TH
 Approuvé par

PWSSC Project Manager / Administrateur de Projets TPSOC

Drawing title
ENLARGED
MECHANICAL ROOM PLANS
RENOVATION
 Titre du dessin

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
	H102	0
	4 OF 08	

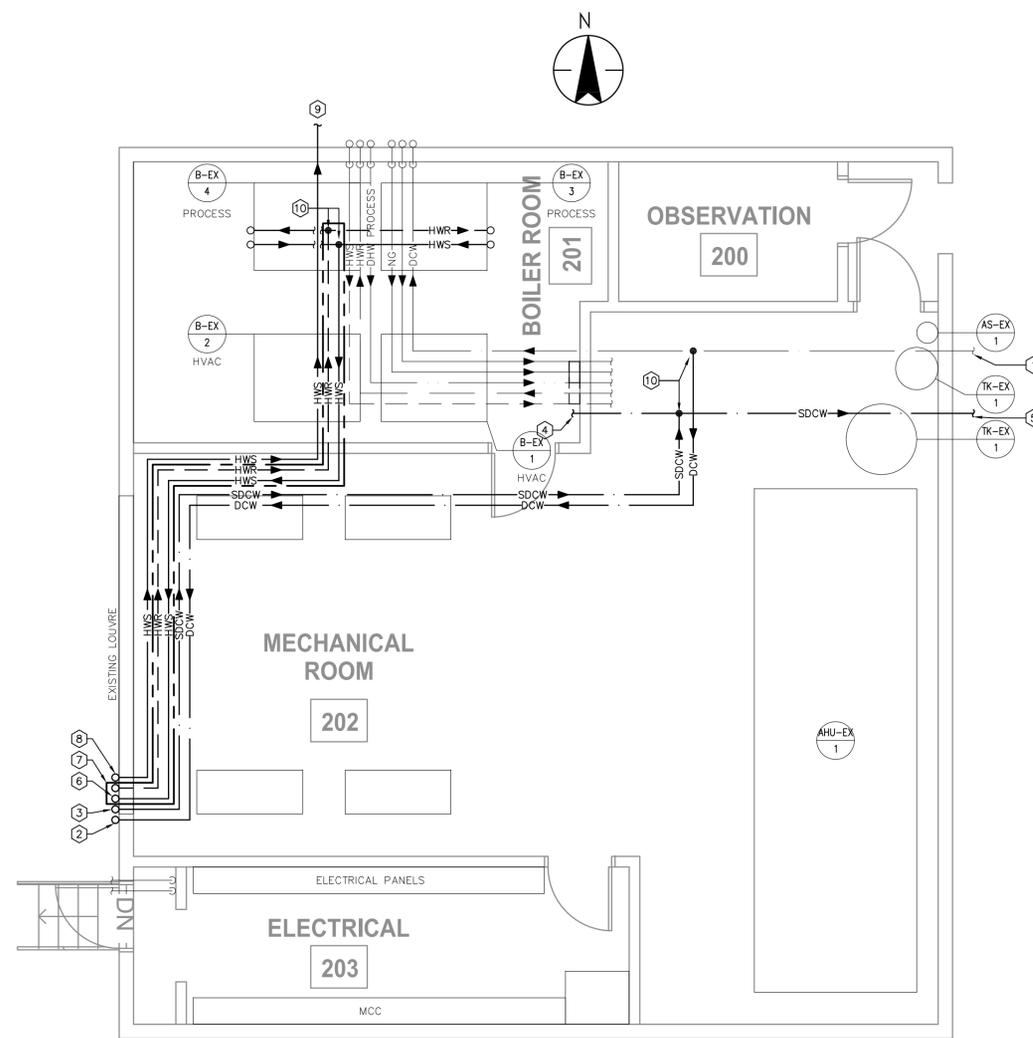


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KEY NOTES

- 1 EXISTING DOMESTIC COLD WATER SUPPLY.
- 2 DOMESTIC COLD WATER SUPPLY DOWN TO NEW MECHANICAL ROOM TO SUPPLY WATER SOFTNER TREATMENT PLANT.
- 3 SOFT COLD WATER UP TO SUPPLY PROCESS BOILERS AND STEAM BOILERS.
- 4 SOFT COLD WATER TO BOILER ROOM.
- 5 SOFT COLD WATER TO STEAM BOILER ROOM ON MAIN FLOOR.
- 6 PRIMARY PROCESS HOT WATER DOWN TO HEAT EXCHANGER IN NEW MECHANICAL ROOM.
- 7 PRIMARY PROCESS HOT WATER RETURN LOOP.
- 8 PROCESS HOT WATER SUPPLY UP TO SUPPLY KILLING AREA.
- 9 PROCESS HOT WATER SUPPLY TO KILLING AREA.
- 10 OWNER TO SPECIFY TIE IN LOCATION.

Revision	Description	Date
5	Issued for Tender	2016.11.25
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3	Issued for 100% review	2016.08.11
2	Issued for Client review	2016.05.31
1	Issued for Client review	2016.03.28
0	Design Completion	

Revision Description Date

Permit Seal



Client client

LACOMBE RESEARCH FACILITY

600 C And E Trail, Lacombe, AB

Project title Projet

**Lacombe, AB
600 C And E Trail
ABATTOIR**

**ABATTOIR MECHANICAL
EQUIPMENT ROOM PLANS**

Designed by Conçu par

IG

Drawn by Dessiné par

FH

Approved by Approuvé par

TH

PWSC Project Manager Administrateur de Projets TPSGC

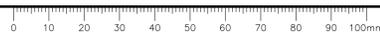
Drawing title Titre du dessin

**ENLARGED
MECHANICAL PENTHOUSE PLAN
RENOVATION**

Project no./No. du projet Drawing no./No. du dessin Revision no.

H103
5 OF 08 **0**

A
H103 ENLARGED MECHANICAL PENTHOUSE PLAN – RENOVATION
1:50





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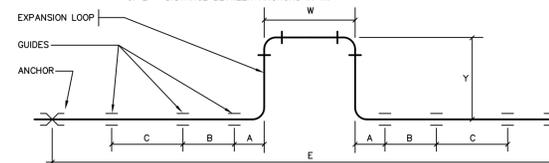
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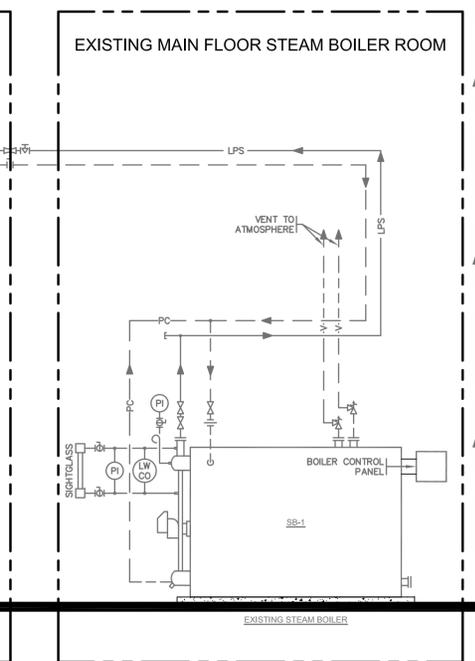
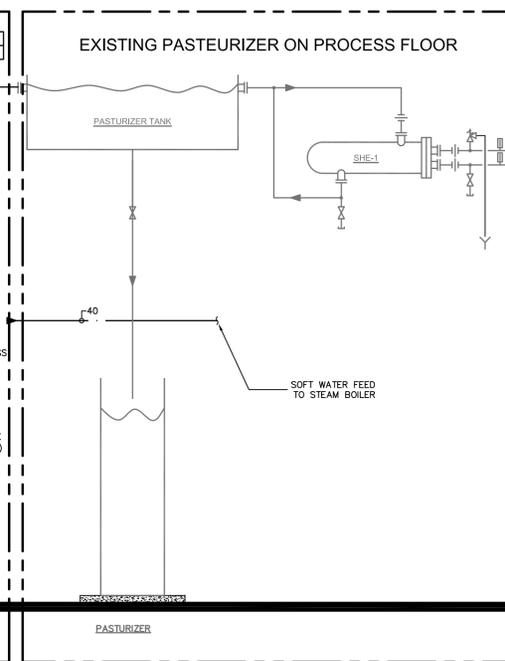
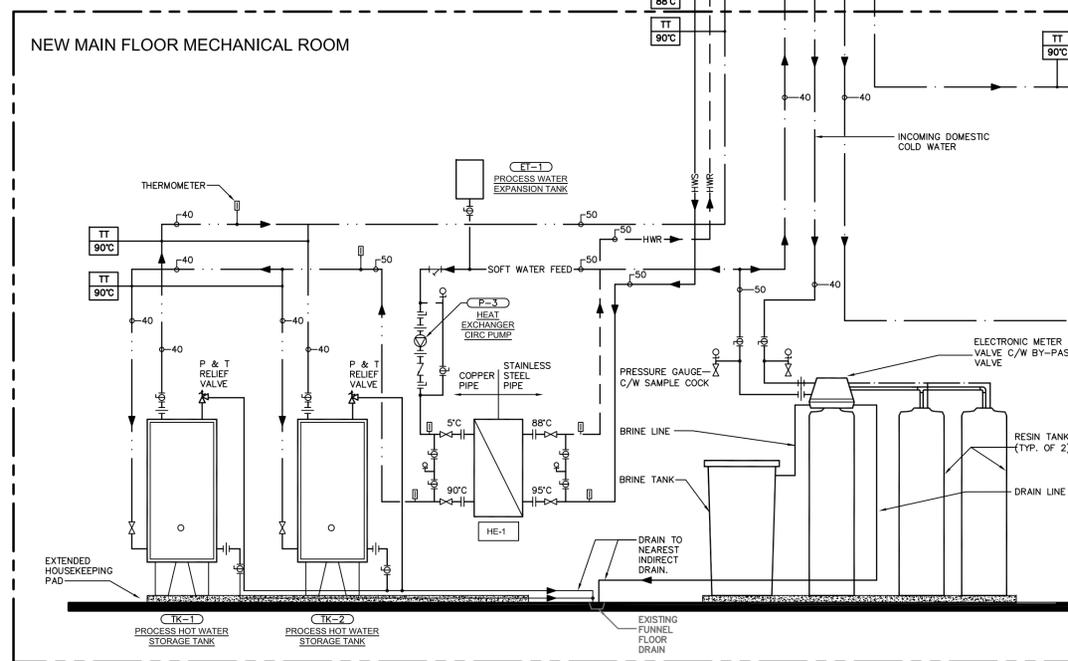
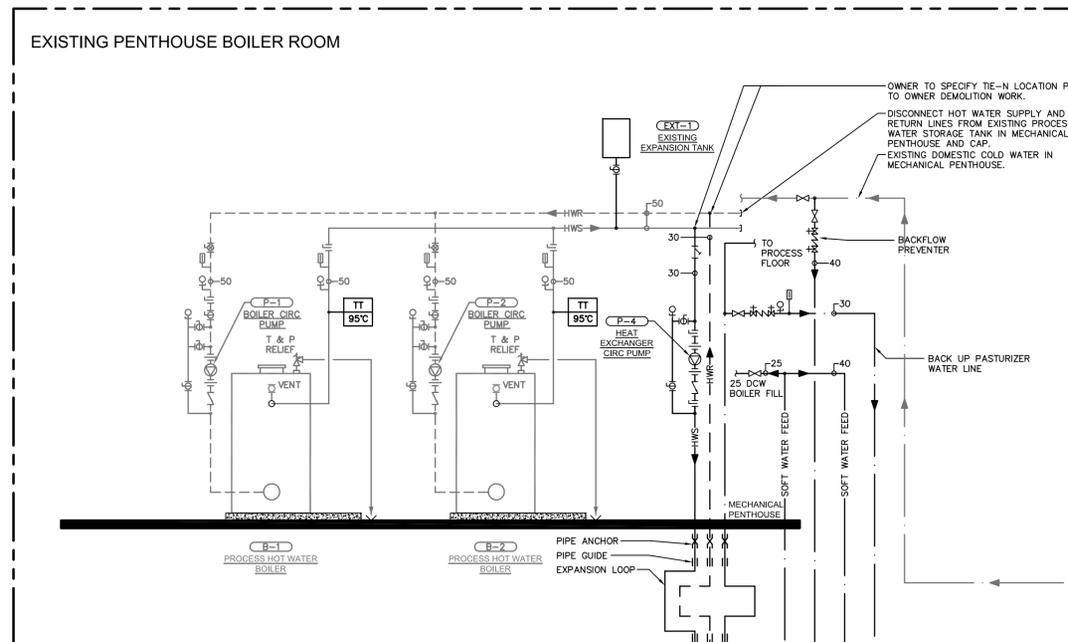
LOOP SIZING DATA:

- USE THESE FORMULAS FOR TEMPERATURE DIFFERENCES NOT EXCEEDING 110°C. FOR OTHER CONDITIONS USE THE ASHRAE GUIDE DATA BOOK.
- LENGTH OF PIPE IN LOOP $L_{in} = 2Y + W$
- FOR LENGTH "L" USE THE FOLLOWING FORMULAS:
 - STEEL PIPE $L = 2.67 \sqrt{D \times E}$
 - COPPER PIPE $L = 3.17 \sqrt{D \times E}$
- D = DIAMETER IN IN.
- E = DISTANCE BETWEEN ANCHORS IN IN.



PIPE SIZE mm NOMINAL	MAXIMUM DISTANCE		MAXIMUM SPACING BETWEEN GUIDES
	A	B	
25	200	600	120
30	200	600	120
40	200	900	180
50	200	900	180
65	250	1200	240
75	300	1200	240
100	400	1500	360
150	500	3000	420

B EXPANSION LOOP GUIDE DETAIL
H104 N.T.S.



A BOILER SCHEMATIC
H104 N.T.S.

Revision	Description	Date
5	Issued for Tender	2016.11.25
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3	Issued for 100% review	2016.08.11
2	Issued for Client review	2016.05.31
1	Issued for Client review	2016.03.24
0	Design Completion	

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Date: 25 NOV 16
PERMIT NUMBER: P 0258
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

Client: LACOMBE RESEARCH FACILITY

600 C And E Trail, Lacombe, AB

Project title: Lacombe, AB
600 C And E Trail
ABATTOIR
MECHANICAL EQUIPMENT ROOM PLANS

Designed by: IG
Drawn by: FH
Approved by: TH
PWSSC Project Manager / Administrateur de Projets TPSOC

Drawing title: MECHANICAL HOT PROCESS WATER SCHEMATIC AND DETAIL RENOVATION

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
	H104	0



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Revision	Description	Date
5	Issued For Tender	2016.11.25
4	Issued For Client Review	2016.09.14
3	Issued For 100% review	2016.08.11
2	Issued For Client review	2016.05.31
1	Issued For Client review	2016.03.28
0	Design Completion	

Client: LACOMBE RESEARCH FACILITY

600 C And E Trail, Lacombe, AB

Project title: Lacombe, AB
600 C And E Trail
ABATTOIR

ABATTOIR MECHANICAL
EQUIPMENT ROOM PLANS

Designed by: SL
Conçu par: SL

Drawn by: RGM
Dessiné par: RGM

Approved by: SL
Approuvé par: SL

PWSSC Project Manager / Administrateur de Projets TPSOC

Drawing title: SYMBOL LEGEND
GENERAL NOTES
& DRAWING LIST

DRAWING No.	DRAWING NAME	SCALE
E001	SYMBOL LEGEND, GENERAL NOTES AND DRAWING LIST	NTS
E100	ELECTRICAL DEMOLITION & RENOVATION	AS NOTED

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
115302873	E001	0

LIGHTING PLAN SYMBOLS

[Symbol]	SURFACE MOUNTED OR SUSPENDED FLUORESCENT LUMINAIRE, 305x1220mm
[Symbol]	SURFACE MOUNTED OR SUSPENDED FLUORESCENT LUMINAIRE, 610x1220mm
[Symbol]	SURFACE MOUNTED OR SUSPENDED FLUORESCENT LUMINAIRE, 610x610mm
[Symbol]	RECESSED FLUORESCENT LUMINAIRE, 305x1220mm
[Symbol]	RECESSED FLUORESCENT LUMINAIRE, 610x1220mm
[Symbol]	RECESSED FLUORESCENT LUMINAIRE, 610x610mm
[Symbol]	FLUORESCENT STRIP LUMINAIRE, 1220mm
[Symbol]	FLUORESCENT STRIP LUMINAIRE, 915mm
[Symbol]	FLUORESCENT STRIP LUMINAIRE, 610mm
[Symbol]	WALL MOUNTED LINEAR FLUORESCENT LUMINAIRE, 1220mm
[Symbol]	WALL MOUNTED LINEAR FLUORESCENT LUMINAIRE, 915mm
[Symbol]	WALL MOUNTED LINEAR FLUORESCENT LUMINAIRE, 610mm
[Symbol]	RECESSED LUMINAIRE / POT LIGHT
[Symbol]	SURFACE MOUNTED OR SUSPENDED LUMINAIRE
[Symbol]	STEP OR WALL MOUNTED LUMINAIRE
[Symbol]	BOLLARD OR IN-GROUND LUMINAIRE
[Symbol]	POLE MOUNTED LUMINAIRE (SINGLE HEAD)
[Symbol]	POLE MOUNTED LUMINAIRE (DOUBLE HEAD)
[Symbol]	LUMINAIRE ON EMERGENCY CIRCUIT (INDICATED BY HALF SHADING)
[Symbol]	DIRECTIONAL / AIMED LUMINAIRE (ARROW INDICATES DIRECTION)
[Symbol]	CEILING MOUNTED EXIT SIGN (TEXT ON SHADED SIDES, ARROWS AS INDICATED)
[Symbol]	WALL MOUNTED EXIT SIGN (TEXT ON SHADED SIDES, ARROWS AS INDICATED)
[Symbol]	TRACK LIGHT (# OF HEADS AS SHOWN, LENGTH AS INDICATED)
[Symbol]	LINE VOLTAGE SWITCH (120V TO 347V)
[Symbol]	2-GANG LINE VOLTAGE SWITCH
[Symbol]	3-GANG LINE VOLTAGE SWITCH
[Symbol]	4-GANG LINE VOLTAGE SWITCH
[Symbol]	LOW VOLTAGE SWITCH (30V OR LESS)
[Symbol]	MULTIPLE LOW VOLTAGE SWITCHES (QUANTITY AS INDICATED)
[Symbol]	LOW VOLTAGE DIMMER SWITCH
[Symbol]	LINE VOLTAGE DIMMER SWITCH
[Symbol]	LOW VOLTAGE SWITCH c/w OCCUPANCY SENSOR
[Symbol]	LINE VOLTAGE SWITCH c/w OCCUPANCY SENSOR
[Symbol]	LINE VOLTAGE SWITCH c/w PILOT LIGHT
[Symbol]	LINE VOLTAGE TWO POLE SWITCH
[Symbol]	LINE VOLTAGE THREE WAY SWITCH
[Symbol]	LINE VOLTAGE FOUR WAY SWITCH
[Symbol]	TIMER SWITCH
[Symbol]	KEY OPERATED SWITCH
[Symbol]	3-POSITION LIGHT SWITCH
[Symbol]	CEILING MOUNTED LIGHTING OCCUPANCY SENSOR (TYPE AS INDICATED)
[Symbol]	WALL MOUNTED LIGHTING OCCUPANCY SENSOR (TYPE AS INDICATED)
[Symbol]	PHOTOCELL (EXTERIOR, TYPE AS INDICATED)
[Symbol]	DAYLIGHT SENSOR (INTERIOR PHOTOCELL, TYPE AS INDICATED)
[Symbol]	EMERG. LTG. BATTERY PACK (WATTAGE AS SHOWN/# OF LAMPS AS SHOWN)
[Symbol]	CEILING MOUNTED EMERG. LTG. REMOTE HEAD (# OF LAMPS AS SHOWN)
[Symbol]	WALL MOUNTED EMERG. LTG. REMOTE HEAD (# OF LAMPS AS SHOWN)

GENERAL SYMBOLS

[Symbol]	NOTE REFERENCE
[Symbol]	EQUIPMENT REFERENCE
[Symbol]	REVISION NUMBER
[Symbol]	WIRING HOME RUN

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
BMS	BUILDING MANAGEMENT SYSTEM
DW	DISHWASHER
FAX	FAX MACHINE
GF	GROUND FAULT
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
OC	ON CENTER
JB	JUNCTION BOX
MCC	MOTOR CONTROL CENTER
MW	MICROWAVE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
IG	ISOLATED GROUND
PTR	PRINTER
RB	RELAY BASE
REF	REFRIGERATOR
SB	SOUNDER BASE
SPD	SURGE PROTECTIVE DEVICE
TR	TAMPER RESISTANT
TV	TELEVISION
TYP	TYPICAL
WP	WEATHERPROOF
EX	EXISTING DEVICE TO REMAIN
RE	REMOVE EXISTING DEVICE
RP	REPLACE EXISTING DEVICE WITH NEW
RL	RELOCATE EXISTING DEVICE
ER	EXISTING DEVICE IN RELOCATED POSITION

POWER PLAN SYMBOLS

[Symbol]	DUPLEX 5-15R RECEPTACLE
[Symbol]	DUPLEX 5-15R RECEPTACLE C/W INTEGRAL GFCI PROTECTION
[Symbol]	DUPLEX 5-20R RECEPTACLE, T-SLOT
[Symbol]	SINGLE 5-15R RECEPTACLE
[Symbol]	SPLIT CIRCUIT DUPLEX 5-15R RECEPTACLE
[Symbol]	TWO DUPLEX 5-15R RECEPTACLES
[Symbol]	SPECIAL RECEPTACLE (TYPE AS INDICATED)
[Symbol]	REEL CORD RECEPTACLE (TYPE AS INDICATED)
[Symbol]	FLOOR MOUNTED DUPLEX 5-15R RECEPTACLE
[Symbol]	TWO FLOOR MOUNTED DUPLEX 5-15R RECEPTACLES
[Symbol]	CEILING MOUNTED DUPLEX 5-15R RECEPTACLE
[Symbol]	TWO CEILING MOUNTED DUPLEX 5-15R RECEPTACLES
[Symbol]	SERVICE COLUMN / PACK POLE (OUTLETS AS INDICATED)
[Symbol]	UTILITY POLE (TYPE AS INDICATED)
[Symbol]	CEILING MOUNTED JUNCTION BOX
[Symbol]	WALL MOUNTED JUNCTION BOX
[Symbol]	FLOOR MOUNTED JUNCTION BOX
[Symbol]	POWER PANELBOARD
[Symbol]	PANEL (TYPE AS INDICATED - SECURITY, LIGHTING RELAY, ETC.)
[Symbol]	SURFACE RACEWAY (TYPE AS INDICATED)
[Symbol]	PUSHBUTTON (TYPE AND WIRING AS INDICATED)
[Symbol]	GROUND BUS BAR
[Symbol]	ROOM REFERENCE GROUND BUS
[Symbol]	MOTOR
[Symbol]	MOTOR c/w DISCONNECT SWITCH
[Symbol]	COMBINATION DISCONNECT AND MAGNETIC MOTOR STARTER
[Symbol]	DISCONNECT SWITCH
[Symbol]	FUSED DISCONNECT SWITCH
[Symbol]	MAGNETIC MOTOR STARTER
[Symbol]	THERMOSTAT
[Symbol]	MANUAL MOTOR STARTER c/w PILOT LIGHT
[Symbol]	CONDUIT STUB
[Symbol]	CONDUIT UP
[Symbol]	CONDUIT DOWN
[Symbol]	DEVICE MOUNTED ABOVE MILLWORK COUNTERTOP

FIRE ALARM SYMBOLS

[Symbol]	FIRE ALARM MANUAL STATION
[Symbol]	FIRE ALARM BELL
[Symbol]	FIRE ALARM BELL c/w STROBE
[Symbol]	CEILING MOUNTED FIRE ALARM HORN SPEAKER
[Symbol]	WALL MOUNTED FIRE ALARM HORN SPEAKER
[Symbol]	CEILING MOUNTED FIRE ALARM HORN SPEAKER c/w STROBE
[Symbol]	WALL MOUNTED FIRE ALARM HORN SPEAKER c/w STROBE
[Symbol]	CEILING REMOTE EVACUATION STROBE
[Symbol]	WALL MOUNTED REMOTE EVACUATION STROBE
[Symbol]	CEILING MOUNTED DUPLEX 5-15R RECEPTACLE
[Symbol]	WALL MOUNTED FIRE ALARM SPEAKER
[Symbol]	CEILING MOUNTED FIRE ALARM SPEAKER c/w STROBE
[Symbol]	WALL MOUNTED FIRE ALARM SPEAKER c/w STROBE
[Symbol]	FIRE ALARM PIEZO SOUNDER
[Symbol]	FIRE ALARM PIEZO SOUNDER c/w STROBE
[Symbol]	FIRE ALARM ELECTRONIC HORN/SOUNDER
[Symbol]	FIRE ALARM ELECTRONIC HORN/SOUNDER c/w STROBE
[Symbol]	CARBON MONOXIDE ALARM
[Symbol]	FIRE ALARM HEAT DETECTOR (RATE OF RISE UNLESS OTHERWISE INDICATED)
[Symbol]	FIRE ALARM SMOKE DETECTOR
[Symbol]	FIRE ALARM SMOKE DETECTOR, DUCT MOUNTED
[Symbol]	SMOKE ALARM
[Symbol]	FIRE ALARM ANNUNCIATOR PANEL
[Symbol]	FIRE ALARM CONTROL PANEL
[Symbol]	CENTRAL ALARM & CONTROL FACILITY
[Symbol]	EMERGENCY TELEPHONE
[Symbol]	FIRE ALARM MAGNETIC DOOR HOLD OPEN DEVICE
[Symbol]	FIRE ALARM CONNECTION TO PRESSURE SWITCH
[Symbol]	FIRE ALARM CONNECTION TO FLOW SWITCH
[Symbol]	FIRE ALARM CONNECTION TO TAMPER SWITCH
[Symbol]	FIRE ALARM CONNECTION TO LEVEL SWITCH
[Symbol]	END OF LINE RESISTOR
[Symbol]	FIRE ALARM CONTROL MODULE
[Symbol]	FIRE ALARM MONITOR MODULE
[Symbol]	FIRE ALARM FAULT ISOLATION MODULE
[Symbol]	FIRE ALARM RELAY

TELECOMMUNICATIONS SYMBOLS

[Symbol]	WALL MOUNTED TELECOM OUTLET (# DENOTES NUMBER OF CABLES)
[Symbol]	FLOOR MOUNTED TELECOM OUTLET (# DENOTES NUMBER OF CABLES)
[Symbol]	CEILING MOUNTED TELECOM OUTLET (# DENOTES NUMBER OF CABLES)
[Symbol]	INTERCOM STATION
[Symbol]	WIRELESS ACCESS POINT
[Symbol]	WALL MOUNTED TELEVISION OUTLET
[Symbol]	CEILING MOUNTED TELEVISION OUTLET
[Symbol]	FLOOR MOUNTED TELEVISION OUTLET
[Symbol]	FIBRE OPTIC OUTLET
[Symbol]	CABLE TRAY, AS INDICATED

SECURITY SYMBOLS

[Symbol]	WALL MOUNTED SECURITY CAMERA
[Symbol]	WALL MOUNTED SECURITY CAMERA, FIXED
[Symbol]	WALL MOUNTED SECURITY CAMERA, PAN/TILT/ZOOM
[Symbol]	CEILING MOUNTED SECURITY CAMERA
[Symbol]	CEILING MOUNTED SECURITY CAMERA, FIXED
[Symbol]	CEILING MOUNTED SECURITY CAMERA, PAN/TILT/ZOOM
[Symbol]	CARD READER
[Symbol]	CARD READER / KEY PAD COMBINATION
[Symbol]	SECURITY KEY PAD
[Symbol]	KEYSWITCH OVERRIDE
[Symbol]	REQUEST-TO-EXIT PUSHBUTTON
[Symbol]	PANIC/DURESS PUSHBUTTON
[Symbol]	BUZZER AND KEYSWITCH FOR LOCAL ALARM
[Symbol]	ELECTROMAGNETIC LOCK
[Symbol]	ELECTRIFIED DOOR HARDWARE
[Symbol]	DOOR POSITION SWITCH
[Symbol]	REQUEST-TO-EXIT MOTION SENSOR
[Symbol]	PUSHBUTTON
[Symbol]	PUSHBUTTON c/w KEYED RESET
[Symbol]	CEILING MOUNTED SECURITY MOTION DETECTOR
[Symbol]	CEILING MOUNTED SECURITY MOTION DETECTOR (360 DEGREES)
[Symbol]	WALL MOUNTED SECURITY MOTION DETECTOR
[Symbol]	GLASS BREAK DETECTOR

ELECTRICAL MOTOR LIST

Project: Lacombe Abattoir
Project No.: 115302873
Issued to: Stantec Electrical
Issued from: Stantec Mechanical
Issued by: FH
Date Created: 1-Feb-16
Date Updated: 7-Nov-16
Date Printed: 7-Nov-16
Revision No.: 1

Main Service Voltage: 600 Volts

ABBREVIATIONS:
M = Mechanical
E = Electrical
BMS = Building Management System
CCF = Firefighters Central Control Facility

STARTERS:
MA = Manual c/w Pilot Light
MG = Magnetic Starter
MG2 = Magnetic Starter (2-Speed)
VFD=Variable Frequency Drive

CONTROL DEVICES:
C = Time Clock
DDC = Direct Digital Controls
ET = Electronic Thermostat
F = Float Switch
FA = Fire Alarm
GS = Gas Sensor
H = Humidistat
I = Interlock
O = Other (Identify)
P = Pressure Switch
S = Manual Switch
T = Thermostat

SPECIAL INSTRUCTIONS:
1.All starters to be magnetic H.O.A. unless otherwise specified
A terminal section shall be provided with all MCC's
& wired in accordance with standard detail drawing

SHADING LEGEND:
Shop drawings approved, no more revisions
Revised in this update
Design (Estimated) Load

UNIT No.	UNIT DESCRIPTION	LOCATION	LOAD		ELECTRICAL		TYPE	STARTER				CONTROL				REMARKS		
			Quantity	Unit	(V)	(PH)		CONTROL	PILOT LIGHT	SUPPLIED BY	INSTALLED BY	WIRED BY	INTERLOCK WITH	SUPPLIED BY	INSTALLED BY		WIRED BY	
MUA-1	MAKE UP AIR UNIT	MECHANICAL ROOM	0.25	HP	208	3	MG											
EF-1	EXHAUST FAN	MECHANICAL ROOM	0.25	HP	115	1	MG											
MD-1	MOTORIZED DAMPER	MUA-1	fraction	HP	24	1												
MD-2	MOTORIZED DAMPER	EXHAUST DUCT	fraction	HP	24	1												
WS-1	WATER SOFTNER	MECHANICAL ROOM			24	1												
EBB-1	BASEBOARD HEATER	MECHANICAL ROOM	2500	W	208	1												BUILT IN THERMOSTAT

DRAWING LIST

DRAWING No.	DRAWING NAME	SCALE
E001	SYMBOL LEGEND, GENERAL NOTES AND DRAWING LIST	NTS
E100	ELECTRICAL DEMOLITION & RENOVATION	AS NOTED



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1	Issued for Client review	2016.03.28
0	Design Completion	

LACOMBE RESEARCH FACILITY

600 C And E Trail, Lacombe, AB

Project title

Lacombe, AB
600 C And E Trail
ABATTOIR

ABATTOIR MECHANICAL EQUIPMENT ROOM PLANS

Designed by SL Conçu par

Drawn by RGM Dessiné par

Approved by SL Approuvé par

PWSSC Project Manager / Administrateur de Projets TPSGC

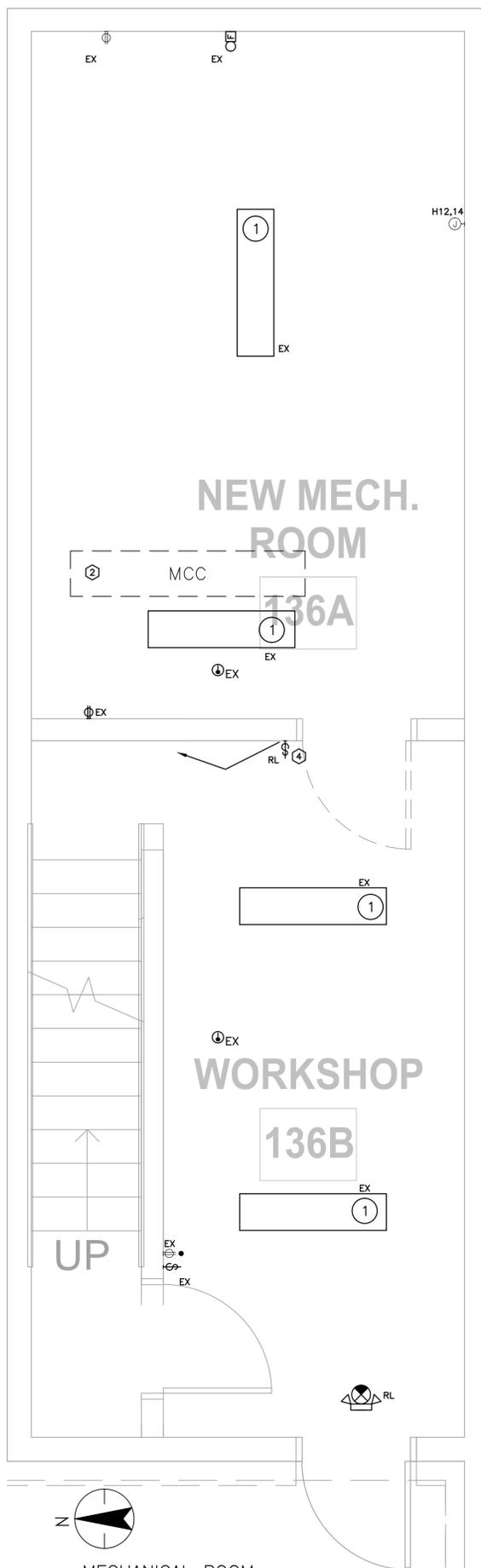
Drawing title / Titre du dessin

ELECTRICAL DEMOLITION AND RENOVATION

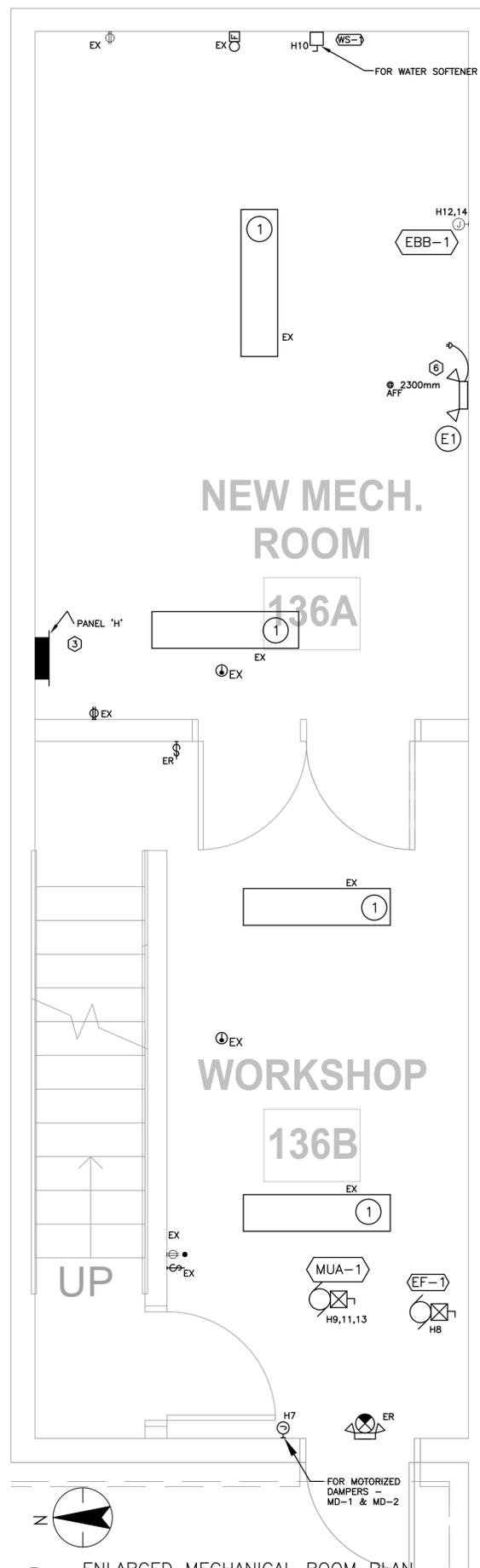
Project no./No. du projet / Drawing no./No. du dessin / Revision no.

115302873 / E100 / 0

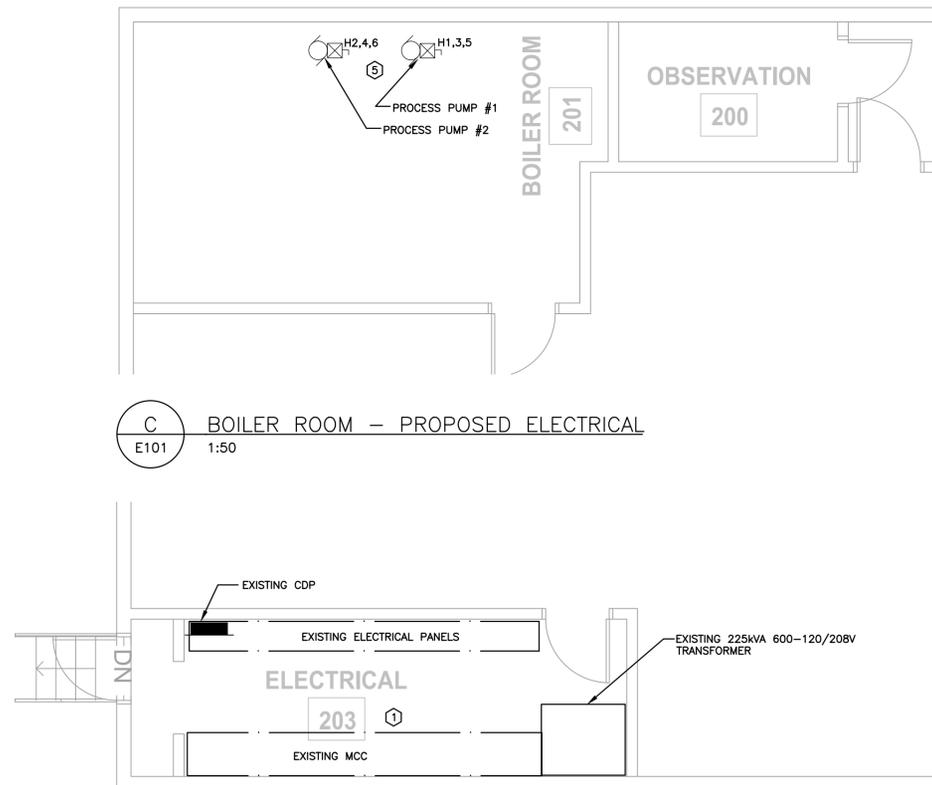
8 OF 08



A MECHANICAL ROOM - ELECTRICAL DEMOLITION
E101 1:25



B ENLARGED MECHANICAL ROOM PLAN - PROPOSED ELECTRICAL
E101 1:25



C BOILER ROOM - PROPOSED ELECTRICAL
E101 1:50

D MECHANICAL PENTHOUSE PLAN - ELECTRICAL DEMOLITION
E101 1:50

LOAD	DESCRIPTION	BKR. SIZE	CCT. NO.	LOCATION: MCC ROOM	LOAD
690	PROCESS PUMP #1	20	1	20	690
690	MOTORIZED DAMPERS, MD-1, MD-2	3P	5	4 AMP PROCESS PUMP #2	690
190	MAKEUP AIR UNIT MUA-1	15A	7	8 15A EXHAUST FAN EF-1	190
200		15	9	10 15A WATER SOFTENER	100
200		AMP	11	12 20A BASEBOARD HEATER EBB-1	1250
200		3P	13	14 2P	1250
-			15	16	-
-			17	18	-
-			19	20	-
-			21	22	-
-			23	24	-

NOTES: PHASE A = 1960 W, PHASE B = 2930 W, PHASE C = 2830 W, TOTAL = 5520 W

TAG	DESCRIPTION	LAMPS	VOLTAGE	COMMENTS
①	300mm x 1200mm SURFACE FLUORESCENT WITH PRISMATIC DIFFUSER	2x32W T8 LAMPS		EXISTING
②	SURFACE MOUNTED EMERGENCY BATTERY PACK	2x4W PAR18 LED LAMPS	120	STANPRO SLA-12036 OR EQUAL

DEMOLITION GENERAL NOTES

- CIRCUIT DETAILS ARE PROVIDED FOR INFORMATION; VERIFY EXISTING CONDITIONS PRIOR TO COMMENCING WORK AND NOTIFY DEPARTMENTAL REPRESENTATIVE OF ANY DISCREPANCIES.
- ALL EQUIPMENT REMOVED DURING DEMOLITION TO BE TURNED OVER TO OWNER.
- EQUIPMENT SHOWN DARK & HATCHED IS TO BE REMOVED AS NOTED.

RENOVATION GENERAL NOTES

- ANY EXISTING ELECTRICAL WORK ON THESE DRAWINGS SHALL NOT BE CONSIDERED "AS BUILT"; CONTRACTOR TO NOTIFY CONSULTANT OF DISCREPANCIES. EXTRAS WILL NOT BE CONSIDERED BASED ON THE GROUNDS OF DIFFERENCES ON SITE.
- ALL INSTALLATION WORK TO MEET REQUIREMENTS OF THE CANADIAN ELECTRICAL CODE.

KEY NOTES

- ISOLATE AND DISCONNECT EXISTING FEEDERS TO PUMPS #1 AND #2.
- OWNER TO ISOLATE, DISCONNECT AND REMOVE EXISTING MCC (REFRIGERATION CONTROL PANEL). OWNER TO REMOVE ALL REDUNDANT CONDUIT & WIRING DOWNSTREAM OF MCC. OWNER TO REMOVE REDUNDANT FEEDER BACK TO SOURCE.
- PROVIDE A NEW 24 CIRCUIT 3PH 4W 120/208V 225A PANEL; REFER TO PANEL SCHEDULE FOR DETAILS.
- RELOCATE EXISTING LIGHT SWITCH TO SUIT NEW DOUBLE DOOR ARRANGEMENT.
- SITE COORDINATE LOCATION OF MOTOR STARTERS & DISCONNECTS. CONNECT MOTOR STARTERS TO EXISTING BOILER CONTROLS.
- PROVIDE NEW EMERGENCY LIGHTING TWIN LAMP BATTERY PACK WITH MINIMUM 30 MINUTES DURATION, TIE INTO EXISTING LIGHTING CIRCUIT.