



**RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:**

**Bid Receiving - PWGSC / Réception des
soumissions - TPSGC**

11 Laurier St. / 11, rue Laurier

Place du Portage , Phase III

Core 0B2 / Noyau 0B2

Gatineau

Québec

K1A 0S5

Bid Fax: (819) 997-9776

**REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION**

**Proposal To: Public Works and Government
Services Canada**

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

**Proposition aux: Travaux Publics et Services
Gouvernementaux Canada**

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

Vendor/Firm Name and Address

Raison sociale et adresse du

fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution

Marine Machinery and Services / Machineries et services maritimes

11 Laurier St. / 11, rue Laurier

6C2, Place du Portage

Gatineau

Québec

K1A 0S5

Title - Sujet Waterway Barriers	
Solicitation No. - N° de l'invitation EP168-171841/B	Date 2017-10-18
Client Reference No. - N° de référence du client 20171841	
GETS Reference No. - N° de référence de SEAG PW-\$\$ML-054-26485	
File No. - N° de dossier 054ml.EP168-171841	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2017-11-29	Time Zone Fuseau horaire Eastern Standard Time EST
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Figueredo, Laila	Buyer Id - Id de l'acheteur 054ml
Telephone No. - N° de téléphone (819) 420-2904 ()	FAX No. - N° de FAX () -
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: DEPARTMENT OF PUBLIC WORKS AND GOVERNMENT SERVICES CANADA PORTAGE III 11 LAURIER ST Gatineau Quebec K1A0S5 Canada	

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée See Herein	Delivery Offered - Livraison proposée
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur	
Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date

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This bid solicitation cancels and supersedes previous bid solicitation number EP168-171841/A dated 2016-12-01 with a closing of 2017-01-18 at 14:00 Eastern Standard Time. A debriefing or feedback session was provided to bidders who bid on the previous solicitation.

PART 1 - GENERAL INFORMATION

1.1 Requirement

Public Services and Procurement Canada (PSPC) requires the supply and delivery of buoys, chains, and fittings to the St. Andrew's Lock and Dam site, in Lockport, Manitoba; the design, supply, and installation of waterway barriers and buoys at five (5) other dam sites in Ontario and Quebec regions in addition to spare parts; and an extended 4 year warranty on all goods in accordance with Annex A – Statement of Requirements.

1.2 Debriefings

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days from receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

1.3 Trade Agreements

The requirement is subject to the provisions of the World Trade Organization Agreement on Government Procurement (WTO-AGP), the North American Free Trade Agreement (NAFTA), and the Canadian Free Trade Agreement (CFTA).

PART 2 - BIDDER INSTRUCTIONS

2.1 Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the [Standard Acquisition Clauses and Conditions Manual](https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The [2003](#) (2017-04-27) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

2.2 Submission of Bids

Bids must be submitted only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated on page 1 of the bid solicitation.

2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than five (5) calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by Bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the question(s) or may request that the Bidder do so, so that the proprietary nature of the question(s) is eliminated, and the enquiry can be answered to all Bidders. Enquiries not submitted in a form that can be distributed to all Bidders may not be answered by Canada.

2.4 Applicable Laws

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the Bidders.

2.5 Optional Site Visit

It is highly recommended that the Bidder or a representative of the Bidder visit the work site. Arrangements have been made for the **two-day site visit** to be held at the following locations and dates:

Date	Dam Site Visits	Meet up Time & Location
November 7, 2017	Big Chaudière and Portage	11:00 a.m., 557 Keso Bay Road, Dokis, Ontario, P0M 2N1 (Note: estimated 3 hours maximum to visit all three dam sites in French River).
November 8, 2017	Latchford and Timiskaming	11:00 a.m., Latchford Dam, Highway 11, Latchford, Ontario (near the Latchford Town Office which is at P0J 1N0) Followed by Timiskaming Dam, 141 route 63, Thorne (Sault Island), ON, P0H 2J0 at approximately 3:30 pm (Note: dependent on time spent at Latchford; it's a 2 hour drive to Timiskaming from Latchford)

Bidders are requested to communicate with the Contracting Authority no later than Friday, November 3, 2017 at 2:00 p.m. EST, to confirm attendance and provide the name(s) of the person(s) who will attend.

Access to the dam site visits will be weather / site condition permitting, and will be confirmed prior to the site visit date.

Little Chaudière Dam's site will not be accessible during the site visit. This is due to the fact that the only means of accessing this site is by boat, and at this time of the year the water level will be too low to provide safe boating access.

Bidders may be requested to sign an attendance sheet. Bidders who do not attend or do not send a representative will not be given an alternative appointment but they will not be precluded from submitting a bid. Any clarifications or changes to the bid solicitation resulting from the site visit will be included as an amendment to the bid solicitation.

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

Canada requests that Bidders provide their bid in separately bound sections as follows:

Section I: Technical Bid – two (2) hard copies

Section II: Financial Bid – one (1) hard copy

Section III: Certifications – one (1) hard copy

Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.

Canada requests that Bidders follow the format instructions described below in the preparation of their bid:

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponds to the bid solicitation.

In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process [Policy on Green Procurement](http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html>). To assist Canada in reaching its objectives, Bidders should:

- 1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and containing minimum 30% recycled content; and
- 2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

Section I: Technical Bid

In their technical bid, Bidders should explain and demonstrate how they propose to meet the requirements and how they will carry out the Work.

Section II: Financial Bid

Bidders must submit their financial bid in accordance with Annex B, Basis of Payment. The total amount of Applicable Taxes must be shown separately.

3.1.1 Electronic Payment of Invoices – Bid

If you are willing to accept payment of invoices by Electronic Payment Instruments, complete Annex C Electronic Payment Instruments, to identify which ones are accepted.

If Annex C, Electronic Payment Instruments is not completed, it will be considered as if Electronic Payment Instruments are not being accepted for payment of invoices.

Acceptance of Electronic Payment Instruments will not be considered as an evaluation criterion.

3.1.2 Exchange Rate Fluctuation

[C3011T](#) (2013-11-06), Exchange Rate Fluctuation

3.1.3 SACC Manual Clauses

Section III: Certifications

Bidders must submit the certifications and additional information required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.

4.1.1 Technical Evaluation

4.1.1.1 Mandatory Technical Criteria

The Bidders must provide a completed Annex "F", Mandatory Technical Criteria.

4.1.2 Financial Evaluation

SACC Manual Clause [A0220T](#) (2014-06-26), Evaluation of Price

4.2 Basis of Selection

4.2.1 Basis of Selection – Mandatory Technical Criteria

A bid must comply with the requirements of the bid solicitation and meet all mandatory technical evaluation criteria to be declared responsive. The responsive bid with the lowest evaluated price will be recommended for award of a contract.

PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION

Bidders must provide the required certifications and additional information to be awarded a contract.

The certifications provided by Bidders to Canada are subject to verification by Canada at all times. Unless specified otherwise, Canada will declare a bid non-responsive, or will declare a contractor in default if any certification made by the Bidder is found to be untrue whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Contracting Authority will render the bid non-responsive or constitute a default under the Contract.

5.1 Certifications Required with the Bid

Bidders must submit the following duly completed certifications as part of their bid.

5.1.1 Integrity Provisions - Declaration of Convicted Offences

In accordance with the [Inteligibility and Suspension Policy](http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide with its bid the required documentation, **as applicable**, to be given further consideration in the procurement process.

5.2 Certifications Precedent to Contract Award and Additional Information

The certifications and additional information listed below should be submitted with the bid, but may be submitted afterwards. If any of these required certifications or additional information is not completed and submitted as requested, the Contracting Authority will inform the Bidder of a time frame within which to provide the information. Failure to provide the certifications or the additional information listed below within the time frame provided will render the bid non-responsive.

5.2.1 Integrity Provisions – Required Documentation

In accordance with the [Inteligibility and Suspension Policy](http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide the required documentation, as applicable, to be given further consideration in the procurement process.

Bidder must complete Annex G – Integrity Provisions – Associated Information Form.

Bidders who are incorporated, including those bidding as a joint venture, must provide a complete list of names of all individuals who are currently directors of the Bidder.

Bidders bidding as sole proprietorship, as well as those bidding as a joint venture, must provide the name of the owner(s).

Bidders bidding as societies, firms or partnerships do not need to provide lists of names.

5.2.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list available at the bottom of the page of the [Employment and Social Development Canada \(ESDC\) - Labour's](http://www.esdc.gc.ca/en/jobs/workplace/human_rights/employment_equity/federal_contractor_program.page?&_ga=1.229006812.1158694905.1413548969) website (http://www.esdc.gc.ca/en/jobs/workplace/human_rights/employment_equity/federal_contractor_program.page?&_ga=1.229006812.1158694905.1413548969).

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Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "FCP Limited Eligibility to Bid" list at the time of contract award.

5.2.3 Workers Compensation Certification- Letter of Good Standing

The Bidder must have an account in good standing with the applicable provincial or territorial Workers' Compensation Board.

The Bidder must provide, within 14 days following a request from the Contracting Authority, a certificate or letter from the applicable Workers' Compensation Board confirming the Bidder's good standing account. Failure to comply with the request may result in the bid being declared non-responsive.

The following clauses and conditions apply to and form part of any contract resulting from the bid solicitation.

PART 6 - RESULTING CONTRACT CLAUSES

6.1 Security Requirements

There is no security requirement applicable to the Contract.

6.2 Requirement

The Contractor must supply and deliver buoys, chains, and fittings to the St. Andrew's Lock and Dam site, in Lockport, Manitoba; must design, supply, and install waterway barriers and buoys at five (5) other dam sites in Ontario and Quebec regions in addition to spare parts; and must provide an extended 4 year warranty on all goods for Public Services and Procurement Canada (PSPC) in accordance with Annex A – Statement of Requirements and the Contractor's technical bid entitled _____, dated _____.
(to be completed upon award)

6.3 Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the [Standard Acquisition Clauses and Conditions Manual](https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

6.3.1 General Conditions

[2010A](#) (2016-04-04), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

6.3.2 Supplemental General Conditions

[4006](#) (2010-08-16), Contractor to Own Intellectual Property Rights in Foreground Information apply to and form part of the Contract.

6.4 Term of Contract

6.4.1 Period of the Work

The installation of the waterway barriers (booms and buoys) at the five (5) dam sites in Ontario and Quebec are to be installed in the Summer, site conditions permitting, by no later than 25 August 2018.

6.4.2 Delivery Date

All parts for St. Andrew's dam site (i.e. buoys, fittings, and chain) as detailed in Table 1, section 1.1 Background and Description, and sections 4.3.2.1 and 4.3.2.3 of section 4.3 Independent Buoys, Annex A, Statement of Requirements, are requested to be delivered by no later than 15 April 2018.

The spare parts as detailed in Table 6, section 6 Requirements for Spare Parts, Annex A, Statement of Requirements, are requested to be delivered by no later than 25 August 2018.

6.4.3 Delivery Points

1. Delivery of the spare parts will be made to delivery points specified in Table 6, section 6 Requirements for Spare Parts, Annex "A", Statement of Requirements, as follows:

Timiskaming Dam Office
Sault Island
Timiskaming, ON
P0H 1W0

Portage Dam Office
557 Keso Bay Road
Dokis, ON
P0M 2N1

2. Delivery of the parts for St. Andrew's dam site will be made to the delivery point specified in section 3.6 St. Andrew's Lock and Dam, Annex "A", Statement of Requirements, as follows:

St. Andrew's Lock and Dam
625 River Rd.
Lockport, MB
R1A 2R4

6.4.4 Shipping Instructions - Delivery at Destination

1. Goods must be consigned to the destination specified in the Contract and delivered: Delivered Duty Paid (DDP) to designated delivery address, Incoterms 2000 for shipments from a commercial contractor.
2. The Contractor will be responsible for all delivery charges, administration, costs and risk of transport and customs clearance, including the payment of customs duties and taxes.

6.5 Authorities

6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Laila Figueredo
Supply Team Leader
Public Works and Government Services Canada
Acquisitions Branch
Marine Services & Small Vessels Sector
Place du Portage, Phase III, 6C2
11 Laurier St.
Gatineau, QC
K1A 0S5

Telephone: 819-420-2904
Facsimile: 819-956-0897
E-mail address: laila.figueredo@tpsgc-pwgsc.gc.ca

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

6.5.2 Project Authority

The Project Authority for the Contract is: *(to be provided upon Contract award)*

Name: _____
Title: _____
Organization: _____
Address: _____

Telephone: _____
Facsimile: _____
E-mail address: _____

The Project Authority is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Project Authority, however the Project Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

6.5.3 Contractor's Representative

The Contractor's Representative for the Contract is: *(Bidder to complete)*

Name: _____
Title: _____
Organization: _____
Address: _____

Telephone: _____
Facsimile: _____
E-mail address: _____

6.6 Payment

6.6.1 Basis of Payment – - Firm Price, Firm Unit Price(s) or Firm Lot Price(s)

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm lot price(s), as specified in Annex B for a cost of \$ _____ *(to be completed upon contract award)*. Customs duties are included and Applicable Taxes are extra.

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work, unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

6.6.2 Basis of Payment – Unscheduled Work

1. Price Breakdown:

The Contractor must, upon request, provide a price breakdown for all unscheduled work, by specific activities with trades, person-hours, material, subcontracts and services.

2. Pro-rated Prices:

Hours and prices for unscheduled work will be based on comparable historical data applicable to similar work at the same facility, or will be determined by pro-rating the quoted work costs in the Contract.

3. Payment for Unscheduled Work:

The Contractor will be paid for unscheduled work arising, as authorized by Canada. The authorized unscheduled work will be calculated as follows:

Number of hours (to be negotiated) x \$ _____, being the Contractor's firm hourly charge-out labour rate which includes overhead and profit, plus net laid-down cost of materials to which will be added a mark-up of 10 percent, plus Applicable Taxes, as specified in Annex B. The firm hourly charge-out labour rate and the material mark-up will remain firm for the term of the Contract and any subsequent amendments.

6.6.3 Limitation of Price

SACC Manual clause [C6000C](#) (2017-08-17) Limitation of Price

6.6.4 Milestone Payments - Not Subject to Holdback

Canada will make milestone payments in accordance with Annex B, Basis of Payment detailed in the Contract and the payment provisions of the Contract if:

- a. an accurate and complete claim for payment using [PWGSC-TPSGC 1111](#), Claim for Progress Payment, and any other document required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
- b. all the certificates appearing on form [PWGSC-TPSGC 1111](#) have been signed by the respective authorized representatives;
- c. all work associated with the milestone and as applicable any deliverable required has been completed and accepted by Canada.

6.6.5 SACC Manual Clauses

SACC Manual clause [C2000C](#) (2007-11-30) Taxes - Foreign-based Contractor

6.6.6 Electronic Payment of Invoices – Contract

The Contractor accepts to be paid using any of the following Electronic Payment Instrument(s): **(to be completed upon contract award as applicable)**

- a. Direct Deposit (Domestic and International)

6.6.7 Discretionary Audit for Unscheduled Work Only

SACC Manual clause [C0100C](#) (2010-01-11), Discretionary Audit - Commercial Goods and/or Services.

6.6.8 Time Verification for Unscheduled Work Only

SACC Manual clause [C0711C](#) (2008-05-12), Time Verification

6.7 Invoicing Instructions - Progress Payment Claim - Supporting Documentation not required

1. The Contractor must submit a claim for payment using form [PWGSC-TPSGC 1111](#), Claim for Progress Payment.
Each claim must show:
 - a. all information required on form [PWGSC-TPSGC 1111](#);
 - b. all applicable information detailed under the section entitled "Invoice Submission" of the general conditions;
 - c. the description and value of the milestone claimed as detailed in the Contract.
2. Applicable Taxes, must be calculated on the total amount of the claim before the holdback is applied. At the time the holdback is claimed, there will be no Applicable Taxes payable as it was claimed and payable under the previous claims for progress payments.
3. The Contractor must prepare and certify one original and two (2) copies of the claim on form [PWGSC-TPSGC 1111](#), and forward it to the Project Authority identified under the section entitled "Authorities" of the Contract for appropriate certification after inspection and acceptance of the Work takes place.

The Project Authority will then forward the original and two (2) copies of the claim to the Contracting Authority for certification and onward submission to the Payment Office for the remaining certification and payment action.

4. The Contractor must not submit claims until all work identified in the claim is completed.

6.8 Certifications and Additional Information

6.8.1 Compliance

Unless specified otherwise, the continuous compliance with the certifications provided by the Contractor in its bid or precedent to contract award, and the ongoing cooperation in providing additional information are conditions of the Contract and failure to comply will constitute the Contractor in default. Certifications are subject to verification by Canada during the entire period of the Contract.

6.8.2 Workers Compensation

SACC Manual clause [A0285C](#) (2007-05-25) Workers Compensation

6.9 Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in _____. (to be completed upon Contract Award)

6.10 Priority of Documents

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- (a) the Articles of Agreement;
- (b) the general conditions 2010A (2016-04-04) General Conditions - Goods (Medium Complexity);
- (c) the supplemental general conditions 4006 (2010-08-16) Contractor to Own Intellectual Property Rights in Foreground Information

- (d) Annex A, Statement of Requirements;
- (e) Annex B, Basis of Payment;
- (f) Annex C, Electronic Payment Instruments;
- (g) Annex D, Insurance Requirements;
- (h) Annex E, On-Site Health and Safety Requirements; and
- (i) the Contractor's bid dated _____ (to be completed upon Contract award).

6.11 Warranty

In addition to Article 9 – Warranty of 2010A General Conditions – Goods (Medium Complexity), the following shall apply to and form part of the Contract:

1. **Warranty Period:** Further to the standard 12 month warranty, the Contractor will provide an additional all-inclusive 4 year extended warranty on installed waterway barriers and buoys.
2. **Beginning of Warranty Period:** The Warranty Period begins on the Acceptance Date for each product (and, therefore, the Warranty Period may begin on different dates for different products under this Contract, if they were delivered and/or accepted on different dates).
3. Dam keepers will be inspecting waterway barriers and buoys on a regular basis. Project Authority will contact the Contractor whenever warranty repairs are necessary.
4. **Response time requirement:** When repairs are needed during the Navigation Season (May 15 to October 10), Contractor must repair waterway barriers and buoys within three (3) weeks. When repairs are identified outside of Navigation Season, Contractor must effect repairs no later than May 10 in order to ensure work will be complete before Navigation Season.
5. Conduct a final warranty inspection three months before end of warranty period in order to allow time for rectification of defects found.

6.12 Insurance – Specific Requirements

The Contractor must comply with the insurance requirements specified in Annex D. The Contractor must maintain the required insurance coverage for the duration of the Contract. Compliance with the insurance requirements does not release the Contractor from or reduce its liability under the Contract.

The Contractor is responsible for deciding if additional insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any additional insurance coverage is at the Contractor's expense, and for its own benefit and protection.

The Contractor must forward to the Contracting Authority within ten (10) days after the date of award of the Contract, a Certificate of Insurance evidencing the insurance coverage and confirming that the insurance policy complying with the requirements is in force. For Canadian-based Contractors, coverage must be placed with an Insurer licensed to carry out business in Canada, however, for Foreign-based Contractors, coverage must be placed with an Insurer with an A.M. Best Rating no less than "A-". The Contractor must, if requested by the Contracting Authority, forward to Canada a certified true copy of all applicable insurance policies.

6.13 Salvage

SACC Manual clause [A9039C](#) (2008-05-12) Salvage

6.14 SACC Manual Clauses

[D2000C](#) (2007-11-30), Marking;
[D2001C](#) (2007-11-30), Labelling;
[D2025C](#) (2017-08-17), Wood Packaging Materials; and
[B7500C](#) (2006-06-16), Excess Goods

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ANNEX A

STATEMENT OF REQUIREMENTS

The Statement of Requirements attached to this document should be inserted here and forms an integral part of this document.

ANNEX B

BASIS OF PAYMENT

The Bidder must submit firm prices in Canadian dollars, customs duties included and applicable taxes extra. Delivery is Delivered Duty Paid (DDP) Incoterms 2000. The Contractor is responsible for all delivery charges, administration, costs and risks of transport and customs clearance, including payment of customs duties and taxes to the destination.

Bidder to complete pricing for ALL Tables listed below:

Waterway Barriers & Buoys for the five dam sites in Ontario and Quebec Region

Table 1 – Timiskaming

Milestone Item No.	Description	Firm Lot Price
1	Design of Waterway Barrier and Buoys	(a) \$ _____
2	Supply and Installation of Waterway Barrier and Buoys: (b) Labour (c) Materials (d) Travel & Living Expenses	(b) \$ _____ (c) \$ _____ (d) \$ _____
3	Extended Warranty (4 additional years after standard 1 year)	(e) \$ _____
	TOTAL (a+b+c+d+e = A)	(A) \$ _____

Table 2 – Latchford

Milestone Item No.	Description	Firm Lot Price
4	Design of Waterway Barrier and Buoys	(a) \$ _____
5	Supply and Installation of Waterway Barrier and Buoys: (b) Labour (c) Materials (d) Travel & Living Expenses	(b) \$ _____ (c) \$ _____ (d) \$ _____
6	Extended Warranty (4 additional years after standard 1 year)	(e) \$ _____
	TOTAL (a+b+c+d+e = B)	(B) \$ _____

Table 3 – Big Chaudière

Milestone Item No.	Description	Firm Lot Price
7	Design of Waterway Barrier and Buoys	(a) \$ _____
8	Supply and Installation of Waterway Barrier and Buoys: (b) Labour (c) Materials (d) Travel & Living Expenses	(b) \$ _____ (c) \$ _____ (d) \$ _____
9	Extended Warranty (4 additional years after standard 1 year)	(e) \$ _____
	TOTAL (a+b+c+d+e = C)	(C) \$ _____

Table 4 – Little Chaudière

Milestone Item No.	Description	Firm Lot Price
10	Design of Waterway Barrier and Buoys	(a) \$ _____
11	Supply and Installation of Waterway Barrier and Buoys: (b) Labour (c) Materials (d) Travel & Living Expenses	(b) \$ _____ (c) \$ _____ (d) \$ _____
12	Extended Warranty (4 additional years after standard 1 year)	(e) \$ _____
	TOTAL (a+b+c+d+e = D)	(D) \$ _____

Table 5 – Portage

Milestone Item No.	Description	Firm Lot Price
13	Design of Waterway Barrier and Buoys	(a) \$ _____
14	Supply and Installation of Waterway Barrier and Buoys: (b) Labour (c) Materials (d) Travel & Living Expenses	(b) \$ _____ (c) \$ _____ (d) \$ _____
15	Extended Warranty (4 additional years after standard 1 year)	(e) \$ _____
	TOTAL (a+b+c+d+e = E)	(E) \$ _____

Spare Parts

Table 6 – Timiskaming Dam Office

Milestone Item No.	Description	Quantity	Firm Unit Price	Firm Extended Price
16	Floats	6	\$ _____	\$ _____
17	Warning buoys – type integral to waterway barrier	1	\$ _____	\$ _____
18	Warning buoys – independent type	2	\$ _____	\$ _____
19	Weldless links or connector chain	6 weldless links or 6 lengths of connector chain	\$ _____	\$ _____
20	Shackles – each size, complete with all fittings	6	\$ _____	\$ _____
			TOTAL (F)	(F) \$ _____

Table 7 – Portage Dam Office

Milestone Item No.	Description	Quantity	Firm Unit Price	Firm Extended Price
21	Floats	6	\$ _____	\$ _____
22	Warning buoys – type integral to waterway barrier	1	\$ _____	\$ _____
23	Weldless links or connector chain	6 weldless links or 6 lengths of connector chain	\$ _____	\$ _____
24	Shackles – each size, complete with all fittings	6	\$ _____	\$ _____
			TOTAL (G)	(G) \$ _____

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Parts for St. Andrew's Dam site, Lockport, Manitoba

Table 8 – St. Andrew's

Milestone Item No.	Description	Firm Lot Price
25	Supply and Delivery of buoys, chain, and fittings	(a) \$ _____
26	Extended Warranty (4 additional years after standard 1 year) on all buoys, chain, and fittings	(b) \$ _____
	TOTAL (a+b = H)	(H) \$ _____

TOTAL EVALUATION PRICE (excluding applicable taxes) (A+B+C+D+E+F+G+H) =

\$ _____

Bidder must provide the following Hourly rates as requested in Part 6, Clause 6.6.2 Basis of Payment – Unscheduled Work. These rates will NOT be part of the Financial Evaluation.

Item	Description	Labour Hourly Rates (\$ / h)
1.	Labor Rate for Additional / Unscheduled Work: including Design Change, Engineering Change or change in the scope of work.	\$ _____
2.	Overtime for Additional / Unscheduled Work: Time and One-Half	\$ _____
3.	Overtime for Additional / Unscheduled Work: Double Time	\$ _____

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ANNEX C

ELECTRONIC PAYMENT INSTRUMENTS

ELECTRONIC PAYMENT INSTRUMENTS

The Bidder accepts any of the following Electronic Payment Instrument(s): **(Bidder to complete)**

() Direct Deposit (Domestic and International);

ANNEX D

INSURANCE REQUIREMENTS

Commercial General Liability Insurance

1. The Contractor must obtain Commercial General Liability Insurance, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than \$2,000,000 per accident or occurrence and in the annual aggregate.
2. The Commercial General Liability policy must include the following:
 - a. Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada should read as follows: Canada, as represented by Public Works and Government Services Canada.
 - b. Bodily Injury and Property Damage to third parties arising out of the operations of the Contractor.
 - c. Products and Completed Operations: Coverage for bodily injury or property damage arising out of goods or products manufactured, sold, handled, or distributed by the Contractor and/or arising out of operations that have been completed by the Contractor.
 - d. Personal Injury: While not limited to, the coverage must include Violation of Privacy, Libel and Slander, False Arrest, Detention or Imprisonment and Defamation of Character.
 - e. Cross Liability/Separation of Insureds: Without increasing the limit of liability, the policy must protect all insured parties to the full extent of coverage provided. Further, the policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.
 - f. Blanket Contractual Liability: The policy must, on a blanket basis or by specific reference to the Contract, extend to assumed liabilities with respect to contractual provisions.
 - g. Employees and, if applicable, Volunteers must be included as Additional Insured.
 - h. Employers' Liability (or confirmation that all employees are covered by Worker's compensation (WSIB) or similar program)
 - i. Broad Form Property Damage including Completed Operations: Expands the Property Damage coverage to include certain losses that would otherwise be excluded by the standard care, custody or control exclusion found in a standard policy.
 - j. Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority thirty (30) days written notice of policy cancellation.
 - k. If the policy is written on a claims-made basis, coverage must be in place for a period of at least 12 months after the completion or termination of the Contract.
 - l. Owners' or Contractors' Protective Liability: Covers the damages that the Contractor becomes legally obligated to pay arising out of the operations of a subcontractor.

Errors and Omissions Liability Insurance

1. The Contractor must obtain Errors and Omissions Liability (a.k.a. Professional Liability) insurance, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature but for not less than \$1,000,000 per loss and in the annual aggregate, inclusive of defence costs.

2. If the policy is written on a claims-made basis, coverage must be in place for a period of at least 12 months after the completion or termination of the Contract.
3. The following endorsement must be included:

Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority thirty (30) days written notice of cancellation.

Marine Liability Insurance

1. The Contractor must obtain protection and indemnity insurance that must include excess collision liability and pollution liability. The insurance must be placed with a member of the International Group of Protection and Indemnity Associations or with a fixed market in an amount of not less than the limits determined by the [Marine Liability Act](#), S.C. 2001, c. 6. Coverage must include crew liability, if it is not covered by Worker's Compensation as detailed in paragraph (2.) below.
2. The Contractor must obtain worker's compensation insurance covering all employees engaged in the Work in accordance with the statutory requirements of the territory or province or state of nationality, domicile, employment, having jurisdiction over such employees. If the Contractor is subject to an additional contravention, as a result of an accident causing injury or death to an employee of the Contractor or subcontractor, or due to unsafe working conditions, then such levy or assessment must be paid by the Contractor at its sole cost.
3. The protection and indemnity insurance policy must include the following:
 - a. Additional insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada as additional insured should read as follows: Canada, represented by Public Works and Government Services Canada.
 - b. Waiver of subrogation rights: Contractor's Insurer to waive all rights of subrogation against Canada as represented by Public Works and Government Services Canada for any and all loss of or damage to the watercraft however caused.
 - c. Notice of cancellation: The insurer will endeavour to provide the Contracting Authority with a 30 calendar days prior written notice of cancellation.
 - d. Cross liability and separation of insureds: Without increasing the limit of liability, the policy must protect all insured parties to the full extent of coverage provided. Further, the policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.
 - e. Litigation rights: Pursuant to subsection 5(d) of the [Department of Justice Act](#), R.S.C. 1985, c. J-2, s.1, if a suit is instituted for or against Canada which the Insurer would, but for this clause, have the right to pursue or defend on behalf of Canada as an Additional Named Insured under the insurance policy, the Insurer must promptly contact the Attorney General of Canada to agree on the legal strategies by sending a letter, by registered mail or by courier, with an acknowledgement of receipt.

For the province of Quebec, send to:

*Director Business Law Directorate,
Quebec Regional Office (Ottawa),
Department of Justice,
284 Wellington Street, Room SAT-6042,
Ottawa, Ontario, K1A 0H8*

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For other provinces and territories, send to:

*Senior General Counsel,
Civil Litigation Section,
Department of Justice
234 Wellington Street, East Tower
Ottawa, Ontario K1A 0H8*

A copy of the letter must be sent to the Contracting Authority. Canada reserves the right to co-defend any action brought against Canada. All expenses incurred by Canada to co-defend such actions will be at Canada's expense. If Canada decides to co-defend any action brought against it, and Canada does not agree to a proposed settlement agreed to by the Contractor's insurer and the plaintiff(s) that would result in the settlement or dismissal of the action against Canada, then Canada will be responsible to the Contractor's insurer for any difference between the proposed settlement amount and the amount finally awarded or paid to the plaintiffs (inclusive of costs and interest) on behalf of Canada.

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ANNEX E

ON-SITE HEALTH AND SAFETY REQUIREMENTS

The On-site Health and Safety Requirements attached to this document should be inserted here and forms an integral part of this document.

ANNEX F

MANDATORY TECHNICAL EVALUATION CRITERIA

Bidder's Instructions:

1. The Bidder must submit specifications, published documentation, testing certifications, and descriptive literature for the booms and buoy system being offered in their proposal. Details stated in your specifications, published documentation, testing certifications, and descriptive literature will be compared and must meet the requirements specified below.

If specific published technical documentation or testing certification / reports are not available or does not specifically address each criteria, the Bidder should provide a written narrative or manufacturer's verification explaining how the offered product meets or exceeds the technical mandatory criteria below.

It is incumbent upon the Bidder to submit a complete proposal showing that their items will meet or exceed the technical descriptions described in this solicitation. Failure to submit sufficient information to allow for a full evaluation will result in the proposal being declared non-responsive.

2. Bidders to identify the cross reference page / paragraph in their proposal which demonstrates that they meet each of the specified mandatory criteria on the line provided after each mandatory technical criteria in Table 1 below.

Mandatory Technical Criteria:

EXPERIENCE:

M1 The Bidder must have company experience in the design and installation of shore anchors for waterway barriers at a site with flowing water conditions. Bidders must provide specific details and include a photo of the installed waterway barrier for **two (2) previous projects completed within the last five (5) years** that involved the design and installation of shore anchors for a waterway barrier at a site with flowing water conditions. Please provide the details of your project as follows:

PROJECT 1:	
Project Description: (Details on work performed, type of equipment used, product provided, etc.)	
Location:	
Start Date:	
End Date:	
Project Value:	
Client Contact: (contact information for the Client whom Canada can contact to confirm the information provided on this project)	Name: _____ Company: _____ Email: _____ Phone: _____
Photo Included:	Cross Reference Page # in Bidder's Proposal: _____

PROJECT 2:	
Project Description: (Details on work performed, type of equipment used, product provided, etc.)	
Location:	
Start Date:	
End Date:	

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Project Value:	
Client Contact: <i>(contact information for the Client whom Canada can contact to confirm the information provided on this project)</i>	Name: _____ Company: _____ Email: _____ Phone: _____
Photo Included:	Cross Reference Page # in Bidder's Proposal: _____

M2 The Bidder must provide at least one (1) written example where the proposed waterway barrier products in their Bid which are currently in use at a dam site located in Canada. The Bidder must provide the complete address location of the dam site, and a full description of the waterway barrier products (i.e. make / model / part #) in use which are the same products they are offering in their Bid.

PRODUCT SPECIFICATIONS:

Mandatory Item	Annex A – Requirement Referenced Section	Mandatory Specification Criteria	Cross Reference Paragraph / Page # in Bidder's Proposal
WATERWAY BARRIERS			
M3	4.1.2.7	The Bidder must demonstrate that the waterway barrier can ensure a minimum 305mm (12") freeboard when assembled and floating.	
FLOATS			
M4	4.1.3	The Bidder must demonstrate that the floats proposed in the Bid are: <ul style="list-style-type: none"> • hard exterior casing; • minimum 4 mm thick of some UV-resistant polymer material filled with floatation foam; • Approximately circular in cross-section with recessed ribbing as required for strength. Hexagonal also acceptable. Diameter 410 ± 13mm (16 ± ½"); and • Length: 2870 ± 180mm (9'-6" to 10'-6"). 	
CONNECTION HARDWARE			
M5	4.1.4	The Bidder must demonstrate that the weldless link connectors or connecting chains proposed in the Bid are: <ul style="list-style-type: none"> • stainless steel or hot dipped galvanized; • a strength to suit site requirements; and • a length which will provide an assembled distance between boom floats of maximum 460mm (18"). 	

BUOYS			
M6	4.2.2	Applies to all buoys except for St. Andrews buoys: The Bidder must demonstrate that the buoys proposed in the Bid are: <ul style="list-style-type: none"> • UV-resistant polymer shell, filled with floatation foam; • Standard float collar can type with internal ballast; • Minimum freeboard 750mm (30") and minimum diameter at the visible portion 300mm (12"); and • Select exact dimensions to suit weight of anchor chain and wave conditions in Table 3 of Annex A "SOR". 	
M7	4.3.2	Applies to St. Andrews buoys only: The Bidder must demonstrate that the buoys proposed in the Bid are: <ul style="list-style-type: none"> • a minimum reserve buoyancy of 444 N (100 pounds); and • Supply a single length of 77m (250 ft.) of chain, hot dip galvanized, ½" size, with minimum safe working load 20 kN (4500 pounds). 	
ANCHORS			
M8	4.2.4	The Bidder must demonstrate that the in-water anchors proposed in the Bid are concrete block gravity anchors large enough to provide sufficient mass to resist horizontal loads on the buoy and its adjacent sections of waterway barriers or other type that will provide same performance.	

DELIVERY:

M9 The installation of the waterway barriers (booms and buoys) at all the dam sites are to be installed after spring freshet (usually early June) and by no later than August 25th, 2018. The Bidder must submit a preliminary Project Schedule for the Work for each dam site demonstrating it can meet the completion date.

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ANNEX G

INTEGRITY PROVISIONS – ASSOCIATED INFORMATION FORM

TO BE COMPLETED BY BIDDER:

Please provide list of names of the following entities, according to the ownership nature of the company

1. For a Corporation - each current member of the Bidder's Board of Directors:

(add lines as required)

2. For a Sole Proprietorship or an individual doing business under a firm name - the name of the sole proprietor or individual:

3. For a Joint Venture - the names of all current members of the Joint venture:

(add lines as required)

4. For an individual - the full name of the person:

ANNEX A

STATEMENT OF REQUIREMENTS:

WATERWAY BARRIERS AND BUOYS FOR VARIOUS DAM SITES

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1 SCOPE

1.1 Background and Objective

1. Canada owns and operates the six dams listed in Table 1 below. Recent inspections have identified various areas of noncompliance of the existing waterway barriers with current guidelines and best practices for these devices.
2. The objectives of the project is for a contractor to provide new and compliant waterway barriers and buoys at the dams to improve public safety around the dams.

Table 1: Subject Dams and Requirements for Waterway Barriers and Buoys

Dam Name	Number of Upstream Waterway Barriers	Number of Buoys Integral to Waterway Barrier	Number of Independent Buoys
Timiskaming	1	2	3 - downstream
Latchford	1	1	0
Big Chaudière	1	1	0
Little Chaudière	1	1	0
Portage	1	1	0
St. Andrew's Lock and Dam	0	0	6

1.2 Summary Scope of Work

1. Public Services and Procurement Canada requires the Contractor to supply and deliver buoys, chains, and fittings to the St. Andrew's Lock and Dam site and to supply and install waterway barriers and buoys at the other five dam sites and also supply and deliver spare parts related to those five other dam sites.
2. The Contractor must supply and provide all necessary labour, tools, equipment, materials, safety devices, transportation, management and supervision required to perform the work of this Contract.
3. For St. Andrew's Lock and Dam:
 - a. Supply and deliver Commercial Off The Shelf (COTS) buoys, chain, and fittings to the shipping address given in section 3.6 below.
 - b. Warrant the materials for five years.
4. For all other dams:
 - a. Assemble the required waterway barriers and buoys from Commercial Off The Shelf (COTS) components;
 - b. Design all anchorages necessary for successful installation of the waterway barriers and buoys as required to suit site conditions;
 - c. Install the required waterway barriers and buoys at each of the dam sites;
 - d. Supply and deliver spare parts to the two dam offices (one at the Timiskaming Dam, one at the Portage Dam); and,
 - e. Provide latitude and longitude of final location of installed waterway barriers and buoys to the Project Authority.

- f. Warrant the waterway barriers, buoys, and their installation for five years.

2 APPLICABLE DOCUMENTS

1. The prescribed versions of the following documents are to form a part of this specification to the extent specified herein.
2. Where Standards are referenced in this document, the whole standard will apply unless specifically directed. The reference will indicate what tailoring is required by the Technical Authority.
3. If any referenced standard has been superseded by a new revision or it has become obsolete and it has been replaced by a new standard or it has not been replaced, then the Contractor will use the latest revision or replaced standard or an equivalent standard respectively.
4. In the event of a conflict between the contents of this document and the applicable portions of the referenced documents, the Contractor will inform the Technical Authority of the differences and request for a resolution.

Table 2: List of Applicable Documents

Item	Author	Title
1	Canadian Dam Association	2007 <i>Dam Safety Guidelines</i> (2013 Edition)
2	Canadian Dam Association	2011 <i>Guidelines for Public Safety Around Dams</i>
3	Canadian Dam Association	Technical Bulletin: <i>Booms and Buoys for Public Safety Around Dams</i>
4	ASTM International	ASTM C-578 <i>Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.</i>
5	Government of the United States of America	US Federal Standard 595C <i>Colors Used in Government Procurement.</i>
6	Transport Canada	TP 14542 <i>Cardinal Buoys and Special Buoys</i>
7	Government of Ontario	<i>Occupational Health and Safety Act</i> , R.S.O. 1990, c. 0.1
8	Government of Ontario	<i>Regulations for Construction Projects</i> , O. Reg. 213/91.
9	Government of Canada	<i>Private Buoy Regulations</i> made under <i>Canada Shipping Act</i> 2001.

3 DAM SITES

See Section 9 Detailed Dam Data for location, site plan, and photographs.

3.1 Timiskaming Dam

The Timiskaming Dam complex is located where Lake Timiskaming discharges into the Ottawa River. The dam consists of two structures, one on each side of Sault Island, and called the Ontario and Quebec Dams. The existing waterway barrier spans between the Ontario and Quebec shores of Lake Timiskaming upstream of Sault Island. There are currently no buoys downstream of either the Ontario or the Quebec dam structures.

3.2 Latchford Dam

The Latchford Dam is located on the Montreal River, a tributary to Lake Timiskaming. The dam is within the Town of Latchford, located on Ontario Highway 11, between the Cities of North Bay and Timiskaming Shores. The reservoir upstream of Latchford Dam is known as Bay Lake. The dam is new as of 2016, replacing an earlier structure. The existing waterway barrier spans between a spit upstream of the dam and the opposite shore of Bay Lake. There are currently no buoys downstream of dam.

3.3 Big Chaudière Dam

Big Chaudière Dam is located where Lake Nipissing discharges into a branch of the French River. The dam consists of two structures, one on each side of a spit of land, and called the North and South Dams. The

existing waterway barrier spans between the banks of the French River, upstream of the spit of land between the North Dam and the South Dam. There are currently no buoys downstream of the dam.

NOTE: There is no cell phone service in the area of this dam.

3.4 Little Chaudière Dam

Little Chaudière Dam is located where Lake Nipissing discharges into a branch of the French River. The existing waterway barrier spans between the banks of the French River, upstream of the dam, and is anchored into the old abutments of a previous dam structure. There are currently no buoys downstream of the dam.

NOTE: This dam is only accessible from the water. It is about a 20 minute ride in a motorboat from the dam office adjacent to Portage Dam. There is no power on site. There is no cell phone service in the area of this dam.

3.5 Portage Dam

Portage Dam is located where Lake Nipissing discharges into a branch of the French River. The existing waterway barrier spans between the banks upstream of the dam. The right bank of the channel at the Portage Dam is a spit of land separating the Portage Dam from the Okikendawt Generating Station. There are currently no buoys downstream of the dam.

NOTE: There is no cell phone service in the area of this dam.

3.6 St. Andrew's Lock and Dam

St. Andrew's Lock and Dam is located in Lockport, Manitoba. The shipping address is:

625 River Rd.
Lockport, MB.
R1A 2R4

3.7 Environmental Conditions

The supplied and installed waterway barriers and buoys must withstand the following environmental conditions:

Table 3: Environmental Conditions

Item	Environmental Condition	Requirements
1	Temperature	-40°C to +32°C (all components will be stored outdoors year round)
2	Ice thickness (applicable to buoys)	<i>Timiskaming</i> — 0.3 m (ice forms near shores only) <i>Latchford</i> — 0.3 m (ice forms near shores only, see Figure 17) <i>Big Chaudière</i> — 0.3 m (ice forms near shores only) <i>Little Chaudière</i> — 1.0 m <i>Portage</i> — 1.0 m St. Andrews — Not applicable: buoys will be taken out in winter.
3	Waves	Maximum 1m
4	Maximum Design Water Speed	<i>Waterway Barriers</i> - at all dams: 1.25 m/s <i>Buoys</i> - Timiskaming upstream buoys integral to waterway barrier: 1.5 m/s - Timiskaming independent buoy downstream (Ontario channel): 5.5m/s - Timiskaming independent buoy downstream (Quebec channel): 5.0 m/s - Latchford integral buoy : 1.5 m/s - Big Chaudière integral buoy : 1.5 m/s - Little Chaudière integral buoy: 1.5 m/s - Portage integral buoy: 2.0 m/s - St. Andrews independent buoy: not applicable: anchor will be designed by others.

4 REQUIREMENTS FOR WATERWAY BARRIERS & BUOYS

4.1 Waterway Barriers

4.1.1 General Description

4.1.1.1 Materials

1. *Waterway barriers – to supply and install.*—The waterway barriers are to consist of a number of log-shaped floats (hard plastic shells filled with floatation foam) tied together with shackles and weldless links or chains to form a continuous barrier with a short gap between individual floats. The waterway barriers are to be anchored at the river banks by mechanical anchors into rock, by anchors cast into new concrete blocks, or by other means that achieves anchorage strong enough for the device and suitable for the geometry of the intended layout. Design of anchorages is the responsibility of Contractor.
2. *Buoys – to supply & install.*—The buoys are to be hard plastic shells filled with floatation foam. The buoys (both buoys integral to the waterway barriers and independent buoys) are to be anchored to the riverbottom via a single large prefabricated concrete block.
3. *Buoys – to supply only.*—The buoys are to be hard plastic shells filled with floatation foam. These, along with chains and fittings, are to be shipped to the St. Andrew's Lock and Dam site.

4.1.1.2 PSPC Intended Method of Operation

1. *Waterway barriers.*—The waterway barriers will be in place only during navigation season. Damkeepers will remove the waterway barriers each fall and re-install them in the spring.
2. *Buoys – St. Andrew's Lock and Dam.*—Buoys will be removed in winter and in periods of high water flows.
3. *Buoys – All other Dams.*—All buoys, however, will remain in place year-round and thus the buoys and their anchors must be able to withstand environmental conditions in all four seasons.

4.1.2 Detailed Requirements

The Contractor must:

1. Provide only new materials.
2. For each dam, determine required lengths of waterway barriers, to suit the desired “across the river” configuration.
 - i. Please note the following approximate straight-line lengths from shore to shore at approximately the location of the new waterway barriers, as shown in the referenced figure. This information is provided only to give a general idea of magnitude and is not a specification or a requirement. The Contractor is responsible for selecting correct and adequate lengths.
 - 1) Timiskaming Dam: 525 m (Figure 4)
 - 2) Latchford Dam: 110 m (Figure 9)
 - 3) Big Chaudière Dam: 65 m (Figure 18)
 - 4) Little Chaudière Dam: 50 m (Figure 22)
 - 5) Portage Dam: 50 m (Figure 27)
3. Assemble waterway barriers as modular units made from Commercial Off-the-Shelf components.
4. Select safe working loads of all components of waterway barrier with a minimum factor of safety of 1.5
5. Assembled waterway barriers
6. Must be durable with demonstrated successful performance in similar applications at dams.
7. Ensure a minimum 305mm (12") freeboard when assembled and floating.

4.1.3 Floats of Waterway Barriers

Floats must consist of an external casing filled with internal floatation foam and reinforced with an internal steel member through which is transmitted all loads from the external unit connectors. Each float must maintain its buoyancy even if outer casing is damaged or punctured.

4.1.3.1 Dimensions

1. **Diameter:** Approximately circular in cross-section with recessed ribbing as required for strength. Hexagonal also acceptable. Minimum diameter $410 \pm 13\text{mm}$ ($16 \pm \frac{1}{2}\text{''}$)
2. **Length:** $2870 \pm 180\text{mm}$ (9'-6" to 10'-6")

4.1.3.2 Construction

1. **General:** Hard exterior casing, minimum 4 mm thick, of some UV-resistant polymer material filled with floatation foam.
2. **Interior reinforcement:** Internal structural steel bar (which may also be tube, plate, or channel) fitted with connections to exterior such that the interior reinforcement takes axial loads on the float. This component must be positioned along the bottom length of the float in order to provide ballast against rolling.
3. **End fittings:** End plates on each end configured suitably for fitting shackles and designed to transmit loads to the interior reinforcement bar, tube, plate, or channel. Stainless steel or hot dipped galvanized finish. Factory-assembled to float units. .
4. **Colour:** Safety Yellow #FS-13655 to US Federal Standard 595C *Colors Used in Government Procurement*.

4.1.3.3 Markings

1. On each float, on upstream sides of the float, provide embedded letter, black colour, minimum letter height 100mm (4")high, Arial font, showing the following wording and graphics:



Figure 1: Required notation on waterway barrier floats

2. Markings must be oriented so they will be upright and normally legible when unit is floating.

4.1.4 Connection Hardware between Floats

1. For the purposes of future maintenance, connector assemblies must be able to be assembled by two people using common hand tools working from a small boat.
2. To allow relative movement between floats during wave action, connection assemblies must permit minimum movement of 90 degrees between floats in a horizontal and vertical plane.
3. **Finish:** All connection hardware: stainless steel or hot-dipped galvanized.
4. **Connector shackles:** Stainless steel or hot dipped galvanized steel, attached to end plates on float. Safety type, with safety nut and cotter pin to prevent safety bolt from coming loose. Shackles to be marked with safe working loads.
5. **Weldless Link Connectors or Connecting Chains:** Stainless steel or hot dipped galvanized. Strength to suit site requirements. Length to provide an assembled distance between boom floats of maximum 460mm (18").

4.1.5 Boat Gate

1. In the waterway barriers at Latchford Dam and Timiskaming Dam only, provide one boat gate to allow Damkeepers to make temporary boat access over waterway barrier for purposes of making dam inspections.
2. Boat gates are not required at Portage Dam, Little Chaudière Dam and Big Chaudière Dam.

4.1.6 Connections to End Anchorage

Weldless links or chains, and safety shackles, as per connections between floats, and configured to suit anchors. Maximum distance from end of last float to point of connection with anchor: approximately 4500mm; exact measurement to be determined in final design. This distance must be large enough to allow for deployment of waterway barrier but small enough that unauthorized vessels cannot get past the waterway barrier. The distance will be accepted by the Technical Authority at Preliminary Design Review.

4.1.7 End Anchorages

4.1.7.1 Position

1. Approximate locations of proposed end anchors are shown in the photos of Section 9 *Detailed Dam Data*. Tolerance on exact location is ± 2 metres unless otherwise specified.
2. The following constraints apply for positioning the new anchors, due to property ownership rights.

Table 4: Waterway Barrier End Anchor s – Types and Locations

Dam Name	Type	Left	Right
Timiskaming	Use mechanical or epoxy bolts into existing rock. Independent concrete blocks are also acceptable, placed at or about the waterline	Use same rock as existing left anchor shown Figure 6.	Use one of the large rocks on the right shoreline within a 3 metre radius of existing anchor (Figure 7), as this area is PSPC-owned property (see also section 10 PROPERTY AND BATHYMETRY DRAWINGS).
Latchford	Use an independent concrete block placed at or about waterline	Near existing anchor (see Figure 13).	Slightly downstream of existing right anchor (see section 10 PROPERTY AND BATHYMETRY DRAWINGS). See figures 10, 11 and 12 for images of right shoreline and existing anchor.
Big Chaudière	Shorelines consists almost entirely of large rock mass. New anchors must be upstream of existing (see Figure 18). Use mechanical or epoxy rock anchor bolts.	Location: see Figure 21	Location: see Figure 20
Little Chaudière	Shorelines consists almost entirely of large rock mass. New anchors will be upstream of existing (see Figure 22). Use mechanical or epoxy rock anchor bolts.	Location: see Figure 25.	Location: see Figure 26.
Portage	Place new waterway barrier upstream of existing in location shown in Figure 27. Use mechanical or epoxy rock bolts.	Location: bedrock visible in Figure 28.	Location: in bedrock visible in Figure 27. Alternatively, Contractor may re-locate and re-use one or more of the existing concrete block anchors (Figures 29 and 30).

4.1.7.2 Type

1. Connection point to be above high water by a minimum of 500mm.
2. Various acceptable configurations of end anchors are as shown in the figures of section 9 *Detailed Dam Data*: mechanical rock anchors similar to the existing Timiskaming anchor in Figure 6, anchors into concrete blocks similar to the existing Portage anchors in Figure 29, and epoxy or mechanical anchors into rock as shown for the Okikendawt Generating Station in Figure 32 are all acceptable configurations, but there may well be others.
3. Contractor to select specific type of end anchor and also to design all details associated with it, but must submit proposed type and details to Project Authority for review and comment.

4.2 Buoy Integral to Waterway Barriers

4.2.1 General

The Contractor must:

1. Provide warning buoys integral to waterway barrier that also act to provide intermediate anchorage for the waterway barrier.
2. Unlike the waterway barrier which will be removed for winter, the integral buoys will remain in place year-round. Hence, each integral buoy is to have its own ground anchor sized for this purpose. PSPC currently expects that the anchors will be concrete blocks (gravity anchors); however, other anchor types may be acceptable if Contractor can demonstrate that these are suitable for the bottom conditions.
3. Design buoys and their chains and anchors to remain in place all year, including ice conditions.
4. **Position within waterway barrier:** At Timiskaming, space the buoys so as to respect the maximum distance of 150m (492 ft) between buoys. For the single buoys at the other dams, place the buoy at the centre of the channel.

4.2.2 Buoy Body

1. **Body:** UV-resistant polymer shell, filled with floatation foam. Standard float collar can type with internal ballast. Minimum freeboard 750mm (30") and minimum diameter at the visible portion 300mm (12"). Select exact dimensions to suit weight of anchor chain and wave conditions in Table 3.
2. **Colour and Markings:** White body with retroreflective orange horizontal bands and retroreflective orange diamond to form a "hazard buoy" compliant to Transport Canada standard TP 14542 *Cardinal Buoys and Special Buoys* and Canadian Dam Association's 2011 Technical Bulletin: *Booms and Buoys for Public Safety Around Dams*.
3. **Connection hardware:** Swivel eye, hot dipped galvanized, integral to buoy, and sized large enough to support shackles for connection to anchor chain and also to waterway barrier.

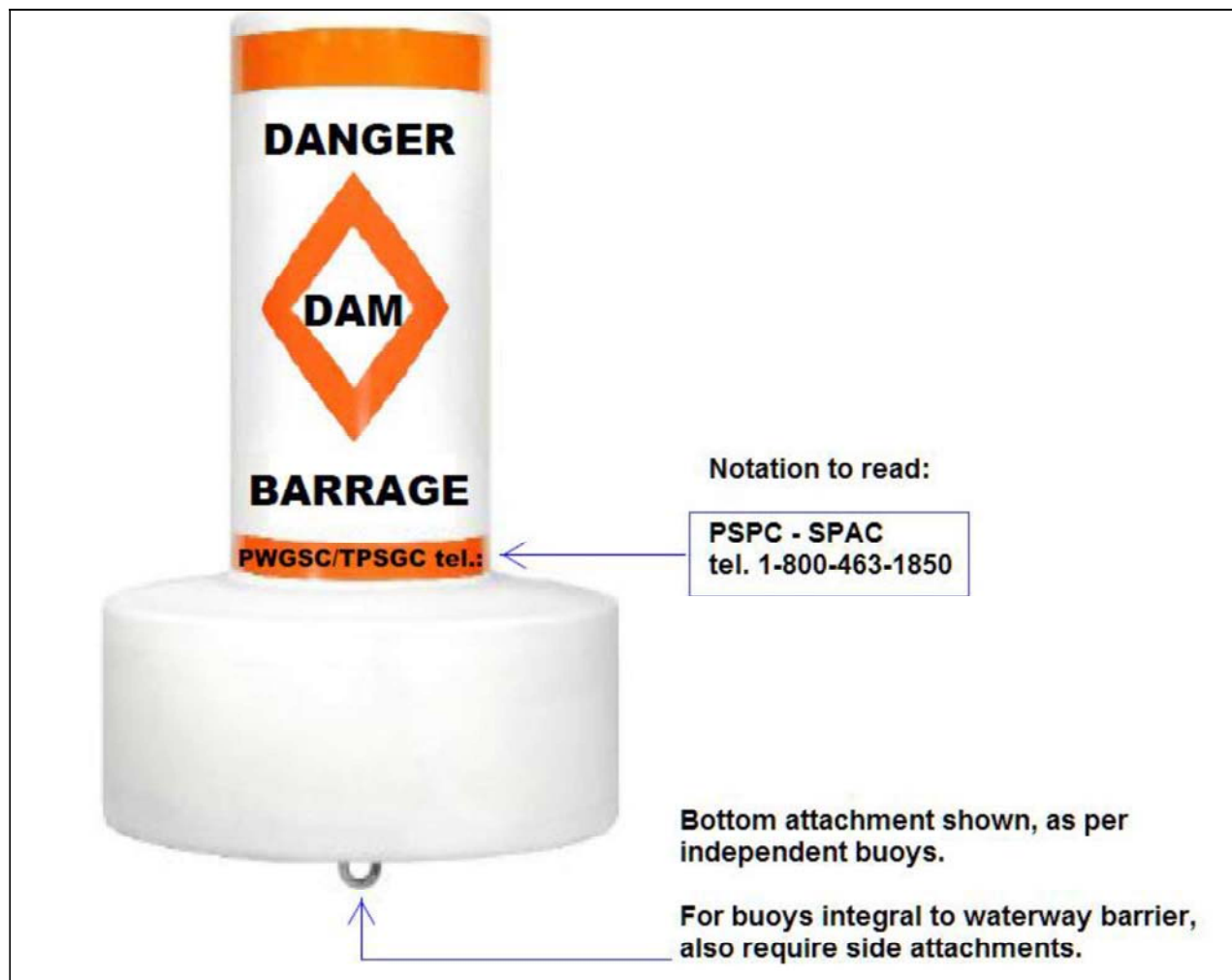


Figure 2: Required shape and markings on buoys

4.2.3 Anchor Chains

Stainless steel or hot dipped galvanized chain to suit site conditions (see bathymetric information in attached site drawings).

4.2.4 Ground Anchors & Fittings

1. PSPC expects that the river bottom at the dams consists of the following:
 - i. Timiskaming: consists of large rocks, boulders, and sunken logs.
 - ii. Latchford: mostly rock.
 - iii. Big Chaudière: mostly rock with potentially some till.
 - iv. Little Chaudière: mostly rock.
 - v. Portage: mostly rock.

PSPC cannot confirm that the above match current riverbed conditions.

2. Concrete block gravity anchor large enough to provide sufficient mass to resist horizontal loads on the buoy and its adjacent sections of waterway barriers or other type that will provide same performance. Note that the displacement of a gravity anchor of more than 2 metres will be considered a defect under the warranty.

3. Provide stainless steel or galvanized steel eye bolt cast integrally with concrete for connecting shackle, but in either case eye bolt material must match the shackle material.
4. Connect anchor chain to ground anchor with either galvanized steel shackle or stainless steel shackle.
5. Length of chain to suit local conditions. Contractor responsible for selecting exact locations in conjunction with selection of exact locations of waterway barriers and for taking depth measurements in exact locations where buoys are to be deployed. Bathymetric drawings attached for reference, and the following information is provided for general orientation purposes (NOTE: for St. Andrews, simply provide chain for buoys).

Table 5: Approximate Water Depths in Vicinity of Existing Waterway Barriers

Dam	Approximate Depths at Existing Waterway Barrier	Approximate Depths around approximate locations of downstream buoys
Timiskaming	~25 ft at central attachment ~25 ft between central attachment and Ontario Shore ~30 ft between central attachment and Quebec shore	<u>Quebec channel</u> ~15 ft at centre of channel at outlet of Gordon Creek ~30 ft at centre of channel slightly downstream of tip of Sault Island <u>Ontario channel</u> ~15 ft at centre of channel approximately at tip of Sault Island ~30 ft at centre of channel at location of hydro gauge on Ontario bank
Latchford	See bathymetric drawings	Not applicable.
Big Chaudière		
Little Chaudière		
Portage		

4.3 Independent Buoys

Symbols and markings on independent buoys are that shown in Figure 2.

4.3.1 Timiskaming

1. The Contractor to supply and install independent buoys downstream of the Timiskaming Dam only.
2. For these three buoys at Timiskaming Dam (two in Ontario channel and one in Quebec channel), space the buoys symmetrically about the centre of the channel with a maximum distances between the buoys of 150m (492 ft).

4.3.2 St. Andrew's

1. The Contractor is to supply buoys and their fittings as well as chain for the St. Andrew's Lock and Dam in Manitoba.
 - a. Note that for St. Andrews buoys, all fitting hardware must be hot dip galvanized.
2. Buoys must have a minimum reserve buoyancy of 444 N (100 pounds).
3. Supply a single length of 77m (250 ft) of chain, hot dip galvanized, 1/2" size, with minimum safe working load 20 kN (4500 pounds).
4. Deliver all of this to the shipping address given in Section 3.6 by no later than April 15, 2018. Assembly and installation of buoys will be by Damkeepers at the site.

5 REQUIREMENTS FOR INSTALLATION

5.1 General Requirements

The Contractor is responsible to:

1. Ensure all Installation work complies with Ontario *Occupational Health and Safety Act*, R.S.O. 1990, c. 0.1 and Ontario *Regulations for Construction Projects*, O. Reg. 213/91.
2. File Notice of Project with Provincial authorities before starting installation Work. This form can be filled out online at: <https://www.enop.labour.gov.on.ca/ENOPWeb/welcome.do>
3. **Temporary facilities:** Provide all electrical generators, toilets, potable water, and other temporary construction facilities necessary for the installation crew.
4. **Environmental protection:** Ensure all construction equipment to be operated on land or from barges only; do not operate in water. Keep waterway free of excavated material, waste, and debris. Provide weighted and anchored silt barrier around work area whenever drilling or other operations create turbidity in water. Provide spill control kit suitable to the equipment to be used on site and ensure all employees are trained in how to use it if required. Report all spills regardless of severity to the Spills Action Centre 1-800-268-6060 and to the Project Authority. For spills greater than 5 litres, also report to the National Service Call Centre at 1-800-463-1850.

5.2 Materials

Mechanical or epoxy anchors, cast-in-place anchors, precast concrete, and all other materials as per Contractor's design.

5.3 Execution

1. The Contractor must provide all supervision, labour, tools, equipment, and materials to install the waterway barriers and buoys at each of the dams.
2. **NOTE: Little Chaudière Dam is only accessible from the water. It is about a 20 minute ride in a motorboat from the dam office adjacent to Portage Dam. There is no power on site. There is no cell phone service on site.**
3. **Health & Safety:** The Contractor is responsible for assessing hazards inherent in the installation Work, and providing all training, personal protective equipment, and supervision necessary during the Work as per Provincial occupational health and safety regulations. See Annex E for details.
4. **Quality Control** is the responsibility of the Contractor.
5. **Quality Assurance:** Project Authority may perform Quality Assurance reviews for some or all of the Work and may engage independent testing agencies. The Contractor will allow the Project Authority and his agents access to work on site as well as to other places where work is in progress such as assembly shops.

5.3.1 **Installation – In-Water Anchors for Buoys**

Pre-cast in-water anchors off site complete with embedded eye to which anchor chain is to be connected. Assemble anchor, chain, and buoy ashore, then deploy the buoy assembly into position off a barge.

5.3.2 **Installation – Shore End Anchors for Waterway Barriers**

1. **Location:** Locate shore end anchors a minimum of 500mm above high water elevation as given in Table 7.
2. Shore end anchors will be a combination of bolts into exposed rock in some locations and into concrete blocks in other locations. In all cases, Contractor must select the length, diameter, and type of bolt and all connectors, plates, eyes, and other fittings required to fasten the waterway barrier to shore end anchor.
 - a. **Rock anchors:** Promptly notify Project Authority in writing if site conditions at Place of Work differ materially from those indicated in Contract Documents, or a reasonable assumption of probable conditions based thereon. Should Project Authority determine that conditions do differ materially, then instructions will be issued.
 - b. **Precast concrete anchors:** Contractor to select appropriate size for concrete blocks, to select concrete mix, and to detail reinforcement and formwork all in conformity with CAN/CSA A23 series of standards for concrete work. Fabricate concrete blocks in shop and deliver to place of installation.

3. Remove all waste materials from site at end of installation Work in accordance with Contract clause 6.13 Salvage.

5.3.3 Removals

Dispose of existing waterway barrier chains and floats in accordance with applicable Canadian environmental regulations. Existing shore anchors do not need to be removed.

5.3.4 Deliverables Related to Installation

The Contractor must submit exact longitude and latitude of waterway barriers and buoys within 15 days of their installation with sufficient detail to allow for publication of their positions and characteristics in Transport Canada marine notices (Notices to Mariners; Notices to Shipping) and for charting of the buoy(s) by the Canadian Hydrographic Service.

5.4 Installation Period

1. The installation of the waterway barriers (booms and buoys) at all dam sites are to be installed after spring freshet (usually by early June) and by no later than August 25, 2018.
2. The unpredictability of future inflows creates a certain degree of uncertainty with regards to the exact date of boom and buoy installation. Confirm with Technical Authority the week before anticipated mobilization to site to confirm that water conditions are convenient for the work.

6 REQUIREMENTS FOR SPARE PARTS

The Contractor must supply the following spare parts and deliver these to the addresses listed by no later than August 25th, 2018:

Table 6: Spare Parts

Item	Timiskaming Dam Office	Portage Dam Office
	Sault Island, Timiskaming ON P0H 1W0	557 Keso Bay Road, Dokis ON P0M 2N1
Floats	6	6
Warning Buoys – type integral to waterway barrier	1	1
Warning Buoys – independent type	2	0
Weldless links or connector chain	6 weldless links or 6 lengths of connector chain	6 weldless links or 6 lengths of connector chain
Shackles – each size, complete with all fittings	6	6

7 PROJECT MANAGEMENT REQUIREMENTS

7.1 General

1. **Project Manager:** The Contractor will identify a Project Manager responsible to manage the Work. The Contractor's Project Manager will plan, direct, control and monitor the Work. The Contractor's Project Manager will liaise and communicate with the Technical Authority on all technical aspects of the Work.
2. **Project Management Plan:** Within 10 working days of Award, the Contractor will prepare and deliver a Project Management Plan describing how the Contractor intends to fulfill the project management requirements of this SOW. The Contractor shall include in the Project Management Plan a Work Breakdown Structure, a Project Schedule, a Risk Management Plan, and Installation Plan, and a Quality Control Plan as

described below:

- a. **Work Breakdown Structure** will show the logical steps required to achieve the project objectives and must include the milestones of design, assembly, and installation at each of the dam sites.
- b. **Project Schedule** will be based on the Work Breakdown structure and shall be in bar-chart format.
- c. **Risk Management Plan** will describe Contractor's procedures for identification, assessment, management, reporting, tracking, reduction and elimination of risks arising from the performance of Work.
- d. **Installation Plan** will describe how each waterway barriers and buoy will be installed, integrated and tested at the dam sites, including from where barges will be launched and how shore access will be accomplished.
- e. **Quality Control Plan** will describe how the Contractor will ensure all technical requirements are met in delivering the waterway barriers and buoys.

7.2 Project Status Reports

The Contractor will monitor progress and deliver monthly Project Status Reports.

7.3 Project Meetings

7.3.1 General

1. The Contractor will identify all meetings in the Project Schedule. Canada will confirm meeting schedule.
2. The Contractor will record, produce, deliver and revise, as required, minutes for all meetings. Meeting minutes are accepted once signed by Canada. Canada will advise the Contractor of any issues within five working days of receiving the minutes.

7.3.2 Project Kick-Off Meeting

1. Within one month of the Contract Award, the Contractor must conduct a project Kick Off Meeting. The discussion will include, but is not limited to, the review of the:
 - a. The Project Management Plan;
 - b. Technical Specification and System Requirement review;
 - c. Critical path activities;
 - d. Risk management concerns and mitigation actions: and,
 - e. Any other contractual or technical issues.

7.3.3 Project Review Meetings

1. The Contractor will conduct and coordinate Progress Review Meetings once each month or as mutually agreed between Canada and the Contractor.
2. The Contractor will issue Project Status Reports at least 3 days before the date of the Progress Review Meeting.
3. The Contractor will hold the first Project Review Meeting within one month following the Kick-Off Meeting.
4. Project Review Meetings will encompass total project status as of the review date.

7.3.4 Final Project Review Meeting

1. A Final Project Review Meeting is required to provide a complete review of the deliverables. The Contractor will hold the Final Project Review Meeting at a time to be determined by Canada but this meeting will take place no later than 30 days after acceptance of the last deliverable.
2. The location of the Final Project Review Meeting will be at either the Timiskaming Dam Office or the

Portage Dam Office depending upon which dam is the last one to receive its waterway barriers and buoys.

7.3.5 Other Scheduled Meetings

The Contractor may identify, through the submission of his various plans, the necessity to schedule other meetings.

8 DESIGN ENGINEERING REQUIREMENTS

1. Professional Engineering services will be required to complete the design engineering requirements. The design qualification must include the following steps:
 - a. **Preliminary Design Review:**
 - i. **Product submittals:** Contractor to provide product data on Commercial Off-the-Shelf components demonstrating that these meet all technical requirements.
 - ii. **Anchorage Design Submittals:** Contractor to submit Professional Engineer's signed and sealed drawings and calculations related to design of shore end anchors for waterway barriers and gravity anchors for buoys. Canada will review to ensure that Contractor has not omitted anything critical or made any incorrect assumptions. Contractor remains responsible for design.
 - iii. Canada will review the preliminary design and advise of any needed revisions.
 - b. **Critical Design Review:** Contractor to provide final design for review. Canada to review and accept final design.
 - c. **As-Built Submittals:** Contractor to submit dimensioned drawings showing location and configuration of "across the river" waterway barrier end anchors and latitude and longitude of these and of the buoy anchors. This is required for Canada to update Notices of Mariners.

9 DETAILED DAM DATA

9.1 Access Information

See site plan drawings attached for bathymetric and property information.

Table 7: Access to Dams

Dam		Upstream		Downstream
		Left Bank	Right Bank	
Timiskaming	By land	On foot, through bush off Marina Road. See Figure 8. It is possible to carry hand tools or hand-carried equipment.	On foot, down steep bank and through heavy bush off Wyse Road. Not recommended.	Not really possible.
	By water	Boat launch at municipal marina about 2km upstream of dam		Boat launch at downstream tip of Sault Island
Latchford	By land	Not really possible. Down steep and heavily wooded bank on private property. Would be difficult on foot, not possible for equipment.	Down spit of land upstream of dam (Figures 9, 14, 15). Width of equipment: about size of a pickup truck is possible. Wooded area right at water's edge.	Not required for this Contract.
	By water	Boat launch at municipal marina within Town of Latchford. Figure 16.		Not required for this Contract.
Big Chaudière	By land	On foot, down steep rocky bank off access road to dam (Figures 18 & 19).	Not really possible except by foot and with great difficulty through heavy bush.	Not required for this Contract.
	By water	Boat launch at Charlie's Bay within Dokis, Ontario (Figure 33), followed by approximately 10 minute boat ride in a motorboat (longer on a barge).		Not required for this Contract.
Little Chaudière	By land	Not possible. Numerous kilometres from nearest road through heavy woods.		Not required for this Contract.
	By water	Boat launch at Charlie's Bay within Dokis, Ontario (Figure 33), followed by approximately 30 minute boat ride in a motorboat (longer on a barge).		Not required for this Contract.
Portage	By land	Not really possible except by foot, over dam, and down rocky, uneven shore covered in scrub (Figure 29 & 30). Possible to carry hand tools only.	Down somewhat uneven spit of land with scrub (Figure 19). Actual tip of spit is bedrock, smooth, and without large bushes (Figure 28). Possible with hand tools or hand-carried equipment.	Not required for this Contract.
	By water	Boat launch at Charlie's Bay within Dokis, Ontario (Figure 33), followed by approximately 15 minute boat ride in a motorboat (longer on a barge).		Not required for this Contract.

Contractor must make all arrangements to use marinas and boat ramps as required for boat access, including purchase of all permits as required. See the figures which show locations of marinas and boat ramps.

9.2 Water Elevations

The following water elevations at the dams are taken from the rule curves. Note that water elevations outside these limits may occasionally occur.

Table 8: Water Elevations from Rule Curves

Dam	Upstream Water Elevation (metres)		Downstream Water Elevations (metres)	
	Maximum	Minimum	Maximum	Minimum

Dam	Upstream Water Elevation (metres)		Downstream Water Elevations (metres)	
	Maximum	Minimum	Maximum	Minimum
Timiskaming	179.560	175.500	177.701	173.701
Latchford	277.150	275.650	Not required for this Contract.	
Big Chaudière	196.220	194.500	Not required for this Contract.	
Little Chaudière	196.220	194.500	Not required for this Contract.	
Portage	196.220	194.500	Not required for this Contract.	
St. Andrew's Lock and Dam	-	-	Not applicable.	

9.3 Map of Dam Locations

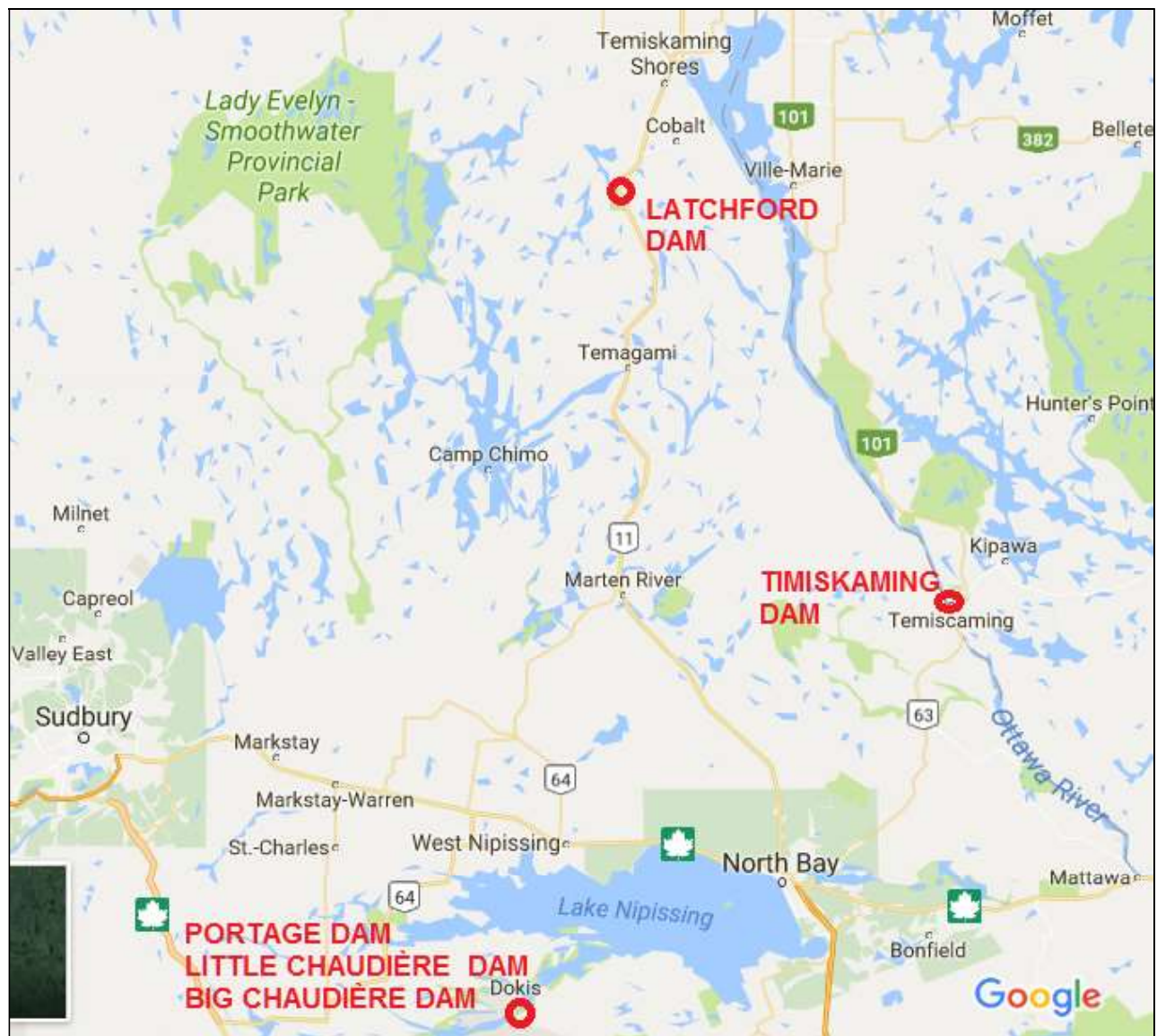


Figure 3: Locations of five subject dams (not including St. Andrews Lock and Dam).

9.4 Photographs – Timiskaming Dam



Figure 4: Timiskaming Dam: approximate locations of new waterway barrier and new hazard buoys.



Figure 5: Timiskaming Dam, existing waterway barrier.



Figure 6: Timiskaming Dam, existing left anchor of existing waterway barrier.



Figure 7: Existing Right Anchor. Old chunk of lumber is itself chained to a tree trunk, and the right end of the existing buoys is currently being connected via a chain to the edge of this lumber. These logs have been in this location for several decades and have simply never been removed. A large rock can be seen at the bottom of the picture and is one of many that are found on the right shoreline.



Figure 8: Access to left bank upstream of Timiskaming Dam (Marina Road off Chemin Kippawa). Gas station at intersection with Hwy 101 visible in top right of photo. Red arrow shows existing waterway barrier, barely visible through trees. Image looking upstream.

9.5 Photographs – Latchford Dam



Figure 9: Latchford Dam showing old dam and old waterway barrier (photo taken 2001). New Latchford Dam has been built slightly upstream of the old dam. New waterway barrier to be in similar location as old waterway barrier, with right anchor being placed slightly downstream of existing anchor.



Figure 10 - View of right shore upstream of Latchford dam. Existing waterway barrier in upper right of photograph.



Figure 11: Latchford Dam, old waterway barrier, looking towards anchor on right bank.



Figure 12: Close-up view of right anchor (the jug shows the cable which is connected to the anchor). This anchor is currently located on private property.



Figure 13: View of existing left shore (looking towards right shore). Existing booms shown in picture. Currently left shore anchor consists of wire secured around tree shown on the right.



Figure 14: New Latchford Dam under construction showing another view of the spit of land upon which the left anchor of the new waterway barrier will be placed.



Figure 15: Aerial view of Latchford Dam at start of new dam construction (image from Google Maps). Waterway barrier visible. There is access to left anchor on spit of land via a pathway about wide enough for a pickup truck.



Figure 16: Boat launch at Marina in Town of Latchford, upstream of Latchford Dam.



Figure 17: Ice conditions upstream of Latchford Dam (typical). The spit of land upon which the left anchor is to be place is visible in the upper right of the photograph.

9.6 Photographs – Big Chaudière Dam

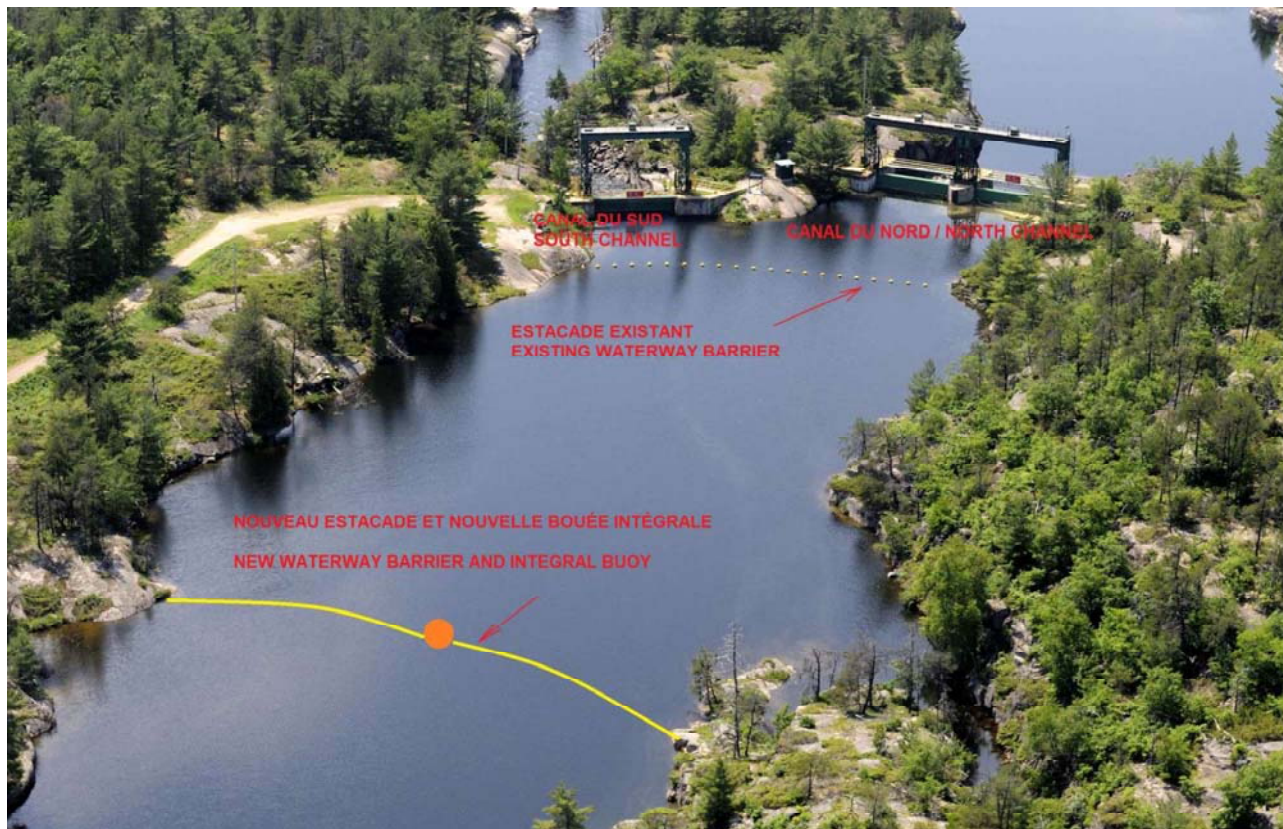


Figure 18: Big Chaudière Dam with previous dam structures in place. Also showing existing waterway barrier and approximate new location of waterway barrier complete with integral hazard buoy.

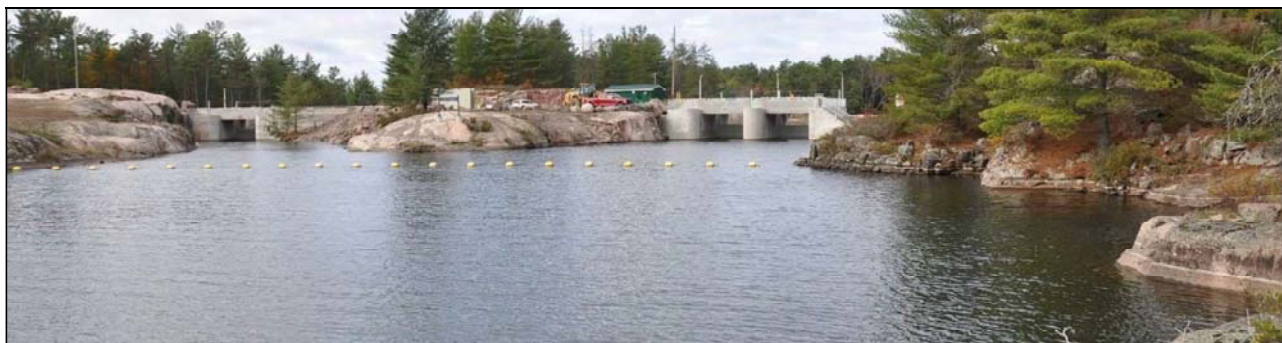


Figure 19: Big Chaudière Dam with new structures (South Dam on left of photo; North Dam at right) showing location of existing waterway barrier. View looking downstream. New waterway barrier to be slightly upstream (i.e. closer to the foreground in this photo).



Figure 20: View of rock shoreline at proposed location of new right anchor.



Figure 21: View of rock shoreline at proposed location of new left anchor.

9.7 Photographs – Little Chaudière Dam

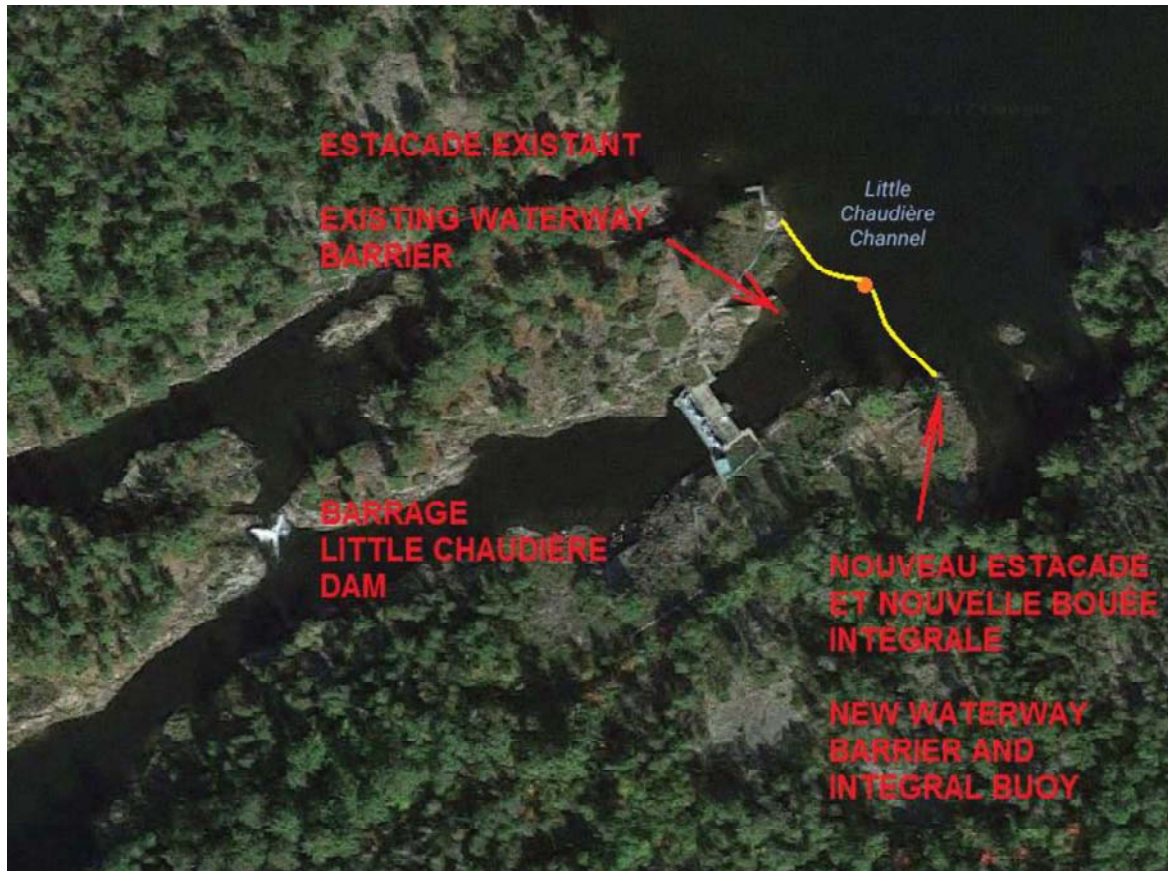


Figure 22: Little Chaudière Dam showing existing waterway barrier and approximate new location of waterway barrier with integral hazard buoy.



Figure 23: Little Chaudière Dam: area around existing waterway barrier, which was broken at the time the photograph was taken.



Figure 24: Existing anchor at Portage Dam, right side. Illustration provided to show general configuration only: the new waterway barrier must be upstream of this, and the configuration of wire rope clips is not acceptable.



Figure 25: View of proposed location of new right anchor (rock to the right of the cantilevered fence).



Figure 26: View of proposed location of new left anchor (near sign).

9.8 Photographs – Portage Dam

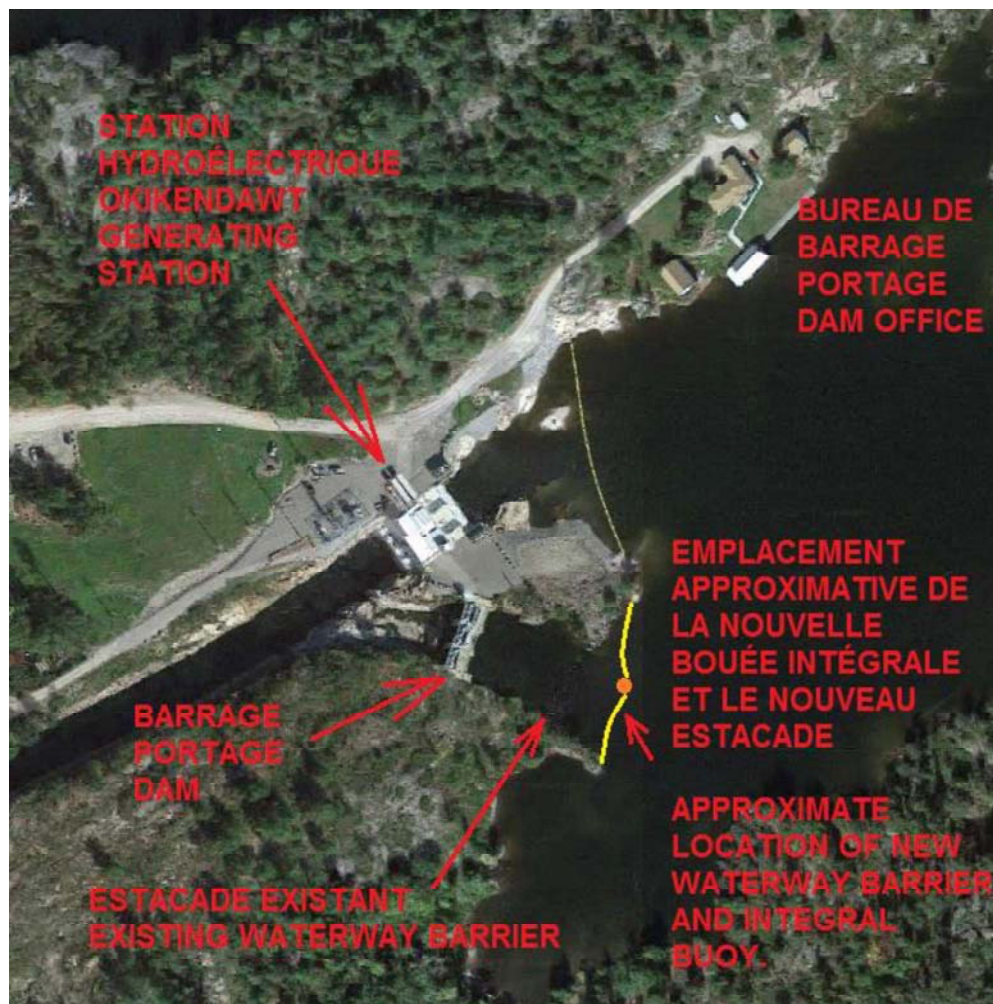


Figure 27: Portage Dam showing existing waterway barrier and approximate new location for waterway barrier complete with integral hazard buoy.



Figure 28: Portage Dam: area slightly upstream showing approximate anchor location of right anchor of new waterway barrier (rock in foreground). Existing waterway barrier anchors visible in upper right of photo. Water is flowing from left to right in this photograph. Proposed location of new right anchor circled in red.



Figure 29: Portage Dam: existing waterway barrier. Area circled in red is approximate location of left anchor of new waterway barrier; detail in next photo (despite the curvature of the existing waterway barrier in this photograph, water flows from left to right in this photograph,).



Figure 30: Detail of area circled in red in previous photograph, which is area upstream of Portage Dam showing approximate location of left anchor of new waterway barrier. Water is flowing from left to right in this photograph.



Figure 31: End anchor for the waterway barrier at the Okikendawt Generating Station adjacent to Portage Dam. Photo provided for background information on local conditions.

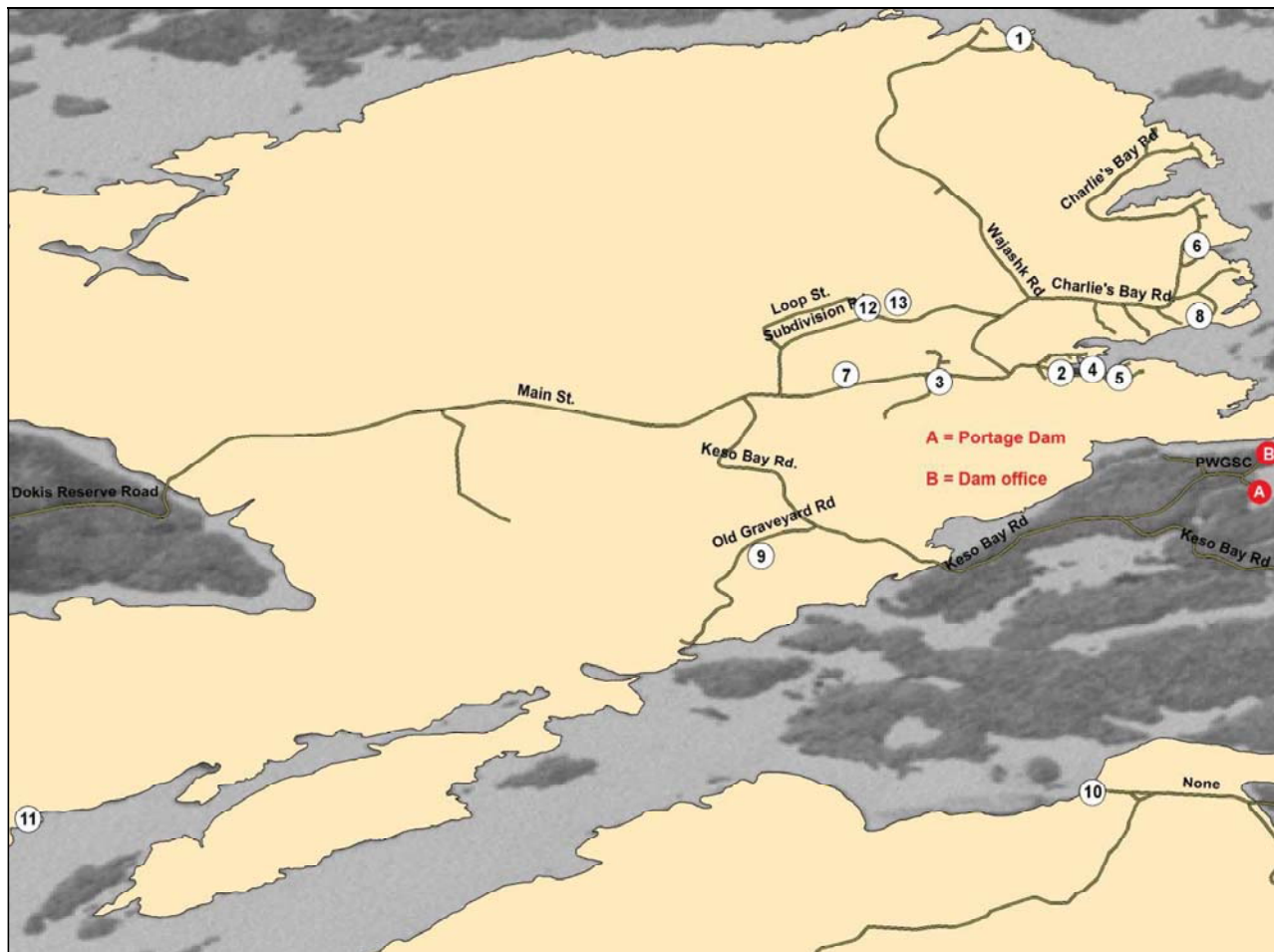


Figure 32: Map of Dokis, Ontario showing location of Portage Dam and Dam Office. Boat launch for access to upstream sides of Portage Dam, Big Chaudière Dam, and Little Chaudière Dam is on Charlie's Bay Road at upper right of map.



Figure 33: Location of Marinas in Dokis, ON



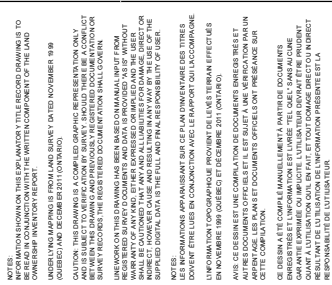
Figure 34: Location of marina at Latchford.

10 PROPERTY AND BATHYMETRY DRAWINGS

See attached.


Timiskaming Dam Complex

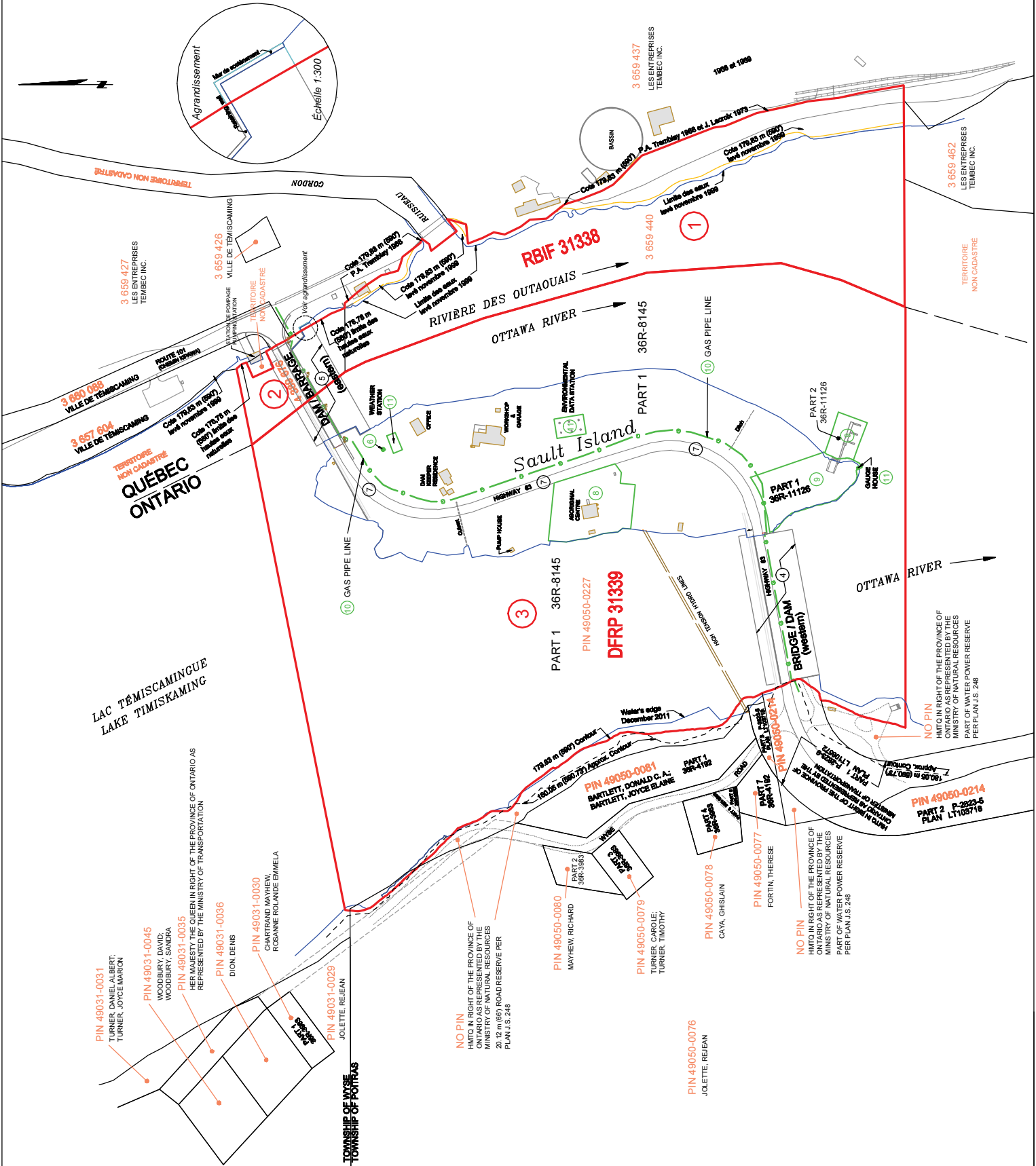
Property Lines and Bathymetry

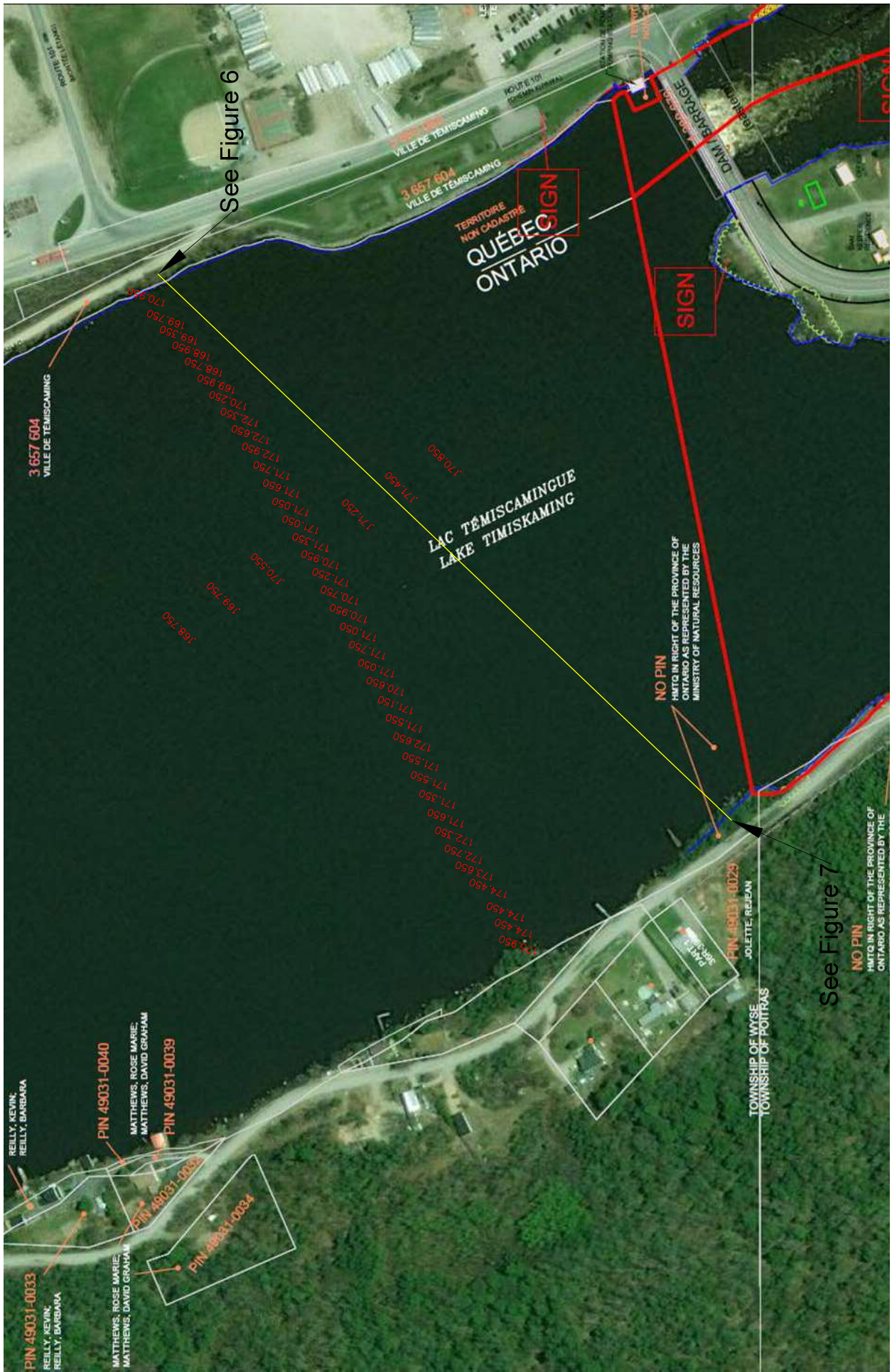
[illegible]

Project title	Nom du projet
Timiskaming Dams Barrages de Témiscamingue	

Drawing title	Titre du plan
EXPLANATORY TITLE RECORD DRAWING	PLAN D'INVENTAIRE DES TITRES

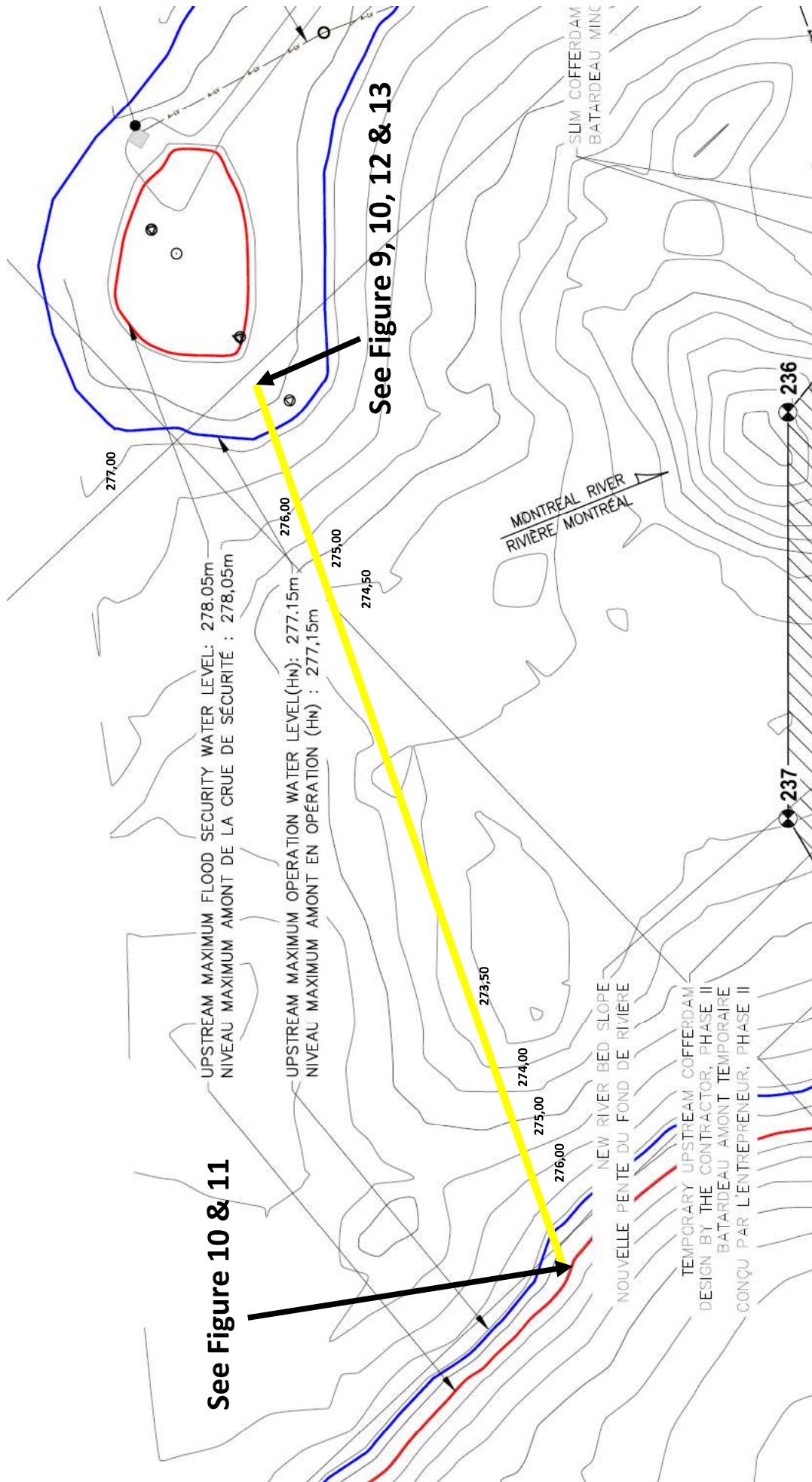
Echelle		1:2000	
		50 0 50	
Project date	Date du projet	Project no.	Project no.
MARCH 2012	MARS 2012	R.050388.002	
Prepared by A.G.		Prepared by A.G.	
Project pair		Project pair	
Verifié par		Verifié par	
P.R., F.B.		P.R., F.B.	
Sheet		Sheet	
1 / 1		1 / 1	





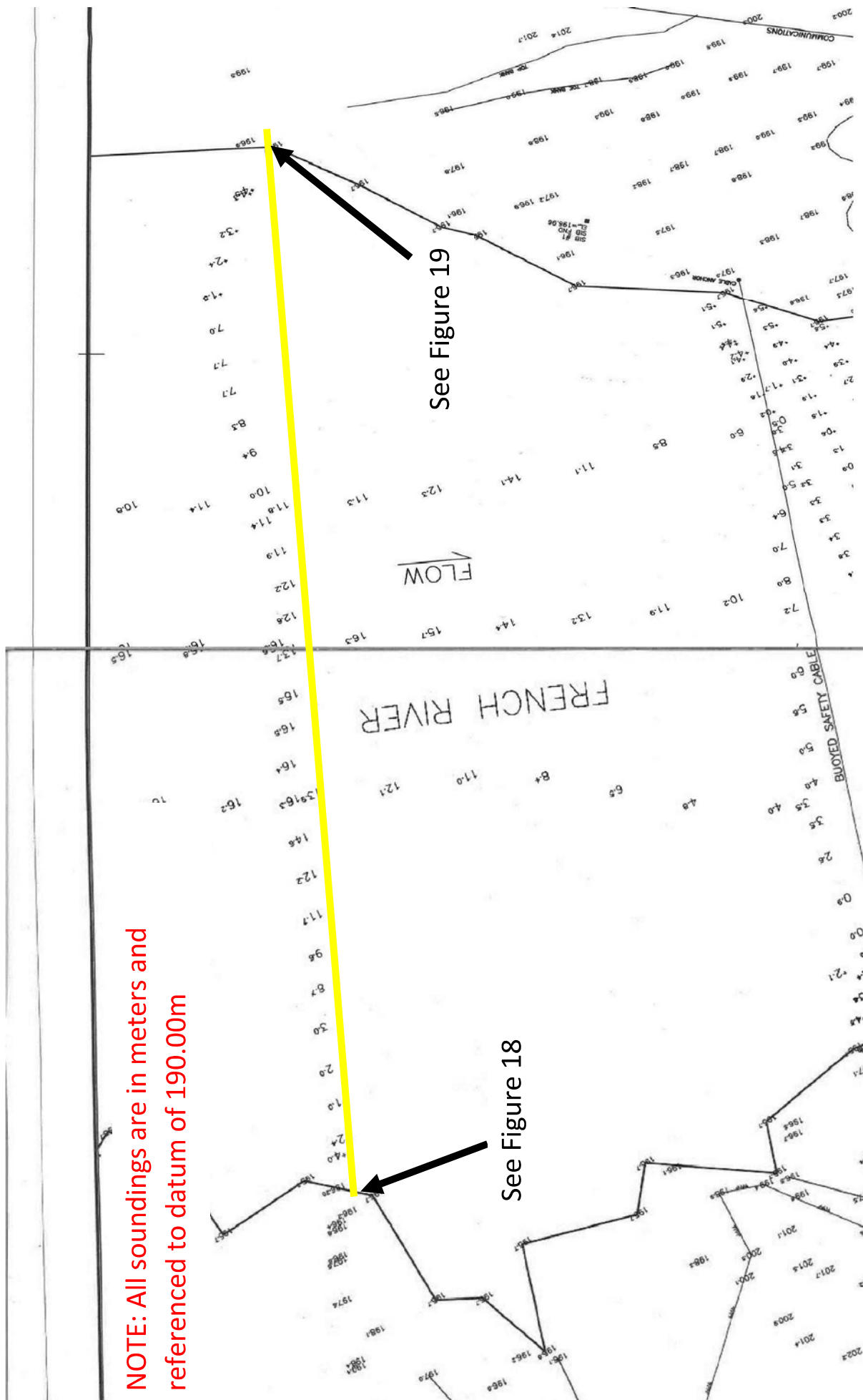
Latchford Dam

Property Lines and Bathymetry



Big Chaudiere Dam

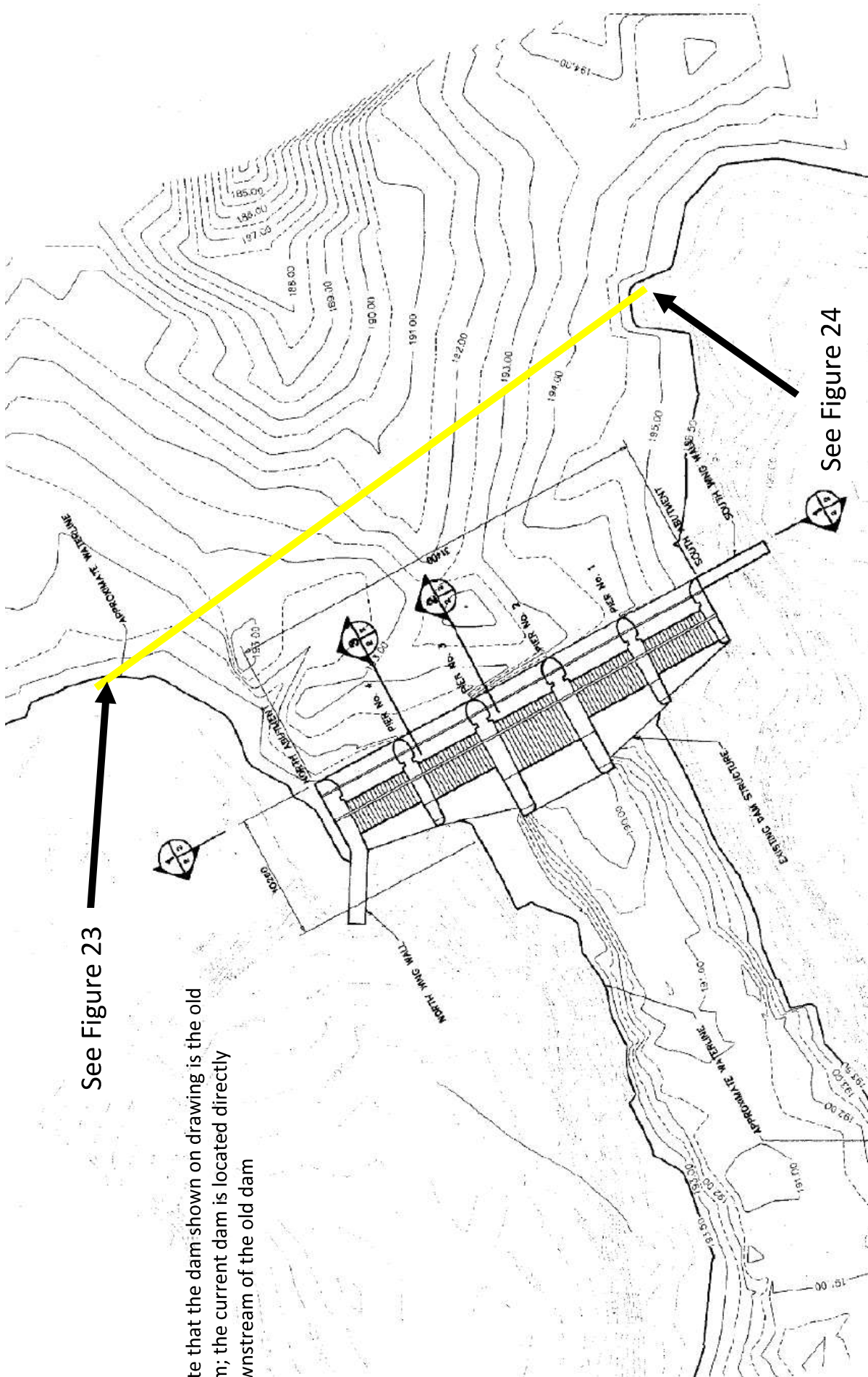
Property Lines and Bathymetry



NOTE: All soundings are in meters and referenced to datum of 190.00m

Little Chaudiere Dam

Property Lines and Bathymetry



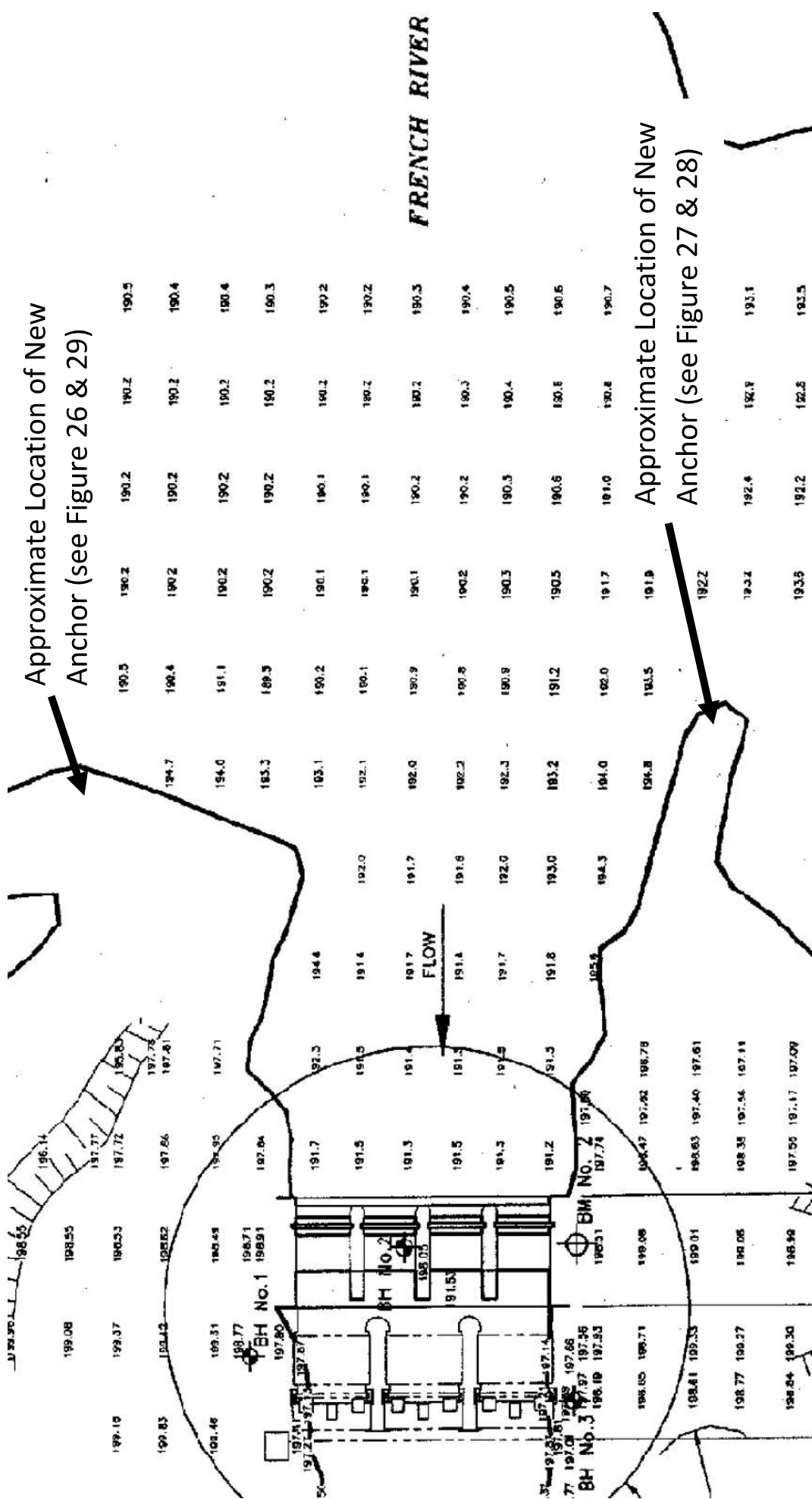
See Figure 23

Note that the dam shown on drawing is the old dam; the current dam is located directly downstream of the old dam

See Figure 24

Portage Dam

Property Lines and Bathymetry



ANNEX E

ON-SITE HEALTH AND SAFETY REQUIREMENTS:

WATERWAY BARRIERS

1 REGULATORY REQUIREMENTS

1. Contractor is responsible for Health and Safety whilst on site. Abide by, all relevant Legislation, Regulations, Codes, and Standards, ensure that all work undertaken at the dam site on behalf of Canada is completed in a safe manner, and ensure that sub-contractors are equally compliant.
2. Immediately address health and safety non-compliance issues identified by Authorities having jurisdiction or by Technical Authority and provide Technical Authority with written report of action taken.
3. Technical Authority may stop work if non-compliance of health and safety regulations is not corrected.
4. In case of conflict, Health and Safety considerations will take precedence over budget and schedule.
5. Should any unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of work, immediately stop work and advise Technical Authority verbally and in writing.

2 SUBMITTALS

Canada requires a variety of submittals proving Contractor compliance with legislated requirements for site work. Hence, a minimum of three weeks before first intended installation of waterway barriers and buoys, the Contractor must submit the following to the Technical Authority:

1. **Company information (submit for sub-contractors as well):**
 - a. *Company's Health & Safety Policy Statement* meeting the requirement of the Ontario Occupational Health and Safety Act. Usually 1 page, this is a clear, concise policy statement reflecting management's commitment, support, and attitude to the health and safety program for the protection of their employees. Statement must be signed by the employer at the highest level of management at the workplace.
 - b. *Company's Occupational Health and Safety Program* meeting the requirements of the Ontario Occupational Health and Safety Act. Usually five to fifteen (5 to 15) pages, describing, in a general way, how Contractor handles health and safety in the firm.
 - c. *Sub-contractor information* – Provide names and contact information for all sub-contractors who will be working on site.
2. **Employee information:** For all members of Contractor's team (both staff and sub-contractors) who will be on site for this Contract:
 - a. *Names* of all persons who will be present on site, both employees and sub-contractors.
 - b. *Proof of health & safety training* for all employees in a minimum of the following areas:
 - c. *Workplace Hazardous Materials Information System (WHMIS)*. All crewmembers on site must have this training. Products currently anticipated to be used at the site include lubricants.
 - d. *First Aid and CPR*. Whenever a crew is on site, at least two employees must be trained in first aid and CPR.
 - e. Additional training as required to address other specific hazards associated with this Contract (e.g. boat-related courses).
3. **Hazard Assessment & Site-Specific Health & Safety Plan:** This must contain, but need not be limited to, the following:
 - a. *Description*: A brief description of what Contractor understands Work of the Contract to be.
 - b. *Hazard identification, analysis, and mitigation measures*: A list of Contract-specific activities to be undertaken at the site complete with the hazards associated with each activity, complete with a series

of procedures to be used to mitigate the hazard. This section is usually five to ten (5 to 10) pages long, depending on the number of hazards identified. Mitigation measures may include a range of engineering controls, work practices, and personal protective equipment. This section must include activities to be undertaken by sub-contractors. Currently-known hazards involved in Work of this contract include: working around water, boat work, working during inclement weather. Depending on Contractor's selected method of installing anchors, it may also involve diving work.

- c. *Emergency contacts*: An organizational chart showing the specific chain-of-command and specify the overall responsibilities of Contractor's employees and sub-contractors at Work site in the case of emergencies. This is usually a list of names, roles, and phone numbers, and must include all sub-contractors.
- d. *Emergency response plan*: List emergencies that could perceivably occur during the course of work and what steps you will take to respond. For example, provide a rescue plan for case if a worker falls in the water.
- e. *Hazard communication plan*: How the Contractor will inform workers, visitors, and other individuals about the hazards during work. This may include but need not be limited to signage, barriers, and tailgate meetings.
- f. *Safety orientation briefing*: Contractor must provide a short (15-minute) safety briefing for their employees and sub-contractors summarizing the hazards and hazard mitigations measures appropriate to the site. All persons are to sign-off as having received this briefing before starting Work. Submit a copy of the briefing agenda and signed attendance list to Technical Authority. Safety briefing is required for all new personnel before they go on site the first time.

3 DIVING

The Contractor may elect to use divers to install some or all anchors. If so, then, the Contractor must submit the following a minimum of three weeks before diving operations are scheduled to start:

3.1 Pre-Dive Submittals

A separate hazard assessment and safety plan for the diving operations which, in addition to the above requirements in Section 2, must include the following:

1. *Names* of all divers and copies of their *Commercial Diver's Certification* from the Diver Certification Board of Canada and a *Diver's Medical Certificates* from the Canadian Association of Diving Contractors.
2. *Operational Plan* and *Contingency Plan*, to requirements of O. Reg.629. Note that known hazards associated with working near the dam include general hazards around dam structures as well as leakage through stoplogs and around gates that may impose on a diver water current forces.
3. *Safety Communications Plan* that must include contact information for all key team members including at minimum the Dive Supervisor and Standby Divers; ;
4. copy of employer's written *Notice of Diving* submitted to Ministry of Labour (provide at minimum 24 hours before starting diving operations);
5. confirmation of availability of an adequate first aid kit including equipment necessary to deliver 100% oxygen to an injured diver;
6. type, location, and time to deploy equipment required to immediately remove an unconscious diver from the water;
7. copy of *Safe Practices Manual* or *Safe Operations Manual* that describes safe diving procedures, pre-and post-dive checklists, dive team assignments and responsibilities, emergency procedures in case of

equipment failure and in case of injury or medical illness.

3.2 During Diving Operations

1. Contractor must ensure that:
 - a. a qualified diving supervisor is on site and authorized to act as required to ensure work is properly and safely carried out; and
 - b. all divers maintain an updated dive log and present this log upon request from the Technical Authority.