

# Request for Proposals Professional Land Surveying Services

June 13, 2022

## 1.0 Introduction

On behalf of the Alberta–British Columbia Boundary Commission, the Land Title and Survey Authority of British Columbia (“LTSA”) is accepting proposals from professional land surveyors to restore monuments marking the boundary between Alberta and British Columbia at North Fork Pass, located about 25 km northeast of Sparwood, BC and about 20 km southeast of Elkford, BC. The pass is south of Funnel Peak and north of Mt. Erris. This work is being conducted under the authority of the Alberta-British Columbia Boundary Commission.

This portion of the interprovincial boundary was originally surveyed in 1915 by A.O. Wheeler, DLS and R.W. Cautley, DLS. The purpose of this project is to restore monuments 1L through 7L (a total of 7 monuments) to preserve the physical definition of this portion of the interprovincial boundary. A full inspection survey was conducted in the summer of 2021 to assess the condition of the 7 monuments, and a report was prepared and approved by the Boundary Commissioners later that year.

## 2.0 Background of the LTSA

The LTSA is a statutory corporation responsible for administering British Columbia’s land title and survey systems. These systems provide the foundation for all real property business and ownership in British Columbia. The LTSA has a close relationship with the Provincial Government. The Province establishes the mandate, responsibilities and performance standards of the LTSA in the *Land Title and Survey Authority Act* and the LTSA’s Operating Agreement with the Province.

The Surveyor General of British Columbia is an employee of the LTSA and has been appointed by the Province of BC as Boundary Commissioner pursuant to section 3 of the *Boundary Act*. In cooperation with the boundary commissioners for Alberta and Canada, the Surveyor General of British Columbia has the authority to establish, restore, and maintain survey monuments and other physical evidence of the interprovincial boundary.

## 3.0 Background of the Alberta-British Columbia Boundary Commission

The Alberta-British Columbia Boundary Commission is comprised of the Surveyor General of Canada Lands, the Director of Surveys of Alberta, and the Surveyor General of British Columbia. The commission meets bi-annually to carry out its responsibilities, which include: maintaining the records of the commission, settling any problems or disputes referred to the commissioners concerning the location of the boundary, restoring and maintaining boundary monuments, and managing surveys of the interprovincial boundary.

#### 4.0 Overview of Requirements

The LTSA is seeking a contractor to restore and georeference interprovincial boundary monuments 1L through 7L (a total of 7 monuments) in accordance with the Statement of Work.

The project is tentatively scheduled for summer 2022 and includes restoring and georeferencing boundary monuments, preparing a survey report, and preparing official field notes for the survey.

The number of monuments to be included in the project will ultimately be determined by the Alberta-British Columbia Boundary Commission upon review of the proposals received and available funding for the project.

In responding to this request, the LTSA requests the following information:

- 4.1 Identify the land surveyor in your company who is authorized to practice in Alberta or British Columbia, and who will have professional responsibility for this project if you are successful in your bid.
- 4.2 For reference purposes, provide the names and contact information for three organizations to which your company presently provides, or has recently provided, professional land surveying services; and
- 4.3 Set forth your proposal such that it clearly provides **fixed fee** prices for completing the restoration of all 7 monuments and preparation of a survey report and official field notes in plan form;

Your proposal should include detailed information on methodology to be used in carrying out the work described in the Statement of Work.

**NOTE:** Given the unique administrative requirements of the Alberta and British Columbia Boundary Commissioners, the successful contractor will be required to enter into a separate contract with each Commissioner's home organization for one-half of the total cost of the contract.

#### 5.0 Information Provided

The following information is provided by the LTSA to assist proponents in identifying the scope of work and format of the deliverables:

- 5.1 AB/BC Boundary Atlas Sheets 5 and 5A – from 34895CLSRBC
- 5.2 AB/BC Sheet 5A 6A – 33666CLSRAB
- 5.3 Cautley 1915 Field Notes – FB16137CLSRAB
- 5.4 Cautley 1915 Field Notes – FB16143CLSRBC
- 5.5 ***North Fork Pass Boundary Monument Inspection*** report prepared by Global Raymac Surveys in 2021 - FB43631CLSRCA
- 5.6 Boundary Monument List – (1L – 7L)
- 5.7 Historic Boundary Monument Photos
- 5.8 Boundary Monument Specification – Concrete Monolith and Brass Bolt in Cairn
- 5.9 ParcelMap BC Prints (2 pages) at North Fork Pass
- 5.10 **Example Report on Monument Restoration**  
Yellowhead Pass - FB42515CLSRCA

## 5.11 Example Official Field Notes in Plan Form

Yellowhead Pass – 108250CLSRCA

## 6.0 Statement of Work

- 6.1 The surveys, survey reports, and official field notes in plan form are to be in accordance with the *National Standards for the Survey of Canada Lands* and the additional specific instructions contained herein.
- 6.2 Monuments will be restored from traces remaining on the ground of the original monument or physical evidence of the position of the original monument as noted in the report entitled *North Fork Pass Boundary Monument Inspection*, prepared and certified correct on October 4, 2021 by Luke Dixon, ALS.
- 6.3 Prior to restorations taking place, the location of the original monument must be tied to reference posts using redundant measurements, so that the monument can be precisely restored to its original position.
- 6.4 Monuments are to be restored according to the following standards:
  - 6.4.1 For those concrete monolith monuments where both the pillar and the concrete base are in poor condition (1L, 2L and 3L); the pillar is to be removed, the base is to be reduced to grade completely and a capped post is to be firmly set in place.
  - 6.4.2 Monuments 4L and 5L are Brass Bolt in Cairn style monuments. The cairns shall be dismantled enough to inspect the bolt; if it is still securely in place, there is no requirement to replace it, but the position should be accurately recorded.
  - 6.4.3 Monuments 6L is a Brass Bolt in Cairn style monument. The cairn shall be dismantled to look for the bolt. This bolt was observed to be loose in 2021, and is to be re-secured in place using grout or concrete as appropriate, and then positioned accurately.
  - 6.4.4 Monument 7L was a Brass Bolt in Cairn style monument. The 2021 inspection survey found a small cairn at the location of the original brass bolt but the original brass bolt has been lost due to bedrock cracking and rock fall. For position 7L, a capped post is to be placed in rock or concrete as appropriate based on traces remaining on the ground or from other physical evidence of the position of the original monument. The inspection report by Global Raymac indicated that the original location may no longer be suitable for a monument and as such a reference/witness post may be set in close proximity to the original position and details of the offset recorded.
  - 6.4.5 For the cairns at 4L, 5L and 6L they are to be rebuilt after restoration is complete to equal or greater size as they were found before restoration. For the cairn at 7L an attempt to rebuild to a size similar to those above should also be made and noted in the field notes/plan.

- 6.5 Any restoration activity should be conducted in an environmentally responsible manner. Concrete and other monument debris should be removed from the site or broken down and integrated with the new monument to the extent possible. Each monument location must be left tidy and free of refuse.
- 6.6 From those monuments where the pillar has been removed, the old tin casings (including the brass name plates) shall be disposed of in a suitable manner for the materials (landfill or recycling) and not left on site.
- 6.7 Custom post caps, marked "BRITISH COLUMBIA" on one side and "ALBERTA" on the other, will be supplied by the LTSA. Caps must be stamped with the designation of the original monument (e.g. "3L") with a line running through the center point to denote the orientation of the boundary. Based on the site conditions if the post placed to replace Monument 7L is to be marked as a Witness, the capped post must be marked as such and the final plan shall show the calculated distance to where Monument 7L would originally have been located.
- 6.8 An angle iron or T-iron reference/marker post must be set securely in the ground or in a drill hole in rock and securely grouted. A brightly coloured metal reference plate supplied by the LTSA must be bolted to the angle or T-iron.
- 6.9 All boundary monuments must be geo-referenced to NAD83(CSRS) to an absolute accuracy of better than 0.20 m at the 95% confidence level (with final error ellipse values noted). GNSS methods must be used with ties made to one or more of the following:
  - 6.9.1 Markers forming part of the Alberta Survey Control network (ASCMS) (<https://alta.registries.gov.ab.ca/spinii/logon.aspx>)
  - 6.9.2 Geodetic control markers published on BC's MASCOT website (<http://a100.gov.bc.ca/pub/mascotw/> )
  - 6.9.3 BC Active Control System (BCACS) (<https://www2.gov.bc.ca/gov/content/data/geographic-data-services/geo-spatial-referencing/bcacs> )
  - 6.9.4 Canadian Active Control System (CACS) (<https://webapp.csrscs.nrcan-rncan.gc.ca/geod/data-donnees/cacs-scca.php?locale=en> )
  - 6.9.5 NRCan's Precise Point Positioning Service (PPP) (<https://webapp.csrscs.nrcan-rncan.gc.ca/geod/tools-outils/ppp.php?locale=en> )
- 6.10 A survey report is to be prepared and certified correct. The survey report is to include the following:
  - 6.10.1 For each monument, three photographs (from different viewpoints – two sides and one top down) **prior** to restoration taking place.
  - 6.10.2 For each monument, three photographs (from different viewpoints – two sides and one top down) **after** restoration has taken place.
  - 6.10.3 A written description of the condition of each monument (including an explanation of any monument that has been lost).
  - 6.10.4 A description of all evidence found and placed including monument markings and ancillary evidence.

- 6.10.5 For each monument, a sketch of the restoration similar in format to that contained in the example Report on Monument Restoration - *Yellowhead Pass* - FB42515CLSRCA.
  - 6.10.6 For each monument, adjusted positions (geographical coordinates) and ellipsoidal heights.
  - 6.10.7 For each monument, adjusted UTM Zone 11 coordinates referenced to NAD83(CSRS).
  - 6.10.8 For each monument, an orthometric height referenced to either the CGVD28 or CGVD2013 vertical datum.
  - 6.10.9 For each monument, the combined scale factor at that point.
  - 6.10.10 Any other relevant information to verify the accuracy of positions derived using GNSS methods such as GNSS observations or reports produced by the Precise Point Positioning service from Natural Resources Canada (NRCan).
  - 6.10.11 An explanation of all symbols and abbreviations used in the report and sketches.
  - 6.10.12 Identification of circumstances where these instructions could not be complied with and the resulting action taken.
  - 6.10.13 Any observed activity which might result in monument destruction in the future.
  - 6.10.14 Any contact made with local officials or residents and the reason for the contact.
- 6.11 Official field notes in plan form are to be prepared and certified correct. Official field notes must contain a table of adjusted UTM coordinates. Distances are to be ground distances and bearings must be grid bearings derived from GNSS observations. Symbols and abbreviations are to be in accordance with the *National Standards for the Survey of Canada Lands, Appendixes C and D*.

## 7.0 Request for Proposals Process

The deadline for submissions is **2:00 PM Pacific Daylight Time (PDT) on Friday July 8, 2022**. All enquiries should be directed to the contact listed in section 9.0 "Request for Proposal Submission Details".

The estimated time frames for this project are as follows:

Activity	Date(s)
Request for Proposals issue date	June 13, 2022
Proposal submission closing date	July 8, 2022
Review and evaluation of proposals by the AB/BC Boundary Commission	July 8 - July 22, 2022
Successful proponent enters into contract with the LTSA	~July 29, 2022

Deadline for submission of preliminary survey report and official field notes in plan form	September 16, 2022
Deadline for submission of final survey report and official field notes in plan form	October 14, 2022

## 8.0 Evaluation of Proposals

Further consideration by the Alberta-British Columbia Boundary Commission will only be given to proposals that meet the following Mandatory Criteria:

Mandatory Criteria
Proposal received at the Closing Location before the Closing Time
Complete proposal received in PDF format, in English
Proposal identifies a land surveyor who is authorized to practice in either Alberta or British Columbia, and who will have professional responsibility for the project

Proposals meeting the Mandatory Criteria above will be further assessed against the following Desirable Criteria:

Desirable Criteria	Weighting
Understanding of Project Requirements	10
Approach and Work Plan	30
Project Management/Communications	10
Demonstrated Experience and Capability	10
Safety Plan	10
Total Project Fixed Fee	30
<b>Total Points</b>	<b>100</b>

## 9.0 Request for Proposals Submission Details

Requests for additional information please contact:

Name : Peter Haas, BCLS  
 Title : Deputy Surveyor General  
 Phone: (250) 410-0580  
 E-mail: [peter.haas@ltsa.ca](mailto:peter.haas@ltsa.ca)

Closing Location and Time:

Proposals are to be delivered in PDF format via email to [surveyor.general@ltsa.ca](mailto:surveyor.general@ltsa.ca), by **2:00 PM Pacific Daylight Time (PDT) on Friday, July 8, 2022.**

The subject line should read, "**RFP Response – North Fork Pass Restoration**"