Agnico-Eagle Mines Ltd.

Contract no. 6515-C-270-007

Cable Installation and Testing Procedure

AEM-EL-PRO-001

Area No.: All

System No.: All

PROMEC Approvals

Prepared by:	Stéphane Doré	**Signature:**		**Date:**	2017-04-25
Verified by:	Jonathan Roy	**Signature:**		**Date:**	2017-04-25
Approved by:	Éric Poulin	**Signature:**		**Date:**	2017-04-25.

CLIENT Approvals

Verified by:		**Signature:**		**Date:**	
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1. SCOPE

The procedure is to establish the cable installation and testing procedure.

1.1 Covered Sections

- Medium Voltage and 1 000 V Power Cables.
- 600 V Control Cables.
- 300 V Instrumentation Cables.

2. EXECUTION

2.1 Inspection and Preparation

- Installation of raceways and supports shall be completed before installing cables.
- Conduits shall be tested for obstructions by pulling a mandrel or other approved object through the conduit. Obstructions shall be cleared with a cutting mandrel or other approved means.

2.2 Installation Requirements

- Cables shall be handled carefully when unreeling to avoid damage due to kinking or otherwise bending to radius less than the Manufacturer's or Electrical Code minimum recommended bending radius.
- Cables shall not be laid on rough ground or dragged over sharp objects.
- Cable Installation in Raceways:
  - Cable reels to be set as close as practical to the raceway entrance, and train the cable as directly as possible to the entrance with minimal bending.
  - A protector is to be used at the raceway entrance to protect the cable jacket.
  - For installation of multiple cables in a conduit, all cables are to be pulled simultaneously.
  - Cable installation to be performed so that no undue stress is placed upon the insulation and coverings when they are drawn through conduits or otherwise handled.
  - Cables to be neatly installed avoiding crosses as much as practical.
  - Cables to be supported clear of the tray lip where they exit the tray.
  - Cables to be anchored in place vertically at 1.0 m maximum intervals, and at each bend within 0.3 m of the change in direction at both sides of the bend with appropriate fasteners.
  - A barrier shall be provided to separate power and control cables for installations where they share a common cable tray. Fireproof sheeting shall be provided to separate power and control cables at tee or cross junctions.
- Installation Cables in Boxes and Cabinets:
  - Open wiring to be arranged in a neat and orderly manner.

- Groups of cables to be spaced and supported.
- Slack wire will be left in all junction boxes, pull boxes, and other places so that wires are not drawn tight against conduit and bushings or short radius corners and the insulation eventually damaged by being squeezed between conductor and other objects.

- The cable shall not be bended either temporarily during installation or permanently to a radius less than the Manufacturer's recommended minimum bending radius.
  - Cable Termination Instructions:
    - Leave each conductor of a cable long enough to reach the most distant terminal point in the equipment being installed. Loop and tie the conductors in a bundle.
    - Strip cable jackets only as far back as needed to accommodate the termination of the conductors.
    - Slack wire to be left at all terminal connections so that stress is not placed on terminal studs and other connections.
    - Control and Instrumentation Cables:
      - All shields on the shielded cables to be kept floating at the transducer and final control element ends (thermocouples, transmitters, analyzers, etc.) and to be terminated and grounded in DCS cabinets.
      - Motor terminal wiring to be bolted together with the ring tongue type terminals and tin plated bolts of the approximate size.
  - Cable Penetration Sealing: Fire stopping seal penetrations shall be in accordance with Client specifications.
  - Tagging of Cables Installations:
    - Identify all cables in accordance with attached cable tagging procedure.
    - Affix cable identification tags at each termination as close to the termination as possible, and at pull boxes, manholes or other points of access.
    - Individual conductor identification products may be slip-on, or heat shrink. Identification information to be typed or printed with indelible ink.
    - Single conductor cables shall be color coded and comply with the Canadian Electrical Code CSA C22.1-06, Article 4-036.

2.3 Inspection and Test Requirements

Installed power cables shall be inspected and tested, including continuity and insulation (Megger) of all cables, in accordance with applicable codes and standards.

Installed control shall be inspected and tested, including continuity, in accordance with applicable codes and standards.

Appendix A

ALL APPLICABLE ITRs & LOGs

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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: LUC SÉNÉCAL Date: 2017-07-10

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Agnico Eagle No. 6515-C-270-007-141-TES-0003 R: Sub002

DOCUMENT FOR INFORMATION

Agnico-Eagle Mines Ltd.

Contract no. 6515-C-270-007

Grounding Installation and Testing Procedure

AEM-EL-PRO-002

Area No.: All

System No.: All

PROMEC Approvals

Prepared by:	Stéphane Doré	**Signature:**		**Date:**	2017-04-25
Verified by:	Jonathan Roy	**Signature:**		**Date:**	2017-04-25
Approved by:	Éric Poulin	**Signature:**		**Date:**	2017-04-25.

CLIENT Approvals

Verified by:		**Signature:**		**Date:**	
Approved by:		**Signature:**		**Date:**	

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1. GENERAL

1.1 Introduction

- The purpose of electrical ground testing is to determine the effectiveness of the grounding medium with respect to true ground (earth). Most electrical systems do not rely on the earth to carry load current (this is done by the system conductors) but earth may provide the return path for fault currents, and for safety, all electrical equipment frames are connected to ground.
- During resistance testing, precautions shall be taken to ensure personnel safety. For example the test cable area shall be barricaded and testing personnel shall wear adequate PPE when handling test probes.
- All tests shall be documented and submitted to Owner's representative.
- Weather conditions (e.g. temperature and humidity) can have a considerable effect on resistance readings. Hence, it is important that weather conditions be documented for every resistance test.
- In general, the lower the ground resistance, the safer the system is considered to be. Where the resistance is unsatisfactory, those components of the circuit causing unsatisfactory readings shall be repaired or replaced until the resistance meets the minimum requirements.

1.2 References

- Canadian and National electrical code requirements.
- IEEE Standard IEEE-80 and 81
- IEEE 142, Recommended Practice for grounding of Industrial and Commercial Power Systems.
- International Electrical Testing Association Inc. (NETA).

1.3 Design requirements

- Ground electrical equipment in accordance with ANSI/ IEEE Standard 142, IEEE Standard 80 and the requirements of this Section.
- Design shall be such that acceptable levels of step and touch potential are not exceeded either for exposure to plant personnel or for external exposure via transfer potentials.
- The grounding system consists of a number of above ground interconnected conductors to provide a network to which all equipment and metallic structures are connected, either directly or by interconnecting cables. Bond the ground system to the main plant ground grid system at places designated on the Drawings.

2. PRODUCTS

2.1 Materials

- Bare Cable: Uninsulated, stranded, tinned copper cable of adequate size for station and substation ground grids, for connection of electrical and other equipment to the grounding grid and for running along the top of underground ductbanks.
- Insulated Cable: Soft drawn copper, Class B stranding with green colored insulation (if required).
- All ground connection will be bolted or compress type.
- Furnish all connectors, clamps, anchors, fittings, etc., made of copper or copper-alloy.

3. EXECUTION

3.1 Installation

- Install products in accordance with manufacturer's instructions.
- Equipment Safety Grounding
  a. Clamp the ground conductor running on building steel to the flanges of the steel and provide access for connecting equipment ground taps.
  b. If ground conductor is installed along the cable trays as a continuous conductor, clamp the ground cable to the outside of the trays side rail with

appropriate cable tray clamps. Run the cable on the top power tray wherever possible. The cable may be run along control trays in runs that do not have power trays. Do not run ground cables on any instrument trays.

c. For motors remote from the ground grid, run a bare ground cable with the duct bank or tray connecting the motor frame to the station ground grid.

d. Provide all enclosures of electrical distribution or control equipment with a visible grounding cable connection between the enclosure and the station grounding system.

e. Provide grounding cable taps to electrical equipment not shown on the Drawings sized to meet the requirements of the CSA C.22.1-02.

f. Regardless of any regulatory body, no conductor smaller than 6 is permitted for an exposed ground circuit except for grounding instrument cases and secondary circuits of instrument transformers where 16 will be permitted.

g. For equipment requiring grounding, provide a means for attachment of a ground cable to the enclosure. The grounding means may be a tapped hole in the enclosure with a matching bolt and a appropriate lug for copper cable. Hold-down bolts are not to be used for attaching grounding cables.

h. Provide "packaged" or "skid-mounted" equipment with single-point connection to ground grid.

i. Ground all metallic conduits above ground and underground in accordance with the requirements of the CSA C.22.1-02.

j. Install the cable trays electrically continuous to meet the requirements of Article CSA C.22.1-02.. Install a bonding jumper in the gaps in the tray runs to provide continuity.

- Circuit Grounding
  a. Power circuits to include a circuit ground conductor terminated appropriately at source end ground bus connection and at the load.
  b. Size the circuit ground conductor in accordance with the CSA C.22.1-02.

- Terminal Connections:
  a. Provide connections of ground conductors to cable trays and conduit with copper clamps or straps or by grounding bushings. Remove non-conductive protective coatings such as paint, mill scales, oil, grease, oxides, or enamel

on the conduit fittings from the threads or contact surfaces before attaching grounding connection. After ground connection is attached, cover any remaining exposed bare metal with a coating matching the original coating.

b. Above grade connections to equipment to be made using compression type connectors and bolted terminals.

c. Below grade connections, cable-to-cable or cable-to-ground rods and cable-to-structural steel to be made using compression lug.

d. Ground connections to piping to be generally "U clamp".

e. Connections of ground conductors to columns and similar structures to be welded.

f. Ground all cable shielding in accordance with the manufacturer's recommendations, or as directed by Owner.

g. Provide connections of ground conductors to equipment by means of a lug which shall be compressed on the cable end. Bolt the lug to the equipment frame using holes or terminals provided by the equipment manufacturer for this purpose. Where no such provisions are made, drill suitable holes in locations designated by Owner. Hold-down bolts are not to be used for ground connections. Ground connections to motors to be bolted directly to motor frame, and not to sole plates or supporting structures. At all bolted connections, scrape the joining surfaces clean and coat with NO-OX-ID, or equal compound.

- Control Cabinets Safety Ground

a. Connect all metal control cabinets to the ground buses. Insulate wires for connections between individual devices and the ground bus. Provide individual ground connections for each device; no looping permitted.

b. Do not make ground bus splice points coincident with the bolts which support the copper ground bus. Provide connections to the copper ground bus such that it is not necessary to open neither the ground bus nor any other connection to the bus to remove any ground connection. Separate bolted connections to the ground bus from the support and joint bolts.

- Control Cabinet Instrument Ground System:
  a. Install an instrument ground system, conform to Client standard and engineering drawings
  b. Install the instrument ground system in the following manner
     I. Connect the main and branch insulated ground conductors to instrument ground bus.
     II. Clearly label the instrument ground bus.
     III. Ensure that no loops are in the instrument ground system.
  c. "Reference" Distributed Control System (DCS) dc power "common" terminations and analog I/O field wiring shields to the instrument ground bus provided in each DCS enclosure. Provide all instruments and instrument cables with shields attached to only this instrument ground. Tape or insulate shielded cable with sleeves to prevent accidental grounding or touching of shields. Do not ground field ends.

3.2 Inspection and tests

- Visual and mechanical inspection: Check and inspect the installation to ensure that the grounding system has been built as per the engineering design. Ensure all connections to electrodes and ground cable are tight and secure.
- Ground resistance testing is needed after installation of the grounding system, typically five ohms for commercial and small industrial sites and one ohm for utility & transmission substation grounds and large industrial plant substation grounds.
- Follow the recommended manufacturer or designer grounding resistance levels specified. In general – all efforts shall be targeted toward achievement of minimum grounding resistance.

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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: LUC SÉNÉCAL Date: 2017-07-10

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Agnico Eagle No. 6515-C-270-007-141-TES-0005 R: Sub002

DOCUMENT FOR INFORMATION

Agnico-Eagle Mines Ltd.

Contract no. 6515-C-270-007

Electrical Apparatus, Equipment & Supports Installation Procedure

AEM-EL-PRO-004

Area No.: All

System No.: All

PROMEC Approvals

Prepared by:	Stéphane Doré	**Signature:**		**Date:**	2017-04-25
Verified by:	Jonathan Roy	**Signature:**		**Date:**	2017-04-25
Approved by:	Éric Poulin	**Signature:**		**Date:**	2017-04-25.

CLIENT Approvals

Verified by:		**Signature:**		**Date:**	
Approved by:		**Signature:**		**Date:**	

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1. PURPOSE

The procedure is to establish the electrical apparatus, equipment and supports installation procedure.

1.1 Submittals

The following drawings, information and data will be submitted:

- As-built drawings showing final setting dimensions where different from the design drawings.
- As-built drawings of all relative installation drawings.

2. EXECUTION

2.1 Installation

2.1.1 GENERAL

- Install all equipment in a neat manner using qualified trade persons in complete accordance with the Drawings and the equipment manufacturers instructions and recommendations.
- Fabricate and install any necessary temporary steel supports, brackets and anchors required for equipment erection or installation. Design of such supports, brackets, and anchors are subject to engineers' approval. Upon completion, remove all temporary supports, sand smooth, prime and paint welds on permanent plant structures, grout temporary anchor holes left in concrete and return the area to the originally installed condition.
- Prior to setting equipment:
  - Inspect equipment foundations for correctness in location, level, location of center lines, anchor bolt omissions, and height.
  - Uniformly roughen foundation surfaces.
  - Inspect all anchor bolts for straightness and damaged threads.
  - Straighten bent anchor bolts using acceptable methods.
  - Rerun bolts with damaged threads using suitable dies.
  - Clean and oil anchor bolts.
- Install all items shipped loose with equipment.
- Mount items with appropriate hardware.
- Provide additions and modifications to structural steel, grating, or floor steel required to completely install the equipment.
- Fabricate racks and supports for miscellaneous enclosures, boxes, cabinets and housings from rolled steel shapes, bars, rods, etc. of standard section and/or from strut material with accessory members and fittings.

- Use proper and adequate handling equipment and rigging at all times and inspect such equipment frequently. Lift electronic cabinets with the use of slings; do not use lifting eyes. Obtain exact weights and dimensions from approved manufacturers drawings or manufacturers representatives to ensure the use of adequate handling equipment.
- Welding
  - Perform in accordance with welding procedure
- Do not remove protective covers on flanges, pipe, or conduit connections until these connections are to be made.
- Fabrication and placing of shims:
  - Place shims, equipment baseplate, bedplates and soleplates as required for a minimum of 25 mm of grout such that shim pack thickness is no greater than 6 mm and no less than 3 mm for shims between the equipment and the top of the mounting plate.
  - Cut down and refinish where required, the tops of baseplate, soleplates, or rough foundations to allow for grouting.
  - Install shims of the required size, thickness and quality at the appropriate locations so there will be no deflection, deformation, or strain induced into the equipment bedplate or soleplate.
  - When the supporting structural steel frame is not level, taper the bottom shims to provide a level top bearing surface. Use a minimum number of shims at all times.
  - Wherever possible, place shims while the bedplate or equipment is in a jacked-up position using jacking or levelling nuts where provided or other means as necessary. Driving of shims to achieve a level top bearing surface is not permitted.

2.1.2 EQUIPMENT

- General
  - Set stationary equipment such as switchgear, motor control centers, and skid mounted equipment in a true vertical and horizontal plane and set anchor bolts evenly as required.
  - Tighten gasketed joints evenly around the entire gasketed area to insure uniform contact pressure.
  - Install wiring in conformance with connection diagrams, including jumpers where shown on terminal blocks. Install and terminate all wiring in accordance with Promec's procedure No. AEM-EL-PRO-001.
  - Install grounding systems and lightning protection in accordance with Promec's procedure No. AEM-EL-PRO-002.
  - Install cable tray system in accordance with Promec's procedure No. AEM-EL-PRO-003.
  - Install and terminate all cable in accordance with Promec's procedure No. AEM-EL-PRO-001.
- Panel boards and Transformers
  - Mount panel boards and transformers as specified in Client standards.

- Cabinets and Free Standing Panel boards
  - Handle, assemble, and maintain cabinets and free standing panels according to manufacturer's recommended procedures and documentation requirements.
  - Place cabinets and free standing panels immediately in their final positions, as shown on the drawing's temporary storage locations shall not be considered.
  - Wire cabinets and free standing panels in accordance with electrical wiring diagrams including jumpers shown on terminal blocks.

2.2 Personnel requirements

Provide qualified manufacturer's representatives for technical assistance as required.

2.3 Inspection and test requirements

- CEM Cabinets
  - Thoroughly inspect, clean, and remove all foreign matter, dust, debris, dirt, etc. from equipment cubicles, compartments and insulators.
- Transformers
  - Megger all winding terminals (maximum 1 kV) in accordance with manufacturer's requirements and provide results to Client for review.
- Construction Checkout
  - Perform and document all inspections and test activities in accordance with manufacturer's recommendations.

2.4 Adjustment and Cleaning

Remove any protective, non-permanent coatings applied by the equipment manufacturer.

Clean external surfaces of all equipment and materials of dirt, grease, oil, loose rust.

2.5 Corrosion Protection/Coatings

Following installation, touch-up all scratched or marred areas of manufacturer's primed or finished paint. Use the same paint as manufacturer's original finish or prime paint with surface preparation and paint application in accordance with the manufacturer's requirements.

Appendix A

ALL APPLICABLE ITRs & LOGs

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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 JG Date: 2017-05-16

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Agnico Eagle No. 6515-C-270-007-141-TES-0006 R: Sub001

DOCUMENT FOR INFORMATION

Agnico-Eagle Mines Ltd.

Contract no. 6515-C-270-007

Instrumentation Installation and Testing Procedure

AEM-IN-PRO-001

Area No.: All

System No.: All

PROMEC Approvals

Prepared by:	Stéphane Doré	**Signature:**		**Date:**	2017-04-25
Verified by:	Jonathan Roy	**Signature:**		**Date:**	2017-04-25
Approved by:	Éric Poulin	**Signature:**		**Date:**	2017-04-25

CLIENT Approvals

Verified by:		**Signature:**		**Date:**	
Approved by:		**Signature:**		**Date:**	

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1 SCOPE

This procedure includes:

- Installation of:
  - Field instruments
  - Field instrument racks and stands
- Installation of package equipment loose instruments.
- Installation of package equipment sensing tubing up to local control panel.
- Installation of specialty instruments.

2 PRODUCTS

2.1 Materials

- Instruments: As identified in the Instrument List. The Instrument List is a listing of instruments to be installed after:
  - Promec shall furnish all materials required for complete installation of control and instrumentation devices. Provide all tools and equipment required for the installation.
  - Promec shall furnish instruments, control devices and instrument racks, stands, and enclosures.
  - Promec shall provide all calibration equipment as required in Sections 2.2 of this specification.
  - Promec shall furnish nameplates for all control and instrumentation equipment furnished or installed under these specifications, unless already provided. Nameplates shall be either of laminated phenolic (white background with black letters) or stainless steel. Engrave or stamp the nameplates with the Instrument Tag Numbers per the Instrument List. Attach phenolic type nameplates to control and instrumentation equipment by machine screws or stainless steel wire.

2.2 Inspection and Test Requirements

- Promec shall obtain the instruments from the receiving warehouse which has inspected them for obvious shipping damage and manufacturing defects. Promec will also inspect instruments for obvious shipping damage and manufacturing defects when they receive them. Each instrument will have been calibrated by the manufacturer. Vendor calibration report will be review by Promec for each instrument. The calibration of each instrument will be checked by Promec prior to installation.
- Promec shall use qualified and experienced personnel to perform adjustments and tests. Perform adjustments and tests as many times as necessary to assure proper operation of equipment and systems and quality of materials and workmanship.

2.3 Cleaning

- Promec shall clean and remove any protective non-permanent, coatings applied by manufacturers. Clean equipment and material external surfaces of all dirt, grease, oil, loose rust, and other foreign material.

2.4 Corrosion Protection/Coatings

- Following installation, Promec shall touch-up all scratched or marred areas of Manufacturer's prime or finish painting. Promec shall use paint the same as Manufacturer's original finish or prime paint with surface preparation and paint application in accordance with the Manufacturer's requirements.
- Threads shall not be painted
- Stainless steel and other corrosion-resisting surfaces: do not paint.
- Machined surfaces: do not paint.
- Omit paint at all areas: before field welding.

3 EXECUTION

3.1 Installation

3.1.1 GENERAL

- Install all controls and instrumentation in accordance with the requirements of this Section. Any installation procedures not specified herein shall be done in accordance with the manufacturer's recommendations and good engineering practice.
- Promec shall utilize experienced workers for installation of all controls and instrumentation, tubing, and piping.
- Promec shall furnish all necessary craft personnel, supervision and scheduling required for the completion of instrument installation within the Owner's schedule.

3.1.2 INSTALLATION OF LOCALLY MOUNTED EQUIPMENT

- In addition to the installation requirements indicated on the drawings, the manufacturer's submittals, and the Instrument List, the requirements specified herein apply.
- Install all instruments and associated devices shall be installed in easily accessible locations for maintenance, calibration, and replacement. Take special care to assure that indicator type instruments are easily readable from the nearest accessible floor or platform elevation.
- Solenoid valves and control loop accessories not located in enclosures or mounted on valves shall be mounted in easily accessible protected locations near the components with which they are associated.
- All pressure gages (indicators) shall be installed bear the process connections, unless otherwise on the drawings and locate where easily read.
- Pressure switches not mounted in enclosures shall be installed on a wall or building column, or on pipe stands, near the piping or duct to which they are connected and mount to permit ease of adjustment.

- All brackets, stands, supports, and other miscellaneous hardware shall be provided as required for mounting devices.
- Level transmitters, level controllers, and level switches of the displacer or float type shall be installed on vessel instrument piping columns as indicated on the piping detail drawings for that vessel. Top works of transmitters, controllers, and switches shall be provided as to positions which provide convenient access for operation and maintenance; perform prior to installation of tubing and wiring to the devices.
- Sight flow glasses shall be installed for maximum visibility.

3.1.3 Installation of Instrument Racks and Stands

- Freestanding racks, stands, and enclosures to the floor shall be attached to concrete equipment bases or supporting steel, at locations indicated on the drawings. Shim shall be provided for proper alignment before bolting to the floor or grouting.
- Non-freestanding racks and enclosures shall be mounted in accessible locations on columns and walls. Brackets shall be fabricated as required to install the racks and enclosures in a workmanlike manner.
- Rough edges and welds on all fabricated supports shall be grinded smooth; surfaces shall be finished with coating.
- Racks shall be located to provide the shortest reasonable instrument impulse line lengths for each of the instruments mounted thereupon.

3.1.4 Connection of Equipment and Devices

- Design pressure and maximum process temperature shall be limited below manufacturer's specified data for all instruments.
- After flow instrument installation, Promec shall verify the high and low sides of the instrument with respect to the direction of flow.
- When reservoir tees are required, bent pipe shall be used between the root valve and the tee unless there is a space limitation. Fittings may be used if space is limited.
- Reservoir tees to be installed on vertical lines shall be mounted at or above the process line connection. These reservoir tees shall be mounted at the same elevation.
- Reservoir tees shall be provide for each reference leg for differential pressure transmitter used to measure level on the steam drums, deaerator storage tank, or any tank containing both liquid and vapour. Reservoir tees shall be provided on all steam flow and pressure applications to insure complete fill of the sensing line during operation. Reservoir tees must not be insulated. A filling connection shall be provided on the reservoir tees for initial filling of the sensing line.

3.1.5 Flow Meter Tubing

- Process sensing connections shall be provided between flow indicators, transmitters, controllers, or switches and shutoff valves on the main piping in accordance with the Drawings.
- Where tubing is run in open type trays, covers shall be installed wherever the trays pass through an open area where it is possible that the tubes can be damaged from falling objects.

3.2 Inspection and Test Requirements

3.2.1 GENERAL

- Pre-operational adjustments, material and equipment tests shall be made as specified and as required by governing codes, regulations, manufacturers' recommendations, and good construction methods.
- Instrument functional loop checkout shall be made to resolve any discrepancies and correct any field problems which arise in the scope of work.
- Assemble, test, and adjust, as required, for correct and reliable operation the control and instrument equipment (including gages, switches, thermostats, and other devices) which are a part of major equipment.

Appendix A

ALL APPLICABLE ITRs & LOGs

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Vendor Document Status

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By: LUC SÉNÉCAL Date: 2017-07-10

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Agnico Eagle No. 6515-C-270-007-141-TES-0008 R: Sub002

DOCUMENT FOR INFORMATION

Agnico-Eagle Mines Ltd.

Contract no. 6515-C-270-007

Cable Tray Installation Procedure

AEM-EL-PRO-003

Area No.: All

System No.: All

PROMEC Approvals

Prepared by:	Stéphane Doré	**Signature:**		**Date:**	2017-04-25
Verified by:	Jonathan Roy	**Signature:**		**Date:**	2017-04-25
Approved by:	Éric Poulin	**Signature:**		**Date:**	2017-04-25

CLIENT Approvals

Verified by:		**Signature:**		**Date:**	
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1. GENERAL

1.1 Section Includes

- Cable Tray, Fittings, and Accessories.
- Hangers and Supports.

2. EXECUTION

2.1 Inspection and Preparation

- Before installation, inspect cable trays and fittings and clean off all dirt, cuttings, and other foreign material. Cut ends of the trays to be filed or ground to remove burrs and sharp edges, and coated to prevent rust.

2.2 Installation Requirements

- All Electrical Installations: in accordance with CSA Standard C22.1-06.
- In general, provide a recommended minimum vertical spacing between trays of 250 mm measured from the bottom of the upper tray to the top of the lower tray. Maintain minimum of 230 mm clearance between the top of the tray and beams, pipes, etc. for parallel runs, and 75 mm minimum for crossing runs. (Trays to be installed by others).
- Cut cable tray to size by use of a hack saw, or other approved tool. Do not flame cut trays or their accessories.
- Align cable trays carefully and level plumb and true. Secure the runs with at least two smooth head bolts at each support bracket.
- Supports for cable tray runs to be the cantilever or the trapeze type, fabricated of threaded rod, strut, and/or steel members and accessories. The support member is in contact with the cable tray and shall be approximately 75 mm longer than the width of the cable tray that it supports.
- Support cable trays at all bends, tees, dropouts, crossovers, risers, etc. as recommended by CSA Standard C22.2, No. 126.1-02.
- Fasten supports to building steel by means of beam clamps. Fasten supports to concrete by inserts or drilled-in anchors. Provide supports capable of supporting the ultimate tray loading capacity.

2.3 Inspection and Test Requirements

- Perform inspections and tests normally used either in installation, construction processes or as called for by the applicable codes and standards.
- Upon completion of cable tray installation, inspect the interior surfaces of the tray run for any burrs or rough edges that could result in cable damage during cable installation. Remove burrs and rough edges.

2.4 Corrosion Protection/Coatings

- Where the galvanizing of cable tray supports is damaged, repair by the application of appropriate galvanizing repair paints.

Control System Description

Rankin Inlet Tank Farm – 65PLC11601

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.

Sébastien Perron Instrumentation Date: 28/09/2017

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-270-007-280-GNS-0001 R: Sub003

DOCUMENT FOR INFORMATION

AGNICO EAGLE - MELIADINE DIVISION

Rankin Inlet, Nunavut

Project No: 591700

Prepared by: G. Gagnon, Eng.

Approved by: D. Carrier, Eng.

Document No: ULT-591700-CSD-001

Date: Sept 12, 2017

Revision: 1

REGISTERED PROFESSIONAL ENGINEER
13627
D. CARRIER
LICENSEE
NT/NU

Sept 12/2017

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 12 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REVISION INDEX

Rev	Prepared by	Reviewed by	Approved by	Date	Pages Revised / Remarks	Issued for
PA	G. GAGNON	E. LAROUCHE	D. CARRIER	2017/05/18		FOR REVIEW
0	G. GAGNON	E. LAROUCHE	D. CARRIER	2017/06/20		FOR CONSTRCUTION
1	D .CARRIER	E. LAROUCHE	D. CARRIER	2017/09/12		FOR START-UP

D. CARRIER, Eng. OIQ – 40308 / NAPEQ – L3627

Sept 12/2017
Date

INDEX

1 Overview

The control system at Rankin Inlet tank farm consists of the following components:

- PLC cabinet located in the operator room with a HMI touchscreen for operation.
- Flow Controller Smith Meter located in the operator room.
- A flow control kit including one flow valve, one flow meter and one temperature probe connected to the Flow Controller to measure the transferred quantity per transaction.
- Two Variable Frequency Drive (VFD), one per transfer pumps (2).
- Scully Module with plug to allow truck ground proving and truck overfill prevention.
- Radar level transmitters and temperature transmitters for monitoring the diesel tanks (2).
- Motorized Operated Valve (MOV) to allow the transfer between tanks and truck.
- E-stops (3) located in the truck area, inside the pumping station and inside the operator room.
- Strobe light on each diesel tank and one common horn on the pumping station to indicate high level tank.

2 PLC

2.1.1 One PLC for the Rankin Inlet tank farm diesel distribution.
Manufacturer: Schneider, Model: BMEP582040

3 I/O cards

3.1.1 PLC Input and outputs cards connected to field devices are as following:

Module	Manufacturer	Model
32 digital inputs module (120 Vac)	Schneider	BMXDDI3202K
32 digital outputs module	Schneider	BMXDDO3202K
8 analog inputs module (4 -20 mA)	Schneider	BMXAMI0810
Ethernet backplane card	Schneider	BMENOC0321

4 Human-Machine Interface (HMI)

4.1.1 One Touch screen HMI mounted in front of the PLC cabinet to monitor and control the transferred quantity from diesel tanks to tanker truck.
Manufacturer: Schneider, Model: HMIDT732 / HMIG3U

5 Flow controller

5.1.1 One Microload Flow controller c/w one flow meter, one digital flow valve and one RTD temperature to control the transferred quantity.

Instrument	Manufacturer	Model
Flow controller	FCM	Smith Meter ML-XP-STD-1, Microload
Flow valve (Digital pre-set valve) with two 120 Vac solenoids	TCS	OCV 115-3
Flow meter (positive displacement type)	TCS	700-40SP4DX
Pulse transmitter for flowmeter	TCS	DMP-100-3
RTD temperature sensor	FMC	TP-W-3C-2.5

6 Ground proving and overfill prevention device

6.1.1 A Scully module located beside the truck loading arm to connect to the tanker truck using a plug assembly. The 10-pins plug assembly allows the monitoring of up to 8 high level sensors and monitors the static ground verification on the tanker truck.
Manufacturer: Scully, Model: Intellitrol IC-OG, plug model: SC-8A

7 Motorized Operated Valve (MOV)

7.1.1 One MOV per vertical tank to control the tanks outlets. These valves are powered at 120 Vac and are controlled through 120 Vac output PLC cards. With one output configuration for the open command, it closes automatically when off. Open position, close position and fault status are monitored by the PLC.
Actuator Manufacturer: Rotork, Model: IQT500

Valve Manufacturer: M.A Stewart, Model: F-150-CSF-SS-FS-N

8 Communication

8.1.1 Ethernet TCP/IP is used for communication between the PLC, the HMI, the flow controller and the VFDs.

9 Ethernet switches

9.1.1 One Ethernet switch inside the PLC cabinet connected to the PLC Ethernet communication card, dedicated for the HMI and the plant Ethernet network.
Manufacturer: Schneider, Model: TCSESM083F2CSO

9.1.2 One Ethernet switch inside the PLC cabinet connected to the PLC CPU Ethernet port, dedicated for Microload controllers and VFDs.
Manufacturer: Schneider, Model: TCSESM083F1CSO

10 Software

10.1 PLC Programming

10.1.1 Schneider Unity Pro software, version 11 is the PLC programming software for the Schneider M580 PLC.

10.2 HMI Programming

10.2.1 Vijeo Designer software, version 6.2 is the HMI touch screen programming software.

10.3 PLC – Microload Controller exchange

10.3.1 The communication protocol used to transfer data between the PLC and the Microload controller is Ethernet Modbus TCP/IP (Accumulated volume, Pre-set volume, Flow rate, etc). The Microload keypad is disabled, all controls are done through the PLC.

11 Functional Description

11.1 Truck Loading

1. At the truck area

    a. Connect the Scully Intellitrol plug to the tanker truck to allow ground proving and truck overfill prevention, then attach the loading arm to the truck.

    b. Green Bar indicator is ON steady on the Scully Intellitrol Module when the plug is properly connected and the ground contact is made. Red Bar indicator ON means Scully not ready or no lights ON means no power. The Intellitrol also monitors the truck compartment levels, if one or many compartments LED are ON that indicates a faulty level sensor.

    c. The Scully Intellitrol switch interlocks the 120 Vac power to the flow control valve. In case of high level in tanker truck or loss of truck grounding contact, the 120 Vac power is removed from the flow control valve and the valve closes. The fault status is wired to PLC through interposing relay to prevent any loading operation. The running sequence is then paused and equipment are stopped and valves closed.

    d. The Scully Intellitrol can be bypassed with a bypass key held against the side of the Intellitrol for 10 to 30 seconds. When in bypassed mode, the Intellitrol Bar indicator will blink green.
        - The maximum bypass time is settable from 15 to 60 minutes.
        - Bypass operation automatically ends when the vehicle is disconnected.
        - A faulty sensor can only be bypassed at initial truck hookup.
        - A sensor wet during loading can never be bypassed.

2. At the pumping station operator room – Logging to the system

    a. Two levels of user security are available at the HMI;

        i. Operator username and PIN number 1111.

        ii. Maintenance username and PIN number 2222.

    b. At the operator security level, the truck loading sequence is fully automatic and there is no bypassed or manual mode available.

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.

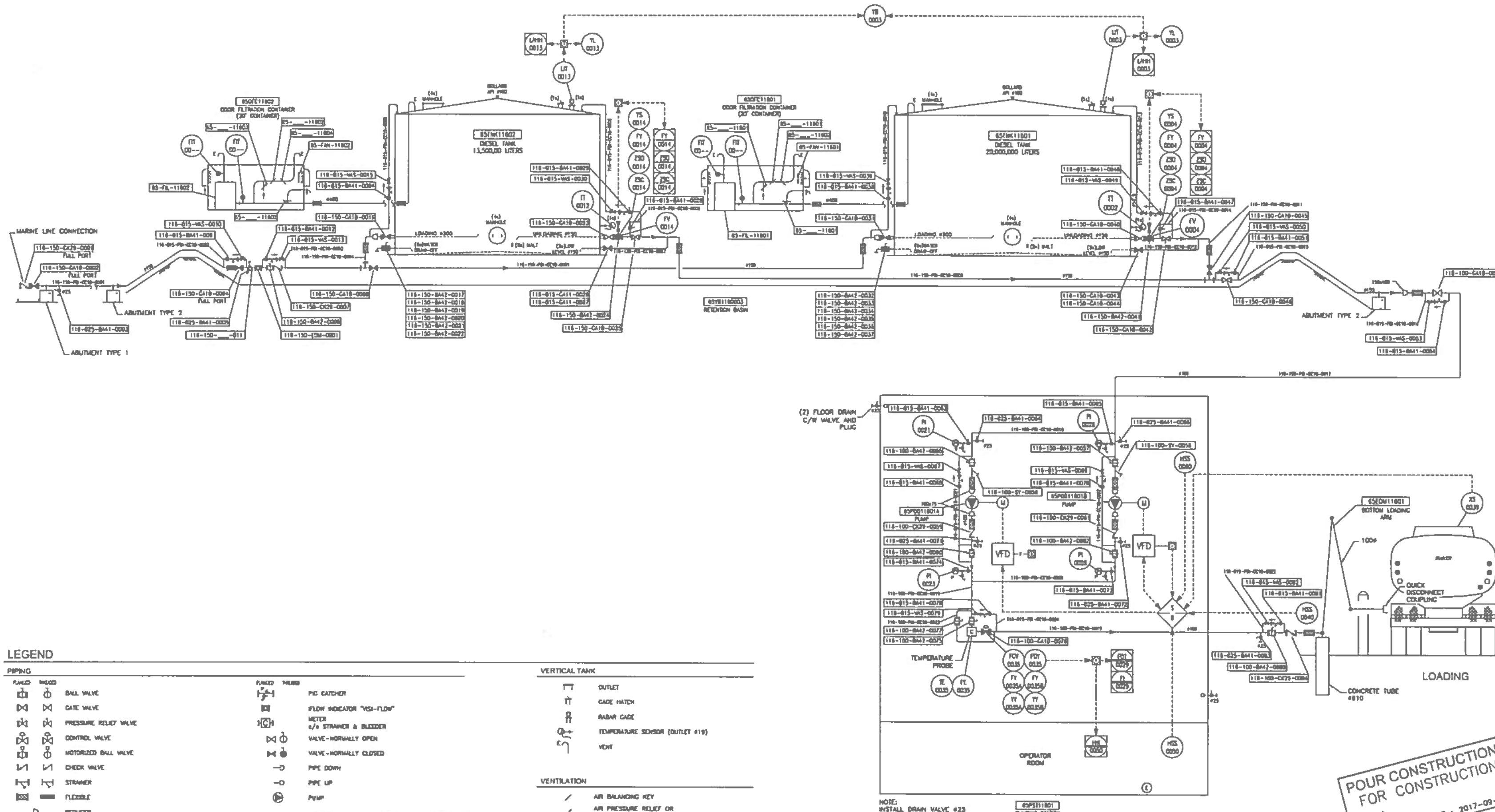
11.2 Main tanks loading

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

65-116-205-200_R2.dwg



LEGEND

PIPING

- BALL VALVE
- GATE VALVE
- PRESSURE RELIEF VALVE
- CONTROL VALVE
- MOTORIZED BALL VALVE
- CHECK VALVE
- STRAINER
- FLEXIBLE
- REDUCER
- UNION
- FLANGES
- BLANK FLANGE
- CAP
- CONNECTION
- PIG CATCHER
- FLOW INDICATOR "VISI-FLOW"
- METER c/w STRAINER & BLEEDER
- VALVE-NORMALLY OPEN
- VALVE-NORMALLY CLOSED
- PIPE DOWN
- PIPE UP
- PUMP
- PRESSURE RELIEF VALVE KIT: PIPING #12.5 SCH. 80, PRESSURE RELIEF VALVE (AJUSTED TO 5 PSI UNLESS OTHERWISE SPECIFIED), UNION, T WITH PLUG & BALL VALVE
- PRESSURE GAGE TO VACUUM OF POMPE (VACUUM)
- PRESSURE GAGE TO DISHARGE OF PUMP (POSITIVE PRESSURE)
- TEMPERATURE PROBE

VERTICAL TANK

- OUTLET
- GAGE HATCH
- RADAR GAGE
- TEMPERATURE SENSOR (OUTLET #19)
- VENT

VENTILATION

- AIR BALANCING KEY
- AIR PRESSURE RELIEF OR BACK-DRAFT DAMPER
- MANUEL FLAP
- AIR FLOW SWITCH

GENERAL

- EXTINGUISHER 20 BC

P&ID

SEE DWG 65-500-205-207

WSP

NOTES GÉNÉRALES / GENERAL NOTES

1. REPLACE DRAWING : 65-103-205-200

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

AGNICO EAGLE

REVISIONS

POUR CONSTRUCTION / FOR CONSTRUCTION — DATE : 2017-09-05

EN PROGRÈS / IN PROGRESS — DATE : 2017-09-05

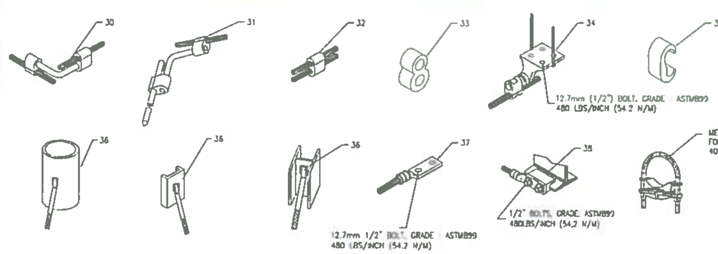
AGNICO EAGLE – MELIADINE DIVISION
116 – FUEL TANK FARM
205 – P&ID
FUEL DISTRIBUTION
FLOW DIAGRAM

DESSINÉ PAR / DRAWN BY	GHISLAINE CORRIVEAU, tech.	2017-05-26
VÉRIFIÉ PAR / CHECKED BY	JOEL MORLIÈRE, tech.	2017-05-26
APPROUVÉ PAR / APPROVED BY	DENIS THIBODEAU, P. Eng.	2017-05-26
ÉCHELLE / SCALE	NONE	2017-05-26
NO. DESSIN / DRAWING NO.	65-116-205-200	
NO. PROJET / PROJECT NO.	6515	REVISION 2 — FEUILLE / SHT 1/1

No. DESSIN / DRAWING No. 65-116-275-200_R0

EQUIPMENT LIST

ARTICLE NUMBER	SYMBOL	DESCRIPTION	MANUF.	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: [illegible], 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 CONNECTION – HYGRL 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 [illegible] RESISTANT CABLE SIZE: 4/0AWG	BURNDY	YGF	
35	PT	CONNECTION – PARALLEL HORIZONTAL CONDUCTORS COMPRESSED CONNECTOR FOR TWO PARALLEL HORIZONTAL CONDUCTORS. 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 [illegible] CABLE SIZE: 4/0AWG.	BURNDY	GYCLD-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 (VS2) MUST BE COMBINED WITH A YGHA HEAVY DUTY TERMINAL (LA) AND 2 NUTS OF ADEQUATE SIZE FOR THE TERMINAL.
39		GROUNDING PLATE PREFABRICATED COPPER GROUNDING PLATE WITH ONE PIGTAIL, WIRE GAUGE: [4/0AWG, PLATE SIZE: 610mmX610mm, THICKNESS : 6.35mm	PENGAR	[illegible]	
40	CP	CONNECTION – PIPE MECHANICAL GROUNDING CONNECTOR CONDUCTOR TO PIPE CABLE SIZE: 4/0AWG.	BURNDY	GAR3902BU GAR3904BU GAR3905BU GAR3906BU	1¼" TO 2" (30MM TO 52MM) PIPE 2½" TO 3½" (65MM TO 89MM) 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	CTC24P	
42		BONDING JUMPER PREFABRICATED COPPER JUMPER, FOR EXPANSION JOINTS AND ADJUSTABLE JOINTS.	THOMAS & BETTS	FBE13-1	
		COPPER GROUNDING CONDUCTOR 4/0 AWG, BARE, FLEXIBLE, TINNED, 19 STRANDS (ASTM STANDARDS 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 METER (UTILITY PROVIDED)
- CABLE TRAY
- ELECTRIC HEATER
- 15A, 120V DUPLEX RECEPTACLE
- [illegible] RECEPTACLE
- JUNCTION BOX

DETECTION & FIRE ALARM

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

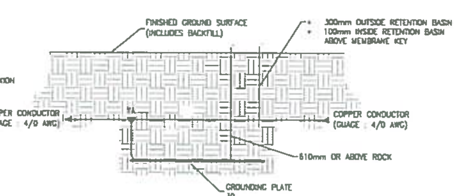
ELECTRICAL EQUIPMENT

No. EQUIP	MANUFACTURER	CATALOG NUMBER	MOUNTING	DESCRIPTION
[illegible]	[illegible]	[illegible]	SURF.	[illegible]
[illegible]	SCHNEIDER ELECTRIC	[illegible]	SURF.	[illegible]
[illegible]	SCHNEIDER ELECTRIC	[illegible]	SURF.	TRANSFORMER [illegible], COPPER WINDINGS
[illegible]	SCHNEIDER ELECTRIC	[illegible]	SURF.	HEAVY DUTY FUSED SAFETY SWITCH [illegible]
[illegible]	SCHNEIDER ELECTRIC	[illegible]	SURF.	HEAVY DUTY FUSED SAFETY SWITCH [illegible], NEMA 1 ENCLOSURE
[illegible]	SCHNEIDER ELECTRIC	[illegible]	SURF.	HEAVY DUTY FUSED SAFETY SWITCH [illegible], NEMA 1 ENCLOSURE
[illegible]	SCHNEIDER ELECTRIC	[illegible]	SURF.	HEAVY DUTY FUSED SAFETY SWITCH [illegible], NEMA 1 ENCLOSURE
[illegible]	SCHNEIDER ELECTRIC	[illegible]	SURF.	HEAVY DUTY FUSED SAFETY SWITCH [illegible], NEMA 1 ENCLOSURE
[illegible]	SCHNEIDER ELECTRIC	[illegible]	SURF.	HEAVY DUTY FUSED SAFETY SWITCH [illegible], NEMA 1 ENCLOSURE
[illegible]	SCHNEIDER ELECTRIC	[illegible]	SURF.	HEAVY DUTY FUSED SAFETY SWITCH [illegible], NEMA 1 ENCLOSURE
[illegible]	SCHNEIDER ELECTRIC	[illegible]	SURF.	HEAVY DUTY FUSED SAFETY SWITCH [illegible], NEMA 1 ENCLOSURE
[illegible]	SCHNEIDER ELECTRIC	[illegible]	SURF.	[illegible], NEMA 1 ENCLOSURE
[illegible]	SCHNEIDER ELECTRIC	[illegible]	SURF.	SAFETY SWITCH [illegible]
[illegible]	SCHNEIDER ELECTRIC	[illegible]	SURF.	[illegible]
[illegible]	[illegible]	[illegible]	SURF.	[illegible]
[illegible]	THOMAS & BETTS	[illegible]	SURF.	[illegible]
[illegible]	ABB	[illegible]	SURF.	VARIABLE SPEED DRIVE

C-M. = CEILING-MOUNTED
BALT. = BUILT-IN
SUR. = SURFACE
SUP = SUPPORTED
[illegible]
S.P. = MOUNTED ON SUPPORT
[illegible]

FIRE DETECTION EQUIPMENT

TYPE	MANUFACTURER	CATALOG NUMBER	MOUNTING	DESCRIPTION
PA1	[illegible]	[illegible]	SURF.	[illegible]
F	[illegible]	[illegible]	SURF.	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]
F	[illegible]	[illegible]	SURF.	[illegible]
	[illegible]	[illegible]	SURF.	[illegible]



TYPICAL INSTALLATION – GROUNDING PLATE AND GROUNDING CONDUCTOR

SCL: 1:20

POUR CONSTRUCTION
FOR CONSTRUCTION
DATE : 2017-07-11

WSP
1075, 3e AVENUE EST
VAL-D'OR (QUÉBEC) CANADA J9P 0J7
TEL.: 819 825-4711 | TELEC.: 819 824-1544 | WWW.WSPGROUP.COM

NOTES GÉNÉRALES / GENERAL NOTES

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	No.
LEGEND, TABLES & DETAILS	65-163-275-300

AGNICO EAGLE

No.	DATE	DESCRIPTION	PAR / BY	APP.
0	2017-07-11	ISSUED FOR CONSTRUCTION	M.A.F.	L.S.

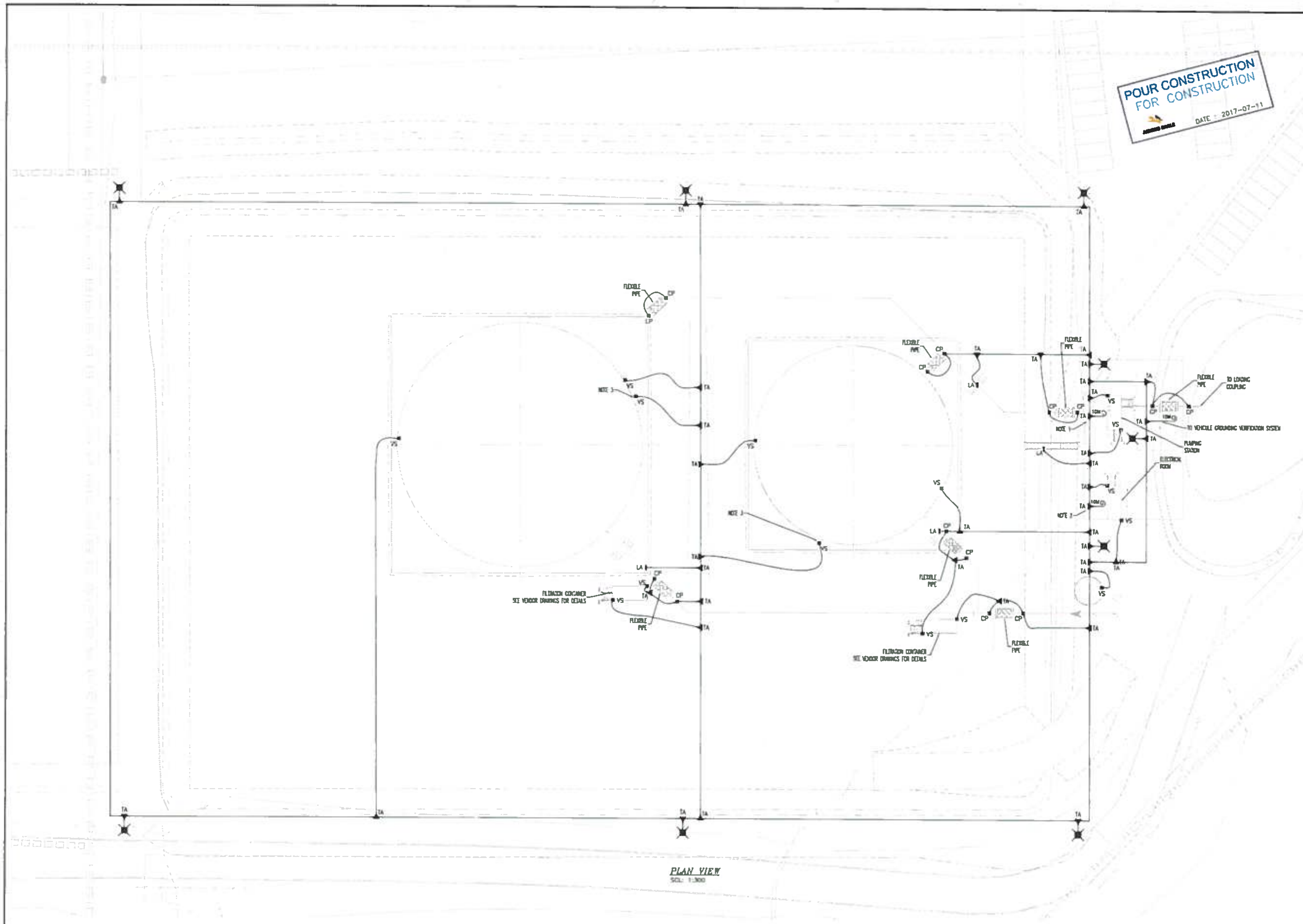
REVISIONS

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

DESSINÉ PAR / DRAWN BY	M.-A. FALARDEAU, Jr. Eng.	2016-08-22
VÉRIFIÉ PAR / CHECKED BY	RÉMI HÉNAULT, Tech.	2016-06-22
APPROUVÉ PAR / APPROVED BY	LUC SÉNÉCAL, P.Eng.	2017-07-11
ÉCHELLE / SCALE	INDICATED	2015-12-01
No. DESSIN / DRAWING No.	65-116-275-200	
No. PROJET / PROJECT No. 6515	RÉVISION 0	FEUILLE / SHEET 1 / 1

FILE NO. [illegible]

65-116-275-201_R0



WSP

1075, 3e AVENUE EST
VAL-D'OR (QUÉBEC) CANADA J9P 0J7

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.

- 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 APPROXIMATIVE AND SHALL BE COORDINATED WITH OTHER CONTRACTORS.
- THE LOCATION OF CONTAINERS SHALL BE COORDINATED WITH OTHER CONTRACTORS.

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
GROUNDING LAYOUT	65-116-275-301
LEGEND, TABLES & DETAILS	65-116-275-200

AGNICO EAGLE

0	2017-07-11	ISSUED FOR CONSTRUCTION		

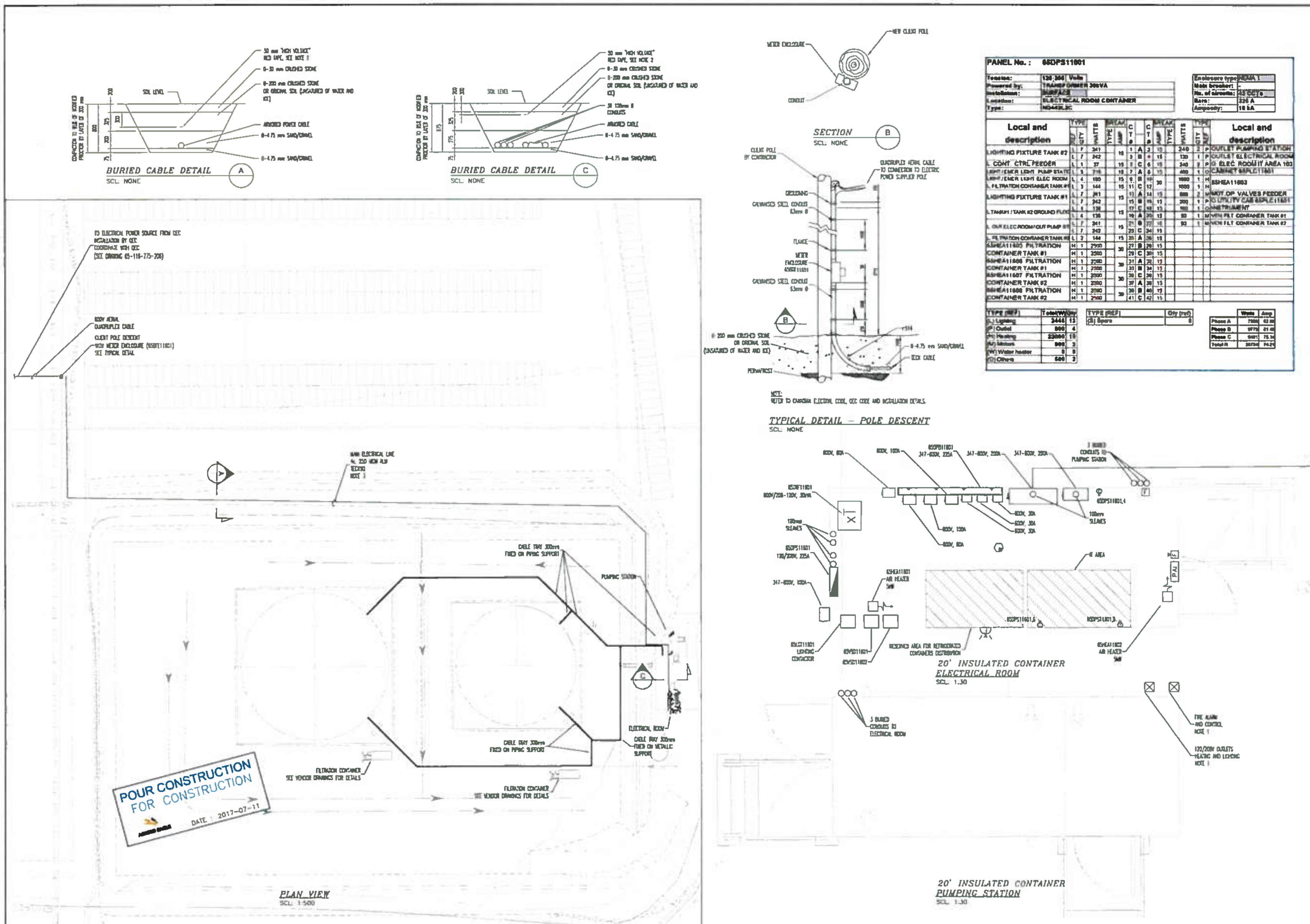
REVISIONS

TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
116 – FUEL TANK FARM
275 – POWER ELECTRICAL
GROUNDING LAYOUT
PLAN VIEW

DESSINÉ PAR / DRAWN BY	RÉMI HÉNAULT, Tech.	2016-08-22
VÉRIFIÉ PAR / CHECKED BY	RÉMI HÉNAULT, Tech.	2016-08-22
APPROUVÉ PAR / APPROVED BY	LUC SÉNÉCAL, P.Eng.	2017-07-11
ÉCHELLE / SCALE	INDICATED	2016-01-25
NO. DESSIN / DRAWING NO.	65-116-275-201	
NO. PROJET / PROJECT NO.	6515	RÉVISION 0 — FEUILLE / SHT 1 / 1

FILE NO. 65-116-275-201_R0.dwg

65-116-275-202_R0



PANEL No. : 65DPS11601

Tension:	120/208 Volts
Powered by:	TRANSFORMER 30kVA
Installation:	SURFACE
Location:	ELECTRICAL ROOM CONTAINER
Type:	NQ442L2C
Enclosure type:	NEMA 1
Main breaker:	-
No. of circuits:	42 CCTS
Bars:	225 A
Ampacity:	10 kA

Local and description	TYPE REF	QTY	WATTS	BREAK. TYPE	BREAK. AMP	CT #		CT #	BREAK. AMP	BREAK. TYPE	WATTS	QTY	TYPE REF	Local and description
LIGHTING FIXTURE TANK #2	L	7	241		15	1	A	2	15		240	2	P	OUTLET PUMPING STATION
	L	7	242			3	B	4	15		120	1	P	OUTLET ELECTRICAL ROOM
L. CONT CTRL FEEDER	L	1	37		15	5	C	6	15		240	2	P	[illegible] ELEC. ROOM IT AREA 103
LIGHT/EMER LIGHT PUMP STATION	L	5	716		15	7	A	8	15		400	1	O	CABINET [illegible]
LIGHT/EMER LIGHT ELEC ROOM	L	4	180		15	9	B	10	30		1000	1	H	65HEA11603
L. FILTRATION CONTAINER TANK #1	L	3	144		15	11	C	12			1000	1	H	
LIGHTING FIXTURE TANK #1	L	7	241		15	13	A	14	15		[illegible]	2	M	MOT. OP. VALVES FEEDER
	L	7	242			15	B	16	15		200	1	P	[illegible] UTILITY CAB [illegible]
L. TANK#1 / TANK #2 GROUND FLOOR	L	4	138		15	17	C	18	15		[illegible]	1	O	INSTRUMENT
	L	4	138			19	A	20	15		50	1	M	VEN FLT CONTAINER TANK #1
L. OUT ELEC ROOM/OUT PUMP ST	L	7	241		15	21	B	22	15		50	1	M	VEN FLT CONTAINER TANK #2
	L	7	242			23	C	24	15					
L. FILTRATION CONTAINER TANK #2	L	3	144		15	25	A	26	15					
65HEA11605 FILTRATION CONTAINER TANK #1	H	1	2500		30	27	B	28	15					
	H	1	2500			29	C	30	15					
65HEA11606 FILTRATION CONTAINER TANK #1	H	1	2500		30	31	A	32	15					
	H	1	2500			33	B	34	15					
65HEA11607 FILTRATION CONTAINER TANK #2	H	1	2500		30	35	C	36	15					
	H	1	2500			37	A	38	15					
65HEA11608 FILTRATION CONTAINER TANK #2	H	1	2500		30	39	B	40	15					
	H	1	2500			41	C	42	15					

TYPE (REF)	Total(W)	Qty
(L) Lighting	3446	13
(P) Outlet	600	4
(H) Heating	22000	10
(M) Motors	900	3
(W) Water heater	0	0
(O) Others	600	2

TYPE (REF)	Qty (ref)
(S) Spare	0

	Watts	Amp
Phase A	[illegible]	[illegible]
Phase B	[illegible]	[illegible]
Phase C	[illegible]	[illegible]
Total R	[illegible]	[illegible]

WSP
1075, 3e AVENUE EST
VAL-D'OR (QUÉBEC) CANADA J9P 0J7
TÉL. : 819 825-4711 | TÉLÉC. : 819 824-1514 | WWW.WSPGROUP.COM

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 ELECTRICAL CABLES AND FOLLOW ALL THE BURIED PART OF THEM.
3. COORDINATE THE EXACT LOCATION AND DEPTH OF THE MAIN FEEDER CABLE.

- THE LOCATION OF PIPING IS APPROXIMATE AND SHALL BE COORDINATE WITH OTHER MECHANICAL DRAWINGS.

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	N°
EQUIPMENT LAYOUT, DETAILS AND SERVICES PANEL	65-102-275-202
LIGHTING	65-116-285-201
LEGEND, TABLES & DETAILS	65-116-275-200
SINGLE LINE DIAGRAM	65-116-275-203

AGNICO EAGLE

0	2017-07-11	ISSUED FOR CONSTRUCTION	T.A.B.	L.S.

REVISIONS

AGNICO EAGLE – MELIADINE DIVISION
116 – FUEL TANK FARM
275 – POWER ELECTRICAL
EQUIPMENT LAYOUT, DETAILS AND SERVICES PANEL
PLAN VIEW

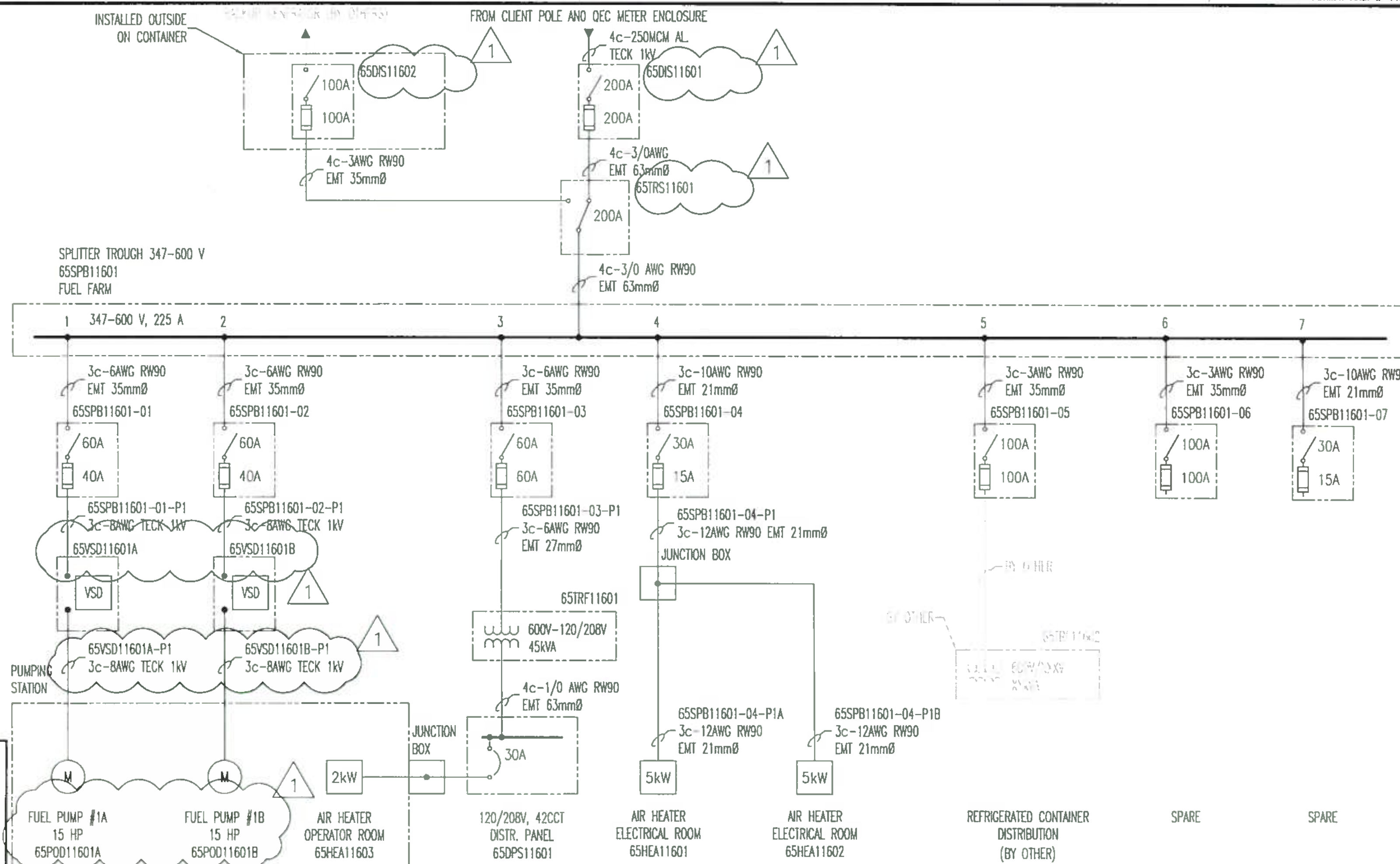
DESSINÉ PAR / DRAWN BY	BRIAN FILDES, Tech.	2016-06-22
VÉRIFIÉ PAR / CHECKED BY	RÉMI HÉNAULT, Tech.	2016-06-22
APPROUVÉ PAR / APPROVED BY	LUC SÉNÉCAL, P.Eng.	2017-07-11
ÉCHELLE / SCALE	INDICATED	2016-01-25
No. DESSIN / DRAWING No.	65-116-275-202	
No. PROJET / PROJECT No.	6515	RÉVISION 0 — FEUILLE 1/1

FILE NO. 65-116-275-202_R0.dwg

NO. DESSIN / DRAWING NO. 65-116-275-203_R1

FORMAT ANSI B-11x17

POUR CONSTRUCTION
FOR CONSTRUCTION
DATE : 2017-08-02



WSP
1075, 3e AVENUE EST
VAL-D'OR (QUÉBEC) CANADA J9P 0J7
TÉL. : 819 825-4274 | TÉLÉC. : 819 824-1514 | WWW.WSPGROUP.COM
Ref. 151-08440-40

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–	–		
–	–		
–	–		
600V DISTRIBUTION PANEL SINGLE LINE DIAGRAM	65-103-275-203		
TITRE / TITLE	# DWG		

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

REV	DESCRIPTION	DATE	PAR BY
1	ISSUED FOR CONSTRUCTION	2017-08-02	R.H.
0	ISSUED FOR CONSTRUCTION	2017-07-11	F.M.G.

REVISIONS

AGNICO EAGLE

REGISTERED PROFESSIONAL ENGINEER L3514 LICENSEE NT/NU 2017-08-03

		DATE
DESSINÉ PAR / DRAWN BY	BRIAN FILDES, Tech.	2016-06-22
VÉRIFIÉ PAR / CHECKED BY	RÉMI HÉNAULT, Tech.	2016-06-22
APPROUVÉ PAR / APPROVED BY	LUC SÉNÉCAL, P.Eng.	2017-07-11
No. PROJET / PROJECT NO.	6515	
DATE	2015-02-15	

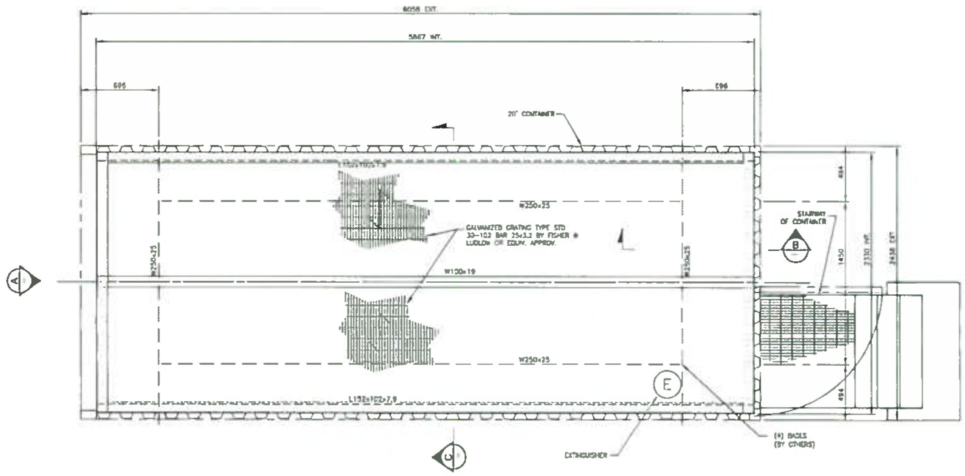
TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
116 – FUEL TANK FARM
275 – POWER ELECTRICAL
600V DISTRIBUTION PANEL
SINGLE LINE DIAGRAM

ÉCHELLE / SCALE	NONE	FICHIER / FILE	65-116-275-203_R1.DWG
No. DESSIN / DRAWING NO.	65-116-275-203	RÉVISION 1	FEUILLE/SHT 1 / 1

AE-CART-ANSI B

\\CaVdo1Dat01\Projet_15X-XXXX-XX\151-08440-40\01-COMM\Envoy6_AEM\WSP-AEM-151-08440-40-649 (116 and 416 changing equipment number)\65-116-275-203_R1.dwg-2017-08-03 10:21:21

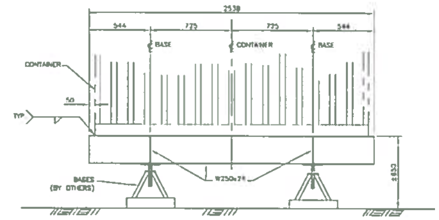
NO. DESSIN / DRAWING NO. 65-116-275-204_R0



20' CONTAINER ELECTRICAL ROOM FLOOR (1)

SCL: 1:20

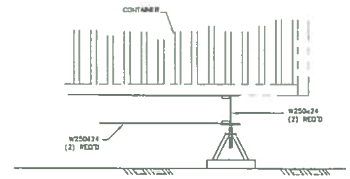
- 20' STANDARD CONTAINER (WOOD FLOOR REPLACED BY STEEL BY SUPPLIER)
- GRATING IS BOLTED (WELDING IS NOT PERMITTED)
- LEVELLING SHIMS MUST BE INSTALLED ON L152x102x7.9
- GRATING SECTION 300mm LARGE (INSTALLED ON CIRCULATION AREA)
- CONTAINER FLOOR MUST HAVE A SLIGHT SLOPE TOWARDS ACCESS DOORS



ELEVATION (A)

SCL: 1:20

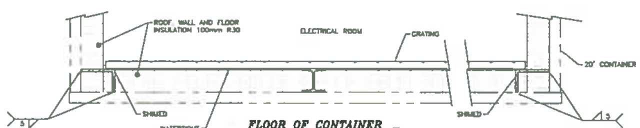
(1) ARRANGEMENT ELECTRICAL ROOM



ELEVATION (B)

SCL: 1:20

(1) ARRANGEMENT ELECTRICAL ROOM



FLOOR OF CONTAINER SECTION (C)

SCALE: 1:10

WORK AREA

WSP

NOTES GENERALES / GENERAL NOTES

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TITRE / TITLE	No.
MODIFICATIONS & ADDITIONS AT THE CONTAINERS	65-163-275-204
LIGHTING	65-116-285-201
GROUNDING LAYOUT	65-116-275-301
EQUIPMENT LAYOUT	65-116-275-302

AGNICO EAGLE

0	2017-07-11	ISSUED FOR CONSTRUCTION	F.M.S.	L.S.

REVISIONS

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

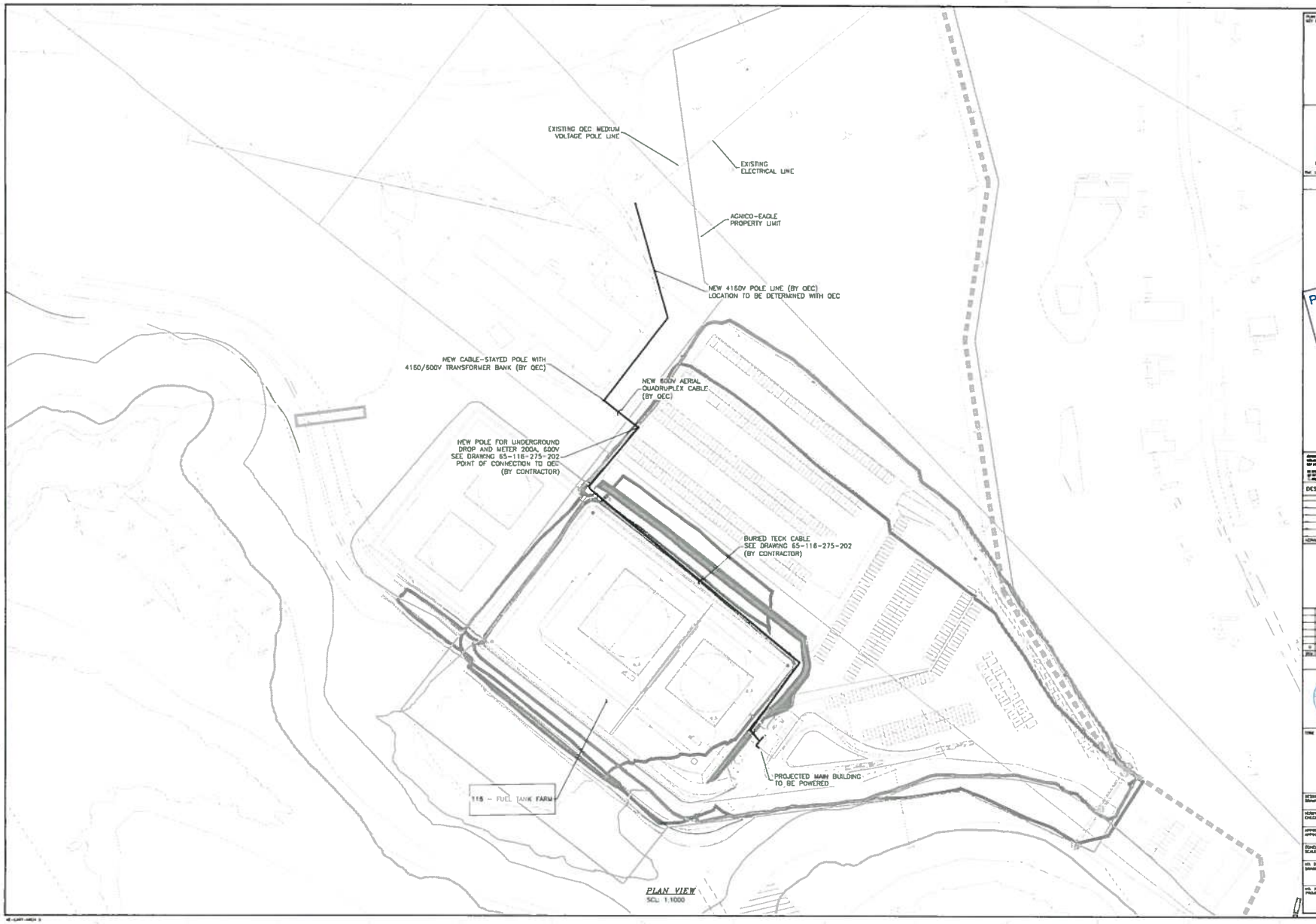
		DATE
DESSINE PAR / DRAWN BY	REMI HENAULT, Tech.	2016-06-22
VERIFIE PAR / CHECKED BY	REMI HENAULT, Tech.	2016-06-22
APPROUVE PAR / APPROVED BY	LUC SENECAL, P.Eng.	2017-07-11
ECHELLE / SCALE	INDICATED	2016-02-02
NO. DESSIN / DRAWING NO.	65-116-275-204	
NO. PROJET / PROJECT NO.	6515	REVISION 0

POUR CONSTRUCTION
FOR CONSTRUCTION
DATE: 2017-07-11

FILE NO. 65-116-275-204_R0.dwg

NO. DESSIN DRAWING NO. 65-116-275-206_R0

FORMAT ARCH D



WSP

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NOTES GÉNÉRALES / GENERAL NOTES

POUR CONSTRUCTION
FOR CONSTRUCTION
DATE : 2017-07-11

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TYPE / TITLE	# DWG
AERIAL LINE CONNECTION	65-116-275-206

AGNICO EAGLE

NO	DATE	DESCRIPTION	PAR/BY	APP.
0	2017-07-11	ISSUED FOR CONSTRUCTION	F.p.d.	L.S.

REVISIONS

TITRE / TITLE
AGNICO EAGLE – MEADOWBANK DIVISION
116 – FUEL TANK FARM
275 – POWER ELECTRICAL
AERIAL LINE CONNECTION
PLAN VIEW

DESSINÉ PAR / DRAWN BY	BRYAN FILDES, Tech.	2018-08-11
VÉRIFIÉ PAR / CHECKED BY	JONATHAN CLOUTIER, P.Eng.	2018-08-11
APPROUVÉ PAR / APPROVED BY	LUC SENÉCAL, P.Eng.	2017-07-11
ÉCHELLE / SCALE	INDICATED	DATE 2018-08-09

NO. DESSIN / DRAWING NO.
65-116-275-206

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

FILE NO. 65-116-275-206_R0.dwg

65-116-285-200_R0

ELECTRICAL LEGEND (DIV. 16)

LIGHTING FIXTURES

- CEILING MOUNTED LUMINAIRE OR ON CANOPY
- WALL MOUNTED LUMINAIRE
- EMERGENCY BATTERY WITH 2 HEADS LIGHT
- (A) INDICATES TYPE - SEE LIGHTING SCHEDULE; PDx: INDICATES ELECTRICAL PANEL; c: INDICATES CIRCUIT NUMBER; a: INDICATES CONTROL SWITCH

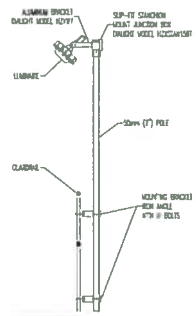
LIGHTING CONTROL

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

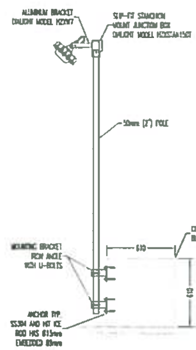
LUMINAIRES

TYPE	MANUFACTURER	CATALOGUE NUMBER	MOUNTING TYPE	HEIGHT	INPUT POWER (W)	LAMP	COLOR	VOLTAGE	DESCRIPTION
L1	DIALIGHT	[illegible]	SURF	NO.	[illegible]	LED	5000K	120	OUTDOOR PENDANT AREA LIGHT C/W ACCESSORIES
[illegible]	LUMACELL	[illegible]	SURF	2250mm	[illegible]	LED	5000K	120	EMERGENCY BATTERY UNITS COMBINE WITH 2 HEADS LIGHT
(photocell)	PRECISION MULTI CONTROLS	ST-1SP	SURF	N.C.S.	-	-	-	24	ADJUSTABLE PHOTOELECTRIC CELL

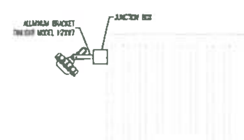
SURF = SURFACE; REC = RECESSED; PLUS = PLUSIEURS; LED = LIGHT EMITTING DIODE; NO. = NOTED ON PLAN; N.C.S. = [illegible]



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

WSP

NOTES GÉNÉRALES / GENERAL NOTES

POUR CONSTRUCTION
FOR CONSTRUCTION
DATE : 2017-07-11

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

AGNICO EAGLE

REV.	DATE	DESCRIPTION		
0	2017-07-11	ISSUED FOR CONSTRUCTION	F.B.S.	L.S.

REVISIONS

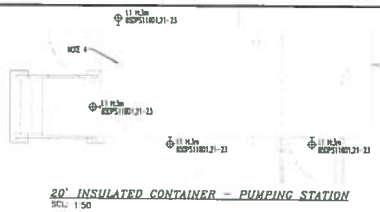
AGNICO EAGLE – MELIADINE DIVISION
116 – FUEL TANK FARM
285 – LIGHTING & SERVICES
LIGHTING
LEGEND, TABLE & INSTALLATION DETAILS

DESSINÉ PAR / DRAWN BY	BRIAN FILDES, Tech.	2016-06-22
VÉRIFIÉ PAR / CHECKED BY	RÉMI HÉNAULT, Tech.	2016-06-22
APPROUVÉ PAR / APPROVED BY	LUC SÉNÉCAL, P.Eng.	2017-07-11
ÉCHELLE / SCALE	INDICATED	2015-12-01
NO. DESSIN / DRAWING NO.	65-116-285-200	
NO. PROJET / PROJECT NO.	6515	REVISION 0, FEUILLE / SHT 1/1

FILE NO. 65-116-285-200_R0.dwg

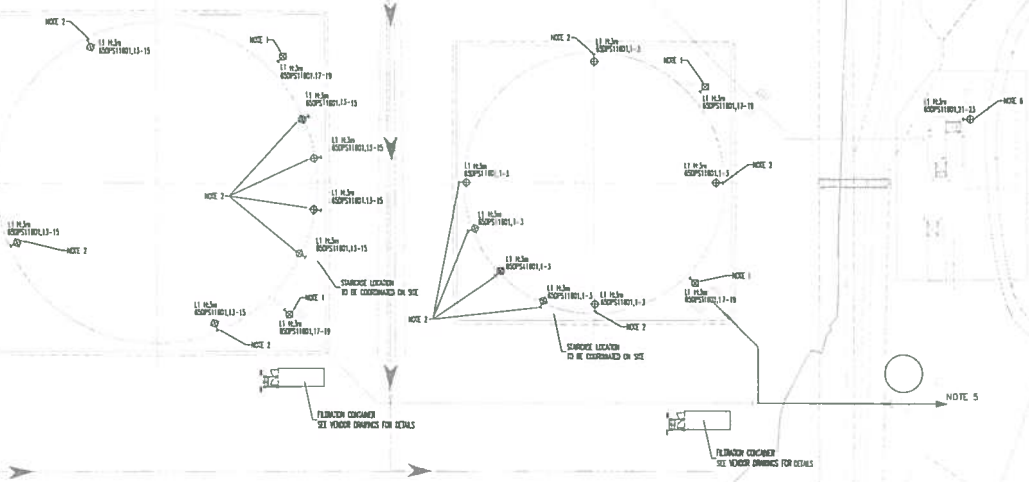
65-116-285-201_R0

20' INSULATED CONTAINER – ELECTRICAL ROOM
SCL: 1:50



20' INSULATED CONTAINER – PUMPING STATION
SCL: 1:50

POUR CONSTRUCTION
FOR CONSTRUCTION
AGNICO EAGLE
DATE : 2017-07-11



PLAN VIEW
SCL: 1:100

WSP

NOTES GENERALES / GENERAL NOTES

1. INSTALL THIS LUMINAIRE NEAR VALVES AND INSTALL THE LUMINAIRE'S POLE ON CONCRETE SUPPORT. REFER TO TYPICAL INSTALLATION ON PLAN 65-116-285-200.
2. INSTALL THE LUMINAIRE'S POLE ON THE GUARDRAIL. REFER TO TYPICAL INSTALLATION ON PLAN 65-116-285-200.
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 65-116-275-202.
5. INSTALL LIGHTING FIXTURE AT THE SUPPLY LINE TERMINAL 3C12AWG TECK TO LIGHTING FIXTURE, L1 TYPE ON POLE (SEE TYPICAL INSTALLATION) AT THE SUPPLY LINE TERMINAL, CIRCUIT : 65DPS11601,3
6. INSTALL LUMINAIRE ON CONCRETE CLOSE TO THE LOADING ARM (50 LUX IS REQUIRED AT THE CONNECTION POINT).

DESSINS DE RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
LIGHTING PLAN VIEW	65-163-285-201
LEGEND, TABLE & INSTALLATION DETAILS	65-116-285-200
EQUIPMENT LAYOUT, DETAILS AND PANEL	65-116-275-202

AGNICO EAGLE

REVISIONS

#	DATE	DESCRIPTION	PAR	APP
0	2017-07-11	ISSUED FOR CONSTRUCTION	A.B.S.	L.S.

TITRE / TITLE
AGNICO EAGLE – MEADOWE DIVISION
116 – FUEL TANK FARM
285 – LIGHTING & SERVICES
LIGHTING
PLAN VIEW

DESSINÉ PAR / DRAWN BY	BRIAN FILDES, Tech.	2016-06-22
VÉRIFIÉ PAR / CHECKED BY	PIERRE HENAULT, Tech.	2016-06-22
APPROUVÉ PAR / APPROVED BY	LUC SENÉCAL, P.Eng.	2017-07-11
ÉCHELLE / SCALE	INDICATED	DATE 2016-02-11

NO. DESSIN / DRAWING NO. 65-116-285-201

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

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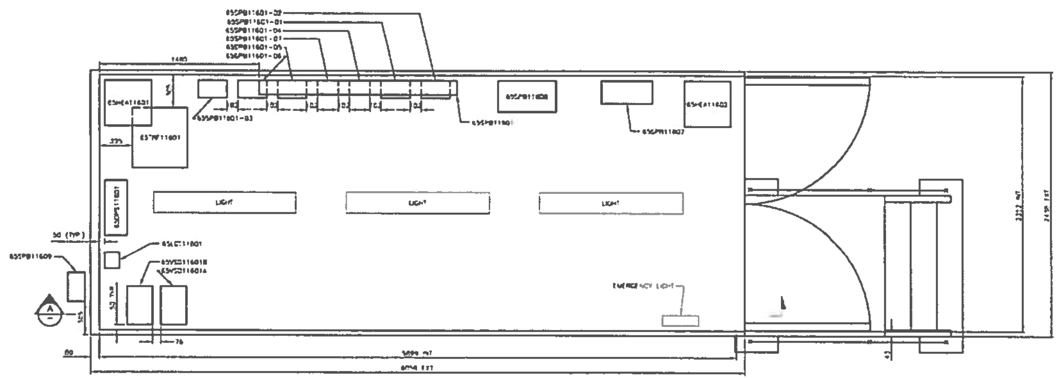
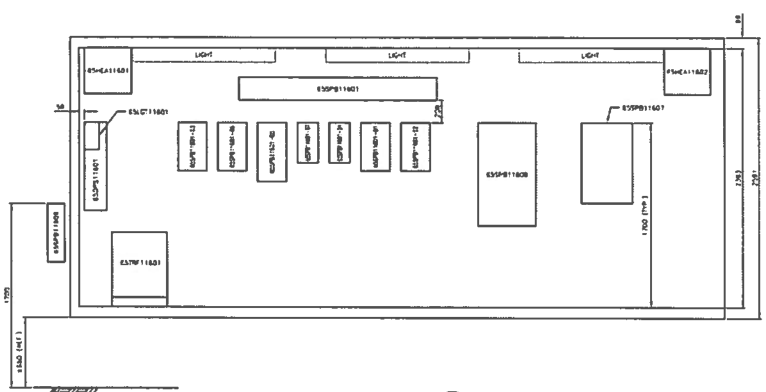
FILE NO. 65-116-285-201_R0.dwg

65-ULT-116-EL-002



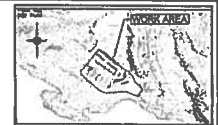
PLAN VIEW 1
SCALE: 1:20
RANKIN INLET ELECTRICAL ROOM
ELECTRICAL EQUIPMENT LAYOUT



ELEVATION VIEW A
SCALE: 1:20
RANKIN INLET ELECTRICAL ROOM
ELECTRICAL EQUIPMENT LAYOUT

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature ________
Date SEP 2 1 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
L3627
D CARRIER
LICENSEE
NT/NU
SEP 2 1 2017



NOTES GENERALES / GENERAL NOTES

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

ISSUED FOR CONSTRUCTION

DESSINS EN REFERENCE / REFERENCE DRAWINGS

AGNICO EAGLE

REVISIONS

ultragen

591760

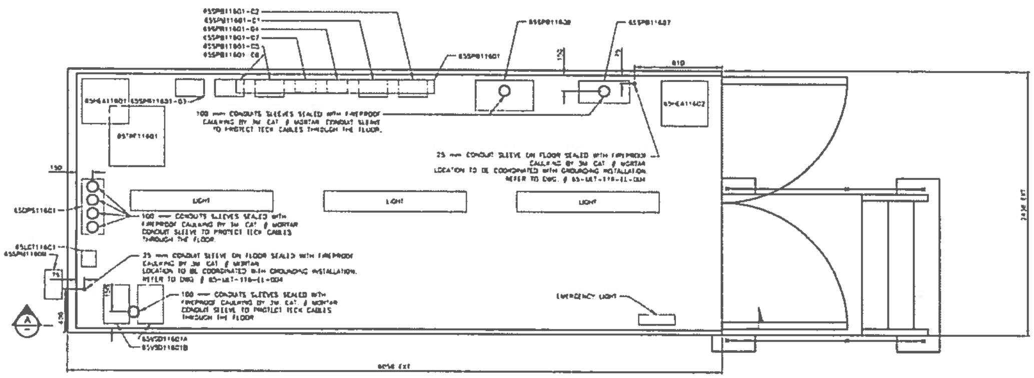
AGNICO EAGLE — MELIADINE DIVISION
116 — FUEL TANK FARM
FUEL DISTRIBUTION
RANKIN INLET ELECTRICAL ROOM
ELECTRICAL EQUIPMENT LAYOUT

DESSINE PAR / DRAWN BY	REDHI SHRESTHA	2017-05-04
VERIFIE PAR / CHECKED BY	MARC TREMBLAY	2017-05-04
APPROUVE PAR / APPROVED BY	DANIEL CARRIER	2017-05-04
ECHELLE / SCALE	1:20	2017-05-04

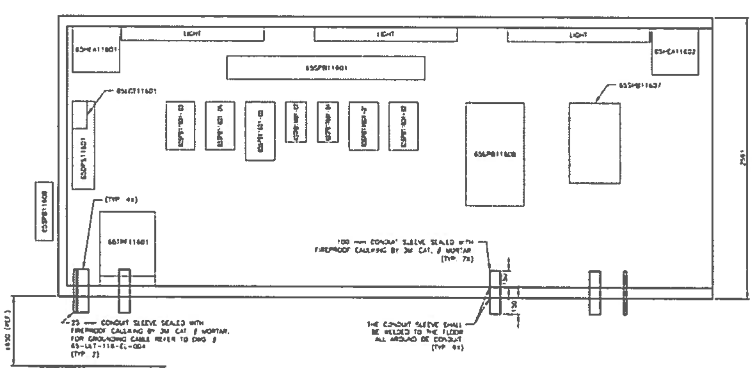
65-ULT-116-EL-002

6515 | 2 | 1/1

65-ULT-116-EL-003



PLAN VIEW (1)
SCALE: 1:20
RANKIN INLET ELECTRICAL ROOM
FLOOR OPENING



ELEVATION VIEW (A)
SCALE: 1:20
RANKIN INLET ELECTRICAL ROOM
FLOOR OPENING

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature ____________
Date SEP 1 1 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
L3677
D. CARRIER
LICENSEE
SEP 1 1 2017

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

AGNICO EAGLE

REVISIONS

ultragen

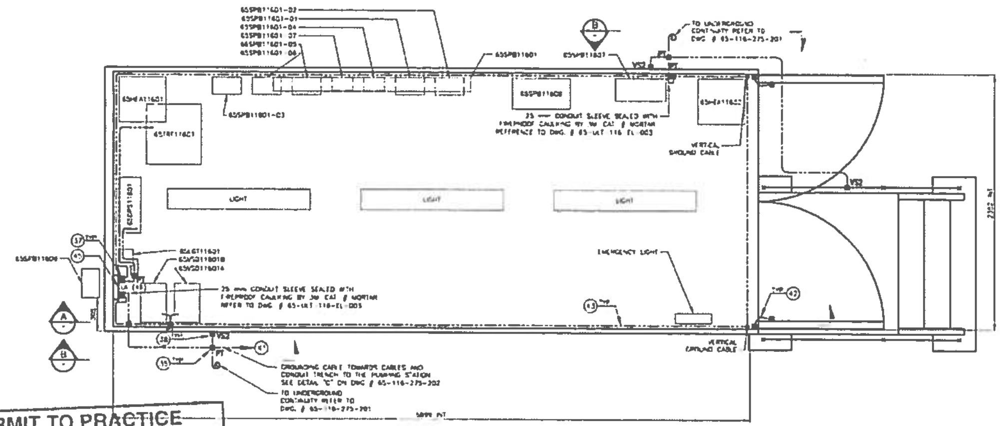
AGNICO EAGLE – MELIADINE DIVISION
116 – FUEL TANK FARM
FUEL DISTRIBUTION
RANKIN INLET ELECTRICAL ROOM
FLOOR OPENINGS

STEPHANE GIRARD 2017-05-04
DANIEL CARRIER 2017-05-04
1:20 2017-05-04

65-ULT-116-EL-003

6515 | 2 | 1/1

65-ULT-116-EL-004



PLAN VIEW (1)

SCALE: 1:20

RANKIN INLET ELECTRICAL ROOM GROUNDING

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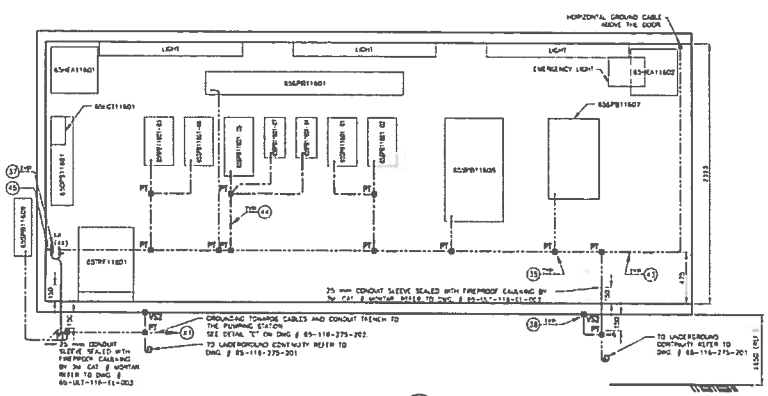
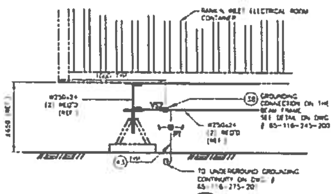
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 1 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists



ELEVATION VIEW (A)

SCALE: 1:20

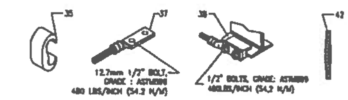
RANKIN INLET ELECTRICAL ROOM GROUNDING



ELEVATION (B)

SCALE: 1:20

RANKIN INLET ELECTRICAL ROOM GROUNDING



CONNECTOR TYPES – BURNDY AND THOMAS & BETTS

EQUIPMENT LIST

ARTICLE NUMBER	SYMBOL	DESCRIPTION	MANU.	TYPE	NOTE
35	PT	CONNECTION – PARALLEL HORIZONTAL CONDUCTORS COMPRESSED CONNECTOR FOR TWO PARALLEL HORIZONTAL CONDUCTIONS. 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 TWHC-42	EVERY BURNDY YGIB CONNECTIC (VS2) MUST BE COMBINED WITH A YGHA HEAVY DUTY TERMINAL (LA) AND 2 NUTS OF ADEQUATI 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 STANDARS B8 AND B33).	PHILLIPS CABLES		
44		COPPER GROUNDING CONDUCTOR. 2/0 AWG, BARE, FLEXIBLE, TINNED, 19 STRANDS (ASTM STANDARS 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	
		COPPER CONDUCTOR IDENTICAL CHARACTERISTICS FOR FUTURE CONNECTIONS. THE LENGTH TO RESERVE IS SPECIFIED ON THE SYMBOL	PHILLIPS CABLES		

NOTES GÉNÉRALES / GENERAL NOTES

REGISTERED PROFESSIONAL ENGINEER
L3627
D. CARRIER
LICENSEE
NT/NU
SEP 2 1 2017

ISSUED FOR CONSTRUCTION

AGNICO EAGLE

REVISIONS

ultragen

AGNICO EAGLE – MELIADINE DIVISION
116 – FUEL TANK FARM
FUEL DISTRIBUTION
RANKIN INLET ELECTRICAL ROOM
GROUNDING

REMI SHRESTHA 2017-05-04
STEPHANE DRAPEAU 2017-05-04
DANIEL CARRIER 2017-05-04
1:20 2017-05-04

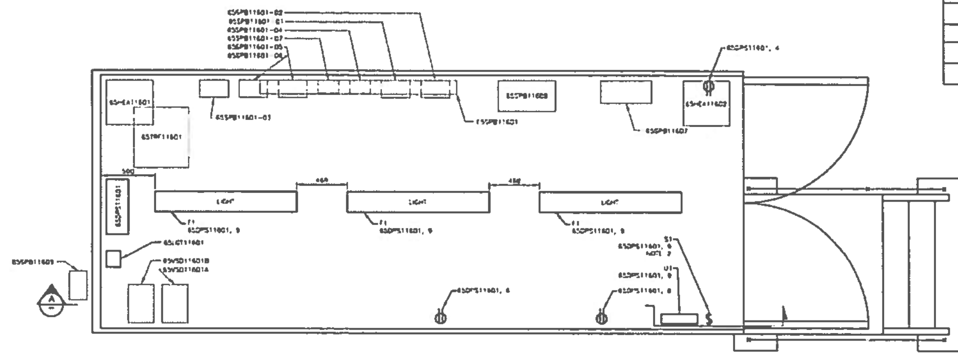
65-ULT-116-EL-004

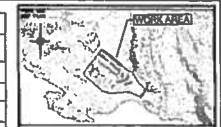
6515 2 1/1

65-ULT-116-EL-005

MATERIAL LIST

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
F1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
$	[illegible]	[illegible]	-	[illegible]	[illegible]

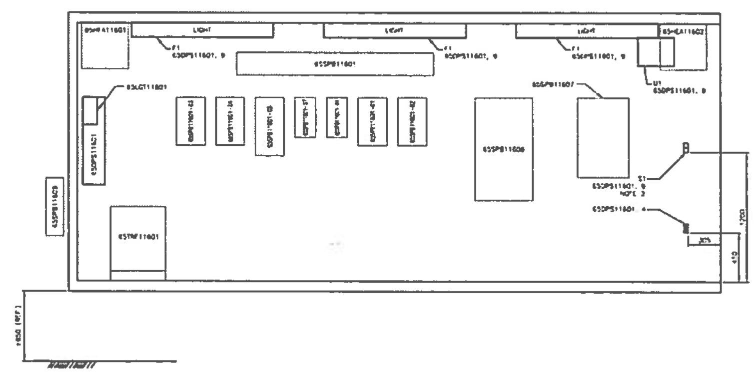




NOTES GENERALES / GENERAL NOTES

1. FOR OUTDOOR LIGHTING AND PHOTOCELL REFER TO WSP DRAWING #65-118-280-201.
2. SWITCH FOR LIGHTING TYPE F1.

PLAN VIEW (1)
SCALE: 1:20
RANKIN INLET ELECTRICAL ROOM
LIGHTING AND SERVICES



ELEVATION VIEW (A)
SCALE: 1:20
RANKIN INLET ELECTRICAL ROOM
LIGHTING AND SERVICES

ISSUED FOR CONSTRUCTION

DESSINS EN REFERENCE / REFERENCE DRAWINGS

AGNICO EAGLE

REVISIONS

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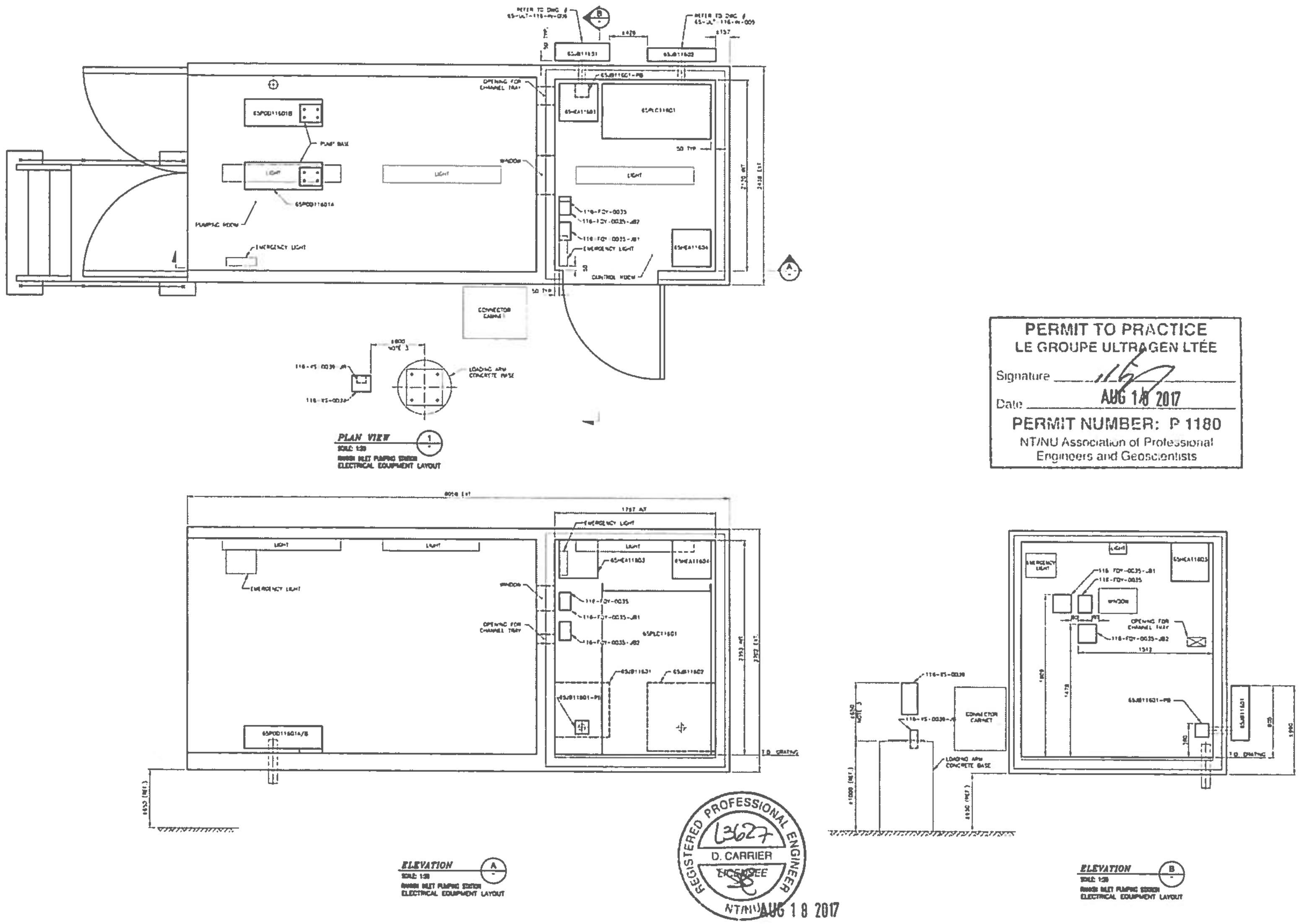
AGNICO EAGLE – MELIADINE DIVISION
116 – FUEL TANK FARM
FUEL DISTRIBUTION
RANKIN INLET ELECTRICAL ROOM
LIGHTING AND SERVICES

DRAWN BY	MARC TREMBLAY	2017-05-04
CHECKED BY	STEPHANE GRIMARD	2017-05-04
APPROVED BY	DANIEL CARRIER	2017-05-04
SCALE	1:20	2017-05-04
DRAWING NO.	65-ULT-116-EL-005	
PROJECT NO.	6515	2	1/1

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 1 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
L3627
D. CARRIER
LICENSEE
NT/NU
SEP 2 1 2017

65-ULT-116-EL-007



PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature ______
Date AUG 18 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
L3627
D. CARRIER
LICENSEE
NT/NU AUG 18 2017

WORK AREA

UPDATE AREA & TAG NUMBER

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.

AGNICO EAGLE

REVISIONS

ultragen — 581760

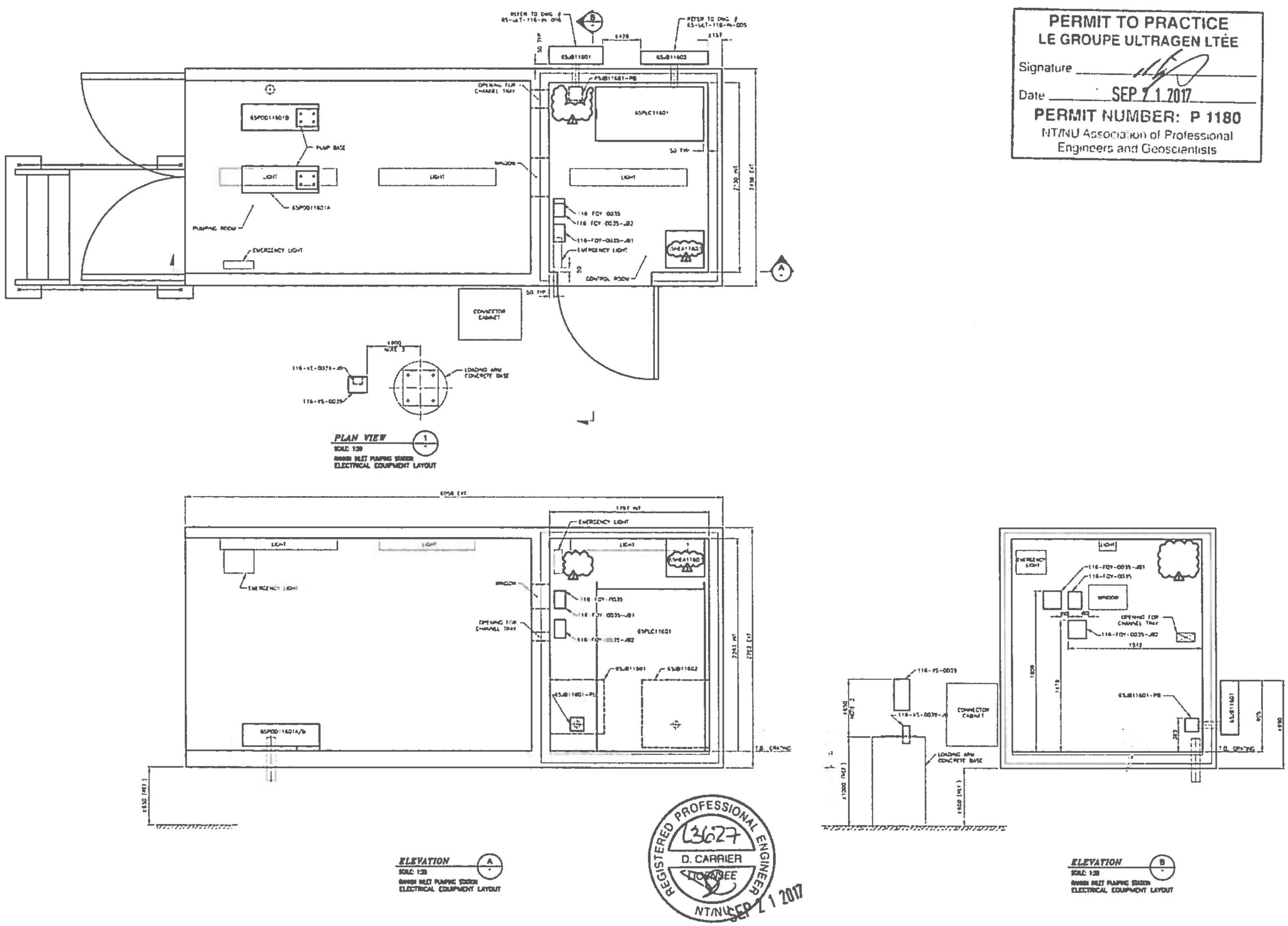
AGNICO EAGLE – MELIADINE DIVISION
116 – COMBUSTIBLES
FUEL DISTRIBUTION
RANKIN INLET PUMPING STATION
ELECTRICAL EQUIPMENT LAYOUT

DRAWN BY	[illegible] SHRESTHA	2017-08-15
CHECKED BY	STÉPHANE GRIMARD	2017-08-15
APPROVED BY	DANIEL CARRIER	2017-08-15
SCALE 1:20	DATE	2017-08-15

65-ULT-116-EL-007

PROJECT NO.	REVISION	SHEET
6515	2	1 / 1

65-ULT-116-EL-007



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

REGISTERED PROFESSIONAL ENGINEER
L3627
D. CARRIER
LICENSEE
NT/NU SEP 21 2017

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

AGNICO EAGLE

REVISIONS

ultragen
PROJECT NO. 201700

AGNICO EAGLE – MELIADINE DIVISION
116 – FUEL TANK FARM
FUEL DISTRIBUTION
RANKIN INLET PUMPING STATION
ELECTRICAL EQUIPMENT LAYOUT

DRAWN BY	RISHI SHRESTHA	2017-09-15
CHECKED BY	STÉPHANE GIRARD	2017-09-15
APPROVED BY	DANIEL CARRIER	2017-09-15
SCALE 1:30	DATE	2017-09-15

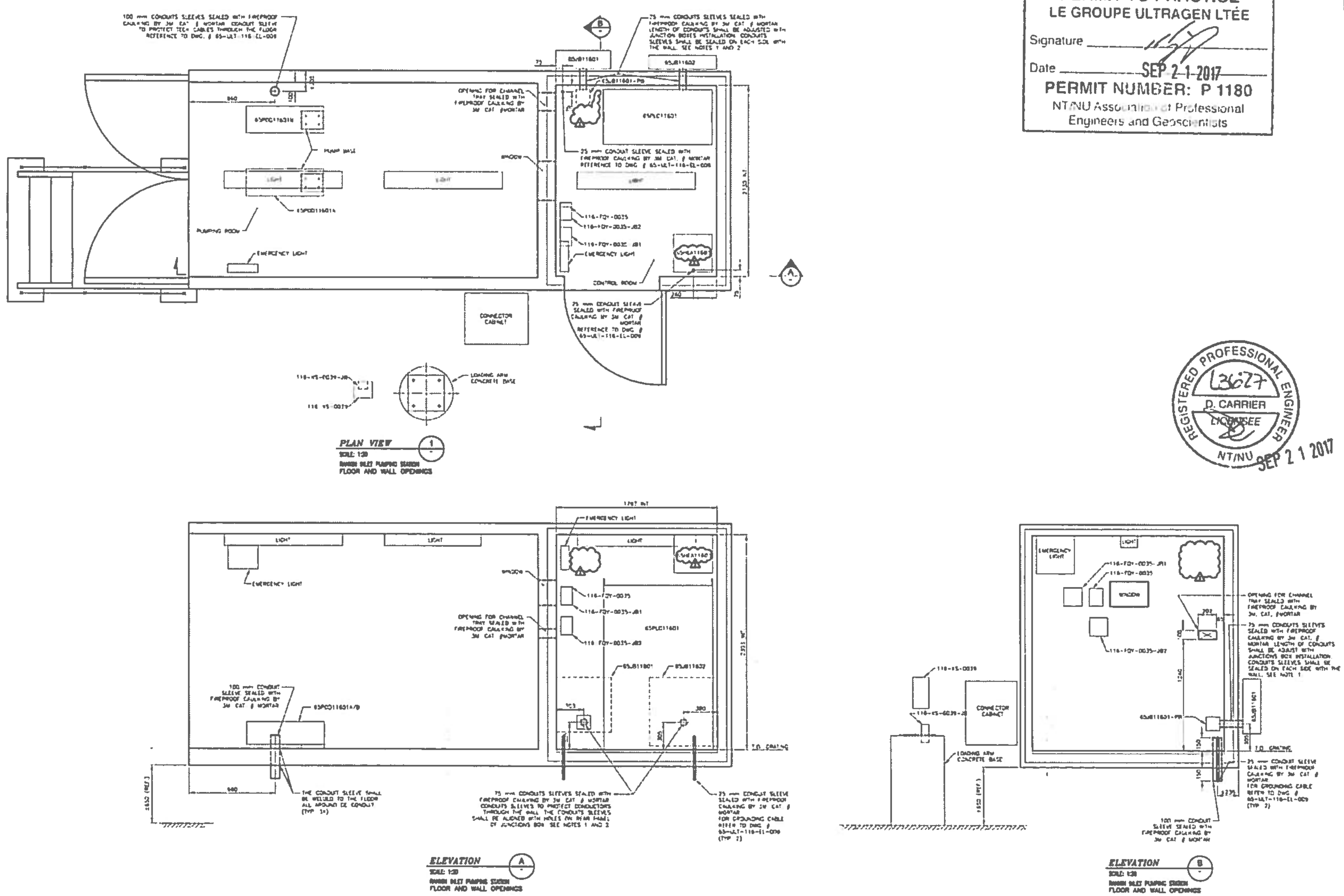
DRAWING NO. 65-ULT-116-EL-007

PROJECT NO.	REVISION	SHEET
6515	3	1/1

FILE NO.

65-ULT-116-EL-008

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature ____________
Date SEP 2 1 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists



REGISTERED PROFESSIONAL ENGINEER
L3627
D. CARRIER
LICENSEE
NT/NU
SEP 2 1 2017

NOTES GÉNÉRALES / GENERAL NOTES

1. PULL BOX 65JB11601-PB LINKED WITH CONDUIT SLEEVE TO JUNCTION BOX 65JB11601. THE CABLES INSIDE CONTROL ROOM END TO THE PULL BOX.
2. CABINET 65PLC11601 LINKED WITH CONDUIT SLEEVE TO JUNCTION BOX 65JB11602.
3. USE TIP AT EACH ENDS OF THE CONDUITS SLEEVES.

ISSUED FOR CONSTRUCTION
Ultragen DATE: SEPT 2017

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

AGNICO EAGLE

REVISIONS

ultragen
NO. PROJET / PROJECT NO. 391700

TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
116 – FUEL TANK FARM
FUEL DISTRIBUTION
RANKIN INLET PUMPING STATION
FLOOR AND WALL OPENINGS

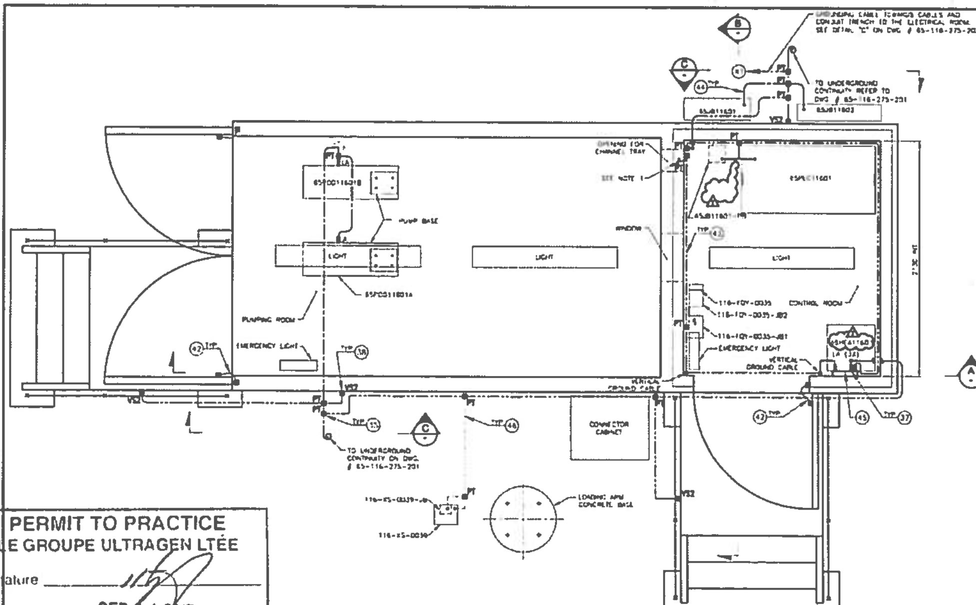
DESSINÉ PAR / DRAWN BY	NEHA SHRESTHA	2017-08-15
VÉRIFIÉ PAR / CHECKED BY	STÉPHANE GIRARD	2017-08-15
APPROUVÉ PAR / APPROVED BY	DANIEL CARRIER	2017-08-15
ÉCHELLE / SCALE	1:20	DATE 2017-08-15

NO. DESSIN / DRAWING NO. 65-ULT-116-EL-008

NO. PROJET / PROJECT NO. 6515 | RÉVISION 2 | FEUILLE / OF 1/1

FILE NO.

65-ULT-116-EL-009



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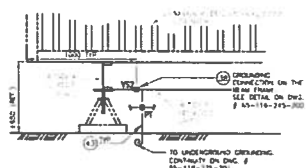
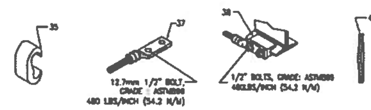
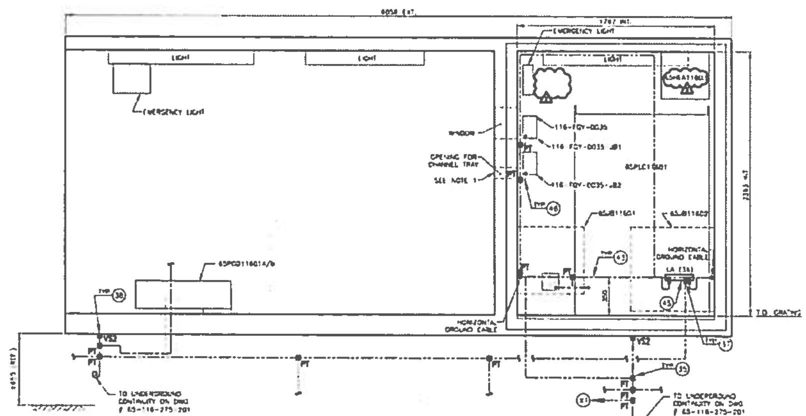
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 1 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

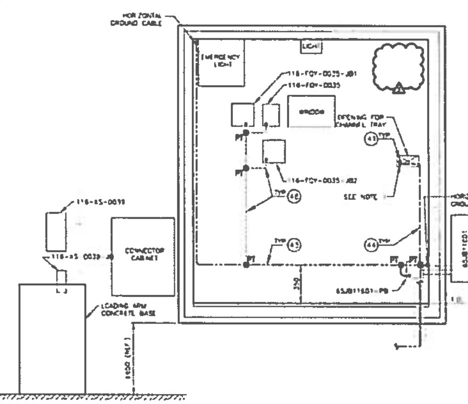
			EQUIPMENT LIST		
ARTICLE NUMBER	SYMBOL	DESCRIPTION	MANU.	TYPE	NOTE
36	PT	CONNECTION – PARALLEL HORIZONTAL CONDUCTORS. COMPRESSED CONNECTOR FOR TWO PARALLEL HORIZONTAL CONDUCTORS. CABLE SIZE: 2/0AWG, TAP CABLE SIZE: 2/0AWG. CABLE SIZE: 4/0AWG, TAP CABLE SIZE: 2/0AWG. CABLE SIZE: 4/0AWG, TAP CABLE SIZE: 4/0AWG	BURNDY	YGHC2C2C2 YGHC2C2C2 YGHC2C2C2	
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	YGHA29-2N YGHA29-2N	
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	YGIBF29-330-2N YGIBE29-400-2N TWNC-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		
		COPPER CONDUCTOR. IDENTICAL CHARACTERISTICS FOR FUTURE CONNECTIONS. THE LENGTH TO RESERVE IS SPECIFIED ON THE SYMBOL.	PHILLIPS CABLES		

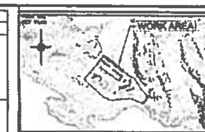




CONNECTOR TYPES – BURNDY AND THOMAS & BETTS







NOTES GÉNÉRALES / 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 36). CONNECT CABLE AT EACH SECTION OF CHANNEL TRAY WITH CONNECTION TYPE "GTC24P" (ARTICLE NUMBER 41). FOR CHANNEL TRAY INSTALLATION REFER TO DRAWING #65-ULT-116-EL-011.

REGISTERED PROFESSIONAL ENGINEER
13627
D CARRIER
LICENSEE
NT/NU
SEP 2 1 2017

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

AGNICO EAGLE

REVISIONS

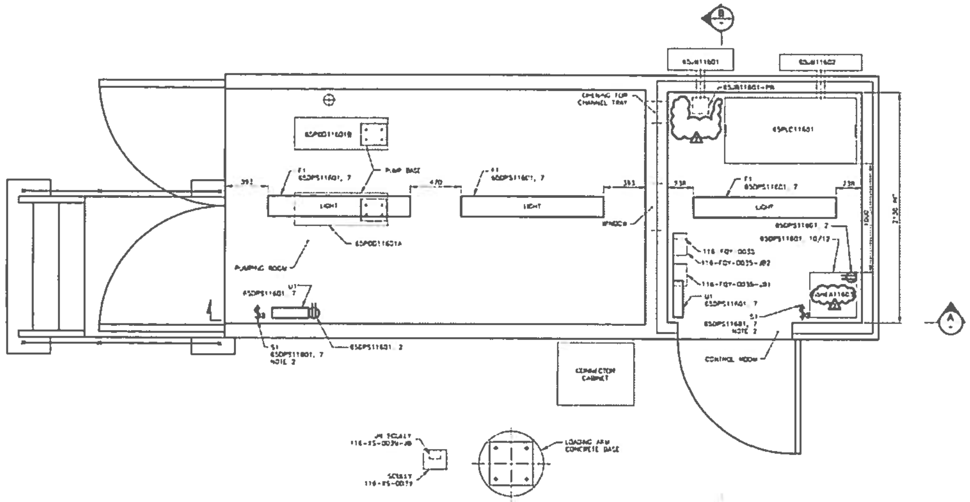
ultragen
PROJECT NO. 581700

AGNICO EAGLE – MELIADINE DIVISION
116 – FUEL TANK FARM
FUEL DISTRIBUTION
RANKIN INLET PUMPING STATION
GROUNDING

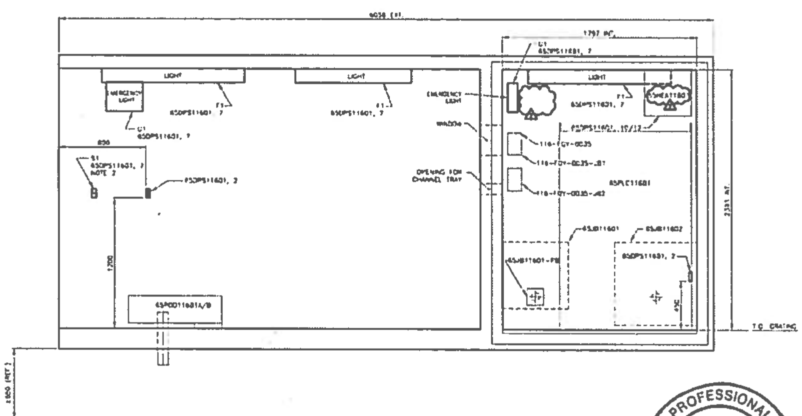
DRAWN BY	REGIS SHRESTHA	2017-05-15
CHECKED BY	STÉPHANE GIRARD	2017-05-15
APPROVED BY	DANIEL CARRIER	2017-05-15
SCALE 1:20	DATE	2017-05-15
DRAWING NO.	65-ULT-116-EL-009	
PROJECT NO. 6515	2	1/1

REF NO.

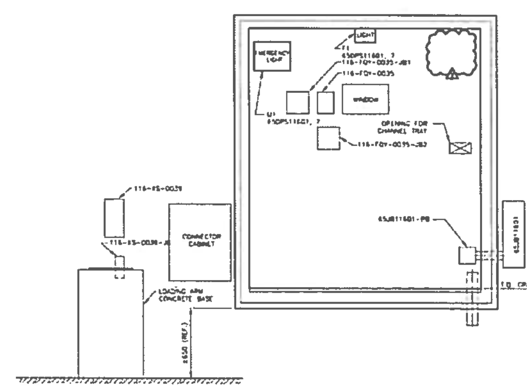
65-ULT-116-EL-010



PLAN VIEW (1)
SCALE: 1:20
RANKIN INLET PUMPING STATION
LIGHTING AND SERVICES



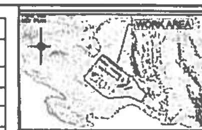
ELEVATION (A)
SCALE: 1:20
RANKIN INLET PUMPING STATION
ELECTRICAL EQUIPMENT LAYOUT
LIGHTING AND SERVICES



ELEVATION (B)
SCALE: 1:20
RANKIN INLET PUMPING STATION
LIGHTING AND SERVICES

MATERIAL LIST

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
F1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
S_3	[illegible]	[illegible]	-	[illegible]	[illegible]



NOTES GENERALES / GENERAL NOTES

1. FOR OUTDOOR LIGHTING AND PHOTOCELL REFER TO WSP DRAWING (65-116-285-201.
2. SWITCH FOR LIGHTING TYPE F1.

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature [signature]
Date SEP 2 1 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

ISSUED FOR CONSTRUCTION
Ultragen DATE: SEPT 2017

REGISTERED PROFESSIONAL ENGINEER
L3627
D. CARRIER
LICENSEE
NT/NU
SEP 2 1 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

AGNICO EAGLE

REVISIONS

ultragen
NO. PROJET / PROJECT NO. 501700

TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
116 – FUEL TANK FARM
FUEL DISTRIBUTION
RANKIN INLET PUMPING STATION
LIGHTING AND SERVICES

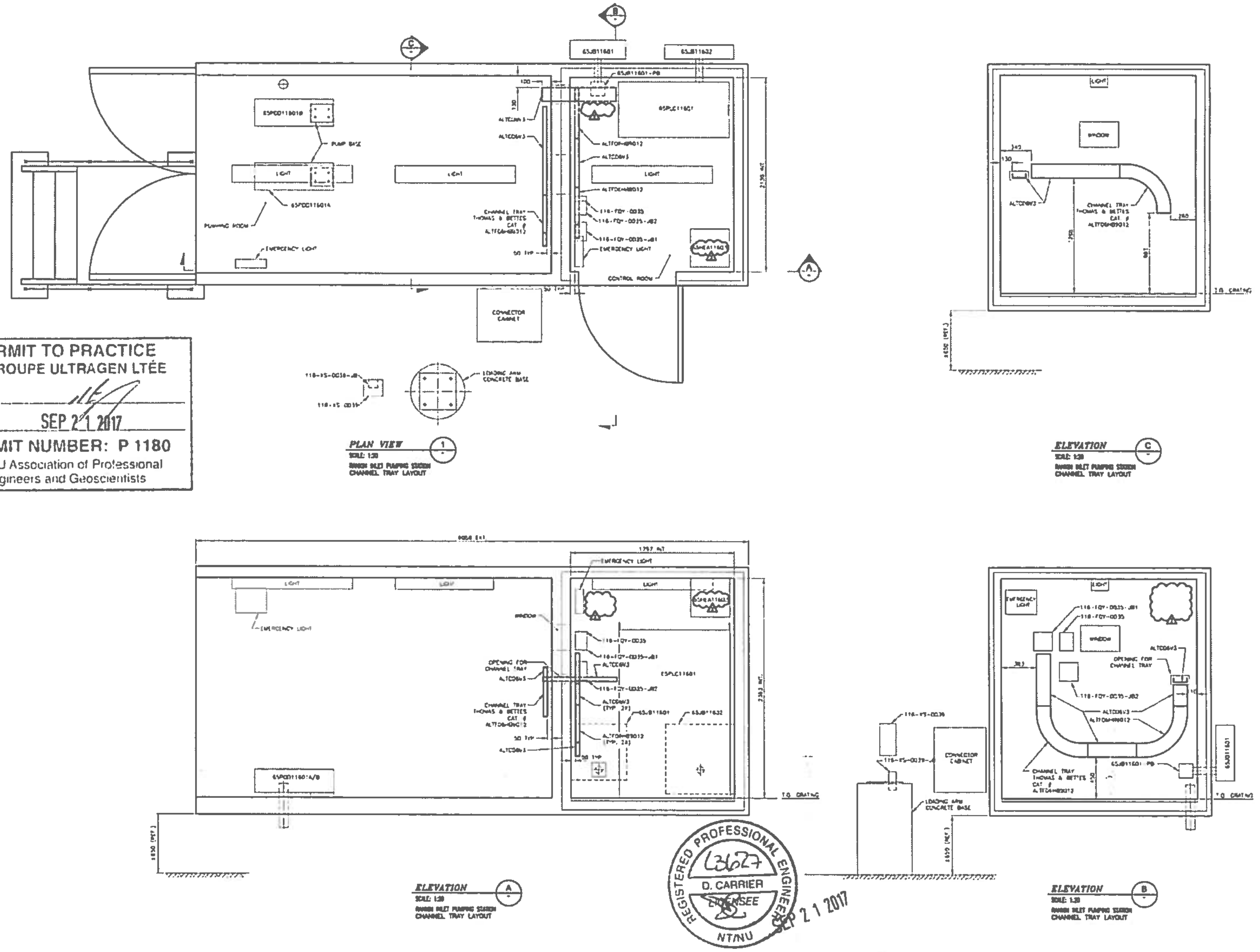
DESSINE PAR / DRAWN BY	RISHI SHRESTHA	2017-08-15
VERIFIE PAR / CHECKED BY	STÉPHANE GIRARD	2017-08-15
APPROUVE PAR / APPROVED BY	DANIEL CARRIER	2017-08-15
ECHELLE / SCALE 1:20	DATE	2017-08-15

NO. DESSIN / DRAWING NO. 65-ULT-116-EL-010

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

FILE NO.

65-ULT-116-EL-011



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

REGISTERED PROFESSIONAL ENGINEER
L3627
D. CARRIER
LICENSEE
NT/NU
SEP 21 2017

NOTES GÉNÉRALES / GENERAL NOTES

1. ALL CHANNEL TRAY ITEMS ARE IDENTIFIED WITH THOMAS & BETTS CATALOG NUMBER.
2. FOR CHANNEL TRAY GROUNDING REFER TO DRAWING #65-ULT-116-EL-008.
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 RÉFÉRENCE / REFERENCE DRAWINGS

AGNICO EAGLE

REVISIONS

ultragen

AGNICO EAGLE – MELIADINE DIVISION
116 – FUEL TANK FARM
FUEL DISTRIBUTION
RANKIN INLET PUMPING STATION
CHANNEL TRAY LAYOUT

DESIGNED BY		2017-08-16
CHECKED BY	STEPHANE GIRARD	2017-08-16
APPROVED BY	DANIEL CARRIER	2017-08-15
SCALE 1:20	DATE	2017-08-15

65-ULT-116-EL-011

6515 | 2 | 1/1

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 1 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 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 #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	30		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

REGISTERED PROFESSIONAL ENGINEER
13607
D CARRIER
LICENSEE
NT/NU
SEP 2 1 2017

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

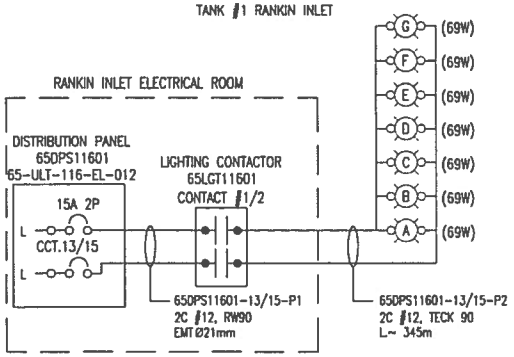
REV	DATE	DESCRIPTION	PAR	VER	APP
2	2017-09-20	ISSUED FOR CONSTRUCTION	S. GRIMARD	D.CARRIER	D.CARRIER
1	2017-08-04	UPDATE AREA & TAG NUMBER	N. SALDAN	D CARRIER	D CARRIER
0	2017-07-12	ISSUED FOR CONSTRUCTION	SG 111891	DC 40308	DC 40308
PC	2017-06-13	ISSUED FOR REVIEW	SG 111891	DC 40308	DC 40308
PB	2017-05-11	ISSUED FOR REVIEW	MT 5029941	SG 111891	DC 40308
PA	2017-05-08	ISSUED FOR REVIEW	MT 5029941	SG 111891	DC 40308

AGNICO EAGLE
NUQSANA PROJECT MINING
ultragen
116 - FUEL TANK FARM
RANKIN ELECTRICAL ROOM
PANEL SCHEDULE 65DPS11601

UNITE	-	DATE	2017-05-08
DESS	MT 5029941		65-ULT-116-EL-012

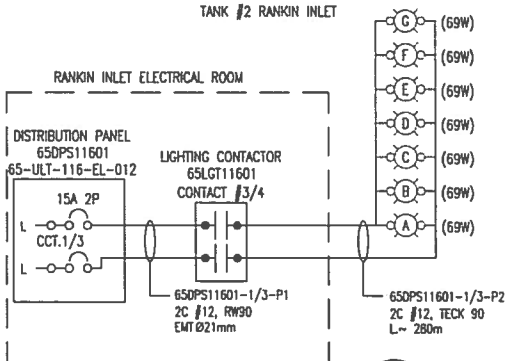
REV 2

TANK #1 RANKIN INLET

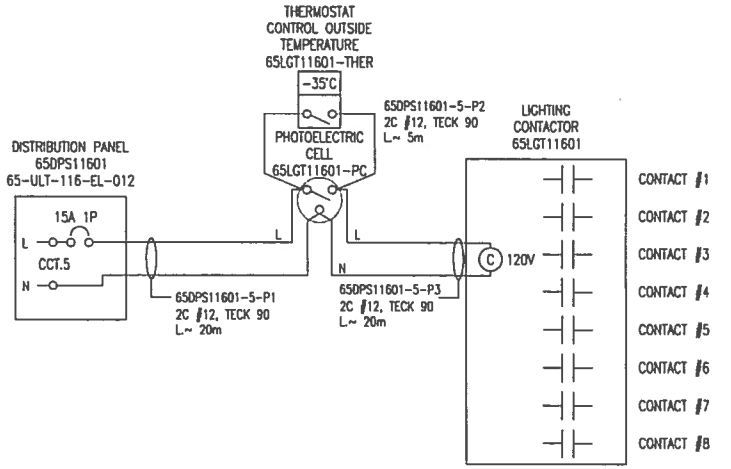


WIRING DIAGRAM 1
INTERCONNECTION

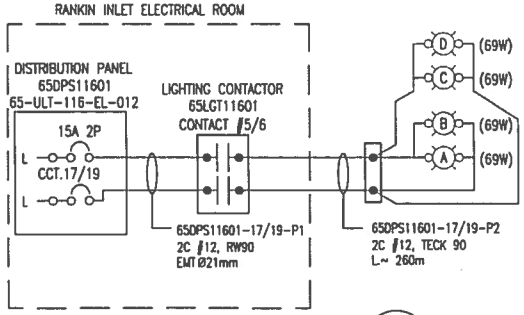
TANK #2 RANKIN INLET



WIRING DIAGRAM 2
INTERCONNECTION

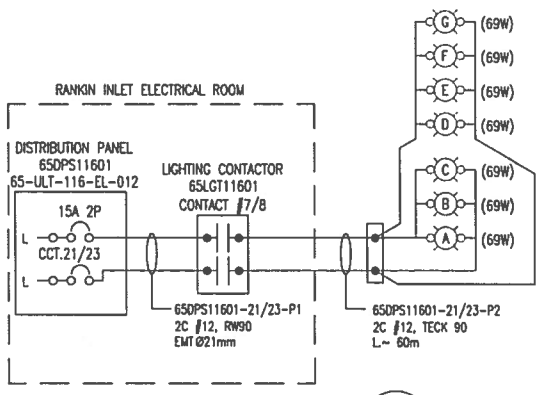


TANK #1 AND 2 GROUND FLOOR ON CATWALKS RANKIN INLET



WIRING DIAGRAM 3
INTERCONNECTION

OUTSIDE ELECTRICAL ROOM AND PUMPING STATION



WIRING DIAGRAM 4
INTERCONNECTION

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).

No.	DATE	REVISION	BY / APP.
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.

CLIENT: AGNICO EAGLE

NUQSANA PROJECT MINING

ultragen

CONSULTANT PROJECT NO. 591700

DESIGNED BY: MARC TREMBLAY	DATE: 2017-09-08
DRAWN BY: MARC TREMBLAY	DATE: 2017-05-08
CHECKED BY: STEPHANE GIRARD	DATE: 2017-05-08
APPROVED BY: DANIEL CARRIER	DATE: 2017-05-08
SCALE: NONE	

PROJECT: AGNICO EAGLE – MEADOWBANK DIVISION
116 – FUEL TANK FARM (3)

TITLE: FUEL DISTRIBUTION
RANKIN INLET
LIGHTING DIAGRAM

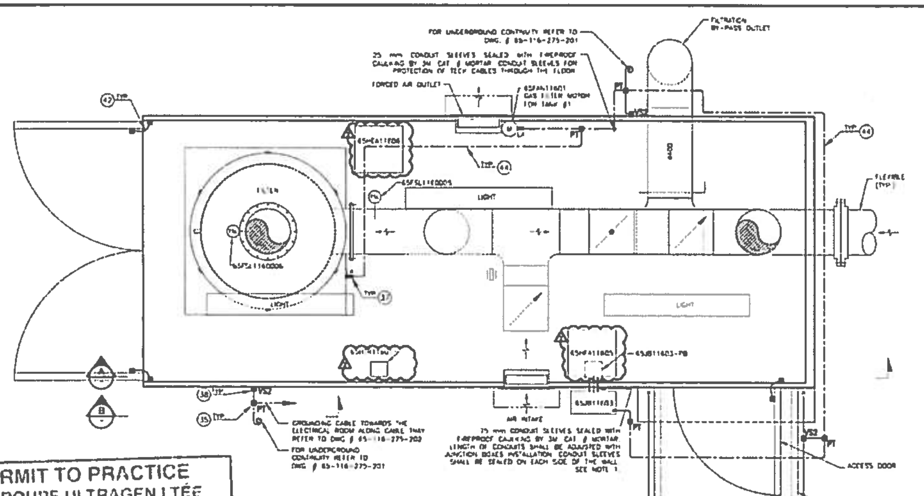
PROJECT No.	DRAWING NO.	REV.
6515	65-ULT-116-EL-013	3

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

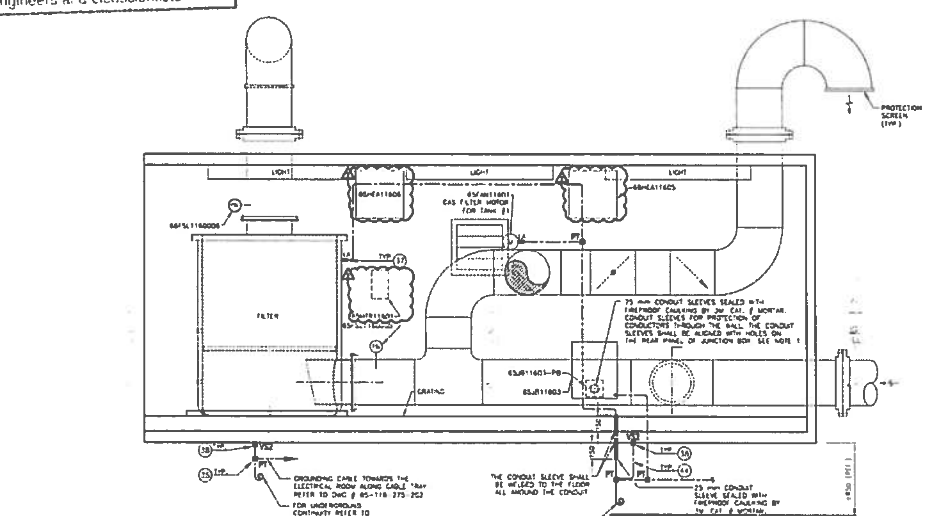
REGISTERED PROFESSIONAL ENGINEER 13627 D. CARRIER LICENSEE NT/NU SEP 21 2017

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

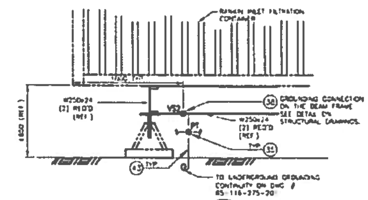
65-ULT-116-EL-014



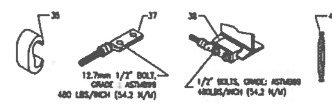
PLAN VIEW (1)
SCALE: 1:20
RANKIN INLET FILTRATION CONTAINER TANK #1
FLOOR OPENING AND GROUNDING



ELEVATION VIEW (A)
SCALE: 1:20
RANKIN INLET FILTRATION CONTAINER TANK #1
FLOOR OPENING AND GROUNDING

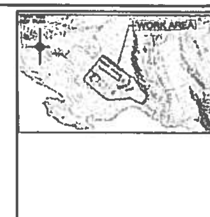


ELEVATION (B)
SCALE: 1:20
RANKIN INLET FILTRATION CONTAINER TANK #1
FLOOR OPENING AND GROUNDING



CONNECTOR TYPES - BURNDY AND THOMAS & BETTS

EQUIPMENT LIST					
ARTICLE NUMBER	SYMBOL	DESCRIPTION	MANU.	TYPE	NOTE
36	PT	CONNECTION - PARALLEL HORIZONTAL CONDUCTORS COMPRESSED CONNECTOR FOR TWO PARALLEL HORIZONTAL CONDUCTIONS. 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	YGHA28-2N YGHA28-2N	
38	VS2	CONNECTION - STRUCTURE CONNECTION USED FOR VERTICAL STEEL SURFACE (STRUCTURAL BEAMS) CABLE SIZE: 4/0AWG COMPLETE WITH HARDWARE	BURNDY	YGIBW28-338-2N, 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.
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		
46		COPPER GROUNDING CONDUCTOR. 6 AWG, GREEN INSULATION, FLEXIBLE, 7 STRANDS (ASTM STANDARDS B8 AND B33).	PHILLIPS CABLES		
		COPPER CONDUCTOR. IDENTICAL CHARACTERISTICS FOR FUTURE CONNECTIONS. THE LENGTH TO RESERVE IS SPECIFIED ON THE SYMBOL.	PHILLIPS CABLES		



NOTES GENERALES / GENERAL NOTES

1. PULL BOX 65JB11603-PB LINKED WITH CONDUIT SLEEVE TO JUNCTION BOX 65JB11603. THE CABLES INSIDE FILTRATION CONTAINER END AT THE PULL BOX.
2. USE TIP AT EACH END OF THE CONDUIT SLEEVES.
3. 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 36). CONNECT CABLE AT EACH SECTION OF CHANNEL TRAY WITH CONNECTION TYPE "GTC24P" (ARTICLE NUMBER 41).

PROFESSIONAL ENGINEER — L3627 — D. CARRIER — SEP 2 1 2017

ISSUED FOR CONSTRUCTION

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 1 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

AGNICO EAGLE

ultragen

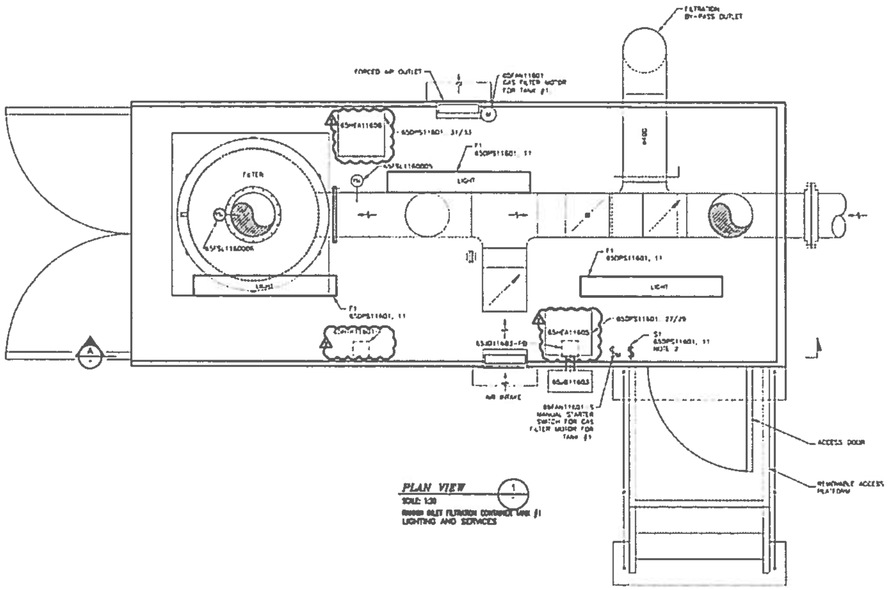
AGNICO EAGLE - MELIADINE DIVISION
116 - FUEL TANK FARM
FUEL DISTRIBUTION
RANKIN INLET FILTRATION CONTAINER TANK #1
FLOOR OPENINGS AND GROUNDING

STEPHANE CRAMARD — 2017-06-13
STEPHANE CRAMARD — 2017-06-13
DANIEL CARRIER — 2017-06-13
1:20 — 2017-06-13

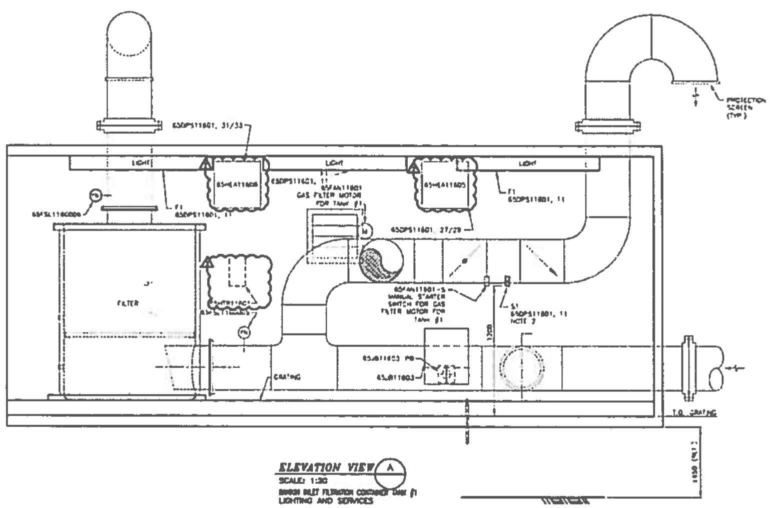
65-ULT-116-EL-014

6515 — 2 — 1/1

65-ULT-116-EL-015



PLAN VIEW (1)
SCALE: 1:30
RANKIN INLET FILTRATION CONTAINER TANK #1 LIGHTING AND SERVICES



ELEVATION VIEW (A)
SCALE: 1:30
RANKIN INLET FILTRATION CONTAINER TANK #1 LIGHTING AND SERVICES

MATERIAL LIST

TYPE					
F1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
$	[illegible]	[illegible]	-	[illegible]	[illegible]

NOTES GENERALES / GENERAL NOTES

1. FOR OUTDOOR LIGHTING AND PHOTOCELL REFER TO WSP DRAWING #65-116-285-301.
2. SWITCH FOR LIGHTING TYPE F1.

ISSUED FOR CONSTRUCTION
Ultragen DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

AGNICO EAGLE

REVISIONS

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 1 2017
PERMIT NUMBER: P 1130
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
L3627
D. CARRIER
LICENSEE
NT/NU
SEP 2 1 2017

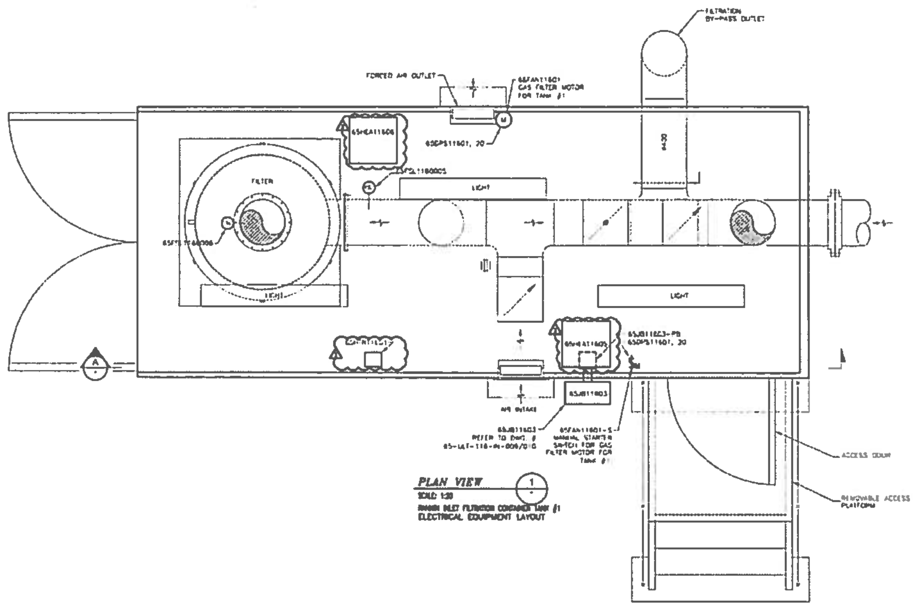
Ultragen

AGNICO EAGLE – MELIADINE DIVISION
116 – FUEL TANK FARM
FUEL DISTRIBUTION
RANKIN INLET FILTRATION CONTAINER TANK #1
LIGHTING AND SERVICES

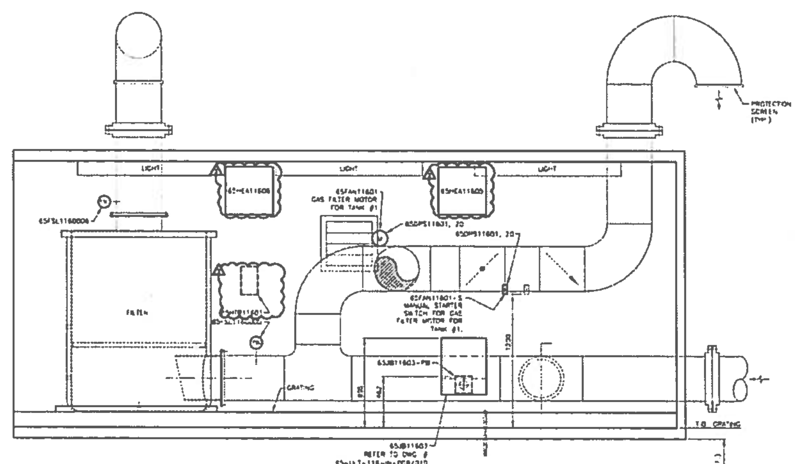
STEPHANE GIRARD		2017-08-15
STEPHANE GIRARD		2017-08-15
DANIEL CARRIER		2017-08-15
1:30		2017-08-15

65-ULT-116-EL-015
6515 | 2 | 1/1

65-ULT-116-EL-016



PLAN VIEW (1)
SCALE: 1:20
RANKIN INLET FILTRATION CONTAINER TANK #1
ELECTRICAL EQUIPMENT LAYOUT



ELEVATION VIEW (A)
SCALE: 1:20
RANKIN INLET FILTRATION CONTAINER TANK #1
ELECTRICAL EQUIPMENT LAYOUT

MATERIAL LIST

NOTES GENERALES / GENERAL NOTES

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

ISSUED FOR CONSTRUCTION

DESSINS EN REFERENCE / REFERENCE DRAWINGS

AGNICO EAGLE

REVISIONS

ultragen

391700

AGNICO EAGLE – MELIADINE DIVISION
116 – FUEL TANK FARM
FUEL DISTRIBUTION
RANKIN INLET FILTRATION CONTAINER TANK #1
ELECTRICAL EQUIPMENT LAYOUT

STEPHANE CRMARD 2017-08-13
STEPHANE CRMARD 2017-08-13
DANIEL CARRIER 2017-08-13
1:20 2017-08-13

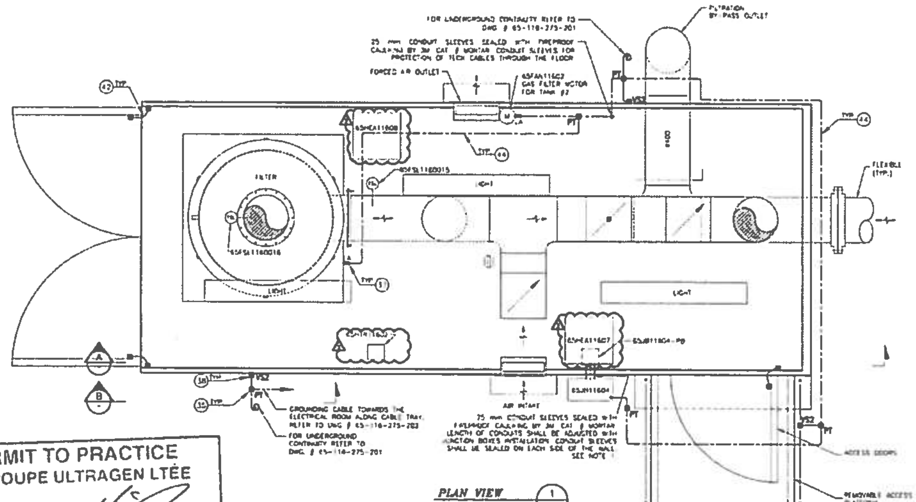
65-ULT-116-EL-016

6515 | 2 | 1/1

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 1 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

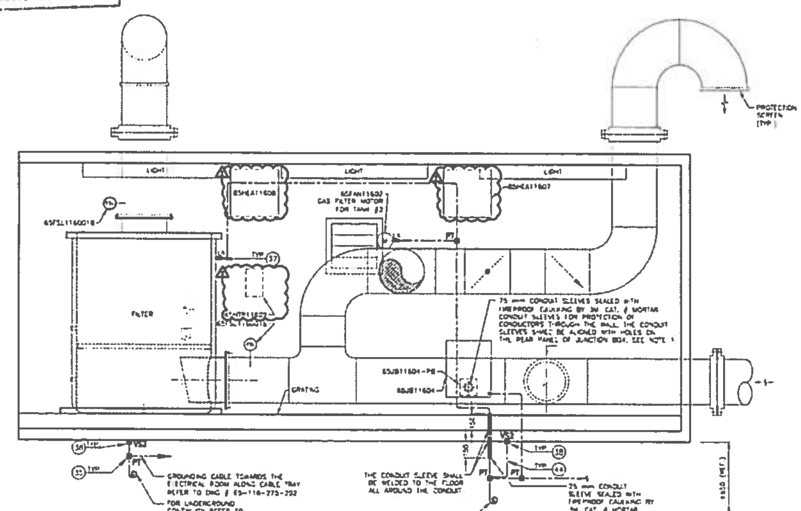
REGISTERED PROFESSIONAL ENGINEER
L3627
D. CARRIER
LICENSEE
NT/NU
SEP 2 1 2017

65-ULT-116-EL-017

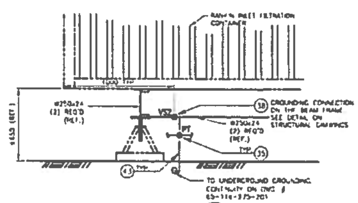


PLAN VIEW (1)
SCALE: 1:20
RANKIN INLET FILTRATION CONTAINER TANK #2
FLOOR OPENING AND GROUNDING

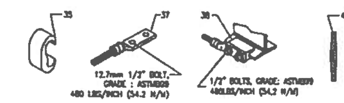
PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 1 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists



ELEVATION VIEW (A)
SCALE: 1:20
RANKIN INLET FILTRATION CONTAINER TANK #2
FLOOR OPENING AND GROUNDING

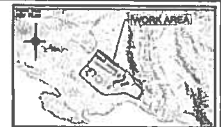


ELEVATION (B)
SCALE: 1:20
RANKIN INLET FILTRATION CONTAINER TANK #2
FLOOR OPENING AND GROUNDING



CONNECTOR TYPES – BURNDY AND THOMAS & BETTS

EQUIPMENT LIST					
ARTICLE NUMBER	SYMBOL	DESCRIPTION	MANU.	TYPE	NOTE
35	PT	CONNECTION – PARALLEL HORIZONTAL CONDUCTORS COMPRESSED CONNECTOR FOR TWO PARALLEL HORIZONTAL CONDUCTIONS. 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 COMPLETE WITH HARDWARE	BURNDY	YGIBW28-338-2N 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		
46		COPPER GROUNDING CONDUCTOR. 6 AWG, GREEN INSULATION, FLEXIBLE, 7 STRANDS (ASTM STANDARDS B8 AND B33).	PHILLIPS CABLES		
		COPPER CONDUCTOR. IDENTICAL CHARACTERISTICS FOR FUTURE CONNECTIONS. THE LENGTH TO RESERVE IS SPECIFIED ON THE SYMBOL	PHILLIPS CABLES		



NOTES GÉNÉRALES / GENERAL NOTES

1. PULL BOX 65JB11604-PB LINKED WITH CONDUIT SLEEVE TO JUNCTION BOX 65JB11604. THE CABLES INSIDE FILTRATION CONTAINER END AT THE PULL BOX.
2. USE TIP AT EACH END OF THE CONDUIT SLEEVES.
3. 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).

REGISTERED PROFESSIONAL ENGINEER
D CARRIER
LICENSEE
NT/NU
SEP 2 1 2017

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

AGNICO EAGLE

REVISIONS

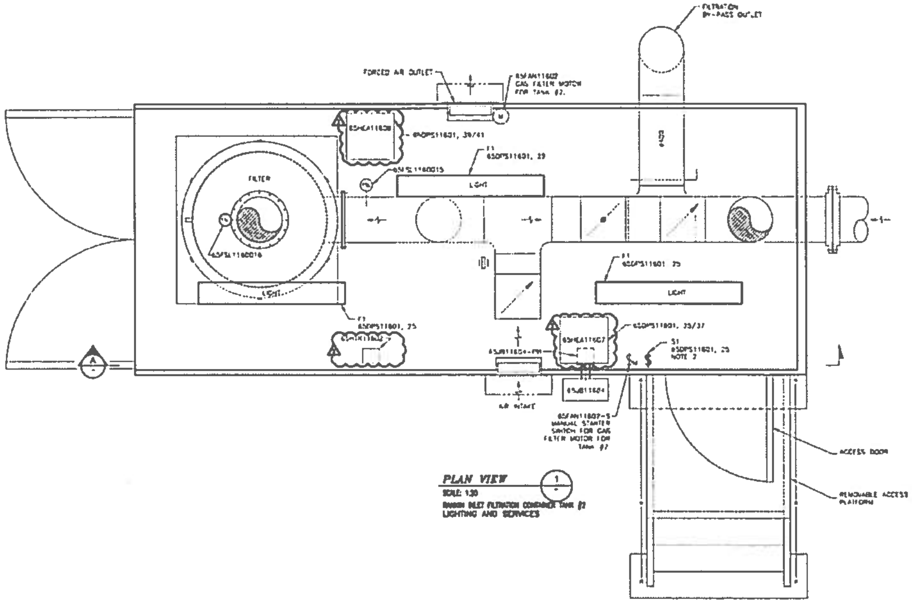
ultragen

PROJECT NO. 591700

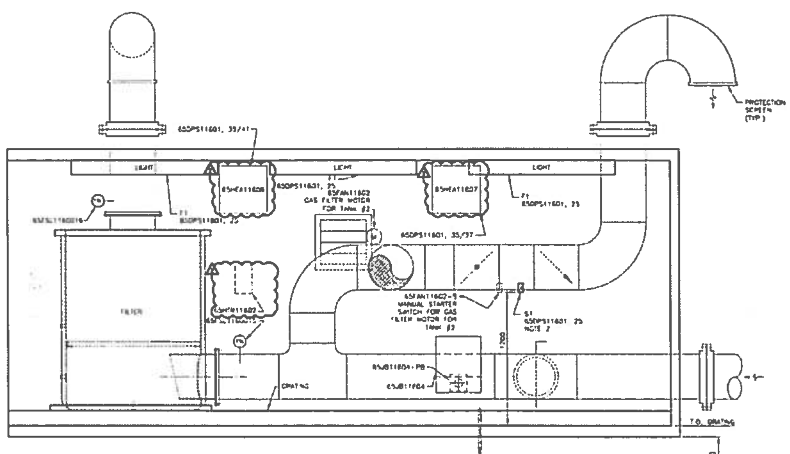
AGNICO EAGLE – MELIADINE DIVISION
116 – FUEL TANK FARM
FUEL DISTRIBUTION
RANKIN INLET FILTRATION CONTAINER TANK #2
FLOOR OPENINGS AND GROUNDING

DRAWN BY	STÉPHANE GIRARD	2017-05-13
CHECKED BY	STÉPHANE GIRARD	2017-05-13
APPROVED BY	DANIEL CARRIER	2017-05-13
SCALE 1:20	DATE	2017-05-13
DRAWING NO.	65-ULT-116-EL-017	
PROJECT NO. 6515	REVISION 2	SHEET 1/1

65-ULT-116-EL-018



PLAN VIEW 1
SCALE: 1:20
RANKIN INLET FILTRATION CONTAINER TANK #2
LIGHTING AND SERVICES



ELEVATION VIEW A
SCALE: 1:20
RANKIN INLET FILTRATION CONTAINER TANK #2
LIGHTING AND SERVICES

MATERIAL LIST					
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
F1	[illegible]	[illegible]	4	120	[illegible]
$	[illegible]	[illegible]	-	120	[illegible]

WORK AREA

NOTES GENERALES / GENERAL NOTES

1. FOR OUTDOOR LIGHTING AND PHOTOCELL REFER TO WSP DRAWING #65-116-285-201.
2. SWITCH FOR LIGHTING TYPE F1.

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

DESSINS DE REFERENCE / REFERENCE DRAWINGS

AGNICO EAGLE

REVISIONS

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 1 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
L3627
D CARRIER
LICENSEE
NT/NU
SEP 2 1 2017

ultragen

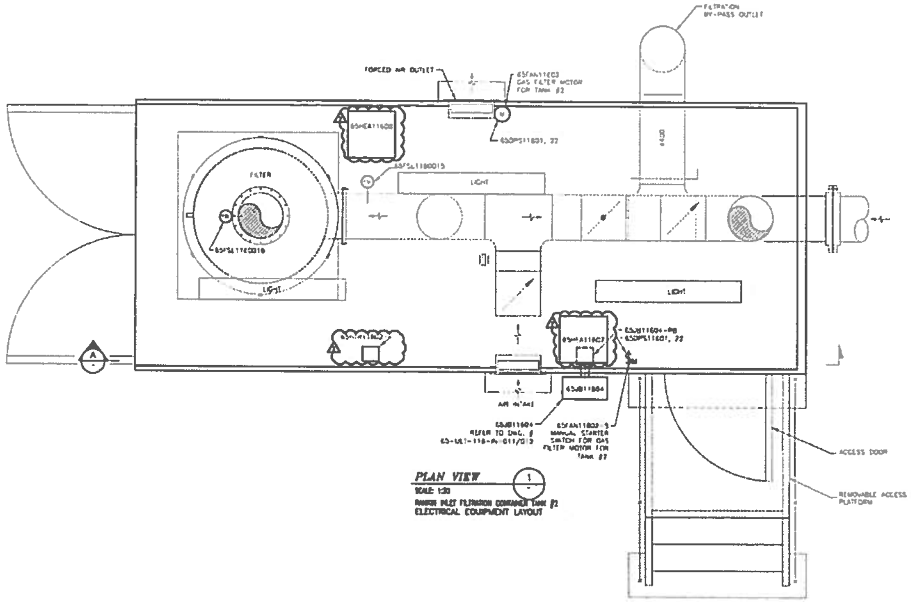
AGNICO EAGLE – MELIADINE DIVISION
116 – FUEL TANK FARM
FUEL DISTRIBUTION
RANKIN INLET FILTRATION CONTAINER TANK #2
LIGHTING AND SERVICES

	STEPHANE GRIMARD		2017-06-13
	STEPHANE GRIMARD		2017-06-13
	DANIEL CARRIER		2017-06-13
	1:20		2017-06-13

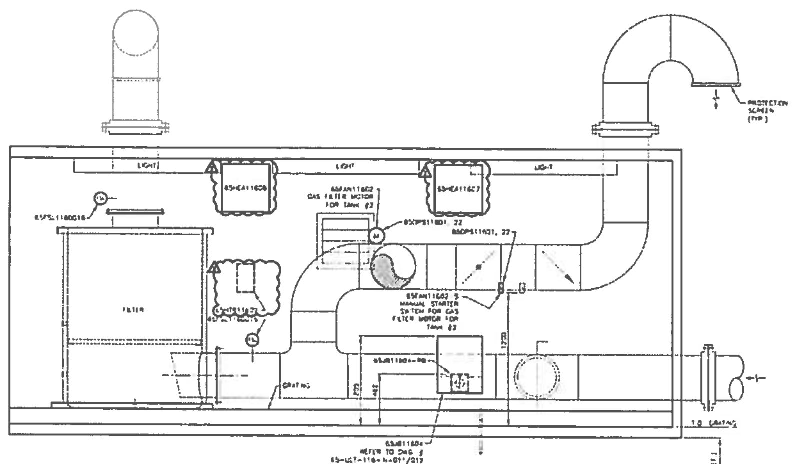
65-ULT-116-EL-018

6515 | 2 | 1/1

65-ULT-116-EL-019



PLAN VIEW (1)
SCALE: 1:20
RANKIN INLET FILTRATION CONTAINER TANK #2
ELECTRICAL EQUIPMENT LAYOUT



ELEVATION VIEW (A)
SCALE: 1:20
RANKIN INLET FILTRATION CONTAINER TANK #2
ELECTRICAL EQUIPMENT LAYOUT

MATERIAL LIST

TYPE					DESCRIPTION
[illegible]	[illegible]	[illegible]	-	[illegible]	[illegible]

NOTES GENERALES / GENERAL NOTES

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

ISSUED FOR CONSTRUCTION
ultragen DATE: SEPT 2017

DESSINS EN REFERENCE / REFERENCE DRAWINGS

AGNICO EAGLE

REVISIONS

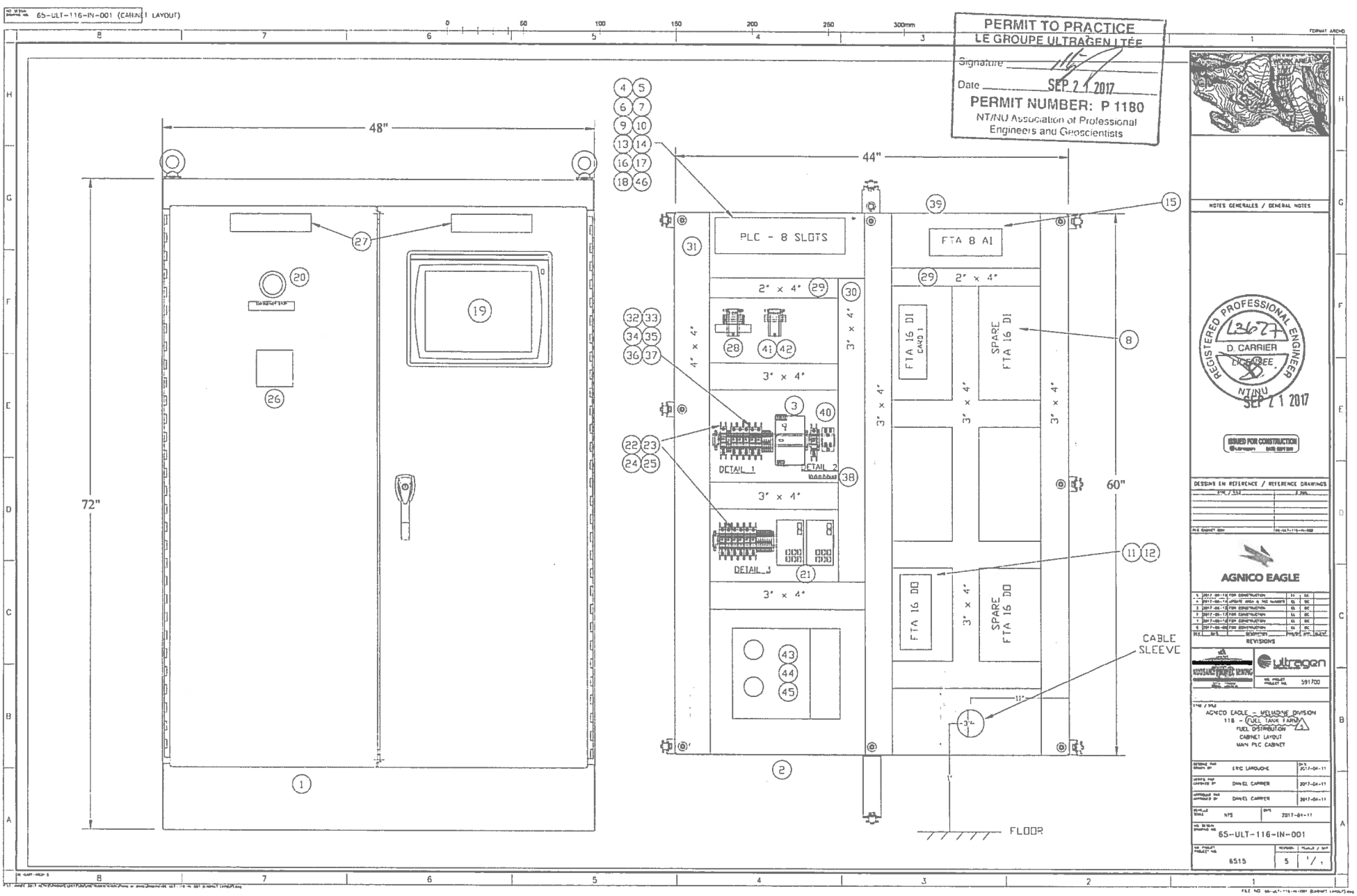
ultragen

AGNICO EAGLE – MELIADINE DIVISION
116 – FUEL TANK FARM
FUEL DISTRIBUTION
RANKIN INLET FILTRATION CONTAINER TANK #2
ELECTRICAL EQUIPMENT LAYOUT

DESIGNED BY	STEPHANE GIRARD	2017-08-13
CHECKED BY	STEPHANE GIRARD	2017-08-13
APPROVED BY	DANIEL CARRIER	2017-08-13
SCALE 1:20	DATE	2017-08-13
DRAWING NO.	65-ULT-116-EL-019	
PROJECT NO. 8515	REVISION 2	SHEET 1/1

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 1 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
L3627
D. CARRIER
LICENSEE
NT/NU
SEP 2 1 2017

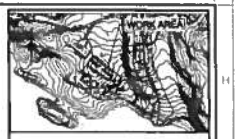

65-ULT-116-IN-001 (CABINET LAYOUT)
PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 1 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists
48"
72"
44"
60"
PLC - 8 SLOTS
FTA 8 AI
2" x 4"
3" x 4"
4" x 4"
FTA 16 DI
SPARE FTA 16 DI
FTA 16 DO
SPARE FTA 16 DO
DETAIL 1
DETAIL 2
DETAIL 3
CABLE SLEEVE
FLOOR
NOTES GÉNÉRALES / GENERAL NOTES
REGISTERED PROFESSIONAL ENGINEER
L2677
D. CARRIER
ELECTRICAL
NT/NU
SEP 2 1 2017
ISSUED FOR CONSTRUCTION
DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS
AGNICO EAGLE
REVISIONS
ultragen
AGNICO EAGLE - MEADOWBANK DIVISION
118 - FUEL TANK FARM
FUEL DISTRIBUTION
CABINET LAYOUT
MAIN PLC CABINET
ERIC LAROUCHE
DANIEL CARRIER
2017-04-11
NTS
65-ULT-116-IN-001
6515
5

65-ULT-116-IN-002 (BOM)

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	ABL8RPS24050
4	1	BACKPLANE 8 SLOTS	Schneider	BMEXBP0800
5	1	POWER SUPPLY PLC	Schneider	BMXCPS3500
6	1	PLC PROCESSOR	Schneider	BMEP582040
7	1	32 DIGITAL INPUT PLC CARD	Schneider	BMXDDI3202K
8	1	FTA 16 DIGITAL INPUT	Schneider	ABE7S16E2F0
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	16	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	BMXAMI0810
15	1	FTA 8 ANALOG INPUT	Schneider	ABE7CPA31
16	1	CABLE 1.5METERS 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	HMIDT732 / HMIG3U
20	1	PANEL MOUNTED BUTTON	Schneider	XB4BS8444
21	2	ETHERNET TCP/IP SWITCH - 6 COPPER / 1 FIBER	Schneider	TCSESM083F1CS0
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	Pandut	G2X4LG6
30	2	RACEWAY INSIDE CABINET 3" x 4", 6 FEET LENGTH	Pandut	G3X4LG6
31	3	RACEWAY INSIDE CABINET 4" x 4", 6 FEET LENGTH	Pandut	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	6	GROUP MARKER CARRIER	Weidmuller	29246
36	25	TERMINAL BLOCK WDU 4	Weidmuller	102010
37	50	MARKER	Weidmuller	051798/150772/051530
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	Pandult	FWME2
44	2	LC DUPLEX SINGLE MODE ADAPTER (12 FIBERS)	Pandut	FAP12WBUDLCZ
45	2	FIBER OPTIC PATCH CORD LC TO SC	Pandut	F92ERLNSNSNM002
48	1	ETHERNET MODULE M580 - 3 SUBNETS	Schneider	BMENOC0321

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 1 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
13627
D. CARRIER
LICENSEE
NT/NU
SEP 2 1 2017



NOTES GENERALES / GENERAL NOTES

ISSUED FOR CONSTRUCTION

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

AGNICO EAGLE

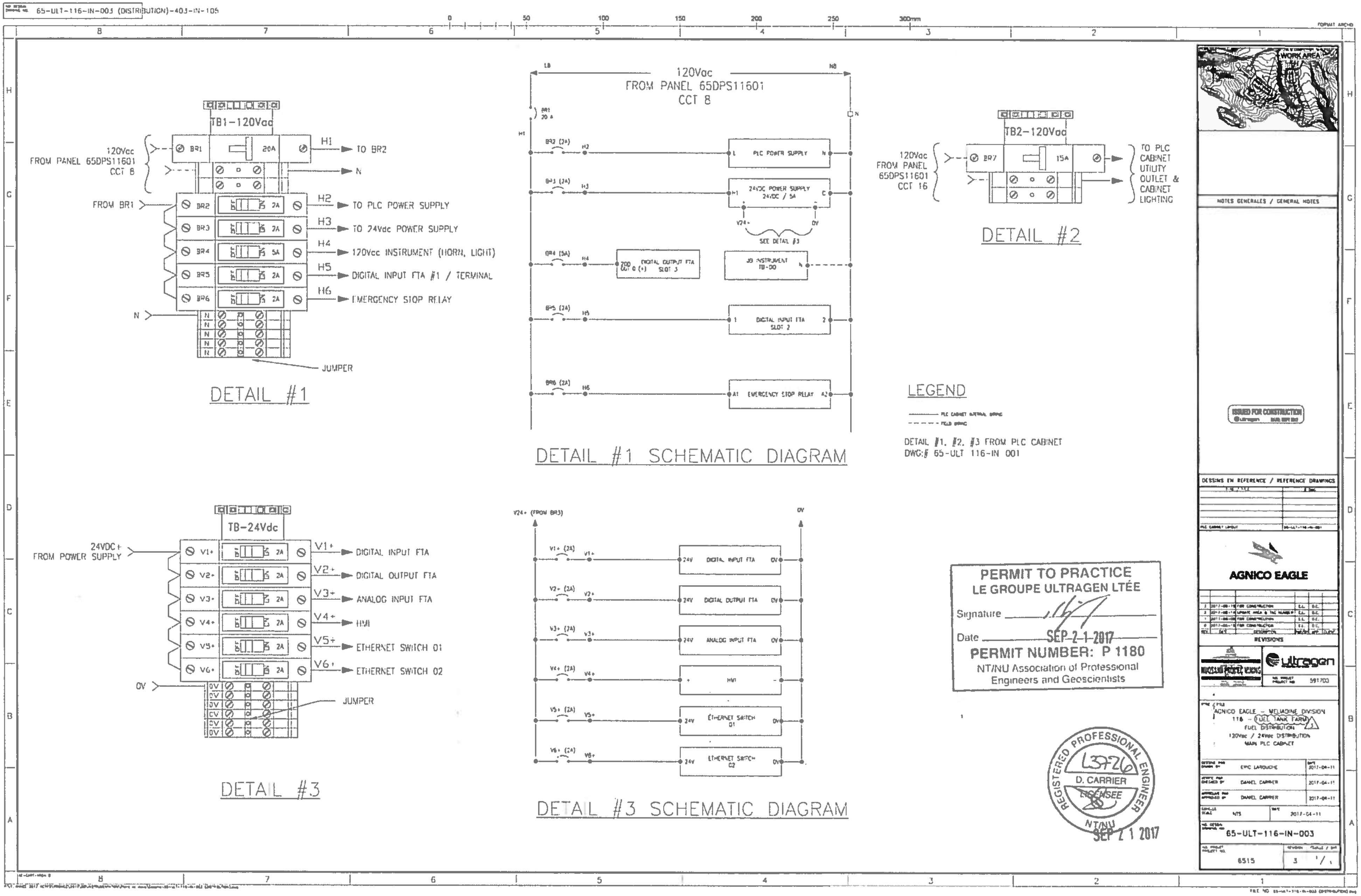
REVISIONS

ADNICO EAGLE – MEADOWBANK DIVISION
116 – FUEL TANK FARM
FUEL DISTRIBUTION
BILL OF MATERIAL
MAIN PLC CABINET

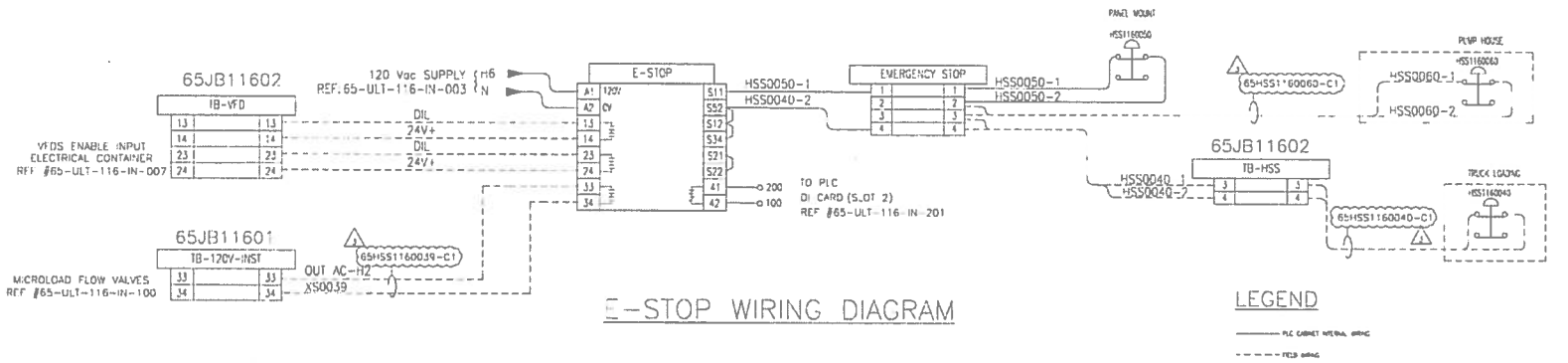
DESSINÉ PAR / DRAWN BY	ERIC LAROUCHE	2017-04-11
VÉRIFIÉ PAR / CHECKED BY	DANIEL CARRIER	2017-04-11
APPROUVÉ PAR / APPROVED BY	DANIEL CARRIER	2017-04-11
ÉCHELLE / SCALE	NTS	DATE 2017-04-11

65-ULT-116-IN-002

6515 | 5 | 1/1


65-ULT-116-IN-003 (DISTRIBUTION)-403-IN-105
TB1-120Vac
120Vac
FROM PANEL 65DPS11601
CCT 8
TO BR2
FROM BR1
TO PLC POWER SUPPLY
TO 24Vdc POWER SUPPLY
120Vac INSTRUMENT (HORN, LIGHT)
DIGITAL INPUT FTA #1 / TERMINAL
EMERGENCY STOP RELAY
JUMPER
DETAIL #1
120Vac
FROM PANEL 65DPS11601
CCT 8
PLC POWER SUPPLY
24VDC POWER SUPPLY 24VDC / 5A
SEE DETAIL #3
DIGITAL OUTPUT FTA SLOT 3
JB INSTRUMENT TB-00
DIGITAL INPUT FTA SLOT 2
EMERGENCY STOP RELAY
DETAIL #1 SCHEMATIC DIAGRAM
TB2-120Vac
120Vac
FROM PANEL
65DPS11601
CCT 16
TO PLC CABINET UTILITY OUTLET & CABINET LIGHTING
DETAIL #2
LEGEND
DETAIL #1, #2, #3 FROM PLC CABINET
DWG:# 65-ULT 116-IN 001
TB-24Vdc
24VDC+
FROM POWER SUPPLY
DIGITAL INPUT FTA
DIGITAL OUTPUT FTA
ANALOG INPUT FTA
HMI
ETHERNET SWITCH 01
ETHERNET SWITCH 02
JUMPER
DETAIL #3
V24+ (FROM BR3)
0V
DIGITAL INPUT FTA
DIGITAL OUTPUT FTA
ANALOG INPUT FTA
HMI
ETHERNET SWITCH 01
ETHERNET SWITCH 02
DETAIL #3 SCHEMATIC DIAGRAM
PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 21 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists
REGISTERED PROFESSIONAL ENGINEER
D. CARRIER
LICENSEE
NT/NU
SEP 21 2017
ISSUED FOR CONSTRUCTION
NOTES GENERALES / GENERAL NOTES
DESSINS EN REFERENCE / REFERENCE DRAWINGS
AGNICO EAGLE
REVISIONS
ultragen
591700
AGNICO EAGLE - MELIADINE DIVISION
116 - FUEL TANK FARM
FUEL DISTRIBUTION
120Vac / 24Vdc DISTRIBUTION
MAIN PLC CABINET
ERIC LAROUCHE 2017-04-11
DANIEL CARRIER 2017-04-11
DANIEL CARRIER 2017-04-11
NTS 2017-04-11
65-ULT-116-IN-003
6515
3

65-ULT-116-IN-004 (E-STOP & COMM) 403-IN-105



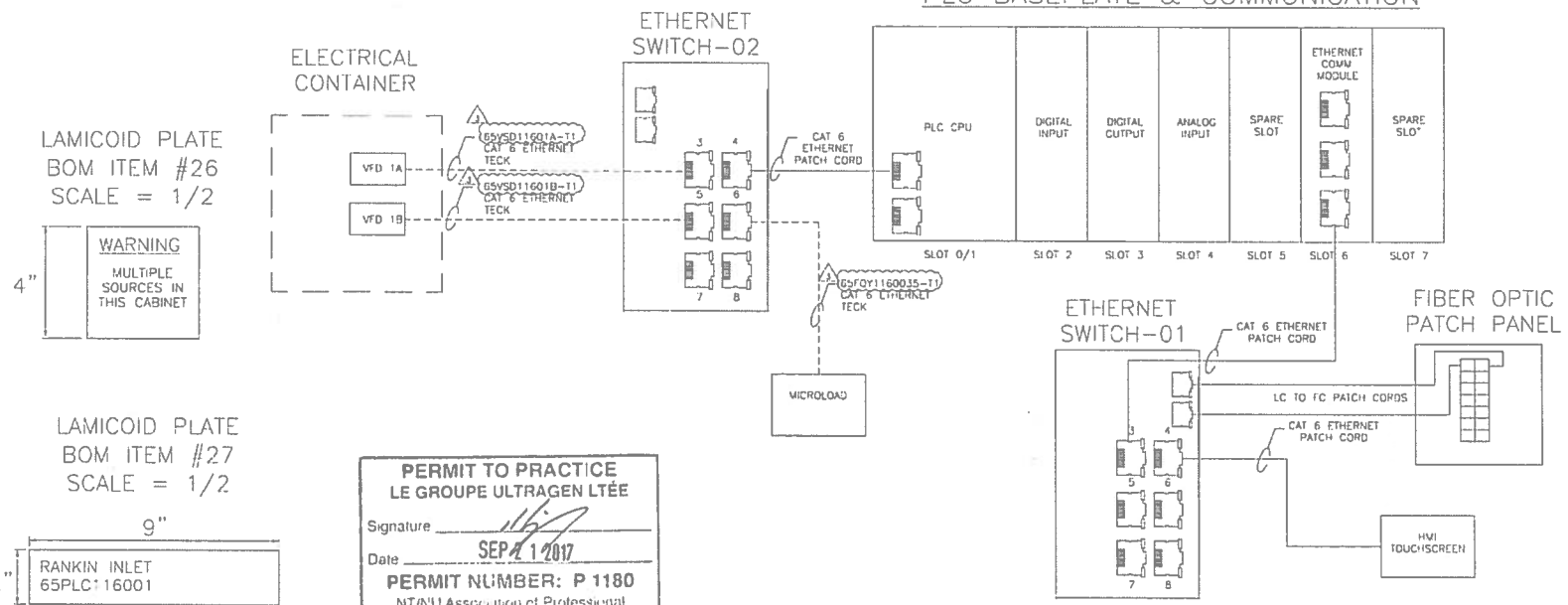
E-STOP WIRING DIAGRAM

LEGEND

PLC CABINET INTERNAL WIRING

FIELD WIRING

PLC BASEPLATE & COMMUNICATION



LAMICOID PLATE
BOM ITEM #26
SCALE = 1/2

4"

WARNING
MULTIPLE SOURCES IN THIS CABINET

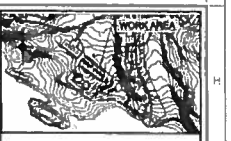
LAMICOID PLATE
BOM ITEM #27
SCALE = 1/2

9"

2"

RANKIN INLET
65PLC116001

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 1 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists



NOTES GENERALES / GENERAL NOTES

REGISTERED PROFESSIONAL ENGINEER
L3627
D. CARRIER
LICENSEE
NT/NU
SEP 2 1 2017

ISSUED FOR CONSTRUCTION

DESSINS EN REFERENCE / REFERENCE DRAWINGS

AGNICO EAGLE

NO.	DATE	DESCRIPTION	BY	CHK'D
2	2017-09-15	FOR CONSTRUCTION	EL	DC
1	2017-09-06	FOR CONSTRUCTION	EL	DC
0	2017-05-17	FOR CONSTRUCTION	EL	DC

REVISIONS

ultragen

NUNAVUT QUALITY MINING

NO. PROJET / PROJECT NO. 581700

TITRE / TITLE
AGNICO EAGLE – MEADOWBANK DIVISION
116 – FUEL TANK FARM
FUEL DISTRIBUTION
& RING DETAIL
EMERGENCY STOP & PLC COMMUNICATION

DESSINÉ PAR / DRAWN BY	ERIC LAROUCHE	2017-04-11
VÉRIFIÉ PAR / CHECKED BY	DANIEL CARRIER	2017-04-11
APPROUVÉ PAR / APPROVED BY	DANIEL CARRIER	2017-04-11
ÉCHELLE / SCALE	NTS	DATE 2017-04-11

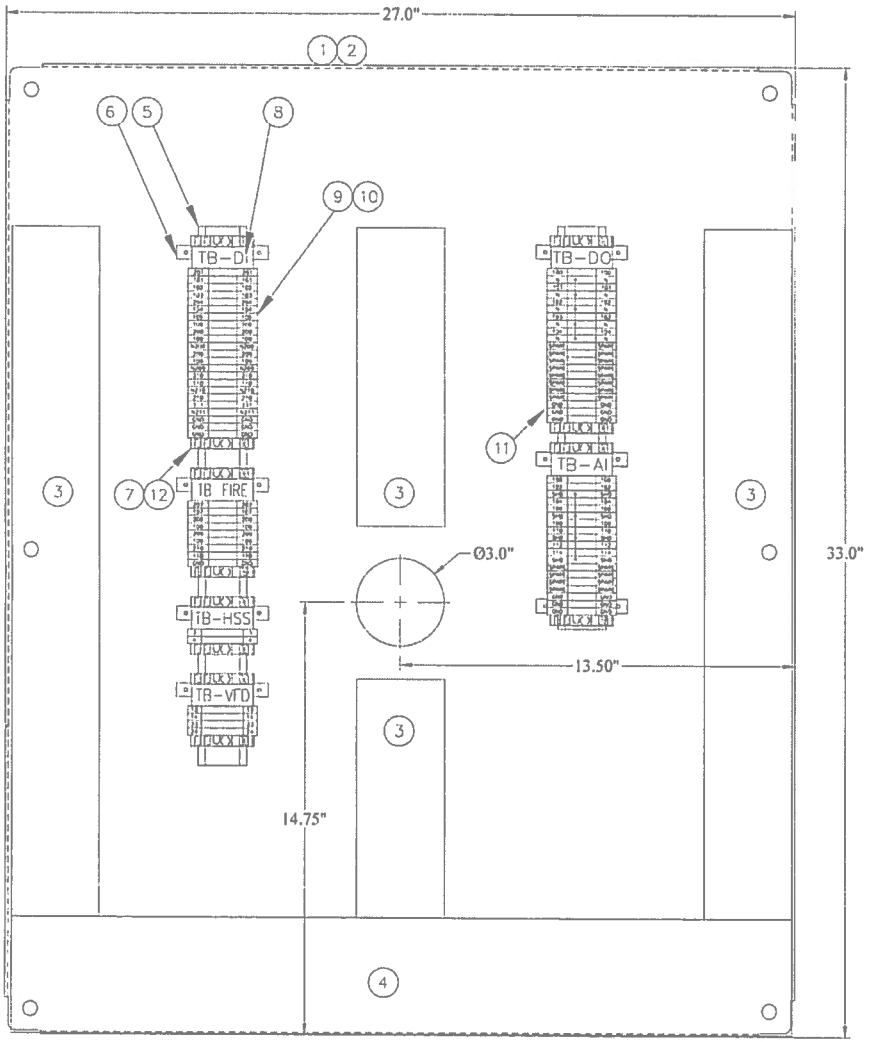
NO. DESSIN / DRAWING NO. 65-ULT-116-IN-004

NO. PROJET / PROJECT NO. 6515

FEUILLE / SHEET 3 OF 1/1

FILE NO. 65-ULT-116-IN-004 (E-STOP & COMM).dwg

65-ULT-116-IN-005 (JB INST LAYOUT)



ITEM	QUANTITY PORTABL #1	DESCRIPTION	MANUFACTURER	MODEL
1	1	WALLMOUNT ENCLOSURE 36H, 30W 8D TYPE 4X ALUMINIUM	Hammond	1418H44ALMB
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	914300000
6	7	RAIL SUPPORT 1"	Weidmuller	7824270030
7	10	END COVER FOR TS-35	Weidmuller	36356
8	6	GROUP MARKER CARRIER	Weidmuller	28248
9	72	TERMINAL BLOCK WDU 4	Weidmuller	1G2010
10	144	MARKER	0514790160772651830	
11	10	GROUND TERMINAL YELLOWGREEN	Weidmuller	10101
12	6	END PLATE	Weidmuller	10500

NOTES GENERALES / GENERAL NOTES

ISSUED FOR CONSTRUCTION

DESSINS EN REFERENCE / REFERENCE DRAWINGS

DWG # / DWG #	REV
TB-DI INTERCONNECTION	65-ULT-116-IN-201
TB-DO INTERCONNECTION	65-ULT-116-IN-202
TB-FIRE INTERCONNECTION	65-ULT-116-IN-203
TB-HSS INTERCONNECTION	65-ULT-116-IN-204
TB-VFD INTERCONNECTION	65-ULT-116-IN-205
TB-AI INTERCONNECTION	65-ULT-116-IN-206

AGNICO EAGLE

A	2017-10-16	FOR CONSTRUCTION	GL
2	2017-09-19	UPDATE AREA & TAG NUMBER	GL
1	2017-09-06	FOR CONSTRUCTION	GL
0	2017-05-19	FOR CONSTRUCTION	GL

REVISIONS

ultragen

NO. PROJET / PROJECT NO. 531700

AGNICO EAGLE – MEADOWBANK DIVISION
116 – (FUEL TANK FARM)
FUEL DISTRIBUTION
JUNCTION BOX INSTRUMENTATION
65JB116C2

DESSINE PAR / DRAWN BY	ERIC LARCHEVÊQUE	2017-04-19
VÉRIFIÉ PAR / CHECKED BY	DANIEL CARRIER	2017-04-19
APPROUVÉ PAR / APPROVED BY	DANIEL CARRIER	2017-04-19
ÉCHELLE / SCALE	N/S	2017-04-19

NO. DESSIN / DRAWING NO.
65-ULT-116-IN-005

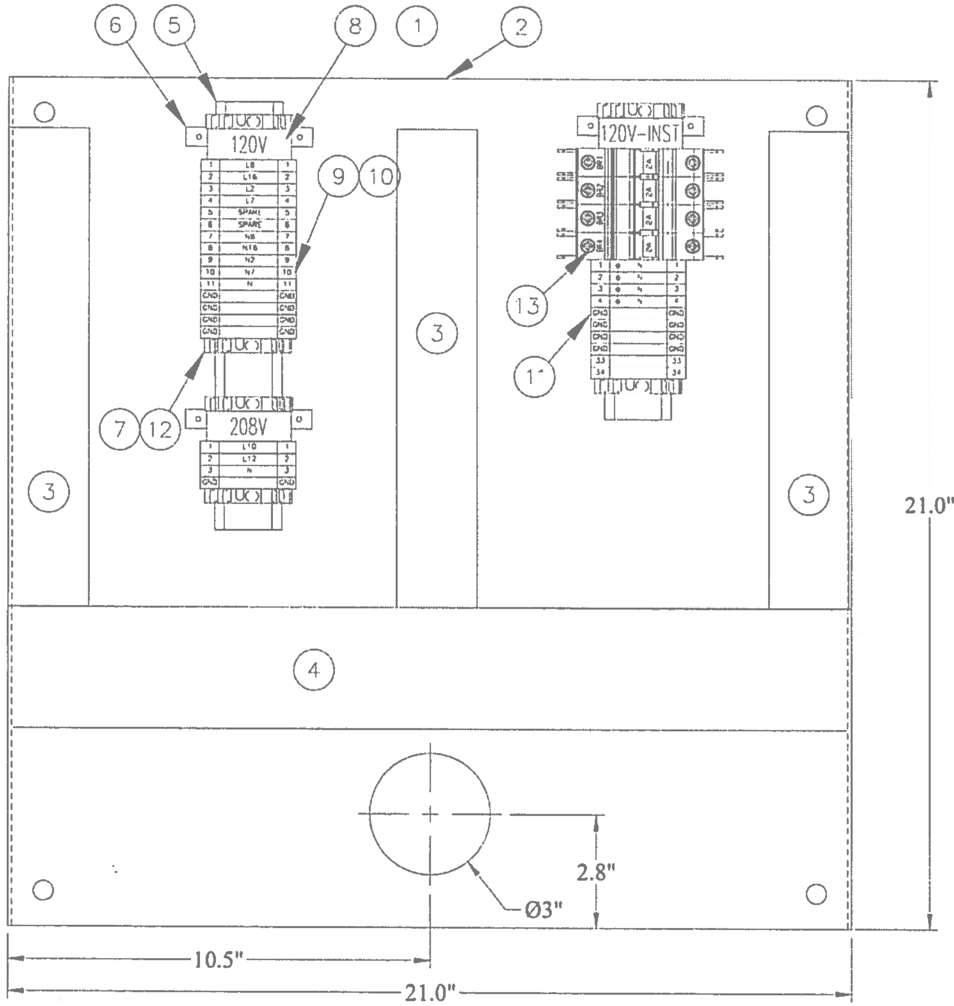
NO. PROJET / PROJECT NO.	REVISION	FEUILLE / SHT
6515	3	1 / 1

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 1 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
L3627
D. CARRIER
LICENSEE
NT/NU
SEP 2 1 2017

FILE NO: 65-ULT-116-IN-005 (JB INST LAYOUT).dwg

65-ULT-116-IN-006 (JB 120V LAYOUT)



ITEM	QUANTITY	DESCRIPTION	MANUFACTURER	MODEL
1	1	WALLMOUNT ENCLOSURE 24H, 24W 8D TYPE 4X ALUMINUM	Hammond	1418N4AL8
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	7924070030
7	8	END BRACKET FOR TS-35	Weidmuller	38356
8	3	GROUP MARKER CARRIER	Weidmuller	29246
9	24	TERMINAL BLOCK WDU 6	Weidmuller	10202
10	48	MARKER	Weidmuller	051796/160772/051530
11	9	GROUND TERMINAL YELLOWGRE N	Weidmuller	10102
12	3	END PLATE	Weidmuller	10500
13	4	120VAC/24VDC CIRCUIT BREAKER 2A	Schneider	GB2CB07

WORK AREA

NOTES GENERALES / GENERAL NOTES

ISSUED FOR CONSTRUCTION

DESSINS EN REFERENCE / REFERENCE DRAWINGS

AGNICO EAGLE

REVISIONS

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

REGISTERED PROFESSIONAL ENGINEER
L3627
D CARRIER
LICENSEE
NTNU
SEP 21 2017

ultragen

NO. PROJET / PROJECT NO. 591700

TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
116 – FUEL TANK FARM
FUEL DISTRIBUTION
JUNCTION BOX 120V
65JH11601

DESSINÉ PAR / DRAWN BY	ERIC LAROUCHE	2017-04-19
VÉRIFIÉ PAR / CHECKED BY	DANIEL CARRIER	2017-04-19
APPROUVÉ PAR / APPROVED BY	DANIEL CARRIER	2017-04-19
ÉCHELLE / SCALE	NTS	DATE 2017-04-19

NO. DESSIN / DRAWING NO. 65-ULT-116-IN-006

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

65-ULT-116-IN-007 (VFD)-403-IN-105

PLC CABINET
65PLC116001

OUTSIDE
PUMPING STATION CONTAINER

ELECTRICAL DISTRIBUTION
CONTAINER

PUMPING STATION
CONTAINER

65VSD11601A

65SPB11601-01-P1

ABB VFD

65VSD11601A-P1

FROM DISCONNECT SWITCH
65SPB11601-01
REF #65-116-275-203

15 HP 65POD11601A

EMERGENCY STOP

WIRING DETAIL
REF #65-ULT 116 IN-004

65JB11602

1B-VFD

DL (VFD1)

24V+ (VFD1)

65VSD11601A-C1
3C #14 TECK

ETHERNET SWITCH-02

65VSD11601A-T1
CAT 6 ETHERNET TECK

65VSD11601B

65SPB11601-02-P1

ABB VFD

65VSD11601B-P1

FROM DISCONNECT SWITCH
65SPB11601-02
REF #65-116-275-203

15 HP 65POD11601B

EMERGENCY STOP

WIRING DETAIL
REF #65-ULT-116-IN-004

65JB11602

1D-VFD

DL (VFD2)

24V+ (VFD2)

65VSD11601B-C1
3C #14 TECK

ETHERNET SWITCH-02

65VSD11601B-T1
CAT 6 ETHERNET TECK

MOTOR SCHEMATIC

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 11 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
13627
D CARRIER
LICENSEE
NT/NU
SEP 11 2017

NOTES GENERALES / GENERAL NOTES

ISSUED FOR CONSTRUCTION

DESSINS EN REFERENCE / REFERENCE DRAWINGS

AGNICO EAGLE

REVISIONS

ultragen

AGNICO EAGLE – MEADOWBANK DIVISION
116 – FUEL TANK FARM
FUEL DISTRIBUTION
VFD SCHEMATIC WIRING DETAIL
65VSD116-1/65VSD116-3

65-ULT-116-IN-007

6515 2

65-ULT-116-IN-008 (DISTRIBUTION BJ 120)

ELECTRICAL DISTRIBUTION CONTAINER

65DPS11601

OUTSIDE PUMPING STATION CONTAINER 65JB11601

INSIDE PUMPING STATION CONTAINER

FIELD

PLC CABINET 65PLC116001

65DPS11601-8-P1 — CCT #8 — 65DPS11601-8-P2

65DPS11601-16-P1 — CCT #16 — 65DPS11601-16-P2

65DPS11601-2-P1 — CCT #2 — 65DPS11601-2-P3

UTILITY OUTLET (2) PUMPING STATION & OPERATOR ROOM

65DPS11601-7-P1 — CCT #7 — 65DPS11601-7-P2

LIGHTING PUMPING STATION

65DPS11601-18-P1 — CCT #18 — 65FDV1160035-P2

TO MICROLOAD ENCLOSURE SEE DWG. # 65-ULT-116-IN-100

65VS1160037-P1

TO SCULLY INTELLITROL AND FLOW VALVE SEE DWG. # 65-ULT-116-IN-100

SPARE

SPARE

65FDV1160035-P1

OUT AC-N2 FSO0039

TO PULL BOX FDYDC35-JB1 SEE DWG # 65-ULT-116-IN-100

65DPS11601-10/12-P1 — CCT #10/12 — 65DPS11601-10/12-P2

HEATING

65DPS11601-14-P1 — CCT #14

65FV1160014-P1

CAV BOX

65FV1160014

VALVE ROTORK WIRING DETAIL # 65-ULT-116-IN-101

65FV1160004-P1

65FV1160004

VALVE ROTORK WIRING DETAIL # 65-ULT-116-IN-101

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

REGISTERED PROFESSIONAL ENGINEER 13674 D. CARRIER DISPOSEE NT/NU SEP 21 2017

WORK AREA

NOTES GENERALES / GENERAL NOTES

ISSUED FOR CONSTRUCTION

DESSINS DE REFERENCE / REFERENCE DRAWINGS

AGNICO EAGLE

REVISIONS

ultragen

591700

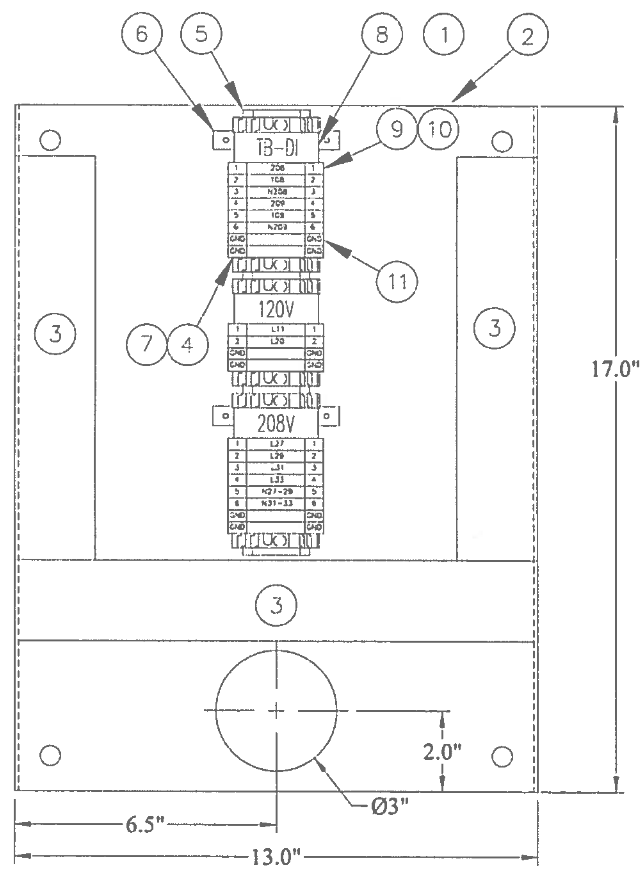
AGNICO EAGLE – MEADOWBANK DIVISION
116 – FUEL TANK FARM
FUEL DISTRIBUTION
INTERCONNECTION
65JB11601 – 120Vac DISTRIBUTION

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.T.S — 2017-04-11

65-ULT-116-IN-008

6515 — 2 — 1 / 1

65-ULT-116-IN-009



ITEM	QUANTITY	DESCRIPTION	MANUFACTURER	MODEL
1	1	WALL MOUNT ENCLOSURE 20H, 16W, 6D TYPE 4X ALUMINIUM	Hammond	1418N4ALJ6
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	3	END PLATE	Weidmuller	10500
5	1	TS-35 DIN MOUNTING RAIL, 7.5MM 2 METERS LONG	Weidmuller	514500000
6	6	RAIL SUPPORT 1"	Weidmuller	7924270000
7	6	END BRACKET FOR TS-35	Weidmuller	38358
8	3	GROUP MARKER CARRIER	Weidmuller	29246
9	14	TERMINAL BLOCK WDU 6	Weidmuller	10222
10	28	MARKER	Weidmuller	051786/160772/051530
11	6	GROUND TERMINAL YELLOW/GREEN	Weidmuller	10152

NOTES GÉNÉRALES / GENERAL NOTES

ISSUED FOR CONSTRUCTION

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

AGNICO EAGLE

REVISIONS

ultragen

PROJECT NO. 591700

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE

Signature ____

Date SEP 21 2017

PERMIT NUMBER: P 1180

NT/NU Association of Professional Engineers and Geoscientists

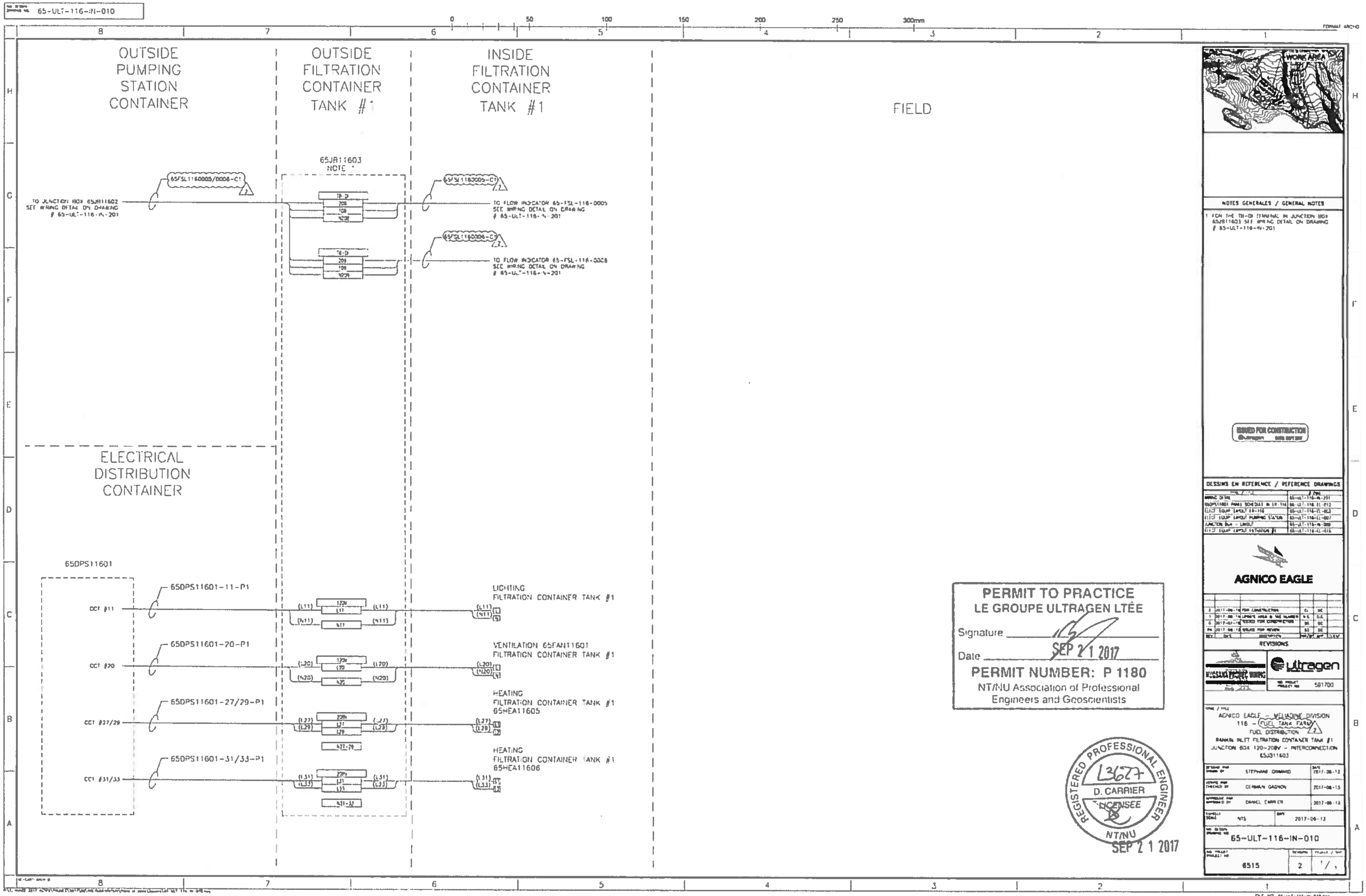
REGISTERED PROFESSIONAL ENGINEER
L3627
D CARRIER
LICENSEE
NT/NU
SEP 21 2017

AGNICO EAGLE – MELIADINE DIVISION
116 – FUEL TANK FARM
FUEL DISTRIBUTION
RANKIN INLET FILTRATION CONTAINER TANK #1
JUNCTION BOX 120-208V – LAYOUT
65J911603

DRAWN BY	STÉPHANE GIRARD	2017-08-13
CHECKED BY	GERMAIN GAGNON	2017-08-13
APPROVED BY	DANIEL CARRIER	2017-08-13
SCALE	NTS	2017-08-13

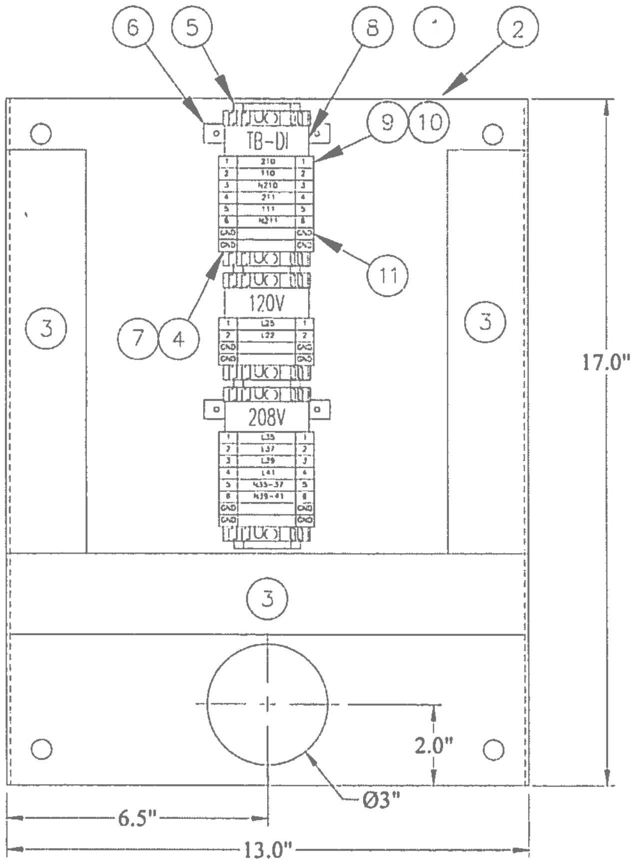
DRAWING NO. 65-ULT-116-IN-009

PROJECT NO. 6515 | REVISION 2 | SHEET 1/1

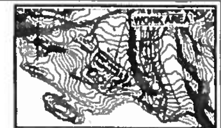


65-ULT-116-IN-010
OUTSIDE PUMPING STATION CONTAINER
OUTSIDE FILTRATION CONTAINER TANK #1
INSIDE FILTRATION CONTAINER TANK #1
FIELD
ELECTRICAL DISTRIBUTION CONTAINER
65JB11603 NOTE 1
65FSL1160005/0006-C1
TO JUNCTION BOX 65JB11602 SEE WIRING DETAIL ON DRAWING # 65-ULT-116-IN-201
TO FLOW INDICATOR 65-FSL-116-0005 SEE WIRING DETAIL ON DRAWING # 65-ULT-116-IN-201
TO FLOW INDICATOR 65-FSL-116-0006 SEE WIRING DETAIL ON DRAWING # 65-ULT-116-IN-201
65DPS11601
CCT #11
CCT #20
CCT #27/29
CCT #31/33
65DPS11601-11-P1
65DPS11601-20-P1
65DPS11601-27/29-P1
65DPS11601-31/33-P1
LIGHTING FILTRATION CONTAINER TANK #1
VENTILATION 65FAN11601 FILTRATION CONTAINER TANK #1
HEATING FILTRATION CONTAINER TANK #1 65HEA11605
HEATING FILTRATION CONTAINER TANK #1 65HEA11606
NOTES GENERALES / GENERAL NOTES
1 FOR THE TB-DI TERMINAL IN JUNCTION BOX 65JB11603 SEE WIRING DETAIL ON DRAWING # 65-ULT-116-IN-201
ISSUED FOR CONSTRUCTION
DESSINS EN REFERENCE / REFERENCE DRAWINGS
AGNICO EAGLE
REVISIONS
ultragen
591700
AGNICO EAGLE – MELIADINE DIVISION
116 – FUEL TANK FARM
FUEL DISTRIBUTION
JUNCTION BOX 120-208V – INTERCONNECTION
STEPHANE OMMARD 2017-06-13
DANIEL CARRIER 2017-06-13
NTS 2017-06-13
65-ULT-116-IN-010
6515
2
PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 21 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists
REGISTERED PROFESSIONAL ENGINEER
L3627
D. CARRIER
LICENSEE
NT/NU
SEP 21 2017

65-ULT-116-IN-011



ITEM	QUANTITY	DESCRIPTION	MANUFACTURER	MODEL
1	1	WALLMOUNT ENCLOSURE 20H, 16W 6D TYPE 4X ALUMINUM	Hammond	1418N4ALJ8
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	3	END PLATE	Weidmuller	10500
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	38356
8	3	GROUP MARKER CARRIER	Weidmuller	29246
9	14	TERMINAL BLOCK WDU 6	Weidmuller	10202
10	29	MARKER	Weidmuller	051796/160772/051530
11	6	GROUND TERMINAL YELLOW/GREEN	Weidmuller	10122



NOTES GENERALES / GENERAL NOTES

ISSUED FOR CONSTRUCTION

DESSINS EN REFERENCE / REFERENCE DRAWINGS

AGNICO EAGLE

REVISIONS

ultragen

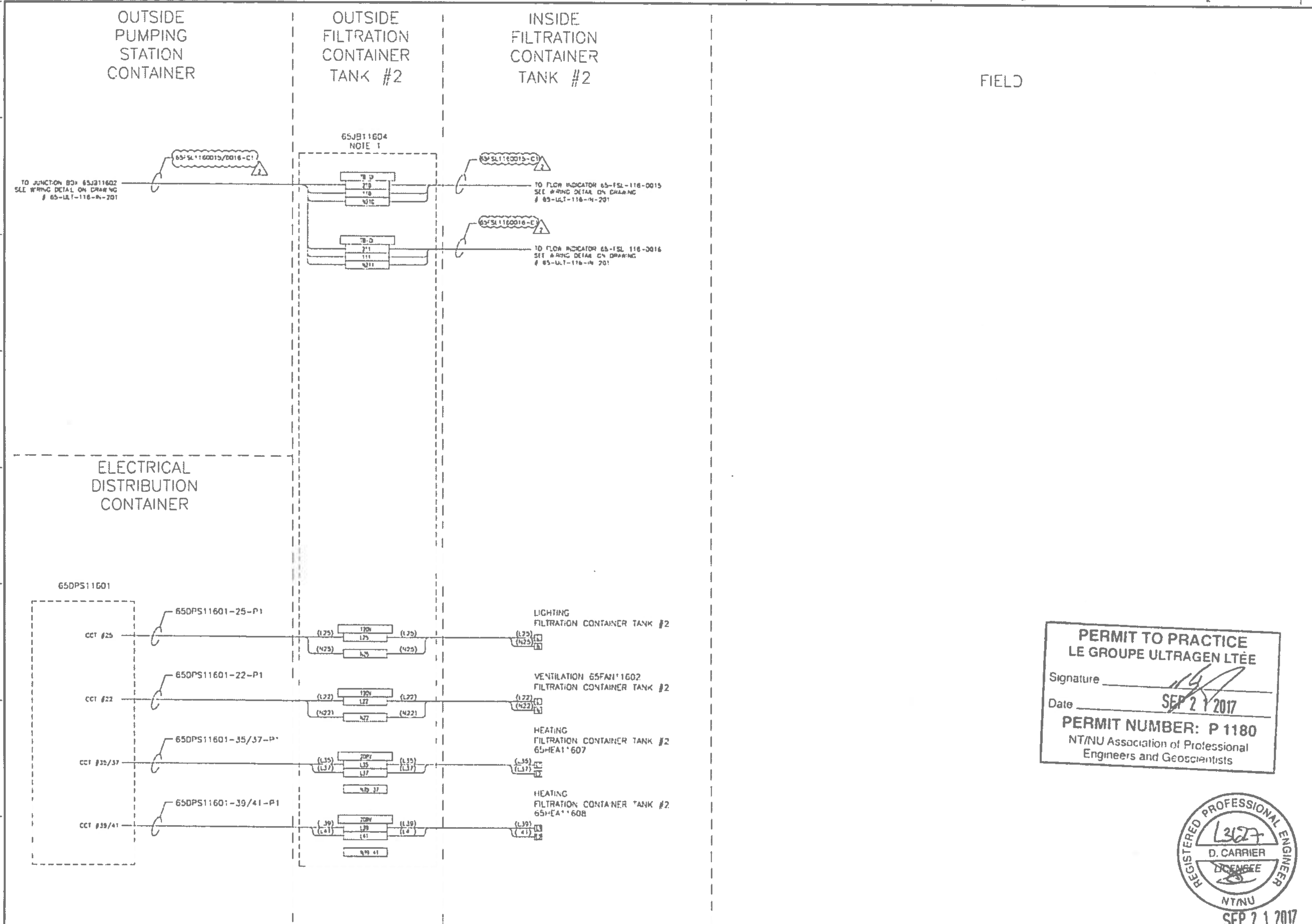
PROJECT NO. 591700

AGNICO EAGLE – MELIADINE DIVISION
116 – FUEL TANK FARM
FUEL DISTRIBUTION
RAMAN INLET FILTRATION CONTAINER TANK #2
JUNCTION BOX 120-208V – LAYOUT

DESIGNED BY: STEPHANE GRIMARD 2017-06-13
CHECKED BY: GERMAIN GAGNON 2017-06-13
APPROVED BY: DANIEL CARRIER 2017-06-13
SCALE: NTS | DATE: 2017-06-13
DRAWING NO. 65-ULT-116-IN-011
PROJECT NO. 6515 | REVISION 2 | SHEET 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

REGISTERED PROFESSIONAL ENGINEER
L3627
D. CARRIER
LICENSEE
NT/NU
SEP 21 2017


OUTSIDE PUMPING STATION CONTAINER
OUTSIDE FILTRATION CONTAINER TANK #2
INSIDE FILTRATION CONTAINER TANK #2
FIELD
65JB11604
NOTE 1
TO JUNCTION BOX 65JB11602
SEE WIRING DETAIL ON DRAWING
65-ULT-116-IN-201
TO FLOW INDICATOR 65-FSL-116-0015
SEE WIRING DETAIL ON DRAWING
65-ULT-116-IN-201
TO FLOW INDICATOR 65-FSL-116-0016
SEE WIRING DETAIL ON DRAWING
65-ULT-116-IN-201
ELECTRICAL DISTRIBUTION CONTAINER
65DPS11601
CCT #25
CCT #22
CCT #35/37
CCT #39/41
65DPS11601-25-P1
65DPS11601-22-P1
65DPS11601-35/37-P1
65DPS11601-39/41-P1
LIGHTING
FILTRATION CONTAINER TANK #2
VENTILATION 65FAN11602
FILTRATION CONTAINER TANK #2
HEATING
FILTRATION CONTAINER TANK #2
65HEAT1607
HEATING
FILTRATION CONTAINER TANK #2
65HEAT1608

NOTES GENERALES / GENERAL NOTES

1. FOR THE TB-DI TERMINAL IN JUNCTION BOX 65JB11604 SEE WIRING DETAIL ON DRAWING # 65-ULT-116-IN-201

ISSUED FOR CONSTRUCTION

DESSINS EN REFERENCE / REFERENCE DRAWINGS

AGNICO EAGLE

REVISIONS

ultragen

PROJECT NO. 591700

AGNICO EAGLE – MELIADINE DIVISION
116 – FUEL TANK FARM
FUEL DISTRIBUTION
RANKIN INLET FILTRATION CONTAINER TANK #2
JUNCTION BOX 120-208V – INTERCONNECTION
65JB11604

DESSINE PAR / DRAWN BY	STEPHANE GRAVARD	2017-06-13
VERIFIE PAR / CHECKED BY	GERMAIN GAGNON	2017-06-13
APPROUVE PAR / APPROVED BY	DANIEL CARRIER	2017-06-13
ECHELLE / SCALE	NTS	2017-06-13

DRAWING NO. 65-ULT-116-IN-012

PROJECT NO. 6515 REVISION 2

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 1 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
L3627
D. CARRIER
LICENSEE
NT/NU
SEP 2 1 2017

65-ULT-116-IN-100 (SWITH) -403-IN-105

PUMPING STATION

OPERATOR ROOM

TRUCK AREA

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

DESSINS EN REFERENCE / REFERENCE DRAWINGS

AGNICO EAGLE

REVISIONS

ACANICO EAGLE – MELVILLE DIVISION
116 – FUEL TANK FARM
FUEL DISTRIBUTION
MICROLOAD INTERCONNECTION
65FCV11600135

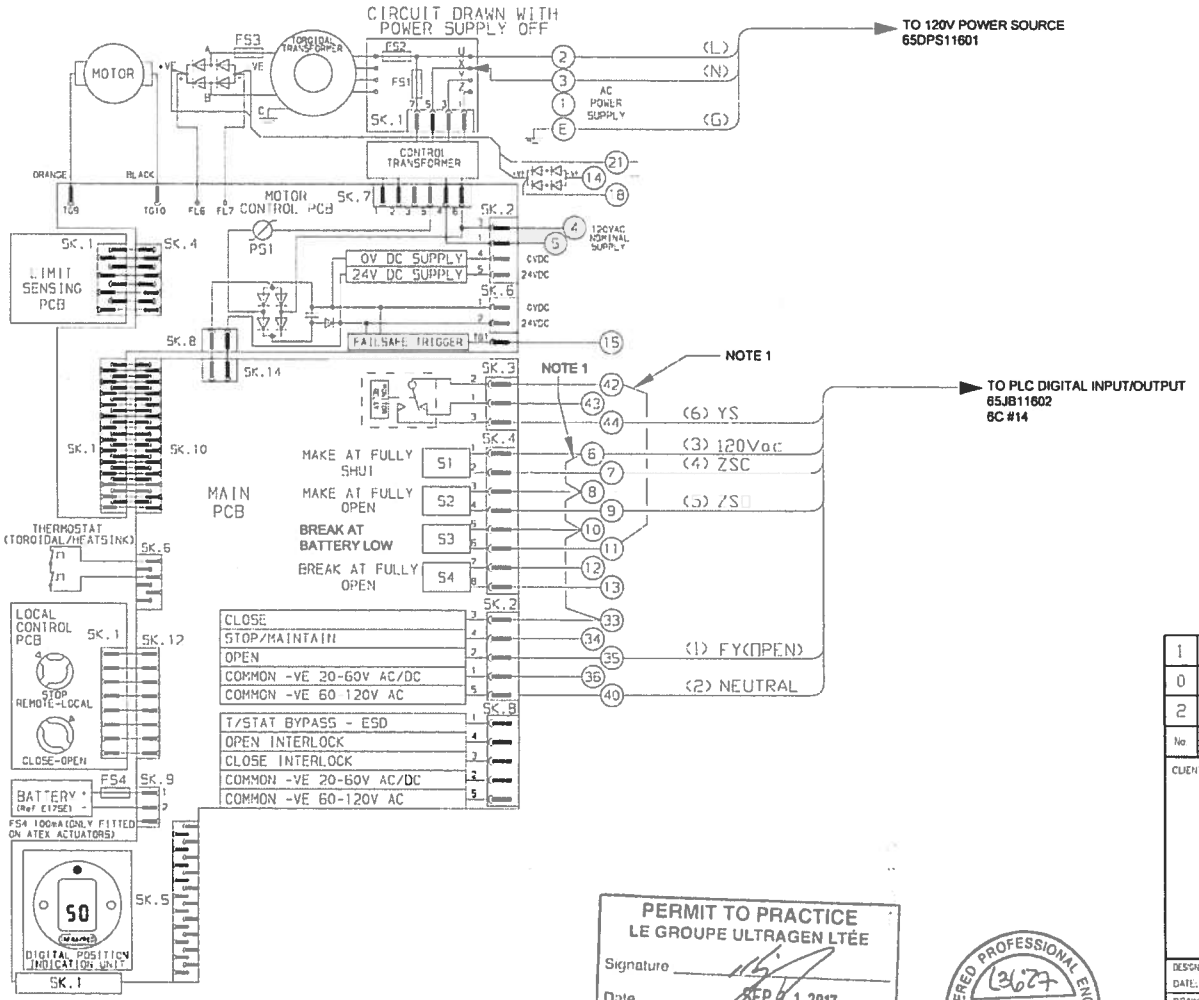
ERIC LARDUCHE	2017-05-18
DANIEL CARRIER	2017-05-18
DANIEL CARRIER	2017-05-18
	2017-05-18

65-ULT-116-IN-100

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

REGISTERED PROFESSIONAL ENGINEER
13617
D. CARRIER
LICENSEE
NT/NU
SEP 21 2017



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

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

CLIENT: AGNICO EAGLE

NUQSANA-PROMEC MINING

ultragen
CONSULTANT PROJECT NO. 591700

DESIGNED BY: E. LAROUCHE	DATE: 2017.09.24
DRAWN BY: R. SHRESTHA	DATE: 2017.09.24
CHECKED BY: D. CARRIER	DATE: 2017.09.24
APPROVED BY:	DATE:
SCALE: NTS	

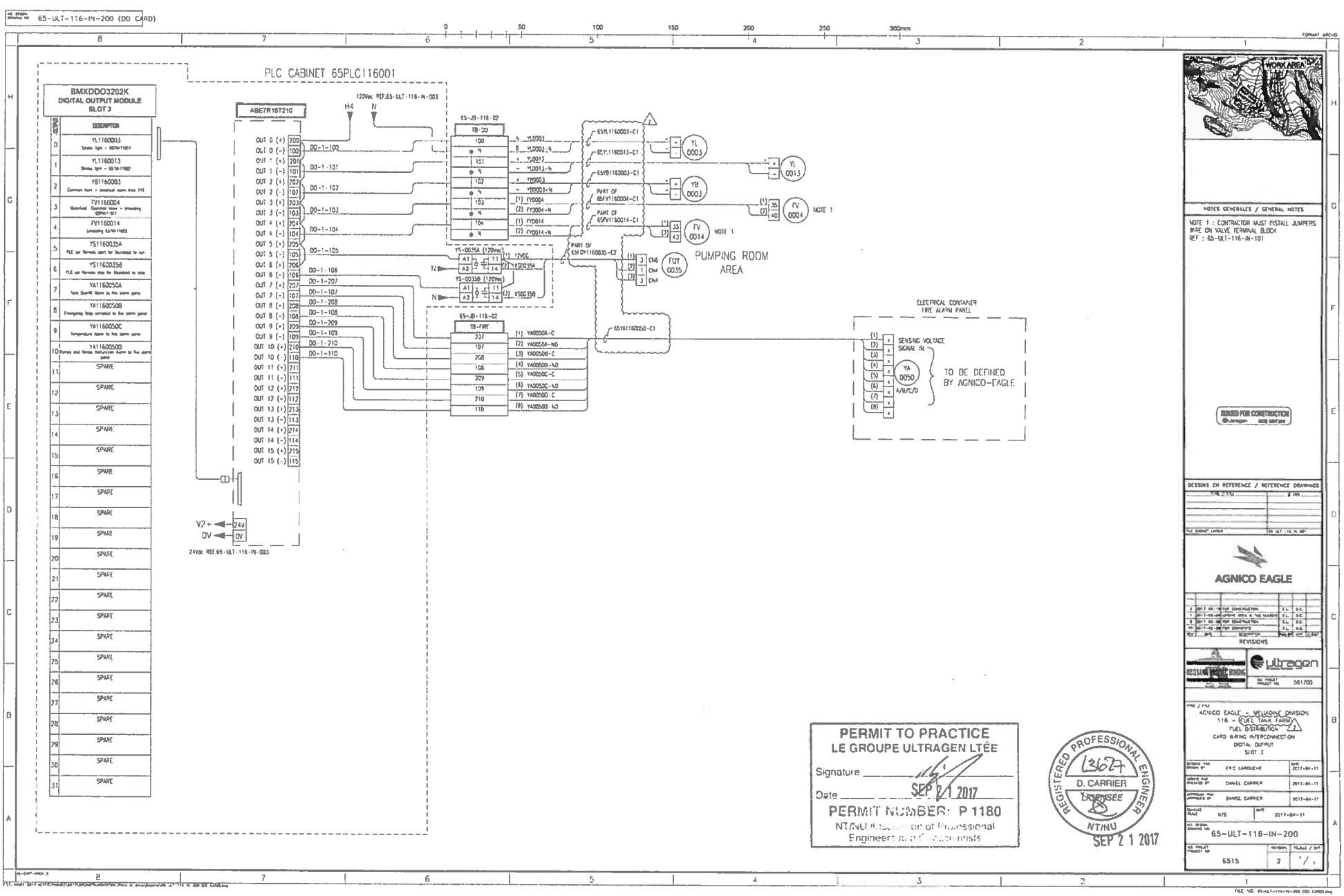
PROJECT: AGNICO EAGLE – MEADOWBANK DIVISION
116 – FUEL TANK FARM 2

TITLE: ROTORK MOTORIZED VALVE WIRING DIAGRAM TYPICAL DRAWING FOR 65FV1160004/65FV1160014

PROJECT No.	DRAWING NO.	REV.
6515	65-ULT-116-IN-101	2

PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date SEP 2 1 2017
PERMIT NUMBER: P 1180
NT/NU Association of Professional Engineers and Geoscientists

REGISTERED PROFESSIONAL ENGINEER
13677
D. CARRIER
LICENSEE
NT/NU
SEP 2 1 2017


65-ULT-116-IN-200 (DO CARD)
PLC CABINET 65PLC116001
BMXDDO3202K
DIGITAL OUTPUT MODULE
SLOT 3
SPARE
ABE7R16T210
120Vac REF:65-ULT-116-IN-003
24Vdc REF:65-ULT-116-IN-003
65-JB-116-02
TB-DO
TB-FIRE
PUMPING ROOM AREA
ELECTRICAL CONTAINER FIRE ALARM PANEL
SENSING VOLTAGE
SIGNAL IN
TO BE DEFINED BY AGNICO-EAGLE
NOTE 1
ISSUED FOR CONSTRUCTION
AGNICO EAGLE
REVISIONS
ULTRAGEN
AGNICO EAGLE - MEADOWBANK DIVISION
116 - FUEL TANK FARM
FUEL DISTRIBUTION
CARD WIRING INTERCONNECTION
DIGITAL OUTPUT
SLOT 3
ERIC LAROUCHE
DANIEL CARRIER
NTS
65-ULT-116-IN-200
6515
2
PERMIT TO PRACTICE
LE GROUPE ULTRAGEN LTÉE
Signature
Date
SEP 21 2017
PERMIT NUMBER: P 1180
REGISTERED PROFESSIONAL ENGINEER
D. CARRIER
NT/NU
SEP 21 2017

65-ULT-116-IN-201 (DI CARD)

BMXDDI3202K
DIGITAL INPUT MODULE
SLOT 2

BIT	DESCRIPTION
0	65S1160259
1	65C1160004
2	65D1160004
3	65S1160004
4	65C1160014
5	65D1160014
6	65S1160014
7	65S1160039
8	65SL1160005
9	65SL1160006
10	65SL1160015
11	65SL1160016
12	SPARE
13	SPARE
14	SPARE
15	SPARE
16	SPARE
17	SPARE
18	SPARE
19	SPARE
20	SPARE
21	SPARE
22	SPARE
23	SPARE
24	SPARE
25	SPARE
26	SPARE
27	SPARE
28	SPARE
29	SPARE
30	SPARE
31	SPARE

ABE7B16E2P0

E-STOP RELAY
65-ULT-116-IN-004

65-JB-116-02
TB-DI

PART OF 65FV1160004-C1
PART OF 65FV1160014-C1

FV 0004 NOTE 1
FV 0014 NOTE 1

CR-65D039 (120Vac)
OUT AC-N2
AC-N2

65XS1160039-C1
TO MICROLOAD PULL BOX FOY0035-JB1
REF 65-ULT-116-IN-100

65-JB-116-03 (TANK 1)
65-JB-116-04 (TANK 2)

65FSL1160005/0006-C1
65FSL1160015/0016-C1

FSL 0005
FSL 0006
FSL 0015
FSL 0016

24Vdc REF:65-ULT-116-IN-003
V1+ 24V
0V 0V
115
N
120Vac REF:65-ULT-116-IN-003
N209

NOTES GENERALES / GENERAL NOTES

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

ISSUED FOR CONSTRUCTION

DESSINS EN REFERENCE / REFERENCE DRAWINGS

AGNICO EAGLE

REVISIONS

ultragen

591700

AGNICO EAGLE – MEADOWS DIVISION
116 – FUEL FARM
FUEL DISTRIBUTION
CARD WIRING INTERCONNECTION
DIGITAL INPUT (120VAC)
SLOT 2

DESSINE PAR / DRAWN BY	EPIC LAROUCHE	2017-04-11
VERIFIE PAR / CHECKED BY	DANIEL CARRIER	2017-04-11
APPROUVE PAR / APPROVED BY	DANIEL CARRIER	2017-04-17
ECHELLE / SCALE	N/S	DATE 2017-04-11

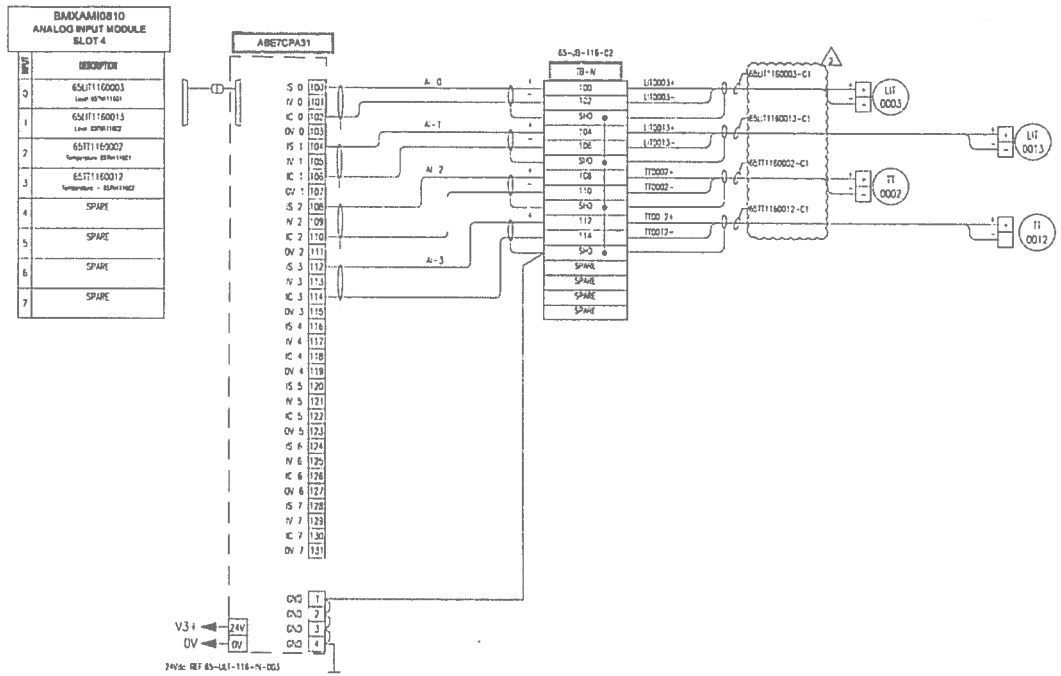
65-ULT-116-IN-201

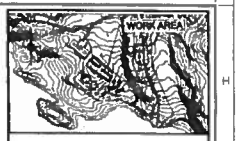
6515 | 2 | 1/1

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

REGISTERED PROFESSIONAL ENGINEER
L3677
D. CARRIER
LICENSEE
NT/NU
SEP 21 2017

65-ULT-116-IN-207 (AI CARD)





NOTES GENERALES / GENERAL NOTES

ISSUED FOR CONSTRUCTION

DESSINS EN REFERENCE / REFERENCE DRAWINGS

AGNICO EAGLE

REVISIONS			
2	2017-09-18 FOR CONSTRUCTION	E.L.	D.C.
1	2017-05-04 UPDATE AREA & TAG NUMBER	E.L.	D.C.
0	2017-04-06 FOR CONSTRUCTION	E.L.	D.C.
Rv.	2017-03-30 FOR COMMENTS	E.L.	D.C.

ultragen

AGNICO EAGLE – MEADOWBANK DIVISION
116 – CVT TANK FARM
FUEL DISTRIBUTION
CARD WIRING INTERCONNECTION
ANALOG INPUT
SLOT 4

ERIC LAROCHE		2017-04-11
DANIEL CARRIER		2017-04-11
DANIEL CARRIER		2017-04-11
NTS		2017-04-11

65-ULT-116-IN-202

6515 | 2

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

REGISTERED PROFESSIONAL ENGINEER
13627
D. CARRIER
LICENSEE
NT/NU
SEP 21 2017

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: ☐ 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.

6515-C-270-007

Fuel Tanks Piping Supply and Installation

Non-Conformance Log

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

AGNICO EAGLE

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

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: 2017-05-02

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

DOCUMENT FOR INFORMATION

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1 ☐ Proceed to next submission and status.

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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

AGNICO EAGLE

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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.
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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

NUQSANA PROMEC MINING

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				

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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

NUQSANA PROMEC MINING

AGNICO EAGLE

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	
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Deficiency-037						N/A	
Deficiency-038						N/A	
Deficiency-039						N/A	
Deficiency-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: 2017-05-16

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

DOCUMENT FOR INFORMATION

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:

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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

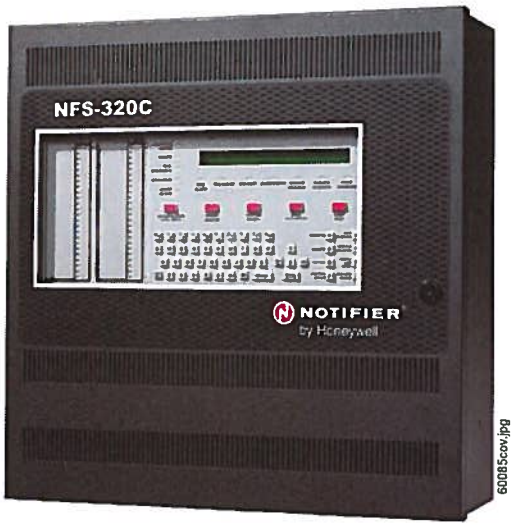
The NFS-320C intelligent Fire Alarm Control Panel is part of the ONYX® Series of Fire Alarm Controls from NOTIFIER.

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 multisensor.
  - 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 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.

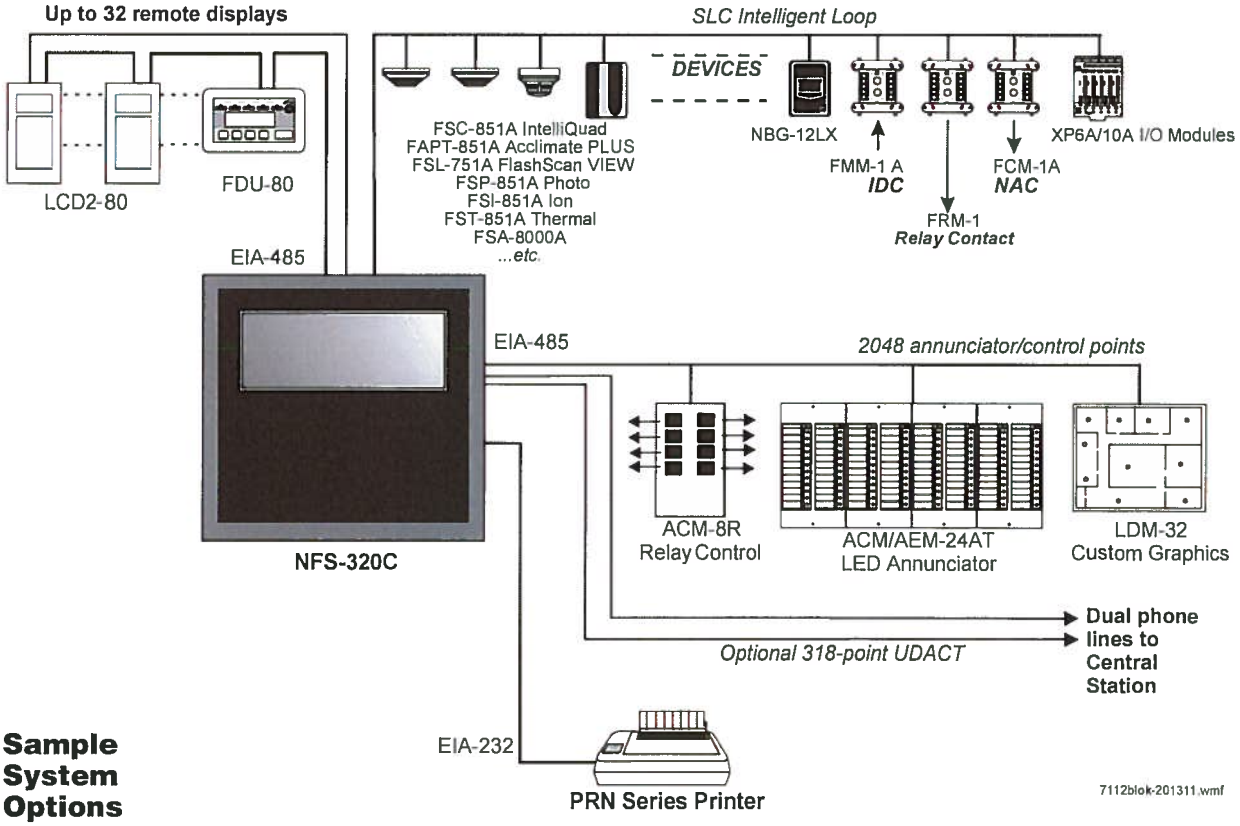
FCO-851A INTELLIQUAD™ PLUS ADVANCED MULTI-CRITERIA FIRE/CO DETECTOR

- 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

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).

ISO 9001 CERTIFIED
ENGINEERING & MANUFACTURING QUALITY SYSTEMS

This document is not intended to be used for installation purposes. We try to keep our product information up-to-date and accurate. We cannot cover all specific applications or anticipate all requirements. All specifications are subject to change without notice.

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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

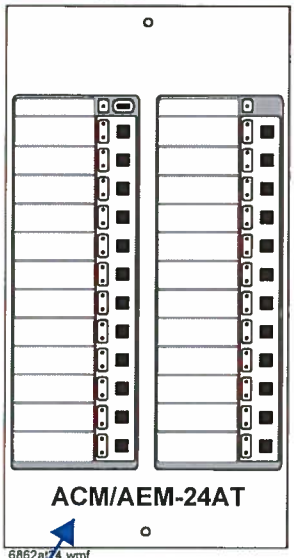
- Speaker control mode for use with XPIQ and the following panels: NFS2-3030, NFS2-640, NFS-320(C) and NFS-320SYS. Enables the ACS to control operation of groups of multi-channels mapped to groups of multi-speakers.
- Compatible with existing annunciators.
- Color-programmable LEDs.
- On-board end-of-line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



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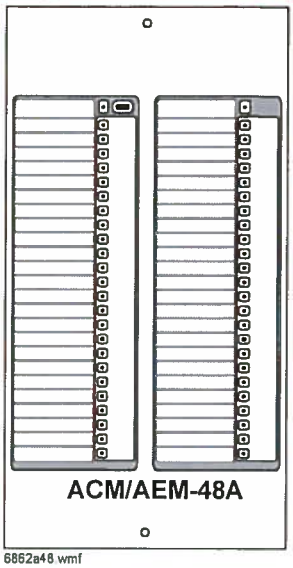

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Installation

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.

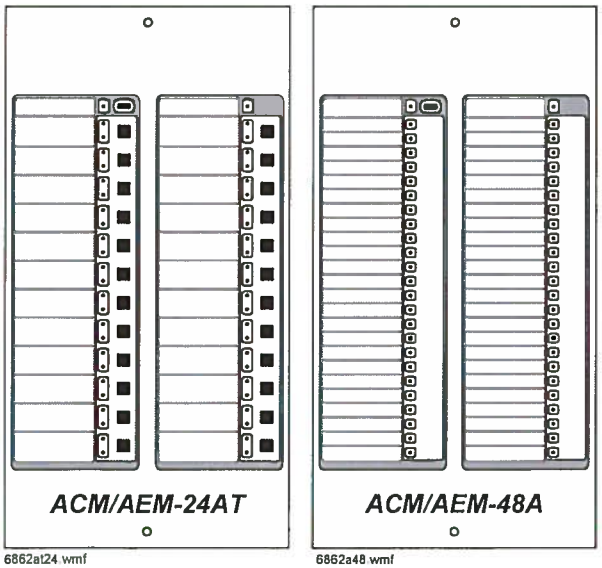
Local or remote power supplies and serial communications allow the ACS to be located virtually anywhere in the protected premises.

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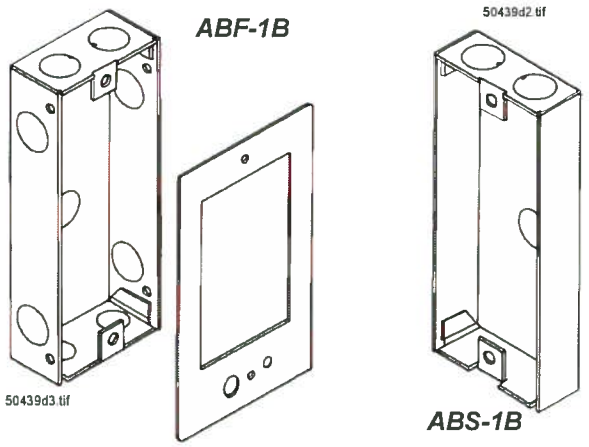
AEM-24AT: The Annunciator Expander Module-24AT expands the ACM-24AT by 24 system points. The AEM-24AT is identical in size and in frontal appearance to the ACM-24AT. Up to three of these expander modules can be supported by an ACM-24AT, for a maximum of 96 system points. 8.375" (21.27 cm) high; 4.375"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

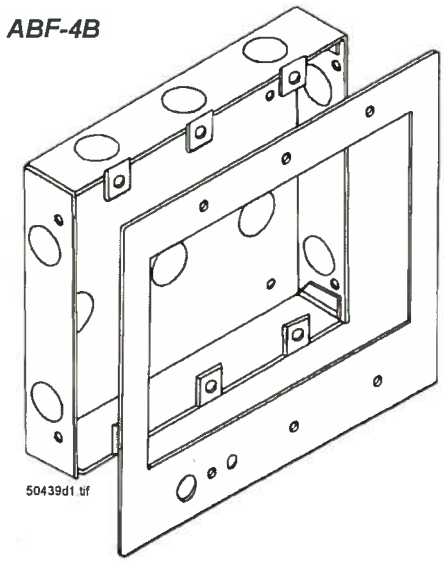
ABS-2B: The Annunciator Surface Box-2B (black) provides for the surface mounting of one ACM-24AT/AEM-24AT combination or one ACM-48A/AEM-48A combination. Knockouts are provided for use with 1/2" (1.27 cm) conduit. The annunciators mount directly to the ABS-2B without a dress plate. 8.5" (21.59 cm) high 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.



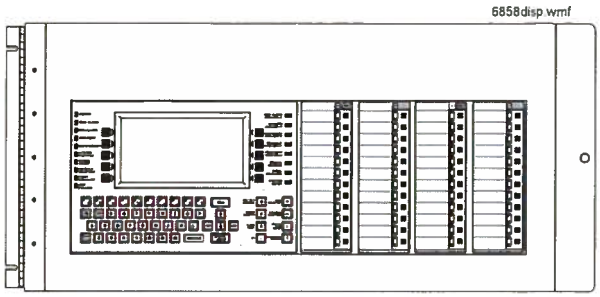
ABF-1DB, ABF-2DB, ABS-4D: The ABF-1DB, ABF-2DB and ABS-4D are semi-flush-mount backboxes for ACS Series Annunciators. The ABF-1DB mounts one annunciator module; the ABF-2DB mounts two modules; the ABS-4D mounts up to four modules. The ABS-4D Series can also accomodate the NCA-2 network annunciator, using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

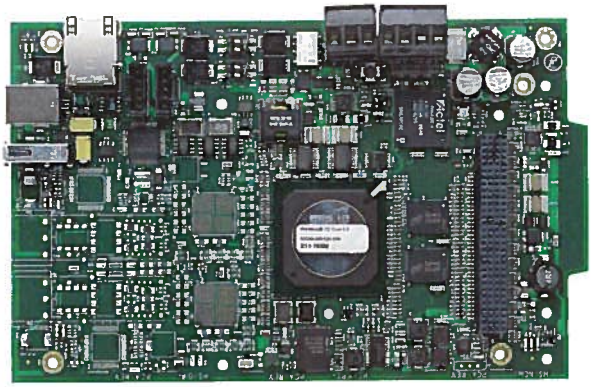
Compatibility

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

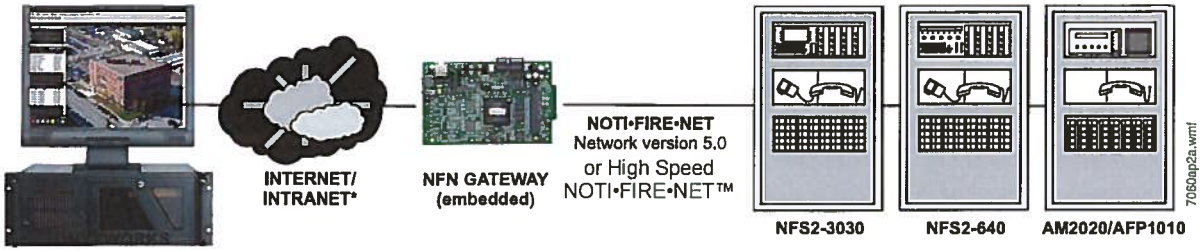
NFN-GW-EM-3: NOTI•FIRE•NET™ Gateway, embedded. Includes PC board, NUP to NUP cable (75577), USB Cable (75665) and NFN Configuration.

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.

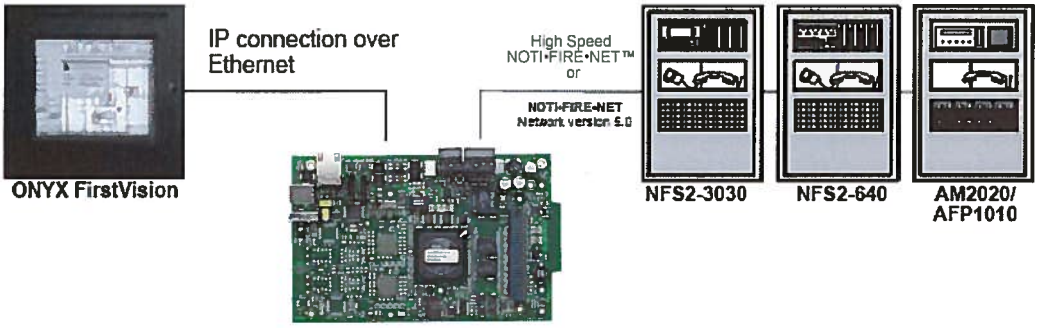
Remote Monitoring

NFN-GW-EM-3



* 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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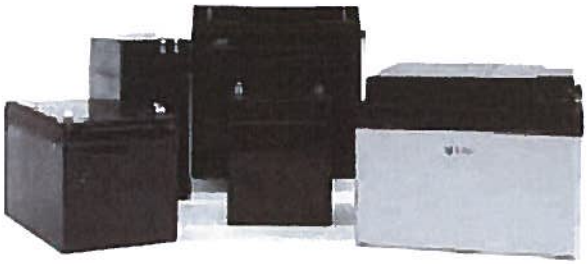
BAT Series Batteries

Sealed Lead-Acid

NOTIFIER® by Honeywell

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.



6933cov.jpg

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)*

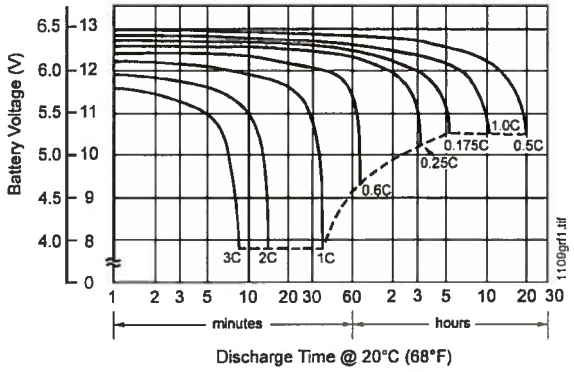
Ordering Information

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)

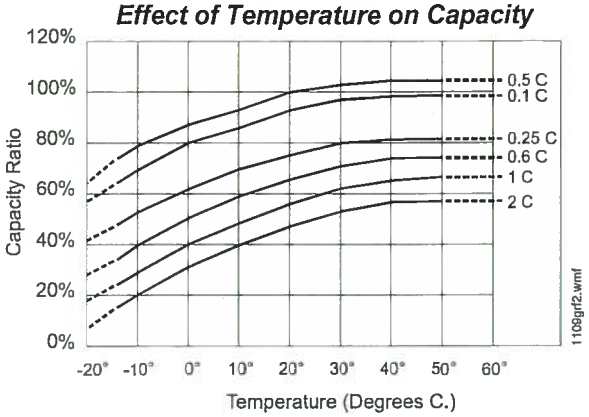
Part Number Reference & Specifications

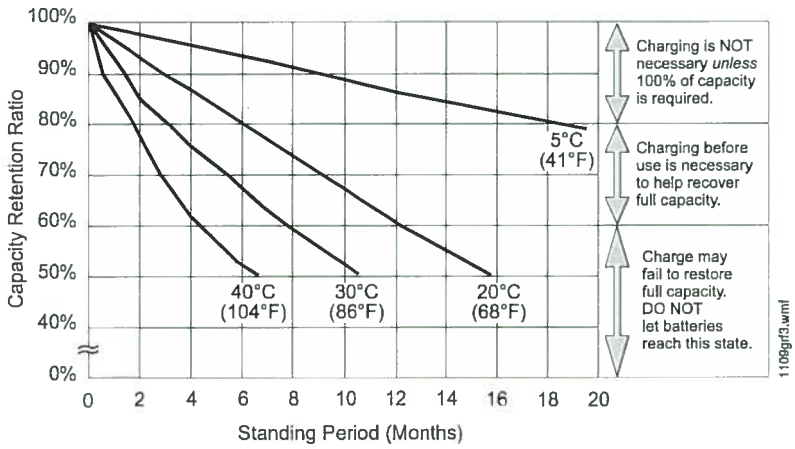
Part Number	Power Sonic Part Number	Battery Description			DIMENSIONS									
		Nominal Voltage V	Nominal Capacity @ 20 hr. rate A.H.		Width		Depth		Height		Height over terminal		Weight	
					in.	mm	in.	mm	in.	mm	in.	mm	lb.	kg.
BAT-1250	PS-1250	12	5	sealed	3.54	90	2.76	70	4.02	102	4.21	107	4.1	1.9
BAT-1270	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

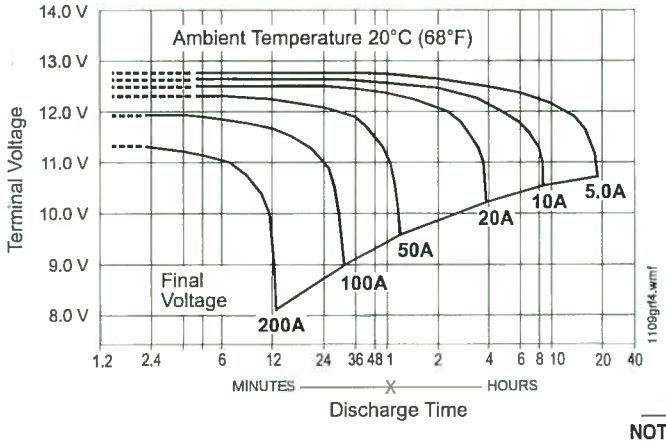


Effect of Temperature on Capacity





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.

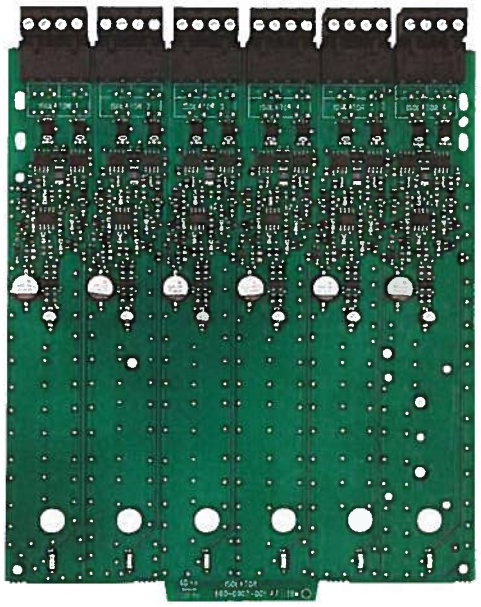
Dimensions: 6.8"H x 5.8"W x 1.0"D.

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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NBG-12LX

Addressable Manual Pull Station

NOTIFIER® by Honeywell

Intelligent/Addressable Devices

General

The Notifier NBG-12LX is a state-of-the-art, dual-action (i.e., requires two motions to activate the station) pull station that includes an addressable interface for any Notifier intelligent control panel except FireWarden series panels, and the NSP-25 panel. Because the NBG-12LX is addressable, the control panel can display the exact location of the activated manual station. This leads fire personnel quickly to the location of the alarm.

Features

- Maintenance personnel can open station for inspection and address setting without causing an alarm condition.
- Built-in bicolor LED, which is visible through the handle of the station, flashes in normal operation and latches steady red when in alarm.
- Handle latches in down position and the word "ACTIVATED" appears to clearly indicate the station has been operated.
- Captive screw terminals wire-ready for easy connection to SLC loop (accepts up to 12 AWG/3.25 mm² wire).
- Can be surface mounted (with SB-10 or SB-I/O) or semi-flush mounted. Semi-flush mount to a standard single-gang, double-gang, or 4" (10.16 cm) square electrical box.
- Smooth dual-action design.
- Meets ADAAG controls and operating mechanisms guidelines (Section 4.1.3[13]); meets ADA requirement for 5 lb. maximum activation force.
- Highly visible.
- Attractive shape and textured finish.
- Key reset.
- Includes Braille text on station handle.
- Optional trim ring (BG12TR).
- Meets UL 38, Standard for Manually Actuated Signaling Boxes.
- Up to 99 NBG-12LX stations per loop on CLIP protocol loops.
- Up to 159 NBG-12LX stations per loop on FlashScan® protocol loops.
- Dual-color LED blinks green to indicate normal on FlashScan® systems.

Construction

Shell, door, and handle are molded of durable polycarbonate material with a textured finish.

Specifications

- **Shipping Weight:** 9.6 oz. (272.15 g)
- **Normal operating voltage:** 24 VDC.
- **Maximum SLC loop voltage:** 28.0 VDC.
- **Maximum SLC loop current:** 375 µA.
- **Temperature Range:** 32°F to 120°F (0°C to 49°C)
- **Relative Humidity:** 10% to 93% (noncondensing)
- **For use indoors in a dry location**

The NBG-12LX
Addressable Manual Pull Station

Installation

The NBG-12LX will mount semi-flush into a single-gang, double-gang, or standard 4" (10.16 cm) square electrical outlet box, or will surface mount to the model SB-10 or SB-I/O surface backbox. If the NBG-12LX is being semi-flush mounted, then the optional trim ring (BG12TR) may be used. The BG12TR is usually needed for semi-flush mounting with 4" (10.16 cm) or double-gang boxes (not with single-gang boxes).

Operation

Pushing in, then pulling down on the handle causes it to latch in the down/activated position. Once latched, the word "ACTIVATED" (in bright yellow) appears at the top of the handle, while a portion of the handle protrudes from the bottom of the station. To reset the station, simply unlock the station with the key and pull the door open. This action resets the handle; closing the door automatically resets the switch.

Each manual station, on command from the control panel, sends data to the panel representing the state of the manual switch. Two rotary decimal switches allow address settings (1 – 159 on FlashScan® systems, 1 – 99 on CLIP systems).

Architectural/Engineering Specifications

Manual Fire Alarm Stations shall be non-coded, with a key-operated reset lock in order that they may be tested, and so designed that after actual Emergency Operation, they cannot be restored to normal except by use of a key. An operated station shall automatically condition itself so as to be visually detected as activated. Manual stations shall be constructed of red-colored polycarbonate material with clearly visible operating instructions provided on the cover. The word FIRE shall appear on the front of the stations in white letters, 1.00 inches (2.54 cm) or larger. Stations shall be suitable for surface mounting on matching backbox SB-10 or SB-I/O; or semi-flush mounting on a standard single-gang, double-gang, or 4"

(10.16 cm) square electrical box, and shall be installed within the limits defined by the Americans with Disabilities Act (ADA) or per national/local requirements. Manual Stations shall be Underwriters Laboratories listed.

Manual stations shall connect with two wires to one of the control panel SLC loops. The manual station shall, on command from the control panel, send data to the panel representing the state of the manual switch.. Manual stations shall provide address setting by use of rotary decimal switches.

The loop poll LED shall be clearly visible through the front of the station. The LED shall flash while in the normal condition, and stay steadily illuminated when in alarm.

Product Line Information

NBG-12LX: Dual-action addressable pull station. Includes key locking feature.

SB-10: Surface backbox; metal.

SB-I/O: Surface backbox; plastic.

BG12TR: Optional trim ring.

17021: Keys, set of two.

NY-Plate: New York City trim plate

Agency Listings and Approvals

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 / CUL Listed:** S692 (listed for Canadian and non-Canadian applications)
- **MEA:** 67-02-E
- **CSFM:** 7150-0028:0199
- **FDNY:** COA #6038 (NFS2-640), COA #6058 (NFS2-3030)
- **BSMI:** CI313066760047
- **U.S. Coast Guard:** 161.002/23/3 (AFP-200); 161.002/27/3 (AM-2020/AFP-1010; 161.002/42/1 (NFS-640)
- **Lloyd's Register:** 02/6007 (NFS-640); 94/60004 (E2) (AFP-200); 03/60011 (E1); 07/60007 (NFS2-3030)
- **FM** Approved

Patented: U.S. Patent No. D428,351; 6,380,846; 6,314,772; 6,632,108.

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FAPT-851(A)

Acclimate® Plus™ Multi-Sensor
Low-Profile Intelligent Detector

NOTIFIER® by Honeywell

Intelligent/Addressable Devices

General

The Notifier FAPT-851(A) Acclimate® Plus™ detector is an intelligent, addressable, multi-sensing, low-profile detector designed for use with Notifier Notifier Onyx and CLIP series Fire Alarm Control Panels (FACPs).

The Acclimate Plus detector uses a combination of photoelectric and thermal sensing technologies to increase immunity to false alarms. Unlike traditional intelligent detectors, the Acclimate Plus detector has a microprocessor in the detector head that processes alarm data. As a result, the Acclimate Plus detector adjusts its sensitivity automatically, without operator intervention or control panel programming.

Areas where the Acclimate Plus detector is especially useful include office complexes, schools, college campuses, manufacturing and industrial facilities, and anywhere else the use of a particular area may change. The Acclimate Plus detector automatically adjusts its sensitivity to the environment.

FlashScan® (U.S. Patent 5,539,389) is a communication protocol developed to greatly enhance the speed of communication between analog intelligent devices and compatible systems. Intelligent devices communicate in a grouped fashion. If one of the devices within the group has new information, the panel's CPU stops the group poll and concentrates on single points. The net effect is response speed greater than five times that of earlier designs.

Features

- Automatically adjusts sensitivity levels without operator intervention or programming. Sensitivity increases with heat.
- Microprocessor-based, combination photo and thermal technology.
- Compatible with all Notifier Onyx and CLIP series Fire Alarm Control Panels (FACPs).
- Addressable-analog communication.
- Sleek, low-profile design.
- Two-wire SLC connection.
- Rotary, decimal addressing (1-99 on CLIP systems, 1-159 on FlashScan systems).
- Addresses can be viewed and changed without electronic programmers.
- Dual bi-color LED design provides 360° viewing angle.
- LEDs lock red when in alarm. In FlashScan, LEDs flash green in standby for normal condition.
- Built-in tamper-resistant feature.
- Constructed of off-white fire-resistant plastic, designed to commercial standards, and offers an attractive appearance.
- SEMS screws for wiring of the separate base.
- Several base options, including relay, isolator, and sounder.
- Built-in functional test switch activated by external magnet.
- Listed to UL 268.
- Capable of heat-only alarm mode, enabled by a special command from the panel. Smoke alarms are ignored.
- Low-temperature signal at 45°F +/– 10°F (7.22°C +/– 5.54°C).

FAPT-851 with B210.png

FAPT-851(A) in B210LP(A) Base

Specifications

Sensitivity: *auto-adjusting levels*: 1 to 2%/ft. and 2 to 4%/ft. with classic CLIP systems; 1 to 2, 2 to 3, and 3 to 4%/ft. with systems; *fixed-sensitivity levels:* 1, 2, and 4%/ft. with classic CLIP systems; 0.5, 1, 2, 3, and 4%/ft. with FlashScan systems.

Size: 2.0" (5.3 cm) high; base determines diameter.

- **B210LP(A):** 6.1" (15.5 cm) diameter.
- **B501(A):** 4.1" (10.4 cm) diameter.
- **B200S(A):** 6.875" (17.46 cm) diameter.
- **B200SR(A):** 6.875" (17.46 cm) diameter.
- **B224RB(A):** 6.2" (15.748 cm) diameter.

Shipping weight: 5.2 oz. (147 g).

Operating temperature: 0°C to 38°C (32°F to 100°F).

UL-Listed velocity range: 0 – 4000 ft./min. (1219.2 m/min.), suitable for installation in ducts.

Relative humidity: 10% – 93% noncondensing.

Thermal sensing rating: fixed-temperature setpoint 135°F (57°C).

ELECTRICAL SPECIFICATIONS

Voltage range: 15 – 32 volts DC peak.

Standby current (max. avg.): 300 µA.

Loop resistance: 50 ohms maximum; varies according to control panel used. Refer to panel installation manuals.

LED current (max.): 6.5 mA @ 24 VDC ("ON").

Installation

The FAPT-851(A) plug-in detector uses a separate base to simplify installation, service, and maintenance. A special tool allows maintenance personnel to plug-in and remove detectors without using a ladder. Suitable mounting base boxes include:

- 4.0" (10.16 cm) square box.
- 3.5" (8.89 cm) or 4.0" (10.16 cm) octagonal box.
- Single-gang box (except relay or isolator base).

NOTE: *The FAPT-851(A) detector has the unique ability to adjust sensitivity according to the environment, based on heat and smoke levels. Avoid installing these detectors in locations that are susceptible to rapid and high temperature changes. An example of an incorrect application would be near or in line with the output of a self-contained heater.*

Agency Listings and Approvals

These listings and approvals apply to the modules specified in this. 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 Listed:** S1115.
- **ULC Listed:** S1115.
- **MEA Listed:** 225-02-E.
- **FM Approved.**
- **CSFM:** 7272-0028:0206.
- **U.S. Coast Guard:** 161.002/42/1 (NFS-640); 161.002/50/0 (NFS2-640/NFS-320/NFS-320C, excluding B210LP(A)).
- **Lloyd's Register:** 11/600013 (NFS2-640, NFS-320/NFS-320C, excluding B210LP(A)).
- **Maryland State Fire Marshal:** Permit # 2122.

Ordering Information

NOTE: *"A" suffix indicates ULC Listed model.*

FAPT-851: Low-profile intelligent multi-sensor detector.

FAPT-851A: Same as FAPT-851 but with ULC Listing.

INTELLIGENT BASES

NOTE: *"A" suffix indicates ULC Listed model.*

NOTE: *For details about intelligent bases and their mounting, see DN-60054.*

B210LP(A): Plug-in detector base; standard U.S. flanged low-profile mounting base.

B210LPBP: Bulk pack of B210LP; package contains 10.

B501(A): Flangeless mounting base.

B501BP: Bulk pack of B501; package contains 10.

B200S(A): Intelligent, programmable sounder base capable of producing sound output in high or low volume with ANSI Temporal 3, ANSI Temporal 4, continuous tone, marching tone, and custom tone.

B200SR(A): Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone. Replaces B501BH series bases in retrofit applications.

B224RB(A): Relay base Screw terminals: up to 14 AWG (2.0 mm^2). Relay type Form-C. Rating: 2.0 A @ 30 VDC resistive; 0.3 A @ 110 VDC inductive; 1.0 A @ 30 VDC inductive.

B224BI(A): Isolator base. Maximum: 25 devices between isolator bases.

ACCESSORIES

F110: Retrofit flange to convert B210LP to match the B710LP profile, or to convert older high-profile bases to low-profile.

F110BP: Bulk pack of F110; package contains 15.

F210: Replacement flange for B210LP(A) base.

RA100Z(A): Remote LED annunciator. 3 – 32 VDC. Fits U.S. single-gang electrical box. Supported by B210LP(A) and B501(A) bases only.

SMB600: Surface mounting kit for use with B210LP(A).

M02-04-00: Test magnet.

M02-09-00: Test magnet with telescoping handle.

XR2B: Detector removal tool. Allows installation and/or removal of FlashScan® Series detector heads from base in high ceiling installations.

T55-127-010: Detector removal tool without pole.

XP-4: Extension pole for XR2B. Comes in three 5-foot (1.524 m) sections.

For more information, contact Notifier. Phone: (203) 484-7161, FAX: (203) 484-7118.
www.notifier.com

FST-851(A) Series

Intelligent Thermal (Heat) Detectors with FlashScan®

NOTIFIER® by Honeywell

Intelligent / Addressable Devices

General

Notifier FST-851(A) Series intelligent plug-in thermal detectors with integral communication has features that surpass conventional detectors. Point ID capability allows each detector's address to be set with rotary, decimal address switches, providing exact detector locations. FST-851(A) Series thermal detectors use an innovative thermistor sensing circuit to produce 135°F/57°C fixed-temperature (FST-851/A) and rate-of-rise thermal detection (FST-851R/A) in a low-profile package. FST-851H(A) provides fixed high-temperature detection at 190°F/88°C. These thermal detectors provide effective, intelligent property protection in a variety of applications. FST-851(A) Series detectors are compatible with Notifier Onyx and CLIP series Fire Alarm Control Panels (FACPs).

FlashScan® (U.S. Patent 5,539,389) is a communication protocol developed by Notifier Engineering that greatly enhances the speed of communication between analog intelligent devices and certain NOTIFIER systems. Intelligent devices communicate in a grouped fashion. If one of the devices within the group has new information, the panel's CPU stops the group poll and concentrates on single points. The net effect is response speed greater than five times that of earlier designs.

Features

- Sleek, low-profile, stylish design.
- State-of-the-art thermistor technology for fast response.
- Rate-of-rise model (FST-851R/A), 15°F (8.3°C) per minute.
- Factory preset fixed temperature at 135°F (57°C); high-temperature model fixed at 190°F (88°C).
- Addressable by device.
- Compatible with FlashScan® and CLIP protocol systems.
- Rotary, decimal addressing (1-99 on CLIP systems, 1-159 on FlashScan systems).
- Two-wire SLC connection.
- Visible LEDs "blink" every time the unit is addressed.
- 360°-field viewing angle of the visual alarm indicators (two bi-color LEDs). LEDs blink green in Normal condition and turn on steady red in Alarm.
- Integral communications and built-in device-type identification.
- Remote test feature from the panel.
- Built-in functional test switch activated by external magnet.
- Walk test with address display (an address of 121 will blink the detector LED 12-(pause)-1).
- Low standby current.
- Backward-compatible.
- Built-in tamper-resistant feature.
- Designed for direct-surface or electrical-box mounting.
- Sealed against back pressure.
- Plugs into separate base for ease of installation and maintenance. Separate base allows interchange of photoelectric, ionization and thermal sensors.
- SEMS screws for wiring of the separate base.
- Constructed of off-white fire-resistant plastic, designed to commercial standards, and offers an attractive appearance.

B210-2251.jpg

FST-851(A) in B210LP(A) Base

- 94-5V plastic flammability rating.
- Remote LED output connection to optional RA100Z(A) remote LED annunciator.
- Optional sounder, relay, and isolator bases.
- Optional flanced surface mounting kit.

Specifications

Size: 2.1" (5.3 cm) high; base determines diameter.

- **B210LP(A):** 6.1" (15.5 cm) diameter.
- **B501(A):** 4.1" (10.4 cm) diameter.
- **B200S(A):** 6.875" (17.46 cm) diameter.
- **B200SR(A):** 6.875" (17.46 cm) diameter.
- **B224RB(A):** 6.2" (15.748 cm) diameter.
- **B224BI(A):** 6.2" (15.748 cm) diameter.

Shipping weight: 4.8 oz. (137 g).

Operating temperature range: FST-851(A) Series, FST-851R(A): –20°C to 38°C (–4°F to 100°F); FST-851H(A): –20°C to 66°C (–4°F to 150°F).

Detector spacing: UL approved for 50 ft. (15.24 m) center to center. FM approved for 25 x 25 ft. (7.62 x 7.62 m) spacing.

Relative humidity: 10% – 93% noncondensing.

Thermal ratings: fixed-temperature setpoint 135°F (57°C), rate-of-rise detection 15°F (8.3°C) per minute, high temperature heat 190°F (88°C).

ELECTRICAL SPECIFICATIONS

Voltage range: 15 - 32 volts DC peak.

Standby current (max. avg.): 300 µA @ 24 VDC (one communication every 5 seconds with LED enabled).

LED current (max.): 6.5 mA @ 24 VDC ("ON").

Applications

Use thermal detectors for protection of property. For further information, go to systemsensor.com for manual I56-407-00, Applications Manual for System Smoke Detectors, which provides detailed information on detector spacing, placement, zoning, wiring, and special applications.

Installation

The FST Series plug-in intelligent thermal detectors use a separate base to simplify installation, service, and maintenance. Installation instructions are shipped with each detector. A special tool allows maintenance personnel to plug in and remove detectors without using a ladder

Mount base (all base types) on an electrical backbox which is at least 1.5" (3.81 cm) deep. For a chart of compatible junction boxes, see *DN-60054*.

***NOTE:** 1) Because of the inherent supervision provided by the SLC loop, end-of-line resistors are not required. Wiring "T-taps" or branches are permitted for Style 4 (Class "B") wiring. **2)** When using relay or sounder bases, consult the ISO-X(A) installation sheet I56-1380 for device limitations between isolator modules and isolator bases.*

Agency 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 Listed:** S747.
- **ULC Listed:** S6978.
- **MEA Listed:** 383-02-E.
- **FM Approved.**
- **CSFM:** 7270-0028:0196.
- **BSMI:** CI313066760025.
- **CCCF:** Certif. # 2004081801000018.
- **U.S. Coast Guard:** 161.002/42/1 (NFS-640); 161.002/50/0 (NFS2-640/NFS-320/NFS-320C, excluding B210LP(A)).
- **Lloyd's Register:** 11/600013 (NFS2-640/NFS-320/NFS-320C, excluding B210LP(A)).

Product Line Information

***NOTE:** "A" suffix indicates ULC Listed model.*

FST-851: Intelligent thermal detector. Must be mounted to one of the bases listed below.

FST-851A: Same as FST-851 but with ULC Listing.

FST-851R: Intelligent thermal detector with rate-of-rise feature.

FST-851RA: Same as FST-851R but with ULC Listing.

FST-851H: Intelligent high-temperature thermal detector.

FST-851HA: Same as FST-851H but with ULC Listing.

INTELLIGENT BASES

***NOTE:** "A" suffix indicates ULC Listed model.*

***NOTE:** For details about intelligent bases and their mounting, see DN-60054.*

B210LP(A): Standard U.S. flanged low-profile mounting base.

B210LPBP: Bulk pack of B210LP; package contains 10.

B501(A): Standard European flangeless mounting base.

B501BP: Bulk pack of B501; package contains 10.

B200S(A): Addressable Intelligent, programmable sounder base capable of producing sound output in high or low volume with ANSI Temporal 3, ANSI Temporal 4, continuous tone, marching tone, and custom tone.

B200SR(A): Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone. Replaces B501BH series bases in retrofit applications.

B224RB(A): Intelligent relay base. Screw terminals: up to 14 AWG (2.0 mm²). Relay type: Form-C. Rating: 2.0 A @ 30 VDC resistive; 0.3 A @ 110 VDC inductive; 1.0 A @ 30 VDC inductive.

B224BI(A): Intelligent isolator base. Isolates SLC from loop shorts. Maximum: 25 devices between isolator bases; see Note 2 under Installation.

ACCESSORIES

F110: Retrofit flange to convert B210LP(A) to match the B710LP(A) profile, or to convert older high-profile bases to low-profile.

F110BP: Bulk pack of F110; package contains 15.

F210: Replacement flange for B210LP(A) base.

RA100Z(A): Remote LED annunciator. 3 – 32 VDC. Fits U.S. single-gang electrical box. Supported by B210LP(A) and B501(A) bases only.

SMB600: Surface mounting kit, flanged.

M02-04-00: Test magnet.

M02-09-00: Test magnet with telescoping handle.

XR2B: Detector removal tool. Allows installation and/or removal of FlashScan® Series detector heads from base in high ceiling installations. Includes T55-127-010.

T55-127-010: Detector removal tool without pole.

XP-4: Extension pole for XR2B. Comes in three 5-foot (1.524 m) sections.

For more information, contact Notifier. Phone: (203) 484-7161, FAX: (203) 484-7118.
www.notifier.com

FCM-1(A) & FRM-1(A) Series

Control and Relay Modules

NOTIFIER® by Honeywell

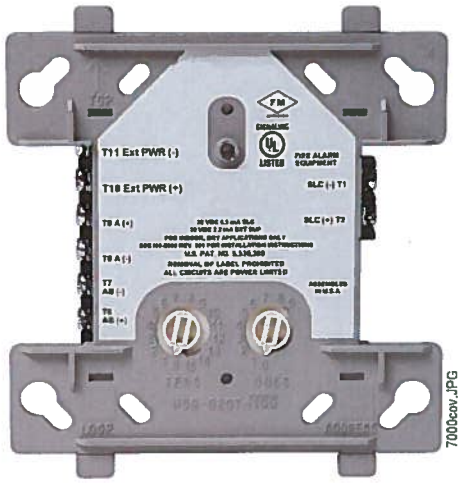
Intelligent / Addressable Devices

General

FCM-1(A) Control Module: The FCM-1(A) Addressable Control Module provides Notifier intelligent fire alarm control panels a circuit for Notification Appliances (horns, strobes, speakers, etc.). Addressability allows the FCM-1(A) to be activated, either manually or through panel programming, on a select (zone or area of coverage) basis.

FRM-1(A) Relay Module: The FRM-1(A) Addressable Relay Module provides the system with a dry-contact output for activating a variety of auxiliary devices, such as fans, dampers, control equipment, etc. Addressability allows the dry contact to be activated, either manually or through panel programming, on a select basis.

FlashScan® (U.S. Patent 5,539,389) is a communication protocol developed by NOTIFIER Engineering that greatly enhances the speed of communication between analog intelligent devices. Intelligent devices communicate in a grouped fashion. If one of the devices within the group has new information, the panel CPU stops the group poll and concentrates on single points. The net effect is response speed greater than five times that of other designs.



FCM-1(A)

Features

- Built-in type identification automatically identifies these devices to the control panel.
- Internal circuitry and relay powered directly by two-wire SLC loop. The FCM-1(A) module requires power (for horns, strobes, etc.), or audio (for speakers).
- Integral LED "blinks" green each time a communication is received from the control panel and turns on in steady red when activated.
- LED blink may be deselected globally (affects all devices).
- High noise immunity (EMF/RFI).
- The FCM-1(A) may be used to switch 24-volt NAC power, audio (up to 70.7 Vrms).
- Wide viewing angle of LED.
- SEMS screws with clamping plates for wiring ease.
- Direct-dial entry of address 01– 159 for FlashScan loops, 01 – 99 for CLIP mode loops.
- Speaker, and audible/visual applications may be wired for Class B or A (Style Y or Z).

Applications

The FCM-1(A) is used to switch 24 VDC audible/visual power, high-level audio (speakers). The FRM-1(A) may be programmed to operate dry contacts for applications such as door holders or Air Handling Unit shutdown, and to reset four-wire smoke detector power.

NOTE: Refer to the SLC Manual (PN 51253) for details regarding releasing applications with the FCM-1(A). Refer to the FCM-1-REL datasheet (DN-60390) for new FlashScan® releasing applications.

Construction

- The face plate is made of off-white heat-resistant plastic.
- Controls include two rotary switches for direct-dial entry of address (01-159).
- The FCM-1(A) is configured for a single Class B (Style Y) or Class A (Style Z) Notification Appliance Circuit.
- The FRM-1(A) provides two Form-C dry contacts that switch together.

Operation

Each FCM-1(A) or FRM-1(A) uses one of 159 possible module addresses on a SLC loop (99 on CLIP loops). It responds to regular polls from the control panel and reports its type and status, including the open/normal/short status of its Notification Appliance Circuit (NAC). The LED blinks with each poll received. On command, it activates its internal relay. The FCM-1(A) supervises Class B (Style Y) or Class A (Style Z) notification or control circuits.

Upon code command from the panel, the FCM-1(A) will disconnect the supervision and connect the external power supply in the proper polarity across the load device. The disconnection of the supervision provides a positive indication to the panel that the control relay actually turned ON. The external power supply is always relay isolated from the communication loop so that a trouble condition on the external power supply will never interfere with the rest of the system.

Rotary switches set a unique address for each module. The address may be set before or after mounting. The built-in TYPE CODE (not settable) will identify the module to the control panel, so as to differentiate between a module and a sensor address.

Specifications for FCM-1(A)

Normal operating voltage: 15 to 32 VDC.

Maximum current draw: 6.5 mA (LED on).

Average operating current: 350 µA direct poll, 375 µA group poll with LED flashing, 485 µA Max. (LED flashing, NAC shorted.)

Maximum NAC Line Loss: 4 VDC.

External supply voltage (between Terminals T10 and T11): Maximum (NAC): Regulated 24 VDC; Maximum (Speakers): 70.7 V RMS, 50W.

Drain on external supply: 1.7 mA maximum using 24 VDC supply; 2.2 mA Maximum using 80 VRMS supply.

Max NAC Current Ratings: For class B wiring system, the current rating is 3A; For class A wiring system, the current rating is 2A.

Temperature range: 32°F to 120°F (0°C to 49°C).

Humidity range: 10% to 93% non-condensing.

Dimensions: 4.5" (114.3 mm) high x 4" (101.6 mm) wide x 1.25" (31.75 mm) deep. Mounts to a 4" (101.6 mm) square x 2.125" (53.975 mm) deep box.

Accessories: SMB500 Electrical Box; CB500 Barrier

Specifications for FRM-1(A)

Normal operating voltage: 15 to 32 VDC.

Maximum current draw: 6.5 mA (LED on).

Average operating current: 230 µA direct poll; 255 µA group poll.

EOL resistance: not used.

Temperature range: 32°F to 120°F (0°C to 49°C).

Humidity range: 10% to 93% non-condensing.

Dimensions: 4.5" (114.3 mm) high x 4" (101.6 mm) wide x 1.25" (31.75 mm) deep. Mounts to a 4" (101.6 mm) square x 2.125" (53.975 mm) deep box.

Accessories: SMB500 Electrical Box; CB500 Barrier

Agency Listings and Approvals

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:** S635
- **ULC:** S3705 (A version only)
- **FM Approved**
- **CSFM:** 7300-0028:0219
- **MEA:** 14-00-E
- **FDNY:** COA #6067, #6065

Contact Ratings for FRM-1(A)

Current Rating	Maximum Voltage	Load Description	Application
3 A	30 VDC	Resistive	Non-Coded
2 A	30 VDC	Resistive	Coded
.9 A	110 VDC	Resistive	Non-Coded
.9 A	125 VDC	Resistive	Non-Coded
.5 A	30 VDC	Inductive (L/R=5ms)	Coded
1 A	30 VDC	Inductive (L/R=2ms)	Coded
.3 A	125 VAC	Inductive (PF=0.35)	Non-Coded
1.5 A	25 VAC	Inductive (PF=0.35)	Non-Coded
.7 A	70.7 VAC	Inductive (PF=0.35)	Non-Coded
2 A	25 VAC	Inductive (PF=0.35)	Non-Coded

***NOTE:** Maximum (Speakers): 70.7 V RMS, 50 W*

Product Line Information

***NOTE:** "A" suffix indicates ULC Listed model.*

FCM-1(A): Intelligent Addressable Control Module.

FRM-1(A): Intelligent Addressable Relay Module.

A2143-20: Capacitor, required for Class A (Style Z) operation of speakers.

SMB500: Optional Surface-Mount Backbox.

CB500: Control Module Barrier — required by UL for separating power-limited and non-power limited wiring in the same junction box as FCM-1(A).

***NOTE:** For installation instructions, see the following documents:*

- *FCM-1(A) Installation document I56-1169.*
- *FRM-1(A) Installation document I56-3502.*
- *Notifier SLC Wiring Manual, document 51253.*

ISO 9001 CERTIFIED ENGINEERING & MANUFACTURING QUALITY SYSTEMS

This document is not intended to be used for installation purposes.
We try to keep our product information up-to-date and accurate.
We cannot cover all specific applications or anticipate all requirements.
All specifications are subject to change without notice.

Made in the U.S. A.

For more information, contact Notifier. Phone: (203) 484-7161, FAX: (203) 484-7118.
www.notifier.com

SpectrAlert® Advance

Selectable Output Notification Appliances

NOTIFIER® by Honeywell

Audio/Visual Devices

General

SpectrAlert® Advance selectable-output horns, strobes and horn/strobes are rich with features guaranteed to cut installation times and maximize profits. The SpectrAlert Advance series of notification appliances is designed to simplify your installations, with features such as: plug-in designs, instant feedback messages to ensure correct installation of individual devices, and eleven field-selectable candela settings for wall and ceiling strobes and horn/strobes.

More specifically, when installing Advance products, first attach a universal mounting plate to a four-inch square, four-inch octagon, or double-gang junction box. The two-wire mounting plate attaches to a single-gang junction box.

Then, connect the notification appliance circuit wiring to the SEMS terminals on the mounting plate.

Finally, attach the horn, strobe, or horn/strobe to the mounting plate by inserting the product's tabs in the mounting plate's grooves. The device will rotate into position, locking the product's pins into the mounting plate's terminals. The device will temporarily hold in place with a catch until it is secured with a captured mounting screw.

SpectrAlert Advance products allow you to choose:

- 12 or 24 volts.
- 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, or 185 candela by way of a rear-mounted slide switch and front viewing window.
- Horn tones and volume by way of a rotary switch.

The SpectrAlert Advance series includes outdoor notification appliances. Outdoor strobes and horn/strobes (two-wire and four-wire) are available for wall or ceiling. Outdoor horns are available for wall only. All System Sensor outdoor products are rated between –40°C and 66°C in wet or dry applications.

Models available:

- Indoor wall-mount: horn, strobe, 2-wire horn/strobe, 4-wire horn/strobe.
- Indoor ceiling-mount: strobe, 2-wire horn/strobe, 4-wire horn/strobe.
- Outdoor wall-mount: horn, strobe, 2-wire horn/strobe, 4-wire horn/strobe.
- Outdoor ceiling-mount: strobe, 2-wire horn/strobe, 4-wire horn/strobe.

Features

- Plug-in design.
- Same mounting plate for wall- and ceiling-mount units.
- Shorting spring on mounting plate for continuity check before installation.
- Captive mounting screw.
- Tamper-resistance capability.
- Field-selectable candela settings on wall and ceiling units: 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, 185.
- Automatic selection of 12 or 24 volt operation at 15 and 15/75 candela.
- Outdoor wall and ceiling products.
- Outdoor products rated from –40°C and 66°C.

Indoor Ceiling Horn/Strobe

Outdoor Ceiling Strobe

Indoor Wall Horn/Strobe

Indoor Ceiling Strobe

Indoor Wall Horn

Outdoor Wall Strobe

- Outdoor products rainproof per UL50 (NEMA 3R) and weatherproof per NEMA 4X, IP56
- Minimal intrusion into the backbox.
- Horn rated at 88+ dbA at 16 volts.
- Rotary switch for tone selection.
- Three horn volume settings.
- Electrically compatible with existing SpectrAlert products.

Engineering Specifications

SpectrAlert Advance horns, strobes, and horn/strobes mount to a standard 10.16 x 10.16 x 3.81 cm backbox, 10.16 cm octagonal backbox, or a double-gang backbox. Two-wire products mount to a single-gang 5.08 x 10.16 x 4.763 cm backbox. A universal mounting plate shall be used for mounting ceiling and wall products. The notification appliance circuit wiring shall terminate at the universal mounting plate. Also, SpectrAlert Advance products, when used with the Sync•Circuit™ Module accessory, shall be powered from a non-coded notification appliance circuit output and shall operate on a nominal 12 or 24 volts. When used with the Sync•Circuit Module, 12-volt rated notification appliance circuit outputs shall operate between 9 and 17.5 volts; 24-volt rated notification appliance circuit outputs shall operate between 17 and 33 volts. Indoor SpectrAlert Advance products shall operate between 0°C and 49°C from a regulated DC, or full-wave-rectified, unfiltered power supply. Strobes and horn/strobes shall have field-selectable candela settings including 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, 185.

STROBE

The strobe shall be a System Sensor SpectrAlert Advance Model _____ listed to CAN/ULC S5512 and shall be approved for fire protective service. The strobe shall be wired

as a primary-signaling notification appliance and comply with the Americans with Disabilities Act requirements for visible signaling appliances, flashing at 1 Hz over the strobe's entire operating voltage range. The strobe light shall consist of a xenon flash tube and associated lens/reflector system.

HORN/STROBE COMBINATION

The horn/strobe shall be a System Sensor SpectrAlert Advance Model _____ listed to CAN/ULC S5512 and shall be approved for fire protective service. The horn/strobe shall be wired as a primary-signaling notification appliance and comply with the Americans with Disabilities Act requirements for visible signaling appliances, flashing at 1 Hz over the strobe's entire operating voltage range. The strobe light shall consist of a xenon flash tube and associated lens/reflector system. The horn shall have three audibility options and an option to switch between a Temporal 3 pattern and a Non-Temporal (continuous) pattern. These options are set by a multiple position switch. On four-wire products, the strobe shall be powered independently of the sounder. The horn on horn/strobe models shall operate on a coded or non-coded power supply.

OUTDOOR PRODUCTS

SpectrAlert Advance outdoor horns, strobes and horn/strobes shall be listed for outdoor use by ULC and shall operate between –40°C and 66°C. The products shall be listed for use with a System Sensor outdoor/weatherproof backbox with half-inch and three-fourths-inch conduit entries.

SYNCHRONIZATION MODULE

The module shall be a System Sensor Sync•Circuit MDL3RA or MDL3WA listed to ULC and shall be approved for fire protective service. The module shall synchronize SpectrAlert strobes at 1 Hz and horns at Temporal 3. Also, while operating the strobes, the module shall silence the horns on horn/strobe models over a single pair of wires. The module shall mount to a 11.906 x 11.906 x 5.398 cm backbox. The module shall also control two Style Y (class B) circuits or one Style Z (Class A) circuit. The module shall synchronize multiple zones. Daisy-chaining two or more synchronization modules together will synchronize all the zones they control. The module shall not operate on a coded power supply.

Operating Specifications

- **Standard operating temperature:** 0°C to 49°C.
- **K Series operating temperature:** –40°C to 66°C.
- **Humidity range:** 10% to 93% non-condensing (indoor products).
- **Strobe flash rate:** 1 flash per second.
- **Nominal voltage:** regulated 12 VDC/FWR or regulated 24 VDC/FWR. ***NOTE:*** *Full Wave Rectified (FWR) voltage is a non-regulated, time-varying power source that is used on some power supply and panel outputs.*
- **Operating voltage range:** 8 V to 17.5 V (12 V nominal); or 16 V to 33 V (24 V nominal). ***NOTE:*** *P, S, PC, and SC products will operate at 12 V nominal only for 15 cd and 15/75 cd.*
- **Input terminal wire gauge:** 12 to 18 AWG (3.31 to 0.821 mm²).
- **Ceiling-mount dimensions (including lens):** 17.3 cm diameter x 6.4 cm deep.
- **Wall-mount dimensions (including lens):** 14.2 cm H x 11.9 cm W x 6.4 cm D.
- **Horn dimensions:** 14.2 cm H x 11.9 cm W x 3.3 cm D.

Agency Listings and Approvals

The listings and approvals below apply to SpectrAlert Advance Selectable Output Notification Devices. 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 Listed:** S4011
- **ULC Listed:** S5512
- **FM Approved**
- **MEA:** 452-05-E
- **CSFM:** 7125-1653:0186 (indoor strobes); 7125-1653:0188 (horn strobes, chime strobes); 7135-1653:0189 (horns, chimes)

Strobe Current Draw, ULC Maximum (mA RMS)

Candela		8 – 17.5 V		16 – 33 V	
		DC	FWR	DC	FWR
Standard Candela Range	15	123	128	66	71
	15/75	142	148	77	81
	30	NA	N/A	94	96
	75	NA	NA	158	153
	95	NA	NA	181	176
	110	NA	NA	202	195
	115	NA	NA	210	205
High Candela Range	135	NA	NA	228	207
	150	NA	NA	246	220
	177	NA	NA	281	251
	185	NA	NA	286	258

Horn Current Draw, ULC Maximum (mA RMS)

Sound Pattern	dB	8 – 17.5 V		16 – 33 V	
		DC	FWR	DC	FWR
Temporal	High	57	55	69	75
Temporal	Medium	44	49	58	69
Temporal	Low	38	44	44	48
Non-temporal	High	57	56	69	75
Non-temporal	Medium	42	50	60	69
Non-temporal	Low	41	44	50	50
Coded	High	57	55	69	75
Coded	Medium	44	51	56	69
Coded	Low	40	46	52	50

Horn and Horn/Strobe Rotary Switch Setting

Setting	Repetition Rate	dB Level
1	Temporal horn	High
2	Temporal horn	Medium
3	Temporal horn	Low
4	Normal horn	High
5	Normal horn	Medium
6	Normal horn	Low
7*	Externally coded	High
8*	Externally coded	Medium
9*	Externally coded	Low

**NOTE: Settings 7, 8, and 9 are not available on 2-wire horn/strobe.*

Horn and Horn/Strobe Output (dBA)

Switch Position	Sound Pattern	dB	8 – 17.5 V		16 – 33 V	
			DC	FWR	DC	FWR
1	Temporal	High	96	93	101	99
2	Temporal	Medium	89	89	95	95
3	Temporal	Low	86	87	91	92
4	Non-temporal	High	90	86	96	93
5	Non-temporal	Medium	82	82	90	89
6	Non-temporal	Low	79	80	86	86
7*	Coded	High	90	87	96	93
8*	Coded	Medium	82	82	90	89
9*	Coded	Low	78	80	86	86

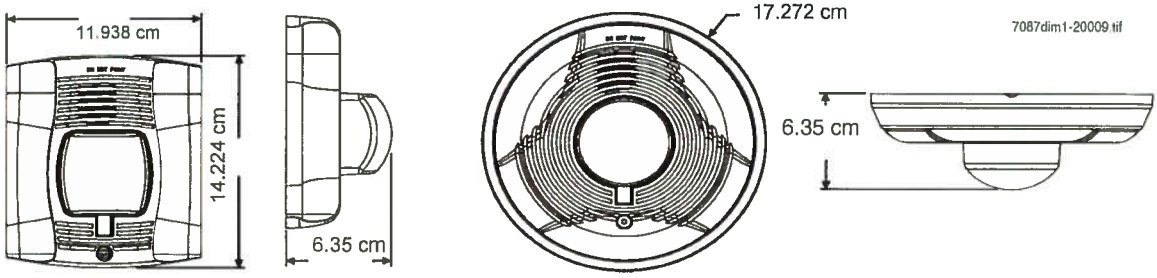
**NOTE: Settings 7, 8, and 9 are not available on 2-wire horn/strobe.*

Two-Wire Horn/Strobe, *STANDARD* Candela Range (15 – 115 cd), ULC Maximum Current Draw (mA RMS)

Input, Sound Pattern, dB Level	8 – 17.5 V		16 – 33 V						
	15	15/75	15	15/75	30	75	95	110	115
Input, Temporal, High	137	147	79	90	107	176	194	212	218
Input, Temporal, Medium	132	144	69	80	97	157	182	201	210
Input, Temporal, Low	132	143	66	77	93	154	179	198	207
Input, Non-temporal, High	141	152	91	100	116	176	201	221	229
Input, Non-temporal, Medium	133	145	75	85	102	163	187	207	216
Input, Non-temporal, Low	131	144	68	79	96	156	182	201	210
Input, Temporal, High	136	155	88	97	112	168	190	210	218
Input, Temporal, Medium	129	152	78	88	103	160	184	202	206
Input, Temporal, Low	129	151	76	86	101	160	184	194	201
Input, Non-temporal, High	142	161	103	112	126	181	203	221	229
Input, Non-temporal, Medium	134	155	85	95	110	166	189	208	216
Input, Non-temporal, Low	132	154	80	90	105	161	184	202	211

Two-Wire Horn/Strobe, *HIGH* Candela Range (135 – 185 cd), ULC Maximum Current Draw (mA RMS)

Input	16 – 33 V				Input	16 – 33 V			
	135	150	177	185		135	150	177	185
Temporal, High	245	259	290	297	Temporal, High	215	231	258	265
Temporal, Medium	235	253	288	297	Temporal, Medium	209	224	250	258
Temporal, Low	232	251	282	292	Temporal, Low	207	221	248	256
Non-temporal, High	255	270	303	309	Non-temporal, High	233	248	275	281
Non-temporal, Medium	242	259	293	299	Non-temporal, Medium	219	232	262	267
Non-temporal, Low	238	254	291	295	Non-temporal, Low	214	229	256	262



Ordering Information

Model	Description	Model	Description
WALL HORN/STROBES		*CEILING HORN/STROBES*	
P2RA	2-wire horn/strobe, standard cd, red.	PC2RKA	2-wire horn/strobe, standard cd, red, outdoor.
P2RHA	2-wire horn/strobe, high cd, red.	PC2RHKA	2-wire horn/strobe, high cd, red, outdoor.
P2RKA	2-wire horn/strobe, standard cd, red, outdoor	PC2WA	2-wire horn/strobe, standard cd, white.
P2RHKA	2-wire horn/strobe, high cd, red, outdoor.	PC2WHA	2-wire horn/strobe, high cd, white.
P2WA	2-wire horn/strobe, standard cd, white.	PC4RKA	4-wire horn/strobe, standard cd, red, outdoor.
P2WHA	2-wire horn/strobe, high cd, white.	PC4RHKA	4-wire horn/strobe, high cd, red, outdoor.
P4RA	4-wire horn/strobe, standard cd, red.	PC4WA	4-wire horn/strobe, standard cd, white.
P4RHA	4-wire horn/strobe, high cd, red.	PC4WHA	4-wire horn/strobe, high cd, white.
P4RKA	4-wire horn/strobe, standard cd, red, outdoor.	*HORNS*	
P4RHKA	4-wire horn/strobe, high cd, red, outdoor.	HRA	Horn, red.
P4WA	4-wire horn/strobe, standard cd, white.	HRKA	Horn, red, outdoor.
P4WHA	4-wire horn/strobe, high cd, white.	HWA	Horn, white.
ACCESSORIES		*WALL STROBES*	
BBS-2A	Backbox skirt, wall, red.	SRA	Strobe, standard cd, red.
BBSW-2A	Backbox skirt, wall, white.	SRHA	Strobe, high cd, red.
BBSC-2A	Backbox skirt, ceiling, red.	SRKA	Strobe, standard cd, red, outdoor.
BBSCW-2A	Backbox skirt, ceiling, white.	SRHKA	Strobe, high cd, red, outdoor.
WTPA	Flush mount, weatherproof plate, red	SWA	Strobe, standard cd, white.
WTPWA	Flush mount, weatherproof plate, white	SWHA	Strobe, high cd, white.
TR-HSA	Trim Ring, Red, package of 5	*CEILING STROBES*	
TRW-HSA	Trim Ring, White, package of 5	SCRKA	Strobe, standard cd, red, outdoor.
TRC-HSA	Trim Ring Ceiling, Red, package of 5	SCRHKA	Strobe, high cd, red, outdoor.
TRCW-HSA	Trim Ring Ceiling, White, package of 5	SCWA	Strobe, standard cd, white.
		SCWHA	Strobe, high cd, white.

NOTE: *For strobes and horn/strobes, add suffix "-F" for French or "-B" for Bilingual.*

NOTE: **"High cd" refers to strobes that include 135, 150, 177, and 185 candela settings. "Standard cd" refers to strobes that include 15, 15/75, 30, 75, 95, 110, and 115 candela settings.*

NOTE: *All outdoor models ("K(A)" suffix) include a plastic weatherproof backbox.*

NOTE: *Add "-R" to models for weatherproof replacement device (no back box included). Only for use with weatherproof outdoor flush mounting plate, WTPA and WTPWA.*

NOTE: *Add "P" to model for plain housing (No "FIRE" marking on the cover.)*

For more information, contact Notifier.
(888) 289-1114
10 Whitmore Road
Woodbridge, Ontario L4L 7Z4
www.notifier.com

Audible Visible Accessories

System Sensor offers a wide range of Audible Visible (AV) accessories to enable you to meet a variety of application requirements.

Features

MP120K Mounting Plate

- Designed for both indoor and outdoor use
- Plug-in design eliminates ground faults
- Power supply that converts 120 VAC to nominal 24 V FWR
- Compatible with all two-wire SpectrAlert Advance® devices

Color Lens Attachments

- Easily turns any device into a strobe for ECS, severe weather, sprinkler activation and more
- Outdoor rated from –35°F to 151°F
- Wall- or ceiling-mount lenses available
- UL 1638 listed

WTP Weatherproof Plates

- Enables flush mounting of outdoor devices to brick, ceramic tile, concrete, and masonry brick
- Weatherproof per NEMA 3R
- For use in both indoor and outdoor applications
- For use with all K series (outdoor) products replacement -R models
- Universal mounting plate easily attaches to the weatherproof plate

Agency Listings

LISTED S4011 S3593 — 7300-1653 195 7300-1653 204 7300-1653 0222 — MEA approved 582-06-E

The **MP120K Mounting Plate** is designed to use 120 VAC to power SpectrAlert Advance horns, strobes, horn strobes, chimes, and chime strobes.

Color Lens Attachments install easily on any indoor or outdoor SpectrAlert Advance strobe devices to provide distinctive visual signaling.

WTP Series Weatherproof Plates enable installers to flush mount outdoor horns, strobes, horn strobes, speakers, and speaker strobes to a variety of wall surfaces, including brick, ceramic tile, concrete, and masonry brick. These NEMA 3R-rated plates come in red and white to suit aesthetic and functional requirements. They may be used indoors or outdoors (with outdoor devices), as required by conditions. They easily attach to the SpectrAlert Advance universal mounting plate.

Trim Rings for speakers and speaker strobes allow for additional space within the backbox. Trim rings for horns, strobes, and horn strobes allow 4-wire devices to mount to a single-gang back box.

SpectrAlert Advance Outdoor Back Boxes ensure a NEMA 4X watertight listing for AV devices. In locations where you have a hard surface to mount to, **Surface Mount Back boxes** are the best solution. If you have an exposed junction box, the **Back Box Skirts** offer an attractive solution to mask the junction box exposure. **Retrofit Plates** cover paint outlines on the wall when replacing legacy SpectrAlert Advance products.

SpectrAlert Advance DECALS are for use on our non-pad printed wall- and ceiling-mount devices. Each decal comes with AGENT, EVAC, ALERT, or FIRE label options. The **Sync•Circuit Module** synchronizes SpectrAlert Advance strobes at 1 Hz and horns and chimes at temporal 3 over a single pair of wires. Patented module technology also allows the silencing of horns or chimes on horn strobe and chime strobe models over a pair of wires. See Datasheet *A05-1007-005* for more information.

Specifications

MP120K

120 VAC mounting plate model MP120K shall be listed to UL 464 for fire protective signaling systems. The mounting plate shall power a two-wire SpectrAlert® Advance horn, strobe, horn strobe, chime or chime strobe from a 120 VAC supply converted to nominal 24 V FWR. For indoor applications, the mounting plate shall be installed in a 4x4x2 1/8 -inch junction box. For outdoor applications, the mounting plate shall be installed using the proper SpectrAlert Advance outdoor weatherproof back box and outdoor listed notification appliance.

Compatibility

MP120K may be used with any of the following products at all horn and strobe settings: P2R, P2RH, P2RK, P2RHK, P2W, P2WH, SR, SRH, SRK, SRHK, SW, SWH, PC2R, PC2RH, PC2RK, PC2RHK, PC2W, PC2WH, SCR, SCRH, SCRK, SCRHK, SCW, SCWH, HR, HRK, HW, SR-P, SW-P, SRH-P, SWH-P, P2R-P, P2W-P, P2RH-P, P2WH-P, SCR-P, SCW-P, SCRH-P, SCWH-P, PC2R-P, PC2W-P, PC2RH-P, PC2WH-P, SR-SP, SRH-SP, P2R-SP, P2RH-SP, SCW-SP, SCWH-SP, PC2W-SP, PC2WH-SP, CHR, CHW, CHSR, CHSW.

Physical/Operating Specifications

Standard Operating Temperature	–40°F to 151°F (–40°C to 66°C)
Humidity Range	10 to 93% non-condensing (indoor products)
Nominal Voltage	Regulated 120 VAC
Operating Voltage Range	96–132 VAC
Current Draw From AC Line	150 mA max.

WTP Weatherproof Plates

The SpectrAlert Advance weatherproof plate for horns, strobes, and horn strobes shall mount to 4x4x1 1/4-inch and 2x4x1 1/2-inch back boxes. The weatherproof plate for speakers and speaker strobes shall mount to 4x4x2 1/8-inch back boxes. The weatherproof plate may be installed on brick, concrete, ceramic tile, and masonry brick and must be used with System Sensor "K" series outdoor replacement models (-R). Outdoor SpectrAlert Advance products shall operate between -40°F and 151°F.

Physical Specifications

Speaker Strobe	7.25" L x 6.26" W x 3.00" D (including speaker and lens)
Speaker	7.25" L x 6.26" W x 1.30" D (including speaker)
Horn Strobe	6.90" L x 5.90" W x 2.80" D (including strobe lens)
Horn	6.90" L x 5.90" W x 1.60" D (including horn)

Note: WTP and WTPW are compatible with 4x4x11/4-inch and 2x4x11/2-inch back boxes. (Compatible with outdoor horns, horn strobes and strobes)
WTP-SP and WTP-SPW are compatible with 4x4x21/8-inch back boxes. (Compatible with outdoor speakers and speaker strobes)

Models Available for Use with the Watertight Plates:

WTP/WTPW	HRK-R
WTP/WTPW	SRK-R, SRHK-R, SWK-R, SWHK-R
WTP/WTPW	P2RK-R, P2RHK-R, P4RK-R, P2WK-R, P2WHK-R
WTP-SP	SPRK-R, SPWK-R
WTP-SPW	SPSRK-R

Note: -R models ship without the outdoor back box. The weatherproof mounting plates are designed to be used only with -R replacement models.

Specifications

Color Lens Attachments

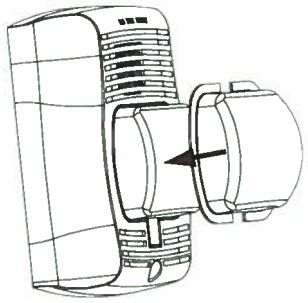
The System Sensor SpectrAlert Advance color lens attachments shall be approved for fire protective service as listed in UL 1638. The lens attachments shall only be used with non-FIRE-printed System Sensor strobe devices. The lens shall mount to any wall- or ceiling-mount strobes and shall be rated from –35°F to 151°F.

Compatibility

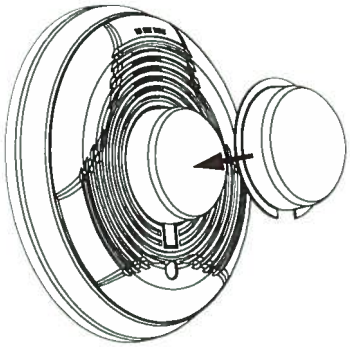
Color lens attachments may be used with the following System Sensor plain (non-FIRE-printed) indoor or outdoor strobe models: SR-P, SRH-P, SW-P, SWH-P, P2R-P, P2W-P, P2WH-P, P2RK-P, P2RHK-P, SCW-P, PC2R-P, PC2W-P, PC2WH-P, SPSW-P, SPSR-P, SPSWH-P, SPSRH-P, SPSWV-P, SPSRV-P, SPSCW-P, SPSCWH-P, SPSCWV-P, SPSCWVH-P, SRK-P, SRHK-P, SWK-P, SWHK-P, P2WK-P, P2WHK-P, SPSWK-P, SPSRK-P, SW-CLR-ALERT, SCW-CLR-ALERT, SPSCW-CLRALERT.

Color Lens Installation

Installation to Wall-Mount Strobe



Installation to Ceiling-Mount Strobe



Candela Rating for UL 1638

Light output of color lenses is measured per UL 1638, on axis, and is not derated.

Strobe Output (cd)	
Candela Switch Setting	**On-Axis Candela Rating (UL1638) – All Colors**
15	15
15/75*	NA
30	30
75	75
95	95
110	110
115	115
135	135
150	150
177	177
185	185

*15/75 Candela setting not to be used with color lenses

Ordering Information

Part No.	Description
Metal Weatherproof Backboxes	
MWBBW	white, wall-mount, compatible with: SPWK-R, SPWK, SPSWK-R, SPSWK-P, SPSWK
MWBB	red, wall-mount, compatible with: SPRK-R, SPRK
MWBBCW	white, ceiling-mount, compatible with: SPCWK, SPSCWK,SPCWK-R, SPSCWK, SPSCWK-R, SPSCWHK, SPSCWHK-R
SA-WBBW	white, wall-mount, compatible with: P2WK, P2WHK, P2WHK-P, P2WK-P, SWK, SWK-P,P2WHK-R, P2WK-R, SWHK-R
SA-WBB	red, wall-mount, compatible with: P2RK, P2RK-P, P2RK-R, SRK, SRK-P, SRK-R P2RHK, P4RK, P4RHK, SRHK, HRK, P2RHK-R, P2RK-R, HRK-R, P4RHK-R, P4RK-R, SRHK-R
SA-WBBCW	white, ceiling-mount, compatible with: PC2WK, SCWK
SA-WBBW	white, wall-mount, compatible with: P2WK, P2WHK, P2WHK-P, P2WK-P, SWK, SWK-P,P2WHK-R, P2WK-R, SWHK-R

Ordering Information (continued)

Part No.	Description
Surface Mount Back Box	
SBBR	red, wall-mount, compatible with: HR, CHR, SR, SR-SP, SRH, P2R, P2R-SP, P2RH, P4R, P4RH, CHSR, P2R-P, SR-P, SRH-P
SBBW	white, wall-mount, compatible with:HW, CHW, SW, SWH, P2W, P2WH, P4W, P4W-P, CHSW, P2W-P, P2WH-P, SW-P, SWH-P, SW-ALERT, SWH-ALERT
SBBSPR	red, wall-mount, compatible with: SPR, SPRV, SPSR, SPSRH, SPSRV, SPSR-P, SPSRH-P, SPSRV-P
SBBSPW	white, wall-mount, compatible with: SPW, SPWV, SPSW, SPSWH, SPSWV, SPSW-P, SPSWH-P, SPSWV-P, SPSW-ALERT, SPSW-CLR-ALERT
SBBCR	red, ceiling-mount compatible with: SCR, SCRH, PC2R, PC2RH, PC4R, PC4RH, SPCR, SPCRV, SPSCR, SPSCRH, SPSCRV, SPSCRVH, PC2R-P
SBBCW	white, ceiling-mount, compatible with: SCW, SCWH, PC2W, PC2W-SP, PC2WH, PC4W, SPCW, SPCWV, SPSCW, SPSCWH, SPSCWV, SPSCWVH, PC2W-P, PC2WH-P, SCW-P, SPSCW-P, SPSCWH-P, SPSCWHK-P, SPSCWV-P, SPSCWVH-P, SPSCW-CLR-ALERT, SCW-CLR-ALERT
Back Box Skirts	
BBS-2	red, wall-mount, compatible with: P2R, SR, HR, CHSR, CHR, P2RH, P4R, P4RH, SRH, P2R-P, P2RH-P, P4R-P, P4RH-P, SR-P, SRH-P, SR-SP, SRH-SP, P2R-SP, P2RH-SP
BBS-SP201W	Surface-mount back-box skirt for the PF24V (ExitPoint™ Directional Sounder with Voice Messaging)
SPBBS	red, wall-mount, compatible with: SPR, SPSR, SPRV,SPSR-P,SPSRH,SPSRH-P
Colored Lenses	
LENS-B	Wall-mount, blue
LENS-R	Wall-mount, red
LENS-G	Wall-mount, green
LENS-A	Wall-mount, amber
LENS-BC	Ceiling-mount, blue
LENS-RC	Ceiling-mount, red
LENS-GC	Ceiling-mount, green
LENS-AC	Ceiling-mount, amber

Part No.	Description
Decals	
DECAL-R	red, used for non-pad-printed wall-mount devices. (10 total decals per box for 5 devices)*
DECAL-RC	red, used for non-pad-printed ceiling-mount devices. (15 total decals per box for 5 devices)*
DECAL-W	white, used for non-pad-printed wall-mount devices. (10 total decals per box) for 5 devices*
DECAL-WC	white, used for non-pad-printed ceiling-mount devices. (15 total decals per box for 5 devices)*
*All Decals include Labels: "AGENT, EVAC, ALERT & FIRE"	
Retrofit Plates (For use with horn strobe & speaker strobe devices)	
RFPW	9.5" x 7" white
RFP	9.5" x 7" red
Mounting Plate	
MP120K	120 VAC Adapter Mounting Plate
Sync Modules	
MDL3W	white, 12/24 volt Sync-Circuit module.
MDL3R	red 12/24 volt Sync-Circuit module
Trim Rings	
TR	red, wall-mount for use with speaker devices
TRC	red, ceiling-mount for use with speaker devices
TRC-HS	red, ceiling-mount for use with horn strobe devices
TRCW	white, ceiling-mount for use with speaker devices
TRCW-HS	red, ceiling-mount for use with horn strobe devices
TR-HS	red, wall-mount for use with horn strobes devices
TRW	white, wall-mount for use with speaker devices
TRW-HS	white, wall-mount for use with horn strobe devices
Watertight Plates	
WTPW	white, for use with horn, strobes & horn strobe devices
WTP	red, for use with horn, strobes & horn strobe devices
WTP-SPW	white, for use with speaker devices
WTP-SP	red, for use with speaker devices

SYSTEM SENSOR

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Phone: 800-SENSOR2 • Fax: 630-377-6495
www.systemsensor.com

AVDS00403 • 7/13

EOL-CR, EOL-CW

Universal End-of-Line Device Mounting Plates

NOTIFIER® by Honeywell

General

The EOL-CR and EOL-CW Universal End-of-Line Device Mounting Plates are used, when required, to place the end-of-line device at an accessible height. The EOL-CR/-CW consists of a terminal strip mounted on a heavy gauge metallic single-gang faceplate, finished in red or white baked enamel; it fits on a standard single-gang electrical box. The end-of-line device is included with the corresponding module in the central equipment.

Architectural/Engineering Specifications

The End-of-Line Device Mounting Plate shall be model EOL-CR/-CW. It shall consist of a terminal strip, mounted on a single-gang faceplate, made of heavy-gauge metal, finished in red (EOL-CR) or white (EOL-CW), and shall fit on a standard single-gang electrical box.

Agency Listings and Approvals

The listings and approvals below apply to the EOL-CR and EOL-CW Mounting Plates for End-of-Line Devices. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in progress. Consult factory for latest listing status.

- **ULC Listed:** File S7547

Ordering Information

EOL-CR: End-of-line device mounting plate (red). Shipping weight 0.17 kg (6 oz.).

EOL-CW: End-of-line device mounting plate (white). Shipping weight 0.17 kg (6 oz.).

EOL-CR

ISO 9001 CERTIFIED
ENGINEERING & MANUFACTURING QUALITY SYSTEMS

This document is not intended to be used for installation purposes. We try to keep our product information up-to-date and accurate. We cannot cover all specific applications or anticipate all requirements. All specifications are subject to change without notice.

For more information, contact Notifier.
(888) 289-1114
10 Whitmore Road
Woodbridge, Ontario L4L 7Z4
www.notifier.com

FMM-1(A), FMM-101(A), FZM-1(A) & FDM-1(A)

Monitor Modules with FlashScan®

NOTIFIER® by Honeywell

Intelligent/Addressable Devices

General

Four different monitor modules are available for Notifier's intelligent control panels for a variety of applications. Monitor modules supervise a circuit of dry-contact input devices, such as conventional heat detectors and pull stations, or monitor and power a circuit of two-wire smoke detectors (FZM-1(A)).

FMM-1(A) is a standard-sized module (typically mounts to a 4" [10.16 cm] square box) that supervises either a Style D (Class A) or Style B (Class B) circuit of dry-contact input devices.

FMM-101(A) is a miniature monitor module a mere 1.3" (3.302 cm) H x 2.75" (6.985 cm) W x 0.5" (1.270 cm) D that supervises a Style B (Class B) circuit of dry-contact input devices. Its compact design allows the FMM-101(A) to be mounted in a single-gang box behind the device it monitors.

FZM-1(A) is a standard-sized module that monitors and supervises compatible two-wire, 24 volt, smoke detectors on a Style D (Class A) or Style B (Class B) circuit.

FDM-1(A) is a standard-sized dual monitor module that monitors and supervises two independent two-wire Style B (Class B) dry-contact initiating device circuits (IDCs) at two separate, consecutive addresses in intelligent, two-wire systems.

FlashScan® (U.S. Patent 5,539,389) is a communication protocol developed by NOTIFIER that greatly increases the speed of communication between analog intelligent devices. Intelligent devices communicate in a grouped fashion. If one of the devices within the group has new information, the panel CPU stops the group poll and concentrates on single points. The net effect is response speed greater than five times that of other designs.

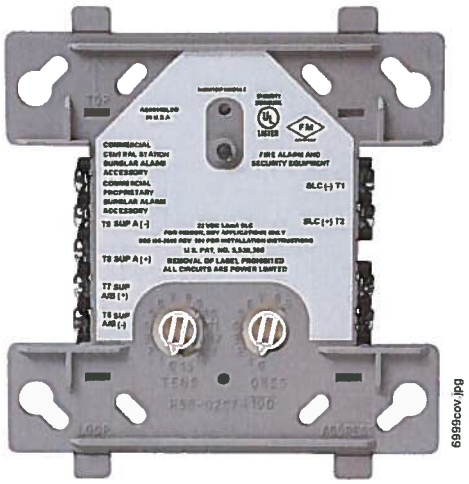
FMM-1(A) Monitor Module

- Built-in type identification automatically identifies this device as a monitor module to the control panel.
- Powered directly by two-wire SLC loop. No additional power required.
- High noise (EMF/RFI) immunity.
- SEMS screws with clamping plates for ease of wiring.
- Direct-dial entry of address: 01 – 159 on FlashScan loops; 01 – 99 on CLIP loops.
- LED flashes green during normal operation (this is a programmable option) and latches on steady red to indicate alarm.

The FMM-1(A) Monitor Module is intended for use in intelligent, two-wire systems, where the individual address of each module is selected using the built-in rotary switches. It provides either a two-wire or four-wire fault-tolerant Initiating Device Circuit (IDC) for normally-open-contact fire alarm and supervisory devices. The module has a panel-controlled LED indicator. The FMM-1(A) can be used to replace MMX-1(A) modules in existing systems.

FMM-1(A) APPLICATIONS

Use to monitor a zone of four-wire smoke detectors, manual fire alarm pull stations, waterflow devices, or other normally-open dry-contact alarm activation devices. May also be used to monitor normally-open supervisory devices with special supervisory indication at the control panel. Monitored circuit may be wired as an NFPA Style B (Class B) or Style D (Class A) Initiating Device Circuit. A 47K ohm End-of-Line Resistor (provided) terminates the Style B circuit. No resistor is required for supervision of the Style D circuit.



FMM-1(A) (Type H)

FMM-1(A) OPERATION

Each FMM-1(A) uses one of the available module addresses on an SLC loop. It responds to regular polls from the control panel and reports its type and the status (open/normal/short) of its Initiating Device Circuit (IDC). A flashing LED indicates that the module is in communication with the control panel. The LED latches steady on alarm (subject to current limitations on the loop).

FMM-1(A) SPECIFICATIONS

Nominal operating voltage: 15 to 32 VDC.

Maximum current draw: 5.0 mA (LED on).

Average operating current: 350 µA (LED flashing), 1 communication every 5 seconds, 47k EOL.

Maximum IDC wiring resistance: 40 ohms.

EOL resistance: 47K ohms.

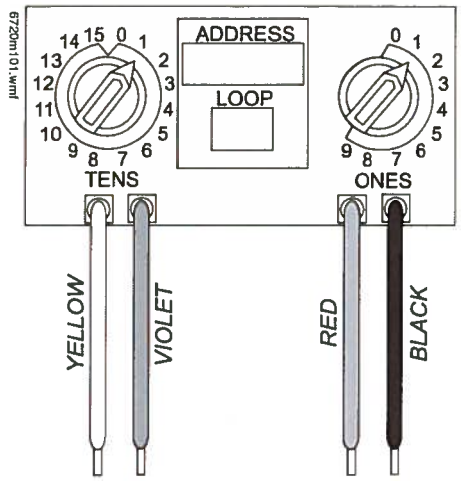
Temperature range: 32°F to 120°F (0°C to 49°C).

Humidity range: 10% to 93% noncondensing.

Dimensions: 4.5" (11.43 cm) high x 4" (10.16 cm) wide x 1.25" (3.175 cm) deep. Mounts to a 4" (10.16 cm) square x 2.125" (5.398 cm) deep box.

FMM-101(A) Mini Monitor Module

- Built-in type identification automatically identifies this device as a monitor module to the panel.
- Powered directly by two-wire SLC loop. No additional power required.
- High noise (EMF/RFI) immunity.
- Tinned, stripped leads for ease of wiring.
- Direct-dial entry of address: 01 – 159 on FlashScan loops; 01 – 99 on CLIP loops.



The FMM-101(A) Mini Monitor Module can be installed in a single-gang junction directly behind the monitored unit. Its small size and light weight allow it to be installed without rigid mounting. The FMM-101(A) is intended for use in intelligent, two-wire systems where the individual address of each module is selected using rotary switches. It provides a two-wire initiating device circuit for normally-open-contact fire alarm and security devices. The FMM-101(A) can be used to replace MMX-101(A) modules in existing systems.

FMM-101(A) APPLICATIONS

Use to monitor a single device or a zone of four-wire smoke detectors, manual fire alarm pull stations, waterflow devices, or other normally-open dry-contact devices. May also be used to monitor normally-open supervisory devices with special supervisory indication at the control panel. Monitored circuit/device is wired as an NFPA Style B (Class B) Initiating Device Circuit. A 47K ohm End-of-Line Resistor (provided) terminates the circuit.

FMM-101(A) OPERATION

Each FMM-101(A) uses one of the available module addresses on an SLC loop. It responds to regular polls from the control panel and reports its type and the status (open/normal/short) of its Initiating Device Circuit (IDC).

FMM-101(A) SPECIFICATIONS

Nominal operating voltage: 15 to 32 VDC.

Average operating current: 350 µA, 1 communication every 5 seconds, 47k EOL; 600 µA Max. (Communicating, IDC Shorted).

Maximum IDC wiring resistance: 40 ohms.

Maximum IDC Voltage: 11 Volts.

Maximum IDC Current: 400 µA.

EOL resistance: 47K ohms.

Temperature range: 32°F to 120°F (0°C to 49°C).

Humidity range: 10% to 93% noncondensing.

Dimensions: 1.3" (3.302 cm) high x 2.75" (6.985 cm) wide x 0.65" (1.651 cm) deep.

Wire length: 6" (15.24 cm) minimum.

FZM-1(A) Interface Module

- Supports compatible two-wire smoke detectors.
- Supervises IDC wiring and connection of external power source.
- High noise (EMF/RFI) immunity.
- SEMS screws with clamping plates for ease of wiring.
- Direct-dial entry of address: 01 – 159 on FlashScan loops, 01 – 99 on CLIP loops.
- LED flashes during normal operation; this is a programmable option.
- LED latches steady to indicate alarm on command from control panel.

The FZM-1(A) Interface Module is intended for use in intelligent, addressable systems, where the individual address of each module is selected using built-in rotary switches. This module allows intelligent panels to interface and monitor two-wire conventional smoke detectors. It transmits the status (normal, open, or alarm) of one full zone of conventional detectors back to the control panel. All two-wire detectors being monitored must be UL compatible with the module. The FZM-1(A) can be used to replace MMX-2(A) modules in existing systems.

FZM-1(A) APPLICATIONS

Use the FZM-1(A) to monitor a zone of two-wire smoke detectors. The monitored circuit may be wired as an NFPA Style B (Class B) or Style D (Class A) Initiating Device Circuit. A 3.9 K ohm End-of-Line Resistor (provided) terminates the end of the Style B or D (class B or A) circuit (maximum IDC loop resistance is 25 ohms). Install ELR across terminals 8 and 9 for Style D application.

FZM-1(A) OPERATION

Each FZM-1(A) uses one of the available module addresses on an SLC loop. It responds to regular polls from the control panel and reports its type and the status (open/normal/short) of its Initiating Device Circuit (IDC). A flashing LED indicates that the module is in communication with the control panel. The LED latches steady on alarm (subject to current limitations on the loop).

FZM-1(A) SPECIFICATIONS

Nominal operating voltage: 15 to 32 VDC.

Maximum current draw: 5.1 mA (LED on).

Maximum IDC wiring resistance: 25 ohms.

Average operating current: 300 µA, 1 communication and 1 LED flash every 5 seconds, 3.9k eol.

EOL resistance: 3.9K ohms.

External supply voltage (between Terminals T3 and T4): DC voltage: 24 volts power limited. Ripple voltage: 0.1 Vrms maximum. Current: 90 mA per module maximum.

Temperature range: 32°F to 120°F (0°C to 49°C).

Humidity range: 10% to 93% noncondensing.

Dimensions: 4.5" (11.43 cm) high x 4" (10.16 cm) wide x 1.25" (3.175 cm) deep. Mounts to a 4" (10.16 cm) square x 2.125" (5.398 cm) deep box.

FDM1(A) Dual Monitor Module

The FDM-1(A) Dual Monitor Module is intended for use in intelligent, two-wire systems. It provides two independent two-wire initiating device circuits (IDCs) at two separate, consecutive addresses. It is capable of monitoring normally open contact fire alarm and supervisory devices; or either normally open or normally closed security devices. The module has a single panel-controlled LED.

***NOTE:** The FDM-1(A) provides two Style B (Class B) IDC circuits ONLY. Style D (Class A) IDC circuits are NOT supported in any application.*

FDM-1(A) SPECIFICATIONS

Normal operating voltage range: 15 to 32 VDC.

Maximum current draw: 6.4 mA (LED on).

Average operating current: 750 µA (LED flashing).

Maximum IDC wiring resistance: 1,500 ohms.

Maximum IDC Voltage: 11 Volts.

Maximum IDC Current: 240 µA

EOL resistance: 47K ohms.

Maximum SLC Wiring resistance: 40 Ohms.

Temperature range: 32° to 120°F (0° to 49°C).

Humidity range: 10% to 93% (non-condensing).

Dimensions: 4.5" (11.43 cm) high x 4" (10.16 cm) wide x 2.125" (5.398 cm) deep.

FDM-1(A) AUTOMATIC ADDRESSING

The FDM-1(A) automatically assigns itself to two addressable points, starting with the original address. For example, if the FDM-1(A) is set to address "26", then it will automatically assign itself to addresses "26" and "27".

***NOTE:** "Ones" addresses on the FDM-1(A) are 0, 2, 4, 6, or 8 only. Terminals 6 and 7 use the first address, and terminals 8 and 9 use the second address.*

CAUTION:
Avoid duplicating addresses on the system.

Installation

FMM-1(A), FZM-1(A), and FDM-1(A) modules mount directly to a standard 4" (10.16 cm) square, 2.125" (5.398 cm) deep, electrical box. They may also be mounted to the SMB500 surface-mount box. Mounting hardware and installation instructions are provided with each module. All wiring must conform to applicable local codes, ordinances, and regulations. These modules are intended for power-limited wiring only.

The FMM-101(A) module is intended to be wired and mounted without rigid connections inside a standard electrical box. All wiring must conform to applicable local codes, ordinances, and regulations.

Agency Listings and Approvals

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:** S635
- **ULC:** S635
- **FM Approved**
- **CSFM:** 7300-0028:0219
- **MEA:** 457-99-E
- **U.S. Coast Guard:**
  - 161.002/23/3 *(AFP-200: FMM-1/-101, FZM-1)*
  - 161.002/42/1 *(NFS-640: FMM-1/-101)*
- **Lloyd's Register:**
  - 03/60011/E1 *(FMM-1/-101, FZM-1)*
  - 94/60004/E2 *(AFP-200: except FDM-1)*
  - 02/60007 *(NFS-640: FDM-1)*
- **FDNY:** COA #6038 (NFS2-640, NFS-320), COA# 6058 (NFS2-3030)

Product Line Information

***NOTE:** "A" suffix indicates ULC-listed model.*

FMM-1(A): Monitor module.

FMM-101(A): Monitor module, miniature.

FZM-1(A): Monitor module, two-wire detectors.

FDM-1(A): Monitor module, dual, two independent Class B circuits.

SMB500: Optional surface-mount backbox.

***NOTE:** See installation instructions and refer to the SLC Wiring Manual, PN 51253.*

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This document is not intended to be used for installation purposes.
We try to keep our product information up-to-date and accurate.
We cannot cover all specific applications or anticipate all requirements.
All specifications are subject to change without notice.

Made in the U.S. A.

For more information, contact Notifier. Phone: (203) 484-7161, FAX: (203) 484-7118.
www.notifier.com

NBG-12 Series

Non-Coded Conventional Manual Fire Alarm Pull Stations

NOTIFIER® by Honeywell

Conventional Initiating Devices

General

The NOTIFIER **NBG-12 Series** is a cost-effective, feature-packed series of non-coded manual fire alarm pull stations. It was designed to meet multiple applications with the installer and end-user in mind. The NBG-12 Series features a variety of models including single- and dual-action versions.

The NBG-12 Series provides an alarm initiating input signal to conventional fire alarm control panels (FACPs) such as the SFP Series, and to XP Transponders. Its innovative design, durable construction, and multiple mounting options make the NBG-12 Series simple to install, maintain, and operate.

Features

- Aesthetically pleasing, highly visible design and color.
- Attractive contoured shape and light textured finish.
- Meets ADA 5 lb. maximum pull-force.
- Meets UL 38, Standard for Manually Actuated Signaling Boxes.
- Easily operated (single- or dual-action, model dependent), yet designed to prevent false alarms when bumped, shaken, or jarred.
- PUSH IN/PULL DOWN handle latches in the down position to clearly indicate the station has been operated.
- The word "ACTIVATED" appears on top of the handle in bright yellow, further indicating operation of the station.
- Operation handle features white arrows showing basic operation direction for non-English-speaking persons.
- Braille text included on finger-hold area of operation handle and across top of handle.
- Multiple hex- and key-lock models available.
- U.S. patented hex-lock needs only a quarter-turn to lock/unlock.
- Station can be opened for inspection and maintenance without initiating an alarm.
- Product ID label viewable by simply opening the cover; label is made of a durable long-life material.
- The words "NORMAL" and "ACTIVATED" are molded into the plastic adjacent to the alarm switch (located inside).
- Four-position terminal strip molded into backplate.
- Terminal strip includes Phillips combination-head captive 8/32 screws for easy connection to Initiating Device Circuit (IDC).
- Terminal screws backed-out at factory and shipped ready to accept field wiring (up to 12 AWG/3.1 mm²).
- Terminal numbers are molded into the backplate, eliminating the need for labels.
- Switch contacts are normally open.
- Can be surface-mounted (with **SB-10** or **SB-I/O**) or semi-flush mounted. Semi-flush mount to a standard single-gang, double-gang, or 4" (10.16 cm) square electrical box.
- Backplate is large enough to overlap a single-gang backbox cutout by 1/2" (1.27 cm).
- Optional trim ring (**BG12TR**).
- Spanish versions *(FUEGO)* available (**NBG-12LSP, NBG-12LPSP**).
- Designed to replace the legacy **NBG-10** Series.
- Models packaged in attractive, clear plastic (PVC), clam-shell-style, Point-of-Purchase packages. Packaging includes a cutaway dust/paint cover in shape of pull station.

6643cov.jpg

Construction

- Cover, backplate and operation handle are all molded of durable polycarbonate material.
- Cover features white lettering and trim.
- Red color matches System Sensor's popular SpectrAlert® Advance horn/strobe series.

Operation

The NBG-12 manual pull stations provide a textured finger-hold area that includes Braille text. In addition to PUSH IN and PULL DOWN text, there are arrows indicating how to operate the station, provided for non-English-speaking people.

Pushing in and then pulling down on the handle activates the normally-open alarm switch. Once latched in the down position, the word "ACTIVATED" appears at the top in bright yellow, with a portion of the handle protruding at the bottom as a visible flag. Resetting the station is simple: insert the key or hex (model dependent), twist one quarter-turn, then open the station's front cover, causing the spring-loaded operation handle to return to its original position. The alarm switch can then be reset to its normal (non-alarm) position manually (by hand) or by closing the station's front cover, which automatically resets the switch.

Specifications

PHYSICAL SPECIFICATIONS:

pull station		SB-10	SB-I/O	WBB	WP-10
H	5.500 in. (13.97 cm)	5.500 in. (13.97 cm)	5.601 in. (14.23 cm)	4.25 in. (10.79 cm)	6.000 in. (15.24 cm)
W	4.121 in. (10.467 cm)	4.125 in. (10.478 cm)	4.222 in. (10.72 cm)	4.25 in. (10.79 cm)	4.690 in. (11.913 cm)
D	1.390 in. (3.531 cm)	1.375 in. (3.493 cm)	1.439 in. (3.66 cm)	1.75 in. (4.445 cm)	2.000 in. (5.08 cm)

6643dim2.tbl

ELECTRICAL SPECIFICATIONS:

Switch contact ratings: gold-plated; rating 0.25 A @ 30 VAC or VDC. **Auxiliary contact circuit** (Terminals 3 & 4, NBG-12LA): rated to 3.0 A @ 30 VAC or VDC.

ENGINEERING/ARCHITECTURAL SPECIFICATIONS

Manual Fire Alarm Stations shall be non-code, with a key- or hex-operated reset lock in order that they may be tested, and so designed that after actual Emergency Operation, they cannot be restored to normal except by use of a key or hex. An operated station shall automatically condition itself so as to be visually detected as activated. Manual stations shall be constructed of red colored LEXAN (or polycarbonate equivalent) with clearly visible operating instructions provided on the cover. The word **FIRE** shall appear on the front of the stations in white letters, 1.00 inches (2.54 cm) or larger.* Stations shall be suitable for surface mounting on matching backbox SB-10 or SB-I/O; or semi-flush mounting on a standard single-gang, double-gang, or 4" (10.16 cm) square electrical box, and shall be installed within the limits defined by the Americans with Disabilities Act (ADA) or per national/local requirements. Manual Stations shall be Underwriters Laboratories listed.

***NOTE:** *The words "FIRE/FUEGO" on the NBG-12LSP and NBG-12LPSP shall appear on the front of the station in white letters, approximately 3/4" (1.905 cm) high.*

Pre-Signal Models

The **NBG-12LPS** and **NBG-12LPSP** pull stations are non-coded manual pull stations which provide a FACP with two normally open alarm initiating input signals. "Pre-signal" input is activated by pushing in, then pulling down, the dual-action handle. A "general" alarm input signal can be manually activated via a momentary rocker switch mounted inside the unit. This general alarm switch can only be accessed by opening the cover with the supplied key/lock. *See diagram at right.*

Agency Listings and Approvals

The listings and approvals below apply to the NBG-12 Series pull stations. 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.

- **C(UL)US** Listed: file S692.
- **CSFM** approved: file 7150-0028:199.
- **FM** approved *(except NBG-12LPS, NBG-12LPSP).*
- **MEA** approved: file 67-02-E *(NBG-12, NBG-12L, NBG-12LOB, NBG-12LA).*
- **Lloyd's Register** type approved: file 93/60141 (E3) *(NBG-12, NBG-12L, NBG-12LA, NBG-12LOB, NBG-12S).*
- **U.S. Coast Guard** approved: files 161.002/23/3 *(AFP-200 with NBG-12, NBG-12L, NBG-12S)*; 161.002/42/1 *(NFS-640 with NBG-12, NBG-12L, NBG-12S)*; 161.002/27/3 *(AFP1010/AM2020 with NBG-12, NBG-12L, NBG-12S).*
- **Patented:** U.S. Patent No. D428,351; 6,380,846; 6,314,772; 6,632,108.

Product Line Information

NBG-12S: Single-action pull station with pigtail connections, hex lock.

NBG-12: Dual-action pull station with SPST N/O switch, screw terminal connections, ***hex lock.***

NBG-12L: Dual-action pull station with SPST N/O switch, screw terminal connections, ***key lock.***

NBG-12LSP: Same as NBG-12L with English/Spanish *(FIRE/FUEGO)* labeling.

NBG-12LPS: Dual-action pull station with pre-signal option.

NBG-12LPSP: Same as NBG-12LPS with English/Spanish *(FIRE/FUEGO)* labeling.

NBG-12LOB: Dual-action pull station with key lock, outdoor applications listings (**NBG-12LO**), and backbox. Includes **SB-I/O** indoor/outdoor backbox, and sealing gasket. Model will also mount to **WP-10** weatherproof backbox in retrofit applications.

***NOTE:** NBG-12LO not available separately;*
NBG-12LO + approved backbox = NBG-12LOB.
Outdoor applications listings apply to NBG-12LOB combination.

NBG-12LA: Dual-action pull station with key lock and annunciator contacts.

SB-10: Surface-mount backbox, metal.

SB-I/O: Surface-mount backbox, plastic. *(Included with NBG-12LOB.)*

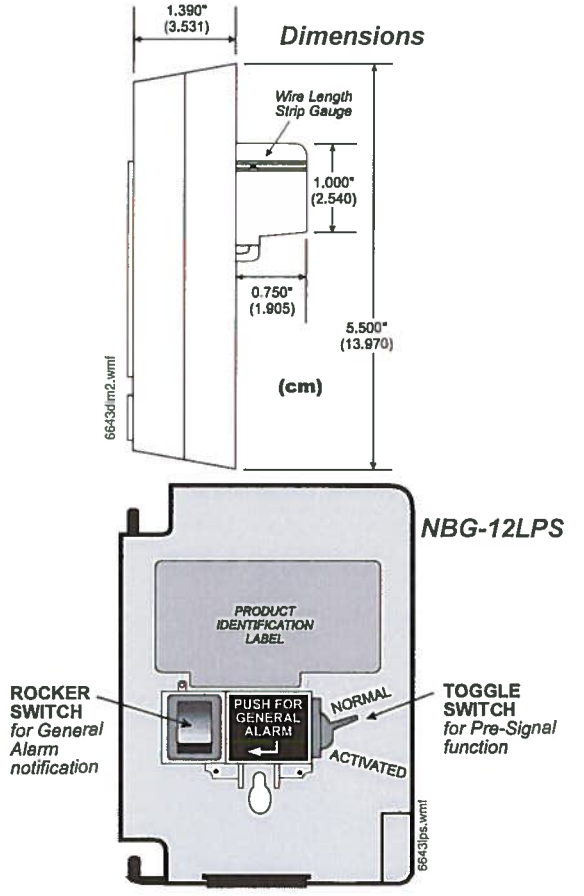
BG12TR: Optional trim ring for semi-flush mounting.

WP-10: Outdoor use backbox.

17021: Keys, set of two. (Included with key-lock pull stations.)

17007: Hex key, 9/64". (Included with hex-lock pull stations.)

***NOTE:** For addressable NBG-12LX models, see data sheet DN-6726.*



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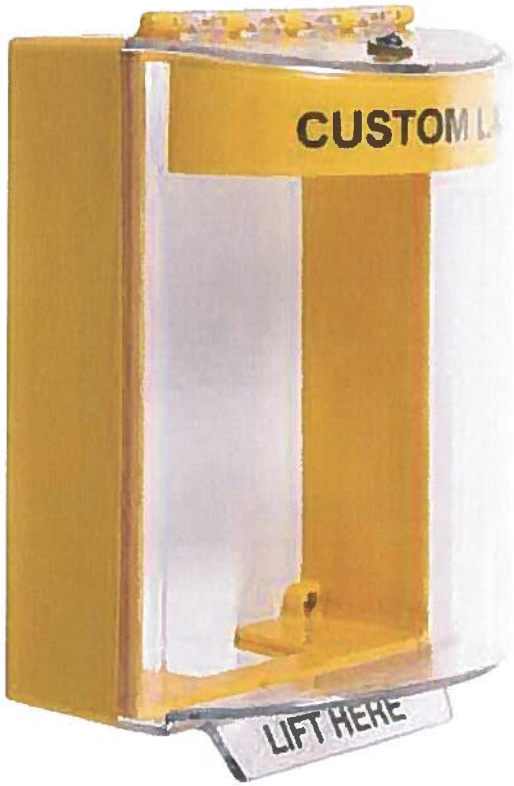
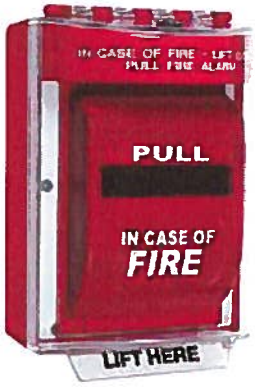
polycarbonate products

STI Universal Stopper®





Shown with waterproof back box

Indoor/Outdoor

c UL us
ADA Compliant
See Reverse For Details

PRODUCT OVERVIEW

These indoor/outdoor low profile or dome polycarbonate covers protect devices such as dual action pull stations, keypads for entry systems, intercom stations, emergency buttons, electrical light switches, duplex plugs, etc., without restricting legitimate operation. The versatile cover offers excellent protection against physical damage (both accidental and intentional), dust and grime as well as severe environments inside and out.

Cover options: Dome or Low Profile, with or without horn, flush mount, surface mount or waterproof back box models. Maximum protrusion is 4 inches deep. Cover has the same footprint as the Mini Stopper® but accommodates most dual action pull stations.

FEATURES

- Protects against vandalism, accidental damage, dust and grime and severe environments inside and outside.
- Protects pull stations, keypads, intercom stations, emergency buttons, electrical light switches or duplex plugs.
- Cover is molded from thick, tough polycarbonate material.
- Cover available in low profile or dome shape.
- Flush frame, surface frame or waterproof back box (with sealed or open internal mounting plate), enclosed flush back box.
- Top and bottom of waterproof back box are threaded for 3/4" NPT rigid conduit.
- Sized to fit most pull stations.
- High strength continuous hinge.
- Dome models have optional relay output with 12-24 VDC power input.
- Gaskets included.
- ADA Compliant.
- Locking tab (not for use with fire pull stations).
- Dome models available with or without 105 dB horn.
- Dome models available with red, green, blue, yellow, white or black label hood/horn housing with custom or no label.
- Available for red units "In Case of Fire..." label.
- UV-stabilized to keep cover clear.
- Typical working properties of polycarbonate are -40° to 250°F (-40° to 121°C).
- No charge for custom label. (See reverse for details.)
- Three year guarantee against breakage of polycarbonate in normal use (one year on electro mechanical and electronic components).

STI Universal Stopper®

Dimensions and Technical Information

BUILD YOUR MODEL

STI-1 _ _ _ _ _ _

Cover Options

3 = Dome Cover
4 = Low Profile Cover*

*Only available with Hood/Horn option "0"

Mounting Options

0 = Flush Mount
2 = Surface Mount
3 = Enclosed Flush Back Box
4 = Enclosed Back Box & Sealed Mounting Plate**
5 = Enclosed Back Box & Opened Mounting Plate**
8 = Enclosed Back Box & European Sealed Mounting Plate**
9 = Enclosed Back Box & European Open Mounting Plate**

**all colors except NC

Hood/Horn

0 = No Label Hood (Label must start with 'N.' If Hood/Horn Option = 0 and Mounting Option = 0 or 3, the label must be NC)
1 = Label Hood without Horn**
2 = Label Hood with Horn**
3 = Label Hood with Horn & Relay**

**all colors except NC

Special Electronics

0 = None
1 = Heat (available with Mounting Options 4, 5, 8 & 9)**

**Coming soon

Housing/Horn Color & Label

Fire label	Free Custom label*
FR = Red -- Fire label	CK = Black*
No label	CB = Blue*
NK = Black	CG = Green*
NB = Blue	CR = Red*
NC = Clear	CW = White*
NG = Green	CY = Yellow*
NR = Red	*must provide custom label wording (2 lines, 20 characters per line including spaces)
NW = White	
NY = Yellow	

COVER OPTIONS - SIDE VIEW

Dome

Low Profile

MOUNTING OPTIONS

FLUSH

SURFACE

BACK BOX
Enclosed Flush

BACK BOX
With Sealed Mounting Plate

BACK BOX
With Opened Mounting Plate

BACK BOX
With European Sealed Mounting Plate

BACK BOX
With European Opened Mounting Plate

APPROVAL & WARRANTY

TESTING

· ADA Compliant

Cover option '3' only has been tested and approved or listed by:

· UL/cUL Listed No. S2466 (Type rating pending). Excludes mounting options 8 and 9.

Flush, Surface or Back Box with opened Mounting Plate
· IP Rating 56

Back Box with sealed Mounting Plate
· IP Rating 66

WARRANTY

Three year guarantee against breakage of polycarbonate in normal use (one year on electro mechanical and electronic components).

IMPORTANT NOTICE

When used on fire systems, Universal Stopper is intended for areas where the incidence of false fire alarms from manual pull stations is high or has proven to be a serious problem. Any disadvantage of the device is more than balanced when one considers the consequences of false fire alarms, especially if fire service personnel and equipment are responding to a false fire alarm when they are needed for a real fire somewhere else. Add to this the disruption to the facility when false alarms occur. If you have, or may have, a problem with false fire alarms or physical/weather damage to your fire alarm activation devices, the Universal Stopper could prove invaluable.

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Tel: 44 (0) 1527 520 999
Fax: 44 (0) 1527 501 999
Free: 0800 085 1678 (UK)
www.sti-europe.com

Fire Detection Devices
CR/CF-MP Series
Moisture-Proof Heat Detectors

Features

- Dual Action Rate of Rise & Fixed Temperature
- Detects Rate of Ambient temperature rise of 8°C (15°F)
- Detectors operating on fixed temperatures are only available in two settings of 135°F (57°C) or 200°F (93°C)
- Clear-anodized aluminium finish

Description

The CR and CF-MP Series Moisture Proof Detectors are designed for hazardous locations and Moisture Proof applications. Each Moisture Proof detector is available in single or multiple circuits with open and/or closed contact configurations, and any of the fixed temperature settings including 135, 165, 200 and 285 degrees Farenheit.

The Moisture Proof detector is characterized by a black phenol-plastic seal plate and black and white pigtail connections. It is specified for use in high humidity environments and areas that are subject to corrosive elements or spray washing. The suffix "MP" denotes "Moisture Proof".

CR-135MP

The Model CR-135MP is a combination Rate-of-Rise and Fixed Temperature detector. A set of normally open contacts will close when the ceiling temperature increases at a (minimum) rate of 8.4°C (15°F) per minute. Closing the contacts initiates the fire alarm sequence. Independent of the rate-of-rise operation, the fixed temperature portion consists of a spring-loaded plunger retained by a fusible alloy that releases when the ceiling temperature reaches 135°F (57°C). When released, the plunger strikes the contacts and holds them closed. Spacing on an uninterrupted ceiling is 70 ft. (21.3m) for the rate-of-rise; 40 ft. (12.2m) for the fixed temperature portion.

CF-135MP

The Model CF-135MP is a Fixed Temperature Only detector. The fixed temperature portion consists of a spring-loaded plunger retained by a fusible alloy that releases when the ceiling temperature reaches 135°F (57°C). When released, the plunger strikes a normally open set of contacts and holds them closed. Spacing on an uninterrupted ceiling is 40 ft. (21.3m). The CF-135MP is identified by a black dot on its heat collector fin.

CR-200MP

The Model CR-200MP is a combination Rate-of-Rise and Fixed Temperature detector that operates in the same way as the CR-135MP, with the exception that the fixed temperature portion releases when the ceiling temperature reaches 200°F (93°C). Spacing on an uninterrupted ceiling is 70 ft. (21.3) for the rate-of-rise, and 25 ft.(7.6m) for the fixed temperature portion (a reduced spacing parameter from the CF-135MP). The CR-200MP is identified by a white dot on its heat collector fin.

CF-200MP

The Model CF-200MP is a Fixed Temperature Only detector. The fixed temperature portion releases when the ceiling temperature reaches 200°F (93°C). Spacing is 25 ft., (7.6m). The CF-200MP is identified by a black dot and a white dot on the heat collector fin.

Canada 25 Interchange Way, Vaughan (Toronto), Ontario L4K 5W3 Telephone: (905) 695-3549 Fax: (905) 660-4113 • **Web Page:** www.summit-st.net
U.S.A. 4575 Witmer Industrial Estates, Niagara Falls, NY 14305 Telephone: (866) 786-6480 Fax: (888) 660-4113 • **E-mail:** mail@summit-st.net

Contact Configurations

Any Detector in the Moisture Proof Series is available in Normally Open (by far the most common) or Normally Closed, or Multiple Circuit configurations. The Model Number does not reflect the Normally Open configuration, however the letter "C" denotes Normally Closed. For example: "CR 135 C MP" describes a rate-of-rise / fixed temperature detector, fusing at 135°F., with Normally Closed contacts, assembled with the moisture proof seal plate.

Engineering Specifications

The CR & CF Series Moisture Proof detectors shall be installed in areas where corrosive elements exist or washing of walls and ceiling surfaces is commonplace. The fixed temperature portion and the rate-of-rise operation shall be determined by the ambient temperature. The Moisture Proof detectors shall be installed in areas where environmental conditions including dust, vapours, insects, etc., would cause an ionization or photoelectric type detector to initiate a false alarm.

Specifications

Contact Rating
3A @ 125 VAC 1A @ 28 VDC 0.3A @ 125 VDC 0.1A @ 250 VDC

Dimensions	
Diameter	5.25" (13.4 cm)
Height	2.0" (4.85 cm)
Weight	
0.41 lb. (330 gm)	

Ordering Information

Model Number	Description
CR-135MP	Rate of Rise & Fixed Temperature to 135°F (57°C) Moisture Proof Heat Detector
CR-200MP	Rate of Rise & Fixed Temperature to 200°F (93°C) Moisture Proof Heat Detector
CF-135MP	Fixed Temperature 135°F (57°C) Moisture Proof Heat Detector
CF-200MP	Fixed Temperature 200°F (93°C) Moisture Proof Heat Detector

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: Joël Morliere Date: 2017-06-12

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Agnico Eagle No. 6515-C-270-007-265-SPD-0001 R: Sub001

DOCUMENT FOR INFORMATION

WSP

SHOP DRAWING
DATA SHEET

Affixing this stamp confirms that an administrative approval and/or a verification of compliance with shop drawings or specifications was made, but does not entail the liability of the author of the work or its owner with regards to this shop drawing or data sheet, for which the contractor is the sole responsible.

☑ Reviewed ☐ Reviewed as noted

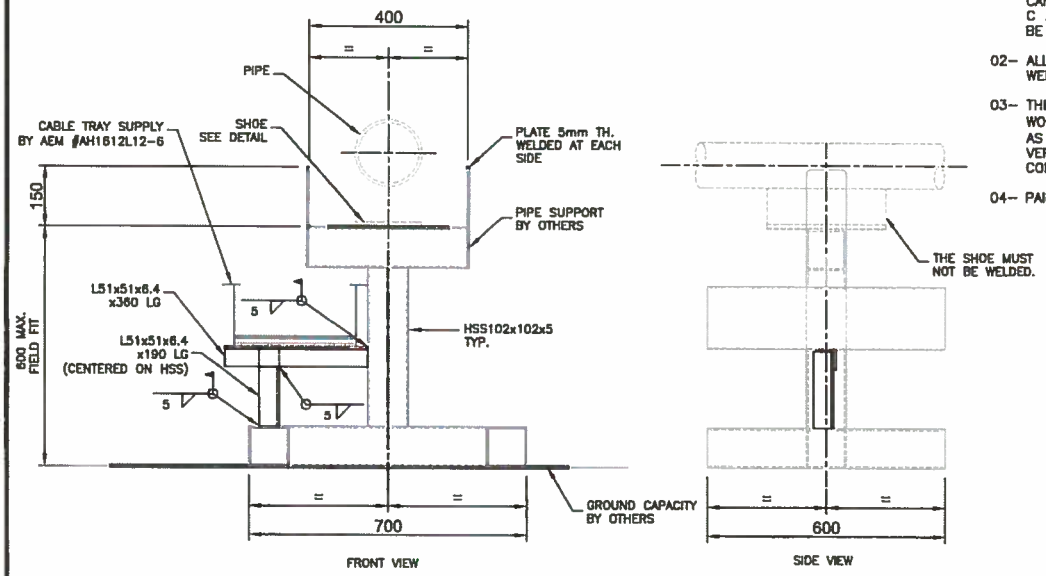
☐ Rejected ☐ Filed for records

The contractor, supplier and/or sub-contractor is responsible for: comfirming and coordinating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his or her work with that of all other trades and performing all work in a safe and satisfactory manner.

By: J. Morliere Date: 2017/06/12

Project # 151-06440-40

Tracé par: "BOURJ26", 2017-05-05 14:46:09 (Lts: 0.25 ; Mes: 1)
P:\300-RN\643812\0000\4-Ingenierie\D-Dessins maitres\43-ST\643812-0000-43DD-0001-0.dwg
Format: Lettre/Légal Ver.: 4.2 2016-01-26



CABLE TRAY SUPPORT (1)

ÉCHELLE : 1 : 15

GENERAL NOTES

01– STRUCTURAL STEEL MUST RESPECT CRITERIA LISTED IN CAN/CSA–G40.20 AND CAN/CSA–G40.21, GRADE 350 W WITH EXCEPTION OF C AND L PROFILES WHICH ARE TOBE OF GRADE 300 W. HSS PROFILES TO BE OF ASTM 500 TYPE C GRADE 345 W.

02– ALL STRUCTURAL MEMBERS MUST BE CLEANED BY GRINDING PRIOR TO ALL WELDING WORKS.

03– THE CONTRACTOR OR SUB–CONTRACTOR MUST PROCEED WITH ALL WELDING WORKS IN ACCORDANCE WITH W59–03(R2008). HE MUST ALSO BE CERTIFIED AS PER W47.1–09(R2014). THE ENGINEER/OWNER RESERVES THE RIGHT TO VERIFY THESE CERTIFICATIONS BEFORE AS WELL AS AFTER THE PROJECT COMMENCEMENT.

04– PAINT BY OTHERS

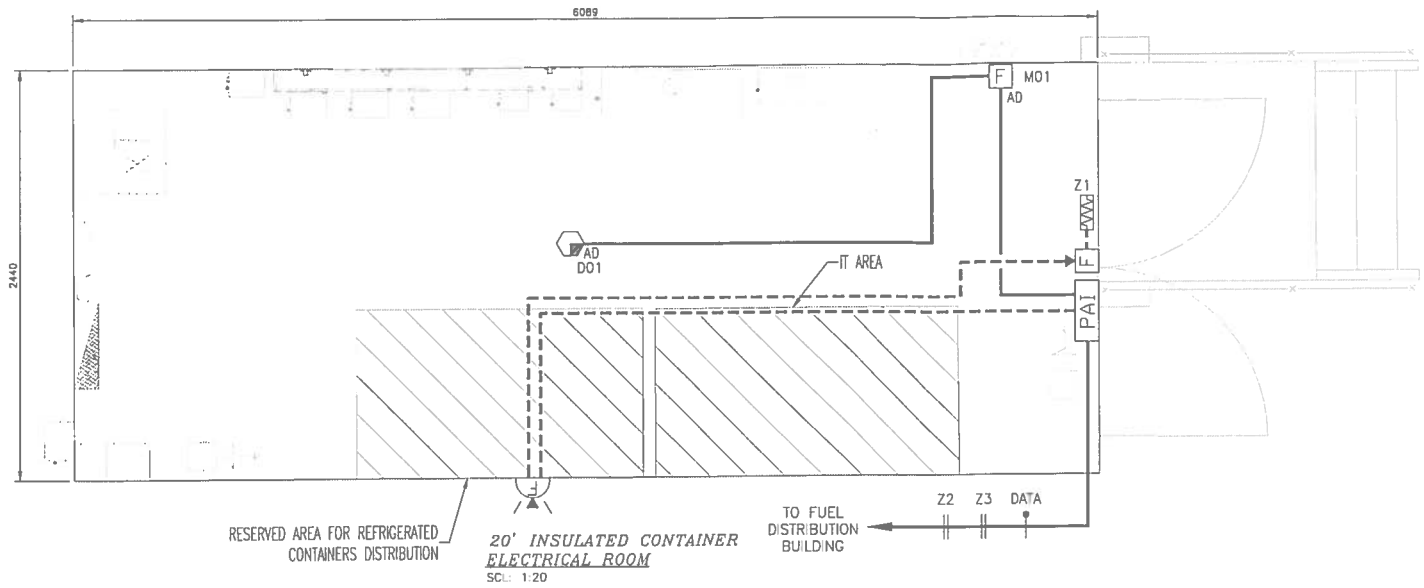
REGISTERED PROFESSIONAL ENGINEER
M.Y DIALLO
LICENSEE
NT/NU
2017-05-05

POUR CONSTRUCTION
FOR CONSTRUCTION
SNC·LAVALIN
2017-05-05

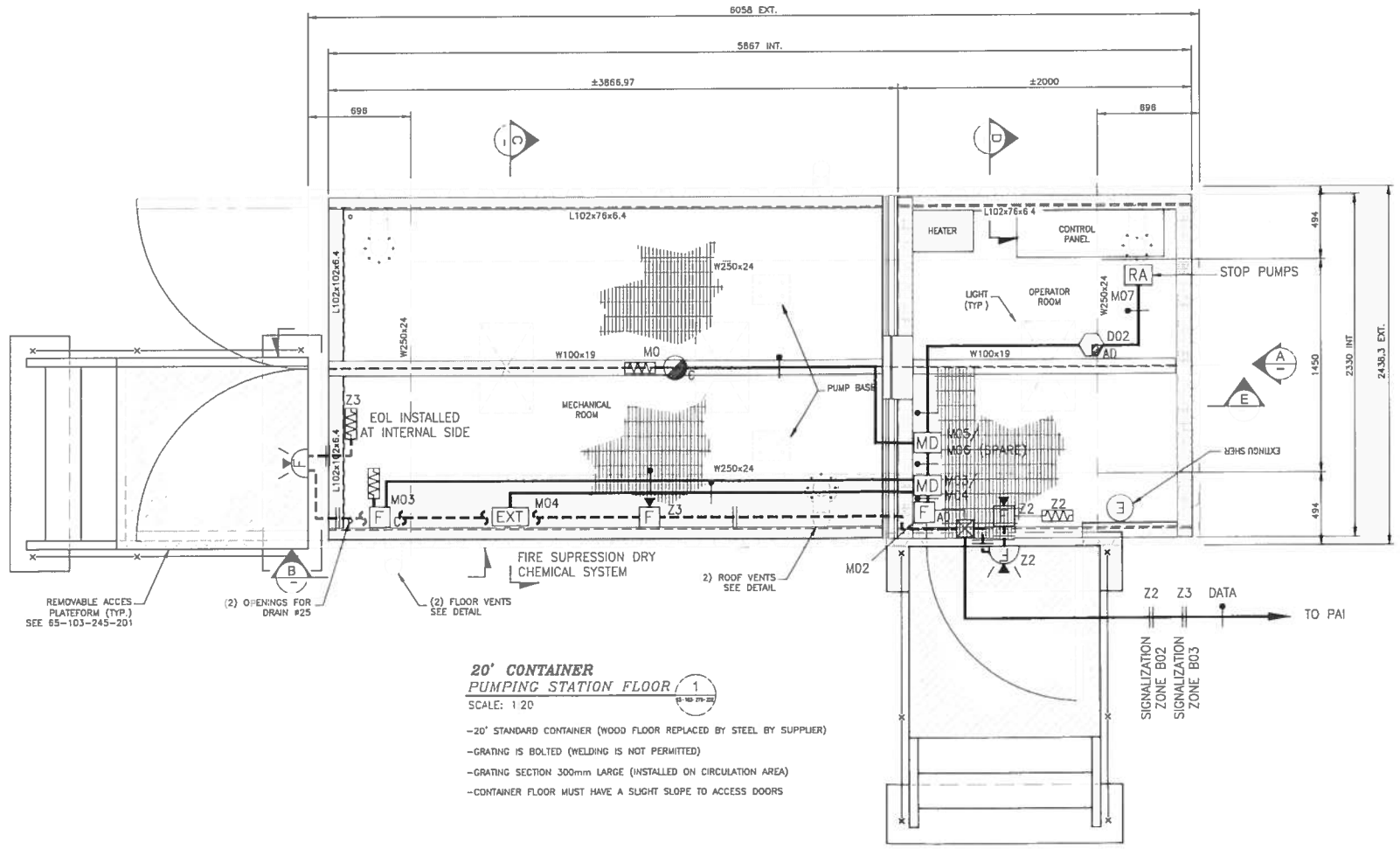
REV.	DATE	ISSUES	BY	CHK	APP.
0	2017-05-05	ISSUED FOR CONSTRUCTION	M.LAN	M.DIA	B.CHA
A	2017-05-04	ISSUED FOR APPROVAL	M.LAN	M.DIA	B.CHA

SNC·LAVALIN
SNC-Lavalin Stavibel Inc.
150, rue Gamble Ouest
Rouyn-Noranda (Québec) J9X 2R7
Tel. : 819 764-5161 Fax : 819 797-0158
www.snclavalin.com

Client / Project : AGNICO EAGLE - MELIADINE DIVISION			
Title : 103 - COMBUSTIBLES SUPPORT SECTION			
Drawn by : Michel Lanthier, tech.	Verified by : Mohamed Diallo, ing.	Project manager : Dany Lambert, ing.	Project # : 643812-0000
Designed by : Mohamed Diallo, ing.	Approved by : Mohamed Diallo, ing.	Org. Date : 2017-05-04	Reference : -
Scale : INDICATED	Drawing # : 643812-0000-43DD-0001	Rev. : 0	



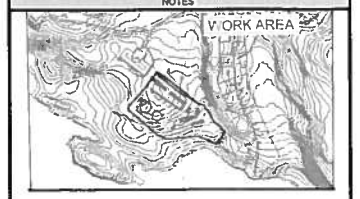
20' INSULATED CONTAINER
ELECTRICAL ROOM
SCL.: 1:20



20' CONTAINER
PUMPING STATION FLOOR (1)
SCALE: 1:20

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

NOTES



LEGEND

- PA1 — FIRE ALARM CONTROL PANEL NOTIFIER NFS-320C
- F AD — ADDRESSABLE MANUAL PULL STATION # NBG-12LX, C/W FLASH MOUNTED BACKBOX # SB-10, INSTALLATION AT 1220mm TOP.
- F C — EDPM, MANUAL PULL STATION # NBG-12L, C/W FLASH MOUNTED BACKBOX # SB-10 & PROTECTOR # ST-134STR, INSTALLATION AT 1220mm TOP.
- AD — ADDRESSABLE COMBINED SMOKE / THERMIC DETECTOR # FAPT-851A, C/W BASE MOUNTED ON OCTAGONAL BACKBOX
- RA — ADDRESSABLE RELAY MODULE # FDM-1A, MOUNTED ON BOX 4 x 4 x 2 1/8
- MD — ADDRESSABLE SUPERVISORY DOUBLE MODULE # FDM-1A, MOUNTED ON BOX 4 x 4 x 2 1/8
- C — CONVENTIONAL THERMIC DETECTOR, HUMIDITY PROOF CR-135HP, C/W BASE MOUNTED ON OCTAGONAL BACKBOX
- F — FIRE ALARM RED HORN # HRA CEILING MOUNTED ON BOX 4 x 4 x 2 1/8
- SYNCHRONIZED FIRE ALARM RED HORN/STROBE # PSRHA-R CEILING MOUNTED C/W BACKBOX
- EOLR — END OF LINE RED PLATE # EOL-CR, MOUNTED ON SAME BACKBOX
- EXT — FIRE SUPRESSION DRY CHEMICAL SYSTEM
- JUNCTION BOX
- 1 #18 AWG FOR ADDRESSABLE LOOP, FAS FT4
- 2 #14 AWG RW90 SOLID FOR SIGNALIZATION

REQUIREMENTS & APPROVALS

APPLICABLE CODES & STANDARDS				DESIGN ACCORDING TO	
☐ N.F.P.A. 72	☐ N.F.P.A. 16	■ ULC-S524		☐ N.F.P.A. 72	
☐ N.F.P.A. 14	☐ N.F.P.A. 20	☐ -		☐ F.M.	
☐ N.F.P.A. 15	☐ N.F.P.A. 24	☐ -		■ CNB-2005	

APPROVED BY	ISSUED	APPROVAL
-	-	-

ENGINEER STAMP

REVISIONS

REV.	DESCRIPTION	BY	DATE
A	EWS POUR INFORMATION	R.B.	2017-06-15

MONTREAL
3055 Pitfield Blvd
St-Laurent (Quebec) H4S 1H4
Tel.: (514) 333-0110
Fax (514) 333-4266

VIKING
VIKING FIRE PROTECTION INC

DATE	2017-06-13
DRAWN BY	R. BASSAL
CHECKED BY	P. NOEL
CONTRACT NO.	TDC10774
PROJECT	AGNICO EAGLE - MEL1ADINE DIVISION 103 COMBUSTIBLE RANKIN MONTREAL - QUÉBEC
SECTION	SCHEMA UNIFILAIRE D'ALARME INCENDIE
CONTRACT WITH	
SCALE	N/A
SHEET NO.	1 de 1
DRAWING NO.	T1077401A

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: 2017-06-29

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Agnico Eagle No. 6515-C-270-007-141-TES-0002 R: Sub002

DOCUMENT FOR INFORMATION

NUQSANA PROMEC MINING

AGNICO-EAGLE MINES Ltd.
Inspection & Testing Report

ITR Number: AEM-EL-ITR-001
ITR Type: GENERAL
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	DEVICE INSTALLED AS PER INSTALLATION DETAILS, LOCATION OR MANUFACTURERS DRAWINGS	C	NC #	N/A	Promec: CLIENT:
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6	BREAKER CONNECTIONS CONNECTED AND TORQUED	C	NC #	N/A	Promec: CLIENT:
7	LUG BOLT TORQUE	C	NC #	N/A	Promec: CLIENT:
8	POWER BUS BAR BOLTED AND TORQUED	C	NC #	N/A	Promec: CLIENT:
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10	MEGGER EQUIPMENT	C	NC #	N/A	Promec: CLIENT:
11	MEGGER CABLES	C	NC #	N/A	Promec: CLIENT:
12	HI-POT TEST	C	NC #	N/A	Promec: CLIENT:
13	PANELS IDENTIFIED	C	NC #	N/A	Promec: CLIENT:
14	UNIT DRAWER IDENTIFIED	C	NC #	N/A	Promec: CLIENT:
15	BREAKERS IDENTIFIED	C	NC #	N/A	Promec: CLIENT:
16	CABLES IDENTIFIED	C	NC #	N/A	Promec: CLIENT:
17	SEAL O RING INSTALLED (IF APPLICABLE)	C	NC #	N/A	Promec: CLIENT:
18	FUSES INSTALLED AND OF ADEQUATE SIZE	C	NC #	N/A	Promec: CLIENT:
18	VISUAL INSPECTION	C	NC #	N/A	Promec: CLIENT:
20	CLEAN / VACUUMED	C	NC #	N/A	Promec: CLIENT:

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Reference Datasheet Number:					

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21	PANEL AND DOOR CLOSED AND BOLTED	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				

AGNICO EAGLE

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Agnico Eagle No. 6515-C-270-007-141-TES-0002 R: Sub002

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AGNICO EAGLE

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Reference Datasheet Number:					

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21	PANEL AND DOOR CLOSED AND BOLTED	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				

AGNICO EAGLE

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NUQSANA PROMEC MINING

AGNICO-EAGLE MINES Ltd.
Inspection & Testing Report

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AGNICO EAGLE

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Comments

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

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

AGNICO EAGLE

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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-0013 R: Sub001

DOCUMENT FOR INFORMATION

NUQSANA PROMEC MINING

AGNICO-EAGLE MINES Ltd.
Inspection and Testing Report
(C22498E)

AGNICO EAGLE

Contract Title:	Fuel Tanks Piping Supply and Installation	**Contract No.:**	6515-C-270-007
Subject:	**Equipment Torque**	**ITR No.:**	**AEM-EL-ITR-006**

Torque #: _____ Calibration due Date: _____

Date: _____ By: _____

Equipment #	Power Bus Bar Torque (lbf·ft)	Ground Bus Bar Torque (lbf·ft)	Lug Torque (lbf·ft)	Photos (If applicable)

Promec's Representative Signature _____ Date _____ Client's Representative Signature _____ Date _____

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: 2017-06-22

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-0028 R: Sub002

DOCUMENT FOR INFORMATION

NUQSANA PROMEC MINING

AGNICO-EAGLE MINES Ltd.
Inspection & Testing Report

ITR Number: AEM-IN-ITR-005A
ITR Type: PCR PANEL
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	EQUIPMENT RACK OR CLAMPING DEVICE ADEQUATE (HEIGHT, SOLIDITY ETC.)	C	NC #	N/A	Promec: CLIENT:
6	WIRING CORRECT AND PROPERLY LABELED	C	NC #	N/A	Promec: CLIENT:
7	GROUNDING INSTALLED AND CONNECTED	C	NC #	N/A	Promec: CLIENT:
8	CLEAN OUT ENCLOSURE	C	NC #	N/A	Promec: CLIENT:
9	OPENING DOOR ADEQUATE	C	NC #	N/A	Promec: CLIENT:
10	CALIBRATION CERTIFICATE AVAILABLE	C	NC #	N/A	Promec: CLIENT:
11	ELECTRICAL SUPPLY COMPATIBLE WITH SOURCE	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				

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: LUC SÉNÉCAL Date: 2017-07-10

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Agnico Eagle No. 6515-C-270-007-141-TES-0009 R: Sub002

DOCUMENT FOR INFORMATION

NUQSANA PROMEC MINING

AGNICO-EAGLE MINES Ltd.
Inspection & Testing Report

ITR Number: AEM-EL-ITR-002
ITR Type: HEATING UNIT
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	CHECK FOR PROPER SIZE OF CIRCUIT BREAKERS IN DISTRIBUTION PANEL	C	NC #	N/A	Promec: CLIENT:
2	CHECK FOR PROPER TAGGING AND LABELLING OF ALL PARTS AS SHOWN ON THE DRAWINGS	C	NC #	N/A	Promec: CLIENT:
3	CHECK FOR PROPER OPERATION OF THERMOSTATS AND/OR TEMPERATURE CONTROLLERS	C	NC #	N/A	Promec: CLIENT:
4	FINAL INSPECTION COMPLETE. DEFICIENCY LIST ITEMS CLEARED	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				

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-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

NUQSANA-PROMEC MINING

AGNICO-EAGLE MINES Ltd.
Inspection and Testing Report
(C22498E)

AGNICO EAGLE

Contract Title: Fuel Tanks Piping Supply and Installation
Contract No.: 6515-C-270-007
Subject: Cable to Meg
ITR No.: AEM-EL-ITR-003

Tester #: MtP 4055 (SN 170617552)
Calibration due Date: 05-07-2018
Date: 15-07-2017
By: TRESCAL
Megger ?/Volts: 1000 Volts

Cable ID	Origin / Destination	Phase 1/Phase 2	Phase 2/Phase 3	Phase 1/Phase 3	Phase 1 /GND	Phase 2/GND	Phase 3/GND
65 SPb 10301-09-P1		OL	OL	OL	OL	OL	OL
65 SPb 11601-08-P1		OL	OL	OL	OL	OL	OL
65 SPb 11601-10-P1		N/A	N/A	N/A			
65 SPb 11601-P1		OL	OL	OL	OL	OL	OL
65 SPb 11601-P2		OL	OL	OL	OL	OL	OL
65 SPb 11601-P3		OL	OL	OL	OL	OL	OL
65 SPb 11601-P4		OL	OL	OL	OL	OL	OL
65 SPb 11601-P5		OL	OL	OL	OL	OL	OL
65 SPb 11601-P6		OL	OL	OL	OL	OL	OL
65 SPb 11601-P7		OL	OL	OL	OL	OL	OL
65 SPb 11601-01-P1		OL	OL	OL	OL	OL	OL
65 SPb 11601-02-P1		OL	OL	OL	OL	OL	OL
65 SPb 11601-03-P1		OL	OL	OL	OL	OL	OL

Promec's Representative Signature — Date: 15-07-2017

Client's Representative Signature — Date

NUQSANA PROMEC MINING

AGNICO-EAGLE MINES Ltd.

Inspection and Testing Report

(C22498E)

AGNICO EAGLE

Contract Title: Fuel Tanks Piping Supply and Installation
Contract No.: 6515-C-270-007
Subject: Cable to Meg
ITR No.: AEM-EL-ITR-003

Tester #: Mtp 4055 (SN 1706175521)
Date: 15-07-2017
Megger ?/Volts: 1000 Volts

Calibration due Date: 05-07-2018
By: TRESCAL

Cable ID	Origin / Destination	Phase 1/Phase 2	Phase 2/Phase 3	Phase 1/Phase 3	Phase 1 /GND	Phase 2/GND	Phase 3/GND
65 DPS 11601 -16-P1		OL			OL	OL	
65 DPS 11601-16-P2		OL			OL	OL	
65 DPS 11601- 2- P1		OL			OL	OL	
65 DPS 11601- 2 -P2		OL			OL	OL	
65 DPS 11601- 7-P1		OL			OL	OL	
65 DPS 11601- 7-P2		OL			OL	OL	
65 DPS 11601- 18-P1		OL			OL	OL	
65 DPS 11601- 10/12 P1		OL			OL	OL	
65 DPS 11601- 10/12 P1		OL			OL	OL	Just Heating 65HEA11603
65 DPS 11601- 14 - P1		OL			OL	OL	

Promec's Representative Signature — Date: 2-10-2017

Client's Representative Signature — Date

NUQSANA PROMEC MINING

AGNICO-EAGLE MINES Ltd.
Inspection and Testing Report
(C22498E)

AGNICO EAGLE

Contract Title: Fuel Tanks Piping Supply and Installation
Contract No.: 6515-C-270-007
Subject: Cable to Meg
ITR No.: AEM-EL-ITR-003

Tester #: Mt P 4055 C.N.S 170617552
Date: 2-10-2017
Megger ?/Volts: 1000 Volts
Calibration due Date: 05-07-2018
By: TRESCAL

Cable ID	Origin / Destination	Phase 1/Phase 2	Phase 2/Phase 3	Phase 1/Phase 3	Phase 1 /GND	Phase 2/GND	Phase 3/GND
65VSD11601 - P1		0,003	0,003	0,003	OL	OL	OL
65VSD11602 - P1		0,003	0,003	0,003	OL	OL	OL
65DPS11601-4-P1		OL			OL	OL	
65DPS11601-5-P1		OL			OL	OL	
65DPS11601-6-P1		OL			OL	OL	
65DPS11601-1/3-P2		OL			OL	OL	
65DPS11601-17/19-P2		OL			OL	OL	
65DPS11601-21/23-P2		OL			OL	OL	
65DPS11601-5-P1		OL			OL	OL	
65DPS11601-5-P2		OL			OL	OL	
65DPS11601-5-P3		OL			OL	OL	
65DPS11602-8-P1		OL			OL	OL	
65DPS11602-8-P2		OL			OL	OL	

TESTER avec moteur

Promec's Representative Signature — Date: 2-10-2017
Client's Representative Signature — Date

NUQSANA PROMEC MINING

AGNICO-EAGLE MINES Ltd.
Inspection and Testing Report
(C22498E)

AGNICO EAGLE

Contract Title: Fuel Tanks Piping Supply and Installation
Contract No.: 6515-C-270-007
Subject: Cable to Meg
ITR No.: AEM-EL-ITR-003

Tester #: MTP 4055 (SN170617552)
Date: 15-07-2017
Megger ?/Volts: 1000 Volts

Calibration due Date: 05-07-2018
By: TRESCAL

Cable ID	Origin / Destination	Phase 1/Phase 2	Phase 2/Phase 3	Phase 1/Phase 3	Phase 1 /GND	Phase 2/GND	Phase 3/GND
65TRF11601-P1		OL	OL	OL	OL	OL	OL
65SPb11601-04-P1		OL	OL	OL	OL	OL	OL
65SPb11601-04-P1A		OL	OL	OL	OL	OL	OL
65 SPb11601-04-P1b		OL	OL	OL	OL	OL	OL

15-07-2017

Promec's Representative Signature | Date | Client's Representative Signature | Date

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

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Agnico Eagle No. 6515-C-270-007-141-TES-0010 R: Sub001

DOCUMENT FOR INFORMATION

NUQSANA-PROMEC MINING

AGNICO-EAGLE MINES Ltd.
Inspection and Testing Report
(C22498E)

AGNICO EAGLE

Contract Title: Fuel Tanks Piping Supply and Installation
Contract No.: 6515-C-270-007
Subject: Cable to Meg
ITR No.: AEM-EL-ITR-003

Tester #: _____
Date: _____
Megger ?/Volts: _____

Calibration due Date: _____
By: _____

Cable ID	Origin / Destination	Phase 1/Phase 2	Phase 2/Phase 3	Phase 1/Phase 3	Phase 1 /GND	Phase 2/GND	Phase 3/GND

Promec's Representative Signature _____ Date _____

Client's Representative Signature _____ Date _____

Contract Title:	Fuel Tanks Piping Supply and Installation	**Contract No.:**	6515-C-270-007
Subject:	Cable to Meg	**ITR No.:**	AEM-EL-ITR-003

AGNICO EAGLE

Vendor Document 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-0011 R: Sub001

DOCUMENT FOR INFORMATION

NUQSANA-PROMEC MINING

AGNICO-EAGLE MINES Ltd.
Inspection and Testing Report
(C22498E)

AGNICO EAGLE

Contract Title: Fuel Tanks Piping Supply and Installation
Contract No.: 6515-C-270-007
Subject: Continuity Test
ITR No.: AEM-EL-ITR-004

Cable ID	Description	Continuity	Visual	Ident. Origin	Ident. Destination	Same	Date	By

Promec's Representative Signature | Date | Client's Representative Signature | Date

AGNICO EAGLE

Vendor Document Status

1 ☐ Proceed to next submission and status.

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Agnico Eagle No. 6515-C-270-007-141-TES-0010 R: Sub001

DOCUMENT FOR INFORMATION

AGNICO-EAGLE MINES Ltd.
Inspection and Testing Report
(C22498E)

NUQSANA PROMEC MINING

AGNICO EAGLE

Contract Title: Fuel Tanks Piping Supply and Installation
Contract No.: 6515-C-270-007
Subject: Cable to Meg
ITR No.: AEM-EL-ITR-003

Tester #: _____
Date: _____
Megger ?/Volts: _____

Calibration due Date: _____
By: _____

Cable ID	Origin / Destination	Phase 1/Phase 2	Phase 2/Phase 3	Phase 1/Phase 3	Phase 1 /GND	Phase 2/GND	Phase 3/GND

Promec's Representative Signature _____ Date _____

Client's Representative Signature _____ Date _____

Contract Title:	Fuel Tanks Piping Supply and Installation	**Contract No.:**	6515-C-270-007
Subject:	Cable to Meg	**ITR No.:**	AEM-EL-ITR-003

AGNICO EAGLE

Vendor Document 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-0011 R: Sub001

DOCUMENT FOR INFORMATION

AGNICO-EAGLE MINES Ltd.
Inspection and Testing Report
(C22498E)

Contract Title: Fuel Tanks Piping Supply and Installation
Contract No.: 6515-C-270-007
Subject: Continuity Test
ITR No.: AEM-EL-ITR-004

Cable ID	Description	Continuity	Visual	Ident. Origin	Ident. Destination	Same	Date	By

Promec's Representative Signature | Date | Client's Representative Signature | Date

AGNICO EAGLE

Vendor Document 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-0010 R: Sub001

DOCUMENT FOR INFORMATION

AGNICO-EAGLE MINES Ltd.
Inspection and Testing Report
(C22498E)

Contract Title:	Fuel Tanks Piping Supply and Installation	**Contract No.:**	6515-C-270-007
Subject:	Cable to Meg	**ITR No.:**	AEM-EL-ITR-003

Tester #: _____ Calibration due Date: _____

Date: _____ By: _____

Megger ?/Volts: _____

Cable ID	Origin / Destination	Phase 1/Phase 2	Phase 2/Phase 3	Phase 1/Phase 3	Phase 1 /GND	Phase 2/GND	Phase 3/GND

Promec's Representative Signature _____ Date _____ Client's Representative Signature _____ Date _____

Contract Title:	Fuel Tanks Piping Supply and Installation	**Contract No.:**	6515-C-270-007
Subject:	**Cable to Meg**	**ITR No.:**	**AEM-EL-ITR-003**

NUQSANARROMEC MINING

AGNICO-EAGLE MINES Ltd.
Inspection and Testing Report
(C22498E)

AGNICO EAGLE

Contract Title: Fuel Tanks Piping Supply and Installation
Contract No.: 6515-C-270-007
Subject: Continuity Test
ITR No.: AEM-EL-ITR-004

Cable ID	Description	Continuity	Visual	Ident. Origin	Ident. Destination	Same	Date	By
116-FQICO14C2	4PR 18	OL	OK	PLC 11602	MICROLOAD		2-10-2017	Alex Chevalier
116-FQICO14-COM	Ethernet cat6	N/A	OK	PLC 11602	MICROLOAD		2-10-2017	" "
116-FQICO14-P1	3c 14	OL	OK	65JB116 02	MICRO LOAD		2-10-2017	" "
116-FQICO14-P2	3c - 14	OL	OK	65JB116-01	MICRO LOAD		2-10-2017	" "
116-FSLO22/023C	6c - 14	OL	OK	65JB11602	FILTRATION		2-10-2017	" "
116-FSLO22-C	3c - 14	OL	OK	65JB11604	103-FSLO22-C		2-10-2017	" "
116-FSLO23-C	3c - 14	OL	OK	65JB11604	116-FSLO23-C		3-10-2017	" "
116-FTO14-1	2p - 18	OL	OK	116-FT-014	MICRO LOAD		3-10-2017	" "
116-FVO14-C	3c - 14	OL	OK	116-FV-014	MICROLOAD (120V)		3-10-2017	" "
116-GSO1602	10 c - 14	OL	OK	116-GS-016	SCULCON		3-10-2017	" "
116-GSO16-P	6 c - 14	OL	OK	65JB11601	116-GS-016		3-10-2017	" "
116-HSS-0171C	6C - 14	OL	OK	65JB11602	116-HSS-0171		3-10-2017	" "
116-HSS-0172C	6C - 14	OL	OK	PLC 11601	116-HSS-0173		3-10-2017	" "
116-LAHO6-C	3c - 14	OL	OK	65JB11602	116-LAH-006		3-10-2017	" "
116-LTO5-C	1PR - 16	OL	OK	65JB11603	116-LT-005		3-10-2017	" "
116-MOVO8-C	6c - 14	OL	OK	65JB11602	116-MOV-008		3-10-2017	" "

Promec's Representative Signature	Date	Client's Representative Signature	Date
	3-10-2017		

NUQSANA PROMEC MINING

AGNICO-EAGLE MINES Ltd.
Inspection and Testing Report
(C22498E)

AGNICO EAGLE

Contract Title: Fuel Tanks Piping Supply and Installation
Contract No.: 6515-C-270-007
Subject: Continuity Test
ITR No.: AEM-EL-ITR-004

Cable ID	Description	Continuity	Visual	Ident. Origin	Ident. Destination	Same	Date	By
116-MOV08P	3c/8	OL	OK	MOV-GRP-box	116-MOV-008		3-10-2017	Alex chevalier
116-TT-007-C	1p-16	OL	OK	65JB11602	116-TT-007		3-10-2017	" "
116-XA019-C	10c/14	OL	OK	65JB11602	~~116-XA~~ Fire panel		3-10-2017	" "
65VSD1161-C1	3c/14	OL	OK	65JB11602	65VSD1161		3-10-2017	" "
65VSD1162-C1	3c/14	OL	OK	65JB11602	65VSD1162		3-10-2017	" "

3-10-2017

Promec's Representative Signature | Date | Client's Representative Signature | Date

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

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Agnico Eagle No. 6515-C-270-007-141-TES-0011 R: Sub001

DOCUMENT FOR INFORMATION

AGNICO-EAGLE MINES Ltd.
Inspection and Testing Report
(C22498E)

Contract Title: Fuel Tanks Piping Supply and Installation
Contract No.: 6515-C-270-007
Subject: Continuity Test
ITR No.: AEM-EL-ITR-004

Cable ID	Description	Continuity	Visual	Ident. Origin	Ident. Destination	Same	Date	By

Promec's Representative Signature | Date | Client's Representative Signature | Date

AGNICO EAGLE

Vendor Document Status

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-0011 R: Sub001

DOCUMENT FOR INFORMATION

AGNICO-EAGLE MINES Ltd.
Inspection and Testing Report
(C22498E)

AGNICO EAGLE

Contract Title: Fuel Tanks Piping Supply and Installation
Contract No.: 6515-C-270-007
Subject: Continuity Test
ITR No.: AEM-EL-ITR-004

Cable ID	Description	Continuity	Visual	Ident. Origin	Ident. Destination	Same	Date	By

Promec's Representative Signature | Date | Client's Representative Signature | Date

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-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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Agnico Eagle No. 6515-C-270-007-141-TES-0002 R: Sub001

DOCUMENT FOR INFORMATION

NUQSANA PROMEC MINING

AGNICO-EAGLE MINES Ltd.
Inspection & Testing Report

ITR Number: AEM-EL-ITR-001
ITR Type: GENERAL
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	DEVICE INSTALLED AS PER INSTALLATION DETAILS, LOCATION OR MANUFACTURERS DRAWINGS	C	NC #	N/A	Promec: CLIENT:
2	EQUIPMENT ACESSIBLE AND EASY TO MAINTAIN	C	NC #	N/A	Promec: CLIENT:
3	EQUIPMENT RACK OR CLAMPING DEVICE ADEQUATE (HEIGHT, SOLIDITY ETC.)	C	NC #	N/A	Promec: CLIENT:
4	GROUNDING INSTALLED AND CONNECTED	C	NC #	N/A	Promec: CLIENT:
5	TERMINAL CONNECTION CONNECTED AND TORQUED	C	NC #	N/A	Promec: CLIENT:
6	BREAKER CONNECTIONS CONNECTED AND TORQUED	C	NC #	N/A	Promec: CLIENT:
7	LUG BOLT TORQUE	C	NC #	N/A	Promec: CLIENT:
8	POWER BUS BAR BOLTED AND TORQUED	C	NC #	N/A	Promec: CLIENT:
9	GROUND BUS BAR BOLTED AND TORQUED	C	NC #	N/A	Promec: CLIENT:
10	MEGGER EQUIPMENT	C	NC #	N/A	Promec: CLIENT:
11	MEGGER CABLES	C	NC #	N/A	Promec: CLIENT:
12	HI-POT TEST	C	NC #	N/A	Promec: CLIENT:
13	PANELS IDENTIFIED	C	NC #	N/A	Promec: CLIENT:
14	UNIT DRAWER IDENTIFIED	C	NC #	N/A	Promec: CLIENT:
15	BREAKERS IDENTIFIED	C	NC #	N/A	Promec: CLIENT:
16	CABLES IDENTIFIED	C	NC #	N/A	Promec: CLIENT:
17	SEAL O RING INSTALLED (IF APPLICABLE)	C	NC #	N/A	Promec: CLIENT:
18	FUSES INSTALLED AND OF ADEQUATE SIZE	C	NC #	N/A	Promec: CLIENT:
18	VISUAL INSPECTION	C	NC #	N/A	Promec: CLIENT:
20	CLEAN / VACUUMED	C	NC #	N/A	Promec: CLIENT: