INVITATION TO TENDER 17-22

BIG ROCK BOAT RAMP RECONSTRUCTION

MASTER MUNICIPAL CONSTRUCTION DOCUMENTS - 2009 Platinum Edition

UNIT PRICE CONTRACT

March 20, 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 17-22

BIG ROCK BOAT RAMP RECONSTRUCTION

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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
     - Appendix 9 – Acceptance of Base Course For Asphalt Paving
   - Supplementary General Conditions
   - Supplementary Specifications

2. 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

3. 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)**:

4. Levelton Consultants Ltd. March 20, 2013 Geotechnical Assessment Big Rock Boat Ramp Renewal Project Campbell River, BC is attached to this Tender **For Information Only** and does not form part of the *Contract Documents.*

INVITATION TO TENDER 17-22

BIG ROCK BOAT RAMP RECONSTRUCTION

The City of Campbell River invites tenders for the Big Rock Boat Ramp Reconstruction**.** 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 the reconstruction of the existing concrete boat ramp, in water rip-rap groyne structures, parking lot upgrades, sub surface utility upgrades and surface landscaping features. The in-water work will be required to be performed during the available lowest annual tides generally described as the third week of May, June and July.

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 be **NOT** held.

This Tender is scheduled to close at:

Tender Closing Time:	**3:00 p.m. local time**
Tender Closing Date:	**Monday April 10th, 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 17-22

BIG ROCK BOAT RAMP RECONSTRUCTION

RECEIPT CONFIRMATION FORM

As receipt of this document, and to directly receive any further information, addendums, etc. regarding this competition, please return this form 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 17-22

BIG ROCK BOAT RAMP RECONSTRUCTION

INSTRUCTIONS TO TENDERERS

PART I

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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 17-22**

Contract: **BIG ROCK BOAT RAMP RECONSTRUCTION**

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 the reconstruction of the existing concrete boat ramp, in water rip-rap groyne structures, parking lot upgrades, sub surface utility upgrades and surface landscaping features. The in-water work will be required to be performed during the available lowest annual tides generally described as the third week of May, June and July.

1.2 Direct all tender inquiries regarding the Tender, 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: **Monday April 10th, 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 the specified financial security, in the form of the "Bid Security" as required in Section 5.2 of the Instructions to Tenderers Part II.

.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 has been completed and is attached to this Tender **for information only**. 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:

All in-water excavation related to increasing the depth of the entrance to the boat ramp is to occur during the lowest tides available during May, June and July.

Substantial Performance of this *Contract* to be achieved within 120 *Days* from receipt of the Notice to Proceed.

Form of Tender

CITY OF CAMPBELL RIVER

Reference No.: **TENDER 17-22**

Contract: **BIG ROCK BOAT RAMP RECONSTRUCTION**

TO OWNER:

1 I (WE), THE UNDERSIGNED:

1.1 have received and carefully reviewed all of the *Contract Documents*, including the Instructions to Tenderers, the specified edition of the "Master Municipal Construction Documents - General Conditions, Specifications and Standard Detail Drawings" and the following Addenda:

_____
_____
_____
_____
_____
_____;
(ADDENDA, IF ANY) **(TENDERER TO COMPLETE)**

1.2 have full knowledge of the *Place of the Work*, and the *Work* required; and

1.3 have complied with the Instructions to Tenderers; and

2 ACCORDINGLY I (WE) HEREBY OFFER:

2.1 to perform and complete all of the *Work* and to provide all the labour, equipment and material as set out in the *Contract Documents*, in strict compliance with the *Contract Documents*; and

2.2 to achieve *Substantial Performance* of the *Work* within 120 *Days* from receipt of a Notice to Proceed; and

2.3 to do the *Work* for the price, which is the sum of the products of the actual quantities incorporated into the *Work* and the appropriate Lump Sums set out in Appendix 1, the "*Schedule of Quantities and Prices*", plus any lump sums or specific prices and adjustment amounts as provided by the *Contract Documents*. For the purposes of tender comparison, our offer is to complete the *Work* for the "*Tender Price*" as set out on

Tenderer's Initial	Owner's Initial

Appendix 1 of this Form of Tender. Our *Tender Price* is based on the estimated quantities listed in the *Schedule of Quantities and Prices*, and excludes *GST*.

3 I (WE) CONFIRM:

3.1 that we understand and agree that the quantities as listed in the *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; and

4.1.2 the ***Bid Security*** as required by paragraph 5.2 of the Instructions to Tenderers - Part II stated as:

A tender must be accompanied by the *Bid Security* in the form of:

a a Bid Bond issued by a surety licensed to carry on the business of suretyship in British Columbia in a form reasonably satisfactory to the *Owner*; or

b cash, bank draft or letter of credit in a form acceptable to the *Owner*;

in an amount equal to 10% of the *Tender Price*.

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 Performance Bond and a Labour and Material

Tenderer's Initial	Owner's Initial

Payment Bond, each in the amount of 50% of the *Contract Price*, issued by a surety licensed to carry on the business of suretyship in the province of British Columbia, and in a form acceptable to the *Owner*; and

b a *Construction Schedule*, as provided by GC 4.6.1; and as per *Supplementary Specification* 01 31 00; and

c a "clearance letter" indicating that the tenderer is in WCB compliance; and

d a copy of the insurance policies as specified in GC 24 indicating that all such insurance coverage is in place; and

e a Health and Safety Program Manual pertaining to the Work;

f a Construction Environmental Management Plan as per Supplementary Specification 01 57 01;

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.

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

Tenderer's Initial	Owner's Initial

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. I (We) further agree that, as full compensation on account of damages suffered by the *Owner* because of such failure or refusal, the *Bid Security* shall be forfeited to the *Owner*, in an amount equal to the lesser of:

6.1.3 the face value of the *Bid Security*; and

6.1.4 the amount by which my (our) *Tender Price* is less than the amount for which the *Owner* contracts with another party to perform the *Work*.

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 120 *Days* from Notice to Proceed (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;

Tenderer's Initial	Owner's Initial

(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:

Tenderer's Initial	Owner's Initial

- 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:

(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.

Tenderer's Initial	Owner's Initial

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)

Tenderer's Initial	Owner's Initial

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.	MMCD REF.	DESCRIPTION	UNIT	QTY	UNIT PRICE	AMOUNT
1	**1**	**Site Preparations**				
1.01	01 53 01	Security fencing upland and on beach in front of breakwaters per Dwg GA01	LS	1		
1.02	01 55 00	Traffic Control, Traffic Management Plan, Vehicle Access and Parking per Dwg N01	LS	1		
1.03	01 57 01	Environmental Protection, Monitoring and Environmental Management Plan per Dwg N01	LS	1		
1.04	01 58 01	Project Identification Sign per Dwg GA01	LS	1		
1.05	GC 4.12, 5.0,	All Submittals and Tests as described in Drawing N01	LS	1		
1.06		Demolition, salvage and disposal and site preparation all as indicated on Drawing D01 unless otherwise listed as pay items below	LS	1		
2	**3.00**	**Concrete**				
2.01	03 30 20	Curb and Gutter, per Standard Drawing C4, reverse gutter	lineal metre	131		
2.02	03 30 20	100 mm thick Concrete Walks Infill Strips and Walkways, including picnic slabs, wheelchair letdowns.	square metre	198		
2.03	03 30 53	Reinforced concrete boat ramp	LS	1		
2.04	03 30 53	Reinforced concrete foot ramp, including rub rails, cleats and steps	LS	1		
2.05	03 30 53	Reinforced concrete beach steps and landings, including railings and Class 10 Riprap base and boulder landing at beach	LS	1		
2.06	03 30 53	Reinforced concrete walkway 150 mm thick	square metre	35		

Tenderer's Initial | Owner's Initial

3	**26.00**	**Electrical and Roadway Lighting**				
3.01	26 56 01	Electrical, lighting, and communications infrastructure as detailed in Drawing E-1 Muir Engineering	LS	1		
4	**31**	**Earthworks**				
4.01	31 22 01	Strip approximately 750 m2 existing soft landscape area to minimum 150 mm depth and dispose of soils and vegetation.	LS	1		
4.02	31 22 16.1	Cut and fill as required parking and driveway area subgrade to yield compacted design subgrade ready for imported granular sub-base. Existing concrete and asphalt removed under Item 1.06	LS	1		
4.03	31 22 16.1	Cut and fill as required boat ramp area subgrade to yield compacted design subgrade ready for imported granular sub-base. Existing concrete removed under Item 1.06	LS	1		
4.04	31 22 16.1	Excavate and stockpile in parking area approximate 0.5 m depth of accumulated gravels from basin at foot of boat ramp for later re-use in Item 4.10	cubic metres	300		
4.05	31 23 17	Rock removal in channel between breakwaters	cubic metres	41		
4.06	31 32 19	Geosynthetic filter fabric where indicated on drawings	square metre	1650		
4.07	31 24 13	Relocate approximatley 1470 m3 of existing breakwater boulders to form foundation layer for cores of both breakwaters, evenly distributed and to uniform depth per Sections AA & DD Dwg C05	LS	1		
4.08	31 37 10	Graded Riprap Class 100 breakwater cores per Dwg C05	tonnes	1650		
4.09	31 37 10	Graded Rip Rap Class 2000 Breakwater armour layer over breakwater cores per Dwg C05	tonnes	8200		
4.10		Load, place and wash into breakwater voids gravel stockpiled in parking area gravel under Item 4.04	cubic metres	300		
4.11	31 05 17	Import supplemental 150 mm minus pit run gravel as required and wash into breakwater armour voids	tonnes	250		
4.12	31 37 10	Apron of graded Riprap Class 20 at toe of boat ramp per Dwg C02 and Section EE Dwg C06	LS	1		
4.13	31 24 13	Strip off and stockpile for re-use existing embankment armouring (either side of boat ramp) refer to Section GG Dwg C06	LS	1		

Tenderer's Initial | Owner's Initial

4.14	31 24 13	Re-stack stripped existing embankment armour south of ramp (over new filter fabric separate pay item) on competent embankment, with special placements required at foot ramps, culvert outfall, and steps to beach per Section GG, Section EE and Detail 05 Dwg C06 and Dwgs C07 and C08	LS	1		
4.15	31 37 10	Supplement re-stacked armour with imported Class 500 Riprap to achieve embankment armour design thickness of 1.2 m (Section GG Dwg C06)	tonnes	400		
5	**32**	**Roads and Site Improvements**				
5.01	32 11 16.1	Crushed 75 mm minus sub-base, variable thickness, under boat ramp and foot ramp concrete	tonnes	340		
5.02	32 11 16.1	200 mm thick 75 mm minus select granular sub-base in parking areas	square metre	2080		
5.03	32 11 23	125 mm thick 19 mm minus granular base as surface course in gravel parking areas	square metre	1655		
5.04	32 11 23	75 mm thick 19 mm minus granular base under driveway asphalt	square metre	425		
5.05	32 12 16	50 mm thick hot mix asphaltic concrete driveway	square metre	425		
5.06	32	sawcut approximately 15 m asphalt or concrete pavements	LS	1		
6	**32**	**Landscaping**				
6.01	32 91 21	Imported growing medium (topsoil) 300 mm thick in lawn and shrub areas	LS	1		
6.02	32 91 21	Imported green shores soil blend 300 mm thick (50 % topsoil 50% 75 mm minus pit run gravel blend)	tonnes	150		
6.03	32 93 01	50 mm thick erosion blanket (mulch replacement) of 38 mm drain rock over green shores soil planting areas	square metre	300		
6.04	32 92 23	Lawn grass sod # 1	square metre	260		
6.05	32 93 01	Install trees shrubs and ground covers complete with bark mulch per Plant Schedule Drawing L01 and Details 16, 17 & 18 Dwg L01	LS	1		
6.06	33 11 01	Irrigation system including draft and final irrigation shop drawings	LS	1		

Tenderer's Initial | Owner's Initial

7	**33**	**Utilities**				
7.01	33 11 01	New 50 mm water surface across Highway 19 per Dwg C01, including connection to AC watermain, corp stop, curb stop valve, water meter, meter setter, meter box, double check valve and tracer wire, 50 mm stub for irrigation and 19 mm service connected to toilet building plumbing, hot mix asphalt patch	LS	1		
7.02	33 11 01	Irrigation sleeves as indicated in Drawing L02 and confirmed in irrigation shop drawings	LS	1		
7.03	33 30 01	Pre-locate existing sanitary stub, install inspection chamber and extend new 100 mm dia service and connect to toilet building	LS	1		
7.04	33 40 01	1200 mm Dia concrete storm sewer depth 2.5 to 2.8 m	lineal metre	34		
7.05	03 40 01	Pre-cast storm outfall per Detail 05 Dwg C06 c/w outfall grating	LS	1		
7.06	33 40 01	Overbuild new 1500 mm dia manhole complete with benching, riser sections, lid, frame and cover to connect existing CSP storm sewer to new 1200 mm concrete storm sewer	LS	1		
7.07	33 40 01	Remove and backfill approximately 24 m of 900 mm dia CSP storm sewer per Dwg D01	LS	1		
8	**33**	**Toilet Building and Miscellaneous**				
8.01	03 50 01	Pre-cast toilet building complete and functioning with all finishes, plumbing, mechanical and electrical systems in place and connected all as specified on drawing T01 Toilet Building.	LS	1		
8.02		Logs for curbs, and landscaping per Sections AA and CC Dwg C05 and Section GG Dwg C06	lineal metre	160		
8.03		Approximately 130 - 600 mm dia boulders, individually placed on breakwater for debris barrier and for ballasting and buttressing logs	LS	1		
8.04		Picnic tables per Detail 12, Dwg C08	each	2		
8.05		Benches per Section CC Dwg C05	each	2		
8.06		Tansport Canada Post and concrete base per Detail 19	LS	1		

SUBTOTAL	**$**
GST	$
TOTAL	**$**

Tenderer's Initial	Owner's Initial

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 00 For Further Detail

ACTIVITY	MILESTONE DATES	CONSTRUCTION SCHEDULE WITH CRITICAL PATH SHOWN (MONTHS)									
		1	2	3	4	5	6	7	8	9	10

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: _____

Tenderer's Initial	Owner's Initial

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 ($)

Tenderer's Initial	Owner's Initial

Appendix 5

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

TENDER ITEM	TRADE	SUBCONTRACTOR NAME	PHONE NUMBER

Tenderer's Initial	Owner's Initial

Appendix 6

TENDERERS CURRENT PROJECTS UNDERWAY

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

Tenderer's Initial | Owner's Initial

Draft Agreement

Between Owner and Contractor

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

Reference No.: **TENDER 17-22**

Contract: **BIG ROCK BOAT RAMP RECONSTRUCTION**

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 120 *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:*
Outlook Engineering and Landscape Architecture Inc.
1326 Docliddle Road
Comox, BC
V9M 2P9
Attention: Mr. Tim O'Brien, P.Eng.
E-mail: outlookela@shaw.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

1 Agreement, including all Schedules;
2 General Conditions*;
3 Supplementary General Conditions;
4 Specifications*;
5 Supplementary Specifications
6 Supplementary Specifications, City of Campbell River, Design Standards 2010, Appendix A to Subdivision and Development Servicing Bylaw 3419**;
7 City of Campbell River: Approved Utility Product List**
8 Standard Detail Drawings*;
9 Supplementary Standard Drawings
10 Executed Form of Tender, including all Appendices;
11 Drawings listed in Schedule 2 to the Agreement -"List of Contract Drawings";
12 Instructions to Tenderers - Part I;
13 Instructions to Tenderers - Part II*;
14 The Following Addenda: TBD

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.
Cover Sheet	13-506	1	Jan. 2017	03/17/17	C
GA01 General Arrangement	13-506	2	Jan. 2017	03/17/17	C
N01 Notes and Construction Limits	13-506	3	Jan. 2017	03/17/17	C
D01 Demolition Plan and Site Preparation	13-506	4	Jan. 2017	03/17/17	C
C01 Servicing Plan	13-506	5	Jan. 2017	03/17/17	C
C02 Grading Plan	13-506	6	Jan. 2017	03/17/17	C
C03 North and South Breakwater Profiles	13-506	7	Jan. 2017	03/17/17	C
C04 Ramp Profile	13-506	8	Jan. 2017	03/17/17	C
C05 Civil Sections and Details	13-506	9	Jan. 2017	03/17/17	C
C06 Civil Sections and Details	13-506	10	Jan. 2017	03/17/17	C
C07 Civil Sections and Details	13-506	11	Jan. 2017	03/17/17	C
C08 Civil Sections and Details	13-506	12	Jan. 2017	03/17/17	C
C09 North Breakwater Sections	13-506	13	Jan. 2017	03/17/17	C
C10 South Breakwater Sections	13-506	14	Jan. 2017	03/17/17	C
C11 South Breakwater Sections	13-506	15	Jan. 2017	03/17/17	C
C12 South Breakwater Sections	13-506	16	Jan. 2017	03/17/17	C
C13 Ramp Sections	13-506	17	Jan. 2017	03/17/17	C
L01 Landscape Plan	13-506	18	Jan. 2017	03/17/17	C
L02 Irrigation	13-506	19	Jan. 2017	03/17/17	C
L03 Landscape Details	13-506	20	Jan. 2017	03/17/17	C
E01 Electrical Plan	13-506	21	Jan. 2017	03/17/17	C
T01 Toilet Building	13-506	22	Jan. 2017	03/17/17	C

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 pertains 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 _____, 2017, 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: _____

Appendix 9

ACCEPTANCE OF BASE COURSE FOR ASPHALT PAVING

Prior to the laying of asphalt pavement, representatives from (i) the City and Tayco Paving, for direct City constructed project **or** from (ii) the City's Consultant, and the General Contractor for contracted projects, agree to the condition, surface elevations and quality of the road base.

Date: _____

Owner or Consultant's Representative:

_____

General Contractor Representative:

_____

This acceptance does not relieve the General Contractor or the City's Consultant of their responsibilities for the surface elevations and/or condition or subsequent failure of materials below the asphalt pavement. Tayco Paving will continue to be responsible for the asphalt paving relating to the asphalt material and its placement.

The general conditions and specifications for the work will apply and take the precedence over this acceptance. The "Limiting Terms and Conditions" of Tayco Paving also take precedence over this acceptance.

An acceptable method of checking elevations will be used to ensure that the road base is graded ready for asphalt. The intention of this survey is to ensure that asphalt tonnage does not exceed Tayco's calculated estimated tonnage by more than 5%.

Conversion from square metres to tonnage will be calculated at the rate of 125 Kg per square metre for a 50mm thickness of asphalt.

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 17-22**

Contract: **BIG ROCK BOAT RAMP RECONSTRUCTION**

TABLE OF CONTENTS

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 2.2.4 ***(delete clause 2.2.4.1 and replace as follows)***
the *Contract Documents* shall govern and take precedence in the following order with the Agreement taking precedence over all other *Contract Documents*:

(a) Agreement
(b) Addenda
(c) Supplementary General Conditions
(d) General Conditions
(e) Drawings listed in Schedule 2 to the Agreement
(f) Supplementary Specifications

(g) Specifications
(h) Supplementary Detail Drawings
(i) Standard Detail Drawings
(j) Executed Form of Tender
(k) Instructions to Tenderers
(l) All other Contract Documents

2.2.4.5 ***(add new clause* 2.2.4.5 *as follows)***
The *Contract Drawings* will be updated post Tender and will be Issued For Construction by the *Contract Administrator* prior to the commencement of the *Work.*

CONTRACTOR **4.0**

Protection of Work, Property and the Public 4.3.7 ***(add new clause 4.3.7 as follows)***
The *Contractor* shall locate, mark and protect from damage or disturbance, any and all stakes, survey pins, monuments and markers at the *Place of the Work.*
All survey stakes, pins, monuments or markers which, in the opinion of the *Owner*, have been damaged or disturbed shall be made good following construction by a registered B.C. Land Surveyor at the *Contractor's* expense.

Good Neighbour Policy 4.3.8 ***(add new clause 4.3.8 as follows)***
The *Owner's* Good Neighbour Policy as adopted by City of Campbell River Council on April 15, 1997 shall apply to this contract. 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."

Damage to Improvements and Utilities 4.3.9 ***(add new clause 4.3.9 as follows)***
The *Contractor's* Work shall be confined to the *Owner's* premises, including statutory right-of-ways easements and construction permit limits, whenever possible. The *Contractor* shall not enter upon or place materials on other private premises except by written consent of the individual *Owners* and shall save the *Owner* harmless from all suits and actions of every kind and description that might result from use of private property.

Use of Working Site 4.3.10 ***(add new clause 4.3.10 as follows)***
The *Contractor* shall confine his equipment, storage of materials and operation of Work to the limits indicated by law, permits, or direction of the *Contract Administrator*, and shall not unreasonably encumber the premises with his materials. The *Contractor* shall comply with the *Contract Administrator* instructions regarding signs, advertisements, fires and smoking.

The working site shall at all times be kept free of rubbish and unnecessary hazards to persons, materials, and equipment.

Local, Emergency Traffic and Property Access 4.3.11 ***(add new clause 4.3.11 as follows)***
Local traffic shall be provided access to private properties at all times.

		Emergency traffic such as Police, Fire, and Disaster Units shall be provided reasonable access at all times. The *Contractor* shall be liable for any damage which may result from his failure to provide such reasonable access.
Traffic Management Plan	4.3.12	***(add new clause 4.3.12 as follows)*** If required, the *Contractor* 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 *Contractor* has obtained the *Owner's* approval via a Road Closure Permit. The *Contractor* 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 Work on Roadways published by the Ministry of Transportation and Highways. The *Contractor* shall only use appropriately accredited personnel for Traffic Control.
Temporary Structures and Facilities	4.4.3	***(add new clause 4.4.3 as follows)*** The *Contractor* 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 *Contractor* shall permit no public nuisance.
Fair Wages	4.8.2	***(add new clause 4.8.2 as follows)*** The *Contractor* 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.
Truck Routes and Disposal Sites	4.17.1	***(add new clause 4.17.1 as follows)*** 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 *Contract Administrator* in advance of the work. The *Contractor* 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 *Contractor* 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 *Contractor* shall be responsible for obtaining and securing a legal dumpsite. All costs associated with that dumpsite shall be the responsibility of the *Contractor* and shall be considered incidental to the *Work.*
Disposal of Wood Debris, Organic Debris, and/or Waste Excavated Material	4.18.1	***(add new clause 4.18.1 as follows*)** Prior to disposal of any wood debris, organic debris and/or waste excavated material, the *Contractor* shall submit a disposal management strategy in accordance with all applicable Laws, Bylaws and Regulations to the *Contract Administrator* for approval. Subject to the *Contract Administrator's* approval, the *Contractor* 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 *Contractor* 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 Regardless of the aforementioned, the *Owner* reserves the right to disallow any or all of the *Contractor*'s proposed disposal management strategy if it is determined that they will result in undesirable environmental impacts.
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 clause 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 clause 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 clause 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 *Subcontractor*s. 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
- Outlook Engineering and Landscape Architecture Inc.
- Chicalo Burridge Land Surveying and Geomatics
- Pacificus Biological Services Ltd.
- Baseline Archaeological Services Ltd.
- Levelton Consultants Ltd.
- Muir Engineering

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 Period Financial Security, or other holdbacks. The *Contractor* shall promptly pay any shortfall.
Maintenance Period 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.

SUPPLEMENTARY SPECIFICATIONS

TO BE READ IN CONJUNCTION WITH THE

"MASTER MUNICIPAL CONSTRUCTION DOCUMENTS"

Reference No.: **TENDER 17-22**

Contract: **BIG ROCK BOAT RAMP RECONSTRUCTION**

General

1.1 a) Payments will be made on the basis of the unit prices bid in the Tender, and in accordance with Article 18 of the General Conditions.

b) The unit prices bid, unless specifically noted otherwise, shall include the supply of all labour, plant, material, product and equipment necessary to construct the *Work* in accordance with the specifications.

c) The prices bid for supply and installation shall be full compensation for supplying, hauling, installing, cleaning, testing, and placing in service together with all other work subsidiary and incidental thereto for which separate payment is not provided elsewhere.

d) Other materials on site, whether existing structures, vegetation, topsoil, gravel, sand or other excavated or piled materials, are the property of the *OWNER* or of the owner of the land on which the *Work* is located. Only those materials specifically noted in the specification or on drawings, as belonging to the *Contractor* shall become the *Contractor's* property.

e) Where there are excess excavated materials, unsuitable materials excavated or materials of any kind that are excavated but not used in the *Work*, such materials are not the property of the *Contractor* unless authorized in writing by the *Contract Administrator* or specified to be disposed of by the *Contractor*.

Unit Price Contracts

2.1 a) Payments will be made on the basis of the following:

.1 Unit Price items in the Schedule of Quantities and Prices. Where payment terms are listed in the Schedule of Quantities and Prices, these will take precedence over those payment terms listed

elsewhere in the Contract Documents.

.2 Changes in the *Work* for items not covered by unit prices, in accordance with Article 7 – Changes in the Work of the General Conditions.

b) For each item in the Schedule of Quantities and 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.

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 shown on the drawings and 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.

The *Contractor* shall work cooperatively with B.C. Hydro, Telus, Shaw and

General Coordination

7.1 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 23 10	Substitutions
01 31 00	Construction Schedule and Progress Reports
01 31 19	Project Meetings
01 33 00	Submittals and Reference Forms
01 34 00	Record Drawings
01 45 00	Quality Control
01 57 01	Environmental Protection
03 50 01	Pre-Cast Concrete Toilet Building

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* as per 01 33 00 and are 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 Divisions 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.

1.4 Cost of Request for Substitution

1. The *Contractor* will be responsible to pay all related costs for evaluating the request for Substitution including but not limited to the *Engineer's* efforts necessary to review all information of the proposed Substitution, above and beyond the time required to review shop drawings for a specified product, even though the request may be denied.
2. Upon receipt of a written application for Substitution from the *Contractor*, the *Contract Administrator* will estimate the value and duration for evaluating the request and present the estimate to the *Contractor for his consideration*. The *Contractor* is advised that the estimate will be based upon the best information available to the *Contract Administrator* at the time the request for Substituion is made; however, the actual cost to evaluate the request for Substitution will be based on all time and expense incuured and will be documented and applied in the final analysis of the substitution request.
3. If the *Contractor* wishes the *Contract Administrator* to continue the review of the request for Substitution, the *Contractor* must submit his approval to proceed to the *Contract Administrator* in writing and submit sufficient any additional information as may be requested by the *Contract Administrator*.
4. If the request for Substitution is accepted by the Owner, the Substitution will be accepted through the issuance of a *Change Order* and the *Contract* will be adjusted accordingly.

END OF SECTION 01 23 10

Supplementary Specifications

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 receipt 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*.

.3 Once Approved, the Baseline Construction Schedule will have been established and both parties agree that any further changes to the Construction Schedule will be based on the Baseline Construction Schedule.

1.4 Schedule Revisions

.1 Any proposed revisions to the Baseline Construction Schedule are to be submitted as a *Contemplated Change Order* 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 *Contract 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 Baseline Construction 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 00

1. General

1.1 Administrative

.1 The *Contract Administrator* will administer the pre-construction meeting, and regular progress meetings to be held weekly.

.2 The *Contractor*'s superintendent, and senior representatives of major sub-contractors to 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 Engineer or *Contract Administrator* will chair and record discussions and decisions, and circulate the minutes. The *Contractor* is to circulate the minutes to subcontractors and suppliers.

.5 The *Contractor* is 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 10 days of Notice to Award, the *Contract Administrator* will schedule a meeting to discuss administrative procedures and responsibilities.

.2 Agenda includes the following:

a) Appointment of official representatives of participants in the Work.
b) Appointment of General *Contractor* as Prime *Contractor*.
c) Notice of Project.
d) Schedule of Work, progress scheduling.
e) Submittals.
f) Requirements for temporary facilities, offices, utilities, fences.
g) Traffic Management Plan
h) Environmental Protection Plan
i) Site Safety and Security.
j) Change Order procedures.
k) Record drawings.
l) Commissioning, acceptance, warranties.
m) Monthly progress payments, administrative procedures, holdbacks.

n) Appointment of inspection and testing agencies or firms.
o) Insurances.

1.3 Weekly Progress Meetings

.1 The *Contractor*'s superintendent and senior representatives of major subcontractors involved in the Work to be in attendance of weekly progress meeting to be held on site.

.2 Agenda includes the following:

a) Past period progress.
b) Next period progress.
c) Schedule of construction.
d) Anticipated changes in the work.
e) Approved changes in the work.
f) Submittal/RFI/SI status
g) Operations staff scheduling.
h) Site safety.
i) General information pertaining to the work.
   i. Quality control
   ii. Site cleanliness
   iii. Environmental protection
   iv. Other

.3 Submit for information only, at each regularly scheduled progress meeting:

a) Totals of all personnel currently on site associated with the contract, broken down by trade and subcontractor including all staff.
b) Totals of all major equipment currently on site, over two thousand dollar 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.

1.5 Payment

.1 All required attendance of the *Contractor* and/or *Contractor*'s major subcontractors to all Progress Meetings and any required Special Meetings shall be incidental to the contract and no separate payment will be made.

END OF SECTION 01 31 19

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 00

.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.

2.0 PRODUCTS

.1 Not Used

3.0 EXECUTION

.1 Not Used

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

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

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.

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)

	Alternate to Specifications - Check (_) if Applicable	CSA Approved Classification
Mounting:		Accuracy
Power Requirements:		
Materials of Construction:		
Wetted Parts Material		

ADDITIONAL SPECIFICATIONS/NOTES

01 33 00-E EQUIPMENT MECHANICAL DATA RECORD FORM

Form Colour: CANARY

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:	

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

Form Colour: GREEN

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

01 33 00-H Spare Parts and Special Tools List (Form 1 of 2)

Specification Section	Equipment Description	Equipment Name	Manufacturer	Model #	Quantity	Spare Parts Required	Box Tag Number

Note: Although presented on two 215 mm x 280 mm pages, Form 01750-A should be completed on a 280 mm x 432 mm page.

01 33 00-H Spare Parts and Special Tools List (Form 2 of 2)

Manufacturers Part Number	Special Storage Requirements	Contractor Scheduled Delivery Date	ABR Acceptance Date/Name	District Receipt Date/Name

Note: Although presented on two 215 mm x 280 mm pages, Form 01750-A should be completed on a 280 mm x 432 mm page.

END OF SECTION 01 33 00

1.0 Construction Record Drawings

.1 The *Contractor* shall keep one complete set of all drawings issued for the completion of and used to complete the *Work* on the *Site*. These drawings are to be made available to the *Contract Administrator* and/or the *Owner* at all times during the completion of the *Work*.

.2 On the construction 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 00

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 Quality Control requirements as detailed in the Contract Drawings with special attention to Drawings N01 and C05 including testing of riprap and concrete along with the required submittals, shop drawings and test panels all in aid of controlling the quality of the final product.

.4 Sieve analysis of sands and aggregates to be supplied for *the Work*.

.5 Aggregates and mix design for Portland Cement concrete.

.6 Standard Proctor Density curves for backfill and embankment materials and roadway and walkway granular base and sub-base materials.

.7 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.

.8 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.

.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 Sub-Contractors 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 00

ENVIRONMENTAL PROTECTION

1.0 GENERAL

.3 ***(Add the following clause 1.3)***
The *Contractor* is required to engage a Qualified Environmental Professional (QEP) and develop a Construction Environmental Management Plan (CEMP) that fully complies with all information provided within this Tender.

1.6 Payment

.1 ***(Delete clause 1.6.1 and replace with)***
Payment for all *Work* performed under this Section will be as per lump sum as per the Schedule of Quantities and Prices.

1.7 Inspection and Testing

.2 ***(Add the following clause 1.7.2)***

The QEP will be required to undertakle any necessary inspections and testing to demostrate that the *Contractor* is delivering the *Work* in full confirmance with the approved CEMP.

In the event of any non-compliance, the QEP shall have full responsibilty for suspending any and all related *Work* activities until such time that all necessary notifications have been issued and the situation remedied to the satisfaction of the QEP and/or any affected agencies.

In the event of a suspension of any *Work* due to an environmental non compliance, The *Contractor* will not be permitted to resume any activities related to the affected portion of the *Work* until he has received written authorization from the *Contract Adminsitrator*.

1.9 Submissions

.1 ***(Add Section 1.9 Submissions and the following clause 1.9.1)***
Within 10 days of receipt of written Notice of Award, The *Contractor* is required to submit the CEMP to the *Owner* for Review.

1.10 Reporting

.1 ***(Add Section 1.10 Reporting and the following clause 1.10.1)***
During the completion of all *Work* occurring below the top of bank, The *Contractor* and/or the *Contractor's* Environmental Monitor are required to submit Weekly Environmental Monitoring Reports to the *Contract Administrator* no later than 1 week after the reporting period.

END OF SECTION 01 57 01

SPECIFICATIONS FOR VAULT-STYLE TOILET BUILDING

1.0 Scope

This specification covers the construction of precast concrete vault toilet buildings.

2.0 Specifications

ASTM C33	Concrete Aggregates
ASTM C39	Method of test for compressive strength of cylindrical concrete specimens
ASTM C143	Method of test for slump concrete
ASTM C150	Standard specifications for Portland cement
ASTM C192	Method of making and curing test specimens in the laboratory
ACI 211.1	Recommended practice for selecting proportions for normal and heavyweight concrete
PCI MNL 116	Quality control for plants and production of precast concrete products
CSA A23.4	Precast Concrete - Materials and Construction

3.0 Materials

A. Concrete – General

The concrete mix design will be designed in accordance with Clause 4.3.1 of CSA A23.1 to produce concrete of good workability

1. Concrete will contain a minimum of 275 kg of cement per cubic meter. Cement will be Type GU.
2. Coarse aggregates used in the concrete mix design will conform to Clause 4.2.3 of A23.1.
3. Minimum water/cement ratio will not exceed .45. Slump will not exceed 125mm.
4. Air entering admixtures will conform to Clause 4.2.4.2 of CSA A23.1 and ASTM C260. Water reducing admixtures will conform to Clause 4.2.4.3 of CSA 23.1 and ASTM C494 Type A. Other admixtures will not be used without customer approval.

B. Cold Weather Concrete

1. Cold weather concrete placement will be accordance with ACI 306.
2. Concrete will not be placed if ambient temperatures are expected below 5°C during the curing period unless heat is readily available to maintain the surface temperature of the concrete at a minimum of 10°C.
3. Materials containing frost or lumps of frozen material will not be used.

3.0 Materials (continued)

C. Hot Weather Concrete

1. The temperature of the concrete will not exceed 25°C at the time of placement and when the ambient temperature reaches 30°C, the concrete will be protected with moist covering.

D. Concrete Reinforcement

1. All reinforcing steel will conform to Clause 6.1.1.1 of CSA A23.1.
2. All reinforcement will be new, free of dirt, oil, paint, grease, loose mill scale and loose or thick rust when placed.
3. Details not shown on drawings or specified will be to ACI 318.
4. Steel reinforcement will be centered in the cross-sectional area of the walls and will have at least 1" of cover on the under surface of the floor and roof.
5. The maximum allowable variation for center-center spacing of reinforcing steel will be ½".
6. Full lengths of reinforcing steel will be used when possible.

E. Sealers and Curing Compounds

1. Curing compounds, if used, will be colourless, complying with ASTM C309 Type I or 1-D, as per Clause 7.4.2.2.2 of CSA A23.1.
2. Weatherproofing sealer for floor of building will be a clear, non-gloss, colourless silicone based sealer with mineral oil carrier.

F. Caulking, Grout, Adhesive and Sealer

1. All caulking will remain flexible and non-sag at temperatures from 10°C to 60°C.
2. Interior joints will be caulked with a paintable latex-based caulk.
3. Exterior joints will be caulked with a siliconized acrylic caulk.
4. Grout will be a non-shrink type.
5. Portland cement mortar will consist of one part Portland cement, three parts sand and enough water to make a workable mixture.

G. Paint

1. All paints and materials will conform to federal specifications or be similar "top-of-the-line" components. Paints will not contain more than .06 percent by weight of lead.
2. Type of paints for toilets:
   i. Inside concrete surfaces
      a. Interior walls and ceilings will be 100 percent acrylic/latex.
   ii. Metal surfaces both inside and out
      a. Primer and enamel
   iii. Exterior concrete surfaces
      a. Exterior walls to be 100 percent acrylic/latex.

3.0 Materials (continued)

H. Grab Bars

Grab bars will be 18 gauge, type 304 stainless steel with 1-1/2" clearance.

I. Toilet Paper Dispenser

1. Dispenser will be constructed of stainless steel and be lockable.
2. Dispenser will be capable of holding three (3) standard rolls of toilet paper.

J. Steel Doors

1. Doors will have welded seams, 1 ½" thick, minimum 18 gauge prime-coated steel panels with honeycomb core.
2. Door frames will be welded type 16 gauge minimum prime-coated steel encased in concrete.

K. Door Hinges

Door hinges will be 3 per door 4 ½" x 4" ball bearing stainless steel.

L. Lockset

1. Lockset will meet ANSI A156.2 Series 4000, Grade 1 cylindrical lockset for exterior door.
2. Stainless pull handle (exterior) and push plate (interior).
3. U.S. 26D finish.

M. Door Closer

1. Door closer will be universal mount ANSI Grade 3 with high strength pressure cast aluminum housing.
2. Door closer to accommodate maximum door weight of 143 lbs.

N. Door Stop

Door stop will have a cast metal base with gray rubber 2-3/8" diameter bumper with a 1" projection.

O. Coat Hook

Coat hook will be constructed of solid brass with a chrome finish with a black rubber stop on upper hook. Upper hook will extend at least 2 ½" from surface of door. Lower hook will extend at least 1 ¼" from surface of door.

3.0 Materials (continued)

P. Door Sweep

Door sweep will be provided at the bottom of door (optional) and will be an adjustable brush type.

Q. Vault Pump-Out Cover

1. Vault pump-out frame and cover will be constructed from aluminum.
2. Cover to be lockable and with handle.

4.0 Manufacture

A. Mixing and Delivery of Concrete

Mixing and delivery of concrete will be in accordance with CSA A23.4, clauses 20.1 through 21.2 with the following additions:

i. Aggregate and water will adjusted to compensate for differences in the saturated surface-dry condition.
ii. Concrete will be discharged as soon as possible after mixing is complete in accordance with Clause 7.4.2.2.2 of CSA A23.1.

B. Placing and Consolidating Concrete

1. Concrete will be consolidated by the use of mechanical vibrators.
2. Vibration will be sufficient to accomplish compaction but not to the point that segregation occurs as per Clause 7.2.5.2.5 of CSA A23.1.

C. Finishing Concrete

1. Interior floor and exterior slabs will be floated and troweled until all marks are removed. A light broom finish will be applied to the exterior and interior slabs.
2. All exterior building walls will be a simulated wood texture.
3. All exterior surfaces of the roof panels will be cast to simulate a metal roof. The underside of the overhang will have a smooth finish.

D. Cracks and Patching

1. Concrete components with cracks that are judged to affect the structural integrity of the building will be rejected.
2. Small holes, depressions and air voids will be patched with a suitable material. The patch will match the colour, finish and texture of the surrounding surface.
3. Patching will not be allowed on defective areas if the structural integrity of the building is affected.

4.0 Manufacture (continued)

E. Curing and Hardening Concrete

1. Concrete surfaces will not be allowed to dry out from exposure to hot, dry weather during initial curing period.
2. Curing compounds will not be used on interior walls of the vault.

F. Painting

1. An appropriate curing time will be allowed before paint is applied to concrete.
2. Painting will not be done outside in cold, frosty or damp weather.
3. Painting will not be done in winter unless the temperature is 10° or higher.
4. Painting will not be done in dusty areas.

5.0 Testing

A. The following test will be performed on concrete used in the manufacture of toilet buildings. Testing will only be performed by qualified individuals who have been certified ACI Technician Grade 1. Sampling will be in accordance with ASTM C172.

1. The slump of the concrete will be performed on the first batch of concrete in accordance with ASTM C143. This slump will be in the 3" – 5" range.
2. The air content of the concrete will be checked per CSA A23.4 Clause 19.2 on the first batch of concrete. The air content will be 5.5% +/- 1.5%.
3. The compressive strength of the cylinders will be tested to Clause 19.3 of CSA A23.4. We will make two cylinders for release and three cylinders for 28 day strength. The minimum strength will be 30 MPA at 28 days and the minimum release strength will be 18 MPA.

6.0 Warranty

Leko warrants that all goods sold pursuant hereto, when delivered, conform to specifications set forth above. If any of the goods fail to conform with any such specifications, Leko will replace or repair the goods free of charge, providing that Leko is given prompt notice thereof in writing not more than one year after the date of delivery of such goods, and is given the opportunity to inspect such goods. It is specifically understood that Leko's obligation hereunder is for repair or replacement only (FOB Leko Precast, Vernon BC), and does not include shipping, handling, installation, or other incidentals or consequential costs unless otherwise agreed to in writing by Leko.

6.0 Warranty (continued)

This warranty shall not apply to:

1. Any goods which have been repaired or altered without written consent by Leko Precast, in such a way as in the reasonable judgment of Leko, to adversely affect the integrity or functionality thereof.
2. Any goods which have been subject to misuse, negligence, or accident.
3. Any goods which have been improperly installed, improperly maintained, or used outside the specifications for which such goods were intended.

7.0 Disclaimer of Other Warranties

The warranty set forth above is in lieu of all other warranties, express or implied. All other warranties are hereby declaimed. Leko makes no other warranty, express or implied, including but not limited to warranty of merchantability of fitness for a particular purpose or use.

8.0 Limitation of Remedies

In the event of any breach of any obligation hereunder, breach of any warranty regarding the goods or any negligent act or omission of any party, the parties shall have all rights and remedies available at law; however, in no event shall Leko be subject to liability for any incidental or consequential damages.

BARRIER FREE

DECLYN™ WALL-HUNG LAVATORY

- Wall-hung sink
- Vitreous china
- Rear overflow
- Soap depression
- Faucet ledge

Shown with 2000.101 Ceramix faucet (not included)

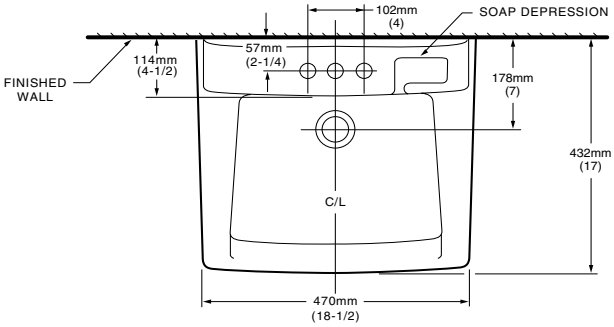
❑ **0321.026** With wall hanger (Illustrated)
Faucet holes on 102mm (4") centers

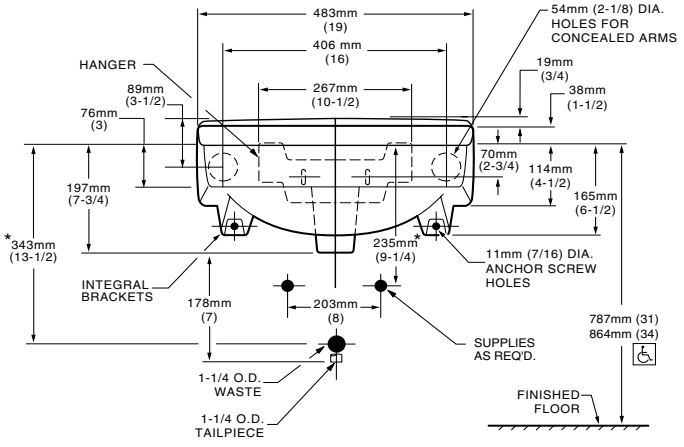
❑ **0321.075** For concealed arms support
Faucet holes on 102mm (4") centers

Nominal Dimensions:
470 x 432mm
(18-1/2" x 17")

Bowl sizes:
362mm (14-1/4") wide
273mm (10-3/4") front to back
152mm (6") deep

Compliance Certifications -
Meets or Exceeds the Following Specifications:
• ASME A112.19.2 for Vitreous China Fixtures





To Be Specified:
❑ Color: ❑ White ❑ Bone ❑ Silver
❑ Faucet*:
❑ Faucet Finish:
❑ Supplies:
❑ 1-1/4" Trap:
❑ Nipple:
❑ Concealed Arms Support (by others):

* See faucet section for additional models available

MEETS THE AMERICANS WITH DISABILITIES ACT GUIDELINES AND ANSI A117.1 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES - CHECK LOCAL CODES.
Top of front rim mounted 864mm (34") from finished floor.

NOTES:
***** DIMENSIONS SHOWN FOR LOCATION OF SUPPLIES AND "P" TRAP ARE SUGGESTED.
PROVIDE SUITABLE REINFORCEMENT FOR ALL WALL SUPPORTS.
FITTINGS NOT INCLUDED AND MUST BE ORDERED SEPARATELY.

IMPORTANT: Dimensions of fixtures are nominal and may vary within the range of tolerances established by ANSI Standard A112.19.2. These measurements are subject to change or cancellation. No responsibility is assumed for use of superseded or voided pages.

Metering Faucets

4" cast metering centerset
w/ no pop-up hole
ADA compliant tip action lever handles
0.5 gpm (1.9 L/min)vandal resistant outlet

Model No: 86T1153

COMPLIES WITH:

- CSA certified.
- Complies to ASME Standard A112.18.1/CSA B125.1 for faucets.
- Lever Handle meets ADA compliance to ICC/ANSI A117.1 / ADA
- Verified compliant with 0.25% weighted average Pb content regulations
- (Contact Delta Representative for State and/or Local Approvals)

SPECIFICATION:

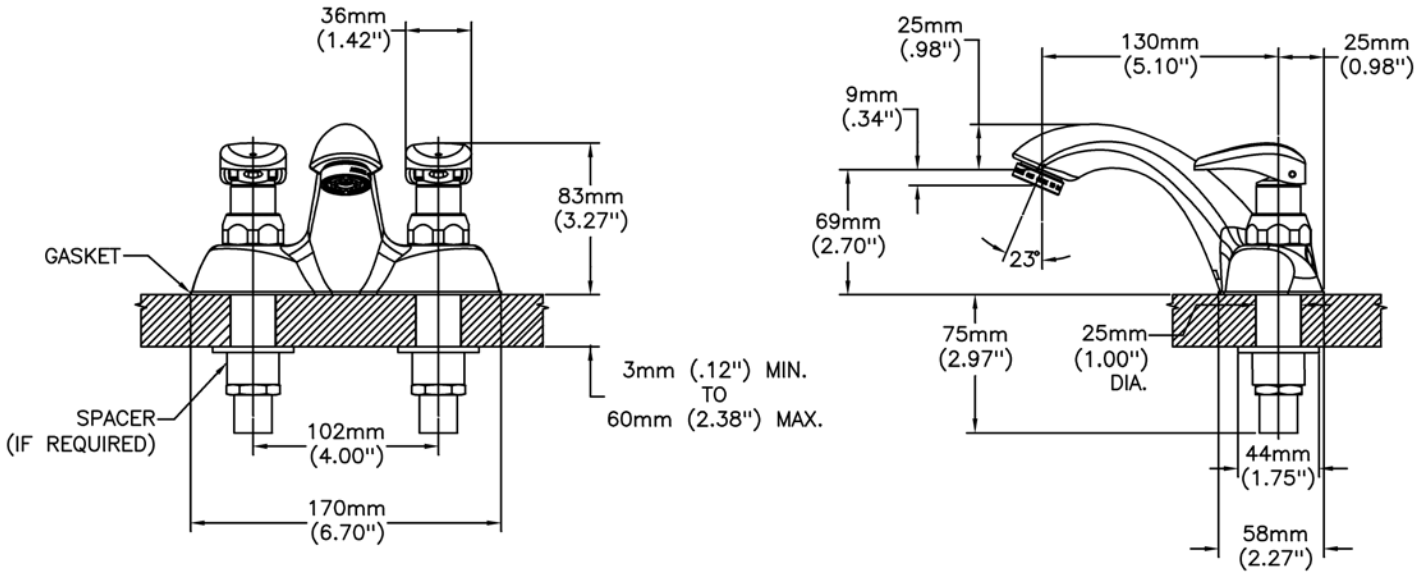
- Heavy duty 4" cast mixing metering centerset
- No pop-up hole
- Two handle
- Vandal resistant colour coded tip action lever handles
- Vandal resistant 0.5GPM (1.9L/min) flow control non-aerating spray outlet
- Vandal resistant handle actuator and spout outlet
- Total flow not to exceed 0.25 gallons per handle activation
- Polished chrome plate finish
- Delta® slow close cartridge
- Note:Run time affected by water pressure and temperature
- Use of Check Valves or check stops recommended to prevent possible cross-flow
- Total flow not to exceed 0.25 gallon per handle activation
- Less Pop-up

OPERATION:

- Not Available

(Dimensional drawing on following page)

Delta Faucet Company - 55 East 111th St. - Indianapolis, Indiana, USA 46280 - (317) 848-1812
Delta Faucet Canada - 395 Matheson Blvd E - Mississauga, Ontario, Canada L4Z 2H2 - (905) 712-3030



INLET FOR 3/8" 1/2" FLEXIBLE RISER
OR 1/2–14 NPSM COUPLING NUT (NOT SUPPLIED)

Delta Faucet Company - 55 East 111th St. - Indianapolis, Indiana, USA 46280 - (317) 848-1812
Delta Faucet Canada - 395 Matheson Blvd E - Mississauga, Ontario, Canada L4Z 2H2 - (905) 712-3030

American Standard

Style That Works Better

BARRIER FREE

MADERA™ FloWise™ 419mm (16-1/2") HEIGHT ELONGATED FLUSHOMETER 4.8L TOILET

VITREOUS CHINA

MADERA™ FloWise™ 419mm (16-1/2") HEIGHT

- Floor-mounted flushometer valve toilet
- Vitreous china
- Meets definition for HET (High Efficiency Toilet)
- High Efficiency (4.8 Lpf/1.07 gpf)
- Will also function at 3.8 Lpf/0.8 gpf and 6 Lpf/1.3 gpf with a properly set dual flush valve
- EverClean® surface inhibits the growth of stain- and odor-causing bacteria, mold, and mildew on the surface
- Fully glazed 54mm (2-1/8") trapway
- Elongated bowl
- 254 or 305mm (10" or 12") rough-in
- 419mm (16-1/2") rim height
- Condensation channel
- Powerful direct-fed siphon jet action
- 254 x 305mm (10" x 12") water surface area
- 38mm (1-1/2") inlet spud
- 2 bolt caps
- 100% factory flush tested

(Flushometer valve & seat shown not included)

NOTE: Roughing-in information shown on reverse side of page

- ❑ **3461 001** Elongated Universal bowl only, top spud
- ❑ **3462 001** Elongated Universal bowl only, top spud with slotted rim for bedpan holding
- ❑ **3465 001** Elongated Universal bowl only, top spud, 4 bolts
- ❑ **3466 001** Elongated Universal bowl only, top spud, 4 bolts with slotted rim for bedpan holding
- ❑ **3463 001** Elongated Universal bowl only, back spud
- ❑ **3464 001** Elongated Universal bowl only, back spud with slotted rim for bedpan holding

Component Parts:

- ❑ **047007-0070A** Inlet spud (furnished with bowl)
- ❑ **481310-100.xxx** Bolt caps with retainers (furnished with bowl)

Nominal Dimensions:
718 x 356 x 419mm
(28-1/4" x 14" x 16-1/2")

Fixture only, less seat and flushometer valve

Recommended working pressure-between 25 psi at valve when flushing and 80 psi static.

Meets or Exceeds the Following Specifications:
Compliance Certifications -

- ASME A112.19.2M for Vitreous China Fixtures
- CAN/CSA International B45

MEETS THE AMERICAN DISABILITIES ACT GUIDELINES AND ANSI A117.1 REQUIREMENTS FOR ACCESSIBLE AND USEABLE BUILDING FACILITIES-CHECK LOCAL CODES

- When installed so top of seat is 432 to 483mm (17" to 19") from the finished floor.

To Be Specified:

- ❑ Colour: ❑ White ❑ Bone ❑ Linen
- ❑ Seat:
  - ❑ American Standard #5901 110 Heavy duty open front less cover with EverClean® surface
  - ❑ American Standard #5905 110 Extra heavy duty open front less cover with EverClean® surface
- ❑ Alternative Seat:
- ❑ Flushometer Valve:
  - ❑ American Standard Selectronic™ #6065 121.002 DC Power (Top Spud)
  - ❑ American Standard Selectronic™ #6065 221.007 DC Power (Back Spud)
  - ❑ American Standard Selectronic™ #6067 221.007 AC Power (Back Spud)
  - ❑ American Standard Selectronic™ #6068 221.007 Multi AC Power (Back Spud)
- ❑ Alternative Flushometer Valve:

EVERCLEAN Surface

WATER EFFICIENT PRODUCT

HET *High Efficiency Toilet (1.07gpf/4.8Lpf)*

American Standard

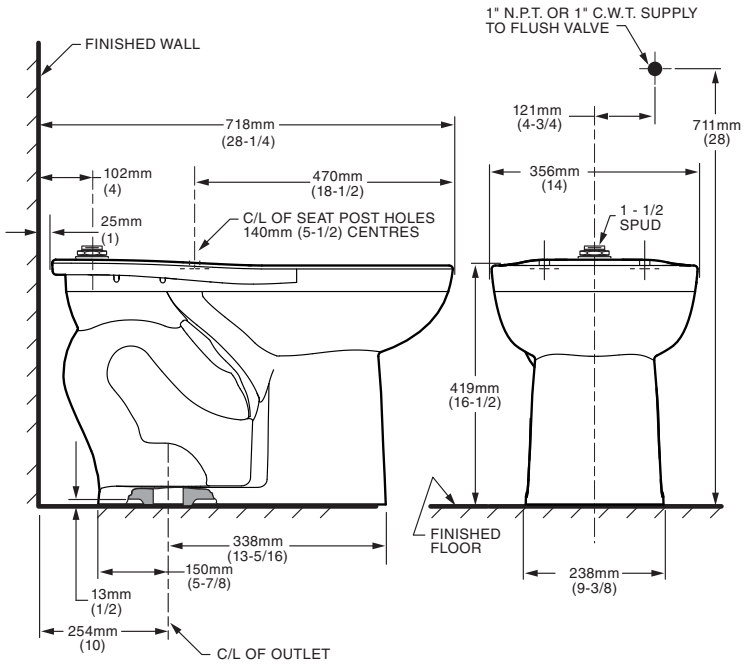
Style That Works Better

BARRIER FREE

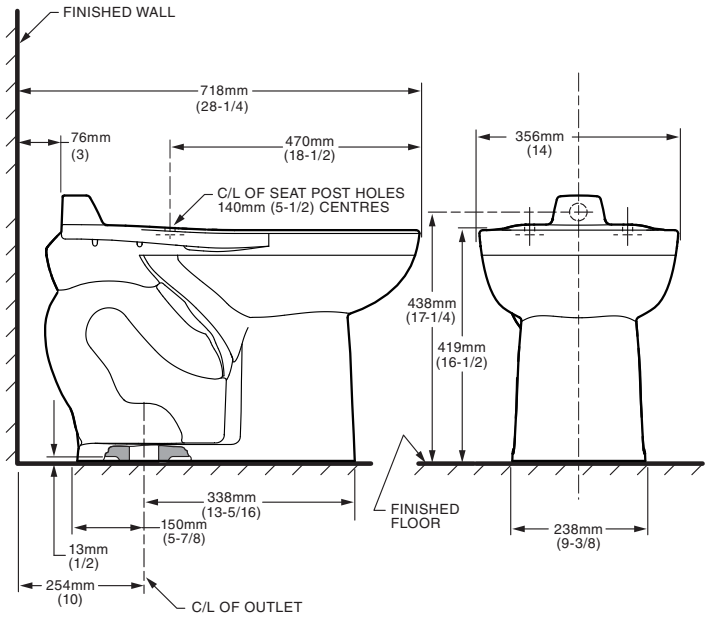
MADERA™ FloWise™ 419mm (16-1/2") HEIGHT ELONGATED FLUSHOMETER 4.8L TOILET

VITREOUS CHINA

3461 001/3462 001/3465 001/3466 001



3463 001/3464 001



NOTES:

PRODUCT 3461 001, 3465 001 SHOWN, 3462 001, 3466 001 SAME AS EXCEPT WITH SLOTTED RIM FOR BED PAN HOLDING.

PRODUCT 3463 001 SHOWN, 3464 001 SAME AS EXCEPT WITH SLOTTED RIM FOR BED PAN HOLDING.

TO COMPLY WITH AREA CODE GOVERNING THE HEIGHT OF VACUUM BREAKER ON THE FLUSHOMETER VALVE, THE PLUMBER MUST VERIFY DIMENSIONS SHOWN FOR SUPPLY ROUGHING.

THIS TOILET DESIGNED TO ROUGH-IN AT A MINIMUM DIMENSION OF 254MM (10") AND A MAXIMUM DIMENSION OF 305MM (12") FROM FINISHED WALL TO C/L OF OUTLET.

FLUSHOMETER VALVE NOT INCLUDED WITH FIXTURE AND MUST BE ORDERED SEPARATELY. FLUSHOMETER VALVE REQUIREMENTS FOR 305MM (12") ROUGH-IN: SWEAT EXTENSION NIPPLE IS REQUIRED. REFER TO VALVE MANUFACTURER AND LOCAL CODES.

IMPORTANT: Dimensions of fixtures are nominal and may vary within the range of tolerance established by ANSI Standard A112.19.2

These measurements are subject to change or cancellation. No responsibility is assumed for use of superseded or voided pages.

Flush Valves

Flush valve for 1-1/2" top spud water closet maximum 11-1/2" or 11 3/4" height (c/l of inlet to base of outlet)

Model No: 81T201

COMPLIES WITH:

- Indicates compliance to ICC/ANSI A117.1
- IAPMO listed to CSA B125.3 and ASSE 1037
- (Contact Delta Representative for State and/or Local Approvals)

SPECIFICATION:

- Quiet action, Teck® exposed diaphragm flush valve
- Right or left-hand supply installation
- Chloramine resistant diaphragm
- Forged brass diaphragm retainer
- Renewable seat
- Polished chrome plated finish
- Vacuum breaker
- For Water Closets with 1-1/2" top spud
- Maximum 292mm(11 1/2") from centerline of valve inlet to top of water closet, except -1 trap seal models which are maximum 11 3/4"
- 1" FIP/Copper sweat inlet adaptor for angle check stop with protecting cap
- Adjustable 121mm (4.75”) plus or minus 11mm (7/16”) inlet/valve outlet centers
- Cover tube and S/S wall flange
- External water conserving flush adjustment:Factory set to 6 Litre(1.6 Gal.) - Field Adjustable from 4.8L to 25L (1.27 to 6.6 Gal.)

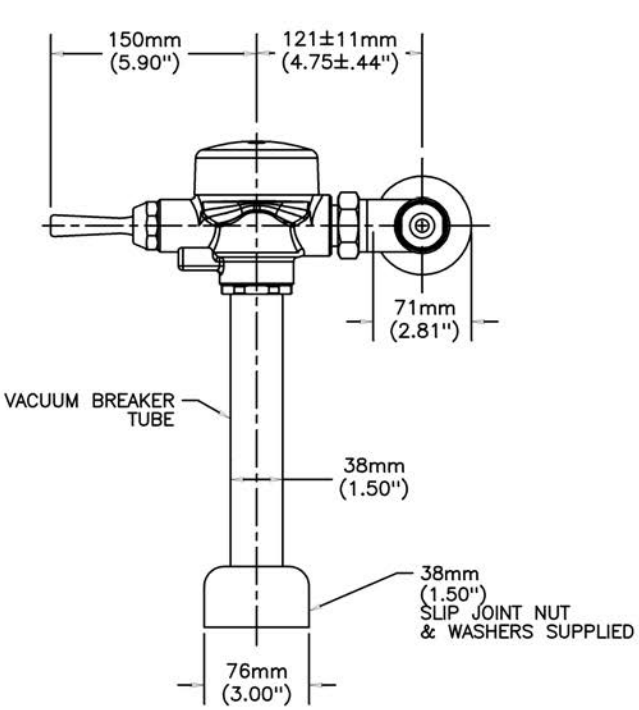
OPERATION:

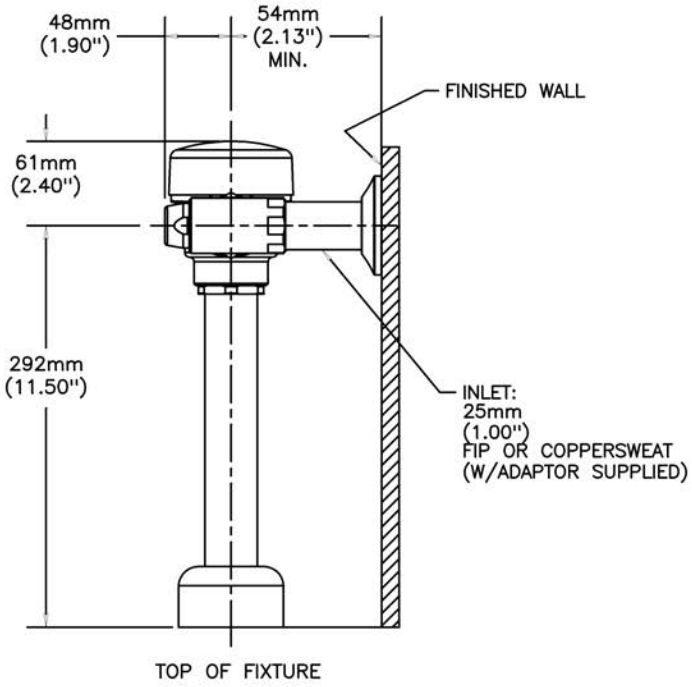
- Not Available

(Dimensional drawing on following page)

Delta Faucet Company - 55 East 111th St. - Indianapolis, Indiana, USA 46280 - (317) 848-1812
Delta Faucet Canada - 395 Matheson Blvd E - Mississauga, Ontario, Canada L4Z 2H2 - (905) 712-3030

Teck® flushometer valves are designed to operate at any supply pressure between 10 psi and 125 psi in accordance with CSA B125. The Teck® flush valve delivers the industry's highest peak flows to enhance bowl scrubbing. At high water pressures, splash out, noise or reduced life of plumbing components may be observed with a few models of water closet or urinal fixtures. To minimize or eliminate these effects, select a different model of water closet or urinal from the same or another manufacturer, or install a pressure reducing valve. If the installation does not allow for either of these options, the control stop adjusting screw may be used to reduce pressure to the valve.





Delta reserves the right (1) to make changes to specifications and materials, and (2) to change or discontinue models, both without notice or obligation. Dimensions are for reference. Measurement may vary plus or minus 6mm(0.25"). Mounting locations are suggested only. Check with local codes for requirements in your area. This spec was produced March 14, 2016.

LEVELTON

20 March 2013
Levelton File: VI13-0021-00

Levelton Consultants Ltd.

Vancouver Island Region

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Fax: 250-475-2211
e-mail: victoria@levelton.com

Construction Materials
Building Science
Geotechnical
Metallurgy and Corrosion
Environmental
Physical Testing

Outlook Land Design Inc.
1326 Docliddle Road
Comox, BC V9M 2P9

Attn: Mr. Tim O'Brien, P.Eng., MBCSLA

Re: Geotechnical Assessment
Big Rock Boat Ramp Renewal Project
Campbell River, BC

1.0 INTRODUCTION

As requested, Levelton Consultants Ltd. (Levelton) has carried out a geotechnical assessment in support of the schematic design for the proposed renewal of the existing Big Rock Boat Ramp in Campbell River, BC.

The assessment was completed in general accordance with Levelton's proposal dated 13 November 2012 (Levelton file reference: PR12-2775-01). Authorization to proceed with the assessment was provided by Outlook Land Design (Outlook) on 11 December 2012. As outlined in the proposal, subsurface assessment work was focussed towards the land based elements of the proposed upgrades.

The following provides a description of the site and proposed upgrades, and presents the results of a subsurface assessment carried out in February 2013 along with geotechnical discussion and recommendations relating to the design and construction of the new boat ramp and associated paved parking. It is anticipated that future geotechnical input will be required during detailed design. The scope of this work will be dependent upon decisions made by the City of Campbell River (the City) regarding design preferences for aspects such as site preparation in the parking area and / or if offshore installations are to be considered further.

Consideration of erosion control and sediment deposition related to ocean currents, littoral drift and wave action are beyond the scope of this assignment and may be looked after by others.

This report incorporates comments provided by Outlook and supercedes a previous version of the report submitted on 18 March 2013.

2.0 SITE AND PROJECT DESCRIPTION

The project area includes the existing boat ramp site, the adjacent property to the south, and a vacant lot approximately 100 m north of the existing boat ramp (985, 991, and 921 South Island Highway, respectively) in Campbell River. The two additional properties are being considered for overflow parking for the new boat ramp. The general site location is shown on Figure 1 and individual property locations are shown on Figure 2.

The boat ramp site (985 South Island Hwy) was accessed directly from the highway and consisted of a gravel parking area that had a concrete slab within the northern portion of the site. There was a concrete boat ramp starting around the middle portion of the site extending down into the sea.

McCallum Park is located immediately to the south of the boat ramp site at 991 South Island Highway. The park was generally flat and grass covered with some landscaping along its border of the boat ramp site.

The third lot included in the project was a relatively flat, grass covered park area located approximately 100 m north of the boat ramp site at 921 South Island Highway. Decorative landscaping stones had been placed around the west side of this site.

The shoreline along the eastern side of all three properties was protected with riprap.

It is understood that the project is to consist of reconstruction and realignment of the existing concrete boat ramp, and construction of asphalt-paved parking area(s), and may include installation of a floating dock. Conceptual plans suggest that the floating dock could be secured near the boat ramp with a series of off shore piles.

3.0 SUBSURFACE ASSESSMENT

A subsurface assessment was carried out at the site on 1 February 2013 and consisted of five auger drill holes advanced with a truck mounted drill rig operated by Grass Roots Drilling Ltd. of Cowichan Bay. The boreholes were advanced to depths ranging from 3.0 to 4.5 m below ground surface. The approximate borehole locations are shown on the Site Plan attached as Figure 2. The bore hole initially contemplated low in the ramp area (described in the proposal) was not possible due to tide elevations at the time of the drilling.

Prior to drilling, Levelton retained the services of a private utilities locator contractor (One Call Locators Canada Ltd. of Chemainus) to confirm the presence and location of underground services at the site and "clear" the borehole locations for drilling.

During drilling, a Levelton representative observed and logged the subsurface conditions encountered and obtained samples at regular intervals. The soil samples obtained were returned to

the Levelton laboratory in Nanaimo for moisture content determination. A detailed description of the subsurface conditions encountered during drilling are presented in the attached borehole summary logs.

Three bore holes were advanced within the boat ramp property (BH13-01 to BH13-03). In general, the soils encountered consisted of variable fills overlying natural deposits of sand / sand and gravel. The fills generally consisted of silty sand or sandy silt with varying amounts of gravel and inclusions of clay soils, organics, and woody debris. The thickness of the fills tended to increase toward the east (i.e., toward the shoreline). In BH13-02, the thickness of fill was observed to be about 0.5 m (potentially 1.5 m thick) while in BH13-01 (near the shoreline); the fills were observed to be about 3 m in thickness. In bore hole BH13-03 – located near the northeast corner of the site – the sand and gravel was underlain by very stiff, grey-blue clay.

Based on their configuration and condition, it is assumed that the fills were placed to reclaim land and extend the shoreline seaward for use as parkland and / or boat ramp access. The presence of organic and woody debris near the base of the fills indicates that the existing fills were placed directly over the original beach surface.

Bore hole BH13-04 – located in McCallum Park – encountered about 2.4 m of variable fill overlying natural sand and gravel. This bore hole was terminated at 3.6 m depth due to effective penetration refusal.

Bore hole BH13-05 – located at the secondary site to the north – encountered a relatively thin (0.15 m thick) layer of organic topsoil overlying sand with gravel.

The underlying natural granular soils were generally wet.

4.0 DISCUSSION AND RECOMMENDATIONS

4.1 GENERAL

In general, soil conditions at the site are considered suitable for the proposed upgrades provided that the recommendations presented below are followed. From a geotechnical perspective, it will be preferred to remove the variable, poor quality fill to expose a subgrade of the underlying, natural, non-organic beach sand and gravel within the pavement support areas. Notwithstanding, existing fill thicknesses increase across the properties from west (highway side) to east (shoreline side) and other risk management approaches may need to be considered for the existing boat ramp property and adjacent site to the south. Further discussion is presented in the pavement design section below. Final design will be dependent upon the scope of site preparation that is completed.

Complete removal of poor quality soils is recommended in the area of the new concrete ramp and adjacent retaining structures. Settlement tolerant slope configurations could also be considered adjacent to the ramp.

Geotechnical discussion and recommendations are provided in the following sections for pavements, in-ground stormwater disposal, the new boat ramp and adjacent retaining walls / slopes, contemplated offshore piled dock support, and preliminary construction considerations.

4.2 PARKING AREA

Under the conditions observed, the existing site fills would not be considered as suitable for a bearing stratum for a conventional asphalt pavement structure. The variability in composition and consistency could result in differential settlements across the site and the presence of organics and woody debris could result in long-term settlements as these components decay and lose strength over time.

For construction of asphalt surfaced parking lots, it is typically recommended, from a geotechnical perspective, that removal and replacement of unsuitable fills with engineered fill be carried out. We acknowledge the substantial thickness (~ 3 m) of fills observed on the ocean side of the boat ramp site may be cost prohibitive to fully remove and replace. Alternate site preparation approaches may need to be considered whereby the City accepts the potential for future settlement and related reduced structure life span and / or increased maintenance costs. Conceptually this could involve partial removal and inclusion of geogrid reinforcement to mitigate (not eliminate) the effects of settlement, phased surfacing, or using an alternate surfacing in areas of thicker existing fills.

Engineered fill should consist of imported, well-graded, 75 mm minus, pitrun sand and gravel that is placed in horizontal lifts and compacted to a minimum of 95 percent of Modified Proctor maximum dry density. The existing site fills observed in the bore holes would not be considered suitable for re-use as engineered fill. For preliminary planning purposes, engineered fill should extend laterally beyond the edge of the pavement structure a distance equal to the thickness of fill plus 0.5 m.

For areas where complete excavation and replacement is undertaken to competent natural soils, the following preliminary pavement section is provided to assist the Civil Engineer with preliminary design and concept development: 75 mm asphaltic pavement, over 150 mm crushed base aggregate, over 300 mm of subbase aggregate. We note that the preliminary section is based on geotechnical strength parameters of the pavement section materials and subgrade. Civil engineering design such as grades, drainage, layout and compatibility with surrounding structures are the responsibility of others. Site specific pavement section design was beyond the scope of this assessment. If a formal pavement design is required as the project develops, we would be pleased to assist.

Depending on their location and design depth, the excavation for proposed underground service pipes may expose a subgrade of the existing site fills. Considerations similar to those outlined above for the pavement structures above would likely be required for preparation of the pipe trench subgrade. These may include sub-excavation and replacement and / or use of geogrid to reinforce the subgrade.

4.3 Storm Water Drainage Considerations

Based on visual observations, the underlying natural sand and gravel encountered at the bore hole locations is inferred to be relatively permeable and generally suitable for in-ground disposal of storm water subject to consideration of the groundwater elevation. The existing (overlying) fills are not considered suitable for in-ground disposal of storm water due to the relatively high fines content. Existing fill should be completely removed in areas of in-ground storm water disposal. In-situ permeability testing should be considered in support of detailed design of an in-ground stormwater exfiltration system.

Design should also include consideration of tidal influences. It may be necessary to incorporate a retention structure or tank to hold drainage prior to discharge into the ground to accommodate fluctuating groundwater levels.

Permeable pavement structures have been used on similar developments on Vancouver Island. Levelton can assist with design of a permeable pavement structure, if requested.

4.4 New Boat Ramp and Adjacent Retaining Walls / Slopes

The new concrete boat ramp should be supported on a subgrade consisting of competent natural soils and / or engineered fill placed above a suitable subgrade. Due to its position relative to the site in general, the prepared subgrade for the ramp is anticipated to consist of intact, compact, non-organic beach deposits of sand and gravel. The concrete slab should be underlain by a 300 mm thick layer of crushed gravel base course compacted to a minimum of 95% MPMDD. Detailed design should consider filter compatibility with the underlying soils.

The concrete mix design for the new ramp should be specially developed to resist degradation in the salt water environment. Concrete design should be developed in general accordance with CSA A23.9 which provides guidelines for design of concrete exposed to chlorides.

At the time of the subsurface assessment, the ramp was bounded on the north and south sides by graded slopes with riprap surfacing. It is understood that as part of the proposed upgrades these slopes could be replaced with retaining walls. For this application, retaining walls could consist of large modular concrete blocks (such as Lock-Blocks®), cast-in-place concrete or segmental block walls (such as Allen Block® or Keystone®). The type of wall selected should be suitable for use in a

marine environment and should be able to accommodate some movement / settlement of the underlying beach deposits over time.

Geotechnical input to retaining wall design generally includes the foundation bearing capacity, the expected magnitude of lateral soil loads under design loading conditions, and requirements for geogrid reinforcement within the backfill. In this case, design would also include consideration of wave action (including input from others) and potential for fluctuating saturated backfill conditions (due to tide effects). We have assumed that retaining walls would not be required to be designed for seismic loading conditions.

The underlying natural compact sand and gravel or stiff clay / silt would generally provide suitable bearing for a retaining structure under static loading conditions.

The expected range of construction costs would vary from a graded slope with riprap as the least expensive up through concrete blocks to cast-in-place concrete as the most expensive. The cast concrete wall would require input and design from a structural engineer and would typically have less tolerance to movements.

It is anticipated that the City will have input to the wall / slope type and configuration chosen for the upgrade. Once that decision has been made, detailed geotechnical design input can be provided for that particular type of wall.

4.5 WHARF STRUCTURE

According to preliminary information provided by Outlook, a conceptual design for the wharf structure includes a line of four piles along the centerline of the new boat ramp to provide support for a new floating dock off-shore east of the filled areas described above. We understand that final design will be dependent in part upon input from the public and the City and could involve a pile layout different than shown or even exclude a piled structure.

Based on the information from the current shoreline assessment, and previous local work (including work directly across the street that encountered 7 m thickness of soil conditions similar to those encountered in the recent shoreward drilling program), piles appear to be feasible for construction of the floating wharf. Notwithstanding, we caution that ground conditions can change over short distances at the shoreline and additional subsurface assessment work should be considered.

We understand that piles would be required primarily to resist lateral loads from wave and tidal actions and not need to support significant vertical loads. As such, it will be critical that the piles are embedded into the ground a sufficient distance to achieve fixity. Based on our current understanding of the project, we recommend open ended steel pipe piles since treated timber piles could encounter premature refusal on coarse gravels and / or stiff hard deposits. The depth required to achieve fixity will be dependent upon a number of details not currently known, including the load

conditions (i.e., lateral forces), pile details (i.e., length, size, type, stiffness, etc.), soil strength and dredging plans which will be reviewed during detailed design.

Based on similar structures constructed in the area, preliminary indications suggest the design could include steel pipe piles in the order of 0.6 m diameter with an embedment in the order of 6 to 10 m. Pile embedment requirements will need to be confirmed during detailed design.

To verify soil conditions offshore would be an involved process beyond the scope of this assessment. In addition, due to the relatively small number of piles involved in relation to mobilization for a barge and drill rig there may be merit in combining the subsoil verification program with construction (i.e.,. arriving at site prepared to install the production piles at the same time as drilling or advancing test piles).

4.6 PRELIMINARY CONSTRUCTION CONSIDERATIONS

Construction considerations will be dependent upon the final design and layout of the various facilities. At this time we generally envisage excavation to remove poor quality soils and install new underground service pipes, work in the foreshore area to construct the new ramp and adjacent slopes / retaining structures and possibly dredging / offshore pile driving for new docking facilities.

Temporary excavation slopes for underground service line installations and / or general poor soil removal are not expected to be stable in steep cut conditions. Mechanical shoring (such as a trench box for the utility excavations) or grading back slopes should be anticipated. For preliminary planning purposes, we suggest that a temporary excavation slope with a maximum gradient of 1H:1V (horizontal:vertical) be used in areas of limited groundwater seepage. Depending on the depth of excavation, mid-slope benches may be required to maintain temporary stability. The presence of groundwater seepage – which would be expected to vary with the tides – may require that the side slope gradients be reduced and / or make shoring mandatory.

We understand that the City intends to upgrade Highway 19A. The sequencing of that work with the boat ramp upgrades should be considered in the context of temporary excavation stability – in particular if deep utility installations are proposed near the new highway.

It is recommended that a qualified Geotechnical Engineer review the excavation conditions in the field and confirm the requirements for side slope configuration. All excavations must be carried out in accordance with WorkSafe BC regulations.

The fills encountered were generally silty and excavation for construction could generate a substantial amount of sediment. Depending on prevailing weather conditions and / or groundwater levels during construction, effective control of erosion and sedimentation will be necessary to avoid sediment laden runoff from entering the ocean and / or near-by storm water sewers.

5.0 FUTURE GEOTECHNICAL WORK

Based on the results of the recent assessment, it is anticipated that the following geotechnical tasks could be required as the project moves into detailed design and construction:

- Geotechnical assistance with pile design in particular with respect to lateral loads and recommended minimum penetration for fixity;
- Off-shore subsurface assessment (i.e., probing, drilling, test piling, etc.) to determine potential pile driving conditions and confirm pile installation feasibility;
- Geotechnical design support for retaining walls dependent upon wall type, configuration, and backfill requirements;
- Assistance with and / or review of final pavement structure design in the context of the site preparation methodology selected by the City;
- Assistance with and / or review of concrete mix design in relation to marine application, if requested;
- Further drilling / test pits to better define the lateral extent of fills and / or confirm the favourable conditions inferred on site to north (for contract tendering purposes);
- Field permeability testing within the natural sand and gravel in support of in-ground stormwater disposal design, if requested;
- Review of design and tender documents for general agreement with geotechnical recommendations; and,
- Construction review services: including subgrade reviews, observation of pile driving, in place density testing of engineered fill, and concrete / asphalt testing.

Levelton would be pleased to provide estimated costs and / or budget amounts for the services outlined above.

6.0 CLOSURE

This report has been prepared for the exclusive use of Outlook Land Design Inc. The report has been prepared in accordance with the attached Terms of Reference for Geotechnical Reports

We trust this information meets your needs at the present time. Please do not hesitate to contact the undersigned if you have any questions in the interim.

Yours truly,
LEVELTON CONSULTANTS LTD.

Reviewed by:

SIGNATURE ON FILE

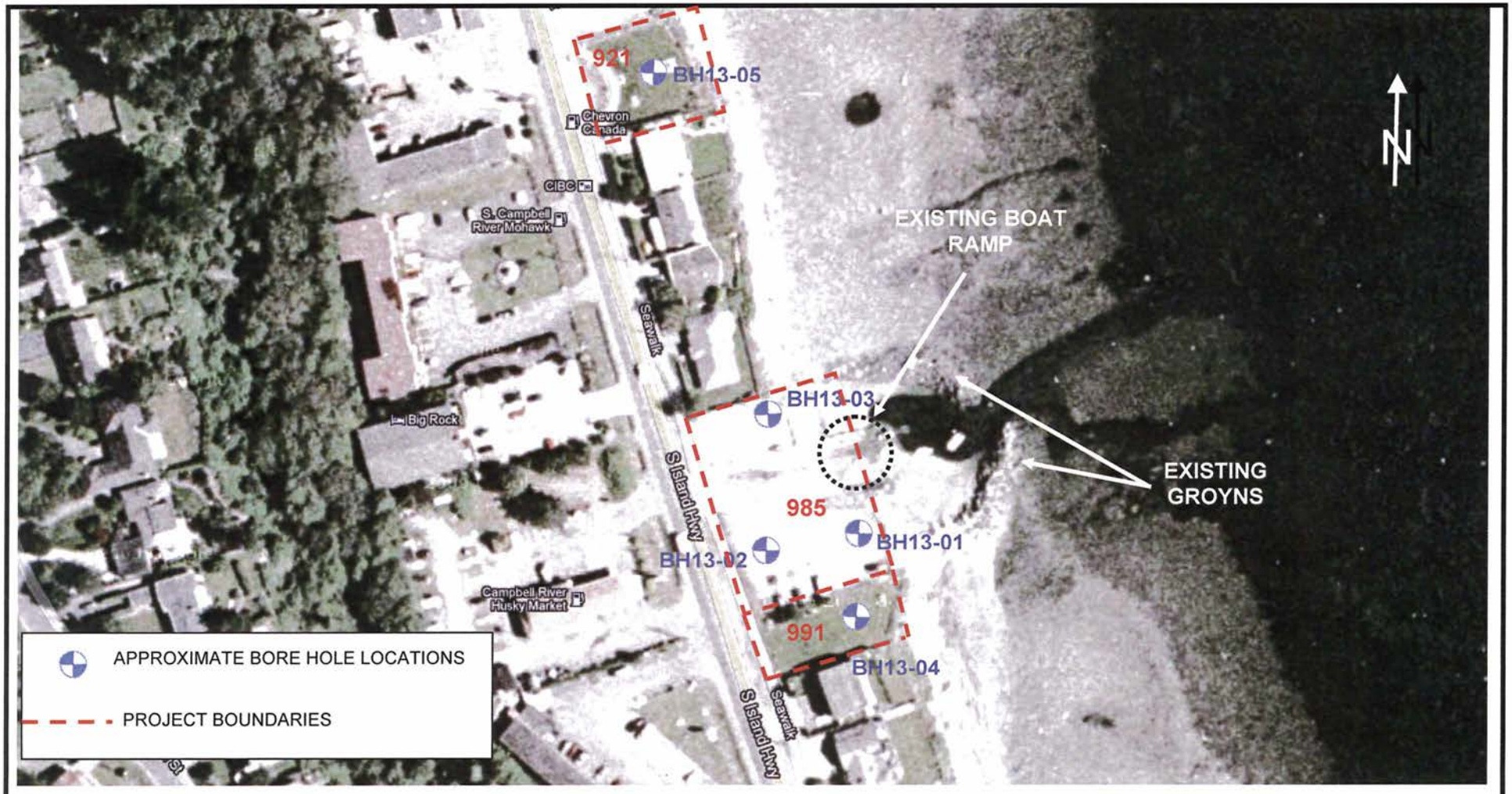
Per: Tom Oxland, P.Eng.
Senior Geotechnical Engineer

Darryl Furey, P.Eng
Senior Geotechnical Engineer

Attachments: Figure 1 – Site Location Plan
Figure 2 – Site Plan
Bore Hole Summary Logs
Terms of Reference for Geotechnical Reports

LEVELTON	PROJECT: CAMPBELL RIVER BOAT RAMP – GEOTECHNICAL ASSESSMENT				
	TITLE: SITE LOCATION PLAN				
	CLIENT: OUTLOOK LAND DESIGN INC.				
FIGURE NO.: 1	DATE: MARCH 2013	FILE NO.: VI13-0021-00	SCALE: NTS	DRAWN BY: RB	

Levelton Consultants Ltd., 1935 Bollinger Road, Nanaimo, B.C., V9S 5W9 Phone: 250/753-1077 Fax: 250/753-1203 Email: nanaimo@levelton.com



LEVELTON

PROJECT:	CAMPBELL RIVER BOAT RAMP – GEOTECHNICAL ASSESSMENT
TITLE:	BORE HOLE LOCATION PLAN
CLIENT:	OUTLOOK LAND DESIGN INC.

FIGURE NO.:	DATE:	FILE NO.:	SCALE:	DRAWN BY:	REV.
2	MARCH 2013	VI13-0021-00	NTS	RB/TWO	

Levelton Consultants Ltd., 1935 Bollinger Road, Nanaimo, B.C., V9S 5W9 Phone: 250/753-1077 Fax: 250/753-1203 Email: nanaimo@levelton.com

LEVELTON

Big Rock Boat Ramp Upgrade
Campbell River, BC
Geotechnical Assessment

BH13-01
Pg 1 of 1

Project No: VI13-0021

Depth (m)	Depth (ft)	Description	C	N	Type	Water Level
		Black, silty, **SAND AND GRAVEL FILL,** moist, organic debris.				
	2	Dark grey, silty, **SAND FILL,** dry to moist.				
1	4				G	
		Brown/black, silty, **SAND AND GRAVEL FILL,** moist, wood debris.				
	6					
2					G	
	8					
		Grey, **GRAVEL,** some sand, wet.				
3	10					
	12					
4		Very stiff, grey blue, **CLAY,** moist.			G	
	14					
		Bottom of hole at 4.5 metres				
	16					
5						
	18					
6	20					

10 20 30 40 50 60 70 80 90

C: Condition of Sample
Good
Disturbed
No Recovery

Type: Type of Sampler
SPT : 2 in. standard
S : Shelby
FP : Fixed Piston
G : Grab
CORE

N: Number of Blows
WH : Weight of Hammer
WR : Weight of Rod
Standard Penetration Test : ASTM D1586
Hammer Type: Trip Hammer

- ● Moisture Content %
- ► Plastic Limit
- ◄ Liquid Limit
- ⧗ Ground Water Level
- ⋈ Shear strength in kPa (Torvane or Penetrometer)
- × Shear strength in kPa (Unconfined)
- ⊗ Shear strength in kPa (field vane)
- ⊠ Remolded strength in kPa
- ■ Percent Passing # 200 sieve

Drill Method: Solid Stem Auger
Date Drilled: 2/1/2013
By: Grass Roots Drilling

LEVELTON

Big Rock Boat Ramp Upgrade
Campbell River, BC
Geotechnical Assessment

BH13-02

Project No: VI13-0021

Depth (m)	Depth (ft)	Description	C	N	Type	Water Level
		Black/grey, silty, **SAND FILL,** trace gravel, moist, trace wood debris.				
1	2	Dark grey, **SAND (FILL?),** trace gravel, wet.				
	4				G	
		GRAVEL.				
2	6	**SAND AND GRAVEL.**				
	8				G	
3	10	Bottom of hole at 3.0 metres				
	12					
4	14					
	16					
5	18					
6	20					

10 20 30 40 50 60 70 80 90

C: Condition of Sample
Good
Disturbed
No Recovery

Type: Type of Sampler
SPT : 2 in. standard
S : Shelby
FP : Fixed Piston
G : Grab
CORE

N: Number of Blows
WH : Weight of Hammer
WR : Weight of Rod
Standard Penetration Test : ASTM D1586
Hammer Type: Trip Hammer

- ● Moisture Content %
- ► Plastic Limit
- ◄ Liquid Limit
- ⧩ Ground Water Level
- ⊠ Shear strength in kPa (Torvane or Penetrometer)
- X Shear strength in kPa (Unconfined)
- ⊗ Shear strength in kPa (field vane)
- ⊠ Remolded strength in kPa
- ■ Percent Passing # 200 sieve

Drill Method: Solid Stem Auger
Date Drilled: 2/1/2013
By: Grass Roots Drilling

LEVELTON

Big Rock Boat Ramp Upgrade
Campbell River, BC
Geotechnical Assessment

BH13-03
Pg 1 of 1

Project No: VI13-0021

Depth (m)	Depth (ft)	Description	C	N	Type	Water Level
		Grey, **SILT FILL,** some sand and gravel, moist.				
	2					
		WOOD DEBRIS (LOG).				
1	4					
		Grey, **SAND AND GRAVEL,** trace silt, wet, trace wood debris in upper 0.3m, low recovery from 1.4 to 3.0m, becoming silty with depth.				
	6					
2						
	8					
3	10					
	12					
					G	
4	14					
		Bottom of hole at 4.5 metres				
	16					
5						
	18					
6	20					

10 20 30 40 50 60 70 80 90

C: Condition of Sample
Good
Disturbed
No Recovery

Type: Type of Sampler
SPT : 2 in. standard
S : Shelby
FP : Fixed Piston
G : Grab
CORE

N: Number of Blows
WH : Weight of Hammer
WR : Weight of Rod
Standard Penetration Test : ASTM D1586
Hammer Type: Trip Hammer

- Moisture Content %
- Plastic Limit
- Liquid Limit
- Ground Water Level
- Shear strength in kPa (Torvane or Penetrometer)
- Shear strength in kPa (Unconfined)
- Shear strength in kPa (field vane)
- Remolded strength in kPa
- Percent Passing # 200 sieve

Drill Method: Solid Stem Auger
Date Drilled: 2/1/2013
By: Grass Roots Drilling

LEVELTON

Big Rock Boat Ramp Upgrade
Campbell River, BC
Geotechnical Assessment

BH13-04

Project No: VI13-0021

Depth (m)	Depth (ft)	Description	C	N	Type	Water Level
		Brown, sandy, **SILT FILL,** trace gravel, moist, wood debris, pockets of grey clay.				
		Grey, **GRAVEL,** some sand, trace silt, wet, very low recovery.				
		Bottom of hole at 3.6 metres				

10 20 30 40 50 60 70 80 90

C: Condition of Sample
Good
Disturbed
No Recovery

Type: Type of Sampler
SPT : 2 in. standard
S : Shelby
FP : Fixed Piston
G : Grab
CORE

N: Number of Blows
WH : Weight of Hammer
WR : Weight of Rod
Standard Penetration Test : ASTM D1586
Hammer Type: Trip Hammer

- ● Moisture Content %
- ► Plastic Limit
- ◄ Liquid Limit
- ⧩ Ground Water Level
- ⊠ Shear strength in kPa (Torvane or Penetrometer)
- X Shear strength in kPa (Unconfined)
- ⊗ Shear strength in kPa (field vane)
- ⊠ Remolded strength in kPa
- ■ Percent Passing # 200 sieve

Drill Method: Solid Stem Auger
Date Drilled: 2/1/2013
By: Grass Roots Drilling

LEVELTON

Big Rock Boat Ramp Upgrade
Campbell River, BC
Geotechnical Assessment

BH13-05

Project No: VI13-0021

Depth (m)	Depth (ft)	Description	C	N	Type	Water Level
		Brown, **ORGANIC SILT,** wet, occasional rootlets.				
		Dark grey, **SAND,** some gravel, wet, becoming gravelly with depth.			G	
1	4					
2	6					
2	8				G	
3	10	Bottom of hole at 3.0 metres				
4	12					
4	14					
5	16					
5	18					
6	20					

10 20 30 40 50 60 70 80 90

C: Condition of Sample
Good
Disturbed
No Recovery

Type: Type of Sampler
SPT : 2 in. standard
S : Shelby
FP : Fixed Piston
G : Grab
CORE

N: Number of Blows
WH : Weight of Hammer
WR : Weight of Rod
Standard Penetration Test : ASTM D1586
Hammer Type: Trip Hammer

- ● Moisture Content %
- ► Plastic Limit
- ◄ Liquid Limit
- ▼ Ground Water Level
- ⋈ Shear strength in kPa (Torvane or Penetrometer)
- X Shear strength in kPa (Unconfined)
- ⊗ Shear strength in kPa (field vane)
- ⊠ Remolded strength in kPa
- ■ Percent Passing # 200 sieve

Drill Method: Solid Stem Auger
Date Drilled: 2/1/2013
By: Grass Roots Drilling

TERMS OF REFERENCE FOR GEOTECHNICAL REPORTS ISSUED BY LEVELTON CONSULTANTS LTD.

LEVELTON

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The terms of reference for geotechnical reports issued by Levelton (the "Terms of Reference") contained in the present document provide additional information and caution related to standard of care and the use of the Report. The Client should read and familiarize itself with these Terms of Reference.

2. COMPLETENESS OF THE REPORT

All documents, records, drawings, correspondence, data, files and deliverables, whether hard copy, electronic or otherwise, generated as part of the services for the Client are inherent components of the Report and, collectively, form the instruments of professional services (the "Instruments of Professional Services"). The Report is of a summary nature and is not intended to stand alone without reference to the instructions given to Levelton by the Client, the communications between Levelton and the Client, and to any other reports, writings, proposals or documents prepared by Levelton for the Client relative to the specific site described in the Report, all of which constitute the Report.

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LEVELTON

TERMS OF REFERENCE FOR GEOTECHNICAL REPORTS ISSUED BY LEVELTON CONSULTANTS LTD. (continued)

5. INTERPRETATION OF THE REPORT

a. **Nature and Exactness of Descriptions**: The classification and identification of soils, rocks and geological units, as well as engineering assessments and estimates have been based on investigations performed in accordance with the standards set out in Paragraph 1 above. The classification and identification of these items are judgmental in nature and even comprehensive sampling and testing programs, implemented with the appropriate equipment by experienced personnel, may fail to locate some conditions. All investigations or assessments utilizing the standards of Paragraph 1 involve an inherent risk that some conditions will not be detected and all documents or records summarizing such investigations will be based on assumptions of what exists between the actual points sampled. Actual conditions may vary significantly between the points investigated and all persons making use of such documents or records should be aware of, and accept, this risk. Some conditions are subject to changes over time and the parties making use of the Report should be aware of this possibility and understand that the Report only presents the conditions at the sampled points at the time of sampling. Where special concerns exist, or when the Client has special considerations or requirements, the Client must disclose them to Levelton so that additional or special investigations may be undertaken, which would not otherwise be within the scope of investigations made by Levelton or the purposes of the Report.

b. **Reliance on information**: The evaluation and conclusions contained in the Report have been prepared on the basis of conditions in evidence at the time of site investigation and field review and on the basis of information provided to Levelton. Levelton has relied in good faith upon representations, information and instructions provided by the Client and others concerning the site. Accordingly, Levelton cannot accept responsibility for any deficiency, misstatement or inaccuracy contained in the report as a result of misstatements, omissions, misrepresentations or fraudulent acts of persons providing information.

c. **Additional Involvement by Levelton**: To avoid misunderstandings, Levelton should be retained to assist other professionals to explain relevant engineering findings and to review the geotechnical aspects of the plans, drawings and specifications of other professionals relative to the engineering issues pertaining to the geotechnical consulting services provided by Levelton. To ensure compliance and consistency with the applicable building codes, legislation, regulations, guidelines and generally-accepted practices, Levelton should also be retained to provide field review services during the performance of any related work. Where applicable, it is understood that such field review services must meet or exceed the minimum necessary requirements to ascertain that the work being carried out is in general conformity with the recommendations made by Levelton. Any reduction from the level of services recommended by Levelton will result in Levelton providing qualified opinions regarding adequacy of the work.

6. ALTERNATE REPORT FORMAT

When Levelton submits both electronic and hard copy versions of the Instruments of Professional Services, the Client agrees that only the signed and sealed hard copy versions shall be considered final and legally binding upon Levelton. The hard copy versions submitted by Levelton shall be the original documents for record and working purposes, and, in the event of a dispute or discrepancy, the hard copy versions shall govern over the electronic versions; furthermore, the Client agrees and waives all future right of dispute that the original hard copy signed and sealed versions of the Instruments of Professional Services maintained or retained, or both, by Levelton shall be deemed to be the overall originals for the Project.

The Client agrees that the electronic file and hard copy versions of Instruments of Professional Services shall not, under any circumstances, no matter who owns or uses them, be altered by any party except Levelton. The Client warrants that the Instruments of Professional Services will be used only and exactly as submitted by Levelton.

The Client recognizes and agrees that Levelton prepared and submitted electronic files using specific software or hardware systems, or both. Levelton makes no representation about the compatibility of these files with the current or future software and hardware systems of the Client, the Approved Users or any other party. The Client further agrees that Levelton is under no obligation, unless otherwise expressly specified, to provide the Client, the Approved Users and any other party, or any or all of them, with specific software and hardware systems that are compatible with any electronic submitted by Levelton. The Client further agrees that should the Client, an Approved User or a third party require Levelton to provide specific software or hardware systems, or both, compatible with the electronic files prepared and submitted by Levelton, for any reason whatsoever included but not restricted to an order from a court, then the Client will pay Levelton for all reasonable costs related to the provision of the specific software or hardware systems, or both. The Client further agrees to indemnify and hold harmless Levelton, its officers, directors, employees, agents, representative or sub-consultant, or any or all of them, against any claim or any nature whatsoever brought against Levelton, whether in contract or in tort, arising or related to the provision or use or any specific software or hardware provided by Levelton.

City of Campbell River

Big Rock Boat Ramp Reconstruction

Big Rock Boat Ramp, 985 South Island Highway,
Campbell River BC

Project Location (Google Maps)

Aerial Perspective Looking Southwards

DRAWING LIST:

Consultants:
Civil Engineering and Landscape Architecture: Outlook Engineering and Landscape Architecture
Survey: Chicalo Burridge Land Surveying and Geomatics
Environmental: Pacificus Biological Services Ltd.
Electrical and Lighting: Muir Engineering

Notes

Stamp

No.	Date	By	Revisions	Eng.
C	MAR 17 2017	TOB	FOR TENDER	TOB
B	MAR 13 2017	TOB	FOR REVIEW	TOB
A	FEB 25 2017	TOB	FOR REVIEW	TOB

Design by TOB
Date January 2017

OUTLOOK
ENGINEERING AND LANDSCAPE ARCHITECTURE
Places People Love
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outlookela@shaw.ca
1326 Dockside Road
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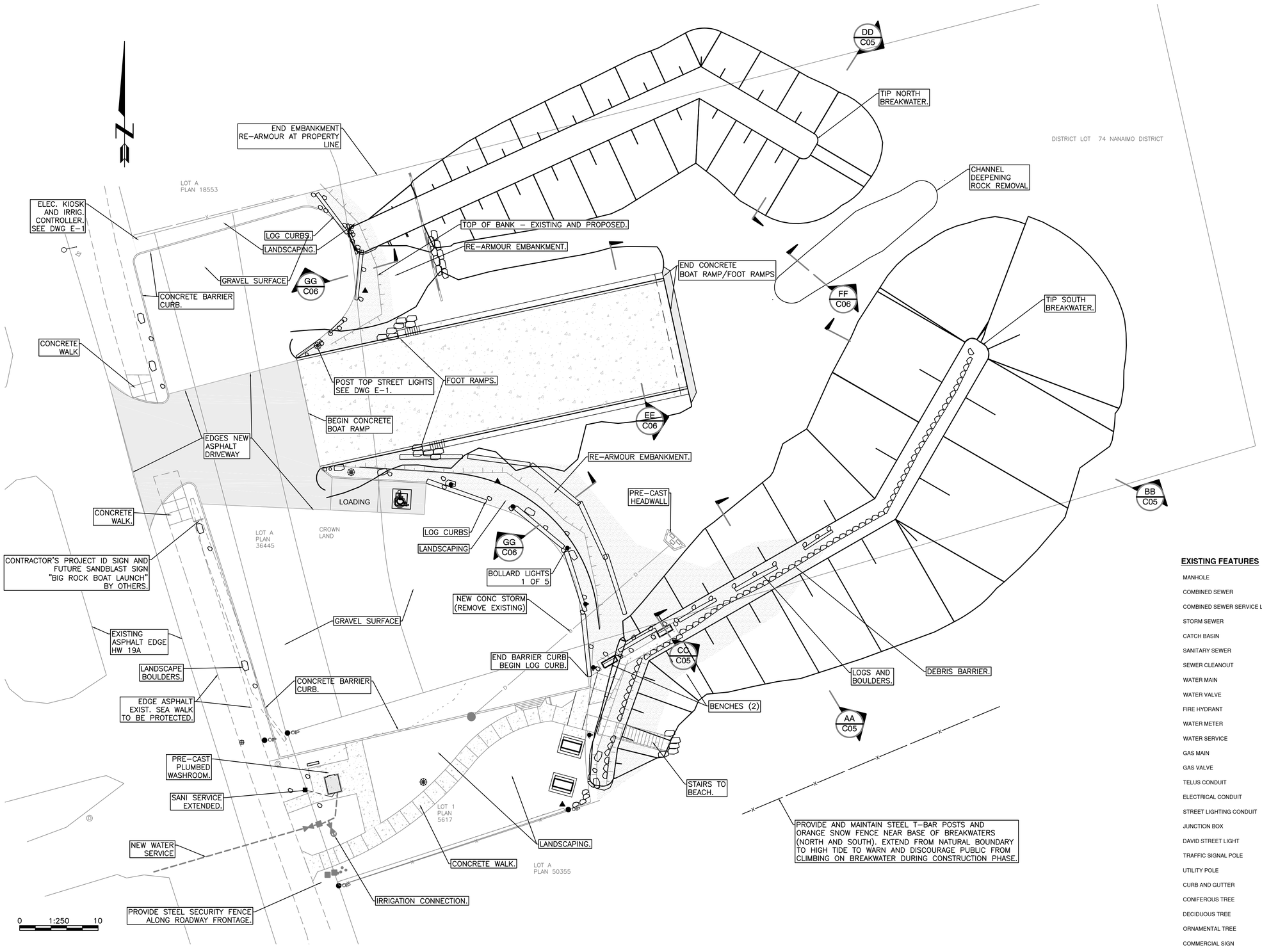
Scale
horiz.
Sheet of
Outlook Project No. 227-3
City Dwg No. 13-506

Project BIG ROCK BOAT RAMP RECONSTRUCTION
Title COVER SHEET



EXISTING FEATURES

- MANHOLE
- COMBINED SEWER
- COMBINED SEWER SERVICE LINE
- STORM SEWER
- CATCH BASIN
- SANITARY SEWER
- SEWER CLEANOUT
- WATER MAIN
- WATER VALVE
- FIRE HYDRANT
- WATER METER
- WATER SERVICE
- GAS MAIN
- GAS VALVE
- TELUS CONDUIT
- ELECTRICAL CONDUIT
- STREET LIGHTING CONDUIT
- JUNCTION BOX
- DAVID STREET LIGHT
- TRAFFIC SIGNAL POLE
- UTILITY POLE
- CURB AND GUTTER
- CONIFEROUS TREE
- DECIDUOUS TREE
- ORNAMENTAL TREE
- COMMERCIAL SIGN
- FENCE

PROPOSED

- STORM SEWER
- SANITARY SEWER
- MANHOLE
- CATCH BASIN
- WATER MAIN
- WATER VALVE
- FIRE HYDRANT
- CROSS
- TEE
- BEND
- CAP
- REDUCER
- IRRIGATION CONTROLLER BOX
- IRRIGATION VALVE
- PROPOSED ROAD RECONSTRUCTION
- PROPOSED MILL & OVERLAY
- PROPOSED TRENCH REPAIR

Notes

Stamp

No.	Date	By	Revisions	Eng.
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Design by TOB
Date January 2017

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Scale horiz. 1:250
Sheet of
Outlook Project No. 227-3
City Dwg No. 13-506

Project BIG ROCK BOAT RAMP RECONSTRUCTION
Title GA01 GENERAL ARRANGEMENT

GENERAL NOTES

1. This is an MMCD Platinum project. All work shall conform to the relevant sections of the Platinum Edition Master Municipal Construction Document specifications unless otherwise noted. Details not provided in the Contract Drawings shall be from the MMCD Platinum Edition Standard Drawings or as noted. Granular aggregate and other materials where not addressed in MMCD specifications shall be as per the Ministry of Transportation Standard Specifications (available on web).
2. These drawing notes are highlights to the Contract requirements. They serve as an outline for site reference and do not govern over the other Contract Documents. Review and conform to the General Conditions, Specifications, Supplemental General Conditions and Supplemental Specifications and all other parts of the Construction Contract.
3. All work and materials guaranteed for 1 year per MMCD.
4. Assume role of Prime Contractor as defined by WorksafeBC.
5. This work is tide dependent and critical to project schedule. Low tides conducive to project occur in May, June and July of 2017. Contractor is to establish tide windows, installation logistics and organize construction schedule to suit.
6. Contractor to employ certified electrician and plumbers to oversee fit out of washroom building.
7. Maintain a clean set of red line mark up as builts for inspection by the Contract Administrator at all times.
8. As part of the General Conditions of the Contract provide the following, but not limited to: lighting plant as required for any work scheduled at night (i.e. for tides), portable toilet, steel security fence along property frontage, project sign per MMCD 01 58 01, Environmental Management Plan, Traffic Management Plan, Quality Control Plan for Provision of Riprap, concrete testing, test panel for sawtooth ramp pattern, hedge protection snow fencing, all required submittals.
9. Retain a Qualified Environmental Professional (QEP) to prepare and administer an Environmental Management Plan for the duration of construction as part of the General Conditions of the Contract. A written plan prepared by the QEP must be submitted for review and approved prior to start of work.
10. A Traffic Management Plan must be submitted for review and approved prior to start of work. Manage temporary worker parking to avoid conflicts and maintain safety. Allow for water service crossing of highway.
11. Coordinate all utility connection requirements with BC Hydro, Telus, Shaw, Fortis and the City of Campbell River. Contractor is in charge of pre–locating all utilities and making BC 1 Call. Per the MMCD Contract no payment will be made for this effort.
12. Provide Notice of Project to Worksafe BC.
13. An approved Riprap Quality Control Plan prepared by a geotechnical engineering company must be submitted for review and approved prior to transporting any riprap. This plan shall include provision of necessary submittals and tests all according to MoTI Section 205 Riprap Specification. This plan is to provide details of weigh scales and procedures proposed for recording and verifying tonnes of riprap shipped. Arrange for contract administrator to visit weigh facility. Also as part of Quality Control Plan maintain representative samples of D15, D50 and D85 samples for each armouring rip rap class conveniently laid out for use by quarry and inspector during creation of stockpiles in quarry.
14. Owner will retain a qualified surveyor to provide construction control staking for breakwaters only. Contractor to also employ a full time qualified gradesman plus a survey crew on call to maintain line and grade and offset staking during construction for the breakwaters. Contractors survey crew to be solely responsible to stake remainder of project including subgrades and finish grades as required for boat ramp, parking areas, curbs, walkways, toilet building etc. Use of metal extension poles to guide offload from barge/truck may be required if stakes are below tide level. A spirit level and jig is suggested for gradesman's use in guiding operators as to specified side slopes of breakwaters. A 5 m long straight edge and spirit level is recommended for guiding rock placements for uniform breakwater crests.
15. Provide an approved concrete mix design for boat ramp and stairs suitable for marine environment/municipal application stamped by P.Eng. Retain a professional materials testing firm for concrete quality control. Take three cylinders of concrete for testing for first and last truck of the day using standard methods. Materials testing firm to cc Contract Administrator on all test results. Missing cylinders may require core tests at Contractor's expense.
16. Reinforcing steel is for marine application and is to be epoxy coated and conform to MMCD for fabrication and placing. Take care to avoid scratching coating and ensure any and all scratches and abrasions to epoxy coating is repaired with rebar suppliers epoxy patch kit.
17. Provide shop drawings to Contract Administrator for reinforcing steel.
18. Provide 48 hours notice to Contract Administrator for rebar placement inspection. Casting of concrete may not occur until rebar placement and forms approved.
19. Cast test panel of sawtooth pattern concrete finish for review prior to casting ramp/foot ramp.
20. Ensure ramp formwork can withstand water action if intended to remain in place during tide cycle. Allow for securely covering fresh concrete for minimum 48 hours with 6 mil poly/sandbags to protect against water erosion.
21. Supply copies of all electrical permits to Contract Administrator.
22. All aggregates intended for use in tidal areas shall be washed to minimize silt generation during placement.
23. Erect snow fencing in front of hedge to be protected.
24. Provide sample of proposed geosynthetic filter fabric along with General Product Certification Sheet.
25. Reviewed and accepted Irrigation Shop drawings must be in place prior to irrigation start.
26. Approved samples of topsoil and bark mulch must be in place prior to transport to site.
27. Confirm availability of dune grass plugs not later than May 15 of the Contract year.
28. Ensure irrigation system is functional prior to plant delivery. Stressed plant material may result in plants being ordered off site.
29. Sequence installation of new manhole and concrete storm sewer to suit weather and tides. Time work to avoid rainfall and provide all necessary pumping if unexpected rainfall occurs.
30. Ensure storm sewer outfall is sound against wave action and headwall area armour placement is sequenced optimally.
31. Only plant growers/nurseries with demonstrated experience serving coastal northern Vancouver Island will be accepted as the supplier of trees and shrubs for the project.

SCHEDULING OF REQUIRED SUBMITTALS

Note: Provide majority of submittals by first site meeting following pre–construction meeting. Timings below are latest dates. Arrange for one or two batches of submittals early in contract. Avoid random submittal times. Establish agreed upon submittal schedule with Contract Administrator and conform to this schedule.

1. Baseline construction schedule: Within 10 days following Notice of Award for Review.
2. Environmental Management Plan: Draft document within 10 days following Notice of Award for Review. Final at pre–construction meeting.
3. Health and Safety Plan within 10 days of Notice of Award.
4. Traffic Control Plan and Safety Plan: Draft document within 10 days following Notice of Award for Review. Final at pre–construction meeting.
5. Copy of WorksafeBC Notice of Project: Pre–construction meeting.
6. Geosynthetic filter fabric sample and General Product Certification Sheet: Pre–construction meeting.
7. P.Eng. stamped Concrete Mix Design and Riprap Quality Control Plan and material tests: Draft within ten days of Notice of Award for Review. Final 14 days prior to delivery.
8. By first site meeting following pre–construction meeting: Proof of purchase of dune grass plugs or signed copy of contract to contract grow necessary dune grass plugs in time for planting not later than August 2017.
9. Irrigation Shop drawing: Draft for first site meeting following pre–construction meeting. Final 14 days prior to proposed work start.
10. Riprap material tests and D15, D50 and D85 samples for riprap: stockpiled and approved in quarry prior to delivery.
11. Reinforcing steel shop drawings: 14 days prior to delivery.
12. Aluminum stair railing shop drawings: 14 days prior to fabrication.
13. 7 and 28 day concrete test results: day of results.
14. Sample panel of grooved high traction ramp finish: 3 days prior to casting.
15. Copies of all electrical permits: upon issuance.
16. Samples of topsoil, bark mulch: 14 days prior to work start.
17. Representative email photos of nursery material 14 days prior to planting.
18. Redline mark up as builts: during course of work, final at substantial completion.

Requirements for Environmental Management Plan

The Contractor shall retain a Qualified Environmental Professional (QEP) as part of their project team. The QEP shall maintain professional independence. The QEP shall assist the Contractor to construct the project with a minimum of environmental impact. The QEP shall have the authority to temporarily stop work, if terms and conditions of the Environmental Management Plan (EMP), Best Management Practices (BMPs), regulatory approvals and/or applicable legislation are not being met. The Owner may, if not satisfied with the QEP's credentials, require the Contractor to subcontract with an alternative QEP.

The QEP shall undertake the following:

1. A draft environmental management plan for Review by the City and Contract Administrator.
2. A finalized environmental management plan prior to mobilization.
3. Liaison with city departments and if necessary DFO.
4. Submit a weekly monitoring report to the Contract Administrator by the end of day the Wednesday following the week of monitoring.
5. Prepare and provide necessary additional site–specific mitigation measures to help ensure the intent of the EMP is met.
6. Work with quarry to ensure imported material has been washed to minimize sediment plume and along with any other relevant techniques.
7. Inspect the operations at a minimum once daily while work is underway in sensitive areas. Provide full time oversight during critical periods.
8. Be available by phone to provide advice or respond to a need at the worksite at any time while works are ongoing.
9. Maintain a photographic log and written diary of the project from an environmental perspective.
10. The environmental management plan shall at a minimum include or reference:
    - 10.1. Appropriate Best Management Practices (BMP's) for but not limited to; Erosion and sediment control, toxic material, working around water, Best Management Practices (BMP's)
    - 10.2. A marked up 8.5 x 11 site plan showing the locations of particular BMP's which are to be employed.
    - 10.3. Targeted tide ranges and prospective dates for breakwater, channel deepening and ramp work.
    - 10.4. Brief report at project conclusion.

RELEVANT MMCD STANDARD DETAIL DRAWINGS (SEE MMCD PLATINUM BOUND SPECIFICATION)

C4 Concrete curbs – Narrow Base

C9 Wheelchair Ramp for Sidewalk and Barrier Curb

CE1.5 Type C4 and C5 Spread Footing Shape Concrete Bases

G4 Utility Trench

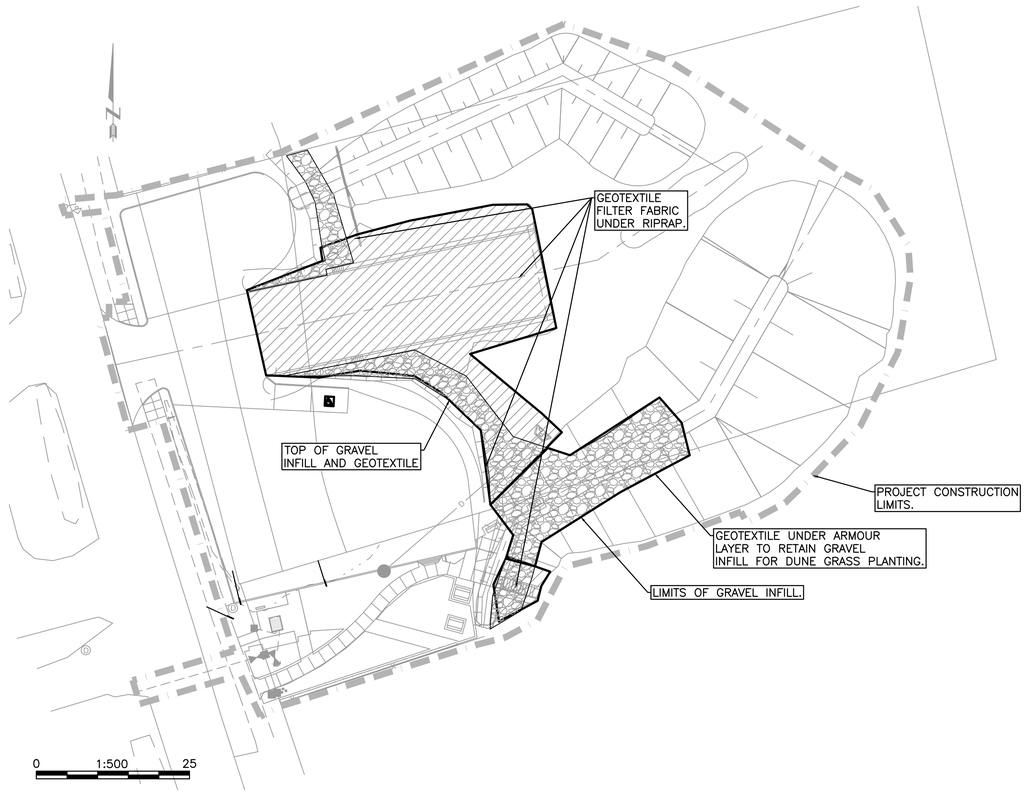
S5 Pre–Cast Riser Manhole

S7 Sanitary Sewer Service Connection

S8 Storm Sewer Service Connection (for CB leads)

S9 Inspection Chamber for 100 to 200 Sanitary Sewer Connection

NOTE ALL SUBMITTALS, TESTS, SERVICES AND PROCEDURES NOTED ON THE DRAWINGS ARE INCIDENTAL TO PAY ITEMS IN THE CONTRACT UNLESS SPECIFICALLY INDICATED AS PAY ITEMS.



LIMITS OF CONSTRUCTION, GEOTEXTILE AND GRAVEL INFILL

1:500

EXISTING FEATURES

MANHOLE
COMBINED SEWER
COMBINED SEWER SERVICE LINE
STORM SEWER
CATCH BASIN
SANITARY SEWER
SEWER CLEANOUT
WATER MAIN
WATER VALVE
FIRE HYDRANT
WATER METER
WATER SERVICE
GAS MAIN
GAS VALVE
TELUS CONDUIT
ELECTRICAL CONDUIT
STREET LIGHTING CONDUIT
JUNCTION BOX
DAVID STREET LIGHT
TRAFFIC SIGNAL POLE
UTILITY POLE
CURB AND GUTTER
CONIFEROUS TREE
DECIDUOUS TREE
ORNAMENTAL TREE
COMMERCIAL SIGN
FENCE

PROPOSED

STORM SEWER
SANITARY SEWER
MANHOLE (D1, S1)
CATCH BASIN
WATER MAIN
WATER VALVE
FIRE HYDRANT
CROSS
TEE
BEND
CAP
REDUCER
IRRIGATION CONTROLLER BOX
IRRIGATION VALVE
PROPOSED ROAD RECONSTRUCTION
PROPOSED MILL & OVERLAY
PROPOSED TRENCH REPAIR

Notes

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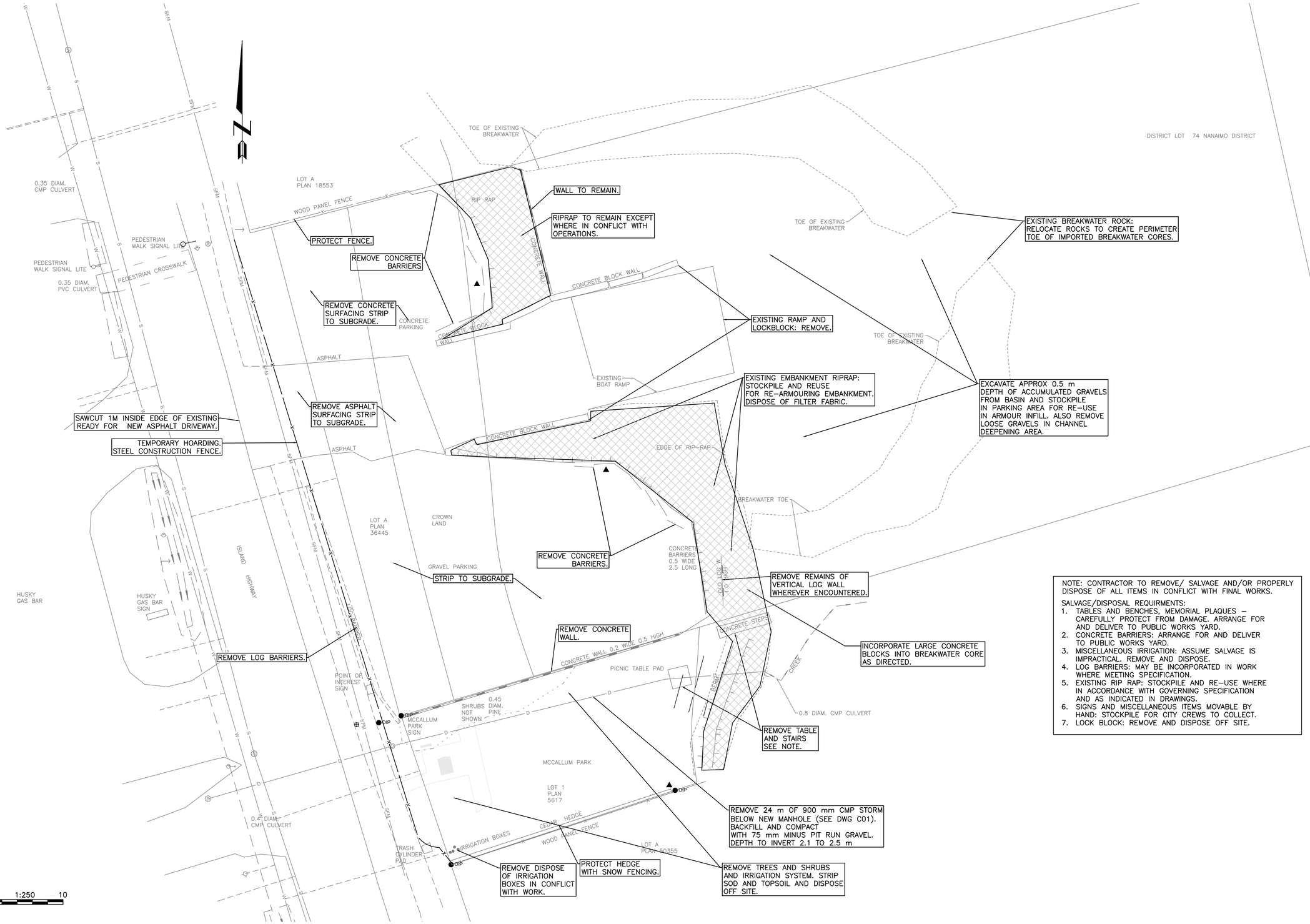
City Dwg No. 13-506

Project BIG ROCK BOAT RAMP RECONSTRUCTION

Title N01 NOTES AND CONSTRUCTION LIMITS



NOTE: CONTRACTOR TO REMOVE/ SALVAGE AND/OR PROPERLY DISPOSE OF ALL ITEMS IN CONFLICT WITH FINAL WORKS.

SALVAGE/DISPOSAL REQUIRMENTS:

1. TABLES AND BENCHES, MEMORIAL PLAQUES – CAREFULLY PROTECT FROM DAMAGE. ARRANGE FOR AND DELIVER TO PUBLIC WORKS YARD.
2. CONCRETE BARRIERS: ARRANGE FOR AND DELIVER TO PUBLIC WORKS YARD.
3. MISCELLANEOUS IRRIGATION: ASSUME SALVAGE IS IMPRACTICAL. REMOVE AND DISPOSE.
4. LOG BARRIERS: MAY BE INCORPORATED IN WORK WHERE MEETING SPECIFICATION.
5. EXISTING RIP RAP: STOCKPILE AND RE-USE WHERE IN ACCORDANCE WITH GOVERNING SPECIFICATION AND AS INDICATED IN DRAWINGS.
6. SIGNS AND MISCELLANEOUS ITEMS MOVABLE BY HAND: STOCKPILE FOR CITY CREWS TO COLLECT.
7. LOCK BLOCK: REMOVE AND DISPOSE OFF SITE.

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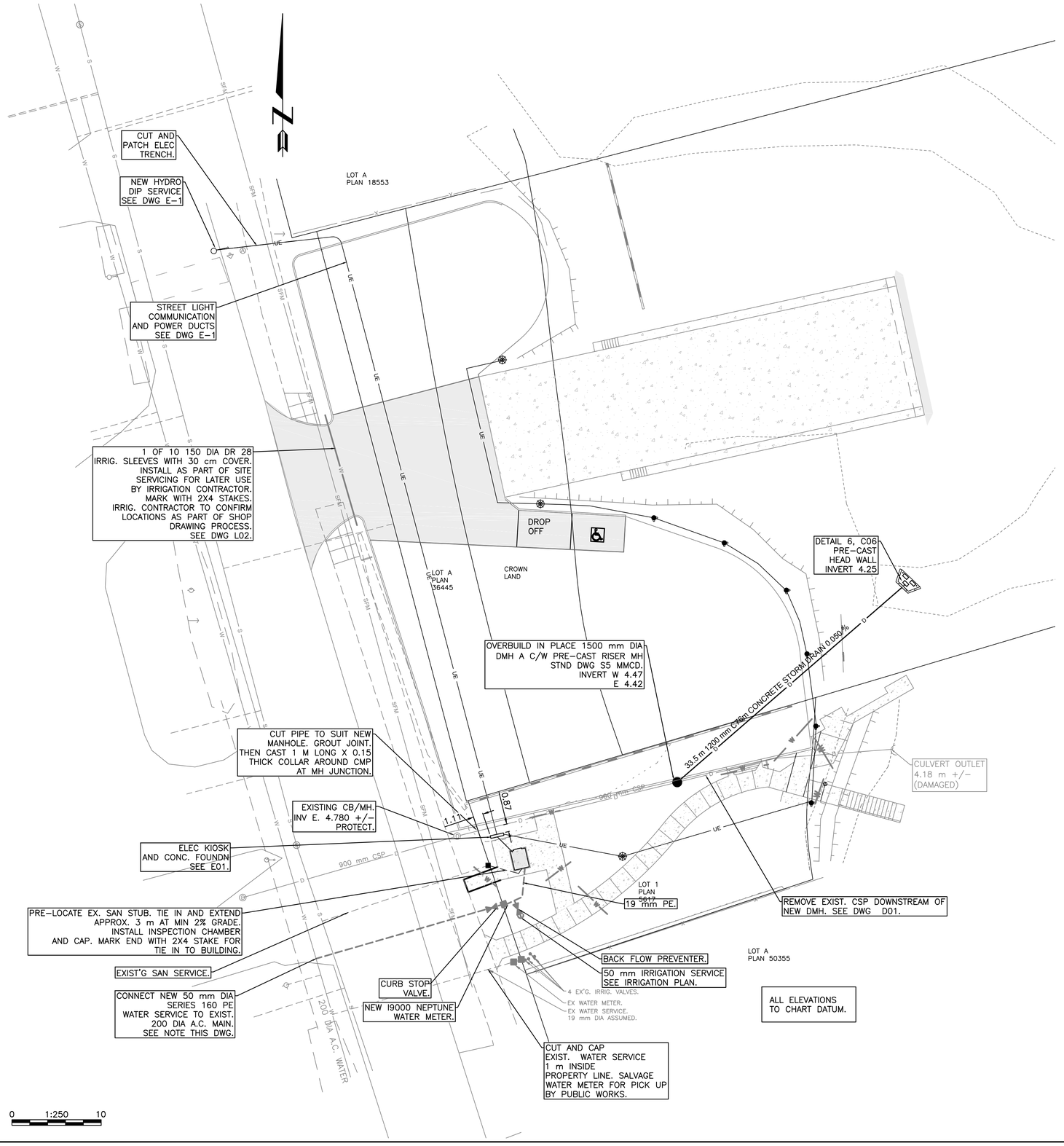
Project BIG ROCK BOAT RAMP RECONSTRUCTION

Title D01 DEMOLITION AND SITE PREPARATION



EXISTING FEATURES

- MANHOLE
- COMBINED SEWER
- COMBINED SEWER SERVICE LINE
- STORM SEWER
- CATCH BASIN
- SANITARY SEWER
- SEWER CLEANOUT
- WATER MAIN
- WATER VALVE
- FIRE HYDRANT
- WATER METER
- WATER SERVICE
- GAS MAIN
- GAS VALVE
- TELUS CONDUIT
- ELECTRICAL CONDUIT
- STREET LIGHTING CONDUIT
- JUNCTION BOX
- DAVID STREET LIGHT
- TRAFFIC SIGNAL POLE
- UTILITY POLE
- CURB AND GUTTER
- CONIFEROUS TREE
- DECIDUOUS TREE
- ORNAMENTAL TREE
- COMMERCIAL SIGN
- FENCE

PROPOSED

- STORM SEWER
- SANITARY SEWER
- MANHOLE
- CATCH BASIN
- WATER MAIN
- WATER VALVE
- FIRE HYDRANT
- CROSS
- TEE
- BEND
- CAP
- REDUCER
- IRRIGATION CONTROLLER BOX
- IRRIGATION VALVE
- PROPOSED ROAD RECONSTRUCTION
- PROPOSED MILL & OVERLAY
- PROPOSED TRENCH REPAIR

SUMMARY OF SERVICING REQUIREMENTS

1. NEW 50 mm WATER SERVICE TO TOILET AND IRRIGATION.
2. PRE-LOCATE AND EXTEND SANI SERVICE INTO TOILET BUILDING.
3. NEW STORM DRAIN OUT FALL, REMOVAL OF EXISTING, OVERBUILD MANHOLE ON EXISTING STORM.
4. NEW ELECTRICAL SERVICE FOR TOILET BUILDING, IRRIGATION AND SITE LIGHTING.

BENCH MARK

OWNER'S SURVEYOR WILL SET TEMPORARY BENCHMARKS IN CHART DATUM FOR CONTRACTOR TO WORK FROM.

New 50 mm WATER SERVICE REQUIREMENTS

1. Note – All components to be approved as per City of Campbell Rivers Approved Product list 2014 Edition.
2. 50 mm NEPTUNE T10 Water Meter with a R-900i E-Coder RW (Note All Meter must be Neptune CE5320 Data Collector compatible).
3. FORD VHH77-xxBHC-11-77-NL setter (height to suit)
4. ARMTECH #5686 box (based on MMCD W2d) complete with HD Cast Iron lid. Lids to be marked with 'Water' and have a un-recessed hole for the antennae (PTP-BR plug).
5. In separate #66 Brooks Box (MMCD W2d) service to connect to a Watts 007M1QT Double Check valve assembly.
6. At connection to 200 dia A.C. main for proposed CI160 HDPE service, provide AC service saddle and 50mm corp stop (AWWA C800) required.
7. For HDPE pipe include 10 g RWU 90 tracer wire laid in trench and taped every 3m and terminated in meter and BFP box.

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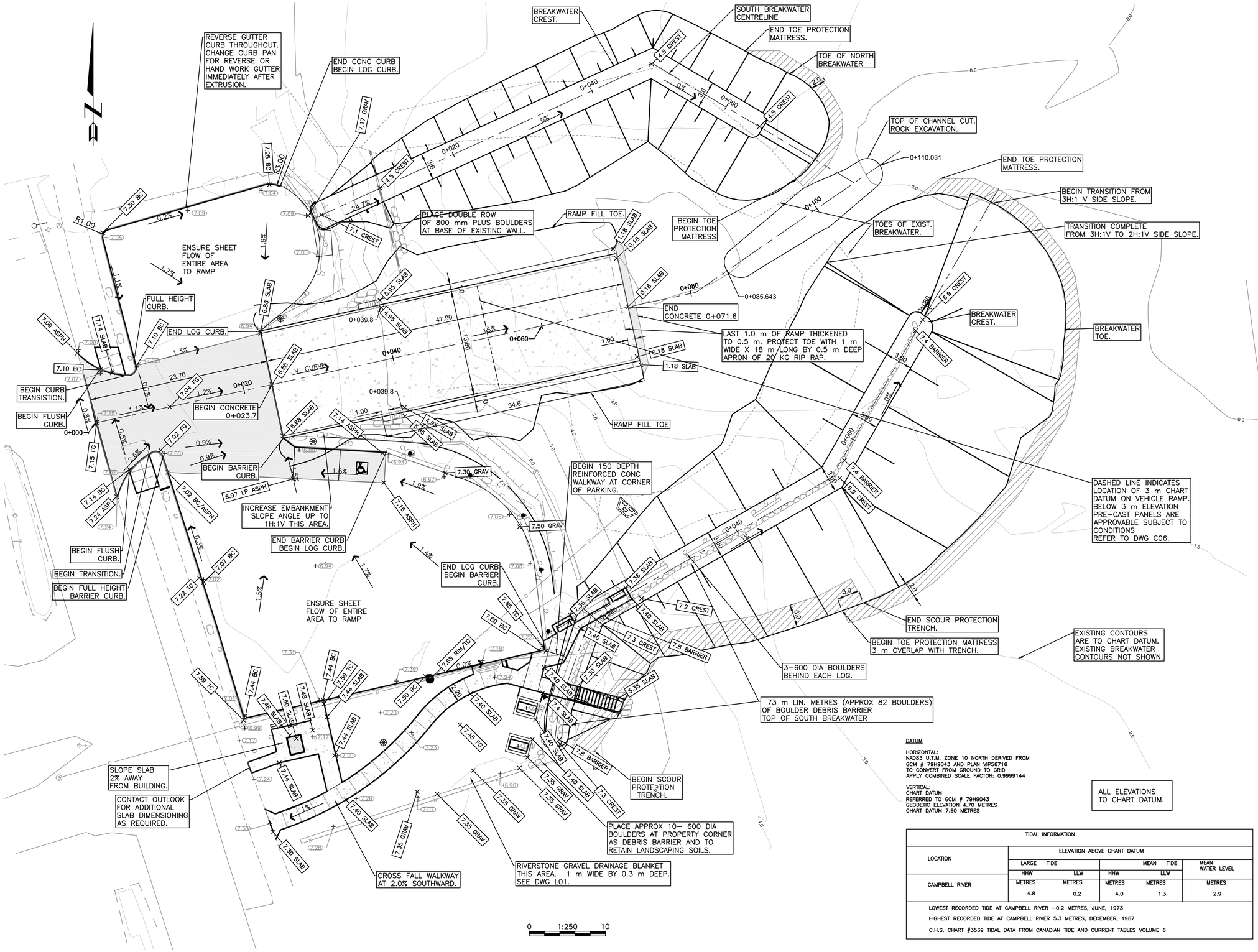
Project BIG ROCK BOAT RAMP RECONSTRUCTION

Title C01 SERVICING PLAN



FINISH GRADE OF WORK.

ORIGINAL SURVEYED GROUND ELEVATION.

ABBREVIATIONS
HP = HIGH POINT
LP = LOW POINT
FG = FINISH GRADE
TC = TOP OF CURB
BC = BOTTOM OF CURB
SLAB = TOP OF CONCRETE SLAB
ASPH = FG OF ASPHALT
GRAV = FG OF GRAVEL

GRADING LEGEND

DATUM

HORIZONTAL:
NAD83 U.T.M. ZONE 10 NORTH DERIVED FROM GCM # 79H9043 AND PLAN VIP56716
TO CONVERT FROM GROUND TO GRID APPLY COMBINED SCALE FACTOR: 0.9999144

VERTICAL:
CHART DATUM
REFERRED TO GCM # 79H9043
GEODETIC ELEVATION 4.70 METRES
CHART DATUM 7.60 METRES

ALL ELEVATIONS TO CHART DATUM.

TIDAL INFORMATION

LOCATION	ELEVATION ABOVE CHART DATUM				
	LARGE TIDE		MEAN TIDE		MEAN WATER LEVEL
	HHW	LLW	HHW	LLW	
CAMPBELL RIVER	METRES	METRES	METRES	METRES	METRES
	4.8	0.2	4.0	1.3	2.9

LOWEST RECORDED TIDE AT CAMPBELL RIVER -0.2 METRES, JUNE, 1973
HIGHEST RECORDED TIDE AT CAMPBELL RIVER 5.3 METRES, DECEMBER, 1967
C.H.S. CHART #3539 TIDAL DATA FROM CANADIAN TIDE AND CURRENT TABLES VOLUME 6

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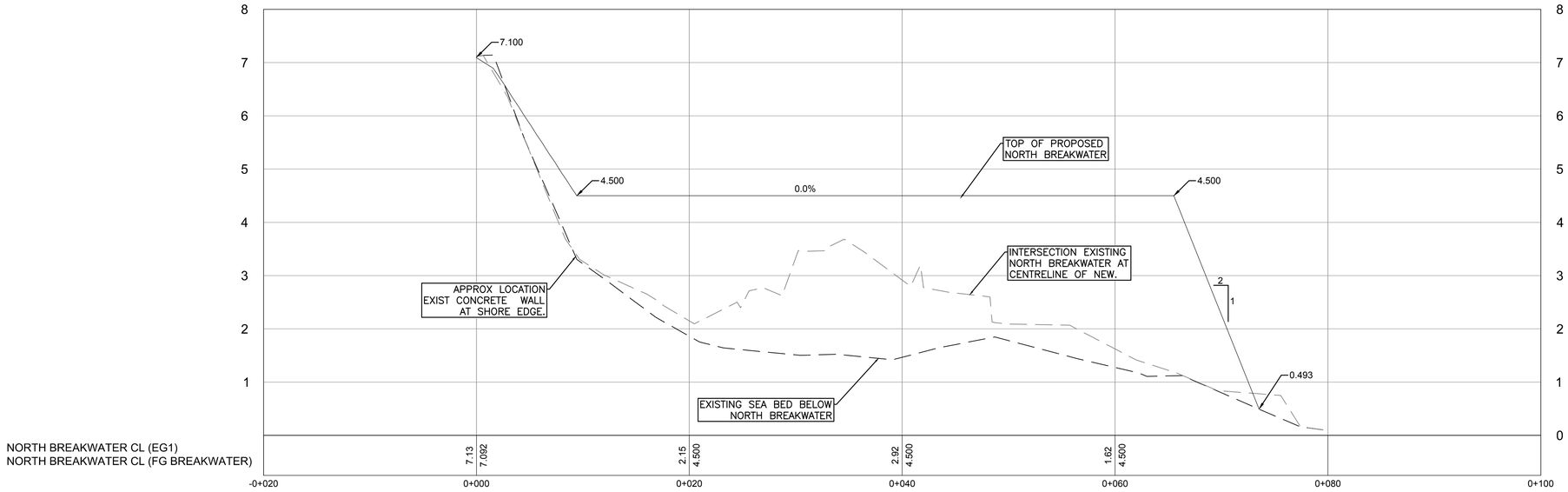
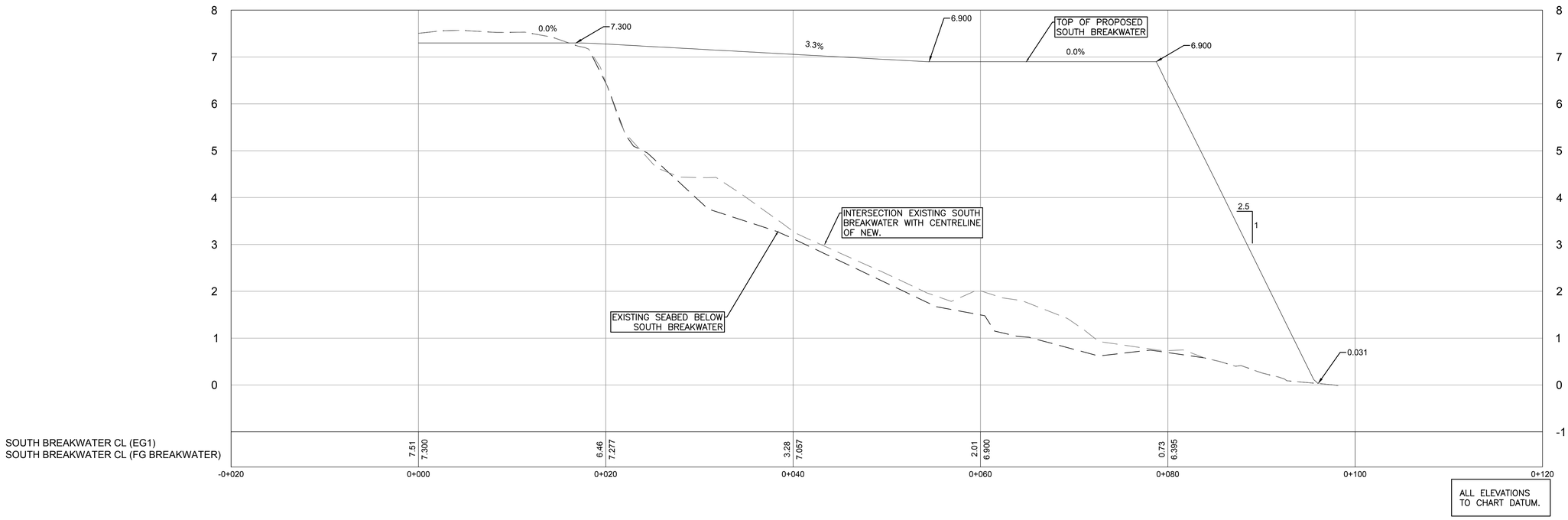
Project BIG ROCK BOAT RAMP RECONSTRUCTION
Title C02 GRADING PLAN

NORTH BREAKWATER CENTRELINE 5:1



SOUTH BREAKWATER CENTRELINE 5:1



ALL ELEVATIONS TO CHART DATUM.

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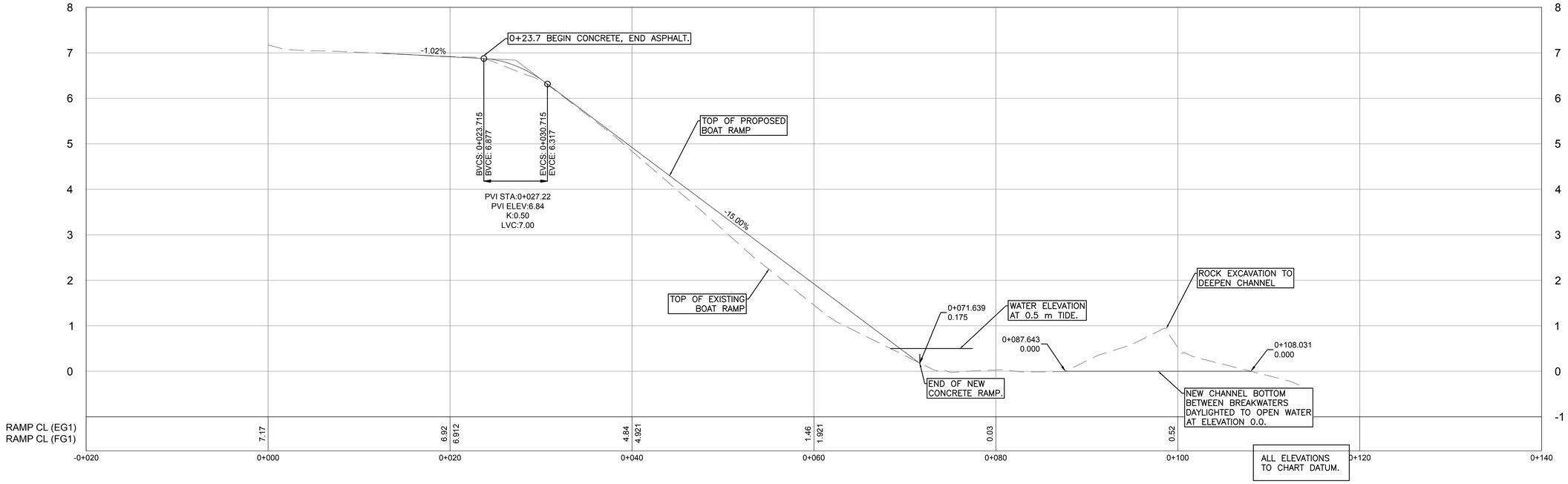
Project BIG ROCK BOAT RAMP RECONSTRUCTION

Title C03 NORTH AND SOUTH BREAKWATER PROFILES



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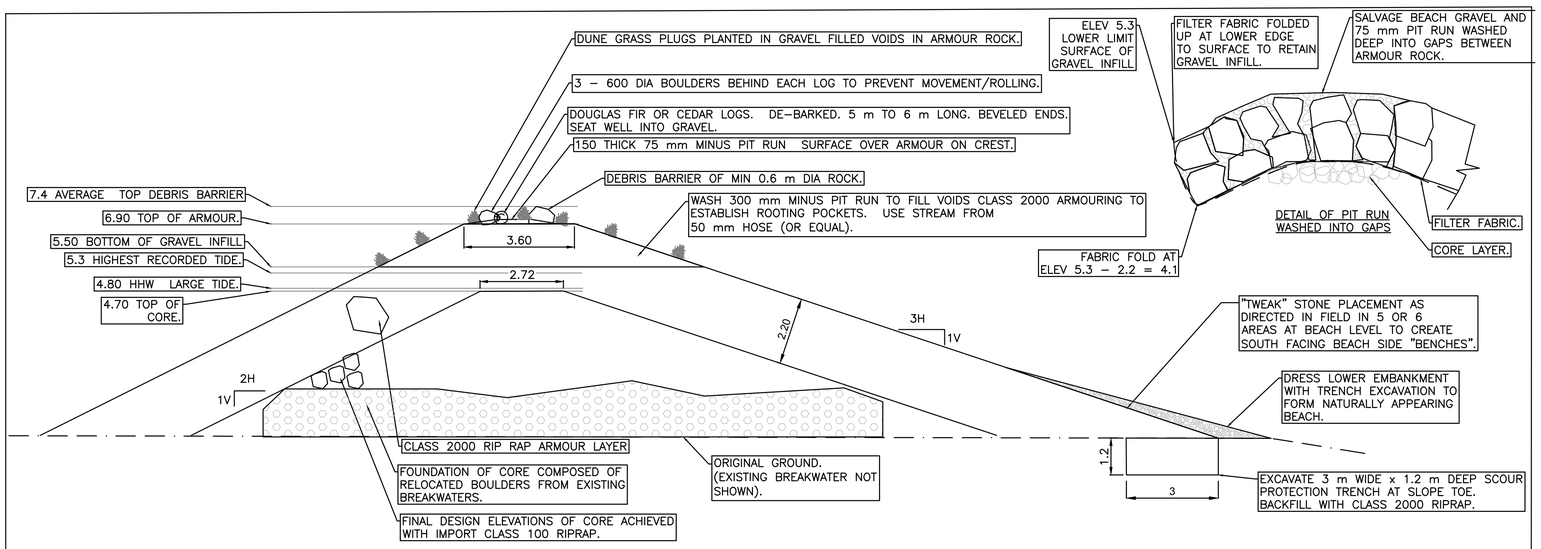
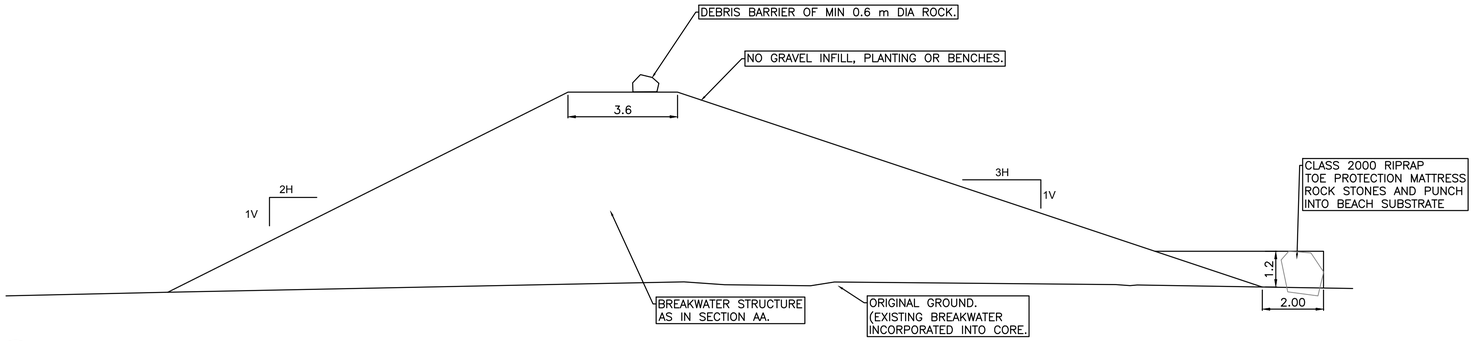
Project BIG ROCK BOAT RAMP RECONSTRUCTION

Title C04 RAMP PROFILE



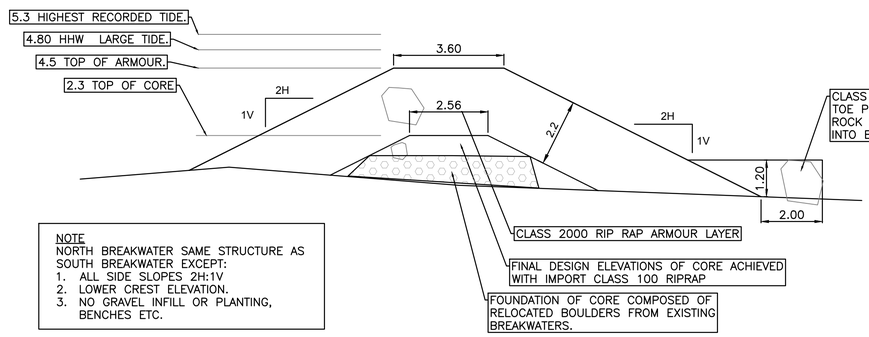
AA SOUTH BREAKWATER TYPICAL SECTION 0 +030 TO 0+ 050 (UPPER TIDE LEVELS)

1:100



BB SOUTH BREAKWATER TYPICAL SECTION 0 + 050 TO END (LOWER TIDE LEVELS)

1:100

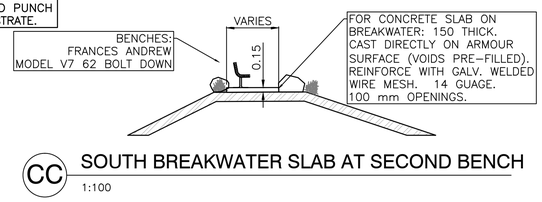


NOTE
NORTH BREAKWATER SAME STRUCTURE AS SOUTH BREAKWATER EXCEPT:
1. ALL SIDE SLOPES 2H:1V
2. LOWER CREST ELEVATION.
3. NO GRAVEL INFILL OR PLANTING, BENCHES ETC.

DD NORTH BREAKWATER TYPICAL SECTION

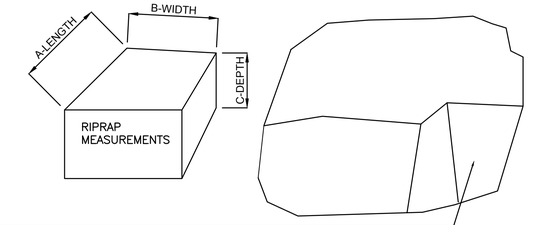
1:100

0 1:100 5



CC SOUTH BREAKWATER SLAB AT SECOND BENCH

1:100



AT QUARRY CONTRACTOR TO WEIGH AND SET ASIDE THREE REPRESENTATIVE SAMPLES OF D15 (PAINTED RED), D50 PAINTED GREEN, D85 PAINTED YELLOW FOR EACH CLASS OR RIPRAP (TOTAL 12 STONES). THESE ARE FOR THE QUARRY AND INSPECTORS USE IN CHECKING STONE FOR SIZE AS STOCKPILES ARE CREATED. 85% OF CLASS 2000 RIPRAP TO BE APPROVED AND IN STOCKPILE PRIOR TO LEAVING QUARRY. 50% OF ALL OTHER CLASSES TO BE IN STOCKPILE AND APPROVED PRIOR TO LEAVING QUARRY.

RIPRAP GRADATION (EXCERPTED FROM TABLE 205–A, MOTI STND SPECS)
STANDARD SPECIFICATIONS FOR RIPRAP.
CLASS 10 KG – D15=1KG, D50=10KG, D85=30KG
CLASS 100 KG – D15=10KG, D50=100KG, D85=300KG
CLASS 500 KG – D15=50KG, D50= 500KG, D85=1500KG
CLASS 2000 KG– D15=200KG, D50=2000KG, D85=6000KG

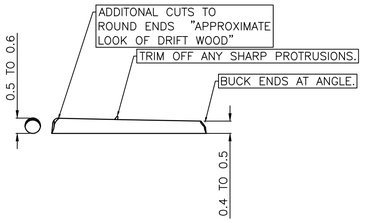
GOVERNING RIPRAP SPECIFICATION
MINISTRY OF TRANSPORTATION AND HIGHWAYS SECTION 205 RIPRAP

01 RIPRAP ARMOURING

NTS

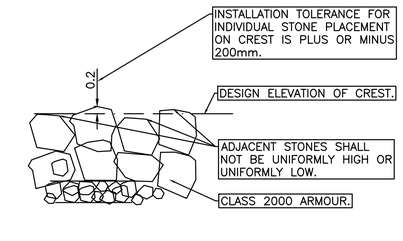
PLACEMENT OF RIPRAP ARMOUR
1. ARMOUR ROCK TO BE INDIVIDUALLY FITTED OVER TOP OF CORE ROCK USING THUMBED EXCAVATOR TO CREATE UNIFORM SURFACE.
2. REFER TO GRADATION SPEC'S FOR ARMOUR AND CORE ROCK.
3. REFER TO GRADING PLAN FOR TOE PROTECTION TRANSITIONS.
4. AT TOE OF ROCK A SUFFICIENT NUMBER OF THE LARGER ROCKS SHALL BE PLACED TO FORM A FIRM FOUNDATION.
5. REMAINING ROCKS SHALL BE REGULARLY SPACED THEN SMALLER ROCKS AND SPALLS SHALL BE WELL HAMMERED IN TO FILL THE INTERSTICES AND TO CREATE A CLOSELY MASSED REGULAR SURFACE.
6. PLACE ARMOUR IN TWO LAYERS.
7. PREPARE A TEST PANEL OF ARMOUR FULL HEIGHT AND MINIMUM 10 m LONG FOR REVIEW AND POSSIBLE RE–WORK AND FOR APPROVAL OF INSPECTOR. THIS IS INTENDED TO CONFIRM ACCEPTABLE TIGHT FIT OF ROCK. THIS PANEL TO FORM STANDARD OF PLACEMENT FOR REMAINDER OF PROJECT.

RIPRAP NOTES
1. REFER TO DIAGRAM AND MOTI SPEC.205. RIP RAP STONES SHALL NOT BE THIN OR PLATEY. RATIO OF LENGTH TO THICKNESS SHALL NOT EXCEED 2.5. (A/C <2.5).
2. DENSITY SHALL NOT BE LESS THAN 2.65.
3. RIPRAP SHALL BE EVENLY GRADED PER TABLES 205–A AND 205–B BC MINISTRY OF TRANSPORTATION STANDARD SPECIFICATIONS.
4. TESTS: SUBMIT AS PER TABLE 205–C SECTION 205 BC MINISTRY OF TRANSPORTATION STANDARD SPECIFICATIONS:
- SPECIFIC GRAVITY
- ABSORPTION
- SOUNDNESS
- ABRASION LOSS FACTOR



02 LOGS FOR BREAKWATER AND PARKING EDGE

1:100



03 CREST UNIFORMITY REQUIREMENT

NTS

Notes
ALL ELEVATIONS TO CHART DATUM.

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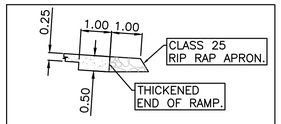
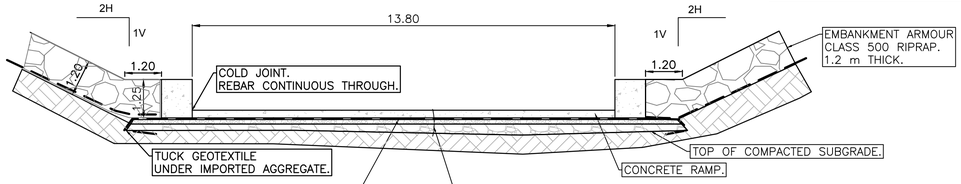
Project BIG ROCK BOAT RAMP RECONSTRUCTION
Title C05 CIVIL SECTIONS AND DETAILS

GEOTEXTILE ARMOUR UNDERLAY FILTER FABRIC AS USED THROUGH OUT PROJECT ON RIPRAP EMBANKMENTS:
- PROVIDE NILEX 4553 OR APPROVED EQUAL
- GRAB STRENGTH: 400N
- ELONGATION 15%
- PUNCTURE STRENGTH 178 N
- BURST STRENGTH 1.0 E 06 Pa
- TRAPEZOID TEAR 133 N

EPOXY-COATED REINFORCING STEEL –
TO THE REQUIREMENTS OF ASTM A 775M AND D 3963M. APPLICATION PLANTS SHALL BE CERTIFIED UNDER THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI) VOLUNTARY CERTIFICATION PROGRAM FOR FUSION-BONDED EPOXY-COATING APPLICATOR PLANTS, AND PROOF OF CERTIFICATION SHALL BE SUBMITTED.
ALL EPOXY-COATED BARS SHALL BE CLEARLY LABELLED WITH THE NAME OF THE MANUFACTURER, THE PRIMER AND THE COATING SYSTEM USED AND THE DATE OF PRODUCTION.
TIE WIRE USED TO TIE EPOXY COATED REINFORCING BARS SHALL BE EPOXY COATED WIRE.

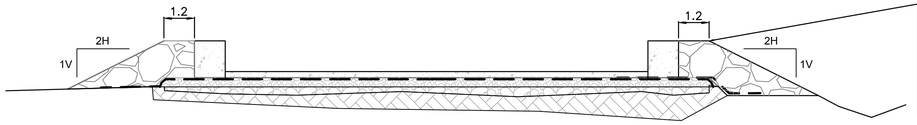


THICKENED CONCRETE PROFILE AT TERMINUS



COVER ENTIRE BASE WITH FILTER FABRIC. OVERLAP ALL EDGES MIN 600 mm. CAST CONCRETE ON TOP. TUCK EDGES UNDER RIPRAP FILL.

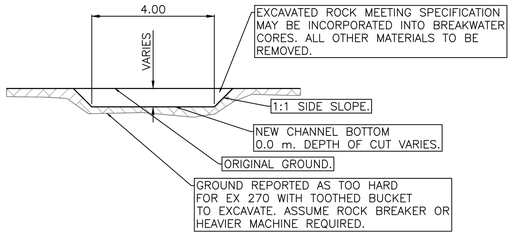
PAVEMENT STRUCTURE:
- 250 mm THICK REINFORCED PORTLAND CEMENT CONCRETE, MARINE APPLICATION MIX.
- FILTER FABRIC PINNED IN PLACE 1 m ON CENTRES
- MINIMUM 150 mm mm THICK 75mm MINUS CRUSHED GRANULAR SUBBASE (MMCD SPEC)
- TRIMMED AND COMPACTED SUBGRADE.



RIP RAP IN THE 1.2 m ZONE EITHER SIDE OF FOOT RAMP TO BE CAREFULLY PLACED TO PROVIDE EXTRA WIDTH SURFACE FOR BOAT LAUNCHING ACTIVITIES THAT IS COMPLETELY FREE OF LARGE (FOOT SIZED) VOIDS. PROVIDE BOTH SIDES FULL LENGTH OF FOOT RAMP. FINISH BY FILLING VOIDS WITH CONCRETE TO YIELD SURFACE SUBSTANTIALLY FREE OF HOLES LARGER THAN 75 mm.

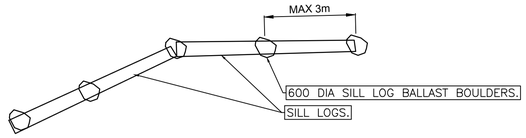
EE RAMP TYPICAL SECTIONS - UPPER AND LOWER
1:100

0 1:100 5

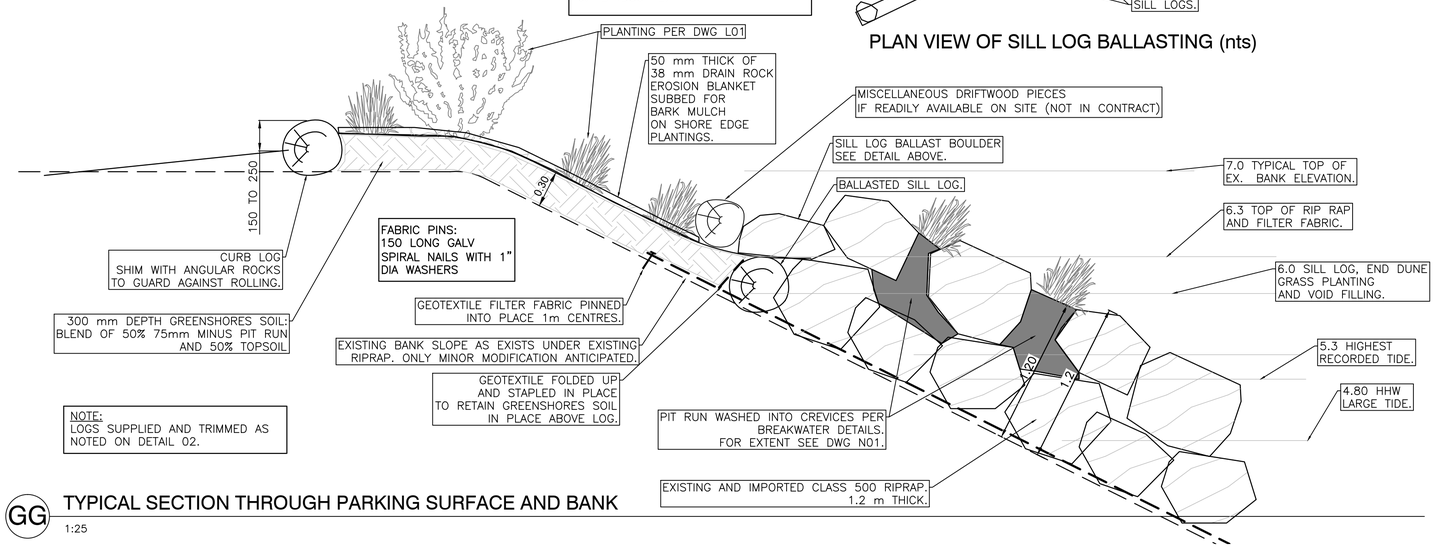


FF ROCK BREAKING TYPICAL SECTION
1:100

SUGGESTED LAYOUT NOTES
1. TRIM EMBANKMENT READY FOR ARMOUR.
2. MARK OUT 6. 3 m CONTOUR LINE ON EMBANKMENT.
3. INSTALL FABRIC AND RIP RAP.
4. MARK OUT 6. 0 m CONTOUR LINE.
5. FILL VOIDS, PLACE SILL LOGS
6. LANDSCAPE.

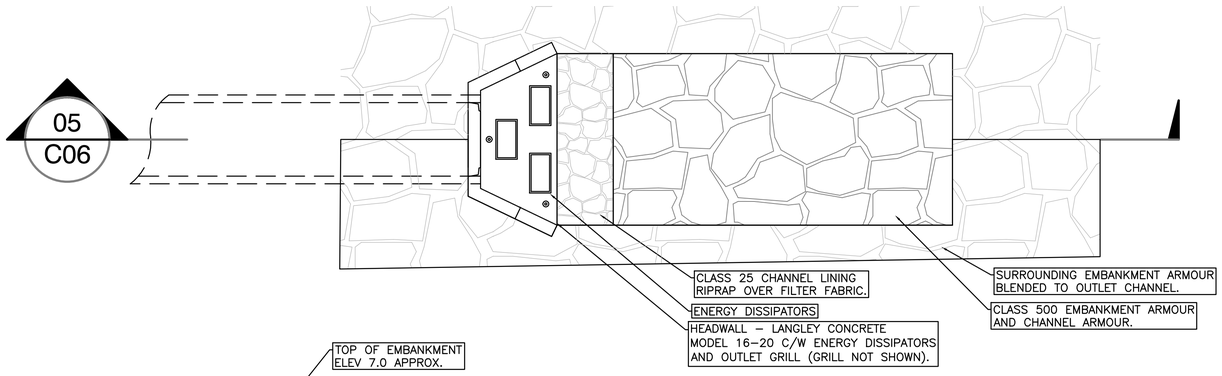


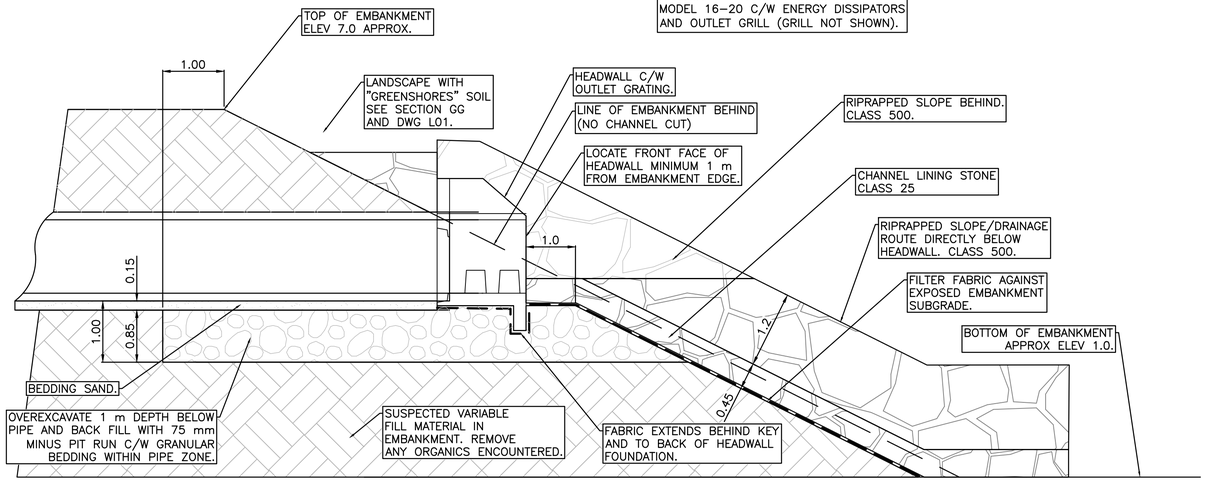
PLAN VIEW OF SILL LOG BALLASTING (nts)



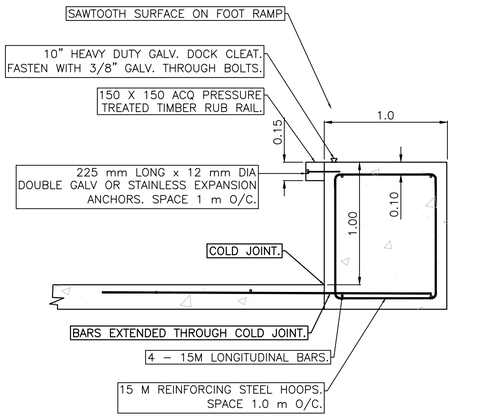
NOTE:
LOGS SUPPLIED AND TRIMMED AS NOTED ON DETAIL 02.

GG TYPICAL SECTION THROUGH PARKING SURFACE AND BANK
1:25

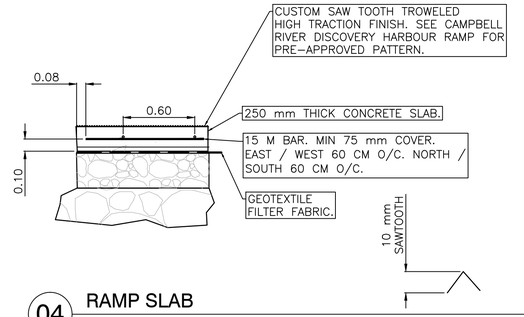




05 CONCRETE CULVERT OUTFALL
1:50



06 FOOT RAMP
1:25



04 RAMP SLAB
1:25

PRE-CAST PANEL OPTION
THE FOLLOWING USE OF PRE-CAST CONCRETE WILL BE PERMITTED AT THE CONTRACTORS OPTION:
1. FOOT AND BOAT RAMPS SHOWN AS CAST IN PLACE MAY BE SUBSTITUTED WITH PRE-CAST BELOW 3 METRES CHART DATUM TO ASSIST WITH WORKING WITH TIDES.
2. ALL REINFORCING AND CONCRETE MIX REQUIREMENTS REMAIN THE SAME AS CAST IN PLACE EXCEPT THAT ADDITIONAL LIFTING POINTS AND REINFORCEMENT MUST BE CAST INTO THE PIECES FOR SAFE TRANSPORT. TO BE SHOWN IN SHOP DRAWINGS AND CONFORM TO WORKSAFE BC STANDARDS. PRIOR TO SHIPPING, PRE-CAST WORK TO SUITABLY CURED AS DETERMINED BY BY CONCRETE MIX DESIGN ENGINEER.
3. PRE-CAST PIECES WHICH HAVE SHIPPING CRACKS WILL NOT BE ACCEPTED.
4. THE MINIMUM WEIGHT OF AN INDIVIDUAL PRE-CAST PIECE TO BE INSTALLED SHALL NOT BE LESS THAN 4000 KG. THE DIMENSIONS OF PANELS AND WALL PIECES WILL BE DEFINED BY THE CONTRACTOR FOR EASE OF INSTALLATION AND DURABILITY THROUGH A SHOP DRAWING SUBMITTAL PROCESS.
5. INTERLOCKING HOOKS ARE NOT REQUIRED DUE TO CHALLENGES WITH CORROSION AND INSTALLATION LOGISTICS.
6. FOLLOWING ONE YEAR OF INSTALLATION THE CONTRACTOR WILL BE REQUIRED TO VISIT THE SITE WITH OUTLOOK ENGINEERING AND IDENTIFY AND MARINE GROUT ANY CRACKS THAT HAVE FORMED BETWEEN PRE-CAST PIECES.
7. IF SHIFTING GREATER THAN 50 MM HAS OCCURRED A RE-SETTING OF THE PRE-CAST PIECES MAY BE REQUIRED.

Notes

ALL ELEVATIONS
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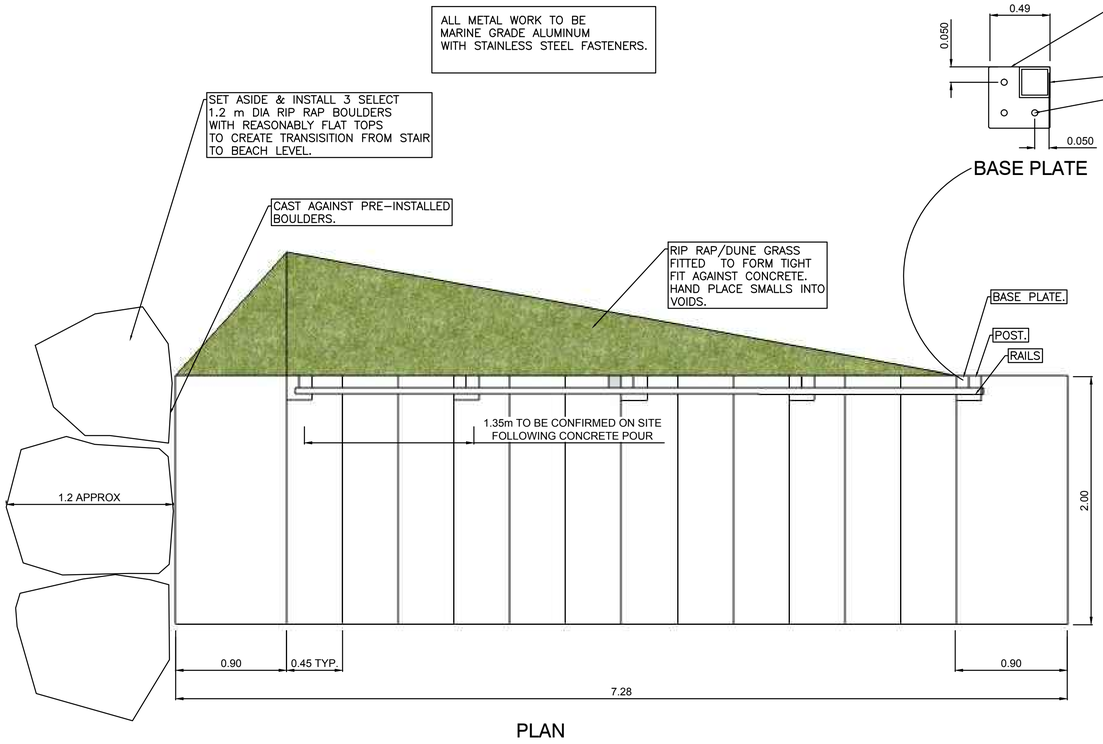
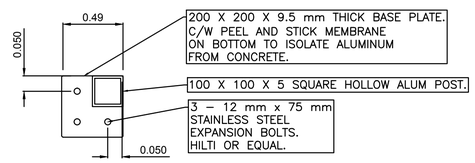
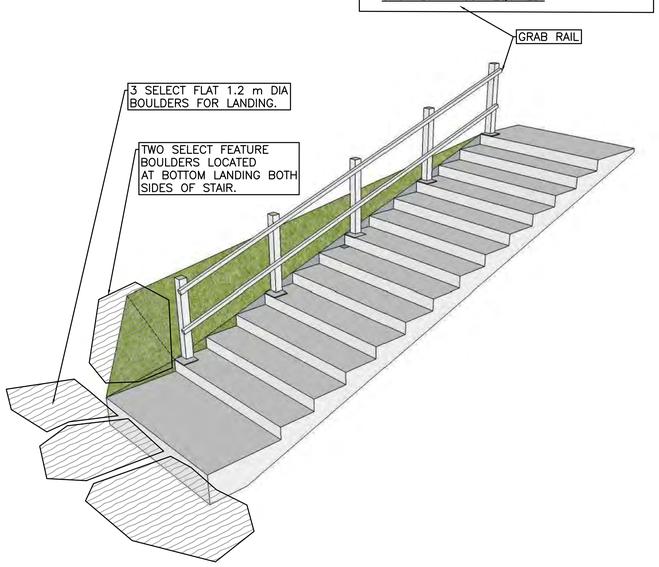
Project BIG ROCK BOAT RAMP RECONSTRUCTION
Title C06 CIVIL SECTIONS AND DETAILS



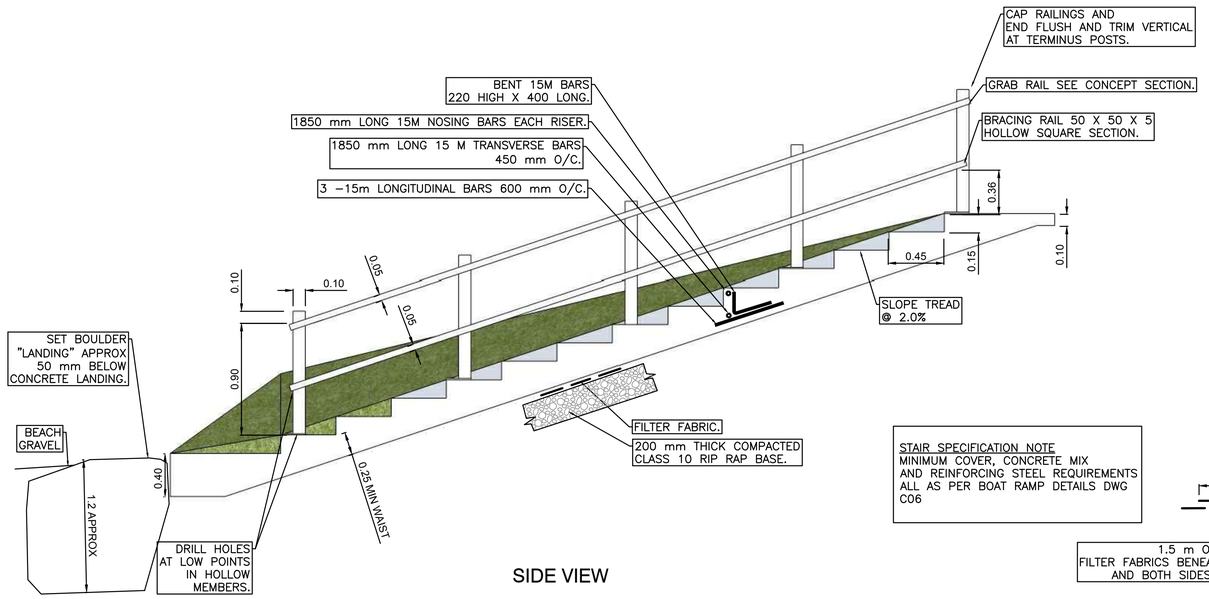
PLAN



BASE PLATE

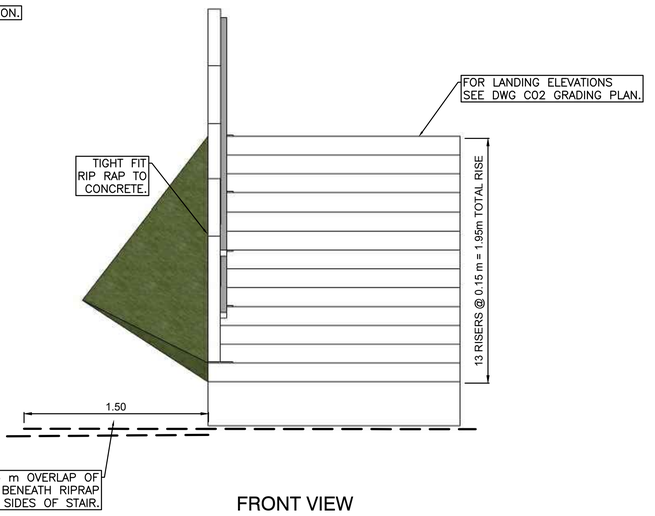


PERSPECTIVE



SIDE VIEW

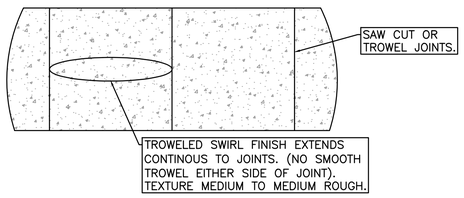
STAIR SPECIFICATION NOTE
MINIMUM COVER, CONCRETE MIX AND REINFORCING STEEL REQUIREMENTS ALL AS PER BOAT RAMP DETAILS DWG C06



FRONT VIEW

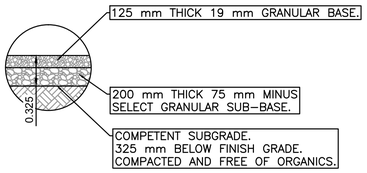
07 STEPS TO BEACH

1:25



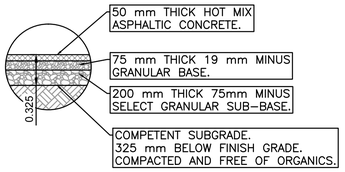
08 CONCRETE WALKS

NTS



09 GRAVEL PARKING STRUCTURE

NTS



10 ASPHALT DRIVEWAY STRUCTURE

NTS

NOTES

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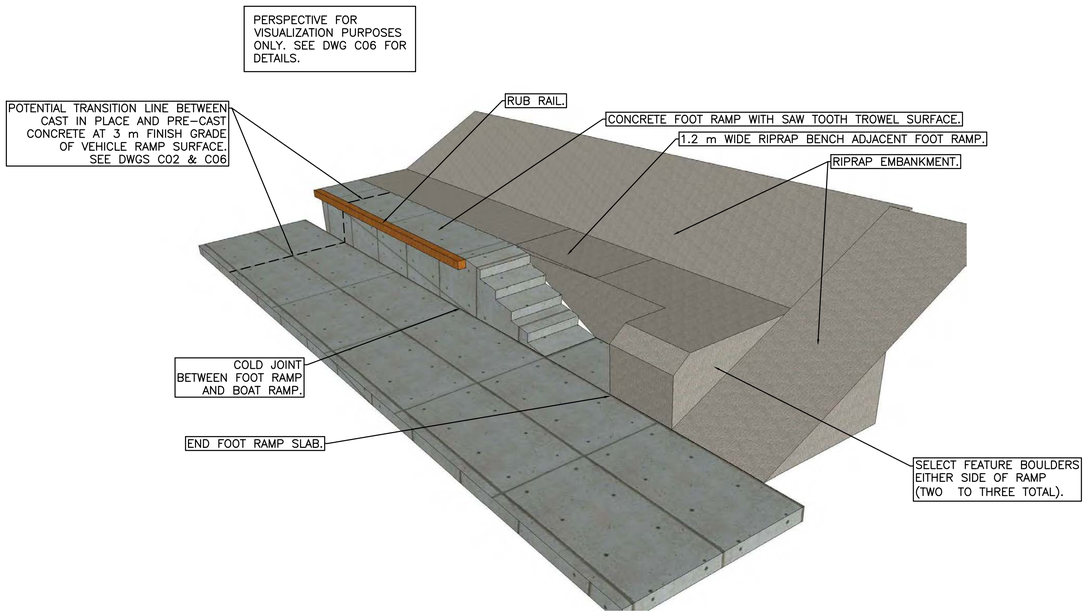
PROJECT BIG ROCK BOAT RAMP

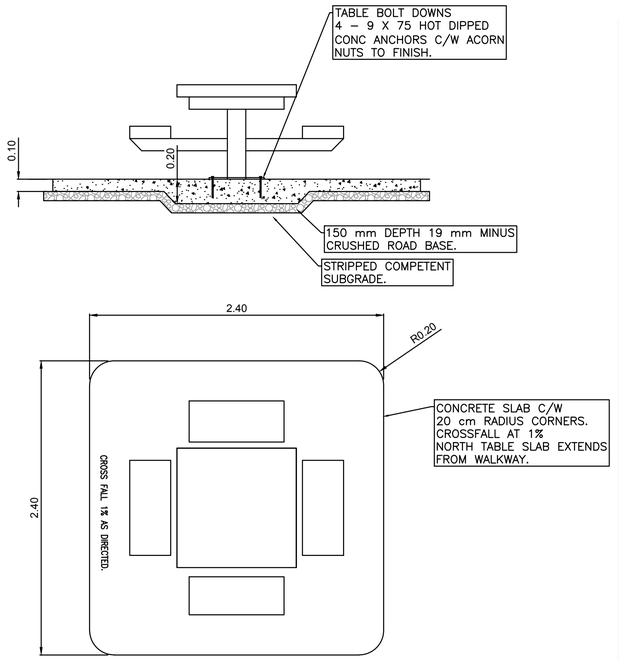
DWG SECTIONS AND DETAILS

C-07 REVISION C



11 FOOT RAMP GENERAL ARRANGEMENT

NTS



SET ELEVATION SLAB TOP SLIGHTLY PROUD OF SURROUNDING GRADES TO ENSURE DRAINAGE.

TABLE: FRANCIS ANDREW KINGSTON 44 BOLT DOWN.
NORTH TABLE THREE SEATS FOR WHEEL CHAIR ACCESS
SOUTH TABLE FOUR SEATS.
METAL WORK: HOT DIPPED GALVANIZED.

12 PICNIC TABLES

NTS

13 LOW TIDE CONDITIONS SPRING 2013

NTS

14 CHANNEL DEEPENING LOCATION

NTS

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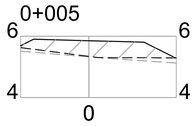
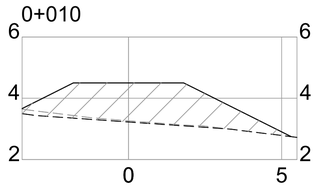
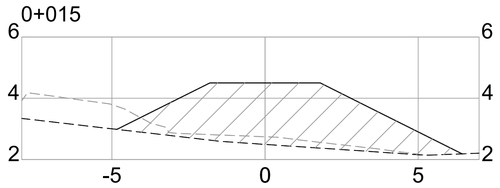
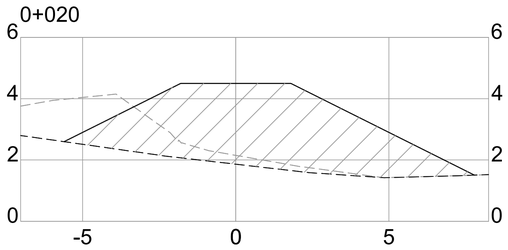
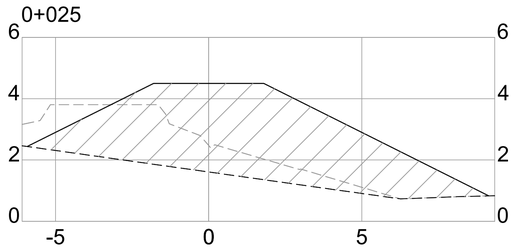
PROJECT BIG ROCK BOAT RAMP
DWG SECTIONS AND DETAILS
C-08 REVISION C

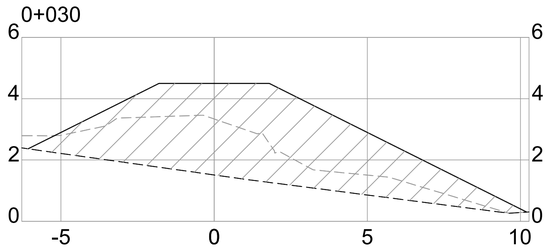


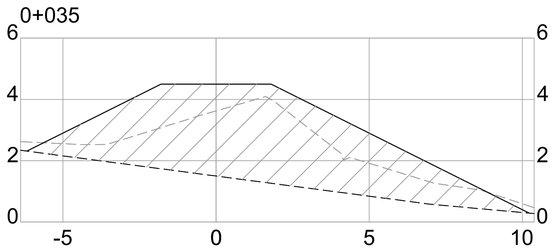


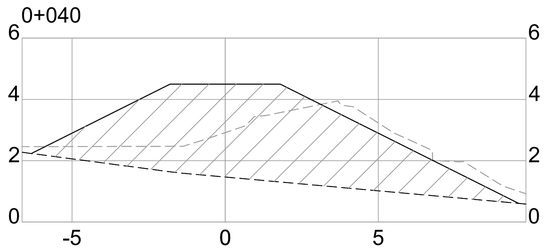


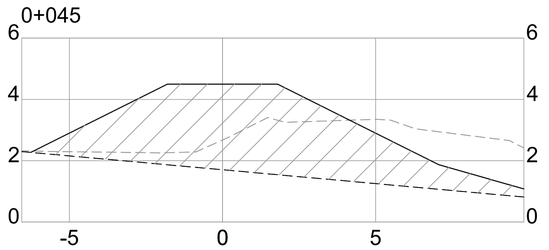


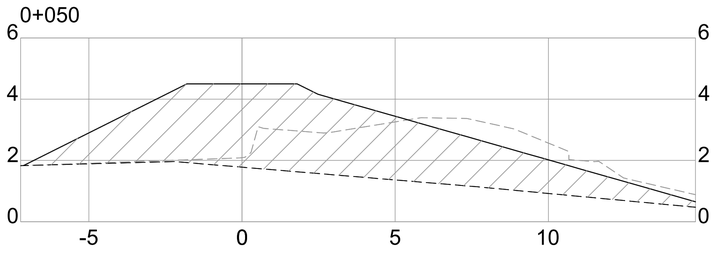


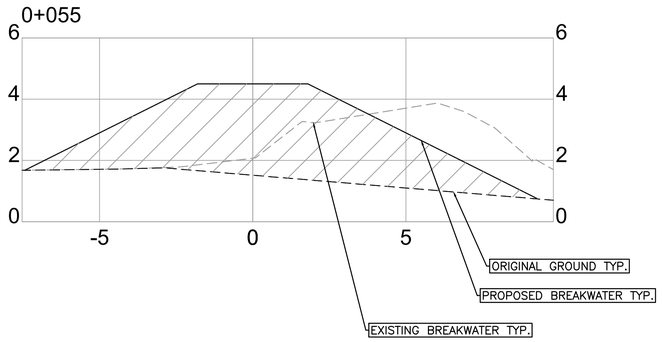


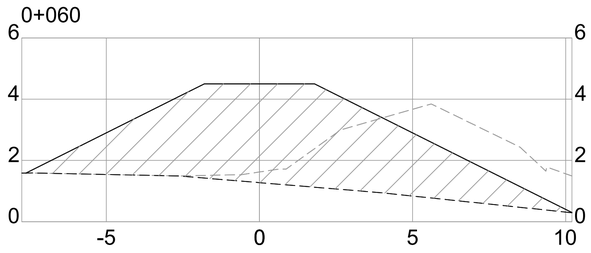












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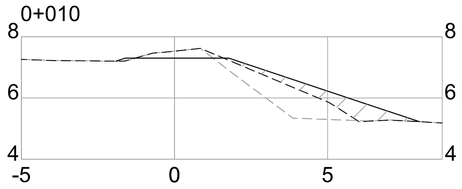
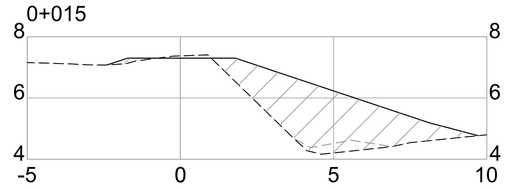
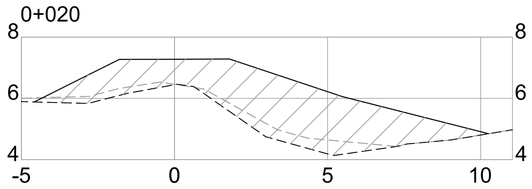
Project BIG ROCK BOAT RAMP RECONSTRUCTION

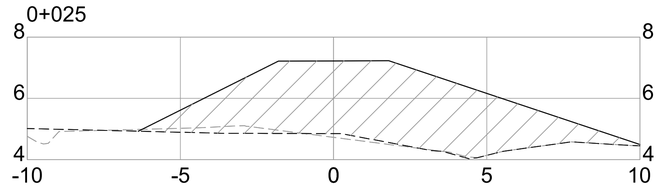
Title

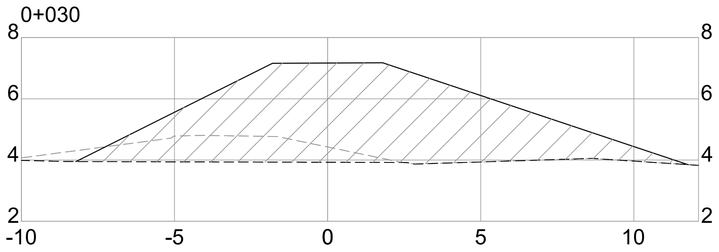
C09 NORTH BREAKWATER SECTIONS

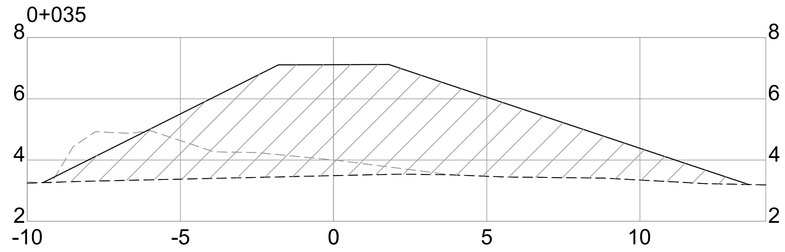


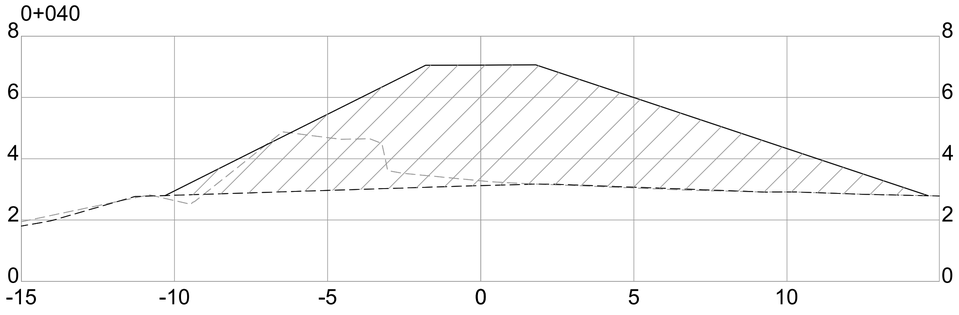


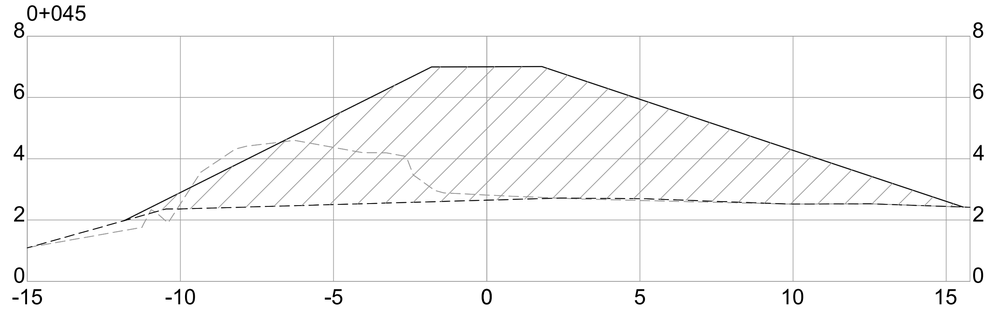


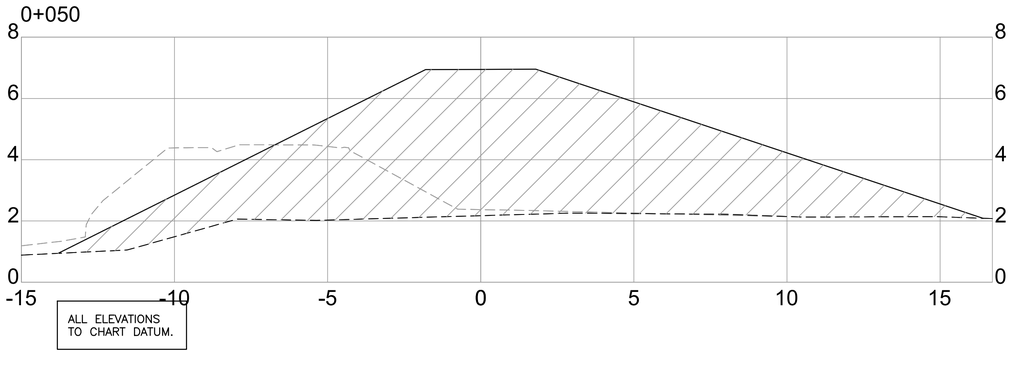


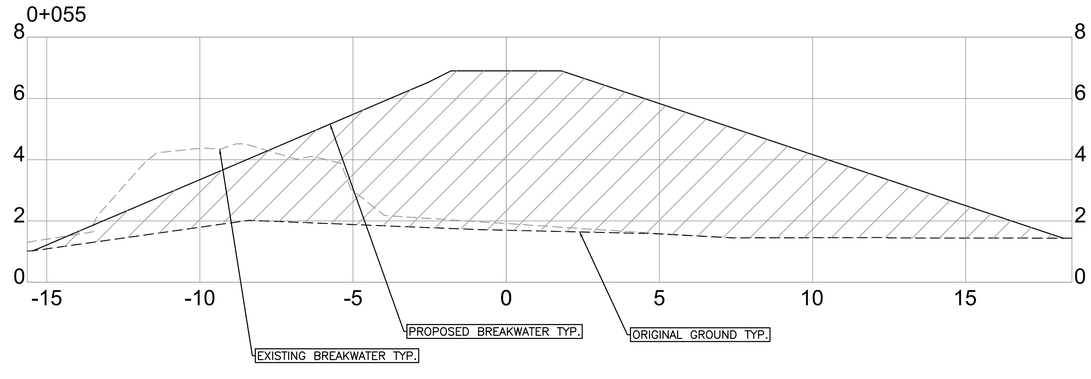












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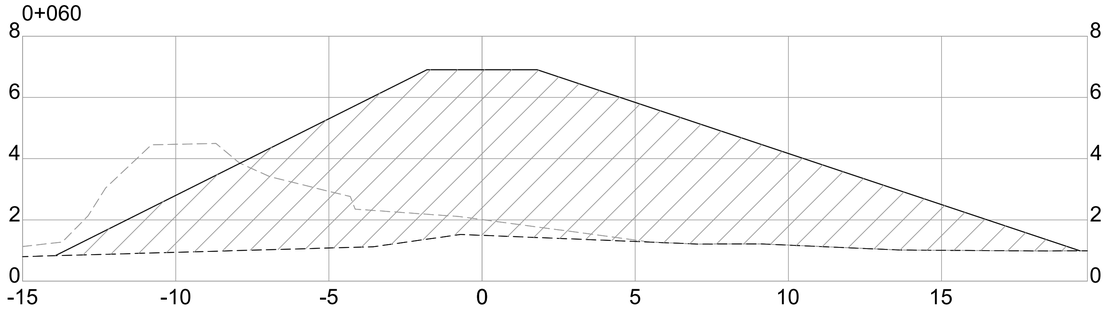
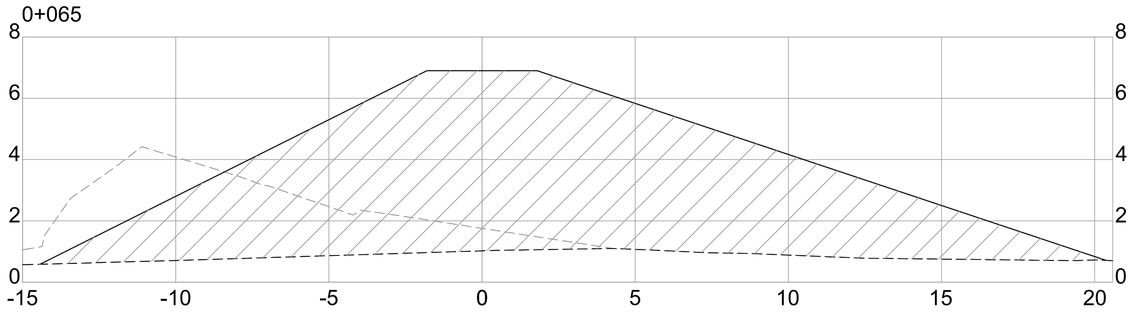
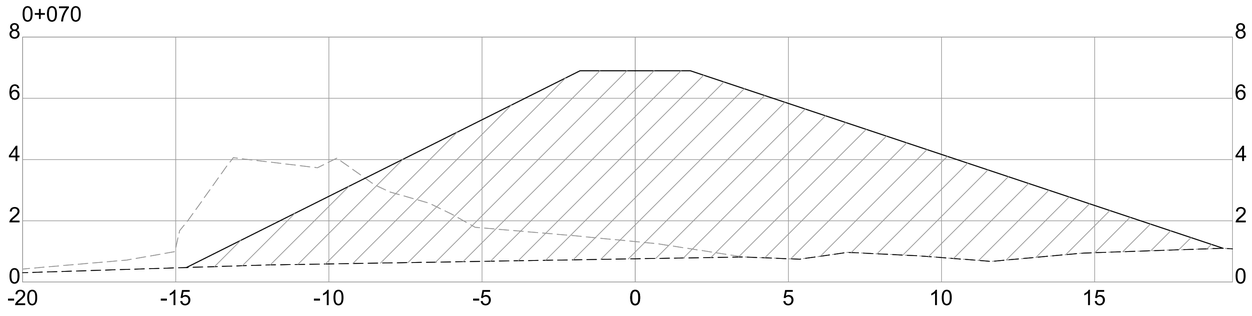
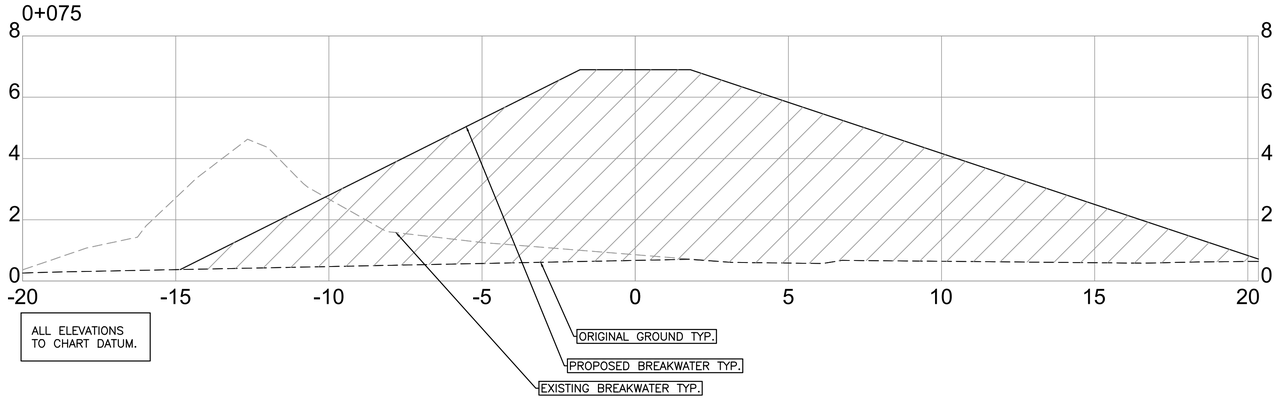
C10 SOUTH BREAKWATER SECTIONS









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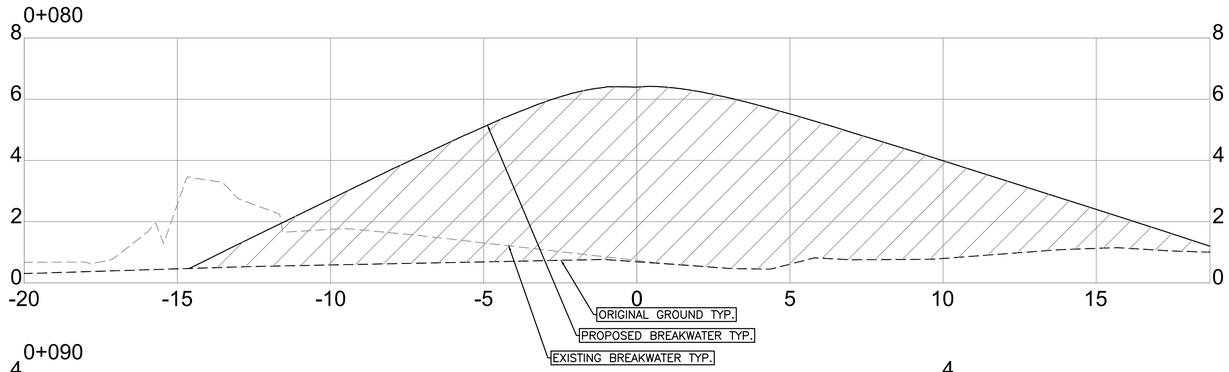
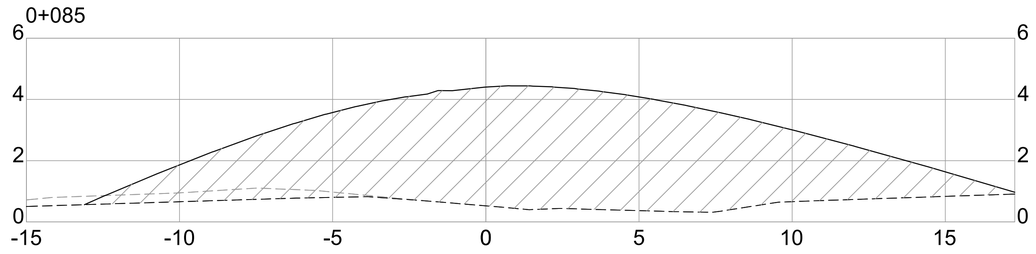
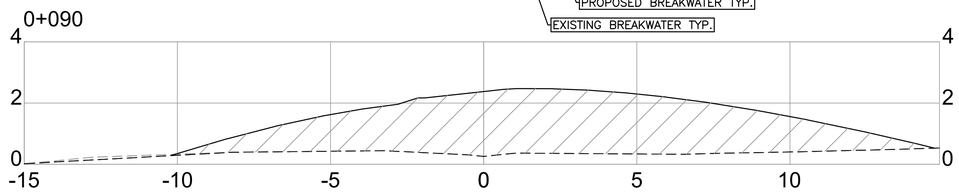
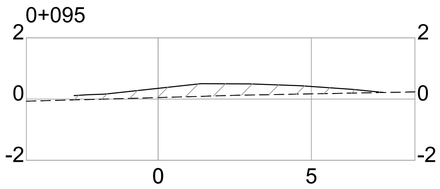
C11 SOUTH BREAKWATER SECTIONS









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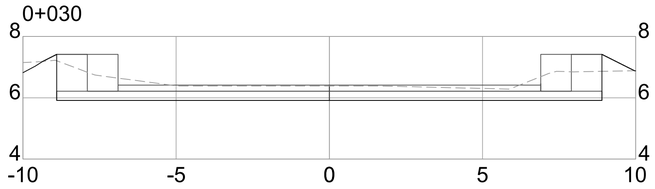
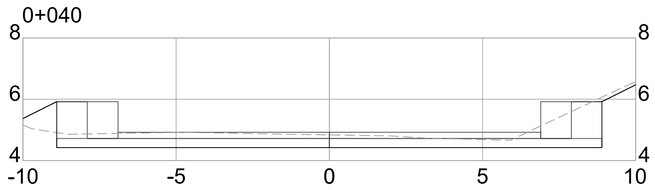
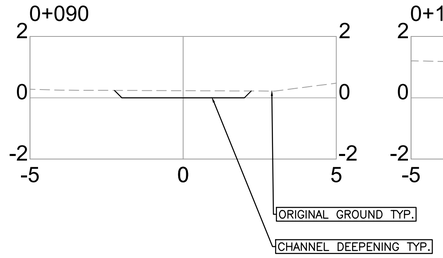
Project BIG ROCK BOAT RAMP RECONSTRUCTION

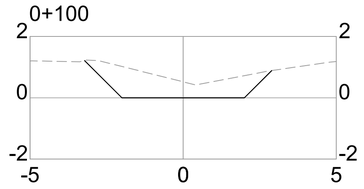
Title

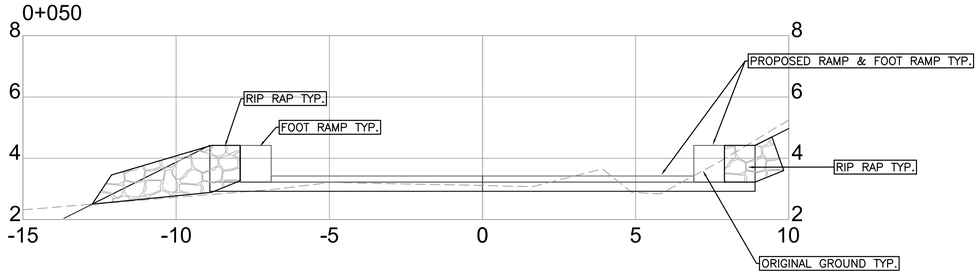
C12 SOUTH BREAKWATER SECTIONS

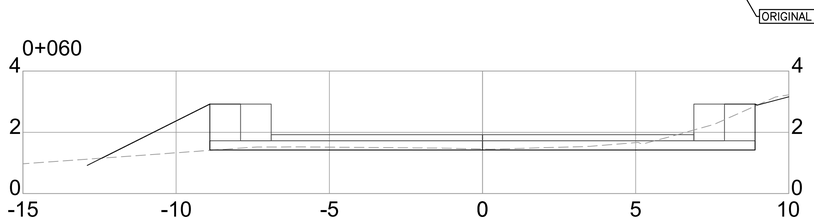


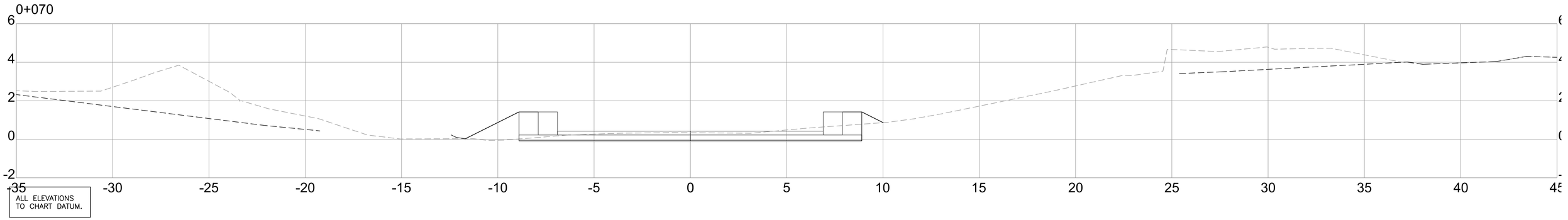












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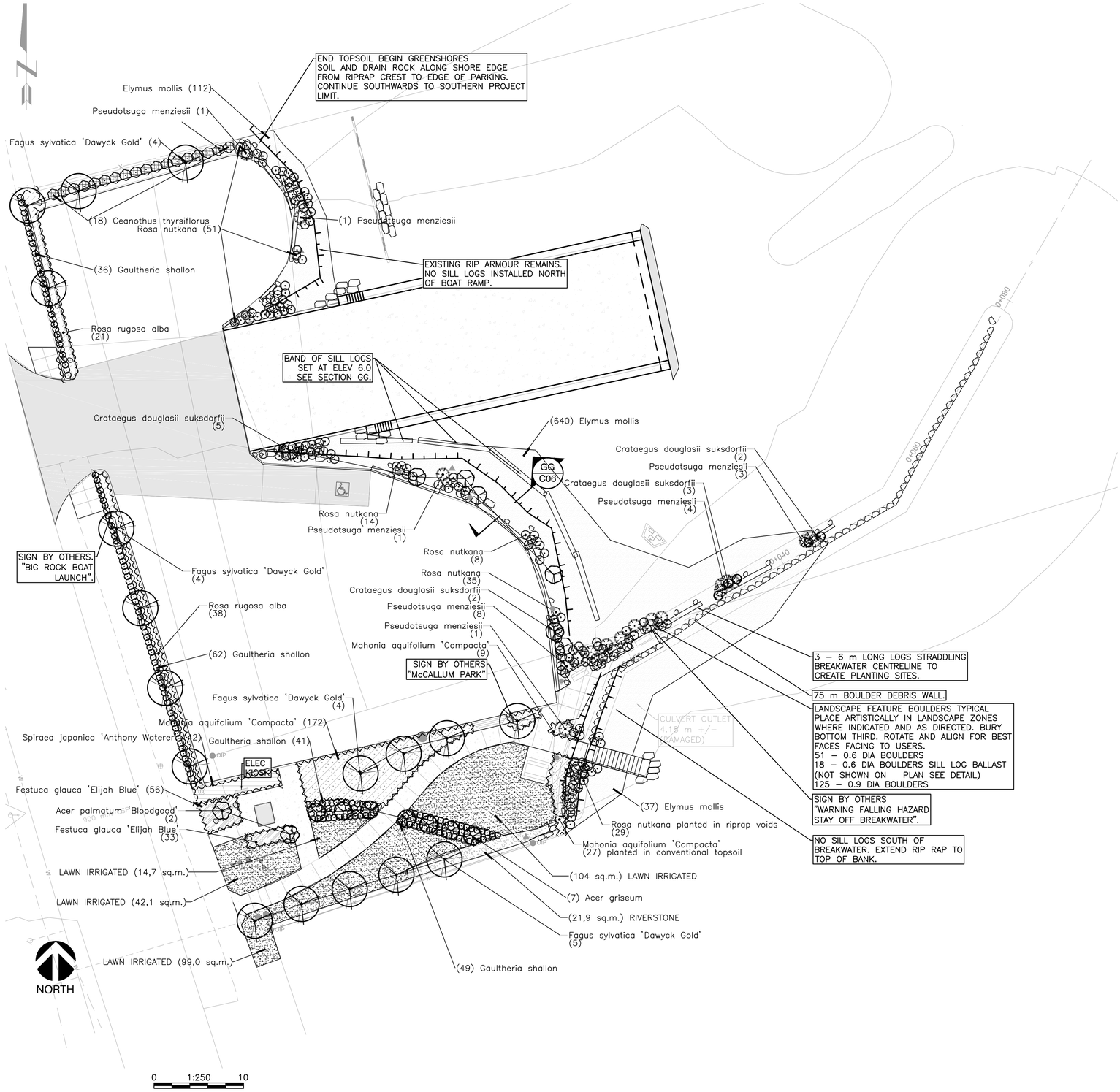
Project BIG ROCK BOAT RAMP RECONSTRUCTION

Title

C13 RAMP SECTIONS



PLANT SCHEDULE

TREES	BOTANICAL NAME / COMMON NAME	CONT	CAL	SIZE	QTY
	Acer griseum / Paperbark Maple	#15 POT	40mm Cal		7
	Acer palmatum 'Bloodgood' / Bloodgood Japanese Maple	#15 POT	40mm Cal		2
	Crataegus douglasii suksdorfii / Black Hawthorn	#5 Pot	40mm Cal		13
	Fagus sylvatica 'Dawyck Gold' / European Beech	#15 POT			17
	Pseudotsuga menziesii / Douglas Fir	#5 Pot		1.2 m HEIGHT	23

SHRUBS	BOTANICAL NAME / COMMON NAME	CONT	FIELD2	FIELD3	QTY
	Ceanothus thyrsiflorus / Blue Blossom	#2 Pot			18
	Gaultheria shallon / Salal	#2 Pot			189
	Rosa nutkana / Nootka Rose	#2 Pot			164

SHRUB AREAS	BOTANICAL NAME / COMMON NAME	CONT	FIELD2	FIELD3	SPACING	QTY
	Festuca glauca 'Elijah Blue' / Blue Fescue	#1 Pot			500mm	89
	Mahonia aquifolium 'Compacta' / Compact Oregon Grape	#2 Pot			700mm	220
	Rosa rugosa alba / White Rugosa Rose	#2 pot			1000mm	59
	Spiraea japonica 'Anthony Waterer' / Japanese Spirea	#2 Pot			700mm	42

GROUND COVERS	BOTANICAL NAME / COMMON NAME	CONT	SPACING	QTY
	Elymus mollis / American Dunegrass	50 P Plugs 8.5 Cu. In.	1000mm	789

NOTE: DUNE GRASS – CONFIRM SUPPLY. SEE SUBMITTAL NOTES DWG NO1.
NOTE – GROWERS/NURSERIES MUST BE EXPERIENCED WITH NORTH ISLAND COASTAL CONDITIONS AND CONFIRM PROVENANCE OF PLANT MATERIAL IS HARDY FOR THIS REGION. (PAST PLANT MATERIAL SUPPLIED BELIEVED TO HAVE COME FROM SOUTHERN PROVENANCES AND NOT SURVIVED)

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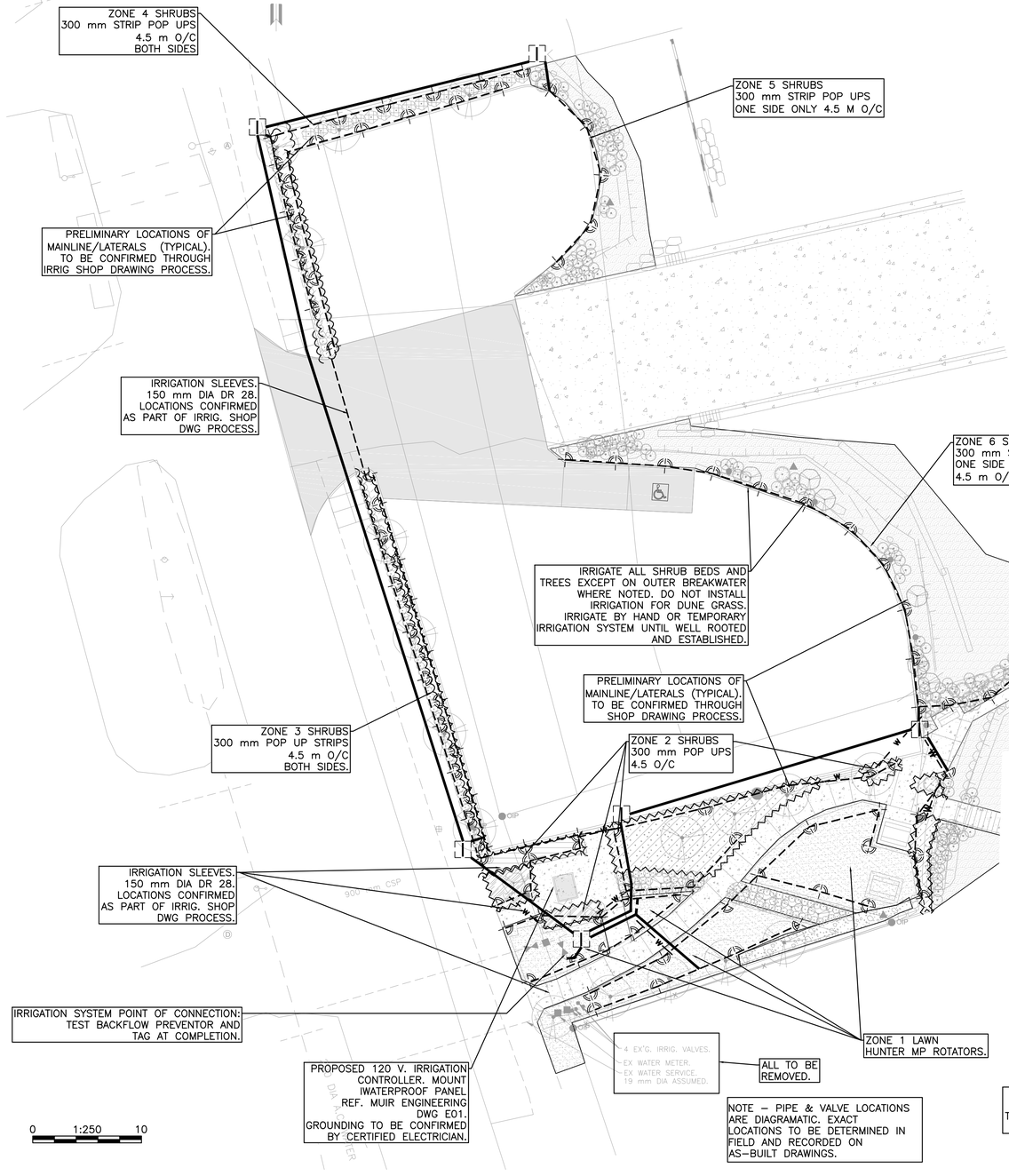
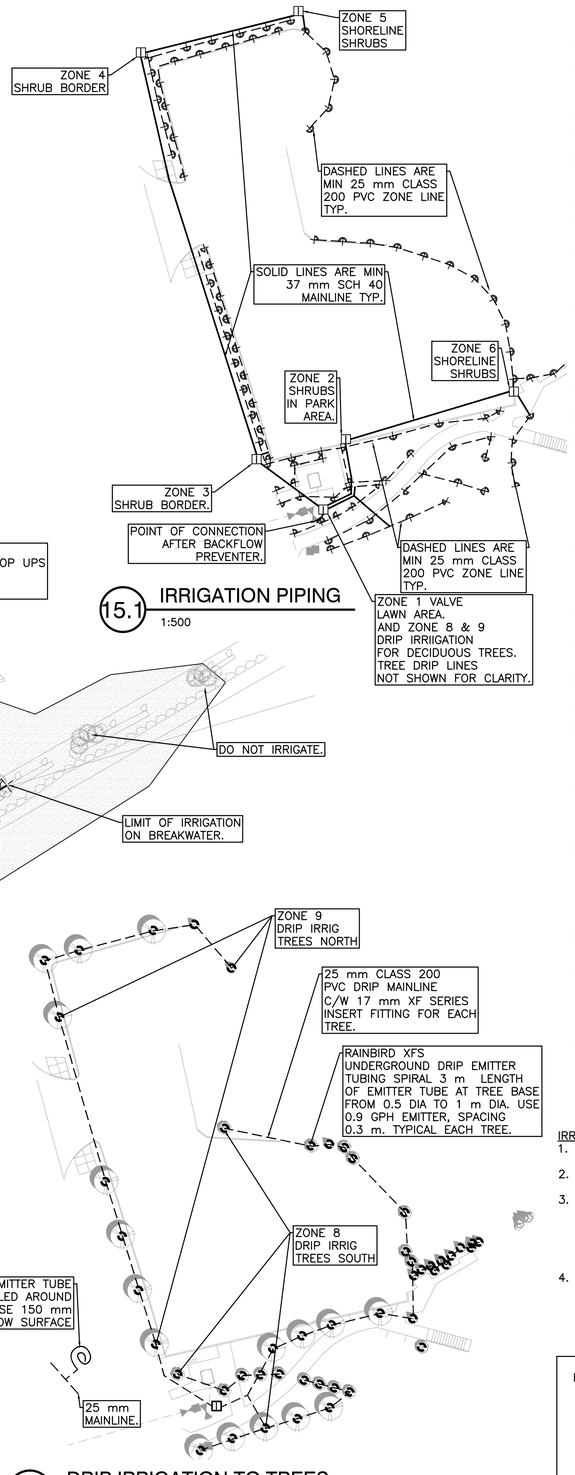
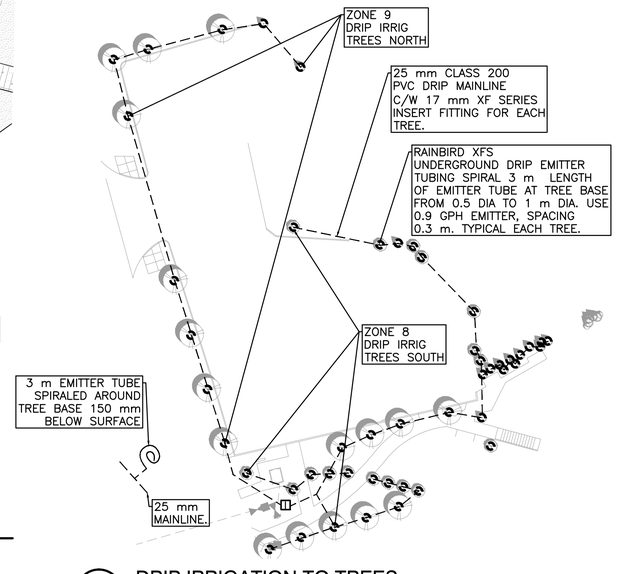
Title L01 LANDSCAPE PLAN



15 SCHEMATIC LAYOUT OF IRRIGATION MAINLINE AND SLEEVES
1:250



15.1 IRRIGATION PIPING
1:500



15.2 DRIP IRRIGATION TO TREES
1:500

IRRIGATION SPECIFICATIONS

1. IRRIGATION SHOP DRAWINGS SHALL BE SUBMITTED TO THE CONTRACT ADMINISTRATOR FOR APPROVAL PRIOR TO COMMENCEMENT OF ANY IRRIGATION INSTALLATIONS. SHOP DRAWINGS SHALL BE COMPLETED BY A CERTIFIED IRRIGATION DESIGNER (IIABC OR IA DESIGNATION), LANDSCAPE ARCHITECT, OR PERSON HAVING RELEVANT AND EXTENSIVE IRRIGATION DESIGN EXPERIENCE.
2. ALL HEADS SHALL BE NEW WITH THE SIZE, MANUFACTURER, AND FEATURES AS SHOWN IN THE DESIGN OR APPROVED EQUAL. THE RELEVANT MANUFACTURER'S RECOMMENDATIONS SHALL BE FOLLOWED IN THE SELECTION AND APPLICATION OF EACH HEAD BEING USED.
3. ALL CONTROL VALVES SHALL BE NEW WITH THE SIZE, MANUFACTURER, AND FEATURES AS SHOWN IN THE DESIGN OR APPROVED EQUAL. THE RELEVANT MANUFACTURER'S RECOMMENDATIONS MUST BE FOLLOWED IN THE SELECTION AND APPLICATION OF EACH CONTROL VALVE BEING USED.
4. ALL ISOLATION VALVES SHALL BE NEW WITH THE SIZE, MANUFACTURER, AND FEATURES AS SHOWN IN THE DESIGN OR APPROVED EQUAL. (VALVES 13 MM (½') THROUGH 50 MM (2') MAY BE BALL OR GATE VALVES WHILE THOSE LARGER SHALL BE GEAR OPERATED BUTTERFLY VALVES.
5. ALL CONTROLLERS SHALL BE NEW WITH THE SIZE, MANUFACTURER, & FEATURES AS SHOWN IN THE DESIGN, AND MUST BE COMPATIBLE WITH THE TORO SYSTEM. ALL CONTROLLERS SHALL BE C.S.A. APPROVED FOR USE IN THE MOUNTING LOCATION SELECTED.
6. ALL POWER AND CONTROL WIRING AND ITS ASSOCIATED COMPONENTS SHALL CONFORM TO LOCAL CODES BEING USED. ALL WIRE SHALL BE SIZED AND SPECIFIED AS SHOWN IN THE DESIGN. MULTI-CONDUCTOR POWER WIRE SHALL BE C.S.A. APPROVED NMWU. SINGLE CONDUCTOR CONTROL WIRE SHALL BE C.S.A. APPROVED PE OR TWU RATED FOR DIRECT BURIAL. WIRE SHALL BE UL LISTED IN ACCORDANCE WITH SPECIFICATION NUMBER P7079D OR P7001D.
7. WHITE WIRE SHALL ALWAYS AND ONLY BE USED AS THE COMMON WIRE. OTHER WIRING SHALL HAVE THE FOLLOWING COLOR DESIGNATIONS: ZONES – BLACK, FLOW METER – BLUE (TWO WIRES REQUIRED), MASTER VALVE – GREEN.
8. ALL CONNECTORS SHALL BE C.S.A. APPROVED FOR WATER TIGHT APPLICATION AND ASSEMBLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
9. ALL BACKFLOW PREVENTION DEVICES SHALL BE NEW WITH THE SIZE, MANUFACTURER, AND FEATURES AS SHOWN IN THE APPROVED SHOP DRAWINGS. ALL DEVICES USED MUST BE C.S.A. AND B.C.W.W.A. APPROVED FOR THE APPLICATION.
10. SCHEDULE 40 PIPE SHALL BE USED IN MAINLINES. CLASS 200 IN ZONE LINES. FITTINGS FOR P.V.C. PIPE SHALL BE SCHEDULE 40 P.V.C. SUITABLE FOR SOLVENT WELDING OR THREADED CONNECTIONS. THE CEMENT AND PRIMER COMBINATION SHALL BE AS RECOMMENDED BY THE MANUFACTURER TO BE SUITABLE FOR THE MATERIALS AND APPLICATION, WHEN USED AS DIRECTED.
11. ALL VALVE BOXES SHALL BE NEW AND OF THE SIZE AND TYPE AS SHOWN IN THE DESIGN OR APPROVED EQUAL.
12. ALL SLEEVING UNDER ROADS, SIDEWALKS, AND WALKWAYS SHALL BE SCHEDULE 40. MINIMUM SLEEVING SIZE SHALL BE 100 MM UNLESS OTHERWISE APPROVED. SLEEVING FOR ALL IRRIGATION MAINLINES SHALL BE 150 MM UNLESS OTHERWISE SPECIFIED. ALL SLEEVING IN MAJOR ROAD CONSTRUCTION PROJECTS SHALL BE SCHEDULE 80-150 MM PVC.
13. PRIOR TO BEGINNING THE INSTALLATION, THE EXACT LOCATION OF LINES, VALVES, AND HEADS MUST BE COORDINATED WITH PLANTING LOCATIONS TO AVOID CONFLICT AND DAMAGE DURING THE COURSE OF THE WORK. ALL HEAD LOCATIONS ARE TO BE STAKED AND GRADES CHECKED FOR ALL COMPONENTS.
14. PERFORM BC 1 CALL. PROTECT ROOTS OF TREES TO REMAIN. LOCATE AND PROTECT ALL UNDERGROUND UTILITIES. ALL TRENCHING SHALL BE COMPLETED SO AS NOT TO UNDERMINE SUB-BASES OF ADJACENT HARD SURFACES.
15. THE FOLLOWING COVERAGE TO FINISHED GRADE ARE REQUIRED OVER PIPING: MAINLINES: 450 MM. ZONE LINES: 300 MM. BACKFILL TRENCHES IN 150 MM LAYERS, TAMPING FIRMLY TO ENSURE THAT THE COMPACTION OF THE TRENCH IS EQUAL TO THE SURROUNDING UNDISTURBED AREAS. BACKFILL MATERIAL SHALL BE SCREENED TOPSOIL OR BEDDING SAND.
16. ALL SLEEVING SHALL BE INSTALLED AND BACKFILLED WITH THE SAME CONSIDERATIONS FOR PROTECTION OF THE MATERIAL AS IF IT WERE WATER PIPE. COMPACTION SHALL BE TO THE SAME STANDARD AS THE ADJOINING UNDISTURBED SOIL AND THE SLEEVES SHALL PROJECT AT LEAST 300 MM (12') ON EITHER SIDE OF THE HARD SURFACE BEING CROSSED. ENDS OF ALL SLEEVING SHALL BE MARKED WITH A 2X4 STAKE BEFORE BACKFILLING TO FACILITATE LOCATION AND PROJECT AT LEAST 150 MM ABOVE GRADE. SLEEVING BEING INSTALLED ACROSS ROADS OR DRIVEWAYS FOR FUTURE USE, SHALL HAVE THE NECESSARY IRRIGATION PIPE AND WIRE INSTALLED AT THE SAME TIME WITH EACH END CAPPED AND MARKED.
17. MULTIPLE PIPES MAY OCCUPY THE SAME TRENCH PROVIDED THAT A MINIMUM OF 50 MM HORIZONTAL AND 100 MM VERTICAL CLEARANCE CAN BE MAINTAINED.
18. VISUALLY INSPECT EACH PIPE PRIOR TO INSTALLATION, REMOVING ANY DIMPLED OR OTHERWISE DAMAGED SECTIONS. LAY THE PIPE IN A STRAIGHT LINE BETWEEN FITTINGS, PLACING IT ON FIRM SOIL AT ALL POINTS IN THE TRENCH. ALL SOLVENT WELDING IS TO BE DONE IN CAREFUL COMPLIANCE WITH THE MANUFACTURER'S RECOMMENDATIONS WITH PARTICULAR ATTENTION TO CLEANLINESS, AIR TEMPERATURE, MOISTURE, AND CURING TIME. EXCESS CEMENT MUST BE REMOVED FROM ALL JOINTS.
19. THRUST BLOCKING IS REQUIRED FOR PIPE 75 MM DIAMETER AND LARGER.
20. ALL VALVE BOXES SHALL BE INSTALLED FLUSH WITH THE FINISHED GRADE AND LOCATED IN SHRUB AREAS WHERE POSSIBLE. VALVE BOXES SHALL BE SUPPORTED, AND CONSTRUCTED OF A MATERIAL SUCH AS TO BE ABLE TO SUPPORT THE WEIGHT OF EXPECTED TRAFFIC. ALL VALVE BOXES LOCATED IN HARDSCAPES SUCH AS ASPHALT, CONCRETE, OR BRICKWORK SHALL BE CONSTRUCTED OF CONCRETE AND FITTED WITH METAL LIDS.
21. ALL VALVES SHALL BE INSTALLED VERTICALLY AND CENTERED IN THE BOX SO AS TO BE ACCESSIBLE FOR SERVICING OR REPLACEMENT. ALL VALVE BOXES SHALL BE INSTALLED WITH ADEQUATE CLEARANCE ABOVE THE PIPE AND ON A FIRM BASE SO AS NOT TO CONTACT THE PIPE WITH SETTLEMENT OR UPON BEING EXPOSED TO EXPECTED TRAFFIC. BASE MATERIAL SHALL FACILITATE THE DRAINAGE OF EXCESS WATER ACCUMULATION 13MM GRAVEL, 150MM DEEP. VALVE BOXES SHALL BE SUPPORTED AND OF A TYPE OF MATERIAL SUCH AS TO BE ABLE TO SUPPORT THE WEIGHT OF EXPECTED TRAFFIC. MINIMUM VALVE BOX SIZE IS TO BE 14 X 19 INCHES. A 10 INCH ROUND VALVE BOX MAY BE USED FOR WIRING SPLICES PROVIDED THERE IS ADEQUATE ROOM FOR REPAIRS.
22. ALL POP-UP HEADS SHALL BE CONNECTED TO THE PIPE BY AN ADJUSTABLE SWING JOINT ASSEMBLY THAT IS SIZED TO MEET THE FLOW REQUIREMENTS OF THE HEAD. ALL SWING JOINT ASSEMBLIES SHALL BE P.V.C. TRIPLE SWING JOINT CONSISTING OF A SCHEDULE 40 STREET ELL, A SCHEDULE 80 NIPPLE AND TWO SCHEDULE 40 STREET ELLS AT THE HEAD END. MARLEX STREET ELLS ARE AN ACCEPTABLE ALTERNATIVE, EXCEPT FOR VALVE IN HEAD APPLICATIONS. ALL THREADS OTHER THAN MARLEX WILL HAVE MINIMUM TWO WRAPS OF TEFLON TAPE. THE BOTTOM STREET ELL OF THE SWING JOINT ASSEMBLY SHALL BE CONNECTED TO AN OUTLET ON THE SIDE OF THE LATERAL PIPE LINE (NOT ON THE TOP OR BOTTOM) AND THE NIPPLE SHALL BE OF SUFFICIENT LENGTH TO BE INSTALLED AT AN APPROXIMATE 45-DEGREE ANGLE WHEN THE HEAD IS MOUNTED AT FINISHED GRADE. ALL POP-UP HEADS SHALL BE INSTALLED FLUSH AND LEVEL WITH THE FINISHED GRADE AND NOT HIGHER THAN ANY ADJOINING HARD SURFACE WHICH THERE MUST BE AT LEAST A 50 MM SEPARATION TO ALLOW FOR EDGING MAINTENANCE. ALL STATIONARY SHRUB RISERS SHALL BE INSTALLED WITH TWO P.V.C. STREET ELLS CONNECTED TO THE SIDE OF THE LATERAL LINE PIPE AND A SCHEDULE 80 NIPPLE THAT IS LONG ENOUGH TO SUIT THE PLANT MATERIAL.
23. ALL PIPING MUST BE THOROUGHLY FLUSHED PRIOR TO THE INSTALLATION OF HEADS/NOZZLES WHICH ON LARGE ZONES WILL REQUIRE PROGRESSIVE FLUSHING.
24. ALL WIRING SHALL BE INSTALLED TO MEET LOCAL ELECTRICAL CODES. ALL WIRING SHALL BE PROTECTED BY BEING BUNDLED AND TAPED AT 1.8 M INTERVALS AND INSTALLED BENEATH THE IRRIGATION PIPING OR IN APPROPRIATELY SIZED CONDUIT IF RUN INDEPENDENTLY. TAPING WIRES TO THE UNDER SIDE OF THE MAINLINE IS PERMISSIBLE, BUT SHALL NOT BE DONE WHERE THE MAINLINE PASSES THROUGH ANY SLEEVING. SPLICES ARE ONLY TO BE MADE IN VALVE BOXES. ALL WIRING SHALL BE CLEARLY IDENTIFIED AND MARKED (I.E.: NUMBERED) AT BOTH ENDS AS WELL AS BOTH SIDES OF ANY SPLICES OCCURRING IN THE WIRE RUN. SUFFICIENT EXTRA WIRE SHALL BE LEFT IN EACH VALVE BOX SUCH THAT THE SPLICE MAY BE LIFTED 300 MM (12') ABOVE GRADE, AND SUCH EXTRA WIRE TO BE NEATLY COILED. WHITE WIRE SHALL ONLY BE USED AS THE COMMON WIRE AND OTHER COLOURS USED SHALL BE CONSISTENT FROM VALVE TO CONTROLLER. EXTRA WIRES ARE TO BE INSTALLED ON EVERY SYSTEM. ALL EXTRA WIRES ARE TO BE INSTALLED IN A VALVE BOX TWO EXTRAS WIRES MUST BE INSTALLED TO THE END OF EACH MAINLINE, UNLESS OTHERWISE APPROVED.
25. BACKFLOW PREVENTION ASSEMBLIES SHALL BE INSTALLED ACCORDING TO THE LOCAL PLUMBING CODE AND THE CROSS CONNECTION CONTROL MANUAL ADOPTED BY THE B.C.W.W.A. ALL CROSS CONNECTION CONTROL DEVICES INSTALLED MUST BE SIZED TO ACCOMMODATE THE FLOW REQUIREMENTS PRESENT, AND SUCCESSFULLY TESTED AND TAGGED AFTER INSTALLATION BY A CERTIFIED PLUMBER.
26. THE LOCATION OF THE CONTROLLERS SHALL BE AS INDICATED ON THE PLANS. THE CONTRACTOR SHALL HAVE A QUALIFIED ELECTRICIAN CONNECT THE CONTROLLERS TO ELECTRICAL SUPPLY. THE CONTROLLER SHALL BE FIRMLY MOUNTED AT APPROXIMATE EYE LEVEL WITH ALL WIRING DONE IN THE CONTROLLER ON AN APPROVED JUNCTION BOX. ZONES SHALL BE WIRED IN A LOGICAL SEQUENCE. THE INSTALLATION OF ANY RAIN OR MOISTURE SENSING EQUIPMENT SHALL BE NOTED ON THE CONTROLLER AND THE LOCATION OF THE CONTROLLER'S CIRCUIT BREAKER INDICATED UNLESS OBVIOUS.
27. THE JOB SITE SHALL BE KEPT IN A NEAT, CLEAN, AND ORDERLY CONDITION AT ALL TIMES DURING THE INSTALLATION PROCESS. ALL SCRAP AND EXCESS MATERIALS ARE TO BE REGULARLY REMOVED FROM THE SITE AND NOT BURIED IN TRENCHES.
28. TRENCHING, LAYING PIPE, AND BACKFILLING SHALL BE CONTINUOUS SO THAT THE AMOUNT OF OPEN TRENCH AT THE END OF EACH WORK DAY IS MINIMIZED. ANY OPEN TRENCH OR OTHER EXCAVATION SHALL BE BARRICADED AND MARKED WITH HIGH VISIBILITY FLAGGING TAPE.
29. UPON COMPLETION OF THE IRRIGATION SYSTEM INSTALLATION, ALL PRESSURE REGULATIONS, ARCS, DISTANCES OF THROW, HEAD LOCATIONS AND HEIGHT, CONTROLLER ZONES ETC., MUST BE ADJUSTED SO AS TO OPTIMIZE THE OPERATION OF THE SYSTEM AND MAKE IT READY FOR INSPECTION AND TESTING.
30. UPON COMPLETION OF THE SYSTEM, MAXIMUM OPERATING PRESSURE SHALL BE APPLIED TO THE MAINLINE AND MAINTAINED FOR A MINIMUM OF TWO HOURS. ONCE THE INTEGRITY OF THE MAINLINE HAS BEEN ESTABLISHED, ALL STATIONS SHALL BE OPERATED SEQUENTIALLY WITH THE CONTROLLER. THE PURPOSE OF THIS TEST IS TO ENSURE THAT THE SYSTEM ADEQUATELY COVERS THE LANDSCAPE TO BE IRRIGATED AND MEETS THE DESIGN CRITERIA. COVERAGE SHALL BE HEAD TO HEAD UNLESS OTHERWISE NOTED. ANY SECTIONS THAT LEAK SHALL BE CUT OUT AND REPLACED. LEAKS SHALL NOT BE REPAIRED BY PATCHING. THE TEST PROCEDURE SHALL BE REPEATED AFTER REPLACING DEFECTIVE SECTIONS. THE SPRINKLER SYSTEM SHALL BE ADJUSTED SECTION BY SECTION TO GIVE SATISFACTORY COVERAGE TO ALL AREAS.
31. TURF HEADS, LAWN HEADS, AND VALVE BOXES SHALL BE FLUSH WITH FINAL GRADE AS REQUIRED. DURING THE LANDSCAPE MAINTENANCE/GUARANTEE PERIOD, THE CONTRACTOR SHALL RETURN TWICE AND ADJUST HEADS, AS REQUIRED TO BE FLUSH WITH THE FINAL TURF GRADE. THESE CALLBACKS SHALL BE PERFORMED WITHIN FIVE DAYS OF REQUEST AND THIS WORK IS INCIDENTAL TO CONTRACT.

IRRIGATION GENERAL NOTES AND REQUIREMENTS:

1. SHOP DRAWINGS TO BE APPROVED BY CCR PARKS DEPT. PRIOR TO CONSTRUCTION START.
2. IRRIGATION CONTRACTOR TO HAVE A COPY OF SPECIFICATION AND THESE DRAWINGS ON SITE AT ALL TIMES.
3. IRRIGATION CONTRACTOR SHALL MAINTAIN A CLEAN COPY OF THE DESIGN AND MARK AS CONSTRUCTED INFORMATION CLEARLY. PROVIDE DIMENSIONS WHERE SUBSURFACE INFORMATION MAY BE REQUIRED IN THE FUTURE (TEES ETC). PROVIDE TO OUTLOOK FOR ISSUANCE OF RECORD DRAWINGS PRIOR TO SUBSTANTIAL COMPLETION.
4. IRRIGATE ALL SHRUBS, TREES AND LAWN AREAS. DUNE GRASS AND NATURALIZED AREAS NOT PROVIDED WITH IRRIGATION SYSTEM.

DISCLAIMER:

BIDDERS ARE ADVISED THAT OUTLOOK ELA IS NOT A CERTIFIED IRRIGATION DESIGNER. THESE DRAWINGS ARE PROVIDED AS A SERVICE TO THE BIDDING PROCESS AND ARE NOT NECESSARILY OPTIMIZED FROM A TECHNICAL PERSPECTIVE. SHOP DRAWINGS ARE INTENDED TO CONVERT THIS DRAWING TO A FULLY DESIGNED SYSTEM SUITABLE FOR LONGTERM MUNICIPAL SERVICE. THIS DRAWING PROVIDES A SUMMARY OF THE KEY COMPONENTS OF THE SYSTEMT THAT WILL BE REQUIRED AND ARE TO BE INCLUDED IN THE PRICING.

IRRIGATION SHOP DRAWING ITEMS

1. ALL MATERIALS AND EQUIPMENT TO CONFORM TO CITY OF CAMPBELL RIVERS APPROVED SUPPLIER LIST 2014.
2. USE TORO 12 STATION SENT CONTROLLER.
3. INDICATE THE FOLLOWING ON SHOP DRAWINGS:
   - 3.1. POINT OF CONNECTION
   - 3.2. BACK FLOW PREVENTION DEVICE AND ENCLOSURE
   - 3.3. MAINLINE AND LATERAL LINE SIZES, TYPE, DEPTH OF COVER
   - 3.4. ZONE VALVES
   - 3.5. MASTER VALVE
   - 3.6. VALVE BOXES
   - 3.7. SLEEVES AND LOCATIONS.
   - 3.8. DATE OF DESIGN AND DESIGNER.
   - 3.9. TYPES OF SPRAY HEADS, ROTORS, BUBBLERS ETC.
   - 3.10. SYSTEM WINTERIZING PROCEDURE AND BLOW OUT LOCATIONS.
   - 3.11. GROUNDING FOR IRRIGATION CONTROLLER.
   - 3.12. MIN DIA MAINLINE IS 37 mm
   - 3.13. MIN DIA ZONE LINE 25 mm

SUGGESTED SUBMISSION FORMAT: ON FULL SIZE PLOT OF THIS DRAWINGS INDICATE SHOP DWG INFORMATION IN NEAT RED PEN. SCAN FULL SIZE. SUBMIT FOR REVIEW VIA EMAIL.

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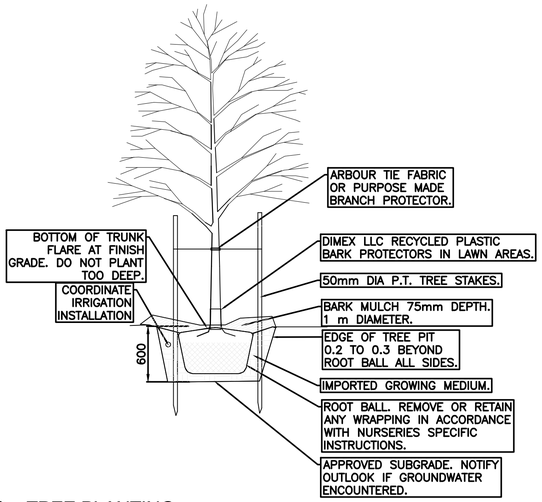
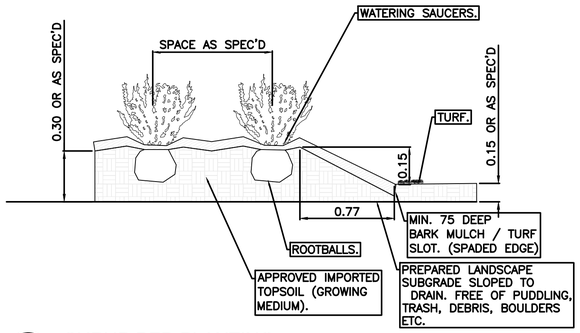
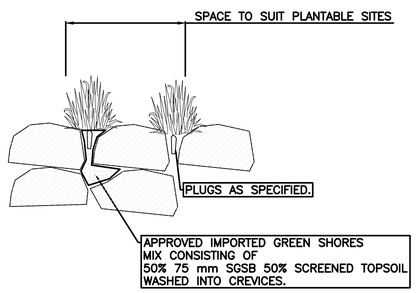
Project BIG ROCK BOAT RAMP RECONSTRUCTION
Title L02 IRRIGATION



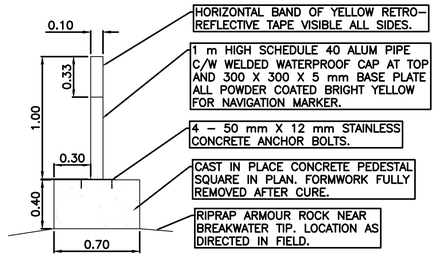
16 TREE PLANTING
NTS



17 SHRUB BED PLANTING
1:25



18 PLUG PLANTING IN RIPRAP
1:25



19 TRANSPORT CANADA POST
NTS

Notes

Stamp

No.	Date	By	Revisions	Eng.
C	MAR 17 2017	TOB	FOR TENDER	TOB
B	MAR 13 2017	TOB	FOR REVIEW	TOB
A	FEB 25 2017	TOB	FOR REVIEW	TOB

Design by TOB
Date January 2017

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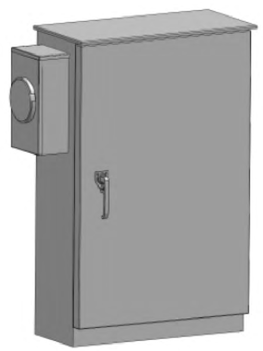
Scale horiz. 1:250
Sheet of
Outlook Project No. 227-3
City Dwg No. 13-506

Project BIG ROCK BOAT RAMP RECONSTRUCTION
Title L03 LANDSCAPE DETAILS

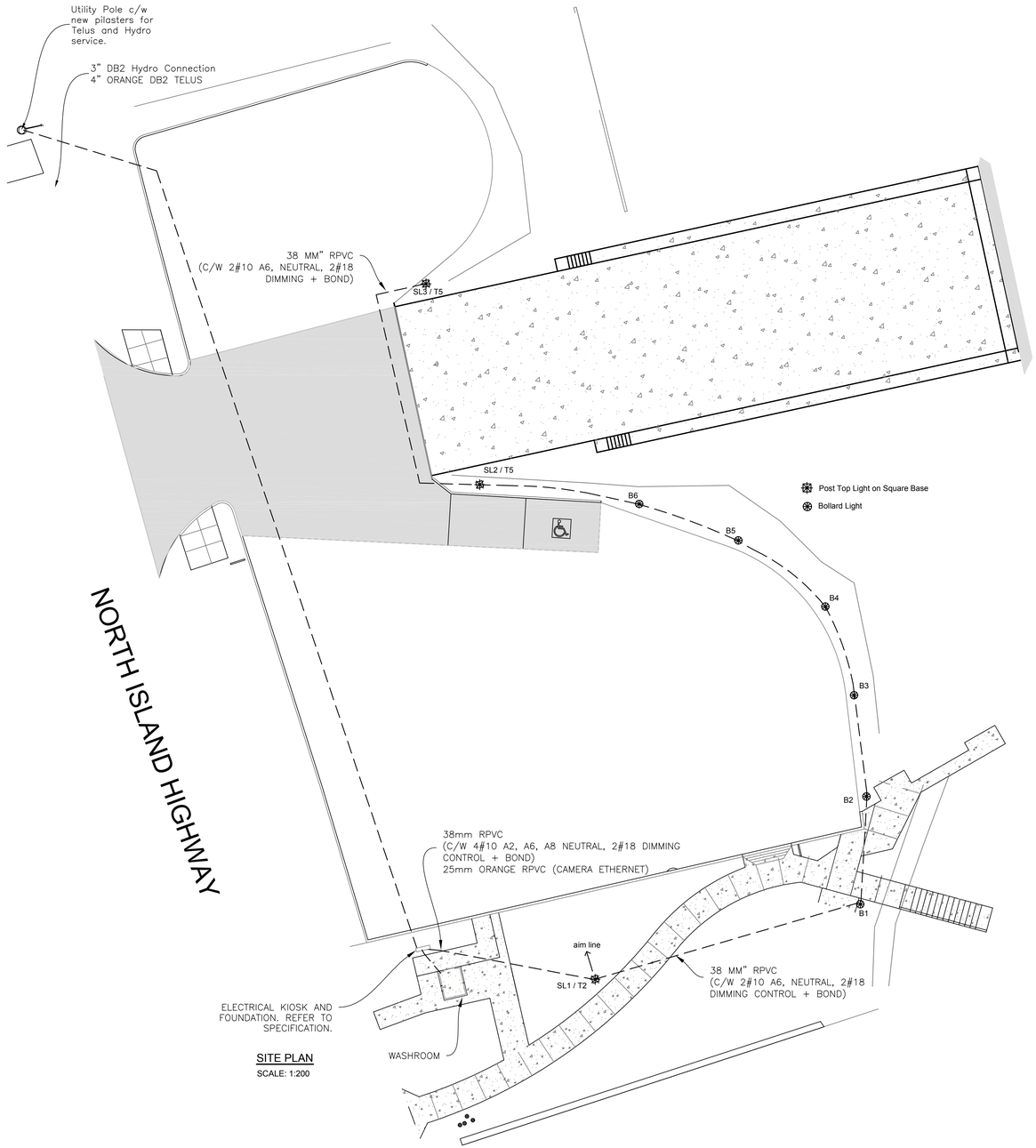
NOTES AND SPECIFICIATIONS

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH MMCD SPECIFICATION FOR DESIGN AND CONSTRUCTION OF STREETLIGHTS AND SERVICE ENCLOSURES. DRAWINGS REFERENCE NUMBERS ARE FROM MMCD PLATINUM EDITION.
2. 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 CIVIL DRAWINGS FOR DISCREPANCIES AND REPORT TO THE ENGINEER.
3. ALL MEASUREMENTS SHALL BE VERIFIED IN FIELD. CONTRACTOR SHALL VERIFY LOCATION OF NEW SERVICES WITH THE ENGINEER PRIOR TO ANY EXCAVATION OR PLACEMENT OF MATERIALS. CARE SHALL BE TAKEN TO AVOID DAMAGE TO, OR TRESPASS OF, PRIVATE PROPERTY.
4. LOCATION OF EQUIPMENT AND CABLE IS DIAGRAMMATIC. EXACT LOCATIONS TO BE DETERMINED IN THE FIELD.
5. INSTALL PULL CORD IN UNUSED CONDUIT.
6. ALL CONCRETE BASES AND JUNCTION BOX SYMBOLS ARE NOT TO SCALE.
7. MATERIAL SHALL CARRY CSA APPROVAL AND CONFIRM WITH EEMAC STANDARDS.
8. EQUIPMENT WIRING AND WIRING DEVICES SHALL MEET THE REQUIREMENTS OF THE CURRENT EDITION OF THE CANADIAN ELECTRICAL CODE 22.1, PART 1.
9. UPON AWARD OF CONTRACT THE CONTRACTOR SHALL ASSUME COORDINATION RESPONSIBILITY WITH BC HYDRO AND TELUS

7. STREETLIGHTS
   - 7.1. STREETLIGHTS TO INCLUDE INLINE FUSE.
   - 7.2. POLE MOUNTED LIGHTS SHALL FEATURE 0-10V DIMMING CONTROL CAPABILITY WITH CONTROL WIRING INSTALLED, CONNECTED TO EACH LIGHT, AND WIRED BACK TO POWER KIOSK FOR POTENTIAL FUTURE USE.
   - 7.3. LIGHTS, BASES, AND POLES ARE TO BE POWDER COATED FLAT BLACK
   - 7.4. ALL HARDWARE (EG NUTS, BOLTS) ASSOCIATED WITH STREET LIGHTS AND BOLLARDS SHALL BE STAINLESS STEEL UNLESS APPROVED BY ENGINEER.
   - 7.5. ORIENT TYPE 2 LIGHT AS INDICATED
   - 7.6. ORIENT TYPE 5 LIGHTS WITH INDICATED "FRONT" FACING SAME DIRECTION AS AXIS OF BOAT RAMP.
8. POWER KIOSK
   - 8.1. MOUNT POWER KIOSK ADJACENT TO WASHROOM
   - 8.2. POWER KIOSK SUPPLIED BY VALID MANUFACTURING TYPE ADFPM110O OR APPROVED ALTERNATE SUPPLIER.
   - 8.3. POWER KIOSK SHALL BE SERVICE ENTRY RATED, CSA TYPE 3R, MARINE GRADE ALUMINUM, POWDER COATED FLAT BLACK
   - 8.4. INSTALL SYSTEM GROUND AS PER CEC.
   - 8.5. COORDINATE WITH GENERAL CONTRACTOR FOR CONSTRUCTION OF KIOSK FOUNDATION AND CONDUIT STUB OUT.
   - 8.6. KIOSK FOUNDATION 32" WIDE X 14" DEEP, WITH KIOSK CENTERED ON FOUNDATION SUCH THAT A 1" LIP IS PROVIDED ALL SIDES.
   - 8.7. POWER KIOSK SHALL CONTAIN
     - 8.7.1. LOCKOUT TAB ON MAIN BREAKER
     - 8.7.2. 200A METER BASE
     - 8.7.3. CONVENIENCE RECEPTACLE
     - 8.7.4. 12 CCT SQUARE D QO SERIES PANEL C/W CIRCUIT BREAKERS AS LISTED IN PANEL A SCHEDULE PLUS ONE 15 SINGLE POLE SPARE CIRCUIT BREAKER
     - 8.7.5. SINGLE GANG CONTROL FOR LIGHTING CIRCUIT, TO BE FITTED WITH LEVITON VPT-24, PROGRAMMED FOR DAWN TO DUSK OPERATION.
     - 8.7.6. ISOLATED SECTION WITH DEDICATED RECEPTACLE FOR TELUS MODEM, 10" X 10" X KIOSK DEPTH IN SIZE. REDUCE INCOMING 4" ORANGE DB2 TO 2" AND PLUMB INTO THIS SECTION. PROVIDE 1.5" ORANGE CONDUIT FROM THIS SECTION OUTBOUND TO CAMERA LOCATION.
     - 8.7.7. SHELF OR MOUNTING LOCATION SUITABLE FOR IRRIGIATION CONTROLLER, C/W DEDICATED RECEPTACLE
     - 8.7.8. HINGED LOCKABLE DOOR
   - 8.8. SUPPLY SHOP DRAWING OF KIOSK PRIOR TO ORDERING
9. WASHROOM
   - 9.1. REFER TO DRAWING T01
   - 9.2. SUPPLY POWER TO WASHROOM SYSTEMS FROM POWER KIOSK VIA SHORT UNDERGROUND CONDUIT RUN THROUGH POWER KIOSK FOUNDATION AND UP TO INSIDE WALL OF BUILDING.
   - 9.3. ALL WIRING IN BUILDING TO BE CONTAINED WITHIN METAL CONDUIT RATED FOR OUTDOOR EXPOSURE.
   - 9.4. USE EXPANSION FITTINGS AT TRANSITIONS FROM RPVC TO METAL
   - 9.5. CONNECT CIRCUIT A3 TO BASEBOARD HEATER, INTERIOR LIGHT AND EXTERIOR LIGHT
   - 9.6. BUILDING INTERIOR LIGHT: VANDAL RESISTANT 2' SURFACE MOUNT LED WITH INTEGRAL SENSOR, 700 LUMEN MINIMUM, 3500K. MOUNT ABOVE SINK. LUMINIARE LED VPFR2 OCC 3500 120 OP BLK OR APPROVED EQUAL. SUPPLY SHOP DRAWING PRIOR TO ORDER.
   - 9.7. BUILDING EXTERIOR LIGHT COOPER CROSSTOUR 10W C/W INTEGRAL PHOTOCELL. INSTALL WITH GASKET AS PER INSTALLATION INSTRUCTIONS.
   - 9.8. INSTALL PHOTOCELL ON SIDE OF BUILDING ABOVE POWER KIOSK AND CONNECT TO POWER KIOSK FOR CONTROL OF SITE LIGHTING.
11. EXTERIOR RECEPTACLE:
    - 11.1. SUPPLY AND INSTALL EXTERIOR RECEPTACLE WITH HEAVY DUTY IN USE WEATHERPROOF COVER IN THE BASE OF STREET LIGHT #1.
    - 11.2. SUPPLY FROM DEDICATED CIRCUIT WITH GCFI CIRCUIT BREAKER. NOTE: USE OF GFCI RECEPTACLE NOT AN ACCEPTABLE ALTERNATE.
    - 11.3. MOUNT RECEPTACLE IN CENTER OF STREET LIGHT BASE, TOP OF RECEPTACLE 3CM BELOW TOP OF LIGHT BASE.
    - 11.4. USE METAL SINGLE GANG BOX WITH CONDUIT FITTINGS.
    - 11.5. COORDINATE INSTALLATION DURING FORMATION OF BASE AS REQUIRED.
12. PROVISION FOR FUTURE CAMERA
    - 12.1. SUPPLY AND INSTALL 1" ORANGE CONDUIT WHERE INDICATED, FROM KIOSK TO STREET LIGHT #1, COMPLETE WITH OUTSIDE PLANT CAT 6 CABLE, SUPERIOR ESSEX BBDNS OR EQUAL.
    - 12.2. PROVIDE SUFFICIENT CABLE AT POLE FOR CAMERA AT 5 METER ELEVATION.
    - 12.3. CABLE IS UNTERMINATED, FOR FUTURE USE.



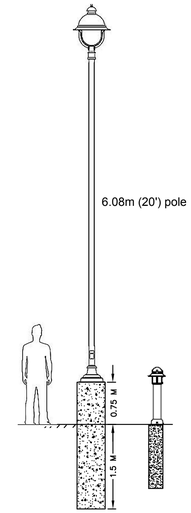
ELECTRICAL KIOSK CONCEPTUAL VIEW



SITE PLAN
SCALE: 1:200

Post Top Light on Square Base

Bollard Light



Street Light Detail
SCALE:1:50

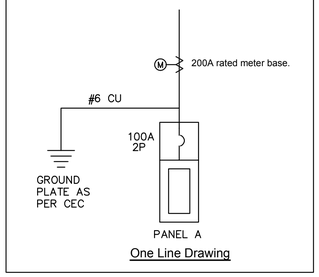
LIGHT FIXTURE SCHEDULE

DES	DESCRIPTION	LUM.	P/N
SL-T2	POST TOP STREET LIGHT	4711	DOMUS DMS60-55W48LED4K-R-LE2F WITH DIMMING CAPABILITY. 6 METER TALL 5" DIAMETER ALUMINUM POLE 5"
SL-T5	POST TOP STREET LIGHT	6416	DOMUS DMS60-80W48LED4K-T-ACDR-LE3F WITH DIMMING CAPABILITY. 6 METER ROUND ALUMINUM POLE 5" DIAMETER
BOL	BOLLARD LIGHT		DOS-B1-20W16LED4K-120-VPA

VOLTS 120/240 — PANEL A — TYPE SURFACE
PHASE 1ø — LOCATION SERVICE CABINET
FEEDER . — FED FROM MAIN — MAINS 100 AMPS

DESCRIPTION	WATTAGE A	WATTAGE B	BKR	CIRC	CIRC	BKR	WATTAGE A	WATTAGE B	DESCRIPTION
HAND DRYER	2300		20	1	2	15	750		OUTDOOR RECEPTACLE
BASEBOARD HEAT		500	15	3	4	15		300	DATA/CAMERA (FUTURE)
IRRIGATION CONTROLLER	300		15	5	6	15	300		SITE LIGHTING
				7	8	15*		800	RECEPTACLES (INTERNAL/SL1)*
				9	10				
				11	12				

* GFCI



One Line Drawing

MUIR ENGINEERING
Consulting Electrical Engineers
Brian Muir, P. Eng.
1522 Highridge Drive,
Comox, BC V9M 3R4
(250) 890-0870 brian@muireng.ca
www.muireng.ca

NO.	REVISION	DATE
C	I.F. FOR CONSTRUCTION	MAR 13/17
B	90% SUBMISSION	SEP 20/13
A	50% SUBMISSION	AUG 3/13

CLIENT:
CITY OF CAMPBELL RIVER

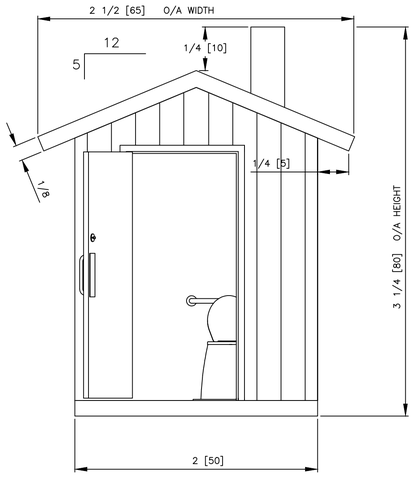
PROJECT:
BIG ROCK BOAT RAMP

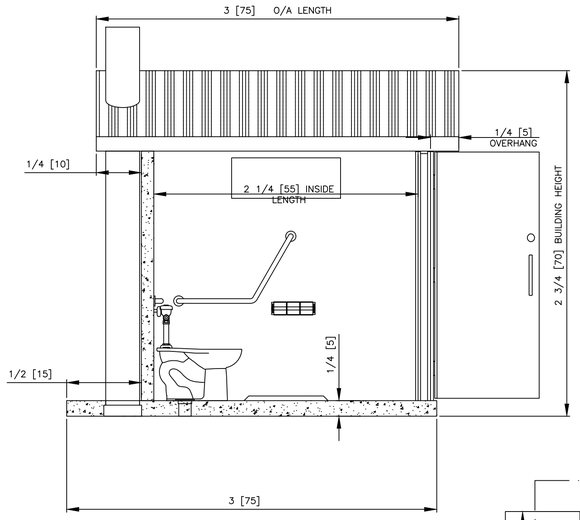
SEAL:

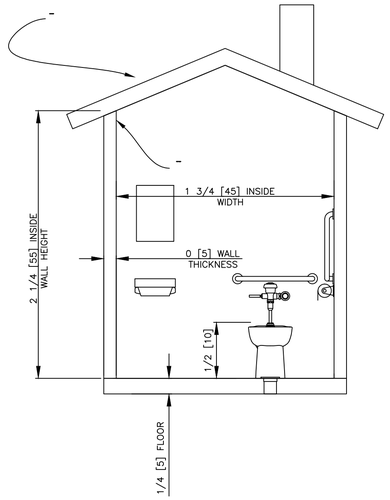
DRAWN BY:	BCM
DRAWN DATE:	
DESIGNED BY:	BCM
DESIGNED DATE:	FEB 2017
CHECKED BY:	
CHECKED DATE:	
PROJECT NO:	1229
SCALE:	AS NOTED

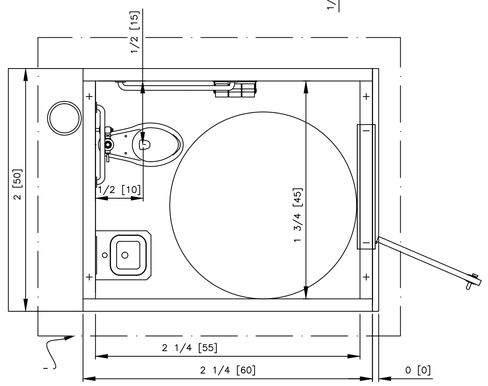
ELECTRICAL PLAN

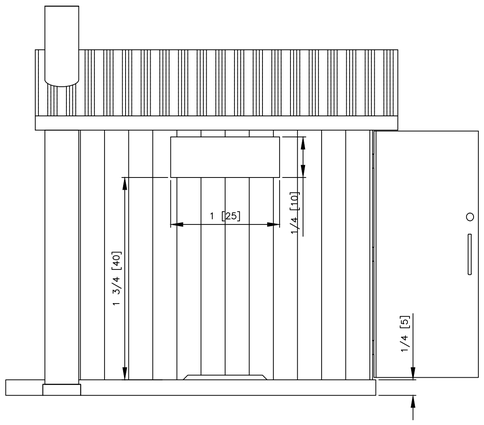
SHEET NO.	OF SHEETS	REV.
E01	1	C











GENERAL NOTES

Concrete shall be exposure Class HSe and meet min compressive strength of 30MPA @ 28d

Air Category: 4.0% – 7.0%
Aggregate: CSA/CAN A23.4 Maximum Size: 20mm
Admixtures: CSA/CAN A23.4
Reinforcing: Grade 400W CSA G30.18–09
Inserts/Embeds: As noted in drawing details

Manufacture of precast concrete units shall be in accordance with specification CSA A23.4

** LEKO PRECAST LTD SHALL NOT BE RESPONSIBLE FOR ANY INSTALLATION PRACTICES FOLLOWED ON–SITE UNLESS PERFORMED BY LEKO PRECAST LTD **

TOILET BUILDING NOTES

1. PRE–APPROVED TOILET BUILDING BY LEKO PRE–CAST.
2. ALTERNATIVE SUPPLIERS WILL BE CONSIDERED FOR APPROVAL PROVIDED SPECIFICATIONS MEET OR EXCEED STANDARDS SPECIFIED.
3. REFER TO WRITTEN SUPPLEMENTAL SPECIFICATIONS FOR TOILET BUILDING AND FIXTURES.
4. REFER TO DRAWING E–1 ELECTRICAL FOR ELECTRICAL INSTALLATIONS.
5. REFER TO DRAWING C01 FOR WATER AND SEWER CONNECTIONS.
6. REFER TO DRAWING C02 FOR FINISHED FLOOR ELEVATION.
7. GENERAL CONTRACTOR TO PROVIDE COMPLETE AND FUNCTIONING TOILET BUILDING INCLUDING ALL PLUMBING AND ELECTRICAL CONNECTIONS.

TOILET BUILDING - PRE-APPROVED MANUFACTURER MODEL LEKO PRE-CAST W2002 FLUSHING TOILET NO VESTIBULE MODEL

1:25

NOTES

STAMP

NO.	DATE	BY	REVISIONS	ENG./LA
C	MAR 17 2017	TOB	FOR TENDER	TOB
B	MAR 13 2017	TOB	FOR REVIEW	TOB
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SCALE HORIZ. SCALE VERT. -
SHEET OF - 1
OUTLOOK PROJECT NUMBER 227-3

CLIENT CITY OF CAMPBELL RIVER
PROJECT BIG ROCK BOAT RAMP
DWG TOILET BUILDING
T01
REVISION C