

International Boundary Commission

Canada and United States

Joint Annual Report

2013





International
Boundary
Commission



Commission
de la frontière
internationale



The Honorable John Kerry
The Secretary of State for the United States
Washington, D.C.

The Honorable John Baird
Minister of Foreign Affairs
Ottawa

Dear Mr. Kerry and Mr. Baird:

We have the honor to submit herewith to each government a joint report of the Commissioners regarding the maintenance and regulatory work performed in the calendar year 2013 with respect to the International Boundary between the United States and Canada.

This is the 89th annual joint report submitted by the Commissioners under the provision of Article IV of the Treaty of Washington, February 24, 1925. This report contains a complete account of all boundary inspection and maintenance work executed from January 1st to December 31st, 2013.

Respectfully submitted,

Kyle K. Hipsley
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Canadian Commissioner

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EXECUTIVE SUMMARY

The International Boundary Commission is a joint organization composed of two Commissioners duly appointed by Canada and the United States to maintain an effective boundary line between the two countries, as per the provisions of the Treaty of 1925. Accomplishments of the Commission from January 1st to December 31, 2013 are as follows:

Why we do it

In a spirit of co-operation, the International Boundary Commission ensures the maintenance and integrity of a peaceful, well-defined boundary between Canada and the United States, contributing to the mutual safety and prosperity of the citizens of both countries.

What we do

To fulfill its mandate, the Commission carries out routine inspections, repairs or replaces damaged boundary monuments, maintains vistas open through woods and forests, and keeps boundary coordinates up to date by carrying out additional surveys as required.

How we do it

The Commission is organized in two sections under the leadership of the Canadian and United States Commissioners. The maintenance work is shared equitably between the two sections, based on the long-term plan revised periodically by the two Commissioners.

What was done

Efforts were focused on vista clearing and inspection of the Alaska/Yukon boundary, vista clearing and surveys along the 49th parallel, inspections along the St. Lawrence River and the Great Lakes, monument maintenance of the Quebec/New York boundary and inspection, surveys and vista clearing of the Quebec/Maine boundary.

How well we did it

The Commission is now fully in line with the 15 year maintenance plan, except regarding the update of the official maps that suffers of the backlog in processing the recent surveys. The long-term plan is in the process of being re-designed to accommodate changes in the business processes as a result of the implementation of the GIS, and to address the mapping project.

The Commissioners

The acting United States Commissioner is Kyle K. Hipsley, who has long served the United States section, most recently as Deputy Commissioner. Peter Sullivan is Surveyor General of Canada Lands and therefore pursuant to the International Boundary Commission Act (Canada) is also Canada's International Boundary Commissioner.



Kyle K. Hipsley, A/US Commissioner



Peter Sullivan, Canadian Commissioner

INTRODUCTION

***“Frontiers are indeed the razor’s edge on which hang suspended the modern issues of war or peace, of life or death to nations.”
Lord Curzon (1907)***

The boundary between Canada and the United States came into being as a result of some 26 treaties, conventions, protocols, decisions and awards. Although there have been ad hoc boundary commissions instituted by the U.S. and Canada over the years to implement these various agreements, the International Boundary Commission as we know it today dates back to the *Treaty of Washington of 1908*.¹ At that time, its mandate was to locate and mark the boundary between the two countries and clarify certain situations. The Commission was permanently instituted by the *Treaty of Washington of 1925*² and has been fulfilling its mandate effectively since.

The Commission instituted in 1908 responded effectively to the concerns expressed by Lord Curzon, which were doubtless shared by the political class of the day, and has since maintained a clear and well demarcated boundary, contributing to peace and prosperity of both countries. As proof of its success, the Commission is regularly cited as an example the world over, especially in Africa, where serious efforts are being made now to define and demarcate the boundaries between several countries.

The International Boundary Commission comprises a Canadian and a United States section, each of which reports to its respective Commissioner. The Canadian Commissioner, Peter Sullivan, is appointed ex officio by virtue of being the Survey General for Canada pursuant to the *International Boundary Commission Act*. In absence of a permanent Commissioner following the departure of David L. Bernhardt in 2009, the current Deputy Commissioner of the U.S. section, Kyle K. Hipsley serves as the Acting United States Commissioner.

To fulfill its mandate, as defined by the *Treaty of Washington 1925*, the Commission carries out routine inspections and repairs or replaces damaged boundary monuments, maintains vistas open through woods and forests, and keeps boundary coordinates up to date by carrying out additional surveys as required. In addition, the Commission responds to public inquiries regarding cross-border projects and requests for information by the public and private sectors.

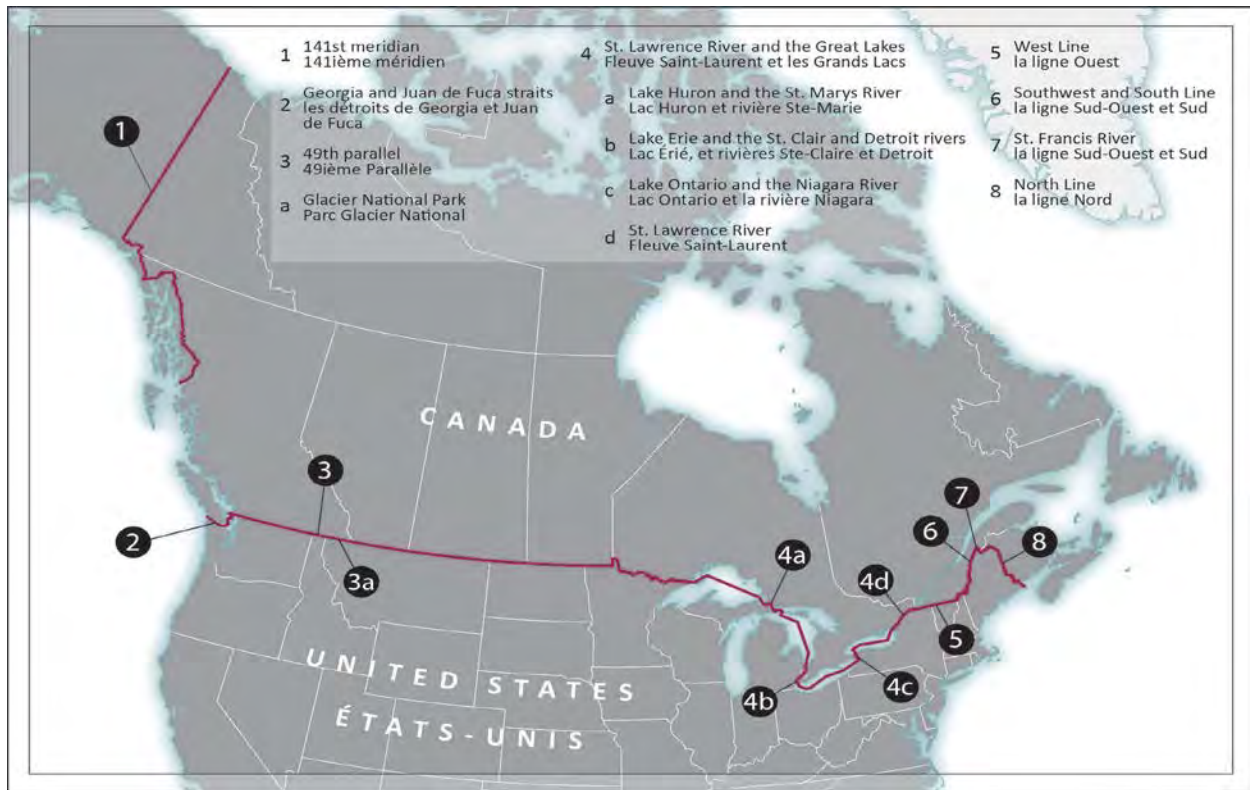
This 89th Joint Annual Report details the activities undertaken by the Commission in the period between January 1, 2013, and December 31, 2013. It contains a complete and faithful report of the projects carried out, as well as tables and plans showing the current condition of the Canada–U.S. boundary.

1 Treaty between the United States of America and the United Kingdom concerning the boundary between the United States and the Dominion of Canada from the Atlantic Ocean to the Pacific, signed at Washington, April 11, 1908, ratifications exchanged at Washington, June 4, 1908.

2 Treaty between the United States of America and His Britannic Majesty, in respect of the Dominion of Canada to define more accurately at certain points and to complete the international boundary between the United States and Canada and to maintain the demarcation of that boundary, signed at Washington, February 24, 1925, ratifications exchanged at Washington, July 17, 1925.

MAINTENANCE ACTIVITIES 2013

The 2013 field season began in May and ended in November. Efforts were focused on the 141st meridian, the 49th parallel, the St. Lawrence River and the Great Lakes, the West Line, the Southwest and South Line, the Saint Francis River and the North Line. The narrative section below provides an overview of the work, while the technical appendices provide more detailed information.



Clearing and inspection along the 141st meridian (Yukon/Alaska)

Separating Yukon and Alaska, the 141st meridian stretches from Mount St. Elias to the Arctic Ocean. At a length of 1,045 km (650 miles), this line crosses regions with varying topography and vegetation. Clearing work on this section is in its fourth year and is progressing well. All overhanging trees, shrubs



and branches were cleared on a distance of 87.7 km (54.5 miles) on the southern part so that no obstacles block the line of sight to the horizon on a width of 6 metres (20 feet), that is, 3 metres (10 feet) on either side of the boundary line. The work was carried out by a specialized company under contract with the Canadian section. The contractor was also responsible for inspecting the boundary monuments along the line. The inspection revealed that the monuments are generally in good condition and that no urgent repairs are needed for the time being. This year's project is the continuation of those carried out in the last three years. At this rate, the clearing and inspection will be completed in 2014.

Relocation of a Reference mark in the Georgia and Juan de Fuca straits (Washington / British Columbia)

This section of the boundary, which extends the 49th parallel and runs along the Georgia and Juan de Fuca straits, between Vancouver Island, British Columbia and the state of Washington. At 240 km (149 miles) long, the boundary at this section is defined by 12 turning points connected by straight lines, which are linked to reference monuments and lighthouses along the shore in each country. It was reported to the commission that the Angeles Point Reference Mark was displaced due to erosion. The mark was re-established at a new location and surveyed to the adjacent reference marks and/or lighthouses. A U.S. crew was responsible for this work.



Figure 2 - Reference Mark Angeles Point after re-establishment (British Columbia/Washington)

Survey and vista clearing along the 49th parallel (Washington, Idaho and Montana / British Columbia)



Figure 3 - The crew ready to fly out (British Columbia/Washington)

Surveying continued along the 49th parallel under the direction of a U.S. team. A total of 80 monuments were surveyed in sometimes challenging conditions. This section of the boundary, which crosses the Rockies, is known to be one of the most difficult, with some summits reaching 3,000 metres, or 10,000 feet. The section is accessible by helicopter and a few barely passable forestry roads. The data collected this year will be combined with earlier surveys to produce up-to-date coordinates and monument to monument relationship for this section of the boundary. In addition to survey, vista clearing was done along the northern limit of Glacier park.

Inspections along the St. Lawrence River and the Great Lakes

The boundary that follows the St. Lawrence River from Cornwall, Ontario, upstream to the Great Lakes themselves and the rivers that connect them is a water boundary line that is defined by turning points determined by reference monuments installed on the bank on either side of the boundary. These reference monuments play a critical role in defining the boundary line, and their position must be maintained. The disappearance or obliteration of any of these monuments would compromise the position of the boundary, and the Commission ensures their protection and maintenance. The boundary across the waters of the Great Lakes poses few maintenance and positioning problems, since they are very long lines and require few reference points. This is not the case for the rivers connecting them and the St. Lawrence River, where residential and industrial development are placing the perpetuity of the numerous reference monuments at risk. The inspection work carried out by the Canadian section therefore focused on those at-risk areas.



Figure 4 – On Ile Parisienne in Lake Superior (Ontario/Michigan)

Lake Huron and the St. Marys River (Ontario/Michigan)

This section, which separates the state of Michigan and the province of Ontario, crosses lakes Huron and Superior and follows the St. Marys River, which connects them. The inspection work was carried out along the St. Marys River only. The reference monuments along this section are in acceptable condition, although some of them will need to be repaired and others replaced.

Lake Erie and the St. Clair and Detroit rivers (Ontario/Michigan)

This water boundary is also established by turning points defined by reference monuments. The inspection carried out by the Canadian section was on the Detroit River only, a tributary to Lake Erie. The reference monuments along this section are generally in good condition.

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

This section, which separates the province of Ontario and the state of New York, crosses the Niagara River, an iconic tourist destination. Reference monuments define the boundary in the Niagara River, while lighthouses serve as references for the boundary crossing Lake Ontario. Here, too, the monuments are generally in good condition.

St. Lawrence River (Ontario / New York)

The boundary line that follows the St. Lawrence River covers some 2,100 kilometres (1,305 miles) from its intersection with the West Line to the Great Lakes. Reference monuments define it, and they were found to be in good condition.

Maintenance of the West Line (Quebec/New York)

The West Line, which separates the province of Quebec and the state of New York, crosses farms and private forests, and is a sensitive area because of the heavy traffic at the numerous border crossings that punctuate it. The recent inspections carried out along this line revealed that the border monuments, most of which were installed nearly a century ago, are in poor condition and require immediate attention. The intensive maintenance work began three years ago continued this year under the supervision of the Canadian section. Twenty-three monuments were renewed, and a total of eight decorative monuments were added, to better demarcate these very active areas.



Figure 5 – A monument under construction
(Quebec/New York)

Improved marking of the West Line (Quebec/Vermont)



Figure 6 – Markers installed along the West Line (Quebec/Vermont)

In preparation for the clearing work planned for 2014 between Halls Stream and Lake Memphremagog, markers were installed between the existing boundary monuments to make the boundary line more visible. The work was carried out by a professional surveying company under contract with the Canadian section. Although markers do not have the durability of boundary monuments, they are appreciated by owners and organizations responsible for enforcing border and customs legislation, particularly in open fields, where it is easy to lose sight of the line. Approximately 51 km (31.7 miles) of line was marked this way.

Surveying and inspection of the Southwest and South Line (Quebec/Maine)

The Southwest and South Line separates the province of Quebec and the state of Maine, and crosses heavily wooded and sparsely populated areas. It extends from Lake Pohenegamook towards the southwest to Lac-Frontière, then extends southward to the southwestern branch of the St. John River. The approximately 239 boundary monuments that demarcate it were all surveyed by the Canadian section, their position determined using GPS. It was necessary to survey this line to update the geographical position of each boundary monument



Figure 7 – View of monument 214 across Lac de l'Est (Quebec/Maine)

and its relationship to adjacent monuments in the most recent reference frame jointly accepted by Canada and the U.S., and to survey the positions of the intermediate monuments installed in recent years. While conducting the survey, the Canadian teams also carried out a thorough assessment of each monument's condition.

Demarcation and clearing of the St. Francis River (Quebec/Maine)

The St. Francis River, which is the main tributary to Quebec's Lake Pohenegamook and empties into the



Figure 8 – Reference monument S-136 renewed (Quebec/Maine)

St. John River, and forms the boundary between Canada and the U.S. over a distance of approximately 70 km (43 miles). On the Canadian side, it crosses farms and private forests and on the U.S. side, it crosses areas that are heavily wooded and sparsely populated. This waterway winds across lowlands and has a tendency to change course. Consequently, long sections of the boundary line are now on dry land and need to be marked. A U.S. team continued to mark this line and installed 23 boundary monuments. In addition, the team inspected 224 monuments, carried out maintenance clearing work on 4.2 km (2.61 miles) and renewed 9 reference monuments.

Clearing along the North Line (New Brunswick / Maine)

The North Line runs true north between Maine and New Brunswick from the source of the St. Croix River to its intersection with the St. John River. Approximately 125 km (78 miles) in length, this line crosses farms and coniferous forests. The rapid growth of the vegetation requires frequent maintenance, and two contracts were awarded to specialized firms by the U.S. section to carry out thinning and clearing work. One contract covered a distance of 56.3 km (35 miles) between boundary monuments 1 and 49 and the other contract covered a distance of 68.5 km (46.6 miles) between boundary monuments 49 and 117-73. All overhanging trees, shrubs and branches were cleared so that no obstacles block the line of sight to the horizon on a width of 6 metres (20 feet), that is, 3 metres (10 feet) on either side of the boundary line.



Figure 9 – Facing south from monument 33A (New Brunswick/Maine)

COMMISSIONERS' ACTIVITIES

Field inspections

The inspections carried out by the commissioners and their assistants ensure that the work performed on the field under their direction meets the standards of the Commission and are done in accordance with the Treaty. During the period, the commissioners inspected the following areas:

The 141st meridian (Alaska/Yukon)

During the summer solstice, from June 24 to 27, the Lead Survey Engineering Technician of the U.S. section, J.T. Moore, and the Canadian Section Manager, Daniel Fortin, inspected the clearing work carried out during the 2012 field season along the 141st meridian. The work had been completed by a contractor under contract with the U.S. section, and the final inspection was required. The work was found to be fully satisfactory. Taking advantage of the warm weather, and despite a few forest fires in the area, Moore and Fortin flew true north to evaluate the condition of the line in the areas in which work will be done as part of the 2014 field season.

The West Line (Quebec / New York)

On July 15 and 16, 2013, the acting U.S. Commissioner Kyle K. Hipsley and his assistant J.T. Moore, together with the Canadian Section Manager Daniel Fortin and Surveyor General Jean Gagnon, visited the Canadian team performing maintenance and reconstruction work on the boundary monuments along the West Line. They confirmed that many of the monuments were seriously damaged and that the current restoration campaign was absolutely necessary.

The St. Francis River (Quebec/Maine)

On July 17 and 18, 2013, the acting U.S. Commissioner Kyle K. Hipsley and his assistant J.T. Moore, together with the Canadian Commissioner Peter Sullivan and the Canadian Section Manager Daniel Fortin, visited the U.S. team that was demarcating the parts of this section that are now on dry land. They observed first hand the advanced state of decay of many of the boundary monuments along this section, and it was decided that efforts would be focused on restoring the reference monuments over the next few seasons.

Commissioner Meetings

The Canadian and U.S. commissioners met twice during the year to review the status of projects, approve upcoming projects, discuss and approve comparable expenditures, and discuss the various issues brought to their attention. The first meeting was held on April 16, 2013, in Great Falls, Montana, and the fall meeting was held on December 4 and 5, 2013, in Edmonton, Alberta. The topics discussed are included in this report.

LIAISON AND COMMUNICATION

The Commission strives to remain in constant contact with the various stakeholders through a variety of communication activities. The following is a list of the main communication activities carried out during this period.

Stakeholder relations

Halls Stream

To support efforts to delimit Hall's Stream, parcel maps were produced by the Canadian section in order to illustrate the position of the boundary line for each property adjoining the boundary. The maps were delivered door-to-door to each U.S. owner in the summer of 2013, and will be delivered to the Canadian owners over the next season. This initiative was greatly appreciated by the owners.

Modernization of the website

The Commission has committed to modernizing its website to make it its primary means of disseminating information and to promote communication with citizens and government agencies. The new website will allow users to download all documents and maps, obtain information regarding the geographical position of the boundary, and generally obtain useful information on our shared boundary. In addition, the new website will contain a map browser, which will facilitate access to information. A specialized company under contract with the Canadian section has been tasked with developing the design of the new site, including the map browser. An update will follow.

Border agencies relation

Both US and Canadian border officials were contacted and/or visited during the winter months to notify them of upcoming projects. In turn, the Commission gets feedback on where we might need to focus some attention.

REGULATORY ITEMS

The Commission monitors the construction of all works within 3 metres (10 feet) of the boundary. Thus, all construction—whether a ditch, a building, a surface or underground structure (telephone, cable, electrical line or gas pipeline), line of communication, or other—must first be authorized by the Commission. In 2013, the commissioners processed the following applications:

- Authorization was granted to construct an additional lane adjacent the northern lane of PTH 75 (29) and to replace several concrete panels at the Emerson Border Crossing;
- Authorization was granted to construct a railway across the border in the rural municipality of Enniskillen #3 (Saskatchewan);
- Authorization was granted to construct an underground fiber optic cable to cross the border near Highway 223 (Quebec) or Highway 11 (New York);
- Authorization was granted to construct an underground gas pipeline across the border between the rural municipality of Cambria #6, Saskatchewan, and Divide County, North Dakota;
- Authorization was granted to replace a gas pipeline that crosses the border between the municipality of Surrey, British Columbia, and Sheridan County, Montana;

No application for authorization was denied.

PLANNING FOR 2014

The Commission plans to undertake the following activities in 2014. These activities are in line with the long-term plan.

Canadian section

The Canadian section's maintenance activities will focus on the following sections of the boundary:

1.- The 141st meridian (Alaska/Yukon): Clearing the 141st meridian will continue with clearing along 48 km (29.8 miles), between monuments 174 and 187. This is the continuation of the contract awarded in 2013. Another contract will be awarded for the clearing of an additional 64 km (40 miles) between monuments 64 and 76. Last, this line will be surveyed to produce up-to-date monument position data.

2.- West line (Quebec / New York): Maintenance of the boundary monuments will continue along the Quebec–New York boundary with as an objective the reconstruction of 35 monuments. This activity is essential, given the importance of this section of the boundary and the state of disrepair of many of the boundary monuments along it.

3.- West line (Quebec/Vermont): Regular maintenance along this line resumes this year. It is planned to clear 51 km (31.7 miles) along the Quebec/Vermont boundary from Hall's Stream to Lake Memphremagog, between monuments 518 and 551A and between monuments 562 and 570. No clearing work is planned for within the boundary villages of Stanstead and Derby Line.

4.- The highlands (Quebec/Maine): A survey campaign is planned along the highlands section to locate approximately one hundred boundary monuments as part of the NAD83 reference frame. The observations obtained will be subsequently supplemented by conventional observations stemming from an earlier survey, to produce up-to-date data on this section.

In addition to these maintenance activities, the Canadian section will supervise the updating of content for the Commission's new website.

United States section

The U.S. section will be responsible for the following projects:

1.- Passamaquoddy Bay (Maine / New Brunswick): A maintenance contract will be awarded to clean and paint the Range Marks which define the boundary. Vistas between range pairs will also be cleared.

2.- 49th parallel (British Columbia / Montana): Survey work will continue along western Montana to the west edge of Glacier National Park.

3.- Vista clearing operations will again take place as part of an ongoing agreement with Glacier National Park for a 3,6 km (2.25 miles) section of boundary to the east and west of Monument 271.

4.- 141st meridian (Alaska/Yukon): Clearing work will continue towards the north, as a contract will be awarded to clear 57 km (36 miles) of this section. Additionally, a US crew will be assigned to clear as much vista as the field season allows. They will begin at Monument 50 and work north.

5.- St. Francis River (Maine / Quebec and New Brunswick): Marking of the turning points defining the boundary is almost complete, and efforts will be directed to maintaining the reference monuments.

In addition to these maintenance activities, the US section will acquire soil studies and provide the USCG with results for design of possible range marks to be placed in Lake Champlain.

Accomplishments against the 15 year plan

The long term planning (15 year plan) is entering its 11th year in 2014 and is starting to show weaknesses for long term planning purposes. Appendix D provides an assessment of projects progress, but doesn't accurately portray the present state of maintenance of the boundary. For instance:

- Clearing of the Highlands section (Maine – Quebec) was originally planned over a six year recurrent cycle, but the clearing was completed over two years in 2010 and 2011 and is considered on track. Clearing of this section will come back on the maintenance schedule in 2016;
- Clearing of the 141st Meridian (Alaska – Yukon) was originally planned between 2006 and 2009, but actually started in 2010 and will likely be completed in 2015 without compromising boundary integrity;
- Survey of the West Line (Quebec – New York/Vermont) is completed and vista clearing is up-to-date. Monument maintenance requires more effort than expected because of their bad condition. Overall, the condition of this section is considered acceptable;
- Monumentation of turning points along the St. Francis river was not on the original planning, but was considered a priority by the Commissioners. This project is completed, and we are now putting some efforts towards reference monuments maintenance;

In summary, objectives of the 15 year plan are generally met, while unanticipated project were carried out.

REPORT ON COMPARABLE EXPENDITURES

This report shows the total amount spent by both sections of the Commission at March 31, 2013, 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 is 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 salary of 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 by both governments are shared equally. Although the cumulative total shows a lag in terms of the expenditures of the U.S. section, this gap is not a concern, as the U.S. section budget is currently exceeding the Canadian budget. This is expected to continue, so that the U.S. section should catch up and close the gap within four or five years.

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

Expenditures are shown in each country's respective currency.

**International Boundary Commission
Joint Annual Report 2013**

*Excerpt of certified Comparable Expenditures to March 31, 2013
Approved by the Canadian Commissioner on December 18, 2013
Approved by the Acting U.S. Commissioner on January 17, 2014*

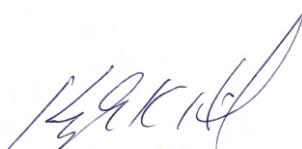
	Expended by United States Section (USD)	Expended by Canadian Section (CAD)
Total to March 31, 2012	\$17,670,293.09	\$20,831,248.69
 <u>Field expenditures from April 1, 2012, to March 31, 2013</u>		
South Line (QC/ME) clearing contract (19.5 mi /31.4 km)		\$54,165.00
Southwest Line (QC/ME) clearing contract (54.7 mi /88 km)		\$148,720.00
West Line (QC/NY) clearing contract (16.3 mi /26.3 km)		\$ 61,125.00
West Line (QC/NY) monument maintenance		\$182,887.00
West Line (QC/VT/NY) survey		\$60,475.00
St. Francis River (QC/ME) survey		\$79,650.00
South-Southwest Line (QC/ME) inspection contract		\$ 3,807.00
Ortho imagery, St. Francis River		\$62,830.00
West Line (NY/QC) vista clearing (12 mi /19.3 km) – Property research along Hall’s Stream – Coburn Gore Port of Entry maintenance	\$56,029.70	
North Line (ME/NB) monument maintenance	\$2,943.28	
St. Francis River (QC/ME) monumentation and survey	\$119,024.55	
49th parallel (WA/BC) monument maintenance and survey	\$227,290.14	
49th parallel (MA/AB) Lake Koochanusa topographic study	\$9,257.98	
49th parallel (WA/BC) monument survey check	\$3,448.17	
Lake Osoyoos range mark topographic study	\$2,500.00	
Glacier Park (MA/AB) clearing contract (3.2 mi /5.1 km)	\$36,978.23	
141st meridian (AK/YK) clearing contract (100 mi /161 km)	\$618,762.28	
49th parallel (ND/MB) clearing contract (36 mi/58 km)	\$91,160.17	
 <u>Other expenditures</u>		
mapping/GIS development		\$48,273.00
ESRI maintenance fees		\$15,250.00
Website design		\$126,870.00
Boundary marker posts		\$48,250.00
Vehicle purchase		\$37,207.00
Vehicle maintenance		\$27,420.00
Decorative monuments		\$41,470.00
Trimble equipment		\$76,305.00
Technical field equipment support services		\$22,434.00
On-line property title search services		\$ 3,000.00
Database population contract	\$27,892.00	
Printing—Appendix data 2007–2009	\$ 3,487.20	
Capital equipment	\$53,477.29	
 Sub-total for 2012–13	<u>\$1,252,250.99</u>	<u>\$1,100,138.00</u>
Cumulative to March 31, 2013	<u>\$18,922,544.08</u>	<u>\$21,931,386.69</u>

CERTIFICATION

We certify that the foregoing is a true record of the work done by the Commissioners during the year ending December 31, 2013 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.



Peter Sullivan
Canadian Commissioner



Kyle K. Hipsley
A/United States Commissioner

APPENDIX A - DETAILS OF MAINTENANCE AND SURVEY WORK

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK 2013

Legend

Boundary Monument Type:	MON	Boundary Monument or Boundary Turning Point
	RM	Reference Monument or Marker
Reconnaissance:	G	Recovered In Good Condition
	F	Recovered in Fair condition (requires minor repair)
	PO	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:	P	Photographed
	NP	Not Photographed
Monument Surveyed:	S	Survey performed to position the monument

**St. John and St. Francis Rivers
(Quebec/New Brunswick – Maine)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
RM S-130	D					NP	
RM S-137-A-50	G					P	S
RM S-139	G					P	S
RM S-145	G					NP	S
RM S-147	G					NP	S
RM S149	G					NP	S
RM S-159-A	G					NP	S
RM S-119	G			MP		P	
RM S-121	G			MP		P	
RM S-122	G			MP		P	
RM C125	G			MP		P	
RM C-129	NR					NP	
RM C131A	G					P	S
RM C132	G					P	S
RM C-138	G					P	S
RM C-141	G					P	S
RM C-143	G					P	S
RM C148	G					P	S
RM S-131	PO			MP		P	
RM S-133	PO		MA	MP	DU	P	
RM S129	PO			MP		P	
RM S-127	PO			MP		P	
RM C-127	PO		MA	MP	DU	P	
RM S-118	PO			MP		P	
RM S120	PO			MP		P	
RM S134	PO		MA	MP	DU	P	
RM S136	PO		MA	MP	DU	P	
RM S-128	PO			MP		P	
RM S-117	PO			MP		P	
RM S156	PO		MA	MP	DU	P	S
RM C-124	PO			MP		P	
RM C-126	PO			MP		P	
RM S135	PO		MA	MP	DU	P	

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK 2013

**St. John and St. Francis Rivers
(Quebec/New Brunswick – Maine)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
RM C-128	PO		MA	MP	DU	P	
RM C-123	PO			MP		P	
RM S-132	PO		MA	MP	DU	P	
RM S-137	PO		MA	MP	DU	P	
LM 356A	UK	NM		MP	DU	P	S
TP 357	UK	NM		MP	DU	P	S
TP 358	UK	NM		MP	DU	P	S
LM 358A	UK	NM		MP	DU	P	S
TP 359	UK	NM		MP	DU	P	S
TP 360	UK	NM		MP	DU	P	S
MON TP 361	PO	R		MP	DU	P	S
MON TP 362	G			MP	DU	P	S
MON TP 363	G			MP	DU	P	S
LM 363A	NR				DU	NP	
LM 367A	UK	NM		MP	DU	P	S
LM 367B	UK	NM		MP	DU	P	S
LM 368A	UK	NM		MP	DU	P	S
TP 369	UK	NM		MP	DU	P	S
LM 369A	UK	NM		MP	DU	P	S
MON TP 386	G			MP	DU	P	S
MON TP 391	G			MP	DU	P	S
MON TP 392	G			MP	DU	P	S
LM 392A	G			MP	DU	P	S
LM 394A	NR				DU	NP	
MON TP 395	G			MP	DU	P	S
MON TP 396	G			MP	DU	P	S
MON TP 397	G			MP	DU	P	S
LM 397A	G			MP	DU	P	S
MON TP 406	G			MP	DU	P	S
TP 407	G			MP	DU	P	S
LM 407A	G			MP	DU	P	S
LM 417A	G			MP	DU	P	S
MON TP 418	G			MP	DU	P	S
LM 418A	D				DU	NP	
LM 420A	G			MP	DU	P	S
MON TP 421	G			MP	DU	P	S
LM 421A	D				DU	NP	
MON TP 426	G			MP	DU	P	S
LM 427A	G			MP	DU	P	S
MON TP 427	G			MP	DU	P	S
LM 428A	UK	NM		MP	DU	P	S
LM 428B	UK	NM		MP	DU	P	S
LM 429A	PO	R		MP	DU	P	S
MON TP 430	PO	R		MP	DU	P	S
MON TP 431	PO	R		MP	DU	P	S
MON TP 432	G			MP	DU	P	S
MON TP 433	PO	R		MP	DU	P	S
LM 433A	G			MP	DU	P	S
LM 438A	UK	NM		MP	DU	P	S
MON TP 439	G			MP	DU	P	S
LM 439A	NR				DU	NP	
TP 440	G			MP	DU	P	S
MON TP 441	G			MP	DU	P	S
LM 441A	NR				DU	NP	
LM 441B	G			MP	DU	P	S
TP 442	G			MP	DU	P	S
TP 443	G			MP	DU	P	S
LM 443A	NR				DU	NP	

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK 2013

**St. John and St. Francis Rivers
(Quebec/New Brunswick – Maine)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
LM 445A	NR				DU	NP	
LM 445B	NR				DU	NP	
LM 446A	NR				DU	NP	
MON TP 447	PO			MP	DU	P	S
MON TP 448	G			MP	DU	P	S
LM 452A	NR				DU	NP	
LM 453A	G			MP	DU	P	S
LM 453B	PO			MP	DU	P	S
LM 453C	G			MP	DU	P	S
MON TP 454	G			MP	DU	P	S
MON TP 455	G			MP	DU	P	S
LM 455A	G			MP	DU	P	S
TP 463	G			MP	DU	P	S
TP 464	G			MP	DU	P	S
LM 464A	G			MP	DU	P	S
LM 493A	NR				DU	NP	
LM 493B	G			MP	DU	P	S
LM 494A	G			MP	DU	P	S
TP 495	G			MP	DU	P	S
LM 495A	NR				DU	NP	
LM 496A	UK	NM		MP	DU	P	S
LM 496B	UK	NM		MP	DU	P	S
LM 499A	G			MP	DU	P	S
TP 500	UK	NM		MP	DU	P	S
TP 501	G			MP	DU	P	S
TP 502	G	R		MP	DU	P	S
TP 503	G			MP	DU	P	S
TP 504	G				DU	NP	S
TP 505	G				DU	NP	
TP 506	G				DU	NP	
TP 507	G				DU	NP	
TP 509	G				DU	NP	
LM 509A	G				DU	NP	
LM 509B	G				DU	NP	
TP 511	G				DU	NP	
TP 512	G				DU	NP	
TP 513	G				DU	NP	
LM 513A	G				DU	NP	
LM 514A	G				DU	NP	
TP 515	G				DU	NP	
LM 515A	G				DU	NP	
LM 516A	G				DU	NP	
LM 516B	G				DU	NP	
LM 518A	G				DU	NP	
TP 519	G				DU	NP	
LM 519A	G				DU	NP	
LM 520A	G				DU	NP	
LM 520B	G				DU	NP	
TP 522	G				DU	NP	
TP 523	G				DU	NP	
LM 524A	G				DU	NP	
TP 525	G				DU	NP	
LM 525A	G				DU	NP	
LM 526A	G				DU	NP	
LM 526B	G				DU	NP	
LM 527A	G				DU	NP	
TP 528	G				DU	NP	
TP 529	G				DU	NP	

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK 2013

**St. John and St. Francis Rivers
(Quebec/New Brunswick – Maine)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
LM 529A	G				DU	NP	
TP 530	G				DU	NP	
LM 530A	G				DU	NP	
LM 530B	G				DU	NP	
LM 530C	G				DU	NP	
LM 531A	G				DU	NP	
TP 532	G				DU	NP	
LM 532A	G				DU	NP	
LM 535A1	G				DU	NP	
TP 536	G				DU	NP	
TP 537	G				DU	NP	
LM 537A	G				DU	NP	
LM 538A	G				DU	NP	
TP 539	G				DU	NP	
TP 540	G				DU	NP	
LM 541A	G				DU	NP	
LM 541B	G				DU	NP	
LM 542B	G				DU	NP	
LM 543A	G				DU	NP	
LM 543B	G				DU	NP	
LM 568A	G				DU	NP	
TP 569	G				DU	NP	
LM 571A	G				DU	NP	
LM 571C	G				DU	NP	
TP 572	G				DU	NP	
LM 572A	G				DU	NP	
LM 573A	G				DU	NP	
LM 574A	G				DU	NP	
LM 574B	G				DU	NP	
LM 579A	G				DU	NP	
LM 579B	G				DU	NP	
TP 581	G				DU	NP	
LM 580A	G				DU	NP	
LM 583A	G				DU	NP	
LM 584A	G				DU	NP	
LM 584B	G				DU	NP	
LM 588A	G				DU	NP	
TP 589	G				DU	NP	
LM 589A	G				DU	NP	
LM 591A	G				DU	NP	
TP 592	G				DU	NP	
LM 594A	G				DU	NP	
LM 603A	G				DU	NP	
LM 603B	G				DU	NP	
TP 606	G				DU	NP	
LM 606A	G				DU	NP	
LM 607A	G				DU	NP	
LM 607B	G				DU	NP	
LM 619A	G				DU	NP	
TP 620	G				DU	NP	
LM 620A	G				DU	NP	
LM 620B	UK	NM		MP	DU	P	S
TP 621	UK	NM		MP	DU	P	S
LM 621A	UK	NM		MP	DU	P	S
LM 623A	UK	NM		MP	DU	P	S
LM 623B	UK	NM		MP	DU	P	S
LM 627A	G				DU	NP	
TP 628	G				DU	NP	

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK 2013

**St. John and St. Francis Rivers
(Quebec/New Brunswick – Maine)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
LM 628A	G				DU	NP	
LM 637A	G				DU	NP	
LM 637B	G				DU	NP	
LM 641A	G				DU	NP	
TP 642	UK	NM		MP	DU	P	
LM 642A	G				DU	NP	
LM 693A	G				DU	NP	
TP 695	G				DU	NP	
LM 695A	G				DU	NP	
LM 698A	G				DU	NP	
LM 698B	G				DU	NP	
LM 699A	G				DU	NP	
LM 699B	G				DU	NP	
LM 700A	G				DU	NP	
LM 700B	G				DU	NP	
LM 701A	G				DU	NP	
LM 701B	G				DU	NP	

**Southwest and South Lines
(Quebec – Maine)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 178	G					P	S
MON 179	G					P	S
MON 180	G					P	S
MON 180A	G					P	S
Pohenegamook	G					P	S
MON 180B	G					P	S
MON 181	G					P	S
MON 181A1	G					P	S
MON 181A2	G					P	S
MON 181A3	G					P	S
MON 181A	G					P	S
MON 182	G					P	S
MON 182A	G					P	S
MON 182B	G					P	S
MON 183	G					P	S
MON 183A	G					P	S
MON 184	G					P	S
MON 184A	G					P	S
MON 184B	G					P	S
MON 185	G					P	S
MON 186	G					P	S
MON 186A	PO					P	S
MON 186B	G					P	S
MON 187	G					P	S
MON 188	G					P	S
MON 188A	G					P	S
MON 189	G					P	S
MON 189A	G					P	S
MON 190	G					P	S
MON 190A	G					P	S
MON 191	G					P	S
MON 192	G					P	S
MON 192A	G					P	S

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK 2013

**Southwest and South Lines
(Quebec – Maine)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 192C	G					P	S
MON 192B	G					P	S
MON 193	G					P	S
MON 194	F					NP	S
MON 195	G					NP	S
MON 195D	G					NP	S
MON 195A-88	G					NP	S
MON 195B	G					NP	S
MON 195C	G					NP	S
MON 196	G					NP	S
MON 197	G					NP	S
MON 198	G					NP	S
MON 198A-88	G					NP	S
MON 198B	G					NP	S
MON 199	G					NP	S
MON 200-88	G					NP	S
MON 201	G					NP	S
MON 201A	D					NP	
MON 201B	G					NP	S
MON 202	G					NP	S
MON 202A	G					NP	S
MON 202A1	G					NP	S
MON 202B	G					NP	S
MON 202B1	G					NP	S
MON 202C1	PO					NP	S
MON 203	F					NP	S
MON 203A	G					NP	S
MON 204	G					NP	S
MON 205	G					NP	S
MON 206	G					NP	S
MON 207	G					NP	S
MON 207A	G					NP	S
MON 207B	G					NP	S
MON 208	G					NP	S
MON 208A	G					NP	S
MON 208B	G					NP	S
MON 209	G					NP	S
MON 210	G					NP	S
MON 210A	G					NP	S
MON 211	G					NP	S
MON 211A	G					NP	S
MON 211B	G					NP	S
MON 212	G					NP	S
MON 212A	G					NP	S
MON 212B	G					NP	S
MON 212C	G					NP	S
MON 212D	G					NP	S
MON 213	G					NP	S
MON 214	G					NP	S
MON 215	G					NP	S
MON 216 AND 217	F					NP	S
SITE OF MON 216217A	NR					NP	
MON 218	G					NP	S
MON 218A	G					NP	S
MON 218B	G					NP	S
MON 218C	G					NP	S
MON 218D	G					NP	S
MON 219	F					P	S

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK 2013

**Southwest and South Lines
(Quebec – Maine)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 219A	G					P	S
MON 220	PO					P	S
MON 220A	G					P	S
MON 221	F					P	S
MON 222	D					P	S
MON 222A	G					P	S
MON 223	G					P	S
MON 223A	G					P	S
MON 224	D					P	S
MON 225-90	G					P	S
MON 226	PO					P	S
MON 227	G					P	S
MON 227A	G					P	S
MON 227B	G					P	S
MON 228-90	G					P	S
MON 229	G					P	S
MON 230-51	PO					P	S
MON 230A	G					P	S
MON 231	G					P	S
MON 232	G					P	S
MON 232A	G					P	S
MON 233	F					P	S
MON 234	G					P	S
MON 235	G					P	S
MON 236	F					P	S
MON 236A	G					P	S
MON 237	G					P	S
MON 237A	PO					P	S
MON 237B	G					P	S
MON 238	G					P	S
MON 239	G					P	S
MON 239A	G					P	S
MON 239B	G					P	S
MON 239C	G					P	S
MON 240	G					P	S
MON 240A	G					P	S
MON 240B	G					P	S
MON 241	G					P	S
MON 241-90	G					P	S
MON 241A	F					P	S
MON 242	F					P	S
MON 242-77	G					P	S
SITE MON 242A	NR					NP	
MON 242A-90	G					P	S
MON 243	PO					P	S
MON 243A	G					P	S
MON 243A1	D					P	S
MON 243B	G					P	S
MON 244	G					P	S
MON 245	PO					P	S
MON 245A	G					P	S
MON 246	G					P	S
MON 247	F					P	S
MON 247A	PO					P	S
MON 247B	G					P	S
MON 247C	G					P	S
MON 248	PO					P	S
MON 249-77	G					P	S

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK 2013

**Southwest and South Lines
(Quebec – Maine)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 250	PO					P	S
MON 250A1	G					P	S
MON 250A2	G					P	S
MON 250A	G					P	S
MON 251	F					P	S
MON 251A	G					P	S
MON 252	PO					P	S
MON 252A	G					P	S
MON 252B	G					P	S
MON 253	G					P	S
MON 253A	G					P	S
MON 254	G					P	S
MON 254A	PO					P	S
MON 255	G					P	S
MON 256	G					P	S
MON 256A1	D					P	S
MON 256A	PO					P	S
MON 256B	PO					P	S
MON 257	G					P	S
MON 257A	G					P	S
MON 258	G					P	S
MON 258A	G					P	S
MON 258B	G					P	S
MON 259	PO					P	S
MON 259A	G					P	S
MON 259B	F					P	S
MON 259C	G					P	S
MON 260	G					P	S
MON 261	F					P	S
MON 262	G					P	S
MON 263	F					P	S
MON 263A	G					P	S
MON 264	G					P	S
MON 265	G					NP	S
MON 265A	G					NP	S
MON 265B	F					NP	S
MON 266	G					NP	S
MON 267	G					NP	S
MON 267A	G					NP	S
MON 268	G					NP	S
MON 268A	G					NP	S
MON 268B	G					NP	S
MON 269	G					NP	S
MON 269A	G					NP	S
MON 270	G					NP	S
MON 271	G					NP	S
MON 271A	G					NP	S
MON 272	G					NP	S
MON 272A	G					NP	S
MON 273	G					NP	S
MON 274	G					NP	S
MON 275	G					NP	S
MON 276	G					NP	S
MON 276A	G					NP	S
MON 277	G					NP	S
MON 278	G					NP	S
MON 279	G					NP	S
MON 280	G					NP	S

**Southwest and South Lines
(Quebec – Maine)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 280A	NR					NP	
MON 281	G					NP	S
MON 281A	G					NP	S
MON 282	G					NP	S
MON 282A	G					NP	S
MON 283	G					NP	S
MON 283A	G					NP	S
MON 284	G					NP	S
MON 285	G					NP	S
MON 286	G					NP	S
MON 287	G					NP	S
MON 287A1	D					NP	S
MON 287A	G					NP	S
MON 287B	G					NP	S
MON 288	G					NP	S
MON 288A-91	G					NP	S
MON 288B	NR					NP	
MON 289	G					NP	S
MON 290	G					NP	S
MON 291	G					NP	S
MON 291A	G					NP	S
MON 292	G					NP	S
MON 293	G					NP	S
MON 293A	G					NP	S
MON 294	G					NP	S
MON 294A	G					NP	S
MON 295	G					NP	S
MON 296	G					NP	
MON 296A	PO					NP	
MON 299	G					NP	S
MON 299A	G					NP	S
MON 300	G					NP	S
MON 301-91	G					NP	S
MON 301A	G					NP	S
MON 302	G					NP	S
MON 303	G					NP	S
MON 304	G					NP	S

**Southwest Branch of the St. John River
(New Brunswick – Maine)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
RM 309	G					P	S
RM C8	PO					P	S
RM C13	F					P	S

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

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON TP 581	G					NP	
MON TP 582	G					NP	

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK 2013

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

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON TP 583	G					NP	
MON TP 584	G					NP	
MON TP 585	G					NP	
MON TP 586	G					NP	

**45th Parallel (West Line)
(Quebec – New York)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 634A	G			MP		P	
MON 635	G			MP		P	
MON 635A	G			MP		P	
MON 635B	G			MP		P	
MON 637	PO					P	
MON 637A	F	R		MP	DU	P	
MON 637B	PO	R		MP	DU	P	
MON 638	F	R		MP	DU	P	
MON 638A	G					P	
MON 638B	F	R			DU	P	
MON 639	PO	R			DU	P	
MON 640	F	R			DU	P	
Noyan E Plaque	G					P	
Noyan W Plaque	G					P	
MON 643-72	G			MP		P	
MON 643B	G			MP		NP	
MON 643D	G					NP	
MON 644	PO	R				P	
MON 645A	G					P	
MON 646	NR					NP	
MON 646A	G	NM			DU	P	S
MON 646B	G	NM			DU	P	S
MON 646C	G	NM			DU	P	S
MON 647	PO	R			DU	NP	
MON 649B	F					P	
MON 650	PO	R			DU	P	
MON 651	PO	R			DU	NP	
MON 651A	F	R			DU	NP	
MON 652	F	R			DU	P	
MON 652A	PO	R			DU	P	
MON 653	G	R			DU	P	
MON 653A	G	NM			DU	P	S
MON 653B	G	NM			DU	P	S
MON 654	F	R			DU	P	
MON 655	F				DU	P	
MON 660	PO	R			DU	P	
MON 661	PO	R		MP	DU	P	
MON 662	F			MP		NP	
MON 663	NR			MP		NP	
MON 663A	F			MP		P	
MON 664	NR			MP		NP	
MON 665	NR			MP		NP	
MON 665A	NR			MP		NP	
MON 666	PO					P	
MON 667	G			MP		P	
MON 671	PO					NP	

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK 2013

**45th Parallel (West Line)
(Quebec – New York)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 672	G					NP	
MON 673	G			MP		NP	
MON 674	G			MP		P	
MON 674A	G			MP		NP	
MON 675	F					NP	
MON 676	PO	R			DU	P	
MON 676A	G			MP		P	
MON 677	PO	R			DU	NP	
MON 678	G					P	
MON 678A	PO					P	
MON 679	PO					P	
MON 679A	F			MP		P	
MON 680	F			MP		P	
MON 681	F			MP		P	
MON 681A	G	NM			DU	P	S
MON 681B	G	NM			DU	P	S
MON 682	G	R		MP	DU	P	
MON 682A	G	NM			DU	P	S
MON 683	None	R			DU	P	
MON 684	F		MI			NP	
MON 711	F	R			DU	P	
MON 719	F	R			DU	P	

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

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
EAST TAB	NR					NP	
WEST TAB	NR					NP	
RM 7-59	G			MP		P	
RM 9-59	G			MP		P	
RM 11-59	G					P	
SOUTHEAST DISK	G					P	
NORTHWEST DISK	G					P	
RM 10-59	G					P	
RM 12-59	G					P	
RM 14	G			MP		P	
RM 13-59	G			MP		P	
RM 15-59	G			MP		P	
RM 15A-59	NR					NP	
RM 16-59	G			MP		P	
RM 17-59	G			MP		P	
RM 18-58	F		MI	MP		P	
RM 19-59	G			MP		P	
RM 20-59	G			MP		P	
RM 21	G			MP		P	
RM 22-58	G			MP		P	
RM 23-58	G			MP		P	
RM 24-58	G			MP		P	
RM 26-59	G			MP		P	
RM 25-58	F			MP		P	
RM 27-78	G			MP		P	
RM 28-59	G					P	
RM 29-59	G			MP		P	
RM 30-58	G			MP		P	

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK 2013

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

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
RM 31-58	F			MP		P	
RM 32-58	G			MP		P	
RM 34-59	PO			MP		P	
RM 33-78	G					P	
RM 35-59	G			MP		P	
RM 36-78	G			MP		P	
RM 37-59	G			MP		P	
RM 38-78	G			MP		P	
RM 39-59	F			MP		P	
RM 40-59	G			MP		P	
RM 41-59	G			MP		P	
RM 43-59	G					NP	
RM 44-59	F					P	
RM 42-59	G					NP	
NORTH DISK	G					NP	
SOUTH DISK	G					NP	
RM 45-59	G					P	
RM 46	PO			MP		P	
RM 47-59	F			MP		P	
RM 48-59	G			MP		P	
RM 49-59	G			MP		P	
RM 50	PO			MP		P	
RM 51-59	NR					NP	
NORTHEAST DISK	G					NP	
SOUTHWEST DISK	G					NP	
RM 52-59	G			MP		P	
RM 53-99	NR					NP	
RM 54	NR					NP	
RM 55	PO			MP		P	
RM 56	G			MP		NP	
RM 57	G			MP		P	
RM 58	G			MP		P	
RM 59-50	NR					NP	
RM 60	G			MP		P	
RM 61	G			MP		P	
RM 62	G			MP		P	
RM 63	G			MP		P	
RM 64	G			MP		P	
RM 65	G			MP		P	
RM 66	G			MP		P	
RM 67	G			MP		P	
RM 68	G			MP		P	
RM 69	F			MP		P	
RM 70	G			MP		P	
EAST TAB	G					P	
WEST TAB	G					P	
EAST TAB	G					P	
WEST TAB	G					P	
RM 72	G			MP		P	
RM 72 TIWC	PO			MP		P	
RM 73 CIWC	G			MP		P	
RM 74	PO			MP		P	
RM 75	G			MP		P	
RM 76	F			MP		P	
RM 77	F			MP		P	
RM 78	G			MP		P	
RM 79	G			MP		P	
RM 80	G			MP		P	

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK 2013

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

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
RM 81	G			MP		P	
RM 82	G			MP		P	
RM 83	G			MP		P	
RM 84	G			MP		P	
RM 85	G			MP		P	
RM 86	G			MP		P	
RM 87-98	G			MP		P	
RM 88	F			MP		P	

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

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
COBURG	G					P	
FORT NIAGARA LH	G					P	
RM 1-41	F			MP		P	
RM 2-41	G			MP		P	
RM 3-41	G			MP		P	
RM 4-41	F					P	
RM 5-41	G					P	
RM 6-41	G					P	
RM 7-67	G					P	
RM 8-41	G			MP		P	
RM 9A	G			MP		P	
RM 9-63	PO			MP		P	
RM 10-63	NR					NP	
Lewiston-Queenston Bridge N. Tablet	G					NP	
Lewiston-Queenston Bridge S. Tablet	G					NP	
RM 10-63	NR					NP	
RM 11-63	G					P	
RM 12-41	G			MP		P	
RM 13-41	F			MP		P	
RM 14-41	G			MP		P	
RM 15-41	G					P	
RM 16-41	G					P	
RM 17-67	G					P	
SOUTH TABLET	G					NP	
NORTH TABLET	G					NP	
RM 18-41	G			MP		P	
NORTH TABLET	G					NP	
SOUTH TABLET	G					NP	
RM 19-67	G					NP	
RM 20-41	G					P	
TERRAPIN-SUB	G					P	
CD-DISK	G					P	
RM 22-41	G					NP	
RM 23-67	G			MP		P	
RM 24-67	G					P	
RM 25-67	G					P	
RM 26-41	G			MP		P	
RM 27-67	G					P	
RM 28-85	G			MP		P	
RM 29-41	G					P	

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK 2013

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

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
RM 30-41	G			MP		P	
RM 31-41	G			MP		P	
RM 32-41	G			MP		P	
RM 33-98	G			MP		P	
PC-BRGTN	G					NP	
PC-BRGTS	G					NP	
RM 35-98	F			MP		P	
RM 34-98	G					P	

**Lake Erie, Detroit and St. Clair River
(Ontario – Michigan)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
HORSE_LT_41	G					P	
RM LONGPOINT	G					P	
PORT_STANLEY	G					P	
ERIEAU	NR					NP	
883056	NR					NP	
COLCHESTER REEF	G					P	
REFMK A-RM1	G			MP		P	
RM 1-01	G			MP		P	
REFMK B-RM1	NR					NP	
RM 2-01	G					P	
BARPOINT	G					P	
MON 1	G					P	
MON 2	G					P	
MON 3	G					P	
RM 3-01	NR					NP	
MON 4	G					P	
RM 4-42	G			MP		P	
RM 5-42	G					P	
RM 6-66	G					P	
963017	G					P	
RM 7-01	G					P	
DET1	G					P	
RM 8-01	G					P	
RM 8-ECC	G					P	
SOUTHWEST TABLET	NR					NP	
NORTHWEST TABLET	NR					NP	
RM 9-42	F			MP		P	
RM 10-01	G					P	
RM 11-42	F			MP		P	
RM 12-42	G					P	
RM 13-01	G					P	
RM 15	G					P	
RM 14-00	F			MP		P	
RM 37-42	G			MP		P	
RM 39-42	F			MP		P	
RM 41-42	F			MP		P	
RM 42	PO			MP	DU	P	
RM 44-42	G			MP		P	
RM 48-42	F			MP		P	
RM 53-82	G					P	
RM 55	G		MI			P	
TABLET 1	G					NP	

**Lake Erie, Detroit and St. Clair River
(Ontario – Michigan)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
TABLET 2	G					NP	
TABLET 3	G					NP	
TABLET 4	G					NP	
RM FLAG-ECC	G					P	
RM 57-42	F			MP		P	

**St. Mary's River
(Ontario – Michigan)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
RM 1	G			MP		P	
RM 2	G			MP		P	
RM 3	G			MP		P	
RM 4	G			MP		P	
RM 5	G			MP		P	
RM 6	G			MP		P	
RM 7	G			MP		P	
RM 8	G			MP		P	
RM 9	G			MP		P	
RM 10	G			MP		P	
RM 11	F			MP		P	
RM 12	G			MP		P	
RM 13	G			MP		P	
RM 14	G			MP		P	
RM 15	G			MP		P	
RM 16	F			MP		P	
RM 17	G			MP		P	
RM 18	G			MP		P	
RM 19	G			MP		P	
RM 20	G			MP		P	
RM 21	G			MP		P	
RM 22	G			MP		P	
RM 23	PO			MP		P	
RM ARMY	NR					NP	
RM 24	G			MP		P	
RM 25	G			MP		P	
RM 26	G			MP		P	
RM 27	F			MP		P	
RM 28	G			MP		P	
RM 29	F			MP		P	
RM 30	G			MP		P	
RM 31-93	G			MP		P	
RM 32	F			MP		P	
RM 33	G			MP		P	
RM 34	G			MP		P	
RM 35-93	G			MP		P	
RM 36	NR					NP	
TABLET	G					P	
W. Tab	G				DU	P	
TABLET	G					P	
RM 37	G			MP		P	
RM 38	NR					NP	
RM 39	F			MP		P	
RM 40	F			MP		P	
RM 41	G			MP		P	

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK 2013

**St. Mary's River
(Ontario – Michigan)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
RM 42-93	G			MP		P	
RM 43-93	G			MP		P	

**Gulf of Georgia to Northwesternmost Point of Lake of the Woods
(Alberta/Manitoba – Montana/North Dakota/Minnesota)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 893	PO		MA	MP	DU	P	
MON 892	PO				DU	P	
MON 891	G			MP	DU	P	
MON 890	G			MP	DU	P	
MON 889	G			MP	DU	P	
MON 888B	G			MP	DU	P	
MON 888A-84	G			MP	DU	P	
MON 888	G			MP	DU	P	
MON 887	G			MP	DU	P	
MON 879	F			MP	DU	P	
MON 878	G			MP	DU	P	
MON 877	G			MP	DU	P	
MON 876	G			MP	DU	P	
MON 875	G			MP	DU	P	
MON 874	G			MP	DU	P	
MON 873	G			MP	DU	P	
MON 872	G			MP	DU	P	
MON 871	G			MP	DU	P	
MON 870	G			MP	DU	P	
MON 869	G			MP	DU	P	
MON 868	G			MP	DU	P	
MON 867	G			MP	DU	P	
MON 866	G			MP	DU	P	
MON 861	PO				DU	P	
MON 860	PO				DU	P	
MON 859	G			MP	DU	P	
MON 858	F			MP	DU	P	
MON 857	G			MP	DU	P	
MON 856	G			MP	DU	P	
MON 855	G			MP	DU	P	
MON 854	G			MP	DU	P	
MON 853	G			MP	DU	P	
MON 852	G			MP	DU	P	
MON 851B	G			MP	DU	P	
MON 851A	G			MP	DU	P	
MON 851	G			MP	DU	P	
MON 850	G			MP	DU	P	
MON 849	G			MP	DU	P	
MON 848	G			MP	DU	P	
MON 847	G			MP	DU	P	
MON 846	G			MP	DU	P	
MON 845	G			MP	DU	P	
MON 844	G			MP	DU	P	
MON 843	G			MP	DU	P	
MON 842	G			MP	DU	P	
MON 841	G			MP	DU	P	
MON 840	G			MP	DU	P	
MON 839	G			MP	DU	P	
MON 838	G			MP	DU	P	

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK 2013

***Gulf of Georgia to Northwesternmost Point of Lake of the Woods
(Alberta/Manitoba – Montana/North Dakota/Minnesota)***

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 837	G			MP	DU	P	
MON 836A	G			MP	DU	P	
MON 836	G			MP	DU	P	
MON 835A	G			MP	DU	P	
MON 835	G			MP	DU	P	
MON 834	G				DU	P	
MON 833B	PO			MP	DU	P	
MON 833A	G			MP	DU	P	
MON 833AA	G			MP	DU	P	
MON 833	G			MP	DU	P	
MON 832A-91	G			MP	DU	P	
MON 832-63	PO		MA	MP	DU	P	
MON 831	G			MP	DU	P	
MON 830	PO		MA	MP	DU	P	
MON 829	G			MP	DU	P	
MON 828	G			MP	DU	P	
MON 827	G			MP	DU	P	
MON 826	G			MP	DU	P	
MON 825	G			MP	DU	P	
MON 824	G			MP	DU	P	
MON 823	G			MP	DU	P	
MON 822	G			MP	DU	P	
MON 821	NR				DU	NP	
MON 820	G			MP	DU	P	
MON 819	G			MP	DU	P	
MON 818	G			MP	DU	P	
MON 817	G			MP	DU	P	
MON 816A-76	G			MP	DU	P	
MON 816	G			MP	DU	P	
MON 815	G			MP	DU	P	
MON 814	G			MP	DU	P	
MON 813	G			MP	DU	P	
MON 812	G			MP	DU	P	
MON 811	G			MP	DU	P	
MON 810	G			MP	DU	P	
MON 809	G			MP	DU	P	
MON 808	G			MP	DU	P	
MON 807	PO		MA	MP	DU	P	
MON 806A	G			MP	DU	P	
MON 806	G			MP	DU	P	
MON 805	G			MP	DU	P	
MON 804	G			MP	DU	P	
MON 803	G			MP	DU	P	
MON 802	PO		MA	MP	DU	P	
MON 801	G			MP	DU	P	
MON 800B-63	G			MP	DU	P	
MON 800A-63	G			MP	DU	P	
MON 800	G			MP	DU	P	
MON 799	G			MP	DU	P	
MON 784	G			MP	DU	P	
MON 783A	G			MP	DU	P	
MON 783	G			MP	DU	P	
MON 782	G			MP	DU	P	
MON 781A	G			MP	DU	P	
MON 781	G			MP	DU	P	
MON 780A	G			MP	DU	P	
MON 780	G			MP	DU	P	
MON 779B	G			MP	DU	P	

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK 2013

***Gulf of Georgia to Northwesternmost Point of Lake of the Woods
(Alberta/Manitoba – Montana/North Dakota/Minnesota)***

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 779A	G			MP	DU	P	
MON 779AA	G			MP	DU	P	
MON 779	G			MP	DU	P	
MON 778A	G			MP	DU	P	
MON 778	G				DU	P	
MON 777	G				DU	P	
MON 776	G			MP	DU	P	
MON 775A	G			MP	DU	P	
MON 775	G			MP	DU	P	
MON 774A	G			MP	DU	P	
MON 774	G			MP	DU	P	
MON 773A	G			MP	DU	P	
MON 773	G			MP	DU	P	
MON 772	G			MP	DU	P	
MON 771A	G			MP	DU	P	
MON 771	G			MP	DU	P	
MON 770A	G			MP	DU	P	
MON 770	G			MP	DU	P	
MON 769A	G			MP	DU	P	
MON 769	G			MP	DU	P	
MON 768	G			MP	DU	P	
MON 767	G			MP	DU	P	
MON 766A	G			MP	DU	P	
MON 766	G			MP	DU	P	
MON 765B	G			MP	DU	P	
MON 765A-66	PO		MA	MP	DU	P	
MON 765	G			MP	DU	P	
MON 764A	G			MP	DU	P	
MON 764	G			MP	DU	P	
MON 763A	G			MP	DU	P	
MON 763	G			MP	DU	P	
MON 762A	G			MP	DU	P	
MON 762	G			MP	DU	P	
MON 761	F			MP	DU	P	
MON 760	G				DU	P	
MON 759	G			MP	DU	P	S
MON 758A	G			MP	DU	P	S
MON 758	G			MP	DU	P	S
MON 757B	G			MP	DU	P	S
MON 757A	D				DU	NP	
MON 757A-13	G	NM		MP	DU	P	S
MON 757	G			MP	DU	P	S
MON 756A	G			MP	DU	P	
MON 756	G			MP	DU	P	
MON 755A	G			MP	DU	P	
MON 755	G			MP	DU	P	
MON 754	G			MP	DU	P	
MON 753A	PO		MA	MP	DU	P	S
MON 753AA	G	NM		MP	DU	P	S
MON 753	G			MP	DU	P	S
MON 752	G			MP	DU	P	S
MON 751B	G	NM		MP	DU	P	S
MON 751A	G	NM		MP	DU	P	S
MON 751	G			MP	DU	P	S
MON 750	G			MP	DU	P	
MON 749	G			MP	DU	P	
MON 748	G			MP	DU	P	
MON 747	G			MP	DU	P	

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK 2013

***Gulf of Georgia to Northwesternmost Point of Lake of the Woods
(Alberta/Manitoba – Montana/North Dakota/Minnesota)***

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 746	G			MP	DU	P	
MON 745A	NR				DU	NP	
MON 745	G			MP	DU	P	
MON 744	G			MP	DU	P	
MON 743	G			MP	DU	P	
MON 742	G			MP	DU	P	
MON 741	G			MP	DU	P	
MON 740	G			MP	DU	P	
MON 739	G			MP	DU	P	
MON 738	G			MP	DU	P	
MON 737	G			MP	DU	P	
MON 736	G			MP	DU	P	
MON 735	G		MI	MP	DU	P	
MON 734C	G			MP	DU	P	
MON 734B-66	G			MP	DU	P	
MON 734A-98	G			MP	DU	P	
MON 734	G			MP	DU	P	
MON 733A	G			MP	DU	P	
MON 733	G			MP	DU	P	
MON 732	G			MP	DU	P	
MON 731	G			MP	DU	P	
MON 730A	G			MP	DU	P	
MON 730	G			MP	DU	P	
MON 729	G			MP	DU	P	
MON 728	G			MP	DU	P	
MON 727	G			MP	DU	P	
MON 726	G			MP	DU	P	
MON 725	G			MP	DU	P	
MON 724	G			MP	DU	P	
MON 723A	G				DU	P	
MON 723AA	G			MP	DU	P	
MON 723	G			MP	DU	P	
MON 722B	G			MP	DU	P	
MON 722A	G			MP	DU	P	
MON 722	G			MP	DU	P	
MON 721	G			MP	DU	P	
MON 720	G			MP	DU	P	
MON 719	G			MP	DU	P	
MON 718A	G			MP	DU	P	
MON 718	G			MP	DU	P	
MON 717A	G			MP	DU	P	
MON 717	G			MP	DU	P	
MON 716	G			MP	DU	P	
MON 715	G			MP	DU	P	
MON 714	G			MP	DU	P	
MON 713	G			MP	DU	P	
MON 712	G			MP	DU	P	
MON 711B	G			MP	DU	P	
MON 711A	G			MP	DU	P	
MON 711	G			MP	DU	P	
MON 710AB	G			MP	DU	P	
MON 710B	G				DU	P	
MON 710A	G			MP	DU	P	
MON 278	G						
MON 279	G						
MON 280	G						
MON 225	G			MP		P	
MON 224	G			MP		P	S

APPENDIX A – DETAILS OF MAINTENANCE AND SURVEY WORK 2013

***Gulf of Georgia to Northwesternmost Point of Lake of the Woods
(Alberta/Manitoba – Montana/North Dakota/Minnesota)***

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 222	PO		MA	MP		P	
MON 220	G			MP		P	S
MON 219	G			MP		P	S
MON 218	G			MP		P	S
MON 217	G			MP		P	S
MON 216C	G			MP		P	S
MON 216A-90	G			MP		P	S
MON 216	G			MP		P	S
MON 215	G			MP		P	S
MON 214	G			MP		P	S
MON 213	G			MP		P	S
MON 212	G			MP		P	S
MON 211	G			MP		P	S
MON 210	G			MP		P	S
MON 209	G			MP		P	S
MON 208	G		MI	MP		P	S
MON 207D	G			MP		P	S
MON 207C	G			MP		P	S
MON 207B	G			MP		P	S
MON 207A	G			MP		P	S
MON 207	G			MP		P	S
MON 206	G			MP		P	S
MON 205	G			MP	DU	P	S
MON 204	G			MP	DU	P	S
MON 203	G			MP	DU	P	S
MON 202	G			MP	DU	P	S
MON 201	G			MP	DU	P	S
MON 200	G			MP	DU	P	S
MON 199	G			MP	DU	P	S
MON 198	G			MP	DU	P	S
MON 197	G			MP	DU	P	S
MON 196	G			MP	DU	P	S
MON 195	G			MP	DU	P	S
MON 194	G			MP	DU	P	S
MON 193	G			MP	DU	P	S
MON 192	G			MP	DU	P	S
MON 191	F		MI	MP	DU	P	S
MON 190	G			MP	DU	P	S
MON 189	G			MP	DU	P	S
MON 188B	G			MP	DU	P	S
MON 188A-99	G			MP	DU	P	S
MON 188	G			MP		P	S
MON 187	G			MP	DU	P	S
MON 186	G			MP	DU	P	S
MON 185	G			MP	DU	P	S
MON 184	G			MP	DU	P	S
MON 183	G			MP	DU	P	S
MON 182	G			MP	DU	P	S
MON 181A	G			MP		P	S
MON 181	G			MP		P	S
MON 180	G			MP		P	S
MON 179	G			MP		P	S
MON 178	G			MP	DU	P	S
MON 177	G			MP	DU	P	S
MON 176	G			MP	DU	P	S
MON 175	G			MP		P	S
MON 174B	G			MP		P	S
MON 174A	G			MP		P	S

***Gulf of Georgia to Northwesternmost Point of Lake of the Woods
(Alberta/Manitoba – Montana/North Dakota/Minnesota)***

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 174	G			MP		P	S
MON 173	G			MP		P	S
MON 172	G			MP		P	S
MON 171	G			MP	DU	P	S
MON 170	G			MP		P	S
MON 169	G			MP		P	S
MON 168	G			MP		P	S
MON 167	G			MP		P	S
MON 166	G			MP		P	S
MON 165B	G			MP		P	S
MON 165A	G			MP		P	S
MON 165	G			MP		P	S
MON 164	G			MP		P	S
MON 163	G			MP		P	S
MON 162	G			MP		P	S
MON 161	G			MP		P	S
MON 160	G			MP		P	S
MON 159	G			MP		P	S
MON 158	G			MP		P	S
MON 157	G			MP		P	S
MON 156	G			MP		P	S
MON 155	G			MP		P	S
MON 117-56	G					NP	S
MON 116	G					NP	S
MON 113	G					NP	S
MON 111A-05	G					NP	S
MON 104	G					NP	S

***49th Parallel to the Pacific Ocean
(British Columbia – Washington)***

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
Fisgard Island Lighthouse	G					P	S
New Dungeness-Lighthouse	G					P	S
Race Rocks Lighthouse	G					P	S
Angeles Point Reference Mark	D				ND	P	S
Angeles Point Reference Mark 2013	G	NM		MP	ND	P	S
Beachy Head Reference Mark	G			MP		P	S
Turni Point Reference Mark	G			MP		P	S

***Arctic Ocean to Mount St. Elias (141st Meridian)
(Yukon – Alaska)***

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 170	G					P	
MON 169	G					P	
MON 168	G					P	
MON 167	G					P	
MON 166	G					P	
MON 165	G					P	
MON 164	G					P	

**Arctic Ocean to Mount St. Elias (141st Meridian)
(Yukon – Alaska)**

Boundary Monument Type & Number	Reconnaissance	Established	Repairs	Painted	Description	Photo	Monument Surveyed
MON 163	F					P	
MON 162B	G					P	
MON 162A	G					P	
MON 162	G					P	
MON 161	G					P	
MON 160	F					P	
MON 159	G					P	
MON 158	G					P	
MON 157	G					P	

MONUMENT MAINTENANCE

***St. John and St. Francis Rivers
(Maine-Quebec/New Brunswick)***

Total Reference Monuments recovered	36
Total Monuments recovered	175
Total Reference Monuments painted	23
Total Monuments painted	74
Reference Monuments repaired or re-established	9
Monuments repaired or re-established	6
Total Reference Monuments established	0
Total Monuments established	23
Total Reference Monument surveyed	13
Total Monument surveyed	74

***Southwest and South Lines
(Maine – Quebec)***

Total Monuments recovered	240
Total Monuments painted	0
Monuments repaired or re-established	0
Total Monuments established	0
Total Monument surveyed	237

***Southwest Branch of the St. John River
(Maine – Quebec)***

Total Reference Monuments recovered	3
Total Reference Monuments painted	0
Reference Monuments repaired or re-established	0
Total Reference Monuments established	0
Total Reference Monument surveyed	3

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

Total Reference Monuments recovered	6
Total Reference Monuments painted	0
Reference Monuments repaired or re-established	0
Total Reference Monuments established	0
Total Reference Monument surveyed	0

***West Line
(Quebec - New York/Vermont)***

Total Monuments recovered	63
Total Monuments painted	25
Monuments repaired or re-established	24
Total Monuments established	8
Total Monument surveyed	8

***St. Lawrence River and the Great Lakes
(Ontario-New York/Ohio/Michigan)***

Total Reference Monuments recovered	218
Total Reference Monuments painted	140
Reference Monuments repaired or re-established	2
Total Reference Monuments established	0
Total Reference Monument surveyed	0

49th Parallel

(British Columbia/ Alberta/Saskatchewan/Manitoba – Washington/Idaho/Montana/North Dakota/Minnesota)

Total Monuments recovered	308
Total Monuments painted	288
Monuments repaired or re-established	11
Total Monuments established	4
Total Monument surveyed	98

***49th Parallel to the Pacific Ocean
(British Columbia – Washington)***

Total Reference Monuments recovered	7
Total Reference Monuments painted	3
Reference Monuments repaired or re-established	0
Total Reference Monuments established	1
Total Reference Monument surveyed	7

***Arctic Ocean to Mount St. Elias (141st Meridian)
(Yukon – Alaska)***

Total Monuments recovered	16
Total Monuments painted	0
Monuments repaired or re-established	0
Total Monuments established	0
Total Monument surveyed	0

VISTA MAINTENANCE

North Line

(Maine –New Brunswick)

Vista Cleared between Monuments 1 and 117-73

Total distance = **124.82 km (77.56 miles)**

St. John & St. Francis Rivers

(Maine – Quebec/New Brunswick)

Vista Cleared at various site along de St. Francis River

Total distance = **4.2 km (2.61 miles)**

Arctic Ocean to Mount St. Elias - 141st Meridian

(Yukon - Alaska)

Vista Cleared between Monuments 157 and 174

Total distance = **87.7 km (54.5 miles)**

49th Parallel to the Pacific Ocean

(Glacier National Park – Montana/Waterton Lakes National Park – Alberta)

Vista Cleared near monument 279

Total distance = **4,5 km (2.8 miles)**

APPENDIX B – SUMMARY OF MAINTENANCE AND SURVEY WORK

APPENDIX B – SUMMARY OF MAINTENANCE AND SURVEY WORK 2013

Monuments recovered	802
Reference monuments recovered	270
Monuments established	35
Reference monuments established	1
Monuments repaired/ re-established	41
Reference monuments repaired/ re-established	11
Monuments positioned	409
Reference monuments positioned	23
Vista cleared	216.7 km (134.7 miles)

APPENDIX C - 15 YEAR PLAN

APPENDIX C – 15 YEAR PLAN

YEAR	PROJECT	COMPLETION
2012	<i>North Line vista & Monument Brook, vista clearing</i>	<i>Completed in 2013</i>
	<i>S.W. Branch of St. John River, insp. & monumentation</i>	<i>Future Work</i>
	<i>Halls Stream, vista clearing</i>	<i>Deferred</i>
	<i>West Line (VT- QC), vista clearing & monumentation</i>	<i>80% completed</i>
	<i>West Line (NY- QC), vista clearing & monumentation</i>	<i>50% completed</i>
	<i>Lake Sup. To Rainy River, inspection & monumentation</i>	<i>50% Completed</i>
	<i>141st Meridian, vista clearing (4 year project)</i>	<i>60% Completed</i>
	<i>49th Parallel (Pemb.- Turtle Mts.), vista clearing</i>	<i>Completed in 2010</i>
	<i>Pt. Roberts Range Towers, inspection & refurbish</i>	<i>Deferred</i>
	<i>St. Lawrence River, inspection & monumentation</i>	<i>Completed in 2013</i>
	<i>Niagara River, inspection & monumentation</i>	<i>Completed in 2013</i>
	<i>Demarcation of Transboundary Waters</i>	<i>30% completed</i>
	<i>GPS Survey 49th Parallel (ID-MT to Glacier NP)</i>	<i>75% completed</i>
	<i>GPS Survey 141st</i>	<i>Deferred to 2014</i>
	<i>Pt. Roberts vista maintenance</i>	<i>Deferred to 2014</i>
<i>Glacier-Waterton Clearing</i>	<i>Completed in 2013</i>	

2013	<i>S.W. Branch of St. John River, insp. & monumentation</i>	<i>Future Work</i>
	<i>Highlands (N.E. Section), vista clearing</i>	<i>Deferred to 2016</i>
	<i>West Line (N.Y.- Que), vista clearing & monumentation</i>	<i>70% completed</i>
	<i>49th Parallel (Minn.- Man.), vista clearing.</i>	<i>100% completed</i>
	<i>49th Parallel (Fraser & Columbia V.), vista clearing</i>	<i>Deferred to 2015</i>
	<i>GPS Survey 49th Parallel (ID-MT to Glacier NP)</i>	<i>100% completed</i>
	<i>Boundary Mapping</i>	<i>Deferred</i>
	<i>Demarcation of Transboundary Waters</i>	<i>30% completed</i>
<i>GPS Survey 141st</i>	<i>Deferred to 2014</i>	

2014	<i>Passamaquoddy Bay, inspection & clearing</i>	<i>Future Work</i>
	<i>Highlands (N.E. Section), vista clearing</i>	<i>Completed in 2010</i>
	<i>West Line (N.Y.- Que), vista clearing & monumentation</i>	<i>Future Work</i>
	<i>49th Parallel (Minn.- Man.), vista clearing</i>	
	<i>141st Meridian Imagery</i>	
	<i>Glacier Waterton Clearing</i>	
<i>Southwest & South Line, vista clearing</i>		

APPENDIX C – 15 YEAR PLAN

YEAR	PROJECT	COMPLETION
2015	<i>Highlands (N.E. Section), vista clearing (3 year project)</i>	<i>Deferred to 2016</i>
	<i>49th Parallel (Foothills to W. Koot.), vista clearing</i>	Completed in 2010
	<i>S.E. Alaska, vista clearing (3 year project)</i>	Future Work
	<i>Pt. Roberts Range Towers, inspection & refurbish</i>	
	<i>St. Clair River, inspection & monumentation</i>	
	<i>Mapping/GIS Updates</i>	
	<i>Glacier Waterton Clearing</i>	
2016	<i>Southwest and South Line, vista clearing (3 year project)</i>	Future Work
	<i>Highlands (S.W. Section), vista clearing (3 year project)</i>	
	<i>West Line (Vt- Que), vista clearing & monumentation (3 year project)</i>	
	<i>St. Lawrence River, inspection & monumentation</i>	
	<i>Rainy River, inspection & monumentation (2 year project)</i>	
	<i>49th Parallel (Foothills to W. Koot.), vista clearing</i>	
	<i>49th Parallel (Fraser & Columbia V.), vista clearing</i>	
	<i>S.E. Alaska, vista clearing (3 year project)</i>	
	<i>Glacier Waterton Clearing</i>	
	<i>Transboundary Waters Inspection and Clearing</i>	
2017	<i>Passamaquoddy Bay, inspection & clearing</i>	Future Work
	<i>North Line & Monument Brook, vista clearing</i>	
	<i>St. John River, inspection & monumentation</i>	
	<i>St. Francis River, vista clearing & mapping</i>	
	<i>Southwest and South Line, vista clearing</i>	
	<i>Highlands (S.W. Section), vista clearing</i>	
	<i>West Line (Vt- Que), vista clearing & monumentation</i>	
	<i>St. Mary's River, inspection & monumentation</i>	
	<i>Rainy River, inspection & monumentation</i>	
	<i>49th Parallel (Pemb.-Turtle Mts.), vista clearing</i>	
	<i>49th Parallel (Foothills to W. Koot.), vista clearing</i>	
	<i>S.E. Alaska, vista clearing</i>	
	<i>Glacier Waterton Clearing</i>	

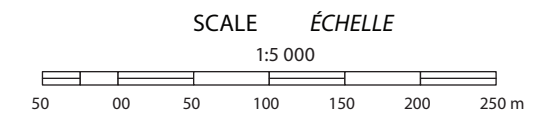
APPENDIX D – PLANS OF MONUMENTS INSTALLED

**BOUNDARY MONUMENT ESTABLISHED
BORNE FRONTIÈRE POSÉE**

646A · 646B · 646C

IBC SECTION SECTION CFI
45th Parallel (West Line) 45e parallèle (Ligne Ouest)

LOCATION LOCALISATION
Lacolle 223, QC
Rouses Point, NY



LEGEND LÉGENDE
Newly established monument ■ Nouvelle borne posée
Existing monument ■ Borne existante

Distances shown are horizontal at general ground level and are expressed in metres and decimals thereof (except when shown otherwise).
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NOTES NOTES

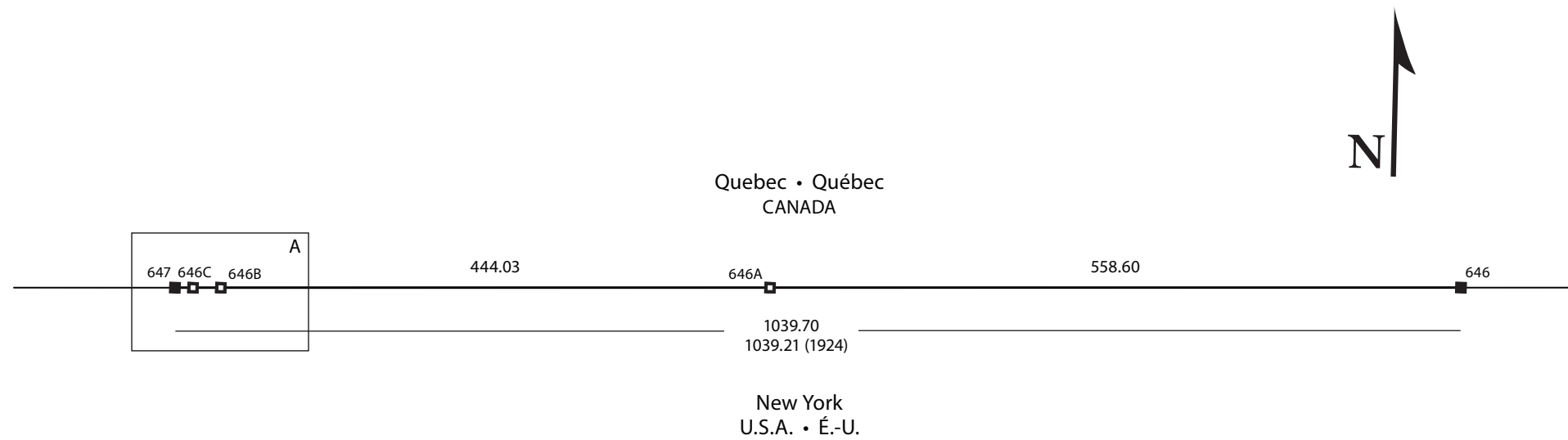
- MON 646 - accept position; ornamental obelisk.
 - MON 646A - set new standard granite obelisk on line.
 - MON 646B - set new decorative obelisk on line east of Route 223/11.
 - MON 646C - set new decorative obelisk on line west of Route 223/11 in rail R/W.
 - MON 647 - reset standard granite obelisk on old base 0.07 m N of found position; accept east-west position.
- (1924) - Report of the International Boundary; Re-establishment of the Boundary between United States and Canada, Source of the St. Croix River to the St. Lawrence River.
- Encroachment: CN Rail control boxes are in the vista at MON 646C.

MONUMENTED & ARPENTÉE ET
SURVEYED BY BORNÉE PAR
Joseph L. Harrietha, CLS
Canadian Section Section canadienne

DATE OF SURVEY DATE DE L'ARPENATAGE
November 2013 novembre 2013



INTERNATIONAL BOUNDARY COMMISSION
COMMISSION DE LA FRONTIÈRE INTERNATIONALE



**BOUNDARY MONUMENT ESTABLISHED
BORNE FRONTIÈRE POSÉE**

653A · 653B

IBC SECTION SECTION CFI
45th Parallel (West Line) 45e parallèle (Ligne Ouest)

LOCATION LOCALISATION
Saint-Bernard-de-Lacolle, QC
Champlain, NY

SCALE ÉCHELLE
1:5 000

LEGEND LÉGENDE
Newly established monument □ Nouvelle borne posée
Existing monument ■ Borne existante

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NOTES NOTES

- MON 653 - replaced with decorative monument east of Rang Saint-André/ Meridian Rd.
- MON 653A - set new standard granite obelisk on line near end of Service Rd., QC.
- MON 653B - set new decorative monument on line, east of northbound truck lanes.
- MON 654 - found leaning, reset 0.08 m S, 0.18 m E; replaced with decorative monument beside southbound lanes at Route 15/87.
- (1924) - Report of the International Boundary; Re-establishment of the Boundary between United States and Canada, Source of the St. Croix River to the St. Lawrence River.

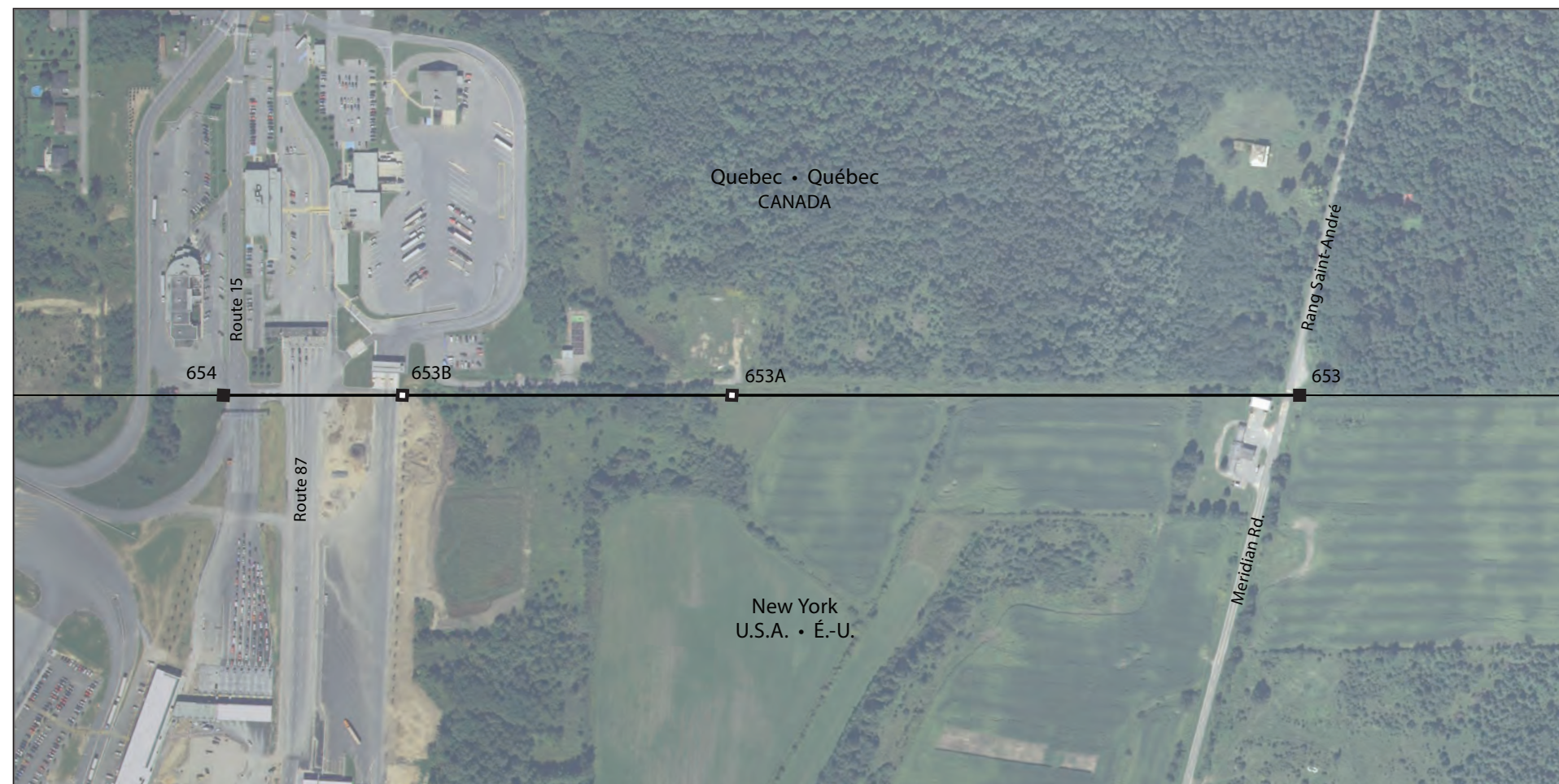
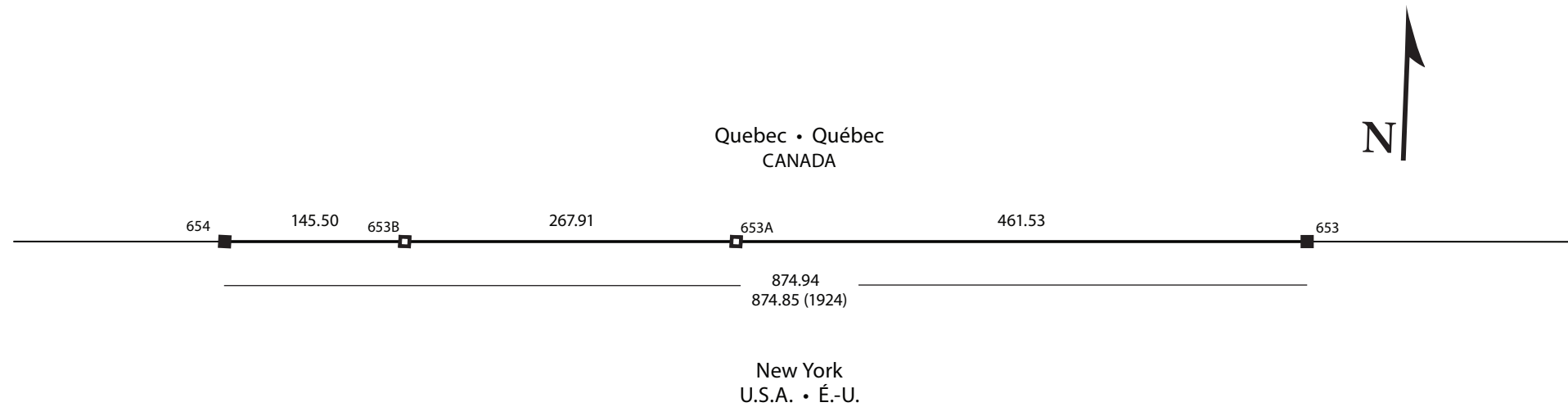
Encroachments:
Fence on line east of MON 653.
Fence on line west of MON 654 to southbound truck lanes.

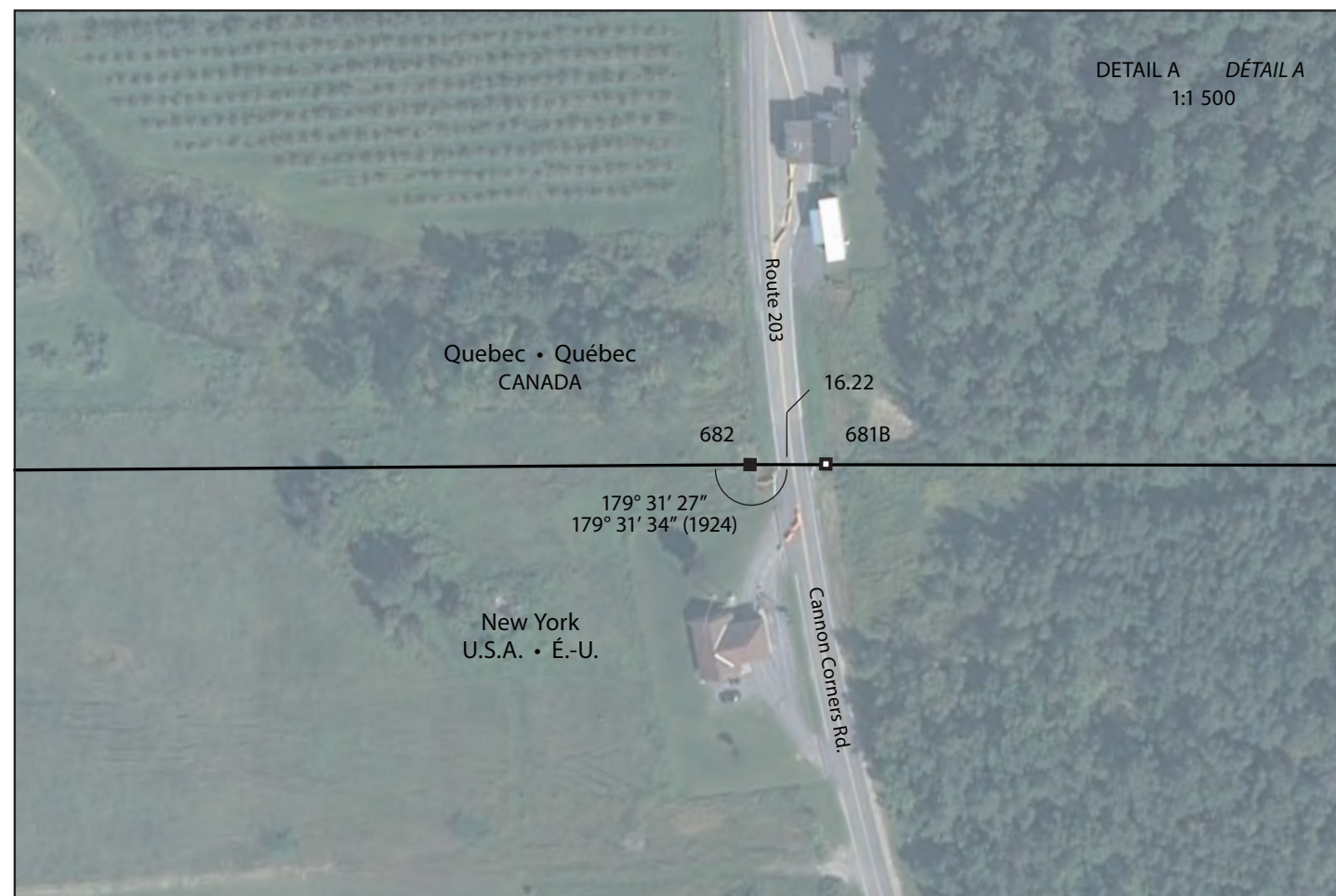
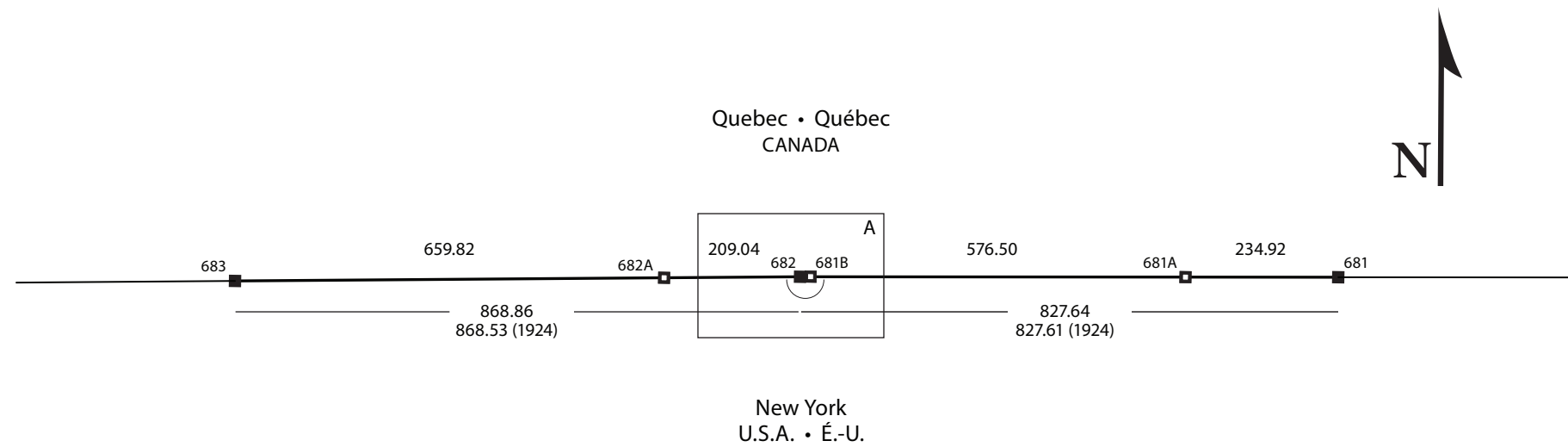
MONUMENTED & ARPENTÉE ET
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Joseph L. Harrietha, CLS
Canadian Section Section canadienne

DATE OF SURVEY DATE DE L'ARPENATAGE
June 2013 juin 2013



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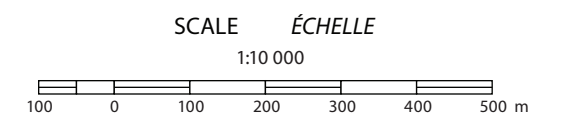


**BOUNDARY MONUMENT ESTABLISHED
BORNE FRONTIÈRE POSÉE**

681A · 681B · 682A

IBC SECTION SECTION CFI
45th Parallel (West Line) 45e parallèle (Ligne Ouest)

LOCATION LOCALISATION
Covey Hill, QC
Cannon Corners, NY



LEGEND LÉGENDE
Newly established monument ■ Nouvelle borne posée
Existing monument ■ Borne existante

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Les distances apparaissant sur ce plan sont horizontales, établies au niveau moyen du terrain et sont exprimées en mètres et décimales du mètre (sauf si indiqué autrement).

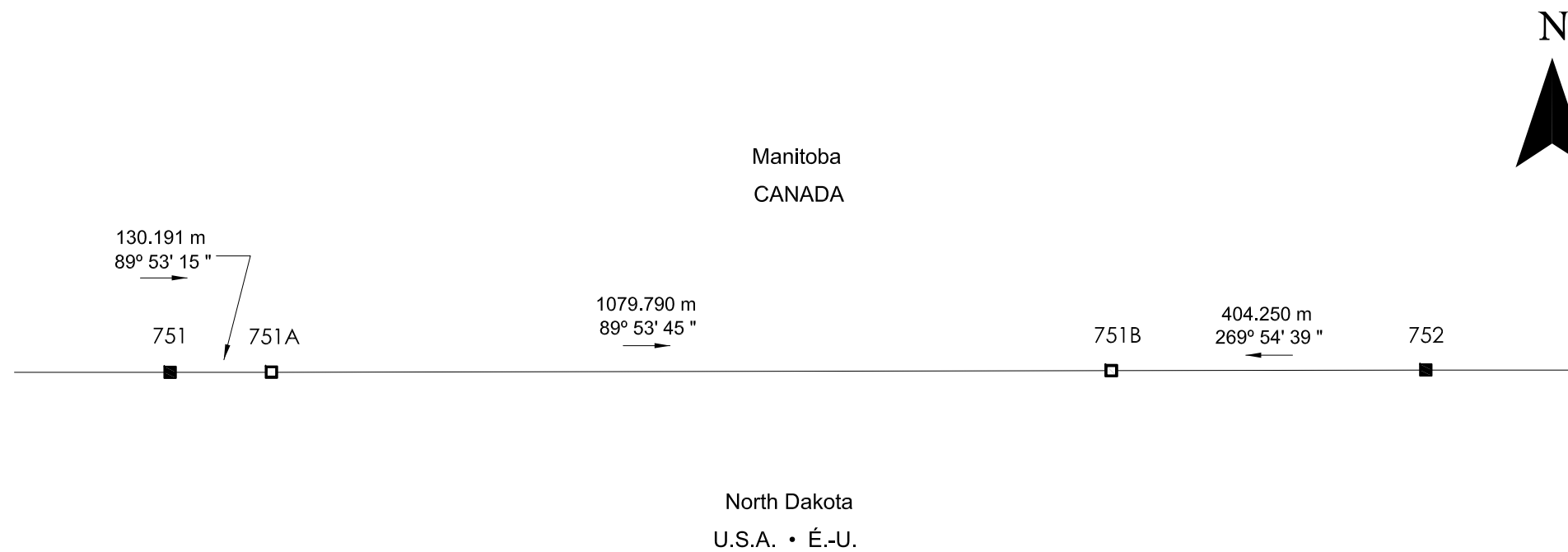
NOTES NOTES
MON 681A - standard granite obelisk established on line between MON 681 and MON 682.
MON 681B - decorative monument established between MON 681 and MON 682.
MON 682 - replaced with decorative monument in same position.
MON 682A - standard obelisk established on line between MON 682 and MON 683.
MON 683 - renewed 0.03 m south; accept east-west position.
(1924) - Report of the International Boundary; Re-establishment of the Boundary between United States and Canada, Source of the St. Croix River to the St. Lawrence River.

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Joseph L. Harrietha, CLS
Canadian Section Section canadienne

DATE OF SURVEY DATE DE L'ARPENATAGE
September 2013 septembre 2013



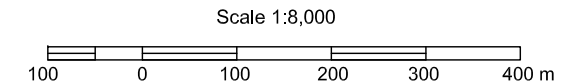
INTERNATIONAL BOUNDARY COMMISSION
COMMISSION DE LA FRONTIÈRE INTERNATIONALE



BOUNDARY MONUMENT ESTABLISHED
BORNE FRONTIÈRE POSÉE
MON 751A • MON 751B

IBC SECTION SECTION CFI
49th Parallel (MB - ND) 49e parallèle (MB - D. du N.)

LOCATION LOCALISATION
Crystal City, MB
Sarles, ND



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.

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 azimuths géodésiques sont présentés. Les angles et les distances sont dérivées d'observations GPS.

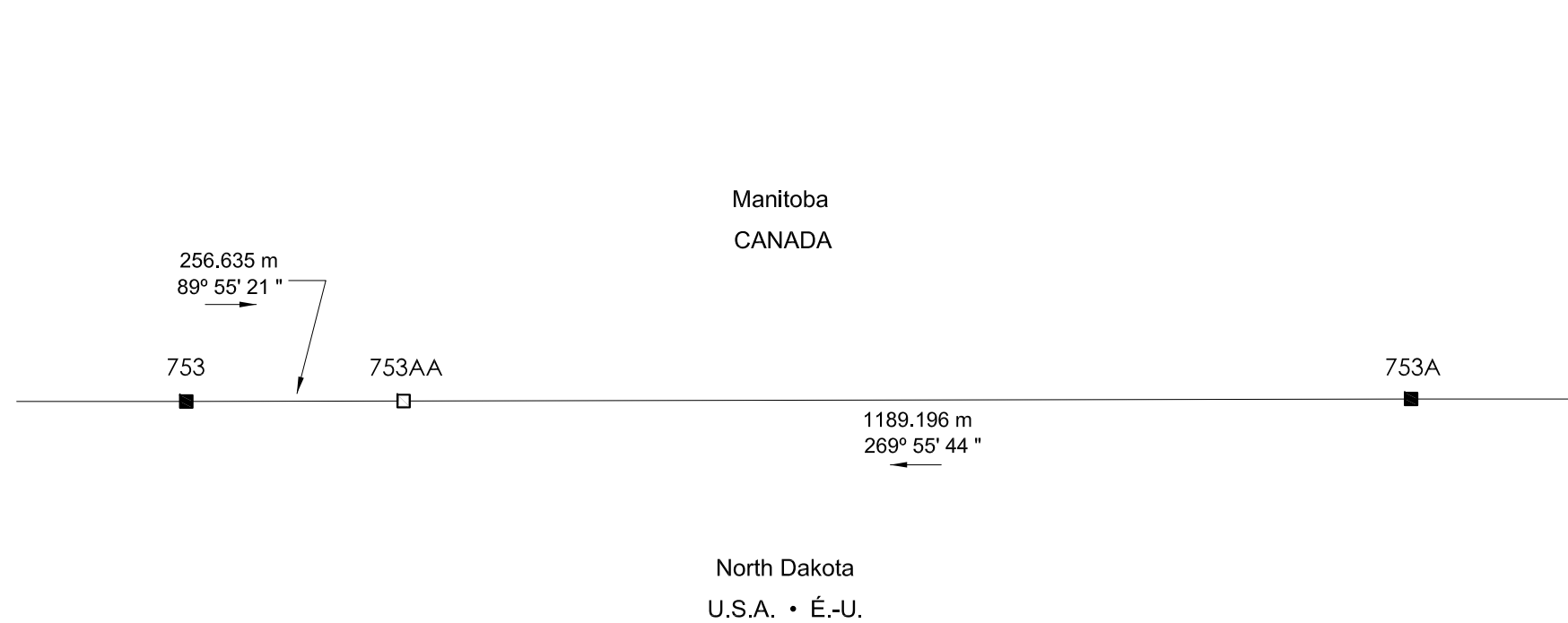
NOTES NOTES

- MON 751 - Monument found and newly painted.
- MON 751A- Established stainless steel obelisk on concrete base.
- MON 751B - Established stainless steel obelisk on concrete base.
- MON 752 - Monument found and newly painted.

MONUMENTED & ARPENÉE ET
SURVEYED BY BORNÉE PAR
Bryan C. Cloutier
American Section Section américaine

DATE OF SURVEY DATE DE L'ARPENATAGE
June 2013 juin 2013

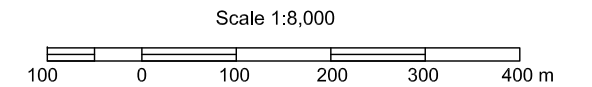




BOUNDARY MONUMENT ESTABLISHED
BORNE FRONTIÈRE POSÉE
MON 753AA

IBC SECTION SECTION CFI
49th Parallel (MB - ND) 49e parallèle (MB - D. du N.)

LOCATION LOCALISATION
Crystal City, MB
Sarles, ND



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.

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 azimuths géodésiques sont présentés. Les angles et les distances sont dérivés d'observations GPS.

NOTES NOTES

MON 753 - Monument found and newly painted.

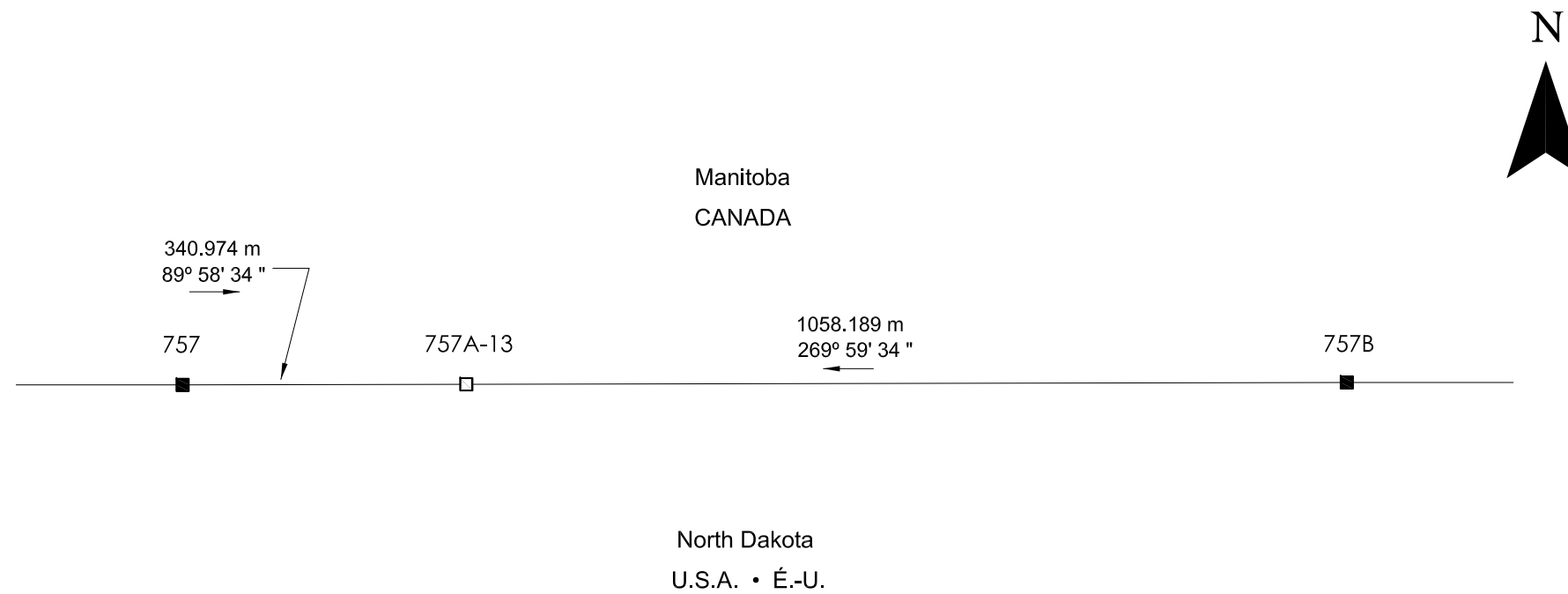
MON 753A- Renewed monument and newly painted.

MON 753AA - Established stainless steel obelisk on concrete base.

MONUMENTED & ARPENTÉE ET
SURVEYED BY BORNÉE PAR
Bryan C. Cloutier
American Section Section américaine

DATE OF SURVEY DATE DE L'ARPENATAGE
June 2013 juin 2013

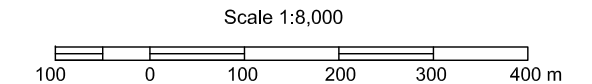




BOUNDARY MONUMENT ESTABLISHED
BORNE FRONTIÈRE POSÉE
MON 757A-13

IBC SECTION SECTION CFI
49th Parallel (MB - ND) 49e parallèle (MB - D. du N.)

LOCATION LOCALISATION
Crystal City, MB
Sarles, ND



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.

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

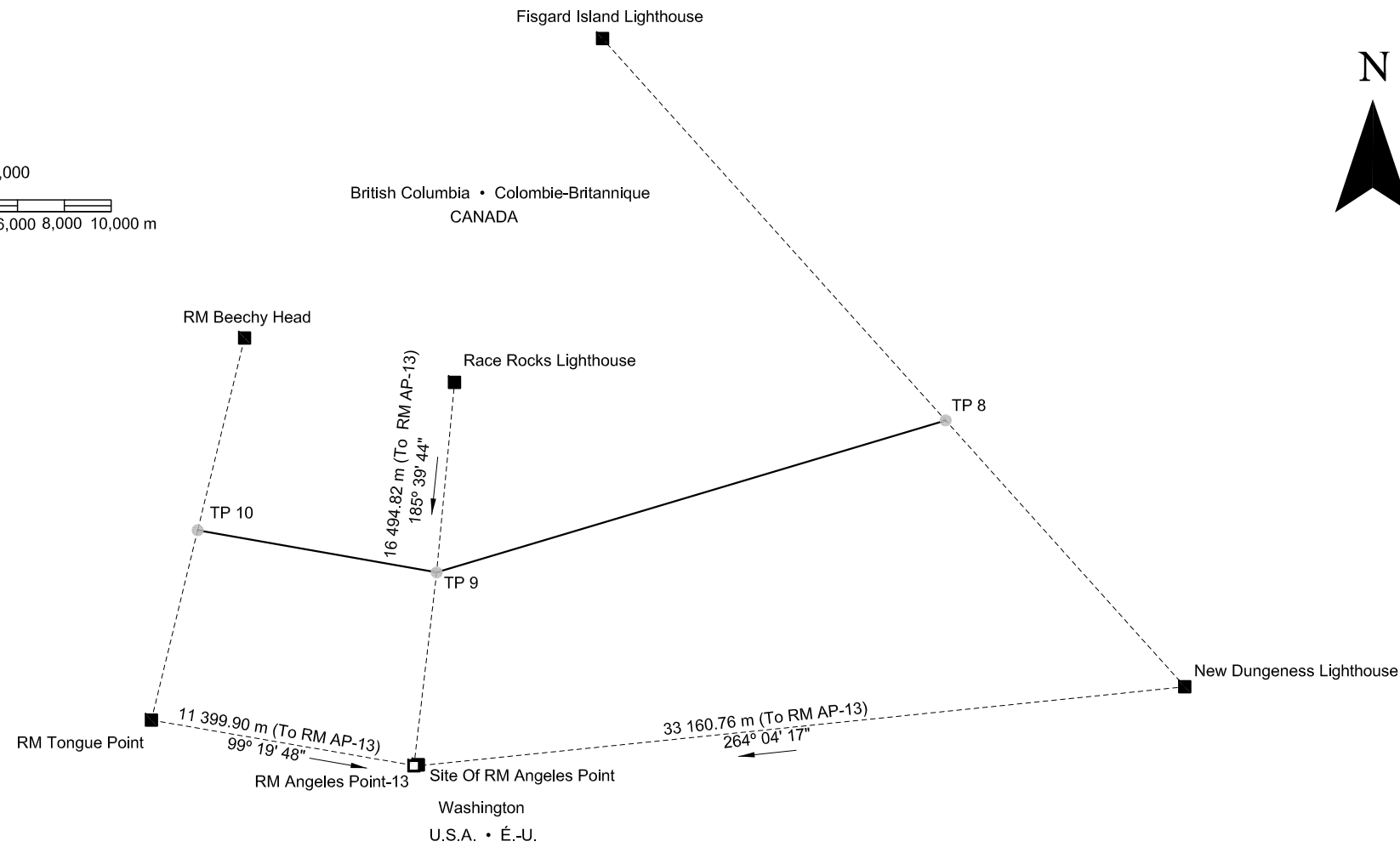
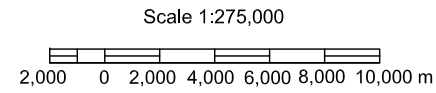
NOTES NOTES

- MON 757 - Monument found and newly painted.
- MON 757A-13 - Established stainless steel obelisk on concrete base.
- MON 757B - Monument found and newly painted.

MONUMENTED & ARPENTÉE ET
SURVEYED BY BORNÉE PAR
Bryan C. Cloutier
American Section Section américaine

DATE OF SURVEY DATE DE L'ARPENATAGE
June 2013 juin 2013





BOUNDARY MONUMENT ESTABLISHED
BORNE FRONTIÈRE POSÉE
RM Angeles Point-13

IBC SECTION SECTION CFI
 49th Parallel to the Pacific Ocean 49e parallèle à l'Océan Pacifique

LOCATION LOCALISATION
 Strait of Juan de Fuca; near Victoria, BC
 Port Angeles, WA

LEGEND	LÉGENDE
Newly established monument	□ Nouvelle borne posée
Existing monument	■ Borne existante
Turning Point	● Point tournant
International Boundary	— Frontière internationale
Survey Ties	- - - - Rattachements d'arpentage

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

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 azimuths géodésiques sont présentés. Les angles et les distances sont dérivées d'observations GPS.

NOTES NOTES

AP-MON - Found displaced in water on an eroded beach.

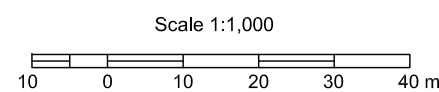
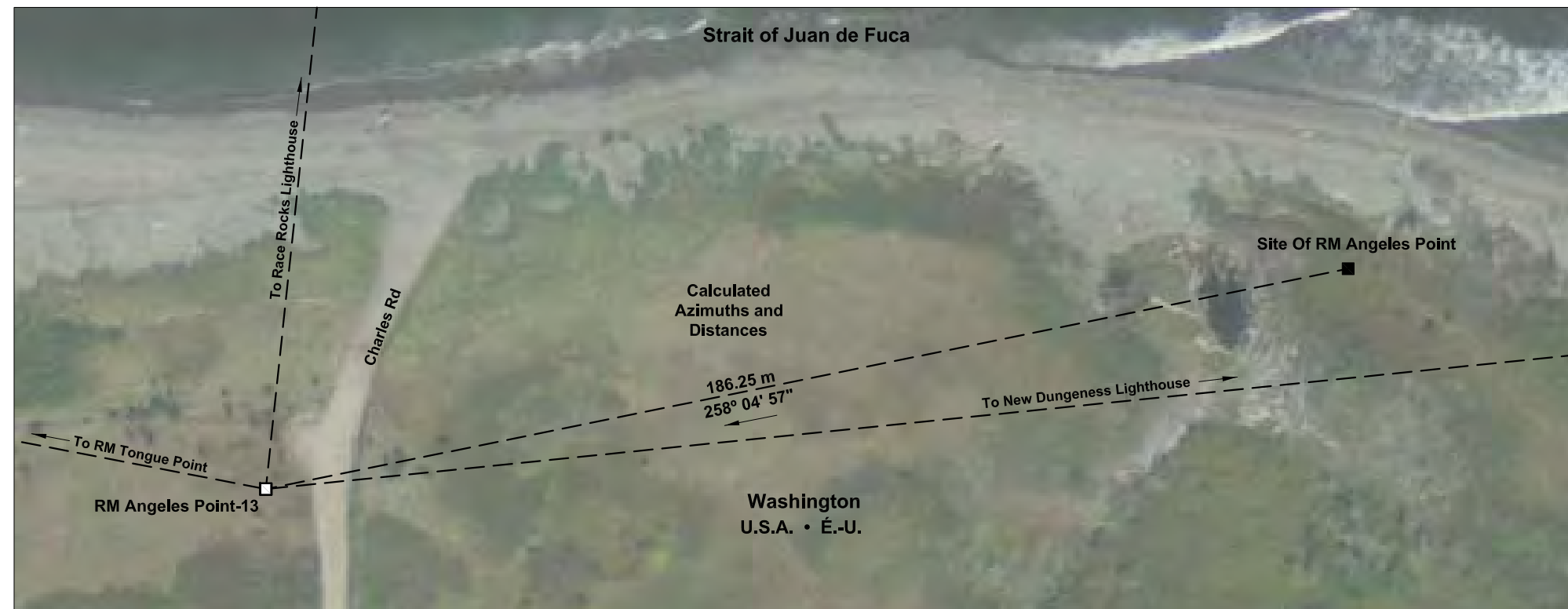
AP-MON-13 - Renewed monument established at a new location higher from the water level. A new base was created and the obelisk was placed upon it and painted white.

MONUMENTED & ARPENTÉE ET
 SURVEYED BY BORNÉE PAR
 Phillip D. Hargrove
 American Section Section américaine

DATE OF SURVEY DATE DE L'ARPENATAGE
 June 2013 juin 2013



INTERNATIONAL BOUNDARY COMMISSION
 COMMISSION DE LA FRONTIÈRE INTERNATIONALE





**International Boundary Commission,
Canada and United States**

**Joint Annual Report
2013**