



INVITATION TO TENDER 17-15

LIFT STATION BACKUP GENERATORS

**MASTER MUNICIPAL CONSTRUCTION DOCUMENTS - 2009
Platinum Edition**

UNIT PRICE CONTRACT

September 25th, 2017

Supply Management

301 St. Ann's Road, Campbell River, B.C. V9W 4C7
Telephone: 250.286.5766; Fax: 250.286.5741
clinton.crook@campbellriver.ca



INVITATION TO TENDER 17-15
LIFT STATION BACKUP GENERATORS
TABLE OF CONTENTS

The complete Contract Documents consist of the following parts:

1. The Master Municipal Construction Documents (Tender Package) consisting of the following parts (**included in this tender package**):
 - Invitation to Tender
 - Instructions to Tenderers, Part I
 - Form of Tender
 - Appendix 1 - Schedule of Quantities and Prices
 - Appendix 2 - Preliminary Construction Schedule
 - Appendix 3 - Experience of Superintendent
 - Appendix 4 - Comparable Work Experience
 - Appendix 5 - Subcontractors
 - Appendix 6 - Tenderer's Current Projects Underway
 - Agreement - Draft
 - Schedule 1 - Schedule of Contract Documents
 - Schedule 2 - List of Contract Drawings
 - Appendix 7 - Safety Covenant
 - Appendix 8 - Prime Contractor Agreement
 - Supplementary General Conditions
 - Supplementary Specifications
2. The balance of the Master Municipal Construction Documents, Platinum, 2009 edition. These documents are available in the "MMCD - General Conditions, Specifications and Standard Detail Drawings" (**not distributed in this tender package**).
3. Additional reference documentation consisting of the following parts (**not distributed in this tender package**) available at www.campbellriver.ca:
 - Supplementary Specifications, City of Campbell River, Design Standards 2010, Appendix A to Subdivision and Development Servicing Bylaw 3419
 - City of Campbell River, Approved Utility Product List April 2011



INVITATION TO TENDER 17-15

LIFT STATION BACKUP GENERATORS

The City of Campbell River invites tenders for the construction, supply, and installation of lift station backup generators. This contract includes the following generalized scope of work:

Work under this Contract includes, but is not limited to, all supervision, construction, equipment, labour, material, permits and related items required for construction of the supply and installation of backup generators for lift stations #9, 10, 12, 14 and 15, and the electrical re-servicing of lift station #8 in the City of Campbell River, BC.

This Tender is available electronically by downloading from the City's website at:
www.campbellriver.ca/city_services/purchasing/request_for_proposal.asp

A **Mandatory** Site Meeting will NOT be held.

This Tender is scheduled to close at:

Tender Closing Time: 3:00 p.m. local time

Tender Closing Date: Tuesday October 24th, 2017
There will NOT be a Public Opening for this Tender

Delivered to: City of Campbell River City Hall
301 St. Ann's Road
1st Floor Reception Desk
Campbell River, BC V9W 4C7
ATTN: Clinton Crook – Senior Buyer

Tender Enquiries: Clinton Crook, SCMP, CPSM, Senior Buyer
Telephone: 250.286.5766
Email: clinton.crook@campbellriver.ca



INVITATION TO TENDER 17-15
LIFT STATION BACKUP GENERATORS
RECEIPT CONFIRMATION FORM

As receipt of this document, and to directly receive any further information, addendums, etc.
regarding this competition, please return this to:

ATTN: Clinton J. Crook, SCMP, CPSM,
Senior Buyer
Email: clinton.crook@campbellriver.ca
Fax: 250.286.5741

Company Name: _____

Address: _____

City: _____

Province/State: _____ Postal/Zip Code: _____

Telephone No: _____ Fax No: _____

Contact Person: _____

Title: _____

Email: _____

CITY OF CAMPBELL RIVER
TENDER 17-15
LIFT STATION BACKUP GENERATORS
INSTRUCTIONS TO TENDERERS
PART I

TABLE OF CONTENTS		Page
1	Introduction	IT 2
2	Tender Documents.....	IT 3
3	Submission of Tenders	IT 3
4	Additional Instructions to Tenderers	IT 4

INSTRUCTIONS TO TENDERERS - PART I

TO BE READ WITH "INSTRUCTIONS TO TENDERERS - PART II" CONTAINED IN THE EDITION OF THE PUBLICATION "MASTER MUNICIPAL CONSTRUCTION DOCUMENTS" AND APPLICABLE CITY OF CAMPBELL RIVER BYLAWS SPECIFIED IN ARTICLE 2.2 BELOW

Reference No.: TENDER 17-15

Contract: LIFT STATION BACKUP GENERATORS

Introduction

1

- 1.1 These Instructions apply to and govern the preparation of tenders for this *Contract*. The *Contract* is generally for the following work:

Work under this Contract includes, but is not limited to, all supervision, construction, equipment, labour, material, permits and related items required for construction of the supply and installation of backup generators for lift stations #9, 10, 12, 14 and 15, and the electrical re-servicing of lift station #8 in the City of Campbell River, BC.

- 1.2 Direct all tender inquiries regarding the *Contract*, to:

Clinton Crook, SCMP, CPSM, Senior Buyer
Telephone: 250.286.5766
Email: clinton.crook@campbellriver.ca

Tender

Documents

2

- 2.1 The tender documents which a tenderer should review to prepare a tender consist of all of the *Contract Documents* listed in Schedule 1 entitled "Schedule of Contract Documents". Schedule 1 is attached to the Agreement which is included as part of the tender package. The *Contract Documents* include the Drawings listed in Schedule 2 to the Agreement, entitled "List of Drawings".

- 2.2 A portion of the Contract Documents is included by reference. Copies of these documents have not been included with the tender package. These documents are the Instructions to Tenderers - Part II, General Conditions, Specifications and Standard Detail Drawings contained in the publication entitled "Master Municipal Construction Documents - General Conditions, "Specifications and Standard Detail Drawings" and relevant sections of Supplementary Specifications, City of Campbell River, Design Standards 2010, Appendix A to Subdivision and Development Servicing Bylaw 3419. Refer to Schedule 1 attached to the Agreement or, if no edition has been specified, then the applicable edition shall be the most recent edition as of the date of this *Contract*. All sections of this publication are by reference included in the *Contract Documents*.

- 2.3 Any additional information made available to Tenderers prior to the Tender Closing Time by the *Owner* or representative of the *Owner*, such as geotechnical reports or as-built plans, which is not expressly included in Schedule 1 or Schedule 2 to the Agreement, is not included in the *Contract Documents*. Such additional information is made available only for the assistance of tenderers who must make their own judgement about its reliability, accuracy or completeness and neither the *Owner* nor any representative of the *Owner* gives any guarantee or representation that the additional information is reliable, accurate or complete.

**Submission of
Tenders**

- 3**
3.1 Tenders must be submitted in a sealed opaque package, clearly marked on the outside with the above *Contract* Title and Reference No., and must be received on or before:

Tender Closing Time: 3:00 p.m. local time

There will NOT be a Public Opening for this Tender

Tender Closing Date: Tuesday October 24th, 2017

Delivered to:

City of Campbell River City Hall
301 St. Ann's Road
1st Floor Reception Desk
Campbell River, BC V9W 4C7
ATTN: Clinton Crook – Senior Buyer

- 3.2 Late tenders will not be accepted or considered, and will be returned unopened.
- 3.3 Tender Submission
- .1 Tenders **must** be submitted on the Tender Forms included in these tender documents. The addition to or changing of any words in these Tender Forms by the tenderer or the failure to comply with and complete all items may be cause for rejection without consideration of the tender.
- .2 The Tender Submission **must** include acknowledgement of receipt of all issued addenda.
- .3 The Tender Submission **must** include:
- Appendix 1 – Schedule of Quantities and Prices – GST Excluded;
 - Appendix 2 – Preliminary Construction Schedule;
 - Appendix 3 – Experience of Superintendent;
 - Appendix 4 – Comparable Work Experience;
 - Appendix 5 – Subcontractors;
 - Appendix 6 – Tenderers Current Projects Underway.

- .4 The Form of Tender **must** bear the signature of a legal signing authority of the tenderer.
- .5 Other than acknowledgement of receipt of addenda, or request for withdrawal or revision, documents submitted as part of a tender will **not** be considered if received by any of the Owner's facsimile machines.
- .6 Except as expressly and specifically permitted in these Instructions to Tenderers, no Tenderers shall have any claim for any compensation of any kind whatsoever, as a result of participating in the tender, and by submitting a bid, each Tenderer shall be deemed to have agreed that it has no claim.

Additional Instructions to Tenderers

4

Freedom of Information

4.1

The *Owner* is subject to the provisions of the Freedom of Information and Protection of Privacy Act. As a result, while Section 21 of the Act does offer some protection for third party business interests, the *Owner* cannot guarantee that any information provided to the *Owner* can be held in confidence. All tenders, after closing time and date become the property of the *Owner*.

Cost of Tender Submission

4.2

The *Owner* shall not be liable for a Tenderer's cost of submitting a tender.

Evaluation Criteria

4.3

(a) The *Owner* reserves the right to waive informalities in or reject any or all tenders or accept the tender deemed most favourable in the interests of the *Owner*. Tenders will be evaluated on the combination of information provided in the Form of Tender and Appendices, which may offer the best value and not necessarily the lowest price. The *Owner* reserves the right to conduct pre-selection meetings with Tenderers. The *Owner* further reserves the right to conduct post-selection meetings in order to correct, change or adapt the selected Tender to the wishes of the *Owner*. **Acceptance of any tender may be subject to budgetary considerations and/or City of Campbell River Council approval, and/or the approval of other jurisdictions having authority.**

Construction Association Policies

4.4

4.4.1

The *Owner* is not a member of the Public Construction Council of British Columbia, the British Columbia Construction Association or any other construction association.

4.4.2

The *Owner* does not adopt or agree to be bound by "The Procedures and Guidelines Recommended For Use on Publicly Funded Construction Projects" produced by the Public Construction

Council of British Columbia, September 1989, or any other procedure/guideline recommended, adopted or produced by any construction association in the tendering and award of the *Contract* of this project.

Good Neighbour Policy

4.5

4.5.1

The *Owner's* Good Neighbour Policy as adopted by City of Campbell River Council on April 15, 1997 shall apply to this contract.

4.5.2

The Policy states: "That Contractors working on Municipal rights-of-way or on private land where new rights-of-way are being created, be required to provide written notice to the residents in the immediate area of the works, describing what is being constructed, when the works will occur, who to contact for more information and what precautions should be taken if necessary; and that the work-site be posted for safety reasons."

Mandatory Site Meeting

4.6

A Mandatory Site Meeting will NOT be held.

Addition\Deletion

4.7

Tenderers are advised that the *Owner* may, at its option, and subject to available funding and budgetary considerations, delete any *Work* described in the *Contract Documents* or may require that optional work be added to the scope of *Work*.

Omissions and Discrepancies

4.8

The Tenderer must carefully examine the *Contract Documents* and the site of the proposed works, judging for and satisfying themselves as to the probable conditions to be encountered. Should a Tenderer find omissions from or discrepancies in the *Contract Documents*, or be in doubt as their meaning, the Tenderer should notify the *Owner* no later than 5 days prior to the tender closing, who may cause to send a written instruction to all Tenderers in the form of an addendum, which shall become part of the contract and shall be covered in the contract price. The Tenderer may not claim, after the submission of a tender, that there was any misunderstanding with respect to the conditions imposed by the documents. No oral interpretations made to a Tenderer as to the meaning of the *Contract Documents* shall be considered binding. Every request for an interpretation shall be made in writing, forwarded to the office referred to in paragraph 3.1 of the Instructions to Tenderers – Part I.

Amendment of Tenders

4.9

4.9.1

Delete Paragraphs 12.1 of the Instructions to Tenderers, Part II and replace with the following paragraphs 4.9.2 and 4.9.3:

4.9.2

A Tenderer may, without prejudice to itself, withdraw or revise a tender after it has been deposited with the *Owner*, provided the request for withdrawal or revision is filed with the *Owner* in writing, via hand, mail, fax, or e-mail before the time set for the Tender closing to the office referred to in paragraph 3.1 of the Instructions

to Tenderers - Part 1. In the case of revision(s), a revised price will not be accepted, only the addition to or deduction from the tender price will be accepted.

- 4.9.3 In the case of facsimile or e-mail requests for withdrawal or revision, they will only be accepted if they are received by the *Owner's* Supply Management Department facsimile machine at 250.286.5741 or via e-mail at clinton.crook@campbellriver.ca before the scheduled tender closing time. Tenderers assume the entire risk that the facsimile and computer equipment and staff at the above office will receive the facsimile or e-mail containing the withdrawal or revision. The *Owner* assumes no risk or responsibility whatsoever that any facsimile or e-mail will be received as required and shall not be liable to any *Tenderer* if for any reason a facsimile or e-mail is not received.

For purposes of this paragraph 4.9.3, "received" means the request for withdrawal or revision is visible to the *Owner's* staff in its entirety, and is either in printed form or is capable of immediate reproduction in printed form.

**Sub-Surface
Conditions**

- 4.10 A geotechnical assessment or a geotechnical exploration has not been completed. Tenderers shall make their own assessment of the soil and groundwater conditions at the location.

**Environmental
Conditions**

- 4.11 No environmental assessment has been completed for this project.

Working Hours

- 4.12 Work inside the *Owner's* Property shall be carried out between the hours of 7:00 a.m. and 10:00 p.m. seven (7) days a week unless other arrangements are made between the *Owner* and the *Contractor*.

**Commencement
And Completion
of Work**

- 4.13 The *Owner* requires that the *Work* under this Contract be completed as quickly as possible after *Contract* award, and within the following milestones:

Substantial Performance of this Contract is to be achieved within 150 days from Notice to Proceed.

Schedule of Quantities and Prices are estimated, and that the actual quantities will vary.

4 I (WE) CONFIRM:

4.1 that the following Appendices are attached to and form a part of this tender:

4.1.1 the Appendices as required by paragraph 5.3 of the Instructions to Tenderers - Part II.

5 I (WE) AGREE:

5.1 that this tender will be irrevocable and open for acceptance by the *Owner* for a period of 60 calendar days from the day following the *Tender Closing Date and Time*, even if the tender of another tenderer is accepted by the *Owner*. If within this period the *Owner* delivers a written notice ("*Notice of Award*") by which the *Owner* accepts our tender we will:

5.1.1 within 10 *Days* of receipt of the written *Notice of Award* deliver to the *Owner*:

- a a *Construction Schedule*, as provided by GC 4.6.1; and as per *Supplemental Specifications* in 01 31 00S; and
- b a "clearance letter" indicating that the tenderer is in WCB compliance; and
- c a copy of the insurance policies as specified in GC 24 indicating that all such insurance coverage is in place; and
- d a Health and Safety Program Manual pertaining to the Work;

5.1.2 As per General Condition 4.6.6, the Owner shall issue the Notice to Proceed within 14 days of receipt of the documentation required under item 5.1.1 above.

5.1.3 within 2 *Days* of receipt of written "*Notice to Proceed*", or such longer time as may be otherwise specified in the *Notice to Proceed*, commence the *Work*.

5.1.4 sign the *Contract Documents* as required by GC 2.1.2.

Tenderer's Initial	Owner's Initial

5.1.5 within 10 days of the issue of the *Certificate of Substantial Performance* deliver to the Owner, a Maintenance Period Financial Security as per Supplementary General Condition 25.4.1.

6 I (WE) AGREE:

6.1 that, if we receive written *Notice of Award* of this *Contract* and, contrary to paragraph 5 of this Form of Tender, we:

6.1.1 fail or refuse to deliver the documents as specified by paragraph 5.1.1 of this Form of Tender; or

6.1.2 fail or refuse to commence the *Work* as required by the *Notice to Proceed*,

then such failure or refusal will be deemed to be a refusal by me (us) to enter into the *Contract* and the *Owner* may, on written notice to me (us), award the *Contract* to another party.

7 I (WE) DECLARE THAT:

7.1 no person, firm or company other than the undersigned, has any interest in this tender or in the proposed *Contract* for which this tender is made;

7.2 this tender is made without any connection, knowledge, comparison of figures, or agreement with any other company, firm or person making a tender for the same work;

7.3 in tendering for this work, and when called upon to enter into an agreement with the *Owner*, I (we) will be bound to comply with all laws, statutes, and municipal bylaws pertaining to the work. The agreement will be governed by the laws of the province of British Columbia;

7.4 in submitting this tender I (we) did not rely upon any information provided by the *Owner*, or any of the *Owner's* employees or agents, relating to the conditions, contingencies, risks or other circumstances, local or otherwise, which might influence or affect the performance or the cost of the work, including, without limiting the nature of the ground, subsoil, substrata of the work site, the means of access to the work site, the quality, quantity, nature or location of the materials to be furnished or removed in performance of the work, and the conditions under which the labour force will be employed, except the extent that any such information is expressly set forth in the *Contract Documents*. I (we) have relied on our own examination of the work site and

Tenderer's Initial	Owner's Initial

have informed ourselves as to all conditions, contingencies, risks, and circumstances, local or otherwise, which might influence or affect the performance or the cost of the work. I (we) accept the site prior to the signing of the *Contract*.

8 WE AGREE:

8.1 The *Work* shall be completed entirely in 150 *Days* (The Designated Completion Period);

8.2 There shall be no exclusion of time from the Designated Completion Period for any reason OTHER than delays clearly attributable to the OWNER, its agents, employees or any Authorized Representatives.

9 I (WE) DECLARE THAT:

9.1 I (we) recognize that the lowest or any tender will not necessarily be accepted; and

9.2 I (we) recognize that the *Owner* reserves the right to reject all tenders or to accept the tender which best suits its long term objectives; and

I (we) recognize that the *Owner* reserves the right to accept or reject all or part of this Tender at any time during the period specified by paragraph 5.1 of this Form of Tender.

10 I (WE) DECLARE THAT:

10.1 I (we) do not (or any related company) have any family, ownership, and operating relationships with the City of Campbell River, or any elected official, staff or other officials holding public office in the City of Campbell River and agree that the Owner reserves the right to reject any tender that may be perceived to be in a conflict of interest.

11 I (WE) DECLARE THAT:

11.1 In this tender:

(a) "Related Party of the Tenderer" means:

- an officer or director of the Tenderer;
- a shareholder of the Tenderer;
- a corporation with a shareholder or director who is also a shareholder or director of Tenderer;

(b) "Public Authority" has the same meaning as under the Community Charter.

11.2 I (we) hereby declare that neither the Tenderer nor a Related Party of the Tenderer:

(a) has had a bid bond or performance bond retained or

--	--

- claimed against;
- (b) has breached a contract for works or services with the *Owner* or other Public Authority in British Columbia;
 - (c) has been engaged in a legal action against the *Owner* or another Public Authority in British Columbia, or the elected or appointed officers and employees of the *Owner* or that other Public Authority, in relation to;
 - any other contract for works or services;
 - any matter arising from the exercise of the *Owner's* or the other Public Authority's powers, duties or functions under the Community Charter, Local Government Act or other enactment;
 - (d) has been charged or convicted of an offence in relation to the performance of a contract for works or services with the *Owner* or other Public Authority;

within five years of the closing date of this Tender.

Tenderers who are unable to truthfully complete this declaration must provide full particulars of the relevant circumstances. Submission of a false declaration is grounds for rejection of a tender.

11.3 I (we) hereby declare that the *Owner* may in its absolute discretion reject a Tender submitted by a Tenderer if the Tenderer or a Related Party of the Tenderer:

- (a) has had a bid bond or performance bond retained or claimed against;
- (b) has breached a contract for work or services with the *Owner* or other Public Authority in British Columbia;
- (c) has been engaged in a legal action against the *Owner* or another public authority in British Columbia, or the elected or appointed officers and employees of the *Owner* or that other public authority, in relation to:
 - any other contract for works or services;
 - any matter arising from the exercise of the *Owner's* or the other public authority's powers, duties or functions under the Community Charter, Local Government Act or other enactment;
- (d) has been charged or convicted of an offence in relation to the performance of a contract for works or services with the *Owner* or other Public Authority;

within five years of the closing date of this Tender.

11.4 I (we) hereby declare that in determining whether to reject a tender the *Owner* will consider whether:

Tenderer's Initial	Owner's Initial

- (a) the legal action is likely to affect the Tenderers ability to work with the *Owner*, its consultants and representatives, and;

whether the *Owner's* or other public authority's experience with the Tenderer indicates that the *Owner* is likely to incur increased costs including but not limited to staff and legal costs in the administration of this contract if it is awarded to the Tenderer.

12 I (WE) AGREE THAT:

12.1 I (we) agree that if any director, officer or employee, agent or other representative of a Tenderer makes any representation or solicitation to the Mayor, any Councillor, officer or employee of the City of Campbell River, other than those specifically designated in the Tender documents, with respect to this Tender, whether before or after the submission of the Tender, the City shall be entitled to reject or not accept the Tender.

MY (OUR) ADDRESS is as follows:

(Full Legal Name of Corporation, Partnership or Individual)

(address)

(city, province)

(postal code)

Phone: _____

Fax: _____

E-mail: _____

This Tender is executed this _____ day of _____, 2017.

(Printed Name)

(Authorized Signatory)

--	--

Appendix 1

SCHEDULE OF QUANTITIES AND PRICES – GST EXCLUDED (See paragraph 5.3.1 of the Instructions to Tender – Part II)

(All prices and *Quotations* including the *Contract Price* shall include all Taxes, but shall not include GST, GST shall be shown separately.)

ITEM No.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
01 20 00S SECTION 1 - GENERAL					
1.1	Mobilization & Demobilization	LS	1		
01 20 00S SECTION 2 - GENERATOR INSTALLATIONS					
2.1	Lift Station 8	LS	1		
2.2	Lift Station 9	LS	1		
2.3	Lift Station 10	LS	1		
2.4	Lift Station 12	LS	1		
2.5	Lift Station 14	LS	1		
2.6	Lift Station 15	LS	1		
01 20 00S SECTION 3 - FINAL DOCUMENTS					
3.1	Operation & Maintenance Manuals	LS	1		
				SUB-TOTAL:	\$
				GST (5%):	\$
				TOTAL:	\$

OPTIONAL WORK:

01 20 00S SECTION 4					
4.1	Additional Maintenance Services	LS	1		

Specify Manufacturer(s) and Genset(s) Supplier:

--	--

Appendix 2

PRELIMINARY CONSTRUCTION SCHEDULE
(See paragraph 5.3.2 of the Instructions to Tenderers - Part II)

Indicate Time-Scaled Network Construction Schedule Based On Critical Path Method.
See Supplemental Specification 01 31 00S For Further Detail

ACTIVITY (with milestone dates)	CONSTRUCTION SCHEDULE WITH CRITICAL PATH SHOWN (weeks)																				
	1	2	3	4	5	6	7	8	9	10	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	2 0	

Tenderer's Initial	Owner's Initial

Appendix 3

EXPERIENCE OF SUPERINTENDENT (See paragraph 5.3.3 of the Instructions to Tenderers - Part II)

Name: _____

Experience:

1. Dates: _____

Project Name: _____

Responsibility: _____

References: _____

2. Dates: _____

Project Name: _____

Responsibility: _____

References: _____

3. Dates: _____

Project Name: _____

Responsibility: _____

References: _____

--	--

Appendix 4

COMPARABLE WORK EXPERIENCE
(See paragraph 5.3.4 of the Instructions to Tenderers - Part II)

PROJECT	OWNER/ CONTRACT NAME	PHONE NUMBER	WORK DESCRIPTION	VALUE (\$)

--	--

Appendix 5

SUBCONTRACTORS

(See paragraph 5.3.5 of the Instructions to Tenderers - Part II)

TENDER ITEM	TRADE	SUBCONTRACTOR NAME	PHONE NUMBER

--	--

Appendix 6

TENDERERS CURRENT PROJECTS UNDERWAY

PROJECT	OWNER/ CONTRACT NAME	PHONE NUMBER	WORK DESCRIPTION	VALUE (\$)	% COMPLETE

--	--

Draft Agreement

Between Owner and Contractor

THIS AGREEMENT made in duplicate this _____ day of _____, 2017.

Reference No.: TENDER 17-15

Contract: LIFT STATION BACKUP GENERATORS

BETWEEN:

CITY OF CAMPBELL RIVER

(the "Owner")

AND:

TBD

(the "Contractor")

The Owner and the Contractor agree as follows:

ARTICLE 1 THE WORK - START/COMPLETION DATES

- 1.1 The Contractor will perform all Work and provide all labour, equipment and material and do all things strictly as required by the Contract Documents.
- 1.2 The Contractor will commence the Work in accordance with the Notice to Proceed. The Contractor will proceed with the Work diligently, will perform the Work generally in accordance with the construction schedules as required by the Contract Documents and will achieve Substantial Performance of the Work within 150 Days of being issued a Notice to Proceed subject to the provisions of the Contract Documents for adjustments to the Contract Time.
- 1.3 Time shall be of the essence of the Contract

ARTICLE 2 CONTRACT DOCUMENTS

- 2.1 "Contract Documents" consist of the documents listed or referred to in Schedule 1, entitled "Schedule of Contract Documents", which is attached and forms a part of this Agreement, and includes any and all additional and amending documents issued in accordance with the provisions of the Contract Documents. All of the Contract Documents shall constitute the entire Contract between the Owner and the Contractor.
- 2.2 The Contract supersedes all prior negotiations, representations or agreements, whether written or oral, and the Contract may be amended only in strict accordance with the provisions of the Contract Documents.

ARTICLE 3 CONTRACT PRICE

- 3.1 The price for the Work ("Contract Price") shall be the sum in Canadian dollars of the following:
 - 3.1.1 the product of the actual quantities of the items of Work listed in the Schedule of Quantities and Prices which are incorporated into or made necessary by the Work and the Lump Sums listed in the Schedule of Quantities and Prices; plus
 - 3.1.2 all lump sums, if any, as listed in the Schedule of Quantities and Prices, for items relating to or incorporated into the Work; plus

- 3.1.3 any adjustments, including any payments owing on account of *Changes* and agreed to *Extra Work*, approved in accordance with the provisions of the *Contract Documents*.
- 3.2 The *Contract Price* shall be the entire compensation owing to the *Contractor* for the *Work* and this compensation shall cover and include all profit and all costs of supervision, labour, material, equipment, overhead, financing, and all other costs and expenses whatsoever incurred in performing the *Work*.

ARTICLE 4 PAYMENT

- 4.1 Subject to applicable legislation and the provisions of the *Contract Documents*, the *Owner* shall make payments to the *Contractor*.
- 4.2 If the *Owner* fails to make payments to the *Contractor* as they become due in accordance with the terms of the *Contract Documents* then interest calculated at 2% per annum over the prime commercial lending rate of the Royal Bank of Canada on such unpaid amounts shall also become due and payable until payment. Such interest shall be calculated and added to any unpaid amounts monthly.

ARTICLE 5 RIGHTS AND REMEDIES

- 5.1 The duties and obligations imposed by the *Contract Documents* and the rights and remedies available hereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law.
- 5.2 Except as specifically set out in the *Contract Documents*, no action or failure to act by the *Owner*, *Contract Administrator* or *Contractor* shall constitute a waiver of any of the parties' rights or duties afforded under the *Contract*, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach under the *Contract*.

ARTICLE 6 NOTICES

- 6.1 Communications among the *Owner*, the *Contract Administrator* and the *Contractor*, including all written notices required by the *Contract Documents*, may be delivered by hand, e-mail, fax, or by pre-paid registered mail to the addresses as set out below:

The *Owner*:
City of Campbell River
301 St. Ann's Road
Campbell River, BC
V9W 4C7
Attention: Mr. Jason Hartley, P.Eng., Capital Works Manager
E-mail: jason.hartley@campbellriver.ca

The *Contractor*: TBD

The *Contract Administrator*:
City of Campbell River
301 St. Ann's Road
Campbell River, BC
V9W 4C7
Attention: Mr. Jason Hartley, P.Eng., Capital Works Manager
E-mail: jason.hartley@campbellriver.ca

- 6.2 A communication or notice that is addressed as above shall be considered to have been received:
- 6.2.1 immediately upon delivery, if delivered by hand; or
- 6.2.2 immediately upon transmission if sent and received by fax or e-mail; or
- 6.2.3 after 5 Days from date of posting if sent by registered mail.
- 6.3 The *Owner* or the *Contractor* may, at any time, change its address for notice by giving written notice to the other at the address then applicable. Similarly if the *Contract Administrator* changes its address for notice then the *Owner* will give or cause to be given written notice to the *Contractor*.

6.4 The sender of a notice by fax or e-mail assumes all risk that the fax or e-mail will be received properly, and the provisions of paragraph 12.5 of the Instructions to Tenderers, Part II apply to the sender for both fax and e-mails.

ARTICLE 7 GENERAL

- 7.1 This *Contract* shall be construed according to the laws of British Columbia.
- 7.2 The *Contractor* shall not, without the express written consent of the *Owner*, assign this *Contract*, or any portion of this *Contract*.
- 7.3 The headings included in the *Contract Documents* are for convenience only and do not form part of this *Contract* and will not be used to interpret, define or limit the scope or intent of this *Contract* or any of the provisions of the *Contract Documents*.
- 7.4 A word in the *Contract Documents* in the singular includes the plural and, in each case, vice versa.
- 7.5 This agreement shall ensure to the benefit of and be binding upon the parties and their successors, executors, administrators and assigns.

IN WITNESS WHEREOF the parties hereto have executed this Agreement the day and year first written above.

Contractor:

TBD

(FULL LEGAL NAME OF CORPORATION, PARTNERSHIP OR INDIVIDUAL)

(AUTHORIZED SIGNATORY)

(WITNESS)

Owner:

City of Campbell River

(GENERAL MANAGER, FACILITIES AND SUPPLY)

(WITNESS)

SCHEDULE 1
CITY OF CAMPBELL RIVER
Schedule of Contract Documents

The following is an exact and complete list of the *Contract Documents*, as referred to in Article 2.1 of the *Agreement*.

NOTE: The documents noted with "*" are contained in the "Master Municipal Construction Documents - General Conditions, Specifications and Standard Detail Drawings", 2009 PLATINUM edition. All sections of this publication are included in the *Contract Documents*.

The documents noted with "***" are available at www.campbellriver.ca

- (a) Agreement;
- (b) Addenda;
- (c) Supplementary General Conditions;
- (d) General Conditions*;
- (e) Supplementary Specifications;
- (f) Specifications*;
- (g) Drawings listed in Schedule 2 to the Agreement;
- (h) Supplementary Detail Drawings;
- (i) Standard Detail Drawings*;
- (j) Executed Form of Tender;
- (k) Instructions to Tenderers - Part I;
- (l) Instructions to Tenderers - Part II*;
- (m) All other Contract Documents;
- (n) Supplementary Specifications, City of Campbell River, Design Standards 2010, Appendix A to Subdivision and Development Servicing Bylaw 3419**;
- (o) City of Campbell River: Approved Utility Product List**.

SCHEDULE 2

CITY OF CAMPBELL RIVER

List of Contract Drawings

(Complete listing of all drawings, plans and sketches which are to form a part of this Contract, other than Standard Detail Drawings and Supplementary Standard Detail Drawings.)

TITLE	DRAWING NO.	SHEET NO.	DATE	REVISION DATE	REVISION NO.
Title Page & Drawing Index	16-503/E00		April 2016	Nov 09 2016	4
Site Plan Lift Station #8 & Lift Station #17 Electrical Layout	16-503/E01		April 2016	Nov 09 2016	3
Site Plan Lift Station #8 Electrical Layout	16-503/E02		April 2016	Nov 09 2016	4
Site Plan Lift Station #9 Electrical Layout	16-503/E03		April 2016	Nov 09 2016	4
Site Plan Lift Station #10 Electrical Layout	16-503/E04		April 2016	Nov 09 2016	4
Site Plan Lift Station #12 Electrical Layout	16-503/E05		April 2016	Nov 09 2016	4
Site Plan Lift Station #14 Electrical Layout	16-503/E06		April 2016	Nov 09 2016	4
Site Plan Lift Station #15 Electrical Layout	16-503/E07		April 2016	Nov 09 2016	4
Generator Specifications	16-503/E08		April 2016	Sept 25 2017	5
Electrical Specifications	16-503/E09		April 2016	Nov 09 2016	2
Proposed Genset Pad Details for Lift Stations 8, 9 & 10	16-503 C01	1 of 2	2016-06-06	2016-09-13	1
Proposed Genset Pad Details for Lift Station 12, 14 & 15	16-503 C02	2 of 2	2016-06-06	2016-09-13	1

Appendix 7

SAFETY COVENANT

BETWEEN:

_____ of
(Company Name (Print legibly))

(Address)

(City)

(Postal Code)

(Phone no.)

(Fax no.)

hereinafter referred to as the "Contractor"

AND:

CITY OF CAMPBELL RIVER

hereinafter called the "Owner"

WHEREAS:

The Contractor covenants and agrees that when performing any work for the Owner, whether directly as a contractor or indirectly as a sub-contractor, it will adhere to all of the requirements of the Occupational Health and Safety (OHS) Regulation, B.C. Reg. 296/97, as may be amended from time to time, that are applicable to the work being performed, and as well will comply with the provisions of the *Workers Compensation Act, R.S.B.C., 1996, c.492*, as amended (the 'Act').

Without limiting the generality of the foregoing, the Contractor agrees:

- 1) Before commencing any work for the Owner, the Contractor will consult the OHS Regulation and will determine which provisions of the OHS Regulation is applicable to the work that the Contractor is to perform. The Contractor will strictly comply with all applicable OHS Regulations when performing the work.
- 2) Before commencing any work for the Owner, the Contractor will review and familiarize itself with any existing policies or procedures developed by the Owner in relation to the work. If in the opinion of the Contractor, by following a policy or procedure that the Owner has established in relation to the work, the Contractor, or an employee of the Contractor or of the Owner, or any other worker, is put at increased risk, the Contractor must request a written change of policy or procedure from the Owner, applicable only to the work the Contractor is to perform, before proceeding with the work. The Owner reserves the right to refuse to amend its policies or procedures in response to any such request where the Owner, after such consultation with WorkSafe BC as the Owner considers necessary, determines that the Owner's policy or procedure does not increase the risk to any worker at the location of the work to be performed, and determines that the Contractor's request is unreasonable, or is unnecessary for the protection of workers at the location of the work.
- 3) To have read every section of the OHS Regulation that pertains to the job at hand, to ensure that it understands the pertinent OHS Regulation and its application to the supervisor(s) and to all of the workers at

the location of the work, and to ensure that each worker under the Contractor's supervision follows the applicable OHS Regulation. To assist Contractors with this task, the City of Campbell River directs them to consult with WorkSafe BC directly, to access the WorkSafe BC Regulations and Policies available on the WorkSafe BC website.

- 4) To understand, comply with and, to the full extent of the Contractor's lawful authority, to enforce all of the following provisions of the OHS Regulation as they pertain to the job at hand and to the workers employed by the Contractor, and to provide to the owner, at any time upon request, evidence of compliance with the following:
 - a) Rights & Responsibilities – Occupational Health & Safety Program (Part 3, including investigations, inspections, written instructions, records and statistics, adequate supervision, complete understanding by the workforce of the right and responsibility to refuse unsafe work)
 - b) General Conditions (Regulation – Part 4)
 - c) Chemical and Biological Substances (Regulation – Part 5)
 - d) Substance Specific requirements (Regulation – Part 6)
 - e) Noise, Vibration, Radiation and Temperature (Regulation – Part 7)
 - f) Personal Protective Clothing and Equipment (Regulation - Part 8)
 - g) Confined Space Entry (Regulation – Part 9)
 - h) Lock-out (Regulation – Part 10)
 - i) Fall Protection (Regulation – Part 11)
 - j) Tools, Machinery and Equipment (Regulation – Part 12)
 - k) Ladders, Scaffolds and Temporary Work Platforms (Regulation – Part 13)
 - l) Cranes and Hoists (Regulation – Part 14)
 - m) Rigging (Regulation – Part 15)
 - n) Mobile Equipment (Regulation – Part 16)
 - o) Traffic Control (Regulation – Part 18)
 - p) Electrical Safety (Regulation – Part 19)
 - q) Construction, Excavation & Demolition (Regulation – Part 20)
 - r) Forestry Operations (Regulation – Part 26)
 - s) Evacuation and Rescue (Regulation – Part 32)
 - t) Occupational First Aid (Regulation – Part 33)
 - u) Coordination of Multiple Employer Workplaces (Regulation – Part 20, s. 20.3)

PROVISIONS OF THE *WORKERS COMPENSATION ACT* – PART 3 SPECIFIC TO CONTRACTORS ON A WORKSITE:

- i. Division 3 – General duties of Employers, Workers and Others (Sections 115, 116, 117, 118, 119, 120, 121, 122, 123, 124);
 - ii. Division 4;
 - iii. Division 10.
- 5) The *Workers Compensation Act* stipulates that the Owner (the City of Campbell River) is required to enforce any observed infraction of the Act or Regulation. The Contractor accepts that the City of Campbell River will be conducting periodic checks of the Contractor during the Contractor's work for the City of Campbell River and will be asking the Contractor to comply with the Act/Regulation in the event that any contravention is observed. If a contravention is observed and not corrected, the Contractor may be asked to leave the worksite and may result in termination of the contract for the work.
 - 6) For the purposes of streamlining large construction projects and multiple employer worksites, the Owner reserves the right to designate a "prime contractor" amongst contractors who are working on a job-site together. A designated person employed by the "prime contractor" – appointed by the Owner - will act as the coordinator of the other contractors on that job-site and will ensure that each of the contractors on the job site are following all of the Act and WorkSafe BC Regulations as well as site-specific policies and procedures. This includes having in place an approved WorkSafe BC Safety Program and a list of the qualified persons amongst the other contractors who have been designated to be responsible for each of the other contractor's site health and safety activities.
 - 7) In the event that a prime contractor has been designated, it is the responsibility of the Contractor to inquire who the "prime contractor" is for the worksite and to comply with the requirements for a multiple employer worksite where a prime contractor has been designated, as set out in the preceding section.

NOTE:

- a) Payment of WorkSafe BC Assessments by any Contractor does not obviate the responsibility of the contractor to any of the foregoing.
- b) The foregoing constitutes requirements of the Prevention Division of WorkSafe BC for any workplace in the Province of British Columbia and constitutes the Owner's expectations of contractors.

The Contractor covenants and agrees that when performing any work for the Owner, whether directly as a contractor or indirectly as a sub-contractor, it will adhere to all of the requirements of the B.C. Employment Standards Act (RSBC 1996), as may be amended from time to time, that are applicable to the work being performed, including but not limited to:

- 1) Section 36 (2); an employer must ensure that each employee has at least 8 consecutive hours free from work between each shift worked.
- 2) Section 39; despite any provision of this Part, an employer must not require or directly or indirectly allow an employee to work excessive hours or hours detrimental to the employee's health or safety.

THIS Covenant made the _____ day of _____, 2016, in
_____ in the Province of British Columbia.
(City)

CONTRACTOR:

Company Name

Authorized Signatory

(Printed name)

Appendix 8

PRIME CONTRACTOR AGREEMENT

1. The Contractor shall, for the purposes of the Workers Compensation Act, and for the duration of the Work of this Contract:
 - .1 be the "prime contractor" for the "Work site", and
 - .2 do everything that is reasonably practicable to establish and maintain a system or process that will ensure compliance with the Act and its regulations, as required to ensure the health and safety of all persons at the "Work site".
- .2 The Contractor shall direct all Subcontractors, Sub-subcontractors, Other Contractors, employers, Workers and any other persons at the "Work site" on safety related matters, to the extent required to fulfill its "prime contractor" responsibilities pursuant to the Act, regardless of:
 - .1 whether or not any contractual relationship exists between the Contractor and any of these entities, and
 - .2 whether or not such entities have been specifically identified in this Contract.

As per the requirements of the Workers Compensation Act Part 3, Division 3, Section 118(1-3) which states:

Coordination of multiple-employer Workplaces

118(1) In this section:

"multiple-employer Workplace" means a Workplace where Workers of 2 or more employers are Working at the same time;

"prime contractor" means, in relation to a multiple-employer Workplace,

- (a) the directing contractor, employer or other person who enters into a written agreement with the owner of that Workplace to be the prime contractor for the purposes of this Part, or
- (b) if there is no agreement referred to in paragraph (a), the owner of the Workplace.

(2) The prime contractor of a multiple-employer Workplace must

- (a) ensure that the activities of employers, Workers and other persons at the Workplace relating to occupational health and safety are coordinated, and
- (b) do everything that is reasonably practicable to establish and maintain a system or process that will ensure compliance with this Part and the regulation in respect to the Workplace.

(3) Each employer of Workers at a multiple-employer Workplace must give to the prime contractor the name of the person the employer has designated to supervise the employer's Workers at that Workplace.

The Contractor covenants and agrees that when performing any work for the Owner, whether directly as a contractor or indirectly as a sub-contractor, it will adhere to all of the requirements of the B.C.

Employment Standards Act (RSBC 1996), as may be amended from time to time, that are applicable to the work being performed, including but not limited to:

- 3) Section 36 (2); an employer must ensure that each employee has at least 8 consecutive hours free from work between each shift worked.
- 4) Section 39; despite any provision of this Part, an employer must not require or directly or indirectly allow an employee to work excessive hours or hours detrimental to the employee's health or safety.

I fully understand and accept the responsibilities of the prime contractor designation in accordance with the Workers Compensation Act and the B.C. Employment Standards Act while contracted by the *City* on

project location: _____ and will abide by all Workers Compensation Board Regulation requirements.

Date: _____

Project: _____

Company Name: _____

Authorized Signatory: _____

Printed Name: _____

Witness Signatory: _____

Printed Name: _____



SUPPLEMENTARY GENERAL CONDITIONS

**TO BE READ WITH "General Conditions"
CONTAINED IN THE PLATINUM EDITION (printed 2009) OF THE PUBLICATION
"MASTER MUNICIPAL CONSTRUCTION DOCUMENTS"**

Reference No.: TENDER 17-15

Contract: LIFT STATION BACKUP GENERATORS

TABLE OF CONTENTS

	<u>Page</u>
1 Definitions	SGC 2
2 Documents	SGC 2
4 Contractor	SGC 2
6 Other Contractors	SGC 4
9 Valuation of Changes and Extra Work	SGC 5
10 Force Account	SGC 5
13 Delays	SGC 5
18 Payment	SGC 5
21 Workers Compensation Regulations	SGC 6
24 Insurance	SGC 6
25 Maintenance Period	SGC 6

DEFINITIONS

1.0

1.67.1

(delete clause 1.67.1 and replace as follows)

"Substantial Performance" means the stage of completion of all of the *Work*, as certified by the *Payment Certifier*, when:

- a) the *Work* is ready for use or is being used for its intended purpose; **and**
- b) the total of the incomplete, defective and deficient *Work* can be completed at an estimated cost of no more than:

3% of the first \$500,000 of the *Contract Price*
2% of the next \$500,000 of the *Contract Price*
1% of the balance of the *Contract Price*

1.79

(add new clause 1.79 as follows)

"(amend clause X.XX as follows)" preceding a supplementary clause means this clause provides additional information or restrictions to the referenced clause in the Master Municipal Construction Documents, Volume II.

1.80

(add new clause 1.80 as follows)

"(add new clause X.XX as follows)" preceding a supplementary clause means this clause provides additional requirements or information not found in the Master Municipal Construction Documents, Volume II.

1.81

(add new clause 1.81 as follows)

"(delete clause X.XX and replace as follows)" preceding a supplementary clause means this clause replaces the referenced clause in the Master Municipal Construction Documents, Volume II, in its entirety.

1.82

(add new clause 1.82 as follows)

"Payment Certifier" has the meaning set out in SGC 18.6.6.

1.83

(add new clause 1.83 as follows)

"Provide" or "Provision of" means supply and placement of an item.

1.84

(add new clause 1.84 as follows)

"Engineer" shall mean the *Owner's* engineer appointed to provide technical support during the course of the *Work*.

DOCUMENTS

2.0

Interpretation

2.2.5

(add new clause 2.2.5 as follows)

The Contract Drawings shall not be used for the construction of the *Work* unless Issued For Construction by the *Contract Administrator*.

CONTRACTOR

4.0

**Protection of Work,
Property and the**

4.3.7

(add new clause 4.3.7 as follows)

The *Contractor* shall locate, mark and protect from damage or

Public		<p>disturbance, any and all stakes, survey pins, monuments and markers at the <i>Place of the Work</i>.</p> <p>All survey stakes, pins, monuments or markers which, in the opinion of the <i>Owner</i>, have been damaged or disturbed shall be made good following construction by a registered B.C. Land Surveyor at the <i>Contractor's</i> expense.</p>
Good Neighbour Policy	4.3.8	<p>(add new clause 4.3.8 as follows)</p> <p>The <i>Owner's</i> Good Neighbour Policy as adopted by City of Campbell River Council on April 15, 1997 shall apply to this contract. The Policy states: "That <i>Contractors</i> working on Municipal rights-of-way or on private land where new rights-of-way are being created, be required to provide written notice to the residents in the immediate area of the works, describing what is being constructed, when the works will occur, who to contact for more information and what precautions should be taken if necessary; and that the work-site be posted for safety reasons."</p>
Damage to Improvements and Utilities	4.3.9	<p>(add new clause 4.3.9 as follows)</p> <p>The <i>Contractor's</i> Work shall be confined to the <i>Owner's</i> premises, including statutory right-of-ways easements and construction permit limits, whenever possible. The <i>Contractor</i> shall not enter upon or place materials on other private premises except by written consent of the individual <i>Owners</i> and shall save the <i>Owner</i> harmless from all suits and actions of every kind and description that might result from use of private property.</p>
Use of Working Site	4.3.10	<p>(add new clause 4.3.10 as follows)</p> <p>The <i>Contractor</i> shall confine his equipment, storage of materials and operation of Work to the limits indicated by law, permits, or direction of the <i>Contract Administrator</i>, and shall not unreasonably encumber the premises with his materials. The <i>Contractor</i> shall comply with the <i>Contract Administrator</i> instructions regarding signs, advertisements, fires and smoking.</p> <p>The working site shall at all times be kept free of rubbish and unnecessary hazards to persons, materials, and equipment.</p>
Local, Emergency Traffic and Property Access	4.3.11	<p>(add new clause 4.3.11 as follows)</p> <p>Local traffic shall be provided access to private properties at all times.</p> <p>Emergency traffic such as Police, Fire, and Disaster Units shall be provided reasonable access at all times. The <i>Contractor</i> shall be liable for any damage which may result from his failure to provide such reasonable access.</p>
Traffic Management Plan	4.3.12	<p>(add new clause 4.3.12 as follows)</p> <p>If required, the <i>Contractor</i> shall submit a Traffic Management Plan for Approval prior to start of construction in which the extent and duration of any road closures associated with the work are identified. Two-way traffic via one open lane shall be maintained on public roads at all times unless the <i>Contractor</i> has obtained the <i>Owner's</i> approval via a Road Closure Permit. The <i>Contractor</i> is cautioned that approval of full road closures is not guaranteed. Traffic control on all roads shall be in strict accordance with the Traffic Control Manual for</p>

		<p>Work on Roadways published by the Ministry of Transportation and Highways. The <i>Contractor</i> shall only use appropriately accredited personnel for Traffic Control.</p> <p>(add new clause 4.4.3 as follows)</p> <p>The <i>Contractor</i> shall provide clean sanitary latrine accommodations for the use of his employees as may be necessary to comply with the requirements and regulations of the Ministry of Health and other bodies having jurisdiction. The <i>Contractor</i> shall permit no public nuisance.</p>
Temporary Structures and Facilities	4.4.3	
Fair Wages	4.8.2	<p>(add new clause 4.8.2 as follows)</p> <p>The <i>Contractor</i> attests to compliance with Section 5 of the Skills Development and Fair Wage Act in projects where the provincial contribution to a Municipal project exceeds \$250,000.</p>
Truck Routes and Disposal Sites	4.17.1	<p>(add new clause 4.17.1 as follows)</p> <p>In hauling of material to and from the work site, the routes to be followed by trucks shall be confined to designated arterial and collector roads as shown on the road classification plan as issued by the City. Where a dumpsite can only be accessed by way of a local road, the route shall be the shortest possible way from an arterial or collector road, and shall be agreed to by the <i>Contract Administrator</i> in advance of the work. The <i>Contractor</i> shall be responsible for road cleanup along all trucking routes used in association with the work. The cost of this cleanup shall be paid by the <i>Contractor</i> and considered incidental to the work. It should be noted that a "Soil Deposition Permit" is required for any dumpsite within the City of Campbell River. The <i>Contractor</i> shall be responsible for obtaining and securing a legal dumpsite. All costs associated with that dumpsite shall be the responsibility of the <i>Contractor</i> and shall be considered incidental to the <i>Work</i>.</p>
Disposal of Wood Debris, Organic Debris, and/or Waste Excavated Material	4.18.1	<p>(add new clause 4.18.1 as follows)</p> <p>Prior to disposal of any wood debris, organic debris and/or waste excavated material, the <i>Contractor</i> shall submit a disposal management strategy in accordance with all applicable Laws, Bylaws and Regulations to the <i>Contract Administrator</i> for approval. Subject to the <i>Contract Administrator's</i> approval, the <i>Contractor</i> shall ensure that all wood debris, organic debris and/or waste excavated material that is removed from the work site is managed in accordance with this approved disposal management strategy. The <i>Contractor</i> shall be required to employ acceptable methods of disposal, approved disposal site location(s), and shall be required to obtain and submit copies of all relevant permits and/or approvals prior to the disposal of any wood debris, organic debris and/or waste excavated material</p> <p>Regardless of the aforementioned, the <i>Owner</i> reserves the right to disallow any or all of the <i>Contractor's</i> proposed disposal management strategy if it is determined that they will result in undesirable environmental impacts.</p>
OTHER CONTRACTORS	6.0	
Coordination and Connection	6.22	<p>(add new clause 6.2.2 as follows)</p> <p>If the performance of any Contract for the project is likely to be</p>

interfered with by the simultaneous execution of some other Contract or Contracts, the *Contract Administrator* shall decide which *Contractor* shall cease Work temporarily and which *Contractor* shall continue, or whether the Work under the Contracts can be coordinated so the Contracts may proceed simultaneously. The *Owner* shall not be responsible for any damages suffered or extra costs incurred by the *Contractor*, resulting directly or indirectly from the award or performance or attempted performance of any other Contract or Contracts on the project, or caused by any decision or omission of the *Contract Administrator* respecting the order of precedence in the performance of the Contracts other than for the extension of time.

VALUATION OF CHANGES AND EXTRA WORK 9.0

Valuation Method 9.2.1.3 *(add new clause 9.2.1.3 as follows)*
Should a lump sum method be used for determination of the value of a *Change*, the *Contractor* shall determine the value of the *Change* by calculating the cost for each item contained within the *Change* and applying a 10% mark up on all costs associated with the *Change* for Overhead and Profit. All costs are required to be supported by documentation satisfactory to the *Contract Administrator* and all applicable rates are to be satisfactory to the *Contract Administrator*.

FORCE ACCOUNT 10.0

Force Account Costs 10.1.1.4 *(delete 10.1.1.4 and replace as follows)*
Force Account Work performed by a *Subcontractor* shall be paid for in the lesser of: (i) the amount as provided by subparagraphs (1), (2) and (3) of this GC, plus a markup of 5%, or (ii) the actual amount the *Contractor* pays the *Subcontractor* including a markup of 10% on such actual cost to cover all overhead and profit.

DELAYS 13.0

Liquidated Damages for Late Completion 13.9.1.1 *(delete 13.9.1.1 and replace as follows)*
as a genuine pre-estimate of the *Owner's* increased costs for the *Contract Administrator* and the *Owner's* own staff caused by such delay an amount of \$1,000 per day or pro rata portion for each calendar day that actual *Substantial Performance* is achieved after the *Substantial Performance Milestone Date*; plus

PAYMENT 18.0

Holdbacks 18.4.1 *(delete 18.4.1 and replace as follows)*
The *Owner* will retain a holdback but will not establish a Holdback Trust Account pursuant to Section 5 of the *Builders Lien Act*.

Substantial Performance 18.6.5 *(delete clause 18.6.5 and replace as follows)*
The *Owner* will release any builder's lien holdback on the 56th day following the date of *Substantial Performance*, or other date as required by law, but the *Owner* may holdback the amounts for any deficiencies or filed builders liens as provided in GC 18.4.2, GC 18.4.3 and 18.4.4, or the Maintenance Period Financial Security if

not received by this date.

Payment Certifier 18.6.6

(delete clause 18.6.6 and replace as follows)

The *Contract Administrator*, as defined herein, shall be the *Payment Certifier* responsible under Section 7 of the *Builders Lien Act* for certifying *Substantial Performance* of the *Work* of the *Contractor*, but not the *Work* of *Subcontractors*. The *Contractor* shall co-operate with and assist the *Contract Administrator* by providing information and assistance in as timely manner as the *Contract Administrator* considers necessary to carry out the duties of the *Payment Certifier* for the *Contract*.

The *Contractor* shall be the *Payment Certifier* responsible under Section 7 of the *Builders Lien Act* for certifying *Substantial Performance* of the *Work* of each *Subcontractor*. Prior to certifying completion for a *Subcontractor*, the *Contractor* shall consult with the *Contract Administrator* and obtain the *Contract Administrator's* comments on the status of completion by the *Subcontractor*, including any deficiencies or defects in the *Subcontractor's Work* noted by the *Contract Administrator*. The *Contractor* will indemnify and save the *Owner* harmless from any and all liability the *Owner* may have to anyone arising out of the certification by the *Contractor* of *Substantial Performance* for that *Subcontractor*.

Notwithstanding any other provision of the *Contract*, no payments will be due or owing to the *Contractor* so long as a Lien filed by anyone claiming under or through the *Contractor* remains registered against the Project or any lands, or interest therein, on which *Work* for the project was performed. Failure of the *Contractor* to remove all Liens promptly will entitle the *Owner* to damages.

**WORKERS
COMPENSATION
REGULATIONS 21.0**

**Contractor is
"Prime Contractor" 21.2.2**

(add new clause 21.2.2 as follows)

If the *Work* is being completed as part of a project for which the *Owner* already has a *Prime Contractor* designated then the *Contractor* will be responsible to ensure that they assume direction from the *Prime Contractor* as per the requirements of the Workers Compensation Act Part 3, Division 3, Section 118(1-3).

INSURANCE 24.0

Required Insurance 4.1.7

(add new clause 24.1.7 as follows)

The *Contractor* shall ensure the following are additional named insured under this contract:

- The City of Campbell River
- RB Engineering Ltd.
- McElhanney Consulting Services Ltd.

**MAINTENANCE
PERIOD 25.0**

**Correction of
Defects 25.1.4**

(add new clause 25.1.4 as follows)

The *Owner* is authorized to make repairs to defects or deficiencies if,

ten days after giving written notice, the *Contractor* has failed to make or undertake with due diligence the required repairs. However, in the case of emergency where, in the opinion of the *Owner*, delay is not reasonable, repairs may be made without notice being sent to the *Contractor*. All expenses incurred by the *Owner* in connection with repairs made pursuant to GC 25 shall be paid by the *Contractor* and may be deducted from the Maintenance Security, or other holdbacks. The *Contractor* shall promptly pay any shortfall.

Financial Security 25.4.1

(add new clause 25.4.1 as follows)

within 10 days of the issue of the Certificate of Substantial Performance deliver to the Owner, a Maintenance Period Financial Security in the form of cash or a clean, irrevocable Letter of Credit in a form acceptable to the Owner in the amount of 5% of the Contract Price, issued by a major Canadian chartered bank which has a branch in Campbell River, payable to the Owner within the Maintenance Period.

- b) For each item in the Schedule of Quantities and Unit Prices, the *Contract Administrator* will, in cooperation with the *Contractor*, measure the quantity of the item completed at the end of the payment period and this will be shown as a percentage of the work completed against the appropriate value for the lump sum assigned to the respective line item.
- Mobilization and Demobilization** 3.1 a) Mobilization and demobilization shall include the *Contractor's* costs of mobilization at the beginning of the project; and the costs of demobilization at the end of the project.
- b) Included in mobilization are such items as bonding, insurance, permits, moving personnel, materials and equipment to the site, setting up temporary facilities, First-Aid, Site Safety, temporary utilities and all preparation for performing *THE WORK*.
- c) Included in demobilization are preparation and submission of operation and maintenance manuals, As-Constructed Record Drawings, comprehensive Bill Of Materials, removal of all personnel, materials and equipment; and cleanup of the site and *THE WORK*.
- d) The lump sum price bid for this work shall be relative to the costs involved but shall not exceed ten percent of the Tender Price.
- e) Payment will be made as follows, as approved by the *CONTRACT ADMINISTRATOR*:
- I. 60% of the lump sum bid will be included in the first progress payment certificate;
 - II. 40% of the lump sum bid will be included in the final progress payment certificate.
- The *CONTRACT ADMINISTRATOR* may at his discretion recommend partial payment if mobilization or demobilization is not complete.
- f) With respect to Division 1 General Requirements, payment will be made as specified for demobilization and mobilization. The costs of other items specified under General Requirements shall be considered, as incidental to *THE WORK*; and separate payment will not be made for any other items of General Requirements.
- Dust Control** 4.1 During the performance of *THE WORK*, the *CONTRACTOR* is to at all times keep the worksite and such immediate surrounding areas which it may utilize free from waste materials, debris or rubbish and is to employ adequate dust control measures. Water shall be the only material acceptable for dust suppression. If accumulation of

such materials, debris, rubbish or dust constitutes a nuisance or safety hazard or is otherwise objectionable in any way, as reasonably determined by the *OWNER* or *CONTRACT ADMINISTRATOR*, the *CONTRACTOR* is to promptly remove it. If any claim, suit, losses, or action is brought by a person affected by the transportation of materials, equipment, goods or wastes to and from the worksite, the *CONTRACTOR* shall defend, indemnify and hold harmless all indemnified parties.

**Underground
Utilities**

5.1 It is the *CONTRACTOR'S* responsibility wherever necessary to determine location of existing pipes, valves, conduits, vaults, or other underground structures. Wherever it is necessary to explore and excavate to determine the location of the existing underground structures, the *CONTRACTOR*, at his own expense, shall make explorations and excavations for such purposes. The *CONTRACTOR* shall notify the *CONTRACT ADMINISTRATOR* or his representative of any conflicts.

The *CONTRACTOR* shall, at his own expense, provide for the uninterrupted flow of all watercourses, sewers, drains, and any other utility encountered during the work. Water control and siltation control shall be under the direction of a qualified environmental monitor engaged by the *CONTRACTOR*.

When any existing mains and/or service pipes, utility ducts, vaults or other utility structures are encountered, the *CONTRACTOR* shall support them to the satisfaction of the *CONTRACT ADMINISTRATOR* so as to protect them from injury. The *CONTRACTOR* shall, at his own expense, at once repair and make good any injury which may occur to any mains, service or utility pipes or ducts, or facilities, or to any electrical conductor, telephone, cable or natural gas facility or to any sidewalk, crosswalk as a result of this operation.

Support of power, telephone poles, underground mains, wiring and light standards required to complete the work, shall be the responsibility of the *CONTRACTOR* and completed in accordance with utility company standards. The *CONTRACTOR* shall schedule the work with the appropriate utility company in advance, so as not to delay the work. All costs associated with the work shall be considered incidental and no separate payment be made for this item.

**Construction
Surveys**

6.1 The *CONTRACTOR is responsible for all survey layout, including stakes, hubs, and grade control*. The *CONTRACTOR* shall survey and layout the work including, but not limited to, as-built invert elevations, offsets and stations of all grade changes, miscellaneous appurtenances, and all existing utilities exposed during construction. The *CONTRACTOR* shall provide all stakes, hubs, nails, flagging, and including the supply of casual labour for checking of the work,

as required by the *CONTRACT ADMINISTRATOR*. The *CONTRACTOR* shall provide the *CONTRACT ADMINISTRATOR* with records of the actual surveys, and “as-built” information pick-up. No separate or additional payment will be made for this work.

**General
Coordination**

7.1 The *CONTRACTOR* shall work cooperatively with B.C. Hydro, Telus, Shaw and Fortis to locate private utility ducting. No additional payment shall be made for this work.

**Supplementary
Specifications**

8.1 The following Supplementary Specifications are complementary to the MMCD.

Section	Title
01 07 00S	Abbreviations
01 11 00S	Summary of Work
01 20 00S	Measurement and Payment
01 23 10S	Substitutions
01 31 00S	Construction Schedule and Progress Payments
01 31 19S	Project Meetings
01 33 00S	Submittals and Reference Forms
01 33 23S	Shop Drawings and Product Data
01 34 00S	Record Drawings
01 45 00S	Quality Control
01 57 01S	Environmental Protection
01 74 16S	Operating and Maintenance Manuals

1.1 Abbreviations - Specifications, Methods, Standards

.1 General

AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ARCA	Alberta Roofing Contractors Association
ASCE	American Society of Civil Engineers
ASTM	American Society for Testing and Materials
AWPA	American Wood Preservers Associations
AWS	American Welding Society
BCLMA	B.C. Lumber Manufacturer's Association
CAN	National Standard of Canada
CCA	Canadian Construction Association
CISC	Canadian Institute of Steel Construction
CITC	Canadian Institute of Timber Construction
CPCI	Canadian Prestressed Concrete Institute
CRCA	Canadian Roofing Contractors Association
CSA	Canadian Standards Association
CWB	Canadian Welding Bureau
ISO	International Organization for Standardization
NBC	National Building Code
PCI	Prestressed Concrete Institute
PMBC	Plywood Manufacturer's Association
SJI	Steel Joist Institute
SSPC	Steel Structures Painting Council
WCB	Worker's Compensation Board

.2 Utilities

API	American Petroleum Institute
AWWA	American Water Works Association
CGA	Canadian Gas Association
CGSB	Canadian General Standards Board
CSPI	Corrugated Steel Pipe Institute
IAO	Insurer's Advisory Organization
RTAC	Roads and Transportation Association of Canada
ULC	Underwriters Laboratories of Canada
USA	United States of America Standards (ASA)

.3 Mechanical

AFBMA	Anti Friction Bearing Manufacturer's Association
AGMA	American Gear Manufacturer's Association
AMCA	Air Moving and Conditioning Association
ANSI	American National Standards Institute
ACR	Air Conditioning and Refrigeration Institute
ASHRAE	American Society of Heating Refrigerating and Air Conditioning Engineers
NFPA	National Fire Protection Association
SAE	Society of Automotive Engineers

.4 Electrical

AIEE	American Institute of Electrical Engineers
CEC	Canadian Electrical Code
EEMAC	Electrical and Electronic Manufacturers Association of Canada
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronic Engineers
IES	Illuminating Engineers Society
IPCEA	Insulated Power Cable Engineer's Association
LEMA	Lighting Equipment Manufacturer's Association
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NESC	National Electrical Safety Code

.5 Use of Abbreviations

These abbreviations refer to Specifications, Methods and Standards issued by the respective Association, and the abbreviations are used in the specifications.

Alphanumeric designations following the abbreviations denote the specification, method, or standard.

2.1 Abbreviations - Metric

.1 General

The specifications are metric and metric usage is based upon SI units in accordance with CSA Standard CAN/CSA-Z234.1 Canadian Metric Practice Guide. In this specification SI units are abbreviated in accordance with the Metric Units and Abbreviations below

.2	Linear Measure	
	Metre	m
	Millimetre	mm
	Kilometre	km
	micrometre	micro-m
.3	Area	
	Square metre	m ²
	Square millimetre	mm ²
	Hectare	ha
.4	Volume	
	Cubic metre	m ³
	Litre	L
.5	Mass and Density	
	Kilogram	kg
	Gram	g
	Tonne	t
	Kilogram per metre	kg/m
	Gram per metre	g/m
	Kilogram per square metre	kg/m ²
	Gram per square metre	g/m ²
	Kilogram per cubic metre	kg/m ³
.6	Temperature	
	Degree Celsius	°C
.7	Force, Pressure, Stress	
	Newton	N
	Kilonewton	kN
	Pascal	Pa
	Kilopascal	kPa
	Megapascal	MPa
.8	Velocity, Rate of Flow	
	Metre per second	m/s
	Metre per hour	m/h
	Kilometre per hour	km/h
	Litre per second	L/s

	Cubic metre per second	m ³ /s
.9	Power, Energy, Heat, Work	
	Watt	W
	Kilowatt	kW
	Kilowatt hour	kWh
	Joule	
.10	Electricity	
	Ampere	A
	volt	V

END OF SECTION 01 07 00S

1.0 Work Covered by Contract Documents

- .1 Work under this Contract includes, but is not limited to, all supervision, construction, equipment, labour, material, permits and related items required for construction of the supply and installation of backup generators for lift stations #9, 10, 12, 14 and 15, and the electrical re-servicing of lift station #8.

1.1 Work of the Contract

- .1 The work to be done under this Contract includes, but is not limited to the construction and completion of the following:
- Mobilization and demobilization for the work at the sites.
 - Coordination with the City of Campbell River in preparation and scheduling of the work and developing a schedule which minimizes the construction period and details all major phases of the work, including all shutdowns of each lift station.
 - Installation of a new feeder from the electrical system at lift station #17 to power the kiosk at lift station #8.
 - Coordinate with BC Hydro for removal of the existing service at lift station #8.
 - Supply and installation of generators c/w enclosure, automatic transfer switch, fuel tank and all associated electrical components as indicated in the contract documents.
 - All civil components of the work as shown on the drawings including restoration.
 - Testing and commissioning of the installed generator systems as indicated in the contract documents.
 - Abandonment and removal of all infrastructure as indicated in the contract documents.
 - Correction of deficiencies found or detected during the course of the work or during start up and testing activities.
 - All other items required to complete the work and provide a complete backup power system as indicated in the contract documents.
- .2 The CONTRACTOR shall provide all supervision, labour and materials and equipment required, and leave the work in an operable, adjusted and acceptable condition.
- .3 The City reserves the right to delete any of the work from the Contract.

END OF SECTION 01 11 00S

1.0 GENERAL

- .1 This Specification 01 20 00S is to be read exclusive of payment descriptions given in other sections, as all non-optional work is measured on a lump sum basis in accordance with the Schedule of Quantities.
- .2 All work of the project must be included under the payment items included. The Owner will not consider claims by the CONTRACTOR for extra payment on grounds that work performed or labour and/or materials supplied in accordance with the requirements of the Contract Documents could not be properly charged to Payment Items listed in the Form of Tender.

The items in the Form of Tender shall cover all that is necessary to construct and complete the work. Include costs of a general nature for work not directly listed on the Form of Tender but included in the Contract Drawings by either direct mention or implication, in those Payment Items to which they pertain most closely.

Incorporate all costs including CONTRACTOR's overhead and profit associated with finding and supplying all material and performing all work specified in the Contract Documents in the Payment Items set out on the Form of Tender.

All work items shall be paid for only once. If a work item is incorrectly included in two or more separate Payment Items, the Engineer shall determine the Payment Item which most reasonably applies.

- .3 The following description of items is for payment purposes only and does not describe or define the Scope of Work.

1.1 Measurement and Payment

.1 SECTION 1 - GENERAL

ITEM 1.1 Mobilization and Demobilization

Mobilization and demobilization shall include the *CONTRACTOR'S* costs of mobilization at the beginning of the project; and the costs of demobilization at the end of the project.

Included in mobilization are such items as bonding, insurance, permits, moving personnel, materials and equipment to the site, setting up temporary facilities and all preparation for performing *THE WORK*.

Included in demobilization are preparation and submission of red line markups, removal of all personnel, materials and equipment; and cleanup of the site and *THE WORK*.

The lump sum price bid for this work shall be relative to the costs involved but shall not exceed ten percent of the Tender Price.

Payment will be made as follows, as approved by the *CONTRACT ADMINISTRATOR*:

- I. 60% of the lump sum bid will be included in the first progress payment certificate;
- II. 40% of the lump sum bid will be included in the final progress payment certificate.

The *CONTRACT ADMINISTRATOR* may at his discretion recommend partial payment if mobilization or demobilization is not complete.

With respect to Division 1 General, payment will be made as specified for demobilization and mobilization. The costs of other items specified under General shall be considered, as incidental to *THE WORK*; and separate payment will not be made for any other items of General requirements.

.2 SECTION 2 - Electrical

ITEM 2.1 Lift Station #8

This Item includes all costs associated with:

Supplying and installing new feeder for lift station #8 from the electrical system located at lift station #17 (Willow Creek Pumping Station) and removal of existing BC Hydro service at lift station #8. Work includes all required overcurrent protection, wire, conduit work, junction boxes, kiosk modification, removals, restoration and all other works to form a functional and safe system in accordance with the contract documents.

Removal of existing BC Hydro service to kiosk at lift station #8.

During construction, lift station operation is not to be interrupted without providing written notice to the Engineer and receiving approval of the anticipated shutdown.

Payment will be made at the lump sum price tendered for this item in the Schedule of Quantities and Prices.

ITEM 2.2 Lift Station #9

This Item includes all costs associated with:

Supply and installation of new generator c/w enclosure and fuel tank, automatic transfer switch, wiring, conduit work, concrete pad, removals, restoration and all other works to form a functional and safe system at lift station #9 in accordance with the contract documents.

Testing and commissioning in accordance with the contract documents.

During construction, lift station operation is not to be interrupted without providing written notice to the Engineer and receiving approval of the anticipated shutdown.

Payment will be made at the lump sum price tendered for this item in the Schedule of Quantities and Prices.

ITEM 2.3 Lift Station #10

This Item includes all costs associated with:

Supply and installation of new generator c/w enclosure and fuel tank, wiring, conduit work, concrete pad, removals, restoration and all other works to form a functional and safe system at lift station #10 in accordance with the contract documents.

Testing and commissioning in accordance with the contract documents.

During construction, lift station operation is not to be interrupted without providing written notice to the Engineer and receiving approval of the anticipated shutdown.

Payment will be made at the lump sum price tendered for this item in the Schedule of Quantities and Prices.

ITEM 2.4 Lift Station #12

This Item includes all costs associated with:

Supply and installation of new generator c/w enclosure and fuel tank, automatic transfer switch, wiring, conduit work, concrete pad, removals, restoration and all other works to form a functional and safe system at lift station #12 in accordance with the contract documents.

Testing and commissioning in accordance with the contract documents.

During construction, lift station operation is not to be interrupted without providing written notice to the Engineer and receiving approval of the anticipated shutdown.

Payment will be made at the lump sum price tendered for this item in the Schedule of Quantities and Prices.

ITEM 2.5 Lift Station #14

This Item includes all costs associated with:

Supply and installation of new generator c/w enclosure and fuel tank, automatic transfer switch, wiring, conduit work, concrete pad, removals, restoration and all other works to form a functional and safe system at lift station #14 in accordance with the contract documents.

Testing and commissioning in accordance with the contract documents.

During construction, lift station operation is not to be interrupted without providing written notice to the Engineer and receiving approval of the anticipated shutdown.

Payment will be made at the lump sum price tendered for this item in the Schedule of Quantities and Prices.

ITEM 2.6 Lift Station #15

This Item includes all costs associated with:

Supply and installation of new generator c/w enclosure and fuel tank, automatic transfer switch, wiring, conduit work, concrete pad, removals, restoration and all

other works to form a functional and safe system at lift station #15 in accordance with the contract documents.

Testing and commissioning in accordance with the contract documents.

During construction, lift station operation is not to be interrupted without providing written notice to the Engineer and receiving approval of the anticipated shutdown.

Payment will be made at the lump sum price tendered for this item in the Schedule of Quantities and Prices.

.3 SECTION 3 – FINAL DOCUMENTS

ITEM 3.1 Operation and Maintenance Manuals

This Item includes all costs associated with:

Compile and supply complete Operation and Maintenance manuals as described in specifications section 01 74 16S.

Address deficiencies noted in the review of the Operation and Maintenance manuals by the Engineer.

Payment will be made at the lump sum price tendered for this item in the Schedule of Quantities and Prices.

.4 SECTION 4 – OPTIONAL PRICING

ITEM 4.1 5 Year Maintenance

This Item includes all costs associated with:

Provide a total of five (5) years of maintenance services for the backup generators including all required fuel, materials, labour and travel resulting from manufacturer recommended maintenance.

Acceptance of this pricing is independent from the remainder of the tender. The Owner reserves the right to accept or reject the price supplied for this section without impact on the overall tender pricing.

Payment will be made at the lump sum price tendered for this item in the Schedule of Quantities and Prices.

END OF SECTION 01 20 00S

1.0 GENERAL

1.1 General

- .1 The Contract Price is based upon those materials and equipment models identified and named in the detailed Specifications. Substitutions or variations to those specified will not be allowed without formal submittal, review and acceptance in accordance with this section.
- .2 The Specification sections contain pertinent performance criteria, quality, function and requirements for materials and methods to achieve work described.
- .3 Coordinate pertinent related work and modify surrounding work as required to complete project under each substitute designated.
- .4 Normally substitutions will not be permitted unless:
 - a) The specified product is not available
 - b) The specified product does not meet critical delivery
 - c) The substitute has a greater or equal value to the *OWNER* for a lower cost.

1.2 Request for Substitution

- .1 Whenever materials or equipment are specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular supplier or manufacturer the naming of the item is regarded as the standard to establish the type, function and quality required.
- .2 Material or equipment of equal or better performance and quality may be offered in substitution for those specified. Requests for review of substitute items of material and equipment will not be accepted by *CONTRACT ADMINISTRATOR* from anyone other than the *CONTRACTOR*.
- .3 Requests for substitution include any request for changes from the *CONTRACTOR* which require significant design changes, redesign or significant design reviews.
- .4 Request for substitution to be made by written application to *CONTRACT ADMINISTRATOR* and to include sufficient data to enable the *CONTRACT ADMINISTRATOR* to assess the acceptability of requirements, including the following:
 - a) All submittal information required for the specified equipment, including all deviations from the specified requirements and/or necessitated by the requested substitution.

- b) Materials of construction, including material Specifications and references.
- c) Dimensional drawings, showing required access and clearances, including any changes to the Work required to accommodate the proposed substitution.
- d) Drawings and details showing changes if the offered substitution necessitates changes to or coordination with other portions of the Work. Perform these changes as part of the substitution of material or equipment at no additional cost.
- e) Certification that the proposed substitute will adequately perform the functions and achieve the results called for by the general design, be similar and of equal substance to that specified and be suited to the same use as that specified.
- f) Information and performance characteristics for all system components and ancillary devices to be furnished as part of the proposed substitution.
- g) Reproducible Contract Drawings, marked up to illustrate all alterations to all structural, architectural, mechanical, electrical and HVAC systems required to accommodate the proposed substitution.
- h) Certification that acceptance of the proposed substitute will not prejudice achievement of Substantial Performance.
- i) Itemization of all costs including any licenses fee or royalty that will result directly or indirectly from the acceptance of the proposed substitution. Include redesign and cost of claims of any other contract affected by the resulting change.
- j) Guaranteed credit or cost reduction offered if the proposed substitution is accepted.
- k) Recommended maintenance requirements and availability of spare parts and service.

1.3 CONTRACT ADMINISTRATOR'S REVIEW

- .1 *CONTRACT ADMINISTRATOR* will evaluate each proposed substitution. *CONTRACT ADMINISTRATOR* will be the sole judge of acceptability, and no substitute will be ordered, installed or utilized without *CONTRACT ADMINISTRATOR's* prior written acceptance by either a Change Order or a reviewed shop drawing.

- .2 Pay the *CONTRACT ADMINISTRATOR*'s cost, above and beyond the time required to review shop drawings for specified product, for evaluating the requested substitution even though the request may be denied. Costs will be charged on a time-and-expense basis and will be deducted from progress payments due the *CONTRACTOR*. Procedures for processing substitutions to be as specified in Section 01 33 00S.

END OF SECTION 01 23 10S

1.0 GENERAL

1.1 Description

- .1 Prepare a time-scaled network schedule using the critical path method. The schedule will provide a basis for determining the progress status of the project relative to the completion time and specific dates and for determining the acceptability of the *CONTRACTOR*'s requests for payment.

1.2 Schedules

- .1 Depict all significant construction activities, shop drawing submittals and procurement activities. Show the dependencies between activities so that it may be established what effect the progress of any one activity has on the schedule.
- .2 Show completion time and all specific dates and sequencing requirements. Identify activities making up the critical path.
- .3 Unless specifically approved by the *CONTRACT ADMINISTRATOR*, show activities on the schedule with a duration not longer than 15 working days or an assigned value not greater than \$100,000 (except activities showing only submittal, fabrication or delivery of material or equipment). Divide activities which exceed these limits into more detailed components. Base the scheduled duration of each activity on the work being performed during the normal 40 hour work week with allowances made for legal holidays and normal weather conditions.

1.3 Submittals for Review

- .1 Within 10 days of the Notice of Award submit a construction schedule as specified herein showing in detail all procurement and on-site construction activities.
- .2 The *CONTRACT ADMINISTRATOR* will review the submitted schedule within 14 working days of its receipt. If the *CONTRACT ADMINISTRATOR* finds that the submitted schedule does not comply with the specified requirements, or does not provide an acceptable schedule detail, the deficiencies will be identified in writing to the *CONTRACTOR* for correction and re-submittal. Correct and resubmit the schedule within 10 working days after the deficiencies have been identified by the *CONTRACT ADMINISTRATOR*.

1.4 Schedule Revisions

- .1 Submit proposed revisions to the accepted construction schedule to the *CONTRACT ADMINISTRATOR* for review. Changes in timing for activities may be modified with agreement of the *CONTRACTOR* and *CONTRACT ADMINISTRATOR*. A change affecting the Contract Price, the completion time, or work sequencing may be made only by approved change order.
- .2 Add separate activities to the construction schedule for each approved change order.
- .3 Should the actual sequence of work performed by the *CONTRACTOR* deviate from the planned sequence indicated in the accepted schedule, the *CONTRACT ADMINISTRATOR* may require the *CONTRACTOR* to revise the schedule to reflect changes in the actual sequence and/or the future sequence of work.
- .4 Within 20 days following approval of the *CONTRACTOR*'s testing and commissioning plan submit a schedule revision incorporating the approved plan into the construction schedule.
- .5 Submit with each schedule revision all information as called for in submitting the original construction schedule.

1.5 Progress Status Update

- .1 Submit an updated schedule on a monthly basis concurrent with the submittal of the progress payment request. Indicate on the updated schedule progress achieved to date on all activities.

2.0 PRODUCTS

- .1 Not Used

3.0 EXECUTION

- .1 Not Used

END OF SECTION 01 31 00S

1.0 GENERAL

1.1 Administrative

- .1 The CONTRACT ADMINISTRATOR will administer the pre-construction meeting and progress meetings will be held on a regular monthly basis or more frequently if requested by the CONTRACT ADMINISTRATOR.
- .2 The CONTRACTOR's superintendent, and senior representatives of major sub-contractors shall attend all meetings.
- .3 Representatives of CONTRACTOR, subcontractor and suppliers attending meetings to be qualified and authorized to act on behalf of the party each represents.
- .4 The CONTRACT ADMINISTRATOR will chair and record discussions and decisions, and circulate the minutes to the OWNER and CONTRACTOR. CONTRACTOR shall circulate the minutes to subcontractors and suppliers.
- .5 CONTRACTOR to notify the CONTRACT ADMINISTRATOR in writing of any discrepancies or inconsistencies within 2 days of receipt of minutes for recording in next meeting. Failure to notify the CONTRACT ADMINISTRATOR of discrepancies or inconsistencies within 2 days of receipt of minutes will be deemed acceptance of the minutes as recorded.

1.2 Preconstruction Meeting

- .1 Within 5 days of Notice to Proceed, the CONTRACT ADMINISTRATOR will schedule a preconstruction meeting to discuss administrative procedures and responsibilities.
2. Agenda includes the following:
 - a) Appointment of General Contractor as Prime Contractor as per WCB regulations and definition.
 - b) Confirmation that the CONTRACTOR has read and understood the requirements of the contract and specifications.
 - c) Notice of Project
 - d) Appointment of official representative of participants in THE WORK.
 - e) Schedule of Work, progress scheduling.

- f) Schedule of submission of shop drawings.
- g) Requirements for temporary facilities, offices, utilities and fences.
- h) Delivery schedule of materials.
- i) Environmental protection.
- j) Site security.
- k) Site safety.
- l) Change order procedures.
- m) Record drawings.
- n) Monthly progress payments, administrative procedures, holdbacks.
- o) Appointment of inspection and testing agencies or firms.
- p) Insurances.

1.3 Progress Meetings

- .1 The CONTRACTOR's superintendent and senior representatives of major subcontractors involved in THE WORK shall be in attendance.
- .2 Agenda includes the following:
 - a) Past period progress.
 - b) Next period progress.
 - c) Anticipated changes in THE WORK.
 - d) Approved changes in THE WORK.
 - e) Schedule of construction.
 - f) Operations staff scheduling.
 - g) Site safety.

- h) General information pertaining to THE WORK:
 - a. Quality control
 - b. Site cleanliness
 - c. Environmental protection
 - d. Other

- .3 Submit for information only, in accordance with Section 01 33 00S, at each regularly scheduled progress meeting:
 - a) Totals of all personnel currently on site associated with the CONTRACT, broken down by trade and sub-contractor including all staff.

 - b) Totals of all major equipment currently on site, over two thousand dollars' replacement value, broken down by type and subcontractor.

1.4 Special Meetings

- .1 Special meetings may be held at the request of the CONTRACT ADMINISTRATOR, OWNER, or CONTRACTOR to discuss specific items.

END OF SECTION 01 31 19S

1.0 GENERAL

1.1 Categories of Submittals

- .1 General requirements and detailed Specifications require various submissions to demonstrate that materials, equipment, methods, and work comply with the provisions and intent of the Contract Documents. Submittals fall into two general categories:
 - a) Submittals for Review.
 - b) Submittals for Information Only.
- .2 Provide submittals in accordance with this section and as specified in the various technical sections contained throughout the Specifications and Supplemental Specifications.
- .3 The *CONTRACT ADMINISTRATOR* may require additional submittals from the *CONTRACTOR* when, in the opinion of the *CONTRACT ADMINISTRATOR*, such additional submittals are warranted.

1.2 Administration

- .1 Submittals covered by these requirements include manufacturers' information and data sheets, descriptive data, certificates, product data, shop drawings, test procedures, test results, samples, requests for substitutions, all mechanical, electrical and electronic equipment and systems, fabricated items, piping and miscellaneous work-related submittals.
- .2 Adjustments made on shop drawings or other submittals by the *CONTRACT ADMINISTRATOR* are not intended to change the Contract Price. If adjustments affect the value of work, state such in writing to the *CONTRACT ADMINISTRATOR* prior to proceeding with the work.
- .3 Provide to *CONTRACT ADMINISTRATOR* for review the submittals specified. Submit all information promptly and in an orderly sequence so as to not cause delay in the Work. Failure to submit in ample time is not considered sufficient reason for an extension of Contract time and no claim for extension by reason of such default will be allowed.
- .4 Include the projected dates for Submissions of Submittals for Review in the Construction Schedule specified in Supplementary Specification 01 31 00S
- .5 Do not proceed with work affected by any submittal until review is complete. Normally, submittals for review and comment will be returned to the *CONTRACTOR* within 15 days, 30 days for substitution, exclusive of any time awaiting clarification or further information; however, the time for returns will necessarily vary and may exceed 15 days depending upon the complexity of the submittal, the number of submittals, and the express needs of the *CONTRACTOR*.
- .6 Review submittals prior to submission to the *CONTRACT ADMINISTRATOR*. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with the requirements of the Work and the Contract Documents. Submittals not stamped,

- signed, dated and identified by the *CONTRACTOR* will be returned without being examined and will be considered rejected.
- .7 Clearly edit submittal documents to indicate only those items, models, or series of equipment, which are being submitted for review. Cross out or otherwise obliterate all extraneous materials.
 - .8 Ensure that there is no conflict with other submittals.
 - .9 Coordinate submittals among subcontractors and suppliers.
 - .10 Coordinate submittals with the Work so that work will not be delayed and schedule different categories of submittals, so that one will not be delayed for lack of coordination with another.
 - .11 The *CONTRACTOR* is responsible for the accuracy and completeness of information submitted. Notify *CONTRACT ADMINISTRATOR* in writing of materials, equipment or methods of work which deviate from the Contract Documents. Notification in writing, to accompany submittal transmittal and noted under deviations.
 - .12 The *CONTRACTOR*'s responsibility for errors, omissions and deviations in submission is not relieved by the *CONTRACT ADMINISTRATOR*'s review of submittals.
 - .13 Keep one reviewed copy of each submission on site.
 - .14 Detail all shop drawings and data sheets using the metric system. Prepare to a drafting standard equivalent to the Contract Drawings.
 - .15 Shop drawings and data sheets indicating modified design requirements or design requirements not included in the Contract Documents require the seal of a qualified Professional Engineer, registered in the Province of British Columbia.

1.3 Transmittal Procedure

- .1 Accompany all submittals with transmittal form 01 33 00-A attached.
- .2 Use a separate form for each specific item, class of material, equipment, and items specified in separate, discrete sections, for which the submittal is required. Identify Contract Document, equipment numbers, equipment descriptors, drawing numbers, and Specification Sections for each submittal and item in each submittal.
- .3 Identify submittal documents common to more than one piece of equipment with all the appropriate equipment numbers.
- .4 Use a single form for submittals for various items when the items taken together constitute a manufacturer's package or are so functionally related that expediency indicates checking or review of the group or package as a whole.
- .5 Note a unique number, sequentially assigned, on the transmittal form accompanying each item submitted. Submittals will be classified according to categories agreed to by the *CONTRACTOR* and *CONTRACT ADMINISTRATOR*. Use the following format by category for submittal numbers: "XXX", where "XXX" is the sequential number assigned by the *CONTRACTOR*. Resubmittals will have the following format: "XXX-Y", where "XXX" is the originally assigned submittal number and "Y" is a sequential letter assigned for resubmittals, i.e., A, B, or C being the 1st, 2nd,

and 3rd resubmittals, respectively. Submittal 25B, for example, is the second resubmittal of submittal 25.

1.4 Submittals for Review

- .1 All submittals, except where specified to be submitted for information only, to be submitted by the *CONTRACTOR* to the *CONTRACT ADMINISTRATOR* for review. Provide submittals for review for all equipment and material substitutions, alternatives or deviations from that specified.
- .2 Submittals which do not have all the information required to be submitted, including notation of all deviations from the Contract requirements, are not acceptable and will be returned without review.
- .3 Review by the *CONTRACT ADMINISTRATOR* is for the sole purpose of ascertaining conformance with the general design concept in accordance with the Specifications. This review does not mean that the *CONTRACT ADMINISTRATOR* approves the detail design inherent in the submittals, shop drawings and data sheets, responsibility for which remains with the *CONTRACTOR*, and such review does not relieve the *CONTRACTOR* of responsibility for errors or omissions in the shop drawings and data sheets or of responsibility for meeting all requirements of the Contract Documents. The *CONTRACTOR* is responsible for dimensions to be confirmed and correlated at the job-site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for coordination of the work of all sub-trades.
- .4 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of the section under which the adjacent items will be supplied and installed. Indicate cross references to Contract Drawings and Specifications.
- .5 Submit 3 copies of submittals, except where other quantities are specified, including shop drawings for each requirement requested in Specification sections and as the *CONTRACT ADMINISTRATOR* may reasonably request. Electronic submissions are acceptable in a PDF format as long as they are accompanied by the required transmittal form.
- .6 Submittals for review will be returned to the *CONTRACTOR* with one of the four following notations:
 - a) If the review indicates that the material, or equipment complies with the Contract Documents, submittal copies will be marked "Reviewed". In this event, the *CONTRACTOR* may begin to implement the work method or incorporate the material or equipment covered by the submittal.
 - b) If the review indicates limited modifications are required, copies will be marked "Reviewed as Modified". The *CONTRACTOR* may begin implementing the work method or incorporating the material and equipment covered by the submittal in accordance with the noted corrections. Where

- submittal information will be incorporated in operation and maintenance data, provide a corrected copy.
- c) If the review reveals that the submittal is insufficient or contains incorrect data, copies will be marked "Revise and Resubmit". Do not undertake work covered by this submittal until it has been revised, resubmitted and returned marked either "Reviewed" or "Reviewed as Modified".
 - d) If the review indicates that the material, equipment, or work method does not comply with the Contract Documents, copies of the submittal will be marked "Rejected - See Remarks". Submittals with deviations which have not been identified clearly may be rejected. Do not undertake the work covered by such submittals until a new submittal is made and returned marked either "Reviewed" or "Reviewed as Modified".
- .7 After submittals are stamped "Reviewed" or "Reviewed as Modified", no further revisions are permitted unless re-submitted to the *CONTRACT ADMINISTRATOR* for further review.
- .8 If upon review by the *CONTRACT ADMINISTRATOR*, no errors or omissions are discovered or if only minor corrections are made, 1 copy will be returned and fabrication and installation of work may proceed. If shop drawings and data sheets are rejected, noted copy and 1 unmarked copy will be returned and resubmission of corrected shop drawings and data sheets, through the same procedure indicated above, to be performed before fabrication and installation of work may proceed.
- .9 The *OWNER* may deduct, from payments due to *CONTRACTOR*, costs of additional Engineering reviews incurred if shop drawings and data sheets are not corrected after one (1) review by *CONTRACT ADMINISTRATOR*.

1.5 Submittals for Information Only

- .1 Where specified, furnish submittals to the *CONTRACT ADMINISTRATOR* for information only at least 30 days prior to commencement of the work covered by the submittal. Submittals for information only will be used by the *CONTRACT ADMINISTRATOR* for general information and filed without comment. The *CONTRACT ADMINISTRATOR* retains the right to return submittals for information only if the submittal does not comply with the Contract Documents and general design criteria.
- .2 Submittals for information only are not subject to review procedures. They are to be provided as part of the Work under the Contract and their acceptability determined under normal inspection procedures.
- .3 Submit 3 copies of information only submittals including product data, manufacturer's standard data sheets or brochures for requirements requested in Specification Sections and as the *CONTRACT ADMINISTRATOR* may reasonably request where shop drawings will not be prepared due to standardized manufacture of product.

- .4 Submit operation and maintenance information in accordance with Section 01 74 16S. Obtain from each manufacturer specific equipment record data, performance data and maintenance requirements.
- .5 Where specified submit engineering calculations sealed by a qualified Professional Engineer, for information only.

1.6 Request for Substitution

- .1 Make requests for substitution by written application accompanied with sufficient information as specified under Section 01 23 10S to permit the *CONTRACT ADMINISTRATOR* to identify the nature and scope of the request.
- .2 Follow submittal procedures and submit 3 copies of all information for each substitution request.
- .3 Upon receipt of written application for substitution from the *CONTRACTOR*, including the specific information specified, the *CONTRACT ADMINISTRATOR* will estimate the cost and time requirement of evaluating the request and present the estimates to the *CONTRACTOR*. The *CONTRACTOR* is advised that the estimates are based upon the best information available to the *CONTRACT ADMINISTRATOR* at the time; however, the actual cost, based on time and expense, will be documented and applied in the final analysis of the substitution request.
- .4 If the *CONTRACTOR* wishes the *CONTRACT ADMINISTRATOR* to continue the review of the request, advise the *CONTRACT ADMINISTRATOR* in writing and submit sufficient additional information as may be requested by the *CONTRACT ADMINISTRATOR*. No evaluation will take place until such time as the *CONTRACTOR* has agreed to the estimate in writing and has authorized the *CONTRACT ADMINISTRATOR* to deduct the cost of the evaluation from monthly progress payments due the *CONTRACTOR*.

2.0 PRODUCTS

- .1 Not Used

3.0 EXECUTION

- .1 Not Used

Supplementary Specifications

01 33 00-A SUBMITTAL TRANSMITTAL FORM:

Submittal Description: _____ Submittal No:¹ _____

Spec Section: _____

TO: ATTN:	Routing	Sent	Received
OWNER:	Contractor/CM		
PROJECT:	CM/DECS		
	DECS/CM		
CONTRACTOR: _____	CM/Contractor		

- We are sending you
- Attached
 - Under separate cover via
 - Submittals for Review (RVU)
 - Submittals for information only (INF)
 - Substitution (SUB)
 - Operation & Maintenance Information (O&M)

Remarks: _____

Item	Copies	Date	Section No.	Description	Review action ^a	Reviewer initials	Review comments attached

^a Attach additional sheets if necessary. REV= Reviewed; RAM= Reviewed as Modified; RAR= Revise and Resubmit; REJ= Rejected

Contractor

Certify either A or B:

- A. We have verified that the material or equipment contained in this submittal meets all the requirements, including coordination with all related work, specified (no exceptions).
- B. We have verified that the material or equipment contained in this submittal meets all the requirements specified except for the attached deviations.

No.

Deviation

Certified by:

Contractor's Signature

¹See Clause 01 30 00S-1.3, Transmittal Procedure.

Supplementary Specifications

01 33 00-B NAME PLATE SCHEDULE:

Quantity	Type/Size	*Colour	Inscription	Location

CONTRACT:

SHEET __ OF

*Colour to be denoted as background/lettering colour i.e. yellow/black or Y/B.

01 33 00-C MARKER/LEGEND SCHEDULE:

Quantity	Size	*Colour	Legend	Pictogram

CONTRACT: _____

SHEET ____ OF

*Colour to be denoted as background/legend colour i.e. yellow/black or Y/B.

Supplementary Specifications

01 33 00-D EQUIPMENT INSTRUMENTATION DATA RECORD FORM

GENERAL DATA

Equipment Number:		Equipment Location:	
Equipment Description:		Serial Number:	
Model Number:		Style Number:	
MANUFACTURER:			
Street Address:			
City:		State/Province:	Zip/Postal Code:
Phone #:		Fax #:	
MANUFACTURER's Contact		Phone #:	
VENDOR			
Street Address:			
City:		State/Province	Zip/Postal Code:
Phone #:		FAX #:	
VENDOR's Contact:		Phone #:	
Date I/S:	Date of Warr:	P.O. #:	Purchase Cost:

TECHNICAL DATA (Complete all areas where applicable)

<input type="checkbox"/>	Alternate to Specifications - Check () if Applicable	CSA Approved Classification
Mounting:		Accuracy
Power Requirements:		
Materials of Construction:		
Wetted Parts Material		

ADDITIONAL SPECIFICATIONS/NOTES

Supplementary Specifications

01 33 00-E EQUIPMENT MECHANICAL DATA RECORD FORM

GENERAL DATA

Equipment Number:		Equipment Location:	
Equipment Description:		Serial Number:	
Model Number:		Style Number:	
MANUFACTURER:			
Street Address:			
City:		State/Province:	Zip/Postal Code:
Phone #:		Fax #:	
MANUFACTURER's Contact		Phone #:	
VENDOR			
Street Address:			
City:		State/Province	Zip/Postal Code:
Phone #:		FAX #:	
VENDOR's Contact:		Phone #:	
Date I/S:	Date of Warr:	P.O. #:	Purchase Cost:

TECHNICAL DATA (Complete all areas where applicable)

Size:	Weight		
R.P.M.	Design BHP:	Impeller Diameter:	
Rotation/Discharge:	Bearing Lubrication:		
Bearing Numbers and Quantity:			
Applicable Tolerances:			
Oil/Air Filters			
PACKING/SEAL DATA			
Style:	Make:		
Size:	Cooling:		
Lubrication:	Lip Seals:		
Seal Type/Numbers:			
ADDITIONAL VALVE DATA			
Valve Seat Material:	Valve Seat Number:		
DRIVE DATA: COUPLING			
Make:	Size:		
Type:			
DRIVE DATA: V-BELT			
Make:	Belts:		
Driver:	Driven:		

Supplementary Specifications

01 33 00-F EQUIPMENT ELECTRICAL DATA RECORD FORM

GENERAL DATA

Equipment Number:		Equipment Location:	
Equipment Description:		Serial Number:	
Model Number:		Style Number:	
MANUFACTURER:			
Street Address:			
City:		State/Province:	Zip/Postal Code:
Phone #:		Fax #:	
MANUFACTURER's Contact		Phone #:	
VENDOR			
Street Address:			
City:		State/Province:	Zip/Postal Code:
Phone #:		FAX #:	
VENDOR's Contact:		Phone #:	
Date I/S:	Date of Warr:	P.O. #:	Purchase Cost:

TECHNICAL DATA (Complete all areas where applicable)

GENERAL			
Nominal Voltage	Phase:	Frequency:	kW: kVA(r):
P.F.:	Amps:	Ambient Temperature:	Temperature Rise:
Nominal Efficiency:	Insulation Class:	Insulation Type:	BIL:
Weight:	Enclosure Type:	Enclosure Dimensions (H x W x D):	
CSA Approved Hazard Classification:	Class:	Division:	Group:
ADDITIONAL MOTOR DATA			
Synch RPM:	HP:	Frame:	LRA: Service Factor:
Design Letter:	KVA Code:	Duty:	Guaranteed Minimum Efficiency @ Full Load:
Winding Heater Volts:		Winding Heater Watts:	
Over Temp. Sensor Type:	DE Bearing:	ODE Bearing:	
ADDITIONAL TRANSFORMER DATA			
Secondary Volts:	Winding Connection: HV: LV:		
% Impedance (Z):	Type (ANN, ONAN, Etc.)		
ADDITIONAL BREAKER DATA			
Interrupting Rating:	Momentary Rating:	Frame Size:	
Thermal Trip Range:		Instantaneous Trip Range:	
ADDITIONAL STARTER DATA			
Overload Setting Range:			
Contactor Rating	Size:	HP:	Amps:
ADDITIONAL SPECIFICATIONS/NOTES			

Supplementary Specifications

01 33 00-G EQUIPMENT MAINTENANCE REQUIREMENT DATA RECORD FORM

GENERAL DATA

Equipment Number:		Equipment Location:	
Equipment Description:		Serial Number:	
Model Number:		Style Number:	
MANUFACTURER:			
Street Address:			
City:		State/Province:	Zip/Postal Code:
Phone #:		Fax #:	
MANUFACTURER's Contact		Phone #:	
VENDOR			
Street Address:			
City:		State/Province:	Zip/Postal Code:
Phone #:		FAX #:	
VENDOR's Contact:		Phone #:	
Date I/S:	Date of Warr:	P.O. #:	Purchase Cost:

GENERAL AND PREVENTATIVE MAINTENANCE REQUIREMENTS

MAINTENANCE REQUIREMENTS							
LUBRICANTS							
Recommended:							
Alternative:							

ADDITIONAL SPECIFICATIONS/NOTES

1.0 GENERAL

- .1 This section specifies general requirements and procedures for *CONTRACTOR*'s submissions of shop drawings and product data to *CONTRACT ADMINISTRATOR* for review. Additional specific requirements for submissions are specified in individual sections of Divisions 2 to 50. **Note shop drawings and product data are required for all equipment whether specified in the technical specifications or referenced on the drawings.**
- .2 Until submission is reviewed, work involving relevant product may not proceed.
- .3 Present shop drawings in metric units unless specified otherwise.
- .4 *CONTRACTOR*'s responsibility for errors and omissions in submission is not relieved by *CONTRACT ADMINISTRATOR*'s review of submissions.
- .5 Notify *CONTRACT ADMINISTRATOR*, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .6 *CONTRACTOR*'s responsibility for deviations in submission from requirements of Contract Documents is not relieved by *CONTRACT ADMINISTRATOR*'s review of submission, unless *CONTRACT ADMINISTRATOR* gives written acceptance of specific deviations.
- .7 Make any changes in submissions which *CONTRACT ADMINISTRATOR* may require consistent with Contract Documents and resubmit as directed by *CONTRACT ADMINISTRATOR*.
- .8 Notify *CONTRACT ADMINISTRATOR*, in writing, when resubmitting, of any revisions other than those requested by *CONTRACT ADMINISTRATOR*.

1.1 Submission Requirement's

- .1 Coordinate each submission with requirements of work and Contract Documents. Individual submissions will not be reviewed until all related information is available.
- .2 Allow 7 days for *CONTRACT ADMINISTRATOR*'s review of each submission.
- .3 Accompany submissions with transmittal form 01 33 00-A.
- .4 After *CONTRACT ADMINISTRATOR*'s review, distribute copies.

1.2 Shop Drawings

- .1 Shop drawings: original drawings, or modified standard drawings provided by *CONTRACTOR*, to illustrate details of portions of work, which are specific to project requirements.
- .2 Maximum sheet size 1000 x 707 mm.
- .3 Submit 3 copies of shop drawings. PDF copies by electronic mail will be accepted.

1.3 Product Data

- .1 Product data: manufacturer's catalogue sheets, brochures, literature, performance charts and manufactured products.
- .2 Submit 2 copies of product data. PDF copies by electronic mail will be accepted.

END OF SECTION 01 33 23S

1.0 Records during Construction

- .1 The *CONTRACTOR* shall keep one complete set of all construction drawings on the WORKSITE.
- .2 On the WORKSITE set of drawings, the *CONTRACTOR* shall record any changes that are made during the actual construction of THE WORK. The purpose of recording these changes is to provide drawings of record at the end of THE WORK.
- .3 The *CONTRACTOR* shall be responsible for the adequacy and the reliability of the information recorded on the drawings of record.
- .4 The *CONTRACTOR* shall record the location of any Asbestos Concrete pipe that is abandoned in place on the Drawings of Record.
- .5 At the completion of the construction period, the *CONTRACTOR* shall turn over the set of construction record drawings that have been marked up with changes during the course of *THE WORK* to the *CONTRACT ADMINISTRATOR* to permit the *CONTRACT ADMINISTRATOR* to prepare Drawings of Record for *THE WORK*.

END OF SECTION 01 34 00S

1.0 GENERAL

- .1 The *CONTRACTOR* is totally responsible for the quality of *MATERIAL* and *PRODUCT* which he provides and for *THE WORK*.
- .2 The *CONTRACTOR* is responsible for quality control and shall perform such inspections and tests as are necessary to ensure and demonstrate that *THE WORK* conforms to the requirements of the *CONTRACT DOCUMENTS*.
- .3 During the progress of *THE WORK*, a sufficient number of tests shall be performed by the *CONTRACTOR* to determine and demonstrate that *MATERIAL*, *PRODUCT* and installation meet the specified requirements.
- .4 Minimum requirements regarding quality control are specified in various sections of the specifications, however, the *CONTRACTOR* shall perform as many inspections and tests as are necessary to ensure and demonstrate that *THE WORK* conforms to the requirements of the *CONTRACT DOCUMENTS*.
- .5 Testing shall be in accordance with pertinent codes and regulations, and with selected standards of the American Society for Testing and Materials (ASTM) and Canadian Standards Association (CSA).
- .6 *PRODUCT* testing, mill tests and laboratory reports shall demonstrate that *PRODUCTS* and *MATERIALS* supplied by the *CONTRACTOR* meet the specifications under various sections of the *CONTRACT DOCUMENTS*.

1.1 Quality Control Testing by the *CONTRACTOR*

- .1 Work Under this Contract
- .2 The *CONTRACTOR* shall retain the services of an independent testing agency under supervision of the *CONTRACT ADMINISTRATOR*, and pay the cost of testing services for quality control including, but not limited to, the following:
 - .3 Sieve analysis of sands and aggregates to be supplied for *THE WORK*.
 - .4 Aggregates and mix design for Portland Cement concrete.
 - .5 Standard Proctor Density curves for backfill and embankment materials and roadway and walkway granular base and sub-base materials.
 - .6 Compaction control tests for backfill of trench excavations at a minimum frequency of 1 test per 20m of trench line at a minimum of 2 lifts within the trench section.

- .7 Compaction control tests for backfill and embankment material and roadway and walkway granular base and sub-base materials at a minimum frequency of 1 test per disturbed area of 200 sq. m. of parking lot, or every 50m of roadway at least 2 locations within the cross-section per lift of each material type.
- .8 Concrete strength tests of cast in place concrete pads to be completed each pour, or as otherwise specified by the *CONTRACT ADMINISTRATOR*
- .9 Any *PRODUCT* testing that is required and is specified under various sections of the specifications.
- .10 The *CONTRACTOR* shall promptly process and distribute all required copies of test reports and test information and related instructions to all of his *SUBCONTRACTORS* and Suppliers to ensure and demonstrate that all necessary retesting and replacement of construction can proceed without delay.
- .11 The *CONTRACTOR* shall promptly provide the *CONTRACT ADMINISTRATOR* with copies of all test results

1.2 Quality Assurance Testing by the Owner

- .1 Work Under this Contract
- .2 The *OWNER* may retain and pay for the services of an independent testing agency for testing for quality assurance, for the *OWNER'S* purposes.
- .3 The *OWNER'S* testing agency and the *CONTRACT ADMINISTRATOR* may inspect and test *MATERIAL*, *PRODUCT* and *THE WORK* for conformance with the requirements of the *CONTRACT DOCUMENTS*; however, they do not undertake to check the quality of *THE WORK* on behalf of the *CONTRACTOR* nor to provide quality control.
- .4 Inspections and tests by the *OWNER'S* testing agency and by the *CONTRACT ADMINISTRATOR* do not relieve the *CONTRACTOR* of his responsibility to supply *MATERIAL* and *PRODUCT* and to perform *THE WORK* in accordance with the requirements of the *CONTRACT DOCUMENTS*.
- .5 The *CONTRACT ADMINISTRATOR*, at his discretion, may order or perform any additional inspections and tests for purposes of his own or for purposes of the *OWNER*.
- .6 The *CONTRACTOR* shall coordinate with the *CONTRACT ADMINISTRATOR* the scheduling of testing and inspection by the *OWNER'S* testing agencies or by the *CONTRACT ADMINISTRATOR*, to enable testing to be done as necessary, without delay, and the *CONTRACTOR* shall notify the *CONTRACT*

ADMINISTRATOR 48 hours in advance of operations to allow for such inspection and tests by the *CONTRACT ADMINISTRATOR* or the *OWNER'S* testing agency.

1.3 Code Compliance Testing

- .1 Work Under this Contract
- .2 Inspections and tests required by codes or ordinances, or by a plan approval authority, shall be the responsibility of and shall be paid for by the *CONTRACTOR*.
- .3 Copies of reports resulting from such inspections shall be submitted in a timely manner by the *CONTRACTOR* to the *OWNER*.

1.4 Retesting

- .1 Work Under this Contract
- .2 When tests on *PRODUCT*, *MATERIAL* or completed portions of *THE WORK* carried out by the *CONTRACTOR* or the *CONTRACTOR'S* testing agency or by the *OWNER'S* testing agency yield results not meeting the requirements of the *CONTRACT DOCUMENTS*, the *CONTRACTOR*, in addition to carrying out remedial work or replacement of the *PRODUCT* or *MATERIAL* shall provide for retesting of the remedied work and the replacement *PRODUCT* and *MATERIAL*. Retesting, including retesting by the *OWNER'S* testing agency, shall be at the *CONTRACTOR'S* expense.
- .3 In every case where the *CONTRACTOR* has submitted test results, which fail to meet the requirements of the *CONTRACT DOCUMENTS*, the *CONTRACTOR* shall submit within a practical and reasonable time results of a retest showing that the results are in accordance with the requirements of the *CONTRACT DOCUMENTS*.
- .4 If the *CONTRACTOR* fails or refuses to do remedial work or replace unacceptable *MATERIAL* or *PRODUCT*, the *CONTRACT ADMINISTRATOR* may refuse to certify payment and the *OWNER* may refuse to make payment, in addition to any other remedies the *OWNER* may have.

END OF SECTION 01 45 00S

1.0 GENERAL

- .1 This Supplementary Specification shall be read in conjunction with MMCD Section 01 57 01 - Environmental Protection
- .2 *THE WORK* is adjacent to the Discovery Passage. The *CONTRACTOR* shall adhere to best practices for the protection of the environment, and maintain all facilities and measures so as to ensure that no deleterious substances are discharged into the environment
- .3 The *CONTRACTOR* shall submit to the *CONTRACT ADMINISTRATOR* a detailed EPP for review. The *CONTRACTOR*'s EPP shall designate specific materials and methodologies to be implemented with respect to the EPP. The *CONTRACTOR*'s EPP must also specify any and all alternate methodologies to be used in case of failure of primary methodologies or in the event of an environmental spill / loss of containment.

1.1 Notifications

- .1 The *OWNER* may notify the *CONTRACTOR* in writing of any non-compliance with the MMCD provisions or of any environmentally objectionable acts. The *CONTRACTOR* shall, after receipt of such notice from the *OWNER*, immediately take corrective action. Such notice, when delivered to the *CONTRACTOR* or the *CONTRACTOR*'s authorized representative at the site of *THE WORK*, shall be deemed sufficient for the purpose. If the *CONTRACTOR* fails or refuses to comply promptly, the *OWNER* may issue an order stopping all or part of *THE WORK* until satisfactory corrective action has been taken. No part of the time lost due to any such stop work orders shall be made the subject of a claim for extension of time or for excess costs or damages by the *CONTRACTOR*.

1.2 Payment

- .1 No Measurement or Payment for the environmental monitor shall be made for this work as it shall be deemed incidental to the completion of the *CONTRACT*.
- .2 The work shall include all temporary measures as approved in writing by the *CONTRACT ADMINISTRATOR*. All other requirements under the *CONTRACTOR*'s EPP shall be considered incidental to the work.

END OF SECTION 01 57 01S

1.0 MANUALS

- .1 Provide an organized compilation and description of operational and maintenance data including detailed technical information, documents and records describing operation and maintenance of individual products or systems.
- .2 Manuals shall contain the following sections entitled:
 - .1 Section 1: Electrical Equipment;
- .3 For all equipment and items, the operating and maintenance manuals shall include:
 - .1 Appropriate submittals form
 - .2 Specification data;
 - .3 Vendor drawings;
 - .4 Manufacturers recommended operating, maintenance and service data including:
 - nameplate information including make, size, capacity, model number and serial number;
 - spare parts lists as recommended by manufacturer;
 - operating instructions;
 - maintenance instructions;
 - maintenance and service materials or special tools;
 - trouble shooting procedures;
 - .5 Name, address and telephone number of local or closest supplier c/w contact person;
 - .6 Warranty & guarantee information;
 - .7 Test data obtained during commissioning.
 - .8 Results of testing and commissioning.

2.0 GENERAL

- .1 Assemble, coordinate, bind and index required data into Operation and Maintenance Manual and organize data into required sections.
- .2 Label each section with tabs protected with celluloid covers fastened to hard paper dividing sheets.
- .3 Type descriptions, lists and notes.
- .4 Drawings, diagrams and manufacturers literature must be legible.

3.0 SUBMISSIONS

- .1 Provide one set of completed operating and maintenance manuals to *CONTRACT ADMINISTRATOR* for **review four weeks prior to scheduled date for start of pump station commissioning**. Revise manuals as directed by *CONTRACT ADMINISTRATOR*. Each site shall have a separate bound copy of the manuals.
- .2 When manuals are approved provide **four identical sets** of approved operating and maintenance manual binders to the *OWNER*.
- .3 **Commissioning may not proceed until manuals are approved by the *CONTRACT ADMINISTRATOR*.**

4.0 BINDERS

- .1 Binders: Large heavy duty expanding 3-post binders with piano hinged, fabric covered hard covers, and gold or silver embossed lettering on both the front and spine of the binders. Binder to be sized to accommodate all 8 ½ x 11 inch size documents.

5.0 CONTENTS

- .1 Binders:
 - .1 Cover sheet containing:
 - .1 Date submitted.
 - .2 Project title, location and project number.
 - .3 Names and addresses of Contractor, and all Sub-contractors.
 - .4 Table of Contents.
 - .2 Technical sections as specified.
 - .3 Identify each major section with individual title page (ie, ELECTRICAL)

6.0 EQUIPMENT

Unless specified otherwise all equipment and components supplied and installed under this contract shall be included in the manuals. The following equipment includes but is not limited to the equipment to be included in the manuals:

.1 Electrical Equipment

- Diesel Generators
- Generator Enclosures
- Automatic Transfer Switches
- Disconnect Switches

END OF SECTION 01 74 16S



LIFT STATION BACKUP GENERATORS

ELECTRICAL DRAWING INDEX

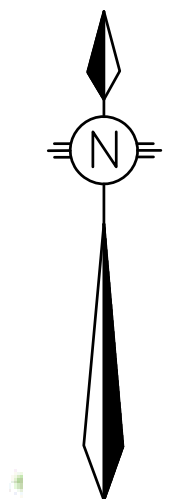
DRAWING NUMBER	TITLE	NOTES
16-503/E00	TITLE PAGE AND DRAWING INDEX	
16-503/E01	SITE PLAN LIFT STATION #8 & LIFT STATION #17	
16-503/E02	SITE PLAN LIFT STATION #9	
16-503/E03	SITE PLAN LIFT STATION #9	
16-503/E04	SITE PLAN LIFT STATION #10	
16-503/E05	SITE PLAN LIFT STATION #12	
16-503/E06	SITE PLAN LIFT STATION #14	
16-503/E07	SITE PLAN LIFT STATION #15	
16-503/E08	GENERATOR SPECIFICATIONS	
16-503/E09	ELECTRICAL SPECIFICATIONS	

CIVIL DRAWING INDEX

DRAWING NUMBER	TITLE	NOTES
16-5003/C01	PROPOSED GENSET PAD DETAILS BACK UP GENERATOR INSTALLATION FOR LIFT STATIONS 8, 9, 10	
16-5003/C02	PROPOSED GENSET PAD DETAILS BACK UP GENERATOR INSTALLATION FOR LIFT STATIONS 12, 14, 15	



CITY OF CAMPBELL RIVER
SCALE: N.T.S.



NO.	DATE	COMMENT
4	NOV 09 2016	ISSUED FOR TENDER
3	SEPT 29 2016	ISSUED FOR TENDER
2	JUN 24 2016	ISSUED FOR 90% REVIEW
1	MAY 06 2016	ISSUED FOR REVIEW

RB ENGINEERING LTD
ELECTRICAL CONSULTING ENGINEERS
#4 1850 NORTHFIELD ROAD TEL: 250-756-4444
NANAIMO, BC, V9S 3B3 RBENGINEERING.CA

CLIENT

PROJECT
**LIFT STATION
BACKUP GENERATORS**

TITLE
**TITLE PAGE &
DRAWING INDEX**

SCALE N.T.S.	DATE APRIL, 2016
-----------------	---------------------

DRAWN EA	SEAL
DESIGNED CR	
CHECKED DM	

PROJECT NO.
16-2244

DRAWING NO.

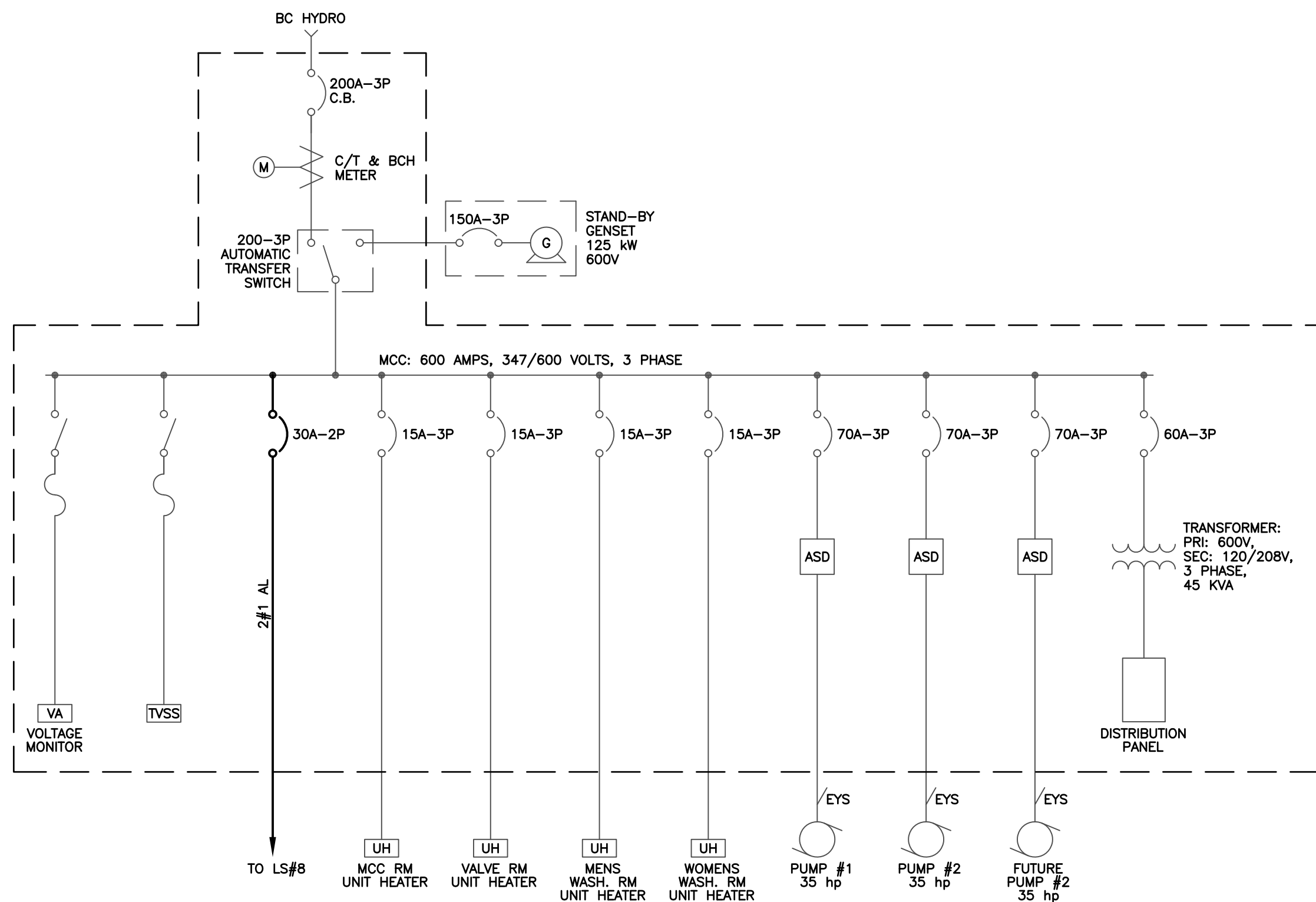
16-503/E00





LIFT STATION #8 & #17 INTERCONNECTION

SCALE: 1:500



LIFT STATION #17 SINGLE LINE DIAGRAM

LOAD CALCULATION

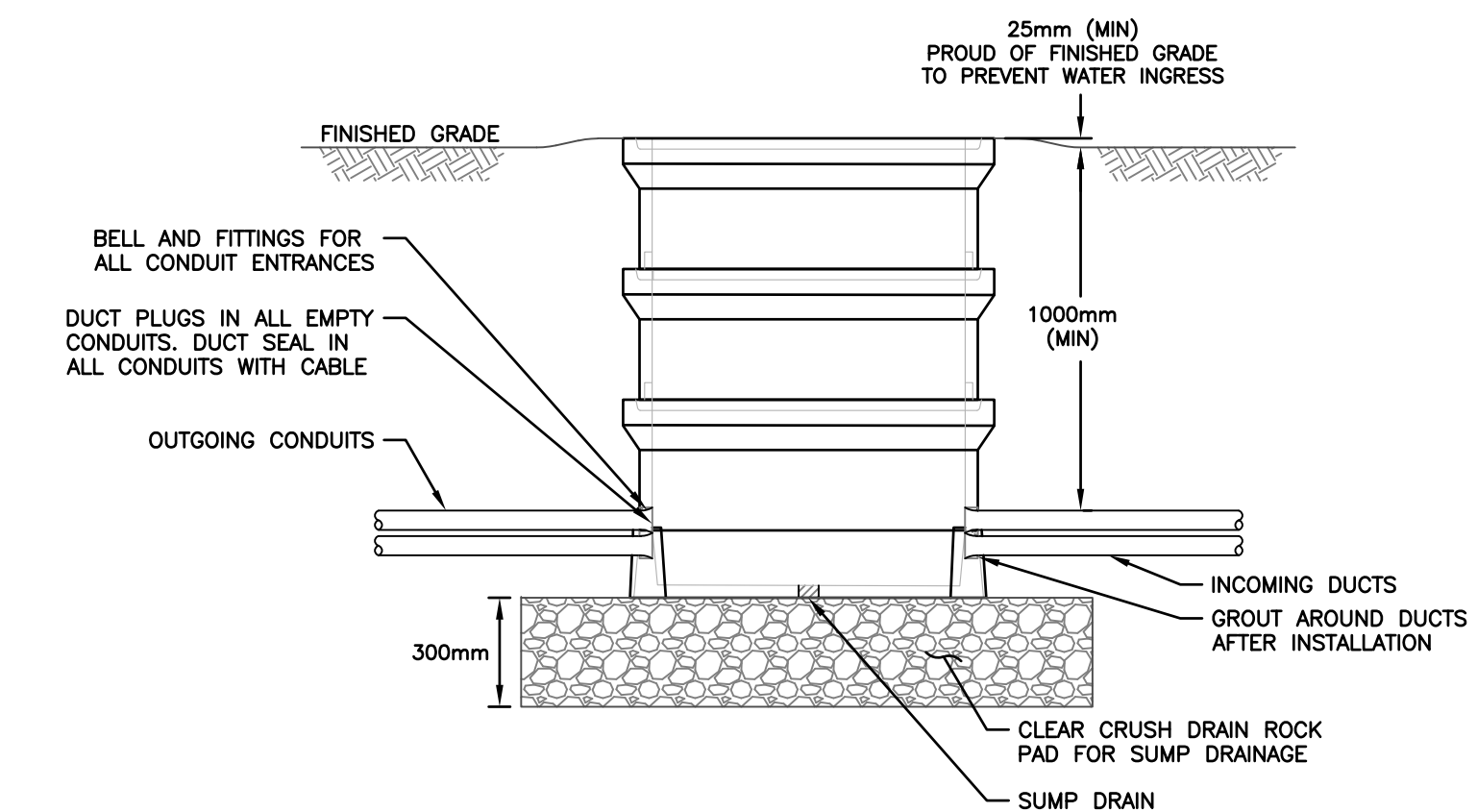
LIFT STATION #8

- 1. PUMPS: 2 @ 3.8 HP = 7,600 VA
- 2. MOTOR INRUSH: = 1,900 VA
- 3. MISC. KIOSK LOADS: = 2,000 VA
- 4. TOTAL VA: = 11,500 VA
- 5. AMPACITY: 11,500 VA / 240 V = 48 AMPS
- 6. 80% CAPACITY: 48 A x 1.25 = 70 AMPS
- 7. SERVICE SIZE: 100 AMP, 120/240 VOLT, SINGLE PHASE

LOAD CALCULATION

LIFT STATION #17

- 1. PUMPS: 2 @ 35 hp = 70,000 VA
- 2. FLOOR AREA: 650 sq.ft x 2.5 W/sq.ft = 1,625 VA
- 3. ELECTRIC HEAT: 9,000 W x 0.75 = 6,750 VA
- 4. HOT WATER: = 3,000 VA
- 5. EXISTING LOAD SUB-TOTAL VA: = 81,375 VA
- 6. LIFT STATION #8 FEED: = 11,500 VA
- 7. FUTURE PUMP: 1 @ 35 hp = 35,000 VA
- 8. TOTAL VA: = 127,875 VA
- 9. AMPACITY: 127,875 VA / (√3 x 600 V) = 123 AMPS
- 10. 80% CAPACITY: 123 A x 1.25 = 154 AMPS
- 11. SERVICE SIZE: 200 AMP, 347/600 VOLT, 3 PHASE



DETAIL 1: TYPE 5 JUNCTION BOX INSTALLATION

SCALE: 1:20

KEY NOTES:

- 1. REMOVE EXISTING 20A-3P BREAKER FROM MCC CELL. INSTALL NEW 30A-2P BREAKER FOR LIFT STATION #8 FEED.
- 2. CONTRACTOR TO MANDREL BOTH CONDUITS TO CONFIRM PATHWAYS AND INSTALL PULL STRINGS PRIOR TO INSTALLING WIRE.
- 3. EXISTING CONDUIT TERMINATES UNDER MCC BOTTOM PLATE. CONTRACTOR SHALL DRILL HOLE AND INSTALL BUSING INTO BOTTOM PLATE TO ACCOMMODATE CABLE RUN INTO MCC WEIRWAY.
- 4. JUNCTION BOX TO BE INSTALLED IN GRASS BOULEVARD WHERE POSSIBLE.

NO.	DATE	COMMENT
3	NOV 09 2016	ISSUED FOR TENDER
2	SEPT 29 2016	ISSUED FOR TENDER
1	JUN 24 2016	ISSUED FOR 90% REVIEW
NO. DATE		COMMENT
REVISION		

RB ENGINEERING LTD
ELECTRICAL CONSULTING ENGINEERS
#4 1850 NORTHFIELD ROAD TEL: 250-756-4444
NANAIMO, BC, V9S 3B3 RBENGINEERING.CA



PROJECT
LIFT STATION BACKUP GENERATORS

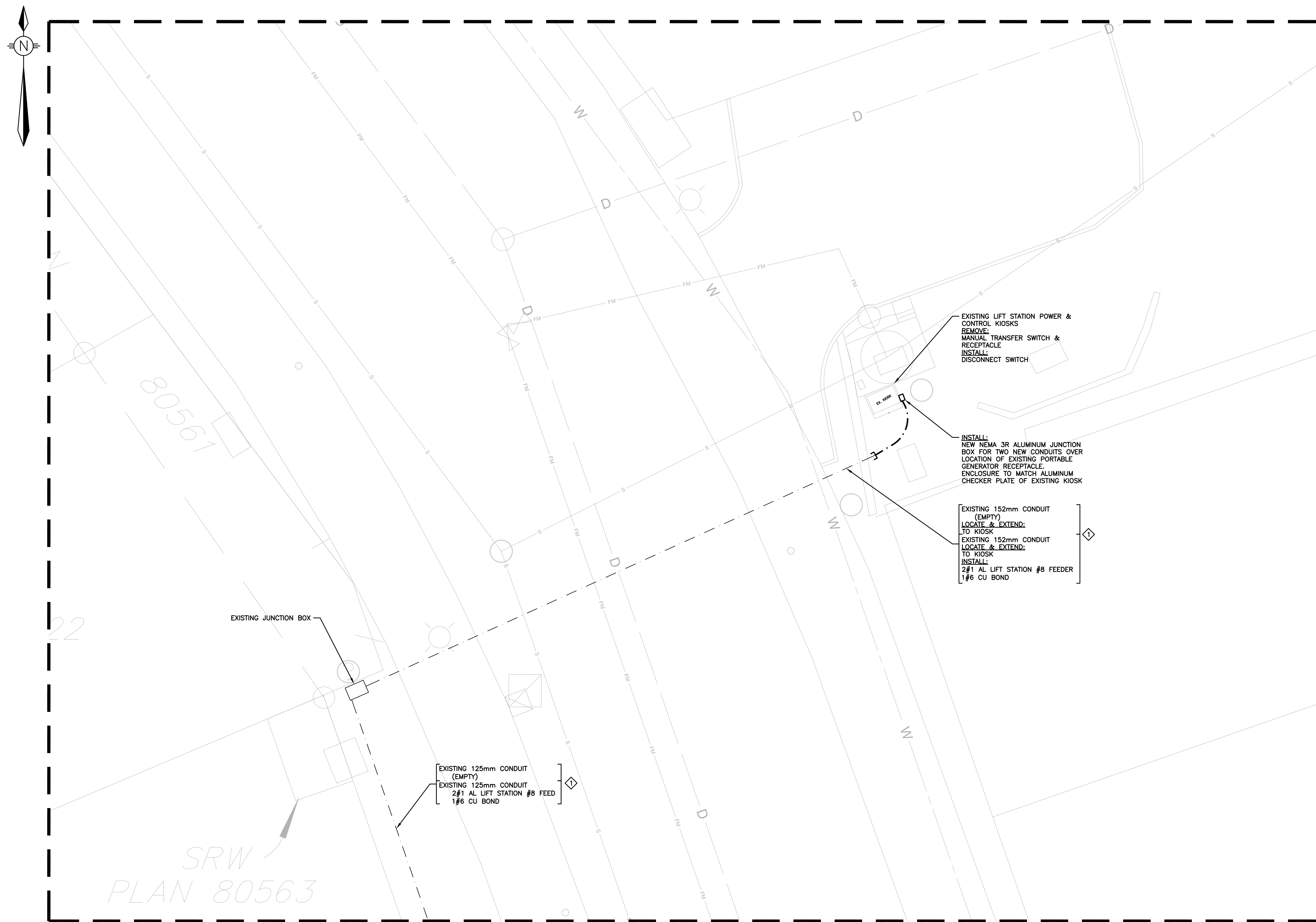
TITLE
SITE PLAN LIFT STATION #8 & LIFT STATION #17 ELECTRICAL LAYOUT

SCALE	DATE
AS SHOWN	APRIL 2016
DRAWN	SEAL
EA	
DESIGNED	
CR	
CHECKED	
DM	

PROJECT NO.
16-2244

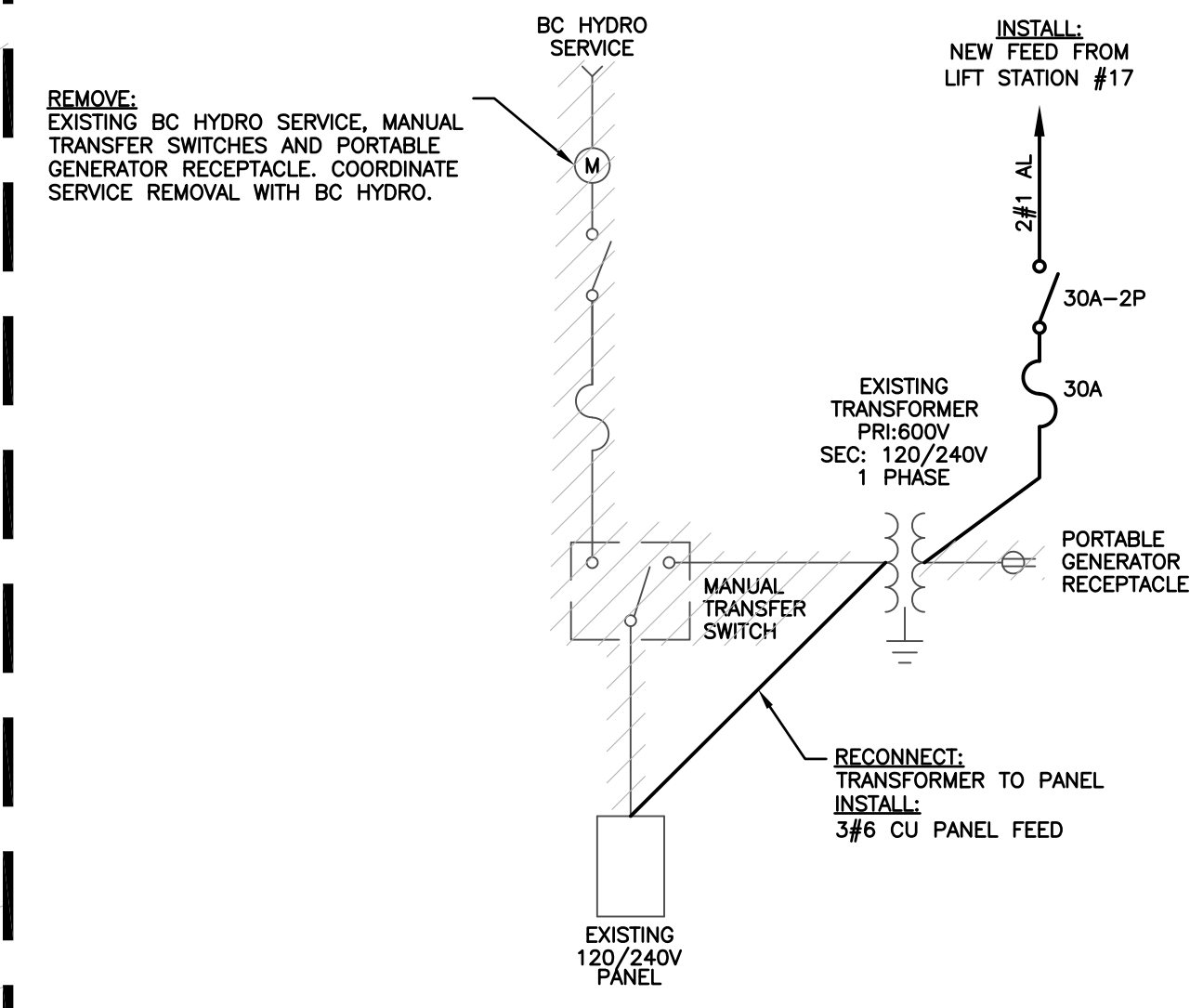
DRAWING NO.
16-503/E01





LIFT STATION #8 AREA ENLARGEMENT LAYOUT

SCALE: 1:100



APPROXIMATE SINGLE LINE DIAGRAM

KEY NOTES:

CONTRACTOR TO MANDREL BOTH CONDUITS TO CONFIRM PATHWAYS AND INSTALL PULL STRINGS PRIOR TO INSTALLING WIRE.

NO.	DATE	COMMENT
4	NOV 09 2016	ISSUED FOR TENDER
3	SEPT 29 2016	ISSUED FOR TENDER
2	JUN 24 2016	ISSUED FOR 90% REVIEW
1	MAY 06 2016	ISSUED FOR REVIEW
NO. DATE		REVISION

RB ENGINEERING LTD
ELECTRICAL CONSULTING ENGINEERS
#4 1850 NORTHFIELD ROAD TEL: 250-756-4444
NANAIMO, BC, V9S 3B3 RBENGINEERING.CA



PROJECT
**LIFT STATION
BACKUP GENERATORS**

TITLE
**SITE PLAN
LIFT STATION #8
ELECTRICAL LAYOUT**

SCALE AS SHOWN DATE APRIL, 2016

DRAWN EA	SEAL
DESIGNED CR	
CHECKED DM	

PROJECT NO.
16-2244

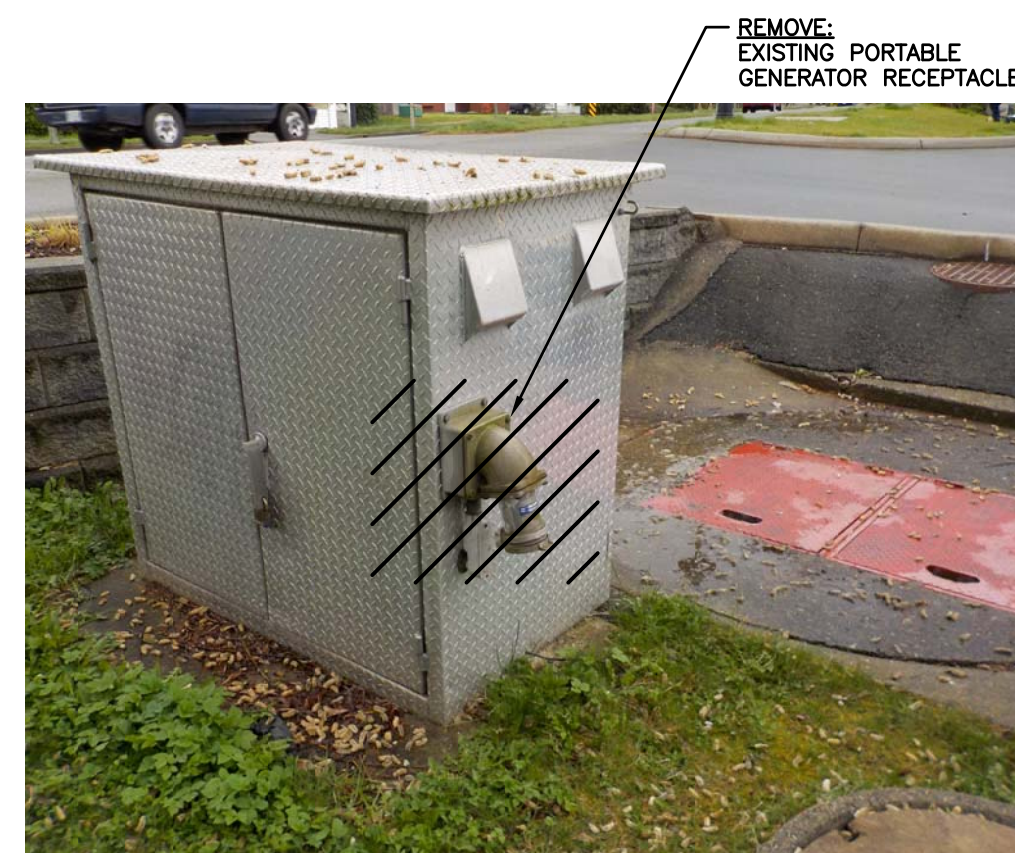
DRAWING NO.

16-503/E02

GENERAL NOTE:
CONTRACTOR TO ADDRESS CODE COMPLIANCE ISSUES IN WIRING IN KIOSK. REMOVE EXISTING, WIRING AND PROVIDE NEW WIRES, TERMINATE AS PER CEC.



LIFT STATION KIOSK INTERIOR - CONTROL SIDE
SCALE: N.T.S.

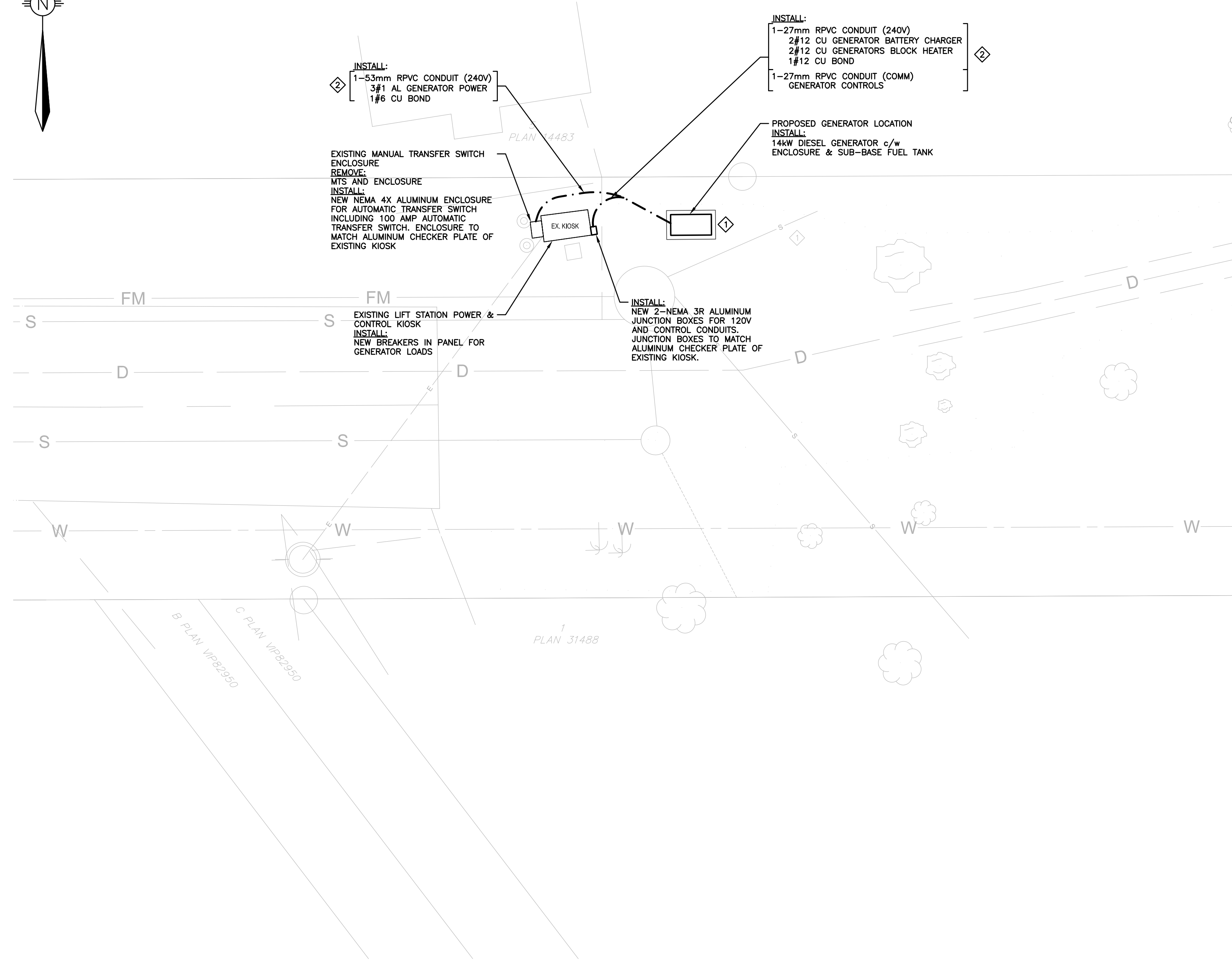


LIFT STATION KIOSK EXTERIOR
SCALE: N.T.S.

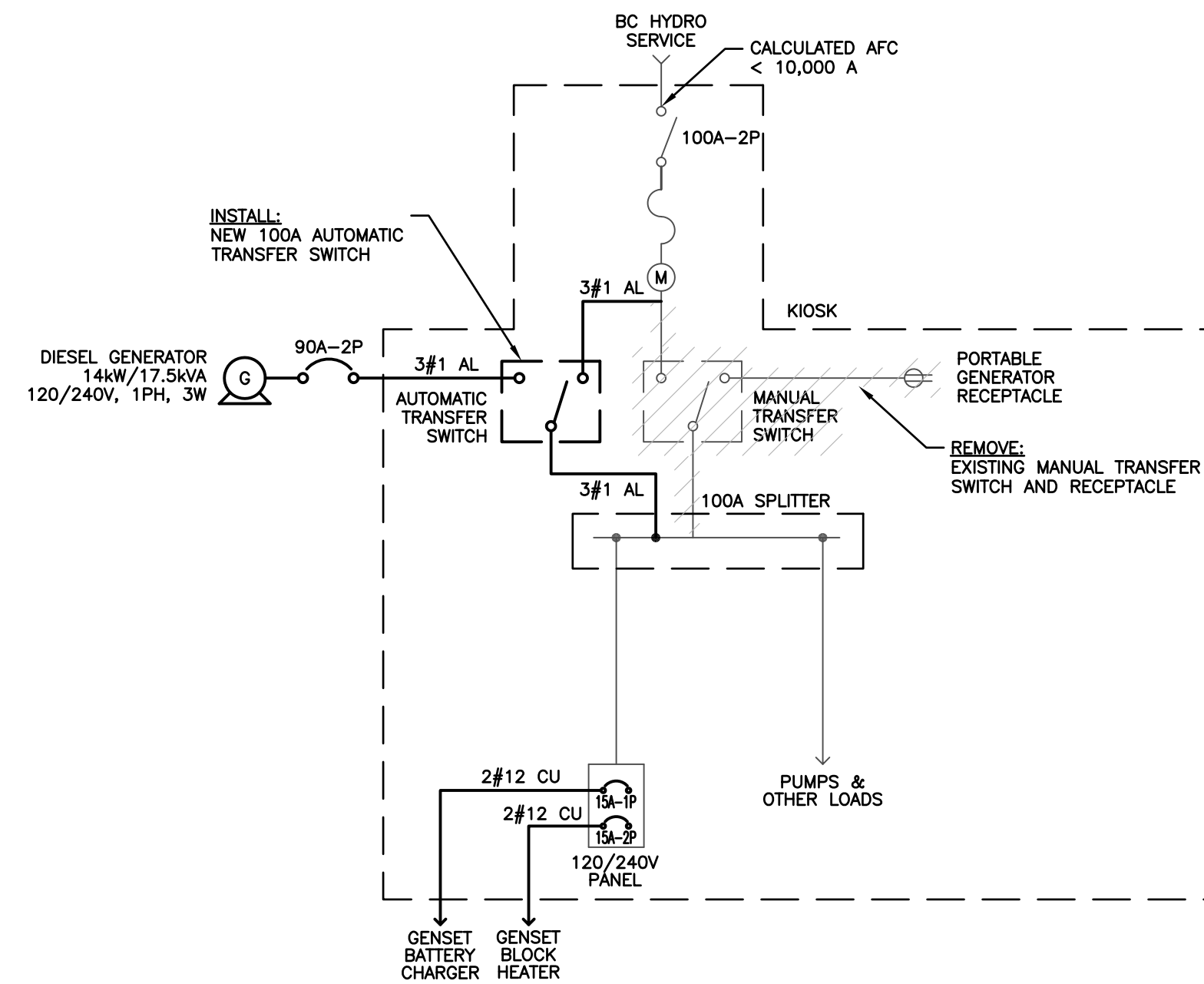


LIFT STATION KIOSK INTERIOR - POWER SIDE
SCALE: N.T.S.





SITE PLAN LAYOUT
SCALE: 1:100



APPROXIMATE SINGLE LINE DIAGRAM

LOAD CALCULATION

- LIFT STATION #9**
- 1. PUMPS: 2 @ 3.9 HP = 7,800 VA
 - 2. MOTOR INRUSH: = 1,850 VA
 - 3. MISC. KIOSK LOADS: = 2,000 VA
 - 4. TOTAL VA: = 11,650 VA
 - 5. AMPACITY: 11,650 VA / 240 V = 48 AMPS
 - 6. 80% CAPACITY: 48 A x 1.25 = 60 AMPS
 - 7. SERVICE SIZE: 100 AMP, 120/240 VOLT, SINGLE PHASE



LIFT STATION KIOSK EXTERIOR ENCLOSURE
SCALE: N.T.S.

KEY NOTES:

- REFER TO CIVIL DESIGN FOR PAD DETAILS. COORDINATE CONDUIT TERMINATION LOCATIONS WITH GENERATOR SHOP DRAWINGS.
- CONFIRM LOCATION OF EXISTING RESIDENTIAL SEWER LINE IN AREA PRIOR TO TRENCHING.

NO.	DATE	COMMENT
4	NOV 09 2016	ISSUED FOR TENDER
3	SEPT 29 2016	ISSUED FOR TENDER
2	JUN 24 2016	ISSUED FOR 90% REVIEW
1	MAY 06 2016	ISSUED FOR REVIEW
NO. DATE		REVISION

RB ENGINEERING LTD
ELECTRICAL CONSULTING ENGINEERS
#4 1850 NORTHFIELD ROAD TEL 250-756-4444
NANAIMO, BC, V9S 3B3 RBENGINEERING.CA



CLIENT
LIFT STATION BACKUP GENERATORS

TITLE
SITE PLAN LIFT STATION #9 ELECTRICAL LAYOUT

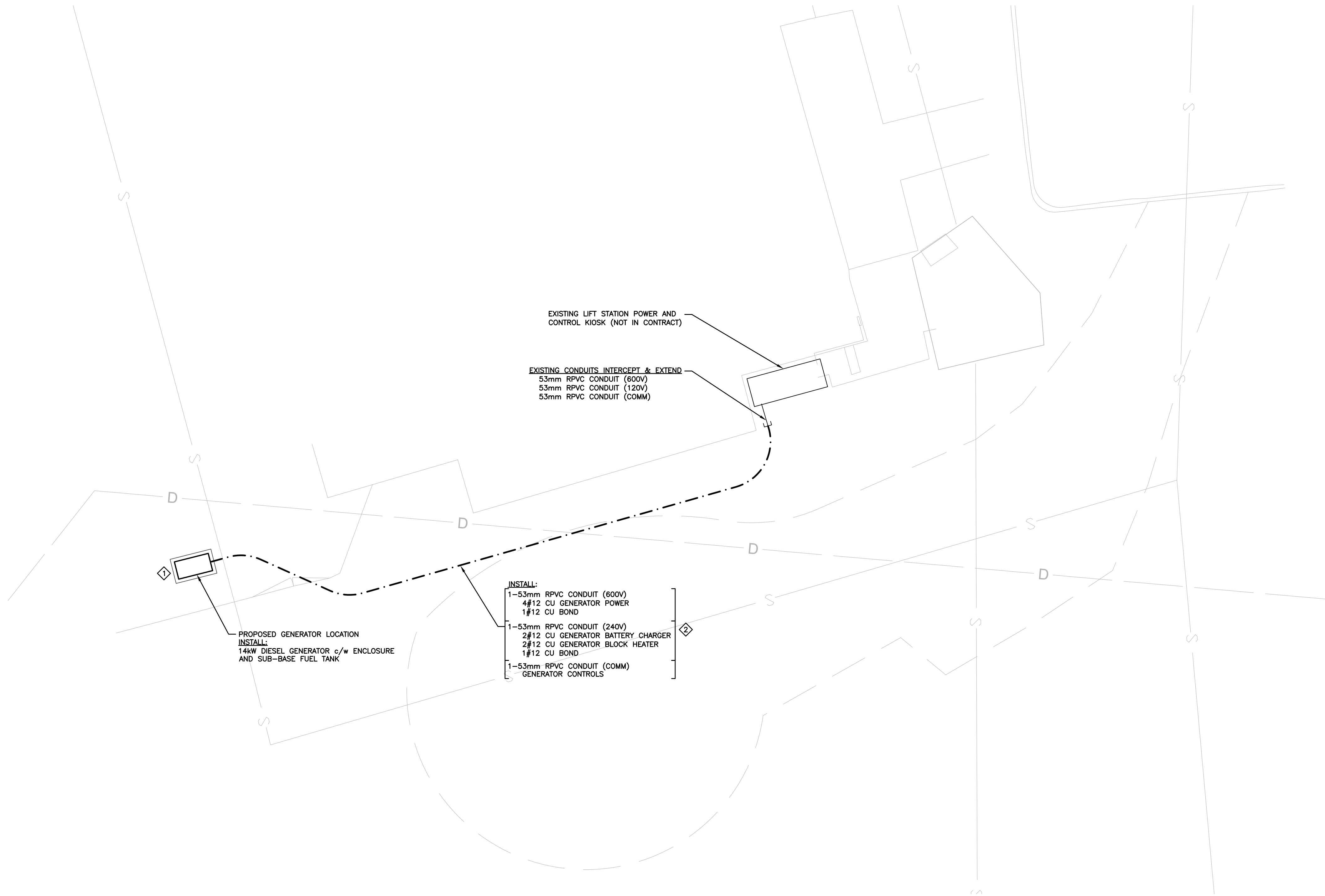
SCALE 1:100	DATE APRIL, 2016
DRAWN EA	SEAL
DESIGNED CR	
CHECKED DM	

PROJECT NO.
16-2244

DRAWING NO.



16-503/E03



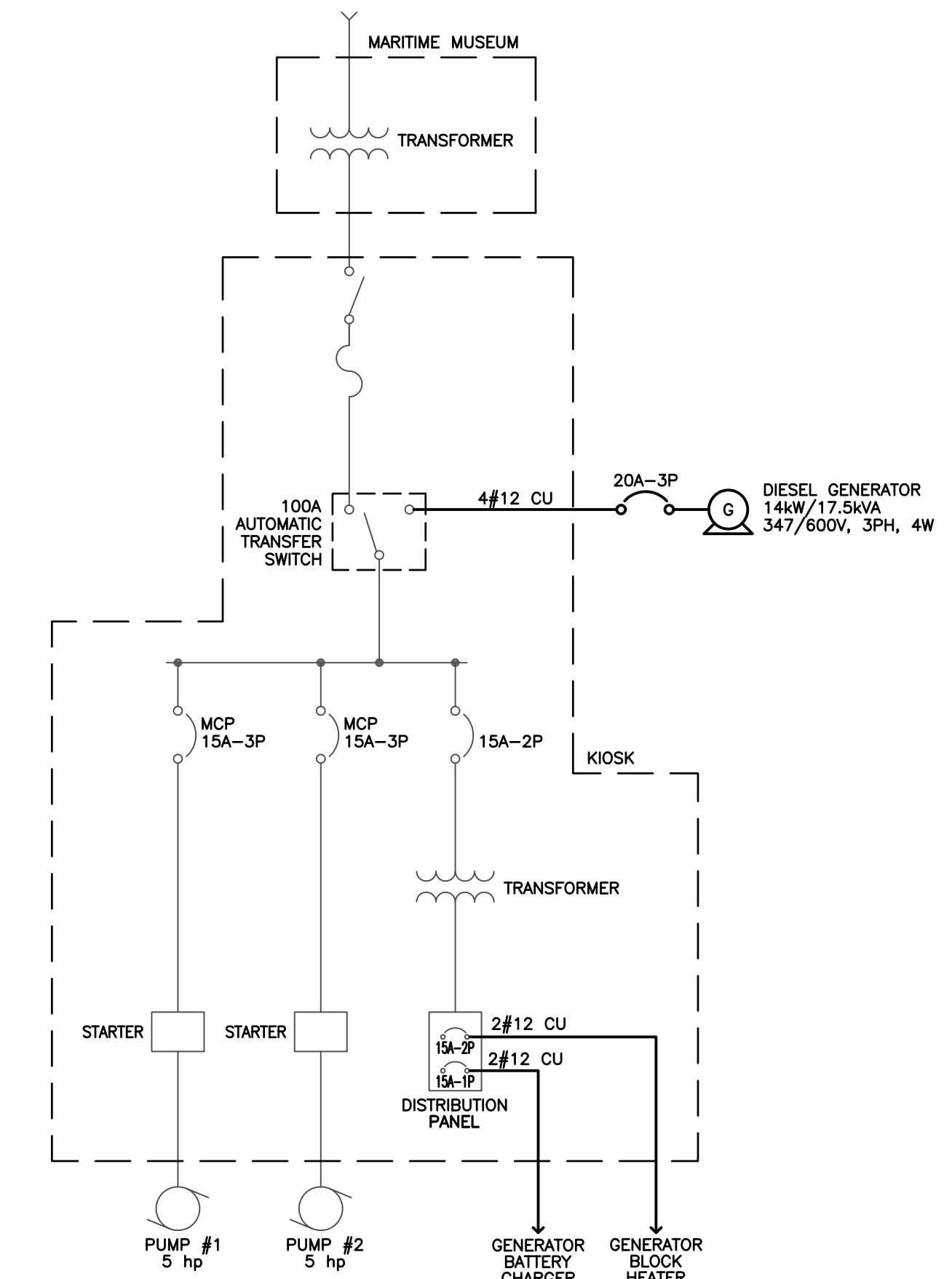
SITE PLAN LAYOUT

SCALE: 1:100

LOAD CALCULATION

LIFT STATION #10

- | | | |
|---|---|-----------|
| 1. PUMPS: 2 @ 5 HP | = | 10,000 VA |
| 2. MOTOR INRUSH: | = | 2,500 VA |
| 3. MISC. KIOSK LOADS: | = | 2,000 VA |
| 4. TOTAL VA: | = | 14,500 VA |
| 5. AMPACITY: 14,500 VA / (600 V x 3) | = | 14 AMPS |
| 6. 80% CAPACITY: 14 A x 1.25 | = | 17 AMPS |
| 7. SERVICE SIZE: 100 AMP, 347/600 VOLT, 3 PHASE | | |



APPROX. SINGLE LINE DIAGRAM

KEY NOTES:

- ◊ REFER TO CIVIL DESIGN FOR PAD DETAILS. COORDINATE TERMINATION LOCATIONS WITH GENERATOR SHOP DRAWINGS.
- ◊ REFER TO CIVIL DESIGN FOR CONDUIT ALIGNMENT.

NO.	DATE	COMMENT
4	NOV 09 2016	ISSUED FOR TENDER
3	SEPT 29 2016	ISSUED FOR TENDER
2	JUN 24 2016	ISSUED FOR 90% REVIEW
1	MAY 06 2016	ISSUED FOR REVIEW
		REVISION

RB ENGINEERING LTD
ELECTRICAL CONSULTING ENGINEERS
#4 1850 NORTHFIELD ROAD TEL: 250-756-4444
NANAIMO, BC, V9S 3B3 RBENGINEERING.CA



PROJECT
**LIFT STATION
BACKUP GENERATORS**

TITLE
**SITE PLAN
LIFT STATION #10
ELECTRICAL LAYOUT**

SCALE: 1:100 DATE: APRIL, 2016

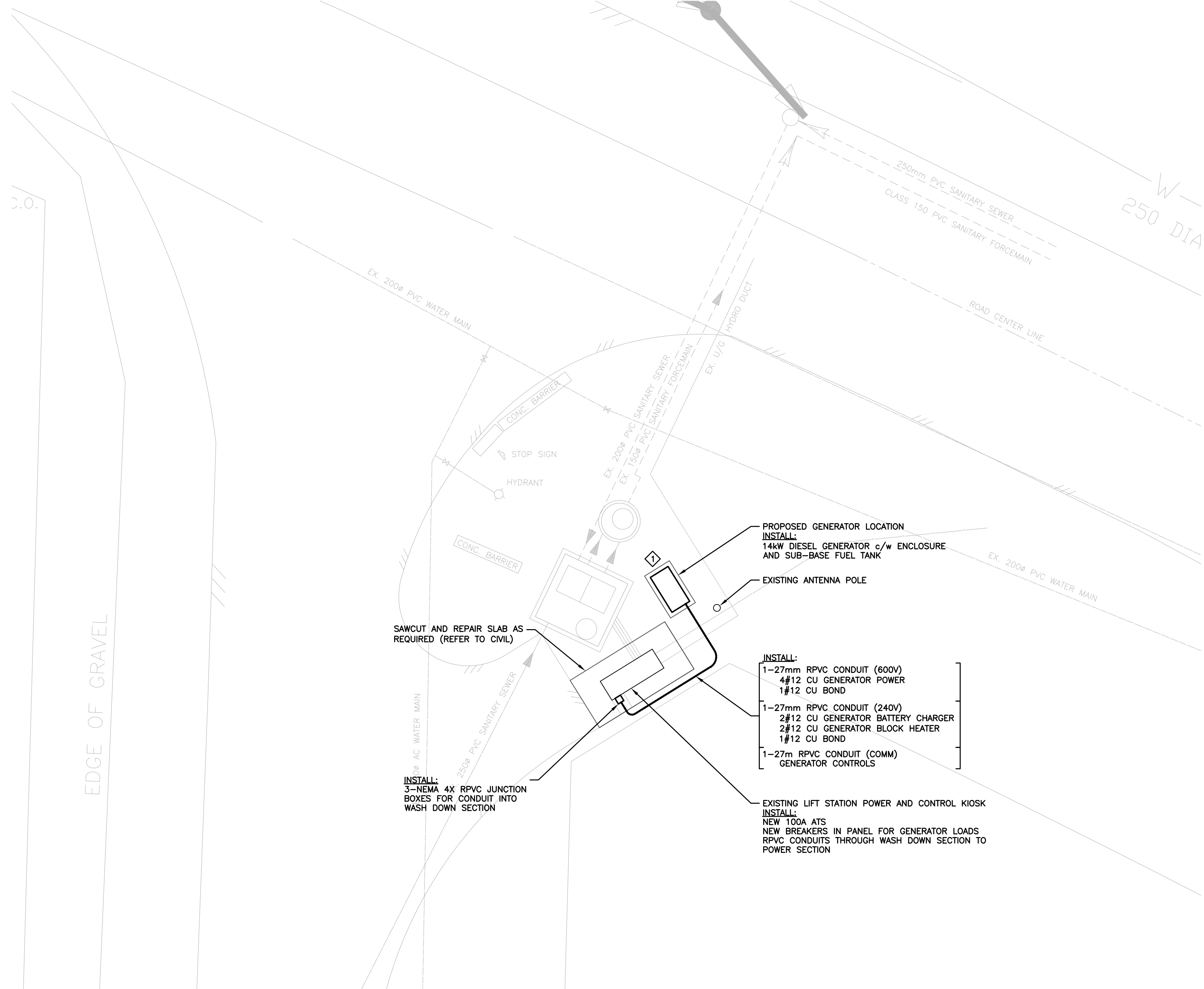
DRAWN EA	SEAL
DESIGNED CR	
CHECKED DM	

PROJECT NO.
16-2244

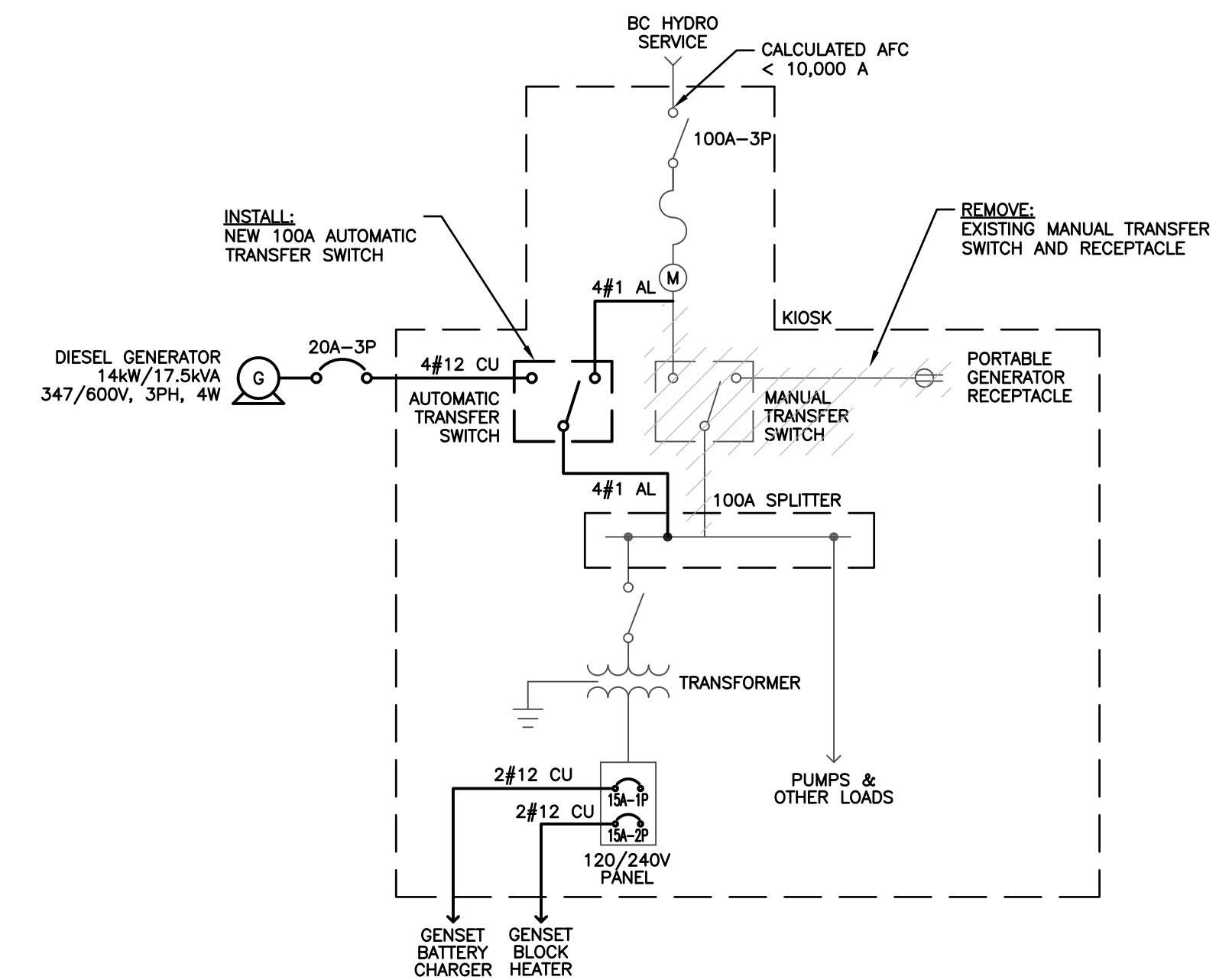
DRAWING NO.



16-503/E04



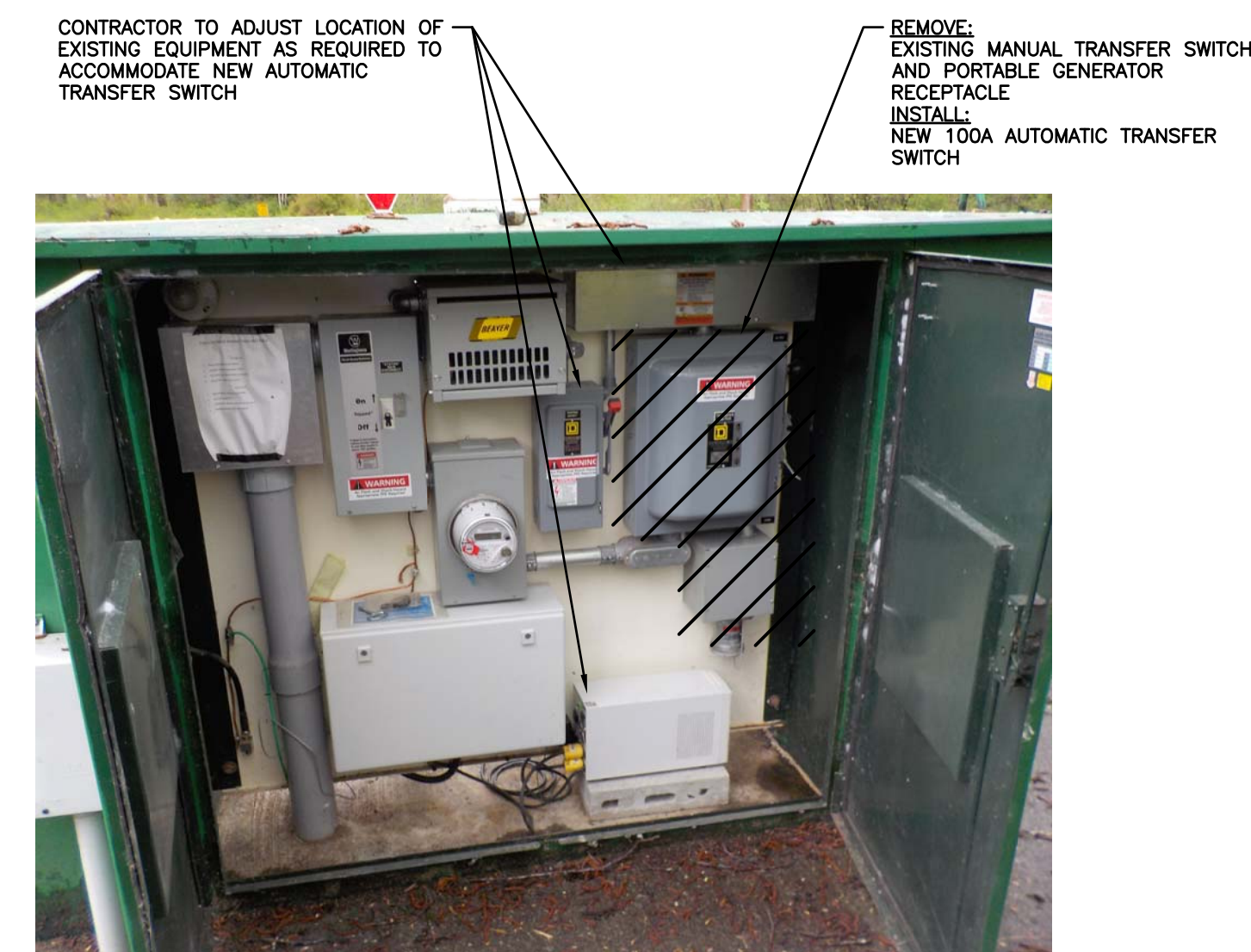
SITE PLAN LAYOUT
SCALE: 1:100



APPROXIMATE SINGLE LINE DIAGRAM

LOAD CALCULATION
LIFT STATION #12

1. PUMPS: 2 @ 5 HP	= 10,000 VA
2. MOTOR INRUSH:	= 2,500 VA
3. MISC. KIOSK LOADS:	= 2,000 VA
4. TOTAL VA:	= 14,500 VA
5. AMPACITY: 14,500 VA / (600 V x √3)	= 14 AMPS
6. BOX CAPACITY: 14 A x 1.25	= 17 AMPS
7. SERVICE SIZE: 100 AMP, 347/600 VOLT, 3 PHASE	



LIFT STATION KIOSK INTERIOR
SCALE: N.T.S.

KEY NOTES:

REFER TO CIVIL DESIGN FOR PAD DETAILS. COORDINATE TERMINATION LOCATIONS WITH GENERATOR SHOP DRAWINGS.

NO.	DATE	COMMENT
4	NOV 09 2016	ISSUED FOR TENDER
3	SEPT 29 2016	ISSUED FOR TENDER
2	JUN 24 2016	ISSUED FOR 90% REVIEW
1	MAY 06 2016	ISSUED FOR REVIEW
		REVISION

RB ENGINEERING LTD
ELECTRICAL CONSULTING ENGINEERS
#4 1850 NORTHFIELD ROAD TEL: 250-756-4444
NANAIMO, BC, V9S 3B3 RBENGINEERING.CA



PROJECT

LIFT STATION
BACKUP GENERATORS

TITLE

SITE PLAN
LIFT STATION #12
ELECTRICAL LAYOUT

SCALE 1:100 DATE APRIL, 2016

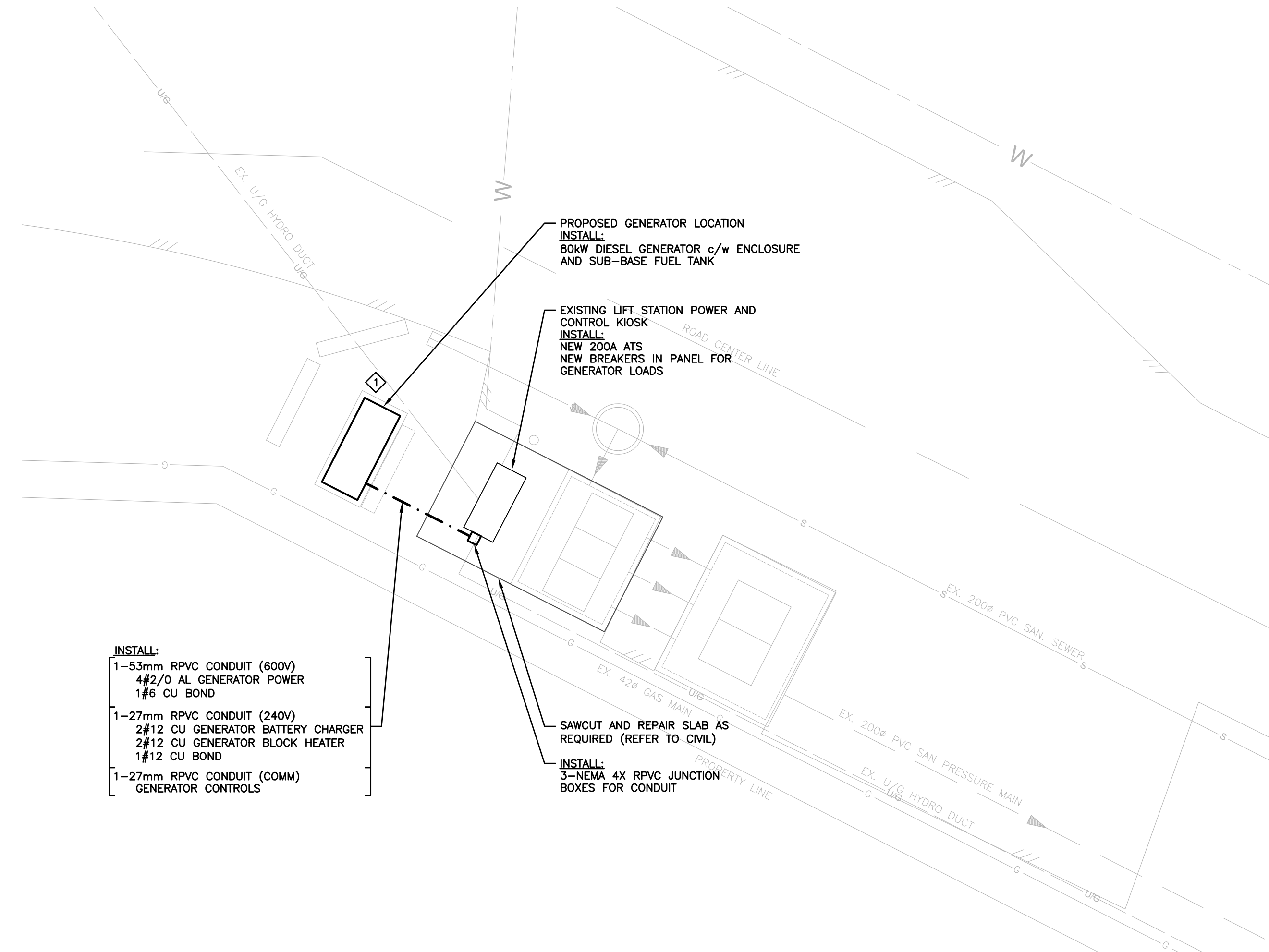
DRAWN EA	SEAL
DESIGNED CR	
CHECKED DM	

PROJECT NO.
16-2244

DRAWING NO.

16-503/E05

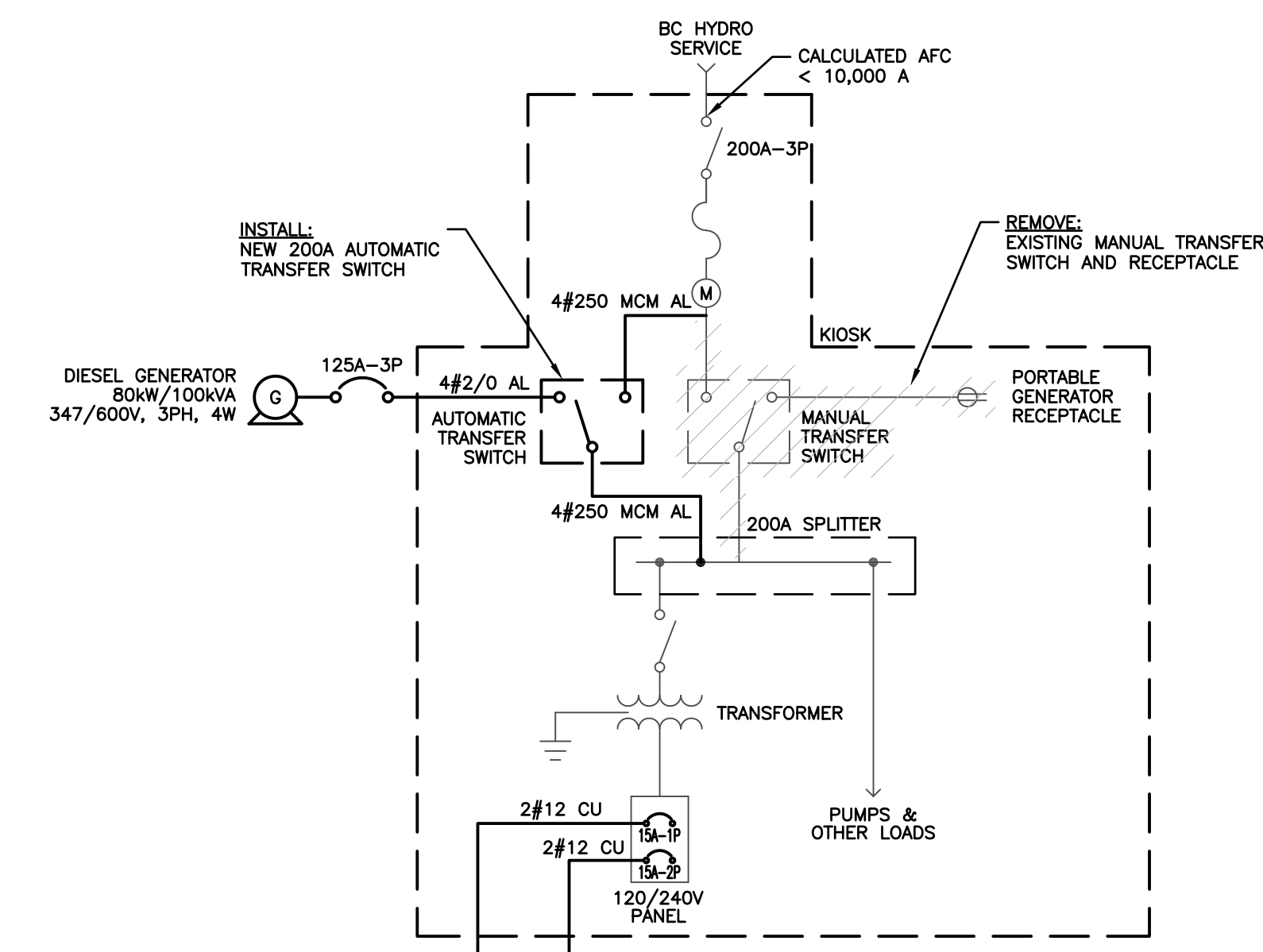




SITE PLAN LAYOUT
SCALE: 1:100

GENERAL NOTE:

1. CONTRACTOR TO PRE-LOCATE ALL EXISTING UNDERGROUND CONDUIT AT LIFT STATION AND IMMEDIATE SURROUNDINGS AND USE HYDROVAC TRUCK TO EXCAVATE. PROVIDE RESULTS TO ENGINEER PRIOR TO CONSTRUCTION.
2. ALL WORK WITHIN 30m OF GAS PIPELINE REQUIRES WRITTEN PERMISSION/PERMIT FROM FORTIS BC PRIOR TO CONSTRUCTION



APPROXIMATE SINGLE LINE DIAGRAM

LOAD CALCULATION

LIFT STATION #14

1. PUMPS: 2 @ 30 HP	= 60,000 VA
2. MOTOR INRUSH:	= 15,000 VA
3. MISC. KIOSK LOADS:	= 2,000 VA
4. TOTAL VA:	= 77,000 VA
5. AMPACITY: 77,000 VA / (600 V x √3)	= 74 AMPS
6. 80% CAPACITY: 74 x 1.25	= 93 AMPS
7. SERVICE SIZE: 200 AMP, 347/600 VOLT, 3 PHASE	



LIFT STATION KIOSK INTERIOR
SCALE: N.T.S.

KEY NOTES:

REFER TO CIVIL DESIGN FOR PAD DETAILS. COORDINATE TERMINATION LOCATIONS WITH GENERATOR SHOP DRAWINGS.

NO.	DATE	COMMENT
4	NOV 09 2016	ISSUED FOR TENDER
3	SEPT 29 2016	ISSUED FOR TENDER
2	JUN 24 2016	ISSUED FOR 90% REVIEW
1	MAY 06 2016	ISSUED FOR REVIEW
NO. DATE		REVISION

RB ENGINEERING LTD
ELECTRICAL CONSULTING ENGINEERS
#4 1850 NORTHFIELD ROAD TEL: 250-756-4444
NANAIMO, BC, V9S 3B3 RBENGINEERING.CA



CLIENT

PROJECT

LIFT STATION BACKUP GENERATORS

TITLE

SITE PLAN LIFT STATION #14 ELECTRICAL LAYOUT

SCALE: 1:100 DATE: APRIL, 2016

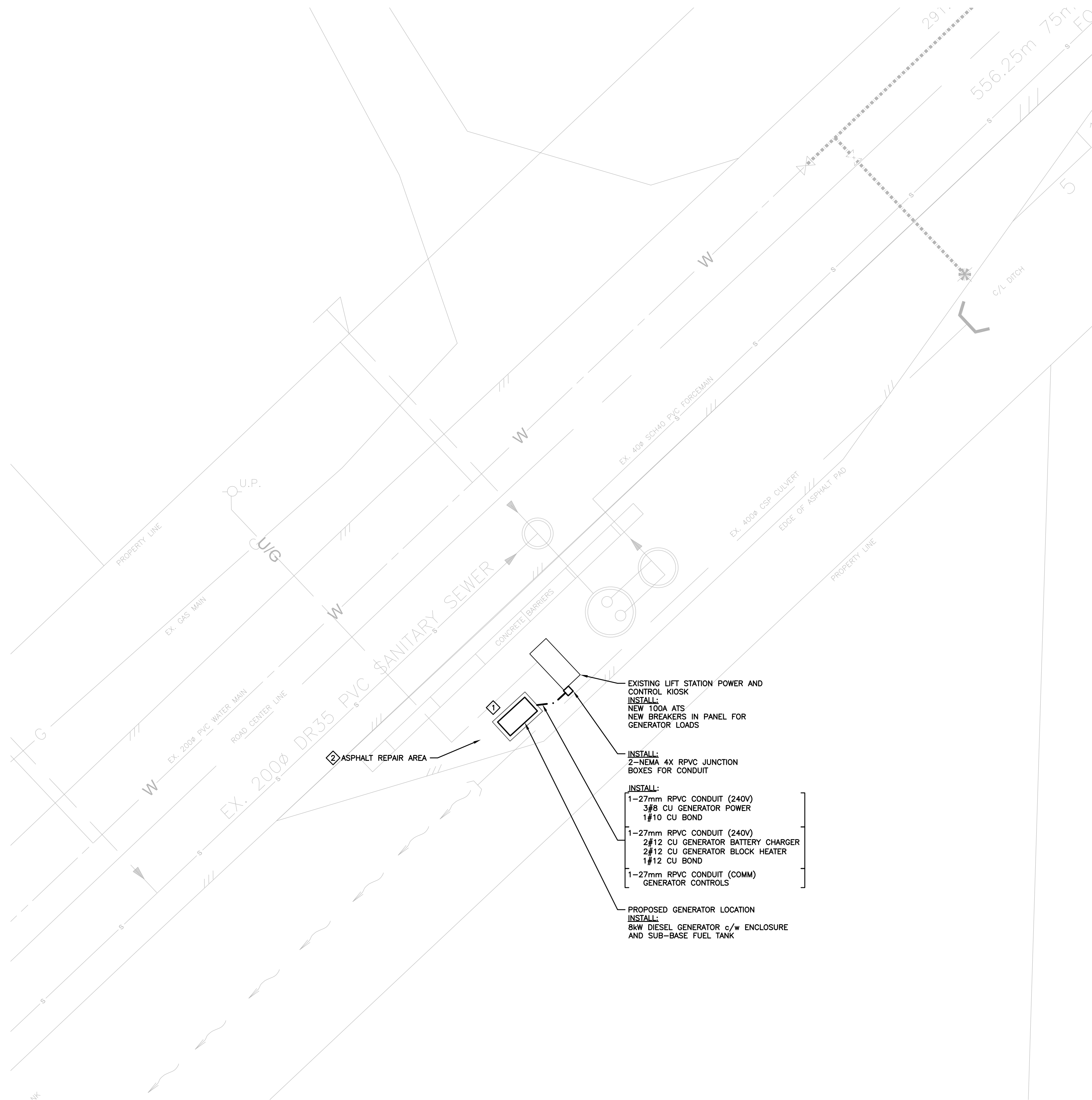
DRAWN: EA	SEAL
DESIGNED: CR	
CHECKED: DM	

PROJECT NO. 16-2244

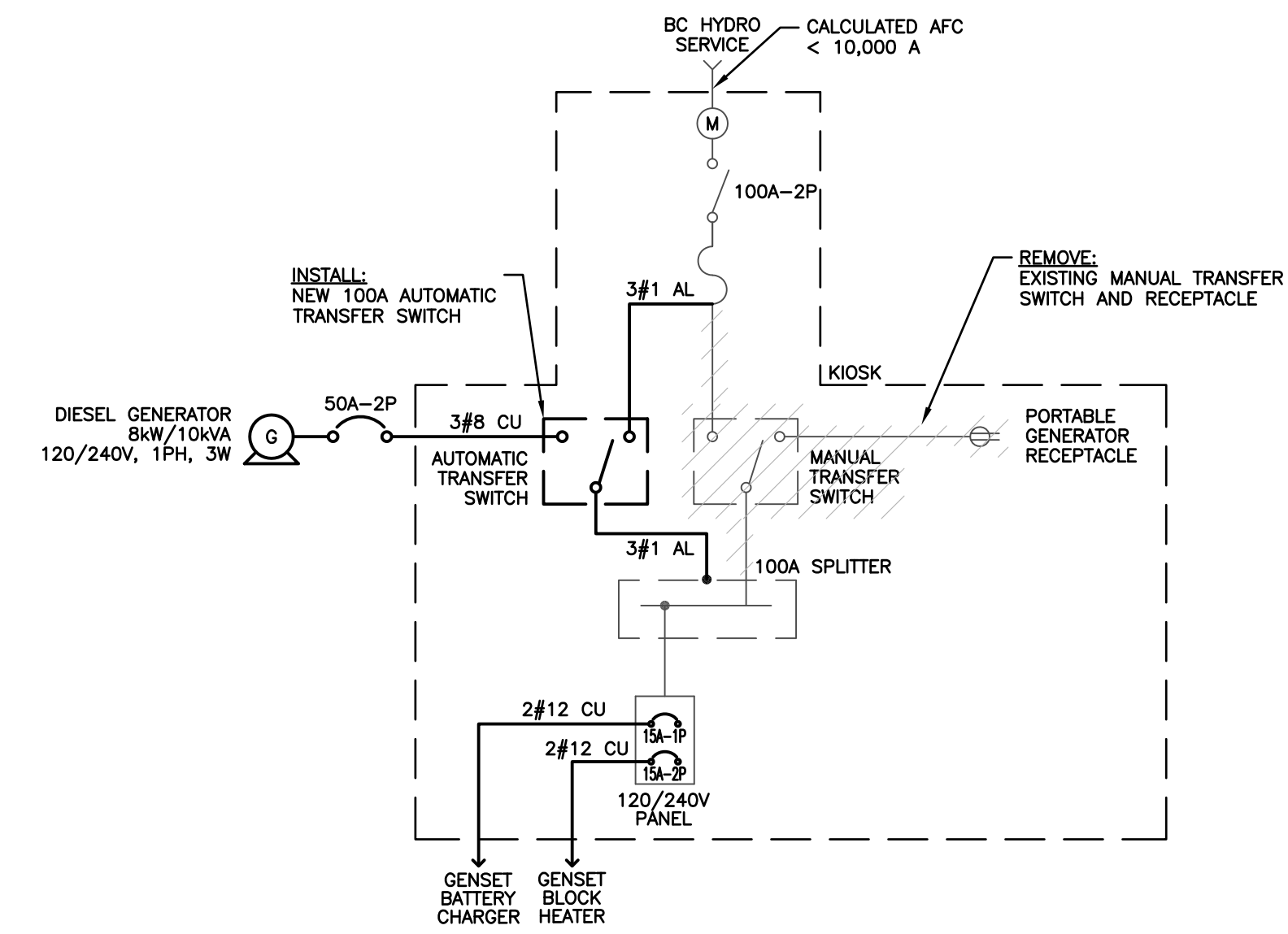
DRAWING NO.

16-503/E06





SITE PLAN LAYOUT
SCALE: 1:100



APPROXIMATE SINGLE LINE DIAGRAM

LOAD CALCULATION

LIFT STATION #15

- | | |
|--|------------|
| 1. PUMPS: 2 @ 2 HP | = 4,000 VA |
| 2. MOTOR INRUSH: | = 1,000 VA |
| 3. MISC. KIOSK LOADS: | = 2,000 VA |
| 4. TOTAL VA: | = 7,000 VA |
| 5. AMPACITY: 7,000 VA / 240 V | = 29 AMPS |
| 6. 80% CAPACITY: 29 A x 1.25 | = 36 AMPS |
| 7. SERVICE SIZE: 100 AMP, 120/240 VOLT, SINGLE PHASE | |



LIFT STATION KIOSK INTERIOR
SCALE: N.T.S.

KEY NOTES:

- ◊ REFER TO CIVIL DESIGN FOR PAD DETAILS. COORDINATE TERMINATION LOCATIONS WITH GENERATOR SHOP DRAWINGS.
- ◊ REFER TO CIVIL DESIGN FOR SURFACE RESTORATION DETAILS.

NO.	DATE	COMMENT
4	NOV 09 2016	ISSUED FOR TENDER
3	SEPT 29 2016	ISSUED FOR TENDER
2	JUN 24 2016	ISSUED FOR 90% REVIEW
1	MAY 06 2016	ISSUED FOR REVIEW
NO. DATE		REVISION

RB ENGINEERING LTD
ELECTRICAL CONSULTING ENGINEERS
#4 1850 NORTHFIELD ROAD TEL: 250-756-4444
NANAIMO, BC, V9S 3B3 RBENGINEERING.CA



PROJECT
LIFT STATION BACKUP GENERATORS

TITLE
SITE PLAN LIFT STATION #15 ELECTRICAL LAYOUT

SCALE: 1:100 DATE: APRIL, 2016

DRAWN: EA	SEAL
DESIGNED: CR	
CHECKED: DM	
PROJECT NO.: 16-2244	

DRAWING NO.

16-503/E07



DESCRIPTION OF SYSTEM

- GENERATING SYSTEM CONSISTS OF:
 - DIESEL ENGINE.
 - ALTERNATOR.
 - ALTERNATOR CONTROL PANEL.
 - AUTOMATIC TRANSFER EQUIPMENT (ATS).
 - BATTERY CHARGER AND BATTERY.
 - EXHAUST SYSTEM
 - STEEL MOUNTING BASE WITH FUEL TANK.
 - SOUND ATTENUATING HOUSING.
 - ENCLOSURE.
- SYSTEM DESIGNED TO OPERATE AS EMERGENCY STANDBY, UNATTENDED.
- AUTOMATIC SHUT DOWN AND ALARM ON:
 - OVERCRANKING.
 - OVERSPEED.
 - HIGH ENGINE TEMP.
 - LOW LUBE OIL PRESSURE.
 - ALTERNATOR OVERVOLTAGE.
 - LUBE OIL HIGH TEMPERATURE.
 - MANUAL REMOTE EMERGENCY STOP.

SOURCE QUALITY CONTROL

- FACTORY TEST GENERATOR SET INCLUDING ENGINE, ALTERNATOR, CONTROL PANELS, TRANSFER SWITCH AND ACCESSORIES.
- COMPLETE EQUIPMENT, INCLUDING TRANSFER MECHANISM, CONTROLS, RELAYS AND ACCESSORIES FACTORY ASSEMBLED AND TESTED.
- OPERATE EQUIPMENT BOTH MECHANICALLY AND ELECTRICALLY TO ENSURE PROPER PERFORMANCE.
 - CHECK IN ALL MODES OF OPERATION AND RECORD RESULTS.
 - CHECK VOLTAGE SENSING AND TIME DELAY RELAY SETTINGS.
 - CHECK AUTOMATIC STARTING AND TRANSFER OF LOAD ON FAILURE OF NORMAL POWER. RETRANSFER OF LOAD WHEN NORMAL POWER SUPPLY RESUMED. AUTOMATIC SHUTDOWN.
- PROVIDE FIELD TESTS OF ALL FUNCTIONS.

AUTOMATIC TRANSFER SWITCH

- AUTOMATIC LOAD TRANSFER EQUIPMENT TO:
 - MONITOR VOLTAGE ON ALL PHASES OF NORMAL POWER SUPPLY
 - INITIATE CRANKING OF STANDBY GENERATOR UNIT ON NORMAL POWER FAILURE OR ABNORMAL VOLTAGE ON ANY ONE PHASE BELOW PRESET ADJUSTABLE LIMITS FOR ADJUSTABLE PERIOD OF TIME.
 - TRANSFER LOAD FROM NORMAL SUPPLY TO STANDBY UNIT WHEN STANDBY UNIT REACHES RATED FREQUENCY AND VOLTAGE PRE-SET ADJUSTABLE LIMITS.
 - TRANSFER LOAD FROM STANDBY UNIT TO NORMAL POWER SUPPLY WHEN NORMAL POWER RESTORED, CONFIRMED BY SENSING OF VOLTAGE ON ALL PHASES ABOVE ADJUSTABLE PRE-SET LIMIT FOR ADJUSTABLE TIME PERIOD.
 - SHUT DOWN STANDBY UNIT AFTER RUNNING UNLOADED TO COOL DOWN USING ADJUSTABLE TIME DELAY RELAY.
- EXTERIOR ENCLOSURE FOR ATS AT STATION #9 TO BE CHECKER PLATE ALUMINUM.
- CONTRACTOR TO ENSURE THAT TRANSFER SWITCH FITS IN EXISTING KIOSK. CONTRACTOR TO ADJUST LOCATION OF EXISTING ELECTRICAL EQUIPMENT AS REQUIRED IN EACH KIOSK TO ACCOMMODATE NEW TRANSFER SWITCH.

ATS SHALL BE CONTACTOR & BREAKER TYPE TRANSFER EQUIPMENT

- TWO-1 PHASE CONTACTORS MOUNTED ON COMMON FRAME, IN DOUBLE THROW ARRANGEMENT, MECHANICALLY AND ELECTRICALLY INTERLOCKED, WITH NEMA 1 ENCLOSURE.
- MAIN CONTACTS: SILVER SURFACED, PROTECTED BY ARC DISRUPTION MEANS.
 - 100% RATED FOR 120/240 V, 60Hz, 100 A, 3 WIRE, SOLID NEUTRAL FOR LIFT STATIONS #9 AND #15.
 - 100% RATED FOR 347/600 V, 60Hz, 100 A, 4 WIRE, SOLID NEUTRAL FOR LIFT STATION #12.
 - 100% RATED FOR 347/600 V, 60Hz, 200 A, 4 WIRE, SOLID NEUTRAL FOR LIFT STATION #14.
- SWITCH RELAY CONTACTS, COILS, SPRING AND CONTROL ELEMENTS ACCESSIBLE FOR INSPECTION AND MAINTENANCE FROM FRONT OF PANEL WITHOUT REMOVAL OF SWITCH PANEL OR DISCONNECTION OF DRIVE LINKAGES AND POWER CONDUCTORS.
- AUXILIARY CONTACT: TO INITIATE EMERGENCY GENERATOR START-UP ON FAILURE OF NORMAL POWER.
- FAULT WITHSTAND RATING: 10,000 A SYMMETRICAL
- LEVER TO OPERATE SWITCH MANUALLY WHEN SWITCH IS ISOLATED.
- SOLID NEUTRAL BAR, RATED:
 - 100 A FOR LIFT STATIONS #9, #12, AND #15.
 - 200 A FOR LIFT STATION #14.

ATS CONTROLS

- CONTROLLER SHALL BE SOLID STATE WITH INTERACTIVE PUSH BUTTON INTERFACE AND LCD DISPLAY.
- OPERATION MODES:
 - TEST MODE - NORMAL POWER FAILURE SIMULATED. ENGINE STARTS AND TRANSFER TAKES PLACE. RETURN SWITCH TO "AUTO" TO STOP ENGINE.
 - AUTO MODE - NORMAL OPERATION OF TRANSFER SWITCH ON FAILURE OF NORMAL POWER; RETRANSFERS ON RETURN OF NORMAL VOLTAGE AND SHUTS DOWN ENGINE.
 - ENGINE START MODE - ENGINE STARTS BUT UNIT WILL NOT TRANSFER UNLESS NORMAL POWER SUPPLY FAILS. MODE MUST BE RETURNED TO "AUTO" TO STOP ENGINE.
- FEATURES:
 - RELAYS: CONTINUOUS DUTY, INDUSTRIAL CONTROL TYPE, WITH WIPING ACTION CONTACTS RATED 10 A MINIMUM.
 - VOLTAGE SENSING: ALL PHASES FOR NORMAL POWER AND ON ONE PHASE ONLY FOR EMERGENCY, SOLID STATE TYPE, ADJUSTABLE DROP OUT AND PICK UP.
 - TIME DELAY: NORMAL POWER TO STANDBY, ADJUSTABLE SOLID STATE, 5 TO 180 S.
 - TIME DELAY ON ENGINE STARTING TO OVERRIDE MOMENTARY POWER OUTAGES OR DIPS, ADJUSTABLE SOLID STATE, 0 TO 60 S DELAY.
 - TIME DELAY ON RETRANSFER FROM STANDBY TO NORMAL POWER, ADJUSTABLE 5 TO 180 S.
 - TIME DELAY FOR ENGINE COOL-OFF TO PERMIT STANDBY SET TO RUN UNLOADED AFTER RETRANSFER TO NORMAL POWER, ADJUSTABLE SOLID STATE, 5 S INTERVALS TO 180 S.
 - FREQUENCY SENSING, TO PREVENT TRANSFER FROM NORMAL POWER SUPPLY UNTIL FREQUENCY OF STANDBY UNIT REACHES PRESET ADJUSTABLE VALUES.
- SOLID STATE ELECTRONIC NEUTRAL POSITION DELAY TIMER TO ENSURE MOTOR SPEEDS DECAY TO SAFE LEVELS PRIOR TO INTRODUCING NEW POWER SOURCE.
- LCD INTERFACE TO INDICATE:
 - LOAD ON GENERATOR
 - LOAD ON UTILITY
 - GENERATOR POWER AVAILABLE
 - UTILITY POWER AVAILABLE
 - LOAD ENERGIZED

ATS ACCESSORIES

- PLANT EXERCISER: 168 H TIMER TO START STANDBY UNIT ONCE EACH WEEK FOR SELECTED INTERVAL BUT DOES NOT TRANSFER LOAD FROM NORMAL SUPPLY TRANSFERS LOAD TO EMERGENCY SUPPLY AND RE-TRANSFERS TO NORMAL SUPPLY ON STANDBY UNIT SHUTDOWN. TIMER ADJUSTABLE 0-168 H IN 15 MIN INTERVALS.
- PROVIDE A MINIMUM OF 5 PROGRAMMABLE AUXILIARY CONTACTS AND PROGRAM AS FOLLOWS:
 - LOAD ON UTILITY
 - LOAD ON GENERATOR
 - FAILED TO SWITCH GENERATOR
 - POWER AVAILABLE
 - UTILITY POWER AVAILABLE
- INSTRUMENTS TO BE DIGITAL MICROPROCESSOR 100% SOLID STATE CIRCUITRY INDICATING TYPE 2 ACCURACY, FLUSH PANEL MOUNTING:
 - VOLTMETER: AC, SCALE 0 TO 1000 V.
 - AMMETER: AC, SCALE 0 TO 300 A.
 - FREQUENCY METER: SCALE 55-65 HZ.
 - ABLE TO READ AND DISPLAY THE FOLLOWING VALUES:
 - VRMS A
 - VRMS B
 - VRMS C
 - IRMS A
 - IRMS B
 - IRMS C
 - PRMS (W)
 - QRMS (VAR)
 - SRMS (VA)
 - PF
 - F (HZ)

ATS EQUIPMENT IDENTIFICATION

- PROVIDE EQUIPMENT IDENTIFICATION.
- CONTROL PANEL:
 - FOR ALL MANUAL SWITCHES
 - FOR METERS, INDICATING LIGHTS, MINOR CONTROLS.

DIESEL ENGINE

- DIESEL ENGINE TO BE NATURALLY ASPIRATED OR TURBO CHARGED SYNCHRONOUS SPEED 1800 R/MIN. TO ISO 3046/1
- CAPACITY:
 - 8 KW CONTINUOUS STANDBY RATED FOR LIFT STATIONS #15.
 - 14 KW CONTINUOUS STANDBY RATED FOR LIFT STATIONS #9, #10 AND #12.
 - 80 KW CONTINUOUS STANDBY RATED FOR LIFT STATIONS #14
- TIER 3 EPA EMISSION CERTIFIED.
- COOLING SYSTEM TO INCLUDE:
 - HEAVY DUTY INDUSTRIAL RADIATOR MOUNTED ON GENERATING SET BASE WITH ENGINE DRIVEN PUSHER TYPE FAN TO DIRECT AIR THROUGH RADIATOR FROM ENGINE SIDE, WITH ANTI-FREEZE, NON-SLUDGING ABOVE MINUS 20 DEGREES C.
 - TO MAINTAIN MANUFACTURER'S RECOMMENDED ENGINE TEMPERATURE RANGE AT 100% LOAD IN AMBIENT TEMPERATURE OF 40 DEGREES C.
 - THERMOSTATICALLY CONTROLLED RECIRCULATING BLOCK HEATER FED BY 240V-2P ON LINE SIDE OF TRANSFER SWITCH TO ALLOW ENGINE TO START IN AMBIENT -10 DEGREES C.
- FUEL TO BE TYPE A WITH SOLID INJECTION, MECHANICAL FUEL TRANSFER PUMP, FUEL FILTERS AND AIR CLEANER, FUEL RACK SOLENOID ENERGIZED WHEN ENGINE RUNNING.
- GOVERNOR TO BE ELECTRONIC.
- LUBRICATION SYSTEM TO BE PRESSURE LUBRICATED BY ENGINE DRIVEN PUMP. LUBE OIL FILTER TO BE REPLACEABLE, FULL FLOW TYPE, REMOVABLE WITHOUT DISCONNECTING PIPING.
- STARTING SYSTEM TO BE POSITIVE SHIFT, GEAR ENGAGING STARTER 12 OR 24 V DC
- BATTERY CHARGER TO BE CONSTANT VOLTAGE, SOLID STATE, TWO STAGE FROM TRICKLE CHARGE AT STANDBY TO BOOST CHARGE AFTER USE. REGULATION: PLUS OR MINUS 1% OUTPUT FOR PLUS OR MINUS 10% VARIATION. INCLUDE BATTERY CHARGING AMMETER.
- BLOCK HEATER.
- VIBRATION ISOLATED ENGINE INSTRUMENT PANEL WITH 12 LIGHT ENGINE CONTROL AND ALARM PACKAGE AND GAUGES:
 - LUBE OIL PRESSURE GAUGE.
 - COOLANT TEMPERATURE GAUGE.
 - COOLANT LEVEL GAUGE.
 - RUNNING TIME METER: NON-TAMPER TYPE.
 - LOW BATTERY VOLTAGE.
 - CHARGER MALFUNCTION.
 - HIGH ENGINE TEMPERATURE.
 - LOW OIL PRESSURE.
 - ENGINE OVERSPEED.
 - ENGINE OVERCRANK.
 - EPS SUPPLYING LOAD.
 - LOW WATER TEMPERATURE.
 - HIGH WATER TEMPERATURE PREALARM.
 - LOW OIL PRESSURE PREALARM.
 - LOW FUEL.
 - UNIT NOT IN AUTO.
 - THREE POSITION MODE SWITCH, REPETITIVE ALARM BUZZER AND SILENCING SWITCH.
 - LIGHT AND ALARM PRESS TO TEST.
- GUARDS TO PROTECT PERSONNEL FROM HOT AND MOVING PARTS. LOCATE GUARDS SO THAT NORMAL DAILY MAINTENANCE INSPECTIONS CAN BE UNDERTAKEN WITHOUT THEIR REMOVAL.
- DRIP TRAY.
- ACCEPTABLE MANUFACTURERS:
 - JOHN DEERE
 - CUMMINS
 - PERKINS
 - CATERPILLAR
 - YANMAR
 - PRE-TENDER APPROVED EQUAL

ALTERNATOR

- ALTERNATOR RATING TO BE PMG 60 HZ, AT 0.8 PF CONTINUOUS STAND-BY POWER RATED INCLUDING REVOLVING FIELD, BRUSHLESS, SINGLE BEARING.
 - 1 PHASE, 240 V, 3 WIRE, 8 KW FOR LIFT STATIONS #15.
 - 1 PHASE, 240 V, 3 WIRE, 14 KW FOR LIFT STATIONS #9.
 - 3 PHASE, 600 V, 4 WIRE, 14 KW FOR LIFT STATIONS #10 AND #12.
 - 3 PHASE, 600 V, 4 WIRE, 80 KW FOR LIFT STATION #14
- ALTERNATOR WINDINGS SHALL HAVE CLASS H INSULATION RATED FOR 125 C TEMPERATURE RISE.

GENSET CONTROL PANEL

- CONTROL PANEL TO BE TOTALLY ENCLOSED, MOUNTED ON ALTERNATOR ISOLATED FROM DIESEL GENERATOR.
- CONTROL PANEL TO BE CONTROLLED BY A MICROPROCESSOR.
- INSTRUMENTS TO BE DIGITAL MICROPROCESSOR 100% SOLID STATE CIRCUITRY INDICATING TYPE 2 ACCURACY, FLUSH PANEL MOUNTING:
 - VOLTMETER: AC, SCALE 0 TO 1000 V.
 - AMMETER: AC, SCALE 0 TO 300 A.
 - FREQUENCY METER: SCALE 55-65 HZ.
 - ABLE TO READ AND DISPLAY THE FOLLOWING VALUES:
 - VRMS A
 - VRMS B
 - VRMS C
 - IRMS A
 - IRMS B
 - IRMS C
 - PRMS (W)
 - QRMS (VAR)
 - SRMS (VA)
 - PF
 - F (HZ)
- CONTROLS TO INCLUDE:
 - ENGINE START BUTTON.
 - SELECTOR SWITCH: OFF-AUTO-MANUAL.
 - ENGINE EMERGENCY STOP BUTTON AND PROVISION FOR REMOTE EMERGENCY STOP BUTTON.
 - ALTERNATOR OUTPUT BREAKER TO BE BOLT ON MOULDED CASE.
- OPERATING LIGHTS, PANEL MOUNTED:
 - "NORMAL POWER" PILOT LIGHT.
 - "EMERGENCY POWER" PILOT LIGHT.
- PROVISION FOR REMOTE RS485 MONITORING.

GENSET MOUNTING BASE

- COMPLETE GENERATING SET MOUNTED ON STEEL BASE OF SUFFICIENT STRENGTH AND RIGIDITY TO PROTECT ASSEMBLY FROM STRESS OR STRAIN DURING TRANSPORTATION. INSTALLATION AND UNDER OPERATING CONDITIONS ON SUITABLE LEVEL SURFACE.
- ASSEMBLY FITTED WITH SEISMIC ISOLATORS TO SUIT CODE AREA OF OPERATION. NEOPRENE PAD TYPE ISOLATORS WITH ADJUSTABLE SIDE SNUBBERS AND ADJUSTABLE FOR LEVELLING.
- BUILT-IN DOUBLE WALL ULC 142 APPROVED FUEL TANK FILLED WITH DIESEL TO RUN GENSET FOR 24 HOURS AT 100% LOAD.
- SOUND INSULATION PADS FOR INSTALLATION BETWEEN OVERALL FRAME AND CONCRETE BASE.
- PROVIDE SEISMIC ANCHORING DESIGN FOR INSTALLATION ON CONCRETE BASE. DESIGN TO BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN BC.

GENSET ENCLOSURE

- ENCLOSURE TO BE 14 AWG SATIN COATED STEEL WALLS AND ROOF, PREPPED AND FACTORY PAINTED FOR LIFT STATIONS #12, #14 AND #15
 - ENCLOSURE TO BE PAINTED DARK GREEN.
- ENCLOSURE TO BE MARINE GRADE ALUMINUM WALLS AND ROOF, PREPPED AND FACTORY PAINTED FOR LIFT STATIONS #9 AND #10.
 - ENCLOSURE TO BE PAINTED DARK GREEN.
- KIOSK ENCLOSURE TO BE PROVIDED WITH GRAFFITI RESISTANT VINYL WRAP.
- DOORS WITH RECESSED LOCKING HANDLES.
- HEAVY DUTY RESIDENTIAL TYPE INTERNALLY MOUNTED EXHAUST SILENCER WITH CONDENSATE DRAIN, PLUG AND COUPLINGS.
- HEAVY DUTY FLEXIBLE EXHAUST PIPE WITH FLANGED COUPLINGS AS REQUIRED.
- FITTINGS AND ACCESSORIES AS REQUIRED.
- EXPANSION JOINTS: STAINLESS STEEL, CORRUGATED, OF SUITABLE LENGTH, TO ABSORB BOTH VERTICAL AND HORIZONTAL EXPANSION.
- SOUND RATING FOR ENCLOSURE TO BE 72 dBA @ 7m WHILE RUNNING AT 75% CAPACITY OR BETTER.
 - LIFT STATION #9 ENCLOSURE SOUND RATING TO BE 68 dBA @ 7m WHILE RUNNING AT 75% CAPACITY OR BETTER.

GENERATOR SYSTEM COMMISSIONING

- PROVIDE EQUIPMENT IDENTIFICATION NAME TAG.
- TO BE SUPPLIED AND TESTED TO CSA-282 REQUIREMENTS INCLUDING TEMPORARY USE OF LOAD BANKS AS REQUIRED.
- PERFORM FIELD TESTS ON SITE AND DEMONSTRATE OPERATION TO SERVICE PERSONNEL.
- NOTIFY ENGINEER 5 WORKING DAYS IN ADVANCE OF TEST DATE.
- PROVIDE FUEL FOR TESTING AND LEAVE FULL TANKS ON ACCEPTANCE.

MAINTENANCE MANUALS

- PROVIDE 3 SETS OF OPERATION AND MAINTENANCE DATA FOR ATS AND GENSET INCLUDING:
 - ILLUSTRATED PARTS LIST WITH PARTS CATALOGUE NUMBERS.
 - SCHEMATIC DIAGRAM OF ELECTRICAL CONTROLS.
 - CERTIFIED COPY OF FACTORY TEST RESULTS.
 - MAINTENANCE AND OVERHAUL INSTRUCTIONS AND SCHEDULES.
 - PRECISE DETAILS FOR ADJUSTMENT AND SETTING OF TIME DELAY RELAYS OR SENSING
- PROVIDE MAINTENANCE MATERIALS AND SPARE PARTS INCLUDING:
 - 2 FUEL FILTER REPLACEMENT ELEMENTS.
 - 2 LUBE OIL FILTER REPLACEMENT ELEMENTS.
 - 2 AIR CLEANER FILTER ELEMENTS.

WARRANTY

- WARRANTY: FOR THE DIESEL ENGINE DRIVEN GENERATOR SET AND ATS TO BE 60 MONTHS OR 1500 OPERATING HOURS, WHICHEVER OCCURS FIRST.

MAINTENANCE

- PROVIDE OPTIONAL PRICE IN TENDER FOR 5 YEAR MAINTENANCE COST FOR INSTALLATION; INCLUDING ALL MAINTENANCE AS RECOMMENDED BY GENERATOR SYSTEM MANUFACTURERS.

5	SEPT 25 2017	ISSUED FOR TENDER
4	NOV 09 2016	ISSUED FOR TENDER
3	SEPT 29 2016	ISSUED FOR TENDER
2	JUN 24 2016	ISSUED FOR 90% REVIEW
1	MAY 06 2016	ISSUED FOR REVIEW
NO.	DATE	COMMENT

REVISION

RB ENGINEERING LTD
ELECTRICAL CONSULTING ENGINEERS
#4 1850 NORTHFIELD ROAD TEL: 250-756-4444
NANAIMO, BC, V9S 3B3 RBENGINEERING.CA

CLIENT


PROJECT
**LIFT STATION
BACKUP GENERATORS**

TITLE
**GENERATOR
SPECIFICATIONS**

SCALE N.T.S.	DATE APRIL 2016
DRAWN EA	SEAL
DESIGNED CR	
CHECKED DM	

PROJECT NO. 16-2244

DRAWING NO.
16-503/E08



REFERENCE STANDARDS

1. MATERIAL SHALL CARRY CSA APPROVAL AND CONFORM WITH EEMAC STANDARDS.
2. EQUIPMENT WIRING AND WIRING DEVICES SHALL MEET THE REQUIREMENTS OF THE CURRENT EDITION OF THE CANADIAN ELECTRICAL CODE 22.1, PART 1.
3. ALL WORK TO BE COMPLETED IN CONFORMANCE WITH MMCD VOLUME II (PLATINUM EDITION) AND CITY OF CAMPBELL RIVER STANDARDS WHERE APPLICABLE.

GENERAL REQUIREMENTS

1. THE ELECTRICAL CONTRACTOR SHALL SUPPLY ALL LABOUR, MATERIALS, TOOLS, EQUIPMENT, TRANSPORTATION REQUIRED FOR THE COMPLETE INSTALLATION, WIRING AND TESTING OF THE SYSTEM SHOWN ON THE DRAWINGS AND DESCRIBED HEREIN & IS RESPONSIBLE TO REVIEW ARCHITECTURAL, MECHANICAL, STRUCTURAL DRAWINGS FOR DISCREPANCIES AND REPORT TO THE ENGINEER.
2. THE ELECTRICAL DRAWINGS INDICATE THE GENERAL LOCATION AND ROUTE. CONDUIT AND/OR WIRING SHALL BE INSTALLED TO PROVIDE A COMPLETE OPERATING SYSTEM AND SHALL BE INSTALLED PHYSICALLY TO CONSERVE HEADROOM, FURRING SPACES ETC.
3. THE WORK TO BE DONE IS DESCRIBED IN THE DRAWINGS.
4. THE DRAWINGS AND SPECIFICATIONS COMPLEMENT EACH OTHER AND WHAT IS CALLED FOR BY ONE IS BINDING AS IF CALLED FOR BY BOTH. IF THERE IS ANY DOUBT AS TO THE MEANING OR TRUE INTENT DUE TO A DISCREPANCY BETWEEN THE DRAWINGS AND SPECIFICATIONS, OBTAIN RULING FROM ENGINEER PRIOR TO TENDER CLOSING. FAILING THIS, ALLOW FOR THE MOST EXPENSIVE ALTERNATIVE.
5. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND DO NOT SHOW ALL CONDUIT, WIRE, CABLE, ETC.. THE ELECTRICAL CONTRACTOR IS TO PROVIDE CONDUIT, WIRE, CABLE, ETC. FOR A COMPLETE OPERATING JOB TO MEET IN ALL RESPECTS THE INTENT OF THE DRAWINGS AND SPECIFICATIONS. ELECTRICAL DRAWINGS DO NOT SHOW ALL ARCHITECTURAL, STRUCTURAL AND MECHANICAL DETAILS.
6. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE AS TO WHICH TRADE PROVIDES SPECIFIC LABOUR AND MATERIALS. EXTRAS WILL NOT BE CONSIDERED BASED ON DIFFERENCES IN INTERPRETATION AS TO WHICH TRADE IS TO PROVIDE CERTAIN ITEMS.

SHOP DRAWINGS

1. PRIOR TO ORDERING OF ANY EQUIPMENT, THIS CONTRACTOR SHALL SUBMIT DIGITAL COPIES OF SHOP DRAWINGS AND DETAIL DRAWINGS FOR REVIEW BY THE ENGINEER. THE ENGINEER SHALL THEN RETURN COPIES OF THE REVIEWED SHOP DRAWINGS TO THE CONTRACTOR. SHOP DRAWINGS SHALL BE SUBMITTED ON ALL MAJOR EQUIPMENT.
2. ALL SHOP DRAWINGS SUBMITTED TO THE ENGINEER MUST BEAR THE CONTRACTORS APPROVALS.
3. ALL SHOP DRAWINGS SHALL BEAR THE NAME OF THE MANUFACTURER AND/OR MANUFACTURER'S REPRESENTATIVE.
4. SUBMIT SHOP DRAWINGS FOR AT LEAST THE FOLLOWING ITEMS:
 - .1 ALL DISTRIBUTION PANEL BOARDS, DISCONNECT SWITCHES, CIRCUIT BREAKERS, INSTRUMENT TRANSFORMERS AND RELAYS, ETC.
 - .2 BACKUP POWER GENERATION EQUIPMENT INCLUDING GENERATORS, SOUND ATTENUATING ENCLOSURES, FUEL TANKS AND TRANSFER SWITCHES.

MAINTENANCE AND OPERATION MANUAL

1. CONTRACTOR TO SUBMIT ONE COPY OF MAINTENANCE AND OPERATION MANUALS IN THREE RING BINDER TO ENGINEER FOR APPROVAL AT TIME OF SUBSTANTIAL COMPLETION.
2. MANUALS TO INCLUDE THE FOLLOWING:
 - .1 PROJECT CONTACT INFORMATION
 - .2 APPROVED SHOP DRAWINGS
 - .3 WARRANTIES AND GUARANTEES
 - .4 TEST RESULTS
 - .5 AS BUILT DRAWINGS
3. ON APPROVAL CONTRACTOR TO PROVIDE THREE COPIES OF THE MAINTENANCE AND OPERATION MANUALS IN THREE RING BINDERS c/w CD OF ALL DOCUMENTS IN PDF FORMAT.

PERMITS, CERTIFICATES, AND FEES

1. ON COMPLETION OF THE WORK, SUBMIT CERTIFICATE OF ACCEPTANCE FROM INSPECTION AUTHORITY TO THE ENGINEER.
2. PRIOR TO COMMENCEMENT OF WORK, SUBMIT THE NECESSARY DRAWINGS TO THE ELECTRICAL INSPECTION DEPARTMENT AND THE ELECTRICAL SUPPLY AUTHORITY.
3. PAY ALL ASSOCIATED FEES, AND OBTAIN DOCUMENTS POSTING AS REQUIRED.

INSPECTION OF WORK

1. UPON COMPLETION OF THE BUILDING AND IMMEDIATELY PRIOR TO FINAL INSPECTION AND TAKEOVER, CHECK LOAD BALANCE ON ALL FEEDERS AND AT DISTRIBUTION CENTRES, PANELS, ETC. IF LOAD EXCEEDS 10 PERCENT PHASE IMBALANCE, RECONNECT CIRCUITS TO BALANCE THE LOAD. RECORD EACH PHASE AMPERAGE AND VOLTAGE AND INCLUDE THE RESULTS IN THE MAINTENANCE AND SHOP DRAWING MANUALS.

ALTERNATIVES

1. ALL MATERIALS OR EQUIPMENT AS CALLED FOR ON THE DRAWINGS AND IN THE SPECIFICATIONS BY TRADE NAMES OR BY CATALOGUE REFERENCE NUMBERS, ARE THE MATERIALS ON WHICH THIS TENDER IS TO BE BASED. ALL EQUIPMENT MUST BE INSTALLED AS SHOWN ON THE DRAWINGS OR IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. THE REQUEST FOR APPROVAL SHALL BE ACCOMPANIED BY COMPLETE SPECIFICATIONS OF PROPOSED SUBSTITUTION, SHOWING DIMENSIONS, RATINGS, PHOTOMETRICS DATA, ETC. IT SHALL BE THIS SUB-CONTRACTOR'S RESPONSIBILITY TO MAKE AND ALLOW FOR ANY CHANGES AND CHARGES WHICH WILL OCCUR IF HE WISHES TO SUBMIT ALTERNATIVE EQUIPMENT. NO SUBSTITUTION BY THIS CONTRACTOR WILL BE PERMITTED AFTER CLOSING OF THE TENDERS.
2. THE ENGINEER RESERVES THE RIGHT TO ACCEPT OR REJECT ANY ALTERNATIVES PROPOSED.

GUARANTEE

1. AFTER THE WORK IS COMPLETED BUT BEFORE FINAL PAYMENT, FURNISH TO THE OWNER A WRITTEN GUARANTEE THAT FOR ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION, ANY DEFECTS IN MATERIALS OR WORKMANSHIP WILL BE CORRECTED AT NO COST TO THE OWNER, EXCEPT WHERE, IN THE OPINION OF THE ENGINEER, SUCH DEFECTS ARE DUE TO MIS-USE OR NEGLIGENCE BY THE OWNER. FLUORESCENT AND H.I.D. LAMPS SHALL BE GUARANTEED FOR 120 DAYS AND INCANDESCENT FOR 60 DAYS FROM THE DATE OF ACCEPTANCE.

MINOR FIELD CHANGES

1. THE LOCATION, ARRANGEMENT AND CONNECTION OF EQUIPMENT AND MATERIAL AS SHOWN ON THE DRAWINGS REPRESENTS A CLOSE APPROXIMATION OF THE INTENT AND REQUIREMENTS OF THE CONTRACT. THE RIGHT IS RESERVED BY THE ENGINEERS TO MAKE REASONABLE CHANGES REQUIRED TO ACCOMMODATE CONDITIONS ARISING DURING THE PROGRESS OF THE WORK. SUCH CHANGES SHALL BE DONE AT NO EXTRA COST TO THE OWNER, UNLESS THE LOCATION, ARRANGEMENT OR CONNECTION IS MORE THAN TEN FEET FROM THAT SHOWN AND THE ITEM IN QUESTION HAS BEEN INSTALLED.
2. CONFIRM FINAL LOCATION PRIOR TO INSTALLATION.

CONDUIT

1. INSTALL AND ATTACH SURFACE MOUNTED CONDUIT WITH TWO HOLE STEEL STRAPS. GROUP CONDUITS WHEREVER POSSIBLE ON CHANNELS.
2. DUCTS USED BELOW GRADE SHALL BE RIGID P.V.C. OR DBII. CONDUIT INSTALLATION SHALL CONFORM TO THE CURRENT EDITION OF THE CANADIAN ELECTRICAL CODE. INSTALL UNDERGROUND DUCT BANKS AS PER C.E.C. DIAGRAMS D11.
3. FACTORY ELBOWS FOR 90 DEGREE BENDS FOR 2" OR LARGER CONDUITS.
4. MAKE CONNECTIONS TO MECHANICAL MOTORS AND EQUIPMENT WITH P.V.C. JACKETED FLEXIBLE CONDUIT AND LIQUID TIGHT CONNECTORS. MINIMUM SIZE (1/2"). ALL FLEXIBLE CONDUIT OF SUFFICIENT LENGTH TO AVOID TRANSMISSION OF VIBRATION.
5. DO NOT INSTALL CONDUIT LARGER THAN (1") IN POURED CONCRETE SLABS.
6. WHERE CONDUIT IS INSTALLED IN OR PASSES THROUGH SPECIAL AREAS SUCH AS WATERPROOF OR ISOLATION SLABS, THE INSTALLATION SHALL BE TO THE SATISFACTION AND SPECIFICATIONS OF THE SLAB SUPPLIER OR GUARANTOR.
7. A SEPARATE BONDING CONDUCTOR SHALL BE INSTALLED IN ALL CONDUITS.
8. FISH CORD SHALL BE INSTALLED IN ALL EMPTY CONDUIT SYSTEMS. FISH CORD TO BE POLYPROPYLENE.

WIRE AND CABLE

1. BUILDING WIRE: 98% CONDUCTIVITY COPPER, 90°C RATED 600V INSULATION, RW90 X-LINK FOR DAMP LOCATIONS. COPPER CONDUCTORS SHALL BE STRANDED WHEN LARGER THAN #8 AWG OR AS NOTED.
2. BRANCH CIRCUIT WIRING: THE MINIMUM SIZE OF CONDUCTORS TO BE #12 AWG CU.
3. LOW VOLTAGE SIGNAL WIRING SHALL BE SEPARATED FROM POWER WIRING AND RUN IN SEPARATE RACEWAYS. THIS INCLUDES PANEL WIREWAYS.
4. COLOUR CODE TO CSA C22.1 CURRENT EDITION.
5. ALUMINIUM CONDUCTORS CAN NOT BE USED UNLESS SPECIFICALLY SHOWN OR WITH SPECIAL PERMISSION.

POWER SERVICE

1. EXISTING BC HYDRO SERVICE AT LIFT STATION #8 TO BE REMOVED. CONTRACTOR TO COORDINATE WITH BC HYDRO FOR DE-ENERGIZATION AND REMOVAL OF SERVICE.
2. CONTRACTOR TO COORDINATE WITH BC HYDRO FOR ALL OTHER STATIONS AS REQUIRED FOR PROPOSED MODIFICATIONS.
3. ALL BC HYDRO WORK TO BE DONE IN ACCORDANCE WITH APPLICABLE BC HYDRO SPECIFICATIONS.
4. BC HYDRO CHARGES WILL BE PAID DIRECTLY BY OWNER.
5. ANY CHANGES TO LAYOUT TO BE APPROVED BY BC HYDRO.

NAME TAGS

1. PROVIDE LAMICOID NAME TAG INDICATING AMPACITY, VOLTAGE AND PHASE OR INDICATED SYSTEM.
2. LAMICOID TO BE 1/8" THICK PLASTIC ENGRAVING SHEET, BLACK FACE, WHITE CORE.
3. LETTERS TO BE 1/4" HIGH UNLESS SPECIFIED OTHERWISE.
4. ALLOW FOR AVERAGE OF 25 LETTERS PER NAMEPLATE.
5. PROVIDE LAMICOID NAME TAG FOR GENERATORS, TRANSFER SWITCHES, BREAKERS, DISCONNECTS, PANEL BOARDS ETC. NAME TAGS SHALL BE MECHANICALLY FASTENED.

AS BUILT DRAWINGS

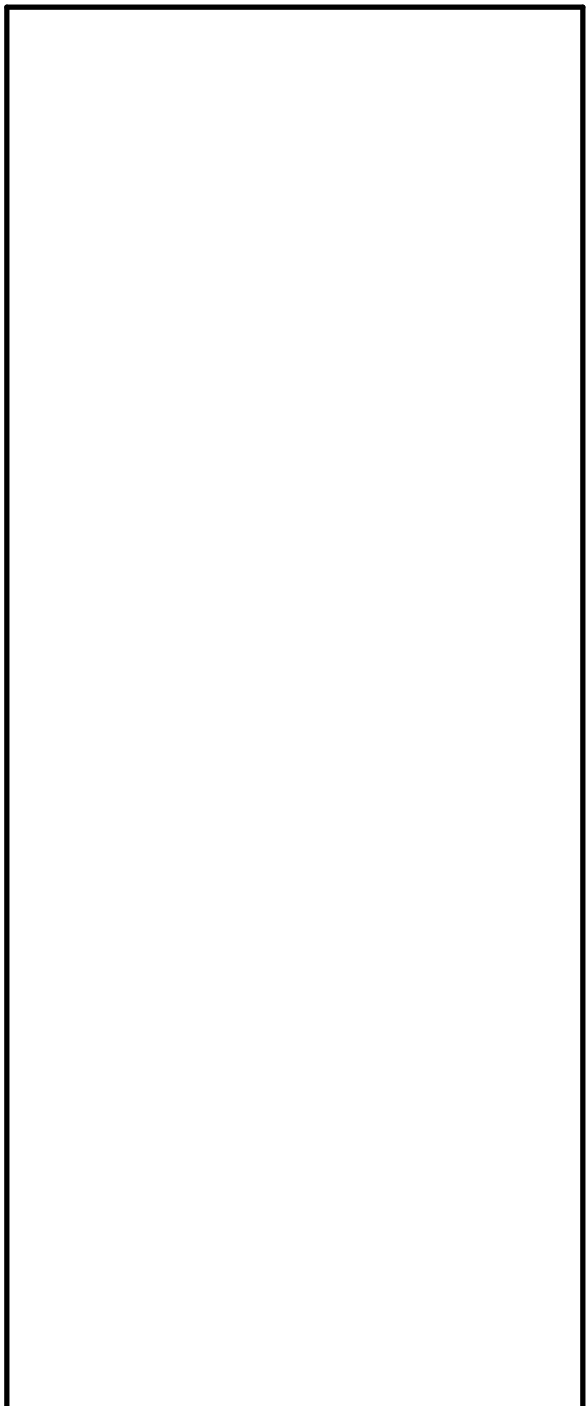
1. PROVIDE A CLEAN SET OF DRAWINGS AT THE JOB SITE, FOR AS BUILT MODIFICATIONS ONLY.
2. MARK ALL MODIFICATIONS IN RED, IN A NEAT, LEGIBLE MANNER.
3. SUBMIT AS BUILTS TO ENGINEER FOR APPROVAL.

EQUIPMENT REMOVALS

1. REMOVE CONDUIT AND WIRE FOR ASSOCIATED ELECTRICAL EQUIPMENT. POWER WIRING TO BE REMOVED BACK TO NEAREST JUNCTION BOX OR BREAKER. COMM WIRING TO BE REMOVED BACK TO TERMINATION POINT. LIMIT THE FOREGOING SO AS NOT TO DEMOLISH WALL OR CEILINGS THAT WOULD OTHERWISE REMAIN.
2. DISPOSE OF REMOVED ITEMS OFF SITE IN ACCORDANCE WITH APPLICABLE RECYCLING AND DISPOSAL GUIDELINES.
3. REPAIR AFFECTED AREAS TO MATCH SURROUNDING FINISHES.

PROJECT CLOSE OUT PROCEDURES

1. PROVIDE 24 HOUR NOTICE TO THE ENGINEER FOR FINAL FIELD REVIEW FOR ELECTRICAL DISCIPLINE. ELECTRICAL CONTRACTOR TO ENSURE ALL LIFE SAFETY DEVICES ARE INSTALLED AND OPERATIONAL. ELECTRICAL CONTRACTOR TO ENSURE ALL ELECTRICAL WORKS NOT INSTALLED ARE MADE SAFE.
2. THE FOLLOWING DOCUMENTS TO BE FORWARDED TO THE ENGINEER PRIOR TO FINAL FIELD REVIEW:
 - .1 MAINTENANCE MANUALS
 - .2 FIELD SAFETY REPRESENTATIVE (FSR) DECLARATION



2	NOV 09 2016	ISSUED FOR TENDER
1	SEPT 29 2016	ISSUED FOR TENDER
NO.	DATE	COMMENT
REVISION		

RB ENGINEERING LTD
ELECTRICAL CONSULTING ENGINEERS
#4 1850 NORTHFIELD ROAD TEL: 250-756-4444
NANAIMO, BC, V9S 3B3 RBENGINEERING.CA

CLIENT

PROJECT

**LIFT STATION
BACKUP GENERATORS**

TITLE

**ELECTRICAL
SPECIFICATIONS**

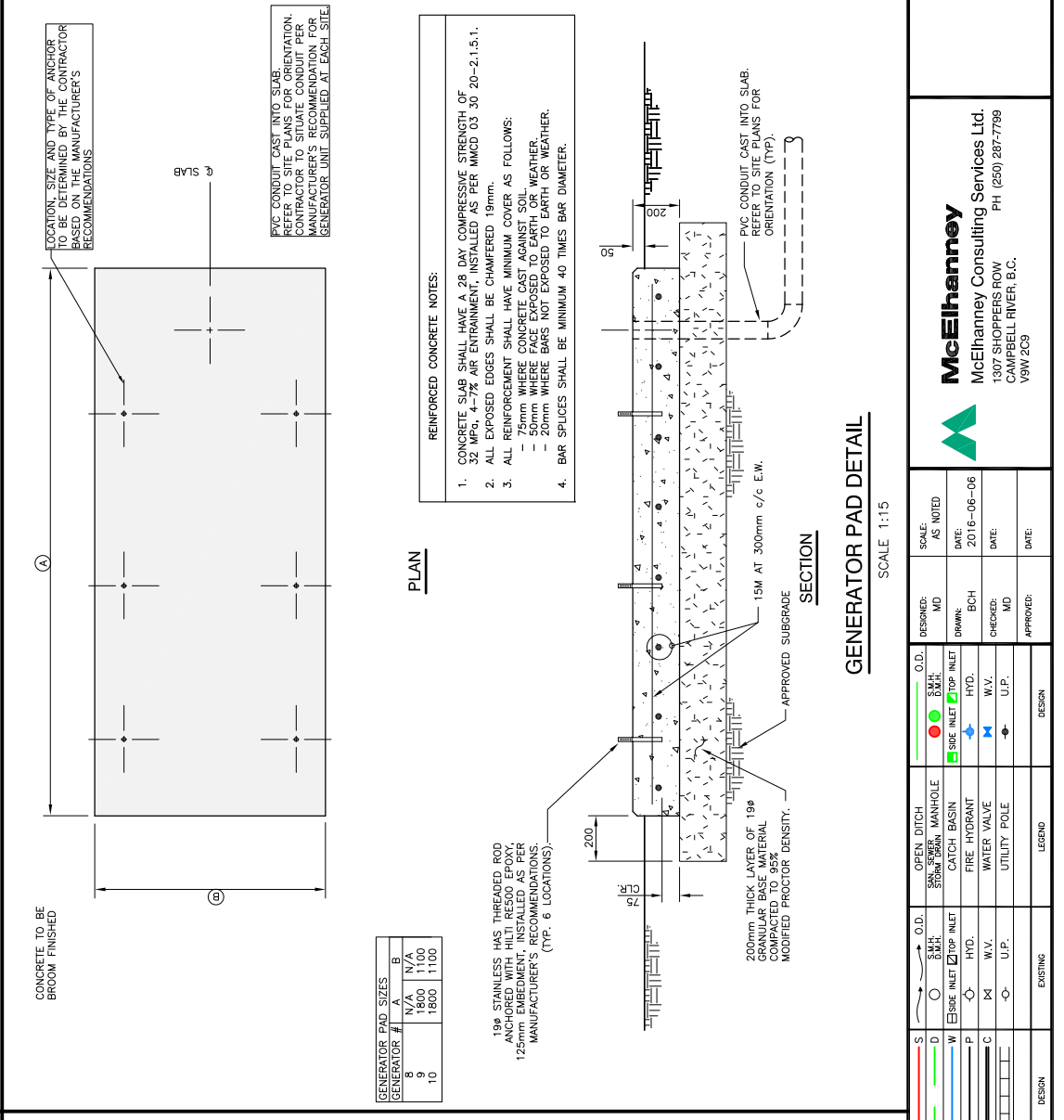
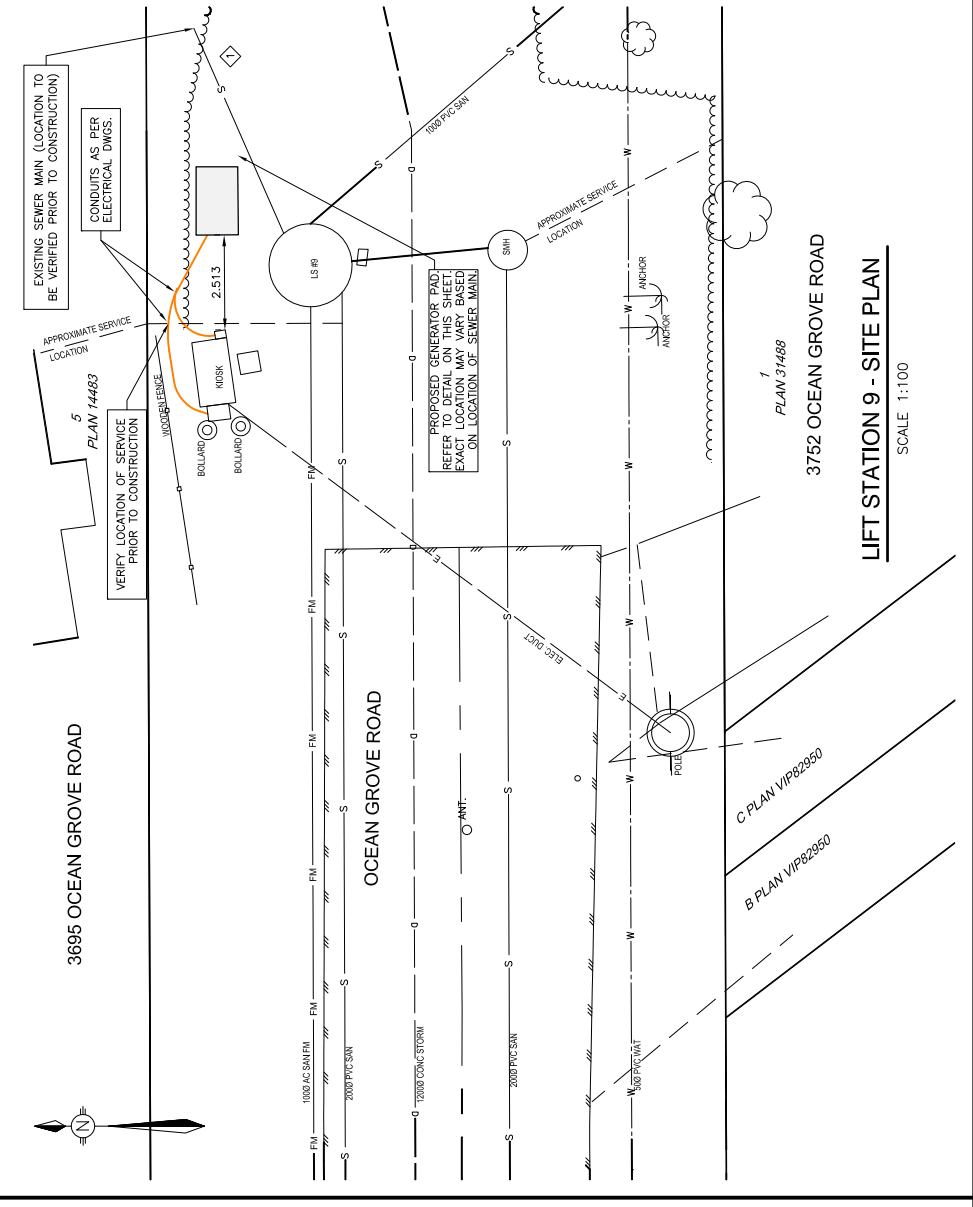
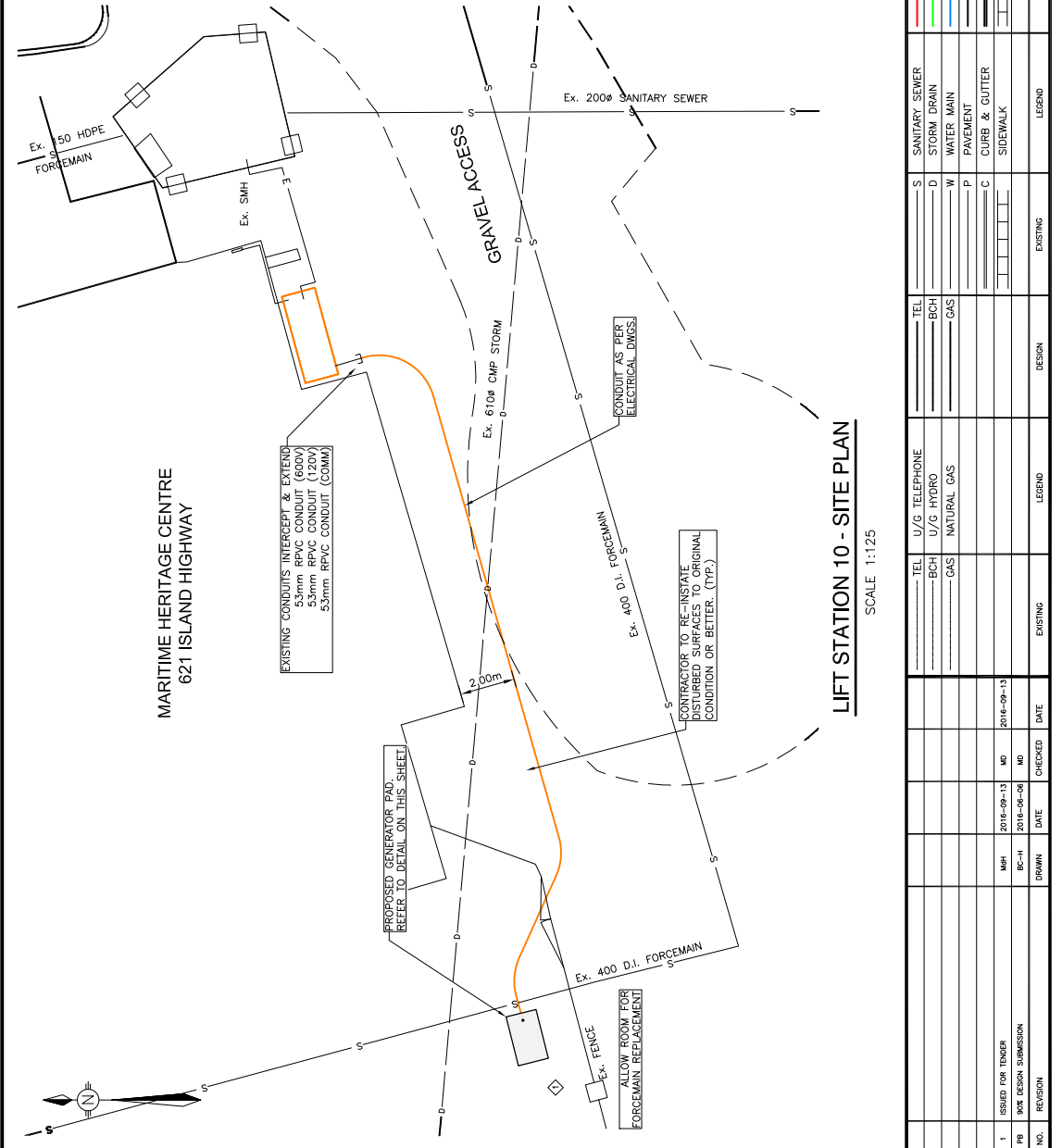
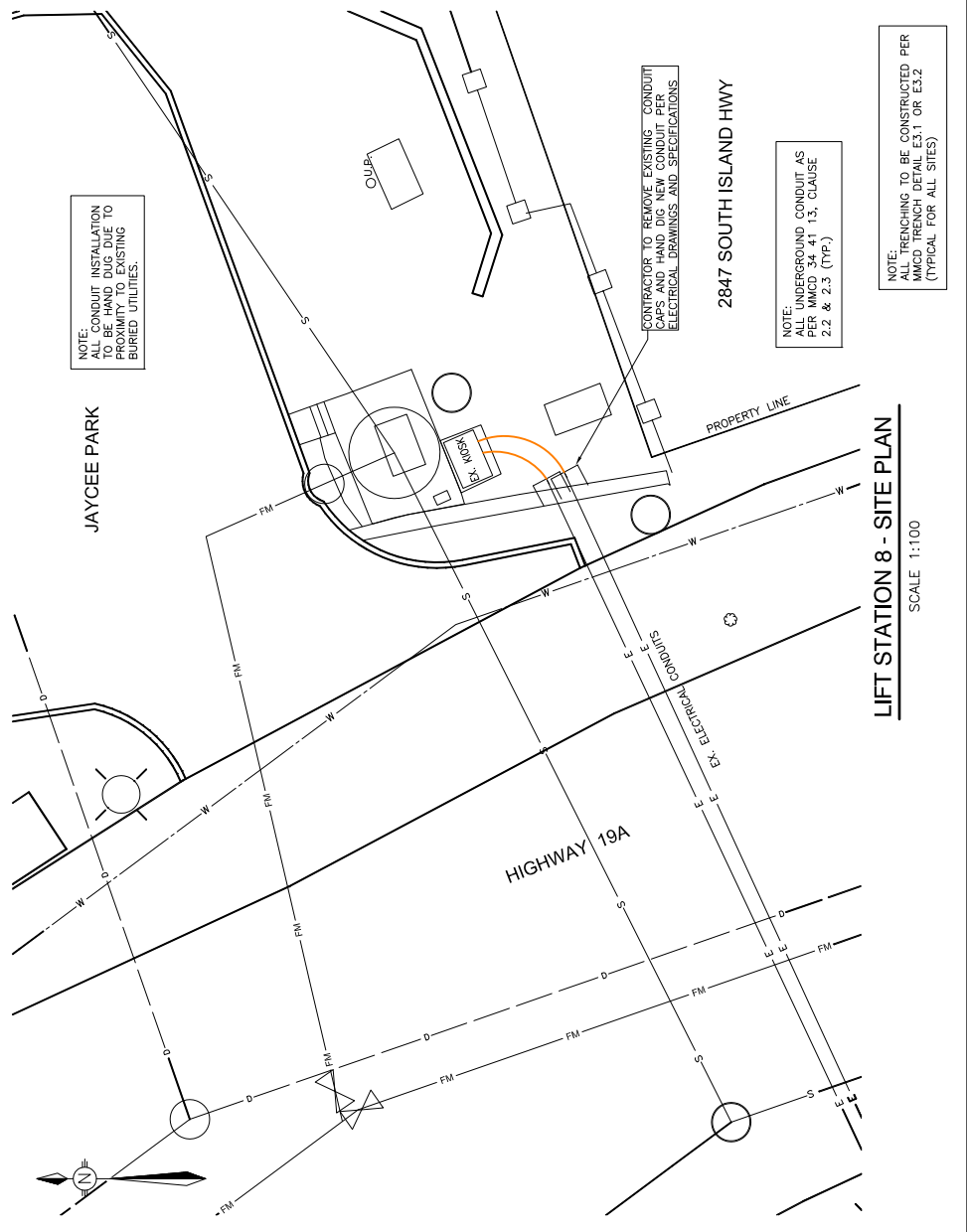
SCALE	DATE
N.T.S.	APRIL 2016

DRAWN	SEAL
EA	
DESIGNED	
CR	
CHECKED	DM
DM	

PROJECT NO.
16-2244

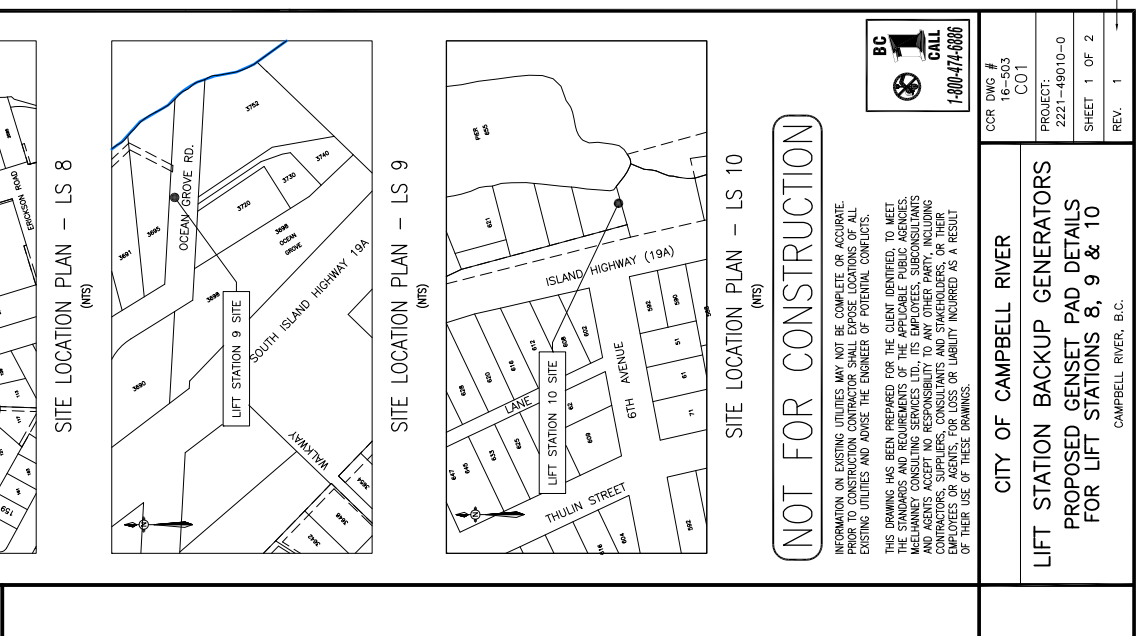
DRAWING NO.
16-503/E09





GENERAL CONSTRUCTION NOTES

- ALL WORKS TO BE COMPLETED IN CONFORMANCE WITH CITY OF CAMPBELL RIVER STANDARDS AND SPECIFICATIONS (CURRENT EDITION) AND MMCD VOLUME II (PLATINUM EDITION, V 2009).
- ALL TRENCHING TO BE CARRIED OUT IN CONFORMANCE WITH WORKSAFE BC (2014) AND ALL TRENCHING TO BE BACK FILLED WITH PIT-RUN GRAVEL COMPACTED TO 95% MODIFIED PROCTOR DENSITY.
- THE LOCATIONS SHOWN FOR EXISTING UTILITIES ARE BASED ON MUNICIPAL RECORDS, AND SHOULD BE VERIFIED PRIOR TO CONSTRUCTION.
- ALL UTILITIES ARE TO BE SHOWN ON PROFILES. THE ELEVATIONS ARE ASSUMED. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL CONFIRM THE LOCATION AND ELEVATIONS OF ALL PIPES OR OTHER UTILITIES AT CROSSINGS AND LOCATIONS WHERE UTILITIES CROSS OR INTERFERE WITH THE PROPOSED WORK. THE CONTRACTOR SHALL UTILIZE BCT CALL SERVICE TO ASSIST LOCATING ALL EXISTING UTILITIES IN THE AREA OF CONSTRUCTION. IN ADDITION, THE CONTRACTOR SHALL EXERCISE CAUTION WHILE EXCAVATING IN ORDER TO AVOID DAMAGE TO THE EXISTING UTILITIES.
- UPON AWARD OF CONTRACT THE CONTRACTOR MUST CONTACT BC-HYDRO, TELUS, FORTISBC, AND SHAW CABLE WITH A CONSTRUCTION SCHEDULE. THE CONTRACTOR IS RESPONSIBLE FOR ALL WORK AT OR AROUND EXISTING UTILITY POLES, AND SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL ENSURE THAT ALL ENVIRONMENTAL PROTECTIONS TO ELIMINATE DOWNSTREAM SEDIMENT TRANSPORT ARE IN PLACE PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN A COPY OF, AND FOLLOW THE PROCEDURES CONTAINED IN THE 'LAND DEVELOPMENT GUIDELINES FOR THE PROTECTION OF AQUATIC HABITAT'. THE CONTRACTOR TO NOTIFY ALL EMERGENCY SERVICE AGENCIES OF THE SUBSEQUENT WORK. THE CONTRACTOR SHALL MAINTAIN A COPY OF ALL PERMITS AND USE FLAG PERSONNEL TO MAINTAIN SAFE AND EFFICIENT TRAFFIC FLOW THROUGH AND AROUND THE WORK SITE. VERIFY THAT SITE SAFETY FOR VEHICLE OPERATORS AND PEDESTRIANS IS MAINTAINED FROM THE END OF EACH WORK DAY THROUGH THE NIGHT UNTIL THE START OF THE NEXT WORK DAY USING FLASHING BEACONS, BARRICADES, SIGNAGE, DELINEATORS ETC. IN ACCORDANCE WITH CURRENT CONSTRUCTION ZONE SIGNAGE.
- CONTRACTOR TO COMPLY WITH ALL CURRENT CITY BY-LAWS REGARDING VEHICLE ALLOWANCE FORM. CONTRACTOR TO COMPLETE FORM AND SUBMIT TO CITY INSURANCE, PERMITS, LICENSING PER "PERMIT TO CONSTRUCT WORKS IN CITY ROAD ALLOWANCE" FORM.
- CONTRACTOR WILL BE RESPONSIBLE FOR DAMAGES TO ANY WATER SERVICES CAUSED BY POOR CONNECTION PRACTICES. I.E., SAND AND/OR GRAVEL INTRODUCED INTO WATER SYSTEM.
- VERIFY ALL AFFECTED WATER CUSTOMERS IN WRITING. OF SCHEDULED CONNECTIONS TO BE MADE. NOTIFY ALL AFFECTED CUSTOMERS IN WRITING. 72 HOURS NOTIFICATION OF ANY TIE-INS TO BE FORWARDED TO CITY OF CAMPBELL RIVER OPERATIONS DIVISION.
- CONTRACTOR IS RESPONSIBLE FOR ALL QUALITY CONTROL, WHICH SHALL INCLUDE DENSITY TESTING OF THE BASE MATERIAL AND ONE SET OF CONCRETE TESTS PER LOCATION. ALL COST ASSOCIATED WITH QUALITY CONTROL TESTING WILL BE CONSIDERED INCIDENTAL TO WORK.
- CONTRACTOR TO SUBMIT SHOP DRAWINGS OF EACH PAD ANCHOR BOLT AND CONDUIT LAYOUT TO THE CONTRACT ADMINISTRATOR TO WORKING DAYS IN ADVANCE OF CONSTRUCTION.



NOT FOR CONSTRUCTION

INFORMATION ON EXISTING UTILITIES MAY NOT BE COMPLETE OR ACCURATE. PRIOR TO CONSTRUCTION CONTRACTOR SHALL EXPOSE LOCATIONS OF ALL EXISTING UTILITIES AND ADVISE THE ENGINEER OF POTENTIAL CONFLICTS.

THIS DRAWING HAS BEEN PREPARED FOR THE CLIENT IDENTIFIED, TO MEET THE STANDARDS AND REQUIREMENTS OF THE APPLICABLE PUBLIC AGENCIES. THE CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES AND AGENTS ACCEPT NO RESPONSIBILITY TO ANY OTHER PARTY, INCLUDING CONTRACTORS, SUPPLIERS, CONSULTANTS AND STAKEHOLDERS, OR THEIR EMPLOYEES OR AGENTS, FOR LOSS OR LIABILITY INCURRED AS A RESULT OF THEIR USE OF THESE DRAWINGS.

BC CALL 1-800-474-8888

CCR DWG # 16-503 C01
PROJECT: 2221-49010-0
SHEET 1 OF 2
REV. 1

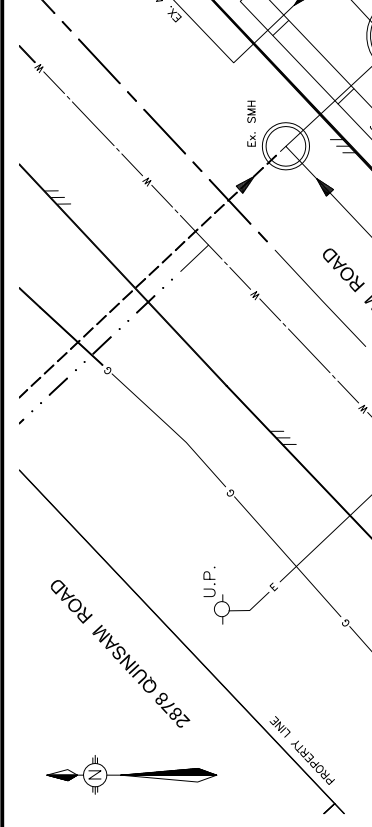
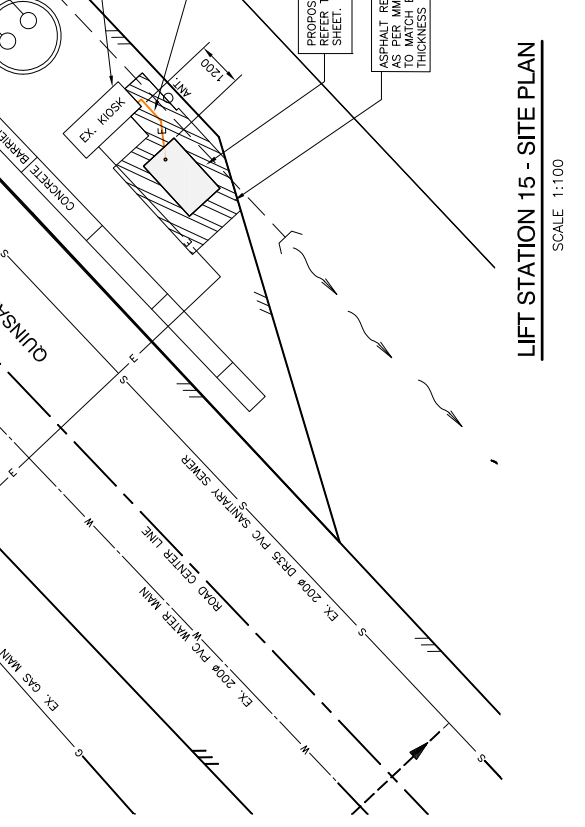
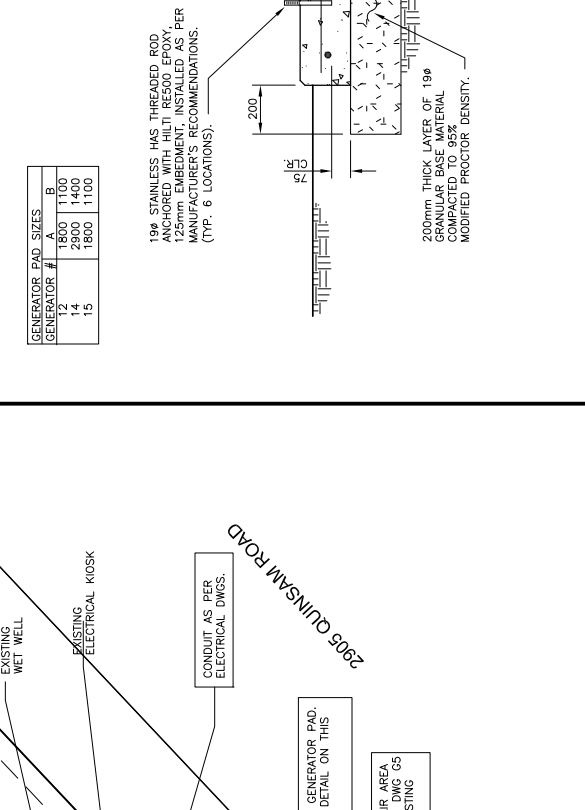
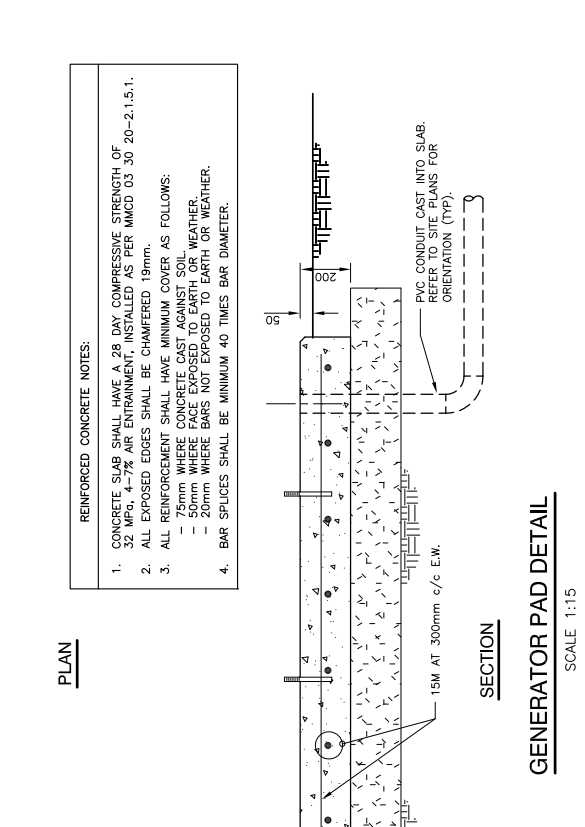
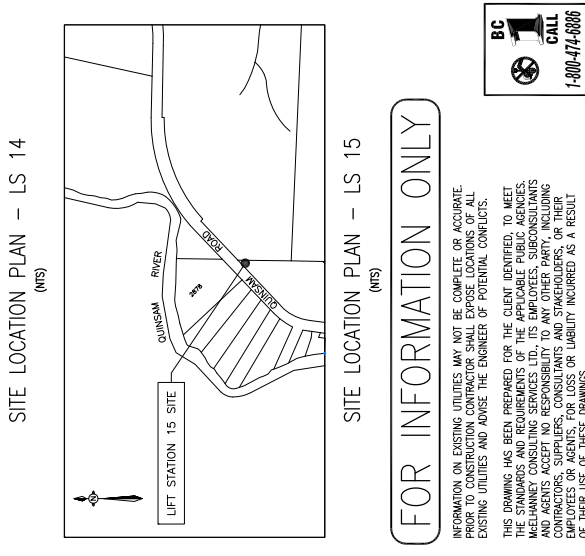
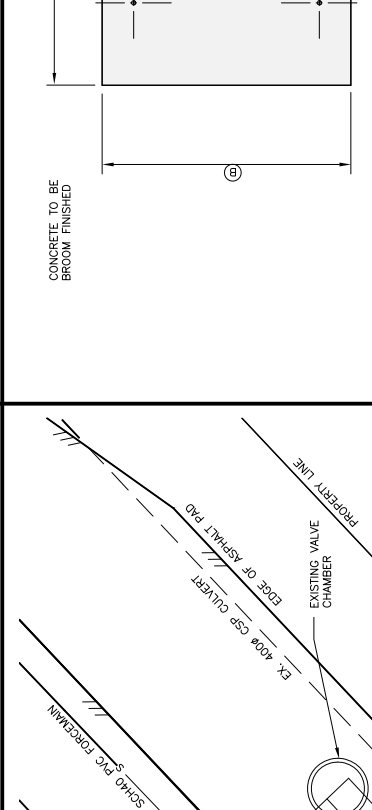
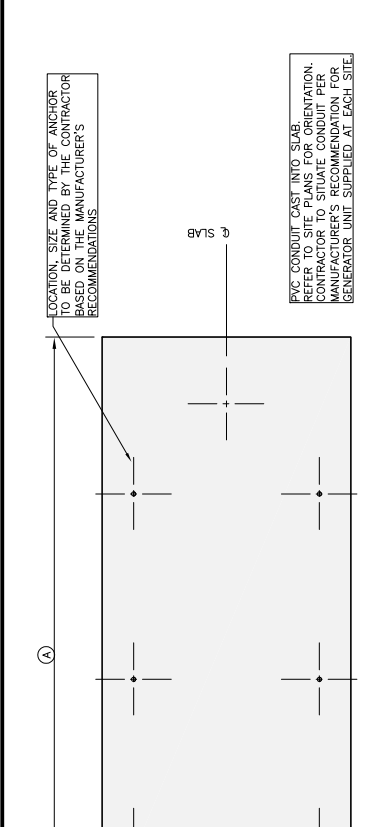
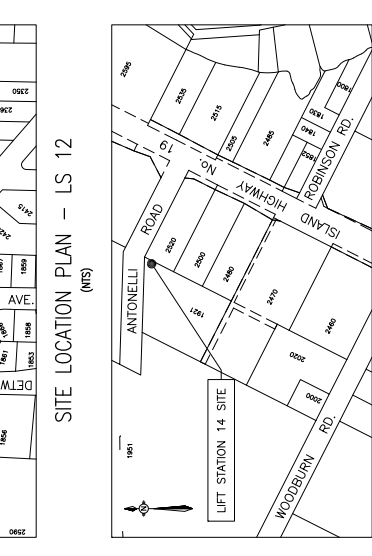
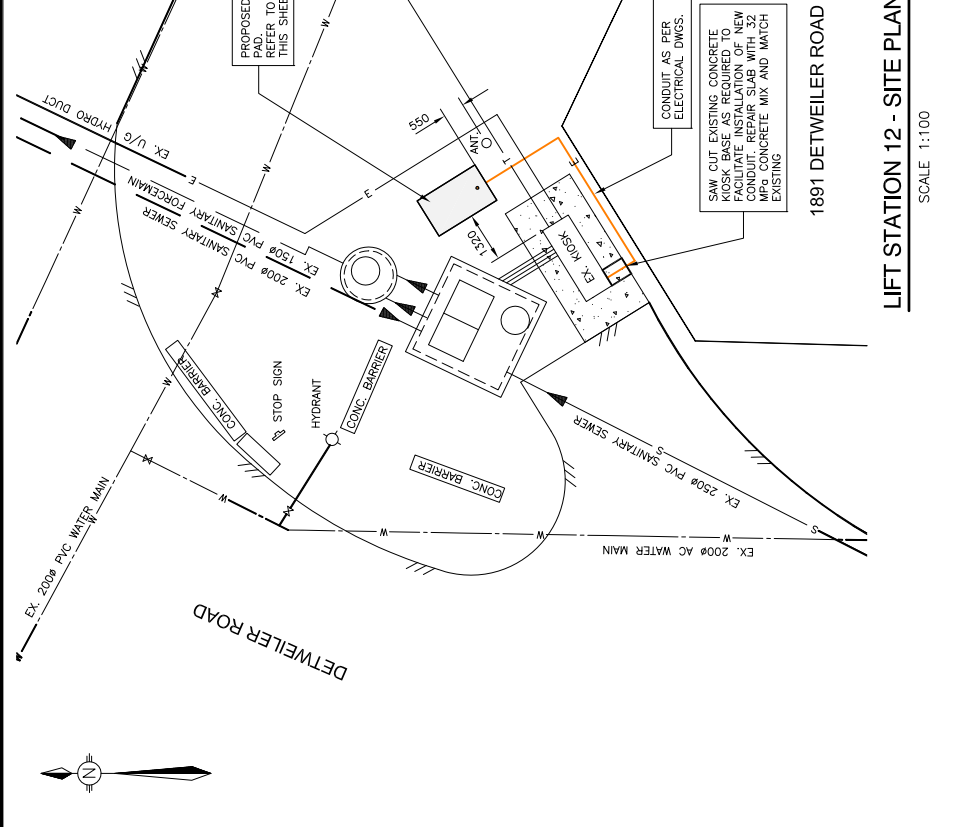
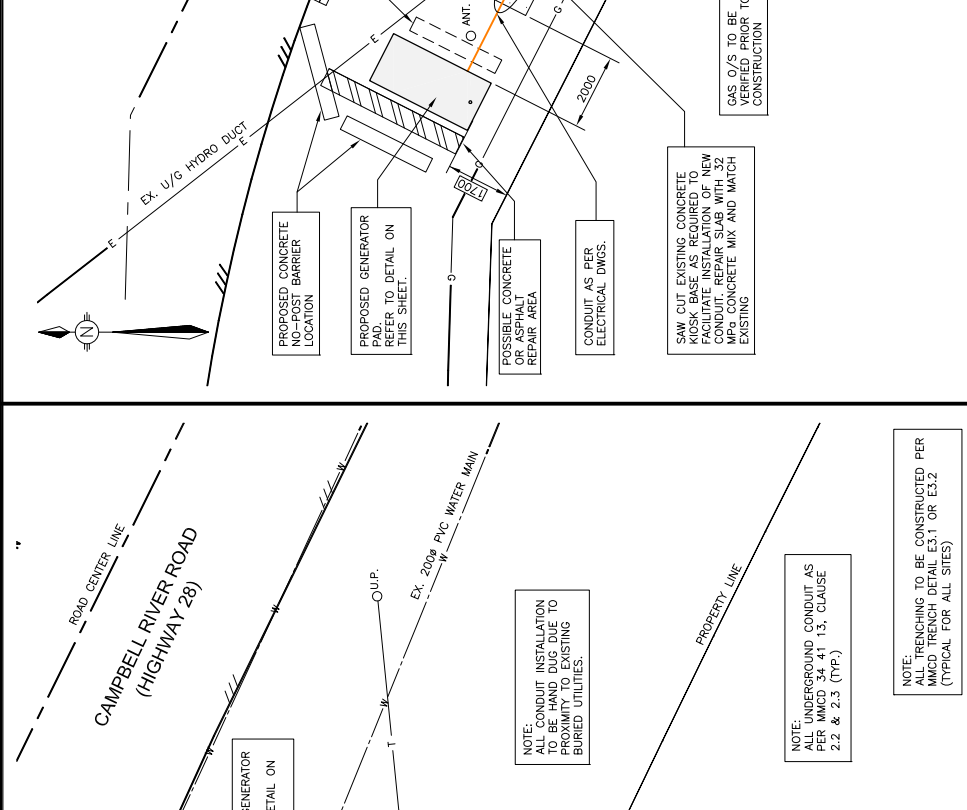
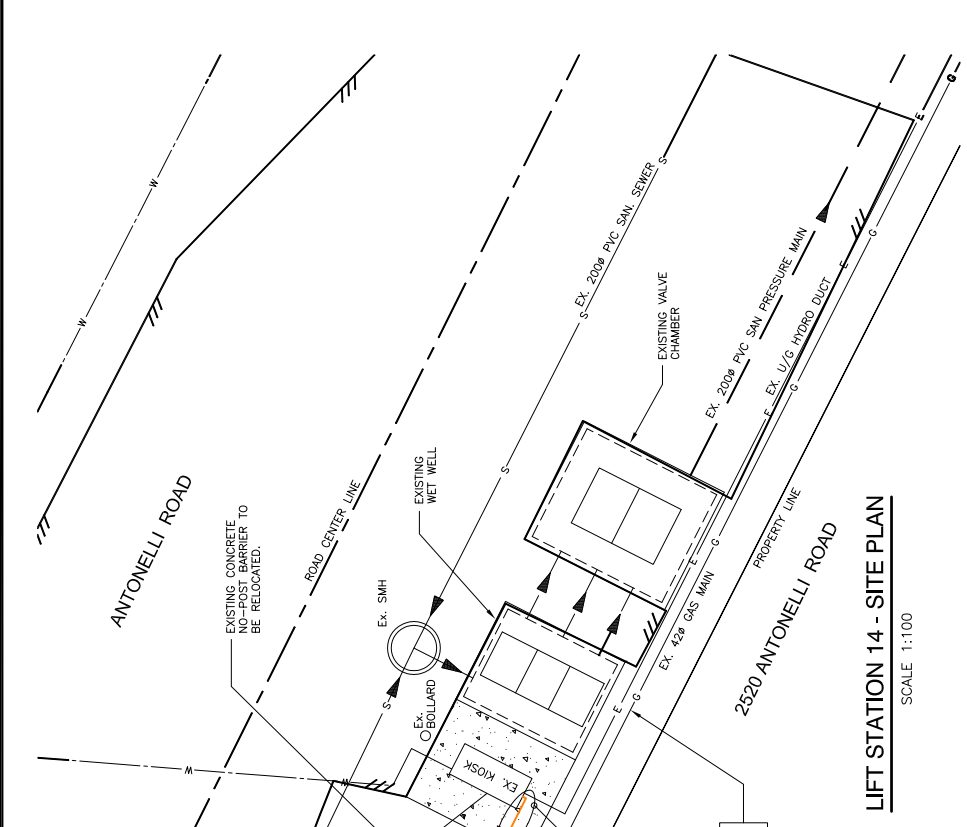
CITY OF CAMPBELL RIVER
LIFT STATION BACKUP GENERATORS
PROPOSED GENSET PAD DETAILS
FOR LIFT STATIONS 8, 9 & 10
CAMPBELL RIVER, B.C.

NO.	REVISION	DATE	CHECKED	DATE	DESIGN	LEGEND
1	ISSUED FOR TENDER	2016-09-13	MS	2016-09-13	MS	
2	FOR DESIGN SUBMISSION	2016-09-13	MS	2016-09-13	MS	
3	FOR DESIGN SUBMISSION	2016-09-13	MS	2016-09-13	MS	

DESIGN	LEGEND	EXISTING	DESIGN
S	OPEN DITCH	O.D.	OPEN DITCH
D	STORM DRAIN	SD	STORM DRAIN
W	WATER MAIN	W	WATER MAIN
P	PAVEMENT	P	PAVEMENT
C	CURB & GUTTER	C	CURB & GUTTER
S	SIDEWALK	S	SIDEWALK
U.P.	UTILITY POLE	U.P.	UTILITY POLE
W.V.	WATER VALVE	W.V.	WATER VALVE
H.Y.D.	FIRE HYDRANT	H.Y.D.	FIRE HYDRANT
HYD.	HYD.	HYD.	HYD.
TOP INLET	TOP INLET	TOP INLET	TOP INLET
SIDE INLET	SIDE INLET	SIDE INLET	SIDE INLET
SHH	SHH	SHH	SHH
8" SHH	8" SHH	8" SHH	8" SHH
12" SHH	12" SHH	12" SHH	12" SHH
18" SHH	18" SHH	18" SHH	18" SHH
N/A	N/A	N/A	N/A
10	10	10	10

McElhanney
McElhanney Consulting Services Ltd.
1307 SHOPPERS ROW
CAMPBELL RIVER, B.C.
V9W 2C9
PH (250) 287-7798

- ### GENERAL CONSTRUCTION NOTES
- ALL WORKS TO BE COMPLETED IN CONFORMANCE WITH CITY OF CAMPBELL RIVER STANDARDS AND SPECIFICATIONS (CURRENT EDITION) AND MMCD VOLUME II (PLATINUM EDITION, V. 2009).
 - ALL TRENCHES TO BE BACK FILLED WITH PIT-RUN GRAVEL COMPACTED TO 95% MODIFIED PROCTOR DENSITY.
 - EXISTING UTILITIES ARE BASED ON MANHOLE RECORDS, AS BUILT DRAWINGS AND LIMITED FIELD SURVEY. THIS INFORMATION MAY NOT BE ACCURATE OR COMPLETE. WHERE UTILITIES ARE SHOWN ON PROFILE, THE ELEVATIONS ARE ASSUMED. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL CONFIRM THE CONNECTION LOCATIONS AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES. THE CONTRACTOR SHALL UTILIZE BCI CALL SERVICE TO ASSIST LOCATING ALL EXISTING UTILITIES IN THE AREA OF CONSTRUCTION. IN ADDITION, THE CONTRACTOR SHALL INFRASTRUCTURE.
 - UPON AWARD OF CONTRACT THE CONTRACTOR MUST CONTACT BC-HYDRO, TELUS, FORTISBC, AND SHAW CABLE WITH A CONSTRUCTION SCHEDULE. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND SHALL BE RESPONSIBLE FOR THE RELOCATION OR MAINTENANCE/PROTECTION OF ALL UTILITY POLES AND GUY WIRES.
 - THE CONTRACTOR SHALL ENSURE THAT ALL ENVIRONMENTAL PROTECTIONS TO ELIMINATE CONSTRUCTION AND REMAIN IN PLACE FOR THE DURATION OF THE CONTRACT. THE CONTRACTOR SHALL OBTAIN A COPY OF, AND FOLLOW THE PROCEDURES CONTAINED IN THE LAND DEVELOPMENT GUIDELINES FOR THE PROTECTION OF AQUATIC HABITAT.
 - WORK ZONE AREA SPEED REDUCTIONS AND DETAILS THAT MAY AFFECT TRAFFIC FLOW. PERSONNEL TO MAINTAIN SAFE AND EFFICIENT TRAFFIC FLOW THROUGH AND AROUND THE CONSTRUCTION.
 - CONTRACTOR TO VERIFY THAT SITE SAFETY FOR VEHICLE OPERATORS AND PEDESTRIANS IS MAINTAINED FROM THE END OF EACH WORK DAY THROUGH THE NIGHT UNTIL THE START OF THE NEXT WORK DAY USING FLASHING BEACONS, BARRICADES, SIGNAGE, STANDBARDS, ETC. IN ACCORDANCE WITH CURRENT CONSTRUCTION ZONE SIGNAGE.
 - CONTRACTOR TO COMPLY WITH ALL CURRENT CITY BY-LAWS REGARDING VEHICLE INSURANCE, PERMITS, LICENSING PER "PERMIT TO CONSTRUCT" WORKS IN CITY OF CAMPBELL RIVER. CONTRACTOR TO COMPLETE FORM AND SUBMIT TO CITY REPRESENTATIVE.
 - CONTRACTOR WILL BE RESPONSIBLE FOR DAMAGES TO ANY WATER SERVICES CAUSED BY POOR CONNECTION PRACTICES. I.E., SAND AND/OR GRAVEL INTRODUCED INTO WATER SYSTEM TO NOTIFY ALL AFFECTED WATER CUSTOMERS IN WRITING OF SCHEDULED WATER MAIN SHUT DOWNS. NOTIFICATION OF 72hrs MINIMUM IS REQUIRED. 72hr NOTIFICATIONS OF ANY TIE-INS TO BE FORWARDED TO CITY OF CAMPBELL RIVER.
 - CONTRACTOR'S DESIGN RESPONSIBILITY FOR ALL QUALITY CONTROL WHICH SHALL INCLUDE DENSITY TESTING OF THE BASE MATERIAL AND ONE SET OF CONCRETE TESTS PER LOCATION. ALL COST ASSOCIATED WITH QUALITY CONTROL TESTING WILL BE CONSIDERED CONTRACTOR'S RESPONSIBILITY.
 - CONTRACTOR TO SUBMIT SHOP DRAWINGS OF EACH PAD ANCHOR BOLT AND CONDUIT LAYOUT TO THE CONTRACT ADMINISTRATOR TO WORKING DAYS IN ADVANCE OF CONSTRUCTION.



NO.	REVISION	DATE	CHECKED	DATE	DRAWN	DATE	DATE	DESIGN	DESIGN	LEGEND	LEGEND
1	DATE DESIGN SUBMISSION	2014-09-12	MS	2014-09-12	MS	2014-09-12	MS	2014-09-12	MS	2014-09-12	MS
2	DATE DESIGN SUBMISSION	2014-09-12	MS	2014-09-12	MS	2014-09-12	MS	2014-09-12	MS	2014-09-12	MS

DESIGN	EXISTING	LEGEND	LEGEND
S	TEL	TEL	TEL
W	U/G HYDRO	U/G HYDRO	U/G HYDRO
P	NATURAL GAS	NATURAL GAS	NATURAL GAS
C	PAVEMENT	PAVEMENT	PAVEMENT
U	CURB & GUTTER	CURB & GUTTER	CURB & GUTTER
U	UTILITY POLE	UTILITY POLE	UTILITY POLE
U	W.V.	W.V.	W.V.
U	HYD.	HYD.	HYD.
U	TOP INLET	TOP INLET	TOP INLET
U	SIDE INLET	SIDE INLET	SIDE INLET
U	MANHOLE	MANHOLE	MANHOLE
U	OPEN DITCH	OPEN DITCH	OPEN DITCH

DATE	DATE	DATE	DATE	DATE	DATE
2014-06-06	2014-06-06	2014-06-06	2014-06-06	2014-06-06	2014-06-06
2014-06-06	2014-06-06	2014-06-06	2014-06-06	2014-06-06	2014-06-06
2014-06-06	2014-06-06	2014-06-06	2014-06-06	2014-06-06	2014-06-06
2014-06-06	2014-06-06	2014-06-06	2014-06-06	2014-06-06	2014-06-06
2014-06-06	2014-06-06	2014-06-06	2014-06-06	2014-06-06	2014-06-06

SCALE	AS NOTED	SCALE	AS NOTED
DATE	2014-06-06	DATE	2014-06-06
DATE	2014-06-06	DATE	2014-06-06
DATE	2014-06-06	DATE	2014-06-06
DATE	2014-06-06	DATE	2014-06-06
DATE	2014-06-06	DATE	2014-06-06

McElhanney
McElhanney Consulting Services Ltd.
1307 SHOPPERS ROW
CAMPBELL RIVER, B.C.
V9W 2C9
PH (250) 287-7798

CITY OF CAMPBELL RIVER
LIFT STATION BACKUP GENERATORS
PROPOSED GENSET PAD DETAILS
FOR LIFT STATIONS 12, 14 & 15

CCR DWG # 16-503
C02
PROJECT: 2221-49010-0
SHEET 2 OF 2
REV. 1

FOR INFORMATION ONLY
INFORMATION ON EXISTING UTILITIES MAY NOT BE COMPLETE OR ACCURATE. PRIOR TO CONSTRUCTION CONTRACTOR SHALL EXPOSE LOCATIONS OF ALL EXISTING UTILITIES AND ADVISE THE ENGINEER OF POTENTIAL CONFLICTS.
THIS DRAWING HAS BEEN PREPARED FOR THE CLIENT IDENTIFIED, TO MEET THE STANDARDS AND REQUIREMENTS OF THE APPLICABLE PUBLIC AGENCIES. CONTRACTOR SHALL VERIFY ALL INFORMATION AND CONDITIONS ON SITE AND AGENTS ACCEPT NO RESPONSIBILITY TO ANY OTHER PARTY, INCLUDING CONTRACTORS, SUPPLIERS, CONSULTANTS AND STAKEHOLDERS, OR THEIR EMPLOYEES OR AGENTS, FOR LOSS OR LIABILITY INCURRED AS A RESULT OF THEIR USE OF THESE DRAWINGS.