c. At the maintenance security level, the Microload controller could be bypassed and manual mode are available for the VFD and the motorized valves.

d. The security level is logout automatically after a predefined time of inactivity, to prevent the unauthorized use of the HMI.

3. Truck loading sequence

a. The HMI contents three main screens;

i. **Loading graphic screen** for visualisation including; tank levels, tank temperatures, Pumps status, MOV status, Scully status and the Microload bypass button.

ii. **Loading sequence screen** for sequence operation; Start, Pause and Stop loading sequence, tank's selection, truck load, sequence status, loading flow and load totalizer.

iii. **Alarm page** with active alarms in red and clear alarms in green. The clear all alarm button is active only with maintenance security level access.

b. To start the truck loading sequence the following actions shall be done:

i. Select one of the two main tanks. There is always one tank selected, make sure this is the right tank before starting the sequence.

ii. Enter the truck load to fill. A predefined load value is set at each transaction and could be modified as required.

iii. Verify the sequence is 'Ready to Start' in the sequence banner status. If not then other alarms texts will show the issues that need to be resolved prior to start the sequence.

iv. Press the START button to start the loading.

c. The sequence status shows 'Ready to start' if all conditions are met for the automatic loading sequence. Otherwise the status will show 'Not Ready' in red with the following alarms messages:

i. **Scully fault:** The Scully unit is faulty, ground contact or truck levels are in fault.

ii. **Equipment fault:** The pumps or the valves are not available; either in fault or in manual mode.

iii. **Tank low level:** The selected tank reached the low level.

d. There are three control buttons for the automatic sequence:

i. **START:** starts the sequence.

ii. **PAUSE:** pauses the sequence, the valves close, the pumps stop and the transaction is on hold, and wait for a restart (START) or a complete stop (STOP). This function allows the truck driver to hold the sequence to do visual checks.

iii. **STOP:** stops the sequence and ends the transaction through the Microload unit.

e. The START button starts the loading sequence and the PLC does an estimated time for the loading based on the truck load and pump flow. It generates an alarm if the time expires before the end of the sequence, meaning there is an issue with the system.

f. The sequence stops automatically once the truck load is reached. If the sequence stops on a fault, the sequence moves to the pause state, allowing the operator to clear the fault and restart or to stop the sequence. If no action is done, the sequence stops after the pause time expired.

g. The sequence starts by opening the selected tank's motorized valve and ramps up one of the VFD.

h. Pumps will run alternatively based on running hours accumulated, if both are available in auto mode before starting the sequence. The pumps have a selector AUTO/MANUAL on their HMI popup, this function is available only with the maintenance security access. If one pump does not start, a fault will be generated on the HMI and the other pump will start automatically. If one pump is in AUTO mode and the other in MAUAL mode, only the pump in AUTO mode will be used. If both pumps are in MANUAL mode, the sequence will not start. If none of the pumps start, the motorized valve closes, and the sequence goes to pause. Alarms are generated on the HMI.

i. The PLC sends a "Remote Start" to the Microload unit with the truck load. The Microload starts the loading control by opening the flow valve and monitoring the accumulated volume.

j. The truck load, the accumulated volume and flow rate are shown on the sequence screen. The data exchange with the Microload controller and the PLC is polled through Modbus link. At the end of transaction, the accumulated value and the truck load stay on the screen until a new transaction. The total of all fuel dispensed is totalized in PLC memory. This value is available and resettable in the PLC only, not on the HMI.

k. The loading sequence stops under the following conditions:

- Tanker truck is full OR;
- The estimated loading time is expired (meaning there is an issued with the truck level) OR;
- The Microload faults OR;
- Scully fault (grounding contact or high level) OR;
- MOV faults on open position OR;
- Fault on VFD pump OR;
- PAUSE or STOP buttons sequence are activated.

When the sequence stops, the pump stops, the MOV closes, the remote stop is set to Microload controller, and the flow valve closes. The status of the loading sequence is shown on the sequence screen.

l. The truck load is a pre-set value in the PLC based on one type of tanker truck. If more than one tanker truck capacity models are used, a pre-set selection could be added to facilitate trucker entries. To be defined on site.

m. The sequence could not start if there is a low low level in the main tank selected. But if the sequence is running when the low low level appears, the sequence will complete the loading. The low low level will be set to support one tanker truck load above the piping intake.

n. On the stop sequence, the pump stops first and then the motorized valve at the selected tank closes.

o. The valves positions and the pumps status are shown on the graphic screen.

p. There are three emergency push buttons, one on the PLC cabinet, one in the pump house and one at the truck area, and they are hardwired to the emergency relay inside the PLC cabinet. The emergency relay contacts stop the VFD pumps through VFD input (DIL and 24V) and remove the power to the flow valve. The emergency relay status is wired back to the PLC, to close the MOVs and set the "remote stop" command to the Microload controller.

q. Pumps interlocks – Starting conditions

- Scully contact through the truck plug (must be connected)
- Minimum level of diesel in the selected main tank (above low low level)

r. Process interlocks – Running conditions that can be bypassed

- Microload Controller ready and running. The bypass confirmation of the controller is available only through the maintenance security level. If the bypass valve is opened, it shall be confirmed on the HMI, to ensure proper functionality.

s. Safety trip conditions

- Emergency stop buttons

4. Maintenance mode

a. The maintenance mode is accessible by logging as maintenance username with the proper password.

b. The user in maintenance mode could access the motors and valves popups. The functionalities in popups allow individual control of the equipment; AUTO/MANUAL mode, START/STOP and feedback status.

c. In MANUAL mode, the user could take control of every equipment to manually operate them without interlock except for the E-Stops. The user is fully responsible of the equipment when running them in manual.

d. A maintenance mode banner is displayed in the graphic and sequence screens to identify that this mode is active.

e. The Microload bypass button is accessible in maintenance mode only.

f. The automatic loading sequence could not run in maintenance mode. Equipment left in manual mode does not return in auto mode automatically, the user is responsible to return them in auto mode to allow the automatic sequence to work properly.

11.2 Main tanks loading

1. Overfill protection of tank during refueling from the marine line
    i. Overfill alarm is composed of one strobe light on each tank and one common horn installed on the pumping container.
    ii. When 90% of a tank capacity is reached, an overfill alarm is activated, turning on the tank strobe light and the horn.
    iii. The horn stops once the alarm is acknowledged.

11.3 Alarms transmission

- At least 4 type of alarms are wired from PLC to Fire Alarm System
- Overfill alarm on tanks
- Emergency stop activated
- Temperature alarm
- Pumps and valves malfunction alarms

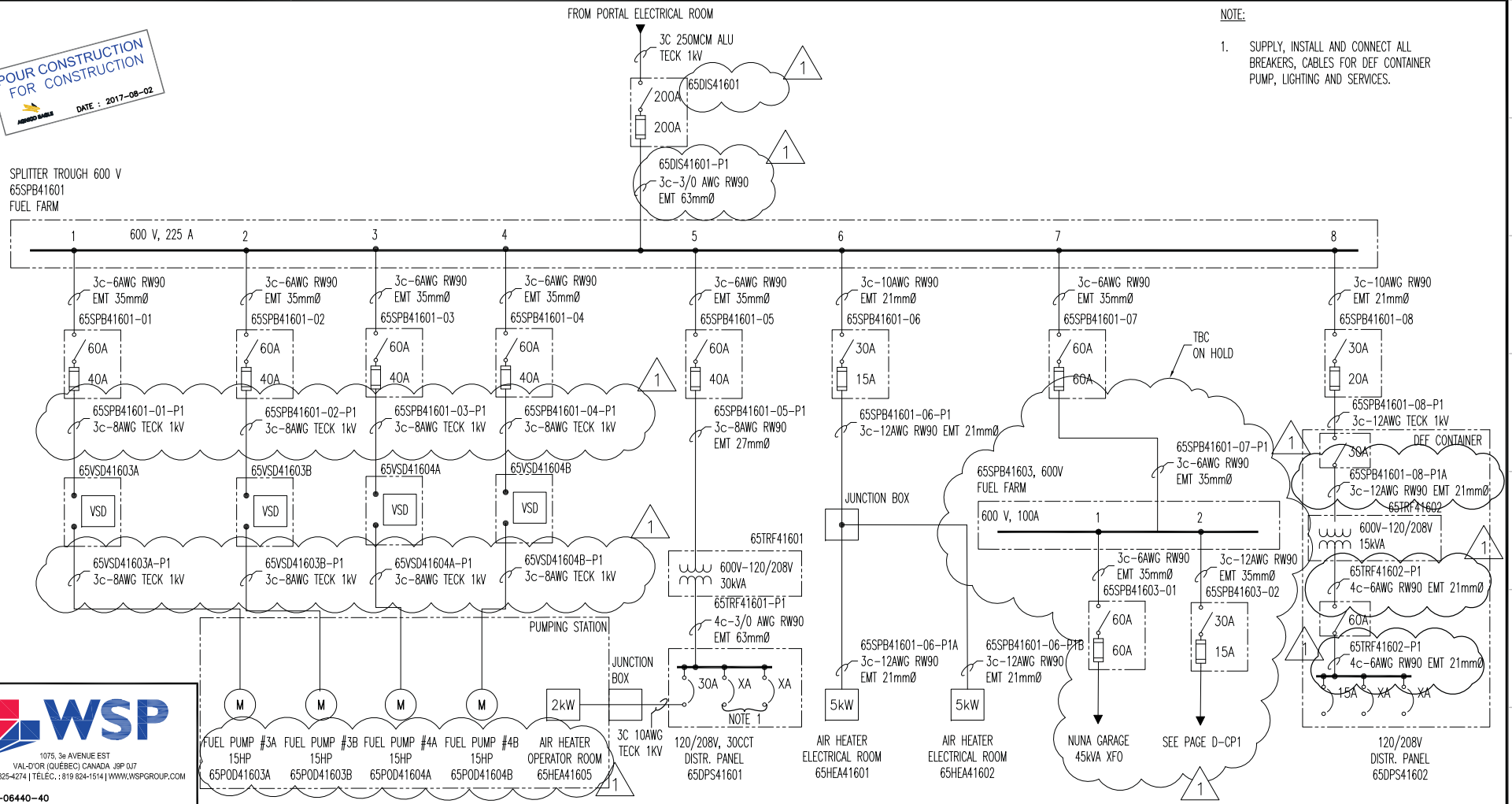
NO. DESSIN / DRAWING NO. 65-416-275-200_R1

FORMAT ANSI B-11x17

POUR CONSTRUCTION
FOR CONSTRUCTION
AGNICO EAGLE
DATE : 2017-08-02

NOTE:

1. SUPPLY, INSTALL AND CONNECT ALL BREAKERS, CABLES FOR DEF CONTAINER PUMP, LIGHTING AND SERVICES.



WSP
1075, 3e AVENUE EST
VAL-D'OR (QUÉBEC) CANADA J9P 0J7
TÉL. : 819 825-4274 | TÉLÉC. : 819 824-1514 | WWW.WSPGROUP.COM

Ref. 151-06440-40

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_	_				
_	_				
_	_	1	ISSUED FOR CONSTRUCTION	2017-08-02	
600V DISTRIBUTION - PORTAIL #1 SINGLE LINE DIAGRAM	65-403-275-200	0	ISSUED FOR CONSTRUCTION	2017-07-11	F.M.G.
TITRE / TITLE	# DWG	REV	DESCRIPTION	DATE	PAR BY

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

REVISIONS

AGNICO EAGLE

		DATE
DESSINÉ PAR / DRAWN BY	F. MONDERIE, Tech.	2017-02-01
VÉRIFIÉ PAR / CHECKED BY	R. HÉNAULT, tech	2017-02-01
APPROUVÉ PAR / APPROVED BY	LUC SÉNÉCAL, P.Eng.	2017-07-11
No. PROJET / PROJECT NO.	6515	
DATE	2016-09-06	

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TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
416 – FUEL TANK FARM
275 – POWER ELECTRICAL
600V DISTRIBUTION – PORTAL #1
SINGLE LINE DIAGRAM

ÉCHELLE/SCALE	NONE	FICHIER/FILE	65-416-275-200_R1.DWG
No. DESSIN/DRAWING NO.	65-416-275-200	REVISION 1	FEUILLE/SHT 1 / 1

AE-CART-ANSI B

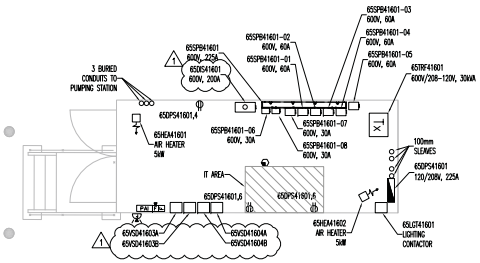
\\CaVdo1Dat01\Projet_15X-XXXX-XX\151-06440-40\01-COMM\Envoyé_AEM\WSP-AEM-151-06440-40-649 (116 and 416 changing equipment number)\65-416-275-200_R1.dwg-2017-08-03 10:48:43

NO. DESSIN DRAWING NO. 65-416-275-202_R1

FORMAT ARCHD

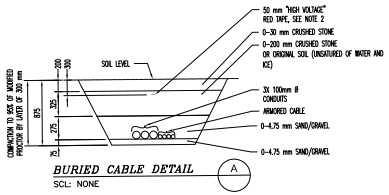
40' INSULATED CONTAINER – PUMPING STATION

SCL: 1:20



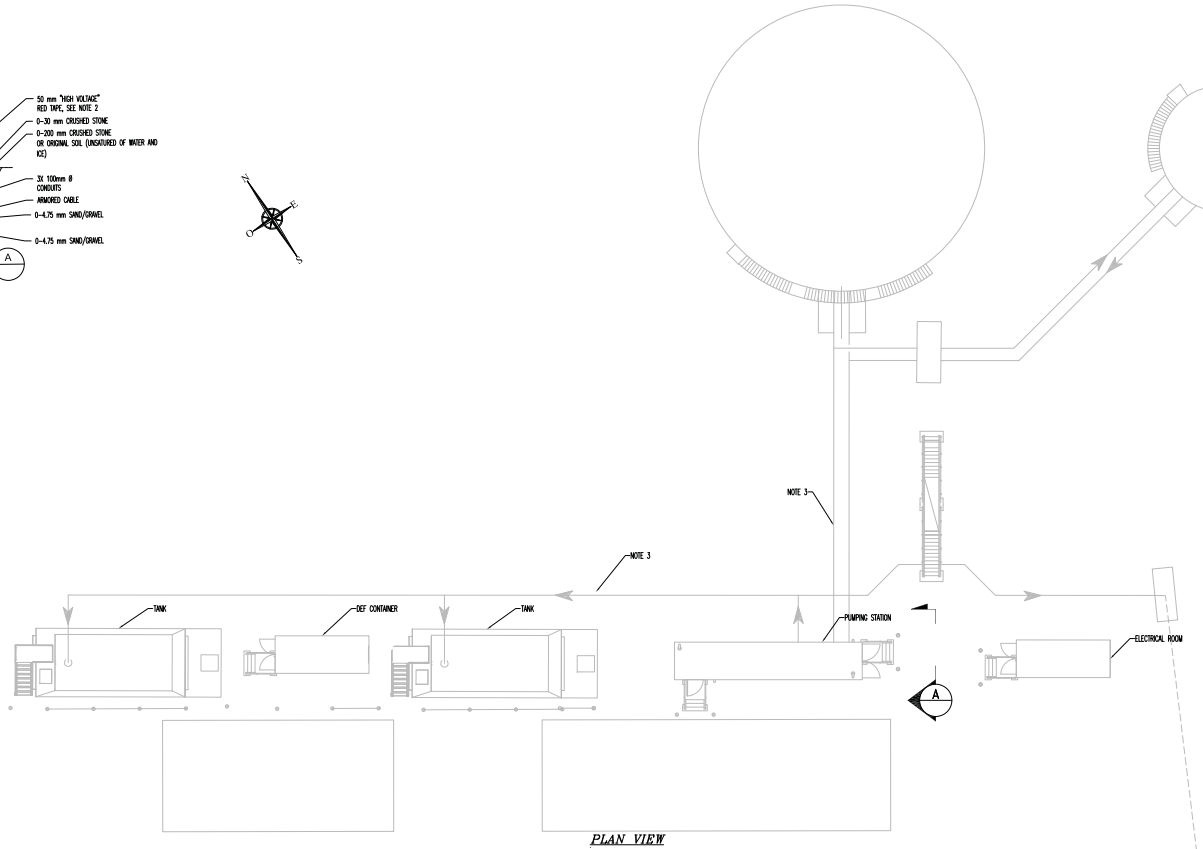
20' INSULATED CONTAINER – ELECTRICAL ROOM

SCL: 1:20



BURIED CABLE DETAIL (A)

SCL: NONE

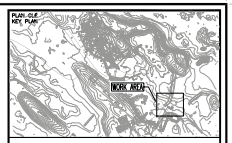


PLAN VIEW

SCL: 1:150

POUR CONSTRUCTION
FOR CONSTRUCTION
DATE : 2017-08-02

PLAN SUIVANT ARTS PLANS



WSP
1075, 3e AVENUE EST
VAL-D'OR (QUÉBEC) CANADA J9P 0J7
TÉL. : 819 825-4274 | TÉLÉC. : 819 824-1514 | WWW.WSPGROUP.COM

Ref. 151-06440-40

NOTES GÉNÉRALES / GENERAL NOTES

1. THE PUMPING STATION CONTAINER COMES PREWIRED WITH THOSE JONCTION BOXES. ELECTRICAL CONTRACTOR SHALL CONNECT THOSE JONCTION BOXES TO THE RIGHT SERVICES IN THE ELECTRICAL CONTAINER. ALL CABLES BETWEEN CONTAINERS SHALL BE TECK TYPE AND INSTALLED BURIED IN TRENCH. INSTALL 3X 100mm Ø CONDUITS FOR FUTURE CABLES.
2. THE RED TAPES SHALL BE INSTALLED ABOVE THE WOODEN PLANKS AND FOLLOW ALL THE BURIED PART OF THEM.
3. LIGHTING AND SERVICES CABLES FOR TANKS MUST BE INSTALLED USING PIPING RACKS. PIPING RACKS ARE SUPPLIED AND INSTALLED BY OTHER (SEE TYPICAL DETAIL ON DRAWING 65-416-285-200)

- THE LOCATION OF PIPING IS APPROXIMATE AND SHALL BE COORDINATE WITH OTHER CONTRACTORS

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DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
FUEL FARM – PORTAL #1	65-403-275-202
LEGEND, TABLES & DETAILS	65-416-285-200
LEGEND, TABLES, PANELS & DETAILS	65-416-275-204

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
1	2017-08-02	ISSUED FOR CONSTRUCTION	R.H.	S.P.D.	
0	2017-07-11	ISSUED FOR CONSTRUCTION	F.M.G.	L.S.	

REVISIONS

TITRE / TITLE

AGNICO EAGLE – MELIADINE DIVISION
416 – FUEL TANK FARM
275 – POWER ELECTRICAL
EQUIPMENT LAYOUT AND DETAIL
PLAN VIEW
FUEL FARM – PORTAL #1

DESSINÉ PAR DRAWN BY	FANNIE MONDERIE, Tech.	DATE 2017-02-01
VERIFIÉ PAR CHECKED BY	RÉMI HÉNAULT, Tech.	2017-02-01
APPROUVÉ PAR APPROVED BY	LUC SÉNÉCAL, P.Eng.	2017-07-11
ÉCHELLE SCALE	INDICATED	DATE 2016-09-06

NO. DESSIN DRAWING NO. 65-416-275-202

NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHT
6515	1	1 / 1

AE-CART-ARCH D

\\CaVdo10ds01\Projet_15X-XXXX-XX\151-06440-40\01-COMM\Encog4_AEM\WSP-AEM-151-06440-40-849 (116 and 416 changing equipment number)\65-416-275-202_R1.dwg-2013-02-19 14:03:29

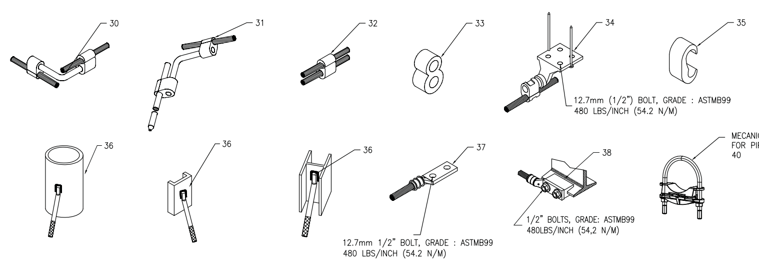
FILE NO. 65-416-275-202_R1.dwg

NO. DESSIN
DRAWING NO. 65-416-275-204_R0

FORMAT ARCHD

EQUIPMENT LIST

ARTICLE NUMBER	SYMBOL	DESCRIPTION	MANU.	TYPE	NOTE
30	XB ◆	CONNECTION – CROSS CONNECTOR COMPRESSION CROSS CONNECTOR FOR TWO HORIZONTAL CONDUCTORS ON THE SAME PLANE. CABLE SIZE: 4/0AWG.	BURNDY	YGL-C	
31	GT ⦿	ROD AND GROUNDING ROD CONNECTOR STEEL ROD COATED WITH COPPER. COMPRESSION CONNECTOR FOR GROUNDING ROD. ROD DIAMETER: 0.020M, ROD LENGTH: 3M CABLE SIZE: 4/0AWG.	BURNDY	YGLR-C	
32	TA ▲	CONNECTION – TAP COMPRESSION CONNECTION FOR GROUNDING TAP OR LAP SPLICE. CABLE SIZE: 4/0AWG.	BURNDY	YGHP-C	
33	–	GROUND ROD TAP CONNECTOR – HYTAIL FOR CONNECTION TO GROUNDING ROD, HEAVY DUTY. ROD SIZE: 4/0AWG CABLE SIZE: 4/0AWG	BURNDY	YGHR	
34	–	COMPRESSION CONNECTION – GROUND PLATES HEAVY DUTY, CONSTRUCTION SITE RESISTANT CABLE SIZE: 4/0AWG.	BURNDY	YGF	
35	PT ■	CONNECTION – PARALLEL HORIZONTAL CONDUCTORS COMPRESSED CONNECTOR FOR TWO PARALLEL HORIZONTAL CONDUCTIONS. CABLE SIZE: 4/0AWG TAP CABLE SIZE: 4/0AWG.	BURNDY	YGHC	
36	VS ■	CONNECTION – STRUCTURE CONNECTION USED FOR VERTICAL STEEL SURFACE, BEAM OR STRUCTURAL STEEL. GSTUD CABLE SIZE: 4/0AWG.	BURNDY	GSTUD-HY	
37	LA ▮	CONNECTION – HEAVY DUTY TERMINALS HEAVY DUTY TERMINALS DESIGNED TO CARRY SHORT CIRCUIT LOAD AND WITHSTAND HIGH MECHANICAL STRESS. CABLE SIZE: 4/0AWG.	BURNDY	YGHA	
38	VS2 ■	CONNECTION – STRUCTURE CONNECTION USED FOR VERTICAL STEEL SURFACE (STRUCTURAL BEAMS) CABLE SIZE: 4/0AWG	BURNDY	YGIB	EVERY BURNDY YGIB CONNECTION (VSS) MUST BE COMBINED WITH A YGHA HEAVY DUTY TERMINAL (LAS) AND 2 NUTS OF ADEQUATE SIZE FOR THE TERMINAL.
39	■	GROUNDING PLATE PREFABRICATED COPPER GROUNDING PLATE WITH ONE PIGTAIL, WIRE GUAGE: #4/0AWG, PLATE SIZE: 610mmX610mm, THICKNESS : 6.35mm	PENTAIR	GPECEEK0242Q008	
40	CP ■	CONNECTION – PIPE MECHANICAL GROUNDING CONNECTOR CONDUCTOR TO PIPE CABLE SIZE: 4/0AWG.	BURNDY	GAR3903BU GAR3904BU GAR3905BU GAR3906BU	1¼" TO 2" (30MM TO 52MM) PIPE 2½" TO 3½" (65MM TO 85MM) PIPE 4" TO 5" (102MM TO 127MM) PIPE 6" (150MM) PIPE
41	○	CABLE TRAY CONNECTOR CABLE TRAY GROUNDING CLAMP. FOR CABLE SIZE 4/0AWG.	THOMAS & BETTS	GTC24P	
42		BONDING JUMPER PREFABRICATED COPPER JUMPER, FOR EXPANSION JOINTS AND ADJUSTABLE JOINTS.	THOMAS & BETTS	FBE12-1	
	— - —	COPPER GROUNDING CONDUCTOR, 4/0 AWG, BARE, FLEXIBLE, TINNED, 19 STRANDS (ASTM STANDARS B8 AND B33).	PHILLIPS CABLES		
	5M	COPPER CONDUCTOR, IDENTICAL CHARACTERISTICS FOR FUTURE CONNECTIONS. THE LENGTH TO RESERVE IS SPECIFIED ON THE SYMBOL.	PHILLIPS CABLES		



CONNECTOR TYPES – BURNDY

SCL: NONE
USABLE TYPES WHEN THE SYSTEM IS BURIED OR NOT

ELECTRICAL LEGEND

SERVICES AND DISTRIBUTION

- FUSED SAFETY SWITCH
- TRANSFORMER
- SURFACE MOUNTED DISTRIBUTION PANEL, 120/208V
- SURFACE MOUNTED DISTRIBUTION PANEL, 347/600V
- THREE PHASE MOTOR, (CAPACITY INDICATED)
- CABLE TRAY
- ELECTRIC HEATER
- 15A, 120V, DUPLEX RECEPTACLE
- BACKUP GENERATOR RECEPTACLE
- JUNCTION BOX

DETECTION & FIRE ALARM

- ADDRESSABLE SMOKE DETECTOR
- MANUAL FIRE PULL STATION
- FIRE ALARM HORN
- END OF LINE RESISTOR
- PAI MAIN FIRE ALARM PANEL
- WALL MOUNTED VISUAL FIRE ALARM AND HORN

ELECTRICAL EQUIPMENT

NO. EQUIP	MANUFACTURER	CATALOG NUMBER	MOUNTING	DESCRIPTION
65SPB41601 65SPB41602	BEL	T6203 TGR200	SURF.	SPLITTER TROUGH, 347/600V, 3ph, 3 WIRES, 225A COPPER BUSSING, NEMA 1 ENCLOSURE
65DPS41601 65DPS41602	SCHNEIDER ELECTRIC	NQ430L2C	SURF.	SERVICES PANEL, 120/208V, 3ph, 4 WIRES, 125A COPPER BUSSING, 30 SINGLE POLE CIRCUIT BREAKERS, NEMA 1 ENCLOSURE
65TRF41601 65TRF41603	SCHNEIDER ELECTRIC	EE30T65HCU	SURF.	TRANSFORMER 600-120/208V, 30KVA, COPPER WINDINGS
65TRF41602 65TRF41604	SCHNEIDER ELECTRIC	EE15T65HCU	SURF.	TRANSFORMER 600-120/208V, 15KVA, COPPER WINDINGS
65DIS41601 65DIS41602	SCHNEIDER ELECTRIC	CH364	SURF.	HEAVY DUTY FUSED SAFETY SWITCH 600V, 3ph, 200A, FUSES 200A, NEMA 1 ENCLOSURE
65SPB41601-01 65SPB41602-01	SCHNEIDER ELECTRIC	CH362	SURF.	HEAVY DUTY FUSED SAFETY SWITCH 600V, 3ph, 60A, NEMA 1 ENCLOSURE
65SPB41601-02 65SPB41602-02	SCHNEIDER ELECTRIC	CH362	SURF.	HEAVY DUTY FUSED SAFETY SWITCH 600V, 3ph, 60A, NEMA 1 ENCLOSURE
65SPB41601-03 65SPB41602-03	SCHNEIDER ELECTRIC	CH362	SURF.	HEAVY DUTY FUSED SAFETY SWITCH 600V, 3ph, 60A, NEMA 1 ENCLOSURE
65SPB41601-04 65SPB41602-04	SCHNEIDER ELECTRIC	CH362	SURF.	HEAVY DUTY FUSED SAFETY SWITCH 600V, 3ph, 60A, NEMA 1 ENCLOSURE
65SPB41601-05 65SPB41602-05	SCHNEIDER ELECTRIC	CH362	SURF.	HEAVY DUTY FUSED SAFETY SWITCH 600V, 3ph, 60A, NEMA 1 ENCLOSURE
65SPB41601-06 65SPB41602-06	SCHNEIDER ELECTRIC	CH361	SURF.	HEAVY DUTY FUSED SAFETY SWITCH 600V, 3ph, 30A, NEMA 1 ENCLOSURE
65SPB41601-07 65SPB41602-07	SCHNEIDER ELECTRIC	CH362	SURF.	HEAVY DUTY FUSED SAFETY SWITCH 600V, 3ph, 60A, NEMA 1 ENCLOSURE
65SPB41601-08 65SPB41602-08	SCHNEIDER ELECTRIC	CH361	SURF.	HEAVY DUTY FUSED SAFETY SWITCH 600V, 3ph, 30A, NEMA 1 ENCLOSURE
65LGT41601 65LGT41602	SCHNEIDER ELECTRIC	8903 LG40 V02	SURF.	LIGHTING CONTACTOR C/W NEMA1 ENCLOSURE, SELECTOR MAN-OFF-AUTO, GREEN INDICATOR LAMP.
65HEA41601 65HEA41602 65HEA41603 65HEA41604	OUELLET	OASO5036 & OAS-DIS40 & OAS-T	SURF.	ELECTRIC HEATER, 600V, 3PH, 5kW WITH THERMOSTAT AND DISCONNECT SWITCH.
65VSD41601 65VSD41602 65VSD41603 65VSD41604	ABB	ACS880 R5	SURF.	VARIABLE SPEED DRIVE

C.-M. = CEILLING-MOUNTED
BUILT = BUILT-IN
SURF. = SURFACE
SUSP. = SUSPENED
H.G. = HEIGHT GIVENT TO THE SITE
SUP. = MOUNTED ON SUPPORT
V.D.P. = SEE DETAIL ON DRAWING

FIRE DETECTION EQUIPMENT

TYPE	MANUFACTURER	CATALOG NUMBER	MOUNTING	DESCRIPTION
PAI	NOTIFIER	NFS-320C & E-1218 & NCM-W & NFN-GW-WM-3	SURF.	FIRE ALARM PANEL FOR SMALL BUILDING WITH NETWORK CARD AND IP CARD
F	NOTIFIER	NBG-12LX	SURF.	ADDRESSABLE TWO-STAGE MANUAL STATION ENGLISH/FRENCH
	NOTIFIER	FAPT-851A & B210LPA	H.D.	LOW PROFILE INTELLIGENT MULTI-SENSOR DETECTOR
F	NOTIFIER	HRA	SURF.	INDOOR RED HORN
F	NOTIFIER	P2RJKA-B	SURF.	WATERPROOF STROBES

BUILT = BUILT-IN
SURF. = SURFACE
H.G. = HEIGHT GIVEN ON SITE

PANEL No. : 65DPS41601 - PORTAIL #1

Tension:	120 208 Volts
Powered by:	TRANSFORMER 30kVA
Installation:	SURFACE
Location:	ELECTRICAL ROOM CONTAINER
Type:	NQ430L2C
Enclosure type	NEMA 1
Main breaker:	-
No. of circuits:	30 CCTs
Bars:	225 A
Ampacity:	10 kA

Local and description	TYPE REF	TYPE QTY	WATTS	BREAK TYPE	BREAK AMP	CT #		CT #	BREAK AMP	BREAK TYPE	WATTS	TYPE QTY	TYPE REF	Local and description
L OUTDOOR TANKS	L	9	540	L	15	1	A	2	15		120	1	P	OUTLET PUMPING STATION
L OUTDOOR	L	8	480	L	15	3	B	4	15		120	1	P	OUTLET ELECTRICAL ROOM
L PUMPING STATION	L	4	240	L	15	5	C	6	15		480	2	P	OUTLET IT AREA
L ELECTRICAL ROOM	L	5	300	L	15	7	A	8	15	S				
L EMERGENCY BAT.	L	1	120	L	15	9	B	10	15	S				
				S	15	11	C	12	15	S				
				S	20	13	A	14	15	S				
				S	20	15	B	16	20	S				
						17	C	18	20	S				
						19	A	20						
						21	B	22						
						23	C	24						
						25	A	26						
						27	B	28						
						29	C	30						

TYPE (REF)	Total(W)	Qty
(L) Lighting	1680	5
(P) Outlet	720	3
(H) Heating	0	0
(M) Motors	0	0
(W) Water heater	0	0
(O) Others	0	0

TYPE (REF)	Qty (ref)
(S) Spare	5

	Watts	Amp
Phase A	960	8.00
Phase B	720	6.00
Phase C	720	6.00
Total R	2400	6.66

PANEL No. : 65DPS41602 - INDUSTRIAL SITE

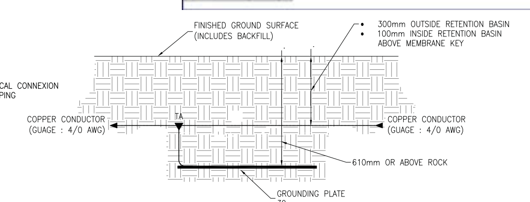
Tension:	120 208 Volts
Powered by:	TRANSFORMER 30kVA
Installation:	SURFACE
Location:	ELECTRICAL ROOM CONTAINER
Type:	NQ430L2C
Enclosure type	NEMA 1
Main breaker:	-
No. of circuits:	30 CCTs
Bars:	225 A
Ampacity:	10 kA

Local and description	TYPE REF	TYPE QTY	WATTS	BREAK TYPE	BREAK AMP	CT #		CT #	BREAK AMP	BREAK TYPE	WATTS	TYPE QTY	TYPE REF	Local and description
L OUTDOOR TANKS	L	10	600	L	15	1	A	2	15		120	1	P	OUTLET PUMPING STATION
L OUTDOOR	L	5	300	L	15	3	B	4	15		120	1	P	OUTLET ELECTRICAL ROOM
L PUMPING STATION	L	4	240	L	15	5	C	6	15		480	2	P	OUTLET IT AREA
L ELECTRICAL ROOM	L	5	300	L	15	7	A	8	15	S				
L EMERGENCY BAT.	L	1	120	L	15	9	B	10	15	S				
				S	15	11	C	12	15	S				
				S	20	13	A	14	15	S				
				S	20	15	B	16	20	S				
						17	C	18	20	S				
						19	A	20						
						21	B	22						
						23	C	24						
						25	A	26						
						27	B	28						
						29	C	30						

TYPE (REF)	Total(W)	Qty
(L) Lighting	1560	5
(P) Outlet	720	3
(H) Heating	0	0
(M) Motors	0	0
(W) Water heater	0	0
(O) Others	0	0

TYPE (REF)	Qty (ref)
(S) Spare	5

	Watts	Amp
Phase A	1020	8.50
Phase B	540	4.50
Phase C	720	6.00
Total R	2280	6.33



TYPICAL INSTALLATION – GROUNDING PLATE AND GROUNDING CONDUCTOR

SCL: 1:20

POUR CONSTRUCTION
FOR CONSTRUCTION
AGNICO EAGLE
DATE : 2017-07-13

PLAN CLÉ
KEY PLAN

WSP
1075, 3e AVENUE EST
VAL-D'OR (QUÉBEC) CANADA J9P 0J7
TÉL.: 819 825-4274 | TÉLÉC.: 819 824-1514 | WWW.WSPGROUP.COM
Ref. 151-06440-40

NOTES GÉNÉRALES / GENERAL NOTES

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DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
–	–
–	–
–	–
–	–
–	–
LEGEND, TABLES, PANELS & DETAILS	65-403-275-204

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
0	2017-07-13	ISSUED FOR CONSTRUCTION	F.M.G.	L.S.	

REVISIONS

TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
416 – FUEL TANK FARM
275 – POWER ELECTRICAL
LEGEND, TABLES, PANELS & DETAILS

		DATE
DESSINÉ PAR / DRAWN BY	FANNIE MONDERIE, Tech.	2017-02-01
VÉRIFIÉ PAR / CHECKED BY	RÉMI HÉNAULT, Tech.	2017-02-01
APPROUVÉ PAR / APPROVED BY	LUC SÉNÉCAL, P.Eng.	2017-07-13
ÉCHELLE / SCALE	INDICATED	2016-09-06

NO. DESSIN / DRAWING NO. 65-416-275-204

NO. PROJET / PROJECT NO.	REVISION	FEUILLE / SHT
6515	0	1 / 1

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FILE NO. 65-416-275-204_R0.dwg

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NO. DESSIN DRAWING NO. 65-416-275-205_R0

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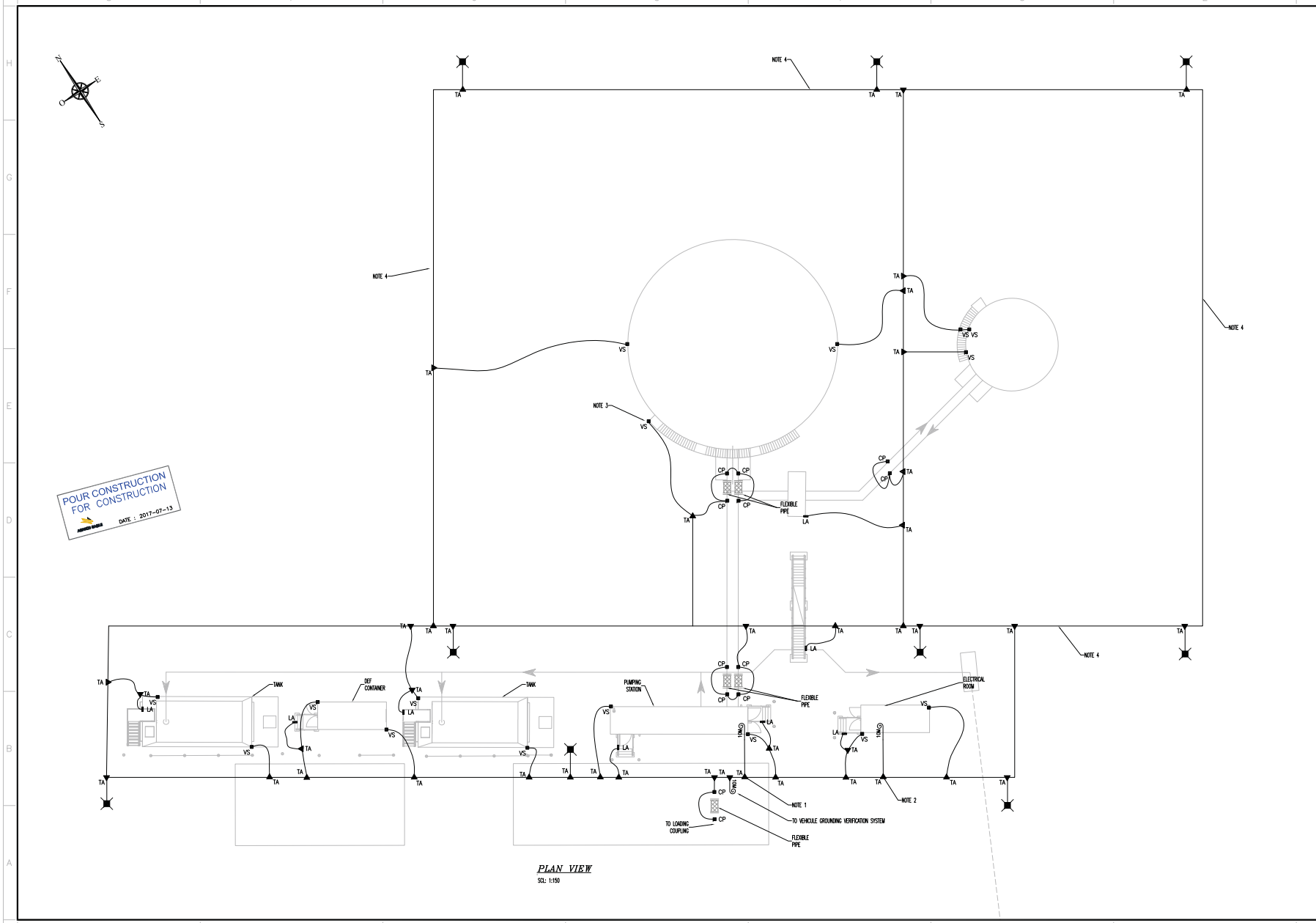

PLAN VIEW

SCL: 1:150

PLAN CLF
KEY PLAN

WSP

1075, 3e AVENUE EST
VAL-D'OR (QUÉBEC) CANADA J9P 0J7
TÉL. : 819 825-4274 | TÉLÉC. : 819 824-1514 | WWW.WSPGROUP.COM

Ref. 151-06440-40

NOTES GÉNÉRALES / GENERAL NOTES

1. GROUND EQUIPMENT INSIDE THE PUMPING STATION AT THE CONNECTION POINT.
2. GROUND THE MAIN SAFETY SWITCH IN THE ELECTRICAL ROOM CONTAINER.
3. GROUND THE STAIRWELL OF THE TANK.
4. GROUNDING CONDUCTOR SHALL BE INSTALLED BURIED IN DIKE.

- GROUND ALL THE PROTECTION BOLLARDS.
- GROUND ALL METALLIC ELEMENTS IN THE RETENTION BASIN AREA AND IN TRUCK LOADING AREA.
- THE LOCATION OF THE GROUND CONNECTIONS AND CONDUCTORS ARE APROXIMATIVE AND SHALL BE COORDINATED WITH OTHER CONTRACTORS.
- THE LOCATION OF CONTAINERS SHALL BE COORDINATED WITH OTHER CONTRACTORS.
- INSTALL A 4/0 AWG GROUNDING CONDUCTOR INSIDE AND OVER THE ENTIRE LENGHT OF THE CABLE TRAY

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DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
FUEL FARM – PORTAIL #1	65-403-275-205
CABLE TRAY PLAN	65-416-285-201
LEGEND, TABLES, PANELS & DETAILS	65-416-275-204

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
0	2017-07-13	ISSUED FOR CONSTRUCTION	F.M.G.	L.S.	

REVISIONS

TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
416 – FUEL TANK FARM
275 – POWER ELECTRICAL
GROUNDING LAYOUT
PLAN VIEW
FUEL FARM – PORTAIL #1

DESSINÉ PAR DRAWN BY	FANNIE MONDERIE, Tech.	DATE 2016-10-14
VERIFIÉ PAR CHECKED BY	RÉMI HÉNAULT, Tech.	2016-10-14
APPROUVÉ PAR APPROVED BY	LUC SÉNÉCAL, P.Eng.	2017-07-13
ÉCHELLE SCALE	INDICATED	DATE 2016-09-06

NO. DESSIN DRAWING NO. 65-416-275-205

NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHT
6515	0	1 / 1

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FILE NO. 65-416-275-205_R0.dwg

NO. DESSIN DRAWING NO. 65-416-275-207_R0

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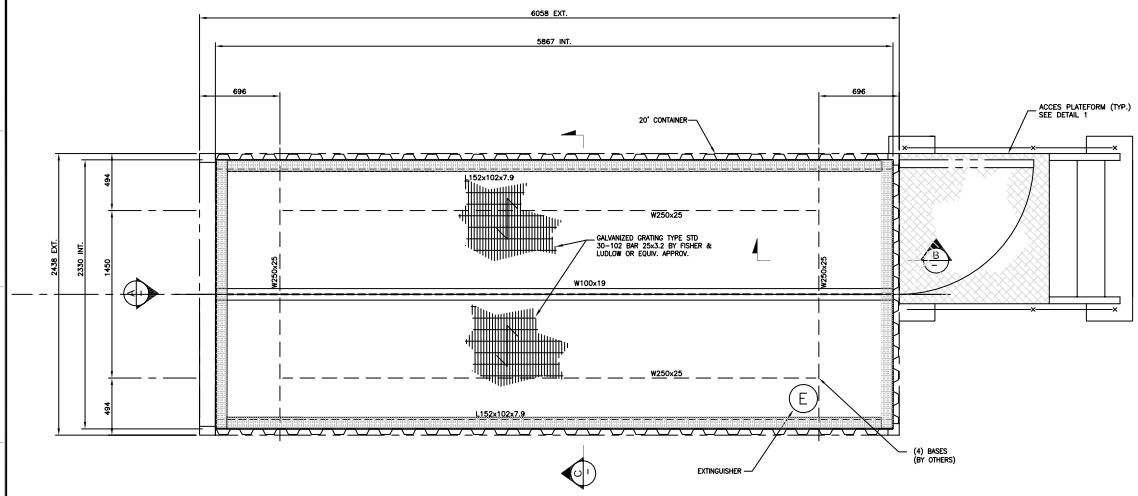
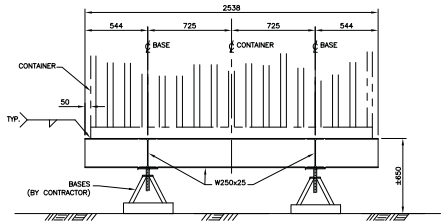
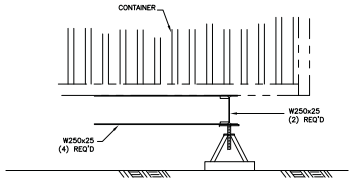


20' CONTAINER ELECTRICAL ROOM FLOOR (1)
SCL: 1:20

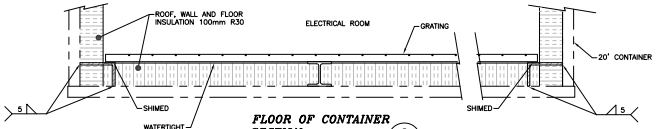
- 20' STANDARD CONTAINER (WOOD FLOOR REPLACED BY STEEL BY SUPPLIER)
- GRATING IS BOLTED (WELDING IS NOT PERMITTED)
- LEVELLING SHIMS MUST BE INSTALLED ON L152x102X7.9
- GRATING SECTION 300mm LARGE (INSTALLED ON CIRCULATION AREA)
- CONTAINER FLOOR MUST HAVE A SLIGHT SLOPE TO ACCESS DOORS



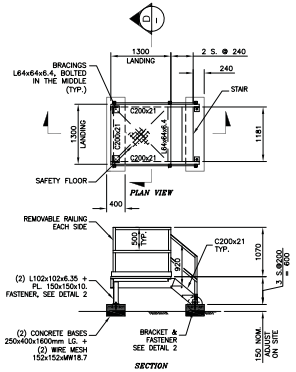
VIEW (A)
SCALE: 1:20



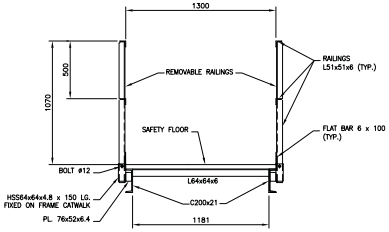
VIEW (B)
SCALE: 1:20



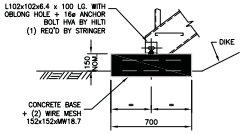
FLOOR OF CONTAINER SECTION (C)
SCALE: 1:10



CONTAINER CATWALK (1)
SCALE: 1:50
QTY: 6



SECTION (D)
SCALE: 1:20



DETAIL (2)
SCALE: 1:20

POUR CONSTRUCTION FOR CONSTRUCTION
AGNICO EAGLE
DATE : 2017-07-13

PLAN CLÉ
KEY PLAN

WSP
1075, 3e AVENUE EST
VAL-D'OR (QUÉBEC) CANADA J9P 0J7
TÉL. : 819 824-4214 | TÉLÉC. : 819 824-1514 | WWW.WSPGROUP.COM
Ref. 151-06440-40

NOTES GENERALES / GENERAL NOTES

CATWALK, RAILINGS AND STAIRS ARE ASSEMBLED AND BOLTED ON SITE.

DEAD LOAD = 0.5 Kpa
LIVE LOAD = 4.8 Kpa
FLÈCHE MAXIMUM = L/300

MATERIAL

GRATING OF LANDING

GRIP SPAN SAFETY GRATING, GALVANIZED STEEL, (D-51215-G, 5 DIAMONDS, Ga 2,7mm, 38.1mm DEEP) BY FISHER LUDLOW OR APPROVED EQUIVALENT, MAX. 300mm WIDTH EXCEPT WHEN INDICATED DIFFERENTLY.

STAIR

GRIP SPAN SAFETY GRATING, GALVANIZED STEEL, (D-41215-G, 4 DIAMONDS, Ga 2,7mm, 38.1mm DEEP) BY FISHER LUDLOW OR APPROVED EQUIVALENT, MAX. 241mm WIDTH EXCEPT WHEN INDICATED DIFFERENTLY.

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DESSINS EN REFERENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
ELECTRICAL ROOM MODIFICATIONS & ADDITIONS AT THE CONTAINERS	65-403-275-207

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
0	2017-07-13	ISSUED FOR CONSTRUCTION	F.M.G.	L.S.	

REVISIONS

TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
416 – FUEL TANK FARM
275 – POWER ELECTRICAL
ELECTRICAL ROOM
MODIFICATIONS & ADDITIONS AT THE CONTAINERS

DESSINÉ PAR DRAWN BY	RÉMI HÉNAULT, Tech.	DATE 2017-02-01
VERIFIÉ PAR CHECKED BY	RÉMI HÉNAULT, Tech.	2017-02-01
APPROUVÉ PAR APPROVED BY	LUC SÉNÉCAL, P. Eng.	2017-07-13
ÉCHELLE SCALE	INDICATED	DATE 2016-09-07

NO. DESSIN DRAWING NO. 65-416-275-207

NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHT
6515	0	1 / 1

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FILE NO. 65-416-275-207_R0.dwg

NO. DESIN
DRAWING NO. 65-416-285-200_R0

FORMAT ARCHD

ELECTRICAL LEGEND (DIV. 16)

LIGHTING FIXTURES

- CEILING MOUNTED LUMINAIRE OR IN CANOPY
- WALL MOUNTED LUMINAIRE
- EMERGENCY BATTERY WITH 2 HEADS LIGHT
- A PDx,yy — (A) INDICATES TYPE-SEE LIGHTING SCHEDULE; PDx INDICATES ELECTRICAL PANEL; x INDICATES CIRCUIT NUMBER; a INDICATES CONTROL SWITCH

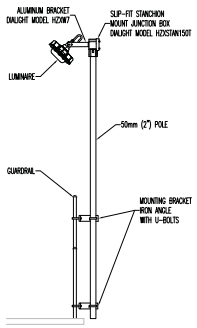
LIGHTING CONTROL

- $ — 15A, 1P, 120V, WALL SWITCH; "x" INDICATES FIXTURES CONTROLLED
- 3a — "3" INDICATES A THREE-WAY SWITCH; "a" INDICATES A FOUR-WAY SWITCH
- 4a
- CP — PHOTOCELL

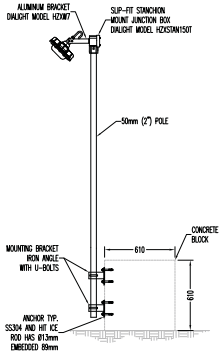
LUMINAIRES

TYPE	MANUFACTURER	CATALOGUE NUMBER	MOUNTING TYPE	HEIGHT	INPUT POWER (W)	LAMP	COLOR	VOLTAGE	DESCRIPTION
L1	DIALIGHT	HZDWC35 & HZ1W7	SUSP.	IND.	40	LED	5450°K	120	OUTDOOR PENDANT AREA LIGHT C/W ACCESSORIES
U1	LUMACELL	RGS 3RM 2 LD1	SURF.	2200mm	120	LED	5500°K	120	EMERGENCY BATTERY UNITS COMBINE WITH 2 HEADS LIGHT
CP	PRECISION MULTI CONTROLS	S1-150P	SURF.	N.G.S.	-	-	-	120	ADJUSTABLE PHOTOELECTRIC CELL

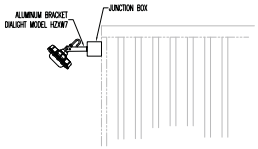
SUSP. = SUSPENDED
REC. = RECESSED
FLUO = FLUORESCENT
LED = LIGHT EMITTING DIODE
IND. = INDICATED ON PLAN
N.G.S. = HEIGHT WILL BE GIVEN ON SITE



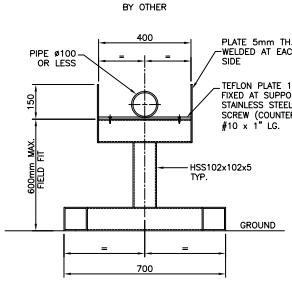
TYPICAL LUMINAIRE INSTALLATION
MOUNTED ON GUARDRAIL
SCL: NONE



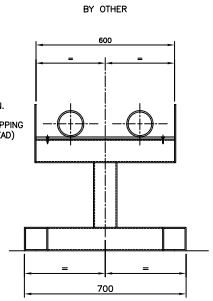
TYPICAL LUMINAIRE INSTALLATION
MOUNTED ON CONCRETE SUPPORT
SCL: NONE



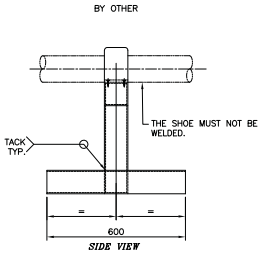
TYPICAL LUMINAIRE INSTALLATION
MOUNTED ON CONTAINER
SCL: NONE



FRONT VIEW
(1) PIPES



FRONT VIEW
(2) PIPES



SIDE VIEW

NOTE:
1. GROUND FOR THE SUPPORT TO BE FLAT AND STABLE. PAD WITH NATURAL GRANULAR BACKILL IF NEEDED.

TYPICAL PIPPING SUPPORT INSTALLATION
SCL: NONE

POUR CONSTRUCTION
FOR CONSTRUCTION
AGNICO EAGLE
DATE : 2017-07-13

PLAN CLÉ
KEY PLAN

WSP
1075, 3e AVENUE EST
VAL-D'OR (QUÉBEC) CANADA J9P 0J7
TÉL. : 819 825-4274 | TÉLÉC. : 819 824-1514 | WWW.WSPGROUP.COM

Ref. 151-06440-40

NOTES GÉNÉRALES / GENERAL NOTES

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DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
–	–
–	–
–	–
–	–
–	–
LEGEND, TABLE & INSTALLATION DETAILS	65-403-285-200

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
0	2017-07-13	ISSUED FOR CONSTRUCTION	F.M.G.	L.S.	

REVISIONS

TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
416 – FUEL TANK FARM
285 – LIGHTING & SERVICES
LIGHTING
LEGEND, TABLE & INSTALLATION DETAILS

		DATE
DESSINÉ PAR / DRAWN BY	FANNIE MONDERIE, Tech.	2016-10-14
VERIFIÉ PAR / CHECKED BY	RÉMI HÉNAULT, Tech.	2016-10-14
APPROUVÉ PAR / APPROVED BY	LUC SÉNÉCAL, P.Eng.	2017-07-13
ÉCHELLE / SCALE	INDICATED	DATE 2016-09-06

NO. DESIN / DRAWING NO. 65-416-285-200

NO. PROJET / PROJECT NO.	REVISION	FEUILLE / SHT
6515	0	1 / 1

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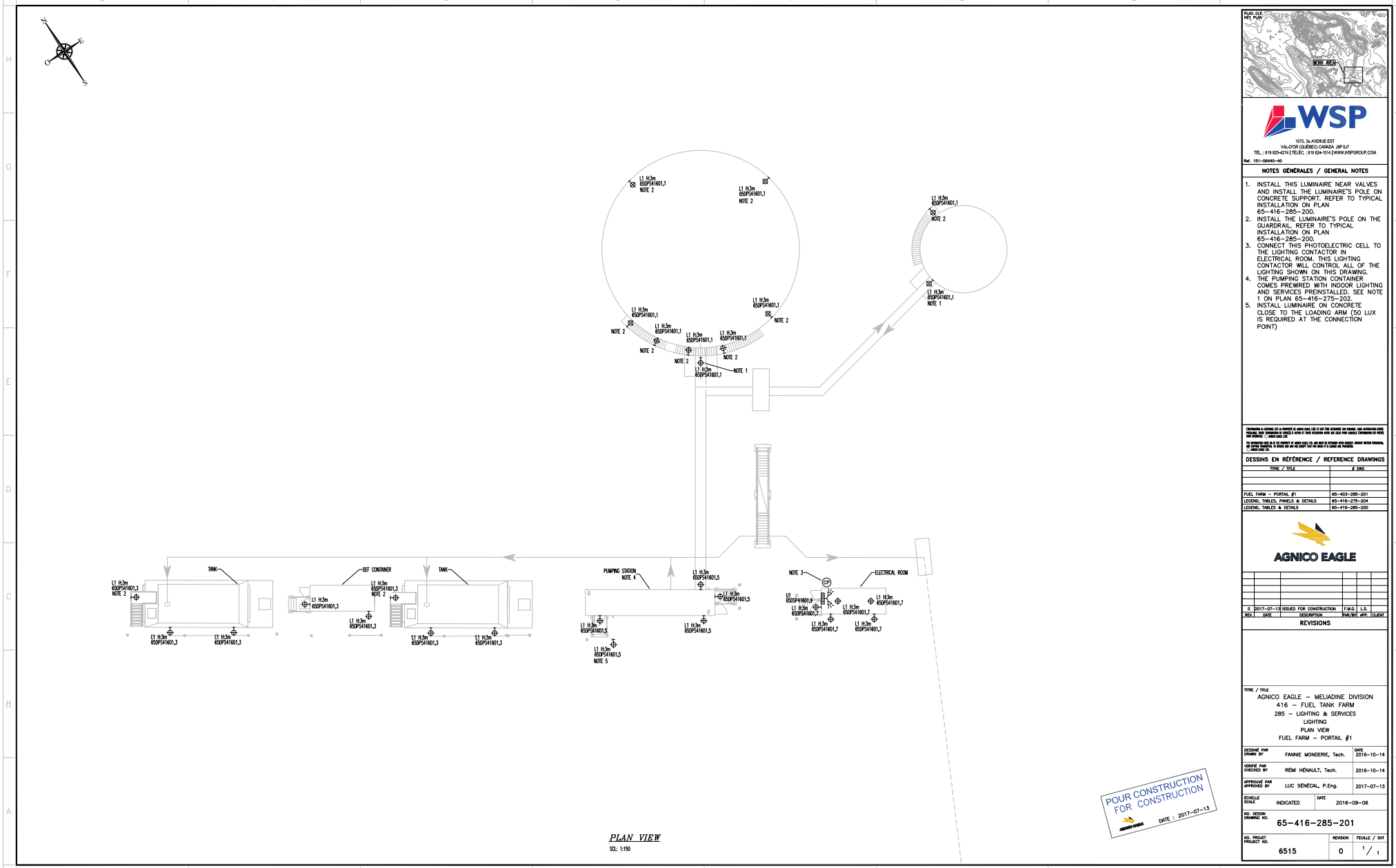
FILE NO. 65-416-285-200_R0.dwg

NO. DESSIN
DRAWING NO. 65-416-285-201_R0

FORMAT ARCHD



PLAN VIEW

SCL: 1:150

POUR CONSTRUCTION
FOR CONSTRUCTION
AGNICO EAGLE
DATE : 2017-07-13

PLAN GLF
KEY PLAN

WSP
1075, 3e AVENUE EST
VAL-D'OR (QUÉBEC) CANADA J9P 0J7
TÉL. : 819 825-4274 | TÉLÉC. : 819 824-1514 | WWW.WSPGROUP.COM

Ref. 151-06440-40

NOTES GÉNÉRALES / GENERAL NOTES

1. INSTALL THIS LUMINAIRE NEAR VALVES AND INSTALL THE LUMINAIRE'S POLE ON CONCRETE SUPPORT. REFER TO TYPICAL INSTALLATION ON PLAN 65-416-285-200.
2. INSTALL THE LUMINAIRE'S POLE ON THE GUARDRAIL. REFER TO TYPICAL INSTALLATION ON PLAN 65-416-285-200.
3. CONNECT THIS PHOTOELECTRIC CELL TO THE LIGHTING CONTACTOR IN ELECTRICAL ROOM. THIS LIGHTING CONTACTOR WILL CONTROL ALL OF THE LIGHTING SHOWN ON THIS DRAWING.
4. THE PUMPING STATION CONTAINER COMES PREWIRED WITH INDOOR LIGHTING AND SERVICES PREINSTALLED. SEE NOTE 1 ON PLAN 65-416-275-202.
5. INSTALL LUMINAIRE ON CONCRETE CLOSE TO THE LOADING ARM (50 LUX IS REQUIRED AT THE CONNECTION POINT)

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DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
FUEL FARM – PORTAIL #1	65-403-285-201
LEGEND, TABLES, PANELS & DETAILS	65-416-275-204
LEGEND, TABLES & DETAILS	65-416-285-200

AGNICO EAGLE

REV.	DATE	DESCRIPTION	DWN/DR	APP.	CLIENT
0	2017-07-13	ISSUED FOR CONSTRUCTION	F.M.G.	L.S.	

REVISIONS

TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
416 – FUEL TANK FARM
285 – LIGHTING & SERVICES
LIGHTING
PLAN VIEW
FUEL FARM – PORTAIL #1

DESSINÉ PAR / DRAWN BY	FANNIE MONDERIE, Tech.	DATE 2016-10-14
VERIFIÉ PAR / CHECKED BY	RÉMI HÉNAULT, Tech.	2016-10-14
APPROUVÉ PAR / APPROVED BY	LUC SÉNÉCAL, P.Eng.	2017-07-13
ÉCHELLE / SCALE	INDICATED	DATE 2016-09-06

NO. DESSIN / DRAWING NO. 65-416-285-201

NO. PROJET / PROJECT NO.	REVISION	FEUILLE / SHT
6515	0	1 / 1

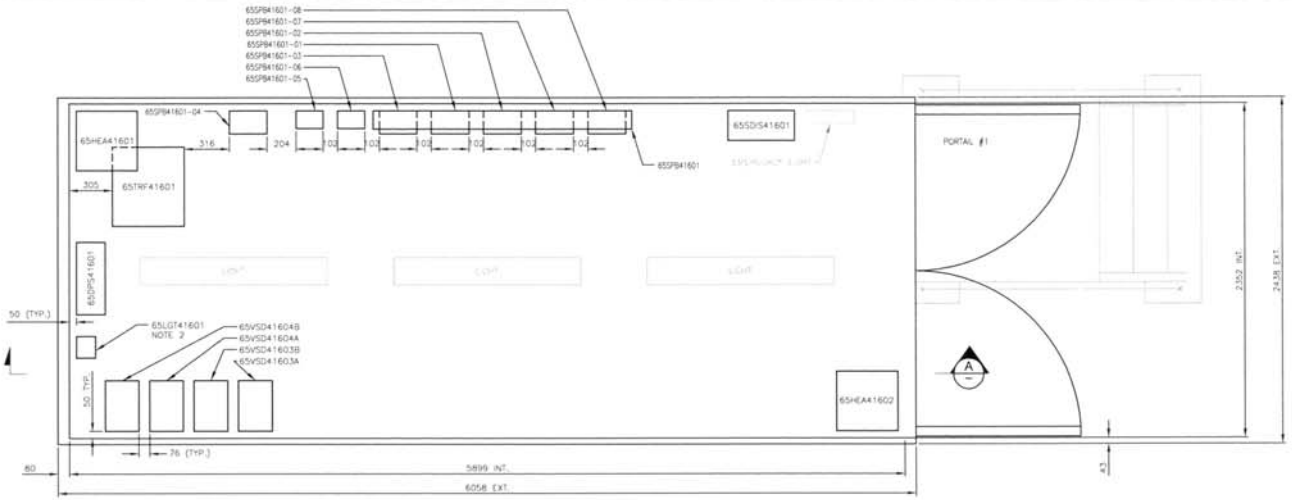
AE-CART-ARCH D

P:\2015\1\151-06440-40 Dossier officiel sur serveur V0\Industriel\03-TECH_ORANGE\Dessin\Dessin_Envis\65-416-285-201_R0.dwg-2013-02-19 14:03:29

FILE NO. 65-416-285-201_R0.dwg

NO. DESIGN DRAWING NO. 65-ULT-416-EL-002

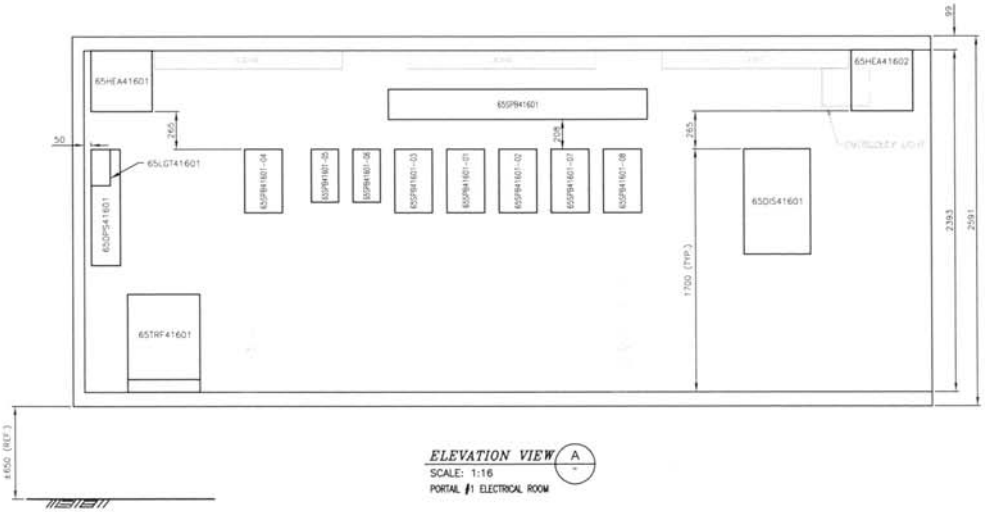
FORMAT ARCH D



PLAN VIEW (1)

SCALE: 1:16

PORTAL #1 ELECTRICAL ROOM



ELEVATION VIEW (A)

SCALE: 1:16

PORTAL #1 ELECTRICAL ROOM

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 28 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
13677
D. CARRIER
LICENSEE
NT/NU
SEP 26 2017

PLAN CLE
REF PLAN

NOTES GENERALES / GENERAL NOTES

1. HEATER UNITS ARE CEILING MOUNTED.
2. TOP OF LIGHTING CONTACTOR PANEL IS 1700MM FROM FINISH FLOOR.
3. FOR EQUIPMENT IDENTIFICATION REFER TO THE MATERIAL LIST.

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TYPE / TITLE	# DWG
LIGHTING AND SERVICES LAYOUT EB-416P	65-ULT-416-EL-005
GROUNDING LAYOUT EB-416P	65-ULT-416-EL-004
FLOOR OPENING EB-416P	65-ULT-416-EL-003
MATERIAL LIST	ULT-501700-EL-ML-001

AGNICO EAGLE

NO.	DATE	DESCRIPTION	PREPARED	APP.	CLIENT
2	2017-08-30	ISSUED FOR CONSTRUCTION	S.G.	D.C.	
1	2017-08-04	UPDATE AREA & TAG NUMBER	S.G.	D.C.	
0	2017-06-12	ISSUED FOR CONSTRUCTION	S.G.	D.C.	
PA	2017-05-15	ISSUED FOR REVIEW	S.T.	D.C.	

REVISIONS

NUOSANG PROJECT MINING

ultragen

NO. PROJET PROJECT NO. 501700

TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
416 – FUEL TANK FARM (A)
FUEL DISTRIBUTION
PORTAL #1 ELECTRICAL ROOM
ELECTRICAL EQUIPMENT LAYOUT

DESSINE PAR DRAWN BY	RISHI SHRESTHA	2017-05-15
VERIFIE PAR CHECKED BY	MARC TREMBLAY	2017-05-15
APPROUVE PAR APPROVED BY	DANIEL CARRIER	2017-05-15
ECHELLE SCALE 1:16	DATE 2017-05-15	

NO. DESSIN DRAWING NO. 65-ULT-416-EL-002

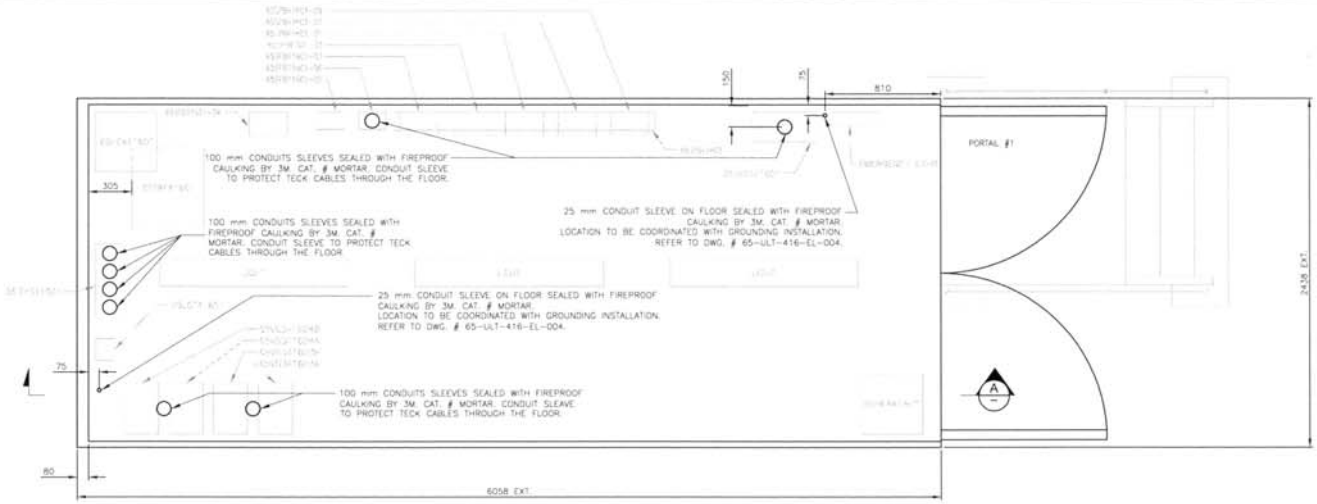
NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHT
6515	2	1/1

AE-CART-ARCH D

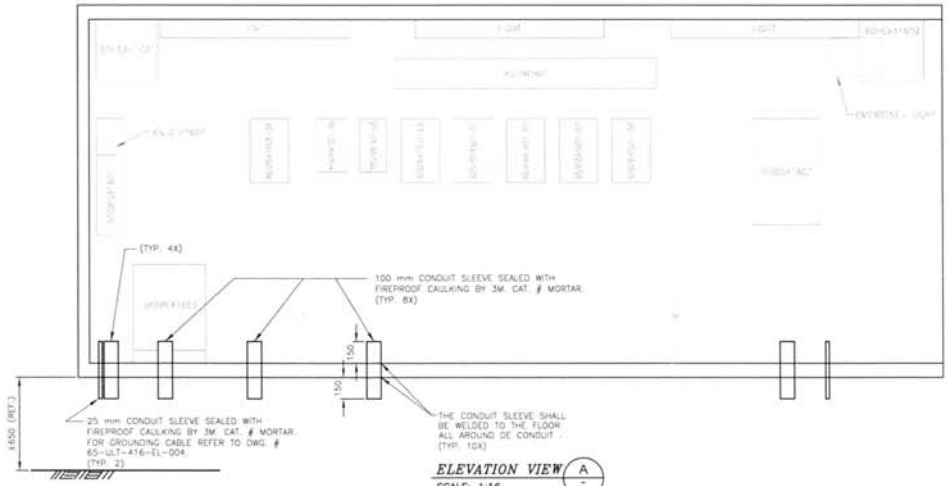
FILE NO.

NO. DESIGN DRAWING NO. 65-ULT-416-EL-003

FORMAT ARCHD



PLAN VIEW (1)
SCALE: 1:16
PORTAL #1 ELECTRICAL ROOM



ELEVATION VIEW (A)
SCALE: 1:16
PORTAL #1 ELECTRICAL ROOM

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 6 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
13627
D. CARRIER
LICENSEE
NT/NU
SEP 2 6 2017

PLAN OLD
REF PLAN

NOTES GENERALES / GENERAL NOTES

1. USE TIP AT EACH ENDS OF THE CONDUITS SLEEVES.

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
ELECTRICAL EQUIPMENT LAYOUT EX-416P	65-ULT-416-EL-003
GROUNDING LAYOUT EX-416P	65-ULT-416-EL-004

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
2	2017-09-26	ISSUED FOR CONSTRUCTION	S.S.	D.C.	
1	2017-08-04	UPDATE AREA & TAG NUMBER	S.S.	D.C.	
0	2017-06-12	ISSUED FOR CONSTRUCTION	S.S.	D.C.	
PA	2017-05-15	ISSUED FOR REVIEW	S.S.	D.C.	

REVISIONS

NUNASAK PROJECT MINING
ultragen
NO. PROJET PROJECT NO. 591700

TITRE / TITLE
AGNICO EAGLE – LITUAGINE DIVISION
416 – OIL TANK FARM
FUEL DISTRIBUTION
PORTAL #1 ELECTRICAL ROOM
FLOOR OPENINGS

DESSINE PAR DRAWN BY	RISHI SHRESTHA	DATE 2017-05-15
VERIFIE PAR CHECKED BY	STEPHANE GRIMARD	2017-05-15
APPROUVE PAR APPROVED BY	DANIEL CARRIER	2017-05-15
ECHELLE SCALE 1:16	DATE 2017-05-15	

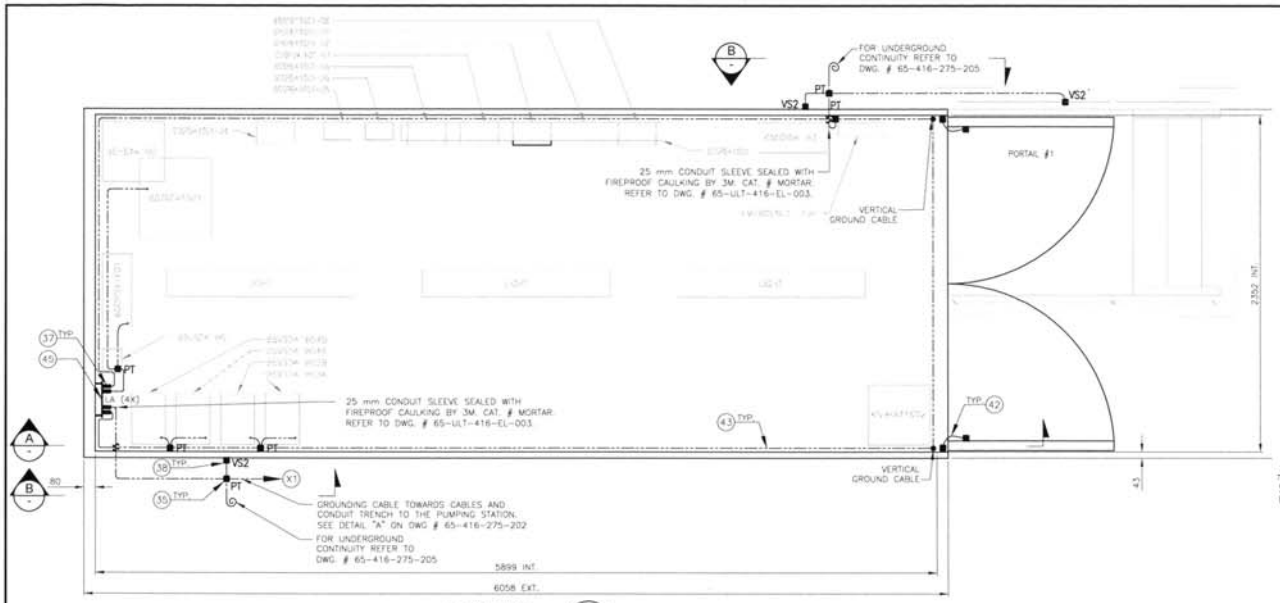
NO. DESSIN DRAWING NO. 65-ULT-416-EL-003

NO. PROJET PROJECT NO. 6515 | REVISION 2 | FEUILLE / SHT 1/1

AE-CART-ARCH D

NO. DESSIN DRAWING NO. 65-ULT-416-EL-004

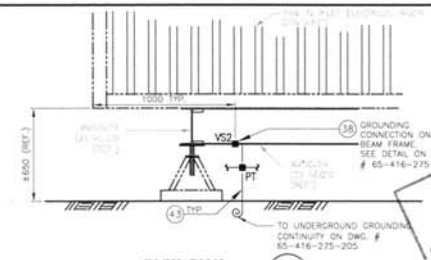
FORMAT ARCHD



PLAN VIEW (1)

SCALE: 1:16

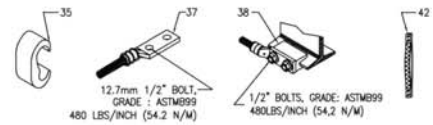
PORTAIL #1 ELECTRICAL ROOM GROUNDING



ELEVATION (B)

SCALE: 1:16

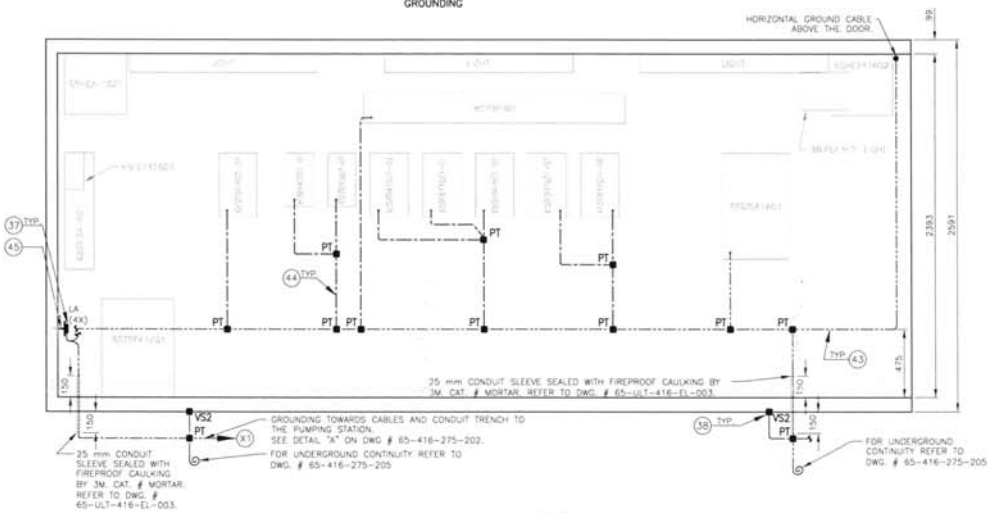
RANKIN INLET ELECTRICAL ROOM GROUNDING



CONNECTOR TYPES – BURNDY AND THOMAS & BETTS

SCALE: NTS

USABLE TYPES WHEN THE SYSTEM IS BURIED OR NOT



ELEVATION VIEW (A)

SCALE: 1:16

PORTAIL #1 ELECTRICAL ROOM GROUNDING

EQUIPMENT LIST					
ARTICLE NUMBER	SYMBOL	DESCRIPTION	MANU.	TYPE	NOTE
35	PT	CONNECTION – PARALLEL HORIZONTAL CONDUCTORS COMPRESSED CONNECTOR FOR TWO PARALLEL HORIZONTAL CONDUCTORS. CABLE SIZE: 4/0AWG CABLE SIZE: 2/0AWG, TAP CABLE SIZE: 2/0AWG CABLE SIZE: 4/0AWG, TAP CABLE SIZE: 2/0AWG CABLE SIZE: 4/0AWG, TAP CABLE SIZE: 4/0AWG	BURNDY	YGHC26C26 YGHC29C26 YGHC29C29	
37	LA	CONNECTION – HEAVY DUTY TERMINALS HEAVY DUTY TERMINALS DESIGNED TO CARRY SHORT CIRCUIT LOAD AND WITHSTAND HIGH MECHANICAL STRESS. CABLE SIZE: 2/0AWG CABLE SIZE: 4/0 AWG COMPLETE WITH NON-CORROSIVE HARDWARE SUCH AS: BOLT, FLAT WASHER, LOCKWASHERS, NUTS AND INHIBITING COMPOUNDS TO PREVENT OXIDATION OR CORROSION.	BURNDY	YGHA26-2N YGHA28-2N	
38	VS2	CONNECTION – STRUCTURE CONNECTION USED FOR VERTICAL STEEL SURFACE (STRUCTURAL BEAMS) CABLE SIZE 4/0AWG ON CONTAINER BEAM FRAME. CABLE SIZE 4/0AWG ON CHANNEL OF CATWALK. COMPLETE WITH HARDWARE	BURNDY	YGIBW28-338-2N YGIBS28-400-2N TWHG-42	EVERY BURNDY YGIB CONNECTION (VS2) MUST BE COMBINED WITH A YGHA HEAVY DUTY TERMINAL (LA) AND 2 NUTS OF ADEQUATE SIZE FOR THE TERMINAL.
42		BONDING JUMPER PREFABRICATED COPPER JUMPER, FOR EXPANSION JOINTS AND ADJUSTABLE JOINTS 1 BRAIDS AND 2 BOLTS HOLD BY CONNECTION.	THOMAS & BETTS	FBE12-1	
43		COPPER GROUNDING CONDUCTOR. 4/0 AWG, BARE, FLEXIBLE, TINNED, 19 STRANDS (ASTM STANDARDS B8 AND B33).	PHILLIPS CABLES		
44		COPPER GROUNDING CONDUCTOR. 2/0 AWG, BARE, FLEXIBLE, TINNED, 19 STRANDS (ASTM STANDARDS B8 AND B33).	PHILLIPS CABLES		
45		COPPER BUS BAR BUS BAR 254(10") X 102(4") X 6(0.25") BRACKETS AND ISOLATORS INCLUDED	BURNDY	BBB-14410C	
	SM9	COPPER CONDUCTOR. IDENTICAL CHARACTERISTICS FOR FUTURE CONNECTIONS. THE LENGTH TO RESERVE IS SPECIFIED ON THE SYMBOL.	PHILLIPS CABLES		

PLAN OLD
RET PLAN

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 6 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

NOTES GÉNÉRALES / GENERAL NOTES

REGISTERED PROFESSIONAL ENGINEER
13627
D. CARRIER
LICENSEE
NT/NU
SEP 2 6 2017

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG.
MODIF. & ADDITIONS OF THE CONTAINERS	65-416-275-207
SINGLE LINE DIAGRAM	65-416-275-200
EQUIPMENT LAYOUT AND DETAIL	65-416-275-202
GROUNDING LAYOUT PLAN VIEW	65-416-275-205
LEGEND, TABLES, PANELS AND DETAILS	65-416-275-204

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/DR	APP.	CLIENT
2	2017-09-26	ISSUED FOR CONSTRUCTION	S.G.	D.C.	
1	2017-08-04	UPDATE AREA AND TAG NUMBER	S.G.	D.C.	
0	2017-08-12	ISSUED FOR CONSTRUCTION	S.G.	D.C.	
PA	2017-05-15	ISSUED FOR REVIEW	S.G.	D.C.	

REVISIONS

MUGABAS PROJECT MINING CONSTRUCTION
ultragen
NO. PROJET PROJECT NO. 591700

TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
416 – (B.B.) TANK FARM (A)
FUEL DISTRIBUTION
PORTAIL #1 ELECTRICAL ROOM GROUNDING

DESSINÉ PAR DRAWN BY	RESHI SHRESTHA	DATE 2017-05-15
VÉRIFIÉ PAR CHECKED BY	STEPHANE GRIMARD	2017-05-15
APPROUVÉ PAR APPROVED BY	DANIEL CARRIER	2017-05-15
ÉCHELLE SCALE 1:16	DATE 2017-05-15	

NO. DESSIN DRAWING NO. 65-ULT-416-EL-004

NO. PROJET PROJECT NO. 6515 | REVISION 2 | FEUILLE / SHT 1/1

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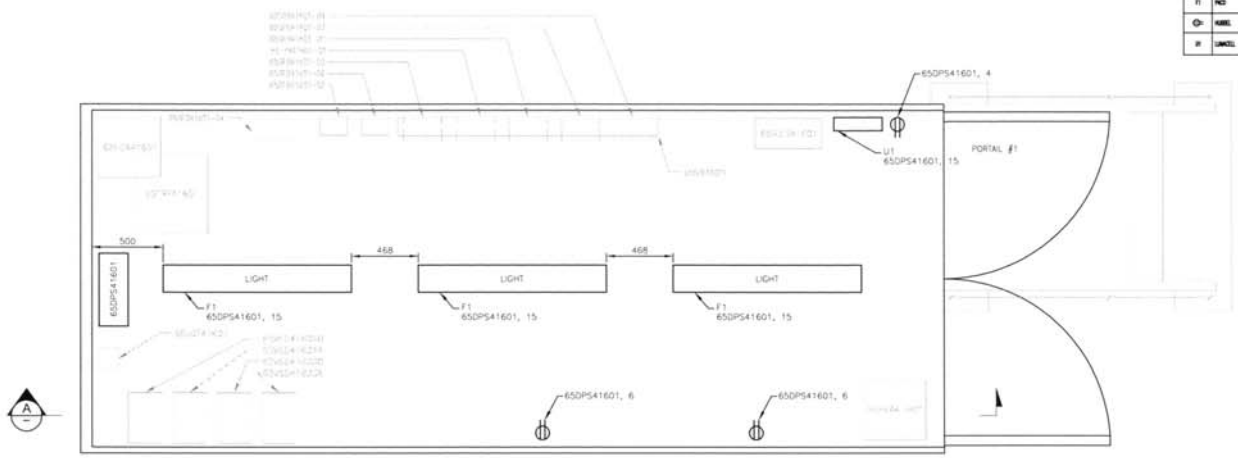
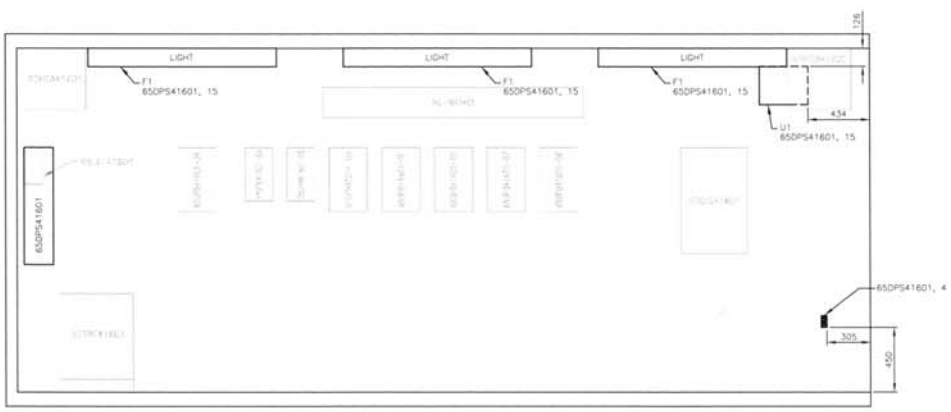
NO. DESSIN DRAWING NO. 65-ULT-416-EL-005

FORMAT ARCHD

MATERIAL LIST					
TYPE	MANUFACTURER	CATALOGUE NUMBER	INPUT POWER (W)	VOLTAGE	DESCRIPTION
F1	PACO	PVAC-4-48-LED-50-40-WHS2	48	120	LUMINAIRE, WAREHOUSE, DUST PROOF, SURFACE, HEAVY FIBERGLASS LUMINAIRE, IP67, 40K, 48W, 120-277VAC, 5100 LUMENS (LM 4000SSWR)
⊕	HUBBEL	HBL5362W	120	120	RECEPTACLE: 15A, 125V, 5-15R, 2 POLES
U1	LUMATEL	RECONSOLO1	36	120	EMERGENCY LIGHTING WITH BATTERY UNIT C/W CHARGER AND BATTERIES (FACTORY MADE CELDLUB/SLA/NICMC, 2 PHASES WITH 30L, W 48E)



PLAN VIEW (1)
SCALE: 1:16
PORTAIL #1 ELECTRICAL ROOM
LIGHTING AND SERVICES



ELEVATION VIEW (A)
SCALE: 1:16
PORTAIL #1 ELECTRICAL ROOM
LIGHTING AND SERVICES

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 8 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER 13627 D. CARRIER LICENSEE NT/NU
SEP 2 6 2017

PLAN CLE
KEY PLAN

NOTES GENERALES / GENERAL NOTES

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TYPE / TITLE	# DWG
650PS11601 PANEL SCHEDULE IN E-ROOM	65-ULT-416-EL-012
ELECTRICAL EQUIPMENT LAYOUT E-ROOM	65-ULT-416-EL-002
EQUIPMENT LAYOUT AND DECAL	65-416-270-202
MATERIAL LIST	ULT-591700-EL-ML-001

AGNICO EAGLE

NO.	DATE	DESCRIPTION	PREPARE	APPR.	CLIENT
2	2017-09-26	ISSUED FOR CONSTRUCTION	S.G.	D.C.	
1	2017-06-04	UPDATE AREA & TAG NUMBER	K.S.	D.C.	
0	2017-05-12	ISSUED FOR CONSTRUCTION	S.G.	D.C.	
PA	2017-05-15	ISSUED FOR REVIEW	M.T.	D.C.	

REVISIONS

NUNASAKA PROJECT MINING
ultragen
NO. PROJET PROJECT NO. 591700

TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
416 – FUEL TANK PARK A
FUEL DISTRIBUTION
PORTAIL #1 ELECTRICAL ROOM
LIGHTING AND SERVICES

DESSINE PAR DRAWN BY	MARC TREMBLAY	DATE 2017-05-15
VERIFIE PAR CHECKED BY	STEPHANE GRIMARD	2017-05-15
APPROUVE PAR APPROVED BY	DANIEL CARRIER	2017-05-15
ECHELLE SCALE 1:16	DATE 2017-05-15	

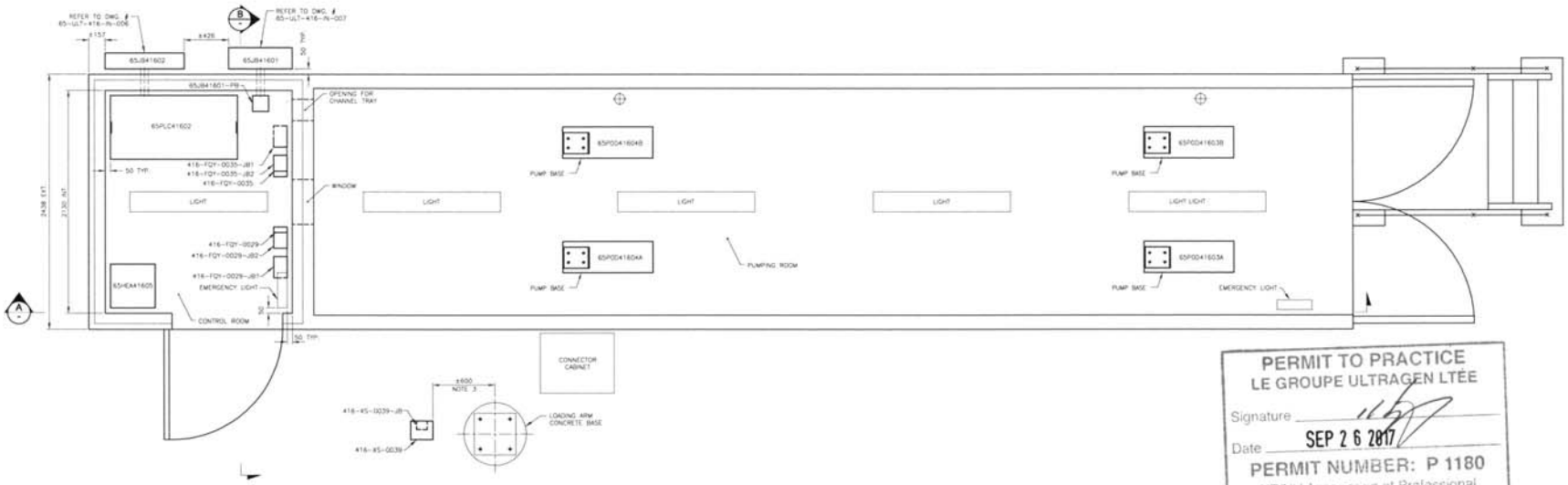
NO. DESSIN DRAWING NO. 65-ULT-416-EL-005

NO. PROJET PROJECT NO. 6515 | REVISION 2 | FEUILLE / SHT 1/1

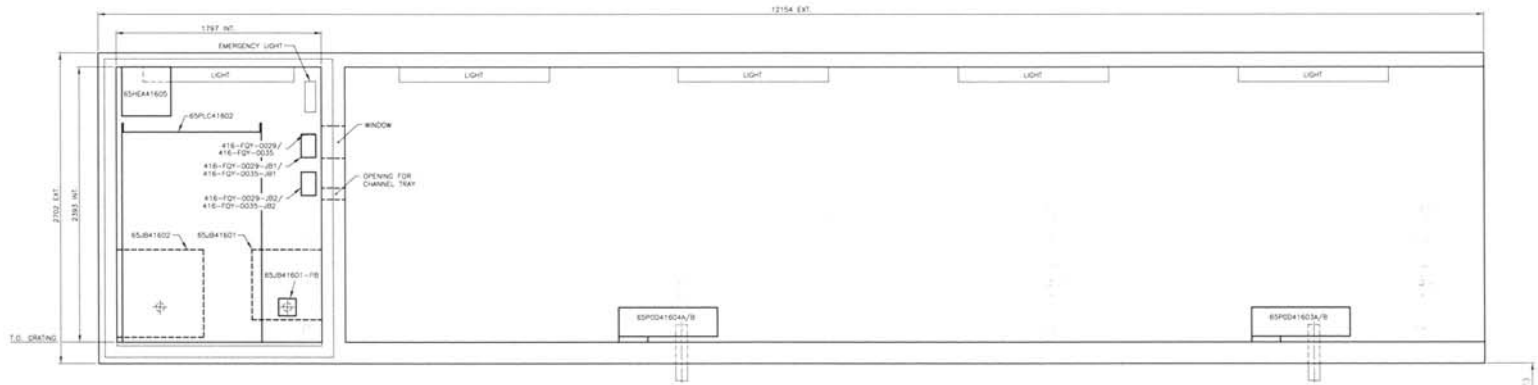
AE-CART-ARCH D

NO. DESSIN DRAWING NO. 65-ULT-416-EL-007

FORMAT ARCH D



1 PLAN VIEW
SCALE: 1:20
PORTAL #1 PUMPING STATION
ELECTRICAL EQUIPMENT LAYOUT



A ELEVATION
SCALE: 1:20
PORTAL #1 PUMPING STATION
ELECTRICAL EQUIPMENT LAYOUT

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 6 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
13627
D. CARRIER
LICENSEE
NT/NU
SEP 2 6 2017

PLAN TITLE
KEY PLAN

NOTES GENERALES / GENERAL NOTES

1. HEATER UNITS ARE CEILING MOUNTED.
2. FOR EQUIPMENT IDENTIFICATION REFER TO THE MATERIAL LIST.
3. SUPPORT FOR "SCULLY" UNIT AND ITS JUNCTION BOX WITH PROFILE AT THE LOADING ARM CONCRETE BASE, TO BE "CANSTRUT" TYPE. COORDINATE THE POSITION TO AVOID INTERFERENCE WITH THE LOADING ARM MOVEMENT.

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG.
LIGHTING AND SERVICES LAYOUT	65-ULT-416-EL-010
GROUNDING LAYOUT PUMPING STATION	65-ULT-416-EL-009
FLOOR AND WALL OPENING	65-ULT-416-EL-008
MATERIAL LIST	ULT-591700-EL-ML-001

AGNICO EAGLE

NO.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
2	2017-09-26	ISSUED FOR CONSTRUCTION	S.G.	D.C.	
1	2017-08-04	UPDATE AREA & TAG NUMBER	N.S.	D.C.	
0	2017-06-12	ISSUED FOR CONSTRUCTION	S.G.	D.C.	
PA	2017-05-18	ISSUED FOR REVIEW	S.G.	D.C.	

REVISIONS

NUNAVUT PROJECT MINING
ultragen
NO. PROJET PROJECT NO. 591700

TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
416 – FUEL TANK FARM
FUEL DISTRIBUTION
PORTAL #1 PUMPING STATION
ELECTRICAL EQUIPMENT LAYOUT

DESSINE PAR DRAWN BY	RISHI SHRESTHA	DATE 2017-05-18
VERIFIE PAR CHECKED BY	STEPHANE GRIMARD	2017-05-18
APPROUVE PAR APPROVED BY	DANIEL CARRIER	2017-05-18
ECHELLE SCALE 1:20	DATE	2017-05-18

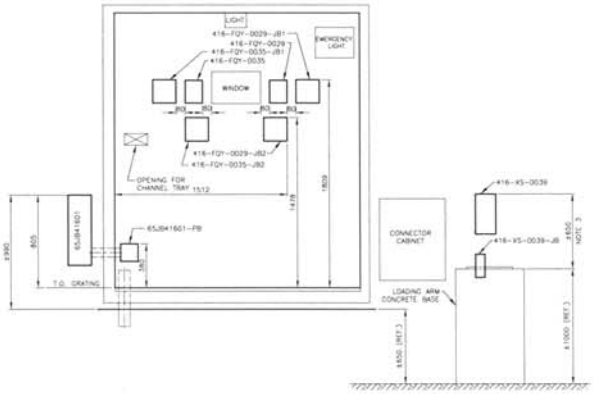
NO. DESSIN DRAWING NO. 65-ULT-416-EL-007

NO. PROJET PROJECT NO. 6515 | REVISION 2 | FEUILLE / SHT 1/2

NO-CART-ARCH D

NO. DESIGN DRAWING NO. 65-ULT-416-EL-007

FORMAT ARCHD



ELEVATION B
SCALE: 1:20
PORTAL #1 PUMPING STATION
ELECTRICAL EQUIPMENT LAYOUT

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 26 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
13677
D. CARRIER
LICENSEE
NT/NU
SEP 26 2017

PLAN OLD KEY PLAN

NOTES GENERALES / GENERAL NOTES

1. FOR NOTES SEE SHEET 1 OF 2.

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
LIGHTING AND SERVICES LAYOUT	65-ULT-416-EL-010
GROUNDING LAYOUT PUMPING STATION	65-ULT-416-EL-008
FLOOR AND WALL OPENING	65-ULT-416-EL-006
MATERIAL LIST	ULT-591700-EL-ML-001

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
2	2017-09-26	ISSUED FOR CONSTRUCTION	S.S.	D.C.	
1	2017-09-04	UPDATE AREA & TAG NUMBER	N.S.	D.C.	
0	2017-06-12	ISSUED FOR CONSTRUCTION	S.S.	D.C.	
PA	2017-05-18	ISSUED FOR REVIEW	S.S.	D.C.	

REVISIONS

NUNAVUT MINING — ultragen

NO. PROJET PROJECT NO. 591700

TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
416 – FUEL TANK FARM
FUEL DISTRIBUTION
PORTAL #1 PUMPING STATION
ELECTRICAL EQUIPMENT LAYOUT

DESSINE PAR DRAWN BY	RISHI SHRESTHA	DATE 2017-05-18
VERIFIE PAR CHECKED BY	STEPHANE GRIMARD	2017-05-18
APPROUVE PAR APPROVED BY	DANIEL CARRIER	2017-05-18
ECHELLE SCALE 1:20	DATE 2017-05-18	

NO. DESSIN DRAWING NO. 65-ULT-416-EL-007

NO. PROJET PROJECT NO. 6515 | REVISION 2 | FEUILLE / SHT 2 / 2

NO. DESSIN DRAWING NO. 65-ULT-416-EL-008

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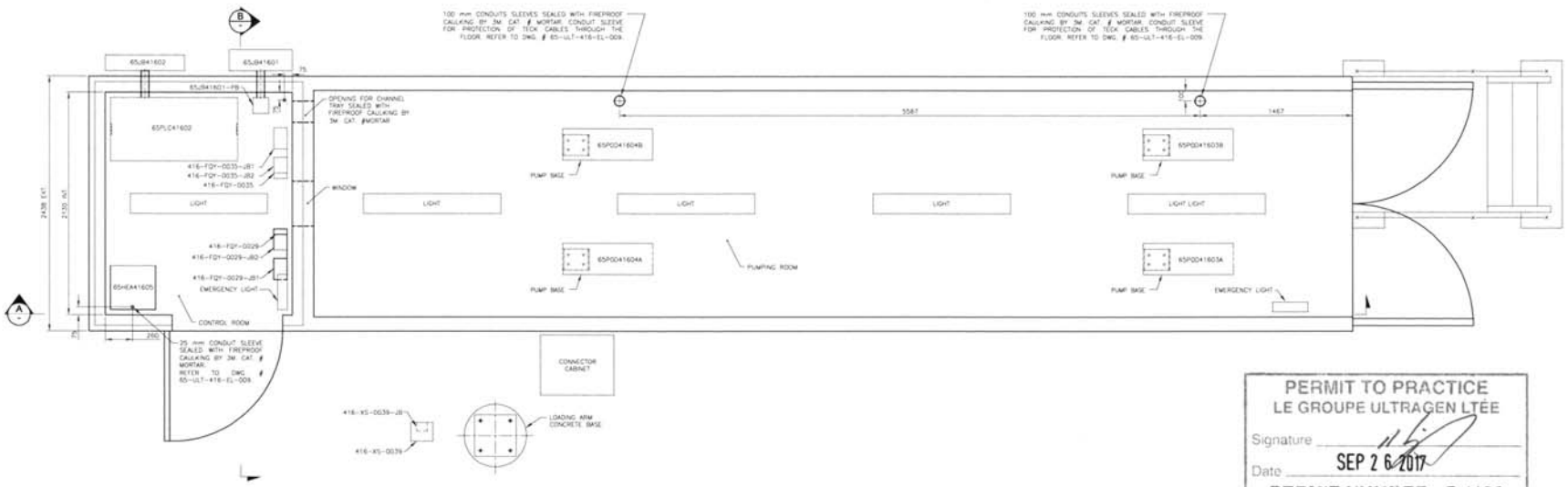
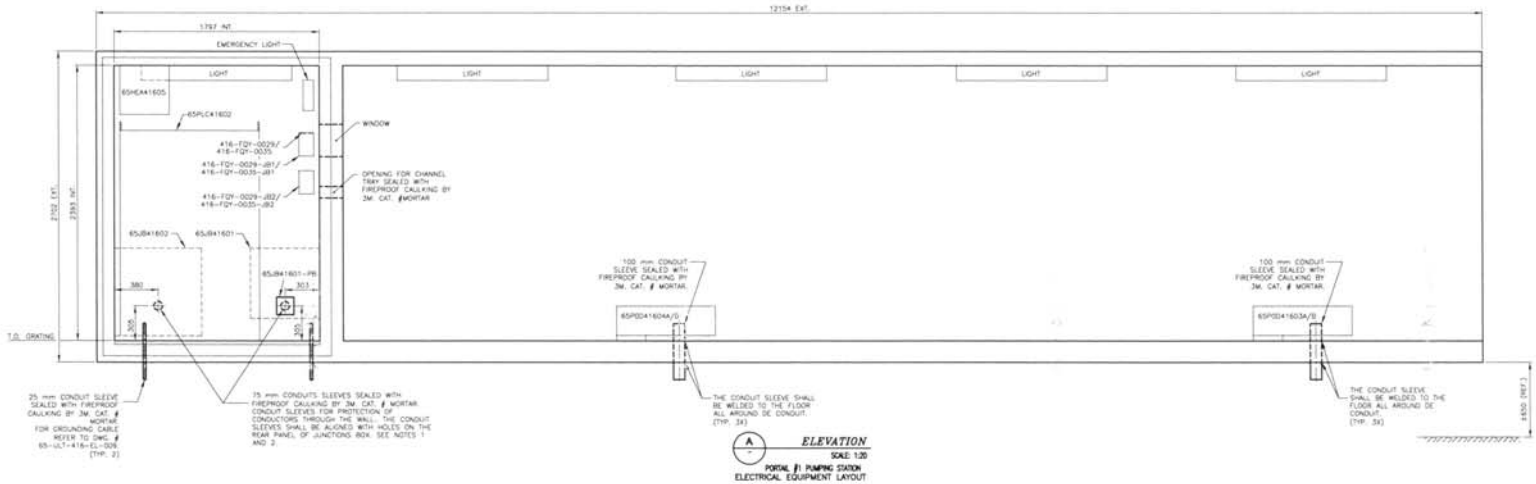


1 PLAN VIEW
SCALE: 1:20
PORTAL #1 PUMPING STATION
ELECTRICAL EQUIPMENT LAYOUT



A ELEVATION
SCALE: 1:20
PORTAL #1 PUMPING STATION
ELECTRICAL EQUIPMENT LAYOUT

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 6 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
13627
D. CARRIER
LICENSEE
NT/NU
SEP 2 6 2017

PLAN TITLE
KEY PLAN

NOTES GENERALES / GENERAL NOTES

1. PULL BOX 65JB41601-PB LINKED WITH CONDUIT SLEEVE TO JUNCTION BOX 65JB41601. THE CABLES INSIDE CONTROL ROOM END AT THE PULL BOX.
2. CABINET 65PLC41602 LINKED WITH CONDUIT SLEEVE TO JUNCTION BOX 65JB41602.
3. USE TIP AT EACH END OF THE CONDUIT SLEEVES.

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
ELECTRICAL EQUIPMENT LAYOUT	65-ULT-416-EL-007
GROUNDING LAYOUT PUMPING STATION	65-ULT-416-EL-009

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
2	2017-09-26	ISSUED FOR CONSTRUCTION	S.S.	D.C.	
1	2017-08-04	UPDATE AREA & TAG NUMBER	K.S.	D.C.	
0	2017-06-12	ISSUED FOR CONSTRUCTION	S.S.	D.C.	
PA	2017-05-18	ISSUED FOR REVIEW	S.S.	D.C.	

REVISIONS

NUNAVUT PROJECT MINING
ultragen
NO. PROJET PROJECT NO. 591700

TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
416 – FUEL TANK FARM A
FUEL DISTRIBUTION
PORTAL #1 PUMPING STATION
FLOOR AND WALL OPENINGS

DESSINE PAR DRAWN BY	RISHI SHRESTHA	DATE 2017-05-18
VERIFIE PAR CHECKED BY	STEPHANE GRIMARD	2017-05-18
APPROUVE PAR APPROVED BY	DANIEL CARRIER	2017-05-18
ECHELLE SCALE 1:20	DATE 2017-05-18	

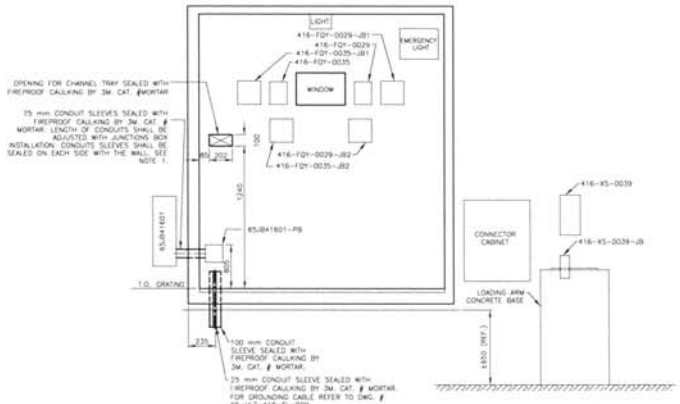
NO. DESSIN DRAWING NO. 65-ULT-416-EL-008

NO. PROJET PROJECT NO. 6515 | REVISION 2 | FEUILLE / SHT 1/2

NO-CART-ARCH-2

NO. DESSIN DRAWING NO. 65-ULT-416-EL-008

FORMAT ARCHD



ELEVATION (B)

SCALE: 1:20

PORTAL #1 PUMPING STATION
ELECTRICAL EQUIPMENT LAYOUT

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 26 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
13627
D. CARRIER
LICENSEE
NT/NU
SEP 26 2017

PLAN TITLE
NET PLAN

NOTES GENERALES / GENERAL NOTES

1. FOR NOTES SEE SHEET 1 OF 2.

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG.
ELECTRICAL EQUIPMENT LAYOUT	65-ULT-416-EL-007
GROUNDING LAYOUT PUMPING STATION	65-ULT-416-EL-009

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
2	2017-09-26	ISSUED FOR CONSTRUCTION	S.S.	D.C.	
1	2017-08-04	UPDATE AREA & TAG NUMBER	N.S.	D.C.	
0	2017-06-12	ISSUED FOR CONSTRUCTION	S.S.	D.C.	
PA	2017-05-18	ISSUED FOR REVIEW	S.S.	D.C.	

REVISIONS

NUNAVUT MINING
ultragen
NO. PROJET PROJECT NO. 501700

TITRE / TITLE
AGNICO EAGLE – MEADOWE DIVISION
416 – FUEL TANK FARM
FUEL DISTRIBUTION
PORTAL #1 PUMPING STATION
FLOOR AND WALL OPENINGS

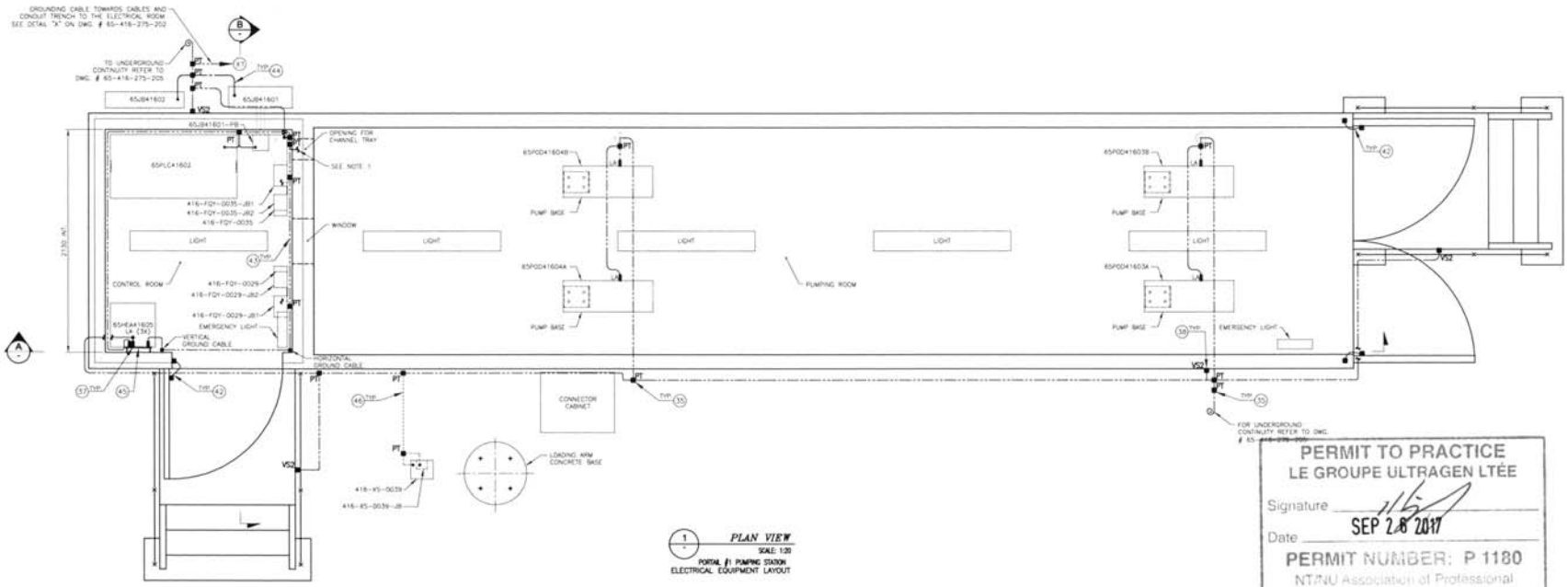
DESSINE PAR DRAWN BY	RISHI SHRESTHA	DATE 2017-05-18
VERIFIE PAR CHECKED BY	STEPHANE GRIMARD	2017-05-18
APPROUVE PAR APPROVED BY	DANIEL CARRIER	2017-05-18
ECHELLE SCALE 1:20	DATE 2017-05-18	

NO. DESSIN DRAWING NO. 65-ULT-416-EL-008

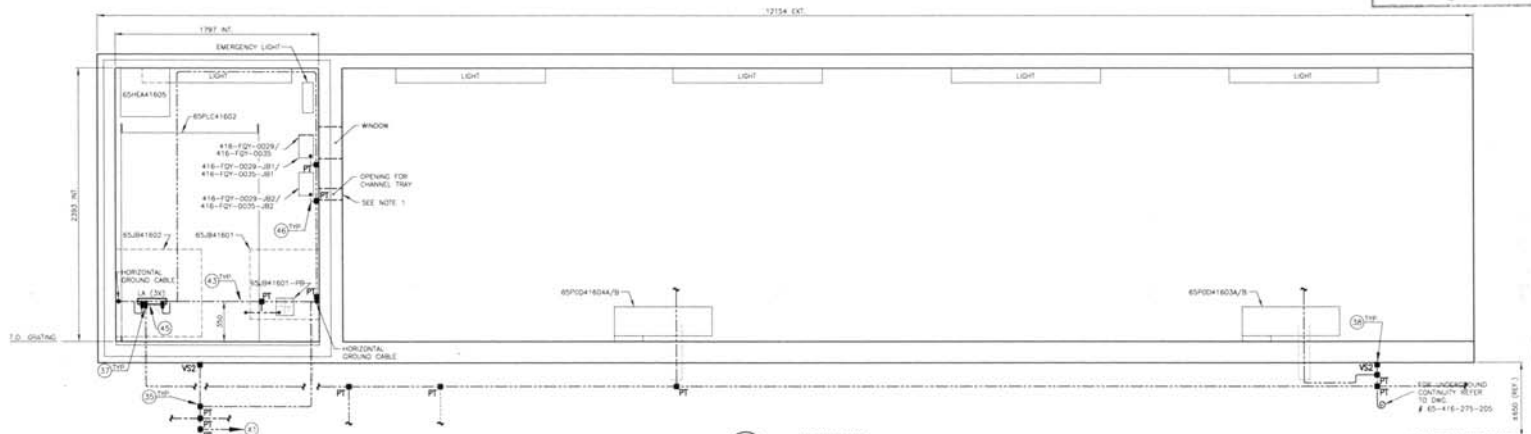
NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHT
6515	2	2/2

NO. DOSSIER DRAWING NO. 65-ULT-416-EL-009

FORMAT ARCH D



1 PLAN VIEW
SCALE: 1:20
PORTAL #1 PUMPING STATION
ELECTRICAL EQUIPMENT LAYOUT



A ELEVATION
SCALE: 1:20
PORTAL #1 PUMPING STATION
ELECTRICAL EQUIPMENT LAYOUT

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 26 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
L3627
D. CARRIER
LICENSEE
NT/NU
SEP 26 2017

PLAN CLE
KEY PLAN

NOTES GENERALES / GENERAL NOTES

1. INSTALL COPPER GROUNDING CABLE 2/0 AWG MINIMUM, BARE, FLEXIBLE, TINNED, 19 STRANDS IN EACH CHANNEL TRAY. CONNECT CABLE WITH CONNECTION TYPE "YGHC" (ARTICLE NUMBER 35). CONNECT CABLE AT EACH SECTION OF CHANNEL TRAY WITH CONNECTION TYPE "GTC24P" (ARTICLE NUMBER 41). FOR CHANNEL TRAY INSTALLATION REFER TO DRAWING #65-ULT-416-EL-011.

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TYPE / TITLE	# DWG
MODIF. & ADDITIONS OF THE CONTAINERS	65-416-245-200
SINGLE LINE DIAGRAM	65-416-275-200
EQUIPMENT LAYOUT PLAN, MAIN SUBSTATION	65-416-275-202
GROUNDING LAYOUT PLAN VIEW	65-416-275-203
LEGEND, TABLES AND DETAILS	65-416-275-204

AGNICO EAGLE

NO.	DATE	DESCRIPTION	PAR/DIT	APP.	CLIENT
3	2017-09-26	ISSUED FOR CONSTRUCTION	S.G.	D.C.	
1	2017-08-04	UPDATE AREA & TAG NUMBER	N.S.	D.C.	
2	2017-06-12	ISSUED FOR CONSTRUCTION	S.G.	D.C.	
1A	2017-05-18	ISSUED FOR REVIEW	S.G.	D.C.	

REVISIONS

NUOSANG PROJECT MINING

ultragen

NO. PROJET PROJECT NO. 501700

TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
416 – FUEL TANK FARM
FUEL DISTRIBUTION
PORTAL #1 PUMPING STATION
GROUNDING

DESSINE PAR DRAWN BY	RISHI SHRESTHA	DATE 2017-05-18
VERIFIE PAR CHECKED BY	STEPHANE GRIMARD	2017-05-18
APPROUVE PAR APPROVED BY	DANIEL CARRIER	2017-05-18
ECHELLE SCALE 1:20	DATE 2017-05-18	

NO. DOSSIER DRAWING NO. 65-ULT-416-EL-009

NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHT
6515	2	1/2

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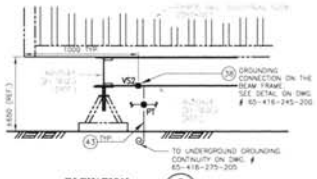
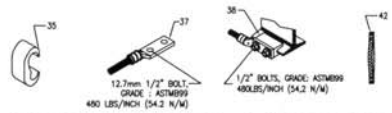
FILE NO. DOSSIER SECURITE

NO. DESSIN DRAWING NO. 65-ULT-416-EL-009

FORMAT ARCH D

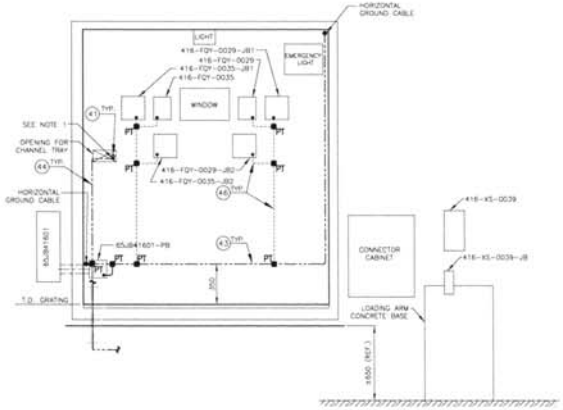


ELEVATION (C)
SCALE: 1:20
PORTAIL #1 PUMPING STATION GROUNDING



CONNECTOR TYPES – BURNDY AND THOMAS & BETTS
SCALE: NTS
USABLE TYPES WHEN THE SYSTEM IS BURIED OR NOT

EQUIPMENT LIST					
ATTACH NUMBER	SYMBOL	DESCRIPTION	MANU.	TYPE	NOTE
35	PT	CONNECTION – PARALLEL HORIZONTAL CONDUCTORS COMPRESSED CONNECTOR FOR TWO PARALLEL HORIZONTAL CONDUCTORS. CABLE SIZE: 2/0AWG, TAP CABLE SIZE: 2/0AWG CABLE SIZE: 4/0AWG, TAP CABLE SIZE: 2/0AWG CABLE SIZE: 4/0AWG, TAP CABLE SIZE: 4/0AWG	BURNDY	YGHC26C26 YGHC29C26 YGHC29C29	
37	LA	CONNECTION – HEAVY DUTY TERMINALS HEAVY DUTY TERMINALS DESIGNED TO CARRY SHORT CIRCUIT LOAD AND WITHSTAND HIGH MECHANICAL STRESS. CABLE SIZE: 2/0AWG CABLE SIZE: 4/0 AWG COMPLETE WITH NON-CORROSIVE HARDWARE SUCH AS: BOLT, FLAT WASHER, LOCKWASHERS, NUTS AND INHIBITING COMPOUNDS TO PREVENT OXIDATION OR CORROSION.	BURNDY	YGHA26-2N YGHA28-2N	
38	VS2	CONNECTION – STRUCTURE CONNECTION USED FOR VERTICAL STEEL SURFACE (STRUCTURAL BEAMS) CABLE SIZE 4/0AWG ON CONTAINER BEAM FRAME. CABLE SIZE 4/0AWG ON CHANNEL OF CATWALK. COMPLETE WITH HARDWARE	BURNDY	YGIBW28-338-2N YGIBS28-400-2N TMHG-42	EVERY BURNDY YGIB CONNECTION (VS2) MUST BE COMBINED WITH A YGHA HEAVY DUTY TERMINAL (LA) AND 2 NUTS OF ADEQUATE SIZE FOR THE TERMINAL.
41	•	CABLE TRAY CONNECTOR CABLE TRAY GROUNDING CLAMP. FOR CABLE SIZE 4/0AWG.	THOMAS & BETTS	GTC24P	
42		BONDING JUMPER PREFABRICATED COPPER JUMPER, FOR EXPANSION JOINTS AND ADJUSTABLE JOINTS 1 BRAIDS AND 2 BOLTS HOLD BY CONNECTION.	THOMAS & BETTS	FBE12-1	
43		COPPER GROUNDING CONDUCTOR. 4/0 AWG, BARE, FLEXIBLE, TINNED, 19 STRANDS (ASTM STANDARDS B8 AND B33).	PHILLIPS CABLES		
44		COPPER GROUNDING CONDUCTOR. 2/0 AWG, BARE, FLEXIBLE, TINNED, 19 STRANDS (ASTM STANDARDS B8 AND B33).	PHILLIPS CABLES		
45		COPPER BUS BAR BUS BAR 254(10") X 102(4") X 6(0.25") BRACKETS AND ISOLATORS INCLUDED	BURNDY	BBB-14410C	
46		COPPER GROUNDING CONDUCTOR. 6 AWG, GREEN INSULATION, FLEXIBLE, 7 STRANDS (ASTM STANDARDS B8 AND B33).	PHILLIPS CABLES		
	TM@	COPPER CONDUCTOR. IDENTICAL CHARACTERISTICS FOR FUTURE CONNECTIONS. THE LENGTH TO RESERVE IS SPECIFIED ON THE SYMBOL	PHILLIPS CABLES		



ELEVATION (B)
SCALE: 1:20
PORTAIL #1 PUMPING STATION ELECTRICAL EQUIPMENT LAYOUT

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 26 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
L3677
D. CARRIER
LICENSEE
NT/NU
SEP 26 2017

PLAN FILE
KEY PLAN

NOTES GENERALES / GENERAL NOTES

1. FOR NOTES SEE SHEET 1 OF 2.

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
MODIF. & AJOUTONS OF THE CONTAINERS	65-416-245-200
SINGLE LINE DIAGRAM	65-416-275-200
EQUIPMENT LAYOUT DETAIL AND SERVICES PANEL PLAN VIEW	65-416-275-202
GROUNDING LAYOUT PLAN VIEW	65-416-275-205
LEGEND, TABLES AND DETAILS	65-416-275-204

AGNICO EAGLE

NO.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
2	2017-09-26	ISSUED FOR CONSTRUCTION	S.S.	D.C.	
1	2017-06-04	UPDATE AREA & TAG NUMBER	N.S.	D.C.	
0	2017-06-12	ISSUED FOR CONSTRUCTION	S.S.	D.C.	
PA	2017-05-18	ISSUED FOR REVIEW	S.S.	D.C.	

REVISIONS

MUSSANE PROJET MINING
ultragen
NO. PROJET PROJECT NO. 591700

TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
416 – FUEL TANK FARM
FUEL DISTRIBUTION
PORTAIL #1 PUMPING STATION
GROUNDING

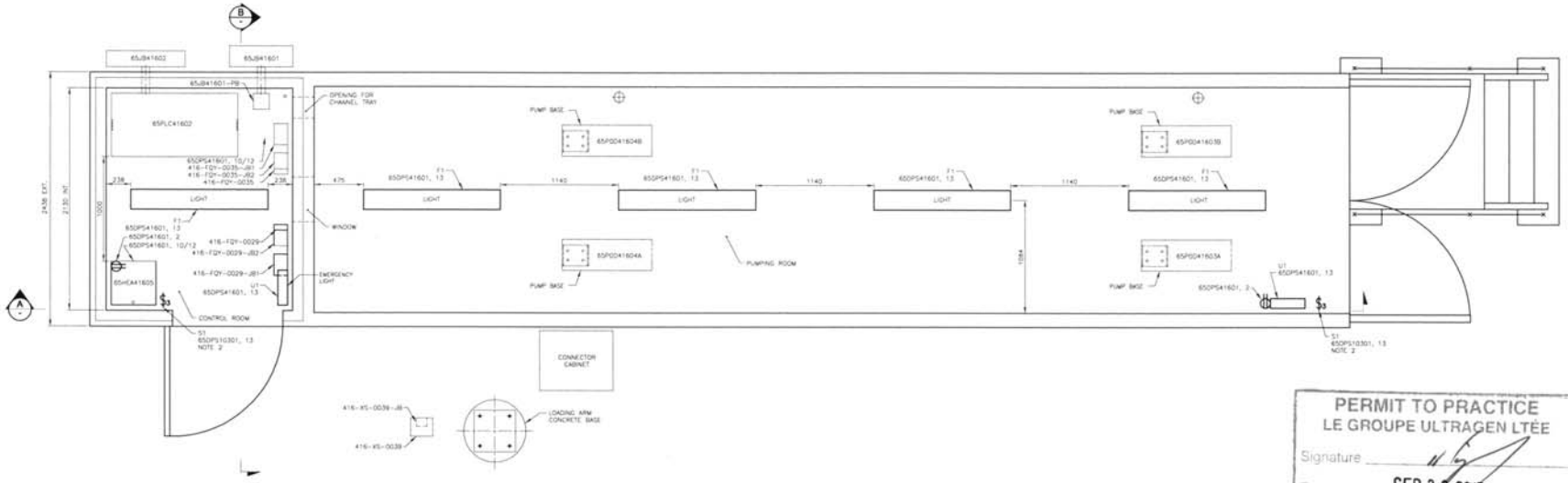
DESSINE PAR DRAWN BY	RISHI SHRESTHA	DATE 2017-05-18
VERIFIE PAR CHECKED BY	STEPHANE GRIMARD	2017-05-18
APPROUVE PAR APPROVED BY	DANIEL CARRIER	2017-05-18
ECHELLE SCALE 1:20	DATE 2017-05-18	

NO. DESSIN DRAWING NO. 65-ULT-416-EL-009

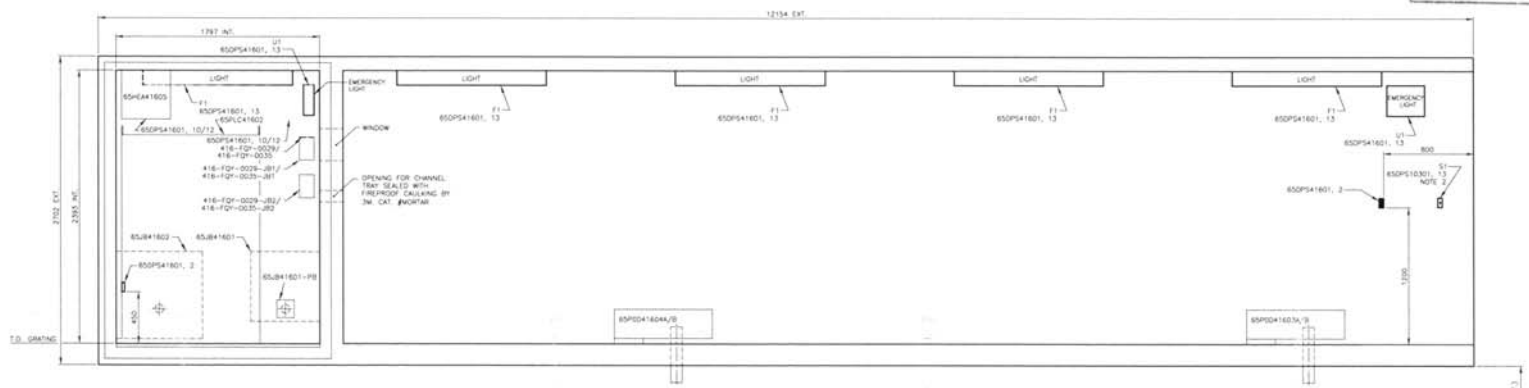
NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHT
6515	2	2/2

NO. DESSIN DRAWING NO. 65-ULT-416-EL-010

FORMAT ARCHD



1 PLAN VIEW
SCALE: 1:20
PORTAL #1 PUMPING STATION
ELECTRICAL EQUIPMENT LAYOUT



A ELEVATION
SCALE: 1:20
PORTAL #1 PUMPING STATION
ELECTRICAL EQUIPMENT LAYOUT

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 26 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
13677
D. CARRIER
LICENSEE
NT/NU
SEP 26 2017

PLAN OLE
REF PLAN

NOTES GENERALES / GENERAL NOTES

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TYPE / TITLE	# DWG.
65DPS41601 PANEL SCHEDULE (in E-400m)	65-ULT-416-EL-012
ELECTRICAL EQUIPMENT LAYOUT E-400m	65-ULT-416-EL-006
ELECTRICAL EQUIPMENT LAYOUT	65-ULT-416-EL-007
MATERIAL LIST	ULT-591700-EL-ML-001

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PREP.	APP.	CLIENT
2	2017-09-20	ISSUED FOR CONSTRUCTION	S.G.	D.C.	
1	2017-08-04	UPDATE AREA & TAG NUMBER	K.S.	D.C.	
0	2017-06-12	ISSUED FOR CONSTRUCTION	S.G.	D.C.	
PA	2017-05-18	ISSUED FOR REVIEW	S.G.	D.C.	

REVISIONS

NUNAVAKA PROJECT MINING
ultragen
NO. PROJET PROJECT NO. 591700

TYPE / TITLE
AGNICO EAGLE – MEADOWBANK DIVISION
416 – FUEL TANK FARM A
FUEL DISTRIBUTION
PORTAL #1 PUMPING STATION
LIGHTING AND SERVICES

DESSINE PAR DRAWN BY	RISHI SHRESTHA	DATE 2017-05-18
VERIFIE PAR CHECKED BY	STEPHANE GRIMARD	2017-05-18
APPROUVE PAR APPROVED BY	DANIEL CARRIER	2017-05-18
ECHELLE SCALE 1:20	DATE 2017-05-18	

NO. DESSIN DRAWING NO. 65-ULT-416-EL-010

NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHT
6515	2	1/2

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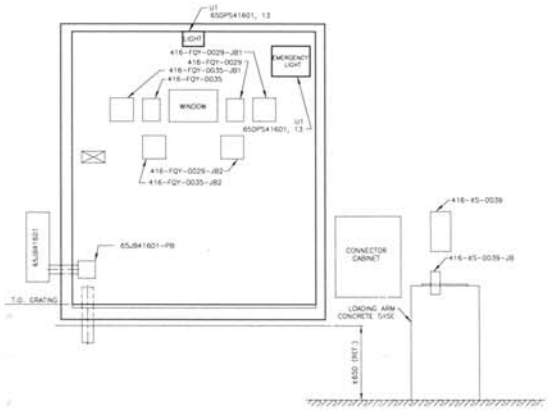
FILE NO. 65-ULT-416-EL-010

NO. DESIGN DRAWING NO. 65-ULT-416-EL-010

FORMAT ARCHD

MATERIAL LIST

TYPE	MANUFACTURER	CATALOGUE NUMBER	INPUT POWER (W)	VOLTAGE	DESCRIPTION
F1	PHILIPS	PVAC-4-40-120-50-40-WH2.7	40	120	LUMINAIRE, WEATHERPROOF, DUST PROOF, SURFACE, ACRYLIC PRISMATICS LUMINAIRE, PVC, 40W, 120-277VAC, 5120 LUMENS C/W ACCESSORIES
	HUBBELL	HBL5362W	120	120	RECEPTACLE 15A, 125V, 5-15R, 2 POLES
W1	LUMACELL	XS200WALL21	36	120	EMERGENCY LIGHTING WITH BATTERY AND L/R CHARGER AND INTERNAL FACTORY WIRE COLOUR:(BLK/WHITE), 2 PHASES WITH BOL, W WE
$3	HUBBELL	CS2310W	-	120	SINGLE WAY SWITCH FOR LIGHTING, 15A, 120-277VAC



ELEVATION B

SCALE: 1:30

PORTAL #1 PUMPING STATION
ELECTRICAL EQUIPMENT LAYOUT

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 26 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
L3527
D. CARRIER
SIGNATURE
NT/NU
SEP 26 2017

PLAN TITLE
KEY PLAN

NOTES GENERALES / GENERAL NOTES

ISSUED FOR CONSTRUCTION
Ultragen DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TYPE / TITLE	# DWG
650PS41601 PANEL SCHEDULE IN E-ROOM	65-ULT-416-EL-012
ELECTRICAL EQUIPMENT LAYOUT E-ROOM	65-ULT-416-EL-002
ELECTRICAL EQUIPMENT LAYOUT	65-ULT-416-EL-007
MATERIAL LIST	ULT-591700-EL-ML-001

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PREP./DT	APP.	CLIENT
3	2017-09-20	ISSUED FOR CONSTRUCTION	S.G.	D.C.	
1	2017-08-04	UPDATE AREA & TAG NUMBER	S.G.	D.C.	
0	2017-06-12	ISSUED FOR CONSTRUCTION	S.G.	D.C.	
PA	2017-05-18	ISSUED FOR REVIEW	S.G.	D.C.	

REVISIONS

NUNAVUT PROPERTIES MINING

ultragen

NO. PROJET PROJECT NO. 591700

TITLE / TITRE
AGNICO EAGLE – MELIADINE DIVISION
416 – FUEL TANK FARM A
FUEL DISTRIBUTION
PORTAL #1 PUMPING STATION
LIGHTING AND SERVICES

DESSINE PAR DRAWN BY	RISHI SHRESTHA	DATE 2017-05-18
VERIFIE PAR CHECKED BY	STEPHANE GRENARD	2017-05-18
APPROUVE PAR APPROVED BY	DANIEL CARRIER	2017-05-18
ECHELLE SCALE	1:20	DATE 2017-05-18

NO. DESSIN DRAWING NO. 65-ULT-416-EL-010

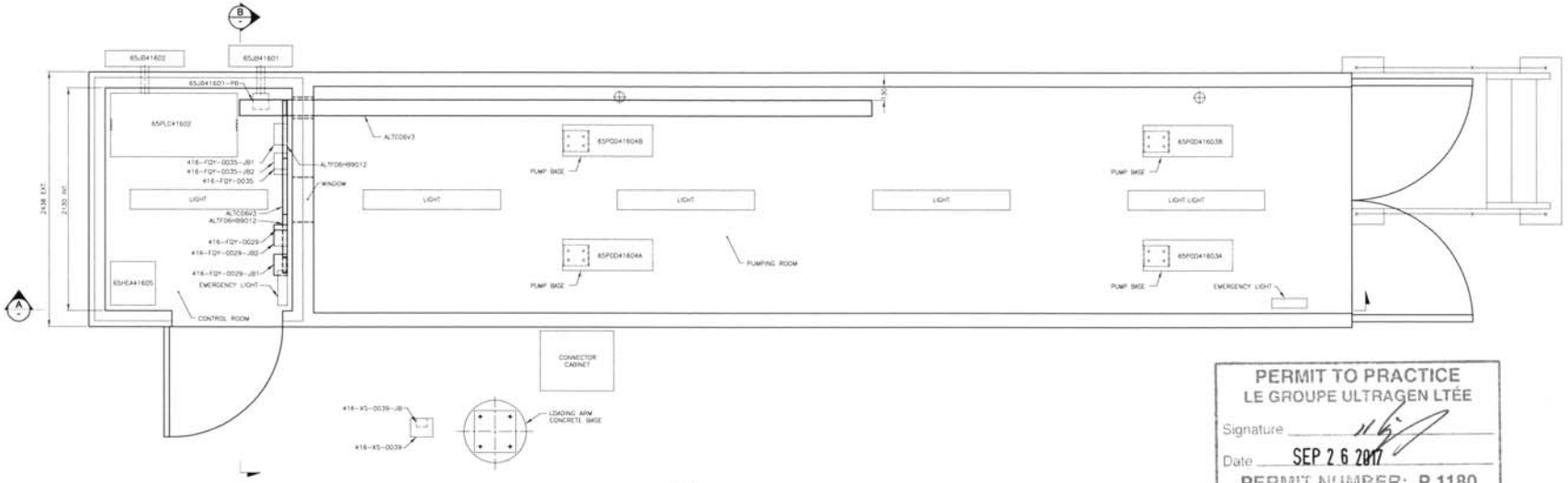
NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHT
6515	2	2 / 2

AE-CART-ARCH D

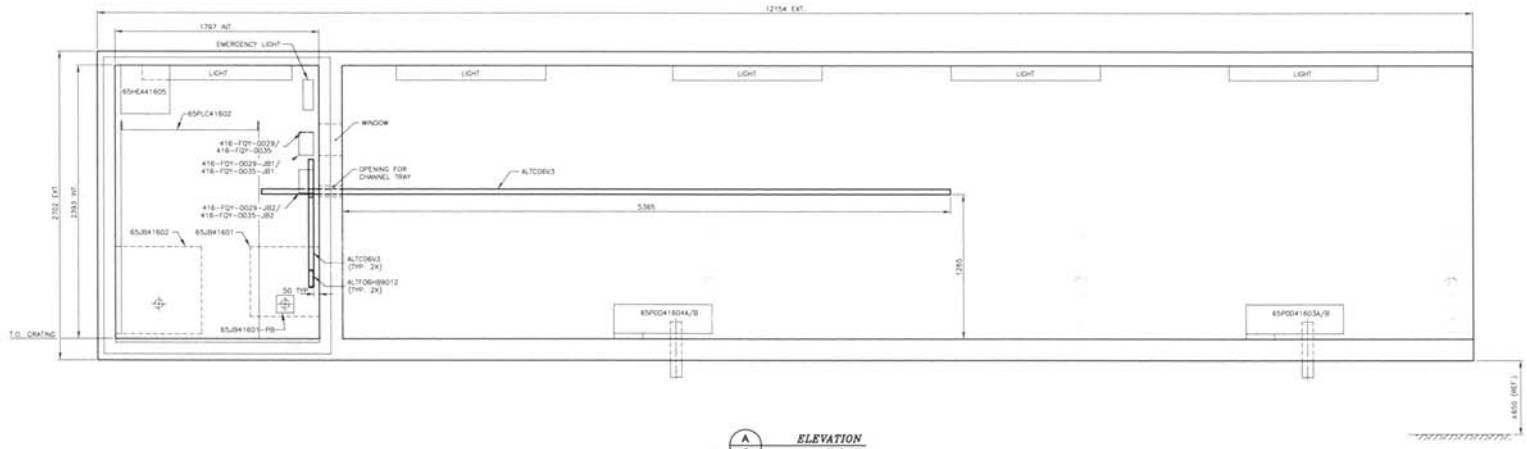
FILE NO. 65-ULT-416-EL-010.dwg

NO. DESSIN DRAWING NO. 65-ULT-416-EL-011

FORMAT ARCHD



1 PLAN VIEW
SCALE: 1:20
PORTAL #1 PUMPING STATION
ELECTRICAL EQUIPMENT LAYOUT



A ELEVATION
SCALE: 1:20
PORTAL #1 PUMPING STATION
ELECTRICAL EQUIPMENT LAYOUT

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 6 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
13627
D. CARRIER
LICENSEE
NT/NU
SEP 2 6 2017

PLAN CLE
KEY PLAN

NOTES GENERALES / GENERAL NOTES

1. ALL CHANNEL TRAY ITEMS ARE IDENTIFIED WITH THOMAS & BETTS CATALOG NUMBER.
2. FOR CHANNEL TRAY GROUNDING REFER TO DRAWING #65-ULT-416-EL-009.
3. INSTALL ALL CHANNEL TRAY WITH CHANNEL PROFILE TYPE "CANSTRUT" BY THOMAS & BETTS. CAT. # A1200-AL COMPLETE WITH MISCELLANEOUS HARDWARE.

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG.
ELECTRICAL EQUIPMENT LAYOUT	65-ULT-416-EL-007
GROUNDING LAYOUT PUMPING STATION	65-ULT-416-EL-009

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
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0	2017-06-12	ISSUED FOR CONSTRUCTION	S.G.	D.C.	
PA	2017-05-18	ISSUED FOR REVIEW	S.G.	D.C.	

REVISIONS

NUQSAAK PROJECT MANAGEMENT
ultragen
NO. PROJET PROJECT NO. 591700

TITRE / TITLE
AGNICO EAGLE – MEADOWBANK DIVISION
416 – FUEL TANK FARM
FUEL DISTRIBUTION
PORTAL #1 PUMPING STATION
CHANNEL TRAY LAYOUT

DESSINE PAR DRAWN BY	RISHI SHRESTHA	DATE 2017-05-18
VERIFIE PAR CHECKED BY	STEPHANE GRENARD	2017-05-18
APPROUVE PAR APPROVED BY	DANIEL CARRIER	2017-05-18
ECHELLE SCALE 1:20	DATE 2017-05-18	

NO. DESSIN DRAWING NO. 65-ULT-416-EL-011

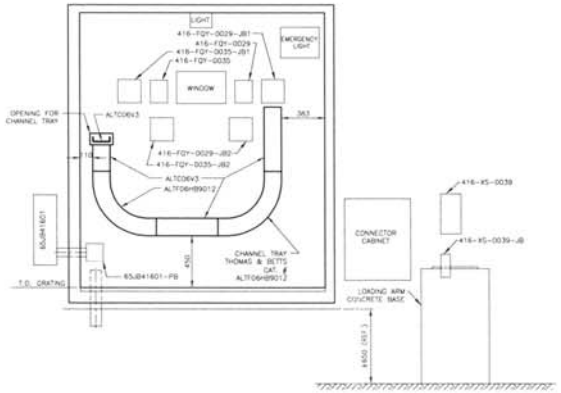
NO. PROJET PROJECT NO. 6515 | REVISION 2 | FEUILLE / SHT 1/2

AE-CART-ARCH D

FILE NO. RÉSERVÉ SEULEMENT

NO. DESIGN DRAWING NO. 65-ULT-416-EL-011

FORMAT ARCHD



ELEVATION B

SCALE 1:20

PORTAL #1 PUMPING STATION
ELECTRICAL EQUIPMENT LAYOUT

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 26 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
13627
D. CARRIER
LICENSEE
NT/NU
SEP 26 2017

PLAN CLE
KEY PLAN

NOTES GENERALES / GENERAL NOTES

1. FOR NOTES SEE SHEET 1 OF 2.

ISSUED FOR CONSTRUCTION
ULTRAGEN DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
ELECTRICAL EQUIPMENT LAYOUT	65-ULT-416-EL-007
GROUNDING LAYOUT PUMPING STATION	65-ULT-416-EL-009

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
2	2017-09-26	ISSUED FOR CONSTRUCTION	S.S.	D.C.	
1	2017-06-04	UPDATE AREA & TAG NUMBER	R.S.	D.C.	
0	2017-06-12	ISSUED FOR CONSTRUCTION	S.S.	D.C.	
PA	2017-05-18	ISSUED FOR REVIEW	S.S.	D.C.	

REVISIONS

MUQSANE PROJECT MINING

ultragen

NO. PROJET PROJECT NO. 591700

TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
416 – QQ TANK FARM A
FUEL DISTRIBUTION
PORTAL #1 PUMPING STATION
CHANNEL TRAY LAYOUT

DESSINE PAR DRAWN BY	RISHI SHRESTHA	DATE 2017-05-18
VERIFIE PAR CHECKED BY	STEPHANE GRIMARD	2017-05-18
APPROUVE PAR APPROVED BY	DANIEL CARRIER	2017-05-18
ECHELLE SCALE 1:20	DATE 2017-05-18	

NO. DESIGN DRAWING NO. 65-ULT-416-EL-011

NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHT
6515	2	2/2

Source:	120	208	Volts

Feeder from / Single line diagram:	65TRF41601 / 65-416-275-200
Mounting:	SURFACE
Location:	ELECTRICAL ROOM 416 (PORTAL #1)
Manufacturer / Catalog No.:	SQUARE-D (SCHNEIDER) / NQ430L2C
Breaker type:	QOB

Enclosure type:	NEMA 1
Main breaker.:	NONE
No. of circuits:	30 CCTs
Bars:	225 A
Short circuit Ampacity:	10 kA
Power:	30 kVA

DESCRIPTION	CABLE AWG	TYPE REF	TYPE QTY	WATTS	BREAK. TYPE	BREAK. AMP	CT #		CT #	BREAK. AMP	BREAK. TYPE	WATTS	TYPE QTE	TYPE REF	CABLE AWG	DESCRIPTION
LIGHTING FIXTURES TANK #3 AND #6	12	L	10	690		15	1	A	2	15		240	2	O	12	OUTLET PUMPING STATION & OPERATION ROOM 416 (PORTAL #1)
							3	B	4	15		120	1	O	12	OUTLET ELECTRICAL ROOM 416
LIGHTING FIXTURES OUTSIDE ELECTRICAL ROOM/OUTSIDE PUMPING STATION	12	L	7	483		15	5	C	6	15		240	2	O	12	OUTLET ELECTRICAL ROOM IT AREA 416
							7	A	8	15		400	1	I	12	PLC/HMI/IO CARDS IN OPERATION ROOM CABINET 65PLC41601
LIGHTING FIXTURES TANK LIGHT AND HEAVY VEHICULE LOADING, CONTAINERIZED DEF PORTAL #1	12	L	8	552		15	9	B	10	30		2000	1	H	6	HEATING IN OPERATION ROOM 416 65HEA41605
							11	C	12							
LIGHTING AND EMERGENCY LIGHTING PUMPING STATION & OPERATION ROOM 416	12	L	7	312		15	13	A	14	15		200	1	I	12	LIGHT VEHICULE GASBOY - CONTROL 416-FQY-0049
LIGHTING AND EMERGENCY LIGHTING ELECTRICAL ROOM 416	12	L	4	180		15	15	B	16	15		200	1	I	12	PLC CABINET 65PLC41601 OUTLET UTILITY IN OPERATION ROOM
LIGHTING CONTACTOR CONTROL FEEDER	12	L	1	37		15	17	C	18	15		100	1	I	12	INSTRUMENT (65-ULT-416-IN-013)
MOTORIZED OPERATOR VALVES FEEDER 416-FV-0014/0016 (65-ULT-416-IN-013)	10	I	2	888		15	19	A	20	15		888	2	I	12	MOTORIZED OPERATOR VALVES FEEDER 416-FV-0004/0006 (65-ULT-416-IN-013)
HEAVY VEHICULE GASBOY -MOTOR (1 1/2 HP) 416-FQY-0044	12	I	1	1120		15	21	B	22	15		444	2	I	12	MOTORIZED OPERATOR VALVES FEEDER 416-FV-0043 (65-ULT-416-IN-013)
							23	C	24	15		444	2	I	10	MOTORIZED OPERATOR VALVES FEEDER 416-FV-0048 (65-ULT-416-IN-013)
HEAVY VEHICULE GASBOY - CONTROL 416-FQY-0044	12	I	1	200		15	25	A	26	15		560	1	I	12	LIGHT VEHICULE GASBOY - MOTOR (3/4 HP) 416-FQY-0049
						15	27	B	28	15						
						15	29	C	30	15						

TYPE (REF)	(W) total	Qte
(L) Lighting	2254	37
(O) Outlet	600	5
(H) Heating	2000	1
(I) Instrument	5444	15

BREAKER TYPE	Qte (ref)
(L) SPARE	0
(S) SPACE	0
(G) DDFT BREAKER (30mA)	0

	Watts
Phase A	4274,5
Phase B	3125
Phase C	2898,5
Total	10298

REGISTERED PROFESSIONAL ENGINEER
13627
D. CARRIER
LICENSEE
NT/NU
SEP 2 6 2017

NOTES:
1. SEE LIGHTING DIAGRAM FOR DETAILS OF CABLE SIZE DWG #65-ULT-416-EL-013.

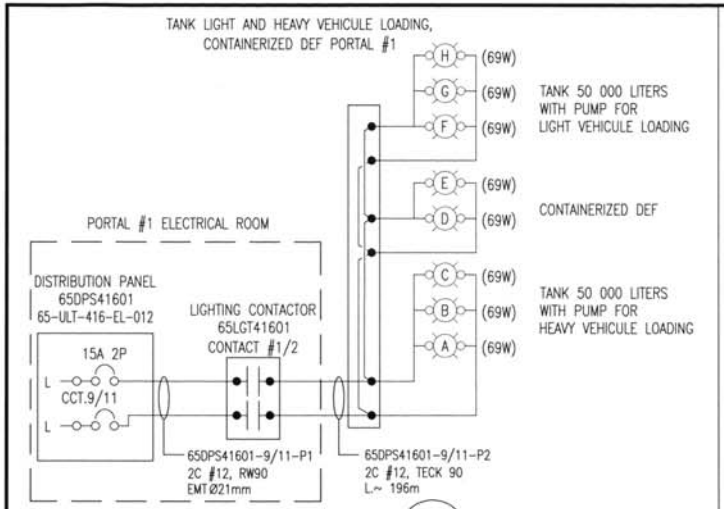
REV.	DATE	DESCRIPTION	PAR	VER.	APP.
2	2017-09-20	ISSUED FOR CONSTRUCTION	S. GRIMARD	D.CARRIER	D.CARRIER
1	2017-08-04	UPDATE AREA & TAG NUMBER	N.SALDAN	D.CARRIER	D.CARRIER
0	2017-06-12	ISSUED FOR CONSTRUCTION	SG 111891	DC 40308	DC 40308
PA	2017-05-16	ISSUED FOR REVIEW	MT 5029941	SG 111891	DC 40308

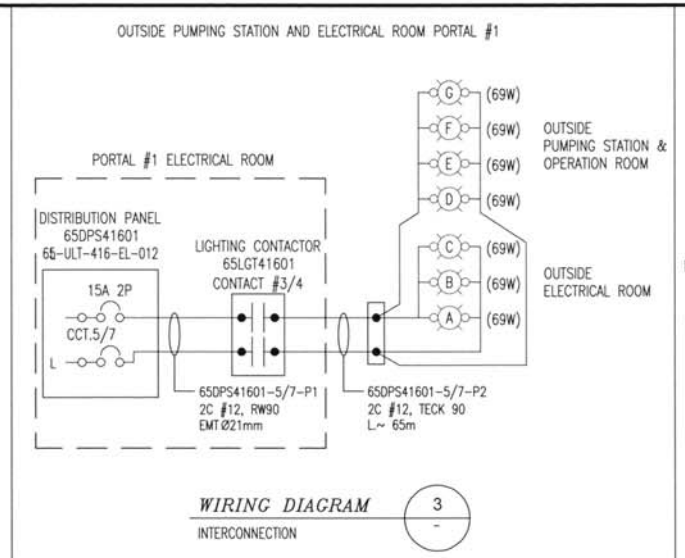
AGNICO EAGLE
NUQSANA PROMEC MINING
ultragen

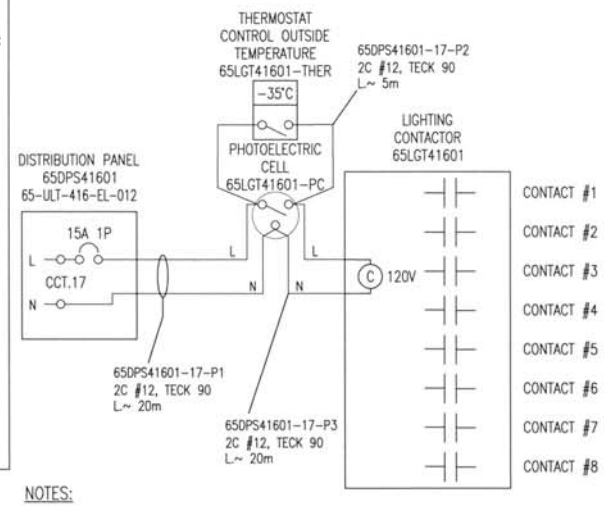
416 - FUEL TANK FARM
PORTAL #1 ELECTRICAL ROOM
PANEL SCHEDULE 65DPS41601

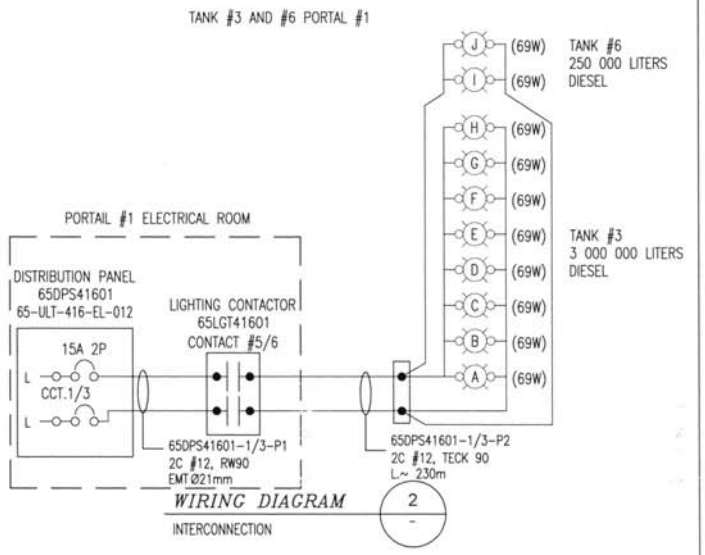
UNITÉ - DATE 2017-05-16 REV. 2
DESS. MT 5029941 65-ULT-416-EL-012

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 6 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists









NOTES:

1. REFER TO THE DWG #65-416-285-201 FOR THE LIGHTING LAYOUT OF THE RANKIN INLET.
2. THE LIGHTING IDENTIFICATION AROUND THE TANKS ON THIS DRAWING STARTS FROM THE GROUND TO THE TOP OF THE TANK (A TO H AND I TO J).

No.	DATE	REVISION	BY / APP.
2	2017-09-20	ISSUED FOR CONSTRUCTION	S.G. / D.C.
1	2017-08-04	UPDATE AREA & TAG NUMBER	N.S. / D.C.
0	2017-06-12	ISSUED FOR CONSTRUCTION	S.G. / D.C.
PA	2017-05-15	ISSUED FOR REVIEW	M.T. / D.C.

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 26 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER 13627 D. CARRIER LICENSEE NT/NU SEP 26 2017

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

CLIENT: AGNICO EAGLE

NUQSANA PROMEC MINING

ultragen

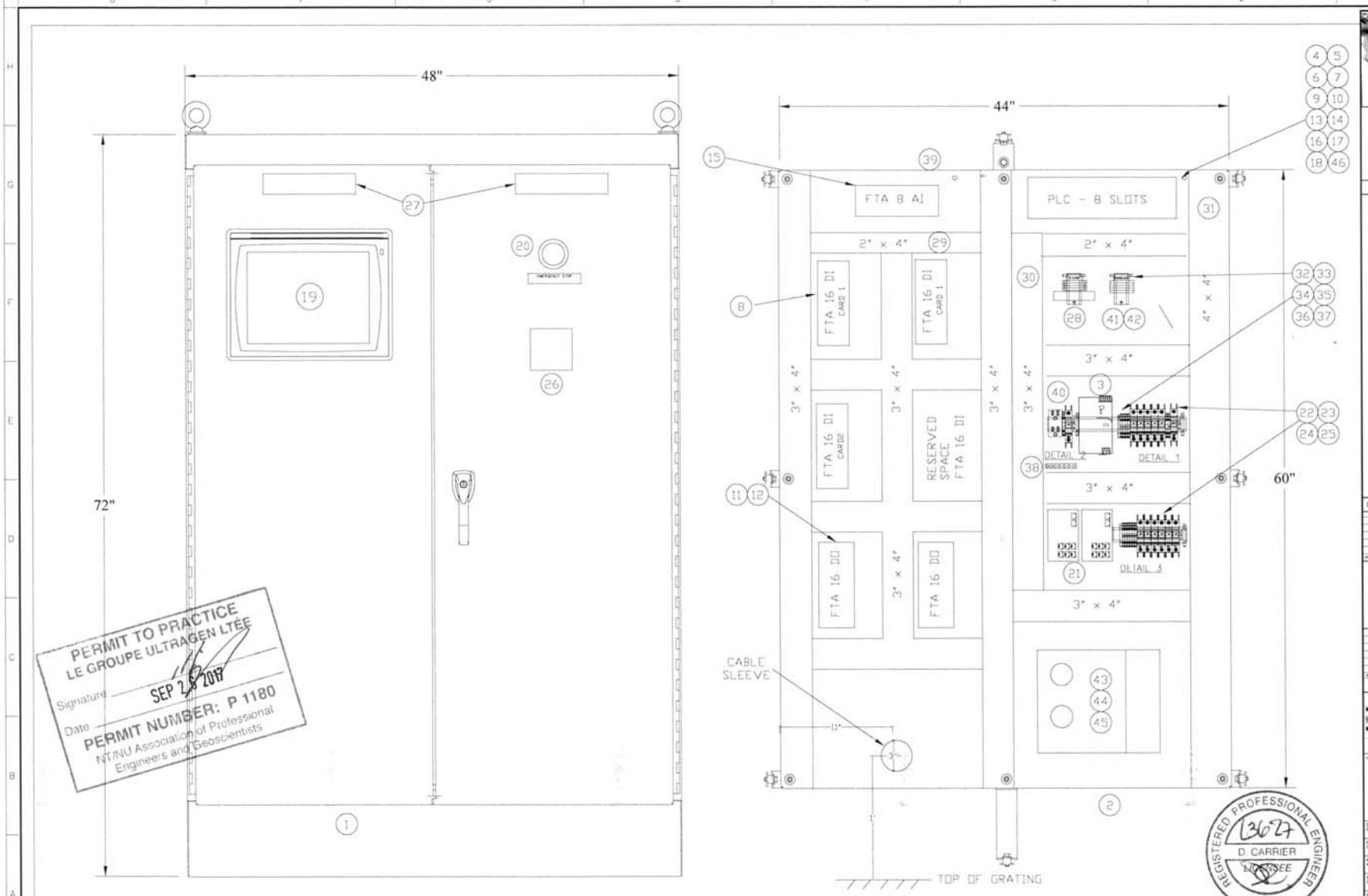
CONSULTANT PROJECT NO. 591700

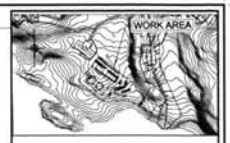
DESIGNED BY: MARC TREMBLAY	PROJECT: AGNICO EAGLE – MELIADINE DIVISION 416 – FUEL TANK FARM
DATE: 2017-05-15	
DRAWN BY: MARC TREMBLAY	
DATE: 2017-05-15	TITLE: FUEL DISTRIBUTION PORTAL #1 LIGHTING DIAGRAM
CHECKED BY: STEPHANE GRIMARD	
DATE: 2017-05-15	
APPROVED BY: DANIEL CARRIER	
DATE: 2017-05-15	
SCALE: NONE	

PROJECT No.	DRAWING NO.	REV.
6515	65-ULT-416-EL-013	2

NO. DESSIN DRAWING NO. 65-ULT-416-IN-001 (CABINET LAYOUT)

FORMAT ARCH-D





NOTES GENERALES / GENERAL NOTES

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TYPE / TITLE	# DWG.
PLC CABINET BOM	65-ULT-416-IN-003

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
5	2017-09-20	FOR CONSTRUCTION	EL	DC	
4	2017-08-14	UPDATE AREA & TAG NUMBER	EL	DC	
3	2017-06-12	FOR CONSTRUCTION	EL	DC	
2	2017-05-15	FOR CONSTRUCTION	EL	DC	
1	2017-05-10	FOR CONSTRUCTION	EL	DC	
0	2017-05-08	FOR CONSTRUCTION	EL	DC	

REVISIONS

NUNAVUT PROJECT MINING

ultragen

NO. PROJET PROJECT NO. 591700

TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
416 – FUEL TANK FARM
FUEL DISTRIBUTION
CABINET LAYOUT
MAIN PLC CABINET

DESSINE PAR Drawn BY	ERIC LAROUCHE	DATE 2017-04-11
VERIFIE PAR CHECKED BY	DANIEL CARRIER	2017-04-11
APPROUVE PAR APPROVED BY	DANIEL CARRIER	2017-04-11
ECHELLE SCALE NTS	DATE 2017-04-11	

NO. DESSIN DRAWING NO. 65-ULT-416-IN-001

NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHT
6515	5	1/1

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 26 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
13627
D. CARRIER
LICENSEE
NT/NU
SEP 26 2017

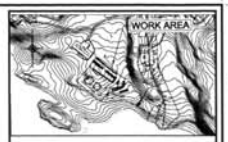
FILE NO. 65-ULT-416-IN-001 (CABINET LAYOUT).dwg

NO. DESSIN DRAWING NO. 65-ULT-416-IN-002 (90M)

ITEM	QUANTITY PORTAIL #1	QUANTITY INDUSTRIAL SITE	DESCRIPTION	MANUFACTURER	MODEL
1	1	1	CABINET 72H, 48W, 24D NEMA 12 WITH BASE FREESTANDING	Hammond	1418ZW24
2	1	1	INNER MOUNTING PANEL FOR CABINET	Hammond	72ZWFW
3	1	1	POWER SUPPLY 24VDC 5 AMP	Schneider	ABL8RPS24050
4	1	1	BACKPLANE 8 SLOTS	Schneider	BMEXBP0800
5	1	1	POWER SUPPLY PLC	Schneider	BMXCPS3500
6	1	1	PLC PROCESSOR	Schneider	BMEP582040
7	1	1	64 DIGITAL INPUT PLC CARD	Schneider	BMXDDI6402K
8	3	3	FTA 16 DIGITAL INPUT	Schneider	ABE7S16E2F0
9	2	2	CABLE 3 METERS FOR DIGITAL INPUT CARD	Schneider	BMXFCC303
10	1	1	32 DIGITAL OUTPUT PLC CARD	Schneider	BMXDDO3202K
11	2	2	FTA 16 DIGITAL OUTPUT	Schneider	ABE7R16T210
12	32	32	RELAY FOR DIGITAL OUTPUT CARD	Schneider	ABR7S21
13	1	1	CABLE 3 METERS FOR DIGITAL OUTPUT	Schneider	BMXFCC303
14	1	1	8 ANALOG INPUT PLC CARD	Schneider	BMXAMI0810
15	1	1	FTA 8 ANALOG INPUT	Schneider	ABE7CPA31
16	1	1	CABLE 1.5METERS FOR ANALOG INPUT	Schneider	BMXFTA150
17	1	1	HIGH SPEED COUNTER MODULE	Schneider	BMXEHC0800
18	1	1	REMOVABLE CAGE CLAMP	Schneider	BMXFTB2000
19	1	1	PANEL VIEW HMI 15 INCH 24VDC WITH PREMIUM BOX	Schneider	HMIDT732 / HMIG3U
20	1	1	PANEL MOUNTED BUTTON	Schneider	XB4BS8444
21	2	2	ETHERNET TCP/IP SWITCH -7 COPPER / 1 FIBER	Schneider	TCSESM083F1CS0
22	10	10	120VAC/24VDC CIRCUIT BREAKER 2A	Schneider	GB2CB07
23	1	1	120VAC/24VDC CIRCUIT BREAKER 5A	Schneider	GB2CB10
24	1	1	120VAC/24VDC CIRCUIT BREAKER 15A	Schneider	GB2CB21
25	1	1	120VAC/24VDC CIRCUIT BREAKER 20A	Schneider	GB2CB22
26	1	1	RED LAMICOID WITH WHITE LETTERS - 4" x 4"	65-ULT-416-IN-004/005 FOR DETAIL	-
27	2	2	WHITE LAMICOID WITH BLACK LETTERS - 2" x 9"	65-ULT-416-IN-004/005 FOR DETAIL	-
28	1	1	SAFETY RELAY FOR EMERGENCY STOP 7 CO -120Vac	Allen-Bradley	440R-G23215
29	1	1	RACEWAY INSIDE CABINET 2" x 4", 6 FEET LENGTH	Panduit	G2X4LG6
30	2	2	RACEWAY INSIDE CABINET 3" x 4", 6 FEET LENGTH	Panduit	G3X4LG6
31	3	3	RACEWAY INSIDE CABINET 4" x 4", 6 FEET LENGTH	Panduit	G4X4LG6
32	1	1	TS-35 DIN MOUNTING RAIL, 7.5MM, 2 METERS LONG	Weidmuller	514500000
33	12	12	RAIL SUPPORT 1"	Weidmuller	7924270030
34	12	12	END COVER FOR TS-35	Weidmuller	38356
35	6	6	GROUP MARKER CARRIER	Weidmuller	29246
36	35	35	TERMINAL BLOCK WDU 4	Weidmuller	102010
37	70	70	MARKER	Weidmuller	051796/160772/051530
38	1	1	GROUNDING BAR 7 TERMINALS	Schneider	PK7GTA
39	1	1	120V FLUORESCENT CABINET LIGHT	Schneider	NSYLAMCU
40	1	1	120V 15A OUTLET DIN RAIL	Allen-Bradley	1492-REC15G
41	0	0	TERMINAL BLOCK 12VDC RELAY	Weidmuller	112275
42	5	5	TERMINAL BLOCK 120Vac RELAY	Weidmuller	112283
43	1	1	FIBER OPTIC PATCH PANEL 24 FIBERS	Panduit	FWME2
44	2	2	LC DUPLEX SINGLE MODE ADAPTER (12 FIBERS)	Panduit	FAP12WBUDLCZ
45	2	2	FIBER OPTIC PATCH CORD LC TO SC	Panduit	F92ENSNLNSNM002
46	1	1	ETHERNET MODULE M580 - 3 SUBNETS	Schneider	BMENOC0321

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 6 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER 13677 D. CARRIER LICENSEE NT/NU
SEP 2 6 2017



NOTES GENERALES / GENERAL NOTES

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
PLC CABINET LAYOUT	65-ULT-416-IN-001

AGNICO EAGLE

REV	DATE	DESCRIPTION	PREPARÉ PAR	VÉRIFIÉ PAR
5	2017-09-18	FOR CONSTRUCTION	EL	DC
4	2017-08-14	UPDATE MECH & TAG NUMBER	EL	DC
3	2017-06-13	FOR CONSTRUCTION	EL	DC
2	2017-05-18	FOR CONSTRUCTION	EL	DC
1	2017-05-15	FOR CONSTRUCTION	EL	DC
0	2017-05-08	FOR CONSTRUCTION	EL	DC

REVISIONS

MEADOWBANK PROJECT MINING
ultragen
NO. PROJET PROJECT NO. 591700

TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
416 – FUEL TANK FARM
FUEL DISTRIBUTION
BILL OF MATERIAL
MAIN PLC CABINET

		DATE
DESSINÉ PAR DRAWN BY	ERIC LAROUCHE	2017-04-11
ÉCRIT PAR CHECKED BY	DANIEL CARRIER	2017-04-11
APPROUVÉ PAR APPROVED BY	DANIEL CARRIER	2017-04-11
ÉCHELLE SCALE N/S	DATE 2017-04-11	

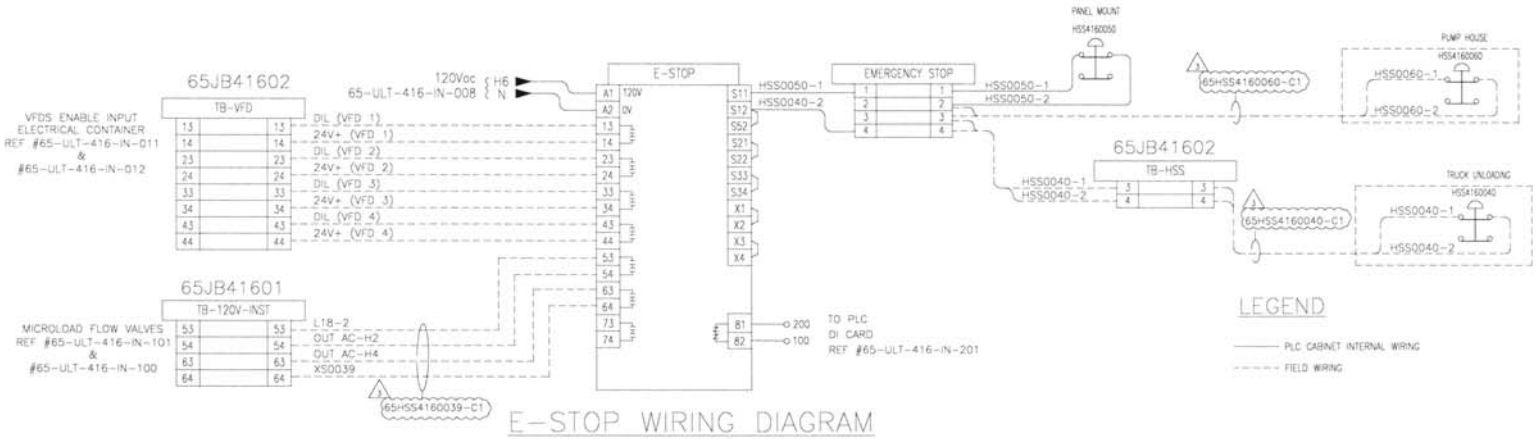
NO. DESSIN DRAWING NO. 65-ULT-416-IN-002

NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHT
6515	5	1 / 1

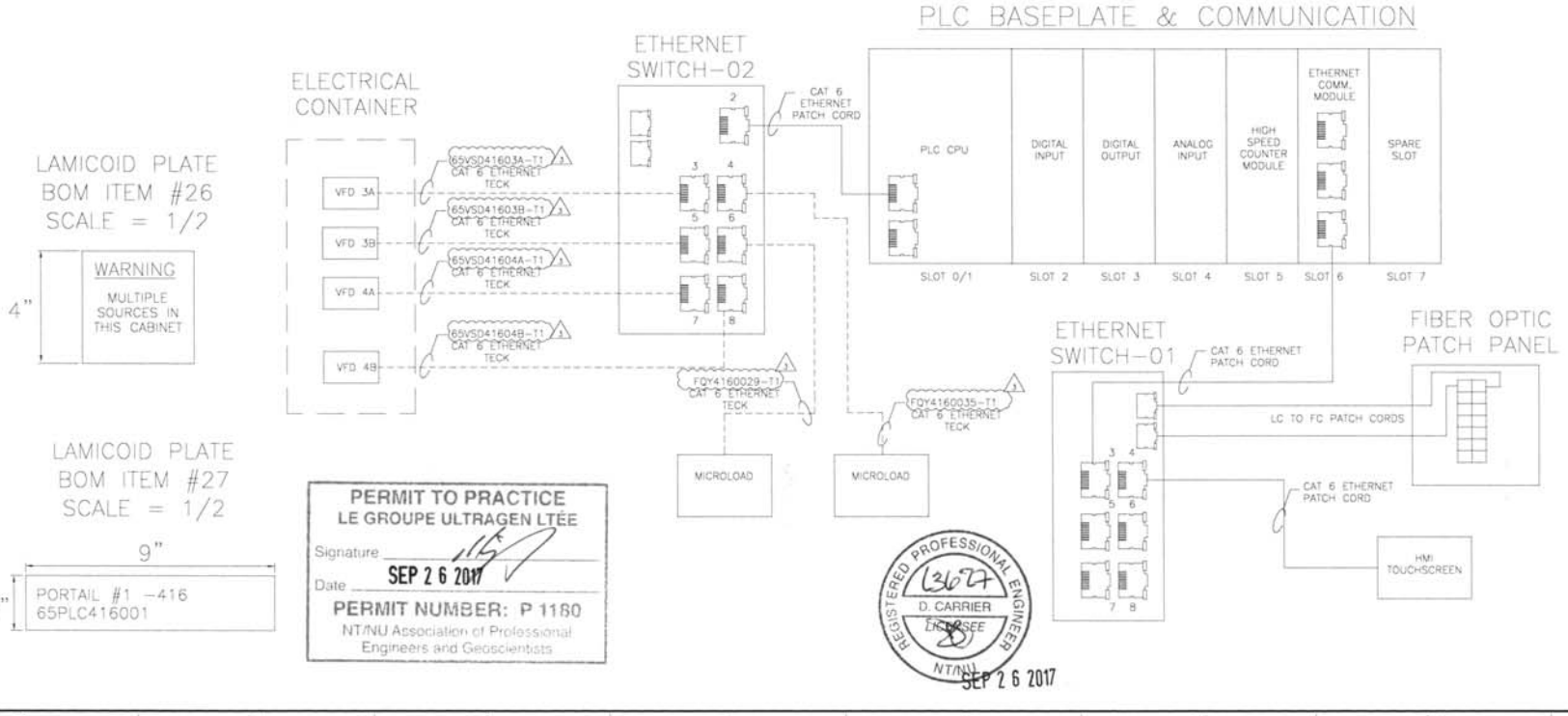
AC-CART-ARCH D

FILE NO. 65-ULT-416-IN-002 (90M).dwg

NO. DESSIN DRAWING NO. 65-ULT-416-IN-004 (E-STOP & COMM)



E-STOP WIRING DIAGRAM



LAMICOID PLATE
BOM ITEM #26
SCALE = 1/2

4"

WARNING
MULTIPLE SOURCES IN THIS CABINET

LAMICOID PLATE
BOM ITEM #27
SCALE = 1/2

9"

2"

PORTAIL #1 -416
65PLC416001

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 6 2017
PERMIT NUMBER: P 1160
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
13677
D. CARRIER
LICENSEE
NT/NU
SEP 2 6 2017

NOTES GENERALES / GENERAL NOTES

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TYPE / TITLE	# DWG
PLC CABINET LAYOUT	65-ULT-416-IN-001

AGNICO EAGLE

REV.	DATE	DESCRIPTION	DWN/DSN	APP.	CLIENT
3	2017-09-20	FOR CONSTRUCTION	E.L.	D.C.	
2	2017-08-14	UPDATE AREA & TAG NUMBER	E.L.	D.C.	
1	2017-06-08	FOR CONSTRUCTION	E.L.	D.C.	
0	2017-05-15	FOR CONSTRUCTION	E.L.	D.C.	

REVISIONS

NUGSAKA PROJECT MINING

ultragen

NO. PROJET PROJECT NO. 591700

TYPE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
416 – FUEL TANK FARM
FUEL DISTRIBUTION (PORTAIL #1)
WIRING DETAIL
EMERGENCY STOP & COMMUNICATION

		DATE
DESIGNE PAR Drawn BY	ERIC LAROUCHE	2017-04-11
APPRO PAR CHECKED BY	DANIEL CARRIER	2017-04-11
APPROUVE PAR APPROVED BY	DANIEL CARRIER	2017-04-11
ECHELLE SCALE	NTS	DATE 2017-04-11

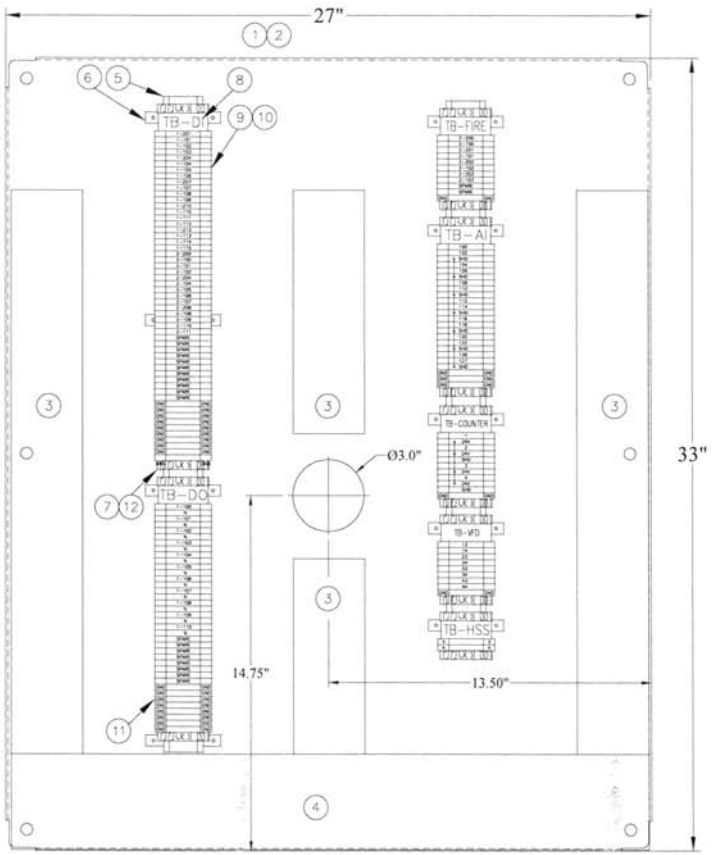
NO. DESSIN DRAWING NO. 65-ULT-416-IN-004

NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHT
6515	3	1/1

FILE NO. 65-ULT-416-IN-004 (E-STOP & COMM).dwg

NO. DESSIN DRAWING NO. 65-ULT-416-IN-006 (JB INST LAYOUT)

FORMAT ARCH D



ITEM	QUANTITY PORTAIL #1	DESCRIPTION	MANUFACTURER	MODEL
1	1	WALLMOUNT ENCLOSURE 36H, 30W, 10 TYPE 4X ALUMINIUM	Hammond	1418N4ALMB
2	1	INNER MOUNTING PANEL FOR ENCLOSURE	Hammond	INCLUDED (ITEM 1)
3	1	RACEWAY INSIDE CABINET 3" x 4", 6 FEET LENGTH	Panduit	G3X4LG6
4	1	RACEWAY INSIDE CABINET 4" x 4", 6 FEET LENGTH	Panduit	G4X4LG6
5	1	TS-35 DIN MOUNTING RAIL, 7.5MM, 2 METERS LONG	Weidmuller	514500000
6	6	RAIL SUPPORT 1"	Weidmuller	7924270030
7	14	END COVER FOR TS-35	Weidmuller	38356
8	7	GROUP MARKER CARRIER	Weidmuller	29246
9	125	TERMINAL BLOCK WDU 4	Weidmuller	102010
10	250	MARKER	Weidmuller	051796/160772/051530
11	22	GROUND TERMINAL YELLOWGREEN	Weidmuller	10101
12	7	END PLATE	Weidmuller	10500

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 6 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
13677
D. CARRIER
LICENSEE
NT/NU SEP 2 6 2017

NOTES GENERALES / GENERAL NOTES

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
TB-DI INTERCONNECTION	65-ULT-416-IN-201
TB-DO INTERCONNECTION	65-ULT-416-IN-200
TB-FIRE INTERCONNECTION	65-ULT-416-IN-200
TB-VFD 1&2 INTERCONNECTION	65-ULT-416-IN-011
TB-VFD 3&4 INTERCONNECTION	65-ULT-416-IN-012
TB-HSS INTERCONNECTION	65-ULT-416-IN-004
TB-AI INTERCONNECTION	65-ULT-416-IN-203
TB-COUNTER INTERCONNECTION	65-ULT-416-IN-204

AGNICO EAGLE

NO.	DATE	DESCRIPTION	PREPARE	APPR	CLEAR
3	2017-09-19	FOR CONSTRUCTION	E.L.	D.C.	
2	2017-08-14	UPDATE AREA & TAG NUMBER	E.L.	D.C.	
1	2017-08-30	FOR CONSTRUCTION	E.L.	D.C.	
0	2017-05-15	FOR CONSTRUCTION	E.L.	DC	

REVISIONS

NUOSANG PROJECT MINING

ultragen

NO. PROJET PROJECT NO. : 591700

TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
416 – FUEL TANK FARM
FUEL DISTRIBUTION (PORTAL #1)
CABINET LAYOUT
JUNCTION BOX INSTRUMENTATION
65JB41602

DESSINE PAR DRAWN BY	ERIC LAROCHE	DATE 2017-04-19
DESSIN PAR CHECKED BY	DANIEL CARRIER	2017-04-19
APPROUVE PAR APPROVED BY	DANIEL CARRIER	2017-04-19
ECHELLE SCALE N/S	DATE 2017-04-19	

NO. DESSIN DRAWING NO. 65-ULT-416-IN-006

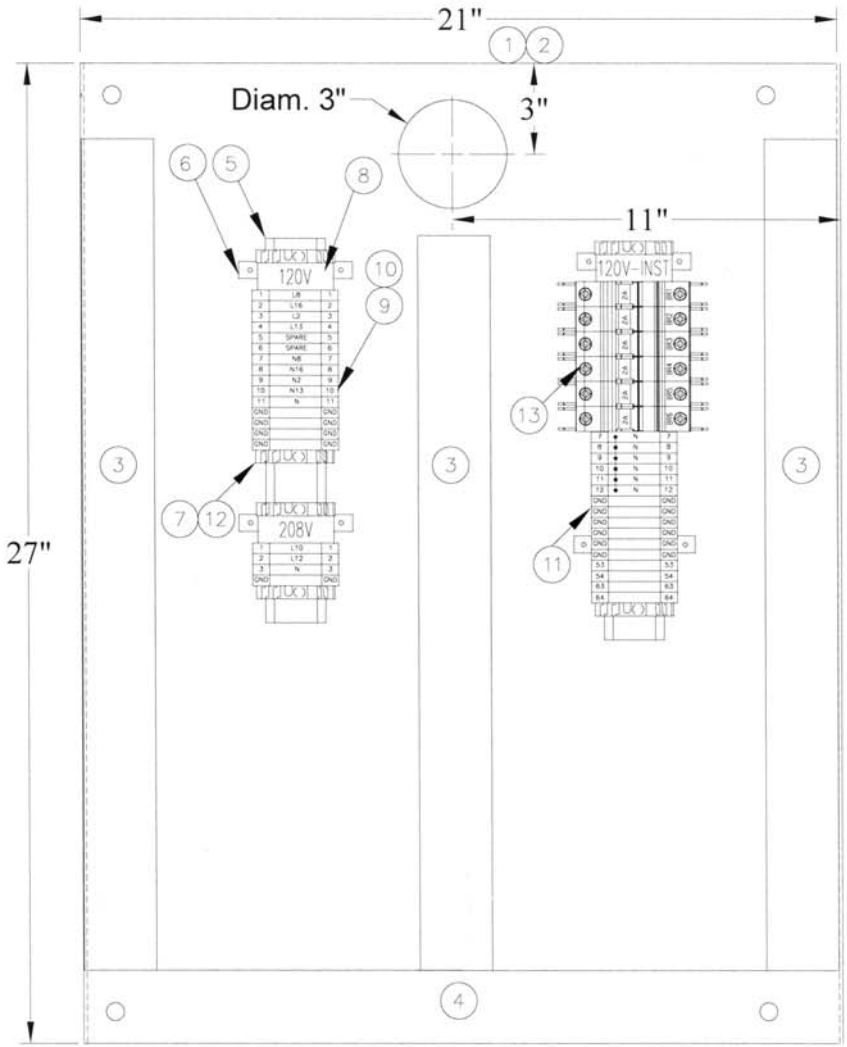
NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHEET
6515	3	1 / 1

NE-CART-ARCH D

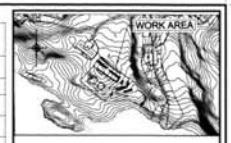
FILE NO. (STATUT TRAVAIL)

NO. DESIGN. DRAWING NO. 65-ULT-416-IN-007 (JB 120V LAYOUT)

FORMAT ARCH D



ITEM	QUANTITY PORTAIL #1	DESCRIPTION	MANUFACTURER	MODEL
1	1	WALLMOUNT ENCLOSURE 30H, 24W, 8D TYPE 4X ALUMINUM	Hammond	1418N4ALK8
2	1	INNER MOUNTING PANEL FOR ENCLOSURE	Hammond	INCLUDED (ITEM 1)
3	1	RACEWAY INSIDE CABINET 2" x 4", 6 FEET LENGTH	Panduit	G2X4LG6
4	1	RACEWAY INSIDE CABINET 3" x 4", 6 FEET LENGTH	Panduit	G3X4LG6
5	1	TS-35 DIN MOUNTING RAIL, 7.5MM, 2 METERS LONG	Weidmuller	514500000
6	6	RAIL SUPPORT 1"	Weidmuller	7924270030
7	6	END BRACKET FOR TS-35	Weidmuller	36356
8	3	GROUP MARKER CARRIER	Weidmuller	29246
9	28	TERMINAL BLOCK WDU 6	Weidmuller	10202
10	56	MARKER	Weidmuller	051796/160772/051530
11	12	GROUND TERMINAL YELLOW/GREEN	Weidmuller	10102
12	4	END PLATE	Weidmuller	10500
13	6	120VAC/24VDC CIRCUIT BREAKER 2A	Weidmuller	GB2CB07



NOTES GENERALES / GENERAL NOTES

ISSUED FOR CONSTRUCTION
Ultragen DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TYPE / TITLE	# DWG
65JB1601, 120Vac INTERCONNECTION	65-ULT-416-IN-013

AGNICO EAGLE

NO.	DATE	DESCRIPTION	PAR/DR	APP.	CLIENT
3	2017-09-18	FOR CONSTRUCTION	E.L.	D.C.	
2	2017-08-14	UPDATE AREA & TAG NUMBER	E.L.	D.C.	
1	2017-06-08	FOR CONSTRUCTION	E.L.	D.C.	
0	2017-05-18	FOR CONSTRUCTION	E.L.	D.C.	

REVISIONS

NUNAVUT MINING — ultragen

NO. PROJET / PROJECT NO. 591700

TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
416 – FUEL TANK FARM
FUEL DISTRIBUTION (PORTAL #1)
CABINET LAYOUT
JUNCTION BOX 120V
65JB1601

DESSINE PAR / DRAWN BY	ERIC LAROCHE	DATE 2017-04-19
VERIFIE PAR / CHECKED BY	DANIEL CARRIER	2017-04-19
APPROUVE PAR / APPROVED BY	DANIEL CARRIER	2017-04-19
ECHELLE / SCALE NTS	DATE 2017-04-19	

NO. DESSIN / DRAWING NO. 65-ULT-416-IN-007

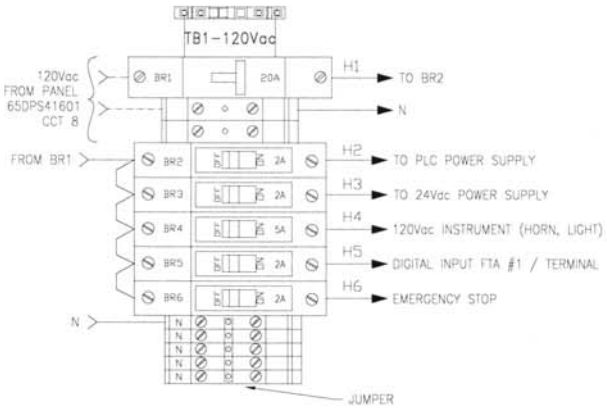
NO. PROJET / PROJECT NO. 6515 | REVISION 3 | FEUILLE / SHT 1 / 1

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 6 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

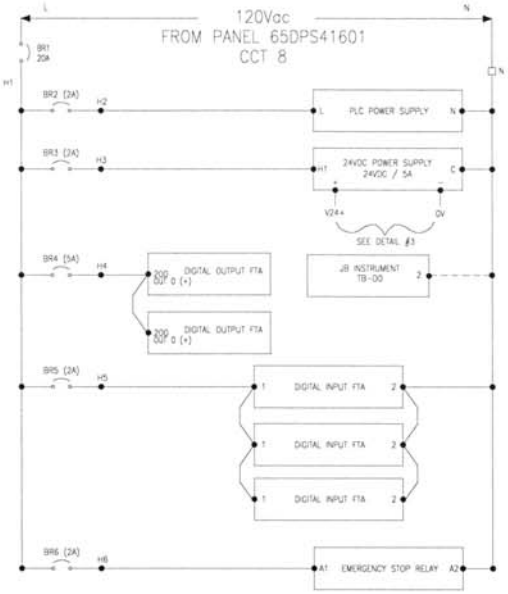
REGISTERED PROFESSIONAL ENGINEER
L3627
D. CARRIER
LICENSEE
NT/NU
SEP 2 6 2017

FILE NO. 65-ULT-416-IN-007 (JB 120V LAYOUT).dwg

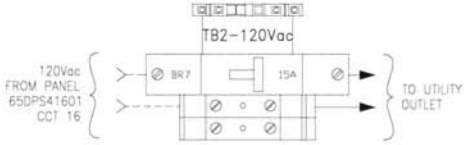
NO. DESSIN DRAWING NO. 65-ULT-416-IN-008 (DISTRIBUTION)



DETAIL #1



DETAIL #1 SCHEMATIC DIAGRAM



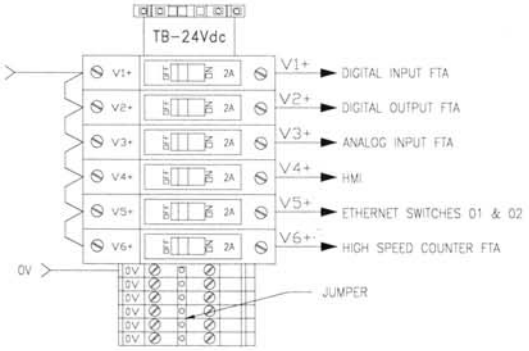
DETAIL #2

LEGEND

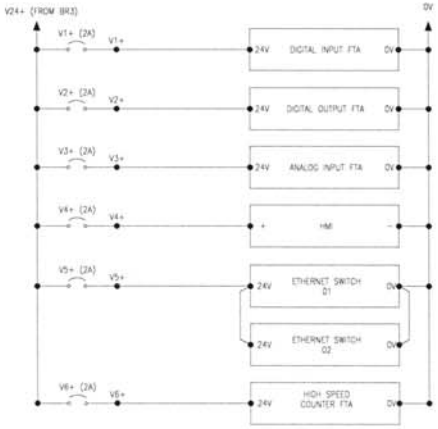
PLC CABINET INTERNAL WIRING

FIELD WIRING

DETAIL #1, #2, #3 FROM PLC CABINET LAYOUT DWG # 65-ULT-416-IN-007



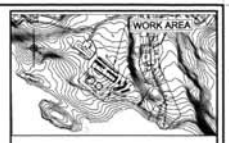
DETAIL #3



DETAIL #1 SCHEMATIC DIAGRAM

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 26 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
L3627
D. CARRIER
LICENSEE
NT/NU
SEP 26 2017



NOTES GENERALES / GENERAL NOTES

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TYPE / TITLE	# DWG
PLC CABINET LAYOUT	65-ULT-416-IN-007

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PREPARED	APP.	CLIENT
3	2017-09-14	FOR CONSTRUCTION	E.L.	D.C.	
2	2017-08-14	UPDATE AREA & TAG NUMBER	E.L.	D.C.	
1	2017-07-06	FOR CONSTRUCTION	E.L.	D.C.	
0	2017-05-15	FOR CONSTRUCTION	E.L.	D.C.	

REVISIONS

NUNAVUT PROJECT MINING
ultragen
NO. PROJET PROJECT NO. 591700

TITRE / TITLE
AGNICO EAGLE – MELIADINE DYSON
416 – FUEL TANK FARM
FUEL DISTRIBUTION (PORTAL #1)
120Vac / 24Vdc DISTRIBUTION
MAIN PLC CABINET

DESSINE PAR DRAWN BY	ERIC LAROCHE	DATE 2017-04-11
VERIFIE PAR CHECKED BY	DANIEL CARRIER	2017-04-11
APPROUVE PAR APPROVED BY	DANIEL CARRIER	2017-04-11
ECHELLE SCALE	N/S	DATE 2017-04-11

NO. DESSIN DRAWING NO. 65-ULT-416-IN-008

NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHT
6515	3	1/1

FILE NO. 65-ULT-416-IN-008 (DISTRIBUTION).dwg

NO. DESIGN DRAWING NO. 65-ULT-416-IN-011 (VFD)-416-IN-105

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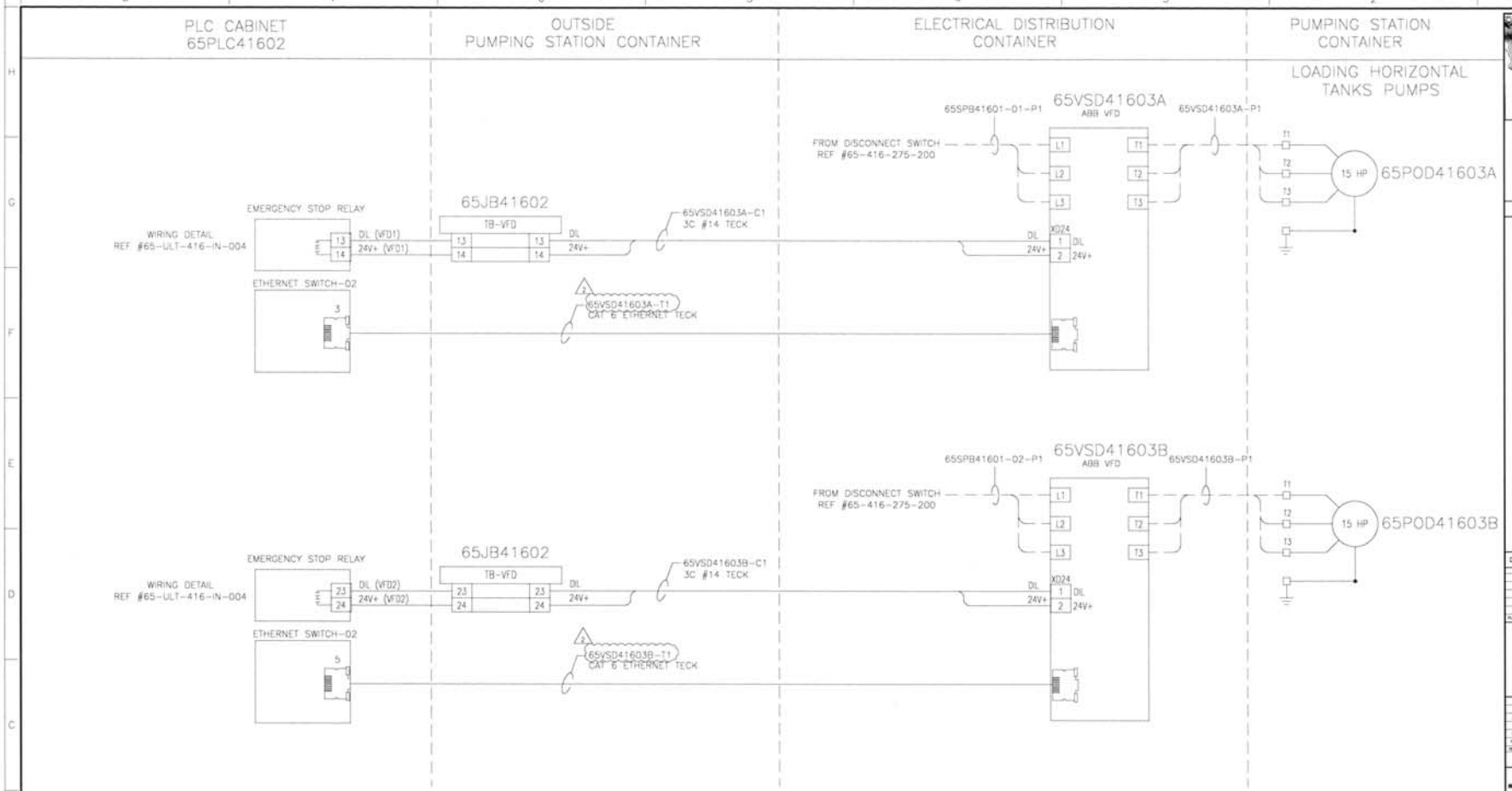
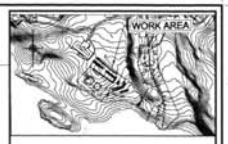


MOTOR SCHEMATIC

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 6 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
13627
D. CARRIER
LICENSEE
NT/NU
SEP 2 6 2017



NOTES GENERALES / GENERAL NOTES

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
PLC CABINET LAYOUT	65-ULT-416-IN-001

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PRÉP./BY	APP.	CLIENT
2	2017-09-18	FOR CONSTRUCTION	E.L.	D.C.	
1	2017-08-14	UPDATE AREA & TAG NUMBER	E.L.	D.C.	
0	2017-06-30	FOR CONSTRUCTION	E.L.	D.C.	
PA	2017-06-12	FOR COMMENTS	E.L.	D.C.	

REVISIONS

NUNAVUT PROMINEX MINING
ultragen
NO. PROJET PROJECT NO. 591700

TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
416 – FUEL TANK FARM
FUEL DISTRIBUTION (PORTAL #1)
VFD SCHEMATIC WIRING DETAIL
65VSD41603A/65VSD41602

DESSINÉ PAR DRAWN BY	ERIC LAROUCHE	DATE 2017-06-08
VÉRIFIÉ PAR CHECKED BY	DANIEL CARRIER	2017-06-08
APPROUVÉ PAR APPROVED BY	DANIEL CARRIER	2017-06-08
ÉCHELLE SCALE N/S	DATE 2017-06-08	

NO. DESSIN DRAWING NO. 65-ULT-416-IN-011

NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHT
6515	2	1 / 1

FILE NO. 65-ULT-416-IN-011 (VFD).dwg

NO. DESIGN DRAWING NO. 65-ULT-416-IN-012 (VFD)-416-IN-105

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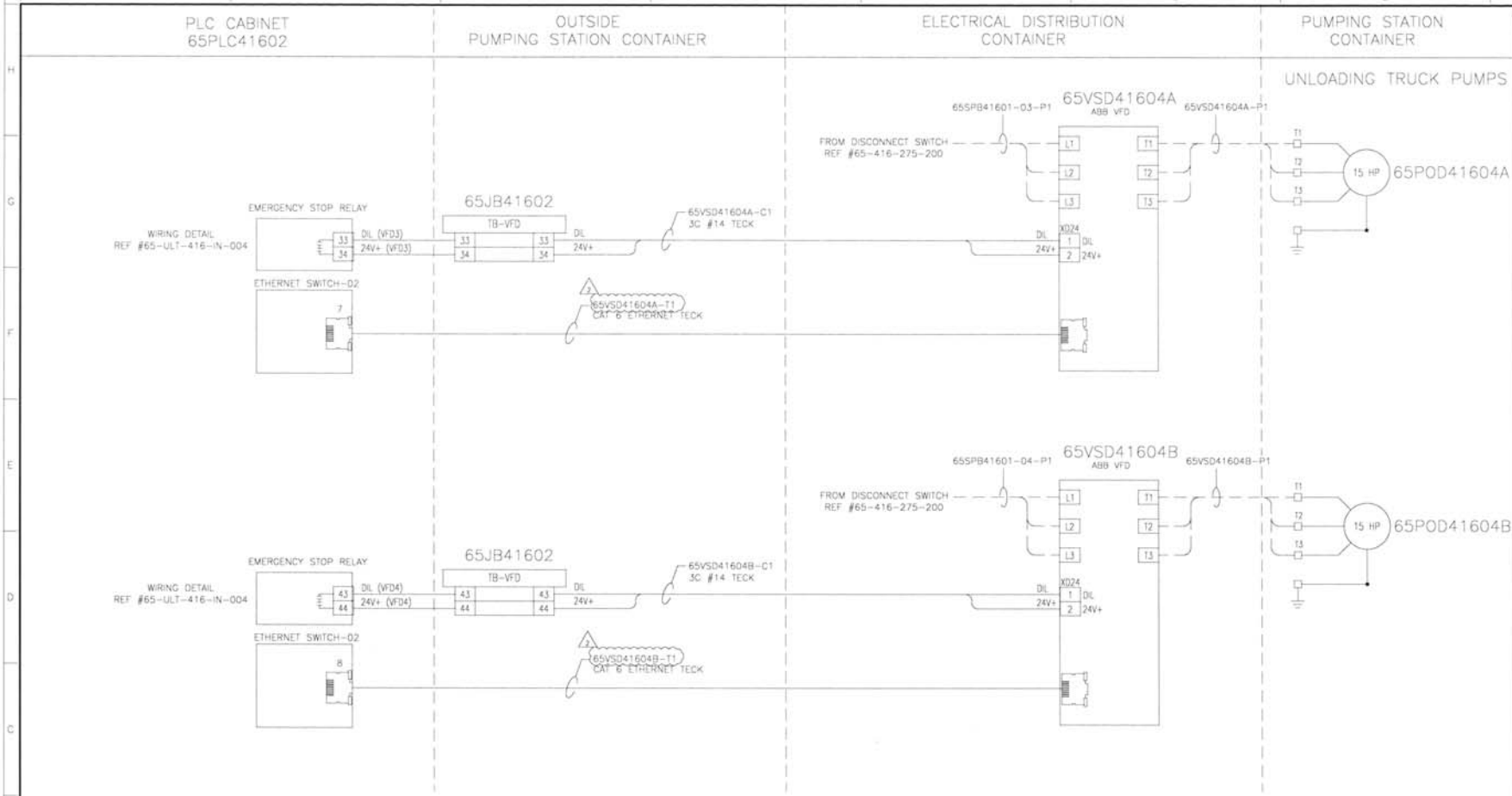
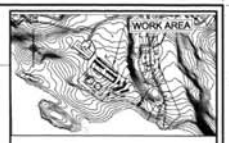


MOTOR SCHEMATIC

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 6 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
L3627
D. CARRIER
LICENSEE
NT/NU
SEP 2 6 2017



NOTES GENERALES / GENERAL NOTES

ISSUED FOR CONSTRUCTION
ULTRAGEN DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TYPE / TITLE	# DWG
PLC CABINET LAYOUT	65-ULT-416-IN-001

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PREPARED BY	APP.	CLIENT
2	2017-09-19	FOR CONSTRUCTION	E.L.	D.C.	
1	2017-08-14	UPDATE AREA & TAG NUMBER	E.L.	D.C.	
0	2017-06-30	FOR CONSTRUCTION	E.L.	D.C.	
79	2017-06-13	FOR COMMENTS	E.L.	D.C.	

REVISIONS

NUGGSANG PROMET MINING

ultragen

NO. PROJET PROJECT NO. 591700

TITLE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
416 – FUEL TANK FARM
FUEL DISTRIBUTION (PORTAL #1)
VFD SCHEMATIC WIRING DETAIL
65VSD41603/65VSD41604

DESSINE PAR DRAWN BY	ERIC LAROUCHE	DATE 2017-06-08
VERIFIE PAR CHECKED BY	DANIEL CARRIER	2017-06-08
APPROUVE PAR APPROVED BY	DANIEL CARRIER	2017-06-08
ECHELLE SCALE N/S	DATE 2017-06-08	

NO. DESIGN DRAWING NO. 65-ULT-416-IN-012

NO. PROJET PROJECT NO. 6515 | REVISION 2 | FEUILLE / SHT 1/1

AC-CRAFT-ARCH D

FILE NO. 65-ULT-416-IN-012 (VFD).dwg

NO. DESIGN DRAWING NO. 65-ULT-416-IN-013 (DISTRIBUTION BJ 120)

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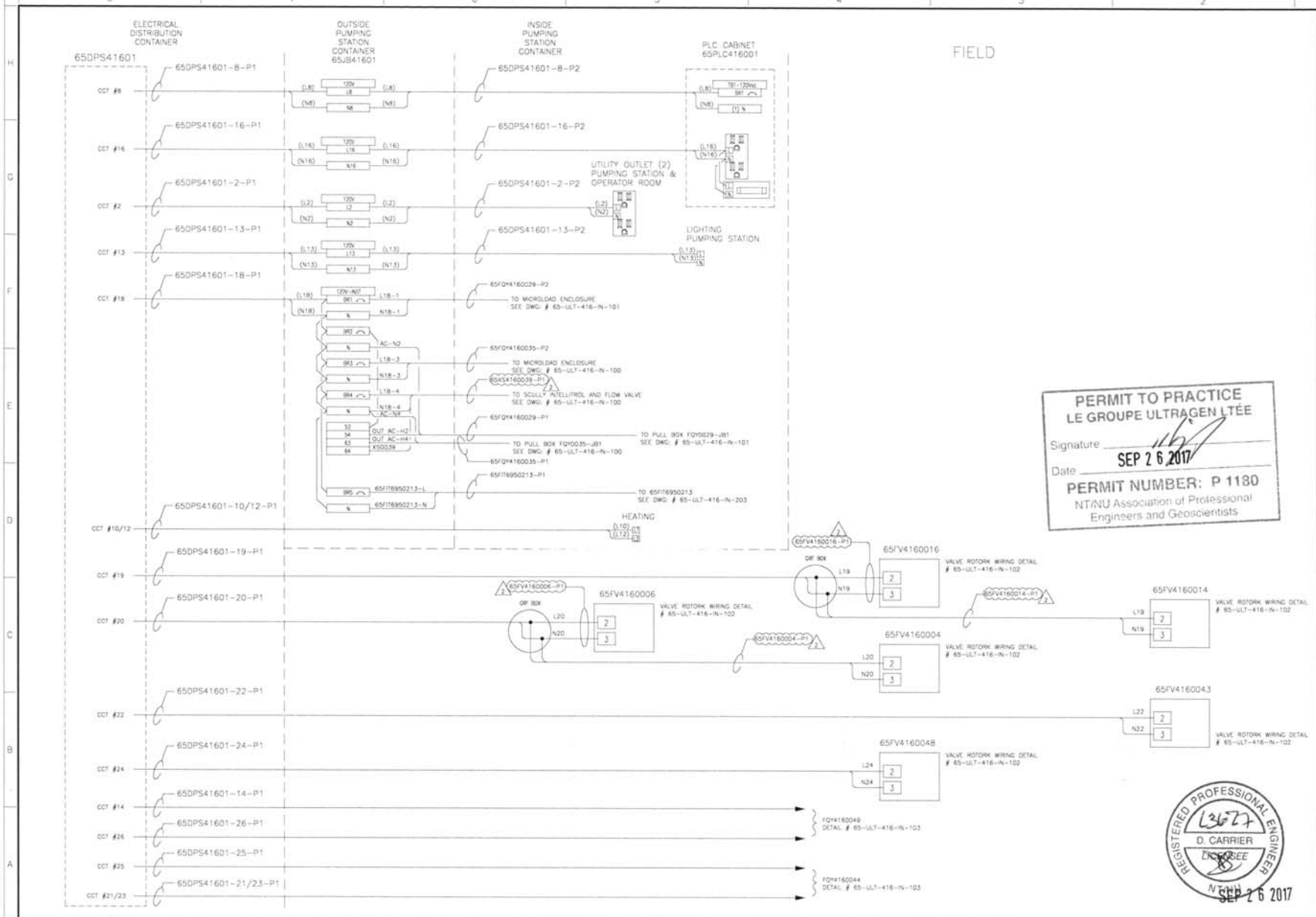
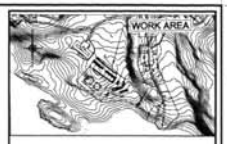


PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 6 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
L3677
D. CARRIER
LICENSEE
NT/NU
SEP 2 6 2017



NOTES GENERALES / GENERAL NOTES

ISSUED FOR CONSTRUCTION
ULTRAGEN DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
PLC CABINET LAYOUT	65-ULT-416-IN-001

AGNICO EAGLE

REV.	DATE	DESCRIPTION	DWN/DR	APP.	CLIENT
2	2017-09-18	FOR CONSTRUCTION	E.L.	D.C.	
1	2017-08-14	UPDATE AREA & TAG NUMBER	E.L.	D.C.	
0	2017-06-30	FOR CONSTRUCTION	E.L.	D.C.	
PA	2017-06-12	FOR COMMENTS	E.L.	D.C.	

REVISIONS

NUOSANG PROJECT MINING

ultragen

NO. PROJET PROJECT NO. 591700

TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
416 – FUEL TANK FARM
FUEL DISTRIBUTION (PORTAL #1)
INTERCONNECTION
65JB41601 – 120Vac DISTRIBUTION

DESSINE PAR DRAWN BY	ERIC LAROCHE	DATE 2017-06-06
DESSIN PAR CHECKED BY	DANIEL CARRIER	2017-06-06
APPROUVE PAR APPROVED BY	DANIEL CARRIER	2017-06-06
ECHELLE SCALE N/S	DATE 2017-06-06	

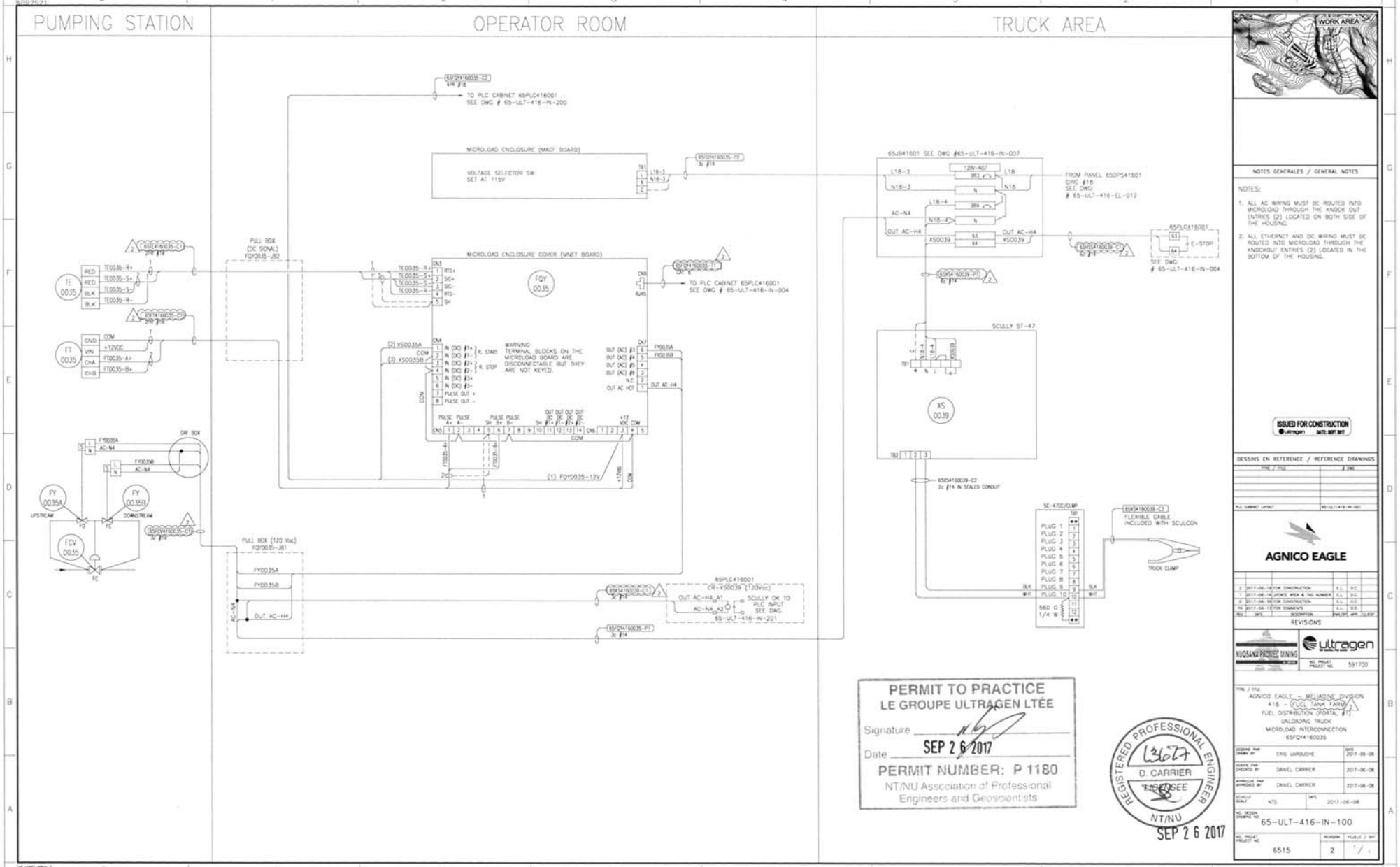
NO. DESSIN DRAWING NO. 65-ULT-416-IN-013

NO. PROJET PROJECT NO. 6515 | REVISION 2 | FEUILLE / SHT 1/1

FILE NO. 65-ULT-416-IN-013 (DISTRIBUTION BJ 120).dwg

NO. DESIGN DRAWING NO. 65-ULT-416-IN-100-416-IN-105

FORMAT ARCH D



NOTES GENERALES / GENERAL NOTES

NOTES:

1. ALL AC WIRING MUST BE ROUTED INTO MICROLOAD THROUGH THE KNOCK OUT ENTRIES (2) LOCATED ON BOTH SIDE OF THE HOUSING.
2. ALL ETHERNET AND DC WIRING MUST BE ROUTED INTO MICROLOAD THROUGH THE KNOCKOUT ENTRIES (2) LOCATED IN THE BOTTOM OF THE HOUSING.

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TYPE / TITLE	# DWG
PLC CABINET LAYOUT	65-ULT-416-IN-001

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PREPARED BY	CHECKED BY
2	2017-06-12	FOR CONSTRUCTION	E.L.	D.C.
1	2017-06-14	UPDATE AREA & TAG NUMBER	E.L.	D.C.
0	2017-06-06	FOR CONSTRUCTION	E.L.	D.C.
PA	2017-06-12	FOR COMMENTS	E.L.	D.C.

REVISIONS

NUNAVUT PROJECT TRAINING

ultragen

NO. PROJET PROJECT NO. 591700

TYPE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
416 – FUEL TANK FARM
FUEL DISTRIBUTION (PORTAL #1)
UNLOADING TRUCK
MICROLOAD INTERCONNECTION
65FQY4160035

DESSINE PAR DRAWN BY	ERIC LAROUCHE	DATE 2017-06-06
VERIFIE PAR CHECKED BY	DANIEL CARRIER	2017-06-06
APPROUVE PAR APPROVED BY	DANIEL CARRIER	2017-06-06
ECHELLE SCALE	NTS	DATE 2017-06-06

NO. DESSIN DRAWING NO. 65-ULT-416-IN-100

NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHT
6515	2	1 / 1

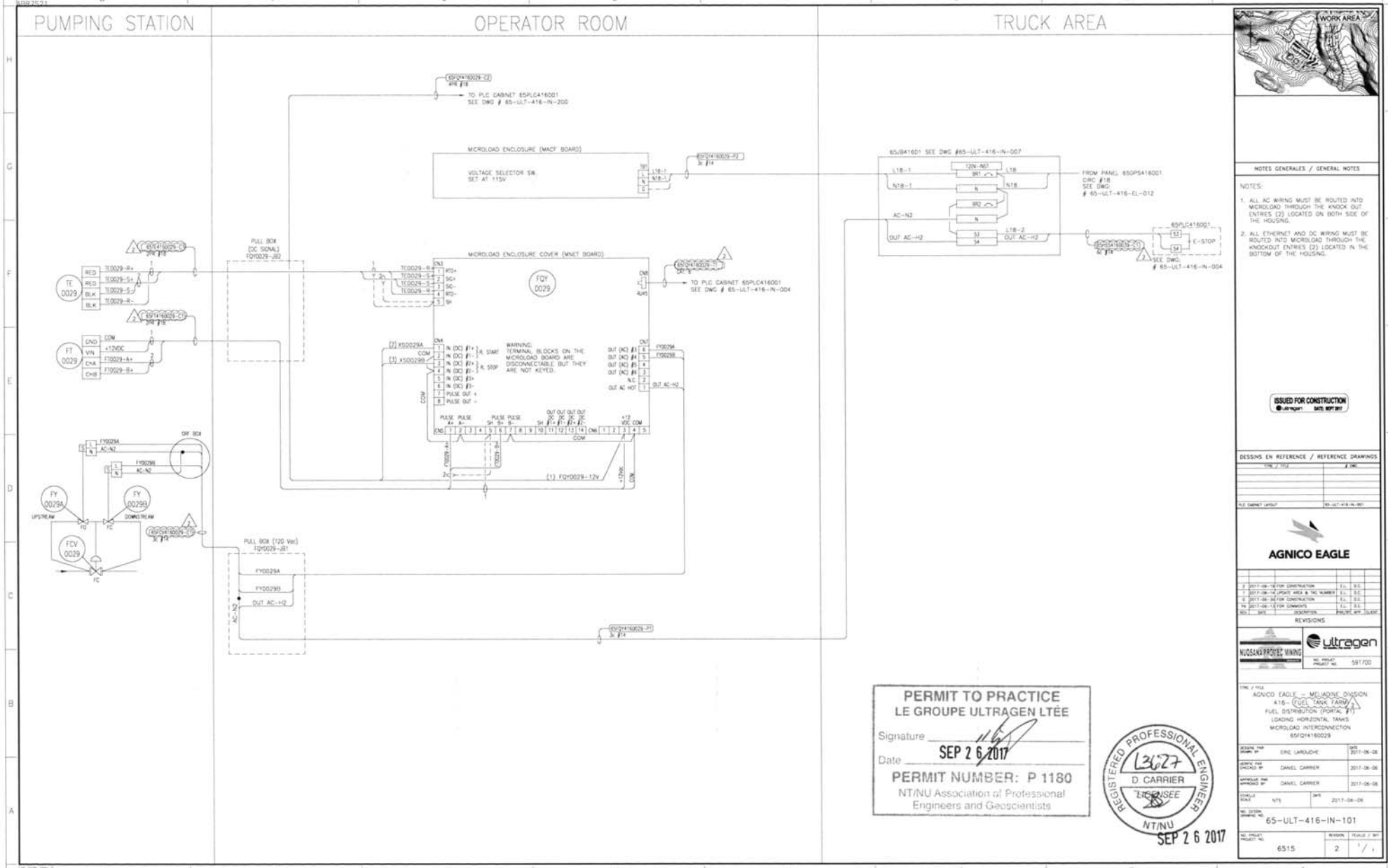
PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 26 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
13677
D. CARRIER
LICENSEE
NT/NU
SEP 26 2017

FILE NO. 65-ULT-416-IN-100.dwg

NO. DESIGN DRAWING NO. 65-ULT-416-IN-101 (SMITH)-416-IN-105

FORMAT ARCH-D



NOTES GENERALES / GENERAL NOTES

NOTES:

1. ALL AC WIRING MUST BE ROUTED INTO MICROLOAD THROUGH THE KNOCK OUT ENTRIES (2) LOCATED ON BOTH SIDE OF THE HOUSING.
2. ALL ETHERNET AND DC WIRING MUST BE ROUTED INTO MICROLOAD THROUGH THE KNOCKOUT ENTRIES (2) LOCATED IN THE BOTTOM OF THE HOUSING.

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TYPE / TITLE	# DWG
PLC CABINET LAYOUT	65-ULT-416-IN-001

AGNICO EAGLE

REV.	DATE	DESCRIPTION	ENGIN.	APP.	CLIENT
2	2017-08-16	FOR CONSTRUCTION	E.L.	D.C.	
1	2017-08-14	UPDATE AREA & TAG NUMBER	E.L.	D.C.	
0	2017-06-30	FOR CONSTRUCTION	E.L.	D.C.	
TA	2017-06-12	FOR COMMENTS	E.L.	D.C.	

REVISIONS

NUNAVUT PROVINCE MINING

ultragen

NO. PROJET / PROJECT NO. 581700

TITRE / TITLE
AGNICO EAGLE – MEADOWE DIVISION
416- (FUEL TANK FARM)
FUEL DISTRIBUTION (PORTAL #1)
LOADING HORIZONTAL TANKS
MICROLOAD INTERCONNECTION
65FQY416029

		DATE
DESSINE PAR DRAWN BY	ERIC LAROUCHE	2017-06-06
VERIFIE PAR CHECKED BY	DANIEL CARRIER	2017-06-06
APPROUVE PAR APPROVED BY	DANIEL CARRIER	2017-06-06

ECHELLE SCALE: N/S — DATE: 2017-06-06

NO. DESSIN DRAWING NO.: 65-ULT-416-IN-101

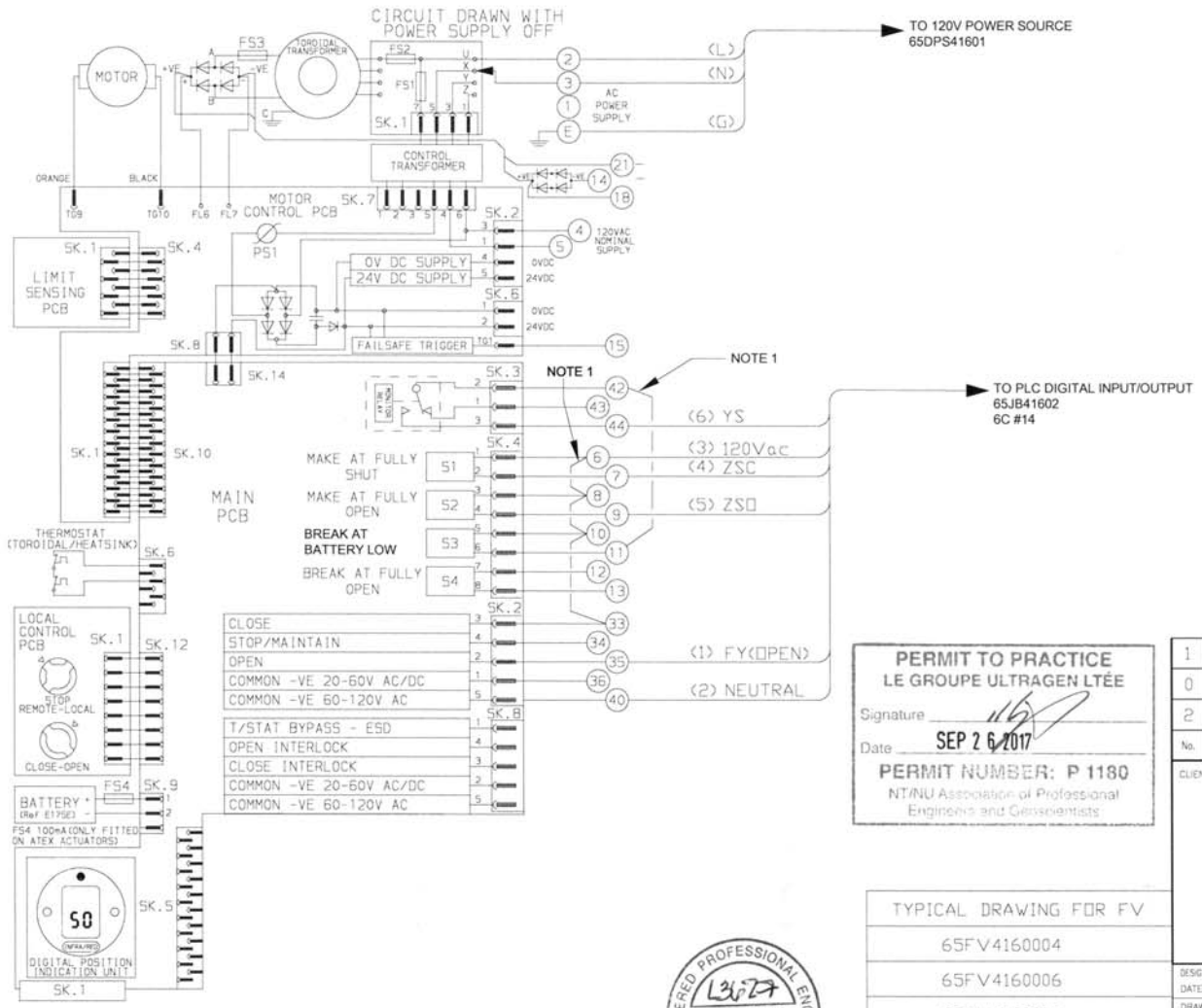
NO. PROJET PROJECT NO.: 6515 — REVISION: 2 — FEUILLE / SHT: 1/1

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 6 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
13627
D. CARRIER
LICENSEE
NT/NU
SEP 2 6 2017

AE-DWT-ARCH-D

FILE NO. 65-ULT-416-IN-101 (SMITH).dwg



NOTE :

1. CONTRACTOR MUST INSTALL JUMPERS WIRE ON VALVE TERMINAL BLOCK
2. RELAY MONITOR SWITCH AND S3 SWITCH ARE CONNECTED IN SERIAL. THESE SWITCHES MUST BE PROGRAMMED IN FAIL SAFE MODE (CLOSED CONTACT IN NORMAL OPERATION)
3. S3 SWITCH MUST BE PROGRAMMED FOR BATTERY LOW MONITORING
4. VALVE TO BE CONFIGURED IN TWO WIRES CONTROL MODE, ENERGIZE TO OPEN, DE-ENERGIZE TO CLOSE (CONFIGURE FOR OPEN PRIORITY)

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 6 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
D. CARRIER
LICENSEE
NT/NU
SEP 2 6 2017

No.	DATE	REVISION	BY / APP.
1	2017-08-14	UPDATE AREA & TAG NUMBER	EL / DC
0	2017-06-30	ISSUED FOR CONSTRUCTION	EL / DC
2	2017-09-19	FOR CONSTRUCTION	EL / DC

TYPICAL DRAWING FOR FV
65FV4160004
65FV4160006
65FV4160014
65FV4160016
65FV4160043
65FV4160048

CLIENT: AGNICO EAGLE

NUQSANA-PROMEC MINING

ultragen
CONSULTANT PROJECT NO. 591700

DESIGNED BY: E. LAROUCHE DATE: 2017-06-08
DRAWN BY: R. SHRESTHA DATE: 2017-06-08
CHECKED BY: D. CARRER DATE: 2017-06-08
APPROVED BY: DATE:
SCALE: NTS

PROJECT: AGNICO EAGLE – MELIADINE DIVISION 416 – FUEL TANK FARM 2

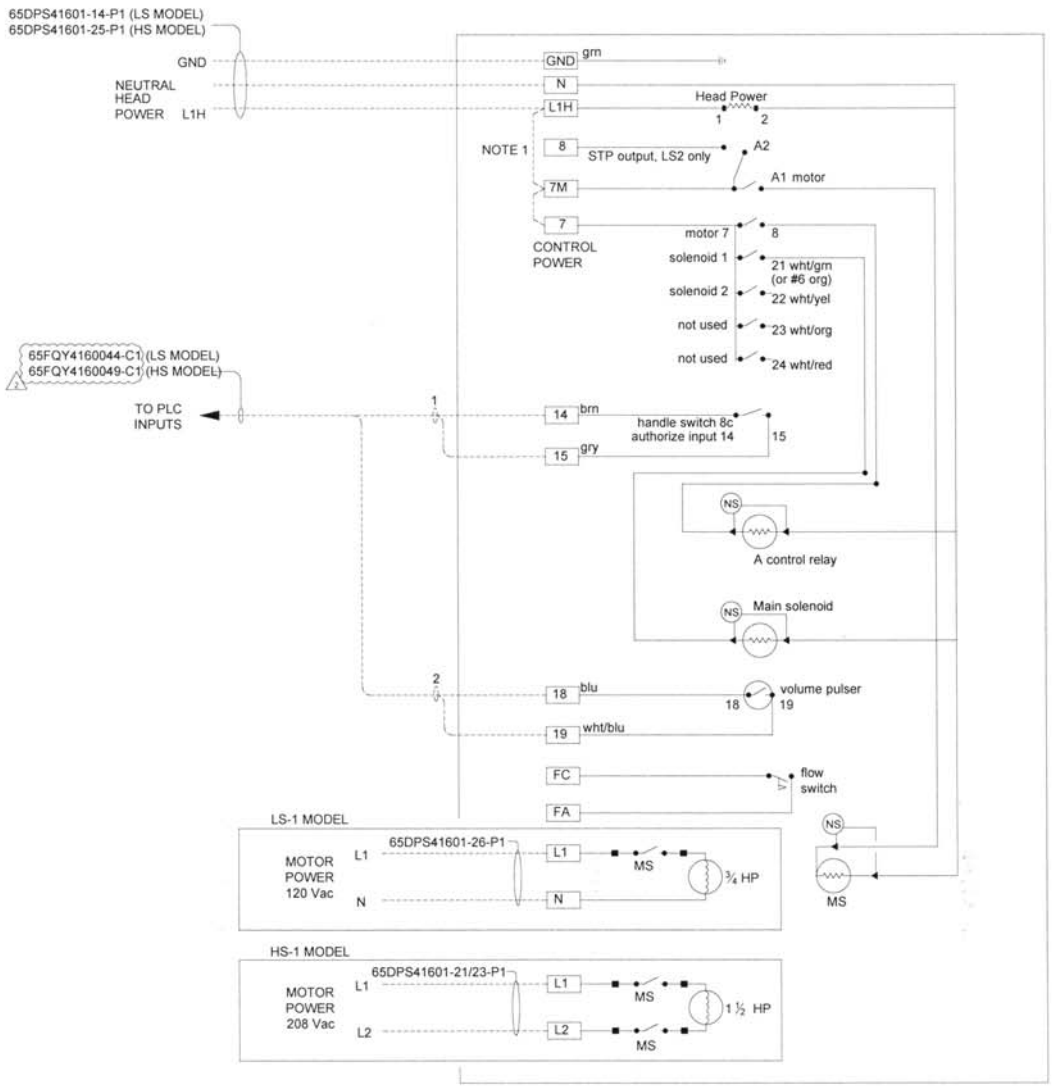
TITLE: ROTORK MOTORIZED VALVE WIRING DIAGRAM TYPICAL DRAWING FOR 65FV416XXXX

PROJECT. No.	DRAWING NO.	REV.
6515	65-ULT-416-IN-102	2

NO. DESIGN DRAWING NO. 65-103-245-201

FORMAT ARCH-D

RDR McLaren gasboy light & heavy vehicles typical wiring diagram



PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 26 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

65FQY4160044-C1 (LS MODEL)
65FQY4160049-C1 (HS MODEL)

TAG NAME	MODEL
65FQY4160044	RDR-HS
65FQY4160049	RDR-LS

LEGEND:

——— INTERNAL WIRING

------- EXTERNAL WIRING BY CONTRACTOR

REGISTERED PROFESSIONAL ENGINEER
13627
D. CARRIER
LICENSEE
NT/NU
SEP 26 2017

NOTES GENERALES / GENERAL NOTES

1. JUMPERS TO BE DONE BY THE CONTRACTOR

ISSUED FOR CONSTRUCTION
ULTRAGEN DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PRN	REV	APP	CLIENT
2	2017-09-14	FOR CONSTRUCTION	E.L.	D.C.		
1	2017-08-14	UPDATE AREA & DC NUMBER	E.L.	D.C.		
0	2017-06-30	ISSUED FOR CONSTRUCTION	E.L.	D.C.		
PA	2017-06-13	ISSUED FOR COMMENTS	E.L.	D.C.		

REVISIONS

TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
416-FUEL TANK FARM
FUEL DISTRIBUTION (MODEL 97)
TYPICAL
McLAREN RDR LS-1 & HS-1
WIRING DIAGRAM

DESSINE PAR DRAWN BY	R. SHRESTHA	DATE 2017-06-08
VERIFIE PAR CHECKED BY	D. CARRIER	2017-06-08
APPROUVE PAR APPROVED BY	D. CARRIER	2017-06-08
ECHELLE SCALE	N/S	DATE 2017-06-08

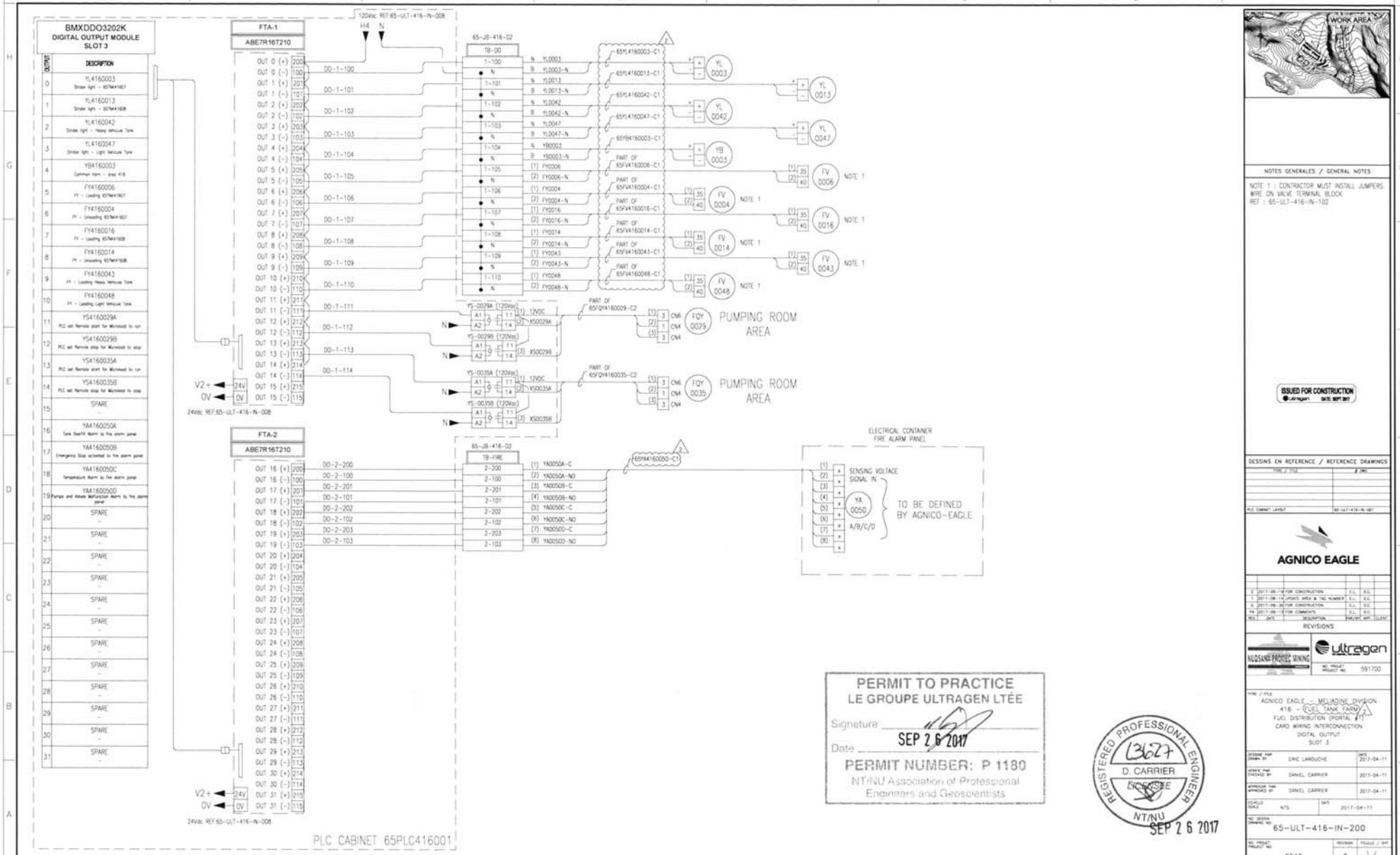
NO. DESIGN DRAWING NO. 65-ULT-416-IN-103

NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHT
591700	2	1/1

FILE NO. 65-ULT-416-IN-103 (Pump outlet).dwg

NO. DESIGN DRAWING NO. 65-ULT-416-IN-200 (DO CARD)

FORMAT ARCH-D



NOTES GENERALES / GENERAL NOTES

NOTE 1 : CONTRACTOR MUST INSTALL JUMPERS WIRE ON VALVE TERMINAL BLOCK
REF : 65-ULT-416-IN-102

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TYPE / TITLE	# DWG
PLC CABINET LAYOUT	65-ULT-416-IN-001

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PREP/DT	APP.	CLIENT
2	2017-09-14	FOR CONSTRUCTION	E.L.	D.C.	
1	2017-08-14	UPDATE AREA & TAG NUMBER	E.L.	D.C.	
0	2017-06-30	FOR CONSTRUCTION	E.L.	D.C.	
PA	2017-06-12	FOR COMMENTS	E.L.	D.C.	

REVISIONS

NUNAVUT PROJECT MINING

ultragen

NO. PROJET PROJECT NO. 591700

TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
416 – FUEL TANK FARM
FUEL DISTRIBUTION (PORTAL #1)
CARD WIRING INTERCONNECTION
DIGITAL OUTPUT
SLOT 3

DESSINE PAR DRAWN BY	ERIC LAROUCHE	DATE 2017-04-11
VERIFIE PAR CHECKED BY	DANIEL CARRIER	2017-04-11
APPROUVE PAR APPROVED BY	DANIEL CARRIER	2017-04-11
ECHELLE SCALE N/S	DATE 2017-04-11	

NO. DESSIN DRAWING NO. 65-ULT-416-IN-200

NO. PROJET PROJECT NO. 6515 | REVISION 2 | FEUILLE / SHT. 1/1

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 26 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
13627
D. CARRIER
LICENSEE
NT/NU
SEP 26 2017

FILE NO. 65-ULT-416-IN-200 (DO CARD).dwg

NO. DESIGN DRAWING NO. 65-ULT-416-IN-201 (DI CARD)

FORMAT ARCH D

BMXDDI6402K
DIGITAL INPUT MODULE
SLOT 2

INPUT	DESCRIPTION
0	HSS4160050 E-stop depressed: truck shed or pumping station or PLC cabinet
1	ZSC4160006 FV close position - Loading 657MX1607
2	ZSO4160006 FV open position - Loading 657MX1607
3	YS4160006 FV failure - Loading 657MX1607
4	ZSC4160004 FV close position - Unloading 657MX1607
5	ZSO4160004 FV open position - Unloading 657MX1607
6	YS4160004 FV failure - Unloading 657MX1607
7	ZSC4160016 FV close position - Loading 657MX1608
8	ZSO4160016 FV open position - Loading 657MX1608
9	YS4160016 FV failure - Loading 657MX1608
10	ZSC4160014 FV close position - Unloading 657MX1608
11	ZSO4160014 FV open position - Unloading 657MX1608
12	YS4160014 FV failure - Unloading 657MX1608
13	ZSC4160043 FV close position - Loading Heavy Vehicule Tank
14	ZSO4160043 FV open position - Loading Heavy Vehicule Tank
15	YS4160043 FV failure - Loading Heavy Vehicule Tank
16	ZSC4160048 FV close position - Loading Light Vehicule Tank
17	ZSO4160048 FV open position - Loading Light Vehicule Tank
18	YS4160048 FV failure - Loading Light Vehicule Tank
19	XS4160039 Study - Truck Ground proving
20	LSHH4160042 Level - Heavy vehicule Tank
21	LSH4160042 Level - Heavy vehicule Tank
22	LSL4160042 Level - Heavy vehicule Tank
23	LSLL4160042 Level - Heavy vehicule Tank
24	LSHH4160047 Level - Light vehicule Tank
25	LSH4160047 Level - Light vehicule Tank
26	LSL4160047 Level - Light vehicule Tank
27	LSLL4160047 Level - Light vehicule Tank
28	SPARE
29	SPARE
30	SPARE
31	SPARE

INPUT #32 TO 63
REF:65-ULT-416-IN-202

FTA-1
ABE7S16E2F0

24Vdc REF:65-ULT-416-IN-008
V1+ 24V 24V
0V 0V 0V

120Vac REF:65-ULT-416-IN-008
H5
N

FTA-2
ABE7S16E2F0

24Vdc REF:65-ULT-416-IN-008
V1+ 24V 24V
0V 0V 0V

120Vac REF:65-ULT-416-IN-008
H5
N

PLC CABINET 65PLC416001

E-STOP RELAY 65-ULT-416-IN-004

65-JB-416-02 TB-DI

Terminal	Wire	Tag
1-201	1-201	
1-101	ZSC-0006	FV 0006
1-102	ZSO-0006	FV 0006
1-103	YS-0006	FV 0006
1-204	1-204	
1-104	ZSC-0004	FV 0004
1-105	ZSO-0004	FV 0004
1-106	YS-0004	FV 0004
1-207	1-207	
1-107	ZSC-0016	FV 0016
1-108	ZSO-0016	FV 0016
1-109	YS-0016	FV 0016
1-210	1-210	
1-110	ZSC-0014	FV 0014
1-111	ZSO-0014	FV 0014
1-112	YS-0014	FV 0014
1-213	1-213	
1-113	ZSC-0043	FV 0043
1-114	ZSO-0043	FV 0043
1-115	YS-0043	FV 0043

PART OF 65FV4160006-C1 · PART OF 65FV4160004-C1 · PART OF 65FV4160016-C1 · PART OF 65FV4160014-C1 · PART OF 65FV4160043-C1

NOTE 1

65-JB-416-02 TB-DI

Terminal	Wire	Tag
2-200	2-200	
2-100	ZSC-0048	FV 0048
2-101	ZSO-0048	FV 0048
2-102	YS-0048	FV 0048

PART OF 65FV4160048-C1 · FV 0048 · NOTE 1

CR-XS0039(120Vac) (1) OUT AC-H4 · (2) AC-N2 · 65XS4160039-C1

TO MICROLOAD PULL BOX FQY0035-JB1 REF #65-ULT-416-IN-100

65-JB-416-02 TB-DI

Terminal	Wire	Tag
2-204	2-204	
2-104	LSHH-0042	LSHH-0042
2-205	LSH-0042	LSH-0042
2-106	LSL-0042	LSL-0042
2-107	LSLL-0042	LSLL-0042
2-208	2-208	
2-108	LSHH-0047	LSHH-0047
2-109	LSH-0047	LSH-0047
2-110	LSL-0047	LSL-0047
2-111	LSLL-0047	LSLL-0047

65LS4160042-C1 · 65LS4160047-C1

DIF BOX

Terminal	Wire	Tag
(1)	BLACK	LSHH-0042
(2)	BLACK	
(3)	WHITE	LSH-0042
(3)	WHITE	
(4)	RED	LSL-0042
(4)	RED	
(5)	GREEN	LSLL-0042
(5)	GREEN	

LS 0042

DIF BOX

Terminal	Wire	Tag
(1)	BLACK	LSHH-0047
(2)	BLACK	
(3)	WHITE	LSH-0047
(3)	WHITE	
(4)	RED	LSL-0047
(4)	RED	
(5)	GREEN	LSLL-0047
(5)	GREEN	

LS 0047

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 26 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER 13627X D. CARRIER LICENSEE NT/NU SEP 26 2017

NOTES GENERALES / GENERAL NOTES

NOTE 1 : CONTRACTOR MUST INSTALL JUMPER WIRE ON VALVE TERMINAL BLOCK
REF : 65-ULT-416-102

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TYPE / TITLE	# DWG
PLC CABINET LAYOUT	65-ULT-416-IN-001

AGNICO EAGLE

REV	DATE	DESCRIPTION	PREPARE	APP.	CLIENT
3	2017-09-18	FOR CONSTRUCTION	E.L.	D.C.	
2	2017-09-06	UPDATE	E.G.		
1	2017-08-14	UPDATE AREA & TAG NUMBER	E.L.	D.C.	
0	2017-08-08	ISSUED FOR CONSTRUCTION	E.L.	D.C.	
R4	2017-08-15	FOR COMMENTS	E.L.	D.C.	

REVISIONS

ultragen
NO. PROJET PROJECT NO. 591700

TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
416 – FUEL TANK FARM
FUEL DISTRIBUTION (PORTAL #1)
CARD WIRING INTERCONNECTION
DIGITAL INPUT (120Vac)
SLOT 2

		DATE
DESSINE PAR DRAWN BY	ERIC LAROUCHE	2017-04-11
VERIFIE PAR CHECKED BY	DANIEL CARRIER	2017-04-11
APPROUVE PAR APPROVED BY	DANIEL CARRIER	2017-04-11
ECHELLE SCALE	N/S	DATE 2017-04-11

NO. DESSIN DRAWING NO. 65-ULT-416-IN-201

NO. PROJET PROJECT NO. 6515 · REVISION 3 · FEUILLE / SHT 1/1

FILE NO. 65-ULT-416-IN-201 (DI CARD).dwg

NO. DESIGN. DRAWING NO. 65-ULT-416-IN-202 (DI CARD)

FORMAT ARCHD

BMXDDI6402K
DIGITAL INPUT MODULE
SLOT 2

INPUT	DESCRIPTION
32	SPARE
33	SPARE
34	SPARE
35	SPARE
36	SPARE
37	SPARE
38	SPARE
39	SPARE
40	SPARE
41	SPARE
42	SPARE
43	SPARE
44	SPARE
45	SPARE
46	SPARE
47	SPARE
48	SPARE
49	SPARE
50	SPARE
51	SPARE
52	SPARE
53	SPARE
54	SPARE
55	SPARE
56	SPARE
57	SPARE
58	SPARE
59	SPARE
60	SPARE
61	SPARE
62	SPARE
63	SPARE

INPUT #0 TO 31
REF:65-ULT-416-IN-201

FTA-3
ABE7S16E2F0

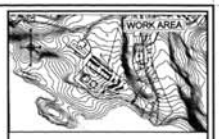
IN 0 (+)	200
IN 0 (-)	100
IN 1 (+)	201
IN 1 (-)	101
IN 2 (+)	202
IN 2 (-)	102
IN 3 (+)	203
IN 3 (-)	103
IN 4 (+)	204
IN 4 (-)	104
IN 5 (+)	205
IN 5 (-)	105
IN 6 (+)	206
IN 6 (-)	106
IN 7 (+)	207
IN 7 (-)	107
IN 8 (+)	208
IN 8 (-)	108
IN 9 (+)	209
IN 9 (-)	109
IN 10 (+)	210
IN 10 (-)	110
IN 11 (+)	211
IN 11 (-)	111
IN 12 (+)	212
IN 12 (-)	112
IN 13 (+)	213
IN 13 (-)	113
IN 14 (+)	214
IN 14 (-)	114
IN 15 (+)	215
IN 15 (-)	115

24Vdc
REF:65-ULT-416-IN-008

V1+ ◄ 24V
24V
0V ◄ 0V
0V

3 — 1 ◄ H5
4 — 2 ◄ N

120Vac REF:65-ULT-416-IN-008



NOTES GENERALES / GENERAL NOTES

ISSUED FOR CONSTRUCTION
APPROVED BY: DATE: SEPT 26/17

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TYPE / TITLE	# DWG
PLC CABINET LAYOUT	65-ULT-416-IN-001

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PROJ. MGR.	CLIENT
2	2017-09-18	FOR CONSTRUCTION	C.L.	S.G.
1	2017-08-14	UPDATE AREA & TAG NUMBER	C.L.	S.G.
0	2017-06-30	FOR CONSTRUCTION	C.L.	S.G.
PA	2017-06-15	FOR COMMENTS	C.L.	S.G.

REVISIONS

ultragen
NO. PROJET / PROJECT NO. 591700

TYPE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
416 – FUEL TANK FARM
FUEL DISTRIBUTION (PORTAL #1)
CARD WIRING INTERCONNECTION
DIGITAL INPUT (120Vac) – PART 2 OF 2
SLOT 2

DESSINE PAR / DRAWN BY	ERIC LAROUCHE	DATE 2017-04-11
ADMIS PAR / CHECKED BY	DANIEL CARRIER	2017-04-11
APPROUVE PAR / APPROVED BY	DANIEL CARRIER	2017-04-11
ECHELLE / SCALE N/S	DATE 2017-04-11	

NO. DESSIN / DRAWING NO. 65-ULT-416-IN-202

NO. PROJET / PROJECT NO.	REVISION	FEUILLE / SHT
6515	2	1 / 1

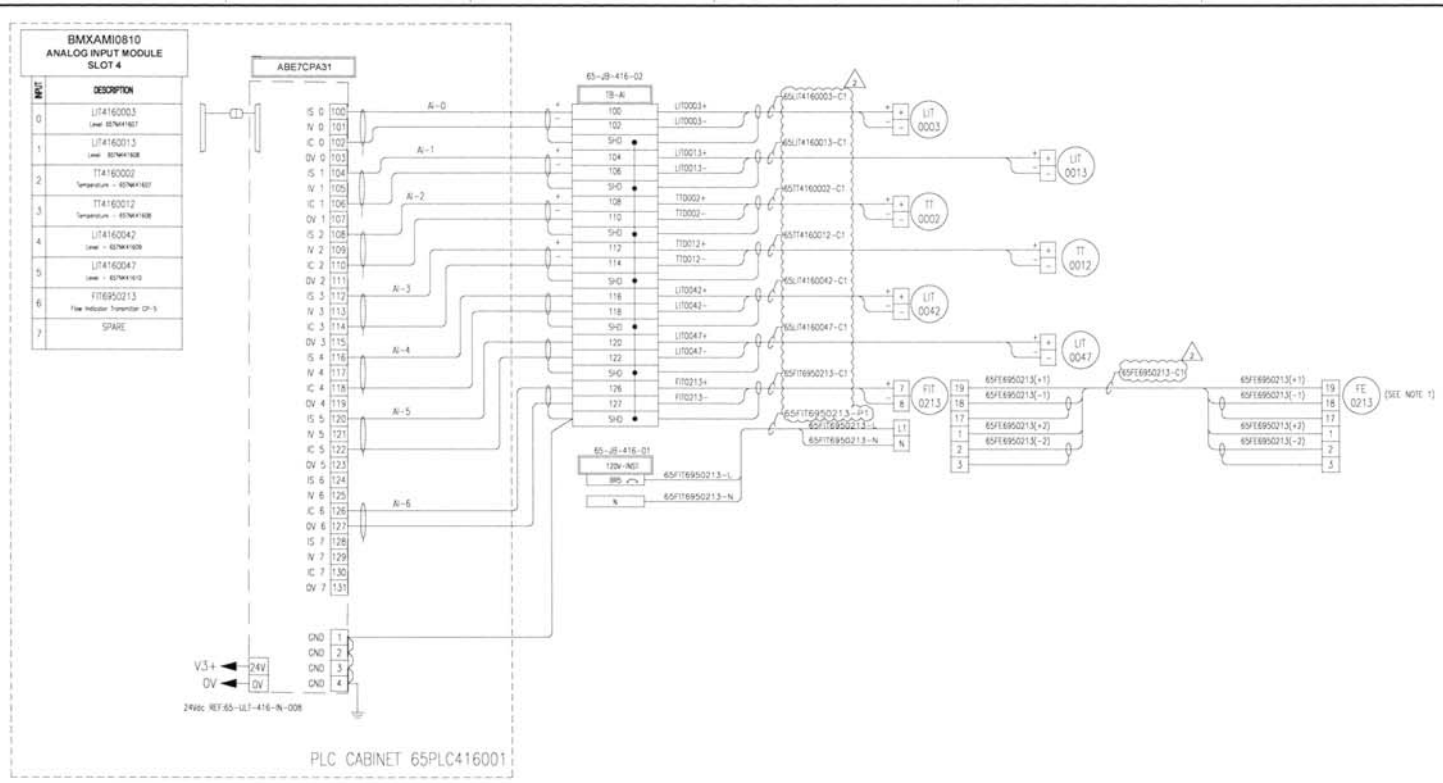
PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 26 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

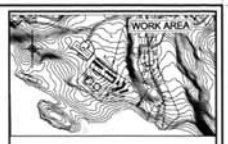
REGISTERED PROFESSIONAL ENGINEER
13627
D. CARRIER
LICENSEE
NT/NU
SEP 26 2017

FILE NO. 65-ULT-416-IN-202 (DI CARD).dwg

NO. DESIGN DRAWING NO. 65-ULT-416-IN-203 (AI CARD)

FORMAT ARCH D





NOTES GENERALES / GENERAL NOTES

1. TRANSMITTER 65FIT6950213 ADDED BY SEBASTIEN PERRON.

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TYPE / TITLE	# DWG
PLC CABINET LAYOUT	65-ULT-416-IN-001

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PREPARED	APPR.	CLIENT
2	2017-09-18	FOR CONSTRUCTION	E.L.	D.C.	
1	2017-08-14	UPDATE AREA & TAG NUMBER	E.L.	D.C.	
0	2017-06-30	FOR CONSTRUCTION	E.L.	D.C.	
PA	2017-06-13	FOR COMMENTS	E.L.	D.C.	

REVISIONS

NUQUSAUQ PROJECT MINING — ultragen

NO. PROJET / PROJECT NO. 591700

TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
416 – FUEL TANK FARM
FUEL DISTRIBUTION DIGITAL I/O
CARD WIRING INTERCONNECTION
ANALOG INPUT
SLOT 4

DESSINE PAR DRAWN BY	ERIC LAROUCHE	DATE 2017-04-11
VERIFIE PAR CHECKED BY	DANIEL CARRIER	2017-04-11
APPROUVE PAR APPROVED BY	DANIEL CARRIER	2017-04-11
ECHELLE SCALE	NTS	DATE 2017-04-11

NO. DESSIN DRAWING NO. 65-ULT-416-IN-203

NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHT
6515	2	1/1

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 26 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
13627
D. CARRIER
NT/NU
SEP 26 2017

AC-CART-ARCH D

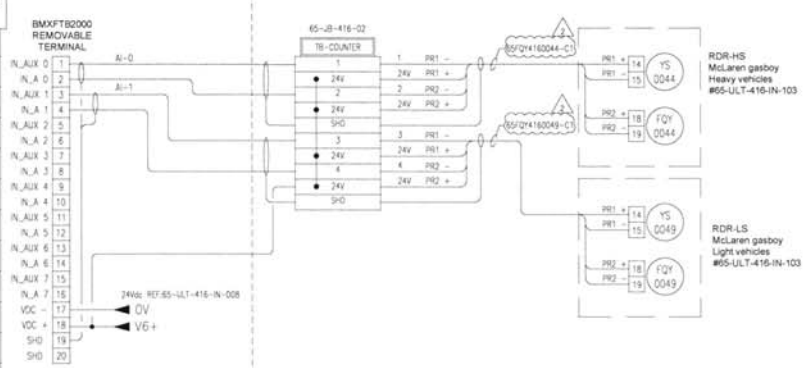
FILE NO. 65-ULT-416-IN-203 (AI CARD).dwg

NO. DESSIN / DRAWING NO. 65-ULT-416-IN-204 (PULSE CARD)

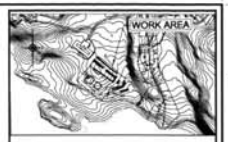
FORMAT ARCH D

BMXEHC0800
HIGH SPEED COUNTER MODULE
SLOT 5

INPUT	DESCRIPTION
0 AUX	YS4160044 Gasboy started from Heavy Vehicule Tank
0 MAN	FQY4160044 Volume transferred from Heavy Vehicule Tank
1 AUX	YS4160049 Gasboy started from Light Vehicule Tank
1 MAN	FQY4160049 Volume transferred from Light Vehicule Tank
2 AUX	SPARE
2 MAN	SPARE
3 AUX	SPARE
3 MAN	SPARE
4 AUX	SPARE
4 MAN	SPARE
5 AUX	SPARE
5 MAN	SPARE
6 AUX	SPARE
6 MAN	SPARE
7 AUX	SPARE
7 MAN	SPARE



PLC CABINET 65PLC416001



NOTES GENERALES / GENERAL NOTES

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
PLC CABINET LAYOUT	65-ULT-416-IN-001

AGNICO EAGLE

REV	DATE	DESCRIPTION	PREP/DT	APP	CLIENT
2	2017-09-14	FOR DESCRIPTION	E.L.	D.C.	
1	2017-08-14	UPDATE AREA & TAG NUMBER	E.L.	D.C.	
0	2017-08-30	FOR CONSTRUCTION	E.L.	D.C.	
PA	2017-08-16	FOR COMMENTS	E.L.	D.C.	

REVISIONS

NUQSANE PROMEC MINING

ultragen

NO. PROJET / PROJECT NO. 591700

TITRE / TITLE
AGNICO EAGLE – MEADOWBANK DIVISION
416 – FUEL TANK FARM
FUEL DISTRIBUTION (PORTAL #1)
CARD WIRING INTERCONNECTION
HIGH SPEED COUNTER MODULE
SLOT 5

		DATE
DESSINE PAR / DRAWN BY	ERIC LAROUCHE	2017-08-06
VERIFIE PAR / CHECKED BY	DANIEL CARRIER	2017-08-08
APPROUVE PAR / APPROVED BY	DANIEL CARRIER	2017-08-08
ECHELLE / SCALE N/S	DATE	2017-06-06

NO. DESSIN / DRAWING NO. 65-ULT-416-IN-204

NO. PROJET / PROJECT NO.	REVISION	FEUILLE / SHT
6515	2	1/1

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 28 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
L3507
D. CARRIER
LICENSEE
NT/NU
SEP 26 2017

AC-CART-ARCH D

FILE NO. 65-ULT-416-IN-204 (PULSE CARD).dwg

AGNICO EAGLE

Vendor Document Status

1 ☐ Proceed to next submission and status.

2 ☐ Proceed with exceptions as noted to next submission and status.

3 ☐ Do not proceed.
Revise as noted and resubmit next submission and status.

4 ☑ Complete, no further submission required.

By: Jean-Francois Tremblay Date: 2017-05-02

Review and authorization to fabricate are only for general conformance with the design concept of the Project as expressed in the Contract Documents. Sole responsibility for the accuracy and completeness of this document, including but not limited to dimensions and quantities, remains with the Supplier/Contractor. Agnico Eagle does not warrant the accuracy or completeness of any of the information contained herein, nor does Agnico Eagle authorize or approve any construction means, methods, techniques, sequences or any safety precautions or procedures.

Agnico Eagle No. 6515-C-270-007-141-TES-0014 R: Sub001

DOCUMENT FOR INFORMATION

NUQSANA PROMEC MINING

Agnico-Eagle Mines Ltd.
Non-Conformance Report

ITR Number : AEM-GE-ITR-002
Contract no. : C22466T / C22498E

AGNICO EAGLE

PART 1 – To be completed by Originator

ITR no. :	Supplier/Vendor/Manufacturer/Contractor :	Originator :	Date:

Equipment Identification:	Equipment Tag No.:

Disposition Requested:	NCR Classification:
☐ 48 Hours ☐ Other	☐ Supplier ☐ Fabrication ☐ Engineering ☐ Construction ☐

Current Status:	Potential Impact (Check appropriate box and give estimate):
☐ Work Already Done ☐ Partially Done ☐ Other _____	☐ Cost ☐ Schedule ☐ Other

Detailed Description of Non-Conformance (attach sketch, pictures, etc) :

Describe Deviation to Drawings, Specifications, Standard, Code or other Reference:

PART 2 - Disposition

* CONTRACTOR Proposed Disposition / Resolution:	Concession Request No. (if applicable):	Contractors NCR No. (if applicable):
☐ Use As Is ☐ Repair ☐ Rework ☐ Reject/Scrap		

Details of Contractor Corrective Actions Proposed / Concession Request:

* Disposition:	Dispositioning Party:	Signature:
☐ Use as Is ☐ Repair ☐ Rework ☐ Reject/Scrap		

Recommended Resolution / Actions:

PART 3 - Confirmation

Corrective Actions Completed By:	Corrective Actions Accepted by Dispositioning Party:
Name:	Name:
Date:	Date:
Signature:	Signature:
Corrective Actions Accepted by Originator:	**NCR Closed Out By (Area QA Coordinator)**
Name:	Name:
Date:	Date:
Signature:	Signature:

* ***Note:*** Dispositions are not to be construed as a change to any Contracts which may be affected. Prior to initiating any work which will impact the Contract terms, the Contractors must forward to AMEC written notice of all impacts, including but not limited to cost and schedule. Any work completed without a written instruction to proceed, if required, will be at the Contractor's risk.

6515-C-270-007

Fuel Tanks Piping Supply and Installation

Non-Conformance Log

Document Number : AEM-GE-LOG-002
Contract Number : C22466T / C22498E

Number	Company	Description	Initiator	Date Opened	Date Closed	Progress Status
NCR-001						N/A
NCR-002						N/A
NCR-003						N/A
NCR-004						N/A
NCR-005						N/A
NCR-006						N/A
NCR-007						N/A
NCR-008						N/A
NCR-009						N/A
NCR-010						N/A
NCR-011						N/A
NCR-012						N/A
NCR-013						N/A
NCR-014						N/A
NCR-015						N/A
NCR-016						N/A
NCR-017						N/A
NCR-018						N/A
NCR-019						N/A
NCR-020						N/A
NCR-021						N/A
NCR-022						N/A
NCR-023						N/A
NCR-024						N/A
NCR-025						N/A
NCR-026						N/A
NCR-027						N/A
NCR-028						N/A
NCR-029						N/A
NCR-030						N/A
NCR-031						N/A
NCR-032						N/A
NCR-033						N/A
NCR-034						N/A
NCR-035						N/A
NCR-036						N/A
NCR-037						N/A
NCR-038						N/A
NCR-039						N/A
NCR-040						N/A

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Vendor Document Status

1 ☐ Proceed to next submission and status.

2 ☐ Proceed with exceptions as noted to next submission and status.

3 ☐ Do not proceed.
Revise as noted and resubmit next submission and status.

4 ☑ Complete, no further submission required.

By: Jean-Francois Tremblay Date: 2017-05-02

Review and authorization to fabricate are only for general conformance with the design concept of the Project as expressed in the Contract Documents. Sole responsibility for the accuracy and completeness of this document, including but not limited to dimensions and quantities, remains with the Supplier/Contractor. Agnico Eagle does not warrant the accuracy or completeness of any of the information contained herein, nor does Agnico Eagle authorize or approve any construction means, methods, techniques, sequences or any safety precautions or procedures.

Agnico Eagle No. 6515-C-270-007-141-TES-0019 R: Sub001

DOCUMENT FOR INFORMATION

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Vendor Document Status

1 ☐ Proceed to next submission and status.

2 ☐ Proceed with exceptions as noted to next submission and status.

3 ☐ Do not proceed.
Revise as noted and resubmit next submission and status.

4 ☑ Complete, no further submission required.

By: Jean-Francois Tremblay Date: 2017-05-02

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Agnico Eagle No. 6515-C-270-007-141-TES-0018 R: Sub001

DOCUMENT FOR INFORMATION

Agnico-Eagle Mines Ltd.
Miscellaneous Field Report

ITR Number : AEM-GE-ITR-006
Contract no. : C22466T / C22498E

SYSTEM:	TAG NO. :	
LOCATION:	AREA:	UNIT:

DATE	ACTIVITY

PROMEC DESIGNATE - SIGNATURE | TITLE | DATE

CLIENT DESIGNATE - SIGNATURE | TITLE | DATE

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Vendor Document Status

1 ☐ Proceed to next submission and status.

2 ☐ Proceed with exceptions as noted to next submission and status.

3 ☐ Do not proceed.
Revise as noted and resubmit next submission and status.

4 ☑ Complete, no further submission required.

By: JEAN-FRANCOIS TREMBLAY Date: 2017-06-22

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Agnico Eagle No. 6515-C-270-007-141-TES-0030 R: Sub002

DOCUMENT FOR INFORMATION

AGNICO-EAGLE MINES Ltd.
Inspection & Testing Report

NUQSANA PROMEC MINING

ITR Number: AEM-IN-ITR-007
ITR Type: Miscellaneous Instruments
Contract No.: 6515-C-270-007

AGNICO EAGLE

Tag Number:		**Equipment/ Pipe N°:**		**System:**	
Service:		**Function:**		**Purchase Order:**	
Manufacturer:		**Model:**		**Serial Number:**	
Location Dwg :		**Reference Datasheet:**		**Installation Detail Dwg:**	
Reference Datasheet Number:					

Item N°	Inspection Points	C	NC/ NCR #	N/A	Completed By/ Date
1	INSTRUMENT TAG ATTACHED	C	NC #	N/A	Promec: CLIENT:
2	CABLE TAG ATTACHED	C	NC #	N/A	Promec: CLIENT:
3	DEVICE INSTALLED AS PER INSTALLATION DETAILS, LOCATION OR MANUFACTURER'S DRAWING	C	NC #	N/A	Promec: CLIENT:
4	EQUIPMENT ACCESSIBLE AND EASY TO MAINTAIN	C	NC #	N/A	Promec: CLIENT:
5	WIRING CORRECT AND PROPERLY LABELED	C	NC #	N/A	Promec: CLIENT:
6	CALIBRATION CERTIFICATE AVAILABLE	C	NC #	N/A	Promec: CLIENT:
7	ELECTRICAL SUPPLY COMPATIBLE WITH SOURCE	C	NC #	N/A	Promec: CLIENT:
8		C	NC #	N/A	Promec: CLIENT:
9		C	NC #	N/A	Promec: CLIENT:
10		C	NC #	N/A	Promec: CLIENT:
11		C	NC #	N/A	Promec: CLIENT:

Comments

Sign Off			
Promec Signature:		**CLIENT Signature:**	
Date:		**Date:**	

Legend					
C	Conformance	**NC**	Non Conformance	**N/A**	Not Applicable
NCR	Non Conformance Report				

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Vendor Document Status

1 ☐ Proceed to next submission and status.

2 ☐ Proceed with exceptions as noted to next submission and status.

3 ☐ Do not proceed.
Revise as noted and resubmit next submission and status.

4 ☑ Complete, no further submission required.

By: Jean-Francois Tremblay Date: 2017-05-02

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Agnico Eagle No. 6515-C-270-007-141-TES-0017 R: Sub001

DOCUMENT FOR INFORMATION

Agnico-Eagle Mines Ltd.
Inspection Deficiency Report

ITR Number : AEM-GE-ITR-005
Contract no. : C22466T / C22498E

Area:	CWP No:
Equipment Tag No:	Inspection Deficiency Report No:
Date:	Page_____ of _____
Reference Drawings:	
Reference Photos:	
Description of Deficiency:	
Suggested Solution:	
Engineering Contact Made: Yes ☐ No ☐	Name:
Course of Action:	
Engineering Follow-up Required: Yes ☐ No ☐	Date Required:

Promec's Representative Print Name		Client's Representative Print Name	
Promec's Representative Signature	Date	Client's Representative Signature	Date

6515-C-270-007

Fuel Tanks Piping Supply and Installation

Inspection Deficiency Log

Document Number : AEM-GE-LOG-004
Contract Number : C22466T / C22984E

Number	Description	Initiator	Dept.	Date	Contract No.		Progress Status
Deficiency-001						N/A	
Deficiency-002						N/A	
Deficiency-003						N/A	
Deficiency-004						N/A	
Deficiency-005						N/A	
Deficiency-006						N/A	
Deficiency-007						N/A	
Deficiency-008						N/A	
Deficiency-009						N/A	
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Deficiency-035						N/A	
Deficiency-036						N/A	
Deficiency-037						N/A	
Deficiency-038						N/A	
Deficiency-039						N/A	
Deficiency-040						N/A	

Vendor Document Status

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1 ☐ Proceed to next submission and status.

2 ☐ Proceed with exceptions as noted to next submission and status.

3 ☐ Do not proceed.
Revise as noted and resubmit next submission and status.

4 ☑ Complete, no further submission required.

By: JEAN-FRANCOIS TREMBLAY Date: 2017-05-16

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Agnico Eagle No. 6515-C-270-007-141-TES-0020 R: Sub001

DOCUMENT FOR INFORMATION

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Vendor Document Status

1	☐ Proceed to next submission and status.
2	☐ Proceed with exceptions as noted to next submission and status.
3	☐ Do not proceed. Revise as noted and resubmit next submission and status.
4	☒ Complete, no further submission required.

By: 2017-05-31 Date:

Review and authorization to fabricate are only for general conformance with the design concept of the Project as expressed in the Contract Documents. Sole responsibility for the accuracy and completeness of this document, including but not limited to dimensions and quantities, remains with the Supplier/Contractor. Agnico Eagle does not warrant the accuracy or completeness of any of the information contained herein, nor does Agnico Eagle authorize or approve any construction means, methods, techniques, sequences or any safety precautions or procedures.

Agnico Eagle No. 6515-C-270-007-275-SSS-0020 R: Sub001

DOCUMENT FOR INFORMATION

VIKING
PROTECTION INCENDIE VIKING INC.
3005 | boulevard Pitfield | Saint-Laurent, Québec, Canada | H4S 1H4
Tél. **514.332.5110** Télec : 514.332.5063 info@vikingfire.ca

Shop Drawings

Prepared for:
Constr. Promec

Notifier Fire Alarm system
Purchase Order: 61116
Our Project #: TMC-XXXXX

Meliadine Fuel Farm

Prepared by: **Joëlle-Ann Forget**
Sales Représentative: Pierre Noël

May 6, 2017

1 copy by email for **APPROBATION**

	MODEL NUMBER	
1	NFS-320C	NFS-320C, 120VAC NOIR
2	ACM-24AT	ANNONCIATEUR À DEL (24)+INTERRUPTEUR
3	NFN-GW-EM-3	NFN GATEWAY EMBEDDED
4	800BAT1218	BATTERIE 12volts 18amps
6	ISO-6A	CARTE DE 6 ISOLATEURS INCORP.ULC
7	NBG-12LX	STATION MANUEL, 1 ÉTAPE, ADRESSABLE FLASHSCAN
8	SB-10	BOÎTIER DE SURFACE POUR SÉRIENBG
9	FAPT-851A	DÉTECTEUR PHOTO/THERM. FLASHSCAN (TÊTE)
10	B210LPA	BASE DE MONTAGE DE DETECTAVEC BRIDE, ULC
11	FRM-1A	MODULE ADRESSABLE (RELAIS) FLASHSCAN
12	P2RKA-B	KLX STRO.MONT MUR, 2 FILS STND, ROUGE,EXT,BILINGUE
13	HRA	KLAXON, 2 FILS 12/24 VDC. ROUGE, MURALE
14	HRKA	KLAXON, 2 FILS 12/24 VDC.ROUGE,MUR,EPP MAUV.TEMPS
15	SBBR	BOÎTIER DE SURFACE ROUGE POURHP, ET1070/ET1080,E7
16	EOL-CR	PLAQUE DE FIN DE LIGNE MÉTAL ROUGE
17	FDM-1A	MODULE ADRESSABLE DOUBLE ENTRÉES (GICLEUR).
18	NBG-12L	STATION MANUEL, 2 ÉTAPES C/A SERRURE, ROUGE
19	STI-13410FR	RED STI UNIVERSAL STOPPERSTI-13410-FR
20	CR-135MP	DÉTECT. THERM. 135°F THERMO.& FIXE/ANTI-HUMIDITÉ

VIKING
PROTECTION INCENDIE VIKING INC.
3005 | boulevard Pitfield | Saint-Laurent, Québec, Canada | H4S 1H4
Tél. 514.332.5110 Télec : 514.332.5063 info@vikingfire.ca

Basic installation guide

Control panel
A maximum distance of 1728mm (5'-8") must separate the top of the control panel and the finished floor surface.

For built in panels, please refer to the following examples for the minimal distance required between the finished wall (gyproc) and the exterior box.

Fire alarm panel	Minimal distance
NFS-320C-FR	1" (25mm)
NFW-50C-FR (Firewarden)	1" (25mm)
NFW2-100C-FR (Firewarden)	1" (25mm)
SBB-A4 (NFS-640 & NFS-3030)	1" (25mm)
SBB-B4 (NFS-640 & NFS-3030)	1" (25mm)
SBB-C4 (NFS-640 & NFS-3030)	1" (25mm)
SBB-D4 (NFS-640 & NFS-3030)	1" (25mm)

There must be a minimum distance in front of the control panel, equal to the width of the control panel, left in front of it.

Manual pull station
Installation height of **1200mm (47")** from the middle of the component and the level of the finished floor **for buildings with elevators.** As requested in the CNB2010 art. 3.8.1.5 (Required by the Régie du Bâtiment)

Installation height between 1200mm (47") and 1400mm (53") from the middle of the component and the level of the finished floor for buildings without elevators

Fire fighter handset
Installation height between 1350mm (53") and 1500mm (60") from the middle of the component and the level of the finished floor.

Detectors (smoke or heat)
A minimum clearance of 450mm (18") must be provided underneath and around the detectors.

The detectors must be installed at a minimum of 450mm (18") from all electrical supply line and air discharge.

Mini horn with silence button
Installation height of **1200mm (47")** from the middle of the component and the level of the finished floor **for buildings with elevators.** As requested in the CNB2005 art. 3.8.1.5 (Required by the Régie du Bâtiment)

Installation height between 1200mm (47") and 1400mm (53") from the middle of the component and the level of the finished floor for buildings without elevators

Audible and visual device
Installation height between 2000mm and 2400mm from the middle of the component and the level of the finished floor.

NFS-320C

Intelligent Addressable Fire Alarm System

NOTIFIER® by Honeywell

Intelligent Fire Alarm Control Panels

General

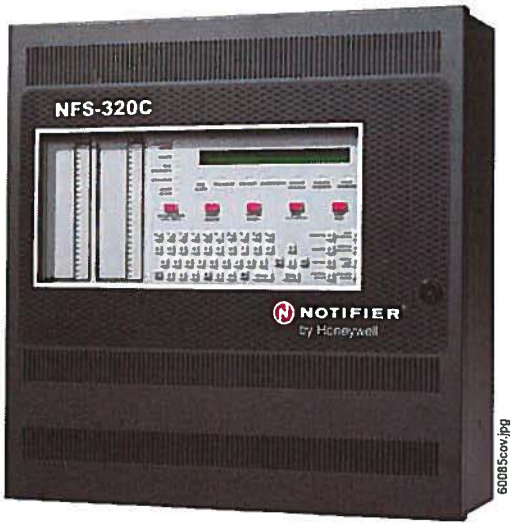
The NFS-320C intelligent Fire Alarm Control Panel is part of the ONYX® Series of Fire Alarm Controls from NOTIFIER.

In stand-alone or network configurations, ONYX Series products meet virtually every application requirement.

The NFS-320C's modular design makes system planning easier. The panel can be configured with just a few devices for small building applications, or networked with many devices to protect a large campus or a high-rise office block. Simply add additional peripheral equipment to suit the application. For example, certain geographic regions such as Canada have specific LED annunciation requirements. To provide up to 48 zones/points in the same cabinet, add an optional ACM Series annunciator (sold separately).

Features

- Listed to Standard ULC-S527-99.
- Certified for seismic applications when used with the appropriate seismic mounting kit.
- Approved for Marine applications when used with listed compatible equipment. *See DN-60688.*
- One isolated intelligent Digital Communications Loop (DCL) Style 4, 6 or 7.
- Up to 159 detectors and 159 modules per SLC; 318 devices maximum.
  - Detectors can be any mix of ion, photo, thermal, or multi-sensor.
  - Modules include addressable pull stations, normally open contact devices, two-wire smoke detectors, notification, or relay.
- Standard 80-character display.
- Network options:
  - High-speed network for up to 200 nodes (NFS2-3030, NFS2-640, NFS-320(C), NFS-320SYS, NCA-2, DVC-EM, ONYXWorks, NFS-3030, NFS-640, and NCA).
  - Standard network for up to 103 nodes (NFS2-3030, NFS2-640, NFS-320(C), NFS-320SYS, NCA-2, DVC-EM, ONYX-Works, NCS, NFS-3030, NFS-640, NCA, AFP-200, AFP-300/400, AFP-1010, and AM2020). Up to 54 nodes when DVC-EM is used in network paging.
- 6.0 A power supply with four Class A/B built-in Notification Appliance Circuits (NAC). Selectable System Sensor, S, or Gentex strobe synchronization.
- Built-in Alarm, Trouble, Security, and Supervisory relays.
- VeriFire® Tools online or offline programming utility. Upload/Download, save, store, check, compare, and simulate panel databases. Upgrade panel firmware.
- Autoprogramming and Walk Test reports.
- Optional universal 318-point DACT.
- 80-character remote annunciators (up to 32).
- EIA-485 annunciators, including custom graphics.
- Printer interface (80-column and 40-column printers).
- History file with 800-event capacity in nonvolatile memory, plus separate 200-event alarm-only file.
- Alarm Verification selection per point, with automatic counter.
- Presignal/Positive Alarm Sequence (PAS).
- Silence inhibit and Auto Silence timer options.



NFS-320C

- March time / temporal / Canadian two-stage coding, 20 ppm and temporal / strobe synchronization.
- Field-programmable on panel or on PC, with VeriFire Tools program check, compare, simulate.
- Full QWERTY keypad.
- Battery charger supports 18 – 200 AH batteries.
- Non-alarm points for lower priority functions.
- Remote ACK/Signal Silence/System Reset/Drill via monitor modules.
- Automatic time control functions, with holiday exceptions.
- Surface Mount Technology (SMT) electronics.
- Extensive, built-in transient protection.
- Powerful Boolean logic equations.

FlashScan® Intelligent Features

- Polls up to 318 devices in less than two seconds.
- Activates up to 159 outputs in less than five seconds.
- Multicolor LEDs blink device address during Walk Test.
- Fully digital, high-precision protocol (U.S. Patent 5,539,389).
- Manual sensitivity adjustment — up to nine levels (see individual device information for available settings).
- Pre-alarm ONYX intelligent sensing — up to nine levels.
- Day/Night automatic sensitivity adjustment.
- Sensitivity windows:
  - **Ion** – 0.5 to 2.5%/foot obscuration.
  - **Photo** – 0.5 to 2.35%/foot obscuration.
  - **Laser (VIEW®)** – 0.02 to 2.0%/foot obscuration.
  - **Acclimate Plus™** – 0.5 to 4.0%/foot obscuration.
  - **IntelliQuad** – 1.0 to 4.0%/foot obscuration.
  - **IntelliQuad™ PLUS** – 1.0 to 4.0%/foot obscuration
- Drift compensation (U.S. Patent 5,764,142).
- Degraded mode: In the unlikely event that the FACP's microprocessor fails, FlashScan detectors revert to degraded operation and can activate the NAC circuits and alarm relay.

Each of the four built-in panel circuits includes a Disable/Enable switch for this feature.

- Multi-detector algorithm involves nearby detectors in alarm decision (U.S. Patent 5,627,515).
- Automatic detector sensitivity testing (NFPA-72 compliant).
- Maintenance alert (two levels).
- Self-optimizing pre-alarm.

FSL-751A VIEW (Very Intelligent Early Warning) Smoke Detection Technology

- Advanced ONYX intelligent sensing algorithms differentiate between smoke and non-smoke signals (U.S. Patent 5,831,524).
- Addressable operation pinpoints the fire location.
- Early warning performance comparable to the best aspiration systems at a fraction of the lifetime cost.

FAPT-851A Acclimate Plus
Low-Profile Intelligent Multi-Sensor

- Detector automatically adjusts sensitivity levels without operator intervention or programming. Sensitivity increases with heat.
- Microprocessor-based technology; combination photo and thermal technology.
- Low-temperature warning signal at 40°F ± 5°F (4.44°C ± 2.77°C).

FSC-851 IntelliQuad
Advanced Multi-Criteria Detector

- Detects all four major elements of a fire (smoke, heat, CO, and flame).
- Automatic drift compensation of smoke sensor and CO cell.
- High nuisance-alarm immunity.

Intelligent FAAST® Detectors FSA-5000A, FSA-8000A, and FSA-20000A

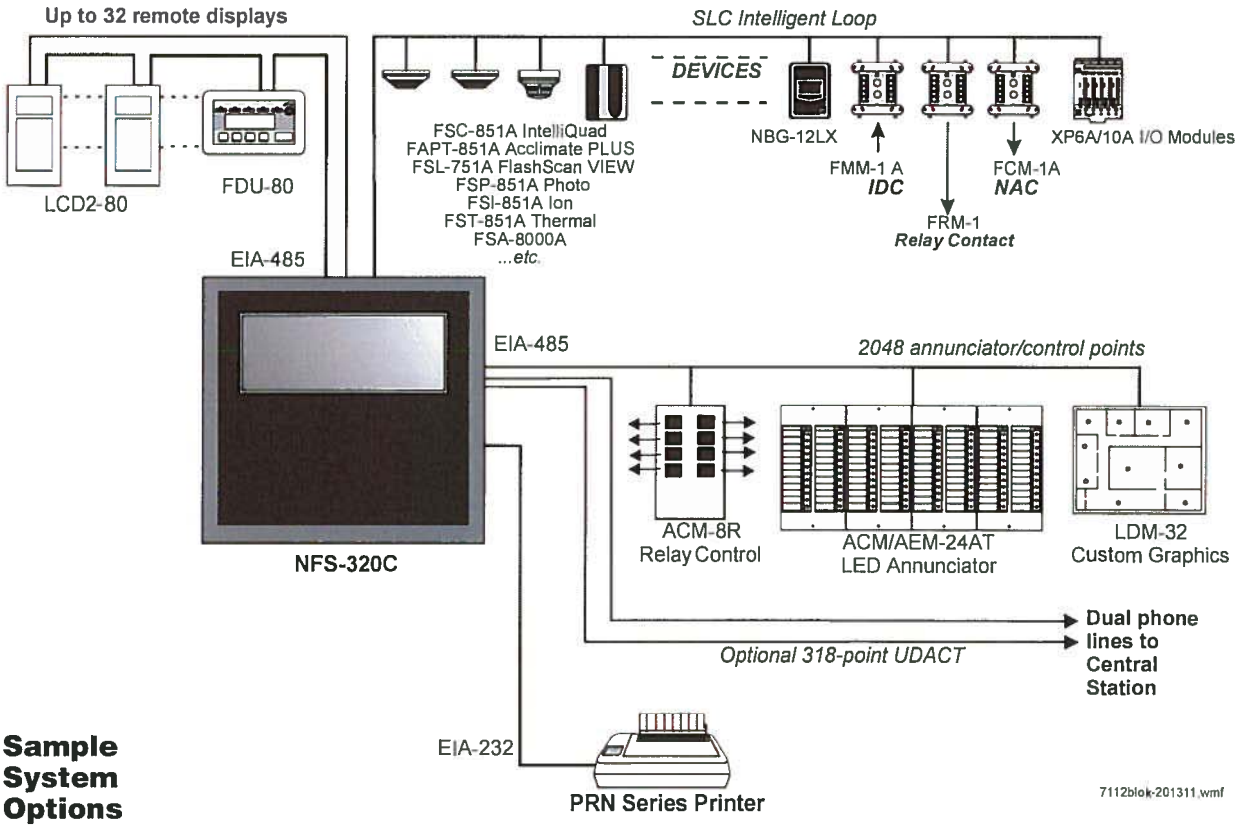
- Connects directly to the SLC loop of compatible ONYX series panels.
- Provides five event thresholds that can be individually programmed with descriptive labels for control-by-event programming; uses five detector addresses.
- Uses patented particle separator and field-replaceable filter to remove contaminants.
- Advanced algorithms reject common nuisance conditions
- FSA-5000A covers 5,000 square feet through one pipe.
- FSA-8000A covers 8,000 square feet through one pipe.
- FSA-20000A covers 28,800 square feet through one to four pipes.

FCO-851A IntelliQuad™ PLUS
Advanced Multi-Criteria Fire/CO Detector

- Detects all four major elements of a fire.
- Separate signal for life-safety CO detection.
- Optional addressable sounder base for Temp-3 (fire) or Temp-4(CO) tone.
- Automatic drift compensation of smoke sensor and CO cell.
- High nuisance-alarm immunity.

Releasing Features

- Ten independent hazards.
- Sophisticated cross-zone (three options).
- Delay timer and Discharge timers (adjustable).
- Abort (four options).
- Low-pressure CO_2 listed.



Sample System Options

VOICE FEATURES

- Integrates with FirstCommand Series. *See DN-60772. Note: Only NFC-50/100 and NFC-LOC are approved for Canadian applications.*

HIGH-EFFICIENCY OFFLINE SWITCHING

3.0 A POWER SUPPLY (6.0 A IN ALARM)

- 120 VAC.
- Displays battery current/voltage on panel (with display).

FlashScan, Exclusive World-Leading Detector Protocol

At the heart of the NFS-320C is a set of detection devices and device protocol — FlashScan (U.S. Patent 5,539,389). FlashScan is an all-digital protocol that gives superior precision and high noise immunity.

In addition to providing quick identification of an active input device, this protocol can also activate many output devices in a fraction of the time required by competitive protocols. This high speed also allows the NFS-320C to have the largest device per loop capacity in the industry — 318 points — yet every input and output device is sampled in less than two seconds. The microprocessor-based FlashScan detectors have bicolor LEDs that can be coded to provide diagnostic information, such as device address during Walk Test.

ONYX Intelligent Sensing

Intelligent sensing is a set of software algorithms that provides the NFS-320C with industry-leading smoke detection capability. These complex algorithms require many calculations on each reading of each detector, and are made possible by the high-speed microcomputer used by the NFS-320C.

Drift Compensation and Smoothing: Drift compensation allows the detector to retain its original ability to detect actual smoke, and resist false alarms, even as dirt accumulates. It reduces maintenance requirements by allowing the system to automatically perform the periodic sensitivity measurements required by NFPA 72. Smoothing filters are also provided by software to remove transient noise signals, such as those caused by electrical interference.

Maintenance Warnings: When the drift compensation performed for a detector reaches a certain level, the performance of the detector may be compromised, and special warnings are given. There are three warning levels: (1) Low Chamber value; (2) Maintenance Alert, indicative of dust accumulation that is near but below the allowed limit; (3) Maintenance Urgent, indicative of dust accumulation above the allowed limit.

Sensitivity Adjust: Nine sensitivity levels are provided for alarm detection. These levels can be set manually, or can change automatically between day and night. Nine levels of pre-alarm sensitivity can also be selected, based on predetermined levels of alarm. Pre-alarm operation can be latching or self-restoring, and can be used to activate special control functions.

Self-Optimizing Pre-Alarm: Each detector may be set for "Self-Optimizing" pre-alarm. In this special mode, the detector "learns" its normal environment, measuring the peak analog readings over a long period of time, and setting the pre-alarm level just above these normal peaks.

Cooperating Multi-Detector Sensing: A patented feature of ONYX intelligent sensing is the ability of a smoke sensor to consider readings from nearby sensors in making alarm or pre-alarm decisions. Without statistical sacrifice in the ability to resist false alarms, it allows a sensor to increase its sensitivity to actual smoke by a factor of almost two to one.

Field Programming Options

Autoprogram is a timesaving feature. The FACP "learns" what devices are physically connected and automatically loads them in the program with default values for all parameters. Requiring less than one minute to run, this routine allows the user to have almost immediate fire protection in a new installation, even if only a portion of the detectors are installed.

Keypad Program Edit (with KDM-R2) The NFS-320C, like all NOTIFIER intelligent panels, has the exclusive feature of program creation and editing capability from the front panel keypad, ***while continuing to provide fire protection***. The architecture of the NFS-320C software is such that each point entry carries its own program, including control-by-event links to other points. This allows the program to be entered with independent per-point segments, while the NFS-320C simultaneously monitors other (already installed) points for alarm conditions.

VeriFire® Tools is an offline programming and test utility that can greatly reduce installation programming time, and increase confidence in the site-specific software. It is Windows®-based and provides technologically advanced capabilities to aid the installer. The installer may create the entire program for the NFS-320C in the comfort of the office, test it, store a backup file, then bring it to the site and download from a laptop into the panel.

Placement of Equipment in Chassis and Cabinet

The following guidelines outline the NFS-320C's flexible system design.

Wiring: When designing the cabinet layout, consider separation of power-limited and non-power-limited wiring as discussed in the *NFS-320/C/E Installation Manual*.

It is critical that all mounting holes of the NFS-320C are secured with a screw or standoff to ensure continuity of Earth Ground.

Networking: If networking two or more control panels, each unit requires a Network Communication Module or High-Speed Network Communication Module (HS-NCM can support two nodes; see "Networking Options" on page 5). These modules can be installed in any option board position (see manual), and additional option boards can be mounted in front of them.

KDM-R2 Controls and Indicators

Program Keypad: QWERTY type (keyboard layout).

12 LED Indicators: Power; Fire Alarm; Pre-Alarm; Security; Supervisory; System Trouble; Signals Silenced; Points Disabled; Control Active; Abort; Pre-Discharge; Discharge.

Keypad Switch Controls: Acknowledge/Scroll Display; Signal Silence; Drill; System Reset; Lamp Test.

LCD Display: 80 characters (2 x 40) with long-life LED backlight.

Product Line Information

- "Configuration Guidelines" on page 4
- "Main System Components" on page 4
- "Networking Options" on page 5
- "Auxiliary Power Supplies and Batteries" on page 4
- "Audio Options" on page 4
- "Compatible Devices, EIA-232 Ports" on page 4
- "Compatible Devices, EIA-485 Ports" on page 4
- "Compatible Intelligent Devices" on page 4
- "Enclosures, Chassis, and Dress Plates" on page 5
- "Other Options" on page 5

Configuration Guidelines

The NFS-320C system ships assembled; description and some options follow. See "Enclosures, Chassis, and Dress Plates" on page 5 for information about mounting peripherals.

***NOTE:** Stand-alone and network systems require a main display. On stand-alone systems, the panel's keypad provides the required display. On network systems (two or more networked fire panel nodes), at least one NCA-2, NCS, or ONYXWorks annunciation device is required. For NCA-2, see DN-7047.*

Main System Components

NFS-320C: The standard, factory-assembled NFS-320C system includes the following components: one control panel mounted on chassis (120 V operation — ships with grounding cable, battery interconnect cables, and document kit); one integral power supply mounted to the control panel; one primary display KDM-R2 keypad/display; and one cabinet for surface or semi-flush mounting. *Purchase batteries separately. One or two option boards may be mounted to the NFS-320 cabinet, with one visible to the left of the display and one inside; additional option boards can be used in remote cabinets. See Canadian applications manual addendum 52747.*

NFS-320CR: Same as NFS-320C but in red enclosure.

NFS-320C-FR: Same as NFS-320C but in French language.

TR-320: Trim ring for the NFS-320C cabinet.

Auxiliary Power Supplies and Batteries

ACPS-610: 6.0 A or 10.0 A addressable charging power supply. *See DN-60244.*

FCPS-24S6C/8C: Remote 6 A and 8 A power supplies. See DN-6297. For use only as a NAC expander.

BAT Series: Batteries. NFS-320 uses two 12 volt, 18 to 200 AH batteries. *See DN-6933.*

Audio Options

NFC-50/100: 25 watt, 25 VRMS, emergency Voice Evacuation Control Panel (VECP) with integral commercial microphone, digital message generator, and Class A or Class B speaker circuits. *See DN-60772.*

Compatible Devices, EIA-232 Ports

PRN-6: 80-column printer. *See DN-6956.*

PRN-7: 80-column printer. *See DN-60897*

VS4095/5: Keltron printer, 40-column, 24 V. Mounted in external backbox. *See DN-3260.* (Not ULC-listed.)

DPI-232: Direct Panel Interface, specialized modem for extending serial data links to remotely located FACPs and/or peripherals; mount on NFS-320 chassis. *See DN-6870.*

Compatible Devices, EIA-485 Ports

ACM-24AT: ONYX Series ACS annunciator – up to 96 points of annunciation with Alarm or Active LED, Trouble LED, and switch per circuit. Active/Alarm LEDs can be programmed (by powered-up switch selection) by point to be red, green, or yellow; the Trouble LED is always yellow. *See DN-6862.*

AEM-24AT: Same LED and switch capabilities as ACM-24AT, expands the ACM-24AT to 48, 72, or 96 points. *See DN-6862.*

ACM-48A: ONYX Series ACS annunciator – up to 96 points of annunciation with Alarm or Active LED per circuit. Active/Alarm LEDs can be programmed (by powered-up switch selection) in groups of 24 to be red, green, or yellow. Expandable to 96 points with one AEM-48A. *See DN-6862.*

AEM-48A: Same LED capabilities as ACM-48A, expands the ACM-48A to 96 points. *See DN-6862.*

ACM-8R: Remote Relay Module with eight Form-C contacts. Can be located up to 6,000 ft. (1828.8 m) from panel on four wires. *See DN-3558.*

LCD-80: ACS mode. 80-character, backlit LCD display. Mounts up to 6,000 ft. (1828.8 m) from panel. Up to 32 per FACP. *See LCD-80/LCD-80TM (DN-3198).*

FDU-80: Terminal mode. 80-character, backlit LCD display. Mounts up to 6,000 ft. (1828.8 m) from panel. Up to 32 per FACP. Not for use as a primary display in Canada. *See FDU-80 (DN-6820).*

LCD2-80: Terminal and ACS mode. 80-character, backlit LCD display. Mounts up to 6,000 ft. (1828.8 m) from panel. Up to 32 per FACP. Not for use as primary display in Canadian applications. *See DN-60548.*

LDM: Lamp Driver Modules LDM-32, LDM-E32, and LDM-R32; remote custom driver modules. *See DN-0551.*

SCS: Smoke control stations SCS-8, SCE-8, with lamp drivers SCS-8L, SCE-8L; eight (expandable to 16) circuits (HVAC only). *See DN-4818.*

TM-4: Transmitter Module. Includes three reverse-polarity circuits and one municipal box circuit; mount on NFS-320C chassis or remotely. *See DN-6860.*

UDACT-2: Universal Digital Alarm Communicator Transmitter, 636 channel. *See DN-60686.*

UZC-256: Programmable Universal Zone Coder provides positive non-interfering successive zone coding. Microprocessor-controlled, field-programmable from IBM®-compatible PCs (requires optional programming kit). Mounts in BB-UZC or other compatible chassis (purchased separately). *See DN-3404.*

Compatible Intelligent Devices

FSA-5000A: Intelligent FAAST® XS Fire Alarm Aspiration Sensing Technology. Intelligent aspirating smoke detector for applications up to 5,000 sq.ft., with ULC listing.

FSA-8000A: Intelligent FAAST® XM Fire Alarm Aspiration Sensing Technology. Intelligent aspirating smoke detector for applications up to 8,000 sq.ft., with ULC listing. *See DN-60792.*

FSA-20000A: Intelligent FAAST® XT Fire Alarm Aspiration Sensing Technology. Intelligent aspirating smoke detector for applications up to 28,800 sq.ft., with ULC listing. *See* DN-60849.

FSB-200A: Intelligent beam smoke detector. *See DN-6985.*

FSB-200SA: Intelligent beam smoke detector with integral sensitivity test. *See DN-6895.*

FSC-851A: FlashScan IntelliQuad Advanced Multi-Criteria Detector. *See DN-60412.*

FCO-851A: FlashScan IntelliQuad PLUS Advanced Multi-Criteria Fire/CO Detector. *See DN-60689.*

FSI-851A: Low-profile FlashScan ionization detector. *See DN-6934.*

FSP-851A: Low-profile FlashScan photoelectric detector. *See DN-6935.*

FSP-851TA: Low-profile FlashScan photoelectric detector with 135°F (57°C) thermal. *See DN-6935.*

FSP-851RA: Remote-test capable photoelectric detector for use with DNR(W) duct detector housings. *See DN-6935.*

FST-851A: FlashScan thermal detector 135°F (57°C). *See DN-6936.*

FST-851RA: FlashScan thermal detector 135°F (57°C) with rate-of-rise. *See DN-6936.*

FST-851HA: FlashScan 190°F (88°C) high-temperature thermal detector. *See DN-6936.*

FAPT-851A: FlashScan Acclimate Plus low-profile multi-sensor detector. *See DN-6937.*

FSL-751A: FlashScan VIEW laser photo detector. *See DN-6886.*

DNR: InnovairFlex low-flow non-relay duct-detector housing (order FSP-851A/FSP-851RA separately). Replaces FSD-751PL/FSD-751RPL. *See DN-60429.*

DNRW: Same as above with NEMA-4 rating, watertight. *See DN-60429.*

B224RBA: Low-profile relay base. See DN-60054.

B224BIA: Isolator base for low-profile detectors. See DN-60054.

B210LPA: Low-profile base. Standard U.S. style. Replaces B710LPA. See DN-60054.

B501A: European-style, 4" (10.16 cm) base. See DN-60054.

B200SA: Intelligent programmable sounder base, capable of producing a variety of tone patterns including ANSI Temporal 3. Compatible with sychronization protocol. *See DN-60054.*

B200SCOA: Based on B200SA, with added CO detector markings in English/French.

B200SRA: Sounder base, Temporal 3 or Continuous tone. See DN-60054.

FMM-1A: FlashScan monitor module. *See DN-6720.*

FDM-1A: FlashScan dual monitor module. *See DN-6720.*

FZM-1A: FlashScan two-wire detector monitor module. *See DN-6720.*

FMM-101A: FlashScan miniature monitor module. *See DN-6720.*

FCM-1A: FlashScan control module. *See DN-6724.*

FCM-1-RELA: FlashScan releasing control module. *See DN-60390.*

FRM-1A: FlashScan relay module. *See DN-6724.*

FDRM-1A: FlashScan dual monitor/dual relay module. *See DN-60709.*

NBG-12LX: Manual pull station, addressable. *See DN-6726.*

N-MPS series: Manual pull stations, addressable and conventional. For use in Canada only. *See DN-5497.*

FM-955: Addressable pull station with two FMM-101A modules.

FM-9551: Addressable pull station with one FMM-101A module.

FM-955-20C: Addressable pull station with two open contacts.

FM-9551S20C: Addressable pull station with one open and one closed extra contacts.

ISO-XA: Isolator module. *See DN-2243.*

ISO-6A: Six Fault isolator module. *See* DN-60844.

XP6-CA: FlashScan six-circuit supervised control module. *See DN-6924.*

XP6-MAA: FlashScan six-zone interface module; connects intelligent alarm system to two-wire conventional detection zone. *See DN-6925.*

XP6-RA: FlashScan six-relay (Form-C) control module. *See DN-6926.*

XP10-MA: FlashScan ten-input monitor module. *See DN-6923.*

SLC-IM: SLC integration module, for VESDAnet detectors. *See DN-60755*

Networking Options

NCM-W, NCM-F: Standard Network Communications Modules. Wire and multi-mode fiber versions available. *See DN-6861.*

HS-NCM-W/MF/SF/WMF/WSF/MFSF: High-speed Network Communications Modules that can connect to two nodes. Wire, single-mode fiber, multi-mode fiber, and media conversion models are available. *See DN-60454.*

RPT-W, RPT-F, RPT-WF: Standard-network repeater board with wire connection (RPT-W), multi-mode fiber connection (RPT-F), or allowing a change in media type between wire and fiber (RPT-WF). Not used with high-speed networks. *See DN-6971.*

ONYXWorks: UL-listed graphics PC workstation, software, and computer hardware. *See DN-7048 for specific part numbers.*

NFN-GW-EM-3: NFN Gateway, embedded. *See DN-60499.*

NWS-3: NOTI•FIRE•NET™ Web Server. *See DN-6928.*

CAP-GW: Common Alerting Protocol Gateway. *See DN-60756.*

VESDA-HLI-GW: VESDAnet high-level interface gateway. *See DN-60753.*

LEDSIGN-GW: UL-listed sign gateway. Interfaces with classic and high-speed NOTI•FIRE•NET networks through the NFN Gateway. *See DN-60679.*

OAX2-24V: UL-listed LED sign, used with LEDSIGN-GW. *See DN-60679.*

Enclosures, Chassis, and Dress Plates

CAB-BM Marine System: Protects equipment in shipboard and waterfront applications. Also order **BB-MB** for systems using 100 AH batteries. For a full list of required and optional equipment, see *DN-60688.*

NFS-LBB: Battery Box (required for batteries over 26 AH).

NFS-LBBR: Same as above, but red.

BB-UZC: Backbox for housing the UZC-256. Required for NFS-320 applications, black. For red, order BB-UZC-R.

SEISKIT-320/B26: Seismic mounting kit. Required for seismic-certified applications with NFS-320C and BB-26. Includes battery bracket for two 26 AH batteries.

SEISKIT-LBB: Seismic kit for the NFS-LBB. Includes battery bracket for two 55 AH batteries.

Other Options

411 Series: Slave Digital Alarm Communicator Transmitters. *See DN-6619.*

IPGSM-4GC: Internet and Digital Cellular Fire Alarm Communicator. Provides selectable configurable paths: cellular only, IP only, or IP primary with cellular backup. Connects to the primary and secondary ports of a DACT. *See DH-60769.*

NFS-320-RB: Replacement board with central processing unit *NOTE: Keypad must be removed before shipping old unit out for repair.*

NFS-320-RBC-FR: Replacement board with central processing unit, Canadian French. *NOTE: Keypad must be removed before shipping old unit out for repair.*

***NOTE:** For other options including compatibility with retrofit equipment, refer to the panel's installation manual, the SLC manual (for intelligent DCL equipment), and the Device Compatibility Document.*

System Specifications

System Capacity

- Intelligent Digital Communications Loop (DCL) 1
- Intelligent detectors 159
- Addressable monitor/control modules 159
- Programmable internal hardware and output circuits 4
- Programmable software zones 99
- Special programming zones 14
- LCD annunciators per FACP 32
- ACS annunciators per FACP ..... 32 addresses x 64 points

Specifications

- Primary input power: 120 VAC, 50/60 Hz, 5.0 A.
- Current draw (standby/alarm):
  - NFS-320C board: 0.250 A. Add 0.035 A for each NAC in use.
  - KDM-R2 (Backlight on): 0.100 A.
- Total output 24 V power: 6.0 A in alarm.

***NOTE:** The power supply has a total of 6.0 A of available power. This is shared by all internal circuits.*

- Standard notification circuits (4): 1.5 A each.

- Resettable regulated 24V power: 1.25 A.
- Two non-resettable regulated 24V power outputs. One at 1.25 A and the other at 0.50 A.
- Non-resettable 5V power: 0.15 A.
- Battery charger range: 18 AH – 200 AH. Use separate cabinet for batteries over 26 AH.
- Float rate: 27.6 V.

Cabinet Specifications

- NFS-320C cabinet dimensions:
  - Backbox: 18.12 in. (46.025 cm) width; 18.12 in. (46.025 cm) height; 5.81 in. (14.76 cm) depth.
  - Door: 18.187 in. (46.195 cm) width; 18.40 in. (46.736 cm) height; 0.75 in. (1.905 cm) depth.

When using trim ring TR-320, mount backbox with at least 1 inch (2.54 cm) between wall surface and front of backbox, to allow door to open fully past the trim ring. The TR-320 molding width is 0.905 in. (2.299 cm).

Shipping Weight

- NFS-320C: 37 lb (16.78 kg) *without batteries.*

Temperature and Humidity Ranges

This system meets NFPA requirements for operation at 0 – 49°C and at a relative humidity 93% ± 2% RH (noncondensing) at 32°C ± 2°C. However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and its peripherals be installed in an environment with a normal room temperature of 15 – 27°C.

Agency Listings and Approvals

The listings and approvals below apply to the basic NFS-320C control panel. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL/ULC Listed:** S635 (UOJC).
- **FM Approved.**
- **CSFM:** 7165-0028:0243.
- **Fire Dept. of New York:** COA #6121.

Marine Applications: Marine approved systems must be configured using components itemized in this document. (See Main System Components, in "Product Line Information.) Specific connections and requirements for those components are described in the installation document, PN 54756. When these requirements are followed, systems are approved by the following agencies:

- **US Coast Guard:** 161.002/50/0, 161.002/55/0 (Standard 46 CFR and 161.002).
- **Lloyd's Register:** 11/600013 (ENV 3 category).
- **American Bureau of Shipping.**

NOTE: *For information on marine applications, see DN-60688.*

Standards

The NFS-320C complies with the following ULC Standards and NFPA 72, International Building Code (IBC), and California Building Code (CBC) Fire Alarm Systems requirements:

- **ULC-S527-99.**
- **LOCAL** (Automatic, Manual, Waterflow and Sprinkler Supervisory).
- **AUXILIARY** (Automatic, Manual and Waterflow) (requires TM-4).
- **REMOTE STATION** (Automatic, Manual, Waterflow and Sprinkler Supervisory) (requires TM-4).
- **PROPRIETARY** (Automatic, Manual, Waterflow and Sprinkler Supervisory). *Not applicable for FM.*
- **CENTRAL STATION** (Automatic, Manual, Waterflow and Sprinkler Supervisory) (requires DACT).
- **EMERGENCY VOICE/ALARM.**
- **IBC 2012, IBC 2009, IBC 2006, IBC 2003, IBC 2000** (Seismic).
- **CBC 2007** (Seismic).

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ACS Series Annunciators

ONYX® Series

ACM~~/AEM~~-24AT, ACM/AEM-48A

NOTIFIER® by Honeywell

Annunciator Control Systems

General

The ONYX® Series ACS Annunciators provide a modular line of products for annunciation and control of the NOTIFIER ONYX® Series Intelligent Fire Alarm Control Panels, Network Control Annunciators, and NOTIFIER's legacy addressable panels. The ACS line provides arrays of LEDs to indicate point status and, in some versions, switches to control the state of output circuits. These ACS units use a serial interface and may be located at distances of up to 6,000 feet (1,828.8 meters) from the panel.

Features

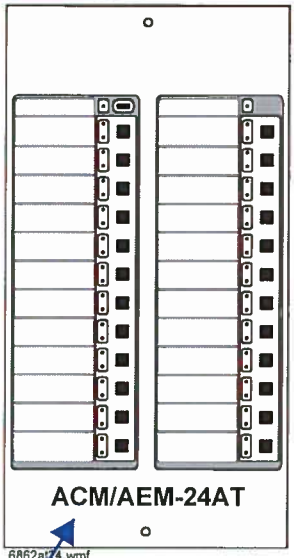
- Speaker control mode for use with XPIQ and the following panels: NFS2-3030, NFS2-640, NFS-320(C) and NFS-320SYS. Enables the ACS to control operation of groups of multi-channels mapped to groups of multi-speakers.
- Compatible with existing annunciators.
- Color-programmable LEDs.
- On-board end-of-line resistors can be enabled/disabled by setting a switch.
- Alarm/Circuit On and Trouble LED per-point thxoption or more dense Alarm-only option.
- Touch-pad control switch option for remote control of system relays; or silence, reset, and evacuate.
- LEDs may be programmed to display status of indicating circuits or control relays as well as system status conditions.
- System Trouble LED indicator.
- On-Line/Power LED indicator.
- Alarm and trouble resound with flash of new conditions.
- Local sounder for both alarm and trouble conditions with silence/acknowledge button (program options).
- May be powered by 24 VDC from the panel or by remote power supplies.
- Microprocessor-controlled electronics, fully supervised.
- Slip-in custom labels, lettered with standard typewriter or LabelEase program.
- Plug-in terminal blocks for ease of installation and service.

Construction

The ACS modules are provided in two basic controller modules, each with its expander module. The ACM-24AT provides 24 annunciation and control points per module, each with a red, green, or yellow Alarm/Circuit On LED, a yellow Trouble LED, and a touch-key switch. The ACM-48A provides 48 annunciation points per module, each with a red, green, or yellow Alarm/Circuit On LED (for annunciating control relays, the LED indicates ON/OFF).

On the ACM-24AT, each LED point is individually color-programmable. On ACM-48A, each column of 24 LED points can be color-configured using a DIP switch.

Temperature and humidity ranges: This system meets NFPA requirements for operation at 0°C to 49°C (32°F to 120°F); and at a relative humidity (noncondensing) of 85% at 30°C (86°F) per NFPA, and 93% ± 2% at 32°C ± 2°C (89.6°F ± 1.1°F) per ULC. However, the useful life of the system's



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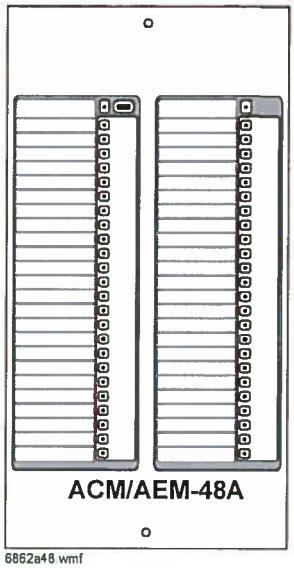

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standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and all peripherals be installed in an environment with a nominal room temperature of 15°C to 27°C (60°F to 80°F).

Installation

The ACS Series annunciator and control subsystems use modular hardware assemblies which allow the custom configuration of the annunciator panel to fit the individual job requirements.

Standard backboxes and mounting hardware schemes, including special remote cabinets, allow the annunciators to be constructed and configured with other system components.

When used with the NFS2-3030, NFS2-640, NFS-320 or legacy panels, the ACS modules can be used for manual selection of speaker and telephone circuits. In this application, they are typically mounted in the main control near the microphone and telephone handset.

For remote annunciation applications, the modules are typically mounted in special ABF or ABS boxes. Control switch key locks (AKS-1B) are available.

Communication between the ACS Series annunciators and the host Fire Alarm Control Panel is made through an EIA-485 multi-drop loop, eliminating the need for costly wiring schemes. Four wires are required, two for the EIA-485 communications (twisted pair), and two for 24 VDC regulated power.

Retrofit of ACS Series annunciators into existing systems is easily accomplished. Software may require upgrading, and some legacy panels may require an interface board.

All field-wiring terminations use removable, compression-type terminal blocks for ease of installation, wiring, and circuit testing.

Operation

The ACS Series annunciator and control system provides the NOTIFIER system with up to 32 remote serially connected annunciators, each with a capacity of 96 points, for a total capacity of ***3072 points*** (subject to the capability of the FACP). The NFS2-3030 and NCA-2 are capable of using the full 96 points.

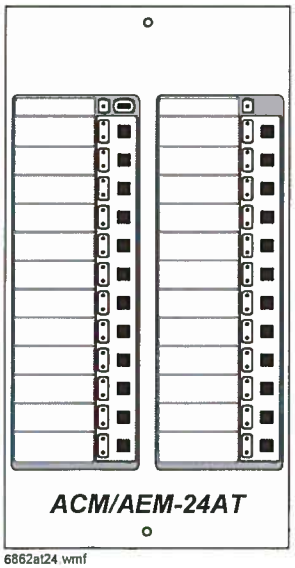
Local or remote power supplies and serial communications allow the ACS to be located virtually anywhere in the protected premises.

On NFS-320, NFS2-640, NFS2-3030, NCA-2 and the legacy panels, system alarm and/or trouble conditions may be annunciated on a per-point basis, or in a grouped or zone configuration.

Control of system operational controls, such as Signal Silence, System Reset, and local annunciation controls (such as Local Acknowledge and Lamp Test) may be accomplished through the module's rubber keypad.

Product Line Information

ACM-24AT: *(see figure)* The Annunciator Control Module-24AT contains 24 color-programmable (red/green/yellow) Active and 24 yellow Trouble LEDs, 24 momentary touch-pad switches, a System Trouble LED, an On-Line/Power LED, and a local piezo sounder with a silence/acknowledge switch for audible indication of alarm and trouble conditions. Includes instructions. 8.375" (21.27 cm) high; 4.375" (11.11 cm) wide.



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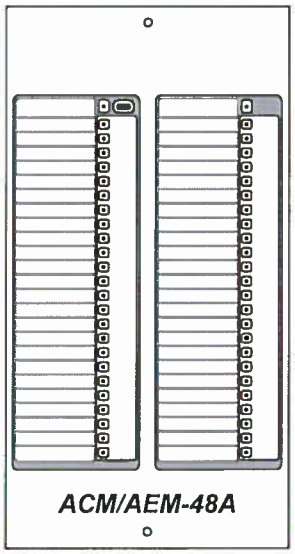

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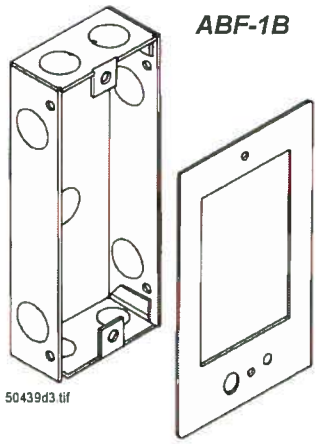
AEM-24AT: The Annunciator Expander Module-24AT expands the ACM-24AT by 24 system points. The AEM-24AT is identical in size and in frontal appearance to the ACM-24AT. Up to three of these expander modules can be supported by an ACM-24AT, for a maximum of 96 system points. 8.375" (21.27 cm) high; 4.375" (11.11 cm) wide. ***NOTE:*** *The AEM-24AT* ***cannot*** *be used to expand the ACM-48A.*

ACM-48A: *(see figure)* The Annunciator Control Module-48A contains 48 color-programmable (red/green/yellow) Active LEDs, a System Trouble LED, an On-Line/Power LED, and a local piezo sounder with a Silence/Acknowledge switch for audible indication of alarm and trouble conditions. Includes instructions. 8.375" (21.27 cm) high; 4.375" (11.11 cm) wide.

AEM-48A: The Annunciator Expander Module-48A expands the ACM-48A by 48 system points. The AEM-48A is identical in frontal appearance to the ACM-48A. One expander module can be supported by an ACM-48A, providing a maximum of 96 points (subject to the capability of the FACP). 8.375" (21.27 cm) high; 4.375" (11.11 cm) wide. ***NOTE:*** *The AEM-48A* ***cannot*** *be used to expand the ACM-24AT.*

ABS-1B: *(see figure)* The Annunciator Surface Box-1B (black) provides for the remote mounting of one annunciator module in a surface-mount enclosure. Knockouts are provided for use with 1/2" (1.27 cm) conduit. The annunciator mounts directly to the ABS-1B without a dress plate. 8.5" (21.59 cm) high x 4.5" (11.43 cm) wide x 2" (5.08 cm) deep. ***NOTE:*** *The ABS-1B will not support the installation of the AKS-1B Annunciator Key Switch.*



50439d3.tif

50439d2.tif

ABS-1TB: The ABS-1TB is an attractive surface-mount backbox for mounting one ACS Series Annunciator. Unlike the ABS-1B, the ABS-1TB has an increased depth that allows mounting of the AKS-1B Annunciator Key Switch. Black, 9.938" (25.24 cm) high x 4.625" (11.75 cm) wide x 2.5" (6.35 cm) deep. ***NOTE:*** *An earlier gray model, ABS-1TB, will not accommodate the ACM/AEM-24AT or ACM/AEM-48A. The slightly deeper ABS-1TB will accommodate both the ACM/AEM-24AT or ACM/AEM-48A models and the ACM-16AT/ACM-32A Series (see DN-0524).*

ABS-2B: The Annunciator Surface Box-2B (black) provides for the surface mounting of one ACM-24AT/AEM-24AT combination or one ACM-48A/AEM-48A combination. Knockouts are provided for use with 1/2" (1.27 cm) conduit. The annunciators mount directly to the ABS-2B without a dress plate. 8.5" (21.59 cm) high x 8.92" (22.66 cm) wide x 2" (5.08 cm) deep. ***NOTE:*** *The ABS-2B will not support the installation of the AKS-1B Annunciator Key Switch.*

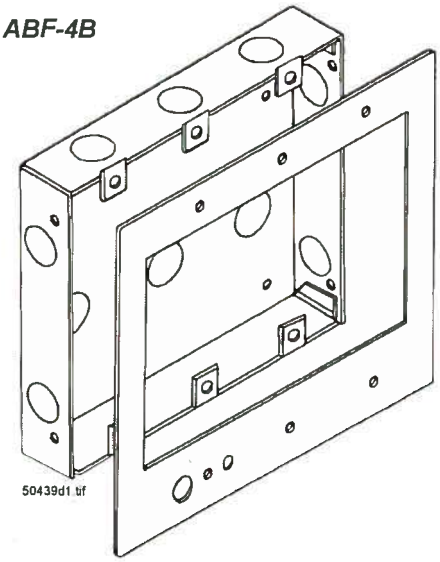
ABF-1B: *(see figure)* The Annunciator Flush Box-1B (black) provides for the remote mounting of a single annunciator module in a flush-mount enclosure. Knockouts are provided for use with 1/2" (1.27 cm) conduit. The ABF-1B includes a painted black metal trim plate [11" (27.94 cm) high x 6.25" (15.875 cm) wide], mounting hardware, and an adhesive-backed annunciator label for the dress plate. 9.938" (25.24 cm) high x 4.625" (11.75 cm) wide x 2.5" (6.35 cm) deep.

ABF-2B: The Annunciator Flush Box-2B (black) provides for the flush mounting of two annunciator modules. Includes a painted black metal trim plate [11" (27.94 cm) high x 10.625" (26.99 cm) wide] and adhesive-backed annunciator label. 9.938" (25.24 cm) high x 9.188" (23.34 cm) wide x 3.75" (9.525 cm) deep.

ABF-4B: *(see figure)* The Annunciator Flush Box-4B (black) provides for the remote mounting of one to four annunciator modules. Knockouts are provided for use with 1/2" (1.27 cm) conduit. The flush-mounted ABF-4B includes a painted black metal trim plate [11" (27.94 cm) high x 19.375" (49.21 cm)

wide] and an annunciator label. 9.938" (25.24 cm) high x 17.75" (45.09 cm) wide x 2.5" (6.35 cm) deep.

ABF-4B



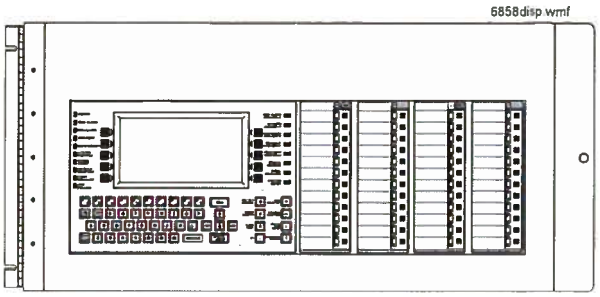
ABF-1DB, ABF-2DB, ABS-4D: The ABF-1DB, ABF-2DB and ABS-4D are semi-flush-mount backboxes for ACS Series Annunciators. The ABF-1DB mounts one annunciator module; the ABF-2DB mounts two modules; the ABS-4D mounts up to four modules. The ABS-4D Series can also accomodate the NCA-2 network annunciator, using the NCA-2 Retro Kit (NCA-2Retro); the NCA-2 is mounted in the center position with a blank plate (BMP-1) mounted on each side. Black with an attracted smoked glass door and keylock. The **ABS-4D** is hinged on the bottom for stability.

- **DIMENSIONS, ABF-1DB:** ***Box only:*** 9.938" (25.24 cm) high x 4.625" (11.75 cm) wide x 2.5" (6.35 cm) deep. ***Door:*** 11" (27.94 cm) high x 6" (15.24 cm) wide x 0.75" (1.9 cm) deep.
- **DIMENSIONS, ABF-2DB:** ***Box only:*** 9.938" (25.24 cm) high x 9.188" (23.34 cm) wide x 3.75" (9.525 cm) deep. ***Door:*** 11" (27.94 cm) high x 10.375" (26.35 cm) wide x 0.75" (1.9 cm) deep.
- **DIMENSIONS, ABS-4D:** ***Box only:*** 11.97" (30.40 cm) high x 19.87" (50.47cm) wide x 3.50" (8.89 cm) deep. ***Door:*** 11.97" (30.40 cm) high x 19.87" (50.47 cm) wide x 1.25" (3.18 cm) deep.

ADP-4B: The Annunciator Dress Panel-4B (black) provides for the cabinet mounting of one to four modules. The ADP-4B hinge-mounts to the CAB-4 Series cabinet. Modules mount directly to threaded studs on the dress panel.

DP-DISP: (see figure) The Dress Panel-Display allows one to four modules to be mounted in the ***top row*** of the CAB-4 Series backbox. Modules mount directly to threaded studs on the DP-DISP.

DP-DISP2: NFS2-640 Dress Panel accomodates up to two annunciator modules (no expanders).



DP-DISP Dress Panel with NCA-2 Network Control Annunciator in left two positions, and two ACM-24AT Annunciators at right.

BMP-1: Annunciator Blank Module is a flat black dress plate that covers unused module positions in the annunciator back-box or in the ADP-4B. 8.375" (21.27 cm) high x 4.375" (11.11 cm) wide. Studs for a variety of module mounting options are available.

AKS-1B: The Annunciator Key Switch-1B (black) provides access security for the control switches on the ACM/AEM-24AT. The key switch kit includes a key and hardware for mounting to the ABF-1B. Also included is an adhesive-backed annunciator label for use with the key switch/dress plate assembly. ***NOTE:*** *The AKS-1B can only be employed with the ABS-1TB.*

Agency Listings and Approvals

The listings and approvals below apply to the ACM/AEM-24AT and the ACM/AEM-48A. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL**: S635
- **ULC**: S635
- **FDNY:** COA #6067 (NFS2-640), COA #6065 (NFS2-3030)
- **CSFM**: 7120-0028:0156, 7165-0028:0243, 7165-0028:0224
- **FM** approved

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ONYXWorks® NFN

Embedded Gateway-3

NOTIFIER® by Honeywell

Network Systems

General

The NOTI•FIRE•NET™ Gateway is an intelligent gateway interface for the ONYXWorks® fire monitoring workstation. This gateway facilitates complete monitoring and control of a NOTI•FIRE•NET™ network. In addition, it supports full panel programming and network diagnostics.

The embedded gateway is a standalone version and is equipped with IP capability thus enabling ONYX® Series users to monitor multiple sites over an Ethernet network without the need for remote workstations.

Features

- Enables ONYX® Series workstation to monitor alarm, pre-alarm, trouble, disabled events, etc. for NFN fire alarm control panels.
- ONYXWorks® supports up to 50 intelligent gateways.
- Compatible with standard and high speed NOTI•FIRE•NET™ network.
- Adds acknowledge, silence, reset, enable/disable, and activate/deactivate control capability to the workstation.
- Supports fire alarm control panel programming upload/downloads and modifications.
- Embedded gateway allows remote IP connections and increases scalability of network.
- Supervised IP connections for remote workstations and gateways.
- Multiple workstations can access the gateway at the same time.
- Gateway redundancy for network survivability.

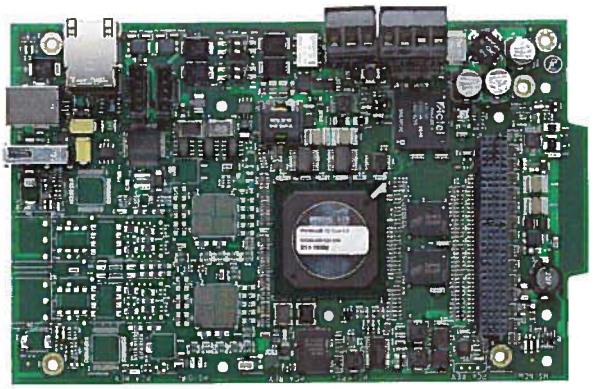
Compatibility

The NOTI•FIRE•NET™ Gateway is compatible with ONYXWorks® and ONYX FirstVision and interfaces to NOTI•FIRE•NET™ version 5.0 and higher, as well as a high speed NOTI•FIRE•NET™ network for the following panels and devices:

- ONYX Series
- AM2020/AFP1010 (version 5.0 SIB-NET)
- AFP-200 (version 5.0 NAM)
- AFP-300/AFP-400 (version 5.0 NAM)
- BACnet Gateway
- NCA-2/NCA Network Control Annunciator
- NOTI•FIRE•NET™Web Server

Specifications

- Power input: 24 VDC
- Input current: 450 mA @ 24 VDC (without NCM).
- Operating temperature: 0°C to 49°C (32°F to 120°F).
- Direct connection to NFS2-640, NFS-640, NFS-320, NFS2-3030, and NFS-3030 fire alarm control panels. NCM required for connection to NOTI•FIRE•NET™, and HS-NCM for connection to high-speed network. (See data sheets DN-6861 and DN-60454.)



NFN-GW-EM-3

Standards and Codes

The NOTI•FIRE•NET™ Gateway complies with the following UL/ULC Standards and NFPA 72 Fire Alarm Systems requirements:

- UL 864
- UL 1076
- UL 2017
- ULC S559-04
- ULC S527-99

Listings and Approvals

These listings and approvals apply to the modules specified in this document. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL / ULC:** S5697
- **FM Approved**
- **CSFM:** 7300-1525:103
- **MEA:** 286-07-E
- **FDNY:** COA #6041

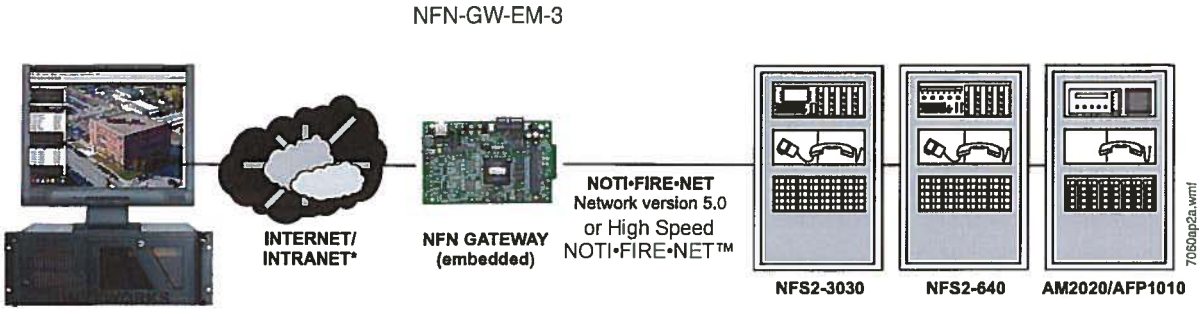
Ordering Information

NFN-GW-EM-3: NOTI•FIRE•NET™ Gateway, embedded. Includes PC board, NUP to NUP cable (75577), USB Cable (75665) and NFN Configuration.

Additional EMBEDDED VERSION Gateway required components:

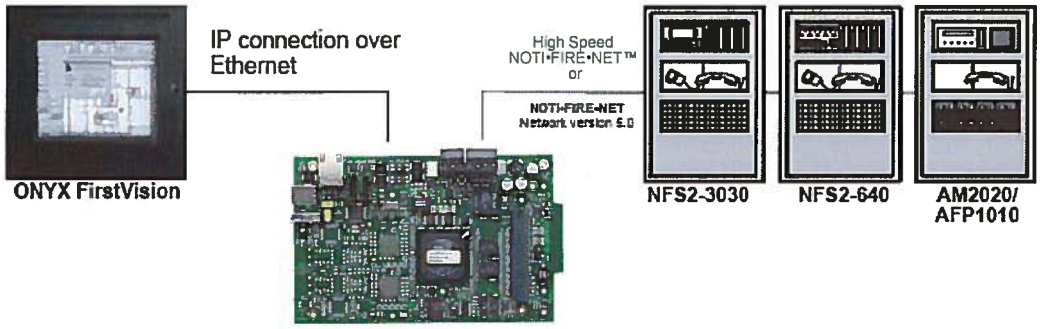
- NCM for connection to NOTI•FIRE•NET™.
- HS-NCM for connection to high speed NOTI•FIRE•NET™.
- IBM®-compatible PC with Windows® XP.
- Standard Ethernet network cable with RJ45 to RJ45 connectors.
- ONYXWorks Workstation V3.12 or above .
- NFN Network Version 5.0 or above.
- Verifire Tools Version 5.71 or above.

Remote Monitoring



* A UL Listed ethernet (TCP/IP) switch is required between a shared-IP network and the ONYXWORKS equipment. Contemporary Control Systems, Inc. (www.ctrlink.com) has several UL864 recognized switching hubs.

Firefighters' Display



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BAT Series Batteries

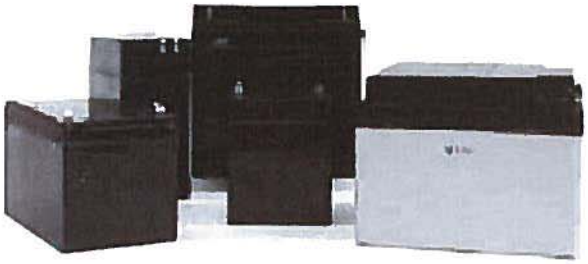
Sealed Lead-Acid

NOTIFIER® by Honeywell

Power Supplies

General

BAT Series Batteries are Power Sonic brand batteries. BAT Series (or Power Sonic brand) batteries are recommended for secondary power or backup power for all NOTIFIER fire alarm control equipment.



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Features

- Provide secondary power for control panels.
- Sealed and maintenance-free.
- Overcharge protected.
- Easy handling with leakproof construction.
- Ruggedly constructed, high-impact case (ABS, polystyrene, or polypropylene, depending on models).
- Long service life.
- Compact design.

Agency Listings and Approvals

The listings and approvals below apply to BAT Series Batteries. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL Recognized Components**: MH20845 *(Power-Sonic)*

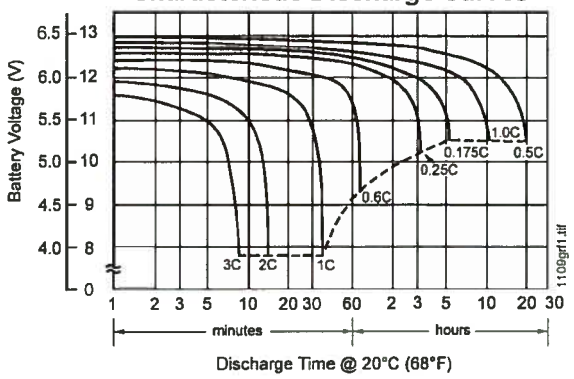
Ordering Information

BAT-1250-BP: 10-unit bulk pack of BAT-1250 (12 V 5 AH)
BAT-1270-BP: 5-unit bulk pack of BAT-1270 (12 V 7 AH)
BAT-12120-BP: 4-unit bulk pack of BAT-12120 (12V 12 AH)
BAT-12180-BP: 2-unit bulk pack of BAT-12180 (12 V 18 AH)
BAT-12260-BP: 2-unit bulk pack of BAT-12260 (12 V 26 AH)
BAT-12550: single battery (12 V 55 AH)
BAT-121000: single battery (12 V 100 AH)

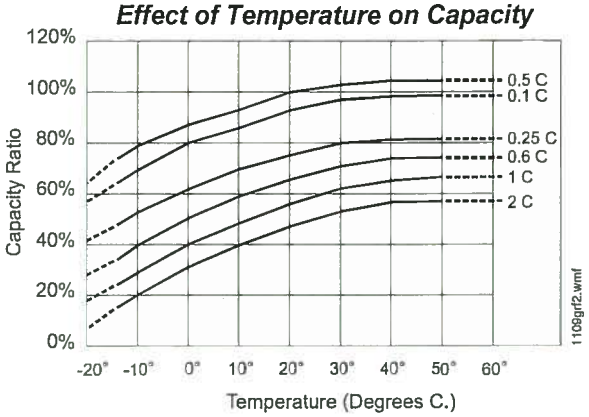
Part Number Reference & Specifications

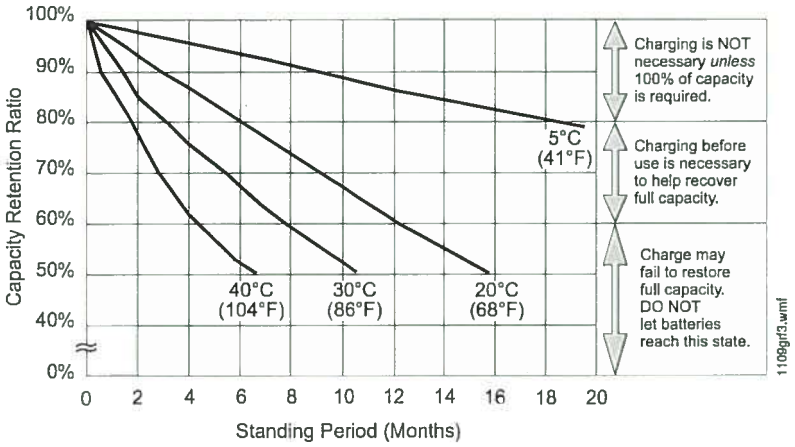
Part Number	Power Sonic Part Number	Battery Description			DIMENSIONS									
		Nominal Voltage V	Nominal Capacity @ 20 hr. rate A.H.		Width		Depth		Height		Height over terminal		Weight	
					in.	mm	in.	mm	in.	mm	in.	mm	lb.	kg.
BAT-1250	PS-1250	12	5	sealed	3.54	90	2.76	70	4.02	102	4.21	107	4.1	1.9
BAT-1270	PS-1270	12	7	sealed	5.95	151	2.56	65	3.7	94	3.86	98	4.8	2.18
BAT-12120	PS-12120	12	12	sealed	5.95	151	3.86	98	3.7	94	3.94	100	7.92	3.59
BAT-12180	PS-12180	12	18	sealed	7.13	181	2.99	76	6.57	167	6.57	167	12.6	5.8
BAT-12260	PS-12260	12	26	sealed	6.56	167	6.97	177	4.92	125	4.92	125	17	7.71
BAT-12550	PS-12250	12	55	sealed	9.04	230	654	138	8.2	208	8.98	228	36	16.33
BAT-121000	PS-121000	12	100	sealed	12	305	6.6	168	8.2	208	8.98	228	68	30.84

Characteristic Discharge Curves

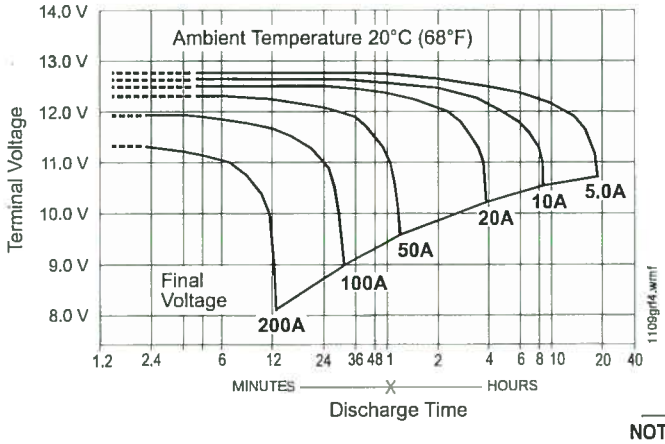


Effect of Temperature on Capacity





at left: PS-121000 Shelf-Life and Storage



at left: PS-121000 Discharge Characteristics

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ISO-6(A)

Six Fault Isolator Module

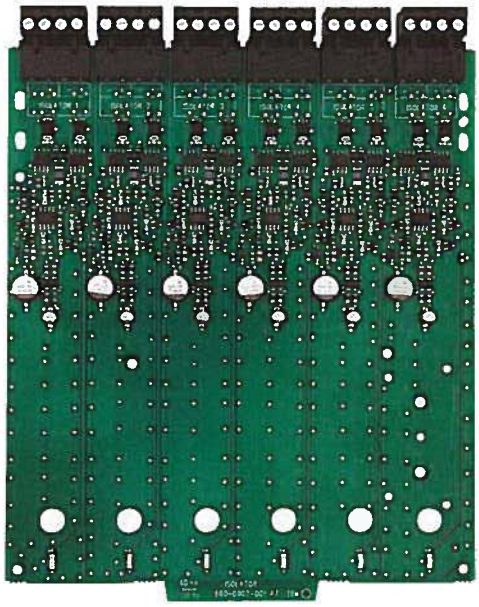
NOTIFIER® by Honeywell

Intelligent Addressable Devices

General

The ISO-6(A) Six Fault Isolator Module provides six equivalent circuits that will allow a portion of the communications loop to continue operating when a short circuit occurs on that loop. An amber LED indicator will blink in the normal state for each of the six inputs and will latch on during a short circuit condition. The module will automatically restore the communications loop to normal condition when the short circuit is removed.

The ISO-6 Six Isolator Module is an automatic switch that opens when the line voltage drops below four volts. Isolator modules should be spaced between groups of sensors or modules in a loop to protect the rest of the loop. If a short occurs between any two isolators, then both isolators immediately switch to an open circuit state and isolate the devices between them. The remaining units on the loop continue to fully operate.



Features

- Removable 12 to 18 AWG plug-in terminal blocks.
- Individual LED status indicators.
- Six individual, Class B isolator circuits.
- Mount up to two modules in BB-XP enclosure (optional).
- Mount up to six modules on a CHS-6 chassis in a CAB-4/CAB-3 series, EQ series, or BB-25 cabinet.
- Mounting hardware included.

Applications

The ISO-6 Fault Isolator Modules should be spaced between groups of sensors in an SLC to protect the rest of the loop. Use to isolate short circuit problems within a section of a loop so that other sections can continue to operate normally. The ISO-6 supports a maximum of 25 devices between isolators.

When more than 100 Isolator Modules are connected to an SLC loop, the address capacity of the loop is reduced by two (2) addresses for every isolator device in excess of 100.

Specifications

Normal Operating Voltage: 15-32 VDC.

Stand-By Current: 450 µA per circuit, 2.7 mA all circuits.

Maximum Current Draw: 17 mA per circuit in isolation, 102 mA with all circuits in isolation.

Temperature Range: 32° F to 120° F (0° C to 49° C).

Humidity: 10% to 85% non-condensing.

Dimensions: 6.8"H x 5.8"W x 1.0"D.

Shipping weight: 1.1 lb. (0.50 kg) including packaging.

Mounting Options: CHS-6 Chassis, BB-XP Cabinet, BB-25 Cabinet, CAB-4 Series Cabinet, EQ Series Cabinet.

Wire Gauge: 12 AWG (3.31 mm²) to 18 AWG (0.821 mm²).

Compatible Devices: See the documentation for your panel, and the *Device Compatibility Document*.

Agency Listings and Approvals

The listings and approvals below apply to ISO-6 components. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL/ULC Listed:** S3705.
- FM Approved.
- CSFM: 7300-1653-0234.

Product Line Information

ISO-6: Six Isolator Module.

ISO-6A: ULC-listed version of ISO-6.

BB-XP: Optional cabinet for one or two modules. **Door Dimensions:** 9.234" (23.454 cm) wide (9.484" [24.089 cm] including hinges), x 12.218" (31.0337 cm) high, x 0.672" (1.7068 cm) deep. **Backbox Dimensions:** 9.0" (22.860 cm) wide (9.25" [23.495 cm] including hinges), x 12.0" (30.480 cm) high x 2.75" (6.985 cm). **Chassis Dimensions** (installed): 7.150" (18.161 cm) wide overall x 7.312" (18.5725 cm) high interior overall x 2.156" (5.4762 cm) deep overall.

BB-25: Optional cabinet for up to six modules mounted on CHS-6 chassis (below). **Door Dimensions:** 24.0" (60.96 cm) wide x 12.632" (32.0852 cm) high, x 1.25" (3.175 cm) deep, hinged at bottom. **Backbox Dimensions:** 24.0" (60.96 cm) wide x 12.550" (31.877 cm) high x 5.218" (13.2537 cm) deep.

CHS-6: Chassis, mounts up to six modules in a CAB-4 Series cabinet (see DN-6857), EQ Series cabinet (see DN-60229), or BB-25 cabinet.

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