

FORT LENNOY

ILE-AUX-NOIX 1964

PRINTS AND 35MM NEGS.



Hydrogen peroxide

939-



Carduus pictus
→ E

939

939

G. her. cordatus
var. *minor*
at *her. her.*

939

939



Old fort, near
present fort
part of drainage sys

929

Barracks

929-

Old-fort

929



Barroche
Chris & P

939

moat

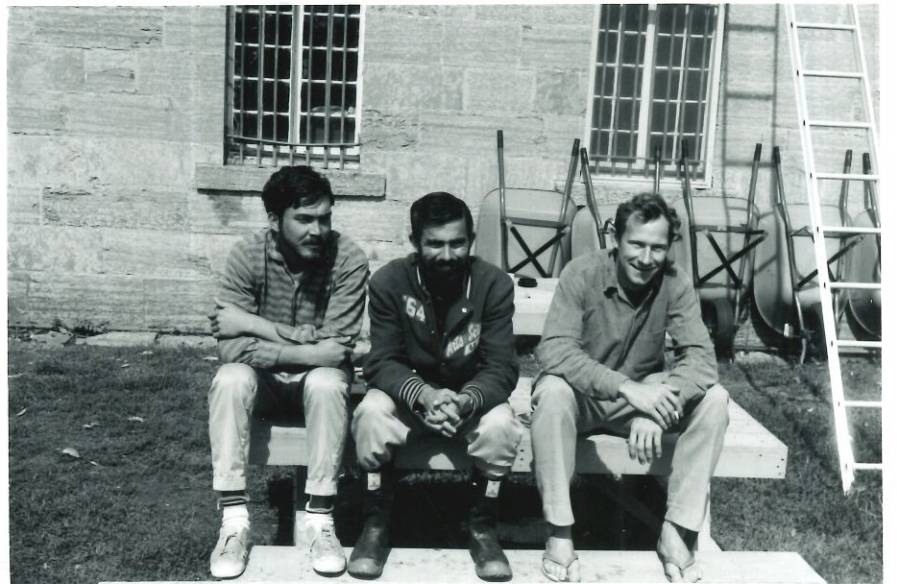
939

old Fort
part of drainage sys

939

Barroche ponds. 200
& Ld's

939



Buildings on
Main St. ...
...

929

Hotel
Building
Sign
?

929

1st St. ...

929

High
...
...
...
...

929



*Ralph
Sunderood
can you follow this
up?
HS. 320-5
Tro*

YOUR FILE NO.

OUR FILE NO.

HS. 320-5

DEPARTMENT OF NORTHERN AFFAIRS AND NATIONAL RESOURCES

NATIONAL PARKS BRANCH

NATIONAL HISTORIC SITES DIVISION

Ottawa 4, Ontario,
February 5, 1964.

Dr. Froelich Rainey,
The Applied Science Center for Archaeology,
University Museum,
University of Pennsylvania,
Philadelphia 4, Penna.,
U.S.A.

Dear Dr. Rainey:

Mr. Edward Larrabee, senior archaeologist with the Fortress of Louisbourg Restoration Section, has told us of the work done at Louisbourg last autumn by Dr. Elizabeth Ralph in examining the Chapel by means of various electronic instruments. If it could be arranged, we would be most interested in conducting a similar test program but on an expanded scale.

In order to formulate development plans for our various parks and sites, it is frequently necessary for us to have some idea of the extent of subterranean remains at these places. Unfortunately, it is not always possible to mount an excavation program of sufficient size to obtain this information. We are, therefore, anxious to test instruments which might give the necessary data without digging. We would wish to determine the usefulness of interpretations made both with and without supporting documentary material, the relative merits of different instruments, and the costs of instrument surveys in relation to conventional excavation.

The site we have in mind is Fort Lennox National Historic Park, a 210-acre island in the Richelieu River, some sixteen miles above the U.S. border. The fort occupies one end of the island, but the greatest area is a more-or-less flat, featureless field. Documentary evidence shows that this field covers civilian and military establishments of both the French and English regimes, a dockyard, and the graves of several thousand American


(2)

soldiers who died of smallpox during the retreat from Quebec in 1776. We will have a fairly large staff on the island throughout the summer, and can arrange our excavation program so as to provide immediate checks on features reported by the instruments.

As part of our work at Fort Lennox, we are conducting a three month course in archaeological field methods for a selected group of students, and would welcome a testing program as a means of introducing the students to the use of the various instruments.

If this proposal is of interest to you, and if you can fit it into your doubtless crowded schedule, please let me know. We would, of course, pay the salaries and expenses of the necessary members of your staff during the period of the tests.

Yours sincerely,



J.D. Herbert,
Chief.

February 12, 1964

Dr. J. D. Herbert, Chief
National Historic Sites Division
Dept. of Northern Affairs &
National Resources
Ottawa 4
Ontario, CANADA

Re: File No. HS. 320-5

Dear Dr. Herbert:

Dr. Rainey has asked me to reply to your letter of February 5th in regard to instrument surveys at Fort Lennox National Historic Park.

We should like very much to participate in the program which you have outlined, and think that it will be a good test of the effectiveness of instrument surveys.

Even though it is premature to make plans in detail, would you please let me know when you expect to start and whether we should plan to have, at least, one person there for three months or for a shorter period.

Sincerely yours,

Eliz. K. Ralph

EKR:ek



YOUR FILE NO.

OUR FILE NO.

H.S. 320-5

DEPARTMENT OF NORTHERN AFFAIRS AND NATIONAL RESOURCES

NATIONAL PARKS BRANCH

NATIONAL HISTORIC SITES DIVISION

OTTAWA(4), February 24, 1964.

Dr. Elizabeth K. Ralph,
Associate Director,
Applied Science Center for Archaeology,
The University Museum,
University of Pennsylvania,
33rd & Spruce Streets,
Philadelphia 4, Penna.

Dear Dr. Ralph:

Thank you very much for your letter of February 12, expressing interest in the proposed instrument surveys of Fort Lennox National Historic Park.

Weather permitting, we plan to begin excavation about April 1, 1964, but the main party will arrive June 1 coincident with the start of our summer field school. We would prefer to have the surveys carried out during the period June 1 - August 31, but the work can be done earlier or later if more convenient for you.

Considering the size of the site, I think we should plan to have your staff remain at Fort Lennox for the full three-month period. As was agreed in your telephone conversation of February 18 with our staff archaeologist, we will request funds to cover the salary and travel expenses of one physicist (\$400 per month for three months), travel expenses for yourself and two assistants, plus an allowance for food during the period of the tests. These financial arrangements are subject to the approval of the Treasury Board.

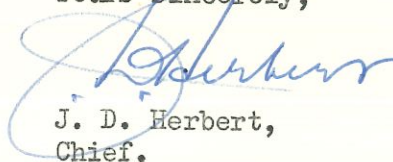
. . . 2

2.

You raised the question of members of your party bringing their wives to the site. It has been our experience that a field camp is no place to bring anyone who does not have a job to do and a professional interest in the work. Since we expect our field school students to work an average of seventy hours per week, it would be especially bad for morale to have people in camp who were obviously idle. If, however, the wives of your assistants are prepared to work in the field or in the lab, we could probably arrange to house them for the duration of their stay. The quarters, by the way, are neither particularly luxurious nor particularly private.

Our historians expect to complete, by March 15, a preliminary analysis of archival material relating to the site. A copy of their report will be sent to you as soon as available.

Yours sincerely,

A handwritten signature in blue ink, appearing to read "J. D. Herbert", is written over the typed name and title.

J. D. Herbert,
Chief.



YOUR FILE NO.

OUR FILE NO.

DEPARTMENT OF NORTHERN AFFAIRS AND NATIONAL RESOURCES

NATIONAL PARKS BRANCH

NATIONAL HISTORIC SITES DIVISION

OTTAWA. (4) March 9, 1964.

Dr. Elizabeth Ralph,
Applied Science Centre for Archaeology,
The University Museum,
33rd and Spruce Streets,
Philadelphia 4, Penna.,
U.S.A.

Dear Dr. Ralph:

Enclosed are copies of the contract covering the proposed instrument survey of Ile-aux-Noix. If the terms seem satisfactory to you, please sign all five copies and return them to me as soon as possible.

In paragraph 1, we have specified only a magnetometer survey, but it is our understanding that as many other instruments as possible will be tested.


Of the \$1,700 requested for this project, \$1,200 represents the salary of your physicist for three months. The remaining \$500 is to cover travel expenses for yourself, the physicist and two assistants. In addition, food and lodging will be provided for your party during their stay at Fort Lennox.

By "reports" in paragraph 4(c) we do not mean a formal report but merely that all the survey data be presented in a form usable by our archaeologists.

The prorating referred to in paragraph 5 covers only the physicist's salary and not the allotment for travel expenses.

I trust that these terms are agreeable to you.

Yours sincerely,


for J.D. Herbert,
Chief.

March 12, 1964

Dr. J. D. Herbert, Chief
National Historic Sites Division
Department of Northern Affairs &
National Resources
Ottawa, Canada

Ref. File No. H. S. 320-5

Dear Dr. Herbert:

The signed copies of the proposed instrument survey of Ile-aux-Noix are enclosed.

We haven't yet decided who our physicist will be, but he may come from England. This reminds me of possible complications at the border since our travel expenses and one salary will be paid. Should we inquire about this, or can you arrange the necessary permissions?

Dr. Rainey and I both agree with you in regard to members bringing their wives. This may limit us, however, to two people who will be able to stay for the whole three months. I assume, though, that there will be other students free to help with the instrument surveys from time to time, or if not, there would be the possibility of using local labor. Any travel money which we have not used, we will, of course, return.

Sincerely yours,

Elizabeth K. Ralph

EKR:gj

COPY



YOUR FILE NO.

OUR FILE NO. HS320-5

DEPARTMENT OF NORTHERN AFFAIRS AND NATIONAL RESOURCES

NATIONAL PARKS BRANCH

NATIONAL HISTORIC SITES DIVISION

OTTAWA (4) March 19, 1964.

Dr. Elizabeth K. Ralph,
Applied Science Center for Archaeology,
The University Museum,
33rd and Spruce Streets,
Philadelphia 4, Penna.,
U.S.A.

Dear Dr. Ralph:

Thank you very much for your letter of March 12, 1964. We do not anticipate any problems at the border, but we are looking into the matter and will let you know what documents, if any, will be needed. I suggest you send me the names, addresses and nationalities of your summer staff as soon as possible.

We will undoubtedly be able to supply you with as much assistance as may be necessary to carry out the instrument surveys at Ile-aux-Noix.

The preliminary historical analysis reveals some seventy buried structures in the section of the island where excavation will be concentrated. A copy of this report will be sent to you by mid-April.

Yours sincerely,

Jean Macpherson
J.D. Herbert,
Chief.



*EKR responsible
For July & Aug.
Stratford
Flann
Asst's.*

*Norman Barker there
May 15th ff.
Norman
5/31
?*

YOUR FILE NO.

OUR FILE NO.

9925375

DEPARTMENT OF NORTHERN AFFAIRS AND NATIONAL RESOURCES

NATIONAL PARKS BRANCH

NATIONAL HISTORIC SITES DIVISION

OTTAWA (4) April 22, 1964.

Dr. Elizabeth Ralph,
The Applied Science Center for Archaeology,
The University Museum,
33rd and Spruce Streets,
Philadelphia 4, Penna.,
U.S.A.

Dear Dr. Ralph:

Enclosed is a brief outline of the history of Fort Lennox and the index to a map showing the approximate location of buildings supposed to have been on that part of the island which we intend to excavate. The map itself will be sent shortly under separate cover.

We have asked our staff and students to take the 1:40 p.m. Canadian Pacific train from Montreal to St. Jean, Quebec, on May 31. A car will meet this train at St. Jean to provide transportation to the site. Would it be convenient for your party to arrive at this time? If not, please let us know which train you would like us to meet. They leave Montreal at:

- 8:15 a.m., 9:45 a.m. and 7:50 p.m. daily
- 4:50 p.m. daily except Saturday
- 5:40 p.m. daily except Sunday
- 1:40 p.m. Saturday and Sunday only.

Those who may wish to drive should be informed that cars must be left on the mainland. Free parking is available but it is unsupervised and we cannot accept responsibility for cars or contents.

...2


We suggest that your staff bring sleeping bags or blanket rolls since ordinary bedding cannot be used on the type of cots available. In so far as clothes are concerned, one should be prepared for fairly cool weather in June and excessively hot and humid weather in August. Laundry will be done approximately once every two weeks. Rubber boots and flashlights would be useful.

The telephone number at the site is FI. 7-4312 (area code 514). Mail should be addressed:

Archaeological Field Party,
c/o N.A. Mainguy,
Superintendent,
Fort Chambly National Historic Park,
Chambly, P.Q.

We need to know, as soon as possible, the names, addresses and nationalities of your party and the approximate date of their entry into Canada.

Yours sincerely,


for J.D. Herbert,
Chief.

992-4457

May 1, 1964

Mr. John H. Rick
Dept. of Northern Affairs
and National Resources
National Historic Sites Division
Ottawa (4), CANADA

Dear Mr. Rick:

In confirmation of our telephone conversation, the list of our personnel for the instrument surveys at Fort Lennox is as follows:

Miss Elizabeth K. Ralph (May 21-25, June 1-14)
(Box 357 Pennington, N.J., U.S.A. citizen)

Mr. Hugh W. Bergh, graduate student in Dept. of Geology,
Princeton University, Princeton, N. J.
Temporary residence: 525 Major Road, Monmouth Junction, N.J.
Citizen of South Africa
Parents' address: 210 Frances Street, Observatory,
Johannesburg, S. A.
(Fort Lennox, June 1 to August 31).

Student assistants from University Museum, Phila. 4, Pa.

Mrs. Jeannette M. Brockman
1426 Spruce Street, Philadelphia 2, Pa.
U.S.A. citizen
(Fort Lennox June 1 - 30)

Mr. Theodore Raymond Spickler
Shiloh Road, Westtown, Penna.
U.S.A. citizen
(Fort Lennox June 1 - 15 and possibly July 1 following)

Mr. John H. Rick

- 2 -

May 1, 1964

Dr. Froelich Rainey, Director of the University Museum, plans to visit the site from time to time in July and August. (He has a summer house in Vermont, not far away.)

I am returning (enclosed) the check for travel funds which was addressed to me so that it may be replaced with one directed to the UNIVERSITY MUSEUM. The salary funds may be directed either to Hugh W. Bergh or to the University Museum.

Since starting this letter, I have talked with Varian Associates in California, and as their geophysicist, Sheldon Breiner, will already be in Canada in May, it suits him best to come to Fort Lennox on May 22nd. He will bring the new Varian rubidium magnetometer which is more sensitive than our proton magnetometer. Experiments with the two instruments should be quite interesting. Therefore, if this is all right with you, I shall arrive in the early evening of May 21st, and Mr. Breiner and I will work together through the weekend. Then, he will leave, and I may possibly have to come back and then return on June 1st.

I am looking forward to meeting you in the near future.

Sincerely yours,

Elizabeth K. Ralph

EKR:ek

Encl.



CANADA

DEPARTMENT OF NORTHERN AFFAIRS AND NATIONAL RESOURCES

NATIONAL PARKS BRANCH

OFFICE OF THE DIRECTOR

OTTAWA (4), May 5, 1964

Director, Port Administration
Customs and Excise Division
National Revenue Dept.
35 George St.
Ottawa, Ontario

Dear Sir

We have recently issued a contract to the University Museum of the University of Pennsylvania to test the applicability of various electronic surveying devices (such as the proton magnetometer) to our archaeological research program. These tests will be carried out at Fort Lennox National Historic Park (Ile-aux-Noix, Quebec) during the period May 12 - August 31, 1964.

Our staff archaeologist, Mr. J.H. Rick, telephoned Mr. G.L. Rosette of your staff to find out whether the museum's party would have any difficulty in bringing their equipment into Canada. Since we do not know at what port they will enter Canada, Mr. Rosette suggested the advisability of your division sending a letter to the University Museum for them to present when crossing the border. This letter should be addressed to:

Dr. Elizabeth K. Ralph
Associate Director
Applied Science Center for Archaeology
University Museum
University of Pennsylvania
33rd & Spruce Sts.
Philadelphia 4, Penna.
U.S.A.

- 2 -

We would be most grateful if you would arrange to send this letter as soon as possible as Dr. Ralph plans to leave Philadelphia about the twentieth of May.

Yours sincerely



J.R.B. Coleman
Director

cc Dr. E.K. Ralph ✓



YOUR FILE NO.

OUR FILE NO.

DEPARTMENT OF NORTHERN AFFAIRS AND NATIONAL RESOURCES

NATIONAL PARKS BRANCH

NATIONAL HISTORIC SITES DIVISION

Ottawa 4, Ontario,
May 5, 1964.

Dr. Elizabeth K. Ralph,
Associate Director,
Applied Science Center for Archaeology,
University Museum,
33rd & Spruce Sts.,
Philadelphia 4, Penna.,
U.S.A.

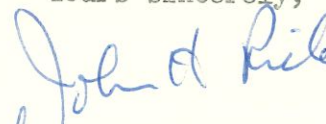
Dear Dr. Ralph:

We have recently consulted the Director of the Immigration Branch, Department of Citizenship and Immigration, regarding your entry into Canada to direct various aspects of our archaeological research program at Fort Lennox National Historic Park, Ile-aux-Noix, Quebec. He informs us that you will require a letter stating that we are prepared to pay for your travel and living expenses during your stay in this country.

It is our understanding that you will enter Canada on or about May 21 for a period of approximately one week and that you will return at intervals during the summer.

Please bring this letter with you for presentation at the border should the officers of the Department of Citizenship and Immigration require proof of your status.

Yours sincerely,


for J.D. Herbert,
Chief.



YOUR FILE NO.

OUR FILE NO.

DEPARTMENT OF NORTHERN AFFAIRS AND NATIONAL RESOURCES

NATIONAL PARKS BRANCH

NATIONAL HISTORIC SITES DIVISION

OTTAWA (4), May 7, 1964
OTTAWA,

Theodore R. Spickler, Esq.
Shiloh Road
Westtown, Penna.
U.S.A.

Dear Mr. Spickler

We have recently consulted the Director of the Immigration Branch, Department of Citizenship and Immigration, regarding your entry into Canada at the end of this month to assist in an archaeological research program at Fort Lennox National Historic Park (Ile-aux-Bois, Quebec) for the period June 1 - July 1, 1964. The Director informs us that you will require a letter stating that we are prepared to pay for your travel and living expenses during your stay in this country.

Please bring this letter with you when you enter Canada for presentation at the border should the officers of the Department of Citizenship and Immigration require proof of your status.

Yours sincerely

JEAN MACPHERSON

J.D. Herbert
Chief

cc Dr. E.K. Ralph ✓



YOUR FILE NO.

OUR FILE NO.

DEPARTMENT OF NORTHERN AFFAIRS AND NATIONAL RESOURCES

NATIONAL PARKS BRANCH

NATIONAL HISTORIC SITES DIVISION

OTTAWA (4), May 7, 1964
OTTAWA.

Mrs. Jeannette M. Brockman
1426 Spruce St.
Philadelphia 2, Penna.
U.S.A.

Dear Mrs. Brockman

We have recently consulted the Director of the Immigration Branch, Department of Citizenship and Immigration, regarding your entry into Canada at the end of this month to assist in an archaeological research program at Fort Lennox National Historic Park (Ile-aux-Noix, Quebec) for the period June 1 - 30, 1964. The Director informs us that you will require a letter stating that we are prepared to pay for your travel and living expenses during your stay in this country.

Please bring this letter with you when you enter Canada for presentation at the border should the officers of the Department of Citizenship and Immigration require proof of your status.

Yours sincerely

JEAN MACGIVERNSON

J.D. Herbert
Chief

cc Dr. E.K. Ralph ✓



YOUR FILE NO.

OUR FILE NO.

DEPARTMENT OF NORTHERN AFFAIRS AND NATIONAL RESOURCES

NATIONAL PARKS BRANCH

NATIONAL HISTORIC SITES DIVISION

OTTAWA (4), May 7, 1964

Dr. Elizabeth K. Ralph
Associate Director
Applied Science Center for Archaeology
University Museum
33rd & Spruce Sts.
Philadelphia 4, Penna.
U.S.A.

Dear Dr. Ralph

-- Attached, for your information are copies of correspondence relating to the entry of your field party into Canada.

Should any of your group encounter difficulties at the border, please telephone collect to me at 992-5375 or to Mr. I.G. Imrie at 992-7975 (area code 613). If you cannot reach either of us, please call Mr. Rick at Fort Lennox, FI. 7-4312 (area code 514).

Yours sincerely

*Desmit House, nr. Quebec
683-4640*

Jean Mayherson
J.D. Herbert
Chief

To Whom It May Concern:

This is to state that Hugh W. Bergh, Esq. is employed in a professional capacity on behalf of the University Museum, University of Pennsylvania, to carry out the duties of the physicist from June 1 to August 31, 1964 as specified in the contract with the Canadian Department of Northern Affairs and National Resources dated March 17, 1964 for instrument surveys on Ile-aux-Noix.

May 11, 1964

Elizabeth K. Ralph
Associate Director
Applied Science Center
for Archaeology



YOUR FILE NO.

OUR FILE NO.

DEPARTMENT OF NORTHERN AFFAIRS AND NATIONAL RESOURCES

NATIONAL PARKS BRANCH

NATIONAL HISTORIC SITES DIVISION

OTTAWA (4), May 13, 1964
OTTAWA.

Miss Gayle Weaver
235 South 42nd Street
Philadelphia 4, Penna.
U.S.A.

Dear Miss Weaver

We have recently consulted the Director of the Immigration Branch, Department of Citizenship and Immigration, regarding your entry into Canada at the end of this month to assist in an archaeological research program at Fort Lennox National Historic Park (Ile-aux-Noix, Quebec) for the period June 15 - August 31, 1964. The Director informs us that you will require a letter stating that we are prepared to pay for your living expenses during your stay in this country.

Please bring this letter with you when you enter Canada for presentation at the border should the officers of the Department of Citizenship and Immigration require proof of your status.

Yours sincerely

JEAN MACPHERSON

J.D. Herbert
Chief

cc Dr. E.K. Ralph



NATIONAL REVENUE, CUSTOMS AND EXCISE
REVENU NATIONAL, DOUANES ET ACCISE

REFER TO FILE 7368-50
RÉFÉRENCE LL/SW

OTTAWA 2,
May 14, 1964.

Dr. Elizabeth K. Ralph,
University of Pennsylvania,
33rd & Spruce Streets,
Philadelphia 4, Pa.,
U.S.A.


Dear Madam:

This refers to correspondence received from Mr. Coleman, Director, Department of Northern Affairs and National Resources, concerning the proposed temporary entry of research equipment to be imported for testing various electronic surveying devices in connection with the archaeological research program that will be carried out at Fort Lennox National Historic Park during the period May 12 to August 31, 1964.

In the circumstances the equipment may be imported on form E29B without security and provided the terms of the permit will be fulfilled there will be no Customs charges assessed.

The second signed copy of this letter should be presented to the Collector of Customs and Excise where the equipment will enter Canada as his authority in this matter.

Yours truly,


G.L. Rosette,
Port Administration Branch.



COPY FOR ELIZABETH RALPH

YOUR FILE NO.

OUR FILE NO.

HS. 320-5

DEPARTMENT OF NORTHERN AFFAIRS AND NATIONAL RESOURCES

NATIONAL PARKS BRANCH

NATIONAL HISTORIC SITES DIVISION

Fort Lennox National Park,
St. Paul Ile-aux-Noix, Que.,
July 1, 1964.

Dr. Froelich Rainey, Director,
The University Museum,
33rd & Spruce Sts.,
Philadelphia 4, Penna.,
U.S.A.

Dear Dr. Rainey:

Thank you for your letter of June 20, 1964; we would be very pleased to have N.B.C. film the work being done here. The Canadian Broadcasting Corporation has also expressed an interest in filming the excavations and may send a camera crew to the island this summer.

We have had excellent results with the resistivity meter. The proton magnetometer has also revealed a number of anomalies, but we have not yet had a chance to determine the nature of these by excavation. Doubtless we will have some interesting results to show you when you arrive.

Yours sincerely,

John H. Rick
John H. Rick,
Staff Archaeologist.

c.c. Elizabeth Ralph.

Many thanks for information on dating solutions.
J.H.R.

July 20, 1964

Mr. Jim Steur
Soiltest, Inc.
237 Sheffield Avenue
Mountainside, New Jersey

Dear Mr. Steur:

A few results which we obtained with the Terra-Scout are enclosed. As you can see in Fig. 1, it worked well for the determination of the depth of bedrock. As for the small shallow walls, however, the results are less precise. As shown in Figs. 2 and 3, we got slight "wiggles" when the geophone was near the walls, but vague results when farther away. Fig. 3 indicates that it may help a little in interpreting anomalies found with our resistivity apparatus, and we shall continue with other tests where subsequent excavations will reveal what we have found.

On Wednesday the Terra-Scout and our other instruments were filmed for the NBC television program called "Sunday", and they are scheduled to be televised on Sunday, July 26th at 5:00 P.M.

Someone, whose name I have misplaced, from your Chicago office asked me for a brief report plus this television information, and I should appreciate it if you will forward this to Chicago.

Sincerely yours,

Elizabeth K. Ralph

EKR:ek

Encls.

cc: Mr. Hugh Bergh
Equipe Archaeologie
Ile-aux-Noix - St. Paul
Quebec Province, Canada

Fig. 1

Tests for Bedrock with Soiltest Terra-Scout
7/15/64

Fort Lennox - Ne-aux-Noix

center of line = 202' N
60-260 E

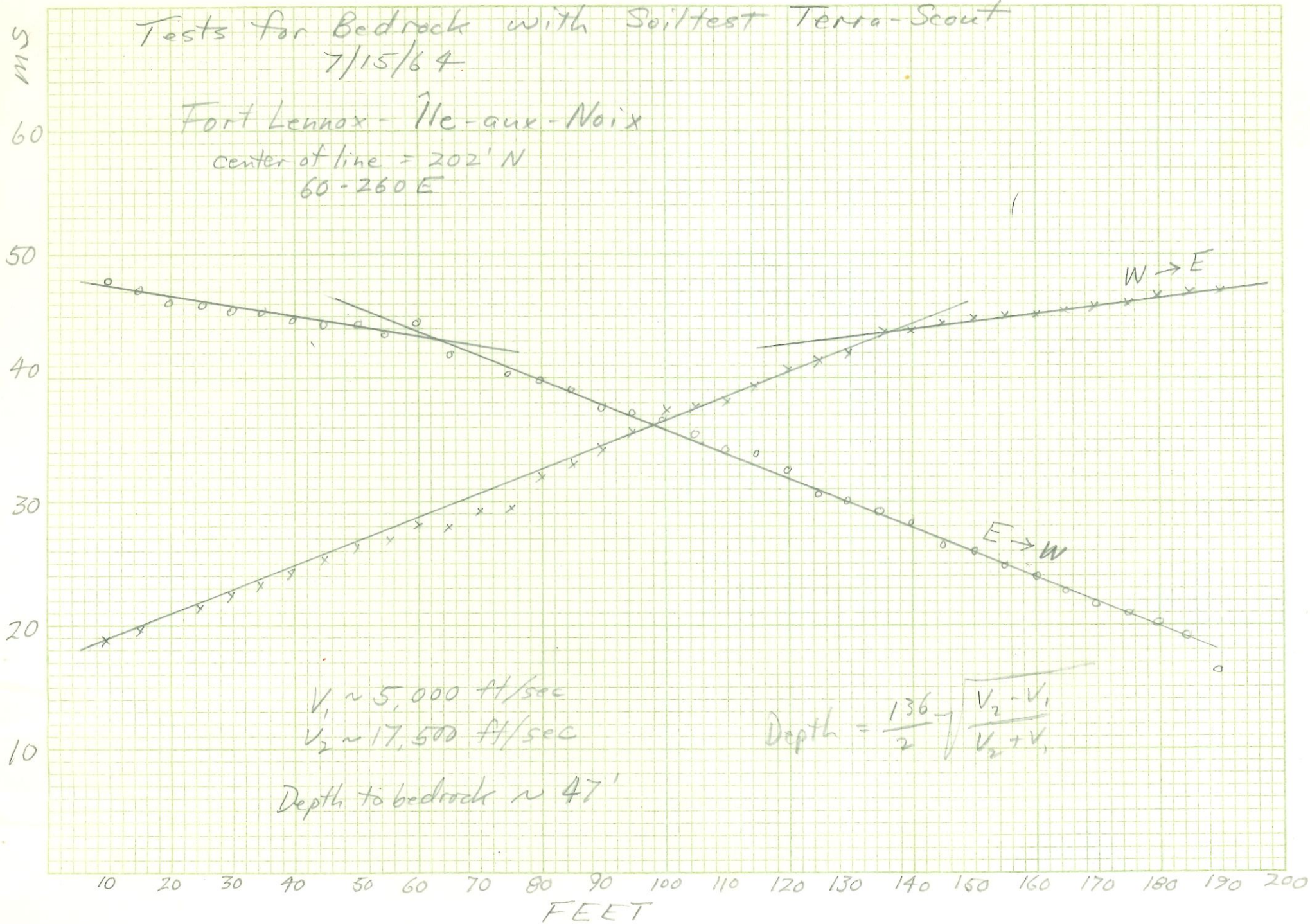


Fig. 2

Tests for walls with Saittest Terra-Scout
7/14/64

Fort Lennox - Ile-aux-Noix
Grid #3 - Hospital

West wall = 2' wide
x 2 1/2' high &
6" below surface

East wall = 3 1/2' wide
x 28" high &
6" below surface

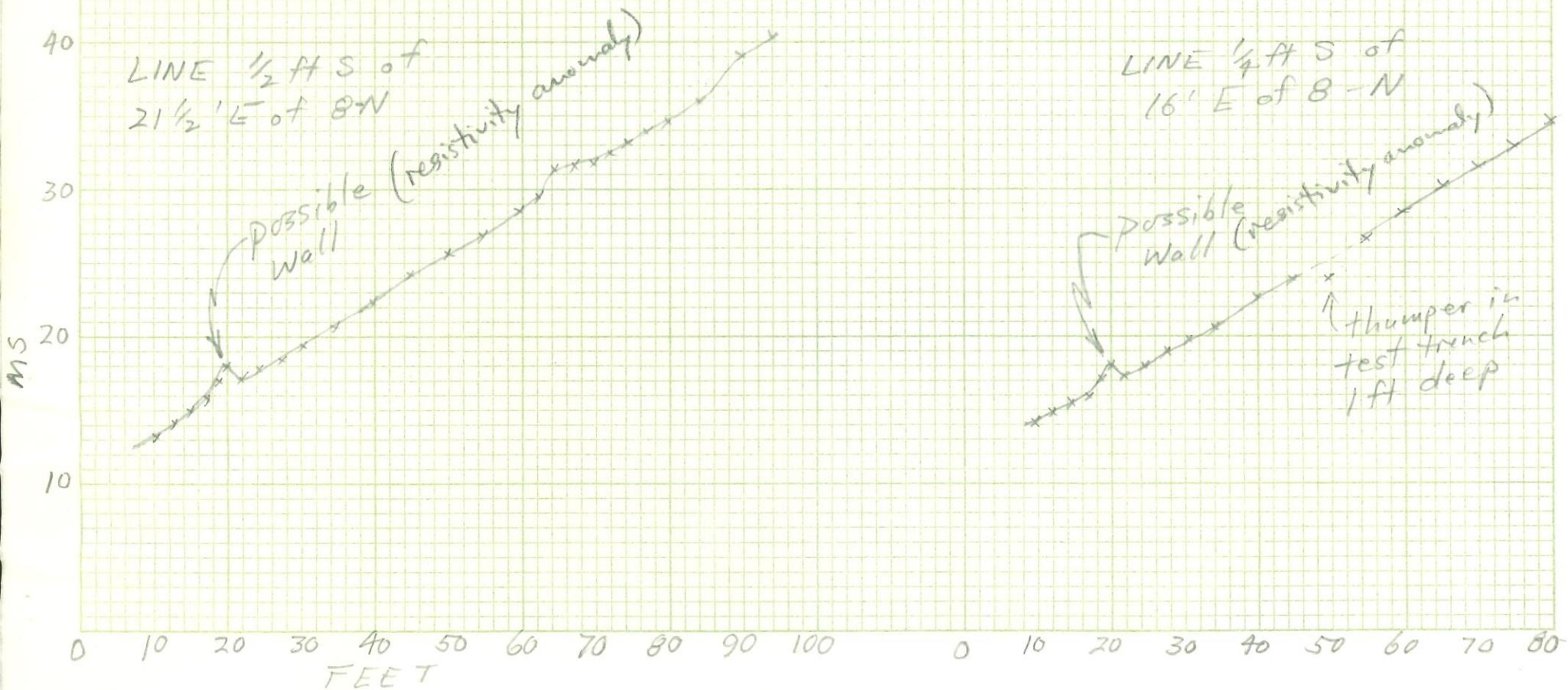


This test shows that detection of wall is less clear when geophone is farther from it (25' rather than 15')

Fig. 3

Tests for walls with Soiltest Terra-Scout
7/14/64

Fort Lennox - Ile-aux-Noix
Grid #2, near line 405 E



Department of Northern Affairs and National Resources
 CONTRACT FOR SERVICE OR WORK UP TO \$5,000

Location Ile-aux-Bois, P.Q. Contract No. _____

General description of Work or Service -

To carry out magnetometer surveys on Ile-aux-Bois to facilitate archaeological investigations in connection with historical reconstruction at Fort Lennox National Historic Park.

I/We hereby offer to supply the materials and perform the work or service referred to hereunder on the covenants and agreements contained hereunder AND ON THE REVERSE SIDE HEREOF.

Details of Work or Service	Unit Price	Total
1. Contractor agrees to carry out magnetometer surveys on Ile-aux-Bois during the period June 1 to August 31, 1964, and to provide such reports as may be required by the Staff Archaeologist of the National Historic Sites Division.		
2. Contractor will supply the required instruments.		
3. Contractor will provide the services of a physicist and as many assistants as may be required.		
4. Remuneration will be \$1700 all inclusive, for the period of the contract, payable as follows:		
(a) \$500 on acceptance of this contract;	\$500 00	
(b) \$400 on each of June 30 and July 31, 1964;	\$800 00	
(c) balance of \$400 on receipt of invoices certified by the Staff Archaeologist, National Historic Sites Division, certifying that all reports due under this contract have been satisfactorily completed.	\$400 00	
5. If the entire period of the contract is not worked, the Contractor's remuneration shall be prorated accordingly.		
	Grand Total	\$1700 00

The maximum amount payable under this contract shall not exceed \$ 1700.00

I/We agree to complete the work or service above referred to within _____ days from the day of your acceptance of this offer, and in accordance with the covenants and agreements contained on the reverse side hereof.

Address of Contractor:

Elizabeth K. Ralph March 12, 1964
 Signature of Contractor Date

The Applied Science Center for Archaeology,
 The University Museum,
 33rd and Spruce Streets,
 Philadelphia 4, Penna.,
 U.S.A.

Recommended by

John A. Rieck 17/3/64 _____ 17/iii/64
 Date Date Date

Accepted on behalf of Her Majesty the Queen in right of Canada
 this 18 day of March 1964

Alvin Keen
 Title: ASSISTANT DIRECTOR

F.E.	Div.	Est.	Vote	Prim.	D.A.	Obj.	Amount	Initials
72015			375 01					

NOTE - Invoices in connection with this contract should be prepared in _____ copies and mailed to _____

Contract No. _____

Location _____
General description of work or service - _____

The parties to this contract covenant and agree as follows:

1. The Contractor will indemnify and save harmless Her Majesty from and against all claims, demands, loss, costs, damages, actions, suits or other proceedings by whomsoever made, brought or prosecuted in any manner based upon, occasioned by or attributable to the activities of the Contractor under this contract.

2. The various works or services are to be carried out and completed to the full satisfaction of the officer signing for the Department or his representative.

3. The Contractor may not assign or sublet this contract or any part thereof without the written consent of the officer signing for the Department.

4. Her Majesty reserves the right to terminate this contract at any time before completion for any reason whatsoever. In the event of such termination Her Majesty will pay to the Contractor an amount that, in the opinion of the officer signing for the Department, is equal to that portion of the work or service completed up to the day of termination.

5. In engaging labour for the work or service contemplated by this contract the contractor will employ as far as practicable and consistent with efficiency and economy only Canadian labour with local labour receiving preference.

6. No member of the House of Commons shall be admitted to any share or part of this contract or to any benefit arising therefrom.

7. Labour Conditions (A-2) if attached shall form a part of this contract.

Address of Contractor: _____
Signature of Contractor: _____
Date: _____
Recommended by: _____
Date: _____

Accepted on behalf of Her Majesty the Queen in right of Canada
this _____ day of _____ 19____

F.E.	Mr. J. H. ...	Mr. J. H. ...	Mr. J. H. ...	Mr. J. H. ...	Mr. J. H. ...	Mr. J. H. ...	Mr. J. H. ...	Mr. J. H. ...	Mr. J. H. ...

NOTE - Invoices in connection with this contract should be prepared in _____ copies and mailed to _____

[SFE - APRIL 22, 1964 LETTER]
Isle aux Noix, because of its strategic position

in the Richelieu River Valley was important to the armies of New France, the United States and Great Britain in the eighteenth and nineteenth centuries.

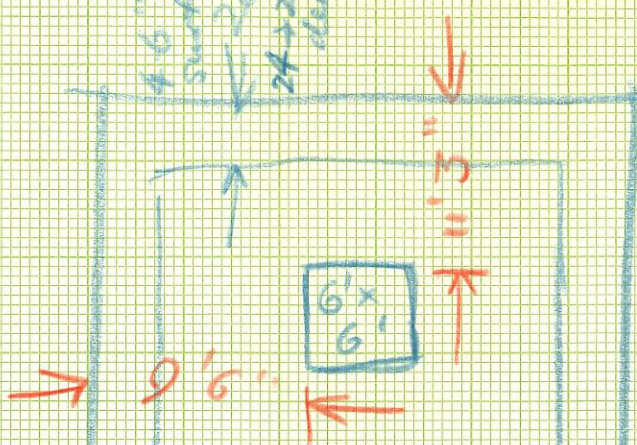
In 1759 the British threat from New York forced the French to abandon the forts of Carillon and St. Frederic on Lake Champlain. General Bourlamaque decided to fall back to Isle aux Noix and fortify it; at the time it was unoccupied and heavily wooded. Bourlamaque supervised the work that year and the next year General de Bougainville took over. It is not clear what the French works consisted of but probably they comprised a weakly built entrenchment of earth and logs extending around the more elevated half of the island and enclosing a few wooden buildings. The works were not finished by August 1760 when General Amherst moved up the Richelieu from New York to attack the island; after five days of bombardment the French withdrew to Fort Chambly.

The island was ignored until 1775 when, at the beginning of the Revolutionary War, the Americans seized it. They were driven away by the British the following summer after suffering the loss of many men owing to disease on the swampy island. Both the Americans and the British tried to maintain and improve the French fortifications but by 1782 the British decided that they were too large and should be contracted. Between 1782 and 1784 they constructed a small fort and three redoubts (the stone coming from the island of Lamotte in Vermont). Since these are the earliest works of whose shape and existence we are certain, these are the earliest ones marked on the accompanying map.

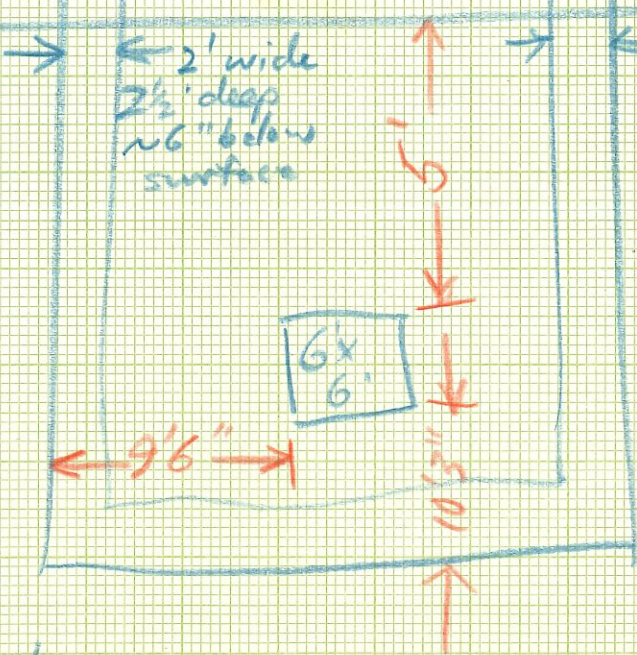
The British works were incomplete at the end of the War (1784) and, although the island became a permanent military post, they fell into disrepair. Very little work was done until the War of 1812. During this War the island became an important centre for the Royal Navy's operations on Lake Champlain. The redoubt in the middle of the island was consequently replaced by a shipyard and several new buildings were constructed.

After the War it was decided that a stronger, more permanent fort was needed and this began by 1820. The previous fortifications on the island (probably including some works of the French and American periods) were cleared away and the massive fort, Fort Lennox which stands today, was erected; some of the stone from the old installation was likely used in the construction of the new fort. Work continued for about ten years, but by the early 1830's the fort's importance declined and the Navy withdrew its detachment. British garrisons remained until 1858 when the island was chosen to be the site of a prison. Troops reoccupied the fort from 1862 to 1870, however, due to the American Civil War and the Fenian Raids into Canada. Little more than maintenance work was carried out after 1830.

4.6" below surface
24-28" deep



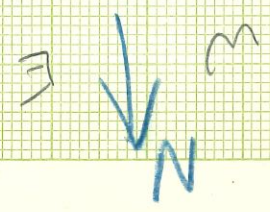
line of seismic test



2' wide
2 1/2' deep
~6" below surface

3 1/2' wide
24-28" deep
~6" below surface

dry-laid stone walls



Grid #	Stake	Dist from base	Diam. of Anom.	Stake #	Dist from base line	Diam
Line 1	1	9.85	6-8'	34	9.5	2
	2	18	5 (= sharp)	35	0.0	2
	3	22	2	Line 5 36	2.3	3
	4	26.5	2	37	15.7	1
	5	32.7	4	38	18.2	1
	6	43.4	6	39	25.5	1
	7	51.8	2	40	30	3
	8	55.7	4	41	33.6	1.5
	9	67.3	4	42	38.6	1.5
Line 2	10	70.6	2	43	44.1	1
	11	65.6	2	44	48.3	3
	12	58.2	3	45	54.3	1
	13	53.8	2	46	62.1	3
	14	47.5	3	47	70.65	2
	15	34.5	2	48	77.1	4
	16	26.6	1	49	68.3	1
	17	18.8	2			
	18	11.5	4			
	19	5.3	2			
Line 3	20	7.5	1			
	21	12.1	1			
	22	30.0	4			
	23	35.2	2			
	24	46.0	4			
	25	53.9	3			
	26	68.9	3			
	27	72.3	2			
Line 4	28	73.45	2			
	29	70.3	2			
	30	56.2	2			
	31	45.3	2			
	32	41.9	1			
	33	26.45	3			

corner = 74.8

7/16/64

FORT LENNOX ILE-AUX-NOIX

INSTRUMENT SURVEYS

1 JUNE - 31 AUGUST 1964

GRID #1 - (22 May 1964) 45 x 60'

In Courtyard of Fort

P. M. Grid - readings at 3' intervals

Found 2 concentrated magnetic regions, one of which corresponds with metal drain pipe leading from (or to) sundial.

Purpose of test - comparison of P. M. & Varian Rb magneto-

meter. Found good correspondence of magnetic anomalies.

GRID #2 - N of NE corner of Fort, region of early British Fort

(1782 - 1784).

(22 - 23 May) - Rb Magnetometer -

From corner of Sallée Porte, did 10 parallel lines 327'

long & 2' apart; also, E of "mid-point", 10 parallel

lines perpendicular to these 80' long & 2' apart.

See plots of large magnetic anomalies.

June - corresponding grids with P. M., total of 24 grids

40 x 40'.

Large magnetic anomalies which corresponded well with Rb

anomalies.

Large magnetic anomalies not yet excavated.

Also, over this area (24 grids) lines run with Geohm at 10' intervals (rod spacing 2 1/2 '); lines run lengthwise & perpendicular. High resistance areas which have been excavated correspond with remnants of log structures.

GRIDS 3 & 4 - Hospital (No. 20 str.)

Combined grids, 74 x 152' covered with both P. M. & Geohm at 2' intervals.

P. M. results - vague, but anomalies larger in region of hospital.

Geohm - outlines of walls pin-pointed precisely. Extremely

high resistance areas near N & S ends corresponded with

fireplace (or hearth) foundations. Bulges in central

portions^{ons} of E & W walls corresponded with entrances.

Longitudinal geohm line run S → N through center (33' on

grid) shows clearly the limits of walls & magnitudes

of high resistance readings. Similar line run

parallel on top of W wall (23' on grid) showed

negligible anomalies.

GRID #5 - Gunshed (No. 40 c Str.) 100 x 120' (2 1/2' spacing)

P. M. - 4 small magnetic areas - otherwise few anomalies.

4 small areas corresponding^{ed} with metal artifacts.

Geohm - slightly high resistance areas corresponded in most spots with building foundations, 81 x 25'. Walls small, only 2' wide x 1 1/2' ft. deep - badly preserved.

GRID #6 - Cookhouse - 40 x 80' (2 1/2' interval)

P. M. - Good correspondence of largest magnetic concentration with base of brick hearth - additional magnetic anomaly S of this may have been due to metal spikes in logs.

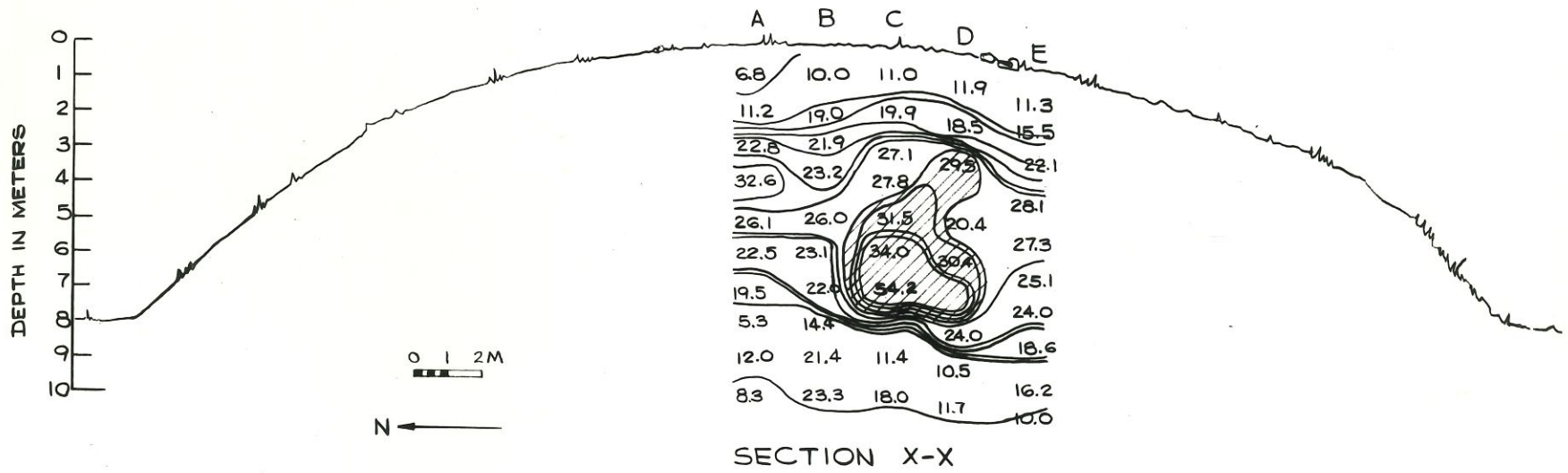
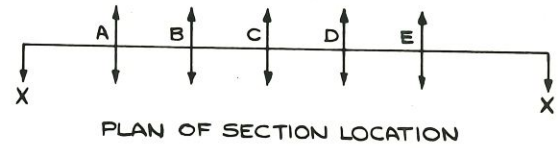
Geohm - Very high resistance anomaly over central brick hearth.

Did not locate small stone corner foundations (rest of building had been made of wood).

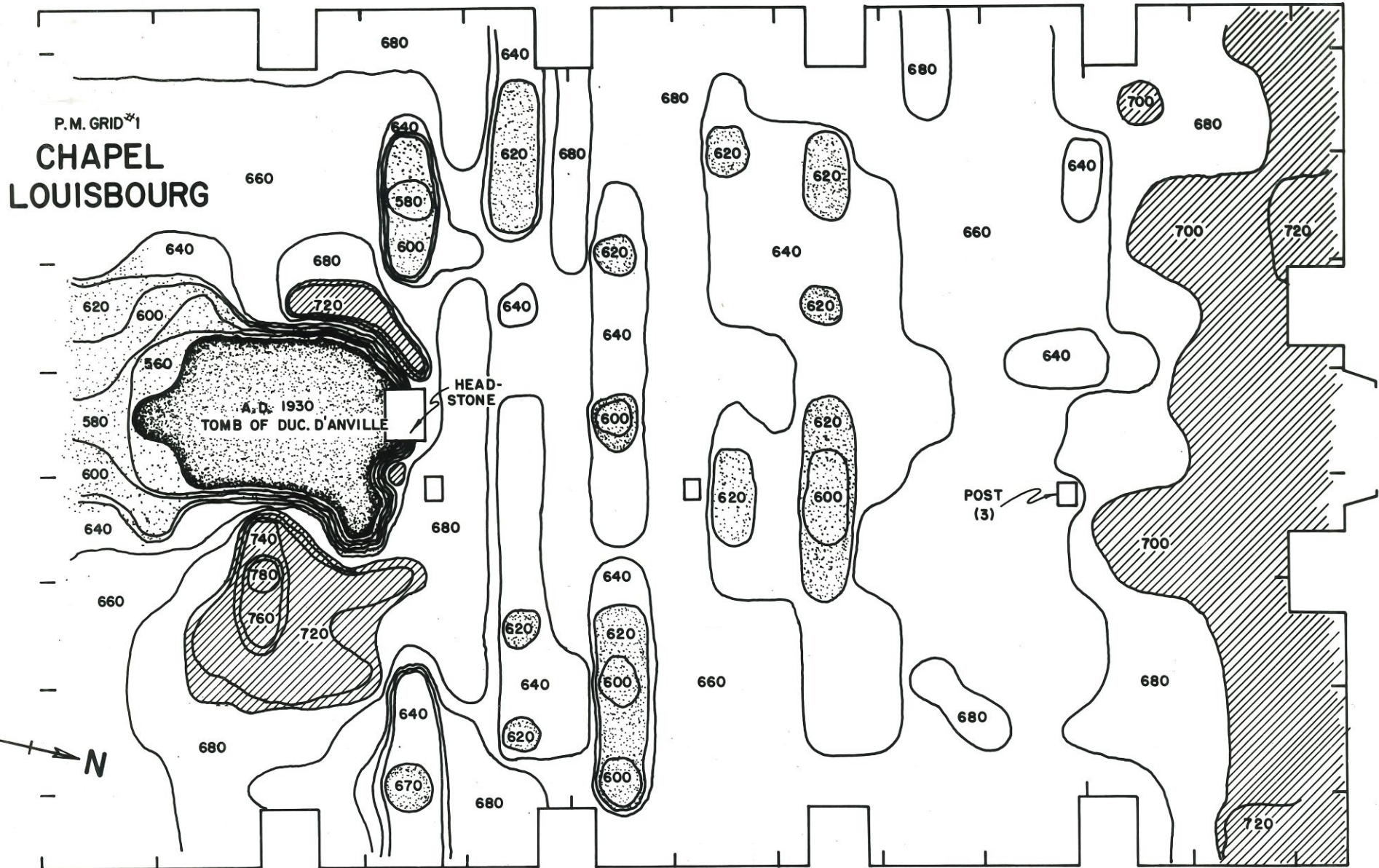
GRID #7 - Burial Area (No. 72 C) 200 x 100'.

P. M. - Showed practically nothing except for reaction to modern reinforced concrete posts at corners.

Geohm - high resistance anomalies (where excavated) corresponded with graves 5' deep. Reason not clear - spacing of rods only 2 1/2' & high resistance due to small graves not expected.



Gordian Tumulus 5 4/65



P.M. GRID #1
**CHAPEL
 LOUISBOURG**

A.D. 1930
 TOMB OF DUC. D'ANVILLE

HEAD-
 STONE

POST
 (3)

BASE READING = 43660 P.M.U. = 0.551 OERSTEDS.
 SCALE: 1/4" = 1"0"

CURVED LINES DEFINE REGIONS OF EQUAL MAGNETIC INTENSITY AT INTERVALS OF 20 P.M.U.

-  MAGNETIC REGIONS
-  ANTI-MAGNETIC REGIONS

