



REQUEST FOR PROPOSALS No. 25-015

French Creek Pollution Control Centre ATAD Mixing Upgrade – Motor Control Centre Supply

ISSUED: February 21st, 2025

CLOSING DATE AND TIME:

Submissions must be received on or before:
3:00 PM (15:00 hrs) Local Time on March 20th, 2025

Submissions and Questions are to be directed to:

Chris Mathie, Project Engineer
Regional District of Nanaimo
6300 Hammond Bay Road
Nanaimo, BC V9T 6N2
Phone: 250-390-6561
Email: cmathie@rdn.bc.ca

Questions are requested at least five (5) calendar days before the closing date.

Proposals will not be opened in public.



1. INSTRUCTIONS TO PROPONENTS

1.1 Closing Date/Time/Submission Method

Submissions must be received on or before **3:00 PM (15:00 hrs), Local Time, on March 20th, 2025.**

Submission Method:

By Email: In PDF format with “**25-015 FCPC ATAD Mixing Upgrade – MCC Supply**” as the subject line at this electronic address:

cmathie@rdn.bc.ca

Please note: Maximum email file size limit is 20MB, or less. The RDN will not be liable for any technological delays of submissions. Submissions received in any other manner will not be accepted.

1.2 Amendment to Proposals

Proposals may be amended in writing and sent via email to the RDN contact person identified on the cover page on or before the closing. Such amendments should be signed by the authorized signatory of the Proponent.

1.3 Addenda

If the RDN determines that an amendment is required to this RFP, the RDN will post the Addendum on the RDN (www.rdn.bc.ca/current-bid-opportunities) and BC Bid (www.bcbid.gov.bc.ca/) websites. Each addendum will be incorporated into and become part of the RFP. No amendment of any kind to the RFP is effective unless it is contained in a written addendum issued by the RDN. It is the sole responsibility of the Proponent to check and ensure all amendments are included prior to submitting their final Proposal submission.

1.4 Withdrawal of Proposals

The Proponent may withdraw their Proposal at any time by submitting a written withdrawal email to the RDN contact person identified on the cover page on or before the closing.

1.5 Unsuccessful Vendors

The Regional District will offer debriefings to unsuccessful Proponents, on request, at a mutually agreeable time.



2. INTRODUCTION

The purpose of this Request for Proposal is to solicit submissions from qualified firms to provide one (1) Motor Control Centre (MCC) equipment package to support the RDN's French Creek Pollution Control Centre (FCPCC) ATAD Mixing Upgrade project.

The MCC package will include four (4) 80 A retrofit breakers, four (4) 15 hp retrofit MCC mounted variable speed drives to support mixers, four (4) 40 hp standalone variable speed drive cabinets to support blowers, and all MCC hardware to facilitate the retrofit.

Installation is anticipated for Summer of 2025, firms are to provide lead times with submission. All products are to be supplied per Incoterms 2020 Delivery Duty Paid (DDP), French Creek Pollution Control Centre, 957 Lee Road, Parksville, BC.

3. BACKGROUND

The Regional District of Nanaimo (RDN) owns and operates the French Creek Pollution Control Centre (FCPCC) wastewater treatment facility, located at 957 Lee Road, Parksville, BC. The facility was constructed in 1978 and has seen numerous upgrades during its lifetime.

The solids treatment process includes an Autothermal Thermophilic Aerobic Digester (ATAD). It is planned to upgrade the mixing system of the ATAD to four (4) hyperboloid mixer/aerators that require air supply to an aeration grid on the floor of the tank beneath each mixer. Three (3) of the blowers will supply air continuously to the four (4) tanks with the fourth blower on standby. The ATAD system does not produce biogas.

Existing SquareD Model 4C MCC Serial #5551237-B will be retrofitted to accommodate the new process equipment noted above.

4. SCOPE OF SERVICES

The scope shall include but not necessarily be limited to the engineering, supply, fabrication, and shipping of the following:

- Four (4) 80 A 600 V SquareD Model 4C MCC Breaker buckets (Part# 8998BW451)
- Three (3) 12" SquareD Model 4C MCC 12" blank Filler Plates (Part# 8998K402)
- Supply or Retrofit of four (4) 15 HP 600 V Custom Variable Frequency Drive (VFD) MCC buckets compatible with SquareD Model 4C MCC as per attached specifications and sample schematics.
 - Four (4) existing 20HP VFD buckets are available for removal and retrofit, however preference is for new MCC wrappers, hardware and doors are provided as part of this supply.
 - Bucket Tag Information: Cl. 8998, TY. KX408, Ph. 3, V. 600, A. 60, No. 5551237-B. A799910602-02
- Four (4) 40 HP 600 V Variable Frequency Drive Cabinets as per attached specifications and sample schematics.
- Onsite operator and maintenance staff training (1 x 8hr day total).



- Vendor standard factory acceptance testing of equipment prior to shipment (1 x 8hr day maximum).
- Onsite start-up and commissioning support for electrical equipment (1 x 8hr day total).
- Operation and maintenance manual in electronic (searchable pdf) format, clearly marked with equipment number (1 total).
- Shop drawings (CAD and PDF)

The following scope is not included:

- Process controls, instrumentation or PLC integration.
- Installation.
- Mechanical/Process Equipment Commissioning.

5. DELIVERABLES AND OUTCOMES

The desired outcome of this RFP is to receive Motor Control Centre components that are reliable for continuous use, low maintenance, and of a proven design.

The deliverables shall include but not necessarily be limited to the engineering, supply and shipping of the MCC retrofit package and VFD cabinets meeting all requirements noted above and in provided technical specifications in **Appendix A** along with onsite training, startup and commissioning support and a comprehensive operation and maintenance manual.

6. REFERENCE/BACKGROUND INFORMATION

- **Appendix A** – Electrical Technical Specifications
- **Appendix B** – Project Drawings
- **Appendix C** – Sample Contract

7. PROPOSAL SUBMISSION AND EVALUATION

To assist in receiving similar and relevant information, and to ensure your Proposal receives fair evaluation, the RDN asks Proponents to provide the following information.

Submission Requirements and Evaluation Criteria	Points
Firm price, in Canadian dollars (CAD), for design and supply of MCC components and VFD cabinets specified herein per Incoterms 2020 Delivery Duty Paid (DDP), French Creek Pollution Control Centre, Parksville, BC.	40
List daily rates to provide onsite representation for training, startup and commissioning services separately from the equipment supply price. Rates to be stated as 1) Travel day and 2) Onsite day and are to include all associated expenses.	
Preliminary drawings. Including MCC elevation and sample VFD schematics.	20
Three (3) recent project references with contact information.	10
Indicate shipping weight and offloading requirements.	5
Preliminary equipment cutsheets detailing major components.	5



REGIONAL
DISTRICT
OF NANAIMO

Proposed project and drawing delivery schedule based on date of award.	10
Quality Management process, any associated certifications, and details of equipment Warranty.	5
A statement of your firm’s approach to advancing equity and sustainability in corporate operations and service provisions, including any certifications in this regard.	5
TOTAL	100

Proposals will be evaluated on the following basis 60% Technical, 40% Financial, per the above table.

The lowest price proposal will receive full marks for the financial score. Other proposals will receive reduced scores based on the proportion higher than the lowest price. i.e. Score = Min Cost/Cost x Fee Points.

Proposals submitted should be in enough detail to allow the RDN to determine the Proponent’s qualifications and capabilities from the documents received. The selection committee, formed at the RDN’s sole discretion, will score the Proposals in accordance with the criteria provided.

The RDN may evaluate proposals on a comparative basis by comparing one proponent’s proposal to another proponent’s proposal. The RDN reserves the right to not complete a detailed evaluation if the RDN concludes the proposal is materially incomplete, irregular or contains any financial or commercial terms that are unacceptable to the RDN.

The selection committee may proceed with an award recommendation or the RDN may proceed to negotiate with the highest evaluated proponent with the intent of developing an agreement. If the parties after having bargained in good faith are unable to conclude a formal agreement, the RDN and the Proponent will be released without penalty or further obligations other than any surviving obligations regarding confidentiality and the RDN may, at its discretion, contact the Proponent of the next best rated Proposal and attempt to conclude a formal agreement with it, and so on until a contract is concluded or the proposal process is cancelled.

The RDN reserves the right to award the assignment in whole or in part or to add or delete any portion of the work. Throughout the evaluation process, the evaluation committee may seek additional clarification on any aspect of the Proposal to verify or clarify the information provided and conduct any background investigation and/or seek any additional information it considers necessary.

8. PROPOSED PURCHASE CONTRACT

The RDN’s preferred form of Contract is attached herein (see **Appendix C**). Proponents should carefully review this form of Contract. Should any vendors request that RDN consider revisions to the form of Contract, Proponents should include any clauses of concern in their proposal submission and suggest replacement language.



9. GENERAL CONDITIONS

9.1 No Contract

By submitting a Request for Proposal and participating in the process as outlined in this RFP, proponents expressly agree that no contract, including "Contract A" of any kind is formed until a fully executed contract is in place.

9.2 Privilege Clause

The lowest or any proposal may not necessarily be accepted.

9.3 Acceptance and Rejection of Submissions

This RFP does not commit the RDN, in any way to select a preferred Proponent, or to proceed to negotiate a contract, or to award any contract. The RDN reserves the right in its sole discretion cancel this RFP, up until award, for any reason whatsoever.

The RDN may accept or waive a minor and inconsequential irregularity, or where applicable to do so, the RDN may, as a condition of acceptance of the Submission, request a Proponent to correct a minor or inconsequential irregularity with no change in the Submission.

9.4 Conflict of Interest

Proponents shall disclose in their Proposals any actual or potential Conflict of Interest and existing business relationships it may have with the RDN, its elected officials, appointed officials or employees.

9.5 Solicitation of Board Members and RDN Staff

Proponents and their agents will not contact any member of the RDN Board or RDN Staff with respect to this RFP, other than the RDN Contact named in this document.

9.6 Litigation Clause

The RDN may, in its absolute discretion, reject a Proposal submitted by Proponent, if the Proponent, or any officer or director of the Proponent is or has been engaged either directly or indirectly through another corporation in legal action against the RDN, its elected or appointed officers and employees in relation to:

- (a) any other contract for works or services; or
- (b) any matter arising from the RDN's exercise of its powers, duties, or functions under the Local Government Act, Community Charter or another enactment within five years of the date of this Call for Proposals.

In determining whether to reject a Proposal under this clause, the RDN will consider whether the litigation is likely to affect the Proponent's ability to work with the RDN, its consultants and representatives and whether the RDN's experience with the Proponent indicates that the RDN is likely to incur increased staff and legal costs in the administration of this Contract if it is awarded to the Proponent.



9.7 Exclusion of Liability

Proponents are solely responsible for their own expenses in preparing and submitting a Proposal and for any meetings, negotiations, or discussions with the RDN. The RDN will not be liable to any Proponent for any claims, whether for costs, expense, losses or damages, or loss of anticipated profits, or for any other matter whatsoever, incurred by the Proponent in preparing and submitting a Proposal, or participating in negotiations for a Contract, or other activity related to or arising out of this RFP. Except as expressly and specifically permitted in these Instructions to Proponents, no Proponent shall have any claim for compensation of any kind whatsoever, because of participating in this RFP, and by submitting a Proposal each Proponent shall be deemed to have agreed that it has no claim.

9.8 Ownership of Proposals

All Proposals, including attachments and any documentation, submitted to and accepted by the RDN in response to this RFP become the property of the RDN.


9.9 Freedom of Information

All submissions will be held in confidence by the RDN. The RDN is bound by the Freedom of Information and Protection of Privacy Act (British Columbia) and all documents submitted to the RDN will be subject to provisions of this legislation. The successful vendor and value of the award is routinely released.



Appendix A

Electrical Technical Specifications

VFD Specification		 REGIONAL DISTRICT OF NANAIMO	
Project	23032932		
Document	2302932-1648-SPEC-001	Project Name	FCPCC ATAD Mixing
Document Revision	A	Client Project Number	
Low Voltage Variable Frequency Drive Specification			

REVISION HISTORY

Revision	Status	Date	Revised By	Checked By	Approved By	Description of Revision
A	IFR	06/11/24	NBF	SD		Issued for Review and Comment
Status: PRE - Preliminary IFR - Issued for Review and Comment IFA - Issued for Approval IFQ - Issued for Quotation IFP - Issued for Procurement IFC - Issued for Construction AB - As Built						
Copyright © ALLNORTH. The information contained in this document is the exclusive property of ALLNORTH and shall not be reproduced, or disclosed, or communicated to any unauthorized person, or used in any other unauthorized way whatsoever without the express written permission of ALLNORTH. The information contained herein is provided solely for the intended purpose of facilitating construction, maintenance, operation, modification, or repair of subject facility and not for any other purpose, including the duplication thereof, in whole or in part.						



TABLE OF CONTENTS

1	Scope	3
1.1	General	3
2	Definitions, acronyms and terms	3
2.1	Overview	3
2.2	Language Use	3
2.3	Terms	3
2.4	Acronyms.....	4
3	applicable codes, regulations, specifications and standards	4
3.1	Regulations, Codes and Standards	4
3.2	Government Regulations	5
3.3	Conflict between Specifications, Codes, and Standards.....	5
3.4	Deviations and/or Variances.....	5
3.5	Quality Assurance (QA) and Quality Control (QC)	5
4	Design and construction details.....	6
4.1	General	6
4.2	Structure and Components.....	6
4.3	Control Functions, Interfaces and Alarms	8
4.4	Performance Requirements	9
4.5	Control Wiring and Terminal Blocks	9
4.6	Communications	10
4.7	Reliability And Maintainability	10
4.8	Nameplates	10
4.9	Accessories/Special Tools/Spare Parts	11
4.10	Painting	11
5	testing and inspection.....	11
5.1	General	11
5.2	Witness Testing.....	12
6	Shipping an preservation.....	12
6.1	Shipping.....	12
6.2	Preservation.....	12
7	Documents and submittals	13
7.1	Vendor Data	13
8	Guarantee.....	13



1 SCOPE

1.1 General

- 1.1.1 This specification, together with the attached single line diagram, schematic(s), and Datasheet(s), cover the minimum requirements for the material, design, manufacture, testing, delivery to site and commissioning of low voltage variable frequency drives (VFD).
- 1.1.2 This specification applies to all new low voltage VFDs used for the control of low voltage, inverter duty, squirrel-cage AC induction motors, with ratings up to 225kW (300HP) and supply voltage up to 600V.
- 1.1.3 All additions to, or modifications of, existing electrical installations in existing facilities shall also account for and be guided by previous design to maintain consistency.

2 DEFINITIONS, ACRONUMS AND TERMS

2.1 Overview

- 2.1.1 The language use and terms below have been defined to ensure correct interpretation where such terms (or their derivatives) appear throughout this specification.

2.2 Language Use

- 2.2.1 "**Must**" - is a mandatory requirement which is required to meet legislative requirements.
- 2.2.2 "**Shall**" - is an absolute requirement, which is to be followed strictly in order to conform to the standard.
- 2.2.3 "**Should**" - is a recommendation. Alternative solutions that have the same functionality and quality are acceptable.
- 2.2.4 "**May**" - indicates a course of action that is permissible within the limits of the standard permission.
- 2.2.5 "**Can**" - is conditional and indicates a possibility open to the user of the specification.

2.3 Terms

- 2.3.1 In this specification, unless the context states otherwise:
- 2.3.2 "**Owner**" - Shall mean the Owner of the facility where the work is performed.
- 2.3.3 "**Contractor**" - Shall mean the party performing site electrical installation or construction activities at the location of the facility.
- 2.3.4 "**Engineering Consultant**" - Shall mean the organization/person (Allnorth) that is designing and specifying a project on behalf of the Owner.
- 2.3.5 "**Vendor**" - Shall mean the party or parties engineering, designing, specifying and supplying packaged equipment.
- 2.3.6 "**Professional Engineer**" - Shall mean a professional engineer licensed to practice in the jurisdiction appropriate to the location of the facility being designed.



2.4 Acronyms

- CPT Control Power Transformer
- VFD Variable Frequency Drive
- CT Current Transformer
- LED/LCD Light Emitting Diode/Liquid Crystal Display
- MCC Motor Control Centre
- MTBF Mean Time Between Failures
- MTTR Mean Time To Repair
- RMS Root Mean Square
- RTD Resistance Temperature Detector
- THD Total Harmonic Distortion
- TIF Telephone Influence Factor

3 APPLICABLE CODES, REGULATIONS, SPECIFICATIONS AND STANDARDS

3.1 Regulations, Codes and Standards

3.1.1 All codes and standards referred to herein shall be the issue in effect on the date of the inquiry.

3.1.2 The following specific standards are referred to in this document and shall apply to all low voltage variable frequency drives:

- API 540 Electrical Installations in Petroleum Processing Plants.
- ANSI Standard C37.90.1 Guide for Surge Withstand Capability (SWC) Tests. ANSI Z535.4 Product Safety Signs and Labels.
- CSA C22.2 No. 14 Industrial Control Equipment.
- CSA Z321 Signs and Symbols in the Workplace.
- CSA C22.1 Canadian Electric Code Part I.
- CAN3-C13-M83 Instrument Transformers.
- CSA Z462 Workplace Electrical Safety.
- IEEE 519 Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems.
- IEEE C57.13 Standard Requirements for Instrument Transformers.
- IEEE C57.13.3 Grounding of Instrument Transformer Secondary Circuits and Cases.
- IEEE C57.16 Standard Requirements, Terminology, and Test Code for Dry-Type Air-Core Series-Connected Reactors.
- IEEE C57.18.10 Semiconductor Power Rectifier Transformers.
- IEEE 1584 Performing Arc-Flash Hazard Calculations.
- NFPA 70E Electrical Safety in the Workplace.
- NEMA ICS 1 General Standards for Industrial Control Systems.
- NEMA ICS 2 Industrial Control and Systems Controllers, Contactors and Overload Relays Rated 600V.
- NEMA ICS 4 Industrial Control and Systems: Terminal Blocks.
- NEMA ICS 7 Adjustable Speed Drives.

3.1.3 Electrical products and equipment must be certified for use in Canada by an accredited certification body, in accordance with the certification body's terms of accreditation with the Standards Council of Canada and shall bear evidence of this in the form of markings or labels authorized by that certification body and displayed in a conspicuous place on the equipment.

3.1.4 Equipment that is not certified by one of the accredited certification bodies shall require special inspection and approval by one of the accredited inspection bodies in accordance with that



body's terms of accreditation with the Standards Council of Canada and shall bear evidence of this in the form of labels authorized by that inspection body and displayed in a conspicuous place on the equipment.

3.2 Government Regulations

- 3.2.1 Appropriate regional or national standards applicable to the specific location shall be used with this specification.
- 3.2.2 Where compliance with any code or standard specified by an authority having jurisdiction is mandatory, the prescribed regulation shall be met.
- 3.2.3 All electrical work shall be specified on drawings and submitted for a CSA compliance review with the appointed electrical inspection agency in British Columbia or the field safety representative in British Columbia.

3.3 Conflict between Specifications, Codes, and Standards

- 3.3.1 Where a discrepancy occurs between this specification and any specification, regulation, code, or standard that has been specified for a particular service, or item of equipment, then the OWNER shall be consulted and a ruling in writing shall be obtained before any work is started.
- 3.3.2 Where regulatory codes or regulations conflict with this specification, the more technically stringent specification shall govern.

3.4 Deviations and/or Variances

- 3.4.1 Requests for exceptions and deviations arising during bid preparation shall be submitted at the time of bid and shall be resolved prior to proceeding with further consideration of the bid or award of the contract.
- 3.4.2 After award, any requests for exceptions and deviations arising during execution of the work shall be submitted back for Owner's consideration prior to proceeding with the affected work.
- 3.4.3 Site construction, operations, and maintenance requests for deviations shall follow Owner's existing Policies and Procedures.
- 3.4.4 Typical deviation requests requiring approval are items such as, but not limited to:
- specifications or design
 - quality plan
 - control logic or philosophy
 - approved drawings
 - drawings issued for construction
 - specified material properties
 - defined installation, operation, or maintenance practices or procedures

3.5 Quality Assurance (QA) and Quality Control (QC)

- 3.5.1 Various responsibilities exist to ensure that QA and QC in Owner's standards, for products and services, shall be met. This shall include, but not be limited to, all Vendors (manufacturers, fabricators, contractors, sub-contractors, laboratories, and distributors).
- 3.5.2 The Vendor shall be responsible for the following:
- providing quality products and/or services that meet Owner's requirements
 - submitting, upon request, or having available, to Owner, a copy of all approved QC manuals, procedures, test reports, permits, certificates (including origin of materials), and any other data that is pertinent to the products or services
 - notifying sub-vendors of the Owner inspection and testing requirements (additionally, the



- Vendor shall notify Owner in the event that a sub-vendor is utilized)
- providing sufficient advance notice to Owner before conducting any inspection or test that Owner has specified to be witnessed or observed
 - supplying equipment for the specified inspections and tests

3.5.3 The Owner or its representative is responsible for the following:

- Evaluating technical data, performing inspections, and witnessing tests, as deemed necessary. Owner shall establish and coordinate inspection hold points with the Vendor. Accessibility to all Vendors, fabrication shops, manufacturing facilities and test facilities, shall be mandatory at a frequency determined by Owner in consultation with the Vendor.
- Owner's acceptance of the results or its option not to carry out this examination does not relieve the Vendors from their responsibilities and liabilities with respect to defective materials and workmanship.

4 DESIGN AND CONSTRUCTION DETAILS

4.1 General

- 4.1.1 The VFD shall be designed for the voltages specified on the Datasheet. They shall be suitable for accelerating and controlling the motor and driven loads specified, and shall be designed for continuous operation for the specified application.
- 4.1.2 The VFD shall include all components required to form a complete system including, but not limited to, VFD Controller, harmonic filter, power factor correction, input isolation, VFD convertor, DC link, inverter, dV/dt filter.
- 4.1.3 The VFD shall be designed to be safe, economical, reliable and maintainable.
- 4.1.4 All components and materials shall be new and undamaged, and shall be of the latest field proven design and in current production. Obsolete components or those scheduled for discontinuation shall not be used.
- 4.1.5 The VFD, including all materials of construction shall be suitable for the operating environment to which they are exposed, including resistance to atmospheric contamination from specific chemicals, gases and dusts where specified in the Datasheet.
- 4.1.6 In addition to the base proposal, Vendor is encouraged to submit alternatives, which would enhance the safety, reliability or maintainability of the equipment.
- 4.1.7 Control voltage may be 120VAC or 24VDC derived from an onboard Control Power Transformer (CPT), or supplied from an external source as specified in the Datasheet. An isolation device shall be provided to isolate the VFD from the source of external control power.
- 4.1.8 In the event that Owner intends to use a non-inverter duty motor, as indicated on the Datasheet, the VFD output shall enable the use of a non-inverter duty AC motor at rated service factor without requiring any special phase to phase or ground wall insulation, additional temperature monitoring, de-rating or reduction in life expectancy.
- 4.1.9 The VFD shall not induce shaft currents requiring a second insulated bearing or ground brushes.
- 4.1.10 The Vendor shall coordinate the VFD design with the motor design to meet the requirements of this specification, and to meet the hazardous location requirements when required.

4.2 Structure and Components

- 4.2.1 Unless otherwise specified on the Datasheet, the VFD will be installed indoors in a heated and ventilated building (by others) in an unclassified area, with an ambient temperature range of



- 10°C to 40°C.
- 4.2.2 Each VFD shall be mounted in a separate enclosure.
- 4.2.3 Where practical, associated components such as input and/or output filters or reactors, shall be located within the same cubicle or enclosure as the drive, or in an adjacent cubicle. The Vendor shall indicate where any such components require to be mounted separately.
- 4.2.4 The Vendor shall provide drawings to show the minimum spacing required around the VFD enclosure to maintain proper ventilation and cooling for the applicable configuration.
- 4.2.5 At the time of proposal the Vendor shall provide heat dissipation information for operation of the VFD at 100% rated output.
- 4.2.6 VFD enclosures shall be NEMA Type 1 unless otherwise specified. Enclosures shall be ventilated, with air filter(s), and be rigidly constructed. Enclosure doors shall be hinged with provisions for padlocking.
- 4.2.7 VFD enclosures shall be designed to ensure adequate cooling is present at 100% rated output and the maximum expected ambient temperature. The Vendor shall provide heat rejection and ventilation calculations to confirm this.
- 4.2.8 The VFD shall have a padlockable isolating device to facilitate power isolation. Where this device is included inside the VFD enclosure, it shall be mechanically interlocked to prevent opening of the enclosure door unless it is in the 'open' position. Provisions shall be included to allow the interlock to be defeated.
- 4.2.9 VFD's shall be designed for ready access to all components and terminations from the front of the MCC or VFD enclosure only, without requiring removal or disassembly of other VFD components. This also includes for maintenance and inspection of bus splices and/or cable connections, provisions for infrared thermography, and access to cooling system components.
- 4.2.10 Power and control field cables shall enter from the top of the VFD enclosure. Removable undrilled gland plates shall be provided at the cable entry locations.
- 4.2.11 Power cable termination assemblies shall be designed for easy access and termination of line and load cables of the size, type and quantity as specified on the Datasheet.
- 4.2.12 Dust filtering is required on all enclosures. Removable dust filter cartridges shall be incorporated on the outside of each enclosure to facilitate filter renewal without removing the equipment from service.
- 4.2.13 VFD's shall be sized to accommodate the continuous current ratings and shall be braced for the available fault level at the MCC bus or as specified on the Datasheet.
- 4.2.14 Power and ground buses shall be tin-plated copper. Lugs shall be provided for power (line and load) cables as specified on the Datasheet, and for the connection of ground cables (#4 AWG to #2 AWG) to the ground bus.
- 4.2.15 The ground bus shall be continuous throughout the enclosure.
- 4.2.16 Input filters and reactors shall be provided when needed to meet the requirements of this specification and or the Datasheet.
- 4.2.17 Output line reactors, filters or other equipment shall be provided as required to ensure that the motor and cable insulation systems are suitable for reliable operation, and to comply with provincial, federal and local utility EMC emissions requirements.
- 4.2.18 All capacitors in the DC bus link and in the output filter shall be equipped with discharge resistors to achieve a safe voltage level within approximately one minute after removal of external power.



- 4.2.19 When specified in the Datasheet, a bypass contactor shall be provided to bypass the VFD and connect the motor to the incoming power supply. Where the bypass is specified as an automatic bypass, then the motor shall be ramped up to speed by the VFD and automatically transferred to incoming power supply. Where the bypass is specified as manual or maintenance bypass, then the motor running on VFD shall be shut down and restarted on bypass, or vice versa. Interlocks shall be provided to prevent the VFD and the bypass from simultaneously energizing the motor.
- 4.2.20 Lifting lugs shall be provided on enclosures and other components as appropriate to facilitate safe handling during installation.

4.3 Control Functions, Interfaces and Alarms

- 4.3.1 Each drive shall be equipped with a front mounted operator control panel (HMI) consisting at a minimum of a back-lit alphanumeric display and soft keys for Run/Stop, Local/Remote, Forward/Reverse, Increase/Decrease, Reset and for local programming. Messages displayed shall all be in plain English words.
- 4.3.2 It shall be possible to control and operate the drive and view its status without opening any covers or doors.
- 4.3.3 All programmed settings and configurations shall be stored in non-volatile memory so that they can be recalled in the event of a power loss.
- 4.3.4 Alarm and trip history shall be retained in non-volatile memory even with all power turned off, to be available for diagnostics and troubleshooting upon restoration of power.
- 4.3.5 VFD shall include a diagnostic system to monitor all the alarms and shutdown functions, displaying the status of each function on the front display. Alarms shall be latched type with first out indication.
- 4.3.6 Password protection shall be provided for all programming.
- 4.3.7 Transfer between Remote and Local/Manual control shall be bumpless.
- 4.3.8 VFD's shall have adjustable minimum/maximum speed and/or torque limits, preset speed settings, critical speed lockout settings and independently adjustable acceleration and deceleration ramps.
- 4.3.9 VFD's shall have at least one 4-20 mA input and one 4-20 mA output, the assigned functions to which shall be selectable or programmable.
- 4.3.10 VFD's shall provide discrete status outputs indicating ready, running, alarm and trip. Additional Input and Output Signals are required as specified on the Datasheet and schematic drawings.
- 4.3.11 The VFD shall incorporate self-protection against internal faults, overloads, load regeneration, over-temperatures, under voltage, unbalanced voltages, power loss, open or short-circuited load circuit, ground fault protection, etc.
- 4.3.12 When specified in the Datasheet, the VFD shall be able to accept tachometer/encoder input feedback.
- 4.3.13 When specified in the Datasheet, the drive shall be capable of monitoring thermistor temperature sensors in the motor windings. If required, an appropriate interface relay shall be installed in the drive and powered from the supplied control power.
- 4.3.14 The drive shall provide a warning signal before the temperature limit of the drive components or motor is reached.
- 4.3.15 A local communications port shall be provided to display sequence logic, enable programming,



and allow data transfer from a computer. A copy of all required software shall be provided for each electrical room where there is a VFD present.

- 4.3.16 It shall be possible to program the drive to default to any of the following in the event of a loss of a reference signal: preset speed, minimum speed, maximum speed, the last output speed or stop. An output alarm shall be provided for loss of reference signal.
- 4.3.17 The VFD control system shall be designed to permit local or remote control, as well as functional testing. Remote control system voltage shall be as specified in the Datasheet. The system shall function normally with control voltage in the range of 90% to 110% of normal.
- 4.3.18 All parameters shall be field adjustable with no component change-out required.
- 4.3.19 A clearly labelled first fault diagnostic display panel shall be provided with each VFD to identify major external (i.e., motor over temperature) and internal (i.e., semiconductor failure) system alarms and faults. Vendor shall provide a complete listing of the conditions monitored and displayed for approval by the Engineer.
- 4.3.20 Drive status information shall be displayed as follows:
- Speed reference
 - Input voltage
 - Input current
 - Input kW
 - Motor current
 - Motor voltage
 - Motor frequency (RPM or Hz as selectable by operator)
 - KW output
 - KVA output
 - Output power factor
 - System operating data
 - Temperature summary
 - Discrete inputs and outputs summary
 - Exciter volts and amps
 - Communication status
 - On-line diagnostics reports
 - Data logs of user selectable information up to six status points
- 4.3.21 All alarms, shutdowns and status information displayed shall be date and time stamped.

4.4 Performance Requirements

- 4.4.1 All VFD equipment shall be capable of operating normally during start-up, stopping, accelerating, and decelerating within the speed range specified.
- 4.4.2 VFD shall have output THD of less than 5% (with or without dv/dt filtering) over the entire operating speed range.
- 4.4.3 Unless otherwise specified, the VFD and all related parts shall be suitable for a minimum of five years of continuous operation. The Vendor shall identify any redundancy requirements necessary to meet this end.
- 4.4.4 The Vendor shall list all components that are expected to require replacement in a 20 year operating life. Components utilized in the VFD shall comply with the appropriate standards for these components and shall be used in accordance with their recognized ratings and other limitations of use.

4.5 Control Wiring and Terminal Blocks



- 4.5.1 Unless otherwise indicated, control wiring shall be NEMA Type B wired to terminal blocks located in the control compartment. Terminal blocks shall be labeled on both sides using machine printed labels.
- 4.5.2 Control wiring shall be minimum #14 AWG grey TEW or SIS. Current Transformer wiring shall be minimum #12 AWG red TEW or SIS. Each wire shall be identified at each end by a machine printed wire marker of heat shrink type or equivalent performance sleeve type, showing the wire number corresponding to the schematic and wiring diagrams. Wire numbers shall be non-erasable and shall match the terminal block numbers.
- 4.5.3 No more than two wires shall terminate on any terminal.
- 4.5.4 Internal wiring terminating at terminal blocks intended for field connections shall be terminated on one side only.
- 4.5.5 Wiring between cells and hinged doors shall be bundled and shall be installed with enough slack and/or protected to prevent the wiring from any damage that could result from opening and closing the door through a 120 angle. Only factory installed wiring originating within the VFD may be connected to protective relays and other devices mounted on the door.
- 4.5.6 Control and secondary wiring shall be one continuous length from terminal to terminal. Splicing shall not be permitted.
- 4.5.7 All auxiliary contacts intended for Owner's use or as spare shall be wired to accessible terminal blocks for field connections.
- 4.5.8 Current transformer secondary circuit wiring shall be provided with ring type lugs.
- 4.5.9 Terminal blocks shall be arranged so that all AC circuits, DC circuits and low voltage circuits are segregated and grouped separately.
- 4.5.10 Circuits to be disconnected at a shipping split shall be identified and flagged both on the wiring and on the associated terminal blocks to ensure correct reconnection at installation. "Pull-apart" terminals are preferred at shipping splits.
- 4.5.11 "Finger-safe" terminal blocks and control fuse holders shall be applied to the extent practical within the VFD control section.

4.6 Communications

- 4.6.1 The communication protocol to be used for the VFD shall be supplied as specified in the Datasheet.
- 4.6.2 Communications cabling shall be separated from power and control cables.
- 4.6.3 The communication devices in the VFD shall be configured by the Vendor in the factory, as much as is practical.

4.7 Reliability And Maintainability

- 4.7.1 The Vendor shall ensure maximum reliability and ease of maintenance in the design and assembly of the drive equipment. Each drive shall be of modular construction and maximize the use of fibre optic and plug connected printed circuit boards. All components are to be accessible from the front of the enclosure.

4.8 Nameplates

- 4.8.1 VFD nameplate shall be white with black lettering. All nameplates shall be attached using stainless steel screws or shall be riveted. Adhesive tape is not acceptable. They shall be easily readable from ground level.



- 4.8.2 Lamacoid nameplates shall be installed on the overall VFD line-up, individual cells, door mounted components and all internal power and control components.
- 4.8.3 The nameplates shall state the equipment tag number, description and voltage if applicable.
- 4.8.4 Nameplate letter sizing shall be appropriate for the application.
- 4.8.5 In addition to the requirements of CSA-C22.2 No. 14, the nameplate for the VFD shall include:
- Manufacturer shop order number
 - Owner's reference purchase order number
 - Owner's equipment tag number
- 4.8.6 Any manual operation warnings listed in the product documents shall also be incorporated as warning signs and shall be installed in the appropriate locations.
- 4.8.7 Warning labels shall be as per CSA Z321.

4.9 Accessories/Special Tools/Spare Parts

- 4.9.1 The Vendor shall supply a complete priced list of:
- Recommended Spare Parts, including location and availability
 - Recommended tools required to carry out routine maintenance
 - Recommended test equipment required to carry out routine maintenance

4.10 Painting

- 4.10.1 The VFD enclosure shall be cleaned, primed and painted to the manufacturer's standard.
- 4.10.2 Exterior finish shall be ASA 61 light grey unless specified otherwise on the Datasheet.
- 4.10.3 Interior surfaces in the control compartment shall be white unless specified otherwise on the Datasheet.
- 4.10.4 The Vendor shall supply 0.5L cans of matching paint for each colour for touch-up after installation.

5 TESTING AND INSPECTION

5.1 General

- 5.1.1 Vendor shall submit formal test plan six weeks before the scheduled start of tests for review and approval.
- 5.1.2 Production tests shall be performed on each VFD and all VFD components per respective applicable standards and per the Vendor's normal quality assurance procedures.
- 5.1.3 In addition to the Vendor's normal quality assurance procedures, tests and inspections as listed below shall be performed:
- Burn-in test of all devices and printed circuit boards
 - Insulation resistance test
 - Visual inspection of complete system
 - Assembly and operation of the cooling system
 - Communication wiring to all devices shall be confirmed by establishing communications between various devices, HMI and external purchaser's control system (laptop). Setting for device addressing and communication shall be determined at the factory.
 - System Controls Testing – Following functions shall be tested/demonstrated:
 - Verification of all control parameter settings



- Adjustment of minimum/maximum speed, acceleration and deceleration rates and other VFD operation functions
- Speed and other parameter controls from external purchaser's control system (simulated from a laptop)
- All trip and alarm functions shall be tested/simulated to verify proper operation and correct settings

5.1.4 When specified, the following tests shall be performed:

- Full load test of VFD shall be performed using the Vendor's standard motor.
- The following measurements/readings shall be recorded and verified for different loads and speeds:
 - Harmonic levels
 - Vibration
 - Noise level
 - Power measurements
 - Power factor
- Heat Run test – the VFD shall be run at full load conditions for a minimum of four continuous hours or until stable temperatures are achieved. Vibration and temperature at critical hot spots shall be monitored and recorded.

5.1.5 Components and items to be shipped loose shall be inspected for completeness.

5.2 Witness Testing

5.2.1 When specified on the Datasheet and/or the Purchase Order, the above tests shall be witnessed by Owner. In the event that witness tests are specified, then:

- Costs of the facilitating witness testing shall be submitted to Owner by the Vendor.
- The Vendor shall notify Owner in writing at least two weeks in advance that the equipment is ready for witness testing.
- When additional or special tests are specified on the Datasheet and/or Purchase Order, the Vendor shall submit the cost associated with these tests as an option to Owner.

5.2.2 A certified test report for all testing carried out shall be submitted for Owner's approval prior to shipping, and a copy of the approved test results shall be included with the VFD shipment.

6 SHIPPING AND PRESERVATION

6.1 Shipping

6.1.1 The VFD assembly shall be suitably braced and otherwise protected against damage during shipping. Consideration shall be given to providing adequate bracing for internal components, such as door mounted protection relays.

6.1.2 Shipping braces shall be clearly marked and identified on drawings. Any special instruction required for their removal prior to putting the equipment in service shall be clearly stated on drawings and/or in the Operating and Maintenance Manuals.

6.1.3 All components shall be prepared in a manner, that will permit off-loading, and handling on site. Disassembled items or components that might be lost shall be boxed and clearly marked for identification.

6.2 Preservation

6.2.1 The Vendor shall provide storage and preservation requirements to Owner before shipping of the equipment.



7 DOCUMENTS AND SUBMITTALS

7.1 Vendor Data

- 7.1.1 Drawings shall be submitted according to the approved schedule to Owner or their representatives for approval prior to the manufacture of the equipment.
- 7.1.2 As a minimum, the following drawings/data shall be included in the Vendor's documentation package:
- Base Plan and Weight
 - Outline detailed dimension drawing showing the location of all components
 - Nameplate drawing including Tag Number
 - Schematic diagrams for all auxiliary control and protective devices
 - Three-line diagram
 - Schematic wiring diagrams showing all devices, connecting wiring and terminal block arrangement
 - Terminal connection diagram for all electrically connected equipment
 - Bill of material
 - List of the make and model of all protective devices
 - Time-current characteristics for all protective devices
 - Shipping sections, including weights and sizes, and assembly instructions
 - Nameplate Schedule showing nameplate and lettering colors and sizes
 - Standard Structural Cross sections and Details
 - Certified as-built drawings
 - Certified Test Reports
 - Recommended spare parts including prices, quantities, and manufacturer's part numbers
 - VFD maintenance and operating manuals and manuals for any auxiliary equipment supplied. The number of hard copies of the manuals shall be as specified in the Purchase Order

8 GUARANTEE

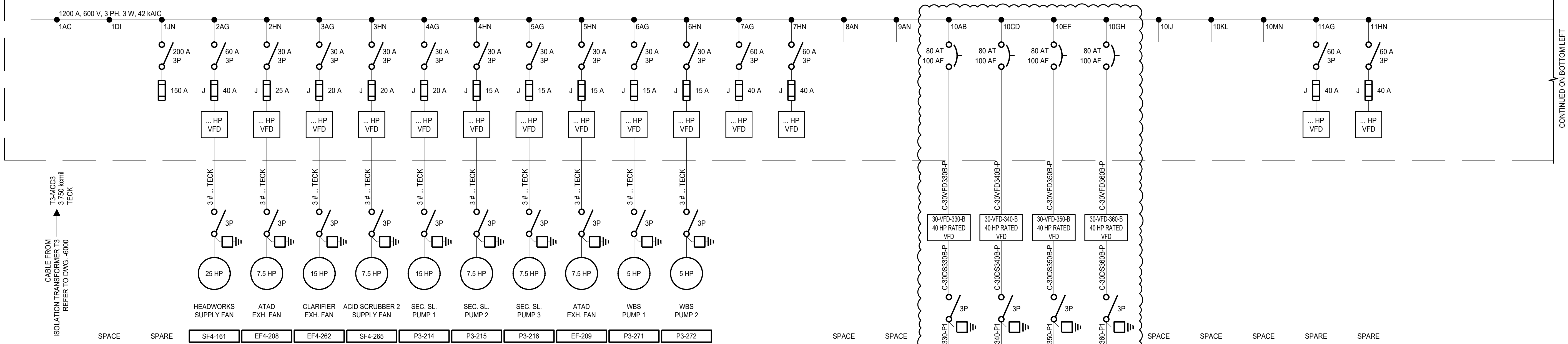
- 8.1.1 The Vendor shall guarantee the equipment against defective material, poor workmanship and improper design for a period of 12 months after start up, the total period not to exceed 18 months from the date of receipt.
- 8.1.2 The Owner may conduct performance tests under the specified conditions of service within 12 months after start up, the total period not to exceed 18 months from the date of receipt. Other test conditions and procedures may be selected by agreement between Owner and the Vendor.
- 8.1.3 The Vendor shall repair or make good, at his own expense, any defect or non-conformities noted during the guarantee period.



Appendix B
Project Drawings

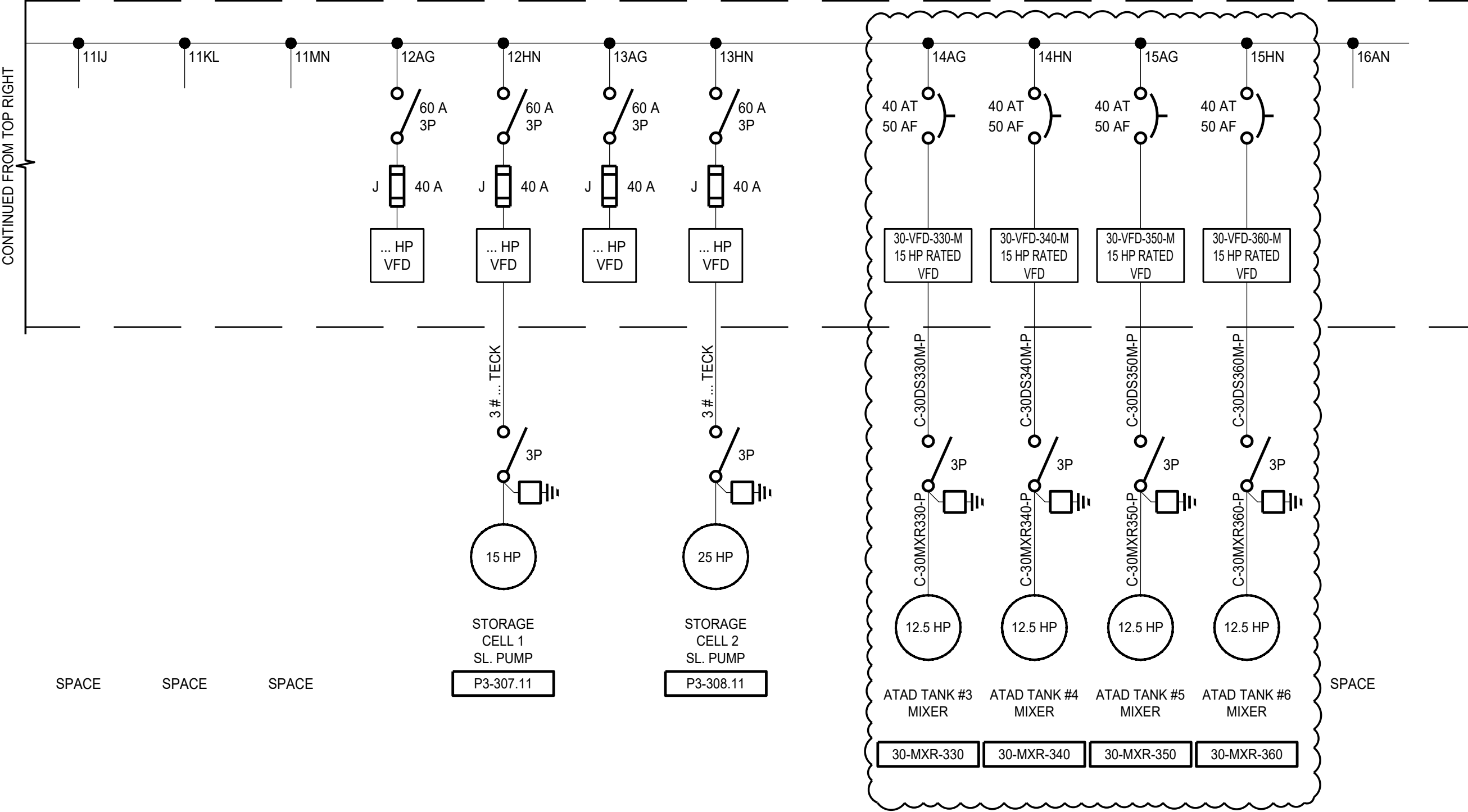
Date: 2025/01/20 1:31 PM | User: Nathaniel Formans | File: P:\NA\2023\2302932-RDN-ATAD-Mixing\1000-Dwg\1016-Elec\1-Production\2302932-1600-001 | Layout: Rev D | Paper Size: 863.6mm x 558.8mm

MCC #3, UPSTAIRS ELECTRICAL ROOM



CONTINUED ON BOTTOM LEFT

CONTINUATION OF MCC #3, UPSTAIRS ELECTRICAL ROOM



CONTINUED FROM TOP RIGHT

- NOTES:**
1. CLOUDED AREAS INDICATE ADDITIONS TO EXISTING EQUIPMENT.

ALLNORTH DOES NOT WARRANT OR GUARANTEE. NOR ACCEPT ANY RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE AS-CONSTRUCTED INFORMATION SUPPLIED BY OTHERS CONTAINED IN THESE DRAWINGS.

REFERENCE DRAWINGS		
DRAWING NO	DRAWING DESCRIPTION/TITLE	REF
-	-	1

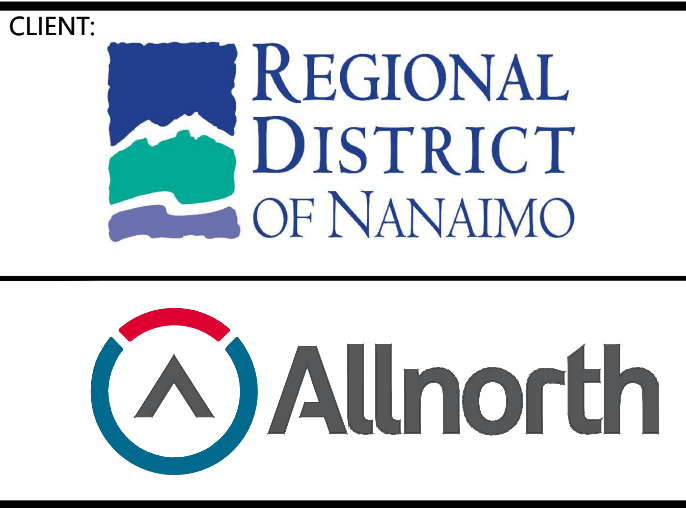
NOT FOR CONSTRUCTION

ISSUED FOR QUOTATION
Date: 2025/JAN/20

PERMIT TO PRACTICE:

ENGINEER SEAL:

REV	DATE	DESCRIPTION	DRWN	CHKD	APVD
D	25/01/20	ISSUED FOR QUOTE	NBF	SD	-
C	25/01/07	ISSUED FOR QUOTE	NBF	SD	-
B	24/12/06	ISSUED FOR REVIEW	BAB	NBF	-
A	24/11/06	ISSUED FOR REVIEW	NBF	SD	-



TITLE:			
MCC #3 SINGLE LINE DIAGRAM			
CLIENT NO:	DRWN:	BAB	DATE: 24/12/05
-	-	-	-
PROJECT NO:	DSGN:	NBF	DATE: 24/12/03
2302932	-	-	-
DRAWING SIZE:	ANSI "D"	CHKD:	SD
-	-	-	DATE: 24/12/06
SCALE:	AS NOTED	APVD:	DATE: -
-	-	-	-

PROJECT:	
FCPCC ATAD MIXING UPGRADE	
DWG NO:	2302932-1600-001
REV:	D



LOW VOLTAGE MCC FEEDER BREAKERS DATASHEET

DOC. NO.: 2302932-1642-DS-001

PAGE 1 of 1

ISSUED FOR: PROPOSAL PURCHASE AS-BUILT OTHER

GENERAL:

PROJECT: RDN ATAD Mixing EQUIPMENT NO.: 30-CB-(330/340/350/360)-B
PROJECT #: 2302932 MCC TAG: MCC #3
UNIT OR AREA: FCPCQ QUANTITY: 4
P&ID NO.: SERVICE DESC.:
FABR. SPEC.:

P.O. NO.: MANUFACTURER: Schneider SERIAL NO.: N/A

AVAILABLE SYM. RMS FAULT (kA) 22 WIRE SIZE
FAULT BRACING (kA) 42 VOLTAGE 600 V
NEUTRAL: NO YES AWG

BUS RATING

MINIMUM CONTINUOUS RATING:
MAIN/HORIZONTAL BUS (AMPS) 1200A
VERTICAL BUS (AMPS) 300 A
GROUND BUS 1" x 0.219"
BRACING 50 kA or OTHER 42 kA
MATERIAL TINNED COPPER OTHER
BUS SIZE: mm x mm

OTHER PROVISIONS:

MCC ENCLOSURE CONSTRUCTION (EXISTING)

TYPE 1 TYPE 4 TYPE 12
 TYPE 3R TYPE 4X
MOUNTING: FRONT ONLY BACK TO BACK
FINISH: ASA 61 GREY OTHER
CABLE ENTRY: TOP BOTTOM

FEEDER BREAKERS - BLOWER VFD CABINETS 30-VFD-(330/340/350/360)-B

REQ'D NOT REQ'D
TYPE: AIR CIRCUIT BREAKER MOULDED CASE DRAWOUT
RATING: FRAME (AMPS) 100 A
TRIP (AMPS) 80 A
SHUNT TRIP: REQ'D NOT REQ'D
QUANTITY: x4
BREAKER TYPE: Type HJ
MODEL NO.: 8998BW404

NOTES

- 1. SEE ATTACHED SLD 2302932-1600-001.
2. SEE ATTACHED MCC LAYOUT 2302932-1678-100.

Table with 5 columns: REV. NO., DATE, DESCRIPTION, BY, CHECKED, APPROVED. Rows A, B, C.

**LOW VOLTAGE VARIABLE FREQUENCY DRIVE DATASHEET**Doc No.: **2302932-1648-DS-001**Page 1 of 1Issued For Proposal Purchase As-Built Other _____**GENERAL:**Project Name: FCPCC ATAD Mixing Upgrade
Project #: 2302932
Unit or Area: FCPCC
Fabr. Spec.: _____Equip. No.: 30-VFD-(330/340/350/360)-B
VFD Tag: _____
Quantity: 4P.O. No.: _____ Manufacturer: Allen-Bradley Serial No.: PowerFlex 753**Refer to Allnorth Technical Specification for General Conditions and Requirements.**Approval and Listings CSA UL or ULc Other _____**SITE CONDITIONS** Indoor Outdoor Altitude 15 m
Ambient Temp. Min. 10 °C Max. 40 °C
24-hr Average _____ °C
 Hazardous Location Class _____ Zone _____ Group _____ AIT _____ °C
 Seismic Zone _____
 Other Non Hazardous**SYSTEM PARAMETERS**Frequency 60Hz Other _____
Phase Single Phase Three Phase
Nominal Voltage 600 V (Wye, 3-wire)
Fault Current (rms sym.) 42 kA (Preliminary)
System Grounding
 By Vendor By Others
 Resistance Solid Other _____
Ground Fault Current (rms sym.) _____ A Duration _____**ENCLOSURE** NEMA 1 NEMA 1A Gasketed NEMA 12
 NEMA 3R NEMA 4X Other _____
 Arc Resistant Type: _____ Mounted in MCC structure
 Channel Base Mounting Enclosure Space Heaters _____ V
 NEMA Type B wiring Other: _____
Cable entry Top Bottom Both
Feeder cable type TECK
Exterior Finish Mfr's Std. Other _____
Interior Finish Mfr's Std. Other _____
Dimensions VTA mm (W) Note 3
VTA mm (D)
VTA mm (H)
Weight VTA kg**MOTOR DATA**Motor Tag 30-BLO-(330/340/350/360)
Service ATAD Mixing - Blower
Rating 600 V 3 phase/60Hz 35 HP 4040 RPM (Synchronous)
Motor feeder cable type TECK Cable length 80 m Note 4
Enclosure TENV TEFC TEXP Other _____
Site conditions (Motor)
 Indoor Outdoor Non-Hazardous
 Hazardous Class _____ Group _____ Zone _____
Temperature Code _____ AIT _____
Ambient Temp. Min. -20 °C Max. 40 °C
 Other Inverter Duty Motor Non-inverter Duty Motor
 Winding/Bearing Thermistors**LOAD DATA**Type Centrifugal Pump Compressor
 Reciprocating Fan Other _____
Characteristic Constant Torque Constant Power
 Variable Torque Other _____
 Other Atlas-Copco Blower Package
Operating speed Range 25 % to 100 %**VFD DATA**Type of VFD PWM
 IGBT
 Other PowerFlex 753
Number of pulses _____
Rated Voltage 600 V Tolerance ± 10 %
Rated Frequency 60 Hz Tolerance ± 5 %
Ride-through Capacity 0.5 seconds
Overload Capacity 110 % FLA for 60 seconds
150 % FLA for 3 seconds
≥ 300 % FLA instantaneous trip
Bypass contactor Required Not Required
 Automatic Manual/Maintenance
Disconnect type Circuit Breaker Disconnect
Control Power:
 120VAC 24VDC (VFD) Other _____
 Control Power Transformer External (by others)
Control Panel
 LCD Indication Display Fault Display
 Run/Stop Soft Key Local/Remote Soft Key
 Increase/Decrease Soft Key Reset Soft Key
 Programming Soft Key Other _____
Control Interface Other 1x Thermistor Input
 4-20 mA Input 1x Relay Outputs
 4-20 mA Output 2x Discrete Inputs
 Tachometer/Encoder Feedback 1x Interposing Relay @ 120 VAC Coil
Communication
 ModBus TCP/IP Ethernet Profibus DP
 Other Ethernet/IP (Integral)
Auxiliary Contacts
 Form A (NO) _____
 Form B (NC) _____
Efficiency *
Speed (%) 25 50 80 100
Load (%) VTA VTA VTA VTA
Losses (kW) VTA VTA VTA VTA
Power factor (pu) VTA VTA VTA VTA**REACTOR/FILTER/TRANSFORMER (VTA)** Input Line Reactor 3 % Z
 Output Line Reactor _____
 Input Line Filter _____
 Output Line Filter _____
 Isolating Transformer
 Other _____**NOTES**

- See schematic drawing 2302932-1664-001 for VFD & I/O details.
- VFD will be installed in Vendor-supplied cabinet. Reference schematic drawing 2302932-1664-001 and VFD cabinet specification 2302932-1648-SPEC-001.
- Maximum width of the VFD cabinet is 900 mm.
- Motor feeder length varies from motor to motor. The provided length is the estimated longest feeder cable length.

VTA - Vendor to Advise

Rev. No.	Date	Revision Description	By	Checked	Approved
A	6/11/2024	Issued for Review	NBF	SD	
B	7/1/2025	Issued for Quote	NBF	SD	
C	20/1/2025	Issued for Quote	NBF	SD	



LOW VOLTAGE VARIABLE FREQUENCY DRIVE DATASHEET

Doc No.: 2302932-1648-DS-002

Page 1 of 1

Issued For: [X] Proposal [] Purchase [] As-Built [] Other

GENERAL: Project Name: FCPC ATAD Mixing Upgrade; Project #: 2302932; Unit or Area: FCPC; Equip. No.: 30-VFD-(330/340/350/360)-M; VFD Tag: ; Quantity: 4

P.O. No.: ; Manufacturer: Allen-Bradley; Serial No.: PowerFlex 525

Refer to Allnorth Technical Specification for General Conditions and Requirements.

Approval and Listings: [X] CSA [] UL or ULc [] Other

SITE CONDITIONS

Indoor [X] Outdoor [] Altitude 15 m; Ambient Temp. Min. 10 °C Max. 40 °C; 24-hr Average °C; Hazardous Location [] Class ___ Zone ___ Group ___ AIT ___ °C; Seismic Zone [] Other [X] Non Hazardous

SYSTEM PARAMETERS

Frequency [X] 60Hz [] Other ___; Phase [] Single Phase [X] Three Phase; Nominal Voltage 600 V (Wye, 3-wire); Fault Current (rms sym.) 42 kA (Preliminary); System Grounding [] By Vendor [X] By Others; Resistance [X] Solid [] Other ___; Ground Fault Current (rms sym.) ___ A Duration ___

ENCLOSURE

[X] NEMA 1 [] NEMA 1A Gasketed [] NEMA 12; [] NEMA 3R [] NEMA 4X [] Other ___; Arc Resistant [] Type: ___ [X] Mounted in MCC structure Note 2; Channel Base Mounting [] Enclosure Space Heaters ___ V; NEMA Type B wiring [] Other: ___; Cable entry [X] Top [] Bottom [] Both; Feeder cable type TECK; Exterior Finish [X] Mfr's Std. [] Other ___; Interior Finish [X] Mfr's Std. [] Other ___; Dimensions VTA ___ mm (W) Note 3, ___ mm (D), ___ mm (H); Weight VTA ___ kg

MOTOR DATA

Motor Tag 30-MXR-(330/340/350/360); Service ATAD Mixing - Mixer; Rating 600 V 3 phase/60Hz 12.5 HP 1770 RPM (Synchronous); Motor feeder cable type TECK Cable length 60 m Note 3; Enclosure [] TENV [X] TEFC [] TEXP [] Other ___; Site conditions (Motor) [] Indoor [X] Outdoor [X] Non-Hazardous; Hazardous [] Class ___ Group ___ Zone ___; Temperature Code ___ AIT ___; Ambient Temp. Min. -20 °C Max. 40 °C; [X] Other Inverter Duty Motor [] Non-inverter Duty Motor; [] Winding/Bearing RTDs

LOAD DATA

Type [] Centrifugal [] Pump [] Compressor; [] Reciprocating [] Fan [X] Other Mixer; Characteristic [X] Constant Torque [] Constant Power; [] Variable Torque [] Other ___; [X] Other INVENT Mixer; Operating speed Range 25 % to 100 %

VFD DATA

Type of VFD [X] PWM [] IGBT [X] Other PowerFlex 525; Number of pulses ___; Rated Voltage 600 V Tolerance ± 10 %; Rated Frequency 60 Hz Tolerance ± 5 %; Ride-through Capacity 0.5 seconds; Overload Capacity 150 % FLA for 60 seconds, 180 % FLA for 3 seconds, ≥ 350 % FLA instantaneous trip; Bypass contactor [] Required [X] Not Required; [] Automatic [] Manual/Maintenance; Disconnect type [X] Circuit Breaker [] Disconnect; Control Power: [X] 120VAC [X] 24VDC (VFD) [] Other ___; [X] Control Power Transformer [] External (by others); Control Panel [X] LCD Indication Display [X] Fault Display; [X] Run/Stop Soft Key [X] Local/Remote Soft Key; [X] Increase/Decrease Soft Key [] Reset Soft Key; [X] Programming Soft Key [] Other ___; Control Interface [X] 4-20 mA Input [X] Other 1x Relay Outputs; [X] 4-20 mA Output 2x Discrete Inputs; [] Tachometer/Encoder Feedback 1x Interposing Relay @ 120 VAC Coil; Communication [] ModBus TCP/IP Ethernet [] Profibus DP; [X] Other Ethernet/IP (Integral); Auxiliary Contacts [] Form A (NO) ___; [] Form B (NC) ___; Efficiency * Speed (%) 25 50 80 100; Load (%) VTA VTA VTA VTA; Losses (kW) VTA VTA VTA VTA; Power factor (pu) VTA VTA VTA VTA

REACTOR/FILTER/TRANSFORMER (VTA)

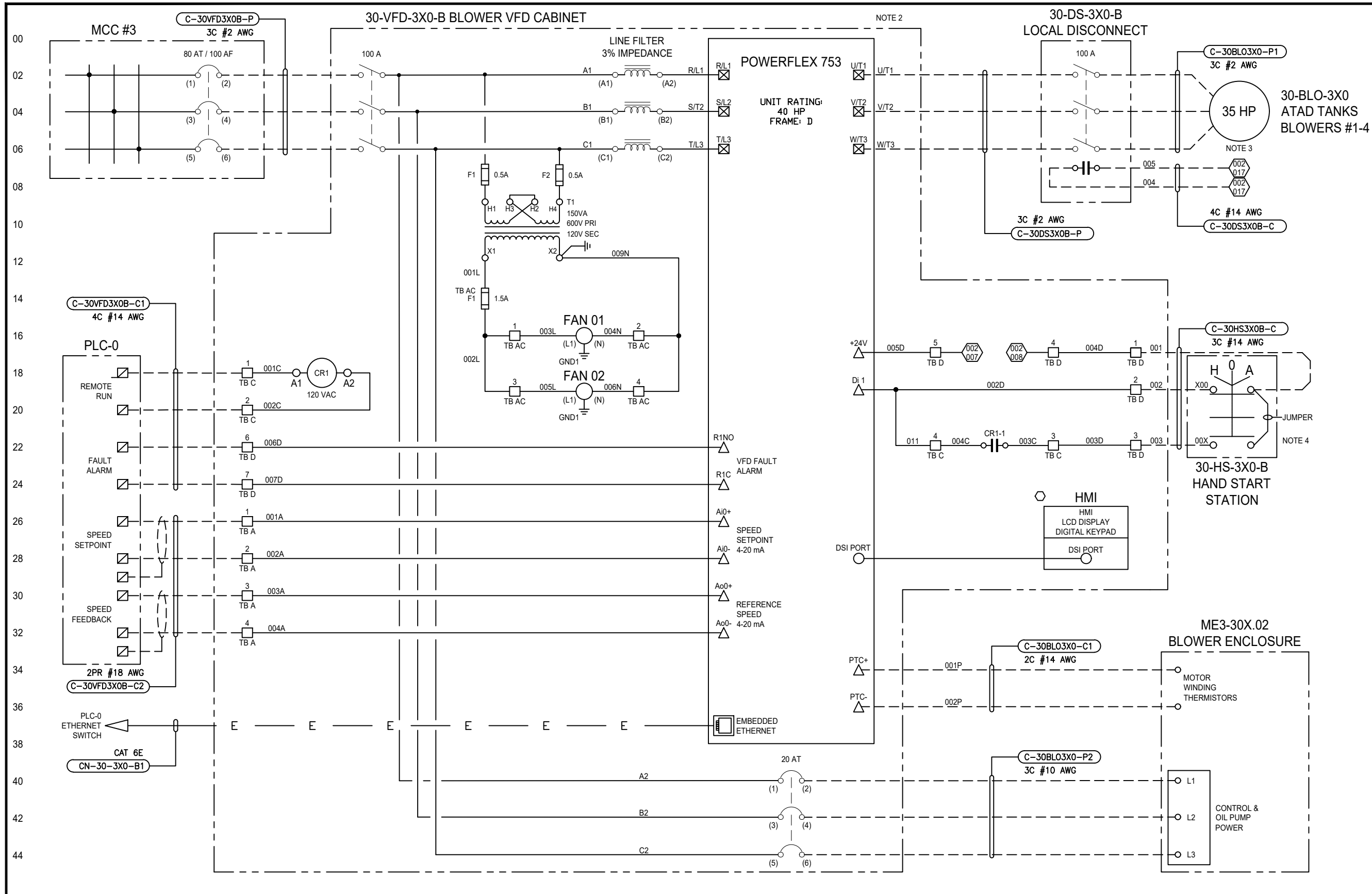
[X] Input Line Reactor 3 % Z; [] Output Line Reactor ___; [] Input Line Filter ___; [] Output Line Filter ___; [] Isolating Transformer; [] Other ___

NOTES

- 1. See schematic drawing 2302932-1664-002 for VFD & I/O details.
2. VFD will be installed in MCC-3 (Schneider Square D Model 3). Reference layout drawing 2302932-1678-100 for more details.
3. Motor feeder length varies from motor to motor. The provided length is the estimated longest feeder cable length.
4. VFD to be installed in full MCC bucket c/w VFD, circuit breaker, and accessories.

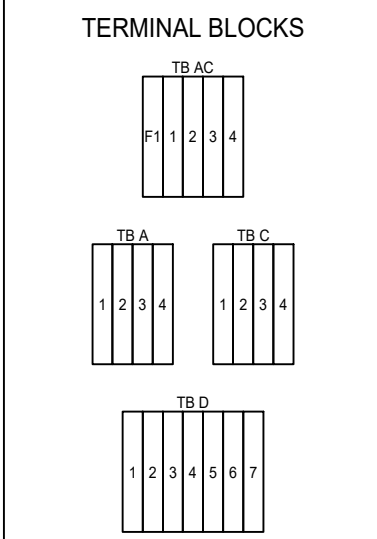
VTA - Vendor to Advise

Table with 6 columns: Rev. No., Date, Revision Description, By, Checked, Approved. Rows A, B, C.



- NOTES:**
- DRAWING IS TYPICAL FOR ALL BLOWERS.
 - MOTOR CABINET TAG IS AS FOLLOWS:
 30-VFD-330-B - BLOWER #1 VFD CABINET
 30-VFD-340-B - BLOWER #2 VFD CABINET
 30-VFD-350-B - BLOWER #3 VFD CABINET
 30-VFD-360-B - BLOWER #4 VFD CABINET
 - BLOWER MOTOR TAG IS AS FOLLOWS:
 30-BLO-330 - BLOWER #1
 30-BLO-340 - BLOWER #2
 30-BLO-350 - BLOWER #3
 30-BLO-360 - BLOWER #4
 - HOA SWITCH IS SPRING RETURN FROM HAND TO OFF.

- LEGEND:**
- VFD CABINET INTERNAL TERMINATIONS
 - VFD CABINET TERMINAL BLOCKS
 - ⊠ PLC TERMINAL
 - ⊞ VFD POWER TERMINAL
 - △ VFD CONTROL TERMINAL
 - LOCATED ON VFD CABINET DOOR



REFERENCE DRAWINGS		
DRAWING NO	DRAWING DESCRIPTION/TITLE	REF
2302932-1600-001	MCC #3 VFD CABINET FEEDS SLD	1

ISSUED FOR
QUOTATION
 Date: 2025/01/20

**NOT FOR
 CONSTRUCTION**

The information contained in this document is the exclusive property of the Regional District of Nanaimo and shall not be reproduced, stored, or communicated to any unauthorized person, or used in any other unauthorized manner, form whatsoever, without the express written permission of the Regional District of Nanaimo.

REV	YY/MM/DD	DESCRIPTION	DRWN	CHKD	APVD
C	25/01/20	ISSUED FOR QUOTE	NBF	SD	-
B	25/01/07	ISSUED FOR QUOTE	NBF	SD	-
A	24/11/06	ISSUED FOR REVIEW	NBF	SD	-

REGIONAL DISTRICT OF NANAIMO

CONSULTANT:
Allnorth

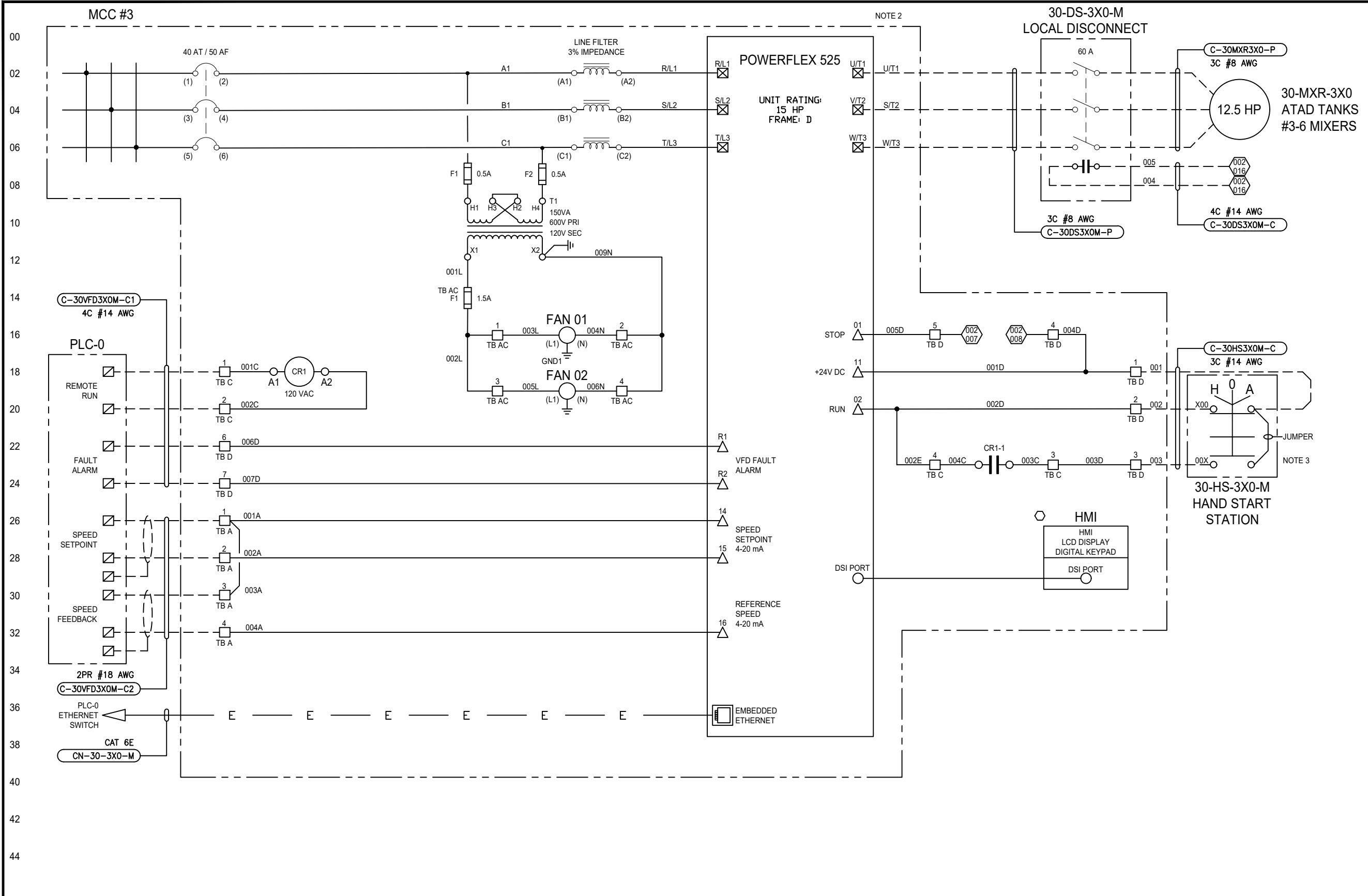
TITLE:
BLOWER VFD CABINET SCHEMATIC TYPICAL

PROJECT NO:	2302932	DRWN:	NBF	DATE:	24/10/31
RDN PROJ NO:	-	CHKD:	SD	DATE:	24/11/05
DRAWING SIZE:	ANSI "B"	APVD:	-	DATE:	-
SCALE:	AS NOTED				

PROJECT:
FCPC ATAD MIXING UPGRADE

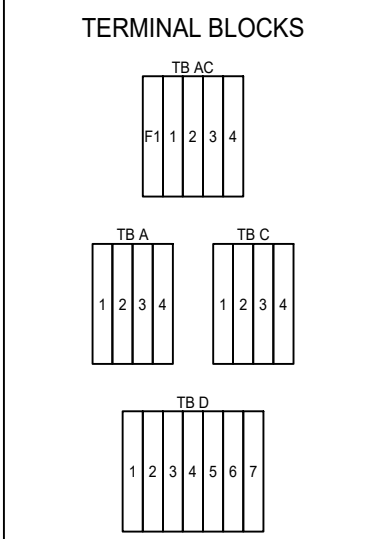
DWG NO:
2302932-1664-001

REV:
C



- NOTES:**
- DRAWING IS TYPICAL FOR ALL MIXERS.
 - MIXER MOTOR TAG IS AS FOLLOWS:
 30-MXR-330 - ATAD TANK #3 MIXER
 30-MXR-340 - ATAD TANK #4 MIXER
 30-MXR-350 - ATAD TANK #5 MIXER
 30-MXR-360 - ATAD TANK #6 MIXER
 - HOA SWITCH IS SPRING RETURN FROM HAND TO OFF.

- LEGEND:**
- VFD CABINET INTERNAL TERMINATIONS
 - VFD CABINET TERMINAL BLOCKS
 - ▣ PLC TERMINAL
 - ⊠ VFD POWER TERMINAL
 - △ VFD CONTROL TERMINAL
 - LOCATED ON VFD CABINET DOOR



REFERENCE DRAWINGS		
DRAWING NO	DRAWING DESCRIPTION/TITLE	REF
2302932-1600-001	MCC #3 VFD CABINET FEEDS SLD	1

ISSUED FOR
QUOTATION
 Date: 2025/01/20

**NOT FOR
 CONSTRUCTION**

The information contained in this document is the exclusive property of the Regional District of Nanaimo and shall not be reproduced, stored, or communicated to any unauthorized person, or used in any other unauthorized manner, in whole or in part, without the express written permission of the Regional District of Nanaimo.

REV	YY/MM/DD	DESCRIPTION	DRWN	CHKD	APVD
C	25/01/20	ISSUED FOR QUOTE	NBF	SD	-
B	25/01/07	ISSUED FOR QUOTE	NBF	SD	-
A	24/11/06	ISSUED FOR REVIEW	NBF	SD	-

REGIONAL DISTRICT OF NANAIMO

CONSULTANT:

Allnorth

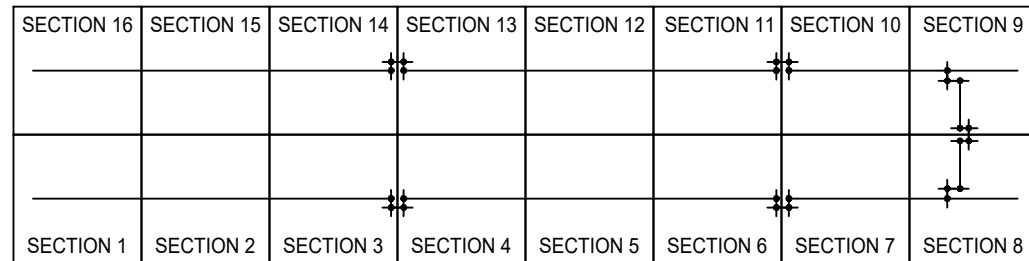
MIXER VFD CABINET SCHEMATIC TYPICAL

PROJECT NO:	2302932	DRWN:	BAB	DATE:	24/10/31
RDN PROJ NO:	-				
DRAWING SIZE:	ANSI "B"	CHKD:	SD	DATE:	24/11/06
SCALE:	AS NOTED	APVD:	-	DATE:	-

PROJECT:

FCPC ATAD MIXING UPGRADE

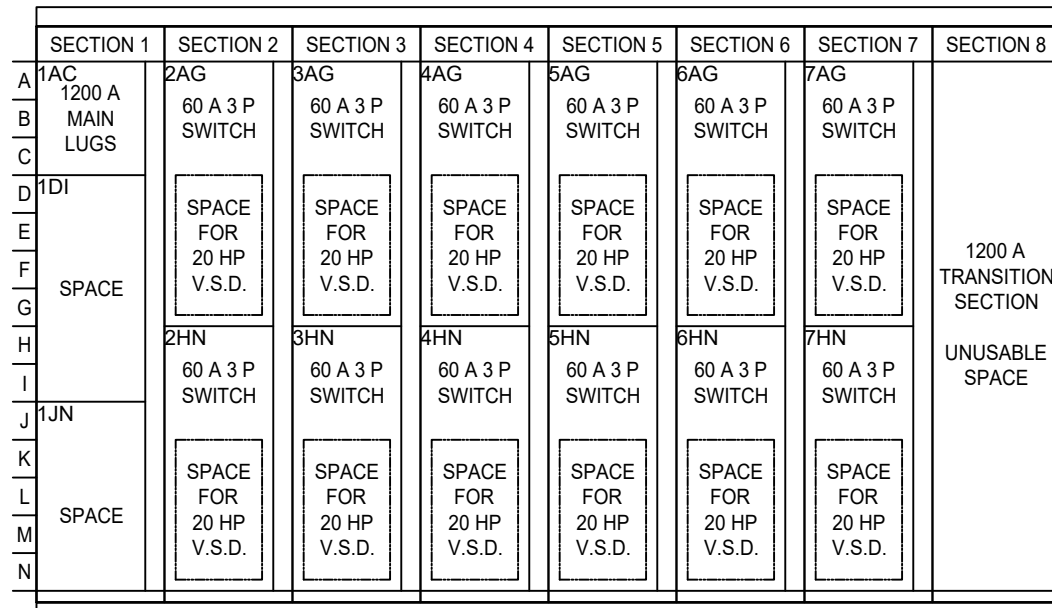
DWG NO: **2302932-1664-002** REV: **C**



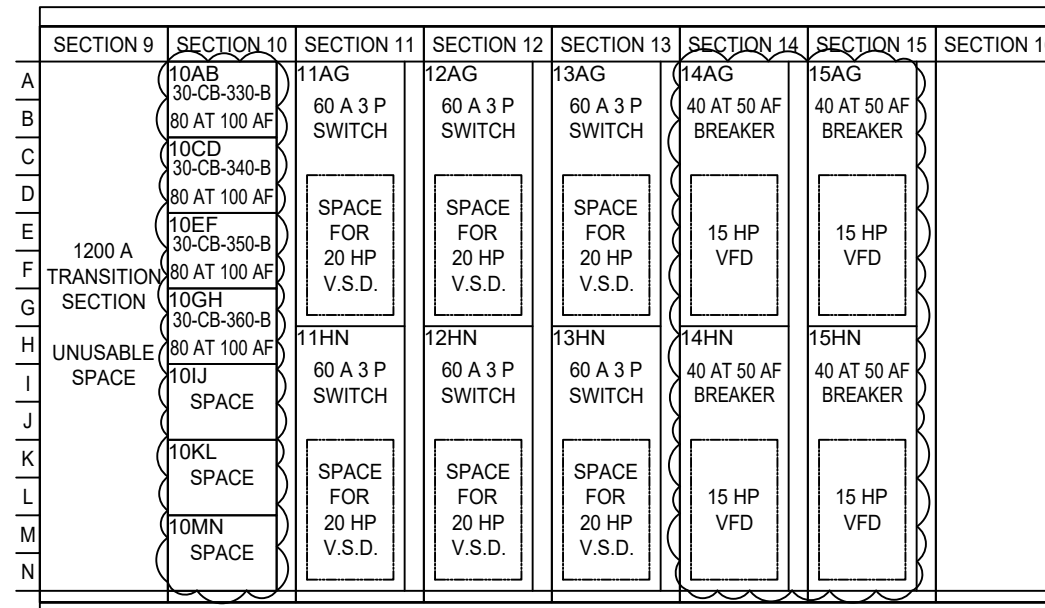
TOP VIEW 1
SCALE: 1:30

MCC LINE-UP INFORMATION		BUS DATA	
EEMAC ENCLOSURE TYPE	1	HORIZONTAL	1200 A
ARRANGEMENT	B.T.B	VERTICAL	300 A
UNIT DEPTH	20" / 508 mm	BUS MATERIAL	COPPER
SPACE FACTOR	7	BUS BRACING	42 kA RMS SYM.
EEMAC WIRING CLASS	1	AVAILABLE FAULT CURRENT	22 kA SYM.
EEMAC WIRING TYPE	B	GROUND BUS	1" x 0.219"
FINISH	ASA49	LUG SIZE	2/0
SYSTEM POWER		POWER SUPPLY DATA	
VOLTAGE	600 VAC	SUPPLY ENTRY	TOP
PHASE	3 PHASE	ENTRY SECTION	1
WIRE	3 W	CABLE SIZE	3/0
FREQUENCY	60 Hz	CONDUCTORS PER PHASE	2

- NOTES:
- DRAWING CREATED FROM REFERENCE DRAWING NO. 1.
 - CLOUDED AREAS INDICATE ADDITIONS TO EXISTING EQUIPMENT.



FRONT VIEW 2
SCALE: 1:30



REAR VIEW 3
SCALE: 1:30

ALLNORTH DOES NOT WARRANT OR GUARANTEE, NOR ACCEPT ANY RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE AS-CONSTRUCTED INFORMATION SUPPLIED BY OTHERS CONTAINED IN THESE DRAWINGS.

REFERENCE DRAWINGS		
DRAWING NO	DRAWING DESCRIPTION/TITLE	REF
F.56.5551237B.01	M.C.C. #3 LAYOUT	1

ISSUED FOR QUOTATION
Date: 2025/01/20
NOT FOR CONSTRUCTION

REV	YY/MM/DD	DESCRIPTION	DRWN	CHKD	APVD
D	25/01/20	ISSUED FOR QUOTE	NBF	SD	-
C	25/01/07	ISSUED FOR QUOTE	NBF	SD	-
B	24/12/06	ISSUED FOR REVIEW	NBF	SD	-
A	24/11/06	ISSUED FOR REVIEW	NBF	SD	-

REGIONAL DISTRICT OF NANAIMO

CONSULTANT: Allnorth

TITLE: ELECTRICAL MCC #3 LAYOUT			
PROJECT NO:	2302932	DRWN:	BAB
DATE:	24/05/22		
DRAWING SIZE:	ANSI "B"	CHKD:	SD
DATE:	24/11/06	APVD:	-
SCALE:	AS NOTED	DATE:	-

PROJECT: FCPC ATAD MIXING UPGRADE	
DWG NO:	2302932-1678-100
REV:	D



Appendix C
Sample Contract

BETWEEN: **XXX** (the "Supply Contractor")

AND: Regional District of Nanaimo (the "Corporation")

THIS AGREEMENT WITNESSES that the Supply Contractor and the Corporation agree as follows:

1. The Supply Contractor shall provide all labour, Supply Contractor's Plant and Equipment and materials required to supply the Goods within the required time, as required by the Contract Documents further defined in the Standard Form Supply Contract General Conditions.
2. The Corporation shall pay the Supply Contractor the Contract Price, as required by the Contract Documents.
3. The Contract Price shall be the sum in Canadian Dollars of the following:
 - (a) **\$ XXX** (Excl. Taxes), and
 - (b) any payments made on account of changes, as may be required by the Contract Documents.

The Contract Price shall be the entire compensation owing to the Supply Contractor by the Corporation for the Goods and shall cover and include necessary costs including but not limited to all supervision, labour, materials, Supply Contractor's Plant and Equipment, overhead, profit, financing costs, duty, shipping charges, fabrication and finishing, conveyance and delivery, packing, crating, freight, cartage, drafting charges, tariffs, warranty and all other costs and expenses whatsoever incurred in supplying the Goods (Incoterms DDP applies).

Except for the amounts which the RDN in good faith is disputing and except for any set off which the RDN may claim and except for invoices (or portions of invoices) in respect of which the RDN has requested and not received supporting evidence, the RDN shall pay invoices submitted to it for the Goods, within 30 days' receipt thereof.

4. Payment terms for the Goods shall be as follows:
 - (a) 10% of the Contract Price upon approval of the engineered drawing package;
 - (b) 40% of the Contract Price upon receipt of all materials required for fabrication/assembly;
 - (c) 50% of the Contract Price upon delivery and acceptance to the Delivery Point.

5. The Supply Contractor shall supply all Goods to the Delivery Point on the date requested and confirmed by the Corporation, with one week notice. For scheduling purposes, this date will be **XX** weeks (*TBC depending on quoted delivery time*) from the date of the Supply Contract, plus or minus two weeks.
6. The Contract Documents shall form a part of this Agreement as though recited in full.
7. The Contract supersedes all prior negotiations, representations, or agreements, whether written or oral and is the entire agreement between the Corporation and the Supply Contractor with respect to the subject matter of this Agreement.
8. The Supply Contractor shall not assign the Contract, or any portion of the Contract, or any payments due or to become due under the Contract, without the express written consent of the Corporation which will not be unreasonably withheld.
9. No action or failure to act by the Corporation or an authorized representative of the Corporation shall constitute a waiver of any right or duty afforded any of them under the Contract or constitute an approval or acquiescence in any breach thereunder, except as may be specifically agreed in writing.
10. This Agreement shall ensure to the benefit of and be binding upon the Corporation and the Supply Contractor and their respective heirs, executors, legal representatives, successors and permitted assigns. In the event of more than one person being the Supply Contractor, the grants, covenants, provisos and claims, rights, powers, privileges, and liabilities shall be construed and held to be several as well as joint.
11. Time shall be of the essence of this Agreement.
12. This Agreement may be executed in any number of counterparts, each of which will be deemed to be an original and all of which taken together will be deemed to constitute one and the same instrument. Delivery by electronic transmission in portable document format (PDF) of an executed counterpart of this Agreement is as effective as delivery of an originally executed counterpart of this Agreement.

IN WITNESS WHEREOF the parties hereto have executed this Agreement as follows:

REGIONAL DISTRICT OF NANAIMO

by its authorized signatory on _____ day of _____, 20__ (the date of Agreement):

SIGNED on behalf of the Corporation by:

Signature: _____

Name: _____

Title: _____

VENDOR

by its authorized signatory on _____ day of _____, 20__:

SIGNED on behalf of the Supply Contractor by:

Signature: _____

Name: _____

Title: _____

Signature: _____

Name: _____

Title: _____

GENERAL

1.1 DEFINITIONS

The following words and terms, unless the context otherwise requires, in all Contract Documents, shall have the meanings set out below. Words importing the male gender include the female gender and either includes the neuter and vice versa and words importing the singular number includes the plural number and vice versa.

"Addenda" means any addition, deletion, clarification, or corrections issued with respect to the Original Solicitation Documents prior to execution of the Agreement;

"Agreement" means the Standard Form Supply Contract Form of Agreement executed by the Corporation and the Supply Contractor;

"Contract" means the contractual relationship formed between the Corporation and the Supply Contractor by each party's execution of the Agreement;

"Contract Documents" means the following documents:

- (1) the executed Agreement;
- (2) these General Conditions;
- (3) any Addenda;
- (4) the Original Solicitation Documents;
- (5) the Proposal; and
- (6) other relevant documents such as but not limited to letters of clarification and any reports, standards or the like included by reference in the Original Solicitation Documents or Addenda;

"Contract Price" has the meaning set out in the Agreement;

"Corporation" means the Regional District of Nanaimo;

"Day" means calendar day;

"Delivery Date" means the date set out in the Agreement as the latest date by which the Supply Contractor is required to supply Goods to the Delivery Point;

"Delivery Point" means the French Creek Pollution Control Centre located at 957 Lee Road, Parksville, BC V9P 1Z4 as per Incoterms 2020 Delivery Duty Paid (DDP) with title transferring at the named place;

“Goods” means moveable property that the Supply Contractor is required to deliver to the Corporation pursuant to the Contract Documents and includes materials, products, equipment, and other physical objects of every kind and description whether in solid, liquid, gaseous, or electronic form;

“Inspector” means a person appointed by the Corporation having the authority set out in Clause 2.1.2.1 of these General Conditions.

“Original Solicitation Documents” means the request for proposals, invitation to tender or comparable form of solicitation posted by the Corporation which resulted in the Agreement being executed;

“Proposal” means the Supply Contractor’s written submission to the Corporation in response to the Original Solicitation Documents;

“Specifications” means that part of the Contract Documents consisting of general requirements and written descriptions of the technical features of materials, equipment, construction systems, standards, and workmanship;

“Supply Contractor” means the person identified as such in the Agreement.; and

“Warranty Period” has the meaning set forth in Clause 3.4.1 of these General Conditions.

CONTRACT REQUIREMENTS

1.1.1 Successors' Obligations

The Contract shall endure to the benefit of and is binding upon not only the parties hereto but also their respective successors and permitted assigns.

1.1.2 Assignment of Contract

The Supply Contractor shall not assign the Contract in whole or in part, nor any payments due or to become due under the Contract without the prior written consent of the Corporation. No assignment of the Contract shall relieve the Supply Contractor from any obligation under the Contract or impose any liability on the Corporation. Involuntary assignment of the Contract because of bankruptcy, assignment of the Contract for the benefit of creditors or appointment of a receiver, or insolvency shall be deemed default under the Contract entitling the Corporation to terminate the Contract as hereinafter provided.

1.1.3 Waiver of Rights

Except as herein provided, no act or failure to act by the Supply Contractor or the Corporation at any time with respect to the exercise of any right or remedies conferred upon them under this Contract shall be deemed to be a waiver on the part of the Supply Contractor or the Corporation of any of their rights or remedies. No waiver shall be effective except in writing. No waiver of one right or remedy shall act as a waiver of any other right or remedy or as a subsequent waiver of the same right or remedy.

1.1.4 Amendment of Contract Documents

The Contract Documents shall not be amended except as specifically agreed in writing signed by both the Corporation and the Supply Contractor.

1.2 LAWS, REGULATIONS AND PERMITS

1.2.1 The Contract shall be construed under and according to the laws of the Province of British Columbia and subject to an agreement to refer a dispute to mediation as per Clause 2.3 of these General Conditions. The parties agree to irrevocably attorn to the jurisdiction of the Courts of the Province of British Columbia.

1.2.2 The Supply Contractor shall give all notices required by law and shall comply with all laws, acts, ordinances, rules, and regulations relating to or affecting the Goods. If any permits, authorizations, approvals or licences from any government or governmental agencies are necessary or desirable for the prosecution of the work they shall be obtained by the Supply Contractor at its expense, provided that the Supply Contractor shall not make application for any such permit, authorization, approval, or licence without first obtaining the written consent of the Corporation.

1.2.3 Patents, Royalties and Copyright

The Supply Contractor shall pay all fees, royalties or claims for any patented invention, article, process, or method that may be used upon or in a manner connected with the Goods or with the use of the Goods by the Corporation. Before final payment is made on the account of this Contract, the Supply Contractor shall, if requested by the Corporation, furnish acceptable proof of a proper release from all such fees or claims.

- 1.2.4 All references to money in the Contract Documents shall be interpreted as meaning lawful currency of Canada.

PART 2 CORPORATION-SUPPLY CONTRACTOR RELATIONS

2.1 AUTHORITY OF CORPORATION

2.1.1 Acceptability of Goods

The Corporation shall make the final determination of the acceptability of the Goods.

2.1.2 Appointment and Authority of Inspector

2.1.2.1 The Corporation may appoint an Inspector at any time before or after award of the Contract. If the Corporation appoints an Inspector, the Inspector shall represent the Corporation at the Delivery Point. The Inspector shall have the authority set out in the Contract Documents and such other authority as may be delegated in writing by the Corporation including but not limited to the following:

- (a) to make determinations regarding the Goods; and
- (b) to make determinations regarding the Supply Contractor's performance of its obligations under the Contract.

2.2 RESPONSIBILITIES OF THE SUPPLY CONTRACTOR

2.2.1 Attention to the Goods

The Supply Contractor shall diligently attend to the supply of the Goods so that they are delivered faithfully, expeditiously and in accordance with the Contract Documents.

2.2.2 Authorized Representative

The Supply Contractor shall advise the Corporation in writing of the name of the Supply Contractor's authorized representative.

2.2.3 Off-loading of Goods

The Supply Contractor shall provide all necessary instructions to ensure satisfactory off-loading of the Goods.

2.2.4 Shipment

The Supply Contractor shall properly package all Goods for safe shipment to the Delivery Point and a notice of shipment shall be sent by the Supply Contractor to the Corporation in advance of final delivery. The notice of shipment shall state the Delivery Date, the applicable purchase order number, description of the Goods, the Supply Contractor's name and the carrier by which the shipment is being made. Clear title to the Goods, free of all charges, liens and encumbrances shall pass to the Corporation when the Goods are received, inspected, deficiencies rectified, and accepted by the Corporation at the Delivery Point. Until such time as title of the Goods is accepted by the Corporation, all risk related to the Goods shall remain with the Supply Contractor. Except for the transfer of risk, the passing of title to the Corporation shall not affect any of the Supply Contractor's obligations.

2.2.5 Errors and Omissions

If the Supply Contractor discovers that there are any errors or omissions in the Contract Documents, it shall immediately notify the Corporation in writing. The Corporation will review the matter and if it concludes that there is an error or omission, it shall determine the corrective actions to be taken and will advise the Supply Contractor accordingly. If the corrective work associated with an error or omission increases or decreases the amount of work called for in the Contract, the Corporation shall issue an appropriate change order. After discovery by the Supply Contractor of an error or omission in the Contract Documents any work thereafter performed by the Supply Contractor shall be done at its risk unless otherwise agreed by the Corporation.

2.3 DISPUTE RESOLUTION

2.3.1 Disputes

A dispute occurs between the Corporation and the Supply Contractor where there is a difference between the parties as to the interpretation, application or administration of the Contract.

2.3.2 Dispute/Claim Resolution

- (1) Any matters in dispute under this Contract which is not first resolved between the parties acting reasonably may, with the concurrence of both the Corporation and the Supply Contractor be submitted to mediation to a single mediator appointed jointly by them.

- (2) No one shall be nominated to act as a mediator who is in any way financially interested in the business affairs of either the Corporation or the Supply Contractor.
- (3) If the parties cannot agree on the choice of a mediator, each party shall select a nominee and the nominees shall jointly appoint a mediator.
- (4) The mediation shall take place in Nanaimo, British Columbia, unless agreed otherwise. Parties will be responsible for their own costs.

PART 3 MATERIAL, EQUIPMENT AND WORKMANSHIP

3.1 GENERAL

The Goods shall be of the quality specified in the Contract Documents or better. All work related to the Contract Documents shall be done with equipment and workmanship of the best quality and description and by employment of properly skilled workers and in strict conformity with and as required by the Contract Documents. Materials and equipment shall be the product of suppliers or manufacturers of established good reputation, regularly engaged in the supply or manufacture of such materials or equipment.

3.2 DEMONSTRATION OF COMPLIANCE WITH CONTRACT REQUIREMENTS

3.2.1 Inspection

Inspections and testing shall not in any way relieve the Supply Contractor from any of its obligations or responsibilities under the Contract Documents, and shall not in any way prejudice or constitute a waiver of any rights or remedies of the Corporation or any guarantees, warranties or covenants in favour of the Corporation, and the Corporation shall be entitled to rely on the expertise and obligations of the Supply Contractor and its subcontractors and their consultants and engineers to the same extent as if such inspections and testing by the Corporation or any Inspector or agent had not taken place.

If the Contract Documents, laws, ordinances, or any public regulatory authority requires parts of the Goods to be specially inspected, tested or approved, the Supply Contractor agrees that the Goods shall comply.

The Goods are subject to inspection and acceptance by the Corporation within a reasonable time after receipt. The Corporation will notify the Supply Contractor in writing of the rejection of any of the Goods which are not in accordance with the Contract Documents, and the Goods will be held subject to disposition by the Supply Contractor at the Supply Contractor's risk and subject to all charges accruing because of such rejection.

Notwithstanding any prior payment therefor, all Goods are subject to inspection and testing by the Corporation at the Delivery Point.

3.2.2 Certification

The equipment must be certified by the Supply Contractor in accordance with the local authorities with jurisdiction. Where compliance of Goods with the Contract Documents is not readily determinable through inspection and tests, the Corporation may require that the Supply Contractor provide, at the Supply Contractor's expense, properly authenticated documents, certificates, or other satisfactory proof of compliance. These documents, certificates or other proof shall include performance characteristics, materials of construction and the physical or chemical characteristics of materials.

3.2.3 Electrical

Electrical products that plug into an electrical outlet must meet Canadian national safety standards and be certified by an accredited certification body such as CSA, cUL or cETL.

3.3 DEFECTIVE OR IMPROPER GOODS

3.3.1 Correction of Defective Goods

If upon inspection, testing or otherwise the Goods or any portion thereof are found to be non-conforming, unsatisfactory, defective, or inferior quality or workmanship, or fail to meet any guarantee of operating or other Specifications contained herein, or any other requirements of the Contract Documents, then without prejudice to any other rights or remedies, the Corporation may give notice of its dissatisfaction to the Supply Contractor in writing and the Supply Contractor shall immediately upon receipt of such notice do all things that are required to satisfy the Corporation. If the Supply Contractor refuses or neglects to do all things that are required to satisfy the Corporation within one week from the receipt of notice, the Corporation may employ some other person to do so and all expenses and costs consequent thereon or incidental thereto shall be charged to the Supply Contractor. The employment of such other person or the doing of the said work by the Corporation itself shall not affect the Supply Contractor's duties and liabilities hereunder or relieve the Supply Contractor from the performance and fulfilment of any or all of the Supply Contractor's warranties, covenants, undertakings, obligations and duties under the Contract.

3.3.2 If upon inspection, testing or otherwise the Goods or any portion thereof are found to be non-conforming, unsatisfactory, defective, or inferior quality or workmanship, or fail to meet any guarantee of operating or other Specifications contained herein, or any other requirements of the Contract Documents, then without prejudice to any other rights or remedies, the Corporation may return the Goods or any part thereof to the Supply Contractor at the Supply Contractor's sole cost and all amounts theretofore paid by the Corporation to the Supply Contractor on account of the Contract Price of such returned Goods, shall be repaid to the Corporation by the Supply Contractor. The Supply Contractor shall advise the Corporation in writing, where to return the Goods, and failing such advice from the Supply Contractor, the Supply Contractor agrees to accept the returned Goods at the Supply Contractor's registered office. Neither the inspection nor failure to make inspection, nor acceptance of Goods shall release the Supply Contractor from any warranties or other provisions of this Contract nor impair the

Corporation's right to reject non-conforming Goods. The Corporation reserves the right even after it has paid for and accepted Goods to make a claim against the Supply Contractor on account of any Goods which do not prove to be satisfactory or are defective irrespective of the Corporation's failure to notify the Supply Contractor of a rejection of non-conforming Goods or revocation of acceptance thereof, or to specify with particularity any defect in non-conforming Goods after rejection or acceptance thereof.

3.3.3 Retention of Defective Goods

If in the opinion of the Corporation any portion of the Goods supplied under the Contract is defective or not in accordance with the Contract Documents and if the defect or imperfection in the same is not of sufficient magnitude or importance to make the Goods dangerous or undesirable, or if the removal of such Goods is impracticable, or will create conditions which are dangerous or undesirable, the Corporation shall have the right and authority to retain such Goods instead of requiring the defective or imperfect Goods to be removed and reconstructed, but the Corporation shall be entitled to make such deductions from the payments due or to become due to the Supply Contractor as are just and reasonable.

3.3.4 No Implied Approval

The fact that the Corporation has not disapproved of or rejected any part of the Goods shall not be deemed or be construed to be an acceptance of any such part of the Goods or any such materials.

3.4 WARRANTY AND GUARANTEE

3.4.1 The Supply Contractor agrees that the warranty provisions outlined in the Proposal are to the benefit of the Corporation and that the Goods are free from all defects arising from faulty construction, manufacturing, materials, equipment or workmanship for the period which is twelve (12) months ("Warranty Period") commencing on the earliest of the following dates: (i) the date Corporation accepts clear title to the Goods, or (ii) the date that is six (6) months from the delivery date of the Goods at the Delivery Point.

3.4.2 During the Warranty Period, the Supply Contractor, upon the receipt of notice in writing from the Corporation, shall promptly make all repairs arising out of defects in the Goods. The Corporation shall be entitled to make such repairs, if 10 Days after the giving of such notice to the Supply Contractor, the Supply Contractor has failed to make or undertake with due diligence the repairs. In case of an emergency, where, in the opinion of the Corporation, delay could cause serious loss or damage, or inconvenience to the public, repairs may be

made without notice being sent to the Supply Contractor, only after all reasonable attempts have been made to contact the Supply Contractor. The costs of any repair made by the Corporation in connection with this clause shall be charged to the Supply Contractor and the Supply Contractor shall reimburse the Corporation for such costs. All covenants and agreements shall continue to be binding on the Supply Contractor until they have been fulfilled.

- 3.4.3 The Corporation is relying on Supply Contractor's skill and judgment in selecting and providing the proper Goods and any applicable services for the Corporation's particular use. The Supply Contractor warrants to the Corporation and its successors in interest that the Goods and any services covered hereby will correspond with the description of the same in the Contract Documents, will conform to all applicable Specifications, will be of the best quality and, unless otherwise specified, will be fit for the purpose for which they are to be used and will conform in all aspects, both in the manufacture and use thereof, with all applicable safety orders or regulations of the Province of British Columbia. The Supply Contractor also warrants that the Goods are free and clear of all liens and encumbrances whatsoever and that the Supply Contractor has a good and marketable title to the same.
- 3.4.4 The Supply Contractor warrants and guarantees that the Goods are free from all defects arising at any time from faulty design in any part of the Goods.
- 3.4.5 The Supply Contractor represents that it has read the Contract Documents and, particularly, the Specifications and has satisfied itself that the Goods can be supplied in accordance with the Contract Documents, free of defects and fit for the purpose for which they are to be used.
- 3.4.6 The warranty should be made out to the Regional District of Nanaimo, 6300 Hammond Bay Road, Nanaimo, B.C. V9T 6N2

PART 4 INDEMNIFICATION AND INSURANCE

4.1 INDEMNIFICATION AND RELEASE

- 4.1.1 The Supply Contractor shall save harmless and indemnify the Corporation and its directors, officers, servants, employees and agents (the "Indemnified Parties") from and against all actions, claims, demands, proceedings, suits, losses, damages, costs and expenses of whatsoever kind or nature (including but not limiting the generality of the foregoing, in respect of death, injury, loss or damage to any person or property) arising in any way out of or connected with negligent acts, omission, willful misconduct or breach of this Contract by the Supply Contractor, except to the proportionate extent that such actions, claims, demands, proceedings, suits, losses, damages, costs and expenses were caused by the Indemnified Parties or any of them.
- 4.1.2 Unless otherwise specified in the Contract, the Supply Contractor shall save harmless and indemnify the Indemnified Parties from and against all actions, claims, demands, proceedings, suits, losses, damages, costs and expenses of whatsoever kind or nature arising in any way from liability of any nature or kind for or on account of any copyrighted or uncopyrighted composition, secret or other process, patented or unpatented invention, articles or appliances manufactured, supplied or used in the Goods, and/or used or to be used by the Corporation before or after supply of the Goods as a result of work performed by the Supply Contractor, and if the Supply Contractor shall fail to save harmless and indemnify in manner aforesaid, any money collected from the Indemnified Parties shall be charged to the Supply Contractor.
- 4.1.3 The Supply Contractor shall release and discharge the Corporation and its directors, officers, servants, employees and agents (the "Released Parties") from and against all actions, claims, demands, proceedings, suits, losses, damages, costs and expenses of whatsoever kind or nature (including but not limiting the generality of the foregoing, in respect of death, injury, loss or damage to any person or property) which the Supply Contractor or its servants or employees might have in any manner arising in any way out of or connected negligent acts, omission, willful misconduct or breach of this Contract by the Supply Contractor except to the proportionate extent that such actions, claims, demands, proceedings, suits, losses, damages, costs and expenses were caused by the Released Parties or any of them.
- 4.1.4 The indemnity provided in this clause by the Supply Contractor to the Indemnified Parties shall not in any way be limited or restricted by any insurance or by limitations on the amount or type of damages, compensation or benefits payable under the Workers' Compensation Act or any other similar statute.

4.2 INSURANCE

4.2.1 General

The Supply Contractor and subcontractors shall provide at their own cost any insurance which they are required by law to provide or which they consider necessary to protect their own interests.

4.3 PATENT, TRADEMARK OR COPYRIGHT

4.3.1 The Supply Contractor represents that it has fully investigated all Specifications, including any furnished by the Corporation, in connection with the Goods and based on such investigation and its experience and superior knowledge with respect to such Goods has determined that the production and supply thereof will not infringe any patent, trademark or copyright.

PART 5 SHIPMENT OF GOODS/DAMAGE TO GOODS

5.1 SHIPMENT OF GOODS

5.1.1 Delivery of Goods

The Supply Contractor must deliver the Goods to the Delivery Point DDP (Incoterms 2020). Delivery of the Goods to a carrier for transmission to the Delivery Point does not constitute delivery of the Goods to the Corporation. Any such carrier is deemed to be the Supply Contractor's agent and not the Corporation's agent.

5.1.2 Delivery Costs

The Supply Contractor is responsible for all costs and expenses whatsoever in relation to the supply and delivery of the Goods to the Delivery Point, including without limitations, all shipping, carrier, transportation, freight, insurance, storage, handling, and off-loading costs, as well as any customs or excise charges or duties.

5.1.3 Supply Contractor to Bear Risk

The Supply Contractor shall bear all risks and shall assume all responsibility for the Goods, including, without limitation, any loss or damage to the Goods from any cause whatsoever, up to acceptance of the Goods by the Corporation.

5.1.4 Loss or Damage

If loss or damage to the Goods occurs for which the Supply Contractor is responsible, the Supply Contractor shall immediately effect repairs or replace any property as necessary to make good any such loss or damage. If the Supply Contractor refuses or neglects to do so, the Corporation may make good any such loss or damage, either by itself or by employing some other person, and the expense of doing so shall be charged to the Supply Contractor. If any repair or replacement of property is performed on the Goods because of loss or damage to the Goods for which the Supply Contractor is responsible the Supply Contractor represents and warrants that the warranty provided shall not be affected or changed to any manner or respect whatsoever.

5.1.5 Acceptance of Delivery of Goods by Corporation

Notwithstanding any other provision in the Contract Documents, the Corporation is not deemed to have accepted the Goods until the Goods have been delivered to and off-loaded at the Delivery Point and the Corporation has had a reasonable opportunity of examining them for the purpose of ascertaining whether they are in conformity with the Contract. The Corporation's acceptance or deemed acceptance of the Goods shall not prejudice any rights or remedies the Corporation may have hereunder relating to Goods that are found to be non-conforming, unsatisfactory, defective, of inferior quality or workmanship, or which fail to meet any Specifications or requirements of the Contract Documents.

PART 6 PROGRESS AND COMPLETION

6.1 CONTRACT TIME

6.1.1 Prosecution of the Goods

Time shall be strictly of the essence. The Supply Contractor shall supply the Goods in accordance with the Contract Documents. The Supply Contractor acknowledges that the schedule for supply of the Goods as set out in the Contract Documents is reasonable.

6.1.2 Schedule

The Supply Contractor shall provide a schedule and periodic updates co-ordinating the supply of Goods within the prescribed time. Contract time extensions, if any, shall be incorporated into updated schedules. The failure of the Supply Contractor to comply with this requirement may entitle the

Corporation to terminate the Supply Contractor's right to continue with the supply of Goods or to delay progress payments.

6.2 TERMINATION

6.2.1 The Corporation may terminate the Contract if the Supply Contractor at any time becomes bankrupt, makes an assignment of his property for the benefit of his creditors, or if a receiver or liquidator should be appointed. Such termination shall be effective upon the Corporation giving notice thereof.

6.2.2 If at any time the Corporation reasonably forms the opinion that the Supply Contractor is in default under this Contract because the Supply Contractor:

- (1) has breached a fundamental term of the Contract or is in substantial breach of the terms of the Contract;
- (2) has failed to supply the Goods, within the time specified in the Contract Documents or extensions mutually agreed between the parties in writing;
- (3) has failed or is failing to furnish or to maintain a detailed schedule;
- (4) has become in any way unable to supply the Goods or any part thereof; or
- (5) has repeatedly failed to make prompt payments to subcontractors, suppliers or others for labour, materials, or equipment;

then the Corporation may give notice in writing to the Supply Contractor of such opinion and require that such default or defaults be remedied forthwith. If, within five Days of such notice, such default or defaults are not remedied to the satisfaction of the Corporation or the Supply Contractor has not taken reasonable measures to commence remedying the default(s), the Corporation may terminate the Contract. Such termination shall be effective immediately.

6.2.3 The Corporation may terminate the Contract, without any cost or penalty or consequence whatsoever, if it concludes, acting reasonably on the information available to it, that the Supply Contractor is in material non-compliance with, or has been convicted of a material offence or violation of, health, safety, labour, or environmental laws.

6.3 NO CLAIM

Except as herein before provided, the Supply Contractor shall have no claim against the Corporation for any reason whatsoever by reason of the termination of the Contract.

PART 7 PAYMENT**7.1 PAYMENTS TO SUPPLY CONTRACTOR**

7.1.1 Payments to the Supply Contractor will be made as per the Agreement and set forth otherwise in the Contract Documents.

7.1.2 Notwithstanding Clause 7.1.1 the Corporation may withhold from payment:

- (1) Such reasonable amount as the Corporation determines appropriate with respect to any part of the Goods not in compliance with the Contract Documents;
- (2) Statutory holdback if the supply of Goods is of a nature that creates an obligation on the Corporation to retain a holdback under the Builders Lien Act;
- (3) The amount of any bona fide builder's lien claim asserted against the Corporation or which the Corporation acting reasonably anticipates will be made against the Corporation; or
- (4) Any deduction or set-off the Corporation may otherwise be entitled to under the Contract.

7.1.3 Payments may be withheld until the relevant operating manuals and all operating and maintenance materials together with all warranties have been delivered to the Corporation.

7.1.4 In addition to any other remedy the Corporation may have in the Contract or law, the Corporation may refuse to make payment because of subsequently discovered evidence or test results, and shall be compensated for any payment previously made to the Supply Contractor to such extent as may be necessary to protect the Corporation from loss because of:

- (1) Defective or damaged Goods;
- (2) A deductive change order;
- (3) Failure of the Supply Contractor to supply the Goods in accordance with the Contract Documents, including failure to maintain the supply of the Goods in accordance with the schedule; or

- (4) Disregard by the Supply Contractor of the authority of the laws of any public body having jurisdiction.

The Corporation may refuse to make payment of the full amount because of claims made against the Corporation on account of the Supply Contractor's performance or supply of Goods. In such case, the Corporation shall give the Supply Contractor prompt written notice stating the reasons for each action.

- 7.1.5 Prior to payment to the Supply Contractor, if requested by the Corporation, the Supply Contractor shall deliver to the Corporation a statutory declaration in form satisfactory to the Corporation declaring that all subcontractors, labour and accounts for material and equipment have been paid and that no persons, firms or corporations have any lien against the lands comprising the Delivery Point or the work together with such other documentation as the Corporation, acting reasonably, determines is necessary or desirable.