



FISHERIES AND MARINE INSTITUTE

OPEN CALL FOR BIDS

FOR

UPGRADES TO FLUME TANK

DRIVES AND CONTROLS

Request for Open Call Number: TMI1330

Issued: July 22, 2026

**Submission Deadline: Wednesday, August 21 @
10:00 AM NL Time**

REQUEST FOR OPEN CALL FOR BIDS INFORMATION SHEET

Request for Open Call			
Title:	UPGRADES TO FLUME TANK DRIVES AND CONTROLS		
Open Call #:	TMI1330	Issue Date:	DATE: July 22, 2026
Deadline for Questions:	72 hours prior to close time	Submission Deadline Closing Date & Time:	Friday Aug 21, 2026 @ 10:00 AM NL Time
		Bid Submission Format:	Mlopencalls@mi.mun.ca
		Opening Date, Time & Location:	Friday Aug 21, 2026 @ 10:30 am NL Time Phone lines will be open 5 minutes before opening. Meeting ID: 251 481 368 015 693 Passcode: xb97Pb6y
Bids Irrevocable Period after Submission Deadline:			90 days
Bid Submission: Responses to this solicitation must be submitted by email to Mlopencalls@mi.mun.ca Email subject line must read: BID SUBMISSION: Open Call number and name. For example: “<u>BID SUBMISSION</u>: TMI1330 – UPGRADES TO FLUME TANK DRIVES AND CONTROLS			
Inquiries and Communication:			
Inquiries and communication: Fisheries and Marine Institute, Memorial University of Newfoundland, Finance and Contracts Office, Purchasing Officer, Mlopencalls@mi.mun.ca Inquiries accepted only via email. No phone calls will be accepted. Please reference Open Call number and “TMI1322 – FLUME TANK UPGRADES” in subject line. Emails not containing this requirement information in the subject line will NOT be responded to. <u>Bids submitted by fax, mail, courier, drop off or by any other means of delivery other than by email stated above shall not be accepted.</u>			

DEFINITIONS

“Agreement”	means a Purchase Order and/or a formal contract between the Marine Institute and the successful bidder;
“best value”	includes the best balance of cost, quality, performance and support, as achieved through a transparent, efficient and competitive procurement process using clear and fair evaluation and selection criteria;
“bid”:	means an offer from a supplier, submitted in response to a call for bids, to supply goods or services;
“bidder”	means the supplier submitted a response to an Open Call;
“commodities”	means goods, services, public works and lease of space;
“Conflict of Interest”	includes, but is not limited to, any situation or circumstance where in relation to the Open Call process, the bidder has an unfair advantage or engages in conduct, directly or indirectly, that may give it an unfair advantage, including but not limited to: (i) having, or having access to, confidential information of the Marine Institute in the preparation of its bid that is not available to other bidders, (ii) communicating with any person with a view to influencing preferred treatment in the Open Call process (including but not limited to the lobbying of decision makers involved in the Open Call process), or (iii) engaging in conduct that compromises, or could be seen to compromise, the integrity of the open and competitive Open Call process or render that process non-competitive or unfair.
“contractor”	means a supplier that has been awarded a contract by the Marine Institute;
“deliverables”	means the goods or services bid in the Open Call to be provided to the Marine Institute;
“goods”	means goods, chattels, materials, personal property, movable property and other physical objects of every kind, including items required to be manufactured or on which a labour or skill is required to be expended before, upon or after delivery to the Marine Institute;
“lease of space”	means a transfer of the possession of space for a fixed period of time at a specified rent, and includes a renewal of a lease;
“Marine Institute”	Fisheries and Marine Institute of the Memorial University of Newfoundland;
“Open Call”	means a publicly-advertised invitation to suppliers to submit a bid;
“procurement”	means the acquisition of commodities or professional services by the Marine Institute by any means, including by purchase, rental or lease;
“public work”	means the construction, re-construction, extension, enlargement, repair, maintenance, improvement and demolition of real property, including

improvements to leased property;

“purchase order” the commercial document issued to the supplier to request the supply of goods or services in return for payment and includes, among other information, items and quantities required at agreed prices.

“services” means all services incidental to the supply of goods including the provision of transportation of all kinds, printing and reproduction services, accounting, land surveying and voice telephone services, engineering services, architectural services, banking services, insurance services, services that require the giving of an opinion, creativity, the preparation of a design, or technical expertise except legal services and financial services;

“standing offer agreement” a mutual agreement effected with the supplier to deliver “as and when requested” over a specific period of time, goods or services in quantities to be determined at prescribed prices or pricing arrangements.

“supplier” means an individual, partnership, corporation, joint venture or other form of business organization engaged in the lawful supply of commodities;

[End of Definitions]

PART 1 – SUBMISSION INSTRUCTIONS

1.1 Bids to be Submitted on Time

Bids must be submitted as set out above on or before the Submission Deadline. Bids submitted after the Submission Deadline will be rejected. Onus and responsibility rest solely with the bidder to submit its bid to the email indicated in the Open Call for Bids on or before the Submission Deadline. The Marine Institute does not accept any responsibility for any bids submitted by means other than the email listed above. Bidders making submissions near the deadline do so at their own risk due server availability. The time for the closing will be determined according to the inbox, time stamp on Mlopencalls@mi.mun.ca. Bids received after the closing time based on this time stamp, will NOT be considered.

1.2 Bids to be Submitted in Prescribed Format

Bidders must submit **one (1)** email submission in PDF format. **Bids submitted by fax, mail, courier, drop off or by any other means of delivery other than by email stated above shall not be accepted.**

1.3 Amendment of Bids

Bidders may amend their bids after they have been submitted if, and only if, the amendment is emailed prior to the Submission Deadline marked BID SUBMISSION AMENDMENT followed by Open Call number and name. Bid revisions, changes and alterations may be made only by completing a new bid. Previous submissions will be cancelled and the submission with the most recent date and time will be considered the final bid.

Written inquiries and requests for clarification shall be accepted up to **72 hours** prior to the closing time. Inquiries and requests for clarification received after this date shall not be addressed. The will be the only official source of information regarding this Open Call for Bids and information from any other source shall be considered unofficial and may not be correct.

To ensure consistency and quality in the information provided to bidders the Marine Institute shall provide, by way of amendment to this Open Call for Bids, in the form of an addendum, any relevant information with respect to the Open Call inquiries received in writing without revealing the source of those inquiries. Bidders are cautioned that it is their responsibility to ensure that they receive all information relevant to this Open Call. The Marine Institute shall not be responsible for bidders who fail to inform themselves regarding the scope and nature of the work. The Marine Institute shall publish all amendments on the Marine Institute's current service providers: MERX: www.merx.com, BIDS: www.bids.ca and PODS: www.pods.net. In addition, all amendments will be published on www.mun.ca/procurement. Bidders should check on a regular basis for Open Call updates. Bidders are solely responsible for ensuring they are aware of and have complied with all amendments by tender closing time.

1.4 Withdrawal of Bids

Bidders may withdraw their bids prior to the Submission Deadline. To withdraw a bid, a notice of withdrawal must be sent to the Mlopencalls@mi.mun.ca email address prior to the Submission Deadline. The Marine Institute is under no obligation to return withdrawn bids.

1.5 Bids Irrevocable after Submission Deadline

Bids shall be irrevocable for a period of **90** days running from the moment that the Submission Deadline passes.

1.6 Delivery

Delivery of all materials and services must be FOB Marine Institute, 155 Ridge Road, St. John's, NL, A1B 5E7, Canada, Attention: Shipping and Receiving, and local environs unless otherwise specified in Appendix A – Specifications. A schedule for delivery of the specified goods or services must be included in the bid.

1.7 Signature

Marine Institute, in consideration of section 11 of the Electronic Commerce Act, confirms its acceptance of electronic signatures, or other acceptable form of electronic consent, in satisfaction of the signature requirement for bid submissions. The electronic form of signature or consent must be directly related to the relevant bid submission at issue and must be reliable, in a manner as determined by the Marine Institute, for the purpose of identifying the person submitting the bid response. By submitting a bid under this process, the bidder confirms that the signatory has the appropriate and proper authority to bind the bidder to its submission, a confirmation upon which the Marine Institute relies in the processing of the bid submission.

1.8 Closure

In the event that the Marine Institute is closed earlier than normally expected prior to a scheduled Open Call for Bids closing for that day, or for the full day, the closing date for those tenders will be extended to the next business day for the Marine Institute at the same time as listed originally.

1.9 Corporations Act

The Corporations Act of Newfoundland and Labrador requires that an extra-provincial company be registered before it begins or carries on business in the Province. If your company is not registered, please apply for the appropriate forms and procedures to:

Commercial Registrations Division

Dept of Government Services, PO Box 8700

St John's, NL Canada A1B 4J6

Phone: 709-729-3317, Fax: 709-729-0232

Website: http://www.gs.gov.nl.ca/registries/companies/corp_art_inc.html

[End of Part 1]

PART 2 – EVALUATION AND AWARD

2.1 Stages of Evaluation

The Marine Institute will conduct the evaluation of bids in the following stages:

2.2 Stage I – Mandatory Submission Requirements

Stage I will consist of a review to determine which bids comply with all of the mandatory submission requirements. Bids that do not comply with all of the mandatory submission requirements as of the Submission Deadline will, subject to the express and implied rights of the Marine Institute, be disqualified and not evaluated further. The Marine Institute reserves the right to reject incomplete bids.

2.3 Stage II – Mandatory Technical Requirements

Stage II will consist of a review to determine which bids comply with all of the mandatory technical requirements. Bids that do not comply with all of the mandatory technical requirements as of the Submission Deadline will, subject to the express and implied rights of the Marine Institute, be disqualified and not evaluated further. The mandatory technical requirements are listed in Appendix A - Specifications.

2.4 Stage III – Pricing

Stage III will consist of a scoring of the submitted pricing of each compliant bid in accordance with the evaluation method set out in the Pricing Form (Appendix C). The evaluation of price will be undertaken after the evaluation of mandatory requirements has been completed.

2.5 No Amendment to Forms

Other than inserting the information requested on the mandatory submission forms set out in the Open Call, a bidder may not make any changes to any of the forms. Any bid containing any such changes, whether on the face of the form or elsewhere in the bid, shall be disqualified.

2.6 Selection of Lowest Compliant Bidder as Preferred Supplier

Subject to the Marine Institute's reserved rights, the compliant bidder with the lowest pricing will be the preferred supplier and will be selected to enter into the Agreement in accordance with the following section. In the event of a tie, the preferred supplier will be determined by way of a coin toss, in accordance with the Public Procurement Policy.

2.7 Notice to Bidder and Execution of Agreement

Notice of selection by the Marine Institute to the preferred supplier shall be in writing. The preferred supplier shall execute an Agreement, the form and content of which will be mutually agreed upon between the parties and satisfy any other applicable conditions of this Open Call within fifteen (15) days of notice of selection. This provision is solely for the benefit of the Marine Institute and may be waived by the Marine Institute. At the Marine Institutes discretion, the bidder will enter into a formal contract containing such terms and conditions (not inconsistent with the terms and conditions in the Open Call) as may be required. Unless or until such a formal contract is entered into, the Open Call in its entirety, the accepted Open Call bid and any resulting Purchase Order when issued shall together be the complete and only contract. If the Open Call is for a number of discrete items, the Marine Institute reserves the right to award in full to a single bidder, or to award

each item to the lowest bidder for that item. In the case of the latter, each item in the Open Call will then be considered a separate agreement and may be awarded separately, unless stated otherwise in the Open Call. It is understood that the Open Call bid will remain open for acceptance by the Marine Institute for a period of not less than 30 days from the closing date specified in the Open Call, unless otherwise indicated in Appendix A – Specifications.

A Purchase Order and/or formal contract will be issued to the contractor. Contractors are not to supply goods or services without a Purchase Order or formal contract unless directed to do so in writing by the official whose name appears in the Open Call.

2.8 Failure to Enter into Agreement

If a selected bidder fails to execute the Agreement or satisfy the pre-conditions of award listed in the Open Call Particulars within fifteen (15) days of notice of selection the Marine Institute may, without incurring any liability, proceed with the selection of another bidder and pursue all remedies available to the Marine Institute.

2.9 Payment Terms

The University's standard payment terms are net 30 days after delivery of goods, or net 15 days after successful completion of installation as applicable. In the case of services, payment terms are also net 30 days after successful completion of the service. These terms shall also apply in the case of sub-contracted items. Prepayments will not be considered unless the supplier provides an irrevocable standby letter of credit, or the supplier provides a credit reference from its banker satisfactory to the Director of Financial and Administrative Services. Bidders should make every effort to structure payments based on tangible milestones, delivery in all, or in part of the goods and/or services to make the basis of payment for goods or services delivered.

[End of Part 2]

PART 3 – TERMS AND CONDITIONS

3.1 General Information and Instructions

3.2 Open Call Incorporated into Bid

All of the provisions of this Open Call are deemed to be accepted by each bidder and incorporated into each bidder's bid. A bidder who submits conditions, options, variations, or contingent statements to the terms as set out in this Open Call, either as part of its bid or after receiving notice of selection, unless otherwise indicated, shall be disqualified.

3.3 Bidders to Follow Instructions

Bidders should structure their bids in accordance with the instructions in this Open Call. Where information is requested in this Open Call, any response made in a bid should reference the applicable section numbers of this Open Call.

3.4 Bids in English

All bids are to be in English only.

3.5 No Incorporation by Reference

The entire content of the bidder's bid should be submitted in a fixed form, and links to the content of websites or other external documents referred to in the bidder's bid but not attached will not be considered to form part of its bid.

3.6 References and Past Performance

In the evaluation process, the Marine Institute may consider information provided by the bidder's references and may also consider the bidder's past performance or conduct on previous contracts with the Marine Institute or other institutions.

3.7 Information in Open Call Only an Estimate

The Marine Institute and its advisors make no representation, warranty, or guarantee as to the accuracy of the information contained in this Open Call or issued by way of addenda. Any quantities shown or data contained in this Open Call or provided by way of addenda are estimates only and are for the sole purpose of indicating to bidders the general scale and scope of the Deliverables. It is the bidder's responsibility to obtain all the information necessary to prepare a bid in response to this Open Call.

3.8 Bidders to Bear Their Own Costs

The bidder will bear all costs associated with or incurred in the preparation and presentation of its bid, including, if applicable, costs incurred for interviews or demonstrations.

3.9 Bid to be Retained by the Marine Institute

The Marine Institute will not return the bid, or any accompanying documentation or samples submitted by a bidder.

3.10 Trade Agreements

Bidders should note that procurements falling within the scope of the Canadian Free Trade Agreement, and/or the Canada-European Union Comprehensive Economic Trade Agreement are subject to those trade agreements but that the rights and obligations of the parties will be governed by the specific terms of this Open Call.

3.11 No Guarantee of Volume of Work or Exclusivity of Contract

The Marine Institute makes no guarantee of the value or volume of work to be assigned to the preferred supplier. The Agreement will not be an exclusive contract for the provision of the described Deliverables. The Marine Institute may contract with others for goods and services the same as or similar to the Deliverables or may obtain such goods and services internally in order to obtain the best value.

3.12 Communication after issuance of Open Call

Bidders shall promptly examine all of the documents comprising this Open Call, and

- (a) shall report any errors, omissions, or ambiguities; and
- (b) may direct questions or seek additional information

in writing by email to Mlopencalls@mi.mun.ca on or before the Deadline for Questions. All questions or comments submitted by bidders by email to the Open Call Contact shall be deemed to be received once the email has entered into the Open Call Contact's email inbox. No such communications are to be directed to anyone other than the Open Call Contact, and the Marine Institute shall not be responsible for any information provided by or obtained from any source other than the Finance and Contracts Office. The Marine Institute is under no obligation to provide additional information. It is the responsibility of the bidder to seek clarification from the Open Call Contact on any matter it considers to be unclear. The Marine Institute shall not be responsible for any misunderstanding on the part of the bidder concerning this Open Call or its process.

3.13 All New Information to Bidders by Way of Addenda

This Open Call may be amended only by addendum in accordance with this section. If the Marine Institute, for any reason, determines that it is necessary to provide additional information relating to this Open Call, such information will be communicated to all bidders by addenda. Each addendum forms an integral part of this Open Call and may contain important information, including significant changes to this Open Call. Bidders are responsible for obtaining all addenda issued by the Marine Institute. In the Submission Form (Appendix B), bidders MUST confirm their receipt of all addenda by setting out the number of each addendum in the space provided.

3.14 Addenda and Extension of Submission Deadline

Any addendum added within seven (7) calendar days of the Open Call for Bids closing (Including on closing day) will extend closing by a reasonable period to be determined by the Marine Institute.

3.15 Verify, Clarify and Supplement

When evaluating bids, the Marine Institute may request further information from the bidder or third parties in order to verify, clarify or supplement the information provided in the bidder's bid. The response received by the Marine Institute shall, if accepted by the Marine Institute, form an integral part of the bidder's bid.

3.16 Notification to Other Bidders

In accordance with section 30 of the *Public Procurement Regulations*, once the Agreement is awarded by the Marine Institute, the outcome of the Open Call will be publicly posted at www.mun.ca/procurement. There will be no issuing of regret letters.

3.17 Debriefing

In accordance with the *Public Procurement Act and Regulations*, unsuccessful bidders may request a debriefing within ten (10) business days after the award has been posted. The request must be sent in writing to the Open Call contact. The intent of the debriefing information session is to provide the bidder an overview of their bid and why it was unsuccessful and to help the bidder in presenting a better bid in subsequent procurement opportunities. The debriefing process is not for the purpose of providing an opportunity to challenge the procurement process or its outcome. A debriefing shall not disclose information regarding another bidder's bid.

3.18 Supplier Complaint Process

If a bidder wishes to register a complaint with respect to the Open Call process, the complaint should be provided in writing and within the parameters established by section 25 of the *Public Procurement Regulations*, as amended. The notice must provide a detailed explanation of the bidder's concerns with the procurement process or its outcome, in addition to such other information as may be required by the *Regulations*. Bidders should note that these complaint procedures are separate and distinct from any dispute resolution processes that may be provided for under applicable trade agreements. If a bidder wishes to dispute a matter under an applicable trade agreement, the bidder must follow the process set out in the trade agreement.

3.20 Conflict of Interest and Prohibited Conduct

3.21 Conflict of Interest

The Marine Institute may disqualify a bidder for any conduct, situation, or circumstances, determined by the Marine Institute, in its sole and absolute discretion, that constitutes a conflict of interest.

The Marine Institute reserves the right to disqualify any bidder that in the Marine Institute's sole opinion has an actual or potential conflict of interest or an unfair advantage.

Bidders are required to disclose, to the Open Call Contact, any potential or perceived conflict of interest issues prior to Open Call closing date and time.

3.22 Disqualification for Prohibited Conduct

The Marine Institute may disqualify a bidder, rescind a notification of selection, or terminate a contract subsequently entered into if the Marine Institute determines that the bidder has engaged

in any conduct prohibited by this Open Call.

3.23 Bidder Not to Communicate with Media

Bidders must not at any time directly or indirectly communicate with the media in relation to this Open Call or any agreement entered into pursuant to this Open Call without first obtaining the written permission of the Open Call Contact.

3.24 No Lobbying

Bidders must not, in relation to this Open Call or the evaluation and selection process, engage directly or indirectly in any form of political or other lobbying whatsoever to influence the selection of the successful bidder(s).

3.25 Illegal or Unethical Conduct

Bidders must not engage in any illegal business practices, including activities such as bid-rigging, price-fixing, bribery, fraud, coercion, or collusion. Bidders must not engage in any unethical conduct, including lobbying, as described above, or other inappropriate communications; offering gifts to any employees, officers, agents, elected or appointed officials or other representatives of the Marine Institute; deceitfulness; submitting bids containing misrepresentations or other misleading or inaccurate information; or any other conduct that compromises or may be seen to compromise the competitive process provided for in this Open Call.

3.26 Past Performance or Past Conduct

The Marine Institute may prohibit a supplier from participating in a procurement process based on past performance or based on inappropriate conduct in a prior procurement process, including but not limited to the following:

- (a) illegal or unethical conduct as described above;
- (b) the refusal of the supplier to honor submitted pricing or other commitments; or
- (c) any conduct, situation or circumstance determined by the Marine Institute, in its sole and absolute discretion, to have constituted a Conflict of Interest.

In addition, the Marine Institute may suspend the bidding privileges of a supplier in regard to non-compliant or substandard performance in accordance with section 26 of the *Public Procurement Regulations*.

3.27 Confidential Information of the Marine Institute

All information provided by or obtained from the Marine Institute in any form in connection with this Open Call either before or after the issuance of this Open Call:

- (a) is the sole property of the Marine Institute and must be treated as confidential;
- (b) is not to be used for any purpose other than replying to this Open Call and the performance of the Agreement;
- (c) must not be disclosed without prior written authorization from the Marine Institute; and

- (d) must be returned by the bidder to the Marine Institute immediately upon the request of the Marine Institute.

3.28 Confidential Information of Bidder

This procurement process is subject to the *Access to Information and Protection of Privacy Act, 2015 (ATIPPA, 2015)*. A bidder must identify any information in its bid, or any accompanying documentation supplied in confidence for which confidentiality is requested to be maintained by the Marine Institute. The confidentiality of such information will be maintained by the Marine Institute, except as otherwise required by law or by order of a court or tribunal. Bidders are advised that their bids will, as necessary, be disclosed, on a confidential basis, to advisers retained by the Marine Institute to advise or assist with the Open Call process, including the evaluation of bids.

The Bidder agrees that any specific information in its submission that may qualify for an exemption from disclosure under subsection 39(1) of the *ATIPPA, 2015* has been identified in its submission. If no specific information has been identified it is assumed that, in the opinion of the proponent, there is no specific information that qualifies for an exemption under the subsection 39(1) of the *ATIPPA, 2015*. The Bidder acknowledges that contracting with the Marine Institute is a public process and any information provided through this process and any records the Bidder supplies to the Marine Institute, including the terms and conditions of any Agreement entered into, may be subject to requests under the *ATIPPA, 2015*. In the event of a request to the Marine Institute for third party business information in its custody and control, information can be withheld only if it meets all parts of the 3-part harms test for non-disclosure as stated in section 39 of the *ATIPPA, 2015*.

Information, including the financial value of a contract resulting from this procurement process, will be publicly released as part of the award notification process, in accordance with section 30 of the *Public Procurement Regulations*.

If a bidder has any questions about the collection and use of personal information pursuant to this Open Call, questions are to be submitted to the Open Call Contact. Further information relating to subsection 39(1) of the *ATIPPA, 2015* is provided in guidance documents available through the Office of the Information and Privacy Commissioner at <https://oipc.ni.ca/guidance/documents>.

3.29 Reserved Rights of the Marine Institute

The Marine Institute reserves the right to:

- (a) make public the names of any or all bidders as well as bid price and value of contract;
- (b) make changes, including substantial changes, to this Open Call provided that those changes are issued by way of addendum in the manner set out in this Open Call;
- (c) request written clarification or the submission of supplementary written information in relation to the clarification request from any bidder and incorporate a bidder's response to that request for clarification into the bidder's bid. This shall not be an opportunity for bid repair;
- (d) assess a bidder's bid on the basis of: (i) a financial analysis determining the actual cost of the bid when considering factors including quality, service, price and transition costs arising from the replacement of existing goods, services, practices, methodologies and infrastructure (howsoever originally established); and (ii) in addition to any other evaluation criteria or considerations set out in this Open Call consider any other relevant information

that arises during this Open Call process;

- (e) waive minor irregularities and formalities and accept bids that substantially comply with the requirements of this Open Call;
- (f) verify with any bidder or with a third party any information set out in a bid;
- (g) check references other than those provided by any bidder;
- (h) disqualify a bidder, rescind a notice of selection or terminate a contract subsequently entered into if the bidder has engaged in any conduct that breaches the process rules or otherwise compromises or may be seen to compromise the competitive process;
- (i) cancel this Open Call process at any stage;
- (j) cancel this Open Call process at any stage and issue a new Open Call for the same or similar deliverables;
- (k) accept any bid in whole or in part; or
- (l) reject any or all bids;
- (m) not necessarily select the lowest or any bidder;

And these reserved rights are in addition to any other express rights or any other rights that may be implied in the circumstances.

3.30 Limitation of Liability

By submitting a bid, each bidder agrees that:

- (a) neither the Marine Institute nor any of its employees, officers, agents, elected or appointed officials, advisors or representatives will be liable, under any circumstances, for any claim arising out of this Open Call process including but not limited to costs of preparation of the bid, loss of profits, loss of opportunity or for any other claim; and
- (b) the bidder waives any right to or claim for any compensation of any kind whatsoever, including claims for costs of preparation of the bid, loss of profit or loss of opportunity by reason of the Marine Institute's decision not to accept the bid submitted by the bidder for any reason, the Marine Institute's decision to enter into an agreement with any other bidder or to cancel this bidding process, and the bidder shall be deemed to have agreed to waive such right or claim.
- (c) Neither Party shall be liable to the other or be deemed to be in breach of this Agreement for any failure or delay in rendering performance arising out of causes beyond its reasonable control and without its fault or negligence. Such causes may include, but are not limited to, governmental regulation or control, acts of nature or of a public enemy, acts of terrorism, mass-casualty event, fire, flood, local, regional or global outbreak of disease or other public health emergency, social distancing or quarantine restriction, strike, lockout or labour or civil unrest, freight embargo, unusually severe weather, failure of public utility or common carrier, or computer attacks or other malicious act, including attack on or through the internet, or any internet service, telecommunications provider or hosting facility.

The parties acknowledge that in March 2020 the World Health Organization declared a global pandemic of the virus leading to COVID-19. The Governments of Canada and the Province of Newfoundland and Labrador responded to the pandemic with legislative amendments, controls, orders, requests of the public, and requests and requirements to the Parties to change their delivery of education and services in various ways (collectively, the “Governmental Response”). It is uncertain how long the pandemic, and the related Governmental Response, will continue, and it is unknown whether there may be a resurgence of the virus leading to COVID-19 or any mutation thereof (collectively, the “Virus”) and resulting or supplementary renewed Government Response. Without limiting the foregoing paragraph, neither Party shall be liable to the other or be deemed to be in breach of this Agreement for any failure or delay in rendering performance arising out of:

1. the continued spread of the Virus;
2. the continuation of or renewed Governmental Response to control the spread of the Virus; and
3. a Party’s decision, made on an organization-wide basis and in good faith, to control the spread of the Virus, even if exceeding the then current specific Government Response.

Dates or times of performance shall be extended to the extent of delays excused by this clause, provided that the Party whose performance is affected notifies the other promptly of the existence and nature of such delay shall, so far as practicable, use commercially reasonable efforts to minimize and mitigate the extent, effect and period of any such delay or non-performance.

The bidder will follow all Government of Newfoundland and Labrador’s Public Health Orders and Special Measure Orders made pursuant to the *Public Health Protection and Promotion Act*. The successful bidder and contractor will ensure it has a Health and Safety Plan and ensure using minimum personnel to carry out the performances under this Open Call, use appropriate personal protective equipment as required, use physical distancing measures and enhanced cleaning protocol as recommended by the Health Authorities.

3.31 Governing Law and Interpretation

These Terms and Conditions of the Open Call Process:

- (a) are intended to be interpreted broadly and independently (with no particular provision intended to limit the scope of any other provision);
- (b) are non-exhaustive and shall not be construed as intending to limit the pre-existing rights of the Marine Institute; and
- (c) are to be governed by and construed in accordance with the laws of the Province of Newfoundland & Labrador and the federal laws of Canada applicable therein.

3.32 Agreement Review and Termination

An Agreement will be subject to review, renegotiation, or termination, at the discretion of the Marine institute, in the event of:

- (a) Unauthorized price increases;

- (b) Prolonged interruption of supply availability;
- (c) Marked deterioration in the quality of supply, sales and technical representation;
- (d) Persistent disregard of the Engineer/Architect Consultant(s) instructions;
- (e) Any disregard of applicable laws and ordinances; or
- (f) Any violation of the terms and conditions of the Agreement.

Agreements will remain closed only for the period of price protection and the Marine Institute reserves the right to terminate an Agreement without notice effective from the date of any price increase when price protection has not been guaranteed for the full Agreement period.

3.33 Standing Offer Agreement

Under a Standing Offer Agreement, the Marine Institute is not obligated to purchase any quantity of any item.

A Standing Offer agreement will be issued for goods or services where the unit prices are agreed but the quantities accepted can vary.

Upon acceptance of the Standing Offer Agreement, the Marine Institute will issue Purchase Orders to the Supplier(s) for items specified in the Standing Offer Agreement on an as and when required basis. A Supplier is not to supply items without a Purchase Order.

[End of Part 3]

APPENDIX A – SPECIFICATIONS

The Marine Institute seeks to:

Modernize its flume tank drives and controls, including upgrading existing DC variable speed drives and associated controls to modern state of the art equipment that will be serviceable and supported well into the future.

Initial engineering work has been completed, including three (3) drawing packages for the fabrication of replacement backplanes for each of the three existing DC drive cabinets, including:

- Detailed schematics and wiring diagrams attached
- Single line diagram(s)
- Panel door modification details
- Panel layout detail
- Complete bill of materials

We request fabrication, testing, installation, and commissioning into service three new DC drive systems, and hardware and software upgrades to the supervisory PLC system, per the above drawing packages.

Dates: To Be Negotiated.

APPENDIX B – SUBMISSION FORM

1. Bidder Information

Please fill out the following form, naming one person to be the bidder's contact for the Open Call process and for any clarifications or communication that might be necessary.	
Full Legal Name of Bidder:	
Any Other Relevant Name under which Bidder Carries on Business:	
GST/HST #	
Street Address:	
City, Province/State:	
Postal Code:	
Phone Number:	
Fax Number:	
Company Website (if any):	
Bidder Contact Name and Title:	
Bidder Contact Phone:	
Bidder Contact Fax:	
Bidder Contact Email:	

2. Offer

The bidder has carefully examined the Open Call documents and has a clear and comprehensive knowledge of the Deliverables required under the Open Call. By submitting a bid, the bidder agrees and consents to the terms, conditions, and provisions of the Open Call, including the Form of Agreement, and offers to provide the Deliverables in accordance therewith at the rates set out in the completed Pricing Form (Appendix C). The bidder hereby certifies that the prices are not in excess of those charged to anyone else, including their most favored customer, for like quantity and quality of items.

3. Rates

The bidder has submitted its rates in accordance with the instructions in the Open Call and in the Pricing Form (Appendix C). The bidder confirms that it has factored all of the provisions of Appendix A, including insurance and indemnity requirements, into its pricing assumptions and calculations. Prices must include all packing, cartage and loading charges, unless otherwise specified in the Open Call.

4. Addenda

The bidder is deemed to have read and accepted all addenda issued by the Marine Institute. The onus is on bidders to make any necessary amendments to their bids based on the addenda. The bidder is required to confirm that it has received all addenda by listing the addenda numbers, or if no addenda were issued by writing the word "**None**", on the following line:

_____. Bidders who fail to complete this section will be deemed to have not received all posted addenda and shall be deemed **non-compliant**.

5. No Prohibited Conduct

The bidder declares that it has not engaged in any conduct prohibited by this Open Call.

6. Disclosure of Information

The bidder hereby agrees that any information provided in this bid, even if it is identified as being supplied in confidence, may be disclosed where required by law or by order of a court or tribunal. The bidder hereby consents to the disclosure, on a confidential basis, of this bid by the Marine Institute to the advisers retained by the Marine Institute to advise or assist with the Open Call process, including with respect to the evaluation of this bid.

7. Bid Irrevocable

The bidder agrees that its tender shall be irrevocable for a period of **[**90**]** days following the Submission Deadline.

8. Execution of Agreement

The bidder agrees that in the event its bid is selected by the Marine Institute, in whole or in part, it will finalize and execute the Agreement in the form set out in Appendix A (or in a form mutually acceptable to the parties) to this Open Call in accordance with the terms of this Open Call. Failure to submit this signature section will render the proposal NON-COMPLIANT and the proposal will be disqualified.

Witness

Signature of Bidder Representative

Name of Witness

Name of Bidder Representative

Title of Bidder Representative

Date

I have the authority to bind the bidder,

**IN COMPLETING THIS PAGE AND
SUBMITTING YOUR PROPOSAL, THE
PROPOSER ACKNOWLEDGES
HAVING READ, UNDERSTOOD AND
AGREED TO THE TERMS AND
CONDITIONS OF THIS DOCUMENT**

APPENDIX C – PRICING FORM

1. INSTRUCTIONS ON HOW TO COMPLETE THE PRICING FORM

- Rates must be provided in Canadian funds, inclusive of all applicable duties and taxes except for HST, which should be itemized separately.
- Rates quoted by the bidder must be all-inclusive and must include all labor and material costs, all travel and carriage costs, all insurance costs, all costs of delivery to the Marine Institute, all costs of installation and set-up, including any pre-delivery inspection charges, and all other overhead, including any fees or other charges required by law.

DESCRIPTION	TOTAL COST
FLUME TANK UPGRADES	

2. THE DELIVERABLES:

Upgrades to Flume Tank Drives and Controls
as per specifications listed in Appendix A

Delivery Timeframe/Date: _____

3. MANDATORY SUBMISSION REQUIREMENTS

1. **Cover page**
Indicating Open Call number, title, date, and bidders legal name and address
2. **Submission Form (Appendix B)**
Each bid must include a Submission Form (Appendix B)
3. **Specification Form (Appendix A)**
As per instructions on form
4. **Pricing Form (Appendix C)**
Each bid must include Pricing Form (Appendix C) according to the instructions contained in this Appendix.



Document Transmittal

Client: Avalon Controls Ltd.
Date: 24-Dec-24
Trans. No: T-17841-VD-0001

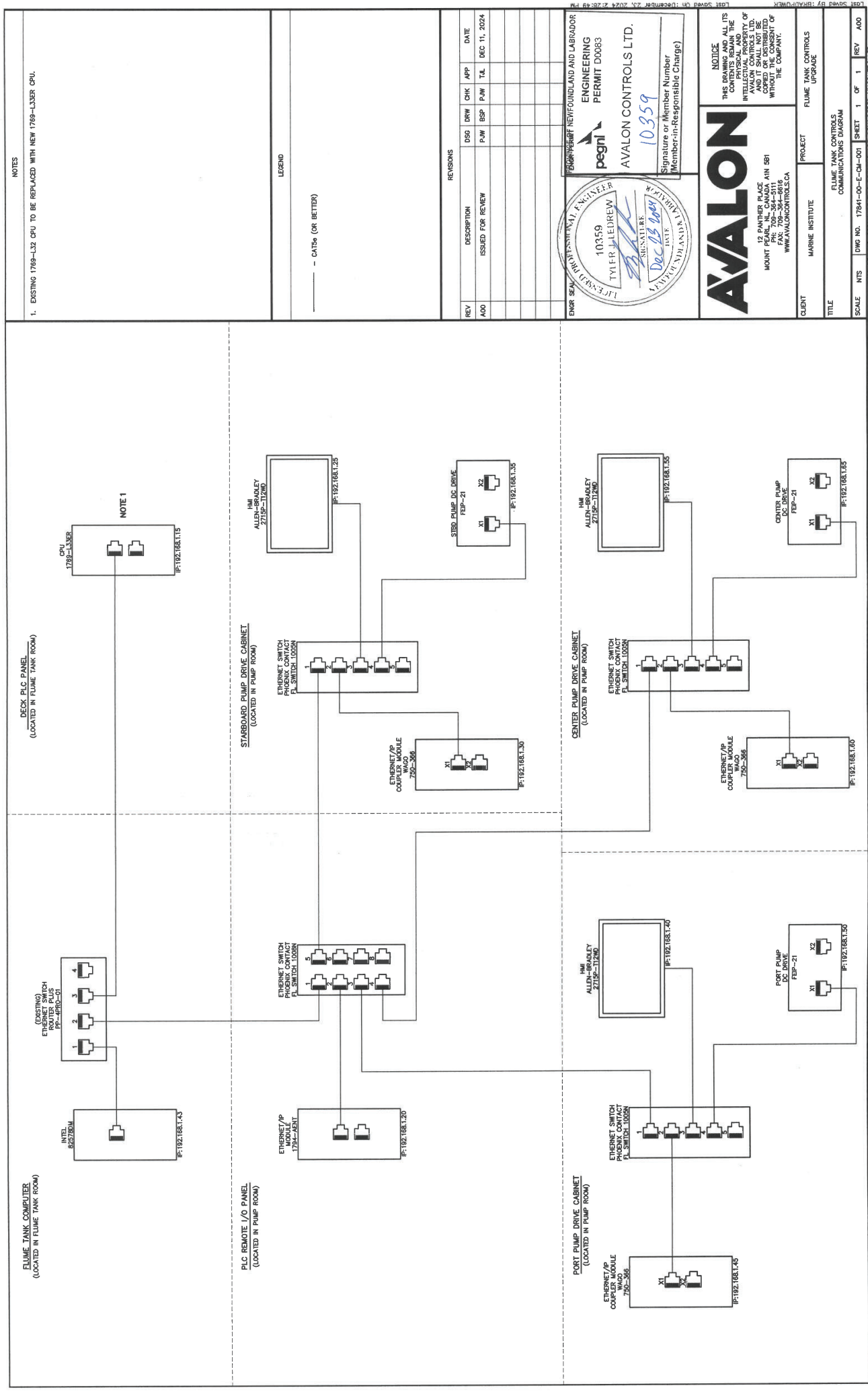
Project: Flume Tank Controls Upgrade
Project No: 17841
Issued By: Philip Walsh

To: Marine Institute of Memorial University of Newfoundland
155 Ridge Rd
St. John's, NL, Canada, A1C 5R3
Attention: George Legge
Subject: Flume Tank Controls Engineering Drawing

Issue Status Descriptions:
IFR - Issued For Review
IFI - Issued For Information
IFU - Issued for Use

Additional Comments:

Item	Document No.	Rev	Description	Status
1	17841-00-E-CM-001	A00	System Communications Diagram	IFR
2	17841-10-E-LY-001 Sh 1	A00	Port Pump Drive Cabinet - Layout Diagram Sheet 1	IFR
3	17841-10-E-LY-001 Sh 2	A00	Port Pump Drive Cabinet - Layout Diagram Sheet 2	IFR
4	17841-10-E-SL-001	A00	Port Pump Drive Cabinet - Single Line Diagram	IFR
5	17841-10-E-PD-001	A00	Port Pump Drive Cabinet - 480VAC Power Distribution Diagram	IFR
6	17841-10-E-PD-002	A00	Port Pump Drive Cabinet - 120VAC & 24VDC Power Distribution Diagram	IFR
7	17841-10-E-IC-001	A00	Port Pump Drive Cabinet - Motor Interconnection Diagram	IFR
8	17841-10-E-IO-001	A00	Port Pump Drive Cabinet - DI01 Digital Input Module Wiring Diagram	IFR
9	17841-10-E-IO-002	A00	Port Pump Drive Cabinet - DI02 Digital Input Module Wiring Diagram	IFR
10	17841-10-E-IO-003	A00	Port Pump Drive Cabinet - DO01 Digital Output Module Wiring Diagram	IFR
11	17841-10-E-IO-004	A00	Port Pump Drive Cabinet - AI01 Analog Input Module Wiring Diagram	IFR
12	17841-10-E-IO-005	A00	Port Pump Drive Cabinet - RTD01 RTD Input Module Wiring Diagram	IFR
13	17841-10-E-WD-001	A00	Port Pump Drive Cabinet - DC Drive Wiring Diagram	IFR
14	17841-10-E-WD-002	A00	Port Pump Drive Cabinet - Local Device Control Wiring Diagram	IFR
15	17841-10-E-WD-003	A00	Port Pump Drive Cabinet - Field Device Termination Wiring Diagram	IFR
16	17841-10-E-WD-004	A00	Port Pump Drive Cabinet - Tank Level Switches Wiring Diagram	IFR
17	17841-20-E-LY-001 Sh 1	A00	Center Pump Drive Cabinet - Layout Diagram Sheet 1	IFR
18	17841-20-E-LY-001 Sh 2	A00	Center Pump Drive Cabinet - Layout Diagram Sheet 2	IFR
19	17841-20-E-SL-001	A00	Center Pump Drive Cabinet - Single Line Diagram	IFR
20	17841-20-E-PD-001	A00	Center Pump Drive Cabinet - 480VAC Power Distribution Diagram	IFR
21	17841-20-E-PD-002	A00	Center Pump Drive Cabinet - 120VAC & 24VDC Power Distribution Diagram	IFR
22	17841-20-E-IC-001	A00	Center Pump Drive Cabinet - Motor Interconnection Diagram	IFR
23	17841-20-E-IO-001	A00	Center Pump Drive Cabinet - DI01 Digital Input Module Wiring Diagram	IFR
24	17841-20-E-IO-002	A00	Center Pump Drive Cabinet - DI02 Digital Input Module Wiring Diagram	IFR
25	17841-20-E-IO-003	A00	Center Pump Drive Cabinet - DO01 Digital Output Module Wiring Diagram	IFR
26	17841-20-E-IO-004	A00	Center Pump Drive Cabinet - AI01 Analog Input Module Wiring Diagram	IFR
27	17841-20-E-IO-005	A00	Center Pump Drive Cabinet - RTD01 RTD Input Module Wiring Diagram	IFR
28	17841-20-E-WD-001	A00	Center Pump Drive Cabinet - DC Drive Wiring Diagram	IFR
29	17841-20-E-WD-002	A00	Center Pump Drive Cabinet - Local Device Control Wiring Diagram	IFR
30	17841-20-E-WD-003	A00	Center Pump Drive Cabinet - Field Device Termination Wiring Diagram	IFR
31	17841-20-E-WD-004	A00	Center Pump Drive Cabinet - Tank Level Switches Wiring Diagram	IFR
32	17841-30-E-LY-001 Sh 1	A00	Starboard Pump Drive Cabinet - Layout Diagram Sheet 1	IFR
33	17841-30-E-LY-001 Sh 2	A00	Starboard Pump Drive Cabinet - Layout Diagram Sheet 2	IFR
34	17841-30-E-SL-001	A00	Starboard Pump Drive Cabinet - Single Line Diagram	IFR
35	17841-30-E-PD-001	A00	Starboard Pump Drive Cabinet - 480VAC Power Distribution Diagram	IFR
36	17841-30-E-PD-002	A00	Starboard Pump Drive Cabinet - 120VAC & 24VDC Power Distribution Diagram	IFR
37	17841-30-E-IC-001	A00	Starboard Pump Drive Cabinet - Motor Interconnection Diagram	IFR
38	17841-30-E-IO-001	A00	Starboard Pump Drive Cabinet - DI01 Digital Input Module Wiring Diagram	IFR
39	17841-30-E-IO-002	A00	Starboard Pump Drive Cabinet - DI02 Digital Input Module Wiring Diagram	IFR
40	17841-30-E-IO-003	A00	Starboard Pump Drive Cabinet - DO01 Digital Output Module Wiring Diagram	IFR
41	17841-30-E-IO-004	A00	Starboard Pump Drive Cabinet - AI01 Analog Input Module Wiring Diagram	IFR
42	17841-30-E-IO-005	A00	Starboard Pump Drive Cabinet - RTD01 RTD Input Module Wiring Diagram	IFR
43	17841-30-E-WD-001	A00	Starboard Pump Drive Cabinet - DC Drive Wiring Diagram	IFR
44	17841-30-E-WD-002	A00	Starboard Pump Drive Cabinet - Local Device Control Wiring Diagram	IFR
45	17841-30-E-WD-003	A00	Starboard Pump Drive Cabinet - Field Device Termination Wiring Diagram	IFR
46	17841-30-E-WD-004	A00	Starboard Pump Drive Cabinet - Tank Level Switches Wiring Diagram	IFR
47	EL-18701-001	A00	Avalon Controls Redline - Flex I/O Panel - PLC Module Layout	IFR
48	EE-18701-001	A00	Avalon Controls Redline - Flex I/O Panel - PLC Discrete Inputs Slot 4	IFR
49	EE-18701-002	A00	Avalon Controls Redline - Flex I/O Panel - PLC Discrete Inputs Slot 5	IFR
50	EE-18701-003	A00	Avalon Controls Redline - Flex I/O Panel - PLC Discrete Outputs Slot 3	IFR
51	EE-18701-004	A00	Avalon Controls Redline - Flex I/O Panel - PLC Analog Outputs Slot 2	IFR
52	EE-18701-005	A00	Avalon Controls Redline - Flex I/O Panel - PLC Analog Inputs Slot 0	IFR
53	EE-18701-006	A00	Avalon Controls Redline - Flex I/O Panel - PLC Analog Inputs Slot 1	IFR



NOTES

1. SPACE REQUIREMENTS FOR ABB DCS880 DC DRIVE AS SHOWN.

LEGEND

REV	DESCRIPTION	ISSUED FOR REVIEW	DATE
001			DEC 11, 2024

REV	DESCRIPTION	ISSUED FOR REVIEW	DATE
001			DEC 11, 2024

ENGINEERING PERMIT 10359
TYLER L. HURST-W
DEC 13 24

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ENGINEERING PERMIT 10359
AVALON CONTROLS LTD.

Signature or Member Number
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10359

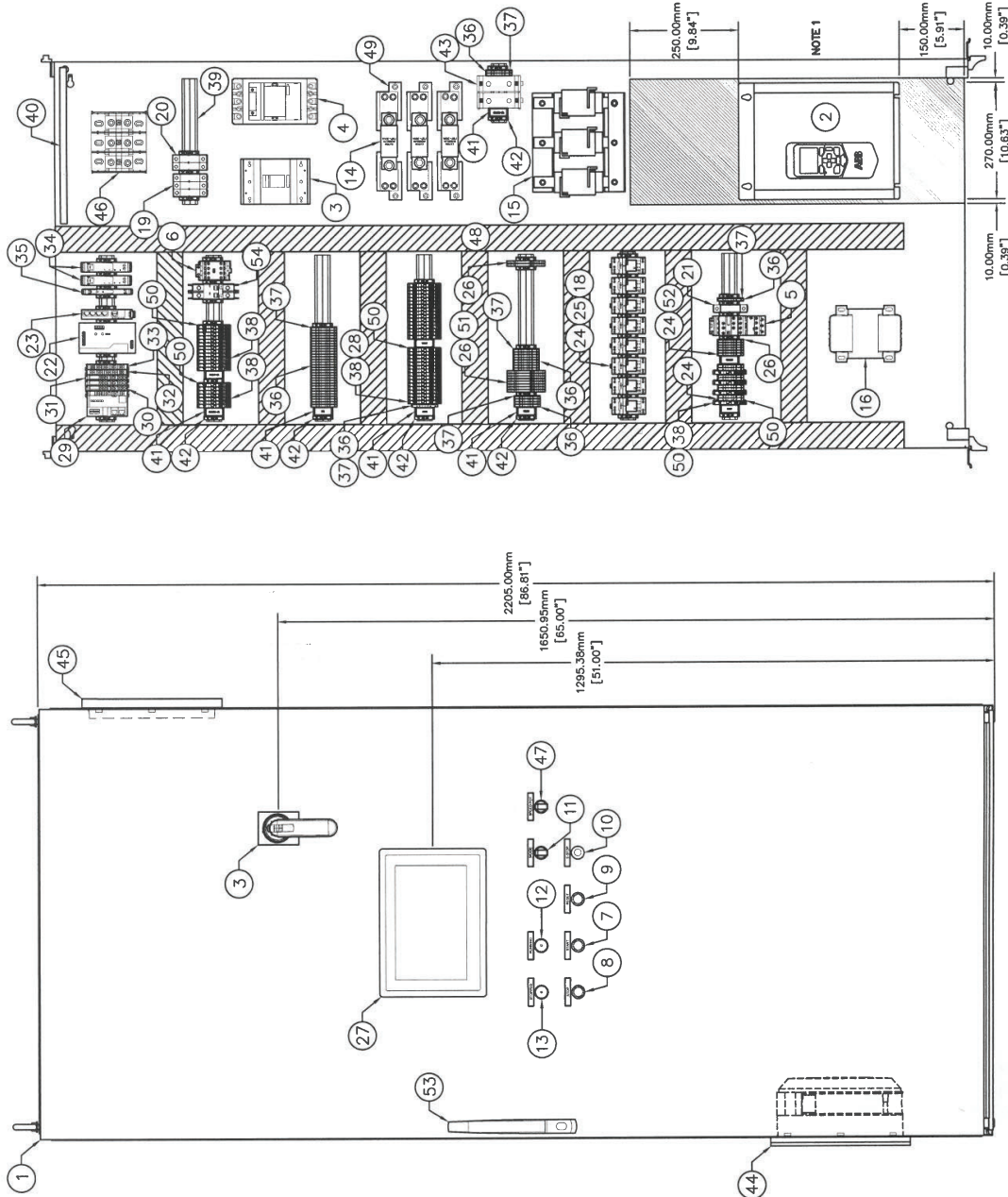
AVALON

12 FAIRVIEW PLACE
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CLIENT	MARINE INSTITUTE	PROJECT	FLUME TANK CONTROLS UPGRADE
TITLE	FLUME TANK CONTROLS PORT TANK CONTROLS LAYOUT DIAGRAM		
SCALE	NTS	DWG NO. 17841-10-E-LV-001	SHEET 1 OF 2
REV	001		

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FRONT VIEW

MOUNTING PANEL

ITEM	QTY	DESCRIPTION	MANUFACTURER	PART NUMBER
1	1	TS8, 2200H x 1000W x 600D mm Enclosure w/ Back Plane and Side Panels	Rittal	
2	1	ABB DCS880 DC Drive	ABB	DCS880-S01-0315-05X0
3	1	Main Circuit Breaker ABB Tmax XT4N 225 3-Pole w/ Electronic Disconnect and Extended Rotary Handle	ABB	XT4NU3225AFF000XXX w/ AC EKIP-LSI R 250 A, KXT4HNDLST, HXT4CUAL2C-3PC+KXT4CUAL2-3PC225,KXTORHEBFP
4	1	Main Contactor ABB, 3 pole, 600 V UL, 480 V UL (AC-3) or 125 hp, 275 A (AC-1)	ABB	AF09-30-10-13 w/ EF19, w/ CAT4-11
5	1	Contactors 25A AC-1 at 40°C w/ Electronic Overload Relay and Aux NO Contact	ABB	100S-C09EJ32C
6	1	100S-C Safety Contactor, 9A, Line Side, 24V DC (w/Elec. Coil), 3 N.O., 3 N.O. 2 N.C	Allen-Bradley	800FM-X3MX11
7	1	800F Start Pushbutton, 22mm Momentary, 1NO 1NC Screw Contact, Green	Allen-Bradley	800FM-X4MX11
8	1	800F Stop Pushbutton, 22mm Momentary, 1NO 1NC Screw Contact, Red	Allen-Bradley	800FM4-F0MKN3WX11
9	1	800F Illuminated Reset Pushbutton, 22mm Momentary, 1NO 1NC Screw Contact, Amber	Allen-Bradley	800FM-MT34MX12
10	1	800F Twist to Release E-Stop Pushbutton, 22mm, 1NO 2NC Screw Contact, Red	Allen-Bradley	800FM-SN22MX11
11	1	800F 2-Position Selector Switch, 22mm, 1NO 1NC Screw Contact, Black	Allen-Bradley	800FM-P3MNG
12	1	800F Running Pilot Light, 22mm, Screw Contact, Green	Allen-Bradley	800FM-P4MNR
13	1	800F Stopped Pilot Light, 22mm, Screw Contact, Red	Allen-Bradley	FWP-300A w/ 1BS103
14	3	Fast Acting, Semiconductor Fuses, 700VAC, 300A, 200kAIC w/ 3-Pole Fuse Holder	Bussman	KLR200BCB
15	1	KLR, 480V, 200A, 150HP, 3 Phase, Open, Input Line Inductor, UL Recognized	Eaton	PH750QMJJ
16	1	Control Power Transformer, 750VA, 480/120V	Hammond	KLDR006
17	6	Class CC Fuse, 600V, 6A Time Delay	Littelfuse	700-HN157
18	LOT	Relay Retainer Clip Pack	Allen-Bradley	LPSC003ID
19	1	3-Pole Class CC Indicating Fuse Holder	Littelfuse	LPSC002ID
20	1	2-Pole Class CC Indicating Fuse Holder	Littelfuse	LPSC001ID
21	1	1-Pole Class CC Indicating Fuse Holder	Littelfuse	QUINT4-PS7AC24DC20
22	1	Power Supply 24V, 10A	Phoenix Contact	FL SWITCH 1005N
23	1	Ethernet Switch 5 RJ45 ports with 10/100 Mbps, 1085039	Phoenix Contact	700-HAX2A1-1
24	8	General Purpose 2-Form Contacts, 120VAC Coil	Allen-Bradley	700-HN204
25	8	Relay Base	Allen-Bradley	700-HLT1Z24
26	10	Electromechanical Relay Output, SPDT, 24VDC Coil	Allen-Bradley	2715P-T12WD
27	1	HMI, PanelView 5510 Graphic Terminal	Allen-Bradley	
28	LOT	GMA 5x20mm Fuses	WAGO	750-366
29	1	PLC Ethernet/IP Coupler Module	WAGO	750-1405
30	2	PLC 16CH 24VDC Digital Input Module	WAGO	750-1504
31	1	PLC 16CH 24VDC Digital Output Module	WAGO	750-455
32	1	PLC 4CH 4-20mA Analog Input Module	WAGO	750-461
33	1	PLC 2CH 24VDC RTD Module	WAGO	ACT20P-VMR-1PH-H-S
34	2	Voltage Monitoring Relay, Input: single-phase voltage, Relay output	Weidmuller	ACT20P-PRO-FLAO-DO-S
35	1	Frequency Signal Converter, 4-20mA Analog Output	Weidmuller	WDU 4
36	60	Feed-Through Terminal Block, 10201 00000	Weidmuller	WAP WDU 2.5-10
37	11	Terminal Block End Plate, 1050000000	Weidmuller	KDKS/ET4
38	56	Double Decker Fused Terminal Block	Weidmuller	TS-35
39	LOT	DIN RAIL 35mm x 7.5mm, Unslotted, 2m,	Weidmuller	NSCH 1M
40	LOT	Ground Bar, 0280200000	Weidmuller	SCHT 5
41	8	Terminal Marker Header, 0292460000	Weidmuller	EW35
42	41	End Anchors	Weidmuller	WDU 240, c/w WZAD240
43	2	Feed-through Terminal Block, Screw Connection, Dark Beige, 240mm, 1802750000	Weidmuller	3244-718
44	1	Wall Mounted Enclosure Filler Fan	Rittal	3243-400
45	1	Exhaust Vent, Blue e+ outlet filter EMC	Rittal	0LS45623ZX
46	1	Splice Block	Littelfuse	800FP-POT6A
47	1	800F Single Turn Potentiometer 10KV	Allen-Bradley	T1-1522G
48	LOT	Cable Tray, 1-1/8" X 2-1/4", Grey	Iboco	1BS103
49	6	Modular Fuse Block, 600V, 400A	Bussman	AP KDKS1
50	8	KDKS1 End Plate	Weidmuller	100-TB120G
51	LOT	Relay Socket Jumper	Allen-Bradley	WGV 4/9
52	LOT	Terminal Block Jumper	Weidmuller	
53	1	TS8 Door Handle with lock insert and Handle Adaptor	Weidmuller	TS 8611.045 w/ TS 8611.080
54	1	Miniature Circuit Breaker, UL489, 10A, 2-Pole, C-Curve	Rittal	2478150000

PRC-006 REV 2

NOTES
1. SPACE REQUIREMENTS FOR ABB DCS880 DC DRIVE AS SHOWN.

LEGEND

REVISIONS						
REV	DESCRIPTION	DSG	DRW	CHK	APP	DATE
A00	ISSUED FOR REVIEW	P.W.	BSP	P.W.	T.L.	DEC 11, 2024



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AVALON CONTROLS LTD.
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TEL: 709-344-8918
FAX: 709-344-8918
WWW.AVALONCONTROLS.CA

CLIENT	MARINE INSTITUTE	PROJECT	FLUME TANK CONTROLS UPGRADE
TITLE	FLUME TANK CONTROLS PART LAYOUT DIAGRAM		
SCALE	NTS	DWG NO. 17841-10-E-LV-001	SHEET 2 OF 2
REV	A00		

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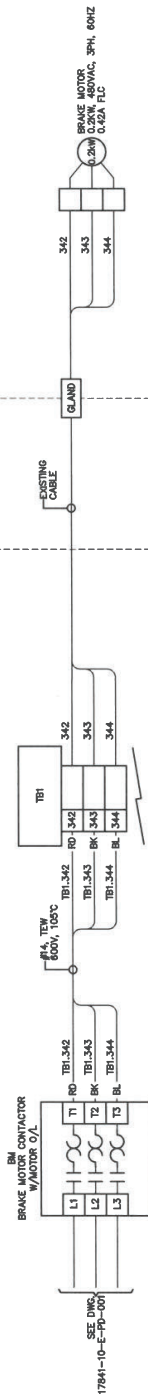
AVALON

12 PANTHER PLACE
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PH: 709-364-5111
FAX: 709-364-5618
WWW.AVALONCONTROLS.COM

CLIENT	MARINE INSTITUTE	PROJECT	FLUME TANK CONTROLS UPGRADE
TITLE	FLUME TANK CONTROLS PORT PUMP DRIVE SINGLE LINE DIAGRAM		
SCALE	NTS	DWG NO. 17841-10-E-SL-001	SHEET 1 OF 1 REV A00
437 SOCIETY SQUARE, SUITE 1000, VANCOUVER, BC V6V 2K6 TEL: 604-681-1111 FAX: 604-681-1112			

1. MOTOR SERIES FIELD WINDING TO BE DISCONNECTED AND INSULATED (600V OR BETTER).

PORT PUMP DRIVE CABINET

[illegible]

ENGINEER PERMIT
 PROVINCE OF NEWFOUNDLAND AND LABRADOR
 10359
 TYLER J. LEDREW
 SIGNATURE
 DATE
 Dec 13 '14
 LICENSED PROFESSIONAL ENGINEER
 PROVINCE OF NEWFOUNDLAND AND LABRADOR
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CANADA
TEL: 709-364-6918
FAX: 709-364-6919
WWW.AVALONCONTROLS.CA

CLIENT	MARINE INSTITUTE	PROJECT	FLUME TANK CONTROLS UPGRADE
TITLE	FLUME TANK CONTROLS UPGRADE CONNECTION DIAGRAM INTERCONNECTION DIAGRAM	DWG NO.	17841-10-E-IC-001
SCALE	NTS	SHEET	1 OF 1
		REV	A00

NOTES

1. ALL WIRING #18 TEW EXCEPT WHERE OTHERWISE NOTED.

LEGEND



REVISIONS

REV	DESCRIPTION	ISSUED FOR REVIEW	DATE
A00			DEC 12, 2024

ENDOR SEAL



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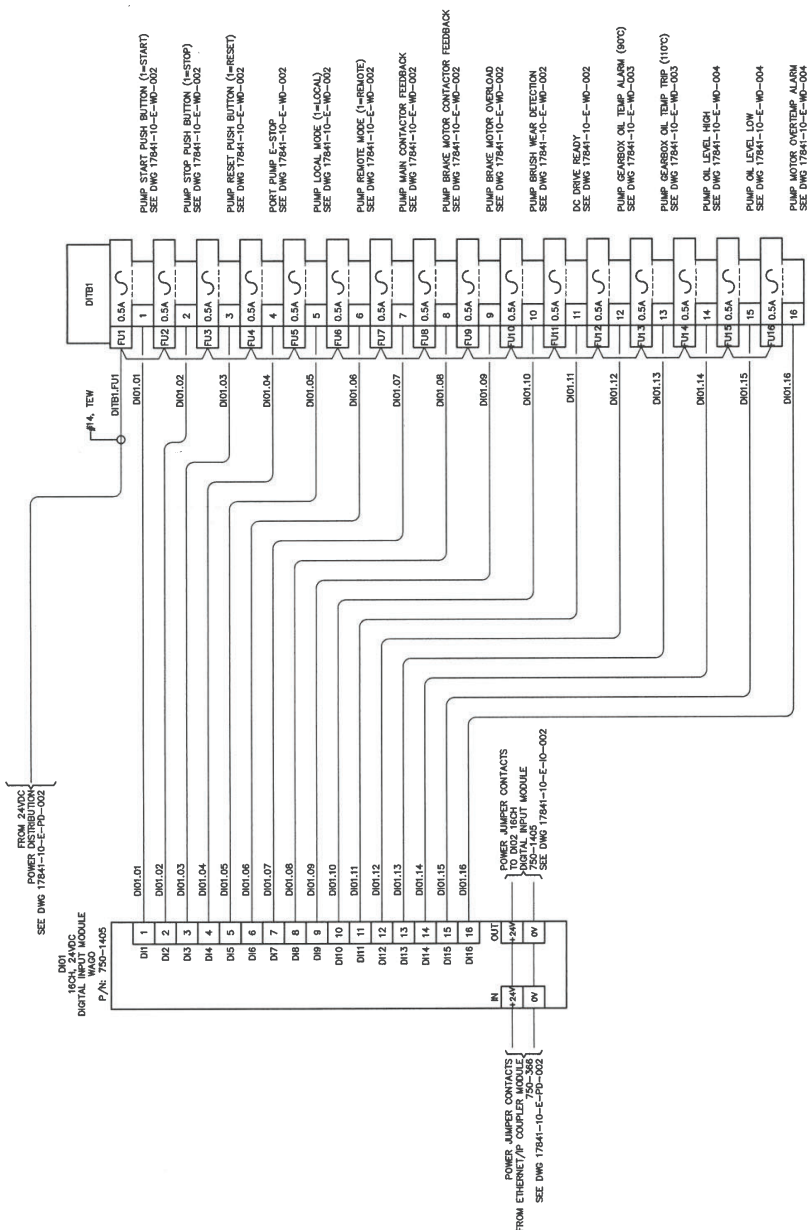
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CLIENT: MARINE INSTITUTE PROJECT: FLUME TANK CONTROLS UPGRADE

TITLE: FLUME TANK CONTROLS PORT PUMP DRIVE CABINET
24VDC DIGITAL INPUT MODULE WIRING DIAGRAM

SCALE: NTS DWG NO. 17841-10-E-00-001 SHEET 1 OF 1 REV A00

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NOTES

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REV	DESCRIPTION	ISSUED FOR REVIEW	DESIGN	DATE
A00				



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AVALON CONTROLS LTD.
Signature of Member Number 10359 (Member-irresponsible Charge)

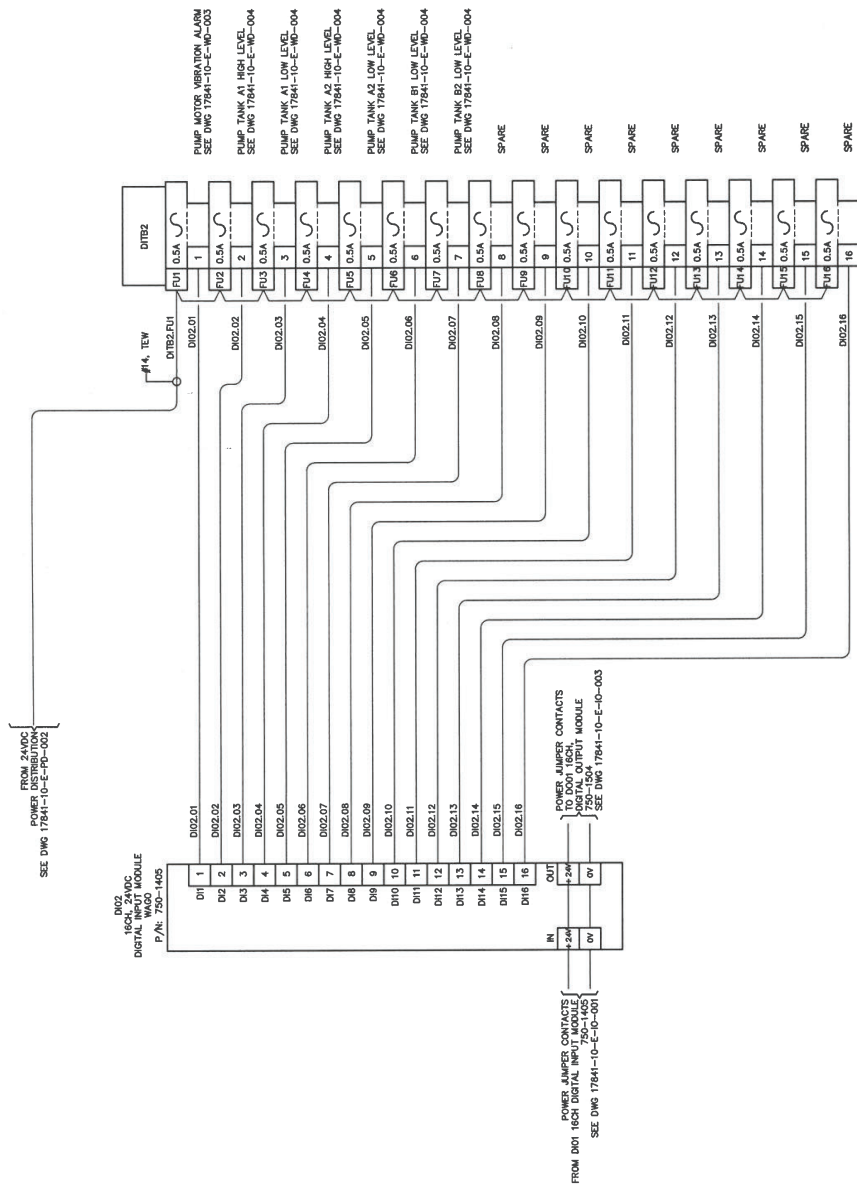


12 PANTHER PLACE
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PHONE: 709-384-8881
FAX: 709-384-8818
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CLIENT	MARINE INSTITUTE	PROJECT	FLUME TANK CONTROLS UPGRADE
TITLE	FLUME TANK CONTROLS PORT PUMP DRIVE CABINET 24VDC DIGITAL INPUT MODULE WIRING DIAGRAM		
SCALE	N.T.S.	DWG NO.	17841-10-E-10-002
SHEET	1	OF	1
REV	A00		

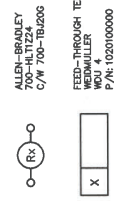
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NOTES

1. ALL WIRING TO BE #18 TEW BLUE UNLESS OTHERWISE NOTED:

LEGEND



REVISIONS

REV	DESCRIPTION	DWG	CHK	APP	DATE
A00	ISSUED FOR REVIEW	PJM	BSP	PJM	DEC 12, 2024

ENDORSEMENT
TYLER J LEDREW
10359
DEC 25 24
REGISTERED PROFESSIONAL ENGINEER
NEWFOUNDLAND AND LABRADOR
ENGINEERING
PERMIT D00033
AVALON CONTROLS LTD.
Signature or Member Number
10359
(Member-In-Responsible Charge)

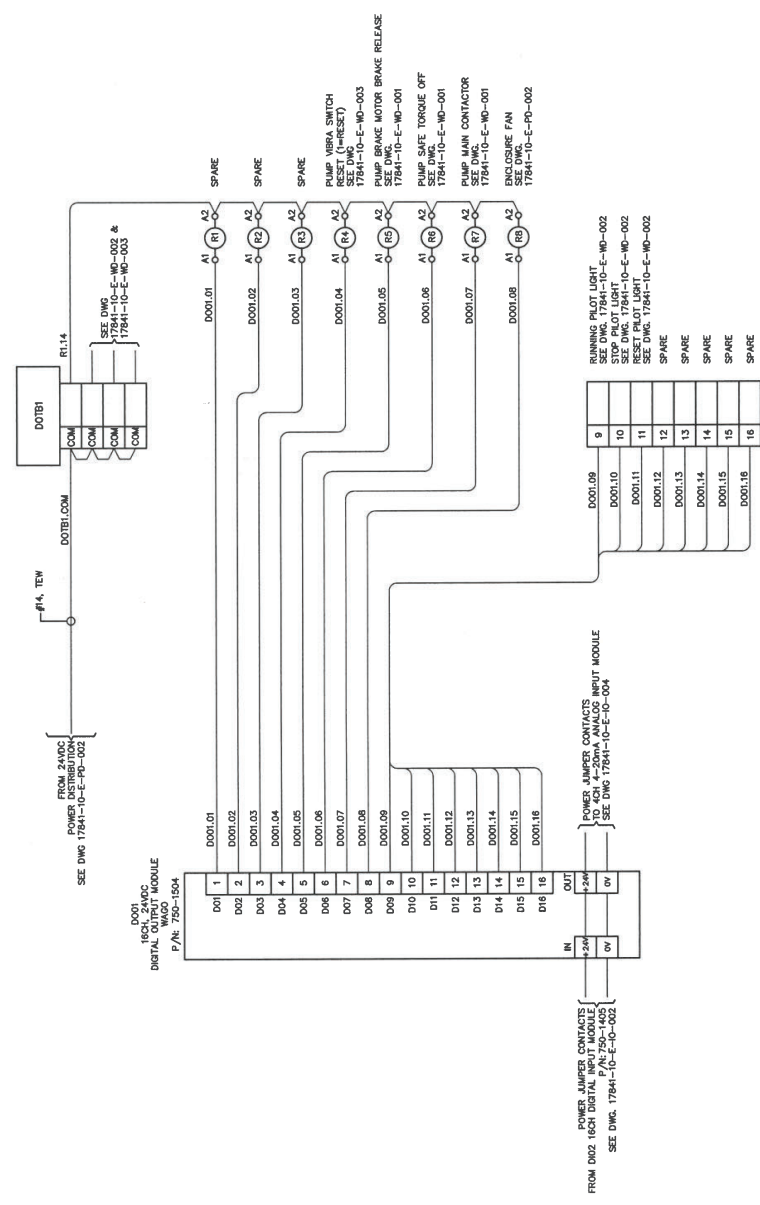


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MOUNT PEARL, NL, CANADA A1N 5B1
TEL: 709-364-5811
FAX: 709-364-5816
WWW.AVALONCONTROLS.CA

CLIENT	MARINE INSTITUTE	PROJECT	FLUME TANK CONTROLS UPGRADE
TITLE	FLUME TANK CONTROLS PORT PUMP DRIVE CABINET D001, 24VDC DIGITAL INPUT MODULE WIRING DIAGRAM		
SCALE	NTS	DWG NO.	17841-10-E-PD-003
		SHEET	1 OF 1
		REV	A00

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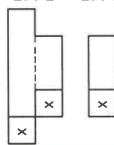


1. ALL WIRING TO BE #18 TEW BLUE UNLESS OTHERWISE NOTED;
2. FREQUENCY CONVERTER INPUT SIGNAL SHOWN WIRED FOR PNP END DEVICE. END DEVICE MUST BE CONFIRMED AS PNP DURING COMMISSIONING. TO CHANGE NPN, RETERMINATE AT CONVERTER AS FOLLOWS:

22—11
31—12

3. SHIELD INSULATED AND RESTRAINED

LEGEND



DOUBLE DECKER TERMINAL BLOCK

WEIDMULLER
WOK2 E

WORKS
P/N: 1021500000

FEED-THROUGH TERMINAL BLOCK

WEIDMULLER

WOU 4
P/N: 1020100000

REVISIONS						
REV	DESCRIPTION	DSG	DRW	CHK	APP	DATE
000	ISSUED FOR REVIEW	PJW	BSP	PJW	TJA	DEC 12, 2024

REVISIONS

INVESTMENT PERMIT



ENGINEERING
PERMIT D0083

AVALON CONTROLS LTD.

1000

Signature of "Member Number
(Member-in-Responsible Charge)

AVALON

ALON

12 PANTHER PLACE
PEARL, NC 28651
TEL: 709-364-6111
FAX: 709-364-6118

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FLUME TANK CONTROLS UPGRADE

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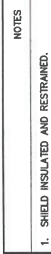
5 PORT PUMP DRIVE CABINET

ANALOG INPUT MODULE WIRING DIAGRAM

3	SHEET	OF	REV	3
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DATE	DESCRIPTION	AMOUNT	BALANCE
10/1	10/1	10/1	10/1
10/2	10/2	10/2	10/2
10/3	10/3	10/3	10/3
10/4	10/4	10/4	10/4
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12/19	12/19	12/19	12/19
12/20	12/20	12/20	12/20
12/21	12/2		

ING ARE CONSIDERED UNCONTROLLED



LENS	
DOUBLE DECKER TERMINAL BLOCK WEDMAILLER DK4/25 P/N: 0527660000	
FUSED/NO-FUSED TERMINAL BLOCK KMSI/3M WEDMAILLER P/N: 0503550000	
FEED-THROUGH TERMINAL BLOCK WEDMAILLER P/N: 1020100000	

[illegible]

AVALON

12 PANTHER PLACE
MOUNT PEARL, NL, CANADA A1N 5B1
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FAX: 709-584-5112
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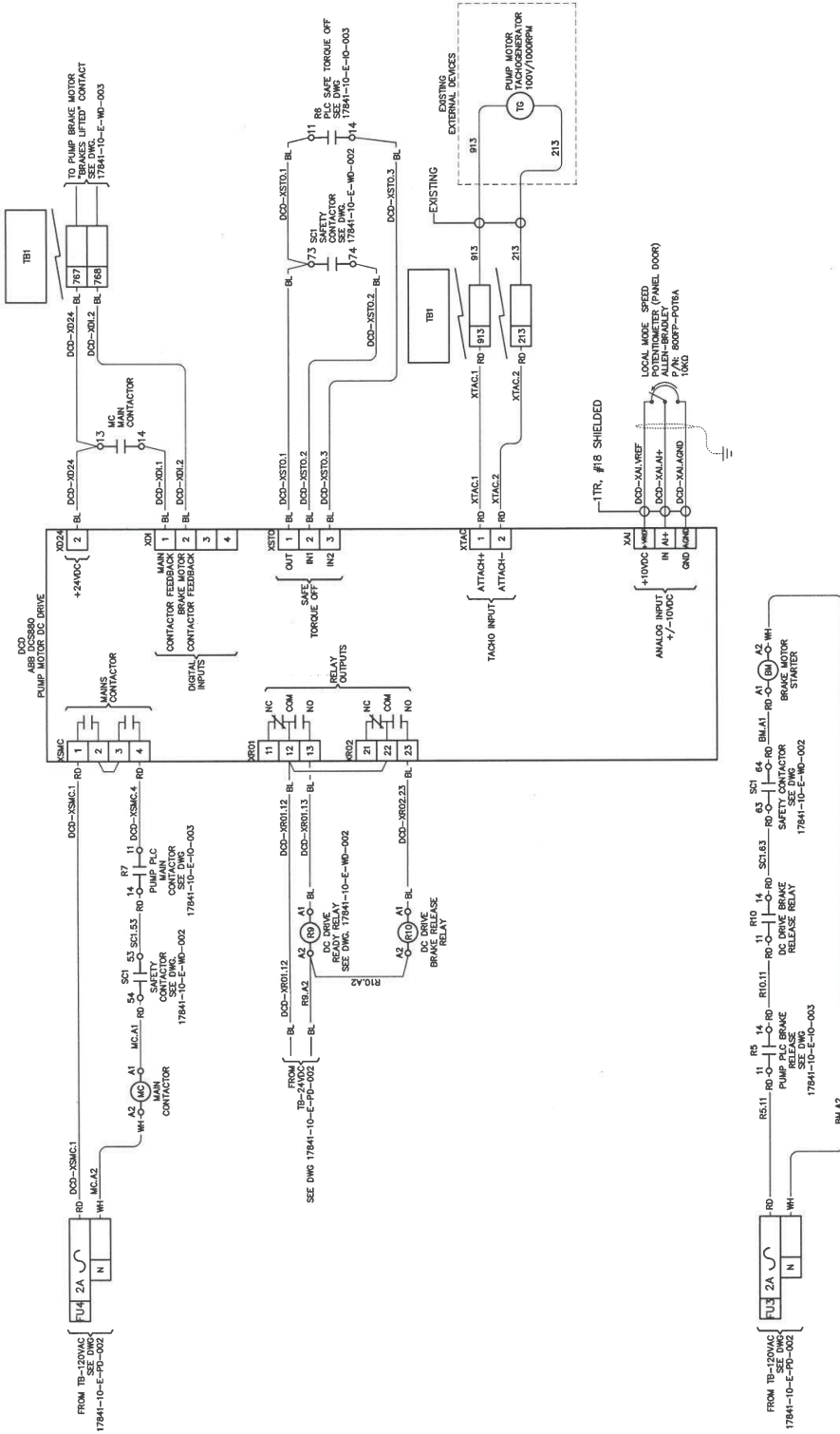
CLIENT	MARINE INSTITUTE	PROJECT	FLUME TANK CONTROLS UPGRADE
TITLE	FLUME TANK CONTROLS PORT PUMP DRIVE CABINET RTD01, RTD INPUT MODULE WIRING DIAGRAM		

SCALE	NTS	DWG NO.	17841-10-E-10-005	SHEET	1	OF	1	REV	A00
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NOTES

1. ALL WIRE #14 UNLESS OTHERWISE NOTED. COLOUR AS SHOWN.



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10359
Signature or Member Number
(Member-in-Responsible Charge)

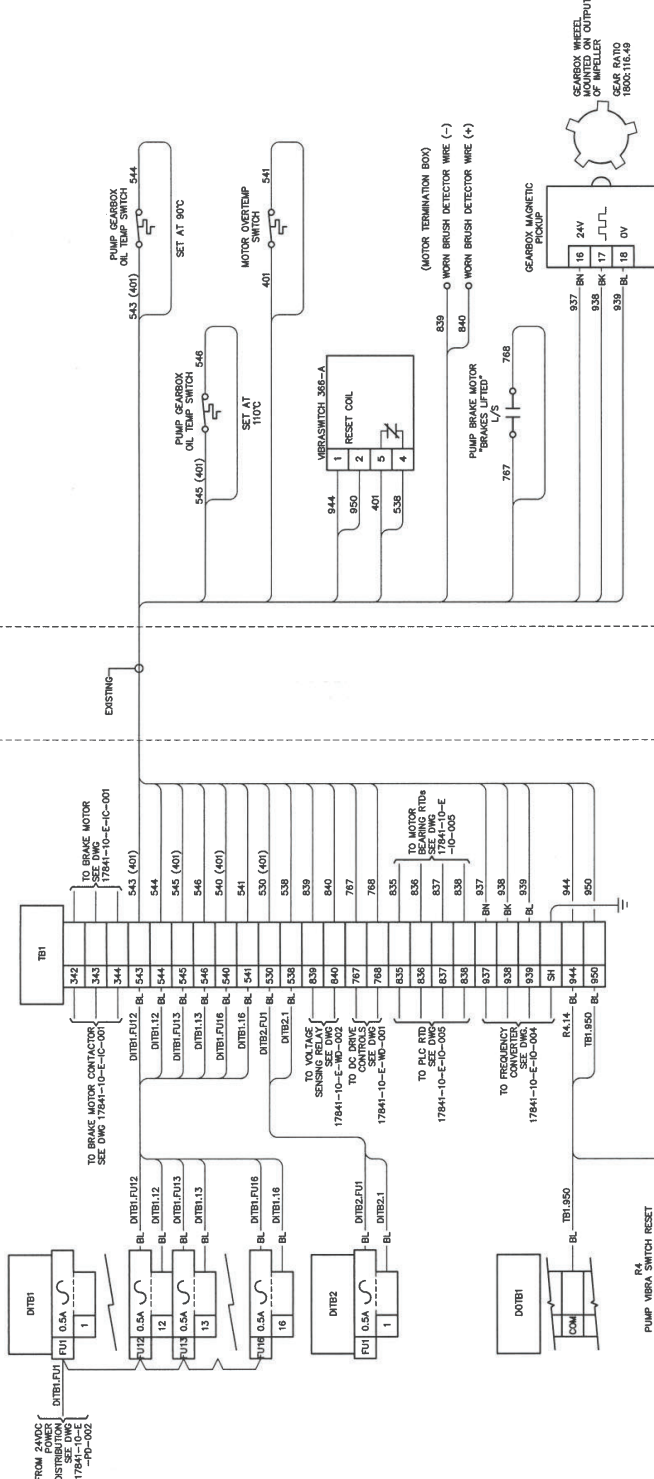
AVALON
12 PANTHER PLACE
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FAX: 709-384-5816
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CLIENT	MARINE INSTITUTE	PROJECT	FLUME TANK CONTROLS UPGRADE
TITLE	FLUME TANK CONTROLS PORT PUMP DRIVE CABINET	WIRING DIAGRAM	
SCALE	NTS	DWG NO.	17841-10-E-WD-001
SHEET	1	OF	1
REV	1	REV	A00

PUMP DC DRIVE CABINET

EXISTING EXTERNAL FIELD DEVICES



NOTES

- 1. ALL WIRING TO BE #18 UNLESS OTHERWISE NOTED.
- 2. WIRE #S WITHIN PARENTHESES INDICATE OLD WIRE # WITH NEW WIRE NUMBER ADJACENT.
- 3. 545 (401) INDICATES A NEW WIRE NUMBER OF 545 REPLACING OLD NUMBER OF 401.

LEGEND



REV	DESCRIPTION	ISSUED FOR REVIEW	DATE
A00			

REV	DESCRIPTION	ISSUED FOR REVIEW	DATE
A00			



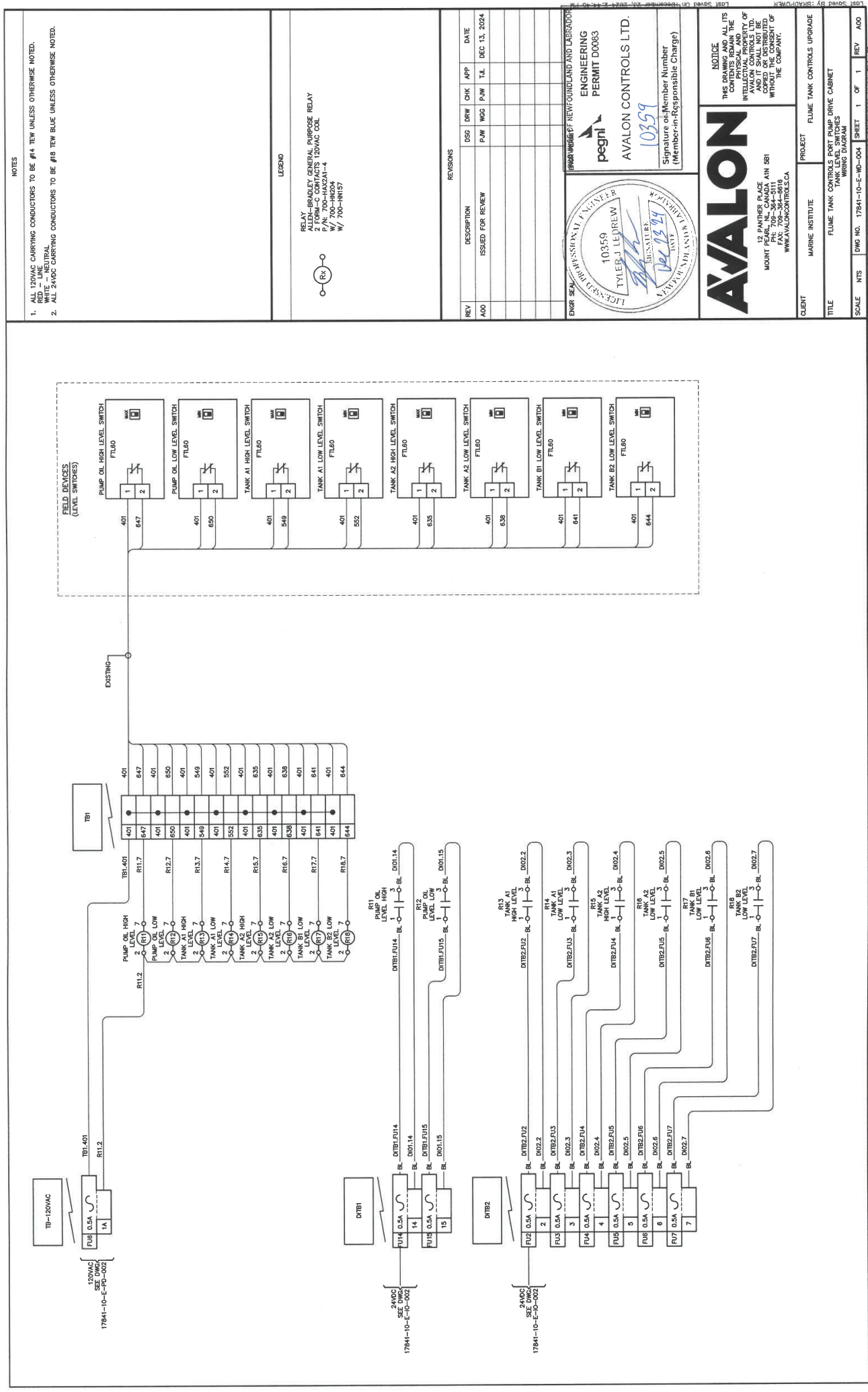
ENGR SEAL
TYLER J. LEDREW
10359
REGISTERED PROFESSIONAL ENGINEER
BRITISH COLUMBIA
DEC 23 24
Signature of Member Number
(Member-in-Responsible Charge)

AVALON
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MOUNT PEARL, NL CANADA A1N 5B1
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CLIENT	MARINE INSTITUTE	PROJECT	FLUME TANK CONTROLS UPGRADE
TITLE	FLUME TANK CONTROLS PORT PUMP DRIVE CABINET FIELD DEVICES TERMINATION WIRING DIAGRAM		
SCALE	NTS	DWG NO. 17841-10-E-WD-003	SHEET 1 OF 1 REV A00

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NOTES

1. ALL 120VAC CARRYING CONDUCTORS TO BE #14 TEW UNLESS OTHERWISE NOTED.

2. ALL 240VAC CARRYING CONDUCTORS TO BE #18 TEW BLUE UNLESS OTHERWISE NOTED.

LEGEND

RELAY - BRADLEY GENERAL PURPOSE RELAY
2 FORM-C CONTACTS 120VAC COIL
P/N: 700-HA22A1-4
W/ 700-HN157

REVISIONS

REV	DESCRIPTION	ISSUED FOR REVIEW	DES	DRW	CHK	APP	DATE
A00			P.W	WOG	P.W	T.L	DEC 13, 2024

ENDORSEMENT

10359
TYLER J LEDREW
12/13/24

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Signature of Member Number
(Member-in-Responsible Charge)

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PHONE: 709-354-9616
FAX: 709-354-9618
WWW.AVALONCONTROLS.CA

CLIENT

MARINE INSTITUTE

PROJECT

FLUME TANK CONTROLS UPGRADE

TITLE

FLUME TANK CONTROLS PORT PUMP DRIVE CABINET

SCALE

NTS

DWG NO.

17841-10-E-WD-004

SHEET

1

OF

1

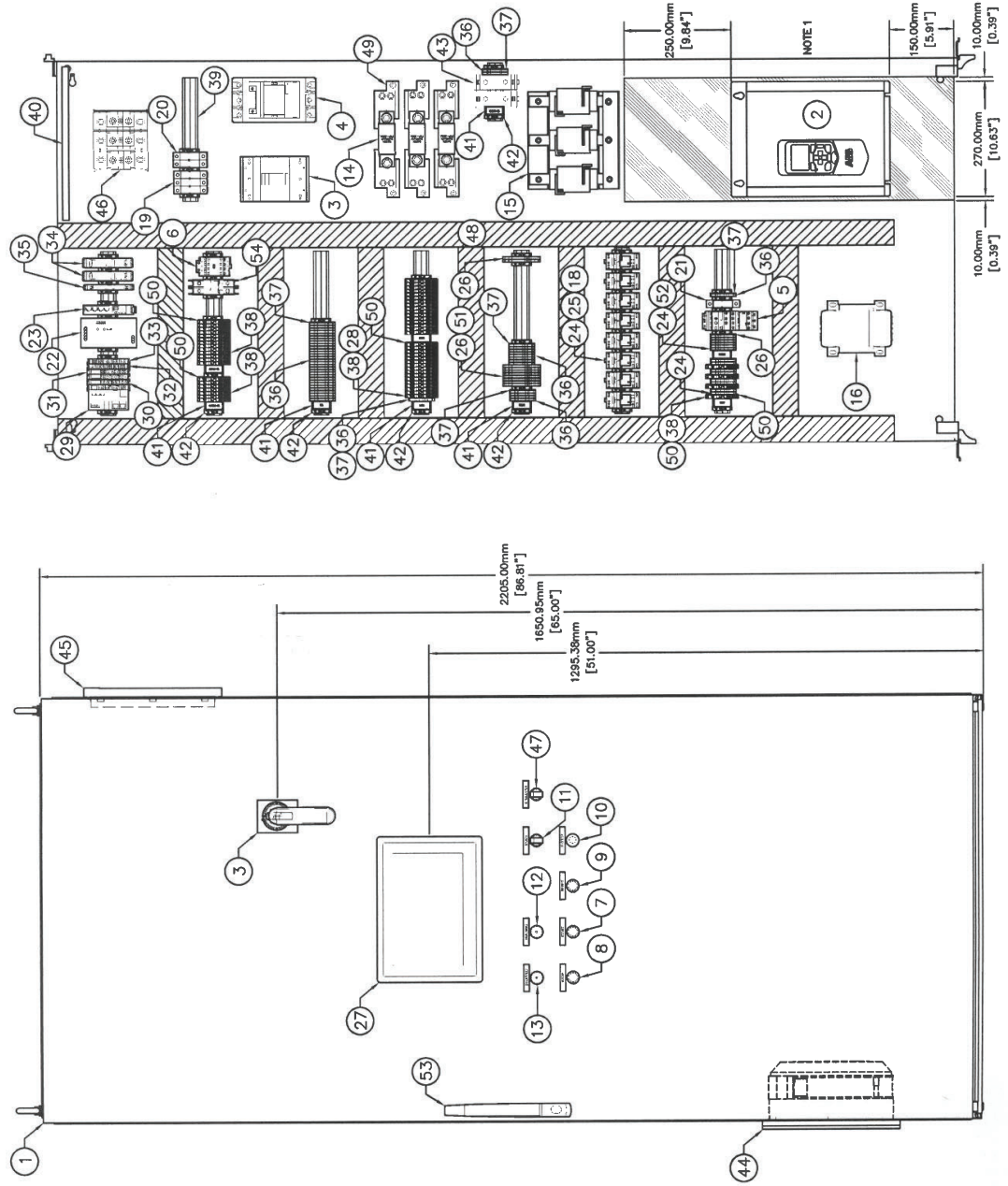
REV

A00

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NOTES

1. SPACE REQUIREMENTS FOR ABB DCS800 DC DRIVE AS SHOWN.



FRONT VIEW

MOUNTING PANEL

REVISIONS

REV	DESCRIPTION	ISSUED FOR REVIEW	DATE
001	ISSUED FOR REVIEW	PJM BSP PJM T.L.	DEC 11, 2024

ENGR SEAL



PROVINCE OF NEWFOUNDLAND AND LABRADOR
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PERMIT D0083
AVALON CONTROLS LTD.
10359
Signature or Member Number
(Members in Blue possible Change)

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13 PARKER PLACE
MOUNT PLEasant, CANADA A1N 5B1
TEL: 709-344-5111
WWW.AVALONCONTROLS.CA

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CLIENT	MARINE INSTITUTE	PROJECT	FLUME TANK CONTROLS UPGRADE
TITLE	FLUME TANK CONTROLS CENTER PUMP DRIVE CABINET LAYOUT DRAWING		

SCALE	NTS	DWG NO.	17844-20-E-LY-001	SHEET	1	OF	2	REV	A00
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ITEM	QTY	DESCRIPTION	MANUFACTURER	PART NUMBER
1	1	TS8, 2200H x 1000W x 600D mm Enclosure w/ Back Plane and Side Panels	Rittal	8028500 w/ 8128235
2	1	ABB DC-S880 DC Drive	ABB	DCS880-S01-031 F-05X0
3	1	Main Circuit Breaker ABB Tmax XT4M 225 3-Pole w/ Electronic Disconnect and Extended Rotary Handle	ABB	XT4NU3225AFF000XXX w/ AC EKIP-L-SI R 250 A, XT4LHND,ST, HXT4CUAL2C-3PC-HXT4CUAL2-3PC225,KXTORHEBP
4	1	Main Contactor ABB, 3 pole, 600 V UL, 480 V UL (AC-3) or 125 hp, 275 A (AC-1)	ABB	AF190-30-00-10-13 w/ CAL19-11
5	1	Contactor 25A AC-1 at 40°C w/ Electronic Overload Relay and Aux. NO Contact	ABB	AF09-30-10-13 w/ EF19, w/ CAT4-11
6	1	100S-C Safety Contactor, 9A, Line Side, 24V DC (w/Elec. Coi), 3 N.O., 3 N.O. 2 N.C	Allen-Bradley	100S-C08EJ32C
7	1	800F Start Pushbutton, 22mm Momentary, 1NO 1NC Screw Contact, Green	Allen-Bradley	800FM-X3MX11
8	1	800F Stop Pushbutton, 22mm Momentary, 1NO 1NC Screw Contact, Red	Allen-Bradley	800FM-X4MX11
9	1	800F Illuminated Reset Pushbutton, 22mm Momentary, 1NO 1NC Screw Contact, Amber	Allen-Bradley	800FM-LF0M3SWX11
10	1	800F Twist to Release E-Stop Pushbutton, 22mm, 1NO 2NC Screw Contact, Red	Allen-Bradley	800FM-MT34MX12
11	1	800F 2-Position Selector Switch, 22mm, 1NO 1NC Screw Contact, Black	Allen-Bradley	800FM-SM22MX11
12	1	800F Running Pilot Light, 22mm, Screw Contact, Green	Allen-Bradley	800FM-P3MNG
13	1	800F Stopped Pilot Light, 22mm, Screw Contact, Red	Allen-Bradley	800FM-P4MNR
14	3	Fast Acting, Semiconductor Fuses, 700VAC, 300A, 200kAIC w/ 3-Pole Fuse Holder	Bussman	FWP-300A w/ 1BS103
15	1	KLR, 480V, 200A, 150HP, 3 Phase, Open, Input Line Indicator, UL Recognized	Eaton	KLR200BCB
16	1	Control Power Transformer, 750VA, 480/120V	Hammond	PH750MQAJ
17	6	Class CC Fuse, 600V, 6A Time Delay	Littelfuse	KLDRO6
18	LOT	Relay Retainer Clip Pack	Allen-Bradley	700-HN157
19	1	3-Pole Class CC Indicating Fuse Holder	Littelfuse	LPSC003ID
20	1	2-Pole Class CC Indicating Fuse Holder	Littelfuse	LPSC002ID
21	1	1-Pole Class CC Indicating Fuse Holder	Littelfuse	LPSC001ID
22	1	Power Supply 24V, 10A	Phoenix Contact	QUINT4-PS/AC/24DC/20
23	1	Ethernet Switch 5 RJ45 ports with 10/100 Mbps, 1085039	Phoenix Contact	FL SWITCH 1005N
24	8	General Purpose 2-Form Contacts, 120VAC Coil	Allen-Bradley	700-HAX2A1-1
25	8	Relay Base	Allen-Bradley	700-HN204
26	10	Electromechanical Relay Output, SPDT, 24VDC Coil	Allen-Bradley	700-HL1T24
27	1	HMI, PanelView 5510 Graphic Terminal	Allen-Bradley	2715P-T12WD
28	LOT	GMA 5x20mm Fuses	-	-
29	1	PLC Ethernet/IP Coupler Module	WAGO	750-366
30	2	PLC 16CH 24VDC Digital Input Module	WAGO	750-1405
31	1	PLC 16CH 24VDC Digital Output Module	WAGO	750-1504
32	1	PLC 4CH 4-20mA Analog Input Module	WAGO	750-455
33	1	PLC 2CH 24VDC RTD Module	WAGO	750-461
34	2	Voltage Monitoring Relay, Input, single-phase voltage, Relay output	Weidmuller	ACT20P-VMR-1PH-H-S
35	1	Frequency Signal Converter, 4-20mA Analog Output	Weidmuller	ACT20P-PRO-FAO-DO-S
36	60	Feed-Through Terminal Block, 1020100000	Weidmuller	WDU 4
37	11	Terminal Block End Plats, 1050000000	Weidmuller	WAP WDU 2.5-10
38	56	Double Decker Fused Terminal Block	Weidmuller	KOKSI/EN4
39	LOT	DIN RAIL 35mm x 7.5mm, Unslotted, 2m,	Weidmuller	TS-35
40	LOT	Ground Bar, 0280200000	Weidmuller	NSCH 1M
41	8	Terminal Marker Header, 0292460000	Weidmuller	SCHT 5
42	41	End Anchors	Weidmuller	EW35
43	2	Feed-through Terminal Block, Screw Connection, Dark Beige, 240mm, 1802780000	Weidmuller	WDU 240, 2w WZAD240
44	1	Wall Mounted Enclosure Filler Fan	Rittal	3244.718
45	1	Exhaust Vent, Blue w/ outlet filler EMC	Rittal	3243.400
46	1	Splice Block	Littelfuse	0LS468232X
47	1	800F Single Turn Potentiometer 10KV	Allen-Bradley	800FP-POT6A
48	LOT	Cable Tray, 1-1/8" X 2-1/4", Grey	Iboco	T1-152G
49	6	Modular Fuse Block, 600V, 400A	Bussman	1BS103
50	8	KOKSI End Plate	Weidmuller	AP KOKS1
51	LOT	Relay Socket Jumper	Allen-Bradley	100-TBJ20G
52	LOT	Terminal Block Jumper	Weidmuller	WGV 4/9
53	1	TS8 Door Handle with lock insert and Handle Adaptor	Rittal	TS 8611.045 w/ TS 8611.060
54	1	Miniature Circuit Breaker, UL489, 10A, 2-Pole, C-Curve	Weidmuller	2478150000

NOTES
1. SPACE REQUIREMENTS FOR ABB DC5860 DC DRIVE AS SHOWN.

LEGEND

--	--

REVISIONS							
REV	DESCRIPTION ISSUED FOR REVIEW	DSG P.W.	DWG ESP	CHK P.W.	APP T.L.	DATE	
A00						DEC 11, 2024	

ENGINEERING PERMIT

PROVINCE OF NEWFOUNDLAND AND LABRADOR

pegnl

AVALON CONTROLS LTD.

10359

TYLER J LEDREW

SIGNATURE

DATE

10-23-24

W.K. KIRBY

10359

**Signature or Secretary Number
(Number on Responsible Charge)**

DNR SEAL

DNR PERMIT

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TEL: 708-795-8811
FAX: 708-795-8818
WWW.AVALONCONTROLS.CA

CLIENT	MARINE INSTITUTE	PROJECT	FLUME TANK CONTROLS UPGRADE
TITLE FLUME TANK CONTROLS CENTRAL CONTROL CABINET LAYOUT DIAGRAM			
SCALE	NTS	DWG NO. 17841-20-E-LY-001	SHEET 2 OF 2 REV A00

NOTES

1. WHERE APPROPRIATE, COLORED WIRE IS NOT AVAILABLE, 3-PHASE WIRING SHALL BE BLACK WITH HEAVY STRIKE AT POINT OF TERMINATION AS FOLLOWS:
PHASE A: RED
PHASE B: BLACK
PHASE C: BLUE

LEGEND

REVISIONS

REV	DESCRIPTION	DSG	DRW	CHK	APP	DATE
A00	ISSUED FOR REVIEW	P.J.W.	B.S.P.	P.J.W.	T.L.	DEC 12, 2024

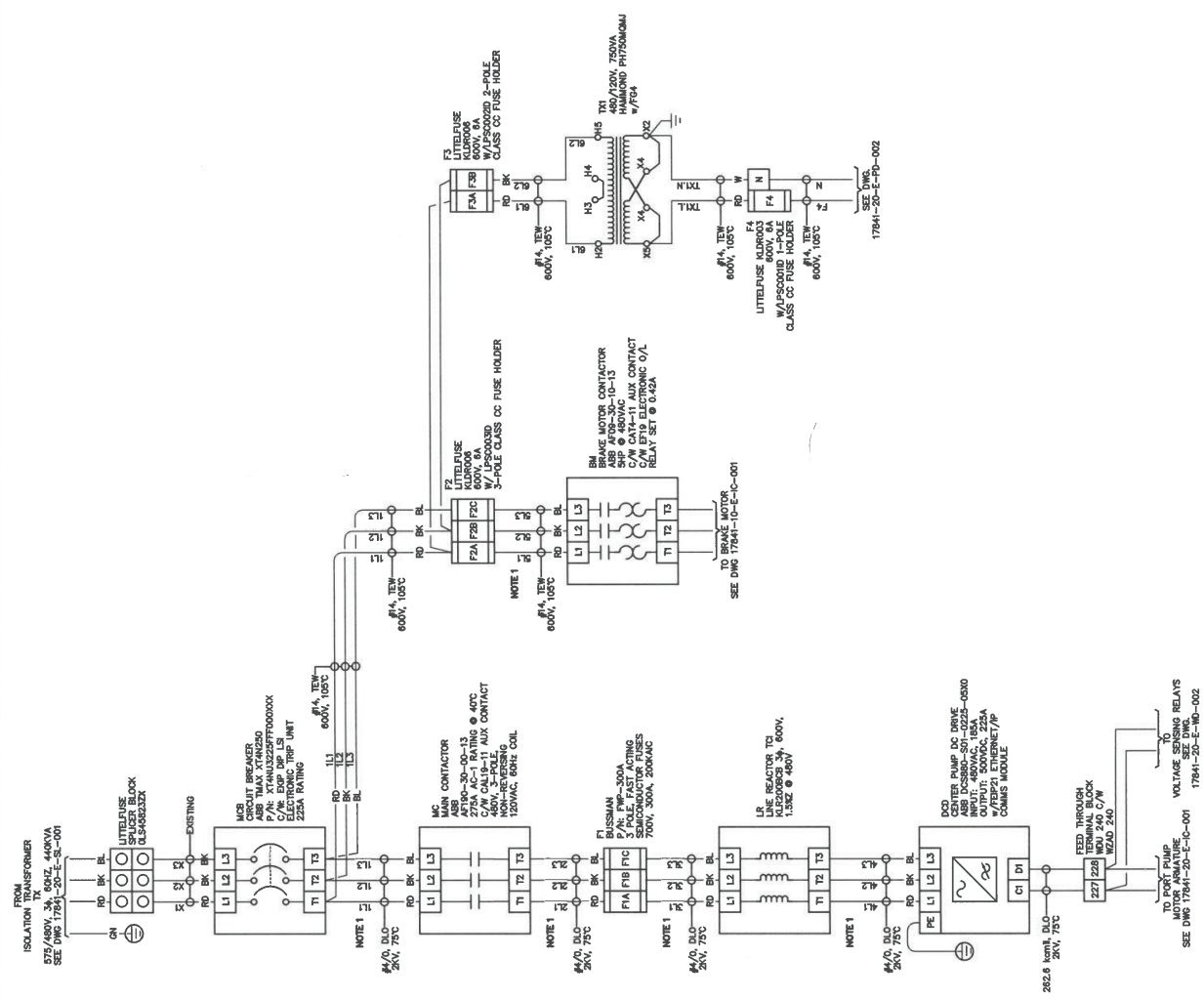
ENGR SEAL
10359
TYLER J. LEDREW
SIGNATURE
Dec 13 24
10359
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Signature or Member Number
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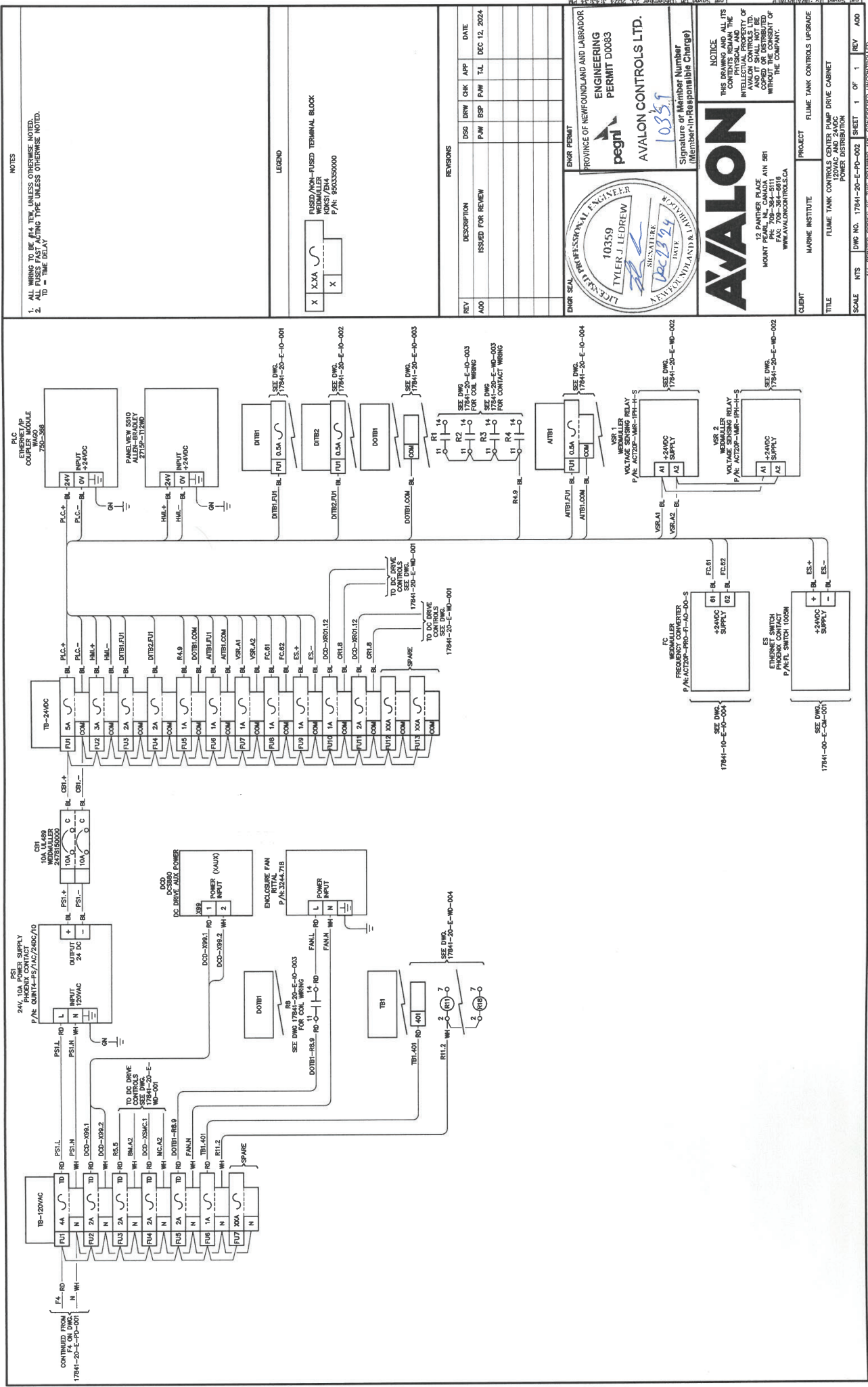
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PH: 709-384-3111
WWW.AVALONCONTROLS.CA

CLIENT	MARINE INSTITUTE	PROJECT	FLUME TANK CONTROLS UPGRADE
TITLE	FLUME TANK CONTROLS CENTER PUMP DRIVE CABINET	POWER	480VAC 3PH 3W
SCALE	N.T.S.	DWG NO.	17841-20-E-PD-001
SHEET	1	OF	1
REV	A00		

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[illegible][illegible]



X	X.XA	S
	X	

LEGEND

FUSED/NON-FUSED TERMINAL BLOCK
 WEIDMULLER
 KDKSI/EN4
 P/N: 9503350000

REVISIONS						
REV	DESCRIPTION	DSG	DRW	CHK	APP	DATE
A00	ISSUED FOR REVIEW	P.W	W.G	P.W	T.L	DEC 12, 2024

ENDORSEMENT	SIGNATURE	DATE
10359 TYLER J. LEDREW	[Signature]	Dec 19 24

LICENSED PROFESSIONAL ENGINEER

PROVINCE OF NEWFOUNDLAND AND LABRADOR

ENGINEERING PERMIT D0083

AVALON CONTROLS LTD.

Signature or Member Number
(if not member-responsible Charge)

10359

AVALON

12 PANTHER PLACE
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CLIENT	WARNE INSTITUTE	PROJECT	FLUME TANK CONTROLS UPGRADE
TITLE	FLUME TANK CONTROLS CENTER PUMP DRIVE CABINET 24VDC DIO1, DIGITAL INPUT MODULE WIRING DIAGRAM		
SCALE	NTS	DWG NO. 1784I-20-E-IQ-001	SHEET 1 OF 1 REV A00

NOTES

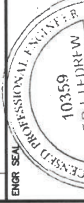
1. ALL WIRING #18 TEW EXCEPT WHERE OTHERWISE NOTED.

LEGEND

X	X1X4	FUSED/NOF-FUSED TERMINAL BLOCK
X		KOKS/EN4
		P/N: 803350000

REVISIONS

REV	DESCRIPTION	ISSUED FOR REVIEW	DES	DRW	CHK	APP	DATE
A00							DEC 12, 2024



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Engineering
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AVALON CONTROLS LTD.
 10359
 Signature of Member Number
 (Member-in-Responsible Charge)

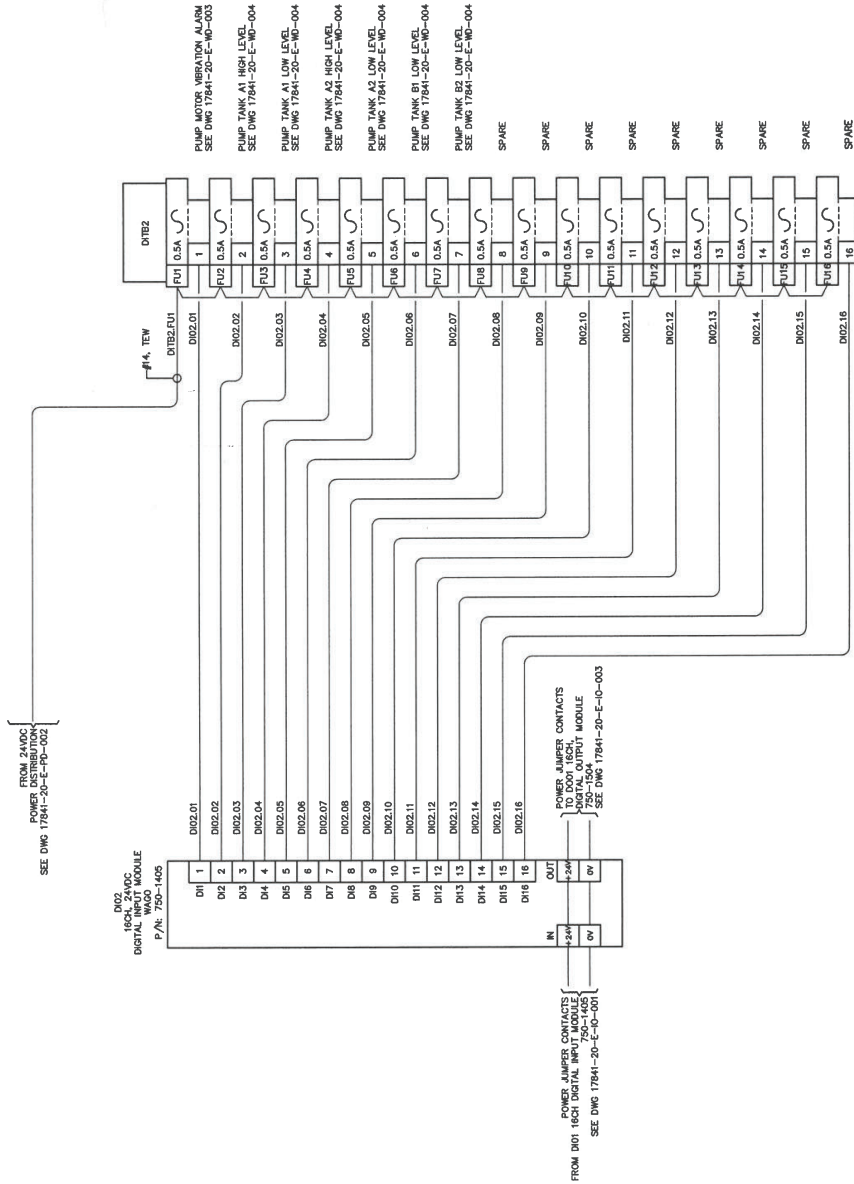
AVALON

12 PANTHER PLACE
 MOUNT PEARL, NL, CANADA A1N 5B1
 TEL: 709-364-8888
 FAX: 709-364-8818
 WWW.AVALONCONTROLS.CA

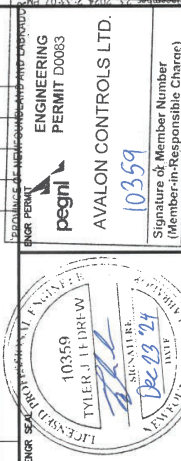
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 THE COMPANY.

CLIENT	MARINE INSTITUTE	PROJECT	FLUME TANK CONTROLS UPGRADE
TITLE	FLUME TANK CONTROLS CENTER PUMP DRIVE CABINET		ZAVOC DIGITAL CONTROL MODULE
SCALE	NTS	DWG NO. 17841-20-E-WD-002	SHEET 1 OF 1
			REV A00

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1. ALL WIRING TO BE #18 TEW BLUE UNLESS OTHERWISE NOTED:



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CLIENT	PROJECT	FLUME TANK CONTROLS UPGRADE
FLUME TANK CONTROLS CENTER PUMP DRIVE CABINET D001, 24VDC DIGITAL OUTPUT MODULE WIRING DIAGRAM		
SCALE	DWG NO. 17841-20-E-10-003	SHEET 1 OF 1
NTS		REV A00
ALL DIMENSIONS UNLESS OTHERWISE SPECIFIED ARE IN INCHES AND DECIMALS THEREOF. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE TO BE CENTERED UNLESS OTHERWISE SPECIFIED.		

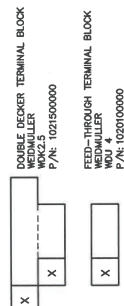
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- ALL WIRING TO BE #18 TEW BLUE UNLESS OTHERWISE NOTED:
1. FREQUENCY CONVERTER INPUT SIGNAL SHOWN WIRED FOR PNP END DEVICE. END DEVICE
2. MUST BE CONFIRMED AS PNP DURING COMMISSIONING, TO CHANGE NPN, RETERMINATE AT
CONVERTER AS FOLLOWS:

- 22—11
31—12

END



REVISIONS

KEY	DESCRIPTION	DSG	DRW	CHK	APP	DATE
000	ISSUED FOR REVIEW	P.W.	BSP	P.W.	T.L.	DEC 12, 2024




ENGINEERING
PERMIT D0083

AVALON CONTROLS LTD.
10359
Signature or Member Number
Member-in-Responsible Charge)

AVALON

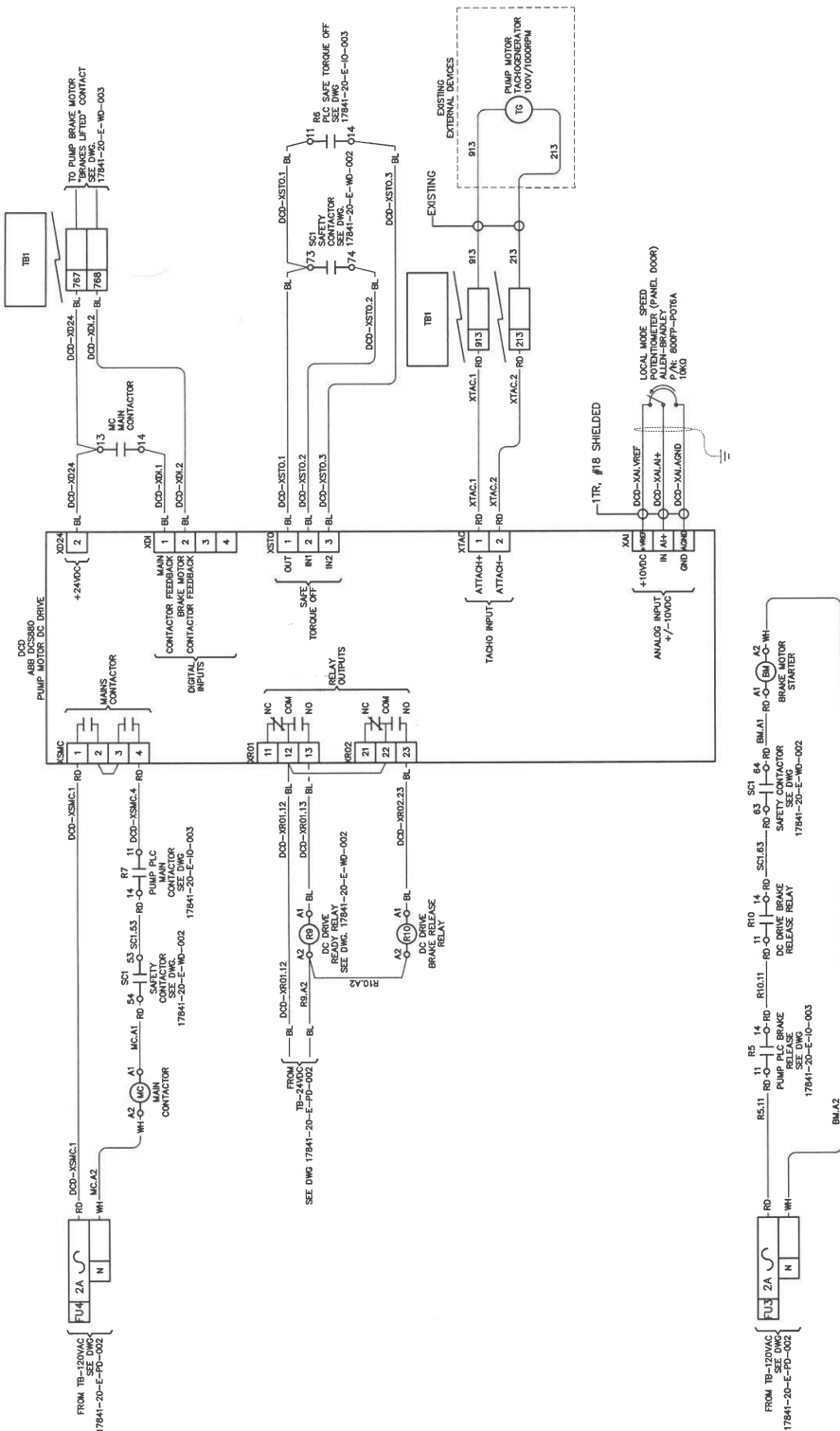
12 PANTHER PLACE
MOUNT PEARL, NL, CANADA A1N 5B1
PH: 709-364-5111
FAX: 709-364-6616
WWW.AVALONCONTROLS.CA

CLIENT	MARINE INSTITUTE	PROJECT	FLUME TANK CONTROLS UPGRADE
TITLE	FLUME TANK CONTROLS CENTER PUMP DRIVE CABINET A01, 4-ZONA ANALOG INPUT MODULE WIRING DIAGRAM		

11.2.11. 20 10 000	ALL PRINTED COPIES OF THIS DRAWING ARE CONSIDERED UNCONTROLLED
--------------------	--

NOTES

1. ALL WIRE #14 UNLESS OTHERWISE NOTED. COLOUR AS SHOWN.



LEGEND

FUSED NON-FUSED TERMINAL BLOCK
KINGS/EN4
P/N: 950355000

ALLEN-BRADLEY
700-H1724
C/W 700-TB000

REVISIONS

REV	DESCRIPTION	DWG	CHK	APP	DATE
A00	ISSUED FOR REVIEW	PJM	WOG	PJM	DEC 13, 2024

ENDOR SEAL

PROVINCE OF NEWFOUNDLAND AND LABRADOR
ENGINEERING
PERMIT D0083

TYLER J LEDRUM
10359
SIGNATURE
12/13/24
DATE

AVALON CONTROLS LTD.
10359
Signature of Member Number
(Member-in-Responsible Charge)

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MOUNT PEARL, NL, CANADA A1A 5B1
PHONE: 709-354-5515
FAX: 709-354-5516
WWW.AVALONCONTROLS.CA

CLIENT

MARINE INSTITUTE

PROJECT

FLUME TANK CONTROLS UPGRADE

TITLE

FLUME TANK CONTROLS CENTER PUMP DRIVE CABINET

SCALE

1 OF 1

REV

A00

NTS

DWG NO. 17841-20-E-WD-001

SHEET

1 OF 1

REV

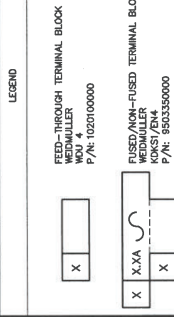
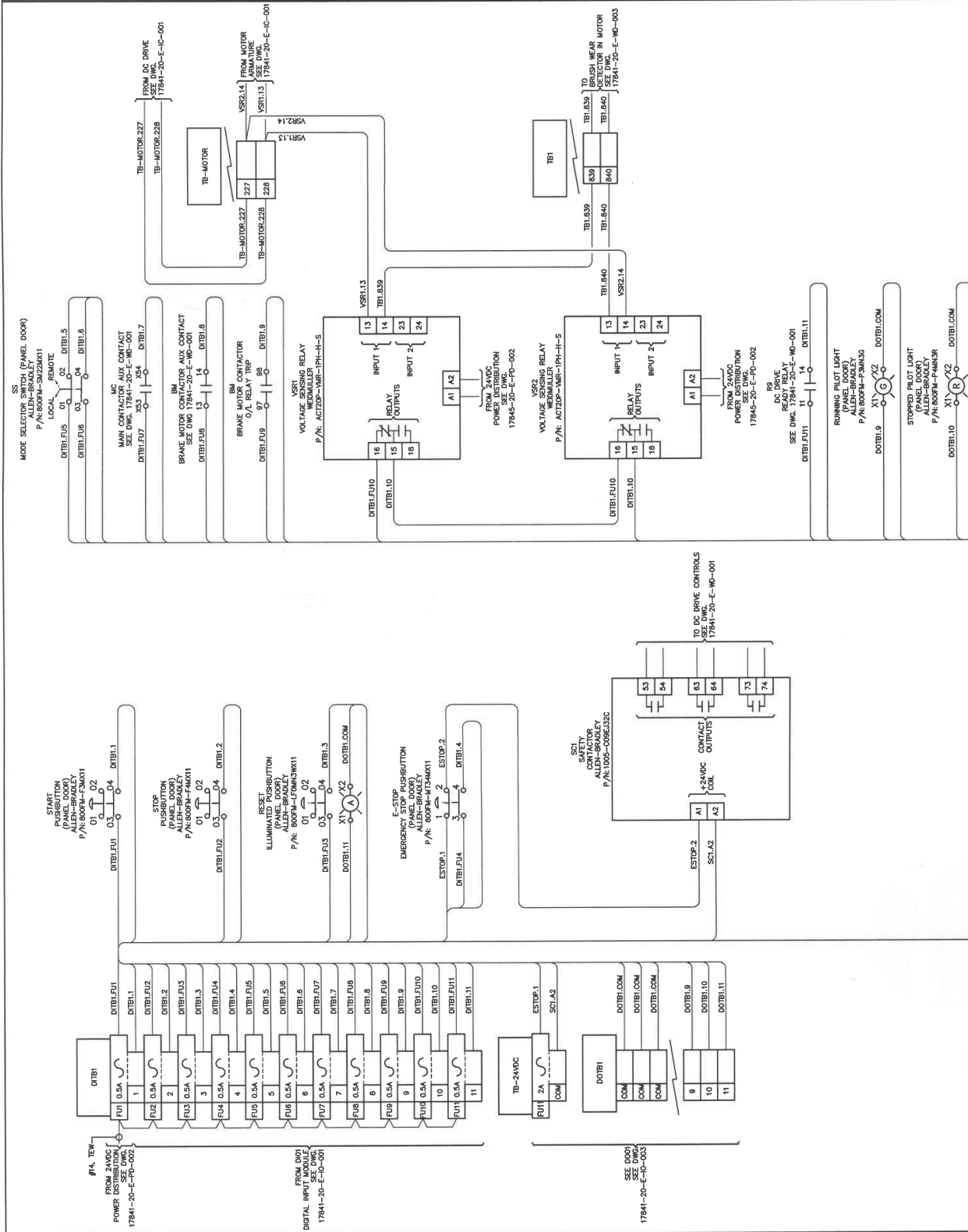
A00

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FRM-071 REV 2

NOTES

1. ALL WIRING #18 TEW BLUE UNLESS OTHERWISE NOTED.



REVISIONS

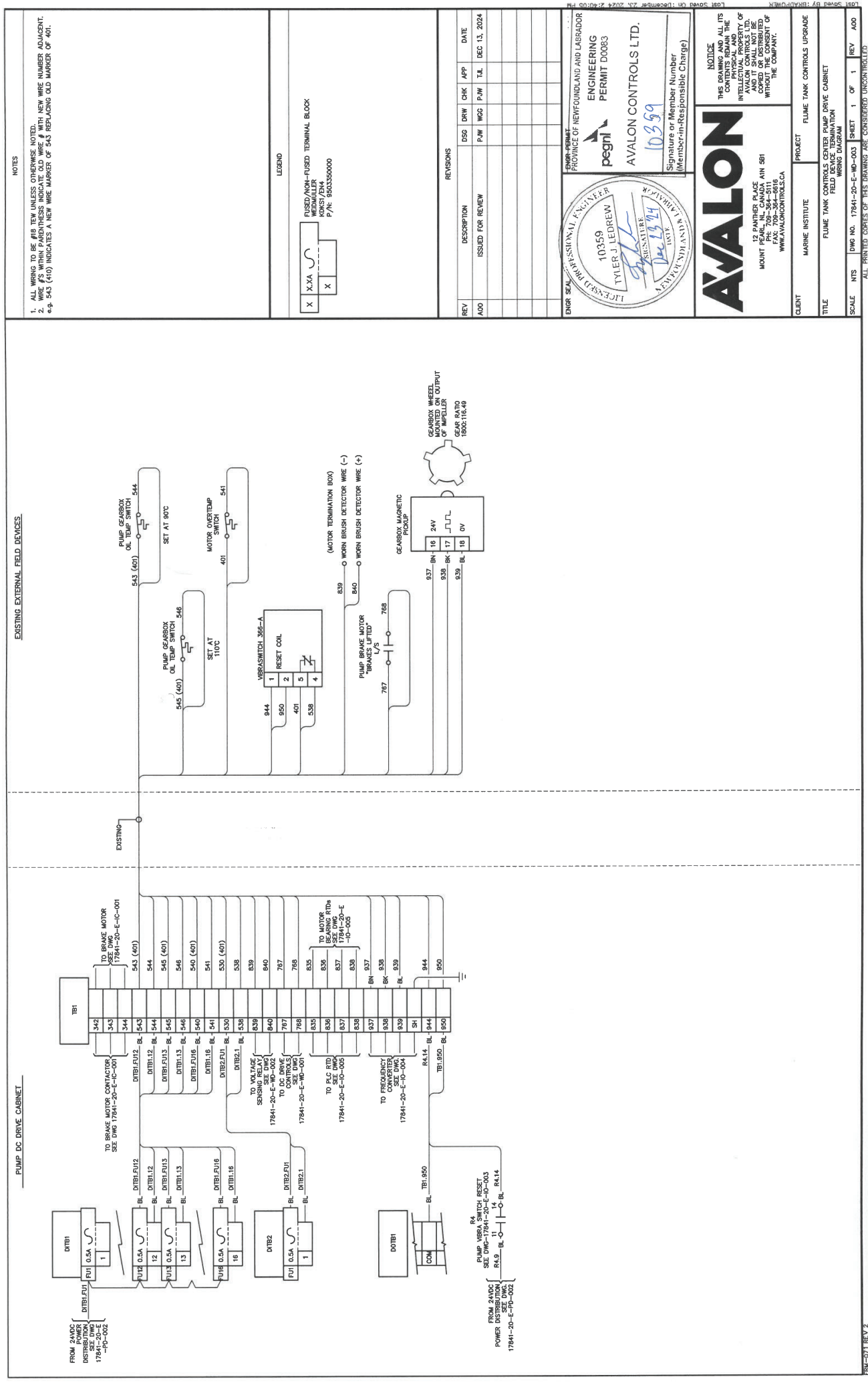
REV	DESCRIPTION	ISSUED FOR REVIEW	DATE
A00			

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AVALON CONTROLS LTD.
Signature of Member Number
10359
(Member-in-Responsible Charge)

AVALON
12 PANTHER PLACE
MOUNT PEARL, NL CANADA A1N 5B1
FAX: 709-364-8818
WWW.AVALONCONTROLS.CA

CLIENT	MARINE INSTITUTE	PROJECT	FLUME TANK CONTROLS UPGRADE
TITLE	FLUME TANK CONTROLS GYBER PUMP DRIVE CABINET		
SCALE	NTS	DWG NO.	1784-20-E-WD-001
		SHEET	1 OF 1
		REV	A00

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NOTES

1. ALL WIRING TO BE #18 TEW UNLESS OTHERWISE NOTED.
ALL WIRING TO BE #18 TEW UNLESS OTHERWISE NOTED.
E.G. 543 (410) INDICATES A NEW WIRE MARKER OF 543 REPLACING OLD MARKER OF 401.

LEGEND

FUSED/NO-FUSED TERMINAL BLOCK

WIRING

WIRING

WIRING

REV	DESCRIPTION	ISSUED FOR REVIEW	DATE
A00			DEC 13, 2024

REVISIONS

ENDORSEMENT

PROVINCE OF NEWFOUNDLAND AND LABRADOR

ENGINEERING

PERMIT D0083

AVOLON CONTROLS LTD.

10359

Signature of Member Number (Member-in-Responsible Charge)

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MOUNT PEARL, NL, CANADA A1A 5B1
TEL: 709-364-0010
FAX: 709-364-0016
WWW.AVALONCONTROLS.CA

CLIENT

MARINE INSTITUTE

PROJECT

FLUME TANK CONTROLS UPGRADE

TITLE

FLUME TANK CONTROLS CENTER PUMP DRIVE CABINET

FIELD WIRING CONNECTION

MEANS DIAGRAM

SCALE

NTS

DWG NO. 17841-20-E-WO-003

SHEET 1 OF 1

REV A00

NOTES

- ALL 120VAC CARRYING CONDUCTORS TO BE #14 TEW UNLESS OTHERWISE NOTED.
- WHITE - NEUTRAL
- RED - LINE
- ALL 240VAC CARRYING CONDUCTORS TO BE #18 TEW UNLESS OTHERWISE NOTED.

RELAY - REMOVED GENERAL PURPOSE RELAY
2 FORM-C CONTACTS 120VAC COIL
P/N: 700-HA22A1-4
100-100-0000
W/ 700-HN157



LEGEND

REVISIONS

REV	DESCRIPTION	ISSUED FOR REVIEW	DATE
A00			DEC 13, 2024



REGISTERED PROFESSIONAL ENGINEER
TYLER J. LEDREW
10359
SIGNATURE
DATE
10359
ENGINEERING
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AVALON CONTROLS LTD.

Signature or Member Number
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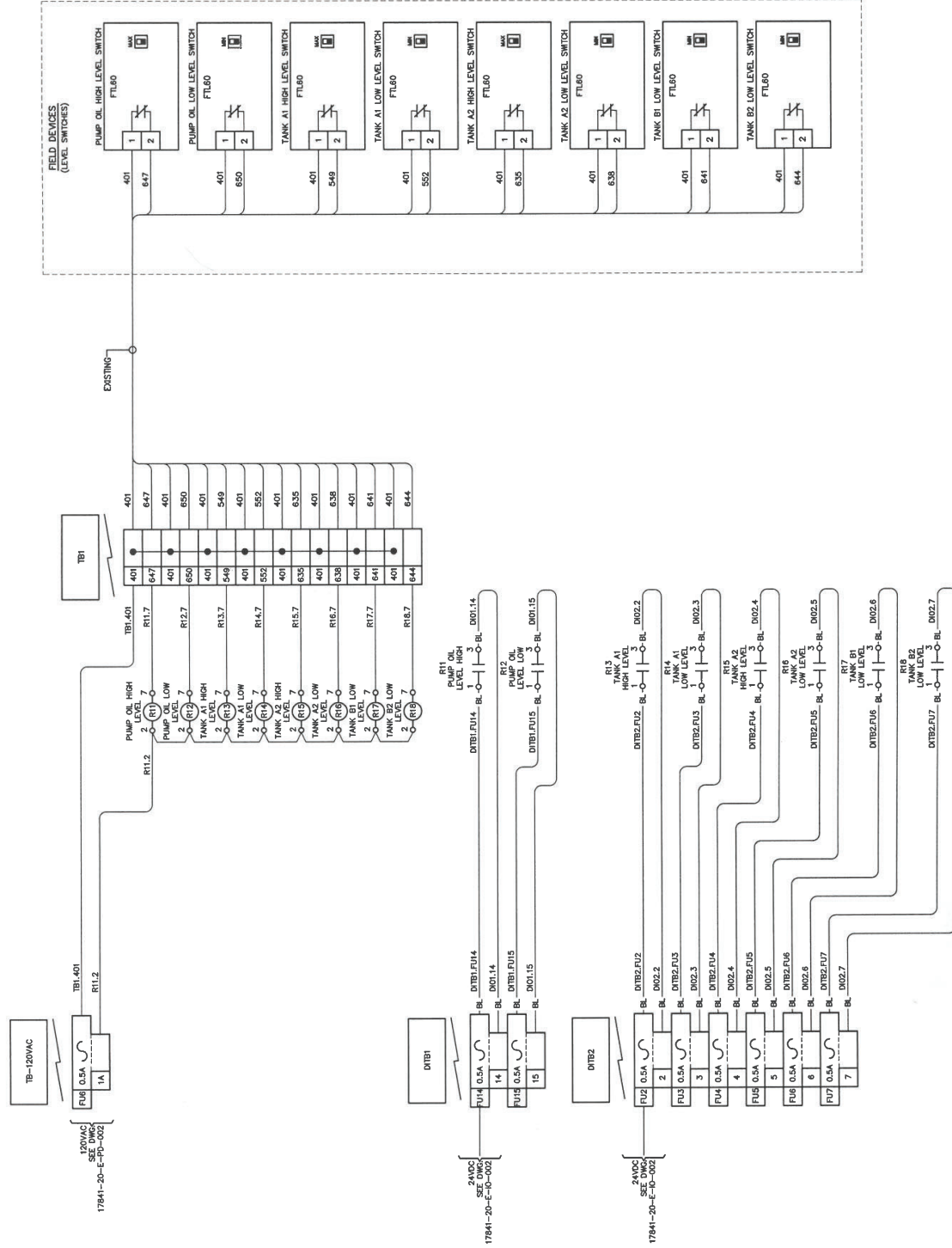
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PHONE: 709-364-0000
FAX: 709-364-0018
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CLIENT	MARINE INSTITUTE	PROJECT	FLUME TANK CONTROLS UPGRADE
TITLE	FLUME TANK CONTROLS CENTER PUMP DRIVE CABINET		
SCALE	NTS	DWG NO. 17841-20-E-WD-004	SHEET 1 OF 1
			REV A00

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NOTES

1. SPACE REQUIREMENTS FOR ABB DCS880 DC DRIVE AS SHOWN.

LEGEND

REVISIONS

REV	DESCRIPTION	ISSUED FOR REVIEW	DATE
A00			DEC 11, 2024

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10359
TYLER J LEDREW
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DATE
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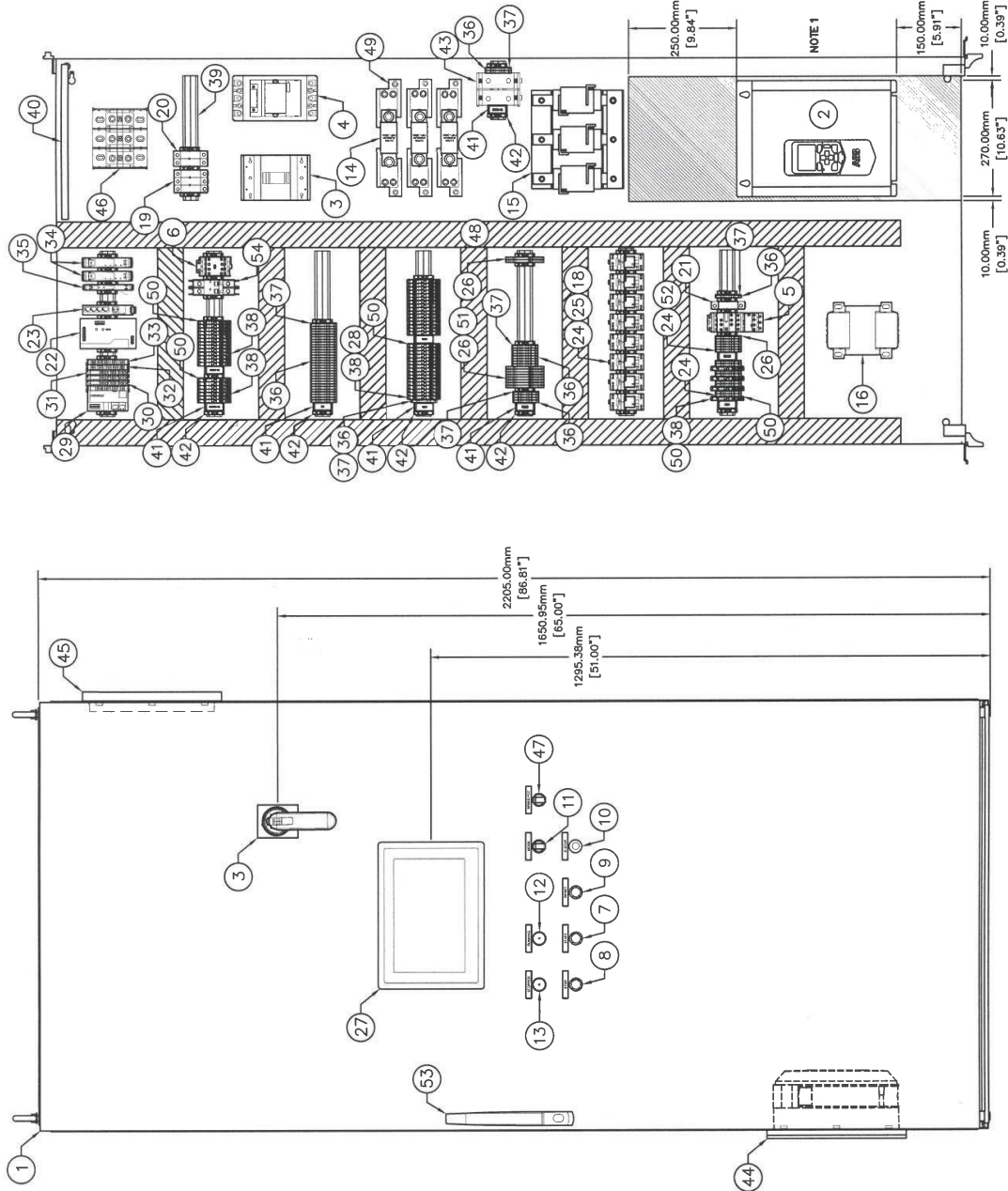
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12 PARTNER PLACE
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CLIENT	MARINE INSTITUTE	PROJECT	FLUME TANK CONTROLS UPGRADE
TITLE	FLUME TANK CONTROLS STARBOARD CONTROL CABINET LAYOUT DIAGRAM		
SCALE	NTS	DWG NO. 17841-30-E-LV-001	SHEET 1 OF 2
			REV A00

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FRONT VIEW

MOUNTING PANEL

ITEM	QTY	DESCRIPTION	MANUFACTURER	PART NUMBER
1	1	TS8, 2200H x 1000W x 6000 mm Enclosure w/ Back Plane and Side Panels	Rittal	8026500 w/ 8126235
2	1	ABB DCS880 DC Drive	ABB	DCS880-S01-0315-05X0
3	1	Main Circuit Breaker ABB TMAX X14N 225 3-Pole w/ Electronic Disconnect and Extended Rotary Handle	ABB	XT4NUJ3225AFF000XXX w/ AC EKIP LSI R 250 A, KXTALHNDLST, HXT4CUAL2C-3PC+KXT4CUAL2-3PC225 KXTCRHEFP
4	1	Main Contactor ABB, 3 pole, 600 V UL, 480 V UL (AC-3) or 125 hp, 275 A (AC-1)	ABB	AF190-30-00-13 w/ CAL19-11
5	1	Contactors 25A AC-1 at 40°C w/ Electronic Overload Relay and Aux NO Contact	ABB	AF09-30-10-13 w/ EF19, w/ CAT4-11
6	1	100S-C Safety Contactor, 9A, Line Side, 24V DC (w/Elec. Coil), 3 N.O., 3 N.O. 2 N.C	Allen-Bradley	100S-C09EJ32C
7	1	800F Start Pushbutton, 22mm Momentary, 1NO 1NC Screw Contact, Green	Allen-Bradley	800FM-X3MX11
8	1	800F Stop Pushbutton, 22mm Momentary, 1NO 1NC Screw Contact, Red	Allen-Bradley	800FM-X4MX11
9	1	800F Illuminated Reset Pushbutton, 22mm Momentary, 1NO 1NC Screw Contact, Amber	Allen-Bradley	800FM-LF0MN3WX11
10	1	800F Twist to Release E Stop Pushbutton, 22mm, 1NO 2NC Screw Contact, Red	Allen-Bradley	800FM-MT34MX12
11	1	800F 2-Position Selector Switch, 22mm, 1NO 1NC Screw Contact, Black	Allen-Bradley	800FM-SN22MX11
12	1	800F Running Pilot Light, 22mm, Screw Contact, Green	Allen-Bradley	800FMP-3MNG
13	1	800F Stopped Pilot Light, 22mm, Screw Contact, Red	Allen-Bradley	800FMP-P4MNR
14	3	Fast Acting, Semiconductor Fuses, 700VAC, 300A, 200kAIC w/ 3-Pole Fuse Holder	Bussman	FWP-300A w/ 1BS103
15	1	KLR, 480V, 200A, 150HP, 3 Phase, Open, Input Line Inductor, UL Recognized	Eaton	KLR200BCB
16	1	Control Power Transformer, 750VA, 480/120V	Hammond	PH750MQMJ
17	6	Class CC Fuse, 600V, 6A Time Delay	LifeLuse	KLDR006
18	LOT	Relay Retainer Clip Pack	Allen-Bradley	700-HN157
19	1	3-Pole Class CC Indicating Fuse Holder	LifeLuse	LPSC003ID
20	1	2-Pole Class CC Indicating Fuse Holder	LifeLuse	LPSC002ID
21	1	1-Pole Class CC Indicating Fuse Holder	LifeLuse	LPSC001ID
22	1	Power Supply 24V, 10A	Phoenix Contact	QUINT4-PS/AC/24DC/20
23	1	Ethernet Switch 5 RJ45 ports with 10/100 Mbps, 1085039	Phoenix Contact	FL SWITCH 1 1005N
24	8	General Purpose 2-Form Contacts, 120VAC Coil	Allen-Bradley	700-HAX2A1-1
25	8	Relay Base	Allen-Bradley	700-HN204
26	10	Electromechanical Relay Output, SPDT, 24VDC Coil	Allen-Bradley	700-HLT1Z24
27	1	HMI, PanelView 5510 Graphic Terminal	Allen-Bradley	2715P-T12WD
28	LOT	GMA 5x20mm Fuses	-	-
29	1	PLC Ethernet/IP Coupler Module	WAGO	750-366
30	2	PLC 16CH 24VDC Digital Input Module	WAGO	750-1405
31	1	PLC 16CH 24VDC Digital Output Module	WAGO	750-1504
32	1	PLC 4CH 4-20mA Analog Input Module	WAGO	750-455
33	1	PLC 2CH 24VDC RTD Module	WAGO	750-461
34	2	Voltage Monitoring Relay, Input: single-phase voltage, Relay output	Weidmuller	ACT20P-VMR-IPH-H-S
35	1	Frequency Signal Converter, 4-20mA Analog Output	Weidmuller	ACT20P-PRO-FI-AC-DO-S
36	60	Feed-Through Terminal Block, 1020100000	Weidmuller	WDU 4
37	11	Terminal Block End Plate, 1050000000	Weidmuller	WAP WDU 2.5-10
38	56	Double Decker Fused Terminal Block	Weidmuller	KDKS1EN4
39	LOT	DIN RAIL 35mm x 7.5mm, Unslotted, 2m,	Weidmuller	TS-35
40	LOT	Ground Bar, 0280200000	Weidmuller	NSGH 1M
41	8	Terminal Marker Header, 0292460000	Weidmuller	SCHT 5
42	41	End Anchors	Weidmuller	EW35
43	2	Feed-through Terminal Block, Screw Connection, Dark Beige, 240mm, 1802760000	Weidmuller	WDU 240, c/w WZAD240
44	1	Wall Mounted Enclosure Filler Fan	Rittal	3244.718
45	1	Exhaust Vent, Blue e+ outlet filler EMC	Rittal	3243.400
46	1	Splice Block	LifeLuse	0LS45823ZX
47	1	800F Single Turn Potentiometer 10KV	Allen-Bradley	800FP-POT6A
48	LOT	Cable Tray, 1-1/8" X 2-1/4", Grey	Iboco	T1-1522G
49	6	Modular Fuse Block, 600V, 400A	Bussman	1BS103
50	8	KDKS1 End Plate	Weidmuller	AP KDKS1
51	LOT	Relay Socket Jumper	Allen-Bradley	100-TBJ20G
52	LOT	Terminal Block Jumper	Weidmuller	-
53	1	TS8 Door Handle with lock insert and Handle Adaptor	Rittal	WGVI 4/9
54	1	Miniature Circuit Breaker, UL489, 10A, 2-Pole, C-Curve	Weidmuller	TS 8611.045 w/ TS 8611.080
				2478150000

[illegible]

NOTES

- WHERE APPROPRIATE COLORED WIRE IS NOT AVAILABLE, 3 PHASE WIRING SHALL BE BLACK WITH NEUTRAL SEPARATE AT POINT OF TERMINATION AS FOLLOWS:
PHASE A: RED
PHASE B: YELLOW
PHASE C: BLUE

LEGEND

REVISIONS

REV	DESCRIPTION	DSG	DRW	CHK	APP	DATE
A00	ISSUED FOR REVIEW	P.W.	ESP	P.W.	T.L.	DEC 12, 2024

10359
TYLER J. LEDREW
REGISTERED PROFESSIONAL ENGINEER
PROVINCE OF NEWFOUNDLAND AND LABRADOR

ENGINEERING
PERMIT D0083

AVALON CONTROLS LTD.

10359
Signature of Member Number
Member-in-Charge (Responsible Charge)

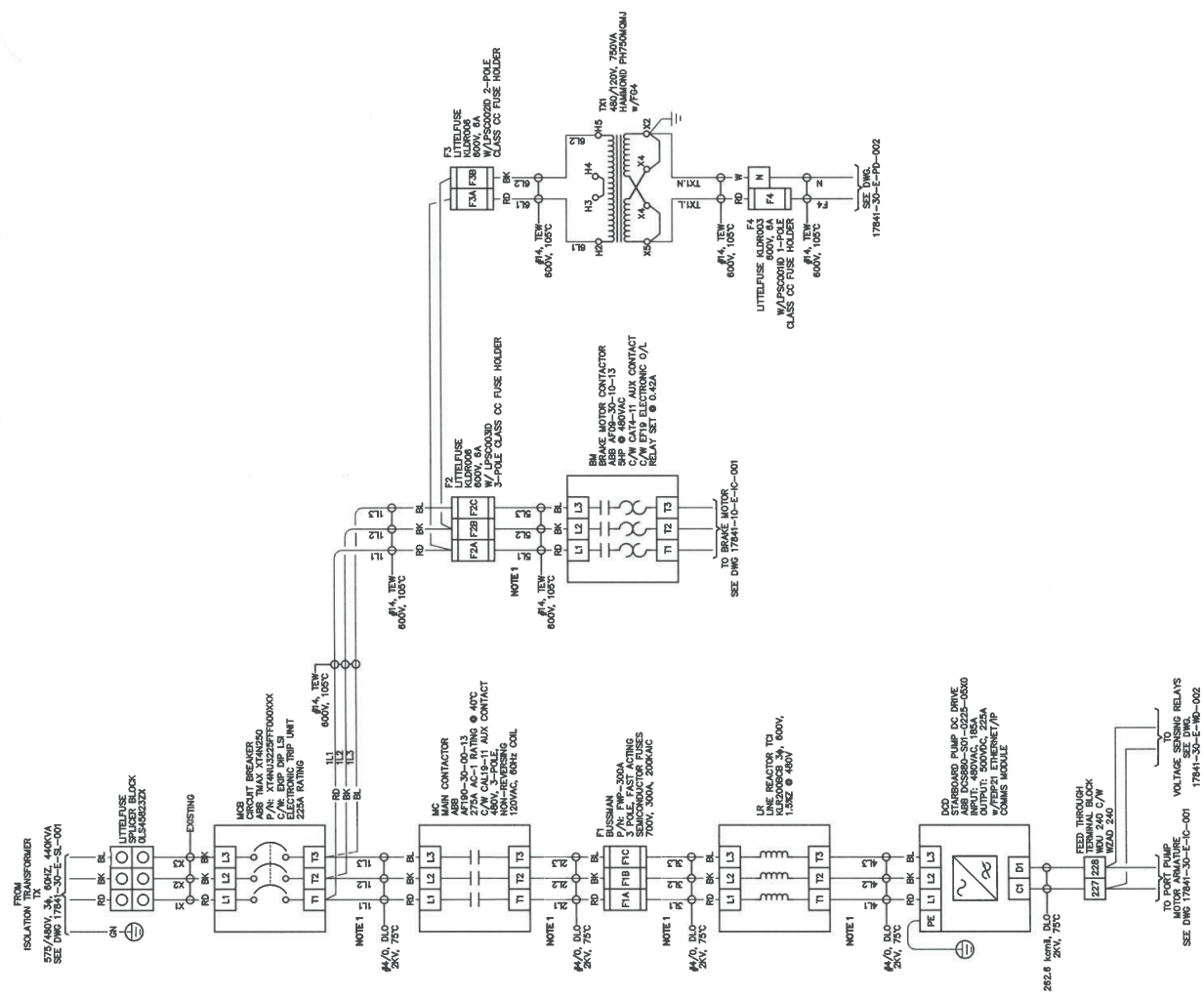
AVALON

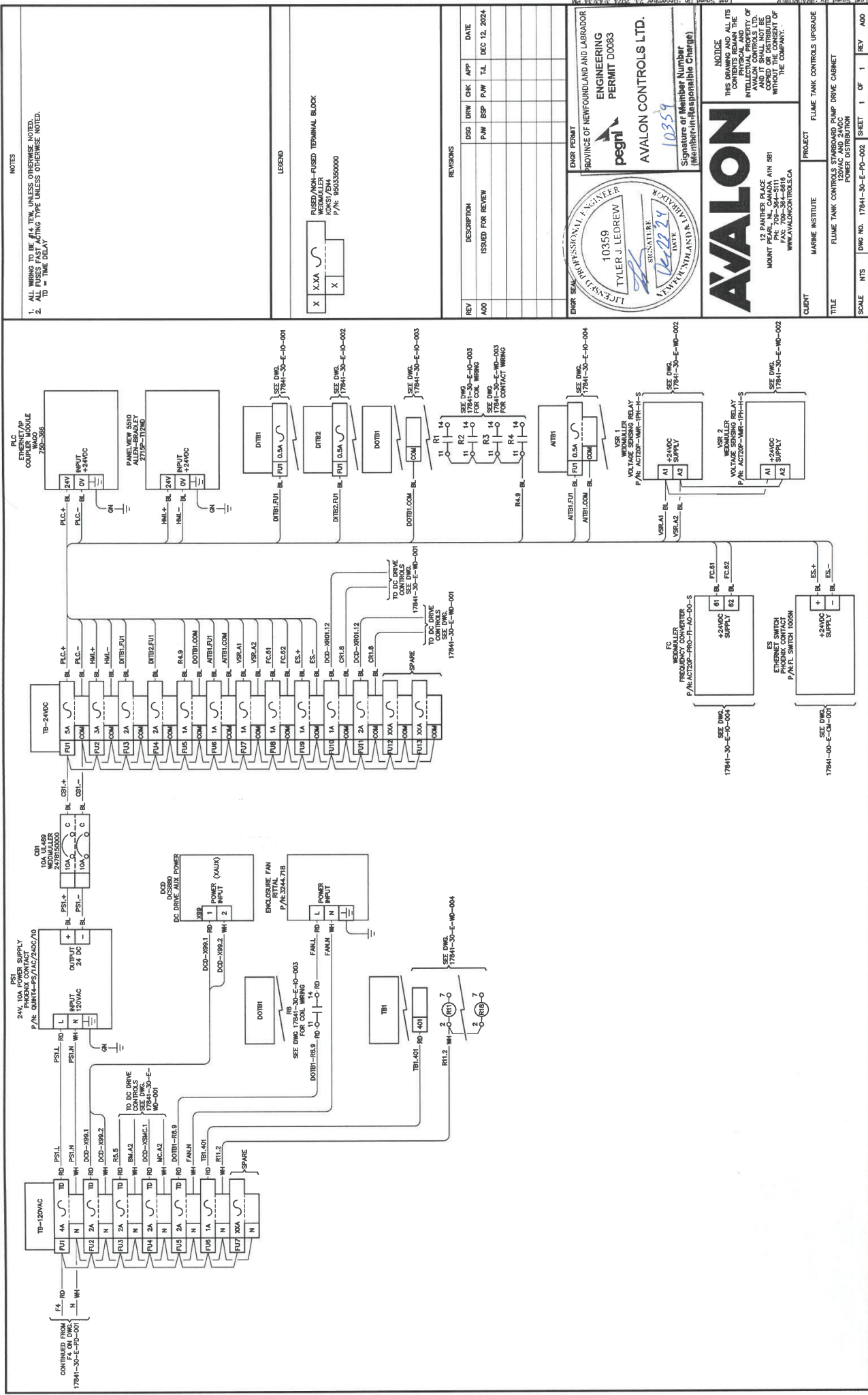
10 PARKVIEW PLACE
MOUNT PEARL, NL, CANADA A1H 5B1
PH: 709-364-8111
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CLIENT	MARINE INSTITUTE	PROJECT	FLUME TANK CONTROLS UPGRADE
TITLE	FLUME TANK CONTROLS STARBOARD PUMP DRIVE CABINET		
SCALE	NTS	DWG NO.	17841-30-E-PD-001
		SHEET	1 OF 1
		REV	A00

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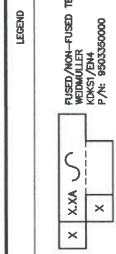


NOTES

1. ALL WIRING TO BE #14 UNLESS OTHERWISE NOTED.

2. ALL RISSES FAST ACTING TYPE UNLESS OTHERWISE NOTED.

TD = TIME DELAY



REVISIONS

REV	DESCRIPTION	ISSUED FOR REVIEW	P.W. BSP	P.W. T.L.	DATE
A00					

ENGR SEAL

PROVINCE OF NEWFOUNDLAND AND LABRADOR

ENGINEERING PERMIT D0093

TYLER J LEDREW

10359

16/02/24

10359

Signature of Member Number

(Member-in-Responsible Charge)

AVALON CONTROLS LTD.

AVALON

13 PARKER BLVD

MOUNT PLEASANT, CANADA A1N 5B1

PH: 709-364-5111

WWW.AVALONCONTROLS.CA

CLIENT

MAINE INSTITUTE

PROJECT

FLUME TANK CONTROLS UPGRADE

TITLE

FLUME TANK CONTROLS STARBOARD PUMP DRIVE CABINET

120VAC AND 240VAC POWER DISTRIBUTION

SCALE

NTS

DWG NO.

17841-30-E-PD-002

SHEET

1 OF 1

REV

A00

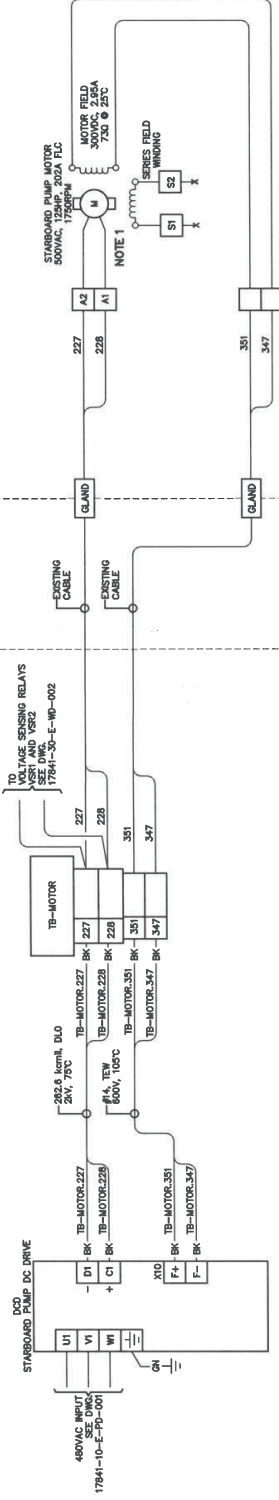
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NOTES

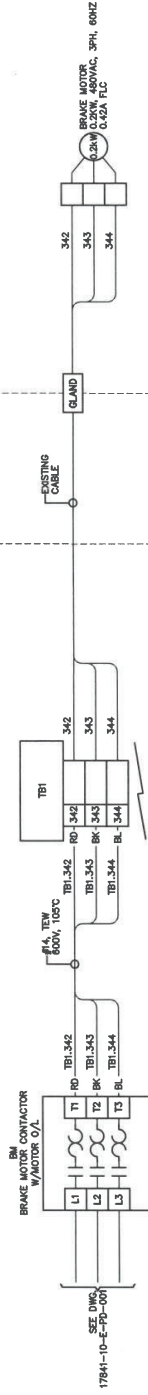
1. MOTOR SERIES FIELD WINDING TO BE DISCONNECTED AND INSULATED (600V OR BETTER).

STARBOARD PUMP MOTOR
MAIN TERMINAL BOX

STARBOARD PUMP DRIVE CABINET



STARBOARD PUMP BRAKE MOTOR
MAIN TERMINAL BOX



FEED-THROUGH TERMINAL BLOCK
WOL 4
P/N: 1020100000

FEED-THROUGH TERMINAL BLOCK
WOL 4
P/N: 1020100000

LEGEND

REVISIONS

REV	DESCRIPTION	DSC	DRW	CHK	APP	DATE
ADD	ISSUED FOR REVIEW	P.W	BSP	P.W	T.L	DEC 13, 2024



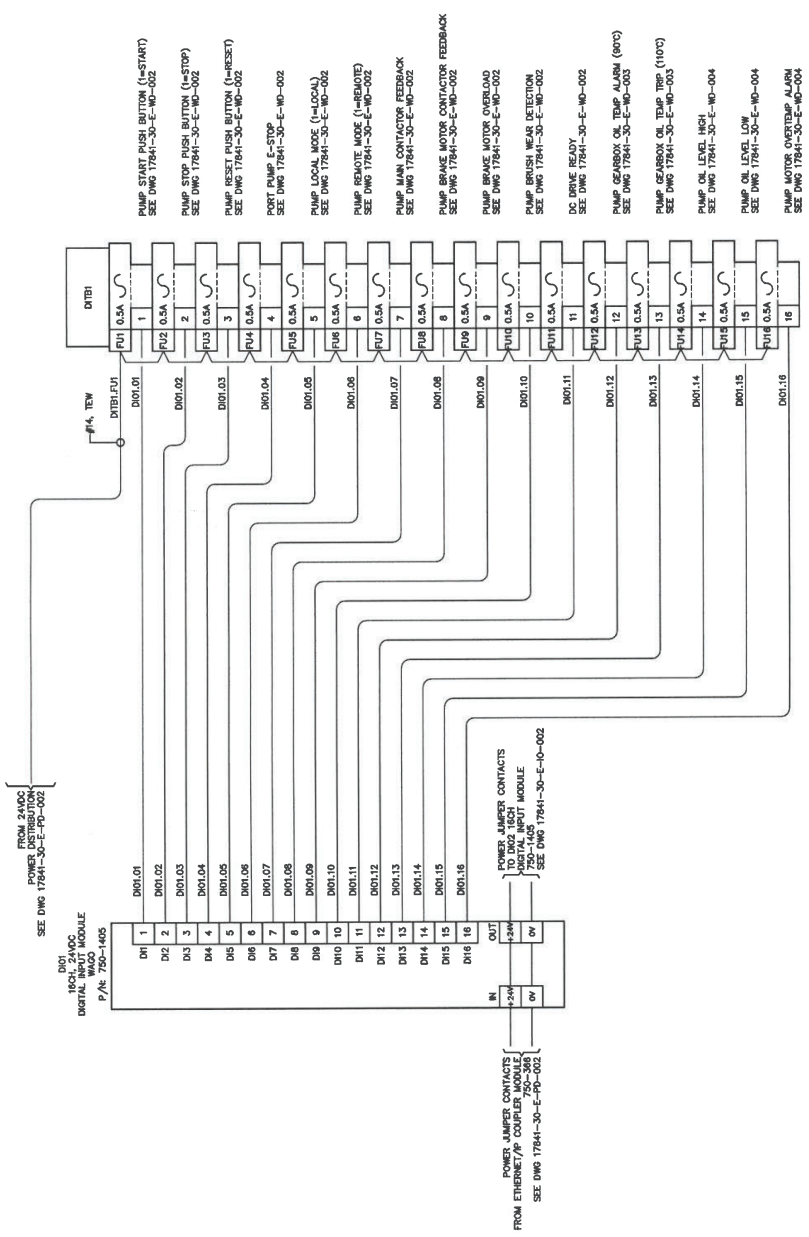
AVALON

10 PANTHER PLACE
MOUNT PEARL, N.L. CANADA A1H 5B1
TEL: 709-364-8111
FAX: 709-364-8111
WWW.AVALONCONTROLS.CA

CLIENT: MARINE INSTITUTE
PROJECT: FLUME TANK CONTROLS UPGRADE
TITLE: FLUME TANK CONTROLS
STARBOARD PUMP MOTOR
INTERCONNECTION DIAGRAM
SCALE: NTS
DWG NO.: 17841-30-E-IC-001
SHEET: 1 OF 1
REV: A00

NOTES

1. ALL WIRING #16 TIEW EXCEPT WHERE OTHERWISE NOTED.



LEGEND

X	X.XA	FUSED/NO-FUSED TERMINAL BLOCK
X	X	KONST/7B44
		P/N: 9503350000

REVISIONS

REV	DESCRIPTION	ISSUED FOR REVIEW	DSG	DRW	CHK	APP	DATE
A00			PJM	WGO	PJM	T.L.	DEC 12, 2024

ENGINEERING
PERMIT D0083
AVALON CONTROLS LTD.
Signature or Member Number
(Member-in-Responsible Charge)
10359

AVALON
12 PARKER PLACE
MOUNT PLEASANT, ONTARIO
PH: 708-384-5111
WWW.AVALONCONTROLS.CA

CLIENT	MARINE INSTITUTE	PROJECT	FLUME TANK CONTROLS UPGRADE
TITLE	FLUME TANK CONTROLS STARBOARD PUMP DRIVE CABINET	24VDC DIOI, DIGITAL INPUT MODULE	WIRING DIAGRAM
SCALE	NTS	DWG NO. 17841-30-E-WD-001	SHEET 1 OF 1

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NOTES

1. ALL WIRING #18 TEW EXCEPT WHERE OTHERWISE NOTED.

LEGEND



REVISIONS

REV	DESCRIPTION	ISSUED FOR REVIEW	DATE
A00			DEC 12, 2024

ENGR SEAL
10359
TYLER J LEDREW
16c13/24
SIGNATURE
DATE

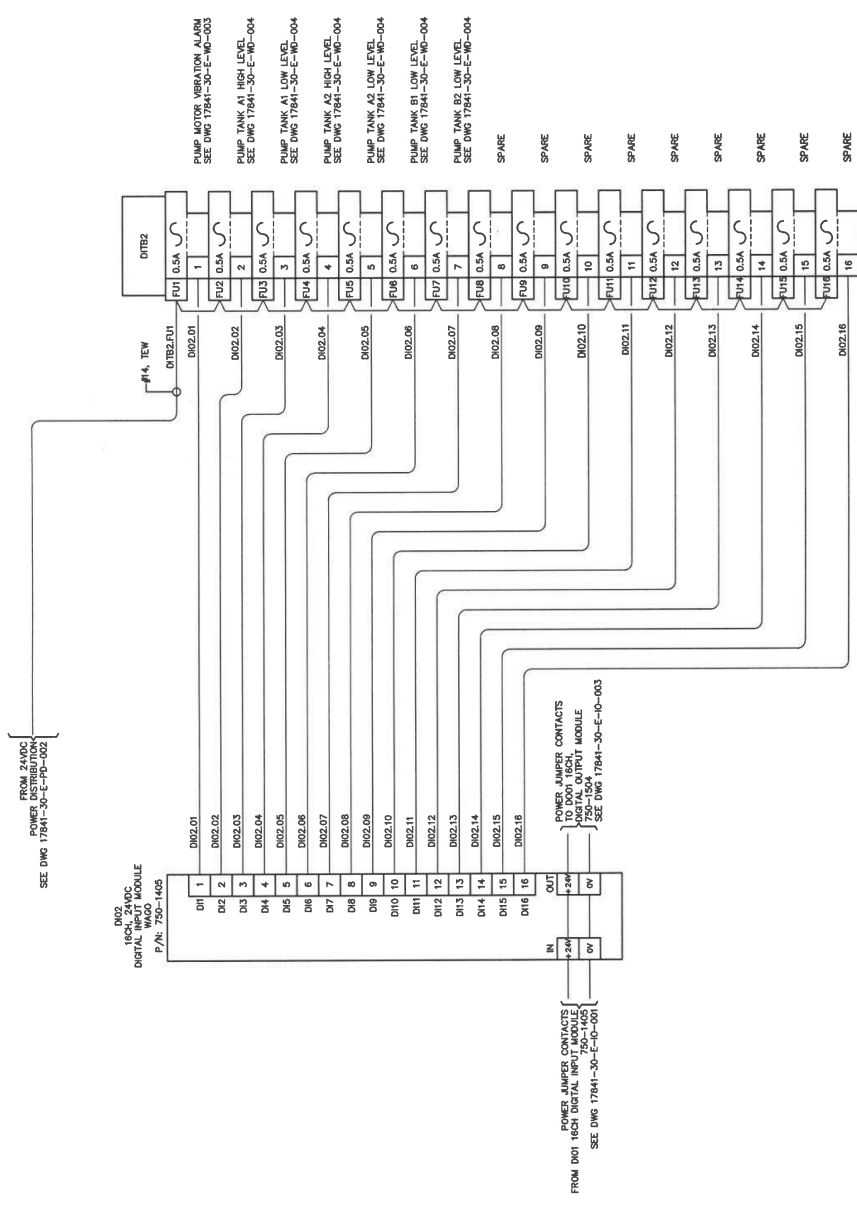
PROVINCE OF NEWFOUNDLAND AND LABRADOR
ENGINEERING
PERMIT 00083
AVALON CONTROLS LTD.
10359
Signature or Member Number
(Member-in-Responsible Charge)



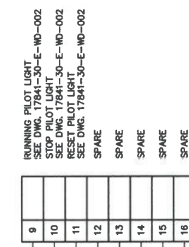
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CLIENT	MARINE INSTITUTE	PROJECT	FLUME TANK CONTROLS UPGRADE
TITLE	FLUME TANK CONTROLS STATIONBOARD PUMP DRIVE CABINET WIRING DIAGRAM		
SCALE	NTS	DWG NO. 17841-30-E-10-002	SHEET 1 OF 1
			REV A00

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10359

AVALON

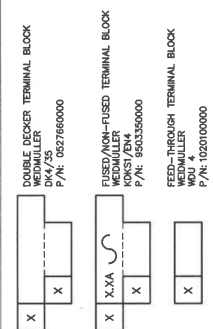
CLIENT	MARINE INSTITUTE	PROJECT	FLUME TANK CONTROLS UPGRADE
TITLE	FLUME TANK CONTROLS STARBOARD PUMP DRIVE CABINET DOOI, 24VDC DIGITAL OUTPUT MODULE WIRING DIAGRAM		
SCALE	DWG NO. 17841-30-E-10-003	SHEET 1	OF 1
REV	ADD		

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NOTES

- 1. SHIELD INSULATED AND RESTRAINED.

LEGEND



REVISIONS

REV	DESCRIPTION	ISSUED FOR REVIEW	DES	DRW	CHK	APP	DATE
A00			PJM	BSP	PJM	TWH	DEC 13, 2024



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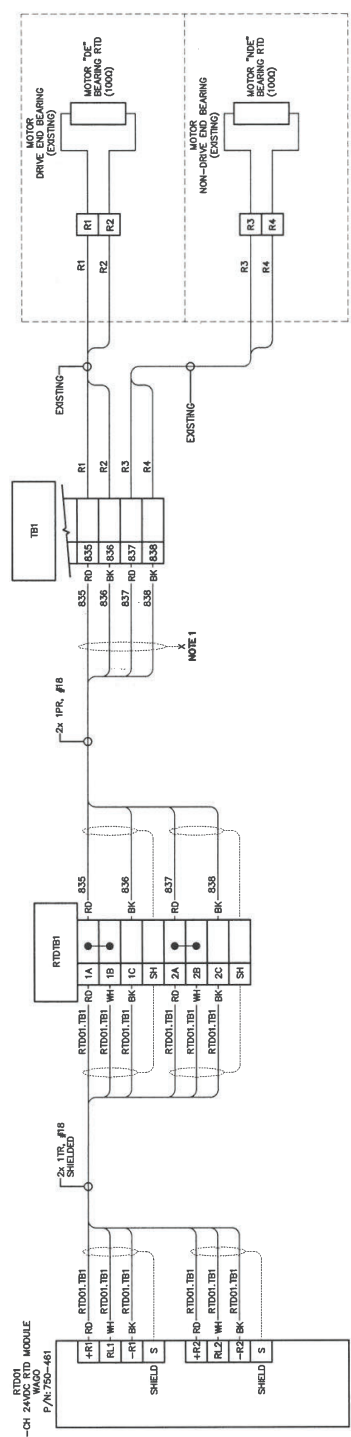
12 PANTHER PLACE
MOUNT PEARL, NL, CANADA A1N 5B1
TEL: 709-334-8888
FAX: 709-334-8818
WWW.AVALONCONTROLS.CA

CLIENT: MARINE INSTITUTE PROJECT: FLUME TANK CONTROLS UPGRADE

TITLE: FLUME TANK CONTROLS STARBOARD PUMP DRIVE CABINET

SCALE: NTS DWG NO. 17844-30-E-JD-Q05 SHEET 1 OF 1 REV A00

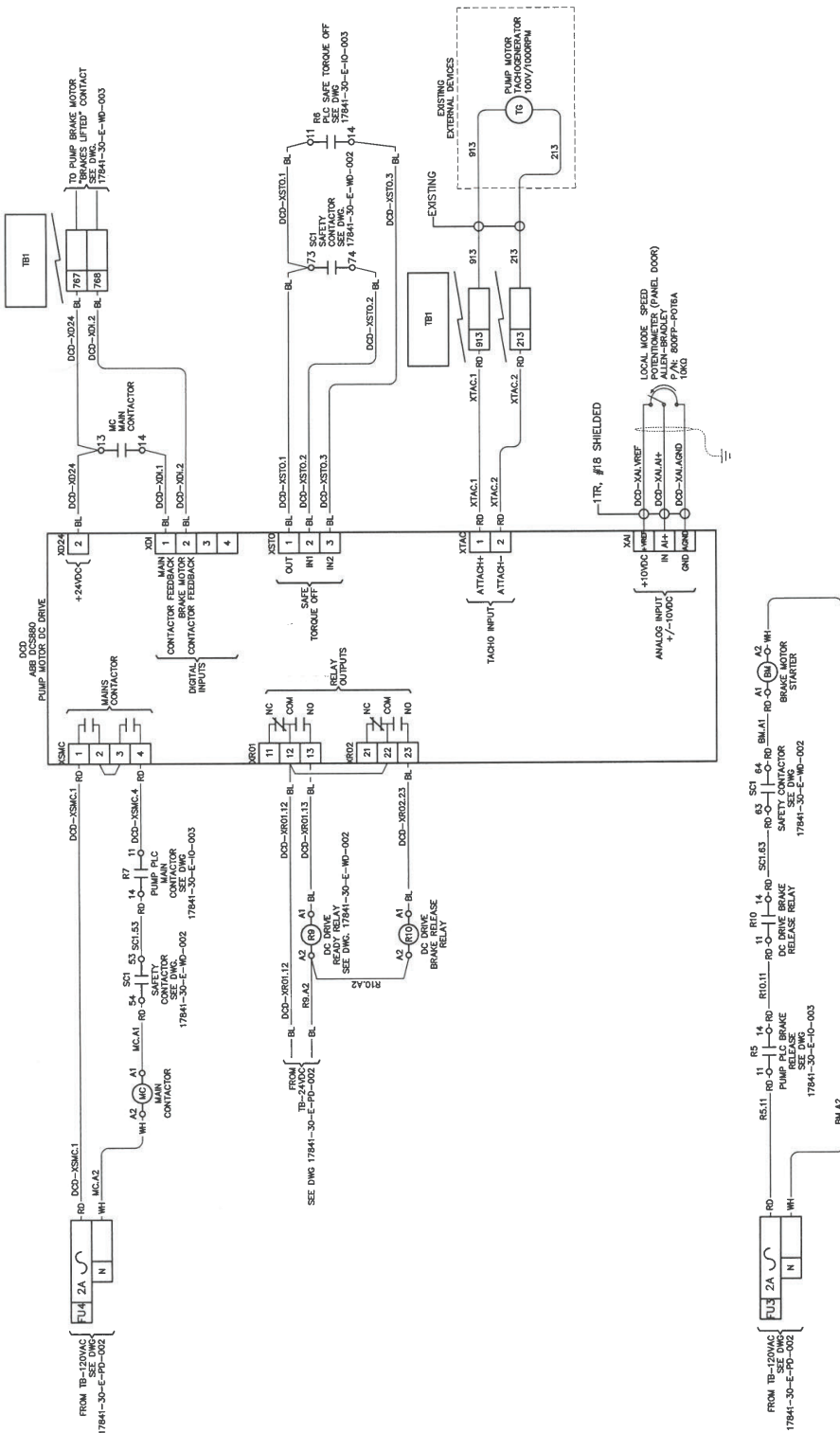
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RTD/TBI
24VDC RTD MODULE
P/N: 750-461

NOTES

1. ALL WIRE #14 UNLESS OTHERWISE NOTED. COLOUR AS SHOWN.



REV	DESCRIPTION	DWG	CHK	APP	DATE
ADD	ISSUED FOR REVIEW	P.W.	W.G.	P.W.	T.L.
					DEC 13, 2024

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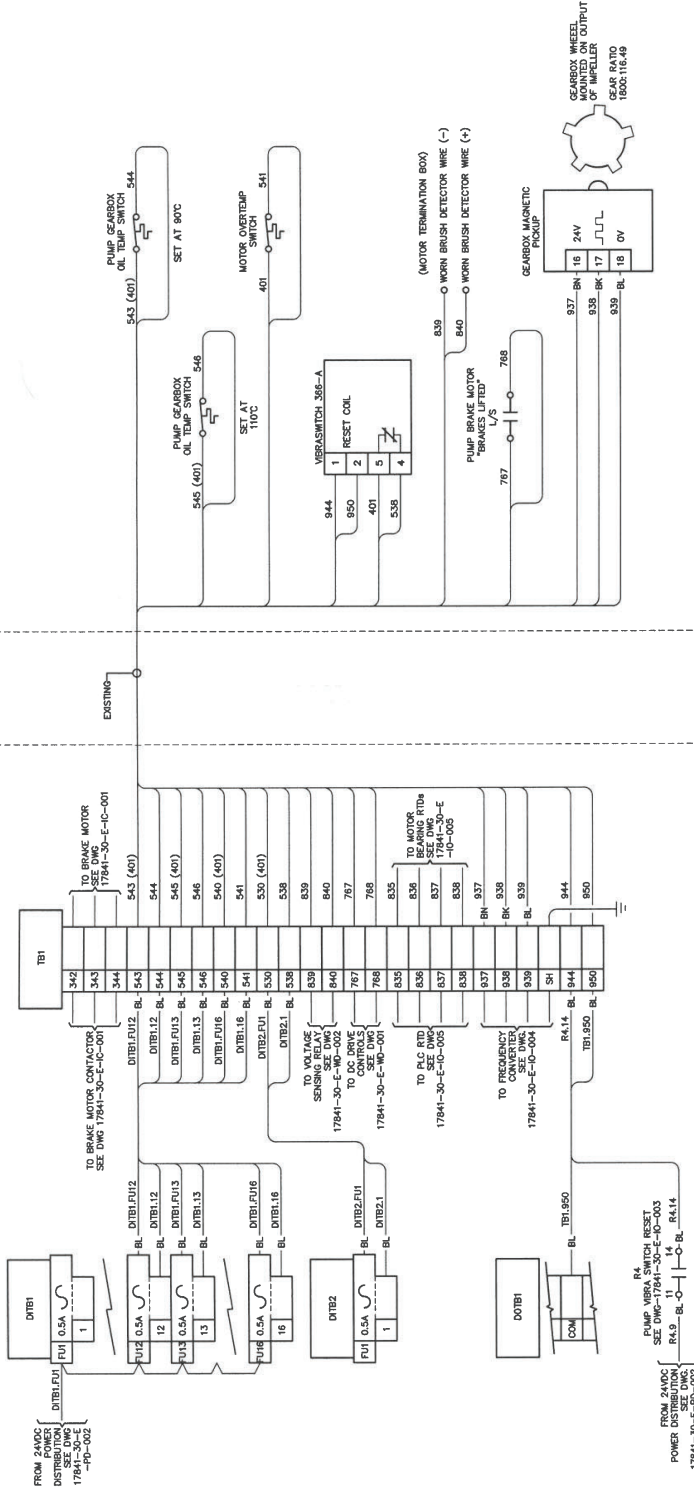
12 PANTHER PLACE
 MOUNT PEARL, NL CANADA A1N 5B1
 TEL: 709-384-5811
 FAX: 709-384-5816
 WWW.AVALONCONTROLS.CA

CUSTOMER: MARINE INSTITUTE
 PROJECT: FLUME TANK CONTROLS UPGRADE
 TITLE: FLUME TANK CONTROLS STANDBY PUMP DRIVE CABINET WIRING DIAGRAM
 SCALE: NTS
 DWG NO.: 17841-30-E-WP-001
 SHEET: 1 OF 1
 REV: 1
 ADD: 1

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EXISTING EXTERNAL FIELD DEVICES

PUMP DC DRIVE CABINET



NOTES

1. ALL WIRING TO BE #18 TYP UNLESS OTHERWISE NOTED.
2. ALL FIELD DEVICES TO BE WIRING TO NEW WIRE NUMBER ADJACENT. E.G. 543 (410) INDICATES A NEW WIRE MARKER OF 543 REPLACING OLD MARKER OF 401.

LEGEND

FUSED/NO-FUSED TERMINAL BLOCK
WEDMULLER
KX517/50
P/N: 6033350000

REVISIONS

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A00			DEC 13, 2024

ENGR. SEAL
10359
TYLER J. LEDREW
SIGNATURE
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CLIENT	MARINE INSTITUTE	PROJECT	FLUME TANK CONTROLS UPGRADE
TITLE	FLUME TANK CONTROLS STAGEBOARD PUMP DRIVE CABINET FIELD WIRING CONNECTION WIRING DIAGRAM		
SCALE	NTS	DWG NO. 17841-30-E-WD-003	SHEET 1 OF 1
			REV A00

NOTES

1. ALL 120VAC CARRYING CONDUCTORS TO BE #14 TEW UNLESS OTHERWISE NOTED.
2. ALL 240VAC CARRYING CONDUCTORS TO BE #10 TEW BLUE UNLESS OTHERWISE NOTED.

LEGEND

RELAY
TYLER LEDREW
240VAC CARRYING CONDUCTORS
P/N: 700-HAZ241-4
W/ 700-HN204
W/ 700-HN157



REVISIONS

REV	DESCRIPTION	DWG	CHK	APP	DATE
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					DEC 13, 2024



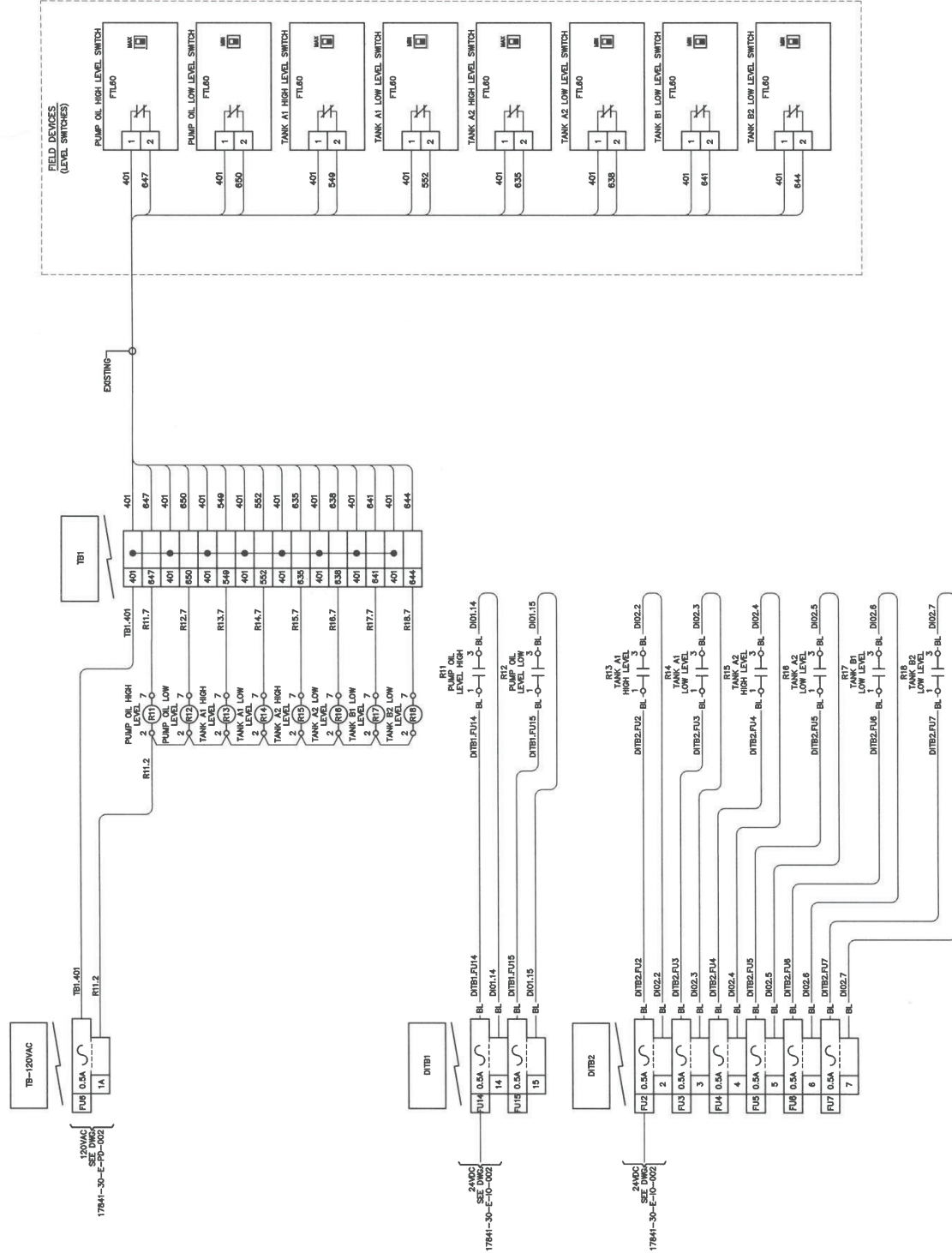
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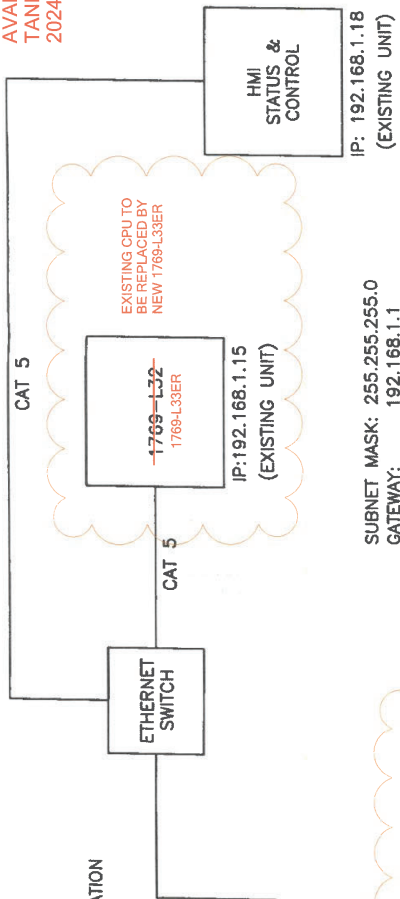
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TITLE	FLUME TANK CONTROLS STAIRBOARD PUMP DRIVE CABINET WIRING DIAGRAM		
SCALE	NTS	DWG NO. 17841-30-E-WD-004	SHEET 1 OF 1
			REV A00

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PLC CABINET NEXT TO CONTROL STATION

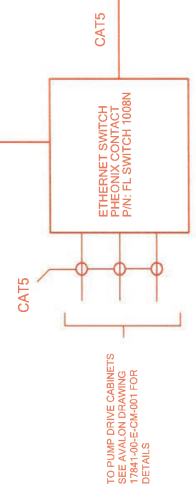
AVOLON CONTROLS REDLINES FLUME TANK CONTROLS UPGRADE DESIGN
2024-12-23



SUBNET MASK: 255.255.255.0
GATEWAY: 192.168.1.1

PLC CABINET IN BASEMENT

FLEX REMOTE I/O



ETHERNET IP	ISO ANALOG INPUT	ISO ANALOG INPUT	ISO ANALOG OUTPUT	RELAY DISCRETE OUTPUT	120V DISCRETE INPUT	120V DISCRETE INPUT
1794-AENT	1794-IF4I	1794-IF4I	1794-OF4I	1794-OW8I	1794-IA8I	1794-IA8I

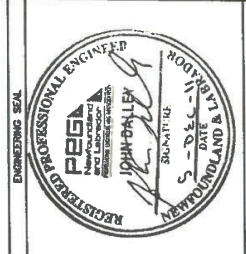
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01	11/02/11	ISSUED FOR TESTING	ME	ME	ME	ME
02	10/10/11	ISSUED FOR CONSTRUCTION	ME	ME	ME	ME
03	09/14/11	ISSUED FOR APPROVAL	ME	ME	ME	ME

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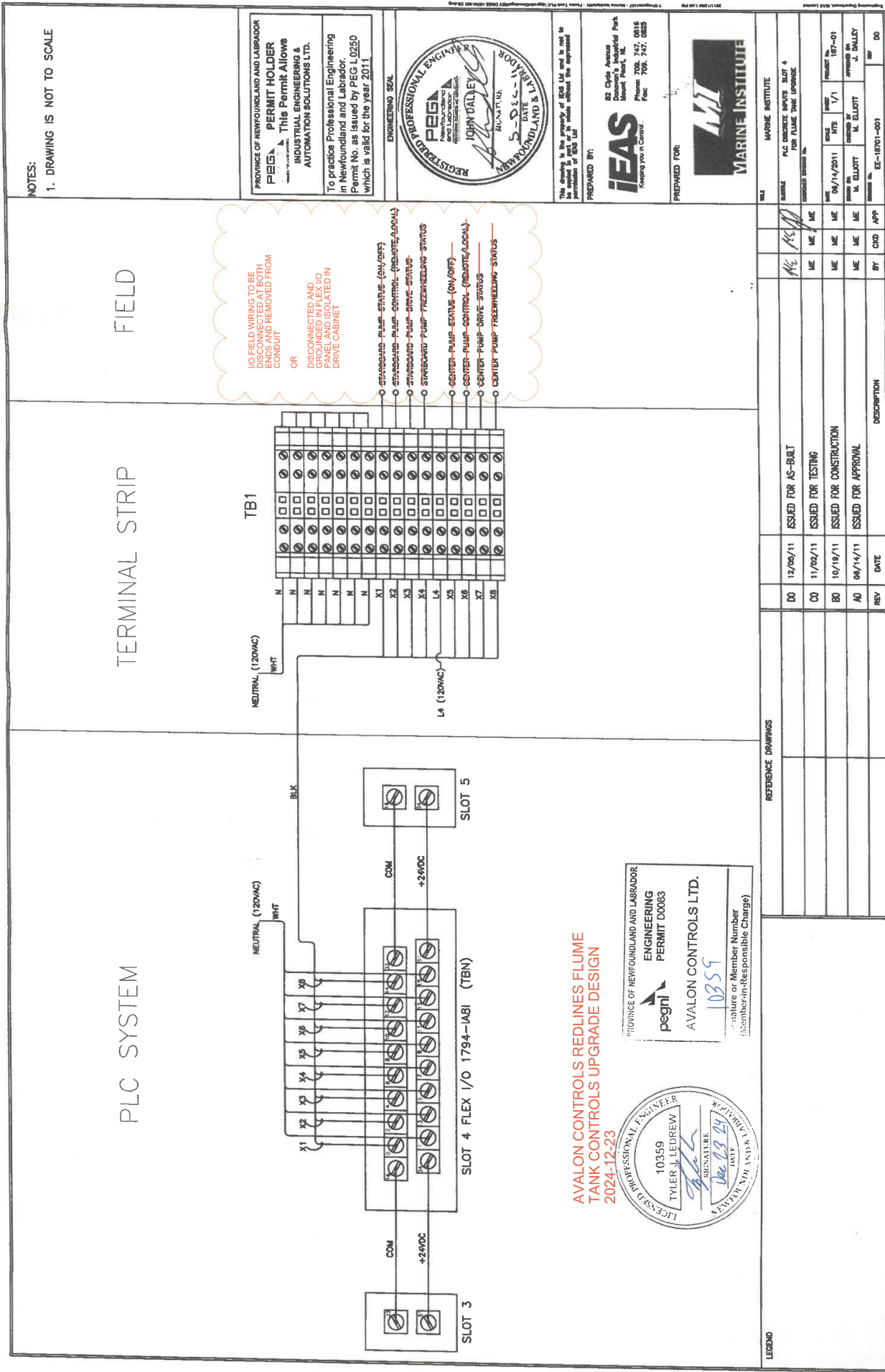
ENGINEERING SEAL
REGISTERED PROFESSIONAL ENGINEER
TYLER J. LEDREW
10359
Dec 13/24
SUNSHINE
5-DECEMBER

PREPARED BY:
IEAS
62 Clyde Avenue
Marine Institute
Phone: 709.747.0818
Fax: 709.747.0825

PREPARED FOR:
MARINE INSTITUTE



MARINE INSTITUTE
PLC MODULE LAYOUT
FOR FLUME TANK UPGRADE
DATE: 04/14/2011
PROJECT NO: 107-01
DRAWN BY: M. J. BULLITT
CHECKED BY: M. J. BULLITT
DESIGNED BY: M. J. BULLITT
REVISION NO: EL-18701-001



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ieas
82 Clyde Avenue
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Phone: 709.747.0316
Fax: 709.747.0325
PREPARED BY:



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10/19/11	ISSUED FOR CONSTRUCTION
08/14/11	ISSUED FOR APPROVAL
REV	DATE

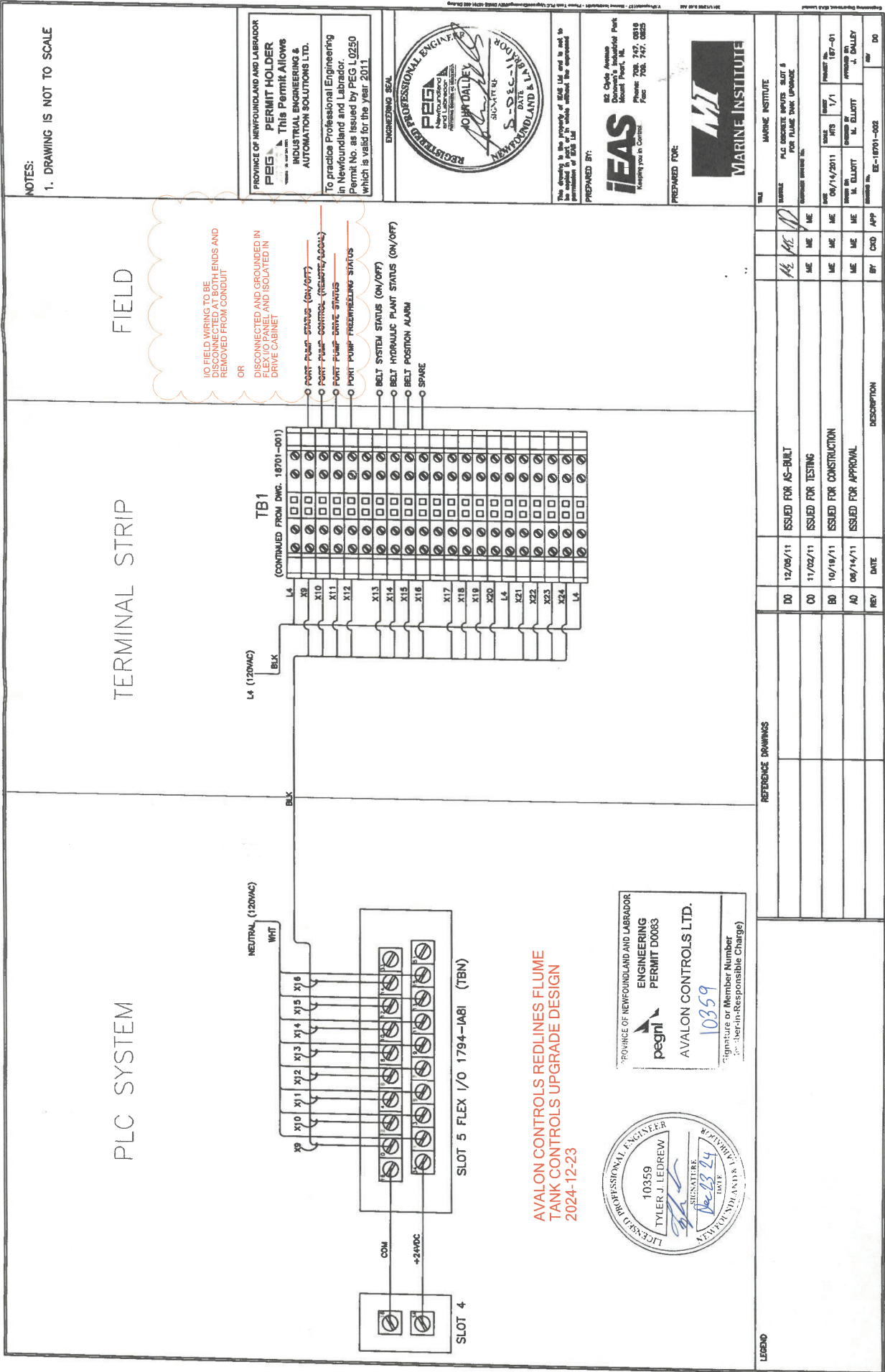
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08/14/11	ISSUED FOR APPROVAL
REV	DATE

AVALON CONTROLS REDLINES FLUME
TANK CONTROLS UPGRADE DESIGN
2024-12-23

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LEGEND



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FIELD

TERMINAL STRIP

PLC SYSTEM

IO FIELD WIRING TO BE DISCONNECTED AND GROUNDING IN FIELD (ON PANEL) AND ISOLATED IN DRIVE CABINET

- PORT PUMP STATUS (ON/OFF)
- PORT PUMP CONTROL (RELAY/ALARM)
- PORT PUMP DRIVE STATUS
- PORT PUMP FREQUENCY STATUS
- BELT SYSTEM STATUS (ON/OFF)
- BELT HYDRAULIC PLANT STATUS (ON/OFF)
- BELT POSITION ALARM
- SPARE

AVALON CONTROLS REDLINES FLUME TANK CONTROLS UPGRADE DESIGN 2024-12-23



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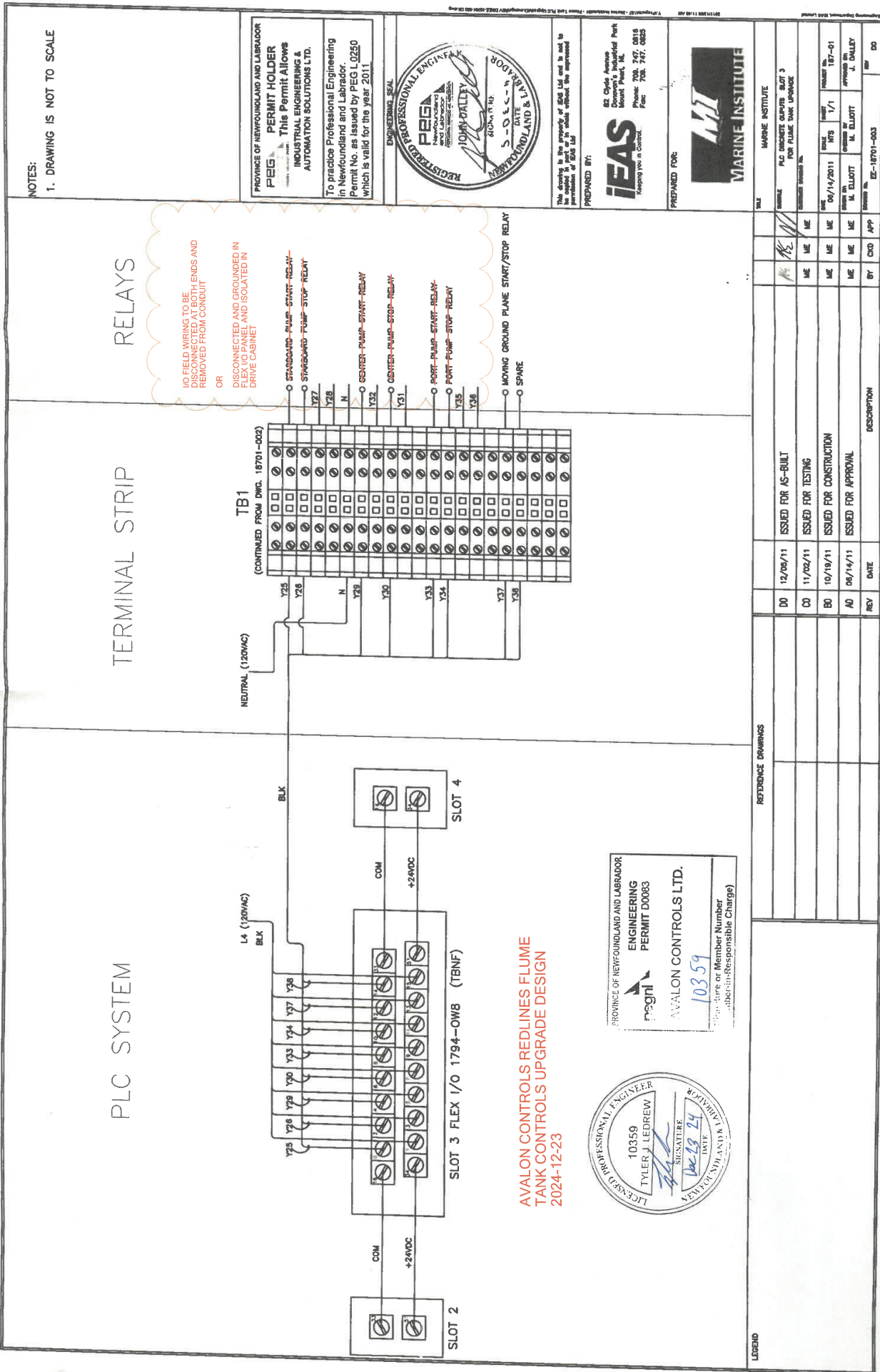
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iEAS
82 Clyde Avenue
Dorchester's Industrial Park
Dorchester, P.E.I. C1A 1A5
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Fax: 709.747.0825



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ieas
EE Clyde Avenue
St. John's, NL A1B 1X6
Phone: 709. 747. 0818
Fax: 709. 747. 0825

PREPARED FOR:



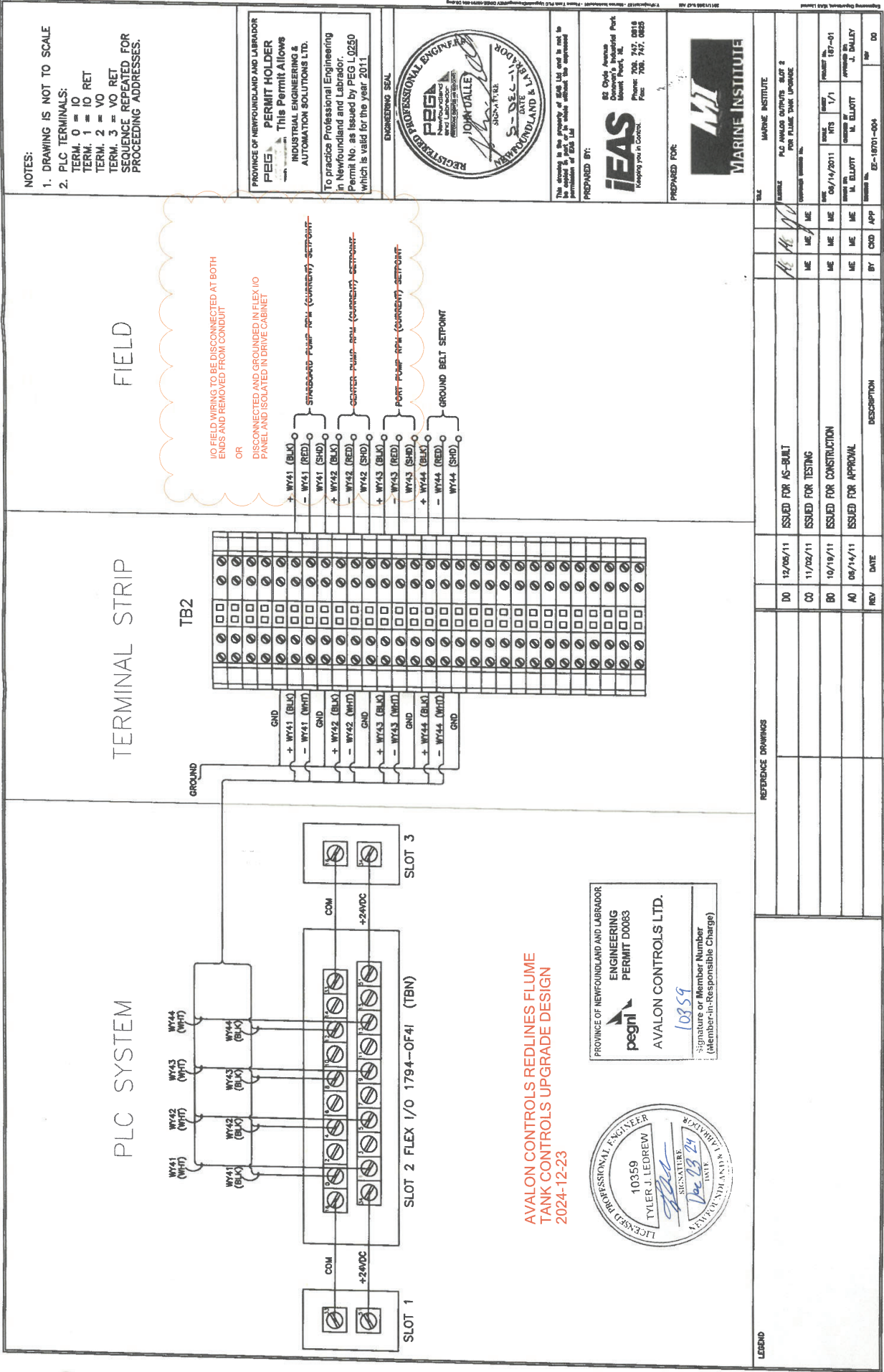
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11/02/11	01	ISSUED FOR TESTING
10/10/11	02	ISSUED FOR CONSTRUCTION
08/14/11	03	ISSUED FOR APPROVAL

DATE	REVISION	DESCRIPTION
12/08/11	00	ISSUED FOR AS-BUILT
11/02/11	01	ISSUED FOR TESTING
10/10/11	02	ISSUED FOR CONSTRUCTION
08/14/11	03	ISSUED FOR APPROVAL

AVALON CONTROLS REDLINES FLUME
TANK CONTROLS UPGRADE DESIGN
2024-12-23



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- 2. PLC TERMINALS:
TERM. 0 = IO
TERM. 1 = IO RET
TERM. 2 = VO
TERM. 3 = VO RET
SEQUENCE REPEATED FOR
PROCEEDING ADDRESSES.

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ieas
82 Clyde Avenue
Corner of Industrial Park
St. John's, NL A1B 1X6
Phone: 709.747.0816
Fax: 709.747.0825



NO.	DATE	REVISION	DESCRIPTION
10	12/05/11		ISSUED FOR AS-BUILT
00	11/02/11		ISSUED FOR TESTING
00	10/19/11		ISSUED FOR CONSTRUCTION
10	08/14/11		ISSUED FOR APPROVAL
REV	DATE		DESCRIPTION

NO.	DATE	REVISION	DESCRIPTION
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00	11/02/11		ISSUED FOR TESTING
00	10/19/11		ISSUED FOR CONSTRUCTION
10	08/14/11		ISSUED FOR APPROVAL
REV	DATE		DESCRIPTION

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AVALON CONTROLS REDLINES FLUME
TANK CONTROLS UPGRADE DESIGN
2024-12-23

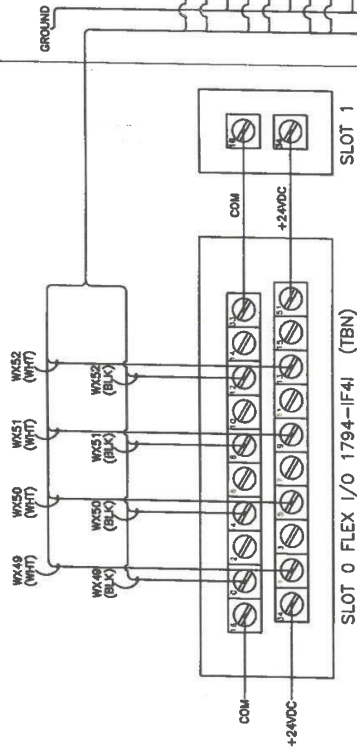
NOTES:

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TERM. 2 = VO RET
TERM. 3 = VO RET
SEQUENCE REPEATED FOR
PROCEEDING ADDRESSES.

PLC SYSTEM

TERMINAL STRIP

FIELD



AVALON CONTROLS REDLINES FLUME
TANK CONTROLS UPGRADE DESIGN
2024-12-23



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REV	DATE	DESCRIPTION	BY	CHK	APP	DO
00	12/05/11	ISSUED FOR AS-BUILT	ME	ME	ME	ME
01	11/02/11	ISSUED FOR TESTING	ME	ME	ME	ME
02	10/19/11	ISSUED FOR CONSTRUCTION	ME	ME	ME	ME
03	08/14/11	ISSUED FOR APPROVAL	ME	ME	ME	ME
04			ME	ME	ME	ME
05			ME	ME	ME	ME
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97			ME	ME	ME	ME
98			ME	ME	ME	ME
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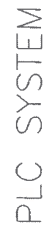
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