



RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
Bid Receiving Public Works and Government
Services Canada/Réception des
soumissions\Travaux publics et Services
gouvernementaux Canada
See herein for bid submission
instructions/
Voir la présente pour les
instructions sur la présentation
d'une soumission
NA
Manitoba

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

Title - Sujet Casting of Dam Curtain Shoes	
Solicitation No. - N° de l'invitation ET858-201690/B	Date 2020-04-15
Client Reference No. - N° de référence du client PSPC-ET858-201690	
GETS Reference No. - N° de référence de SEAG PW-\$WPG-119-11015	
File No. - N° de dossier PWZ-9-42143 (119)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2020-05-26	Time Zone Fuseau horaire Central Daylight Saving Time CDT
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: Zdan, Tyler	Buyer Id - Id de l'acheteur wpg119
Telephone No. - N° de téléphone (204) 509-5743 ()	FAX No. - N° de FAX (204) 983-7796
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: DEPARTMENT OF PUBLIC WORKS AND GOVERNMENT SERVICES CANADA ST ANDREWS LOCK&DAM 625 RIVER RD LOCKPORT Manitoba R1A2R4 Canada	

Instructions: See Herein

Instructions: Voir aux présentes

Vendor/Firm Name and Address

**Raison sociale et adresse du
fournisseur/de l'entrepreneur**

Issuing Office - Bureau de distribution

Public Works and Government Services Canada - Western
Region
Victory Building/Édifice Victory
Room 310/pièce 310
269 Main Street/269 rue Main
Winnipeg
Manitoba
R3C 1B3

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

** This bid solicitation cancels and supersedes previous bid solicitation number ET858-201690/A dated 2020-01-13 with a closing of 2020-03-16 at 14:00 CST. A debriefing or feedback session will be provided upon request to bidders/offerors/suppliers who bid on the previous solicitation. **

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PART 1 - GENERAL INFORMATION

1.1 Requirement

The requirement is detailed under Article 6.2 of the resulting contract clauses.

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 North American Free Trade Agreement (NAFTA) and the Canadian Free Trade Agreement (CFTA).

1.4 epost Connect service

This bid solicitation allows bidders to use the epost Connect service provided by Canada Post Corporation to transmit their bid electronically. Bidders must refer to Part 2 entitled Bidder Instructions, and Part 3 entitled Bid Preparation Instructions, of the bid solicitation, for further information.

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](#) (2019-03-04), 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 the Public Works and Government Services Canada (PWGSC) Bid Receiving Unit specified below by the date and time indicated on page 1 of the bid solicitation:

PWGSC Western Region Bid Receiving Unit

* * Only bids submitted using epost Connect service will be accepted. The Bidder must send an email requesting to open an epost Connect conversation to the following address:
roreceptionSoumissions.wrbidreceiving@tpsgc-pwgsc.gc.ca. * *

Note: Bids will not be accepted if emailed directly to this email address. This email address is to be used to open an epost Connect conversation, as detailed in Standard Instructions [2003](#), or to send bids through an epost Connect message if the bidder is using its own licensing agreement for epost Connect.

It is the Bidder's responsibility to ensure the request for opening an epost Connect conversation is sent to the email address above at least six days before the solicitation closing date.

**** Bids transmitted by facsimile or hardcopy to PWGSC will not be accepted. ****

2.2.1 Improvement of Requirement During Solicitation Period

Should bidders consider that the specifications or Statement of Work contained in the bid solicitation could be improved technically or technologically, bidders are invited to make suggestions, in writing, to the Contracting Authority named in the bid solicitation. Bidders must clearly outline the suggested improvement as well as the reason for the suggestion. Suggestions that do not restrict the level of competition nor favour a particular bidder will be given consideration provided they are submitted to the Contracting Authority at least ten (10) days before the bid closing date. Canada will have the right to accept or reject any or all suggestions.

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 Manitoba.

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.

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

The Bidder must submit its bid electronically in accordance with section 08 of the 2003 standard instructions. The epost Connect system has a limit of 1GB per single message posted and a limit of 20GB per conversation.

The bid must be gathered per section and separated as follows:

Section I: Technical Bid
Section II: Financial Bid
Section III: Certifications

**** Bids transmitted by facsimile or hardcopy will not be accepted. ****

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

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 the Basis of Payment.

3.1.1 Electronic Payment of Invoices – Bid

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

If Annex D: 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

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

This requirement includes mandatory technical criteria. See Annex A, Appendix 1.

4.1.1.2 Point-Rated Technical Criteria

This requirement includes point-rated technical criteria. See Annex A, Appendix 1.

4.1.2 Financial Evaluation

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

4.2 Basis of Selection

4.2.1 Basis of Selection - Highest Combined Rating of Technical Merit and Price

- 1) To be declared responsive, a bid must:
 - (a) comply with all the requirements of the bid solicitation; and
 - (b) meet all mandatory criteria; and
 - (c) obtain the required minimum of 56 points overall for the technical evaluation criteria which are subject to point rating. The rating is performed on a scale of 93 points.
- 2) Bids not meeting (a) or (b) or (c) will be declared non-responsive.
- 3) The selection will be based on the highest responsive combined rating of technical merit and price. The ratio will be 60% for the technical merit and 40% for the price.
- 4) To establish the technical merit score, the overall technical score for each responsive bid will be determined as follows: total number of points obtained / maximum number of points available multiplied by the ratio of 60%.
- 5) To establish the pricing score, each responsive bid will be prorated against the lowest evaluated price and the ratio of 40%.
- 6) For each responsive bid, the technical merit score and the pricing score will be added to determine its combined rating.
- 7) Neither the responsive bid obtaining the highest technical score nor the one with the lowest evaluated price will necessarily be accepted. The responsive bid with the highest combined rating of technical merit and price will be recommended for award of a contract.

The table below illustrates an example where all three bids are responsive and the selection of the contractor is determined by a 60/40 ratio of technical merit and price, respectively. The total available points equals 135 and the lowest evaluated price is \$45,000 (45).

Basis of Selection - Highest Combined Rating Technical Merit (60%) and Price (40%)

		Bidder 1	Bidder 2	Bidder 3
Overall Technical Score		115/135	89/135	92/135
Bid Evaluated Price		\$55,000.00	\$50,000.00	\$45,000.00
Calculations	Technical Merit Score	115/135 x 60 = 51.11	89/135 x 60 = 39.56	92/135 x 60 = 40.89
	Pricing Score	45/55 x 40 = 32.73	45/50 x 40 = 36.00	45/45 x 40 = 40.00
Combined Rating		83.84	75.56	80.89
Overall Rating		1st	3rd	2nd

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 Integrity Provisions of the Standard Instructions, all bidders must provide with their bid, **if applicable**, the declaration form available on the [Forms for the Integrity Regime](http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html) website (<http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html>), 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 section titled Information to be provided when bidding, contracting or

entering into a real property agreement of the [Ineligibility 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.

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](https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#) website (<https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#>).

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.

PART 6 - RESULTING CONTRACT CLAUSES

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

6.1 Security Requirements

6.1.1 There is no security requirement applicable to the Contract.

6.2 Requirement

The Contractor must perform the work and provide the items detailed within the Statement of Work at Annex A.

6.2.1 Task Authorizations

The Work or a portion of the Work to be performed under the Contract will be on an "as and when requested basis" using a Task Authorization (TA). The Work described in the TA must be in accordance with the scope of the Contract.

6.2.2 Task Authorization Process

1. The Technical Authority will provide the Contractor with a description of the task using the PWGSC-TPSGC 572 (2014-04) Task Authorization Form.
2. The Task Authorization (TA) will contain the details of the activities to be performed, a description of the deliverables, and a schedule indicating completion dates for the major activities or submission dates for the deliverables. The TA will also include the applicable basis(bases) and methods of payment as specified in the Contract.
3. The Contractor must provide the Technical Authority, within five (5) calendar days of its receipt, the proposed total estimated cost for performing the task and a breakdown of that cost, established in accordance with the Basis of Payment specified in the Contract.

-
4. The Contractor must not commence work until a TA authorized by the Technical Authority has been received by the Contractor. The Contractor acknowledges that any work performed before a TA has been received will be done at the Contractor's own risk.

6.2.3 Task Authorization Limit

The Technical Authority may authorize individual task authorizations up to a limit of \$ TBD , Applicable Taxes included, inclusive of any revisions.

Any task authorization to be issued in excess of that limit must be authorized by the Technical Authority and Contracting Authority before issuance.

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](#) (2018-06-21), General Conditions - Goods (Medium Complexity) apply to and form part of the Contract.

6.4 Term of Contract

6.4.1 Delivery Date

All the deliverables must be received on or before 2020-11-25.

6.5 Authorities

6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Tyler Zdan
Title: Procurement Specialist
Public Works and Government Services Canada
Procurement Branch
Telephone: (204) 509-5743
E-mail address: Tyler.Zdan@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 Technical Authority

The Technical Authority for the Contract is:

Name: _____
Title: _____

Organization: _____
Telephone: _____
E-mail address: _____

The Technical 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 Technical Authority, however the Technical 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

Name: _____
Title: _____
Organization: _____
Telephone: _____
E-mail address: _____

6.6 Payment

6.6.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid firm prices and firm unit prices as specified in Annex B. 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 Multiple Payments

SACC Manual clause [H1001C](#) (2008-05-12), Multiple Payments

6.6.3 Electronic Payment of Invoices – Contract

The Contractor accepts to be paid using any of the following Electronic Payment Instrument(s):

- a. Visa Acquisition Card;
- b. MasterCard Acquisition Card;
- c. Direct Deposit (Domestic and International);
- d. Electronic Data Interchange (EDI);
- e. Wire Transfer (International Only);
- f. Large Value Transfer System (LVTS) (Over \$25M)

6.7 Invoicing Instructions

1. The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the invoice is completed.

-
2. Invoices must be distributed as follows: The original and one (1) copy must be forwarded to the address shown on page 1 of the Contract for certification and payment.

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.

6.9 Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Manitoba.

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 2010C (2018-06-21), General Conditions - Services (Medium Complexity);
- (c) Annex A, Statement of Work;
- (d) Annex B, Basis of Payment;
- (e) the Contractor's bid dated _____.

6.11 Insurance - Specific Requirements

The Contractor must comply with the insurance requirements specified in Annex C. 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.

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6.12 SACC Manual Clauses

SACC Manual clause [B6802C](#) (2007-11-30), Government Property

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ANNEX A

REQUIREMENT

See attached Statement of Work, following Annex D of this Request for Proposals.

ANNEX A

APPENDIX 1

Compliance Matrix Part 1 - Mandatory Technical Criteria

Bids must comply with the mandatory technical criteria listed below. Bidders must respond to all criteria listed within the table below and must indicate whether the bid meets the criterion by responding, "Yes," or, "No". Bidders must also provide the documentary proof indicated with their bid at the time of submission. If a bid fails to meet any of the mandatory criteria listed below, it will be deemed non-compliant and the bid will not be given further consideration.

No.	Mandatory Technical Criterion	Required Documentary Proof	Bidders: Does the bid comply with the criterion described? Respond, "Yes," or, "No".
M1	<p>Bidders must provide a project schedule identifying the following milestones. Assume a contract award date of May 1, 2020 (this date is provided for evaluation purposes only and should not be interpreted as a firm contract award date).</p> <ol style="list-style-type: none"> 1. Date when reference items will be picked up by contractor (see Task 2 in Statement of Work). 2. Date when Task 2 deliverables will be produced. 3. Date when contractor will be ready for Technical Authority's shop visit for quality testing of castings (see Task 3 in Statement of Work). 4. Date when castings will be fully delivered to SALD (see Task 4). 	Project schedule including ALL four (4) items identified within this mandatory criterion.	
M2	<p>Contractor must provide travel, and if necessary, accommodation, for the Technical Authority's shop visit.</p> <p>Note 1: The Technical Authority may be required to make multiple visits.</p> <p>Note 2: Accommodations must be equivalent to those listed in the Government Accommodations Directory and meals and incidentals must be paid at the current rates found in the National Joint Council Travel Directive.</p>	Bidder must state, in writing, its intent to fulfill this criterion if awarded the contract.	
M3	The contractor must provide FOB delivery of all castings and reference materials, to SALD, by November 25, 2020.	Bidder must state, in writing, its intent to fulfill this criterion if awarded the contract.	
M4	The bid must achieve a minimum score of 60% (56/93) in regards to the point-rated criteria.	N/A	

Compliance Matrix Part 2 – Point-Rated Technical Criteria

Bids will be assessed in accordance with the point-rated criteria identified below. Bids will be scored in accordance with the scoring breakdown provided herein. The bid must achieve a minimum score of 60% (56/93) or it will be deemed non-compliant.

Bidders must attach additional pages to their bid if there is insufficient room to address all the requirements of the criterion within this table. Incomplete responses will result in a lowered score, as per the scoring breakdown provided. Bids that fail to address any of the requirements outlined in the criterion will be assessed with a score of zero (0) for that particular criterion.

No.	Point-Rated Technical Criterion	Scoring Breakdown	Bidder's Response
P1	<p>Bidder's Experience</p> <p>Bidders should identify two (2) <u>recent</u> and <u>relevant</u> projects similar in size, scope, and complexity to this project to demonstrate acceptable experience and past performance.</p> <p><u>Recent</u> projects are defined as those where castings have been delivered to the end-user within the 10-year period from the date of release of this solicitation (e.g. Solicitation released on 2020-04-01, 10-year period begins on 2010-04-01).</p> <p><u>Relevant</u> is defined as:</p> <ul style="list-style-type: none"> - <u>iron castings</u> in sand moulds (other materials, e.g. steel, aluminum are not acceptable); - involving condition checking, dimensional checking, and making repairs to patterns before casting could proceed; - Final project cost of between \$50,000-\$100,000 CAD. <p>For each of the two (2) projects submitted:</p> <ul style="list-style-type: none"> - Describe project in overall terms – what was required and how it was delivered; - Describe condition of pattern received and how it was treated, modified, or re-built before casting 	<p><u>34 total points</u> available, allotted as follows:</p> <p>a. <u>5 points</u> per project, if the project is recent, i.e. it falls within the 10-year period (<u>10 total points available</u>).</p> <p>b. <u>6 points</u> per project, if the project is relevant, as per the criterion at left: <u>-2 points</u> for iron castings; <u>-2 points</u> for a description of condition checking, dimensional checking and making repairs; and <u>-2 points</u> if the project cost was between \$50,000 and \$100,000 CAD. (<u>12 total points available</u>).</p> <p>c. <u>6 points</u>, per project if a written report is provided, as per the criterion at left: <u>-2 points</u> for the overall project description; <u>-2 points</u> for the condition of the pattern and how it was handled; and <u>-2 points</u> for a description of issues and how they were managed. (<u>12 total points available</u>)</p>	

	<p>could proceed; - Describe difficulties and or obstacles encountered during performance and steps taken to resolve these issues.</p>		
<p>P1 score (to be completed by evaluators)</p>		<p>_____ points out of 34.</p>	
<p>P2</p>	<p>Quality Control</p> <p>Bidders should provide a written narrative addressing the following:</p> <ul style="list-style-type: none"> - Describes how customer-supplied materials (e.g. patterns) are handled, tagged, stored, and protected while in Bidder's custody; - Describes how specialized customer needs are tracked and addressed; - Describes approach for selecting and managing sub-contractors and suppliers and for ensuring what they deliver meets customer specifications; - Describes how production lots are properly identified and traced throughout the production process; - Describes routine quality control testing done in foundry and by 3rd parties; - Describes what inspection and test equipment is used in the foundry, and how it is calibrated and maintained - Describes approach taken to with nonconforming products. <p>Note 1: Bidders must provide separate documents for foundry and pattern shop, if these are separate firms. Note 2: A Bidder with certification in IATF 16949:2016 or ISO 9001:2015 is considered to meet all of these requirements in full and</p>	<p><u>14 total points</u> available, allotted as follows:</p> <ul style="list-style-type: none"> a. <u>2 points</u> for describing handling of customer-supplied materials. b. <u>2 points</u> for describing the tracking and addressing of customer needs. c. <u>2 points</u> for describing sub-contractor selection and quality control. d. <u>2 points</u> for describing production lot identification and tracing. e. <u>2 points</u> for description of quality control testing. f. <u>2 points</u> for describing inspection and test equipment. g. <u>2 points</u> for describing approach with non-conforming products. <p>OR</p> <p><u>14 points</u> for providing a valid copy of IATF 16949:2016 or ISO 9001:2015 certificate.</p>	

	may present a valid copy of the certificate as proof without needing to provide a written narrative.		
P2 score (to be completed by evaluators)		_____ points out of 14.	
P3	<p>Workplace Health and Safety</p> <p>Canada wishes to promote an environment where suppliers are serious about reducing workplace risks, improving employee safety, and undertaking continuous technical improvements. To this end, provide a document that addresses the following:</p> <ul style="list-style-type: none"> - Describes the approach to worker health and safety within the foundry – hazard assessment, hazard mitigation measures, and health and safety training provided (A bidder who is certified to ISO 45001:2018 may simply present a copy of the certificate without further description necessary); - Describes technical continuing education provided to employees. <p>Note 1: Bidders must provide separate documents for foundry and pattern shop, if these are separate firms. Note 2: A Bidder whose foundry is a member of one of the following organizations is considered to meet all of these requirements in full, and may present a valid copy of the certificate as proof and will not need to provide the description identified above:</p> <ul style="list-style-type: none"> - Canadian Foundry Association (CFA) - American Foundry Society (AFS) 	<p><u>15 total points</u> available, allotted as follows:</p> <p>a. <u>10 points</u> for describing the approach to worker health and safety within the foundry.</p> <p>OR</p> <p><u>10 points</u> for providing a valid copy of ISO 45001:2018 certificate.</p> <p>b. <u>5 points</u> for describing continuing technical education for employees.</p> <p>OR</p> <p><u>15 points</u> for providing a copy of certification with the CFA, AFS or Iron Casting Research Institute, Inc.</p>	

	- Iron Casting Research Institute, Inc.		
P3 score (to be completed by evaluators)		_____ points out of 15.	
P4	<p>Environmental Performance</p> <p>Canada wishes to promote a focus on continual improvement of environmental performance. To this end, provide documents addressing the following for the foundry:</p> <ul style="list-style-type: none"> - Describe approach used for protecting the environment from foundry processes, in particular, addressing the following points: <ul style="list-style-type: none"> • Waste reduction and disposal, including reclamation rate of foundry sands and disposal of materials from scrubbers; • Safe handling of chemicals; • Minimizing energy use; • Minimizing adverse effects on air quality (suspended particulate matter (SPM) and metallic fumes). - Describe environmental performance approaches for : <ul style="list-style-type: none"> • Monitoring conformance to standards and regulations; • Methods for improving environmental performance; and • For the correction of problems. - Describe environmental emergency preparedness procedures. <p>Note 1: If these topics are already addressed in the foundry's environmental policy document, specific to the</p>	<p><u>20 total points</u> available, allotted as follows:</p> <p>a. <u>8 points</u> for describing environmental-protection approach as per the criterion at left: <u>-2 points</u> for describing waste reduction and disposal; <u>-2 points</u> for describing safe handling of chemicals; <u>-2 points</u> for describing energy-saving practices. <u>-2 points</u> for describing air-quality improvement practices.</p> <p>b. <u>6 points</u> for describing approaches for environmental performance as per the criterion at left: <u>-2 points</u> for describing monitoring conformance to standards and regulations; <u>-2 points</u> for describing methods for improving environmental performance; <u>-2 points</u> for describing how environmental problems will be corrected.</p> <p>c. <u>6 points</u> for describing environmental emergency preparedness procedures.</p> <p>OR</p> <p><u>20 points</u> for providing a copy of the foundry's environmental policy document, specific to the facility and signed by management. A general</p>	

	<p>facility and signed by top management, the Bidder may provide a copy of it, and will not need to provide the description identified above. Note 2: A foundry certified to ISO 14001:2015 or to the EMAS (European Eco-Management and Audit Scheme) is considered to meet all these requirements in full and may present a copy of a valid certificate as proof and will not need to provide the description identified above.</p>	<p>document that does not refer to the bidder's specific foundry, or one that is not signed by foundry management, will result in a score of zero (0). OR <u>20 points</u> for providing a valid copy of ISO 14001:2015 or EMAS certification.</p>	
<p>P4 score (to be completed by evaluators)</p>		<p>_____ points out of 20.</p>	
<p>P5</p>	<p>Foundry Access The Technical Authority will need to visit the contracted foundry and pattern shop in order to perform quality-assurance testing, and may need to make multiple visits. Points will be awarded to foundries that are closest to and most-accessible from SALD (all distances calculated via Google Maps).</p>	<p><u>20 total points</u> available, allotted as follows: For the foundry: a. <u>10 points</u> if the foundry is within 500 km by road of Lockport, MB. b. <u>5 points</u> if the foundry is within 1,000 km, by road, of Lockport, MB. c. <u>2 points</u> if the foundry is within 3,000 km, by road, of Lockport, MB. <u>0 points</u> if the foundry is more than 3,000 km, by road, of Lockport, MB. AND For the pattern shop: a. <u>10 points</u> if the shop is within 500 km by road of Lockport, MB. b. <u>5 points</u> if the shop is within 1,000 km, by road, of Lockport, MB. c. <u>2 points</u> if the shop is within 3,000 km, by road, of Lockport, MB.</p>	

Solicitation No. - N° de l'invitation
ET858-201690/B
Client Ref. No. - N° de réf. du client

Amd. No. - N° de la modif.
File No. - N° du dossier
ET858-201690

Buyer ID - Id de l'acheteur
wpg119
CCC No./N° CCC - FMS No./N° VME

		<u>0 points</u> if the shop is more than 3,000 km, by road, of Lockport, MB.	
P5 score		_____ points out of 20.	
Overall score (to be completed by evaluators)		_____ points out of 93.	

ANNEX B

BASIS OF PAYMENT

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid firm prices and firm unit prices as specified herein.

Bidders must provide pricing for all items listed below. Failure to provide pricing for any of the items listed will result in the bid being deemed non-compliant. Bidders must provide prices in Canadian dollars (CAD). Prices must include any and all costs associated with performing the relevant task, including but not limited to, labour, tools and materials. Taxes (GST, HST) must not be included.

For the firm unit price portion of this Annex, estimates have been provided for evaluation purposes. These estimates may not reflect the actual volume of work under the resulting contract and should not be used to assume any business volume.

For Tasks 1-4, as described in Sections A4.2 through A4.5 in Annex A: Requirement, the Contractor will be paid the following firm price:

Firm Price		
Task	Description	Price
1	Preliminary Document Submittals (A4.2)	\$
2	Confirm Pattern Accuracy (A4.3)	\$
3	Casting and Machining (A4.4)	\$
4	Delivery (A4.5)	\$
Firm Price Total (Subtotal 1)		\$

For unscheduled work, as per Section A4.3.6a of Annex A: Requirement, the Contractor will be paid the following firm unit prices:

Firm Unit Price				
Task	Description	Estimate (A)	Unit Price (B)	Line Total (=A x B)
1	Labour required in the repair or adjustment of a pattern, or creation of a new pattern.	80 hrs.	\$_____/hr.	\$
2	Markup rate for materials or subcontracting required in the repair or adjustment of a pattern, or creation of a new pattern.	\$10,000	_____ %	\$
Firm Unit Price Total (Subtotal 2)				\$

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ET858-201690

Buyer ID - Id de l'acheteur
wpg119
CCC No./N° CCC - FMS No./N° VME

Evaluated Total	
Firm Price Total (Subtotal 1)	\$
Firm Unit Price Total (Subtotal 2)	\$
Overall Evaluated Total	\$

ANNEX C

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 Contractor will provide the Contracting Authority thirty (30) days prior written notice of policy cancellation or any changes to the insurance policy.
 - 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.
 - m. All Risks Tenants Legal Liability - to protect the Contractor for liabilities arising out of its occupancy of leased premises.
 - n. Sudden and Accidental Pollution Liability (minimum 120 hours): To protect the Contractor for liabilities arising from damages caused by accidental pollution incidents.
 - o. Litigation Rights: Pursuant to subsection 5(d) of the Department of Justice Act, S.C. 1993, 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

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.

Bailee's Customer's Goods Insurance

The Contractor must obtain Bailee's Customer's Goods insurance while Government Property is under its care, custody or control for repair or servicing, and maintain it in force throughout the duration of the Contract, in an amount of not less than \$75,000.00. Government Property must be insured on a replacement cost (new) basis.

1. Administration of Claims: The Contractor must notify Canada promptly about any losses or damages to Government Property and monitor, investigate and document losses of or damage to ensure that claims are properly made and paid.
2. The Bailee's Customer's Goods must include the following:
 - a. Notice of Cancellation: The Contractor will provide the Contracting Authority thirty (30) days prior written notice of policy cancellation or any changes to the insurance policy.
 - b. Settlement of Claims: The insurance proceeds regarding any loss of or damage to Government Property must be payable to the appropriate party as directed by the Contracting Authority.
 - c. Waiver of Subrogation Rights: Contractor's Insurer to waive all rights of subrogation against Canada as represented Public Works and Government Services Canada for any and all loss of or damage to the property however caused.

All Risk In-Transit Insurance

1. The Contractor must obtain on the Government's Property, and maintain in force throughout the duration of the Contract, All Risk Property in Transit insurance coverage for all applicable conveyances while under its care, custody or control, in an amount of not less than \$75,000.00 per shipment. Government Property must be insured on a replacement cost (new) basis.

2. Administration of Claims: The Contractor must notify Canada promptly about any losses or damages to Government Property and monitor, investigate and document losses of or damage to ensure that claims are properly made and paid.

3. The All Risk Property in Transit insurance must include the following:
 - a. Notice of Cancellation: The Contractor will provide the Contracting Authority at least thirty (30) days prior written notice of any policy cancellation or any changes to the insurance policy.
 - b. Loss Payee: Canada as its interest appears or as it may direct.
 - c. 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 property however caused.

ANNEX D

ELECTRONIC PAYMENT INSTRUMENTS

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

- VISA Acquisition Card;
- MasterCard Acquisition Card;
- Direct Deposit (Domestic and International);
- Electronic Data Interchange (EDI);
- Wire Transfer (International Only);
- Large Value Transfer System (LVTS) (Over \$25M)

ANNEX A - STATEMENT OF WORK**Fabricate and Deliver Cast Iron Curtain Shoes for St. Andrew's Lock and Dam****TABLE OF CONTENTS**

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A1. SCOPE SUMMARY

The Contractor will provide all labour, supervision, tools, equipment, and materials required to confirm pattern is adequate, adjust as necessary, use pattern to cast 30 new curtain shoes in grey iron, and deliver them to the St. Andrew's Lock and Dam site.

A drawing, an existing pattern, up to two existing curtain shoes, and a hinge piece (to which the shoes must be connected), are all available for reference.

Each shoe is estimated to be approximately 1200 pounds before machining.

A2. BACKGROUND

Canada owns and operates the St. Andrew's Lock and Dam (SALD) on the Red River in Lockport, Manitoba, approximately 27 km downstream of Winnipeg on the Red River and approximately 44 km upstream of Lake Winnipeg (see map in Figure 1 and general overview in Figures 2 and 3).

SALD is recognized as historically significant at both the Provincial and National levels. On November 16, 1990, the Historic Sites and Monuments Board of Canada declared SALD a National Historic Site.

The dam's water control mechanism is a unique "Caméré curtain" system; see Figure 4. SALD is the largest Caméré-curtain dam ever built, the only one in North America, and one of only two remaining Caméré-curtain dams in the world.

A Caméré curtain is an assembly of slats of wood hinged together with a heavy cast iron "shoe" on the bottom end. To effect water control, these curtains are unrolled onto steel frames, themselves hinged to the underside of the working deck and swung down and into the water, bracing themselves at their bottom ends against the top part of a concrete weir.

At SALD, the Caméré curtains are deployed in the spring to raise water levels upstream for navigation season; in the fall, both the curtains and their frames are removed (curtains rolled up and secured to the frames and the frames are swung up and out of the water) to allow unobstructed passage of the spring freshet. Figure 4 was taken during the fall preparations.

SALD requires spares to be made of the cast iron "shoes".

A3. TECHNICAL REQUIREMENTS**A3.1. Governing Documents**

ASTM A48 / A48M - 03(2016) *Standard Specification for Gray Iron Castings*

ANSI/ASME B4.1-1967 (R2009) *Preferred Limits and Fits for Cylindrical Parts*

A3.2. TASK 1: Confirm Pattern Accuracy and Adequacy**A3.2.1. Reference Items**

- 1) A drawing, believed to be accurate, is attached to this Bid Solicitation.
- 2) **Reference Items.**—The following reference items are available to the Contractor:
 - a) A pattern and core box exist (see Figures 12-15 inclusive) and also are believed to be accurate. Corporate memory is that they were last used some 30+ years ago.
 - b) Several used curtain shoes exist (see Figures 6-9 inclusive).
 - c) A hinge (the part to which the shoe is bolted, see Figure 10) is also available for reference and will be required to locate machined holes.

A3.2.2. Scope of Task

- 1) Retrieve all the reference items from the Marine Superintendent and transport them to the Contractor's shop:



- 2) Provide all transportation between SALD and Contractor's shop. Provide all loading and unloading devices required to lift items on and off truck.
- 3) Be responsible for the care and custody of the reference items for the entire time they are away from the SALD site.
 - a) Provide all blocking, covers, and other protection required to keep them safe during shipping.
 - b) Replace them if they are lost or damaged.
 - c) Return them at the same time as delivery of the new castings when job is complete.
- 4) Measure key dimensions on the reference items, and compare the dimensions found with those shown on the drawing. Intent of this exercise is to ensure that the pattern and core box are of the correct size and contains all the correct components and profiles to be able to reproduce accurately the required castings.
- 5) Examine the condition and surface of the existing pattern and core box. Note that curtain shoes are simply weights for the curtains. Although overall dimensional accuracy is not particularly critical, the curtain shoes can't be too far off true, or it will be difficult to get the curtains to roll up properly.
- 6) Taking into account the required tolerance listed under the acceptance criteria of Task 3 for as-cleaned casting and the draft allowances required for mold-making, determine if the existing pattern and core box are in good enough condition to be used to produce the required castings that, in the end, will have the same dimensions as the existing curtain shoe.
- 7) Confirm weight of each casting (weight given above is approximate).

A3.2.3. Deliverable

- 1) Verbal report, delivered by telecon to the Technical Authority.
- 2) If there is a problem with the existing pattern or core box, or if a new pattern will need to be made, then follow the telecon with written report containing photographs and measurements sufficient to illustrate problems and justify recommendations.
- 3) Additional work to repair pattern or core box, or to fabricate new pattern or core box, will be treated as Unscheduled Work and paid by Task Authorization.

A3.3. TASK 2: Casting and Machining

- 1) **Material:** Grey Iron to ASTM A48, Class 25 or Class 30.
- 2) **Quantity:** 30 new curtain shoes.
- 3) **Molds:** Sand.
- 4) **Casting:** Produce each curtain shoe with a single continuous pour of molten metal.
- 5) **Cleaning:** Upon removal from the sand mold, clean castings of all sprues, gates, risers, and vents; remove parting lines; and grit-blast all over to establish a clean surface.

- 6) **Inspecting and Factory Acceptance:**
- a) Advise the Technical Authority that the fresh castings are available for inspection.
 - b) Technical Authority (or his designate) will examine carefully each and every newly-cast curtain shoe.
 - c) The following are the acceptance criteria:
 - i) Dimensions of all castings must be accurate within tolerances as follows, which are taken based on SALD needs and not based on any published standard:
 - (1) $\pm 3/4$ " on overall length and dimensions taken along long axis
 - (2) $\leq 1/2$ " deviation from straight along long axis
 - (3) $\pm 1/8$ " on dimensions taken along small axis
 - ii) The surface of the casting must be free of adhering sand, scale, cracks, hot tears, and other general casting defects, as determined by visual examination.
 - iii) Technical Authority will test all castings with a sideways blow from a 5-lb hammer on the protruding portions of the casting. If these points exhibit any cracking, fracturing, deformation, or other flaws, Technical Authority will reject the casting.
 - iv) All castings must be smooth and free from defects or protrusions, which might adversely affect the serviceability and handling of the curtain shoes; protrusions or sharp edges may be repaired by grinding where required.
 - v) Provide 5-lb. hammer and all measuring instruments required to demonstrate to Technical Authority that all tolerances have been achieved.
 - d) Cast new curtain shoes to replace parts that Technical Authority rejected.
 - e) Call Technical Authority to have same inspection made of new parts.
 - f) At time of Technical Authority's inspection of the castings, submit a material certificate for each heat of iron used in their manufacture, showing heat number, material and grade, chemical composition, and mechanical properties from the test bars.
- 7) **Machining:** Upon acceptance by Technical Authority, drill holes as shown on drawings and existing curtain shoe, using existing hinge as template for holes where appropriate to do so. Tolerances:
- a) $+0.008$ " -0.004 " on diameter of the $5/8$ " dia. holes for hinges (i.e. running fit, Class RC 9, to ASME B4.1)
 - b) ± 0.050 " tolerance of position on hole location

A3.4. TASK 3: Delivery

- 1) Deliver new castings and return all reference items to the SALD site. Ensure these all arrive at their destination undamaged. It is the Crown's intention to re-use them for future castings.
- 2) Be prepared with all personnel and equipment necessary to unload the delivery truck and deposit the castings in the specific location on site that Technical Authority will indicate.
- 3) Deliver at the same time a copy of the warranty (see warranty requirements in section A5.6).

A4. ADMINISTRATIVE REQUIREMENTS

A4.1. Project Manager

Appoint a Project Manager to plan, direct, control, and make decisions for the Contract and who must be the main point of contact for the Technical Authority with the Contractor.

A4.2. Project Meetings**A4.2.1. Kick-Off Teleconference**

- 1) The kick-off telecon will be held within 3 weeks of Award of Contract.
- 2) The discussion must include, but not necessarily be limited to, the following:
 - a) Review of Statement of Work
 - b) Contractor's schedule and identification of items on critical path.
- 3) If convenient for the Contractor, the kick-off telecon can be replaced by a kick-off meeting on site coordinated with the date at which the Contractor is to pick up the reference items.

A4.2.2. Progress Review Meetings

- 1) The first Progress Review Meeting will be held after the work of Task 1.
- 2) Other Progress Review Meetings thereafter will be held as mutually agreed between the Technical Authority and the Contractor.
- 3) Unless otherwise specified, progress meetings will be held via telecon.

A4.3. Communications

- 1) Communications PWGSC must be in English.
- 2) Make communications on items related to administration of the Contract through Contracting Authority.
- 3) Make communications on technical items with the Technical Authority. The Technical Authority may clarify, but not change, the requirements of the contract. The Technical Authority will issue Requests for Task Authorization (if any), to which the Contractor will return with a price proposal (see Contract for procedure for Task Authorizations). Contracting Authority will issue all changes to the contract.
- 4) Make communications related to payment with the Property and Facility Manager.

A4.4. Warranty

- 1) Warrant all products delivered for minimum 1 year against all defects in design, materials, or workmanship when in normal use during warranty period.
- 2) Furnish all required labour, materials, parts, and all other costs associated with required warranty repairs.
- 3) Be responsible for cost of all shipping associated with warranty work.

A5. FIGURES

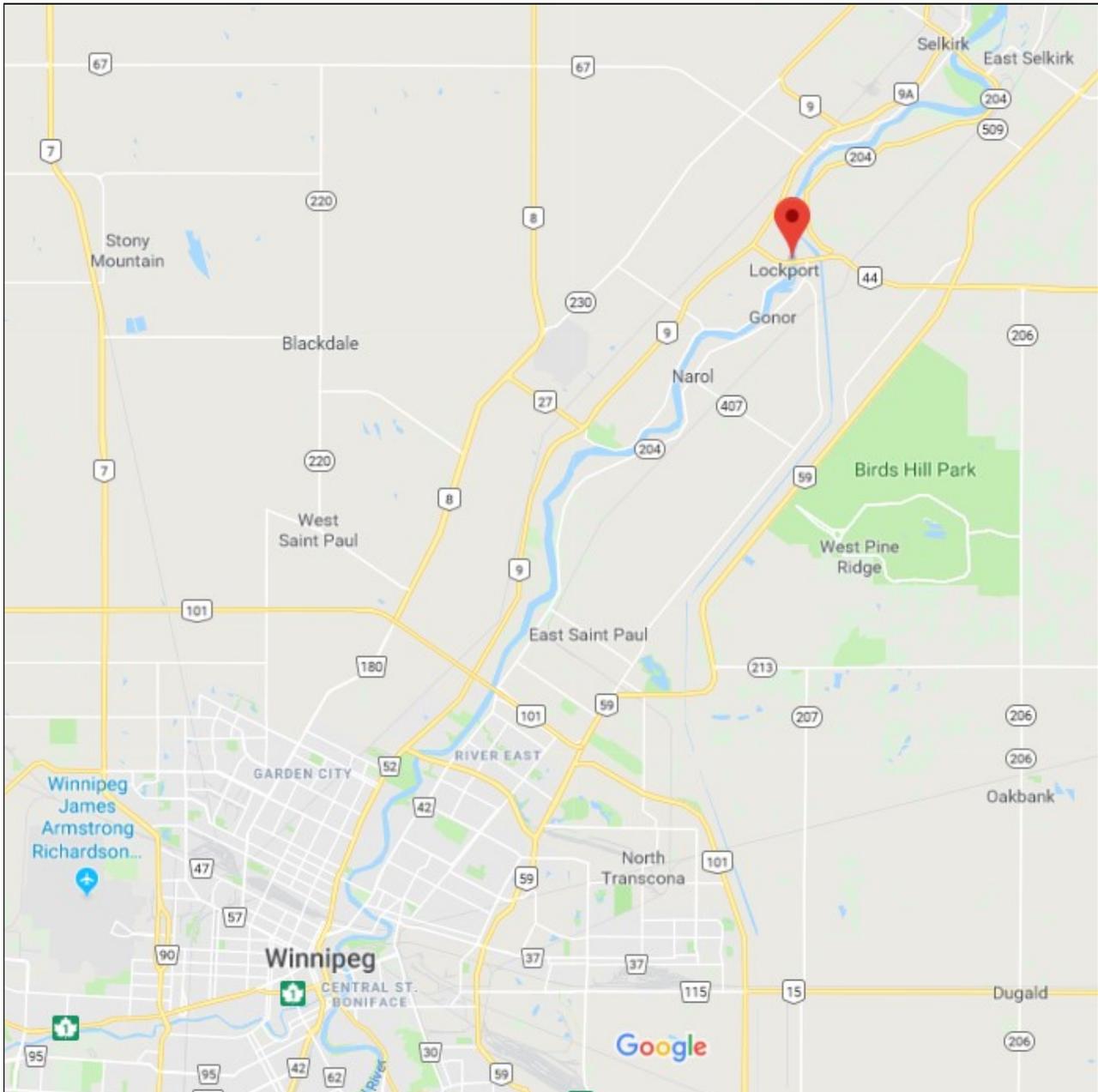


Figure 1: Location of St. Andrew's Lock and Dam in Lockport, MB
Image from GoogleMaps



Figure 2: General overview of St. Andrew's Lock and Dam, looking at the upstream (south) elevation
Google Street View image 2016



Figure 3: Downstream (north) side of dam with frames and curtains deployed



Figure 4: Upstream (south) side of frames. Curtains deployed at left, and being rolled-up at right
The end of the curtain shoe is visible at the centre of each of the two rolled-up curtains



Figure 5: Two existing curtain shoes, both connected to wooden curtain slats



Figure 6: Existing curtain shoe connected to one wooden curtain slat



Figure 7: Existing curtain shoe, detail



Figure 8: Existing curtain shoe, detail



Figure 9: Existing curtain shoe, detail at centre showing holes for hinge connection

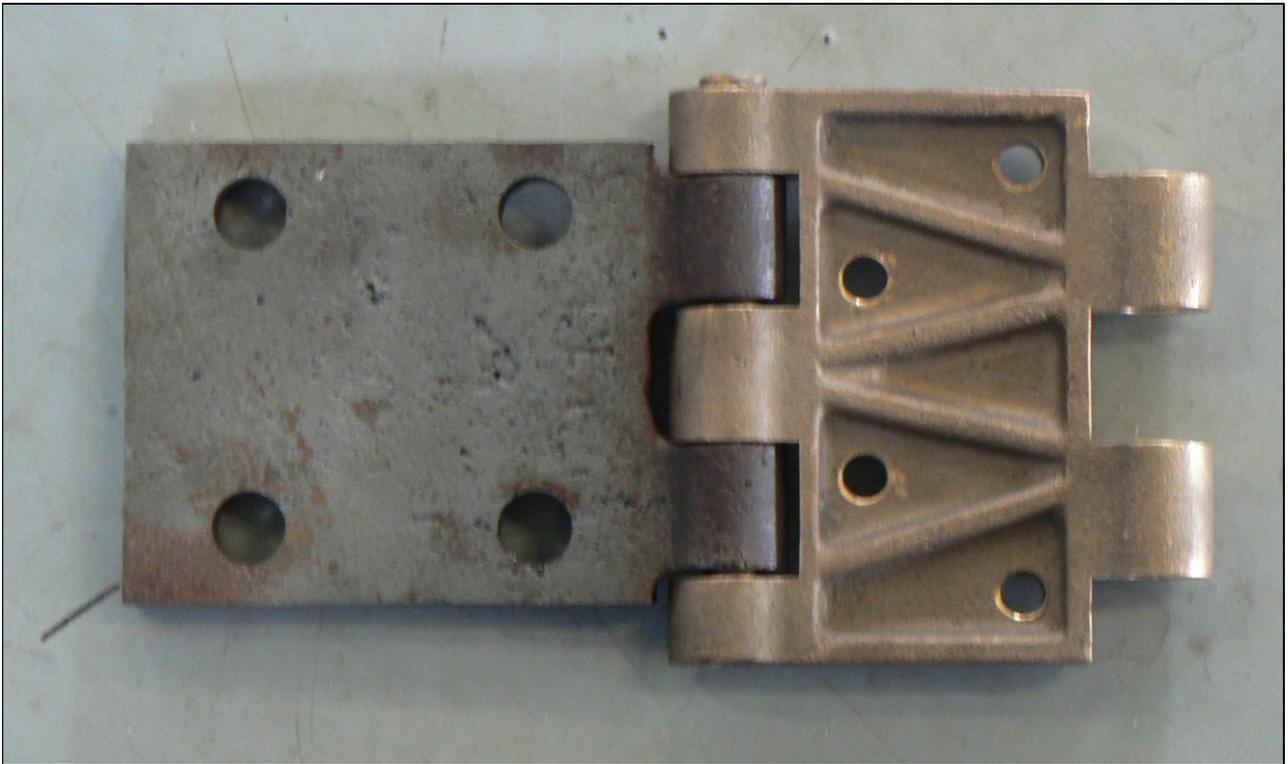


Figure 10: Curtain hinge

At left, the portion that connects to the curtain shoe. At right, the portion that connects to the wood slats.



Figure 11: Curtain with broken shoe

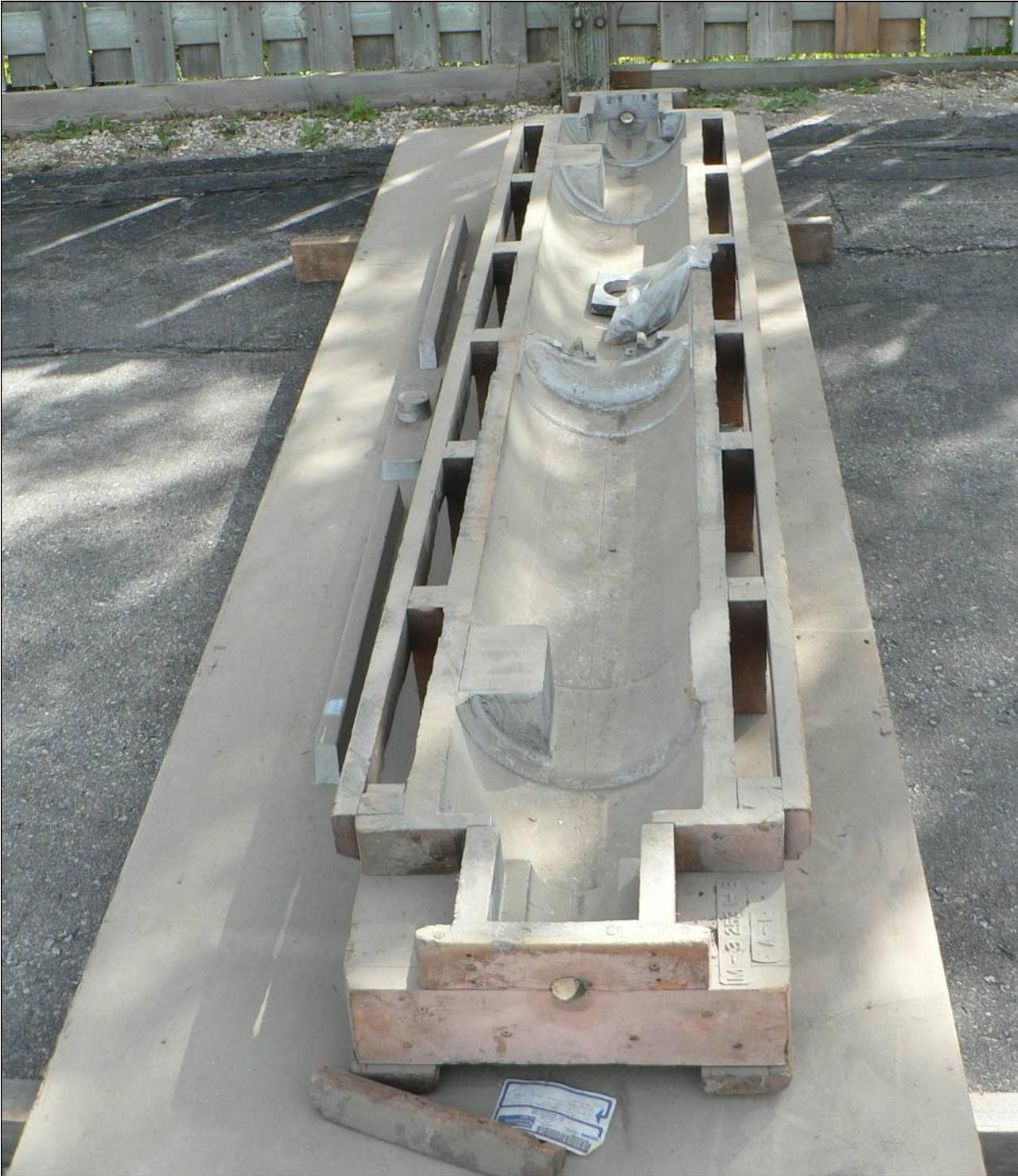


Figure 12: Core box, first view



Figure 13: Core box, second view



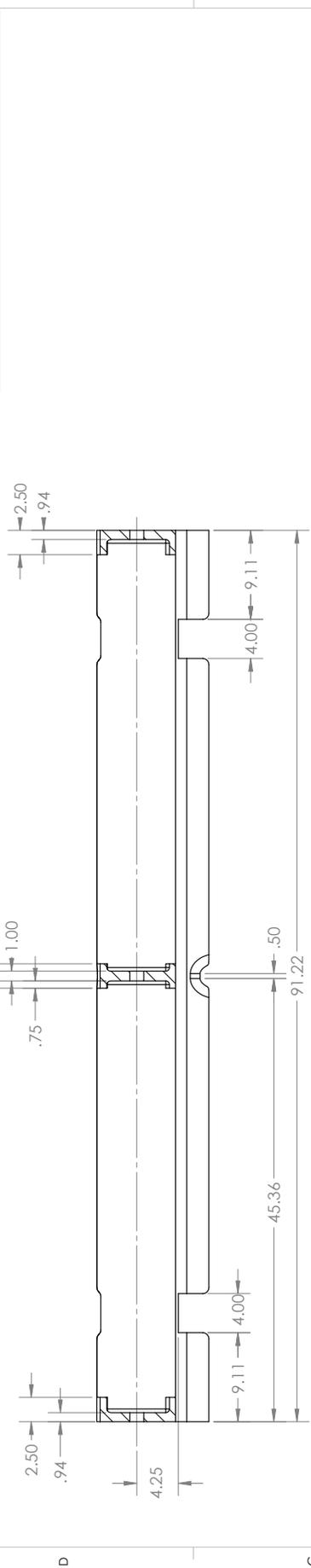
Figure 14: Pattern



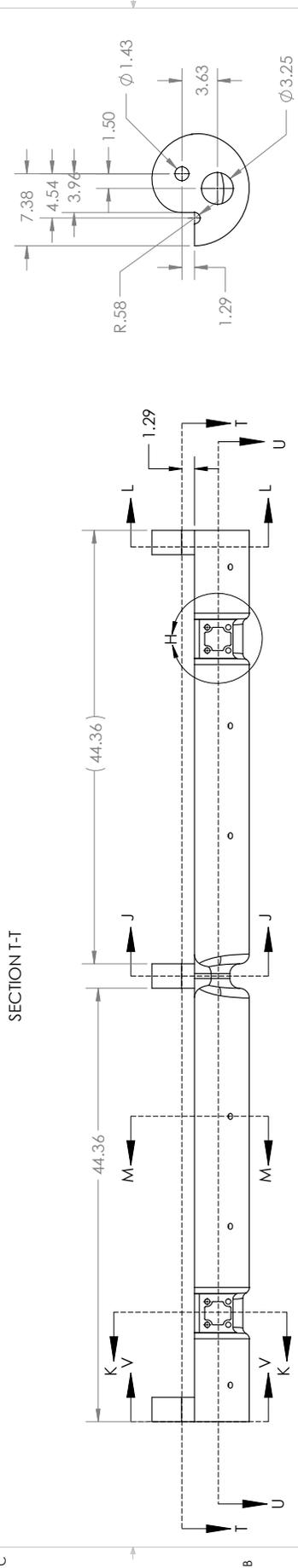
Figure 15: Pattern, detail

1 2 3 4 5 6 7 8

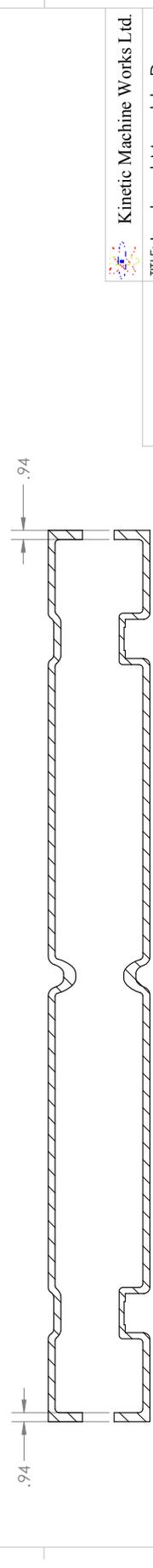
REVISIONS		DATE
REV. A	DESCRIPTION ORIGINAL	Wednesday, November 27, 2019



SECTION T-T



SECTION U-U



SECTION A-A

Kinetic Machine Works Ltd.

**Lockport Movable Dam,
Cast Iron Shoe - Curtain**

REV.	DESCRIPTION	DATE
A	ORIGINAL	Wednesday, November 27, 2019

DRAWN	CHECKED	NAME	DATE	SIZE	DWG. NO.	REV
		C. BUDGE	11/27/2019	B	LPCCW-P01	A

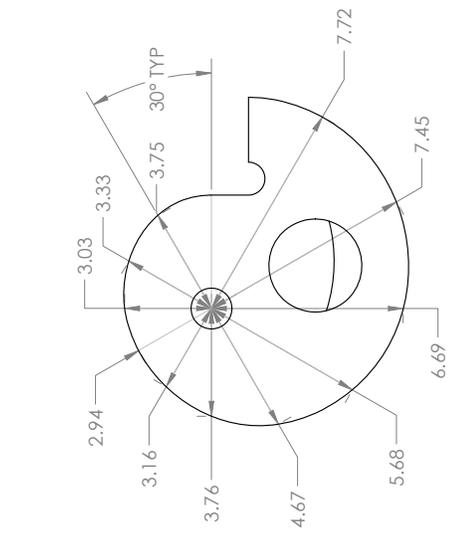
SCALE: 1:10 WEIGHT: 0.00 lbs SHEET 1 OF 2

UNLESS OTHERWISE SPECIFIED:
 DIMENSIONS ARE IN INCHES
 TOLERANCES:
 X .000 ±.001
 .XX ±.010
 .XXX ±.005
 DO NOT SCALE DRAWING

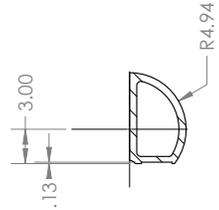
1 2 3 4 5 6 7 8

8 7 6 5 4 3 2 1

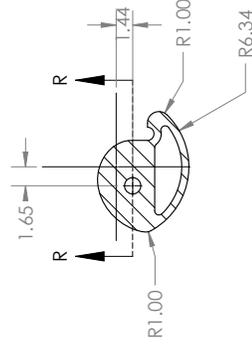
REVISIONS		DATE
REV.	DESCRIPTION	DATE
A	ORIGINAL	Wednesday, November 27, 2019



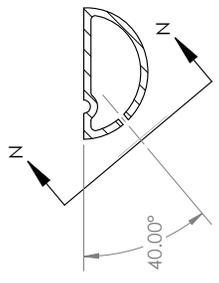
SECTION V-V
SCALE 1 : 4



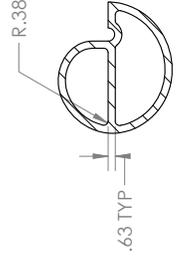
SECTION K-K



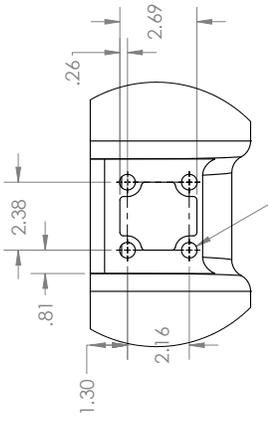
SECTION J-J



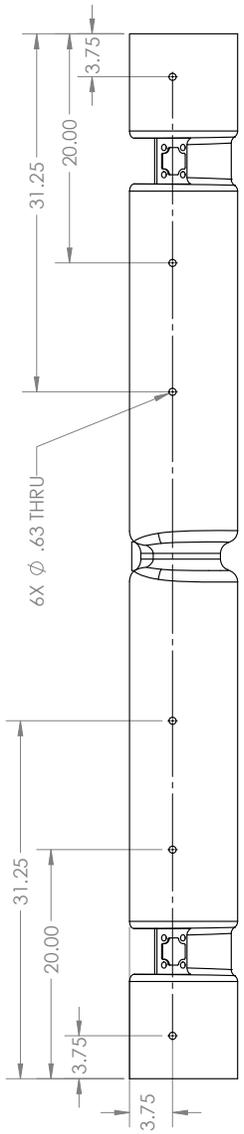
SECTION M-M



SECTION L-L



DETAIL H
SCALE 1 : 4



VIEW N-N
(40.00°)

Kinetic Machine Works Ltd.

TITLE: Lockport Movable Dam,
Cast Iron Shoe - Curtain

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
X" ±.03
.XX ±.010
.XXX ±.005

NAME	DATE	SIZE	DWG. NO.	REV
C. BUDGE	11/27/2019	B	LPCCW-P01	A
DRAWN				
CHECKED				
G.A.				
MATERIAL Eng. Carlson				

SCALE: 1:10 WEIGHT: 0.00 lbs SHEET 2 OF 2

8 7 6 5 4 3 2 1