

JOINT ANNUAL REPORT
**INTERNATIONAL
BOUNDARY
COMMISSION**
UNITED STATES AND CANADA

2022



Cover Photo

Set in the Cascade Mountain Range on the 49th Parallel Boundary Section (WA/BC), Monument 53 lies between American Border Peak and Canadian Border Peak. The sister mountain peaks are connected by a ridge where this original 3-piece bronze cast obelisk, set in a small concrete base was established on the boundary during the surveys of 1908. This remote location is on a small ledge, loose rock fall to the north and a sheer rock face to the south. It has endured harsh winters and remains in good condition.



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EXECUTIVE SUMMARY

The Commission

The International Boundary Commission (IBC) is a joint organization composed of two Commissioners duly appointed by the United States and Canada to maintain an effective boundary line between the two countries, as per the provisions of the Treaty of 1925. The IBC ensures the maintenance and integrity of a well-defined boundary, contributing to the mutual safety and prosperity of the citizens of both countries.

Structure

The Commission is organized in two sections, each under the leadership of its respective Commissioner. Each side has its own staff, equipment, and budget. The maintenance work is shared equitably between the two sections, based on a periodically revised long-term plan.

What we do

To fulfill its mandate, the IBC carries out routine inspections, repairs or replaces damaged boundary monuments, positions new monuments for improved boundary demarcation, maintains open vistas through woods and forests, and keeps boundary coordinates up to date by carrying out additional surveys when required.

Accomplishments

In 2022, efforts were focused on the following activities: Vista Clearing (St. Francis River, Highlands N.E. Section, and 49th Parallel); Boundary Monument Inspection, Maintenance and/or Survey (North Line, Saint John River, St. Francis River, Highlands N.E. Section, Highlands S.W. Section, Halls Stream, West Line, Lake Erie, Detroit and St. Clair Rivers and 49th Parallel). These projects were managed by either the United States or Canadian Section.

Measuring Success

The Commission is pleased to report that the work of maintaining the boundary is in line with its 15-year maintenance plan and the condition of the boundary meets the requirements from both countries.

The Commissioners

Commissioner Kyle K. Hipsley, has long served the Commission and as Commissioner for the United States section since 2014. Commissioner Jean L. Gagnon was appointed Surveyor General in 2017 and also serves as Canada's Commissioner.



Kyle K. Hipsley, Commissioner for the United States



Jean Gagnon, Commissioner for Canada

INTRODUCTION

The boundary between Canada and the United States was defined and refined through a series of twenty-six treaties, conventions, protocols, decisions and awards beginning with the 1783 *Treaty of Peace* and culminating in the 1925 *International Boundary Treaty*. In 1794, the first Commissioners were appointed to resolve ambiguities regarding the exact location of the boundary. The tradition of appointing Commissioners to resolve specific issues was carried on until, in the Treaty of 1925, the positions were made permanent and the Commissioners tasked with the ongoing maintenance of the boundary.

The Mandate of the Commissioners

The Treaty of 1925 set out the responsibilities of the Commissioners as:

1. Inspect the various sections of the boundary line between the Dominion of Canada and the United States and between the Dominion of Canada and Alaska at such times as they shall deem necessary;
2. Repair all damaged monuments and buoys;
3. Relocate and rebuild monuments which have been destroyed;
4. Keep the boundary vistas open;
5. Move boundary monuments to new sites and establish such additional monuments and buoys as they shall deem desirable;
6. Maintain at all times an effective boundary line between the Dominion of Canada and the United States;
7. Determine the location of any point of the boundary line which may become necessary in the settlement of any question that may arise between the two Governments.

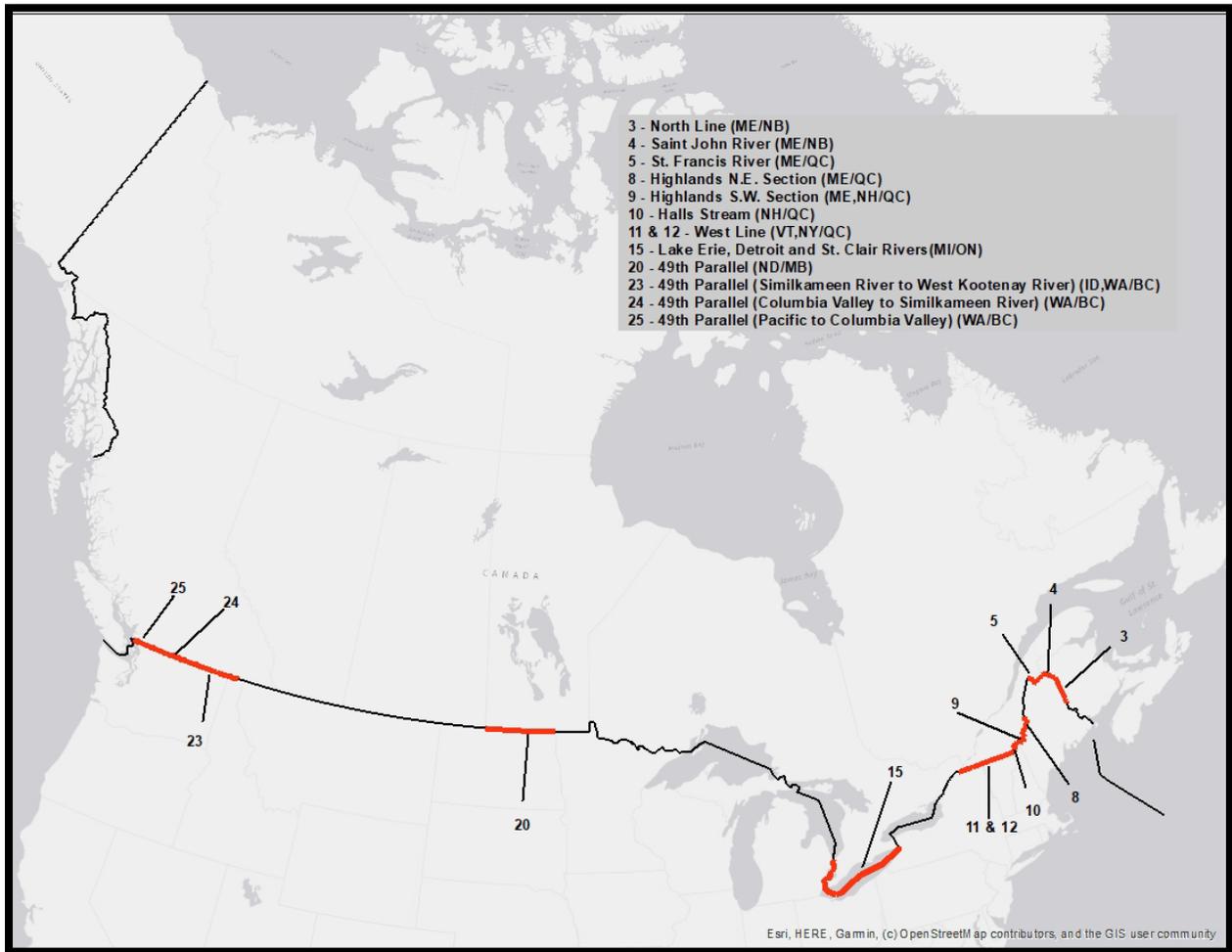
The Commissioners were further instructed to submit to their respective Governments from time to time, at least once in every calendar year, a joint report containing a statement of the inspections made; the monuments and buoys repaired, relocated, rebuilt, moved, and established; and the mileage and location of vistas opened. The report is to contain plats and tables certified and signed by the Commissioners, giving the locations and geodetic positions of all monuments moved and all additional monuments established within the year, and such other information as may be necessary to keep the boundary maps and records accurately revised.

This is the 98th Joint Annual Report from the Commissioners to their respective Governments on the state of the boundary between the United States and Canada.

MAINTENANCE ACTIVITIES

To ensure efficient and orderly management of maintenance activities, the boundary is divided into 30 numbered sections each of which correspond to areas that have similar topographical characteristics. These activities are guided by a 15-year maintenance plan that cycles the entire length of the boundary. The 2022 field season took place between April and October during which crews from the United States and Canada conducted projects on 12 sections of the boundary. Each of these projects are presented from east to west and correspond to the numbered section and the activity performed.

2022 Project Map



Section 3: North Line (ME/NB)

Boundary Monument Maintenance

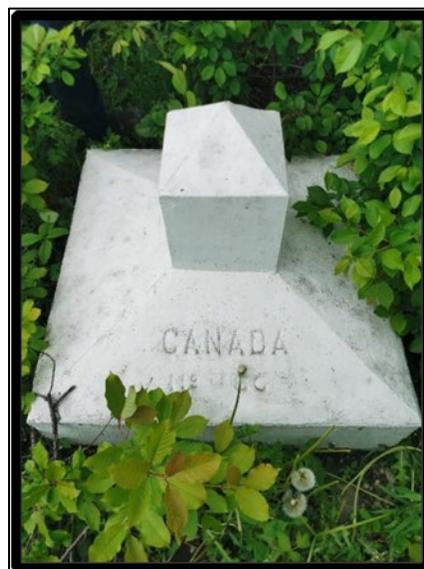
The North Line begins at the source of the St. Croix River and runs approximately 78 mi (125 km) northward to its intersection with the Saint John River, separating New Brunswick and Maine. Stretched across farms and forests, the rapidly growing vegetation necessitates frequent maintenance. This year's project continued the efforts on the North Line that have been ongoing for several years. The Eastern Regional Field Office conducted maintenance on the southerly segment where 2 boundary monuments were restored.

Section 4: Saint John River (ME/NB)

Reference Monument Inspection and Field Survey

The Saint John River Section is a 72 mi (115 km) water boundary that follows the river beginning at the North Line and travels westerly to the mouth of the St. Francis River. Along each shore are small towns and rural properties where a collection of reference monuments is used to locate the 230 turning points that set the boundary on the water. Work on this section continues with the goal of inspecting the original monuments and then resurvey them so that the coordinates can be recomputed on a modern datum.

In 2022, a crew recovered the remaining 20 reference monuments on the Canadian side of which 17 are in good condition, 2 will require repairs and 1 was found destroyed. Inspection began on three islands where reference monuments were originally set however only 1 was recovered. The survey work continued from the last season and the positions of the reference monuments recovered on the Canadian side were integrated into the survey network.



Reference Monument C-80 Saint John River is used to locate the boundary Turning Points on the river. (NB)

Section 5: St. Francis River (ME/QC)

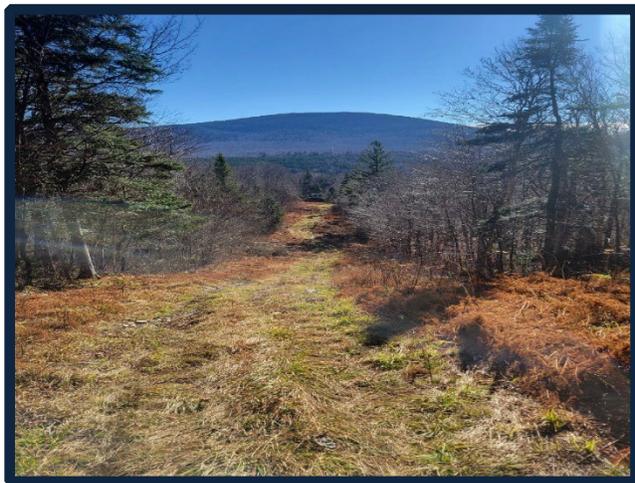
Monument Inspection and Vista Clearing

The St Francis River, its source at Lake Pohenagamook, runs southerly for 44 mi (70 km) to the St. John River. The boundary of the river consists of 485 turning points which are referenced by 122 shore reference monuments. The United States side of the river is dense forested area, and the Canadian side is low lying farm fields. North of Beau Lake, the course of the river has changed, and it now crosses over portions of the boundary which have been marked.

Inspection of the shore erosion and the boundary markers were completed. In total 309 monuments were inspected of which 158 are reference monuments, 91 are line marks and 60 are turning point monuments on land. Approximately 3 mi (4.8 km) of the vista was cleared.

Section 8: Highlands N.E. (ME/QC)

Monument Inspection, Survey and Vista Clearing



N.E. Highlands vista after clearing operations, ME/QC

The Highlands Section of the boundary follows the height of land between 2 watersheds – the Atlantic and the St. Lawrence River. It is the land boundary between the Southwest Branch of the St. Johns River and the Head of Halls Stream and is divided into two sections - the Northeast Section is composed of mostly rolling hills and is fairly accessible as compared to the Southwest Section which is mountainous and where access is difficult. One of the biggest challenges of the Highlands section is locating over 1660 monuments that lie between Monuments 314 and 405, the majority of those are disks that are at or slightly below grade. During the 2022 field

season, a contract was awarded to clear 77.8 mi (125.2 km) of all underbrush and overhanging branches to maintain the 20-foot vista opening. The in-house field operations recovered 115 monuments of which 5 were repaired and 105 were surveyed.

Section 9: Highlands S.W. (ME/QC)

Monument Inspection, Maintenance and Survey



Surveying along the S.W. Highlands, ME/QC

The Southwest Section of the Highlands Boundary is a continuation of the Northeast Section. It is comprised of approximately 1800 monuments that are densely packed, so that it closely follows the height of land, as laid out in the original survey. The mountainous terrain and numerous boundary monuments make it one of the more rugged sections of the boundary to work on.

This season 189 monuments were visited of which 10 were not found, 2 were reestablished and 59 were surveyed.

In recent years recreational vehicles have increasingly been operating on the boundary vista which has caused damage to several boundary monuments. In 2022 a field crew reported a heavily damaged area between Monuments 502 and 507 and set signs posts to better indicate the location of the boundary.



Signposts setup to protect monuments from recreational vehicles, ME/QC

Section 10: Halls Stream (NH/QC)

Monument Inspection



RM 509 Obelisk type reference monument buried in swamp conditions. NH/QC

From the southwest section of the Highlands and the head of Halls stream, the boundary follows said stream until it intersects the 45th Parallel boundary also known as the West Line. This 27.5 mi (44 km) section of water boundary follows a shallow stream through heavy forests along much of its length. As it approaches the 45th Parallel the stream widens and passes through low farmland where it tends to change course during recurring floods. Consequently, in many areas where the boundary once followed the course of the river, it now crosses over dry land. As the stream has continued to shift, monuments have been placed on land to mark the turning points of those straight courses.

The purpose of this project was to inspect the 56 reference monuments that position the turning points on the water. Only 36 reference monuments were recovered in good condition, 12 were in fair or poor condition, 1 was destroyed and the remaining 7 not found.

Sections 11 & 12: West Line (NY/QC)

Monument Inspection, Maintenance and Survey



Roxham Road vista clearing at Mon 660, NY/QC

The New York portion of the West Line Boundary is a continuation of the Vermont-Quebec boundary which approximates the 45th parallel of latitude. The line passes through farmland and forests for 65 mi (105 km) and is marked by over 160 boundary monuments. Many parts of this region were settled before any attempt to define the boundary was made and predates the War of Independence at a time when it was no more than a compass-line run to establish the boundary between two British Colonies. Thus, upon retracing the original line, many deflections were encountered, and it deviated considerably from the 45th parallel. Consequently, the line passes over cultivated fields and through villages where it intersects with many buildings. While some of these “line houses” are abandoned, owners still seek permission to maintain their structures.

The section serves a region where numerous Ports-of-Entry, surveillance and intense traffic make it a sensitive and important part of the international boundary.

This season a crew worked to inspect 144 monuments along this section of which 8 were repaired or renewed, and 5 were painted. They also cleared a small segment of the vista at Roxham Road and set up signposts to better indicate the location of the boundary line. Future monument work will be needed along the westerly portion where at least 10 monuments were recovered in poor condition.

Section 15: Lake Erie, Detroit, and St. Clair Rivers (MI/ON)

Inspection and Reference Monument Maintenance

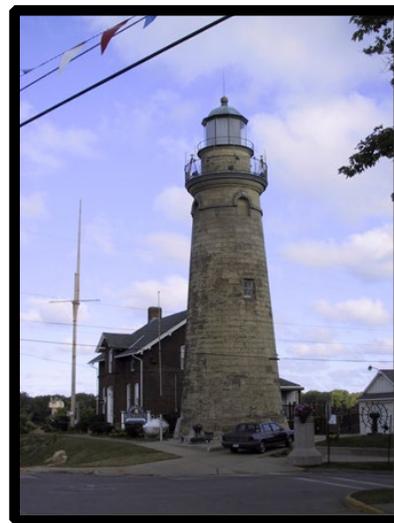
This is a section of water boundary that forms part of the Great Lakes and St. Lawrence River System between Lake Erie and Lake Huron. It is 87 mi (140 km) in length and is defined by 54 turning points that are referenced to 58 reference monuments on shore. The eight turning



*Typical frustrum shaped
Reference Monument, MI/ON*

points across Lake Erie are referenced to 11 lighthouses, many of which are now privately owned and have since been referenced to additional shore control monuments. The Detroit River and Lake St. Clair was first surveyed by the International Waterway Commission, 1909-1913. Over the years, much industrial and residential development has disturbed the original reference monuments. This inspection

recovered 47 reference monuments, 2 of which were established on a previous visit. Minor repairs were made to 1 monument, and 28 were painted.



*Fairport Harbor Lighthouse -
Fairport, OH*

Section 20: 49th Parallel (ND/MB)

Inspection, Monument Maintenance and Vista Clearing

The North Dakota-Manitoba boundary is 186 mi (300 km) in length and marked by 165 monuments. Most of the boundary line passes through open prairie, broken by two minor mountain ranges - the Pembina Hills are forest covered over 12 mi (19 km) while the Turtle Mountains are forested over a distance of 35 mi (56 km). A 20-foot wide vista is maintained through these forested areas.

This season an IBC crew performed inspections while continuing with the monument maintenance by replacing intermediary boundary monument cylinders with a standard type, stainless steel obelisks. The crew inspected 49 monuments, 6 were renewed and 42 were surveyed. The crew also cleared 1 mi (1.6 km) between Monuments 788 and 789. In July, the Commissioners visited the crew to inspect the progression of the work.



*Surveying at Mon 778A before being
replaced by a standard stainless-steel
obelisk. ND/MN.*

Section 23: 49th Parallel, Similkameen River to West Kootenay River (ID-WA/BC)

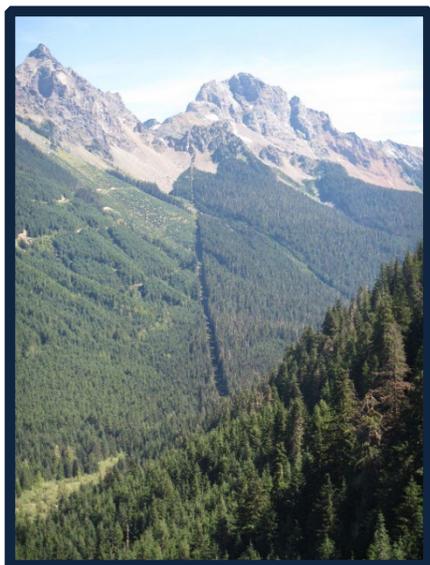
Vista Clearing

As with most of the Idaho/Washington and British Columbia boundary, this section traverses several mountain ranges that are predominantly forested. This 145 mi (232 km) section is marked by 97 monuments and a 20-foot wide vista clearing. As the line travels west from Grand Forks through the Okanogan Valley, conditions are semi-arid with considerable agricultural, commercial, and mining interests that have developed along the boundary.

A vista clearing contract was issued east of Lake Osoyoos from Monuments 132 to 164 – 36 mi (58 km). This contract will be completed in the 2023 season.

Section 24: 49th Parallel, Columbia Valley to Similkameen River(WA/BC)

Vista Clearing



*Cascade Mountain Range vista
clearcut, WA/BC.*

The Washington-British Columbia boundary traversing the mountain ranges inland from the Pacific Ocean, present one of the more difficult sections of the line to maintain. Mountains are abrupt and densely forested with only one access road intersecting the boundary. This 106 mi (170 km) remote and difficult boundary is marked with 67 monuments and a 20-foot wide vista.

After several years seeking competitive bids to clear the entire vista, the contract was rewritten to focus on specific valley segments where most of the clearing is needed. A contract was awarded between Monument 44A at the foothills of the Cascade Mountain east to Monument 59, for a total of 24.2 mi (39 km). This represents half of the distance to Ross Lake to complete the clearing of the segment to Ross Lake and Monument 71.

Section 25: 49th Parallel, Pacific to Columbia Valley (WA/BC)

Inspection, Monument Maintenance and Vista Clearing



Monument 3AA1 established on the Point Roberts Peninsula. WA/BC

This is the last section of the 49th Parallel Section along the Washington State and British Columbia international boundary. It is the area of the boundary along the Fraser Valley which is densely populated and located in prime agricultural land. The prolific growth of vegetation and the intense development makes this a high-profile area for the Commission. A majority of the boundary runs parallel to 0 Ave which helps to keep most of the vista free of encroachments; it then crosses Boundary Bay and the Point Roberts Peninsula to its terminus at Monument 0 on the shore of the Georgia Straight.

The purpose of this project was first, to conduct a full inspection between Monument 0 and Monument 38. In total 88 monuments were recovered, cleared of brush, and painted - 2 of these required repairs and second, to establish two intermediate boundary monuments on the Point Roberts Peninsula where a new residential subdivision abuts the boundary.

COMMISSIONERS' ACTIVITIES

Field Inspections



United States Commissioner, Kyle Hipsley and Canadian Commissioner, Jean Gagnon at the Peace Garden Commemorative Monument. ND/MN.

On-site inspections by the Commissioners give them the opportunity to see in person the projects currently being carried out by the Commission. It is customary that the Commissioners visit both a U.S. and Canadian field crew during the summer field season.

This season, the United States Commissioner, Kyle Hipsley and the Canadian Commissioner, Jean Gagnon traveled to the North Dakota and Manitoba to visit the U.S. western field office crew. They inspected the replacements of intermediate line marks with standard type stainless-steel monuments.

In addition, Mathieu Fortin, Manager for the Canadian Section, joined the Canadian crews in September to inspect the progress of a crew working in the Highlands.

Commissioners' Meetings

The Canadian and U.S. Commissioners met twice during the year to review the status of projects, agree on upcoming projects, and approve the comparable expenditures. Any new issues are brought to their attention and recorded in the meeting minutes. The spring meeting was held in April, in Washington, DC and the second meeting was held in November, in Ottawa, Ontario; each section presented the field projects completed during the field season. Additional discussions concerning ongoing tasks are as follows:

- Outstanding vista encroachments.
- The development of Survey Standards and boundary determination along water boundaries.
- Policy on existing fences when owners wish to make repair or replace them.
- Policy relating to Line Houses that incorporates past decision of the Commission.
- A concerted effort to update boundary coordinates onto modern datum.
- Updating the Commission's website and digital file availability.

REGULATORY ITEMS

The Commission monitors the construction of all works within 10 feet (3 meters) of the boundary. Thus, all construction—whether it be a ditch, building, surface or underground structure like telephone, cable, electrical line, or gas pipeline line of communication, or other—must first be authorized by the Commission. The following are a list of regulatory items addressed by the Commission in 2022:

- Section 17: Authorization of the Pigeon River Bridge reconstruction of decking was received in September. Two reference monuments (RM1356-64 and RM 1357-64) will be destroyed during these operations. After consideration of the submitted case, a Commissioners' approval letter was issued to the proponents on November 9, 2022.

Throughout the year, many requests are sent to the various IBC offices. Some of these requests are reviewed and documented but do not require a letter of authorization from the Commissioners. In 2022, the IBC processed 12 other requests that did not require authorization.

REPORT ON COMPARABLE EXPENDITURES

This report shows the total amount spent by both sections of the Commission as of March 31, 2022, for maintenance of the boundary line under Section IV of the *Treaty of Washington 1925*.

The cumulative total represents the total spending of each section, since 1925, on expenditures deemed comparable. Comparable expenditures are the subject of an agreement by both Commissioners as to the interpretation of Section IV of the *Treaty of 1925* and are revised regularly. The current agreement has been in effect since April 1, 1999. Under the agreement, and according to the Treaty, the expenditures do not include salaries or expenditures by the Commissioner and the Commissioners' assistants, including administrative staff, i.e., the permanent staff of each section. Therefore, this expenditure report is not a financial report, as it does not include all of the expenditures incurred by each section.

The purpose of compiling cumulative expenditures since the Commission's origins is to demonstrate that the efforts of both governments are shared equally.

Given that each country's fiscal year spans two calendar years, the divisible expenditure report does not always reflect all costs associated with current year projects and shows some costs associated with the previous year's projects.

Expenditures are shown in each country's respective currency.

International Boundary Commission
Joint Annual Report 2022

Certified Comparable Expenditures to March 31, 2022



International
Boundary
Commission



Commission
de la frontière
internationale



CERTIFIED STATEMENT OF COMPARATIVE EXPENDITURES

MADE BY
THE UNITED STATES AND CANADA
JOINTLY INCURRED BY THE COMMISSIONERS IN
MAINTAINING THE DEMARCATION OF THE BOUNDARY LINE
IN ACCORDANCE WITH THE PROVISIONS OF
THE TREATY OF 1925, AS OF MARCH 31, 2022

	United States (USD)	Canada (CAD)
Total to March 31, 2021	28,537,943.25 \$	28,966,841.92 \$
<u>Projects from April 1, 2021 to March 31, 2022</u>		
Section 13 - St-Lawrence River (ON/NY): Reference Mon maintenance RM 7-59 to RM 88		10,124.98 \$
Section 14 - Lake Ontario and Niagara River (ON/NY): Reference monument maintenance and inspection from RM 1-41 to RM 35-41 Continued from 2020, US shore maintained.		12,457.26 \$
Section 11 - West line (QC/VT): Project 202119004 Monument maintenance and various issues addressed.		54,640.90 \$
Section 8 - Highlands N.E. (QC/ME) and Section 9 - Highlands S.W. (QC/ME): Project 202119002: Obelisks type Monuments along Highlands N.E. section (MON 323 TO 398).		194,338.63 \$
Section 4 – Saint John River (NB/ME): inspection and field survey on the Canadian shore of the section, from RMC-1 to RMC-40.		93,304.08 \$
Section 8 - Highlands N.E. (QC/ME) and Section 9 - Highlands S.W. (QC/ME): Project 202119007: Secondary Monument inspection and maintenance (MON 340.5 to 369.2).		117,774.53 \$
Section 6 – Southwest and South lines : Vista clearing contract, 134.5 km (84.1 mi.) cleared from monument 178 to 308. Contract price \$294,894: \$2192.52 / km or \$3506.47 / mi (MON 178 to MON 308)		305,947.19 \$
Section 25 – 49th Parallel (Pacific to Columbia Valley) : Inspection, maintenance and monitoring along the Columbia Valley and Point- Roberts (MON 0 to MON 42).		40,202.84 \$
Section 3 - North Line (ME/NB): ERFO GJH-01-21 Monument Maintenance for south half of section (Mon1 to Mon 49)	167,561.79 \$	
Section 4 - St John River (ME/NB): ERFO GJH-02-21 Reference Monument Recovery (TP 1 - TP 230)	28,493.29 \$	

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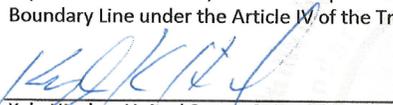
Tel/Tél: (613) 992-1294
Fax/Télécopieur: (613) 947-1337

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Section 19,20 - 49th Parallel (ND,MN/MB): CRFO BCC-01-21 Monument Maintenance, Vista Clearing, Surveys (Mon 723 - Mon 908A)	97,061.95 \$	
Section 20 - 49th Parallel (ND/MB): IBC-02-21 Vista clearing contract for Turtle Mountains (Mon 695C - Mon 719) totaling 33.17 mi / 53.38 km	102,827.00 \$	
Section 21 - 49th Parallel (MT,ND/AB,SK,MB): WRFO KWB-01-21 Monument Maintenance and Surveys (Mon 341 - Mon 364), Special request for line marking (Mon 564A - Mon 564B)	182,883.34 \$	
Section 23 - 49th Parallel (WA/BC): WRFO KWB-02-21 Install new monument, surveys, and vista clearing (Mon 116 - Mon 117B)	16,523.55 \$	
Section 25 - 49th Parallel (WA/BC): IBC-01-21 Range Mark inspection and maintenance contracts for west side of Point Roberts and across Boundary Bay	310,900.00 \$	
Section 27 - Portland Canal (AK/BC): CRFO BCC-02-21 Reference Monument maintenance and surveys (TP 1 - TP 28)	93,891.03 \$	
 <u>Other expenditures from April 1, 2020 to March 31, 2021</u>		
2019 JAR printing	-	4,388.00 \$
Sub-total for 2020-21	1,000,141.95 \$	833,178.41 \$
Total as of March 31, 2021	29,538,085.20 \$	29,800,020.33 \$

NOTE: It is recognized that fluctuations in exchange rates are not reflected in the total expenditures by each country.

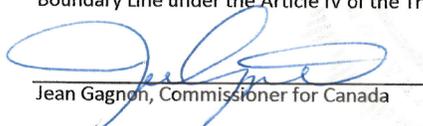
I hereby certify that the above amount of **29,538,085.20 \$** is an accurate statement of the total amount expended to March 31, 2021 on the part of the United States in the joint maintenance of the International Boundary Line under the Article IV of the Treaty of 1925.



Kyle Hipsley, United States Commissioner

OTTAWA Nov 2, 2022
Place Date

I hereby certify that the above amount of **29,800,020.33 \$** is an accurate statement of the total amount expended to March 31, 2021 on the part of Canada in the joint maintenance of the International Boundary Line under the Article IV of the Treaty of 1925.



Jean Gagnon, Commissioner for Canada

OTTAWA November 2, 2022
Place Date

COMMISSIONERS OF THE IBC

UNITED STATES

Otto H. Tittmann	1904 – 1915
Edward C. Barnard	1915 – 1921
E. Lester Jones	1921 – 1929
James H. Van Wagenen	1929 – 1935
Thomas Riggs	1935 – 1945
John A. Ulinski	1945 – 1953
Samuel L. Golan	1953 – 1961
Edward J. King	1961 – 1969
Richard L. Herman	1969 – 1977
William M. Schreiber	1977 – 1981
Frank R. Whetstone	1981 – 1985
David C. Fischer	1985 – 1991
Allen C. Kolstad	1991 – 1993
Clyde Moore (Acting)	1993 – 1996
Thomas L. Baldini	1996 – 2002
Dennis L. Schornack	2002 – 2007
David L. Bernhardt	2007 – 2008
Kyle K. Hipsley (Acting)	2008 – 2014
Kyle K. Hipsley	2014 –

CANADA

William F. King	1904 – 1916
James J. McArthur	1917 – 1924
John D. Craig	1925 – 1931
Noel J. Ogilvie	1931 – 1947
James M. Wardle	1947 – 1950
J. Leslie Rannie	1950 – 1951
J. Earl R. Ross	1951 – 1957
A. Frederick Lambert	1957 – 1976
Alec C. McEwen	1976 – 1991
Suzanne Jacques	1991 – 1996
Michael O’Sullivan	1996 – 2005
Peter J. Sullivan	2005 – 2017
Jean Gagnon	2017 –

RETIREMENTS

Joe Harrietha



Al Arsenault, JT Moore, United States Commissioner Kyle Hipsley, Joe Harrietha, Canadian Commissioner, Jean Gagnon, Mathieu Fortin, Kevin Bagwell and Martin Gingras at the retirement celebration dinner, Ottawa.

The Boundary Commission has been home to many exceptional surveyors who have spent the better part of their life in the field, moving from section to section and conducting one of the most important and challenging aspects of our work – drawing the line. Joe gained knowledge of the boundary that can only come from living it – “to walk the boundary is to know the boundary” and “every monument has a story”, phrases he knows all too well. His reports and surveys will serve the IBC in the years to come. But only he knows that the words and photos do not fully encapsulate the act of

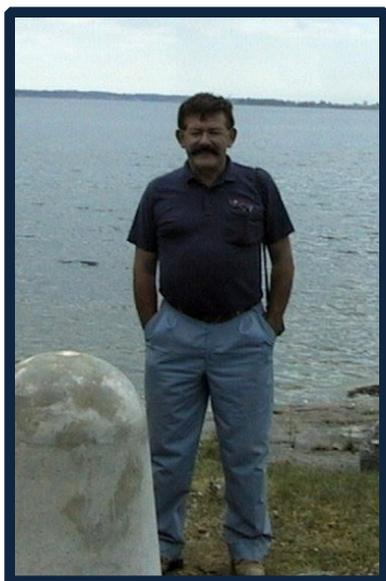
building, monitoring, and interacting with the people and the topography that a boundary surveyor must deal with daily in the field. A self-described “true boundary man”, Joe began his career in 1991 with the Geodetic Survey of Canada and in 1994 he accepted a position with the IBC. His first major feat was the Lake of the Woods to Lake Superior Section where he conducted survey operations; from there he became a well-traveled boundary surveyor - performing surveys and boundary maintenance operations through the St Lawrence River and Great Lakes, the West Line, Halls Stream, the Quebec Highlands, Southwest and South Line and the boundaries east to the North Line. His career also took him out to the western provinces - surveying the Juan de Fuca Strait and was instrumental in the removal of encroachments on the Point Robert Peninsula and worked for many years along the Fraser Valley. Joe travelled to some of the more extreme locations as he conducted projects through the Cascade Mountains and north along Southeast Alaska and the 141st Meridian. It was not just his survey work that set him apart, it was his keen sense of field management and knowledge of construction that allowed him to leave his mark on the boundary building hundreds of monuments that will live on the boundary forever.

Joe retired on October 14, 2022, after 31 years of service, 27 years with the IBC.

IN MEMORIAM

Noel Paquette

December 23, 1945 – October 20, 2022



Our friend and colleague, Mr. Noel Paquette served the Canadian Section of the International Boundary Commission as the Engineer to the Commission from 1988 to 2001.

As a young student, Noel began his career with the IBC in 1967 and from 1970 to 1977 he was a field officer working on the West Line. He later took a position in the Surveys and Mapping Branch before returning to the IBC in 1988.

Noel always had a flare about him and was a great communicator and was there to move the IBC into the 21st century. He was a firm believer in technology and strived to modernize the work of the IBC.

His handlebar mustache was his trademark and he retired young at 55 years of age and enjoyed his long retirement keeping in touch with the friends he made throughout his career. In his retirement he worked jointly with his US counterpart to study the state of the international

boundary and made recommendations for future challenges. Sadly, Noel passed away on October 20, 2022, surrounded by the love of his life.

Winston Smith

February 21, 1927 — March 3, 2022



Upon graduating from the University of New Brunswick as a civil engineer in 1948, Winston Smith immediately began work for the International Boundary Commission. His career would span over a period of 40-years. The first 25 years he spent performing boundary maintenance operations and his field reports exemplify the challenges he endured and his leadership during a period of innovation; being the first to extensively use tools such as the power chainsaw and the electronic distance measurement to fulfill the mandate of the Commission. After 1973, Winston worked as the Canadian, Engineer to the Commission until his retirement in 1987. In his retirement, Winston did not slow down and used his time

to volunteer service with the Scouts, Parkway House, helping seniors with income tax, volunteer driving for cancer patients and active member of Bromley Road Baptist Church. In 1998 he was awarded the Governor General's Caring Canadian award recognizing his years of community volunteer. Winston Smith passed away on March 3, 2022, in his 96th year.

CERTIFICATION

We certify that the foregoing is a true record of the work done by the Commissioners during the year ending December 31, 2022 on the maintenance of the International Boundary Line between Canada and the United States of America, and that the plats and tables submitted herein show the true location and geodetic position of all monuments moved and all additional monuments and marks established within the year, in accordance with the provisions of Article IV of the Treaty between the United States of America and His Britannic Majesty in respect of Canada signed at Washington, February 24, 1925.

Kyle K. Hipsley
Commissioner for the United States

Jean Gagnon
Commissioner for Canada



APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK

Legend

Boundary Monument Type:	MON	Monument (Artificial feature set to mark the international boundary)
	LM	Line Mark (Artificial feature set between established boundary points)
	RG	Range Mark (Artificial feature set to define turning points by mean of alignment)
	RM	Reference Monument (Artificial feature set to define turning points by traverse)
Reconnaissance:	G	Recovered In Good Condition
	F	Recovered in Fair Condition (requires minor repair)
	P	Recovered in Poor Condition (requires major repair)
	D	Destroyed (evidence found but Monument not in place)
	NR	Not Recovered (no evidence found or inadequate search)
Established:	NM	New Monument constructed (in new location)
	R	Renewed (in same location)
Repairs:	MI	Minor repairs to base (cracks patched, plumbed, dirt packed at base, etc)
	MA	Major repairs (new marker installed, base partially replaced or recapped)
Painted:	MP	Monument Painted
Description:	DU	Description Updated
	ND	New Description (newly established monuments only)
Photo:	YES	Photographed
	NO	Not Photographed
Monument Surveyed:	S	Survey performed to position the monument

Saint John River (Maine/New Brunswick)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
RM 170-77	P					YES	
RM C22-58	F					NO	S
RM C27A-40	G					NO	S
RM C27-73	G					NO	S
RM C28-52	G					NO	S
RM C-38-51	G					NO	S
RM C39A-75	G					NO	S
RM C40-51	P					NO	S
RM C40-75	G			MP		YES	S
RM C41-51	G					NO	S
RM C42-75	G					NO	S
RM C43-75	G					NO	S
RM C44A-75	G					NO	S
RM C44	G					NO	S
RM C45-75	G					NO	S
RM C45A-75	G					NO	S
RM C46	F					NO	S
RM C47	G					NO	S
RM C48	F					NO	S

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**Saint John River
(Maine/New Brunswick)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
RM C49-75	G					NO	S
RM C49	P					NO	S
RM C49A-75	G					NO	S
RM C50-51	G					NO	S
RM C51-75	G					NO	S
RM C52	G					NO	S
RM C53	G					NO	S
RM C54A-75	G					NO	S
RM C54	G					NO	S
RM C55-75	F					NO	S
RM C56A-75	G					NO	S
RM C59-51	P					NO	S
RM C60-75	G					NO	S
RM C61A-75	G					NO	S
RM C62-75	G					NO	S
RM C62	G					NO	S
RM C63-75	G					NO	S
RM C64	G					NO	S
RM C64-76	G					NO	S
RM C66A-75	G					NO	S
RM C67	G					NO	S
RM C67A-75	G					NO	S
RM C68	G					NO	S
RM C68A-75	D					YES	
RM C68B-76	G					NO	S
RM C69	G					NO	S
RM C69A-76	G					NO	S
RM C70	G					NO	S
RM C70-75	G					NO	S
RM C70A-76	G					NO	S
RM C71-76	G					NO	S
RM C72A-76	G					NO	S
RM C72	G					NO	S
RM C73	G					NO	S
RM C74	NR					NO	
RM C75	G					NO	
RM C76A-51	G					YES	
RM C76	D					YES	
RM C77	F					YES	
RM C78A-76	G					YES	
RM C78	G					YES	
RM C79	G					YES	S
RM C79A-76	G					YES	
RM C80	G					YES	
RM C80-76	P					YES	
RM C81	G					YES	S
RM C81A-76	G					YES	

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Saint John River
(Maine/New Brunswick)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
SITE RM C82	NR					NO	
RM C82-76	NR					NO	
RM C-83-51	NR					NO	
SITE RM C83	NR					NO	
RM C84-76	NR					NO	
RM C85A-39	NR					NO	
RM C-85-51	NR					NO	
RM C-86-76	G					YES	S
RM C-86-76	G					NO	S
RM C87	G					YES	
RM C87-76	G					NO	
RM C88-52	G					YES	S
RM C88	G					YES	
RM C89	G					YES	
RM C90-76	G					YES	
RM C90	G					YES	
RM C91-77	NR					NO	
RM C91	G					YES	
SITE RM C92	NR					NO	
RM C92-77	G					NO	S
RM 157	D					YES	
RM C92A-51	NR					NO	
RM C93-77	G					NO	S
RM C94A-77	G					NO	S
RM C94	G					NO	S
RM C94B-77	G					NO	S
RM C95	G					NO	S
RM C96	P					NO	S
RM C96-77	F					NO	S
SITE RM C97	NR					NO	
RM C98	G					NO	S
RM C99	F					NO	S
RM C100-51	G					NO	S
RM C101	G					NO	S
RM C102-77	G					NO	S
SITE RM C103	NR					NO	
RM C103-77	F					NO	S
RM C104-77	G					NO	S
RM C105-77	G					NO	S
RM C106-77(mark1)	G					NO	S

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**St. Francis River
(Maine/New Brunswick)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
RM 175A-77	NR					NO	
RM 175	NR					NO	
RM C107	G					NO	S
RM S116	G					NO	S

**Highlands N.E. Section
(Maine/Quebec)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 322.4	G					YES	S
MON 322.5	G					YES	S
MON 322.6	G					YES	S
MON 322.7	G					YES	S
MON 322.8	G					YES	S
MON 322.9	G					YES	S
MON 322.10	G					YES	S
MON 322.11	G					YES	S
MON 322.12	G					YES	S
MON 322.13	G					YES	S
MON 322.14	G					YES	S
MON 322.15	G					YES	S
MON 322.16	G					YES	S
MON 322.17	G					YES	S
MON 322.18	G					YES	S
MON 322.19	G					YES	S
MON 322.20	G					YES	S
MON 322.21	G					YES	S
MON 322.22	G					YES	S
MON 322.23	G					YES	S
MON 322.24	G					YES	S
MON 322.25	G					YES	S
MON 323	G					YES	S
MON 323.1	G					YES	S
MON 323.2	G					YES	S
MON 323.3	G					YES	S
MON 323.4	G					YES	S
MON 357.4	F					NO	
MON 358.5	G					NO	
MON 358.6	G					NO	
MON 358.7	G	R				YES	S
MON 358.8	G		MI			YES	
MON 358.9	G		MI			YES	
MON 359.1	G		MI			YES	
MON 362.7	G					YES	
MON 362.8	G					YES	

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**Highlands N.E. Section
(Maine/Quebec)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 362.9	P					YES	
MON 373.7	G	R				YES	
MON 393.16	G					YES	S
MON 394	G					YES	S
MON 394.1	G					YES	S
MON 394.2	G					YES	S
MON 394.3	G					YES	S
MON 394.4	G					YES	S
MON 394.5	G					YES	S
MON 394.6	G					YES	S
MON 394.7	G					YES	S
MON 394.8	G					YES	S
MON 394.9	G					YES	S
MON 394.10	G					YES	S
MON 394.11	G					YES	S
MON 394.12	G					YES	S
MON 394.13	G					YES	S
MON 395	G					YES	S
MON 395.1	G					YES	S
MON 395.2	G					YES	S
MON 395.3	G					YES	S
MON 395.4	G					YES	S
MON 395.5	G					YES	S
MON 395.6	G					YES	S
MON 395.7	G					YES	S
MON 395.8	G					YES	S
MON 395.9	G					YES	S
MON 395.10	G					YES	S
MON 395.11	G					YES	S
MON 395.12	G					YES	S
MON 395.13	G					YES	S
MON 395.14	G					YES	S
MON 395.15	G					YES	S
MON 396	P					YES	S
MON 396.1	G					YES	S
MON 396.2	G					YES	S
MON 396.3	G					YES	S
MON 396.4	G					YES	S
MON 396.5	G					YES	S
MON 396.6	G					YES	S
MON 396.7	G					YES	S
MON 396.8	G					YES	S
MON 396.9	G					YES	S
MON 396.10	G					NO	S
MON 396.11	G					YES	S
MON 396.12	G					YES	S
MON 396.13	G					YES	S

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**Highlands N.E. Section
(Maine/Quebec)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 396.14	G					YES	S
MON 396.15	G					YES	S
MON 396.16	G					YES	S
MON 398.13	G					NO	S
MON 399	G					NO	S
MON 399.1	G					YES	S
MON 399.2	G					YES	S
MON 399.3	G					YES	S
MON 399.4	G					YES	S
MON 399.5	G					YES	S
MON 399.6	G					YES	S
MON 399.7	G					YES	S
MON 399.8	G					YES	S
MON 399.9	G					YES	S
MON 399.10	G					YES	S
MON 399.11	G					YES	S
MON 399.12	G					YES	S
MON 400	G					NO	S
MON 400.1	G					YES	S
MON 400.2	G					YES	S
MON 400.3	G					NO	S
MON 400.4	G					NO	S
MON 400.5	G					YES	S
MON 400.6	G					YES	S
MON 400.7	G					YES	S
MON 400.8	G					YES	S
MON 400.9	G					YES	S
MON 400.10	G					YES	S
MON 400.11	G					YES	S
MON 400.12	G					YES	S
MON 400.13	G					YES	S
MON 400.14	G					YES	S

**Highlands S.W. Section
(New Hampshire/Quebec)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 477.15	D					NO	
MON 477.25	NR					NO	
MON 477.28	NR					NO	
MON 480.18	G					YES	
MON 480.19	F					YES	
MON 480.20	G					YES	
MON 480.21	G					YES	
MON 481	P					YES	

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**Highlands S.W. Section
(New Hampshire/Quebec)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 481.1	G					YES	
MON 481.2	G					YES	
MON 481.3	G					YES	
MON 481.4	F					YES	
MON 481.5	F					YES	
MON 481.6	NR					NO	
MON 481.7	G					YES	
MON 481.8	G					YES	
MON 481.9	D					YES	
MON 481.10	G					YES	
MON 481.11	G					YES	
MON 481.12	G					YES	
MON 481.13	G					YES	
MON 481.14	G					YES	
MON 481.15	G					YES	
MON 481.16	G					YES	
MON 481.17	G					YES	
MON 481.18	G					YES	
MON 481.19	P					YES	
MON 481.20	G					YES	
MON 481.21	F					YES	
MON 481.22	G					YES	
MON 481.23	G					YES	
MON 481.24	G					YES	
MON 481.25	G					YES	
MON 481.26	G					YES	
MON 481.27	G					YES	
MON 481.28	G					YES	
MON 481.29	G					YES	
MON 481.30	G					YES	
MON 481.31	G					YES	
MON 481.32	G					YES	
MON 481.33	F					YES	
MON 481.34	G					YES	
MON 481.35	G					YES	
MON 482	G					YES	
MON 482.1	F					YES	
MON 482.2	G					YES	
MON 482.3	G					YES	
MON 482.4	G					YES	
MON 482.5	G					YES	
MON 482.6	G					YES	
MON 482.7	G					YES	
MON 482.8	G					YES	
MON 482.9	G					YES	
MON 482.10	G					YES	
MON 482.11	G					YES	

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**Highlands S.W. Section
(New Hampshire/Quebec)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 482.12	G					YES	
MON 482.13	G					YES	
MON 482.14	G					YES	
MON 482.15	G					YES	
MON 482.16	G					YES	
MON 482.17	G					YES	
MON 484 (WEST POST)	G					YES	
MON 484A	G					YES	S
MON 484.1	G					YES	S
MON 484.2	G					YES	S
MON 484.3	G					YES	S
MON 484.4	G					YES	S
MON 484.5	G					YES	S
MON 484.6	G					YES	S
MON 484.7	G	R				YES	S
MON 484.8	G					YES	S
MON 484.9	G					YES	S
MON 484.10	G					YES	S
MON 484.11	G					YES	S
MON 484.12	G					YES	S
MON 484.13	G					YES	S
MON 484.14	G					YES	S
MON 484.15	G					YES	S
MON 484.16	G					YES	S
MON 484.17	G					YES	S
MON 484.18	G					YES	S
MON 484.19	G					YES	S
MON 484.20	G					YES	S
MON 484.21	G					YES	S
MON 484.22	G					YES	S
MON 484.23	G					YES	S
MON 484.24	G					YES	S
MON 484.25	G					YES	S
MON 484.26	G					YES	S
MON 484.27	P					YES	S
MON 484.28	G					YES	S
MON 484.29	G					YES	S
MON 484.30	G					YES	S
MON 484.31	G					YES	S
MON 484.32	G	R				YES	S
MON 484.33	F					YES	S
MON 484.34	G					YES	S
MON 484.35	G					YES	S
MON 484.36	G					YES	S
MON 484.37	F					YES	S
MON 484.38	G					YES	S
MON 484.39	G					YES	S

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**Highlands S.W. Section
(New Hampshire/Quebec)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 484.40	G					YES	S
MON 484.41	G					YES	S
MON 484.42	G					YES	S
MON 484.43	G					YES	S
MON 484.44	G					NO	S
MON 484.45	G					YES	S
MON 484.46	G					YES	S
MON 484.47	F					YES	S
MON 484.48	F					YES	S
MON 484.49	G					YES	S
MON 484.50	G					NO	S
MON 484.51	G					YES	S
MON 484.52	G					YES	S
MON 484.53	G					YES	S
MON 484.54	F					YES	S
MON 484.55	G					YES	S
MON 484.56	G					YES	S
MON 484.57	G					YES	S
MON 484.58	G					YES	S
MON 484.59	G					NO	
MON 493	P					YES	
MON 493.1	G					YES	
MON 493.2	G					YES	
MON 493.3	G					YES	
MON 493.4	G					YES	
MON 493.5	G					YES	
MON 493.6	D					NO	
MON 493.7	F					YES	
MON 493.8	G					YES	
MON 493.9	P					YES	
MON 493.10	G					YES	
MON 493.11	NR					NO	
MON 494	F					YES	
MON 494.1	G					YES	
MON 494.2	D					YES	
MON 494.3	G					YES	
MON 494.4	G					YES	
MON 494.5	D					YES	
MON 494.6	P					YES	
MON 494.7	G					YES	
MON 494.8	G					YES	
MON 494.9	G					YES	
MON 494.10	G					YES	
MON 494.11	G					YES	
MON 494.12	G					YES	
MON 495	G					YES	
MON 502	F					YES	

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**Highlands S.W. Section
(New Hampshire/Quebec)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 502.1	NR					NO	
MON 502.2	G					YES	
MON 502.3	NR					NO	
MON 502.4	P					YES	
MON 502.5	P					YES	
MON 502.6	F					YES	
MON 502.7	G					YES	
MON 502.8	G					YES	
MON 502.9	D					YES	
MON 502.10	G					YES	
MON 502.11	NR					NO	
MON 502.12	P					YES	
MON 502.13	NR					NO	
MON 502.14	F					YES	
MON 502.15	G					YES	
MON 502.16	G					YES	
MON 502.17	NR					NO	
MON 502.18	D					YES	
MON 503	G					YES	
MON 503.1	P					YES	
MON 503.2	G					YES	
MON 503.3	D					YES	
MON 503.4	G					YES	
MON 503.5	P					YES	
MON 503.6	G					YES	
MON 503.7	G					YES	
MON 503.8	G					YES	
MON 503.9	D					YES	
MON 503.10	D					YES	
MON 503.11	P					YES	
MON 503.12	G					YES	
MON 503.13	D					YES	
MON 503.14	P					YES	
MON 503.15	D					YES	
MON 503.16	D					YES	
MON 504	F					YES	
MON 504.1	NR					NO	
MON 504.2	G					YES	
MON 504.3	G					YES	
MON 504.4	G					YES	
MON 504.5	P					YES	
MON 504.6	G					YES	
MON 504.7	F					YES	
MON 505	G					YES	
MON 505.1	G					YES	
MON 506	G					YES	
MON 506.1	G					YES	

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**Highlands S.W. Section
(New Hampshire/Quebec)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 506.2	G					YES	
MON 506.3	G					YES	
MON 507	G					YES	

**Halls Stream
(New Hampshire/Quebec)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
RM 508	G					NO	
RM 509	P					YES	
RM 510	P					YES	
RM 510-1-98	P					YES	
RM 510-2	G					YES	
RM 510-3	G					YES	
RM 510-4	G					YES	
RM 510-5	G					YES	
RM 510-6	G					YES	
RM 510-7	F					YES	
RM 510-8	G					YES	
RM 510-9	D					YES	
RM 510-10	P					YES	
RM 510-11	G					YES	
RM 510-12	G					YES	
RM 510-13	G					YES	
RM 510-14	P					YES	
RM 510-15	G					YES	
RM 510-16	G					YES	
RM 510-17	G					YES	
RM 510-18	F					YES	
RM 510-19	G					YES	
RM 510-20	G					YES	
RM 510-21	F					YES	
RM 510-22	F					YES	
RM 510-23	G					YES	
RM 510-24	G					YES	
RM 510-25	G					YES	
RM 510-26-98	NR					NO	
SITE RM 510-27-49	NR					NO	
RM 511-98	F					YES	
RM 511-1	G					YES	
RM 511-2-39	G					YES	
RM 511-3	G					YES	
RM 511-4	G					YES	
RM 511-5-71	G					YES	
RM 511-6-39	G					YES	

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Halls Stream
(New Hampshire/Quebec)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
RM 511-7	G					YES	
RM 511-8-98	G					YES	
RM 511-9	G					YES	
RM 511-10	G					YES	
RM 511-11	G					YES	
RM 511-12-49	NR					NO	
RM 511-13	G					YES	
RM 511-14-98	NR					NO	
RM 511-15	G					YES	
RM 512	P					YES	
RM 511-16-54	NR					NO	
RM 512-1-71	G					YES	
RM 512-2	G					YES	
RM 512-3	G					YES	
RM 512-4-98	G					YES	
SITE RM 512-4	NR					NO	
SITE RM 512-5	NR					NO	
RM 512-6	F					YES	
RM 517	G					YES	

West Line (QC/VT)
(New Hampshire, Vermont/Quebec)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 518	G					YES	
MON 518A	G					YES	
MON 519AA	G					YES	
MON 519A2	G					YES	
MON 519A3	G					YES	
MON 519A4	G					YES	
MON 520	G					YES	
MON 520A	G					YES	
MON 521	G					YES	
MON 521A	G					YES	
MON 522	G					YES	
MON 522A	G					YES	
MON 522A1	G					YES	
MON 522A3	G					YES	
MON 523	G					YES	
MON 523A	G					YES	
MON 524	G					YES	
MON 525	G					YES	
MON 525A	G		MI			YES	
MON 527A	G					YES	
MON 527A2	G					YES	

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West Line (QC/VT)
(New Hampshire, Vermont/Quebec)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 528	G					YES	
MON 529	G					YES	
MON 530	G					YES	
MON 531	G					YES	
MON 531A	G					YES	S
MON 531B	G	R		MP		YES	S
MON 532	G					YES	S
MON 533	G					YES	
MON 535C1	G					YES	
MON 535D	G	R				YES	
MON 535E	G					YES	
MON 535F	G					YES	
MON 536	G					YES	
MON 537	G					NO	
MON 538	G					YES	
MON 538A	G					YES	
MON 538B	G					YES	
MON 538C	G		MI			YES	
MON 539	G					YES	
MON 539A	G					YES	
MON 540	G					YES	
MON 540A	F					YES	
MON 541	F					YES	
MON 543	F					YES	
MON 544	G					YES	
MON 544A	F					YES	
MON 544B	G					YES	
MON 545	G					YES	
MON 545A	G					YES	
MON 546	G					YES	
MON 546A	G	R				YES	
MON 547	G					YES	
MON 548	G					YES	
MON 548A	G					YES	
MON 548B	G					NO	
MON 549	G			MP		YES	S
MON 549A	G	R		MP		YES	S
MON 550	G			MP		YES	S
MON 551	G	R		MP		YES	S
MON 551A-35	G					YES	S
MON 551A1	G					NO	
MON 551A2	G					NO	
MON 551A3	G					NO	
MON 551B	F					YES	
MON 552A	G					YES	
MON 553-00	G					YES	
MON 553A	G					YES	

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West Line (QC/VT)
(New Hampshire, Vermont/Quebec)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 554A	G					YES	S
MON 555	G	R				YES	S
MON 555A	G					YES	S
MON 555B	G					YES	
MON 556A	G					YES	
MON 557	G					YES	
MON 557A	G					YES	
MON 558	G					YES	
MON 558A	G					YES	
MON 558B	G					YES	
MON 582	F					YES	
MON 582A	G					YES	
MON 599	P					YES	
MON 599A	G					YES	

West Line (QC/NY)
(New York/Quebec)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 660	G					YES	
MON 699AA	G					NO	
MON 699A	G					NO	
MON 700	G					YES	
MON 701	G					YES	
MON 702	G					YES	
MON 703	G					YES	
MON 704 AND 705	G					YES	
MON 706	G					YES	
MON 706A	G					YES	
MON 707	G					YES	
MON 708	G					YES	
MON 709	F					YES	
MON 710	G					YES	
MON 711	G					YES	
MON 712	P					YES	
MON 713	G					YES	
MON 717	P					YES	
MON 718	P					YES	
MON 719	G					YES	
MON 720	P					YES	
MON 721	P					YES	
MON 722	F					YES	
MON 722A	G					YES	
MON 723	G					YES	
MON 724	G					YES	

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West Line (QC/NY)
(New York/Quebec)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 725	G					YES	
MON 726	G					YES	
MON 726A	G					YES	
MON 727	G					YES	
MON 727A	G					YES	
MON 728	G					YES	
MON 729	G					YES	
MON 730	G					YES	
MON 731	G					YES	
MON 732	G					YES	
MON 733A	G					YES	
MON 734-76	G					YES	
MON 735	G					YES	
MON 736	G					YES	
MON 737	G					YES	
MON 738	G					YES	
MON 739	P					YES	
MON 740	F					YES	
MON 741	P					YES	
MON 742	G					YES	
MON 743	P					YES	
MON 744	G					YES	
MON 745	G					YES	
MON 746	G					YES	
MON 747	G					YES	
MON 748	G					YES	
MON 749	G					YES	
MON 750	P					YES	
MON 751	P					YES	
MON 751A	G					YES	
MON 752	G					YES	
MON 753	G					YES	
MON 754A	G					YES	
MON 755	G					YES	S
MON 755A	G					NO	S
MON 756	G					NO	

Lake Erie, Detroit and St. Clair Rivers
(Michigan/Ontario)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
RM 1-01	NR					NO	
RM 2-01	G					NO	
CP BARPOINT	NR					NO	
MON 1	NR					NO	

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**Lake Erie, Detroit and St. Clair Rivers
(Michigan/Ontario)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 2	NR					NO	
MON 3	NR					NO	
MON 3A	NR					NO	
RM 3-01	NR					NO	
MON 4A	NR					NO	
MON 4	NR					NO	
RM 4-42	G			MP		YES	
RM 5-42	NR					NO	
RM 6-66	NR					NO	
RM 7-01	G					YES	
CP DET1	G					YES	
RM 8-01	G					YES	
RM 8-ECC	NR					NO	
RM 9-42	G					YES	
WEST TABLET, MICHIGAN CENTRAL RR. TUNNEL	NR					NO	
EAST TABLET, MICHIGAN CENTRAL RR. TUNNEL	NR					NO	
RM 10-01	F					YES	
RM 11-42	F			MP		YES	
RM 12-42	G			MP		YES	
RM 13	NR					NO	
RM 13-01	G					YES	
RM 15	G			MP		YES	
RM 15-ECC1	NR					NO	
RM 15-ECC2	NR					NO	
RM 14	NR					NO	
RM 14-00	G					YES	
MON 15A	NR					NO	
MON 15B	NR					NO	
CP 15B-REF1	NR					NO	
CP 15B-REF2	NR					NO	
RM 16-81	NR					NO	
RM 17-65	NR					NO	
RM 18-81	NR					NO	
RM 19-81	NR					NO	
RM 20-81	NR					NO	
RM 21-81	NR					NO	
RM 22-81	G					YES	
RM 23-81	G					YES	
RM 24-2005	G					YES	
RM 25-2005	G			MP		YES	
RM 26-42	G					NO	
RM 27-81	G			MP		YES	
RM 28-2005	G					YES	
RM 29-42	G			MP		YES	
RM 30-2005	G					YES	
RM 31-44	G					YES	

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*Lake Erie, Detroit and St. Clair Rivers
(Michigan/Ontario)*

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
RM 32-42	G			MP		YES	
RM 33-82	F			MP		YES	
RM 34-42	G			MP		YES	
RM 35-42	G			MP		YES	
RM 36-81	G			MP		YES	
RM 37-42	G			MP		YES	
RM 38-2005	G					YES	
RM 39-42	G			MP		YES	
RM 40-42	G			MP		YES	
RM 41-42	F			MP		YES	
RM 42	F			MP		YES	
RM 43-42	G			MP		YES	
RM 44-42	G			MP		YES	
RM 45-42	G			MP		YES	
RM 46-42	G			MP		YES	
RM 47-82	G	NM		MP		YES	
RM 48-42	G			MP		YES	
RM 49-42	G			MP		YES	
RM 50-42	NR					NO	
CP 16TH ST	G					YES	
RM 51-82	G	NM		MP		YES	
SOUTH TABLET, CANADIAN NAT. RWY. TUNNEL	NR					NO	
RM 52-42	G			MP		YES	
NORTH TABLET, CANADIAN NAT. RWY. TUNNEL	NR					NO	
RM 53-82	G			MP		YES	
RM 54-82	G			MP		YES	
RM 55ECC2	NR					NO	
RM 55ECC	NR					NO	
RM 55	G					YES	
AP 1	NR					NO	
AP 2	NR					NO	
SOUTH TABLET, BLUE WATER BRIDGE	NR					NO	
AP 3	NR					NO	
NORTH TABLET, BLUE WATER BRIDGE	NR					NO	
AP 4	NR					NO	
RM 56-2005	G					YES	
RM FLAG-ECC	G		MI			YES	
RM 58-42	NR					NO	
RM 57-42	F					YES	

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Meridian and 49th Parallel (MB/MN)
(Minnesota/Manitoba)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 895B	G					NO	S
MON 895C	G					NO	S
MON 896	G					NO	S
MON 900	G					NO	S
MON 900A	G					NO	S
MON 901	G					NO	S

49th Parallel (MB/ND)
(North Dakota/Manitoba)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 741	G					NO	S
MON 751	G					NO	S
MON 753A	G			MP		NO	
MON 754	G			MP		NO	
MON 762	G					NO	S
MON 765	G			MP		NO	
MON 765A-66	G			MP		NO	
MON 773	G					NO	S
MON 773A	G					NO	S
MON 774	G			MP		NO	S
MON 774A	G	R		MP		NO	S
MON 775	G			MP		NO	S
MON 775A	G	R		MP		NO	S
MON 776	G			MP		NO	S
MON 777	G					NO	
MON 778	G			MP		NO	S
MON 778A	G	R		MP		NO	S
MON 779	G			MP		NO	S
MON 779AA	G	R		MP		NO	S
MON 779A	G			MP		NO	S
MON 779B	G			MP		NO	S
MON 780	G			MP		NO	S
MON 780A	G	R		MP		NO	S
MON 781	G			MP		NO	S
MON 781A	G			MP		NO	S
MON 782	G			MP		NO	S
MON 783	G			MP		NO	S
MON 783A	G	R		MP		NO	S
MON 784	G			MP		NO	S
MON 784A	G					NO	S
MON 785	G					NO	S
MON 788	G					NO	S
MON 788A	G					NO	S
MON 788B	G					NO	S

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49th Parallel (MB/ND)
(North Dakota/Manitoba)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 788C	G					NO	S
MON 789	G					NO	S
MON 789A	G					NO	S
MON 790	G					NO	S
MON 795	G					NO	S
MON 795A	G					NO	
MON 796	G					NO	

49th Parallel (AB-SK-MB/MT- ND)
(North Dakota/Saskatchewan)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 638	G					NO	S
MON 646	G					NO	S

49th Parallel (Similkameen River to West Kootenay River)
(Washington/British Columbia)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 117-56	G					YES	
MON 117A	G					YES	
RM Range Mark by MON 117A	G					YES	
MON 117B	P					YES	
RM Range Mark by MON 117B	G					YES	

49th Parallel (Columbia Valley to Similkameen River)
(Washington/British Columbia)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 43	G			MP		YES	

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**49th Parallel (Pacific to Columbia Valley)
(Washington/British Columbia)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 0	G					YES	
MON 1	G					YES	
MON 1A	G			MP		YES	
MON 1B	G			MP		YES	
MON 2	G		MI	MP		YES	
MON 2A-00	G			MP		YES	
MON 2B	G			MP		YES	
MON 3	G			MP		YES	S
MON 3AA1	G	NM			ND	YES	S
MON 3AA	G	NM			ND	YES	S
MON 3A	G			MP		YES	S
MON 3B	G			MP		YES	S
MON 4	G			MP		YES	S
MON 5	G			MP		YES	
MON 5A	G			MP		YES	
MON 5B	G			MP		YES	
MON 5B1	G			MP		YES	
MON 5D	G			MP		YES	
MON 5G	G			MP		YES	
MON 5X	G					YES	
MON 5D1	G			MP		YES	
MON 5E-2009	G			MP		YES	
MON 5F-92	G			MP		YES	
MON 6	G			MP		YES	
MON 7	G			MP		YES	
MON 7A	G			MP		YES	
MON 8	G			MP		YES	
MON 8A	G			MP		YES	
MON 9	G			MP		YES	
MON 9A	G			MP		YES	
MON 10	G			MP		YES	
MON 11	G			MP		YES	
MON 12	G			MP		YES	
MON 12A	G			MP		YES	
MON 13	G			MP		YES	
MON 13A	G			MP		YES	
MON 14	G			MP		YES	
MON 15	G			MP		YES	
MON 15A	G			MP		YES	
MON 16	G			MP		YES	
MON 17	G			MP		YES	
MON 18	G			MP		YES	
MON 18A	G			MP		YES	
MON 19	G			MP		YES	
MON 19AA	G			MP		YES	
MON 19A	G			MP		YES	
MON 19C	G			MP		YES	

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**49th Parallel (Pacific to Columbia Valley)
(Washington/British Columbia)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 20	G			MP		YES	
MON 20A	G			MP		YES	
MON 20B	G			MP		YES	
MON 21	G			MP		YES	
MON 22	G			MP		YES	
MON 22A	G			MP		YES	
MON 23	G			MP		YES	
MON 23A	G			MP		YES	
MON 24	G			MP		YES	
MON 24A	G			MP		YES	
MON 25	G			MP		YES	
MON 25A	G			MP		YES	
MON 25B	G			MP		YES	
MON 26	G			MP		YES	
MON 27	G			MP		YES	
MON 28	G			MP		YES	
MON 28A	G		MI	MP		YES	S
MON 29	G			MP		YES	
MON 29A	G					NO	
MON 30	G					NO	
MON 30AAA	G					NO	
MON 30AA	G					YES	
MON 30A	G					YES	
MON 31AA	G			MP		YES	
MON 31C	G			MP		NO	
MON 32	G			MP		YES	
MON 32A	G			MP		YES	
MON 33	G			MP		YES	
MON 34	G			MP		YES	
MON 35	G			MP		YES	
MON 36	F			MP		YES	
MON 36A	G			MP		YES	
MON 37	G			MP		YES	
MON 37A	G			MP		YES	
MON 38	G			MP		YES	

APPENDIX B – SUMMARY OF MAINTENANCE AND SURVEY WORK

Saint John River

(Maine/New Brunswick)

Reference Monuments recovered	93
Reference Monuments not recovered	8
Reference Monuments painted	1
Reference Monuments surveyed	73

St. Francis River

(Maine/New Brunswick)

Reference Monuments recovered	2
Reference Monuments not recovered	2
Reference Monuments surveyed	2

Highlands N.E. Section

(Maine/Quebec)

Monuments recovered	115
Monuments repaired or re-established	5
Monuments surveyed	105

Highlands S.W. Section

(New Hampshire/Quebec)

Monuments recovered	189
Monuments not recovered	10
Monuments repaired or re-established	2
Monuments surveyed	59

Halls Stream

(New Hampshire/Quebec)

Reference Monuments recovered	49
Reference Monuments not recovered	4

West Line (QC/VT)

(New Hampshire, Vermont/Quebec)

Monuments recovered	82
Monuments repaired or re-established	8
Monuments painted	5
Monuments surveyed	11

West Line (QC/NY)

(New York/Quebec)

Monuments recovered	62
Monuments surveyed	2

Lake Erie, Detroit and St. Clair Rivers

(Michigan/Ontario)

Monuments not recovered	8
Reference Monuments recovered	47
Reference Monuments not recovered	17
Reference Monuments established	2
Reference Monuments repaired or re-established	1
Reference Monuments painted	28

Meridian and 49th Parallel (MB/MN)

(Minnesota/Manitoba)

Monuments recovered	6
Monuments surveyed	6

49th Parallel (MB/ND)

(North Dakota/Manitoba)

Monuments recovered	41
Monuments repaired or re-established	6
Monuments painted	23
Monuments surveyed	34

49th Parallel (AB-SK-MB/MT- ND)
(North Dakota/Saskatchewan)

Monuments recovered	2
Monuments surveyed	2

49th Parallel (Similkameen River to West Kootenay River)
(Washington/British Columbia)

Monuments recovered	3
Reference Monuments recovered	2

49th Parallel (Columbia Valley to Similkameen River)
(Washington/British Columbia)

Monuments recovered	1
Monuments painted	1

49th Parallel (Pacific to Columbia Valley)
(Washington/British Columbia)

Monuments recovered	82
Monuments established	2
Monuments repaired or re-established	2
Monuments painted	72
Monuments surveyed	7

Vista Clearing Total 103.5 mi/166.5 km:

Section 8 – Highlands N.E. Section (Mon 314 to Mon 405) (ME/QC): The total length of 77.8 miles (125.2 km) of vista along the NE section of Maine and Québec International Boundary, were cleared of trees and underbrush.

Section 24 – 49th Parallel Columbia Valley to Similkameen (Mon 44A to Mon 59) (WA/BC): A segment of the vista 25.7 miles (41.3 km) in the Cascade Mountain Range between Washington State and British Columbia was cleared of trees and brush.

APPENDIX C – MONUMENTS ESTABLISHED

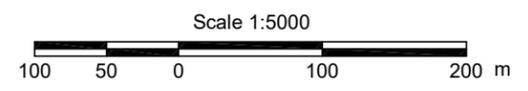


**BOUNDARY MONUMENT ESTABLISHED
BORNE FRONTIÈRE POSÉE**

**MON 3AA
MON 3AA1**

IBC SECTION SECTION CFI
49th Parallel (Pacific to Columbia Valley)
49e Parallèle (Pacifique à la Columbia Valley)

LOCATION LOCALISATION
Tsawwassen, BC
Point Roberts, WA



LEGEND LÉGENDE

- | | | |
|----------------------------|---|--------------------------|
| Newly established monument | □ | Nouvelle borne posée |
| Existing monument | ■ | Borne existante |
| International Boundary | — | Frontière internationale |

Distances shown are horizontal at general ground level and are expressed in metres and decimals thereof (except when shown otherwise). Geodetic azimuths are shown. All angles and distances are derived from GPS observations, NAD83, Epoch 2010.0.

Les distances apparaissant sur ce plan sont horizontales, réduites au niveau moyen du terrain et sont exprimées en mètres et décimales du mètre (sauf si indiqué autrement). Les azimuts géodésiques sont présentés. Les angles et les distances sont dérivés d'observations GPS, NAD83, Époque 2010.0.

NOTES NOTES

- MON 3 - Found and accepted as original evidence
Trouvée et acceptée comme indice probant
- MON 3AA - Set obelisk
Obélisque implanté
- MON 3AA1 - Set obelisk
Obélisque implanté
- MON 4 - Found and accepted as original evidence
Trouvée et acceptée comme indice probant

**PRELIMINARY GEOGRAPHIC COORDINATES
COORDONNÉES GÉOGRAPHIQUES PRÉLIMINAIRES**

MON 3AA : N 49° 00' 07.484" W 123° 02' 51.457"
MON 3AA1 : N 49° 00' 07.492" W 123° 02' 32.876"

MONUMENTED & SURVEYED BY ARPENTÉE & BORNÉE PAR

Etienne Michaud, a.g., Q.L.S.
Canadian Section Section canadienne

DATE OF SURVEY DATE DE L'ARPENTAGE
June 2022 Juin 2022



**INTERNATIONAL BOUNDARY COMMISSION
COMMISSION DE LA FRONTIÈRE INTERNATIONALE**



MON 3



MON 3AA



MON 3AA1



MON 4