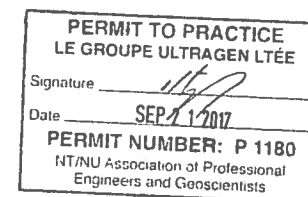


PLAN VIEW
 EXT: 1.30
 OPEN SLIT PAVING STONES
 LIGHTING AND SERVICES



NOTES GÉNÉRALES / GENERAL NOTES

1. FOR OUTDOOR LIGHTING AND PHOTOCELL REFER TO WSP DRAWING #88-116-253-301.
2. SWITCH FOR LIGHTING TYPE FL.

ISSUED FOR CONSTRUCTION
 10/1/07 DATE: SEPT 2007

DESSINS EN REFERENCE / REFERENCE DRAWING	
INT. / INT.	EXT. / EXT.
COUPE HORIZ. PAR LE NIVEAU DE 00-110	00-03-110-00-010
ELEVATION ELEVATION LATRALE 00-110	00-03-110-00-010
ELEVATION ELEVATION LATRALE	00-03-110-00-010
COUPE HORIZ.	00-03-110-00-010



2	001-00-0	00000000000000000000	0.0	0.0
1	001-00-0	00000000000000000000	0.0	0.0
0	001-00-0	00000000000000000000	0.0	0.0
00	001-00-0	00000000000000000000	0.0	0.0

AGNICO EAGLE - MELINDA DIVISION
116 - FUEL TANK FARM
FUEL DISTRIBUTION
RANGER INLET PUMPING STATION
LIGHTING AND SERVICES

ISSUED FOR REASON OF	REG. SHORTAGE	DATE 2017-05
ISSUED FOR REASON OF	STORAGE OVERLOAD	2017-05
ISSUED FOR REASON OF	QUALITY CHECK	2017-05
ISSUED FOR REASON OF	100	DATE 2017-05-15

65-ULT-116-EL-010

NO. FIRST PAGE NO.	GROUP	PAGE
6515	2	1/



1. ALL CHANNEL TRAY ITEMS ARE IDENTIFIED WITH THOMAS & BETTS CATALOG NUMBER.
2. FOR CHANNEL TRAY DRAINAGE REFER TO DRAWING #83-437-118-CL-608.
3. INSTALL ALL CHANNEL TRAY WITH CHANNEL PROFILE TYPE "CONSTANT" BY THOMAS & BETTS. CAT. # A1300-AL COMPLETE WITH MISCELLANEOUS HARDWARE.

ISSUED FOR CONSTRUCTION

[illegible]

AGNICO EAGLE

1	2017-08-31	Balance FOM construction	1.0	0.0	
2	2017-08-31	Balance cash in Fed reserve	1.0	0.0	
3	2017-08-31	Balance FOM construction	1.0	0.0	
4	2017-08-31	Balance Fed reserve	0.0	0.0	

REVISIONS




AGHICO EAGLE - MELIADINE DIVISION
116 - FUEL TANK FARM
FUEL DISTRIBUTION
RANCH INLET PUMPING STATION
CHANNEL TRAY LAYOUT

ISSUED FOR STEVEN JR	REGD 24-0337-A	DATE 2017-05-15
ISSUED FOR STEVEN JR	STEPHANE GRAND	2017-05-15
APPROVED FOR APPROVED BY	DANIEL CARRIER	2017-05-15
RECEIVED 1:20	DATE 2017-05-15	

65-ULT-116-EL-011

6515 2 1/1

PERMIT TO PRACTICE LE GROUPE ULTRAGEN LTÉE

Signature _____

Date **SEP 21 2017**

PERMIT NUMBER: P 1180

NT/NU Association of Professional
Engineers and Geoscientists

Source:	120	208	Volts
Feeder from / Single line diagram:	65TRF11601 / 65-116-275-203		
Mounting:	SURFACE		
Location:	ELECTRICAL ROOM 116 (RANKIN INLET)		
Manufacturer / Catalog No.:	SQUARE-D (SCHNEIDER) / NQ442L2C		
Breaker type:	QOB		

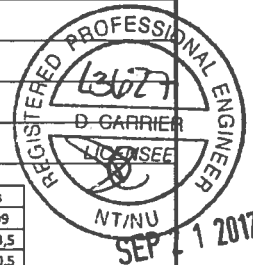
Enclosure type:	NEMA 1
Main breaker:	NONE
No. of circuits:	42 CCTs
Bars:	225 A
Short circuit Ampacity:	10 kA
Power:	45 kVA

DESCRIPTION	CABLE		TYPE	WATTS	BREAK.		C T #		C T #	BREAK.		WATTS	TYPE	CABLE		DESCRIPTION
	AWG	REF			TYPE	AMP				AMP	TYPE		QTE	REF	AWG	
LIGHTING FIXTURES TANK #2	12	L	7	483		15	1	A	2	15		240	2	O	12	OUTLET PUMPING STATION & OPERATION ROOM 116
							3	B	4	15		120	1	O	12	OUTLET ELECTRICAL ROOM 116
LIGHTING CONTACTOR CONTROL FEEDER	12	L	1	37		15	5	C	6	15		240	2	O	12	OUTLET ELECTRICAL ROOM IT AREA 116
LIGHTING AND EMERGENCY LIGHTING PUMPING STATION & OPERATION ROOM 116	12	L	5	216		15	7	A	8	15		400	1	I	12	PLC/HMI/IO CARDS IN OPERATION ROOM CABINET 65PLC11601
LIGHTING AND EMERGENCY LIGHTING ELECTRICAL ROOM 116	12	L	4	180		15	9	B	10			2000	1	H	6	HEATING IN OPERATION ROOM 116 65HEA11603
LIGHTING IN FILTRATION CONTAINER 116 TANK #1	12	L	3	144		15	11	C	12							
LIGHTING FIXTURES TANK #1	12	L	7	483		15	13	A	14	15		888	2	I	8	MOTORIZED OPERATOR VALVES FEEDER 116-MOV-008 & 116-MOV-004 (65-ULT-116-IN-008)
							15	B	16	15		200	1	I	12	PLC CABINET 65PLC11601 OUTLET UTILITY IN OPERATION ROOM 116
LIGHTING FIXTURES TANK #1/TANK #2 GROUND FLOOR	12	L	4	276		15	17	C	18	15		100	1	I	12	INSTRUMENT (65-ULT-116-IN-008)
							19	A	20	15		50	1	M	12	VENTILATION FILTRATION CONTAINER 116 TANK #1 65FAN11601 (1/16 HP, 115V, FLA 1A)
LIGHTING FIXTURES OUTSIDE ELECTRICAL ROOM/OUTSIDE OF PUMPING STATION	10	L	7	483		15	21	B	22	15		50	1	M	12	VENTILATION FILTRATION CONTAINER 116 TANK #2 65FAN11602 (1/16 HP, 115V, FLA 1A)
							23	C	24	15		150	1	H	12	HEATING CONTACTOR CONTROL FEEDER IN FILTRATION CONTAINER TANK #1, 65HTR11601
LIGHTING IN FILTRATION CONTAINER 116 TANK #2	12	L	3	144		15	25	A	26	15		150	1	H	12	HEATING CONTACTOR CONTROL FEEDER IN FILTRATION CONTAINER TANK #2, 65HTR11602
HEATING IN FILTRATION CONTAINER 116 TANK #1 65HEA11605	3	H	1	5000		30	27	B	28	15		0	0			
							29	C	30	15		0	0			
HEATING IN FILTRATION CONTAINER 116 TANK #1 65HEA11606	3	H	1	5000		30	31	A	32	15		0	0			
							33	B	34	15		0	0			
HEATING IN FILTRATION CONTAINER 116 TANK #2 65HEA11607	4	H	1	5000		30	35	C	36	15		0	0			
							37	A	38	15		0	0			
HEATING IN FILTRATION CONTAINER 116 TANK #2 65HEA11608	4	H	1	5000		30	39	B	40	15		0	0			
							41	C	42	15		0	0			

TYPE (REF)	(W)	total	Qte
(L) Lighting	2446		41
(O) Outlet	600		5
(H) Heating	22300		7
(I) Instrument	1588		5
(M) MOTOR	100		2

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

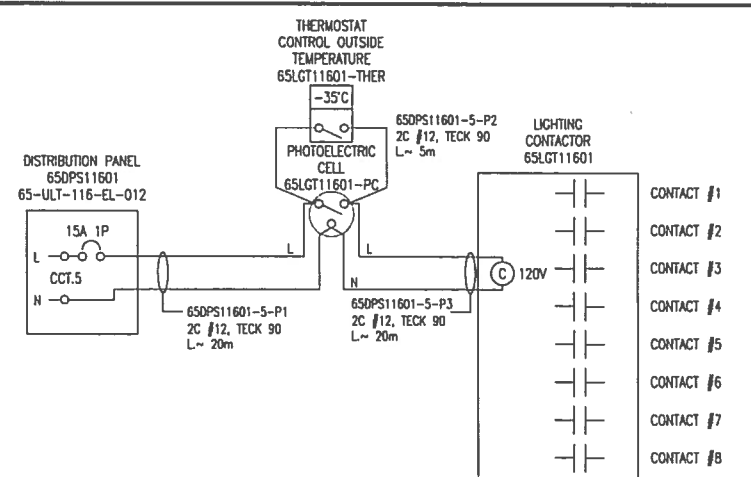
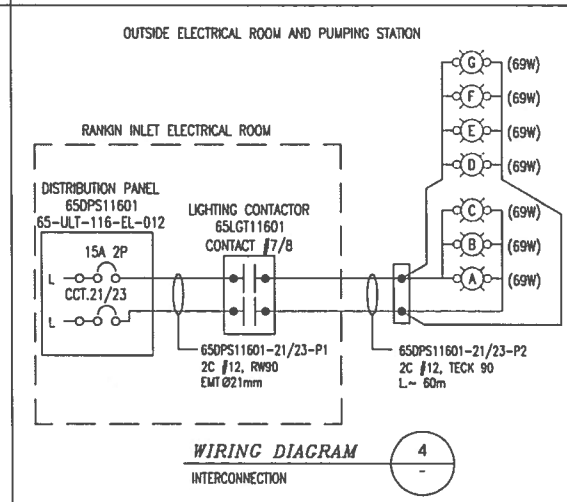
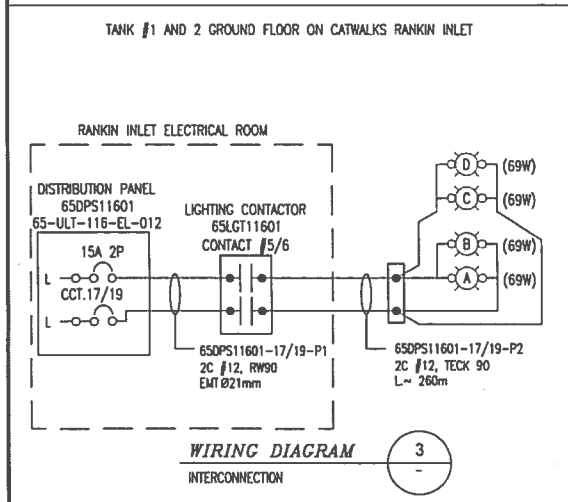
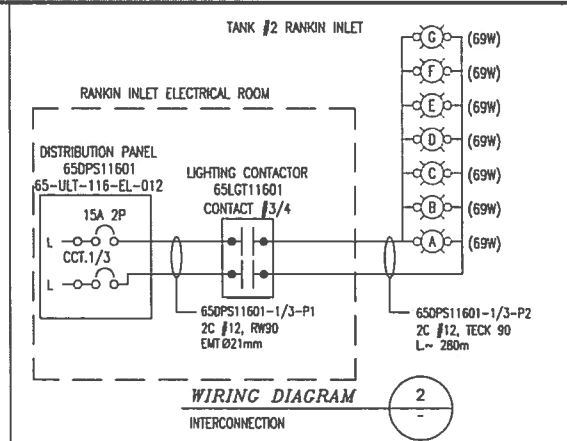
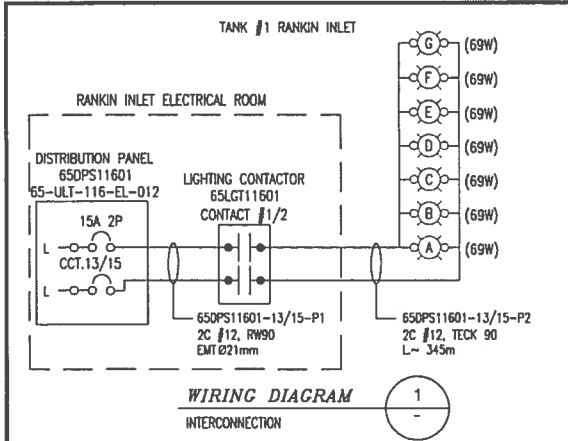
	Watts
Phase A	7709
Phase B	9774,5
Phase C	9550,5
Total	27034



NOTES:

1. SEE LIGHTING DIAGRAM FOR DETAILS OF CABLE SIZE DWG #65-ULT-116-EL-013.

				AGNICO EAGLE			
				ultragen			
2	2017-09-20	ISSUED FOR CONSTRUCTION	S GRMARC	D CARRIER	D CARRIER		
1	2017-08-04	UPDATE AREA & TAG NUMBER	N SALDAN	D CARRIER	D CARRIER		
0	2017-07-12	ISSUED FOR CONSTRUCTION	SG 111891	DC 40308	DC 40308		
PC	2017-06-13	ISSUED FOR REVIEW	SG 111891	DC 40308	DC 40308		
PB	2017-05-11	ISSUED FOR REVIEW	MT 5029941	SG 111891	DC 40308		
PA	2017-05-08	ISSUED FOR REVIEW	MT 5029941	SG 111891	DC 40308		
REV	DATE	DESCRIPTION	PAR	VER	APP	DESS MT 5029941	DATE 2017-05-08 REV 2
				116 - FUEL TANK FARM RANKIN ELECTRICAL ROOM PANEL SCHEDULE 65DPS11601 65-ULT-116-EL-012			



NOTES:

1. REFER TO THE DWG #65-116-285-201 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 G).

3	2017-09-20	ISSUED FOR CONSTRUCTION	S.G.	D.C.
2	2017-08-04	UPDATE AREA & TAG NUMBER	S.G.	D.C.
1	2017-06-12	ISSUED FOR CONSTRUCTION	S.G.	D.C.
0	2017-05-29	ISSUED FOR CONSTRUCTION	M.T.	D.C.
PB	2017-05-11	ISSUED FOR REVIEW	M.T.	D.C.
PA	2017-05-08	ISSUED FOR REVIEW	M.T.	D.C.
No.	DATE	REVISION	BY	APP.

CLIENT:

AGNICO EAGLE

NUQSANA PROMEC MINING

ultragen

CONSULTANT PROJECT NO. 591700

DESIGNED BY: MARC TREMBLAY PROJECT: AGNICO EAGLE - MELADINE DIVISION
DATE: 2017-05-08 116 - FUEL TANK FARM

DRAWN BY: MARC TREMBLAY
DATE: 2017-05-08

CHECKED BY: STEPHANE GROND
DATE: 2017-05-08

APPROVED BY: DANIEL CARRIER
DATE: 2017-05-08

SCALE: NONE

TITLE: FUEL DISTRIBUTION RANKIN INLET LIGHTING DIAGRAM

PROJECT No.	DRAWING NO.	REV.
6515	65-ULT-116-EL-013	3

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE

Signature: *[Signature]*

Date: SEP 21 2017

PERMIT NUMBER: P 1180

NT/NU Association of Professional Engineers and Geoscientists



ISSUED FOR CONSTRUCTION

ultragen DATE: SEPT 2017

NTNU Association of Professional
Engineers and Geoscientists



TEL. PRODUCT PRODUCT NO. 6515	REGION 2	FRAME / DE 1 / 1
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NOTES GÉNÉRALES / GENERAL NOTES

1. FOR OUTDOOR LIGHTING AND PHOTOCELL, REFER TO WSP DRAWING #83-116-183-201.
2. SWITCH FOR LIGHTING TYPE F1.

ISSUED FOR CONSTRUCTION
 0-100000 100% FEB 1987

DESIGN EN REFERENCE / REFERENCE DRAWING	
Item / No.	Ref
BUILDING LIFT RAILINGS	00-110-079-200
STAIRS AND BALCONY WALKWAY RAILINGS	00-110-079-200
LOBBY RAILING AND DETAIL	00-110-079-200
ELEVATOR CHAIR LIFTING PLATFORM (?)	00-057-110-02-005
SHOPEX 11001 PLANT, SHEDDABLE TO 00-110-079-200	00-057-110-02-005
BUILDING LIFT	00-007-000-02-00-001

AGNICO EAGLE

3	2017-05-05	STATUS FOR COMPLETION	0.0	0.0
4	2017-05-05	STATUS FOR A & THE MASTER	0.0	0.0
5	2017-05-10	STATUS FOR COMPLETION	0.0	0.0
6	2017-05-10	STATUS FOR A & THE MASTER	0.0	0.0

REVISIONS



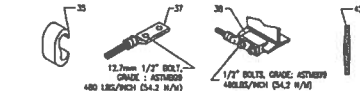
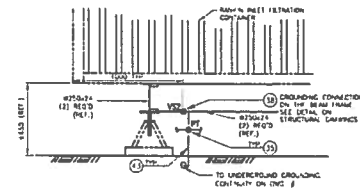
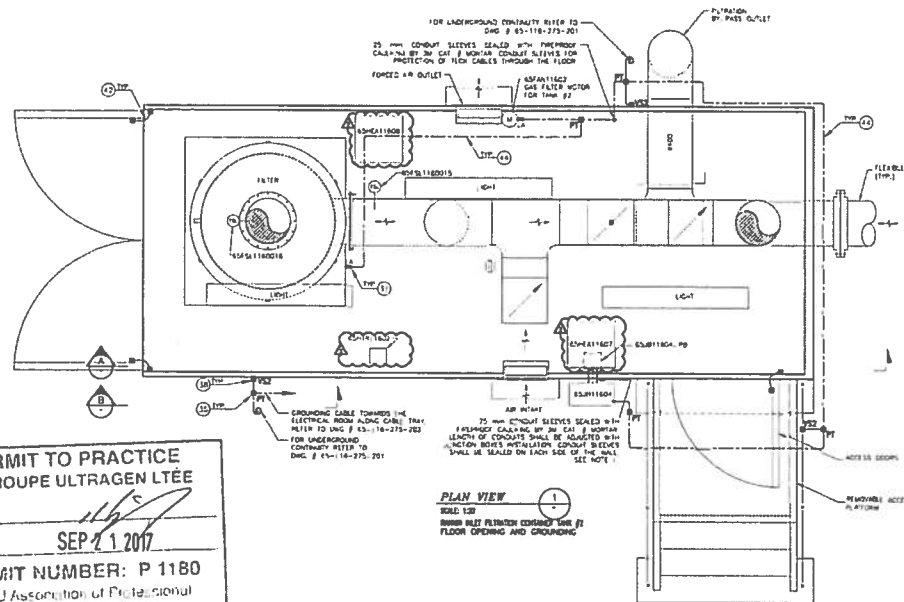
TIME / TOL
AGNICO EAGLE - MELBOURNE DIVISION
118 - FUEL TANK FARM
FUEL DISTRIBUTION
RANDOM INLET FILTRATION CONTAINER TANK
LIGHTING AND SERVICES

ISSUED AND FORWARDED BY	STEPHANE CHAMARD	DATE	2017-06-12
ISSUED AND FORWARDED BY	STEPHANE CHAMARD	DATE	2017-06-12
APPROVED AND FORWARDED BY	DANIEL CHARRIER	DATE	2017-06-12
APPROVED DATE	1/20	DATE	2017-06-12

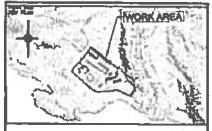
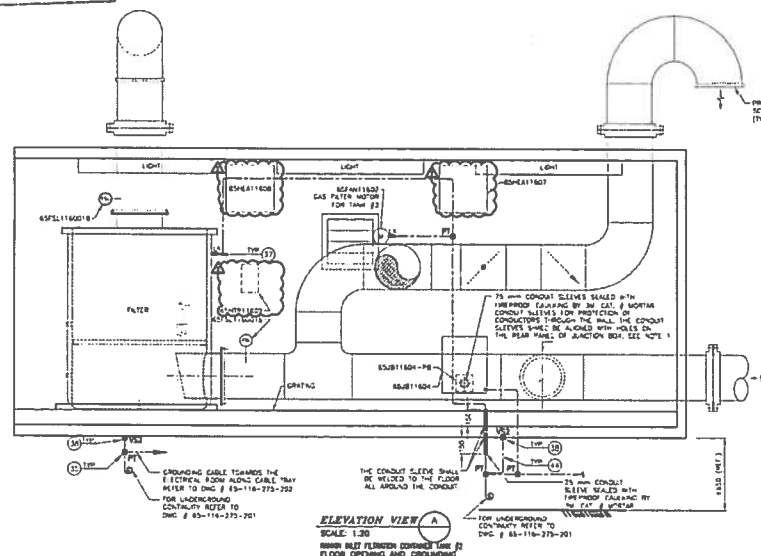
65-ULT-116-EL-015

NO. PROJECT	REASON	PAGE(S) / TOTAL
PROJECT NO.		
6515	2	1 / 1





ITEM NUMBER	SYMBOL	DESCRIPTION	COMPANY LIST	MATERIAL	TYPE	NOTE
35	PT B	CONNECTION - PARALLEL HORIZONTAL CONDUITS COMPRESSED CONNECTION FOR TWO PARALLEL HORIZONTAL CONDUITS. CABLE SIZE: 4/DWG CABLE SIZE: 2/DWG, TAP CABLE SIZE: 2/DWG CABLE SIZE: 4/DWG, TAP CABLE SIZE: 2/DWG CABLE SIZE: 4/DWG, TAP CABLE SIZE: 4/DWG	BURNDY	YH2C26C26 YH2C26C26 YH2C26C26		
37	LA B	CONNECTION - HEAVY DUTY TERMINALS HEAVY DUTY TERMINALS DESIGNED TO CARRY SHORT CIRCUIT LOAD AND WITHSTAND HIGH MECHANICAL STRESS. CABLE SIZE: 2/DWG CABLE SIZE: 4/DWG COMPLETE WITH NON-CORROSIVE HARDWARE SUCH AS: BOLT, PLAT BUSHES, LOCKWASHERS, NUTS AND SPACERS TO PREVENT OXIDATION OR CORROSION.	BURNDY	YH42B-2H YH42B-2H		
38	VS2 B	CONNECTION - STRUCTURE CONNECTION USED FOR VERTICAL STEEL SURFACE (STRUCTURAL BEAMS) CABLE SIZE: 4/DWG COMPLETE WITH HARDWARE	BURNDY	YH2C26-336-2H YH2C26-42		EVERY BURNDY VS2 CONNECTION (VS2) MUST BE COMBINED WITH A YH4A HEAVY DUTY TERMINAL (LA) AND 2 NUTS OF APPROPRIATE SIZE FOR THE TERMINAL.
41		CABLE TRAY CONNECTOR CABLE TRAY GROUNDING CLAMP, FOR CABLE SIZE 4/DWG.	THOMAS & BETTS	GTC24P		
42		BURNDY JUMPER PREFABRICATED COPPER JUMPER FOR EXPANSION JOINTS AND ADJUSTABLE JOINTS 1 BRIDGES AND 2 BOLTS HOLD BY CONNECTION.	THOMAS & BETTS	FBE12-1		
43		COPPER GROUNDING CONDUCTORS 4/0 AWG, BARE, FLEXIBLE, TINNED, 19 STRANDS (ASTM STANDARDS B8 AND B33).	PHILLIPS CABLES			
44		COPPER GROUNDING CONDUCTORS 2/0 AWG, BARE, FLEXIBLE, TINNED, 19 STRANDS (ASTM STANDARDS B8 AND B33).	PHILLIPS CABLES			
46		COPPER GROUNDING CONDUCTORS 6 AWG, GREEN INSULATION, FLEXIBLE, 7 STRANDS (ASTM STANDARDS B8 AND B33).	PHILLIPS CABLES			
img		COPPER CONDUCTORS IDENTICAL CHARACTERISTICS FOR FUTURE CONNECTIONS. THE LENGTH TO RESERVE IS SPECIFIED ON THE SYMBOL.	PHILLIPS CABLES			



- NOTES GENERAL / GENERAL NOTES
1. PULL BOX 65B116018-18 LINED WITH CONCRETE BLEND TO JUNCTION BOX 65B116018-18. THE CABLES SHOULD BE FILTRATION CONTAINER END AT THE PULL BOX.
 2. USE TP AT EACH END OF THE CONDUIT SLEEVES.
 3. INSTALL COPPER GROUNDING CABLE 2/0 AND 4/0 AWG, BARE, FLEXIBLE, TINNED, 19 STRANDS IN EACH CHANNEL THEY CONNECT CABLE WITH CONNECTION TYPE "VS2" (ARTICLE NUMBER 35). CONNECT CABLE AT EACH SECTION OF CHANNEL, THAT WITH CONNECTION TYPE "GTC24P" (ARTICLE NUMBER 41).



REVISIONS	DATE	BY	REVISION
1	2017-08-13	STP/STP	ISSUED FOR CONSTRUCTION
2	2017-08-13	STP/STP	ISSUED FOR CONSTRUCTION
3	2017-08-13	STP/STP	ISSUED FOR CONSTRUCTION
4	2017-08-13	STP/STP	ISSUED FOR CONSTRUCTION
5	2017-08-13	STP/STP	ISSUED FOR CONSTRUCTION

REVISIONS	DATE	BY	REVISION
1	2017-08-13	STP/STP	ISSUED FOR CONSTRUCTION
2	2017-08-13	STP/STP	ISSUED FOR CONSTRUCTION
3	2017-08-13	STP/STP	ISSUED FOR CONSTRUCTION
4	2017-08-13	STP/STP	ISSUED FOR CONSTRUCTION
5	2017-08-13	STP/STP	ISSUED FOR CONSTRUCTION

REVISIONS	DATE	BY	REVISION
1	2017-08-13	STP/STP	ISSUED FOR CONSTRUCTION
2	2017-08-13	STP/STP	ISSUED FOR CONSTRUCTION
3	2017-08-13	STP/STP	ISSUED FOR CONSTRUCTION
4	2017-08-13	STP/STP	ISSUED FOR CONSTRUCTION
5	2017-08-13	STP/STP	ISSUED FOR CONSTRUCTION

REVISIONS	DATE	BY	REVISION
1	2017-08-13	STP/STP	ISSUED FOR CONSTRUCTION
2	2017-08-13	STP/STP	ISSUED FOR CONSTRUCTION
3	2017-08-13	STP/STP	ISSUED FOR CONSTRUCTION
4	2017-08-13	STP/STP	ISSUED FOR CONSTRUCTION
5	2017-08-13	STP/STP	ISSUED FOR CONSTRUCTION



1. FOR OUTDOOR LIGHTING AND PHOTOCELL REFER TO WSP DRAWING #20-116-223-201.
2. SWITCH FOR LIGHTING TYPE F1.

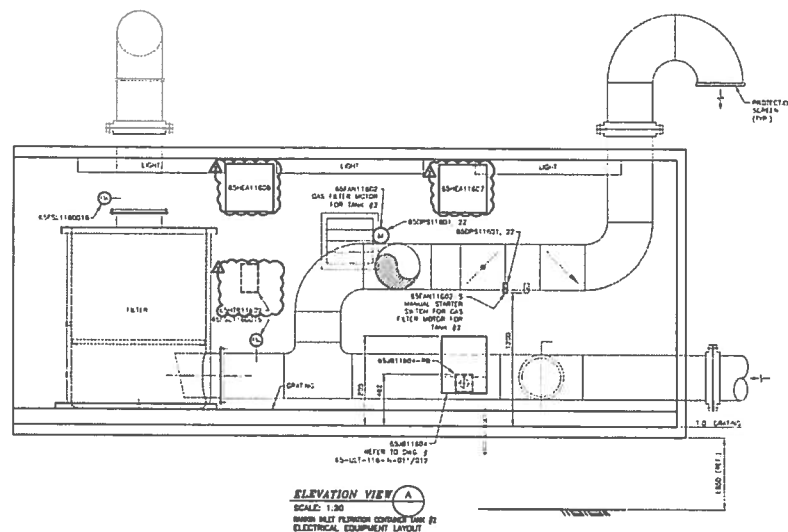
DECISIONS IN REFERENCE / REFERENCE DRAWING	
TYPE / REF	2 / REF
DOUBLE LINE DRAWING	65-110-275-203
DOUBLE LINE "W" MARKING AND SYMBOLS	65-110-275-202
LEADING LINES AND DETAILS	65-110-270-200
ELECT. CABLE LAYOUT PLUMBING (2)	65-107-110-01-010
WIRING/11000 PAUL. CONSOLE (2) (2-110)	65-110-110-01-010

[illegible]

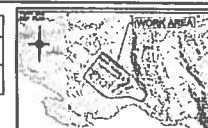



PERSONNEL NAME OF	STEPHANE GRIMARD		DATE 2017-06-13
PERSONNEL ADDRESS OF	STEPHANE GRIMARD		2017-06-13
APPROPRIATE APPROVAL OF	DANIEL CARRIER		2017-06-13
SHOULD DATE	1:30	TIME	2017-06-13
65-ULT-116-EL-018			
NO. PROJECT PROJECT NO.	8315		
	REVISION	PAGE / TOTAL	
	2	1 / 1	





PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature _____
Date **SEP 21 2017**
PERMIT NUMBER: P 1180
HT/NU Association of Professional
Engineers and Geoscientists



NOTES GÉNÉRALES / GENERAL NOTES

1. HEATER UNITS ARE CEILING MOUNTED.
2. FOR EQUIPMENT IDENTIFICATION REFER TO THE MATERIAL LIST.

ISSUED FOR CONSTRUCTION

[illegible]

AGNICO EAGLE

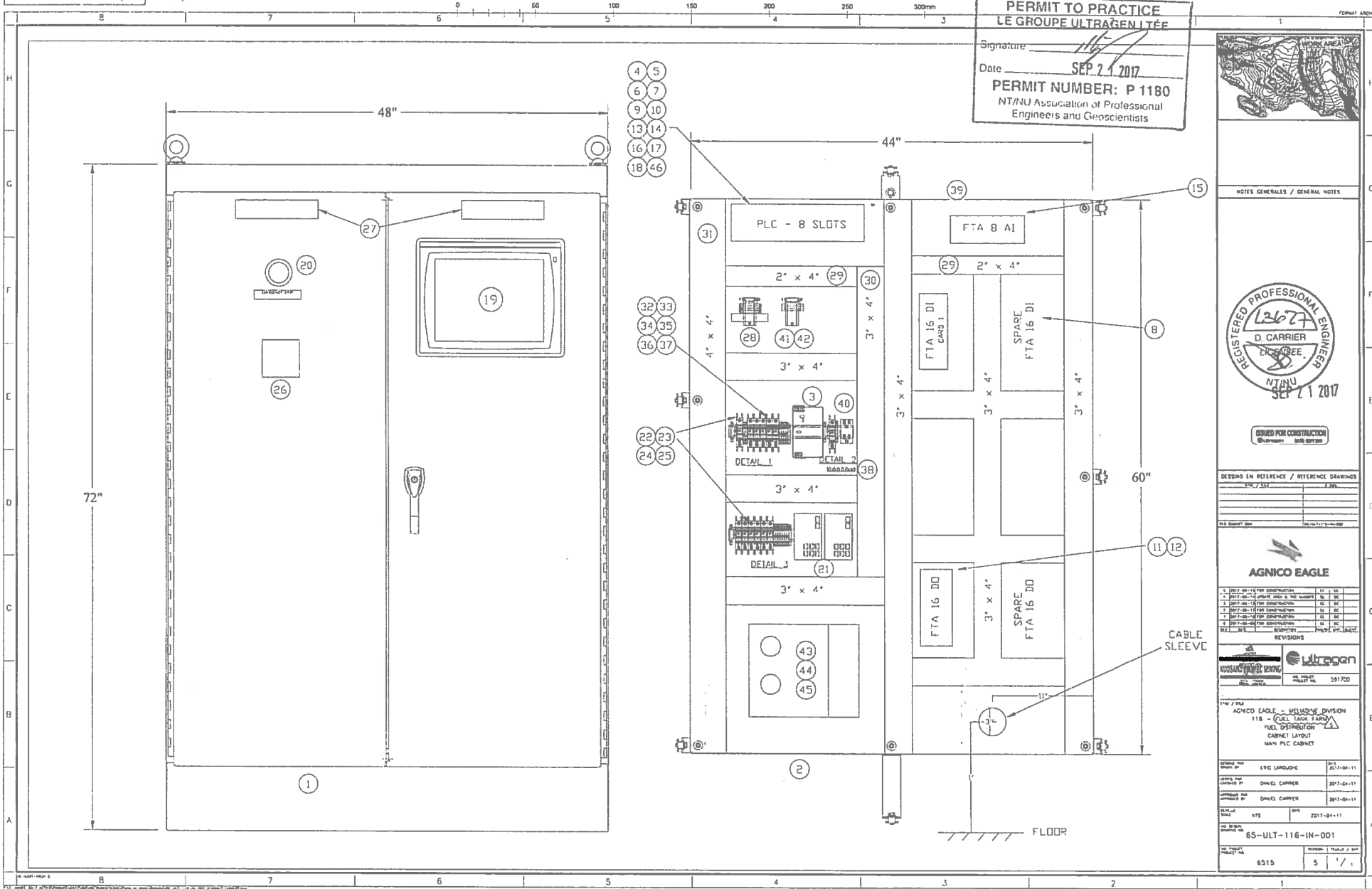
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REVISION

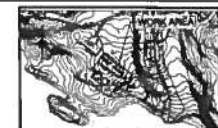
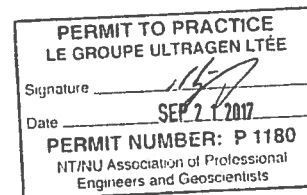


AGNICO EAGLE - MELINDINE DIVISION
116 - FUEL TANK FARM A
FUEL DISTRIBUTION
DRAIN INLET FILTRATION CONTAINER TANK #2
ELECTRICAL EQUIPMENT LAYOUT

REPORT AND STATUS OF	STEPHANE GRAND	DATE	2017-08-15
REPORT MADE ON/OF	STEPHANE GRAND	DATE	2017-08-15
APPROVED AND FORWARDED BY	DANIEL CAMBER	DATE	2017-08-15
ISSUANCE NUMBER	130	DATE	2017-08-15
NO. GROSS REGISTERED VEH 65-ULT-116-EL-019			
REG. PRODUCT REGISTERED VEH	8515	REMARKS	REMARKS /
		2	1 /



ITEM	QUANTITY	DESCRIPTION	MANUFACTURER	MODEL
1	1	CABINET 72H, 48W, 24D NEMA 12 WITH BASE FREESTANDING	Hammond	1418ZW24
2	1	INNER MOUNTING PANEL FOR CABINET	Hammond	72ZWFW
3	1	POWER SUPPLY 24VDC 5 AMP	Schneider	ABLBRP524050
4	1	BACKPLANE 8 SLOTS	Schneider	BMEXBP0800
5	1	POWER SUPPLY PLC	Schneider	BMXCP53500
6	1	PLC PROCESSOR	Schneider	BMXP582040
7	1	32 DIGITAL INPUT PLC CARD	Schneider	BMXDDI3202K
8	1	FTA 16 DIGITAL INPUT	Schneider	ABE7516E2F0
9	1	CABLE 3 METERS FOR DIGITAL INPUT CARD	Schneider	BMXFCC303
10	1	32 DIGITAL OUTPUT PLC CARD	Schneider	BMXDDO3202K
11	1	FTA 16 DIGITAL OUTPUT	Schneider	ABE7R16T210
12	18	RELAY FOR DIGITAL OUTPUT CARD	Schneider	ABR7S21
13	1	CABLE 3 METERS FOR DIGITAL OUTPUT	Schneider	BMXFCC303
14	1	8 ANALOG INPUT PLC CARD	Schneider	BMXAM0810
15	1	FTA 8 ANALOG INPUT	Schneider	ABE7CPA31
16	1	CABLE 1.5 METERS FOR ANALOG INPUT	Schneider	BMXFTA150
17	0	HIGH SPEED COUNTER MODULE	Schneider	BMXEHC0800
18	0	REMOVABLE CAGE CLAMP	Schneider	BMXFTB2000
19	1	PANEL VIEW HMI 15 INCH 24VDC WITH PREMIUM BOX	Schneider	HMI07T32 / HMIG3U
20	1	PANEL MOUNTED "BUTTON"	Schneider	XB4BS444
21	2	ETHERNET TCP/IP SWITCH - 6 COPPER / 1 FIBER	Schneider	TCSESM083F1C50
22	10	120VAC/24VDC CIRCUIT BREAKER 2A	Schneider	GB2CB07
23	1	120VAC/24VDC CIRCUIT BREAKER 5A	Schneider	GB2CB10
24	1	120VAC/24VDC CIRCUIT BREAKER 15A	Schneider	GB2CB21
25	1	120VAC/24VDC CIRCUIT BREAKER 20A	Schneider	GB2CB22
26	1	RED LAMICOID WITH WHITE LETTERS - 4" x 4"	65-ULT-116-IN-004 FOR DETAIL	-
27	2	WHITE LAMICOID WITH BLACK LETTERS - 2" x 9"	65-ULT-116-IN-004 FOR DETAIL	-
28	1	SAFETY RELAY FOR EMERGENCY STOP 120Vac	Allen-Bradley	440R-N23125
29	1	RACEWAY INSIDE CABINET 2" x 4", 6 FEET LENGTH	Panduit	G2X4LG6
30	2	RACEWAY INSIDE CABINET 3" x 4", 6 FEET LENGTH	Panduit	G3X4LG6
31	3	RACEWAY INSIDE CABINET 4" x 4", 6 FEET LENGTH	Panduit	G4X4LG6
32	1	TS-35 DIN MOUNTING RAIL, 7.5MM, 2 METERS LONG	Weidmuller	514500000
33	12	RAIL SUPPORT 1"	Weidmuller	7924270030
34	12	END COVER FOR TS-35	Weidmuller	38356
35	8	GROUP MARKER CARRIER	Weidmuller	29246
36	25	TERMINAL BLOCK WDU 4	Weidmuller	102010
37	50	MARKER	Weidmuller	051796/150772/051530
38	1	GROUNDING BAR 7 TERMINALS	Schneider	PK7GTA
39	1	120V FLUORESCENT CABINET LIGHT	Schneider	NSYLAMCU
40	1	120V 15A OUTLET DIN RAIL	Allen-Bradley	1492-REC15G
41	0	TERMINAL BLOCK 12VDC RELAY	Weidmuller	112275
42	3	TERMINAL BLOCK 120Vac RELAY	Weidmuller	112283
43	1	FIBER OPTIC PATCH PANEL 24 FIBERS	Panduit	PWME2
44	2	LC DUPLEX SINGLE MODE ADAPTER (12 FIBERS)	Panduit	FAP12WBUDLCZ
45	2	FIBER OPTIC PATCH CORD LC TO SC	Panduit	F02ERLNSNSNM002
46	1	ETHERNET MODULE M580 - 3 SUBNETS	Schneider	BMENOC321



NOTES GÉNÉRALES / GENERAL NOTES

ISSUED FOR CONSTRUCTION
@ultragen 09/08/2017

DECISIONS EN RÉFÉRENCE / REFERENCE DRAWINGS

REV. 2 / 1

REV. 1 / 1

REV. 0 / 1

REV. 0 / 1

REV. 0 / 1

REV. 0 / 1

REV. 0 / 1

REV. 0 / 1

REV. 0 / 1

REV. 0 / 1

REV. 0 / 1

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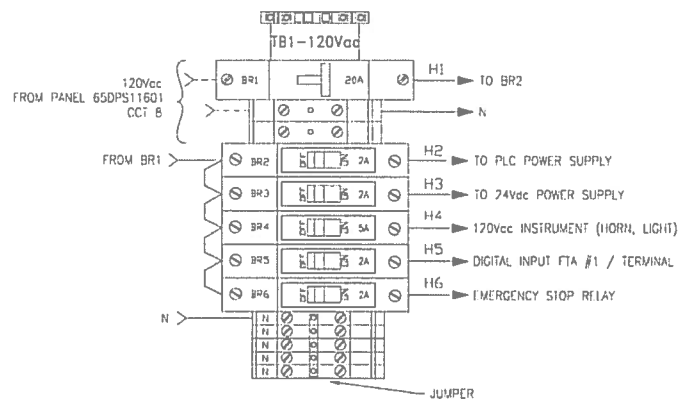
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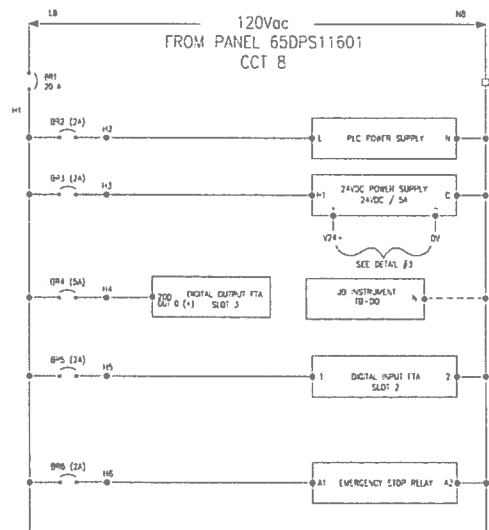
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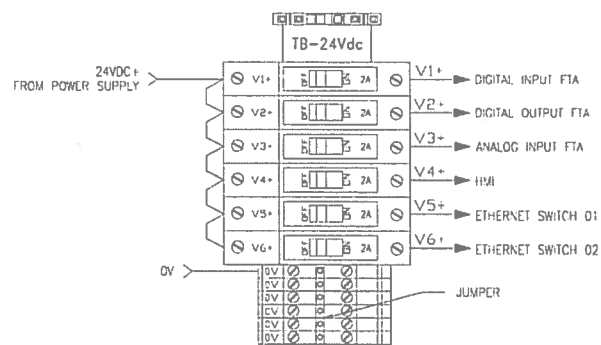
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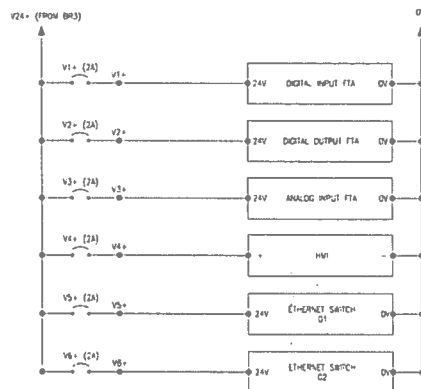
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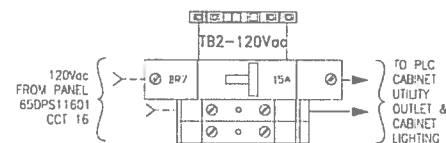
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DETAIL #3



DETAIL #3 SCHEMATIC DIAGRAM

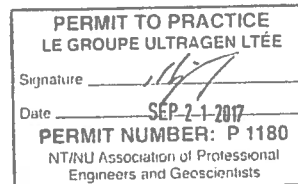


DETAIL #2

LEGEND

——— PLC CABINET INTERNAL WIRING
 - - - - - FIELD WIRING

DETAIL #1, #2, #3 FROM PLC CABINET
 DWG.# 65-ULT 116-IN 001



NOTES GENERALES / GENERAL NOTES

ISSUED FOR CONSTRUCTION
@ 1/10/2017 10:00 AM

DESIGNS EN REFERENCE / REFERENCE DRAWINGS

NO.	DATE	DESCRIPTION
1	2017-04-11	PLC CABINET UTILITY OUTLET & CABINET LIGHTING

AGNICO EAGLE

NO.	DATE	DESCRIPTION
1	2017-04-11	PLC CABINET UTILITY OUTLET & CABINET LIGHTING

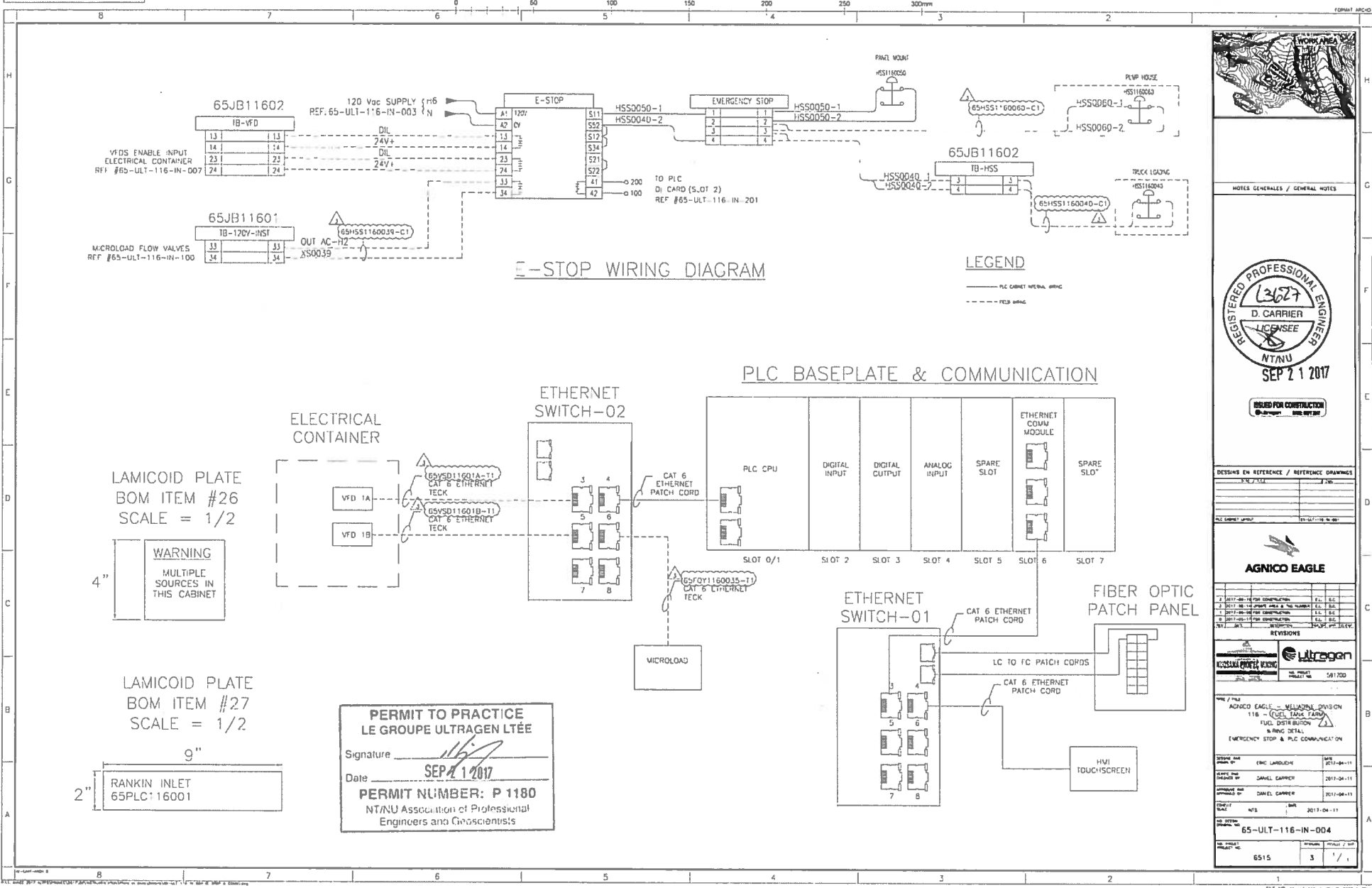
NO.	DATE	DESCRIPTION
1	2017-04-11	PLC CABINET UTILITY OUTLET & CABINET LIGHTING

NO.	DATE	DESCRIPTION
1	2017-04-11	PLC CABINET UTILITY OUTLET & CABINET LIGHTING

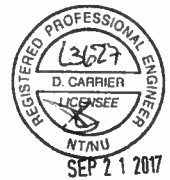
NO.	DATE	DESCRIPTION
1	2017-04-11	PLC CABINET UTILITY OUTLET & CABINET LIGHTING

NO.	DATE	DESCRIPTION
1	2017-04-11	PLC CABINET UTILITY OUTLET & CABINET LIGHTING

NO.	DATE	DESCRIPTION
1	2017-04-11	PLC CABINET UTILITY OUTLET & CABINET LIGHTING



NOTES GENERALES / GENERAL NOTES



ISSUED FOR CONSTRUCTION

DESIGNS EN REFERENCE / REFERENCE DRAWINGS

FILE / FILE	DATE
65-ULT-116-IN-001	2017-04-11



REVISIONS

REV.	DATE	DESCRIPTION	BY	CHK.
1	2017-04-11	FOR CONSTRUCTION	D. CARRIER	S.L.C.
2	2017-04-11	FOR CONSTRUCTION	D. CARRIER	S.L.C.
3	2017-04-11	FOR CONSTRUCTION	D. CARRIER	S.L.C.
4	2017-04-11	FOR CONSTRUCTION	D. CARRIER	S.L.C.



AGNICO EAGLE - SAGUENAY DIVISION
116 - QUEL TAC TARD
FUEL DISTRIBUTION
HANG DETAIL
EMERGENCY STOP & PLC COMMUNICATION

DESIGN AND PROJECT

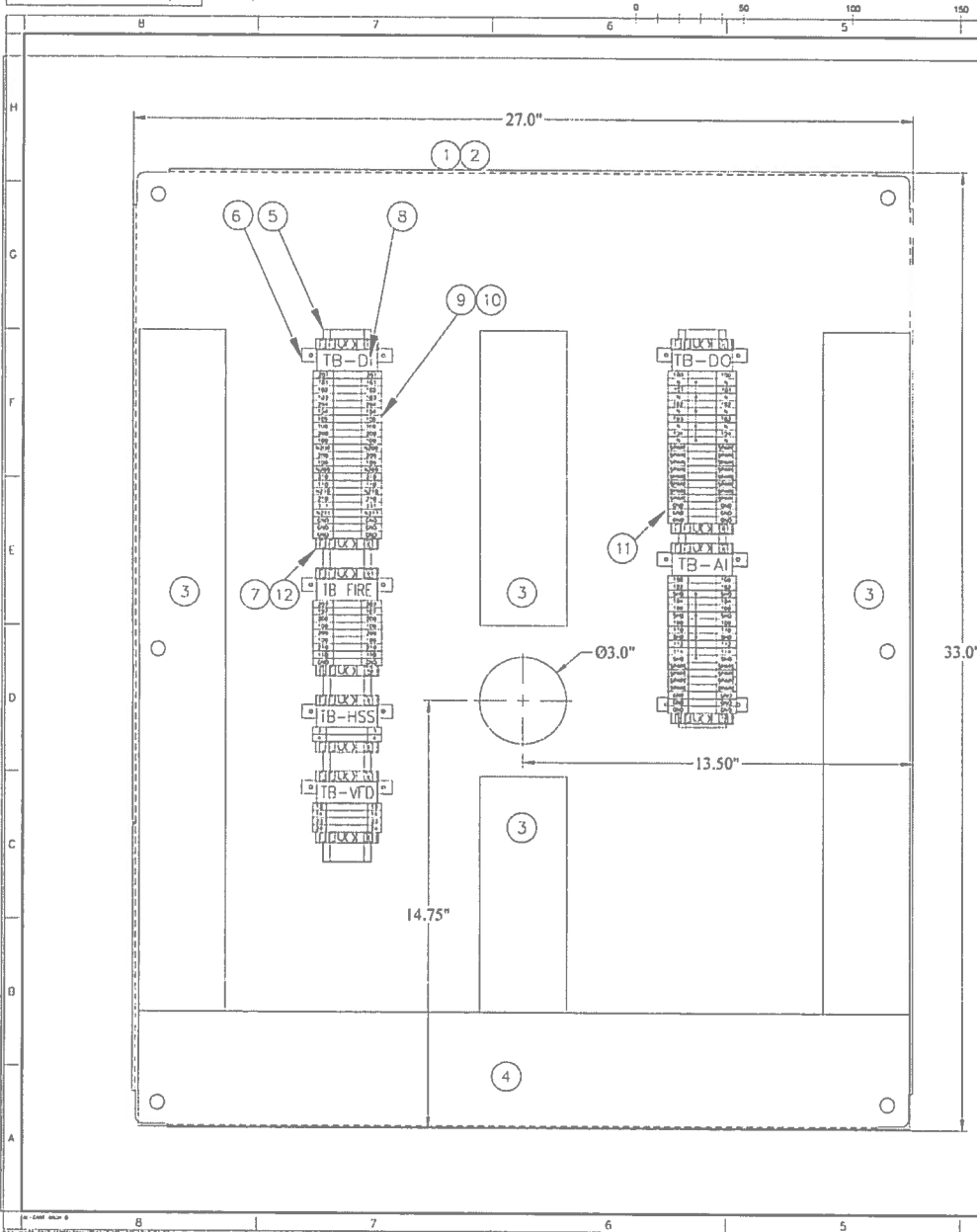
DESIGNER	DATE
ERIC LAMOTHE	2017-04-11
DANIEL CARRIER	2017-04-11
DANIEL CARRIER	2017-04-11

PROJECT

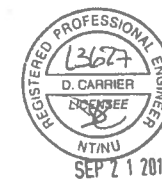
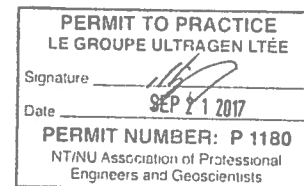
PROJECT	DATE
65-ULT-116-IN-004	2017-04-11

REVISIONS

REV.	DATE	DESCRIPTION	BY	CHK.
1	2017-04-11	FOR CONSTRUCTION	D. CARRIER	S.L.C.



ITEM	QUANTITY PORTABLE #1	DESCRIPTION	MANUFACTURER	MODEL
1	1	WALL MOUNT ENCLOSURE 201.30W 8D TYPE 4X ALUMINUM	Hammond	141944ALMB
2	1	INNER MOUNTING PANEL FOR ENCLOSURE	Hammond	#INCLUDED (ITEM 1)
3	1	RACEWAY INSIDE CABINET 3' x 4' 6 FEET LENGTH	Panabot	Q34A OR
4	1	RACEWAY INSIDE CABINET 4' x 4' 6 FEET LENGTH	Panabot	Q34A OR
5	1	TS-3E DIN MOUNTING RAIL, 7 SANI, 2 METERS LONG	Weidmüller	514500000
6	7	RAIL SUPPORT 1"	Weidmüller	7824270030
7	10	END COVER FOR TS-3E	Weidmüller	36355
8	6	GROUP MARKER CARRIER	Weidmüller	26248
9	72	TERMINAL BLOCK VDU 4	Weidmüller	YC2010
10	184	MARKER	Weidmüller	DS1790180772051830
11	10	GROUND TERMINAL YELLOWGREEN	Weidmüller	10101
12	6	END PLATE	Weidmüller	10500



NOTES GÉNÉRALES / GENERAL NOTES

ISSUED FOR CONSTRUCTION
@Ultragén 000 000000

DESIGNS EN REFERENCE / REFERENCE DRAWINGS	REV	DATE
TS-3E DIN MOUNTING RAIL	001	2017-04-18
TS-3E DIN MOUNTING RAIL	002	2017-04-18
TS-3E DIN MOUNTING RAIL	003	2017-04-18
TS-3E DIN MOUNTING RAIL	004	2017-04-18
TS-3E DIN MOUNTING RAIL	005	2017-04-18
TS-3E DIN MOUNTING RAIL	006	2017-04-18
TS-3E DIN MOUNTING RAIL	007	2017-04-18
TS-3E DIN MOUNTING RAIL	008	2017-04-18
TS-3E DIN MOUNTING RAIL	009	2017-04-18
TS-3E DIN MOUNTING RAIL	010	2017-04-18

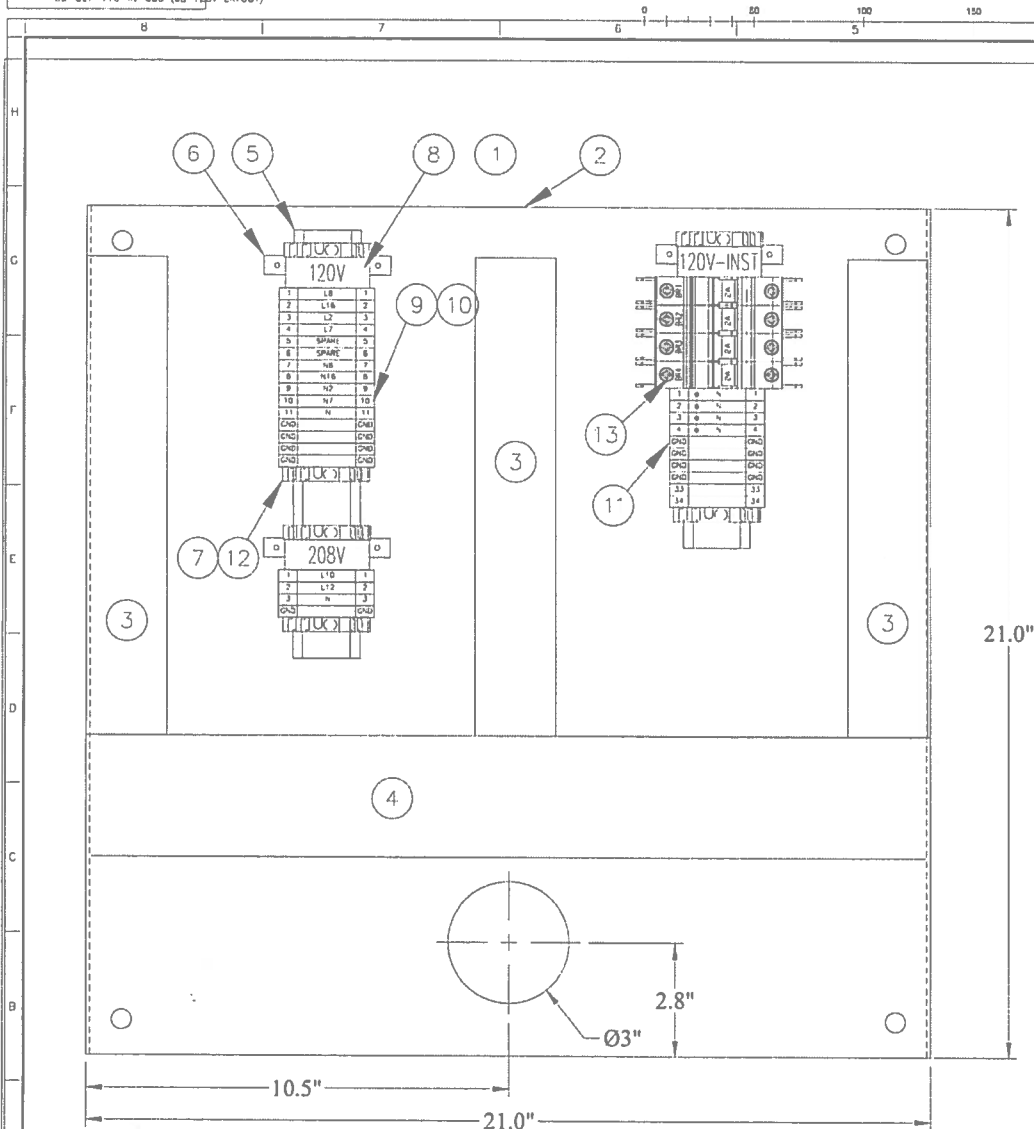


REVISIONS	REV	DATE
1. 2017-04-18: INITIAL CONSTRUCTION	01	2017-04-18
2. 2017-04-18: REVISIONS AND 100% DRAWING	02	2017-04-18
3. 2017-04-18: REVISIONS AND 100% DRAWING	03	2017-04-18
4. 2017-04-18: REVISIONS AND 100% DRAWING	04	2017-04-18
5. 2017-04-18: REVISIONS AND 100% DRAWING	05	2017-04-18

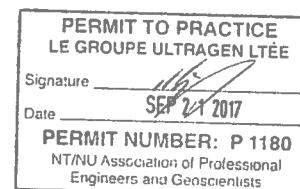


AGNICO EAGLE - MILLER DIVISION
118 - FUEL TANK FARM
FUEL DISTRIBUTION
JUNCTION BOX INSTRUMENTATION
65-ULT-116-005

DESIGNED BY	DATE
ERIC LAROCHE	2017-04-18
CHECKED BY	DATE
DANIEL CARRIER	2017-04-18
APPROVED BY	DATE
DANIEL CARRIER	2017-04-18
SCALE	DATE
N75	2017-04-18
NO. OF SHEETS	NO. OF SHEETS
65-ULT-116-IN-005	3 / 1



ITEM	QUANTITY	DESCRIPTION	MANUFACTURER	MODEL
1	1	WALLMOUNT ENCLOSURE 34" 34" 10" TYPE 4X ALUMINUM	Hammond	1418HALJB
2	1	INNER MOUNTING PANEL FOR ENCLOSURE	Hammond	INCLUDED (ITEM 1)
3	1	RACEWAY INSIDE CABINET 2" x 4" 8 FEET LENGTH	Panduit	Q24A, 04
4	1	RACEWAY INSIDE CABINET 2" x 4" 8 FEET LENGTH	Panduit	Q34A, 04
5	1	TS-35 DIN MOUNTING RAIL, 7 MM, 2 METERS LONG	Weidmüller	51450000
6	6	RAIL SUPPORT T	Weidmüller	7804270030
7	6	END BRACKET FOR TS-35	Weidmüller	34356
8	3	GROUP MARKER CARRIER	Weidmüller	26046
9	24	TERMINAL BLOCK W0.6	Weidmüller	10202
10	48	MARVER	Weidmüller	051780160772001530
11	9	GROUND TERMINAL YELLOW/GRN H	Weidmüller	10182
12	3	END PLATE	Weidmüller	10500
13	4	175VAC/24VDC CIRCUIT BREAKER 2A	Schneider	GBPCB07



NOTES GÉNÉRALES / GENERAL NOTES

ISSUED FOR CONSTRUCTION
@ [Signature] 000 00100

DESIGNS EN RÉFÉRENCE / REFERENCE DRAWINGS

NO. / NO.	DESCRIPTION / DESCRIPTION	DATE / DATE
1	116 - FUEL TANK FARM	2017-04-19
2	116 - FUEL TANK FARM	2017-04-19



NO. / NO.	DESCRIPTION / DESCRIPTION	DATE / DATE
1	116 - FUEL TANK FARM	2017-04-19
2	116 - FUEL TANK FARM	2017-04-19



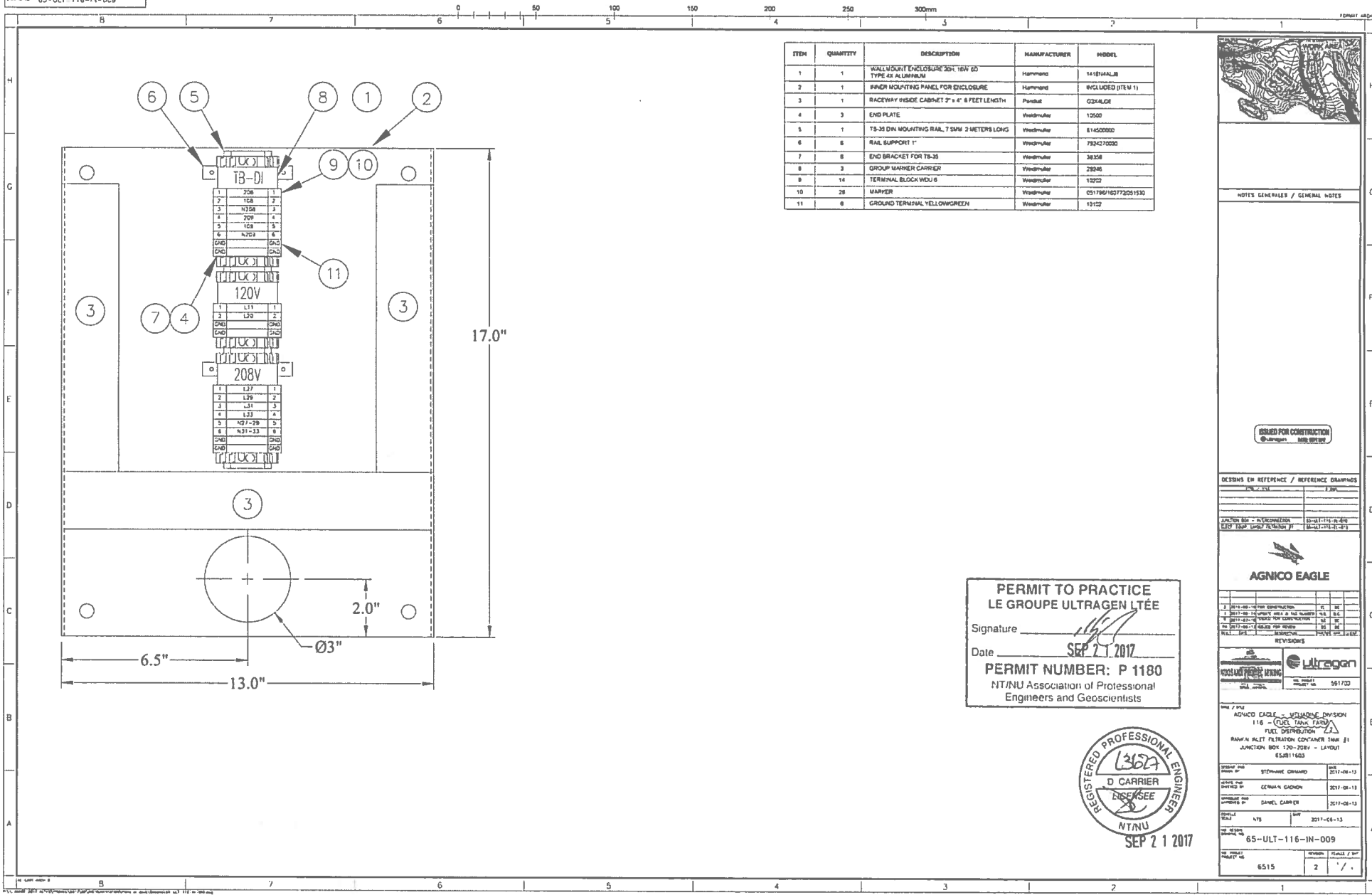
116 - FUEL TANK FARM
116 - FUEL TANK FARM
FUEL DISTRIBUTION
JUNCTION BOX 120V
E3-0011601

NO. / NO.	DESCRIPTION / DESCRIPTION	DATE / DATE
1	116 - FUEL TANK FARM	2017-04-19
2	116 - FUEL TANK FARM	2017-04-19

65-ULT-116-IN-006

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[illegible]**ASRICO EAGLE**

2	2018-09-10	CONSTRUCTION	EL	NC
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ASSAULT-PROSECUTING MENING

[illegible]

116 - (FULL TANK FARM)

JUNCTION BOX 120-250V - LAYOUT

202006 PAB	DATE
STPHANE CHENARD	2017-08-17

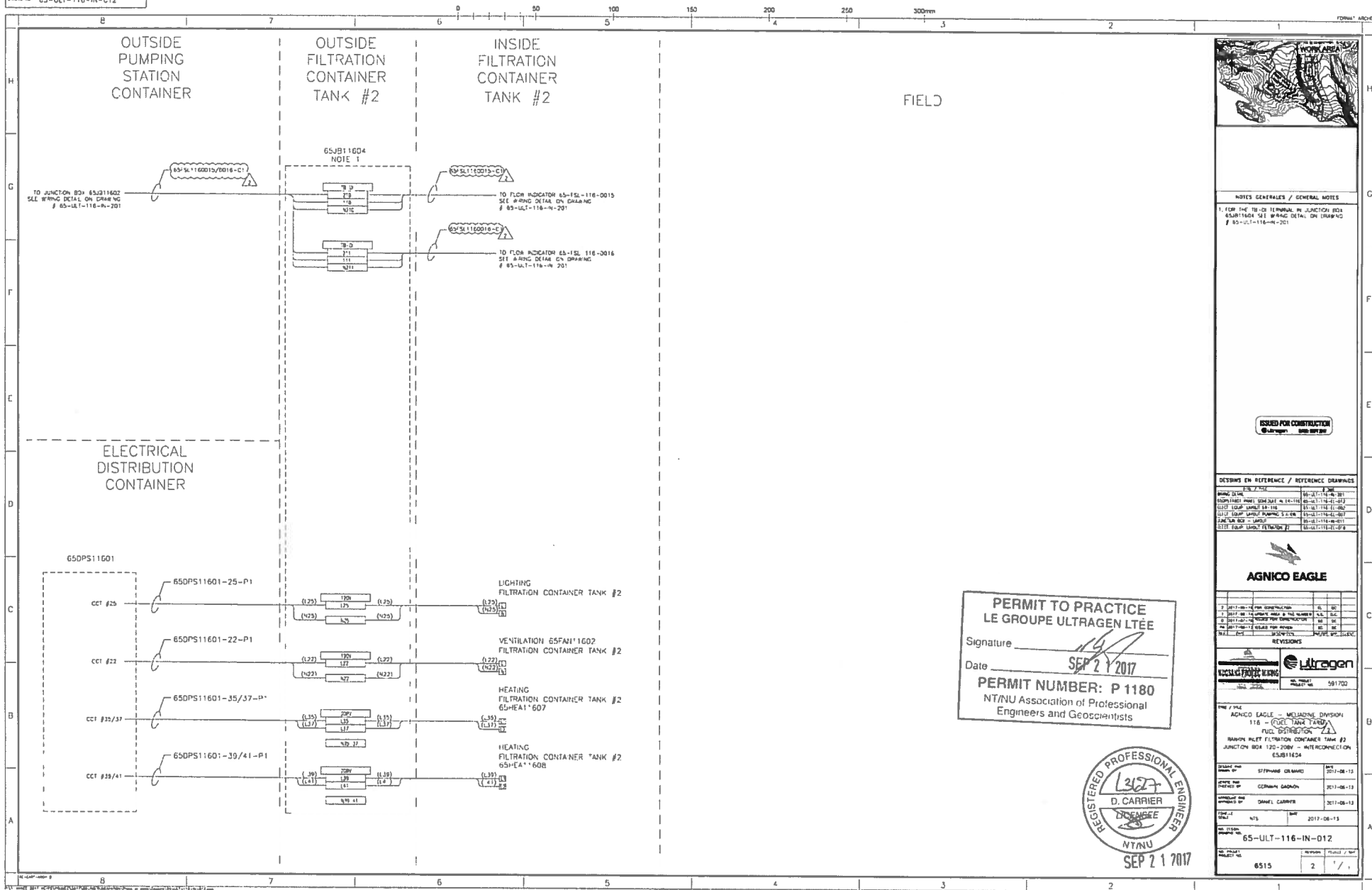
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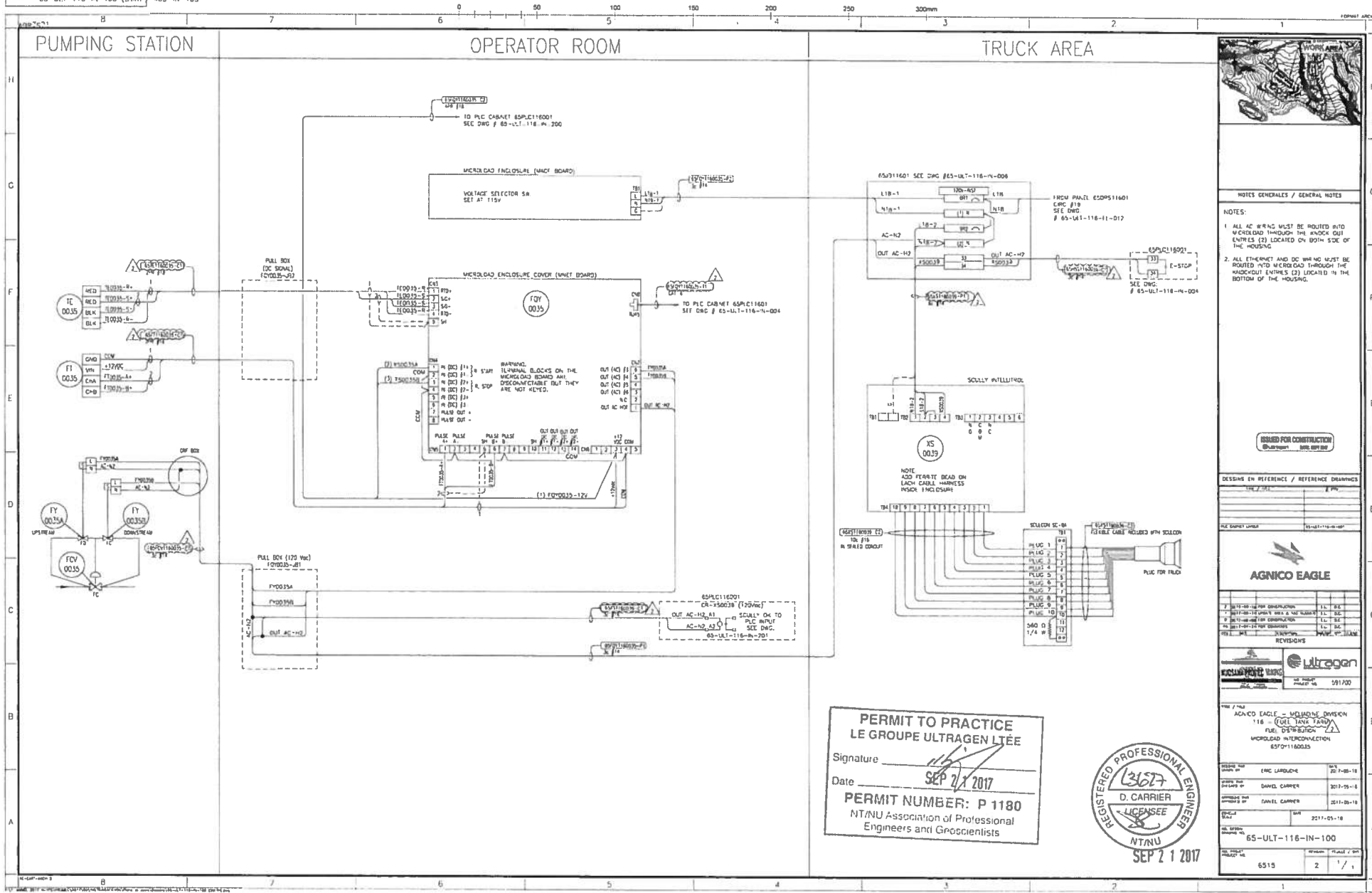
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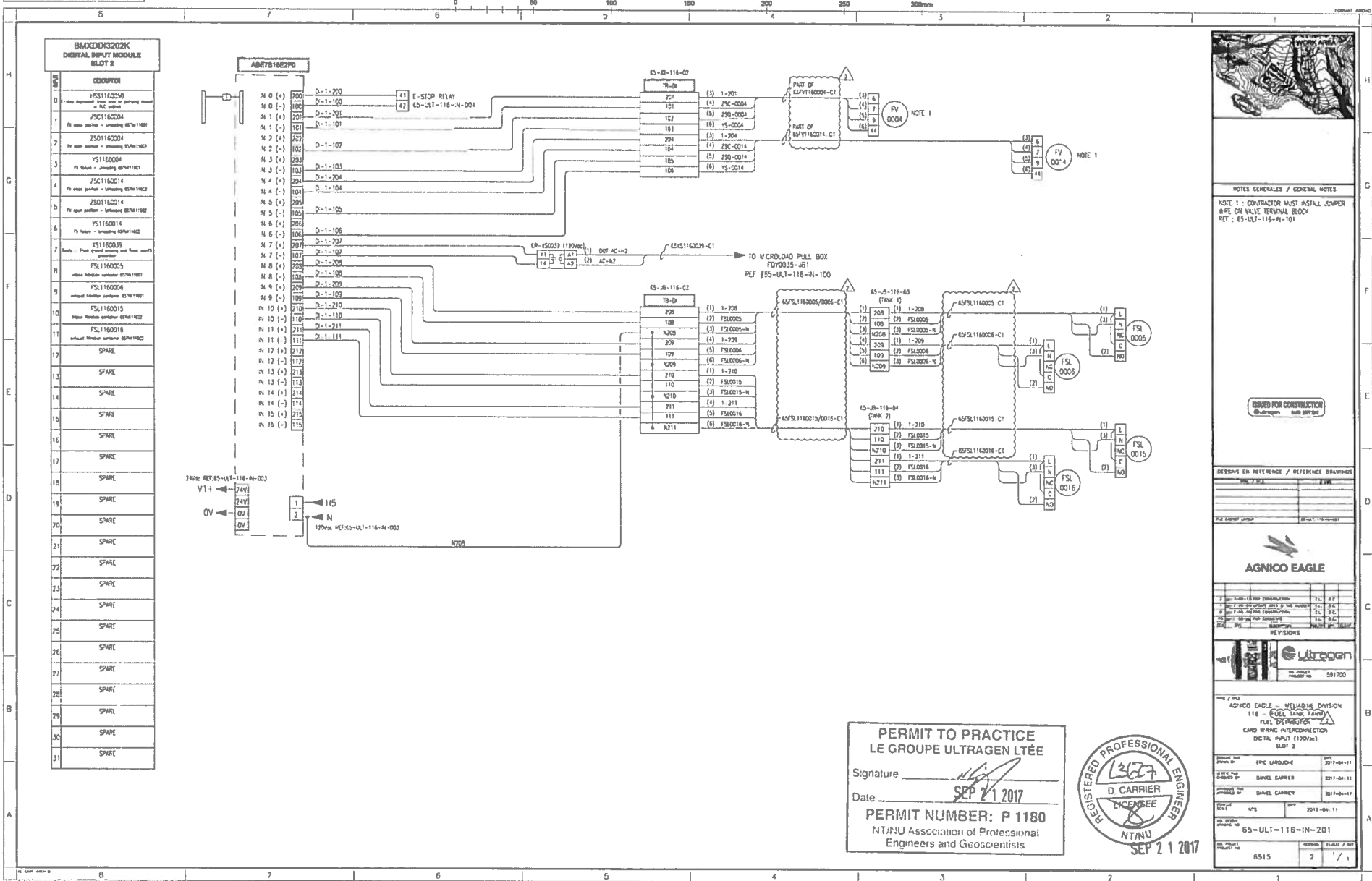
65-ULT-116-IN-011

2022 (1) 40			
2022 (1) 40	2022 (1) 40	2022 (1) 40	2022 (1) 40

1







NOTES GÉNÉRALES / GENERAL NOTES

NOTE 1 : CONTRACTOR MUST INSTALL JUMPER WIRE ON VALVE TERMINAL BLOCK
REF : 65-ULT-116-IN-101

ISSUED FOR CONSTRUCTION

REVISIONS EN REFERENCE / REFERENCE DRAWINGS	DATE	BY

AGNICO EAGLE

REVISIONS	DATE	BY



AGNICO EAGLE - VULCAN DIVISION
116 - FUEL TANK TARDY
FUEL DISTRIBUTION
CAND. BEARING INTERCONNECTION
DIGITAL INPUT (120VAC)
SHEET 2

REVISIONS	DATE	BY

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE

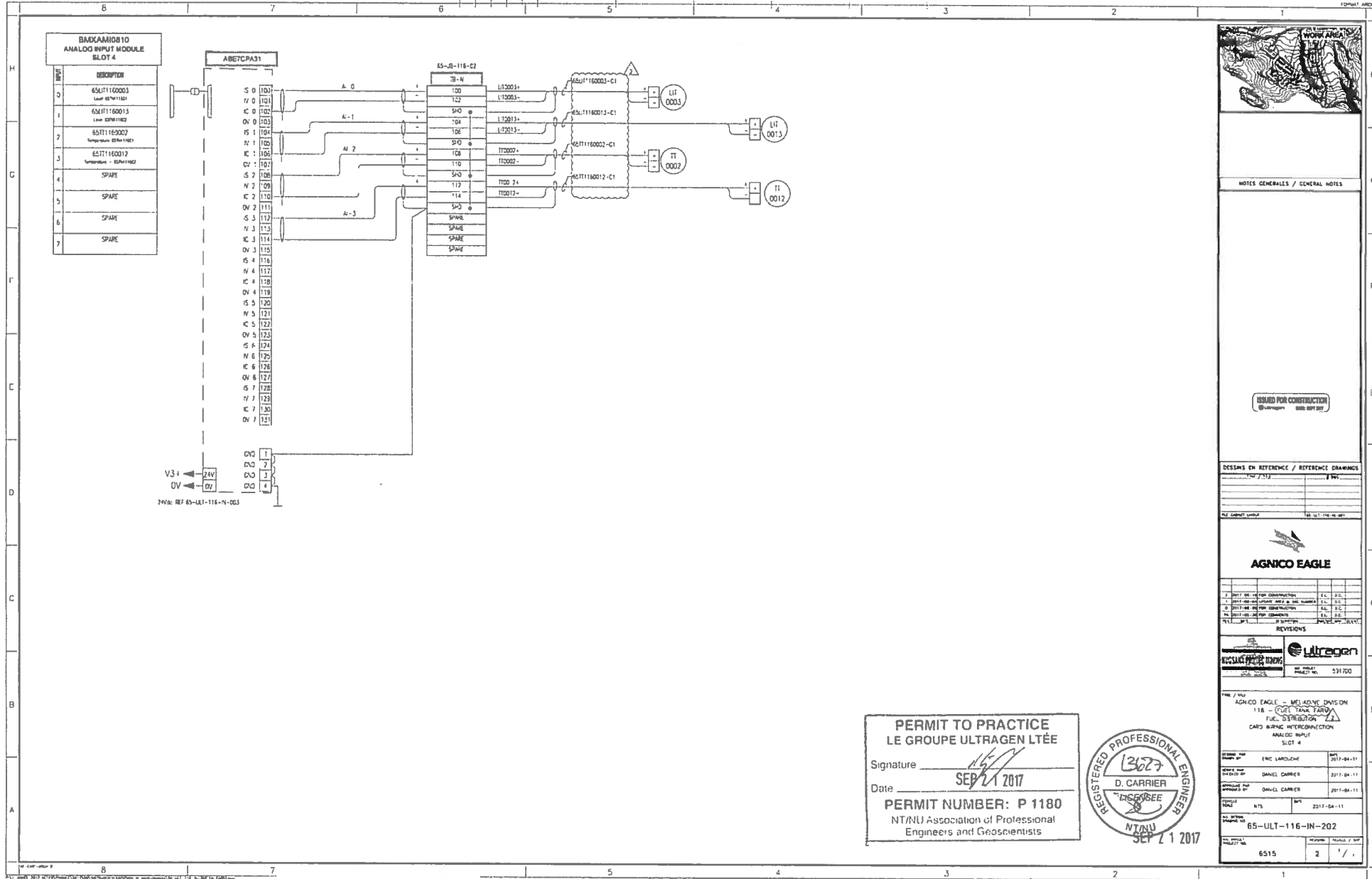
Signature: *[Signature]*

Date: **SEP 21 2017**

PERMIT NUMBER: P 1180

NTNU Association of Professional Engineers and Geoscientists





REGISTERED PROFESSIONAL ENGINEER
13627
D. CARRIER
LICENSEE
TENN
SEP 21 201

NOTES GENERALES / GENERAL NOTES

ISSUED FOR CONSTRUCTION
 01-00000000 00000000

DESIGNS EN REFERENCE / REFERENCE DRAWINGS

1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388</
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AGNICO EAGLE

3	2017-06-16	FOR CONSTRUCTION	6A	6C
1	2017-06-04	UPGRADE AREA & INC GUARDED	6A	6C
0	2017-06-01	FOR CONSTRUCTION	6A	6C
4	2017-05-26	FOR COMMENTS	6A	6C
74	00	IF 00-00-00	6A	6C

REVISIONS

REV. 001 4/21/2000

AGNICO EAGLE - MELANIE DAYSON
118 - FUEL TANK FARM
FUEL DISTRIBUTION
CARS W/ING INTERCONNECTION
ANALOG INPUT
SLICE 4

[illegible]



Vendor Document Status

AGNICO EAGLE

- 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-0014 R: Sub001

DOCUMENT FOR INFORMATION



**Agnico-Eagle Mines Ltd.
Non-Conformance Report**

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



PART 1 – To be completed by Originator			
ITR no. :	Supplier/Vendor/Manufacturer/Contractor :	Originator :	Date:
Equipment Identification:		Equipment Tag No.:	
Disposition Requested: ☐ 48 Hours ☐ Other	NCR Classification: ☐ Supplier ☐ Fabrication ☐ Engineering ☐ Construction ☐		
Current Status: ☐ Work Already Done ☐ Partially Done ☐ Other _____	Potential Impact (Check appropriate box and give estimate): ☐ 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: ☐ Use As Is ☐ Repair ☐ Rework ☐ Reject/Scrap		Concession Request No. (if applicable):	Contractors NCR No. (if applicable):
Details of Contractor Corrective Actions Proposed / Concession Request:			
* Disposition: ☐ Use as Is ☐ Repair ☐ Rework ☐ Reject/Scrap		Dispositioning Party:	Signature:
Recommended Resolution / Actions:			
PART 3 - Confirmation			
Corrective Actions Completed By: Name: Date: Signature:		Corrective Actions Accepted by Dispositioning Party: Name: Date: Signature:	
Corrective Actions Accepted by Originator: Name: Date: Signature:		NCR Closed Out By (Area QA Coordinator) Name: Date: 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.			



Vendor Document Status

AGNICO EAGLE

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



Vendor Document Status

AGNICO EAGLE

- 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.

JEAN-FRANCOIS TREMBLAY

By:

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

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				



Vendor Document Status

AGNICO EAGLE

- 1 ☐ Proceed to next submission and status.
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Revise as noted and resubmit next submission and status.
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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



AGNICO EAGLE

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



AGNICO EAGLE

Number	Description	Initiator	Dept.	Date	Contract No.	Progress Status
Deficiency-001	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: 2017-05-16 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-0020 R: Sub001 DOCUMENT FOR INFORMATION					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
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Deficiency-036						N/A
Deficiency-037						N/A
Deficiency-038						N/A
Deficiency-039						N/A
Deficiency-040						N/A



Vendor Document Status

AGNICO EAGLE

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- 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



3005 | boulevard Pittfield | Saint-Laurent, Québec, Canada | H4S 1H4

Tél. 5 1 4. 3 3 2. 5 1 1 0 Téléc : 5 1 4. 3 3 2. 5 0 6 3 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

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



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, ONYXWorks, 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 micro-processor 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.

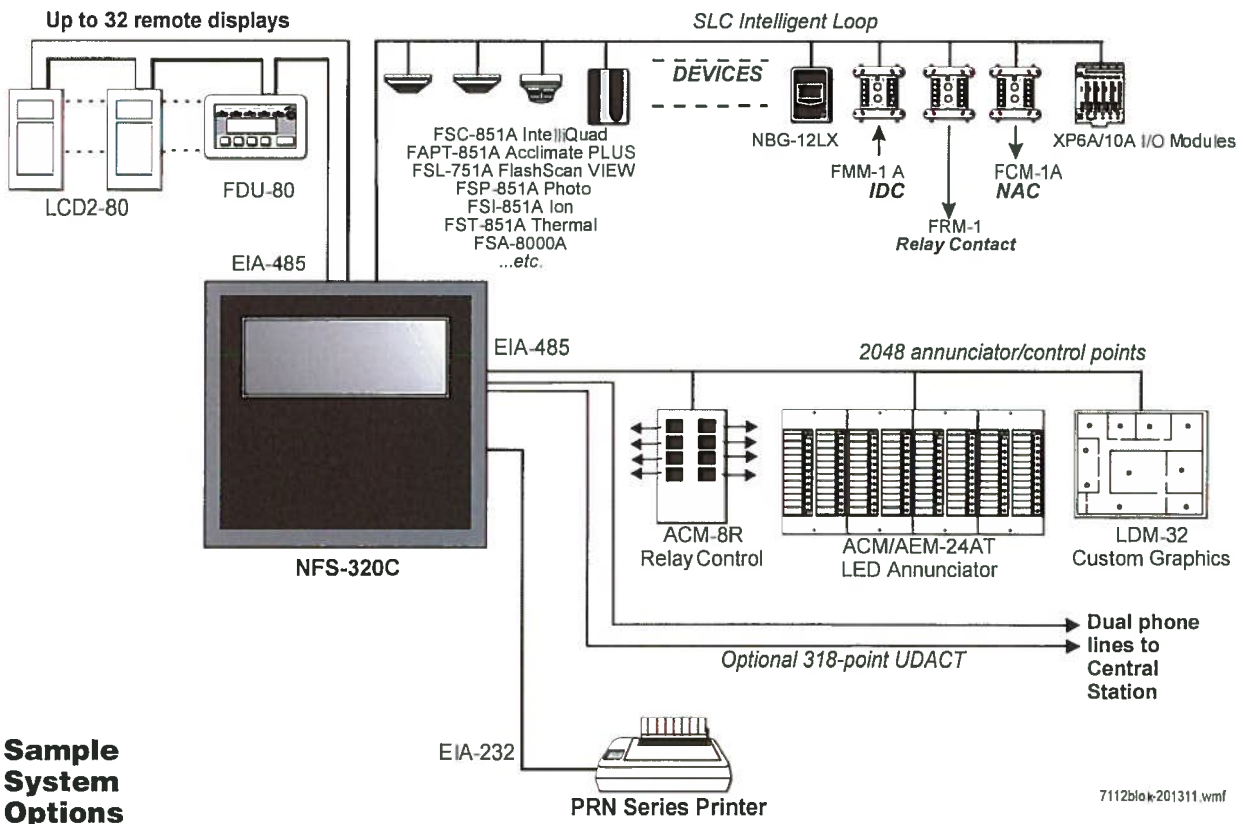
FCO-851A INTELLIQUAD™ PLUS

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 CO₂ listed.



**Sample
System
Options**

7112blok201311.wmf

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 micro-processor-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-320C/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.

UZZ-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-UZZ or other compatible chassis (purchased separately). See DN-3404.

COMPATIBLE INTELLIGENT DEVICES

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

FSA-8000A: Intelligent FFAST® 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 FFAST® 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 synchronization 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.

LED SIGN-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 LED SIGN-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



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

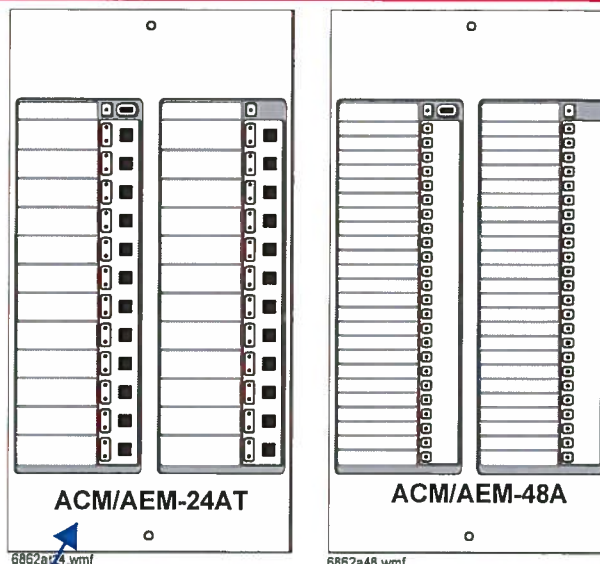
- Speaker control mode for use with XPIQ and the following panels: NFS2-3030, NFS2-640, NFS-320(C) and NFS-320SYS. Enables the ACS to control operation of groups of multi-channels mapped to groups of multi-speakers.
- Compatible with existing annunciators.
- Color-programmable LEDs.
- On-board end-of-line 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



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.

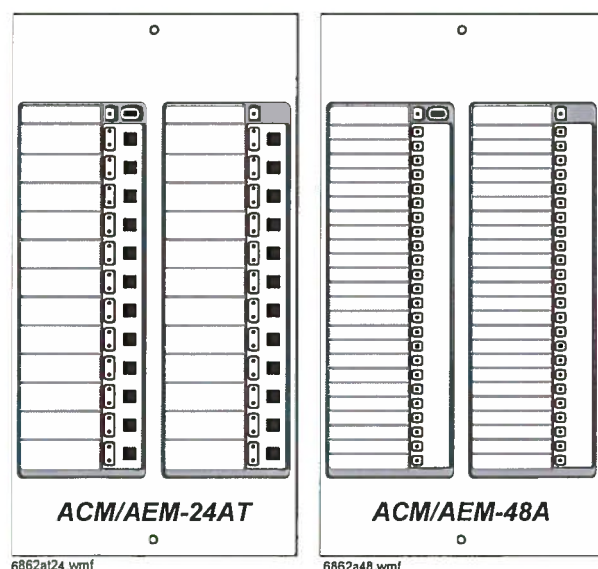
Local or remote power supplies and serial communications allow the ACS to be located virtually anywhere in the protected premises.

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.



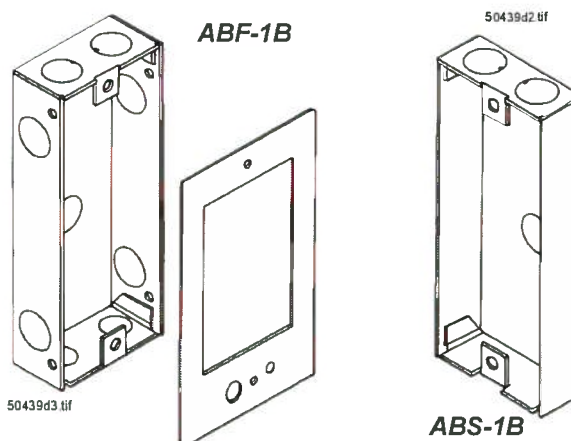
AEM-24AT: The Annunciator Expander Module-24AT expands the ACM-24AT by 24 system points. The AEM-24AT is identical in size and in frontal appearance to the ACM-24AT. Up to three of these expander modules can be supported by an ACM-24AT, for a maximum of 96 system points. 8.375" (21.27 cm) high; 4.375" (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.**



ABS-1TB: The ABS-1TB is an attractive surface-mount back-box 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.**

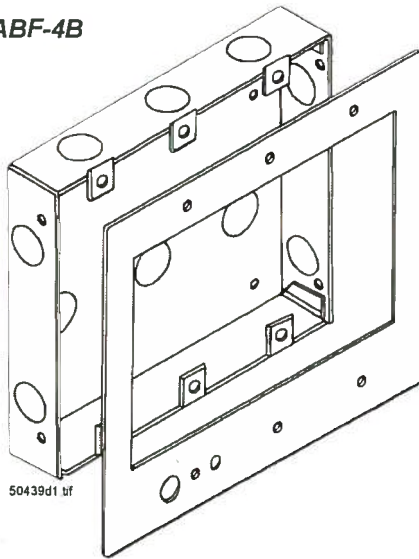
ABF-1B: (see figure) The Annunciator Flush Box-1B (black) provides for the remote mounting of a single annunciator module in a flush-mount enclosure. Knockouts are provided for use with 1/2" (1.27 cm) conduit. The ABF-1B includes a painted black metal trim plate [11" (27.94 cm) high x 6.25" (15.875 cm) 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



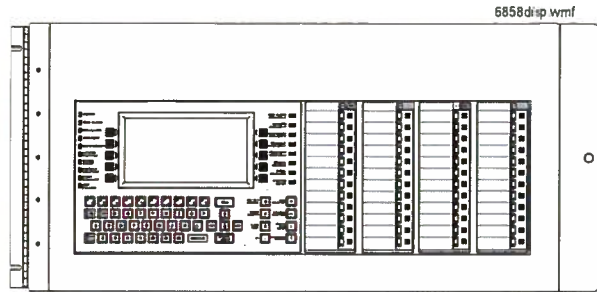
ABF-1DB, ABF-2DB, ABS-4D: The ABF-1DB, ABF-2DB and ABS-4D are semi-flush-mount backboxes for ACS Series Annunciators. The ABF-1DB mounts one annunciator module; the ABF-2DB mounts two modules; the ABS-4D mounts up to four modules. The ABS-4D Series can also accommodate the NCA-2 network annunciator, 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 accommodates 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 backbox 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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