A PROPOSED CHART SCHEME FOR THE GREAT LAKES

AUGUST, 1975

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LIST OF APPENDICES

The following appendices are copies of the charts listed with the proposed schemes sketched on them. The existing U.S. Chart coverage has been included.

APPENDIX 1	CHART 2400	GENERAL CHART OF THE GREAT LAKES
APPENDIX 2	CHART 2000	LAKE ONTARIO
APPENDIX 3	CHART 2100	LAKE ERIE
APPENDIX 4	CHART 2200	LAKE HURON
APPENDIX 5	CHART 2300	LAKE SUPERIOR
APPENDIX 6	PROTOTYPE	HARBOURS CHART - BOOKLET

Appendix 1 to Appendix 5 have been projected onto sketches at a scale appropriate for inclusion in the back of this volume.

The following appendices are copies of the existing chart scheme for the respective lakes. They are copied from C.H.S. Information Bulletin No. 1 and are included for easy reference.

APPENDIX 7	LAKE ONTARIO AND LAKE ERIE
APPENDIX 8	LAKE HURON
APPENDIX 9	LAKE SUPERIOR
APPENDIX 10	GENERAL CHARTS OF THE GREAT LAKES

CHART SCHEME FOR THE GREAT LAKES

Central Region
August, 1975

Introduction

It has become increasingly apparent that the existing charts of the Great Lakes do not adequately meet the changing patterns of today's marine traffic. With the imminent introduction of metric charts and the standardization of chart paper sizes, it is obvious that NOW is the ideal time to redraw the chart scheme. Capitalization on the expense and effort which will be incurred by metrication anyway dictates that a new chart scheme similar to what is being proposed here should be phased in at the same time.

The proposed scheme, sketched on charts labelled APPENDIX 1 to APPENDIX 5, embraces the standard A0 paper, recommended neatline sizes, and recommended scales (See Criteria for Chart Scheming, 4th Draft, May 27, 1975).

General Description

This scheme proposes 36 new charts at 9 different scales to replace 45 charts at 30 different scales. These numbers include the 5 general charts of the lakes.

Eleven of these charts would be recreational strip charts which would not require hand corrections. Four rectangular charts of North Channel could also be considered for recreational usage.

Therefore, only 20 charts instead of the present 45 would be deemed for commercial usage, and it is proposed that these be printed on both heavy paper (and hand corrected) for the commercial user, and lighter paper for the recreational user. Assuming that the latter would comprise about 60% of the charts printed, the overall reduction in charts requiring hand maintenance would be about 85%. The rest would be reprinted annually in a manner similar to the N.O.S.

Scales and layouts have been selected so that they can be easily tied in with the U.S. chart scheme. Charts have been designed so that neither U.S. nor Canadian shoreline is favoured, but so that the mariner will have the best picture of what is around him in all directions.

The basic principles of this proposed scheme are extracted from the Criteria for Chart Scheming, 4th draft, May 27, 1975. The principal points are:

1) all charts shall be printed on a standard paper size which is the A0 size of 1189 mm by 841 mm,

2) the maximum neatline size shall be 1100 mm by 750 mm.
Optional neatline sizes shall be: 980 mm x 650 mm
1100 mm x 650 mm
and 980 mm x 750 mm

3) strip charts shall be developed for printing two-up on A0 size paper with a maximum neatline size of 376 mm by 1163 mm,

4) scales will be a ratio of 10 as far as possible with a desirability to maintain one scale for each series of charts.

The sub-principles for application to this proposed scheme are:

(a) there will be a general chart of each Great Lake and of Georgian Bay,

(b) there will be a confluence chart at a larger scale for the ends of each lake where all through traffic converges,

(c) the shoreline in between these confluence charts will be covered by recreational charts in a strip or rectangular format depending upon the geography,*

(d) charts of the major harbours will be maintained.

* - The advantages of the strip chart versus the rectangular chart format along the coast are:

1) twice as much shoreline could be covered on one chart or the same shoreline could be covered at twice the scale,

2) these areas are mainly of interest to the recreational boater who seems to favour the area within five miles of the shoreline. Strip charts are a preferable design for use in small boats,

3) the large scale detail is of little use to the offshore boater who only requires a general picture such as would be provided by the general chart of the lake,

4) commercial traffic traversing the lake would not be required to carry these charts by the Chart and Publications Regulations,

5) there are very few deep draft ports along these areas,

6) if desired, the commercial user would still be able to use the charts. They would be of an equally high quality to the other charts, and up to date information and corrections would always be available.

DETAILED DESCRIPTION

GENERAL CHARTS (See Appendix I)

Chart 2000 of Lake Ontario should be redrawn, retaining the scale of 1:400,000, inside the minimum recommended neatline of 980 mm by 650 mm. The increase in size will enable much more land mass to be shown and the generalization of the Trent Severn Waterway could be included to Georgian Bay.

Chart 2100 of Lake Erie should be redrawn, retaining the scale of 1:400,000, inside the recommended neatline of 1100 mm by 650 mm. This would give a better overlap into Lake Ontario, and also include a larger portion of the Maumee River through Toledo.

Chart 2200 of Lake Huron should be redrawn, retaining the scale of 1:400,000, inside the maximum recommended neatline dimensions of 1100 mm by 750 mm. This would give good coverage of the entrances to Lake Michigan, Lake Superior and Georgian Bay without having to break the neatline as is presently done on Chart 2200.

Chart 2300 of Lake Superior should be redrawn at a scale of 1:600,000 (presently 1:547,160) inside the recommended neatline of 1100 mm by 650 mm. This is the same scale as the present U.S. chart of Lake Superior. The present neatline break at the east side would not be required. The eastern limit could be moved considerably westward because the newly proposed general chart of Lake Huron has a much greater coverage of the entrance to Lake Superior than did the old one.

The present general chart (2201) of Georgian Bay at a scale of 1:200,000 is vastly oversized for printing on A0 size paper. In order to retain the Bay in its entirety with adequate coverage of the exit to Lake Huron, and the areas confluent to Midland, Port Severn, and North Channel, a

reduction of the scale to 1:250,000 would be necessary. With this reduction the present neatline width of 902 mm (±) would be reduced to 721 mm, and the chart could be ideally suited for incorporation inside the neatline of 980 mm by 750 mm.

It should be noted that this is a general chart and is equated with the general charts of the Great Lakes on Information Bulletin No. 1. No recommendations to change the larger scale charting of Georgian Bay are being included in this proposal.

LAKE ONTARIO (See Appendix 2)

Confluence Charts

On the eastern side, Chart 2064 should be redrawn to become the confluence chart. At present, this chart is totally inadequate in its coverage of U.S. shoreline. The scale should be reduced from 1:61,243 to 1:80,000 inside the maximum neatline of 1100 mm by 750 mm. This will facilitate coverage of the southerly start of the more complex area and still include the northern shoreline and the city of Kingston. An optimum amount of useful Canadian shoreline to the west and U.S. shoreline to the east will be included. The western limit should include the major feature of Pt. Petre which will overlap on a proposed strip chart.

At the western end, Chart 2063 should be redrawn to become the confluence chart. The scale of 1:73,031 should be reduced to 1:80,000 inside a neatline of 980 mm by 750 mm. This would be the same scale as the proposed chart for the eastern end and also the same as the adjacent U.S. Chart No. 25. The neatline would not have to be broken at Toronto as is presently done and coverage would be extended farther south into the Niagara River.

Recreational (Strip) Charts

A series of 1:40,000 strip charts is proposed to cover the Canadian shoreline of the lake. These would be printed two-up on A0 size paper and are schemed using the maximum neatline of 376 mm by 1163 mm. Thus, 5 charts (2 strips each) would cover the lake and the Bay of Quinte passage. For a detailed layout and limits, refer to Appendix 2.

Harbours

Commercial type charts should be maintained for Toronto and Hamilton Harbours. Hamilton Harbour Chart 2067 (presently at 1:18,000) should be redrawn at 1:20,000*. This scale and the minimum neatline size (980 mm by 650 mm) would improve the coverage of the approaches.

The two charts at Toronto, 2065 and 2068 (both at 1:12,000) should be combined to produce one chart at 1:20,000. This scale and the minimum neatline size seem fully adequate.

Chart 2042 (Welland Canal) and Chart 2043 (Approaches to Niagara River) should be maintained, and need only be redrawn to A0 specifications.

Harbours of some interest to commercial shipping (i.e., Bronte Shell Wharf, Clarkson, Ogden Point) could be portrayed as insets on the appropriate smaller scale charts.

Charts of the smaller harbours, used mainly by recreational traffic, should be produced, and presented in a booklet format as described in the last part of this paper.

* - A new chart of Hamilton Harbour in metric units is presently being constructed. It should be noted that neither the scale nor neatline size are in accordance with the Criteria for Chart Scheming Guidelines.

Lake Ontario - Conclusions

This scheme thus proposes 9 new charts at 3 different scales to replace 14 existing charts at 11 different scales. Only the two confluence charts and the Hamilton and Toronto Harbour charts should require hand corrections.

A much greater service will be provided to the recreational boater with 1:40,000 shoreline coverage where the previous coverage averaged about 1:70,000.

Scales will be standardized to a multiple of 10,000, while all commercial harbours will be entered at the same scale, confluent areas will be encountered at the same scale, and all recreational strip charts will be at the same scale. It should be noted that the two proposed confluence charts are at the same scale as the adjacent coverage on the U.S. side.

The recreational boater will be served much better with a chart scheme of this nature for Lake Ontario. The commercial user will have to carry less charts but will have better coverage where he wants it.

LAKE ERIE (See Appendix 3)

At present, Lake Erie has no large scale coverage of most of the Canadian shoreline and inadequate coverage at the western confluent area.

Confluence Charts

At the east end, Chart 2101, presently at a scale of 1:125,000 should be redrawn at a scale of 1:100,000. A better detailed coverage would result while the only area being sacrificed is presently covered by Chart 2110 at 1:50,000. So duplication of it is unnecessary. Thus, a confluence chart utilizing a neatline size of 1100 mm by 750 mm would leave the northern and eastern limits unchanged while increasing the detail of the area by 20%.

The west end could be more adequately portrayed by reducing the scale of Chart 2183 from 1:75,000 to 1:100,000 inside a neatline of 1100 mm by 750 mm. This scale would be compatible with the scale recommended at the east end, and would also be the same scale as U.S. Chart No. 39 which covers the same area.

This proposed chart would: 1) include a greater portion of significant U.S. shoreline, and; 2) give the mariner plenty of time to transfer from the general chart to this one before getting to Pt. Pelee and the more complex area.

Special Chart

If Chart 2110 is still deemed necessary, it should be redrawn (1100 mm by 750 mm) at the same scale of 1:50,000. Using the same southern and eastern limits this increase in neatline size would give greater coverage westward with more land mass in the northwest corner. This would leave more room for a proposed inset of Nanticoke to replace the Port Dover inset.

Recreational (Strip) Charts

A series of strip charts at 1:60,000 would adequately cover the Canadian shoreline for the recreational boater. At present, there is no large scale coverage here, an apparent flaw in the present scheme when compared with the coverage of less travelled areas on the other lakes.

It would take only 5 strips to cover the required area with a break for the 1:50,000 special chart. Refer to Appendix 3 for detailed chart layout and limits. The maximum neatline of 376 mm by 1163 mm has been assumed.

Harbours

The Port of Nanticoke should replace the inset of Port Dover on the 1:50,000 chart at Long Point.

The other ports, mainly of interest to the recreational boater, should be presented in a booklet format as described in the last part of this paper.

Lake Erie - Summary

This scheme improves the three existing charts in coverage and scales, adding only the 5 strip charts, i.e. $2\frac{1}{2}$ charts when printed two-up. All of the Canadian shoreline would be charted at a fairly large scale, a 60% improvement over the present coverage.

LAKE HURON (See Appendix 4)

Confluence Charts

Three confluence charts are proposed - one at the south end, one at the north end, and one at the entrance to Georgian Bay.

At the south end, the present chart 2290 (scale 1:94,480) is totally inadequate. It covers only the Canadian shoreline while the main commercial traffic favours the U.S. side of the lake. Utilizing the neatline size of 1100 mm by 750 mm it should be redrawn at 1:120,000 to cover approximately the same area as U.S. Chart No. 51. The scale is the same as the U.S. Chart and is the largest scale possible for obtaining optimum coverage of both shorelines.

At the northwest end Chart 2297 (presently 1:91,085) should be redrawn at a scale of 1:100,000. This is the optimum scale for obtaining detailed coverage of the confluent area including both routes into the North Channel, the approaches to the Straits of Mackinac (giving good overlap for a transfer to U.S. Chart 60), the important features of the Duck Islands, and a maximum amount of U.S. shoreline, without a very great scale reduction. At the east end, ships will have plenty of time to transfer from the general chart before approaching the Duck Islands.

Chart 2235 (Scale 1:60,000) of the entrance to Georgian Bay seems fully satisfactory for here. It need only be redrawn to A0 dimensions (1100 mm by 750 mm). The maximum length was chosen so as to cover more of the shoreline west of South Baymouth where there will be an overlap on a strip chart, at the same scale of 1:60,000.

Recreational (Strip) Charts

Once again the recreational boater is becoming an increasingly important user of charts for this lake. A series of six strip charts is proposed for his use on the Canadian shoreline.

Two strip charts in each direction from the Georgian Bay confluence chart at the same scale of 1:60,000 is appropriate to include sufficient offshore area and still include the many bays and indentations. Areas between the confluence charts can be most easily portrayed with whole strips at this scale.

A scale of 1:80,000 is chosen for two strips at the southeast side. The reasons for a smaller scale here are:

I - relatively less complex shoreline,

II - coverage of the stretch between Sarnia and Kincardine could be accomplished in two strips,

III - a similar ratio between strip and confluence chart to those at the north end.

For detailed layout and limits of the strip charts, refer to Appendix 4. The maximum neatline size of 376 mm by 1183 mm has been assumed.

Rectangular Charts of North Channel

Four rectangular charts (1100 mm by 750 mm) are proposed to cover the entire North Channel. A scale of 1:60,000 seems to be optimum for the area, and is a notable increase from the present. This will give complete coverage of the entire width of the feature and is the same as the largest scale coverage strip charts proposed for Lake Huron. Therefore, these should suffice for the recreational as well as the commercial user. For specific limits, refer to Appendix 4.

Harbours

There is presently no separate chart of harbours for Lake Huron. Harbours and ports presented as insets on existing charts should be compiled in a harbours booklet chart as suggested for Lake Ontario and Lake Erie.

Lake Huron - Summary

Twelve charts at 8 different scales would be replaced by ten charts at 3 different scales. Two larger scale charts in North Channel (2268 and 2294) are not considered in these figures, and would probably have to be maintained.

Coverage of the confluent areas would be greatly improved, and special recreational strip charts for the entire shoreline would be a boon to the recreational boater.

It should be noted that with this scheme, the entire shoreline from Kincardine north, including the North Channel, could be covered at the same scale of 1:60,000.

LAKE SUPERIOR (See Appendix 5)

Six charts at a scale of 1:100,000 (1100 mm by 750 mm) are proposed for Lake Superior from Sault Ste. Marie to Thunder Bay. This would include a confluence chart at the east end where there is presently no Canadian chart. The scheme will be along the north shore culminating with one chart for Thunder Bay and approaches. This area presently requires two charts.

Since this area does not lend itself to strip charting, and since recreational boating is not as popular here as on the other lakes, no special recreational charts are proposed. The above six charts could be printed for both commercial and recreational users. See Appendix 5 for detailed layout.

Harbours

A chart of Thunder Bay Harbour, presently at 1:20,000, should be retained but redrawn to A0 specifications. There are four charts of harbours in Lake Superior which should be retained in some form. They could possibly be combined into two, or at most, three charts.

Lake Superior - Summary

Eleven charts at eight different scales (from 1:60,800 to 1:97,300) would be replaced by six charts, all at the same scale of 1:100,000. This scale is still sufficient when compared to the U.S. series (1:120,000) and the volume of traffic For the much improved layout for this lake, refer to Appendix 5.

HARBOURS BOOKLET CHART (See Appendix 6)

Appendix 6 is a demonstration copy of a possible format for harbour charts designed for small craft use. The significant features of this proposal are:

1. It would be printed on A0 size paper, the same as all charts, and would require no cutting or trimming.

2. It's folded size would be same as that for strip charts.

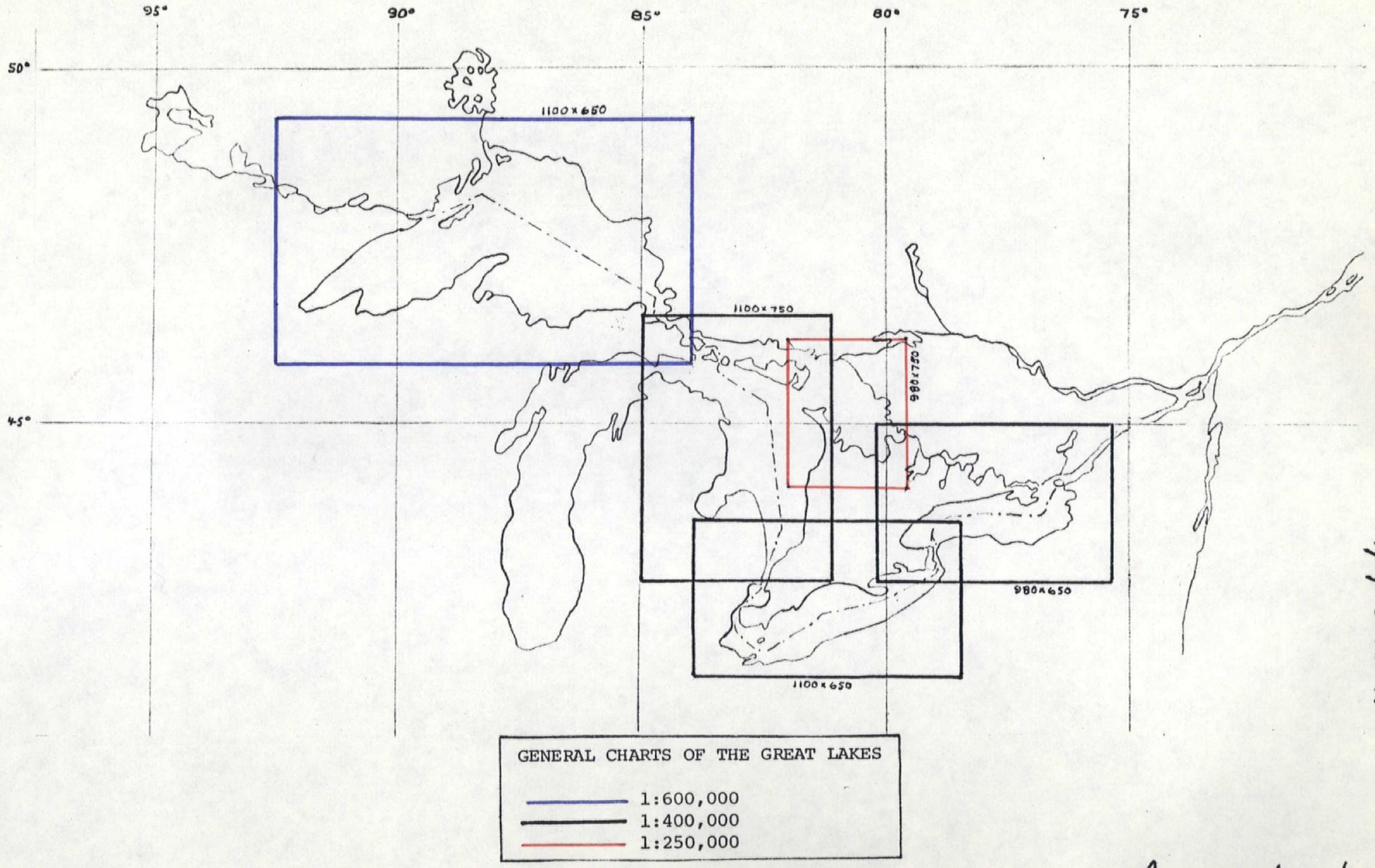
3. Any individual harbour can be exposed with the chart on the right side and other info. on the left with a maximum open size of 39.6 cm by 42.0 cm. This feature would be extremely valuable in a confined area, and would enable the chart to be held in one hand.

4. An optional folding line would enable holes to be punched in one border, and the chart inserted in a 3-ring binder.

5. Without being removed from the binder, any one individual harbour would still be fully accessible.

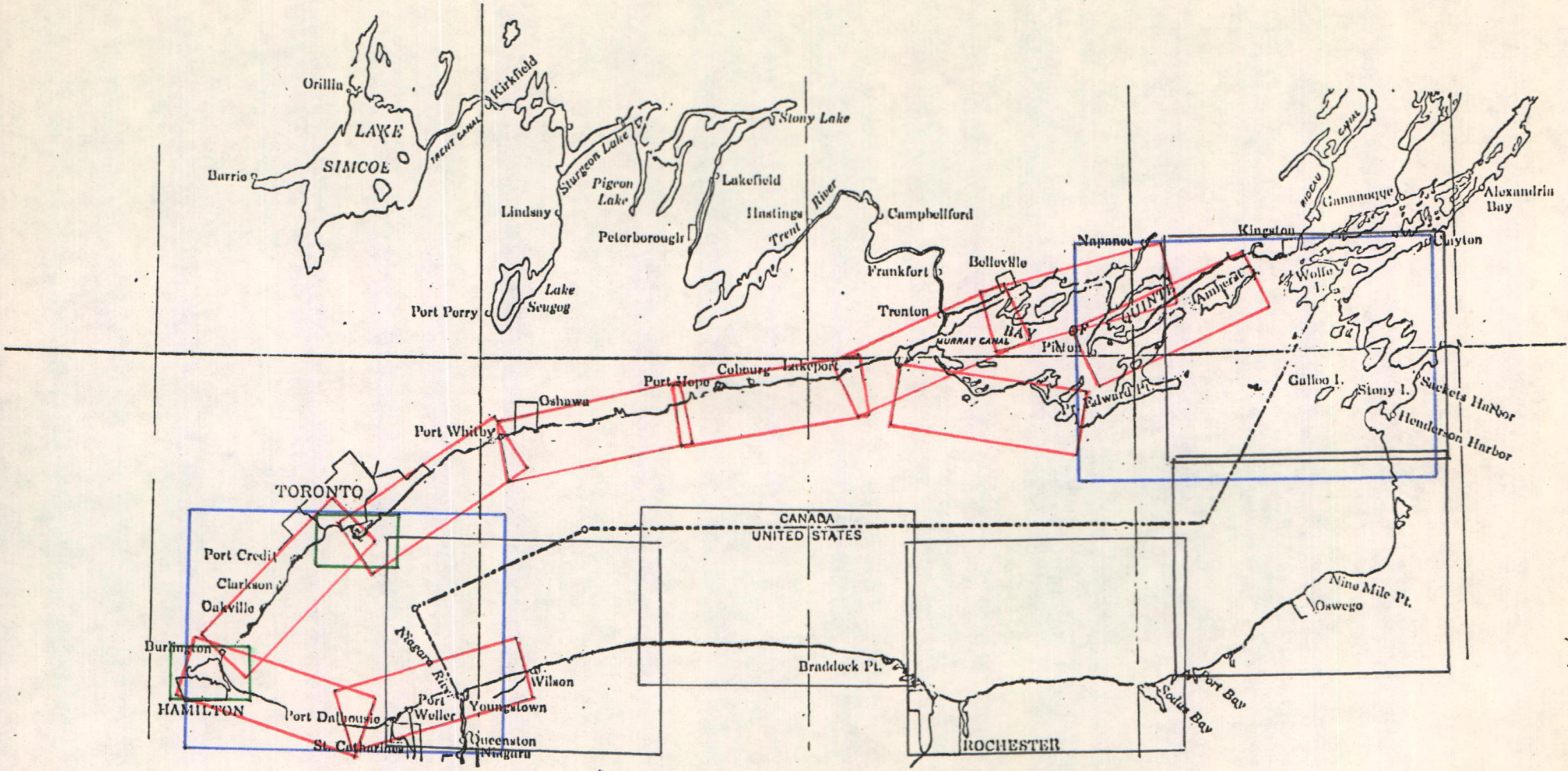
6. Because of its folded size being the same as strip charts, it could be sold in the same size of plastic envelope. Also, strip charts could be secured in the same 3-ring binder.

Besides being the chart style for recreational ports and harbours, this format might be compatible for incorporation into larger scale coverage of confluent or complex areas which are presently covered by insets, or portions of strip charts. In this case, both right and left portions of an open section could be utilized for one chart.



Appendix 1

Appendix 1

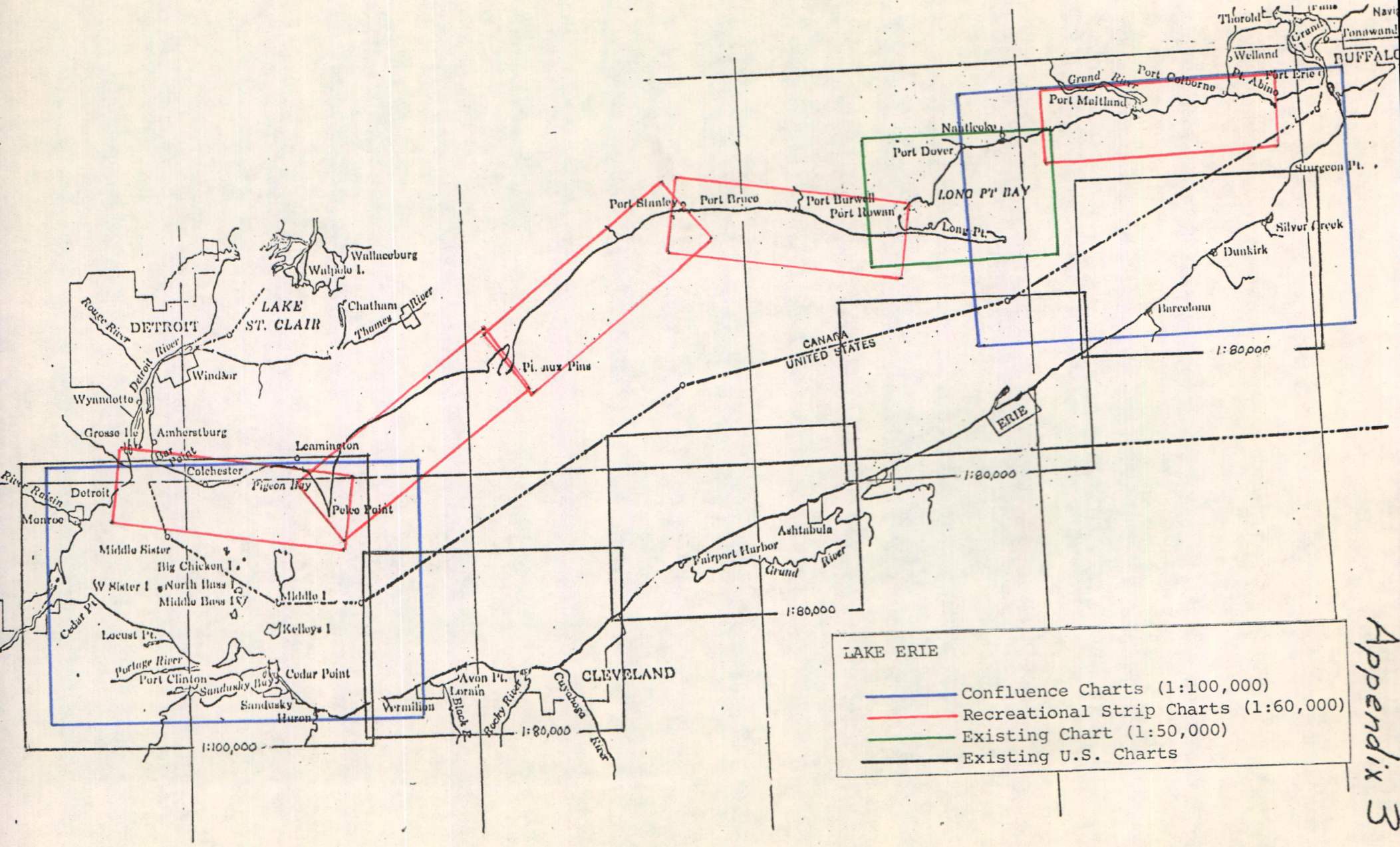


LAKE ONTARIO

- Confluence Charts (1:80,000)
- Recreational Strip Charts (1:40,000)
- Harbour Charts (1:20,000)
- Existing U.S. Charts (1:80,000)

Appendix 2

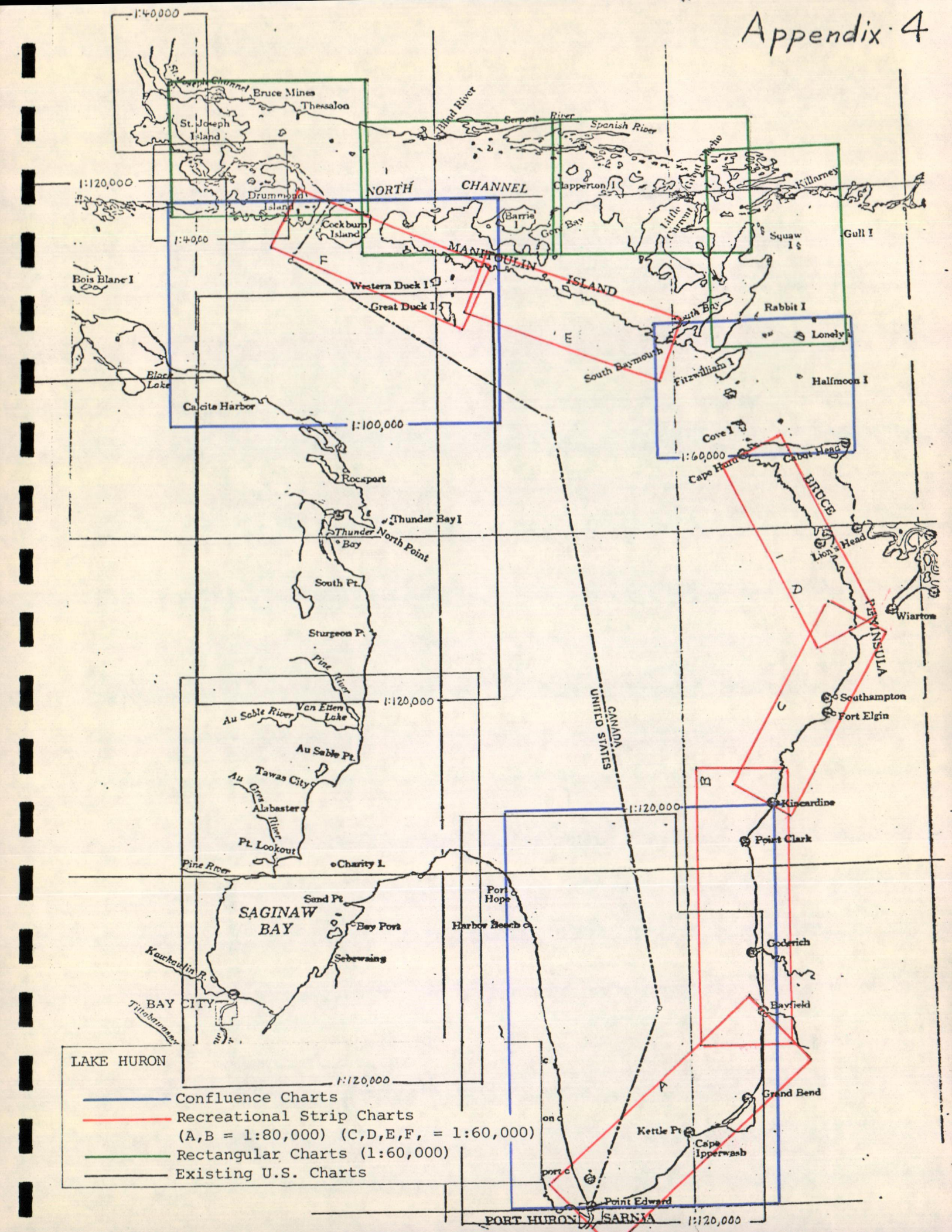
Appendix 2

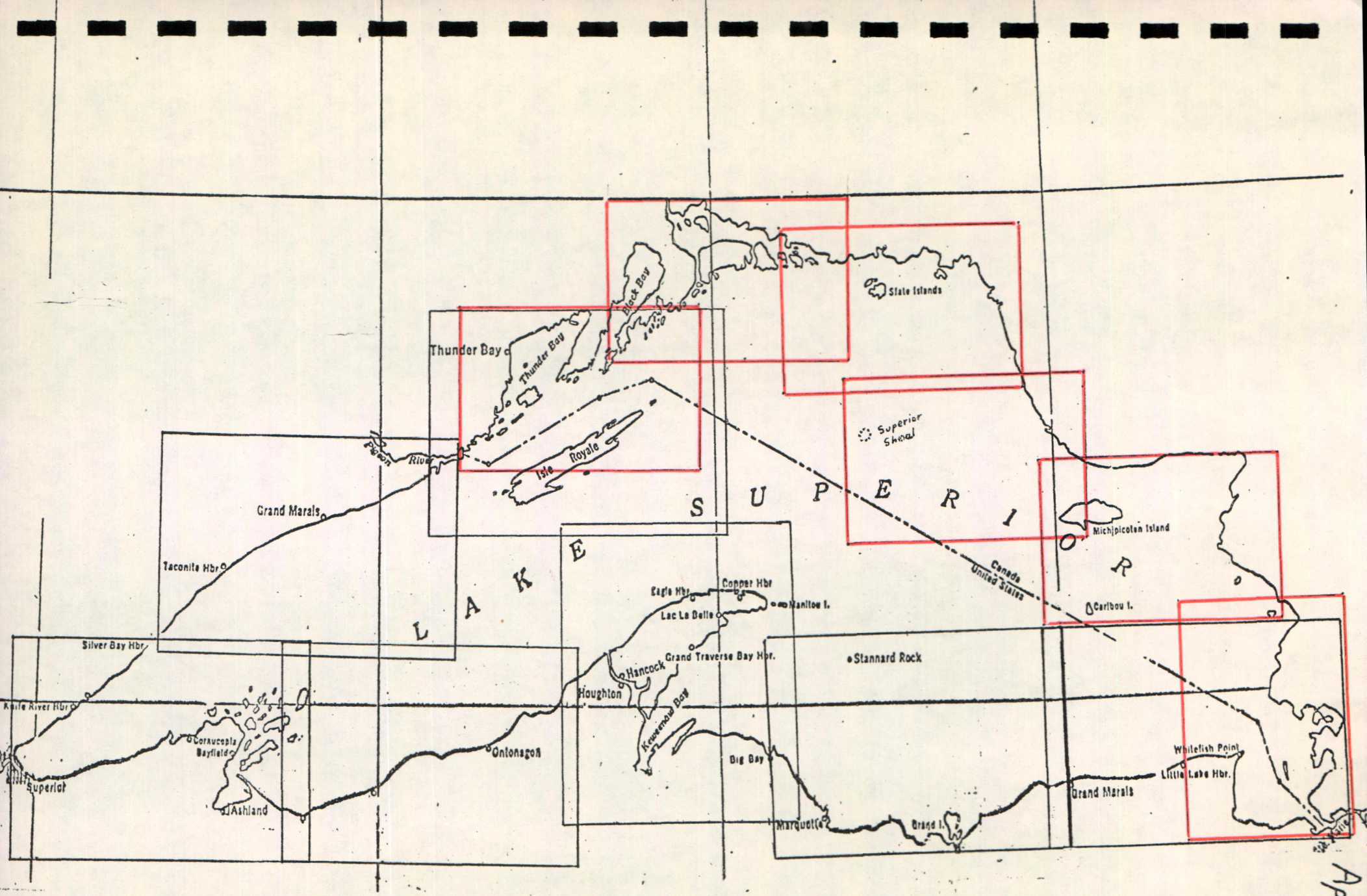


Appendix 3

Appendix 3

Appendix 4


1:40,000
1:120,000
1:40,000
1:100,000
1:60,000
1:120,000
1:120,000
1:120,000
St. Joseph Channel
Bruce Mines
Thessalon
St. Joseph Island
Drummond Island
Cockburn Island
Blind River
Serpent River
Spanish River
NORTH CHANNEL
Clapperton I
Gibraltar Point
Killarney
Barrie I
Gore Bay
Little Current
Squaw I
Gull I
MANITOULIN ISLAND
Bois Blanc I
Western Duck I
Great Duck I
South Bay
Rabbit I
Lonely I
South Baymouth
Fitzwilliam I
Halfmoon I
Black Lake
Calcite Harbor
Cove I
Cape Hurd
Cabot Head
BRUCE PENINSULA
Rockport
Thunder Bay I
Thunder Bay
North Point
Lion's Head
Wiarton
South Pt.
Sturgeon Pt.
Pine River
Au Sable River
Van Etten Lake
Au Sable Pt.
Tawas City
Au Gres River
Alabaster
Pt. Lookout
Pine River
Charity I.
Southampton
Fort Elgin
CANADA
UNITED STATES
Kincardine
Point Clark
Port Hope
Harbor Beach
Sand Pt.
SAGINAW BAY
Bay Port
Sebewaing
Kawkawlin R.
BAY CITY
Tittabawassee
Goderich
Bayfield
Grand Bend
Kettle Pt.
Cape Ipperwash
Point Edward
PORT HURON
SARNIA
A
B
C
D
E
F
LAKE HURON
Confluence Charts
Recreational Strip Charts
(A,B = 1:80,000) (C,D,E,F, = 1:60,000)
Rectangular Charts (1:60,000)
Existing U.S. Charts

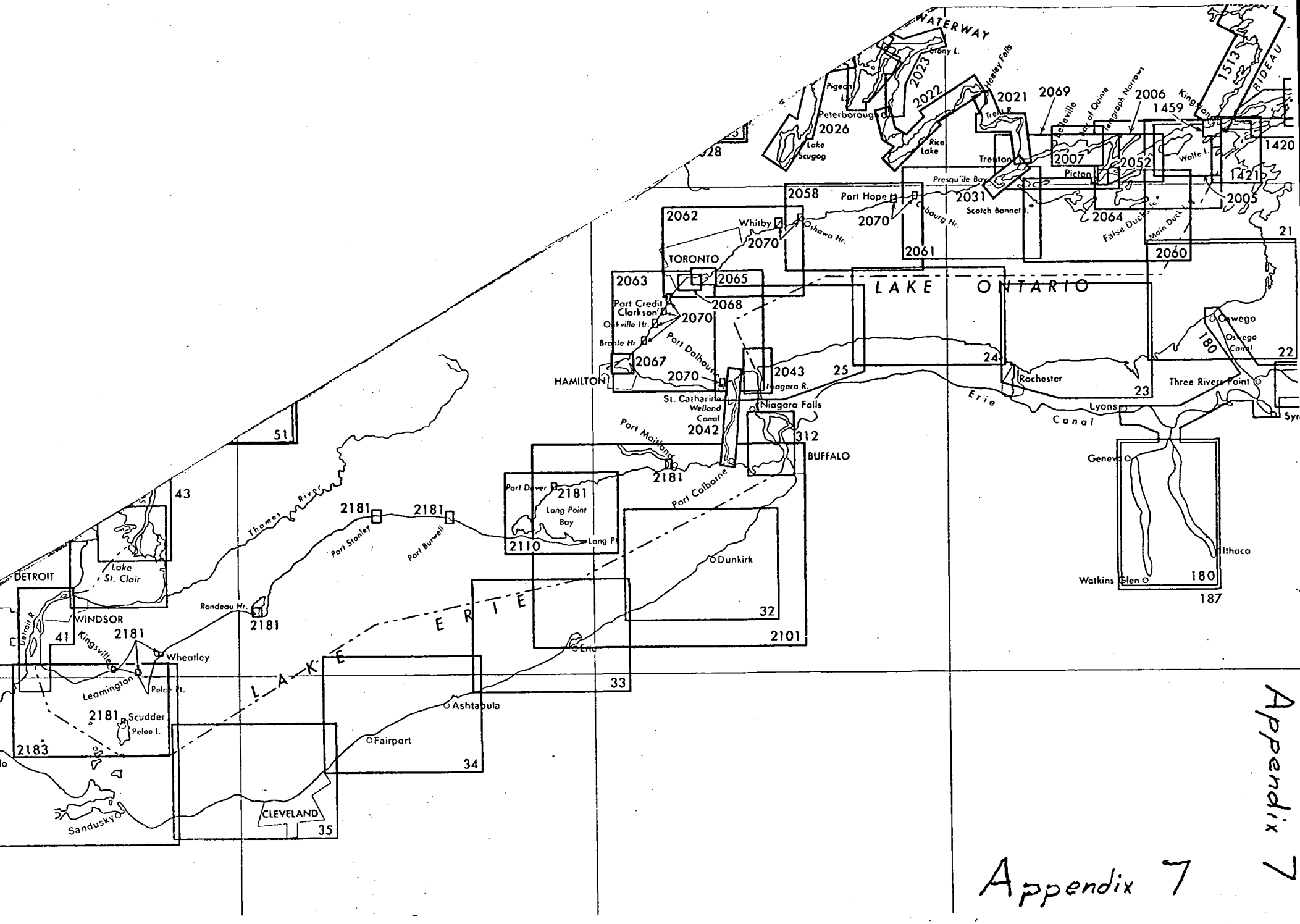


LAKE SUPERIOR

All at 1:100,000
Neatlines 1100 mm x 750 mm
Existing U.S. Charts (1:120,000)

Appendix 5

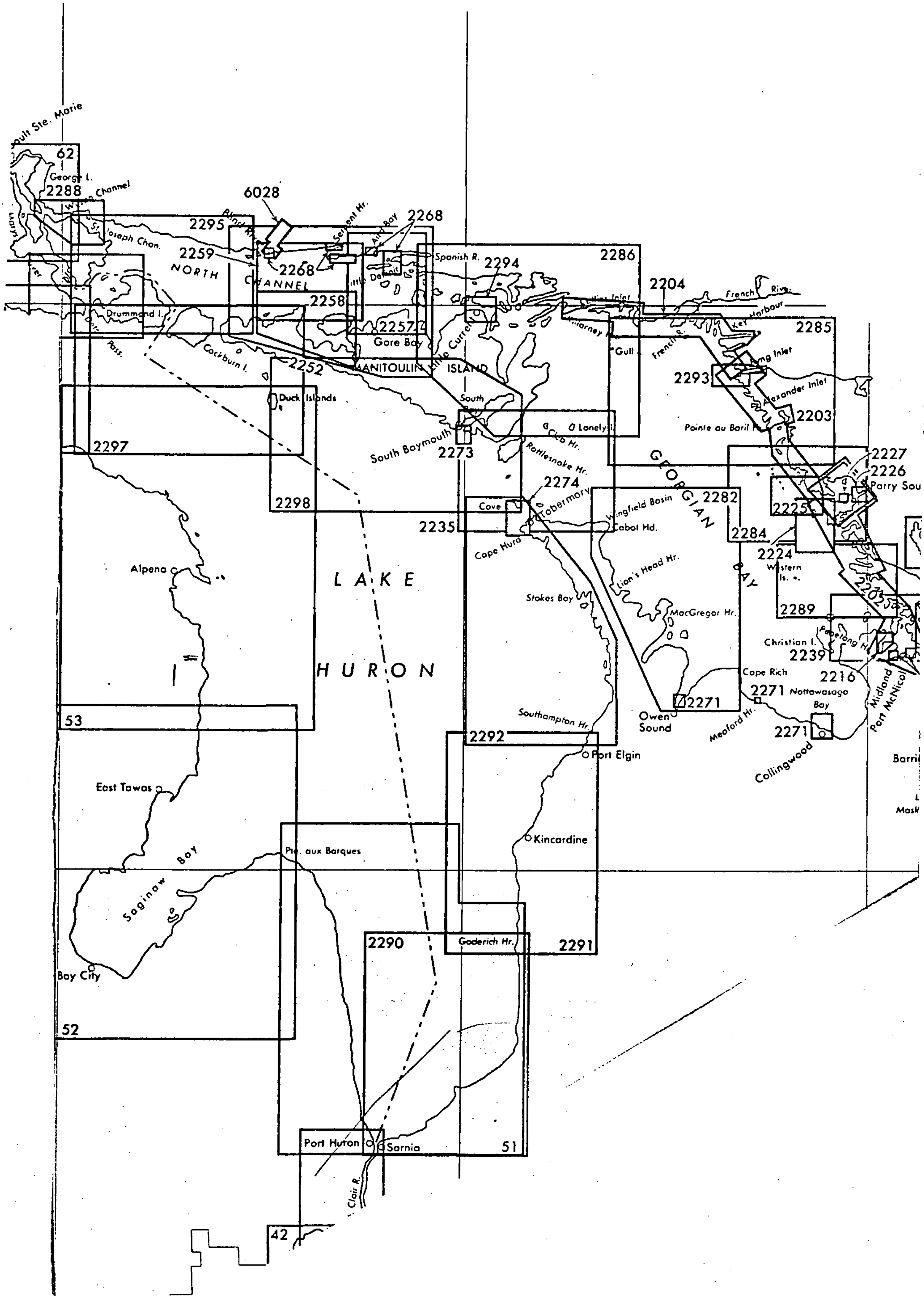
Appendix 5



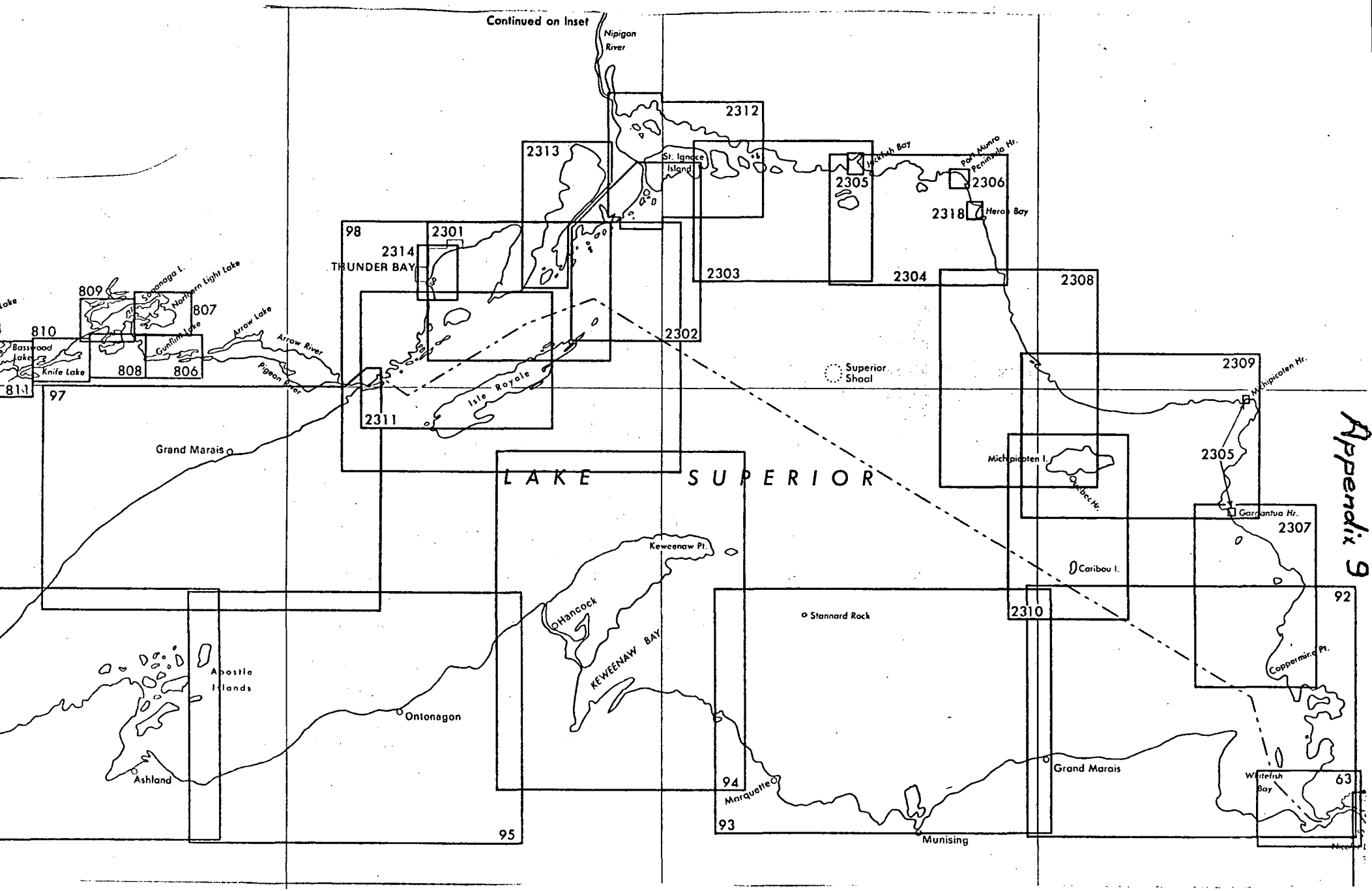
Appendix 7

Appendix 7

Appendix 8



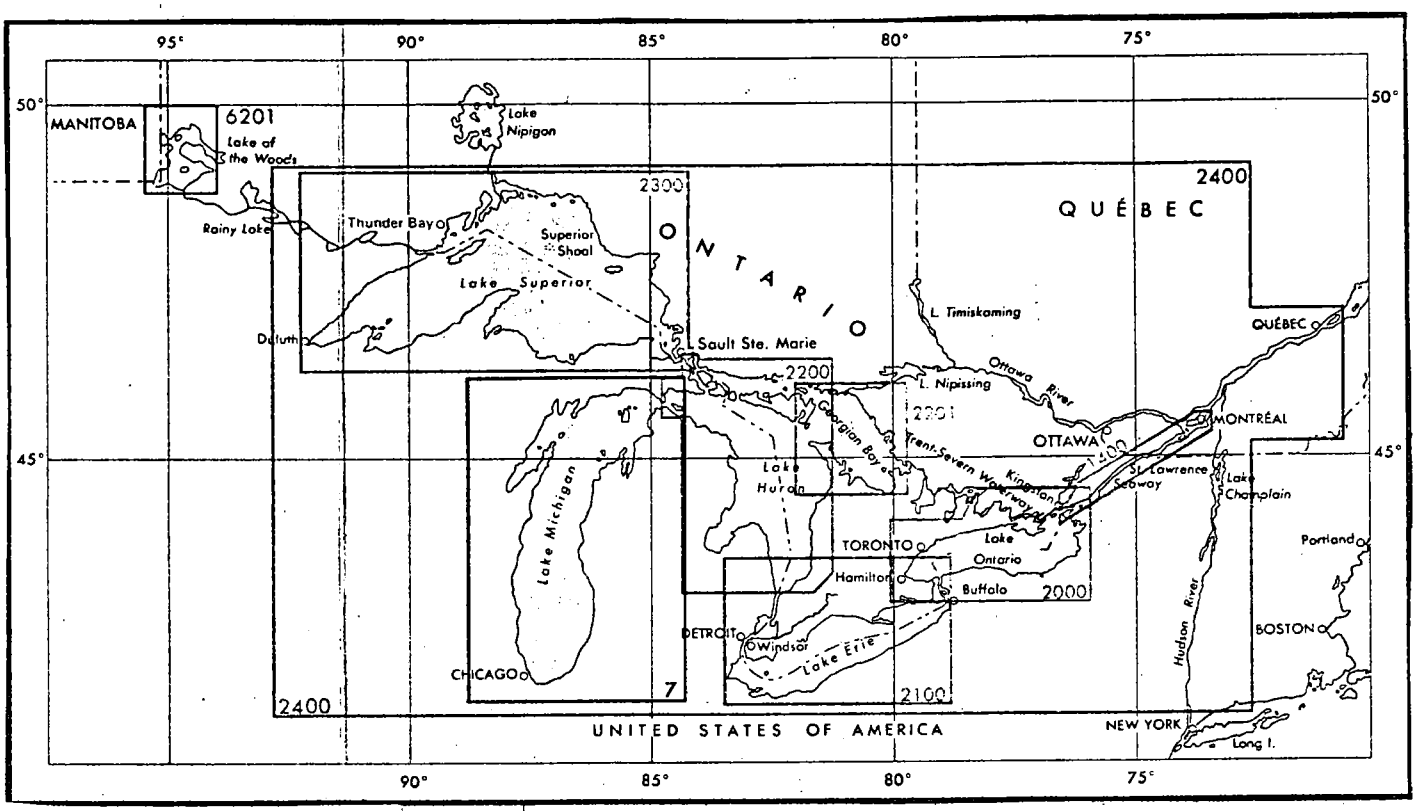
Sault Ste. Marie
62
George I.
2288
Channel
St. Joseph Chan.
6028
2295
2268
2259
2268
NORTH
CHANNEL
Spanish R.
2294
2286
2204
French
French R.
Key Harbour
2285
Drummond I.
2258
2257
Gore Bay
Cockburn I.
2252
MANITOULIN
ISLAND
Gull
2293
Alexander Inlet
2203
Duck Islands
South
Lonely I.
Pointe au Baril
2297
South Baymouth
2273
Club Hr.
Rattlesnake Hr.
GEORGIAN
BAY
2227
2226
Parry Sou
2274
Tobermory
Wingfield Basin
2282
2298
Cove
2235
Cabot Hd.
2284
2225
2224
Cape Hurd
Western Is.
Lion's Head Hr.
Alpena
LAKE
Stokes Bay
2289
MacGregor Hr.
Christian I.
2239
HURON
Cape Rich
2216
2271
Nottawasaga Bay
Midland
Port McNicoll
2271
Owen Sound
Southampton Hr.
Meaford Hr.
2271
53
2292
Port Elgin
Collingwood
Barri
East Tawas
Kincardine
Pte. aux Barques
Saginaw
Bay
2290
Goderich Hr.
2291
Bay City
52
Port Huron
Sarnia
51
Clair R.
42



Appendix 9

Appendix 9

Appendix 10



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