

International Boundary Commission
United States and Canada
Joint Annual Report
2020



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Cover Photo:

West Line: View of the cleared boundary from Mon 592 looking west near North Troy, Vermont and Highwater, Quebec.

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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 2020, efforts were focused on the following categories: vista clearing (Passamaquoddy Bay, West Line, Lake Superior to Rainy River, Meridian and the 49th Parallel, 49th Parallel), monument maintenance and/or inspection (Passamaquoddy Bay, North Line, St. John River, Highlands N.E. and S.W., Halls Stream, West Line, St. Lawrence River, Lake Superior to Rainy River and 49th Parallel), and surveys (St. John River and 49th Parallel).

Measuring Success

The Commission is pleased to report that the work of maintaining the boundary is in line with its 15-year maintenance plan, despite minor setbacks to the year's activities due to the COVID-19 pandemic, and that the condition of the boundary meets the requirements from both countries.

The Commissioners

The United States Commissioner is Kyle K. Hipsley, who has long served the U.S. section, most recently as Deputy Commissioner. Jean Gagnon, Surveyor General for Canada, is 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 96th Joint Annual Report from the Commissioners to their respective Governments on the state of the U.S./Canada boundary.

COVID-19 Impact on IBC Operations

The World Health Organization (WHO) officially declared the novel coronavirus (COVID-19) outbreak to be a global pandemic on March 11, 2020. In an effort to control the spread of the disease, government leaders across the world imposed safety measures and restrictions on travel and activity. The border between the U.S. and Canada was closed on March 21, 2020 to all nonessential travel and remains closed as of the writing of this report. Employees at IBC offices in both the U.S. and Canadian sections quickly transitioned to working virtually from home to prevent possible transmission of the disease. Occasional office visits were made during the year to maintain administrative matters.

With everyone working from home and travel restrictions in place, the prudent decision was made to cancel the in-person spring Commissioners' meeting. In its place, several virtual meetings were held to discuss how to handle the field season and make adjustments to plans. The U.S. section decided to begin their field season on June 8, 2020 and finished in October. The Canadian section followed suit on August 17, 2020 and worked into December. Since IBC staff are considered essential employees, they were able to get out in the field without too much difficulty. However, to minimize interactions and contacts with the public, maintenance activities that would have required access to lands via a Port of Entry were postponed to the following field season. While this resulted in modifications to some of the maintenance activities, many of the projects and contracts were carried out as planned. Another variation from a typical field season's plan was that, whereas the Commissioners usually conduct several on-site field inspections, only one was made when U.S. Commissioner Kyle Hipsley visited an IBC crew at the Sweetgrass/Coutts Port of Entry between Montana and Alberta.

Additional effort was put forth by both sections to follow the COVID-19 safety guidelines and restrictions of the federal and local governments in the areas where each crew worked. This included but was not limited to: observing local quarantine regulations, securing individual hotel rooms to maintain adequate personal distance, keeping a ready supply of personal protective equipment (PPE), and using that PPE (face masks, disposable gloves, cleaning wipes, etc.) to lessen the risk of infection. Online courses, provided by the WHO, were also used so that personnel had adequate knowledge of the proper use of PPE. Throughout the entire field season there were only a couple of instances where IBC employees were in, what was considered by health regulations to be, "close contact" with individuals outside of the IBC who had tested positive for COVID-19. Those crews were tested and quarantined while awaiting their results, all of which came back negative.

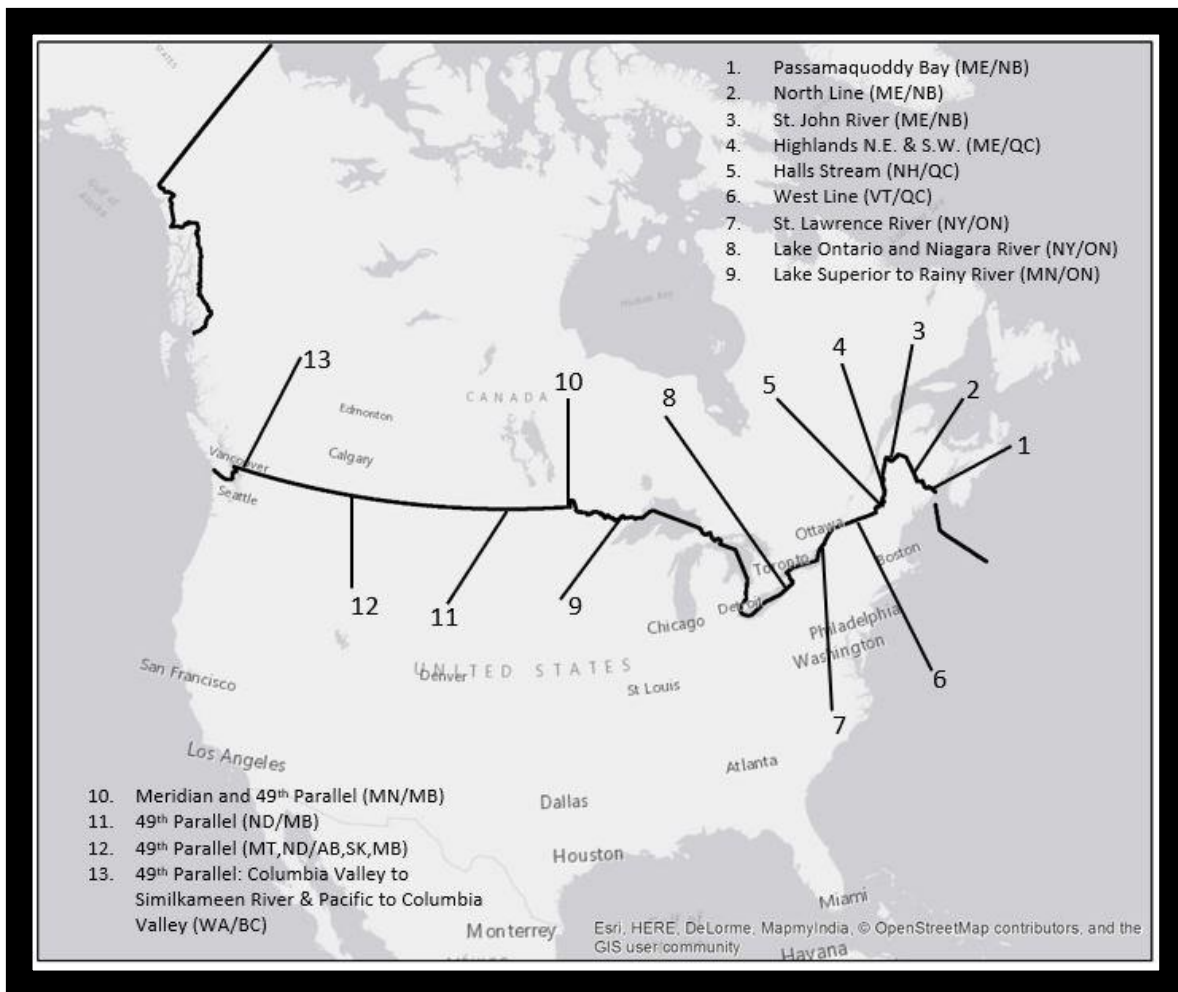
At the conclusion of the field season, with the coronavirus crisis still not under control worldwide, the fall Commissioners' meeting was cancelled. In lieu of that meeting, multiple virtual meetings were scheduled for the first part of 2021.

Despite all the impacts of the global pandemic, the IBC was still able to carry out a productive field season and stay largely on time with both the current year's goals and the 15-year plan.

MAINTENANCE ACTIVITIES

The 2020 field season began in June and ended in December. To ensure efficient and orderly management of boundary maintenance activities, the boundary is split into 8 sections and 30 subsections corresponding to areas with homogeneous characteristics. Projects are presented by subsections and activity from east to west, then north.

2020 Project Map



Sites of major maintenance activities

Passamaquoddy Bay (ME/NB) – Vista Clearing and Range Mark Maintenance



Figure 1- Range Mark 8 located in Eastport, ME (ME/NB)

Passamaquoddy Bay is an inlet of the Bay of Fundy between Maine and New Brunswick. The 25-mile (40-kilometer) boundary here passes between the islands of the bay in a series of 14 straight-line segments. The turning points between boundary segments are marked by large, brightly-painted range marks on the shores and islands of the bay.

As the bay has a huge tidal flow leading to harsh conditions, maintenance is required on a three-year cycle to keep the range marks in good condition. A contract was awarded to repair and paint the range marks and clear the lines of sight between some of the range marks in this section.

An additional project came about when a landowner, with erosion problems from the high surf, requested that a private contractor install stone riprap to prevent further damage to their property. The contractor notified the IBC that Range Mark 43, which sits on that property, had started to tip slightly as the shoreline around it was eroding. The U.S. section's field officer for the Eastern Region, Graig Hill, performed GPS surveys and assessed the condition of the range mark. He determined that Range Mark 43 will need to be restored and relocated.

North Line (ME/NB) – Monument Maintenance

The North Line begins at the source of the St. Croix River and runs approximately 125 km (78 mi) northward to its intersection with the St. John River, separating New Brunswick and Maine. Stretched across farms and forests, the rapidly growing vegetation of this boundary line necessitates frequent maintenance. In 2020, work on the

North Line was a continuation of the previous year's monument recovery and maintenance. Efforts this year focused on the southern half of the line, which starts at the source of the St. Croix River and extends



Figure 3- Setting the obelisk in place with a backhoe (ME/NB)



Figure 2- (Left) Mon 1B as recovered and (Right) Mon 1B after renewal (ME/NB)

to Bridgewater, ME. An IBC crew first assessed the condition of all monuments and determined the best way to access them since many are in difficult to reach areas. As they prepared for the project, obtaining the necessary concrete mix proved to be an added challenge because the number of deliveries was reduced as a result of the COVID-19 pandemic. Consequently, the IBC crew found it necessary to stock up on the mix each time a delivery did arrive. Monument repairs then commenced and ranged from minor fixes to the concrete bases to complete renewals. For monuments with issues only on the concrete base, the crew would carefully jackhammer the base away and remove the intact obelisk before preparing a new base on which it would be set. Some monuments had more extensive damage, such as those found with their granite obelisks broken off in fields where they had been struck by farm machinery or along roads where the damage was done by snowplows. In these cases, they were repaired using epoxy in

the cracks, which makes it almost impossible to tell they had ever been damaged. A large ornamental monument that was broken off by a snowplow near the Custom House in Houlton, ME took more effort to repair. Although essentially the same repair process was used, the size of the monument necessitated the insertion of a bigger steel rod, use of a core drill for a larger hole, and use of a backhoe to lift the obelisk to be drilled and set in place.

St. John River (ME/NB) – Reference Monument Inspection and Survey

The boundary follows the St. John River for 72 miles (115 kilometers) starting at the North Line and running west to the mouth of the St. Francis River. The goal of this year's project was to inspect the 190 reference monuments along the Canadian side of the St. John River. After work was complete, 96 monuments were found to be in good condition, 11 were found in poor condition, 10 were found to be destroyed, and 73 were not able to be located.

In addition, IBC Field Engineer Roger Reid prepared a list of 10 New Brunswick control monuments and one Canadian Base Network monument to survey. This was done so they can be used in the future to help further validate GPS observations of the reference monuments in this section. Adding to that, Mon 113A to 117-73 were inspected and surveyed on the North Line to eventually be tied into GPS surveys of the St. John River.



Figure 4- Courtney Roddick, CLS, and André Bédard setting up a GPS receiver over NB control monument 5510 (ME/NB)

Highlands N.E. and Highlands S.W. (ME/QC) – Monument Inspection and Maintenance



Figure 5- Étienne Michaud and Roger Reid preparing to restore a monument (ME/QC)

Passing through densely forested mountains and ridges, the N.E. and S.W. sections of the Highlands are some of the most difficult parts of the boundary to maintain. With the main objective of inspecting and maintaining monuments, two IBC crews were tasked to perform the work, each focusing on one of the two types of monuments in this section. One crew addressed the larger monuments that consist of an obelisk on a square concrete base. They inspected 63 monuments and renewed 16 of them. Maintenance on those mostly involved recapping deteriorating concrete bases or replacing broken off obelisks. Also, the position of a few monuments that had been moved or destroyed was recalculated. The second crew focused their attention on the smaller, disk-shaped monuments, inspecting 189 of them and performing maintenance on 117 of those. They made repairs to monuments that were found either loose in the ground, in an off-vertical position, or with cracked or disintegrating concrete. This crew also installed new bearing tree signs where previous ones had been destroyed by logging or blown down trees.

Halls Stream (NH/QC) – Reference Monument Maintenance and Inspection

From the Highlands South-West section the boundary follows Halls Stream until it intersects the 45th Parallel boundary also known as the West Line. This water boundary follows a shallow stream through heavy forest along much of its length. As it approaches the 45th Parallel, however, the stream passes through low farmland where it has a tendency 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.



Figure 6- ATV ride along the Halls Stream River (NH/QC)

In 2017, 64 monuments were identified as being at least 15 centimeters off from the boundary based on updated coordinates. In this year's field season, 60 of those monuments were located and removed. The other four were not able to be found and presumed to be lost in the river. These turning point monuments are 12-inch concrete cylinders about 2 to 3 feet long. They are placed flush with the ground and topped with a brass disk. As the level of accessibility varies in the areas where the monuments are located, so did the degree of removal. Those that were easier to access were fully removed, which was the case with five that were found in a Canadian farmer's field, while others that were hardest to reach had only the brass disks removed from their tops.



Figure 7 – TP 407, a typical turning point found in the Halls Stream section (NH/QC)

An additional part of this project was to investigate TP 551, an obelisk on a concrete base. Upon last inspection in 2018, this monument was discovered on its side on the shore with only a corner of the concrete base seen above ground. This year's inspection found that no part of the monument is any longer visible above ground, as it has been entirely swallowed by the alluviums over the past two years.

West Line (VT/QC) – Vista Clearing and Monument Maintenance



Figure 8 – View of the cleared boundary from Mon 568 (VT/QC)

The West Line, between Vermont and Quebec, crosses the scenic mountain vistas and gently rolling hills of the Eastern Townships. It also dips into two of the most scenic lakes of the Northeast, Lake Memphremagog and Lake Champlain, where many early chapters of American and Canadian history were written. Clearing the vista was the main focus of this year's field work in this section. Two clearing contracts were awarded to maintain an unobstructed 20-foot-wide vista. The first contract covered a distance of 22.5 miles (36 kilometers) from Monument 518 to 543. The second stretched from Monument 572 to 631 for a distance of 40.6 miles (65 kilometers). Additionally, an IBC crew worked on clearing two smaller areas from Monument 596B to 597 and Monument 563A to 570.

During the clearing work, the IBC crew placed carsonite posts to mark the boundary between Monuments 563A and 564 at the request of the Vermont Border Patrol office. While in that area, the crew observed several constructions within the restricted zone of the boundary, including utility poles and wires, concrete blocks, and fences. They performed a topographical survey to document the obstructions.

At one point during the project, an RCMP officer informed the local IBC office that clearing work had occurred near the municipality of Saint-Georges-de-Clarenceville in preparation of the demolition of an old building straddling the boundary. Étienne Michaud, an IBC field officer for the Canadian section, investigated the situation and found the two monuments located in the area to be in good condition and not damaged by the work done.

St. Lawrence River (NY/ON) – Reference Monument Maintenance

The St. Lawrence River is a section of water boundary separating the state of New York and the province of Ontario. Beginning at Cornwall Island and running southwesterly to Wolfe Island at the edge of Lake Ontario, the boundary is marked by turning points in the water, which are designated by reference monuments on the shore. The aim of this year's project was to inspect those reference monuments (from RM 7-59 to RM 88) and perform maintenance on them as needed. Because of travel restrictions in place due to the COVID-19 pandemic, only monuments on the Canadian side were visited.

Most of the monuments are bell-shaped concrete forms with their numbers molded on the side. Some of these have a disk cemented on the top, which has the number imprinted on it.



Figure 10 – Daniel Laviolette repairs a bell-shaped monument (NY/ON)

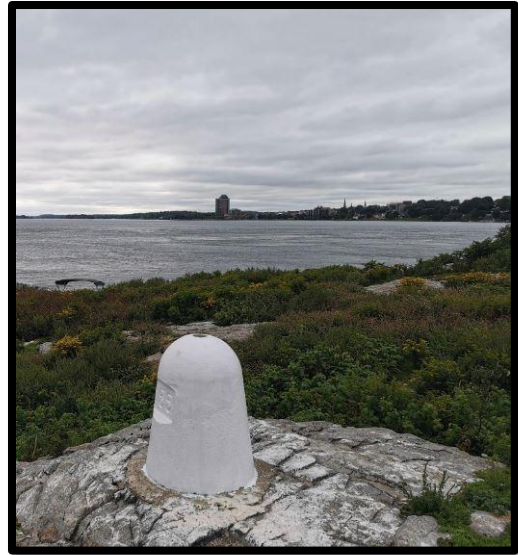


Figure 9 – RM 55, located on a small island near Brockville, ON (NY/ON)

Since many of these monuments were close to roads or in the backyards of private properties, access to them was fairly easy. Seven monuments located on Wolfe Island required taking the ferry that connects the island to Kingston, ON, while monuments on the other islands of the river were reached by small boat. In total, 30 reference monuments were inspected and one was not able to be recovered. Of those, 27 were painted and only four required minor repairs, which entailed filling cracks with cement to prevent further deterioration. Monuments on the U.S. side of the boundary will be visited in the 2021 field season and it can be reasonably assumed that they will be found in similarly good condition.

Lake Ontario and Niagara River (NY/ON) – Reference Monument Maintenance and Inspection

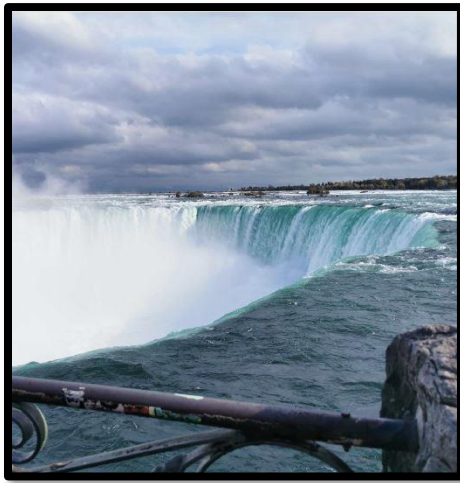


Figure 11 – View of the Horseshoe Falls near RM 20 (NY/ON)

This section of the boundary runs through Lake Ontario and then follows the Niagara River south until it reaches Lake Erie. This year's objective was to inspect and perform maintenance on the reference monuments along the Niagara River. However, due to COVID-19 travel restrictions, work was performed only on monuments on the Canadian side of the river. Most of these monuments are bell-shaped concrete markers, each with its number either molded on the side or stamped on a disk on top. Some are simply a disk cemented in a concrete wall or floor. A total of 17 monuments were inspected and all were found to be in a good condition. A coat of paint was applied to them to refresh their appearance and as a layer of protection. In addition, the installation of a new disk was originally planned for RM 10-63, which was not able to be recovered in 2013 and thought to have been destroyed by the construction of a new concrete sidewalk. But this year, the IBC crew was able to locate the monument with a RTK-GPS receiver under the concrete slab. They found it to be inside a protective cylinder with a cap and thus no new monument was needed.



Figure 12 – RM 5-41, a typical bell-shaped monument (NY/ON)

Lake Superior to Rainy River (MN/ON) – Vista Clearing and Monument Maintenance

This section is primarily a water boundary that runs for 290 miles (467 kilometers) between Minnesota and Ontario. Passing through 32 lakes and an equal number of connecting rivers in remote areas, the boundary is mainly accessible by canoe. Work this year consisted of clearing three portages in the boundary waters: Swamp Portage, Height of Land Portage, and Watap Portage. A total of 0.50 miles (0.80 kilometers) of vista was cleared on the portages and nine monuments were recovered in good condition while clearing work was performed.



Figure 13 – Clearing in progress at Swamp Portage (MN/ON)

Meridian and 49th Parallel (MN/MB) – Vista Clearing

Separating Minnesota and Manitoba, this section of the boundary line is generally swampy with dense tree growth. It stretches for 95 miles (153 kilometers) along the 49th Parallel and 26 miles (42 kilometers) along the Meridian Line going north until it reaches the Northwesternmost Point of Lake of the Woods. This project involved cutting 14.4 miles of vista that was last cleared in 2004. A contract for the work was issued to Northwest Angle Edge Riders, a nonprofit snowmobile club that uses land along the boundary for recreational purposes. All trees, brush, and limbs, within 10 feet (3 meters) of the boundary line on each side, were cut using a pair of clearing machines. This proved to be a particularly good winter with little snowfall and favorable temperatures to clear the normally swampy terrain. In addition to the clearing work, the 13 international boundary monuments along this section were inspected and photographed. These ornamental obelisk monuments are four to five feet tall and are made of a combination of cast iron, stainless steel, and washed pebble. The U.S. Section's Central Regional Field Officer, Bryan Cloutier, served as the Contracting Officer Representative for this project and conducted the final inspection, reporting that the entire length met or exceeded expectations.



Figure 14 - Mon 921 in the newly cleared vista (MN/MB)

49th Parallel (ND/MB) – Vista Clearing and Monument Inspection



Figure 15 - Looking east from monument 724 at the St John, ND/Lena, MB port of entry after clearing (ND/MB)

Originally, surveys were to be conducted along this section of the 49th Parallel to fill in gaps of previous surveys. Covid-19 restrictions on movement across the border made that project difficult to accomplish. An IBC crew instead focused their efforts on clearing the vista around the ports of entry in eastern North Dakota and Manitoba, as well as clearing patches of land along the boundary that have been too small to include in previous clearing contracts. A total of 16.92 miles (27.2 kilometers) of vista was cleared. In addition, while performing clearing work 36 monuments were recovered in good condition.

49th Parallel (MT, ND/AB, SK, MB) – Monument Maintenance

The project in this section focused on monuments along the boundary in Montana, Alberta, and Saskatchewan. The IBC crew worked to survey, recover, and repair or renew monuments starting from the Sweetgrass/Coutts Port of Entry and going east along the 49th Parallel. In all, six new monuments were established at the request of the Border Patrol, four monuments were renewed, and maintenance was performed on 11 others. During the project, U.S. Commissioner Kyle Hipsley visited to inspect the work being done. At his request, the crew installed a wall plaque on the retaining wall at the Sweetgrass/Coutts Port of Entry. They also painted a line as a visual marker of the boundary at the port of entry and stenciled each country's name on its respective side.



Figure 16 – finished retaining wall around base (MT/AB)



Figure 17 – Bridge plaque on the west side retaining wall at the Sweetgrass POE (MT/AB)



Figure 18 – Newly painted boundary line at the Sweetgrass/Coutts POE (MT/AB)

49th Parallel: Columbia Valley to Similkameen River & Pacific to Columbia Valley (WA/BC) – Vista Clearing



Figure 19 – Mon 18 (WA/BC)

The boundary line traverses steep mountains and dense woods in this remote area, making it one of the more difficult sections of the boundary to maintain. Reaching the line is only possible by the one road leading to it or by aircraft, which makes it difficult to access. Clearing work was due in this section, as it was last done in 2008. A vista clearing contract was issued to an experienced contractor. Originally, the contract was for 11.2 miles (18.1 kilometers), but COVID-19 restrictions and a large forest fire prevented completion of the work. Ultimately, 2.7 miles (4.3 kilometers) of vista was cleared of all underbrush and overhanging branches to create a 20-foot-wide view through the trees, with nothing obstructing the line of sight up to the horizon.

COMMISSIONERS' ACTIVITIES

Field Inspections

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 year, the global pandemic resulted in major travel restrictions forcing the Commissioners to limit inspections to their respective sides of the boundary.

This season, Commissioner Hipsley traveled to the 49th Parallel to visit the WRFO crew to inspect the replacements of intermediate line marks that were being replaced with full stainless-steel monuments and also oversaw the line marking and placing of a wall plaque marking the boundary at the Sweetgrass/Coutts port of entry.

Commissioner Gagnon did not inspect field crews this season, however Mathieu Fortin, Office Manager of the Canadian Section traveled to the St. John River between Maine and Quebec to inspect a survey crew performing GPS surveys of the reference marks on the Canadian side of the boundary supporting the ongoing updates to the geographic positions of the Turning Points from NAD27 to NAD83. Mr. Fortin also inspected a Canadian field crew performing monument maintenance and surveys in the Highlands between Maine and Quebec.

Commissioners' Meetings

Due to international travel restrictions and other scheduling conflicts, the customary spring meeting was cancelled. The Commissioners held subsequent conference calls over the course of the summer to discuss the ongoing projects and business of the organization. Travel restrictions remained in place for all of 2020 and the customary fall meeting was held via video teleconference in January 2021.

REGULATORY ITEMS

The Commission monitors the construction of all works within 10 feet (3 meters) of the boundary. Thus, all construction - whether a ditch, building, surface, underground structure (telephone, cable, electrical line, or gas pipeline), line of communication, or other - must first be authorized by the Commission. In 2020, the Commissioners processed the following applications:

- **Section 22 - 49th Parallel (Foothills to West Kootenay River)** : On February 4, 2020, permission was granted to construct cross fences connecting existing fences to a new cattle fence situated 3,05 meters North of the boundary between monuments 224 and 226.
- **Section 4 – St. John River: On April 3, 2020**, permission was granted to construct a new International Bridge, which will cross the St. John River at TP 106.
- **Section 11 – West Line (VT/QC): On April 8, 2020**, permission was granted to excavate and perform maintenance work on an existing gas pipeline near Mon 627A.
- **Section 15 – Lake Erie, Detroit and St. Clair River (MI/ON): On June 23, 2020**, permission was granted to install an underground fiber optic cable between TP 209 and TP 210.
- **Section 11 – West Line (VT/QC): On December 15, 2020**, permission was granted to demolish an existing line house just west of Mon 638.
- **Section 12 – West Line (NY/QC): On May 4, 2020**, permission was granted to install a buried transmission line in Lake Champlain between Mon 644 and 645A.

REPORT ON COMPARABLE EXPENDITURES

This report shows the total amount spent by both sections of the Commission as of March 31, 2020, 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 Commissioner's 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.

Certified Comparable Expenditures to March 31, 2020



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, 2020

	United States (USD)	Canada (CAD)
Total to March 31, 2019	26,880,307.36 \$	27,427,646.42 \$
<u>Projects from April 1, 2019 to March 31, 2020</u>		
Highlands N.E. Section (QC/ME) Project 201819019: Monument maintenance and Survey between monuments 324-12 and 340-21		149,937.91 \$
Highlands S.W. Section (QC/ME) Project 201919001: Inspection and maintenance between monuments 413-16 and 504-7		130,737.45 \$
Halls Stream (QC/NH) Project 201819020: As-built survey of 49 monumented TP and 4 Rm from TP699 to TP709		36,644.60 \$
West Line (QC/NY) Project 201819023: Monument Maintenance Mon 542, 554A, 555A, 566, 579, 580, 596A, 606A, 610, 629 and 753		203,815.35 \$
West Line (QC/NY) Project 201819024: Vista clearing contract between monuments 714A and 755A		87,313.04 \$
St. Lawrence River (ON/NY) Project 201719033: Monument maintenance: RM55 repaired		26,808.22 \$
49th Parallel (Columbia Valley to Similkameen River) Project 201819021: Vista clearing (partial) from mon 40 over 41 towards the east, for a total of 4.2 km		96,855.19 \$
49th Parallel (Pacific to Columbia Valley) Project 201919002: Vista clearing between monuments 26 and 39 (15.6 Km / 9.8 Mi)		71,252.34 \$
St. Francis River (ME/QC) ERFO Project GJH-01-19: RM Maintenance and Vista Clearing	93,868.39 \$	
North Line - North Half (ME/NB) ERFO Project GJH-02-19: Monument Maintenance Mon 49 to Mon 117-52	86,712.48 \$	
49th Parallel (MN,ND) - CRFO Project BCC-02-19: Control surveys clean up. GPS observations Mon 845 to Mon 853	4,178.79 \$	
Lake of the Woods to Lake Superior Surveys (MN,ON) CRFO Project BCC-01-19 Surveys for RMs renewed in 2019 (TP 73 - TP 176), (TP 321 - TP404)	63,811.14 \$	
Southeast Alaska (AK/BC) CRFO Project BCC-03-19: Monument Maintenance (Mon 0 - Mon 62)	202,734.43 \$	
49th Parallel - Lake Osoyoos (WA/BC) WRFO PDH-01-19: Vista Clearing (Mon 117A - Mon 118A)	12,477.04 \$	

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K1A 0Y7 Canada

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

49th Parallel (MT,ND/SK) WRFO PDH-02-19: Monument Maintenance and Surveys (Mon 380 - Mon 621)	163,149.72 \$
49th Parallel - Encroachment mitigated (WA/BC) WRFO PDH-04-19: Flagpole and sign relocation Smuggler's Inn	3,436.47 \$
North Line - South Half (ME/NB) Vista clearing contract IBC 01-19 (Mon 1 to Mon 49)	133,800.00 \$
North Line - North Half (ME/NB) Vista clearing contract (Mon 49 to Mon 117A) Remaining Balance from IBC 01-18	79,000.00 \$

Other expenditures from April 1, 2019 to March 31, 2020

Vehicle Replacement		28,979.50 \$
Boundary Project Related Equipment	13,524.92 \$	12,910.00 \$
Printing	7,480.00 \$	8,478.31 \$
Satellite Phones	4,199.98 \$	

Sub-total for 2019-20	868,373.36 \$	853,731.91 \$
Total as of March 31, 2020	27,748,680.72 \$	28,281,378.33 \$

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 **27,748,680.72 \$** is an accurate statement of the total amount expended to March 31, 2020 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

Washington DC 4/12/2022
 Place Date

I hereby certify that the above amount of **28,281,378.33 \$** is an accurate statement of the total amount expended to March 31, 2020 on the part of the Canada in the joint maintenance of the International Boundary Line under the Article IV of the Treaty of 1925.


 Jean Gagnon, Commissioner for Canada

Washington April 12 2022
 Place Date

COMMISSIONERS OF THE IBC

UNITED STATES		CANADA	
Otto H. Tittmann	1904 – 1915	William F. King	1904 – 1916
Edward C. Barnard	1915 – 1921	James J. McArthur	1917 – 1924
E. Lester Jones	1921 – 1929	John D. Craig	1925 – 1931
James H. Van Wagenen	1929 – 1935	Noel J. Ogilvie	1931 – 1947
Thomas Riggs	1935 – 1945	James M. Wardle	1947 – 1950
John A. Ulinski	1945 – 1953	J. Leslie Rannie	1950 – 1951
Samuel L. Golan	1953 – 1961	J. Earl R. Ross	1951 – 1957
Edward J. King	1961 – 1969	A. Frederick Lambert	1957 – 1976
Richard L. Herman	1969 – 1977	Alec C. McEwen	1976 – 1991
William M. Schreiber	1977 – 1981	Suzanne Jacques	1991 – 1996
Frank R. Whetstone	1981 – 1985	Michael O’Sullivan	1996 – 2005
David C. Fischer	1985 – 1991	Peter J. Sullivan	2005 – 2017
Allen C. Kolstad	1991 – 1993	Jean Gagnon	2017 –
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 –		

RETIREMENTS

PHILLIP D. HARGROVE



With many thanks and warm wishes, the United States Section announces the retirement of Phillip D. Hargrove. Mr. Hargrove, affectionately nicknamed “Uncle Phil” by his colleagues, began his career with the IBC in May 2010 and worked for more than 10 and a half years for the IBC through the end of 2020. He served as the Western Regional Field Officer for the U.S. Section.

During his tenure, Phil had several standout accomplishments. He was the first IBC officer to clear the part of the boundary that lies in the Blackfeet Indian Reservation. Since the IBC does not have jurisdiction in official Native American lands, permission must be obtained. Phil was able to accomplish that and cleared those areas in just one field season. He added Monument 0 in Southeast Alaska, which then became the first monument numerically in that section. His known skill in concrete work was displayed when he built a large monument in Juan de Fuca with the blessing of the local tribe and his tough-as-nails character was evident when he worked in the wilderness of the Alaska/Yukon boundary to clear the 141st Meridian.

A native of Wisconsin, Phil served as a Marine and is a decorated veteran of the Vietnam War. Capable of executing any project anywhere along the boundary, Phil was highly respected by his fellow field officers. He also consistently maintained great relationships with law enforcement, border patrol, and U.S. Fish and Wildlife Service personnel. On several occasions, he gave presentations to those entities on the workings of the IBC. Those lines of communication he established continue to be valuable assets.

We wish “Uncle Phil” all the best in his retirement years.

DANIEL FORTIN



The Canadian Section announces the retirement of Daniel Fortin, IBC Manager after serving 10 years with the Commission from 2009 to 2019. Since 2009, Daniel worked tirelessly alongside the Deputy Commissioner of the United States coordinating work, meetings, and all other necessary operational requirements between the two sections of the IBC.

In this capacity, he brought many fresh ideas from his background in the private sector as a registered land surveyor who owned his own business. While most of his days were spent in the office, as a true surveyor, he loved going out into the field whenever the opportunity arose.

One of his favorite areas of the boundary was along the Alaska/British Columbia, Yukon border where he spent many hours flying in helicopters and performing boundary inspections with his US colleague. Daniel always maintained a positive attitude and took great pride in the work

and success of the Commission.

We congratulate Daniel on his retirement and sincerely thank him for all his efforts in leaving the IBC and the boundary in better shape than when he arrived. And with a raised glass we say, “Once IBC, always IBC.”

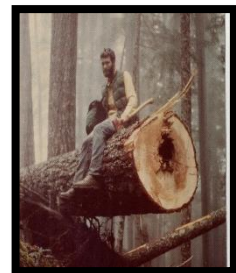
IN MEMORIUM



Mr. Carl J. Gustafson began his career with International Boundary Commission Canada in 1962. In his early years, Carl studied Mechanical Engineering and was hired as a summer student to work on the eastern sections of the Canada-US boundary. This was the beginning of a 40-year long career, working his way to Senior Field Engineer, where he supervised field crews in the maintenance of the international boundary. His reports provide a great resource detailing the work conducted each summer until his retirement in 2003.

Carl's passion of the boundary and his quest for perfection was part of his character. He coined the phrase "to walk the boundary, is to know the boundary" and he did walk, many miles, working on almost every section of the border. He was a master builder of the boundary monument and there are hundreds of examples of his work on the boundary. I think of the double monument in the Quebec highlands where he fashioned a railing around the site so people can see and learn about the border and its uniqueness. Carl was able to use his Mechanical Engineering background to design a tower on the peninsula of Point Roberts to improve visibility of the line across Boundary Bay, (BC/WA). He worked tirelessly to clear vegetation along some of the most notoriously dangerous sections of the boundary like the Alaska panhandle and the Rocky Mountains. If there was a monument to be built, Carl was the expert and one of his last designs is the marker on the Manitoba/South Dakota border where lies the Commissioners' Monument, bearing the name of each Commissioner, since 1925.

As a young man growing up in the border town of Stanstead, Quebec, Carl was no stranger to the boundary and it seems fitting that he chose a path close to his roots, one that would take him away from his home and fill him with adventure. He once spoke to me of the sacrifice and the regret of not always being close to home. He endured hardship, with the unfortunate loss of his son in 2016; he did find great comfort in his retirement years with his family and his grandson. Carl was a great conversationalist and knowledgeable in many aspect of life, having a superior memory of the people he met and the sections of the boundary he worked.



Carl Gustafson passed away on December 19, 2020 at the age of 76. He still lives on the boundary where many people to this day, remember him for his conversation, his life lessons and the wisdom he was able to pass on to those who knew him.

Joe Harrietha, Senior Surveyor, Canada

CERTIFICATION

We certify that the foregoing is a true record of the work done by the Commissioners during the year ending December 31, 2020 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.

Jean Gagnon
Commissioner for Canada

Kyle K. Hipsley
Commissioner for the United States



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

North Line (Maine/New Brunswick)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 1	G			MP		YES	
MON 1A	P		MA	MP		YES	S
MON 1B	P		MA	MP		YES	S
MON 2	G			MP		YES	S
MON 2A	P		MI	MP		YES	
MON 3	P		MA	MP		YES	S
MON 3A	P		MA	MP		YES	S
MON 4	G			MP		YES	S
MON 5	P		MI	MP		YES	
MON 5A	G			MP		YES	
MON 6	G			MP		YES	
MON 6A	P		MI	MP		YES	
MON 7	G			MP		YES	
MON 8	P		MI	MP		YES	
MON 8A	G			MP		YES	
MON 9	G			MP		YES	
MON 10	P		MI	MP		YES	
MON 10A-59	P		MI	MP		YES	
MON 10B	G			MP		YES	
MON 10C	P		MI	MP		YES	
MON 10D	G			MP		YES	
MON 10E	F		MI	MP		YES	

North Line
(Maine/New Brunswick)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 11	P					YES	
MON 11A	G			MP		YES	
MON 11B	F			MP		YES	
MON 12	G			MP		YES	
MON 13	G			MP		YES	S
MON 13A	P		MA	MP		YES	S
MON 13B	G			MP		YES	S
MON 14	G			MP		YES	
MON 14A	G			MP		YES	
MON 15	F			MP		YES	S
MON 15A	P		MA	MP		YES	S
MON 15B	G			MP		YES	S
MON 16	P		MI	MP		YES	
MON 16A	G			MP		YES	
MON 17	P		MI	MP		YES	
MON 17A	P		MI	MP		YES	
MON 18	P		MI	MP		YES	
MON 18A-66	G			MP		YES	S
MON 19A	G			MP		YES	S
MON 19A1	P		MI	MP		YES	S
MON 19A2	G			MP		YES	S
MON 19A3	G			MP		YES	S
MON 19A4	G			MP		YES	S
MON 19B	G			MP		YES	S
MON 19C	G			MP		YES	
MON 20	G			MP		YES	
MON 20A	G			MP		YES	
MON 21	P		MI	MP		YES	
MON 21A	G			MP		YES	
MON 21B	G			MP		YES	
MON 21C	G			MP		YES	
MON 21D	G			MP		YES	
MON 22	P		MI	MP		YES	
MON 22A	P		MI	MP		YES	
MON 23	G			MP		YES	
MON 23A	P		MI	MP		YES	
MON 24	F			MP		YES	
MON 24A	G			MP		YES	
MON 24B	G			MP		YES	
MON 25	G			MP		YES	
MON 26A	G			MP		YES	
MON 27	G			MP		YES	
MON 27A	G			MP		YES	
MON 28	G			MP		YES	
MON 28A	P		MI	MP		YES	

North Line
(Maine/New Brunswick)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 28B	G			MP		YES	
MON 28C	G			MP		YES	S
MON 29	G			MP		YES	S
MON 29A	G			MP		YES	S
MON 29B	G			MP		YES	
MON 30	G			MP		YES	
MON 30A	G			MP		YES	S
MON 30B	P					YES	S
MON 31	P					YES	S
MON 32	NR					NO	
MON 32A	NR					NO	
MON 32B	G			MP		YES	
MON 33	P		MI	MP		YES	
MON 33A	P					YES	
MON 34	G			MP		YES	
MON 35	G			MP		YES	S
MON 35A	NR					NO	
MON 35B	NR					NO	
MON 35C	P					YES	S
MON 35D	NR					NO	
MON 35E	P		MI	MP		YES	S
MON 36	P		MI	MP		YES	
MON 36A	F			MP		YES	
MON 37	P		MI	MP		YES	
MON 37A	G			MP		YES	
MON 38	G			MP		YES	
MON 39	G			MP		YES	
MON 39A	G			MP		YES	
MON 39B	G			MP		YES	
MON 40	G			MP		YES	
MON 40A	G			MP		YES	
MON 40B	G			MP		YES	
MON 41	G			MP		YES	
MON 41A	G			MP		YES	
MON 41B	P					YES	
MON 42	G			MP		YES	
MON 42A	G			MP		YES	
MON 43	P		MI	MP		YES	
MON 43B	G			MP		YES	
MON 44	G			MP		YES	
MON 44A	G			MP		YES	
MON 45	P		MI	MP		YES	
MON 45A	G			MP		YES	
MON 45B	G			MP		YES	
MON 46	G			MP		YES	

North Line
(Maine/New Brunswick)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 46A	G			MP		YES	
MON 47	P		MI	MP		YES	
MON 47A	G			MP		YES	
MON 48	G			MP		YES	
MON 113A	G					YES	S
MON 113B-40	G				DU	YES	S
MON 114-31	G					YES	S
MON 114A	G				DU	YES	S
MON 115	G				DU	YES	S
MON 116-52	G				DU	YES	S
MON 117-73	G					YES	S

Saint John River
(Maine/New Brunswick)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
RM C1-52(us&cb)	G				DU	YES	S
RM C1-52 mark1	G				DU	YES	S
RM C2-52	P				DU	YES	
RM C3-72(mark1)	P				DU	YES	
RM C3-72(mark2)	P				DU	YES	
RM C3	P				DU	YES	S
RM C5-52	D				DU	YES	
RM C5-72	G				DU	YES	
RM C6-72(mark1)	G				DU	YES	
RM C6	D				DU	YES	
RM C6-52	G				DU	YES	
RM C7A-72	G				DU	YES	
RM C12A-72	G				DU	YES	
RM C13-72	D				DU	YES	
RM C15-72	G				DU	YES	
RM C15-72(mark1)	G				DU	YES	
RM C15-72(mark2)	G				DU	YES	
RM C16-72	G				DU	YES	
RM C17-40	G				DU	YES	
RM C20-72	NR					NO	
RM C23-72	P				DU	YES	
RM C23A-40	G				DU	NO	
RM C25-54	NR					NO	
RM C-27-54	NR					NO	
RM C27-73	G				DU	YES	
RM C30-31	NR					NO	

Saint John River
(Maine/New Brunswick)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
RM C31-73	G				DU	YES	
RM C-31-52	D					YES	
RM C32	NR					NO	
RM C34-73 mark1	G				DU	YES	
RM C34 us&cb	G				DU	YES	
RM C-36-52 us&cb	P				DU	YES	
RM C36-75	G				DU	YES	
RM C-38-51	G				DU	YES	
RM C39-73\75	NR					NO	
RM C39	D				DU	YES	
RM C40	NR					NO	
RM C40A-40	NR					NO	
RM C40-51	D					NO	
RM C40-75	G				DU	YES	
RM C41A-39	D				DU	YES	
RM C41-51	NR					NO	
RM C42-75	G				DU	YES	
RM C-42-52	NR					NO	
RM C43-75(mark2)	G				DU	YES	
RM C43-75(mark1)	G				DU	YES	
RM C43-75	G				DU	YES	
RM C44A-75	G				DU	YES	
RM C44	G				DU	YES	
RM C44B-75	D				DU	YES	
RM C45-75	G				DU	YES	
RM C-45-52	D				DU	YES	
RM C45A-75	G				DU	YES	
RM C46	NR					NO	
RM C47	G				DU	YES	
RM C48-75	NR					NO	
RM C48	G				DU	YES	
RM C49-75	F				DU	YES	S
RM C49	G				DU	YES	
RM C49A-75	G				DU	YES	
RM C50	G				DU	YES	
RM C50-75	D				DU	YES	
RM C-50A-75	NR					NO	
RM C51-75	NR					NO	
RM C-51-51	NR					NO	
RM C51	NR					NO	
RM C52-75(mark1)	G				DU	YES	
RM C52	G				DU	YES	
RM C52-75(mark2)	G				DU	YES	
RM C53	G				DU	YES	
RM C54A-75	G				DU	YES	

Saint John River
(Maine/New Brunswick)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
RM C54	G				DU	YES	
RM C55-75	G				DU	YES	
RM C-55-51	NR					NO	
RM C55A-39	NR				DU	NO	
RM C55A-51	NR					NO	
RM C-56-51	NR					NO	
RM C56A-39	NR				DU	NO	
RM C56	NR					NO	
RM C56A-75	G				DU	YES	
RM C-57-51	NR					NO	
RM C57-75	NR					NO	
RM C58-75	NR					NO	
RM C59A-51	NR					NO	
RM C59-75	NR					NO	
RM C59	P				DU	NO	
RM C60-75	G				DU	YES	
RM C61A-75	G				DU	YES	
RM C62-75	G				DU	YES	
RM C62	G				DU	YES	
RM C-63-51	NR					NO	
RM C63-75	G				DU	YES	
RM C64	G				DU	YES	
RM C64-76	NR					NO	
RM C65-75	NR					NO	
RM C-65-51	NR					NO	
RM C65A-76	D				DU	YES	
RM C66	D				DU	YES	
RM C66A-75	G				DU	YES	
RM C67	G				DU	YES	
RM C67A-75	G				DU	YES	
RM C68	NR					NO	
RM C68A-75	G				DU	YES	
RM C68B-76	G				DU	YES	
RM C69	G				DU	YES	
RM C69A-76	G				DU	YES	
RM C69A-76	G				DU	YES	
RM C70	G				DU	YES	
RM C70-75	G				DU	YES	
RM C70A-76	G				DU	YES	
RM C-71-31	NR					NO	
RM C71-76	G				DU	YES	
RM C72A-76	G				DU	YES	
RM C72	G				DU	YES	
RM C73	G				DU	YES	
RM C74	NR					NO	

Saint John River
(Maine/New Brunswick)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
RM C75	G				DU	YES	
RM C76A-51	G				DU	YES	
RM C76	P				DU	YES	
RM C77	G				DU	YES	
RM C78A-76	G				DU	YES	
RM C78	G				DU	YES	
RM C79	G				DU	YES	
RM C79A-76	G				DU	YES	
RM C80	G				DU	YES	
RM C80-76	P				DU	YES	
RM C81	G				DU	YES	
RM C-81-52	NR					NO	
RM C81A-76	G				DU	YES	
RM C82-76	NR					NO	
RM C83-76	NR					NO	
RM C-83-51	NR					NO	
RM C84-76	NR					NO	
RM C-84-51	NR					NO	
RM C-85-51	NR					NO	
RM C85A-39	NR					NO	
RM C85	NR					NO	
RM C-86-76	G				DU	YES	
RM C86-62	NR					NO	
RM C86	NR					NO	
RM C87	G				DU	YES	
RM C87-76	G				DU	YES	
RM C88-52	NR					NO	
RM C88	G				DU	YES	
RM C89	F				DU	YES	
RM C90-76	NR					NO	
RM C90	G				DU	YES	
RM C91-77	NR					NO	
RM C91	G				DU	YES	
RM C92-77	G				DU	YES	
RM C92A-51	NR					NO	
RM C93	G				DU	YES	
RM C93-77	G				DU	YES	
RM C94A-77	G				DU	YES	
RM C94	G				DU	YES	
RM C94B-77	G				DU	YES	
RM C95A-77	G				DU	YES	
RM C95	F				DU	YES	
RM C96	P				DU	YES	
RM C96-77	G				DU	YES	
RM C-97-51	NR					NO	

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

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
RM C97-77	NR					NO	
RM C98-77	G				DU	YES	
RM C98	G				DU	YES	
RM C99	P				DU	YES	
RM C100-51	G				DU	YES	
RM C101	G				DU	YES	
RM C102-77(mark1)	F				DU	YES	
RM C102-77(mark2)	G				DU	YES	
RM C103-77	NR					NO	
RM C104-77	NR					NO	
RM C104	G				DU	YES	
RM C-105	G				DU	YES	
RM C105-77	G				DU	YES	
RM C106-77(mark1)	G				DU	YES	
RM C-106-77	NR					NO	
RM C22	F				DU	YES	S

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

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 314	G			MP		YES	
MON 315	F		MI	MP	DU	YES	
MON 316	F		MI		DU	YES	
MON 317	G					YES	
MON 318	G					YES	
MON 318A	P		MA		DU	YES	S
MON 318B	F					YES	S
MON 319	D		MA		DU	YES	S
MON 320	G	R			DU	YES	S
MON 321	G			MP		YES	
MON 322	G			MP		YES	
MON 323	G		MA		DU	YES	S
MON 324	G			MP		YES	
MON 325	G					YES	
MON 326	G					YES	
MON 327	G					YES	
MON 328	G					NO	
MON 329	G					YES	
MON 330	G					YES	
MON 331	G					YES	
MON 332	G	R			DU	YES	S

Highlands N.E. Section
(Maine/Quebec)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 332.1	G	R			DU	YES	S
MON 333	P				DU	YES	
MON 334	G					YES	
MON 335	G					YES	
MON 336	P				DU	YES	
MON 337	P					YES	
MON 338	P					YES	
MON 339	D	R			DU	YES	S
MON 340	G			MP		YES	
MON 341	D					YES	
MON 341.35	G	R			DU	YES	
MON 341.36	G	R			DU	YES	
MON 342	G	R			DU	YES	S
MON 342.1	G	R			DU	YES	
MON 342.2	G	R			DU	YES	
MON 342.3	G	R			DU	YES	
MON 343	G					YES	
MON 344	G				DU	YES	
MON 345	G				DU	YES	
MON 346	G				DU	YES	
MON 347	D					YES	
MON 348	G					YES	
MON 349	G					YES	
MON 350	D					YES	
MON 351	G					YES	
MON 351A	G		MA		DU	YES	S
MON 351A	G	R			DU	YES	S
MON 351B	G		MA		DU	YES	S
MON 351B	G	R			DU	YES	
MON 352	G					YES	
MON 356	G					YES	
MON 357	P				DU	YES	
MON 358	G					YES	
MON 359	P				DU	YES	
MON 360	P				DU	YES	
MON 361	G					YES	
MON 362	G					YES	
MON 363	G					YES	
MON 364	G					YES	
MON 365	G					YES	
MON 373	G					YES	
MON 374	G					YES	
MON 375	P				DU	YES	
MON 376	G					YES	
MON 377	G					YES	

Highlands N.E. Section
(Maine/Quebec)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 380	P				DU	YES	
MON 382	G					YES	
MON 391	G				DU	YES	
MON 391.1	G	R			DU	YES	
MON 391.2	G	R			DU	YES	
MON 391.3	G				DU	YES	
MON 391.4	G				DU	YES	
MON 391.5	G				DU	YES	
MON 391.6	G	R			DU	YES	
MON 391.7	G				DU	YES	
MON 392	G				DU	YES	
MON 392.1	G				DU	YES	
MON 392.2	G	R			DU	YES	
MON 392.3	G				DU	YES	
MON 392.4	G	R			DU	YES	
MON 392.5	G	R			DU	YES	
MON 392.6	G				DU	YES	
MON 392.7	G	R			DU	YES	
MON 392.8	G				DU	YES	
MON 392.9	G	R			DU	YES	
MON 392.10	G	R			DU	YES	
MON 392.11	G	R			DU	YES	
MON 392.12	G	R			DU	YES	
MON 392.13	G	R			DU	YES	
MON 392.14	G	R			DU	YES	
MON 392.15	G		MI		DU	YES	
MON 392.16	G	R			DU	YES	
MON 392.17	G	R			DU	YES	
MON 393	D				DU	NO	
MON 393.1	G	R			DU	YES	
MON 393.2	G	R			DU	YES	
MON 393.3	G	R			DU	YES	
MON 393.4	G	R			DU	YES	
MON 393.5	G	R			DU	YES	
MON 393.6	G	R			DU	YES	
MON 393.7	G	R			DU	YES	
MON 393.8	G	R			DU	YES	
MON 393.9	G				DU	YES	
MON 393.10	G	R			DU	YES	
MON 393.11	G				DU	YES	
MON 393.12	G	R			DU	YES	
MON 393.13	G	R			DU	YES	
MON 393.14	G	R			DU	YES	
MON 393.15	G	R			DU	YES	
MON 393.16	G	R			DU	YES	

Highlands N.E. Section
(Maine/Quebec)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 394	G				DU	YES	
MON 394.1	G				DU	YES	
MON 394.2	G				DU	YES	
MON 394.3	G				DU	YES	
MON 394.4	G	R			DU	YES	
MON 394.5	G	R			DU	YES	
MON 394.6	G	R			DU	YES	
MON 394.7	G	R			DU	YES	
MON 394.8	G	R			DU	YES	
MON 394.9	G	R			DU	YES	
MON 394.10	G	R			DU	YES	
MON 394.11	G	R			DU	YES	
MON 394.12	G	R			DU	YES	
MON 394.13	G	R			DU	YES	
MON 395	G				DU	YES	
MON 395.1	G	R			DU	YES	
MON 395.2	G	R			DU	YES	
MON 395.3	G	R			DU	YES	
MON 395.4	G	R			DU	YES	
MON 395.5	G		MI		DU	YES	
MON 395.6	G	R			DU	YES	
MON 395.7	G	R			DU	YES	
MON 395.8	G	R			DU	YES	
MON 395.9	G	R			DU	YES	
MON 395.10	G	R			DU	YES	
MON 395.11	G	R			DU	YES	
MON 395.12	G	R			DU	YES	
MON 395.13	G	R			DU	YES	
MON 395.14	G	R			DU	YES	
MON 395.15	G				DU	YES	
MON 396	P				DU	YES	
MON 396.1	G	R			DU	YES	
MON 396.2	G				DU	YES	
MON 396.3	G				DU	YES	
MON 396.4	G	R			DU	YES	
MON 396.5	G	R			DU	YES	
MON 396.6	G				DU	YES	
MON 396.7	G	R			DU	YES	
MON 396.8	G				DU	YES	
MON 396.9	G	R			DU	YES	
MON 396.10	G		MI		DU	YES	
MON 396.11	G	R			DU	YES	
MON 396.12	G				DU	YES	
MON 396.13	G	R			DU	YES	
MON 396.14	G	R			DU	YES	

Highlands N.E. Section
(Maine/Quebec)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 396.15	G		MI		DU	YES	
MON 396.16	G	R			DU	YES	
MON 397	F				DU	YES	
MON 397.1	G				DU	YES	
MON 397.2	G	R			DU	YES	
MON 398.13	G	R			DU	YES	
MON 399	G				DU	YES	
MON 399.1	G		MI		DU	YES	
MON 399.2	G	R			DU	YES	
MON 399.3	G	R			DU	YES	
MON 399.4	G	R			DU	YES	
MON 399.5	G	R			DU	YES	
MON 399.6	G	R			DU	YES	
MON 399.7	G	R			DU	YES	
MON 399.8	G	R			DU	YES	
MON 399.9	G	R			DU	YES	
MON 399.10	G	R			DU	YES	
MON 399.11	G	R			DU	YES	
MON 399.12	G				DU	YES	
MON 400.1	G	R			DU	YES	
MON 400.2	G	R			DU	YES	
MON 400.3	G	R			DU	YES	
MON 400.4	G	R			DU	YES	
MON 400.5	G				DU	YES	
MON 400.6	G	R			DU	YES	
MON 400.7	G		MI		DU	YES	
MON 400.8	G	R			DU	YES	
MON 400.9	G	R			DU	YES	
MON 400.10	G	R			DU	YES	
MON 400.11	G	R			DU	YES	
MON 400.12	G				DU	YES	
MON 400.13	G				DU	YES	
MON 400.14	G				DU	YES	

Highlands S.W. Section
(Maine, New Hampshire/Quebec)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 427.2	G				DU	YES	
MON 427.3	G				DU	YES	
MON 427.4	G				DU	YES	
MON 427.5	G				DU	YES	

Highlands S.W. Section
(Maine, New Hampshire/Quebec)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 427.6	G				DU	YES	
MON 427.7	G				DU	YES	
MON 427.8	G				DU	YES	
MON 427.9	G				DU	YES	
MON 427.10	G	R			DU	YES	
MON 427.11	G	R			DU	YES	
MON 427.12	G		MI		DU	YES	
MON 427.13	G				DU	YES	
MON 427.14	G	R			DU	YES	
MON 427.14	G				DU	YES	
MON 427.15	G				DU	YES	
MON 427.16	G	R			DU	YES	
MON 428	G		MI		DU	YES	
MON 428	F				DU	YES	
MON 428.1	G	R			DU	YES	
MON 428.2	G	R			DU	YES	
MON 428.3	G	R			DU	YES	
MON 428.4	G	R			DU	YES	
MON 428.5	G	R			DU	YES	
MON 428.6	G				DU	YES	
MON 428.7	G	R			DU	YES	
MON 428.8	G				DU	YES	
MON 428.9	G	R			DU	YES	
MON 428.10	G				DU	YES	
MON 428.11	G				DU	YES	
MON 429	P				DU	YES	
MON 429.1	G	R			DU	YES	
MON 429.2	G				DU	YES	
MON 429.3	G				DU	YES	
MON 429.4	G				DU	YES	
MON 429.5	G	R			DU	YES	
MON 429A	G		MA		DU	YES	
MON 429A	F				DU	YES	
MON 429.6	G				DU	YES	
MON 429B	G		MA		DU	YES	
MON 429B	F				DU	YES	
MON 429.7	G				DU	YES	
MON 429.8	G				DU	YES	
MON 430	F				DU	YES	
MON 483.18	G				DU	YES	
MON 483.19	G	R			DU	YES	
MON 483.20	G	R			DU	YES	
MON 483.21	G		MI		DU	YES	
MON 483.22	G	R			DU	YES	
MON 483.23	G	R			DU	YES	

Highlands S.W. Section
(Maine, New Hampshire/Quebec)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 483.24	G	R			DU	YES	
MON 484 (WEST POST)	G				DU	YES	
MON 484A	G		MA		DU	YES	S
MON 484A	F				DU	YES	
MON 484.1	G				DU	YES	
MON 484.2	G		MI		DU	YES	
MON 484.3	G	R			DU	YES	
MON 484.4	G				DU	YES	
MON 484.5	G				DU	YES	
MON 484.6	G	R			DU	YES	
MON 484.7	G	R			DU	YES	
MON 484.8	F				DU	YES	
MON 484.9	G				DU	YES	
MON 484.10	G				DU	YES	
MON 484.11	G				DU	YES	

Halls Stream
(New Hampshire/Quebec)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON TP 395	D				DU	YES	
MON TP 396	D				DU	YES	
MON TP 398	D				DU	YES	
MON TP 399	D				DU	YES	
MON TP400	D				DU	YES	
MON TP401	D				DU	YES	
MON TP402	D				DU	YES	
MON TP403	D				DU	YES	
MON TP404	D				DU	YES	
MON TP405	D				DU	YES	
MON TP406	D				DU	YES	
MON TP407	D				DU	YES	
MON TP408	D				DU	YES	
MON TP409	D				DU	YES	
MON TP413	D				DU	YES	
MON TP414	D				DU	YES	
MON TP415	D				DU	YES	
MON TP418	D				DU	YES	
MON TP419	D				DU	YES	
MON TP420	D				DU	YES	
MON TP421	D				DU	YES	
MON TP422	D				DU	YES	

Halls Stream
(New Hampshire/Quebec)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON TP423	D				DU	YES	
MON TP424	D				DU	YES	
MON TP425	D				DU	YES	
MON TP427	D				DU	YES	
MON TP428	D				DU	YES	
MON TP429	D				DU	YES	
MON TP430	D				DU	YES	
MON TP431	D				DU	YES	
MON TP432	D				DU	YES	
MON TP433	D				DU	YES	
MON TP434	D				DU	YES	
MON TP435	D				DU	YES	
MON TP436	D				DU	YES	
MON TP437	NR					NO	
MON TP438	D				DU	YES	
MON TP446	D				DU	YES	
MON TP447	D				DU	YES	
MON TP448	D				DU	YES	
MON TP449	D				DU	YES	
MON TP 478	NR					NO	
MON TP 479	NR					NO	
MON TP 481	D				DU	YES	
MON TP 482	D				DU	YES	
MON TP 483	D				DU	YES	
MON TP 484	D				DU	YES	
MON TP 485	D				DU	YES	
MON TP551	NR					NO	
MON TP 580	D				DU	YES	
MON TP 581	D				DU	YES	
MON TP582	D				DU	YES	
MON TP 583	D				DU	YES	
MON TP 584	D				DU	YES	
MON TP 586	D				DU	YES	
MON TP 594	NR					NO	
MON TP 595	D				DU	YES	
MON TP 596	D				DU	YES	
MON TP 597	D				DU	YES	
MON TP 598	D				DU	YES	
MON TP 599	D				DU	YES	
MON TP 600	D				DU	YES	
MON TP 601	D				DU	YES	
MON TP 602	D				DU	YES	
MON TP 603	D				DU	YES	

West Line (QC/VT)
(Vermont/Quebec)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 563	G					NO	
MON 563A	G					NO	
MON 564	G					YES	
MON 564A	G					NO	
MON 565	G					NO	
MON 565A	G					NO	
MON 565B	G					NO	
MON 566	G					NO	
MON 567	G					NO	
MON 568	G					NO	
MON 569	G					NO	
MON 570	G					NO	
MON 596B	G					NO	
MON 597	G					NO	
MON 637B	G				DU	YES	
MON 638	G				DU	YES	

St. Lawrence River
(New York/Ontario)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
RM 17-59	G			MP	DU	YES	
RM 18-58	G		MI	MP	DU	YES	
RM 20-59	G			MP	DU	YES	
RM 22-58	G			MP	DU	YES	
RM 23-58	G			MP	DU	YES	
RM 25-58	G		MI	MP	DU	YES	
RM 28-59	G				DU	YES	
RM 35-59	G			MP	DU	YES	
RM 38-78	G			MP	DU	YES	
RM 39-59	F			MP	DU	YES	
RM 40-59	G				DU	YES	
RM 41-59	G			MP	DU	YES	
RM 48-59	G			MP	DU	YES	
RM 49-59	G			MP	DU	YES	
RM 50	G		MI	MP	DU	YES	
RM 51-59	G			MP	DU	YES	
RM 52-59	G			MP	DU	YES	
RM 54	NR					NO	
RM 55	G			MP	DU	YES	
RM 56	G			MP	DU	YES	
RM 57	G			MP	DU	YES	

***St. Lawrence River
(New York/Ontario)***

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
RM 58	G			MP	DU	YES	
RM 61	G			MP	DU	YES	
RM 62	G			MP	DU	YES	
RM 82	G			MP	DU	YES	
RM 83	G			MP	DU	YES	
RM 84	G			MP	DU	YES	
RM 85	G			MP	DU	YES	
RM 86	G			MP	DU	YES	
RM 87-98	G			MP	DU	YES	

***Lake Ontario and Niagara River
(New York/Ontario)***

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
RM 88	G		MI	MP	DU	YES	
RM 1-41	G			MP	DU	YES	
RM 3-41	G			MP	DU	YES	
RM 5-41	G			MP	DU	YES	
RM 7-67	G				DU	YES	
RM 10-63	G				DU	YES	S
RM 12-41	G			MP	DU	YES	
RM 14-41	G			MP	DU	YES	
RM 16-41	G			MP	DU	YES	
RM 18-41	G			MP	DU	YES	
RM 20-41	G				DU	YES	
RM 26-41	G			MP	DU	YES	
RM 28-85	G			MP	DU	YES	
RM 30-41	G			MP	DU	YES	
RM 31-41	G			MP	DU	YES	
RM 32-41	G			MP	DU	YES	
RM 33-98	G			MP	DU	YES	
RM 35-41	G			MP	DU	YES	

***Lake Superior to Rainy River
(Minnesota/Ontario)***

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 1 (TP 766)	G				DU	YES	
MON 2 (TP 767)	G				DU	YES	

**Lake Superior to Rainy River
(Minnesota/Ontario)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 3 (TP 768)	G				DU	YES	
MON 4 (TP 982)	G				DU	YES	
MON 5 (TP 983)	G				DU	YES	
MON 6 (TP 984)	G				DU	YES	
MON 7 (TP 1161)	G				DU	YES	
MON 8 (TP 1162)	G				DU	YES	
MON 9 (TP 1163)	G				DU	YES	

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

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 720	G					NO	
MON 721	G					NO	
MON 722	G					NO	
MON 722A	G					NO	
MON 722B	G					NO	
MON 723	G					NO	
MON 723AA	G					NO	
MON 723A	G					NO	
MON 724	G					NO	
MON 725	G					NO	
MON 726	G					NO	
MON 727	G					NO	
MON 732	G					NO	
MON 733	G					NO	
MON 734	G					NO	
MON 734A-98	G					NO	
MON 734B-66	G					NO	
MON 734C	G					NO	
MON 735	G					NO	
MON 736	G					NO	
MON 737	G					NO	
MON 753A	G					NO	
MON 754	G					NO	
MON 762	G					NO	
MON 762A	G					NO	
MON 763	G					NO	
MON 763A	G					NO	
MON 764	G					NO	
MON 765	G					NO	
MON 765A-66	G					NO	

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

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 765A-66	G					NO	
MON 766	G					NO	
MON 779A	G					NO	
MON 779B	G					NO	
MON 779C	G					NO	
MON 780	G					NO	

49th Parallel (AB-SK-MB/MT- ND)
(Montana/Alberta)

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 333AA	G			MP		NO	S
LM LM	G	NM				YES	
MON 334	G			MP		YES	S
MON 334A	G	NM		MP		YES	S
MON 335	G			MP		YES	S
MON 336	G			MP		YES	S
MON 336A	G	R		MP		YES	S
MON 337	G			MP		YES	S
MON 337A	G	NM		MP		YES	S
MON 338	G			MP		YES	S
MON 338A	G	R		MP		YES	S
MON 339	G			MP		YES	S
MON 340	G			MP		YES	S
MON 340A	G	NM		MP		YES	S
MON 340B	G	NM		MP		YES	S
MON 341	G			MP		YES	S
MON 341AA	G	NM		MP		YES	S
MON 341A	G			MP		YES	S
MON 342	G			MP		YES	S
MON 343	G	R				NO	
MON 344	G	R				NO	

APPENDIX B – SUMMARY OF MAINTENANCE AND SURVEY WORK

North Line

(Maine/New Brunswick)

Monuments recovered	118
Monuments not recovered	5
Monuments repaired or re-established	31
Monuments painted	105
Monuments surveyed	35

Saint John River

(Maine/New Brunswick)

Reference Monuments recovered	123
Reference Monuments not recovered	54
Reference Monuments surveyed	5

Highlands N.E. Section

(Maine/Quebec)

Monuments recovered	189
Monuments repaired or re-established	107
Monuments painted	6
Monuments surveyed	12

Highlands S.W. Section

(Maine, New Hampshire/Quebec)

Monuments recovered	64
Monuments repaired or re-established	28
Monuments surveyed	1

Halls Stream

(New Hampshire/Quebec)

Monuments recovered	60
Monuments not recovered	5

West Line (QC/VT)

(Vermont/Quebec)

Monuments recovered	16
---------------------	----

St. Lawrence River

(New York/Ontario)

Reference Monuments recovered	29
Reference Monuments not recovered	1
Reference Monuments repaired or re-established	3
Reference Monuments painted	27

Lake Ontario and Niagara River

(New York/Ontario)

Reference Monuments recovered	18
Reference Monuments repaired or re-established	1
Reference Monuments painted	15
Reference Monuments surveyed	1

Lake Superior to Rainy River

(Minnesota/Ontario)

Monuments recovered	9
---------------------	---

49th Parallel (MB/ND)

(North Dakota/Manitoba)

Monuments recovered	36
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49th Parallel (AB-SK-MB/MT- ND)
(Montana/Alberta)

Monuments recovered	20
Monuments established	5
Monuments repaired or re-established	4
Monuments painted	18
Monuments surveyed	18
Line Marks recovered	1
Line Marks established	1

Vista Clearing Sub Totals:

Section 1 - Passamaquoddy Bay (TP 1 to TP 15) (ME/NB): Approx. 0.6 miles / 1.0 kilometers total between various ranges

Section 17 - Lake Superior to Rainy River (TP 279 to TP 1796) (MN/ON): Portages between Mon 1 and Mon 9 for a distance of 0.8 miles / 1.3 kilometers

Section 19 - Meridian and 49th Parallel (MON 833 to MON 925) (MN/MB): Mon 913-925 for a distance of 14.4 miles /23.2 kilometers

Section 19 - Meridian and 49th Parallel (MON 833 to MON 925) (MN/MB): Mon 833-891 for a distance of 58.9 miles / 94.7 kilometers

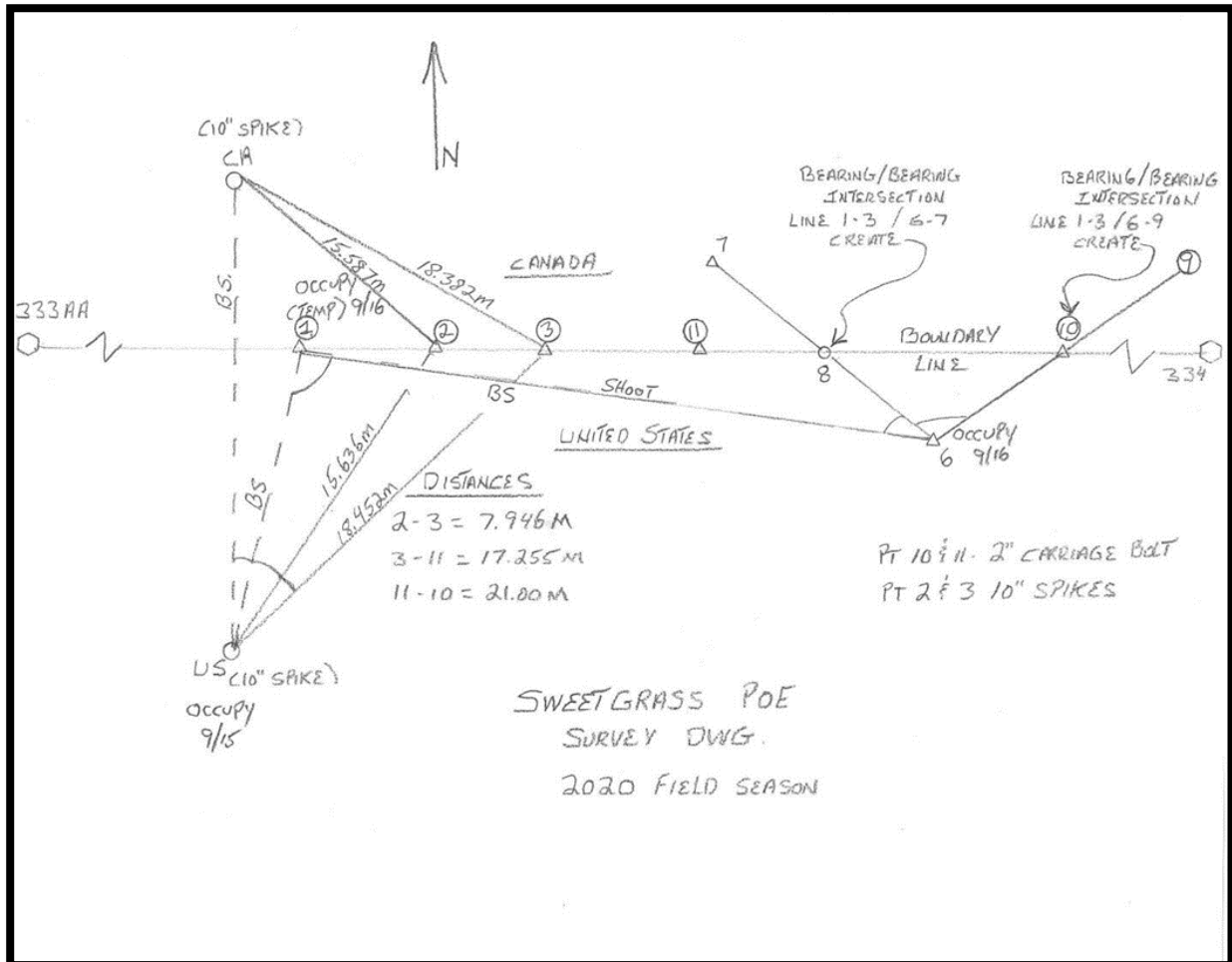
Section 20 - 49th Parallel (MON 671 to MON 832A) (ND/MB): Mon 720-780 for a distance of 18.7 miles / 30.1 kilometers

Section 24 - 49th parallel: Columbia Valley to Similkameen River (MON 43 to MON 109) and Section 25 - 49th parallel: Pacific to Columbia Valley (MON 0 to MON 42) (BC/WA): Mon39 to 60 m east of Mon 44A (excluding Mon 41 to east of Columbia Valley) for a distance of 2.7 miles / 4.3 kilometers

Vista Clearing Total: 96.1 miles / 154.7 kilometers

APPENDIX C – MONUMENTS ESTABLISHED

SWEETGRASS WEST TABLET



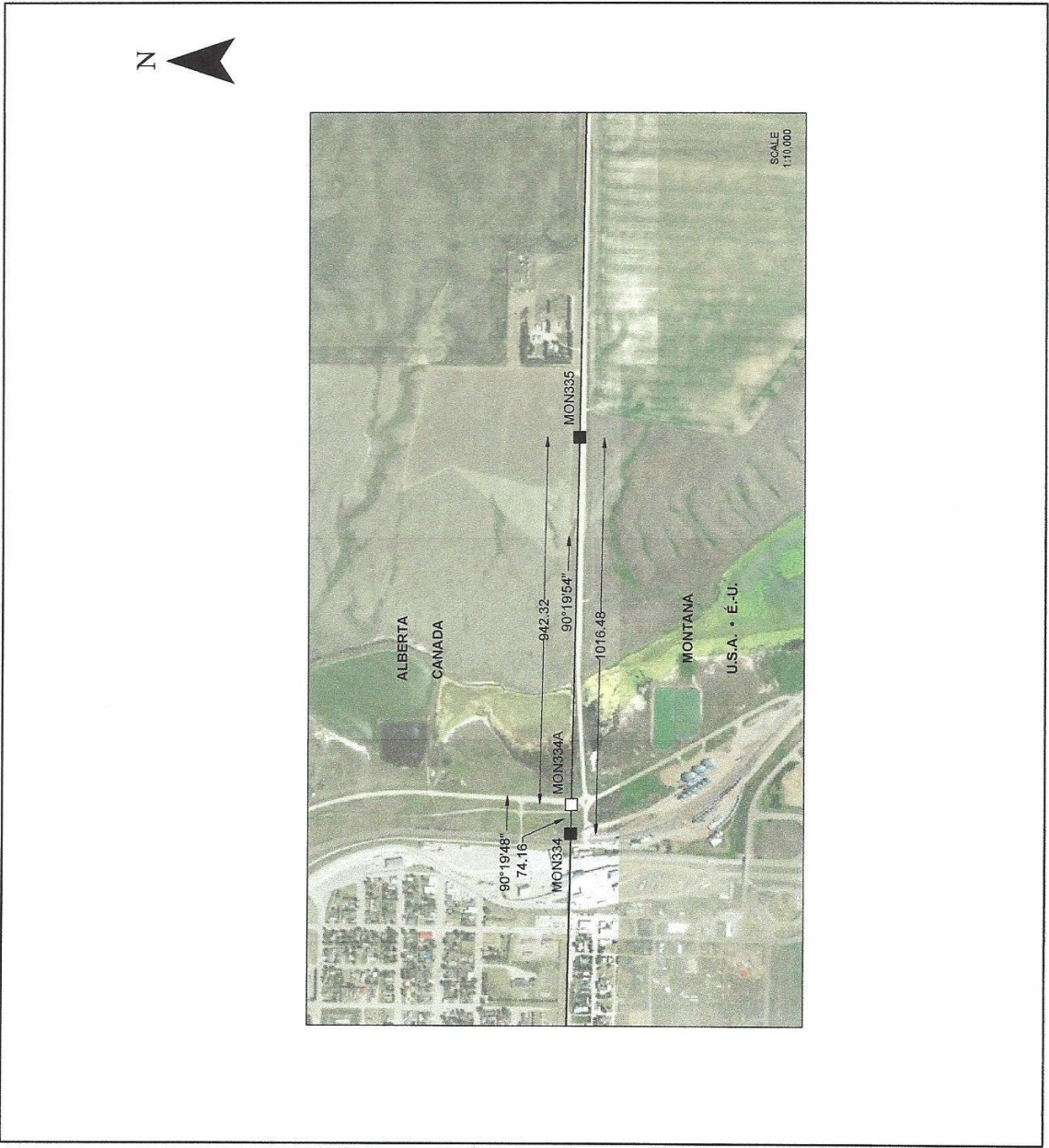
MON 334A

NAD83 2011 (Epoch 2010.0) Preliminary Adjusted Geodetic Coordinates

Point ID	Latitude	Longitude	Height (Meter)	Height Error (Meter)	Constraint
MON 334	N48°59'54.14314"	W111°57'31.42880"	1044.236	?	LLh
MON 334A	N48°59'54.12929"	W111°57'27.78054"	1037.942	0.003	
MON 335	N48°59'53.95014"	W111°56'41.42137"	1069.842	?	LLh

Inverse Results

From	To	Geodetic Azimuth	Ellipsoid Distance (Meter)	Grid Azimuth	Grid Distance (Meter)	Ground Distance (Meter)	Δ Elevation (Meter)
MON 334	MON 334A	90°19'48"	74.156	92°07'43"	74.156	74.168	-6.294
MON 334A	MON 335	90°19'54"	942.321	92°07'47"	942.320	942.476	31.898
MON 334	MON 335	90°19'51"	1016.477	92°07'46"	1016.476	1016.645	25.604



BOUNDARY MONUMENT ESTABLISHED
BORNE FRONTIÈRE POSÉE

MON 334A

LOCATION LOCALISATION
County, AB
Sweet Grass, MT

Scale 1:10,000

200 100 0 200 400 m

LEGEND LÉGENDE

Newly established monument Nouvelle borne posée
Existing monument Borne existante
International Boundary Frontière internationale

Geographic positions were derived by GPS referencing NAD83 2011 (Époque 2010.0). Distances shown are ellipsoidal and expressed in meters.
Les positions géographiques ont été calculées par GPS faisant référence au NAD83 2011 (Époque 2010.0). Les distances apparaissent sur ce plan sont ellipsoïdales et sont exprimées en mètres.

MONUMENTED & ARPENTÉE ET
SURVEYED BY BORNÉE PAR
U.S. Section Section américaine

DATE OF SURVEY DATE DE L'ARPENTAGE
2020 2020

INTERNATIONAL BOUNDARY COMMISSION
COMMISSION DE LA FRONTIÈRE INTERNATIONALE

MON 337A

NAD83 2011 (Epoch 2010.0) Preliminary Adjusted Geodetic Coordinates

Point ID	Latitude	Longitude	Height (Meter)	Height Error (Meter)	Constraint
MON 337	N48°59'53.23620"	W111°53'40.98796"	1059.066	?	LLh
MON 337A	N48°59'52.90791"	W111°52'33.53662"	1045.972	0.012	
MON 338	N48°59'52.78736"	W111°52'08.96850"	1049.024	?	LLh

Inverse Results

From	To	Geodetic Azimuth	Ellipsoid Distance (Meter)	Grid Azimuth	Grid Distance (Meter)	Ground Distance (Meter)	Δ Elevation (Meter)
MON 337	MON 337A	90°25'00"	1371.073	92°10'07"	1371.071	1371.298	-13.088
MON 337A	MON 338	90°25'29"	499.393	92°09'46"	499.392	499.475	3.054



BOUNDARY MONUMENT ESTABLISHED
BORNE FRONTIÈRE POSÉE

MON 337A

LOCATION LOCALISATION
Coutts, AB
Sweet Grass, MT

LEGEND LÉGENDE

- Newly established monument Nouvelle borne posée
- Existing monument Borne existante
- International Boundary Frontière internationale

Scale: 1:20,000

400 200 0 400 800 m

MONUMENTED & ARRENTÉE ET
SURVEYED BY BORNÉE PAR

U.S. Section Section américaine

DATE OF SURVEY DATE DE L'ARRENTAGE
2020 2020

Geographic positions were derived by GPS referencing NAD83 2011 (Epoch 2010.0) Distances shown are ellipsoidal and expressed in meters.
Les positions géographiques ont été calculées par GPS faisant référence au NAD83 2011 (époque 2010.0). Les distances apparaissant sur ce plan sont ellipsoïdales et sont exprimées en mètres.

INTERNATIONAL BOUNDARY COMMISSION
COMMISSION DE LA FRONTIÈRE INTERNATIONALE

MON 340A, MON 340B, MON 341AA

NAD83 2011 (Epoch 2010.0) Preliminary Adjusted Geodetic Coordinates

Point ID	Latitude	Longitude	Height (Meter)	Height Error (Meter)	Constraint
MON 340	N48°59'51.73815"	W111°48'26.18918"	1012.571	?	LLh
MON 340A	N48°59'51.41782"	W111°47'12.49811"	1001.386	0.009	
MON 340B	N48°59'51.30316"	W111°46'46.93166"	995.539	0.006	
MON 341	N48°59'51.13133"	W111°46'09.45445"	999.768	?	LLh
MON 341AA	N48°59'51.02821"	W111°45'45.35714"	992.090	0.007	
MON 342	N48°59'50.66076"	W111°44'22.28608"	1043.168	?	LLh

Inverse Results

From	To	Geodetic Azimuth	Ellipsoid Distance (Meter)	Grid Azimuth	Grid Distance (Meter)	Ground Distance (Meter)	Δ Elevation (Meter)
MON 340	MON 340A	90°22'15"	1497.911	92°03'32"	1497.908	1498.147	-11.173
MON 340A	MON 340B	90°23'16"	519.688	92°03'39"	519.687	519.769	-5.844
MON 340B	MON 341	90°23'43"	761.799	92°03'47"	761.798	761.918	4.235
MON 341	MON 341AA	90°22'12"	489.825	92°01'49"	489.824	489.901	-7.675
MON 341AA	MON 342	90°22'35"	1688.585	92°01'55"	1688.582	1688.854	51.084

