ROLAND F. BEERS, INC.

OFFICE AND LABORATORY:
447 PINEWOODS AVENUE
PHONE ASHLEY 2-2351

MAIL ADDRESS:
POST OFFICE BOX 1019
TROY, NEW YORK

March 24, 1960

REGISTERED MAIL No. 21555

OFFICIAL FILE COPY O. M. E. RECEIVED APR 4 1960		
DATE	INITIALS	CODE
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		800
		500

Mr. V. J. Lynch
U. S. Bureau of Mines
Post Office Building, Room 1
Knoxville 2, Tennessee

Reference: Docket No. DMEA-4947
Contract No. Idm-E 1224
Nickel, State of Maine

Dear Mr. Lynch:

Herewith are five copies each of MME Form 60, Operator's Monthly Voucher; Statement supporting Operator's Monthly Voucher; MME Form 61, Operator's Progress Report, with summary attached submitted in lieu of MME Form 61 for Stages, Areas and Phases of work completed previously; and Narrative Report in connection with work done under above captioned contract during February, 1960.

Very truly yours,

ROLAND F. BEERS, INC.

John S. Baker
Accountant

jsb/h
cc: R. A. Laurence
W. P. Williams
R. S. Young
D. E. Wyke

Logs PI
5-2

DMEA

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DATE	INITIALS	CODE

PROGRESS REPORT

February, 1960

Docket No. DMEA-4947

Contract No. Idm-E 1224

Roland F. Beers, Inc. Troy, New York

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DRILL LOG

H. A. Perpall No. 1 (P-1) (In Progress)

MAP SECTION

Crawford Pond Ice Grid showing
East Side Conductor Vertical Loop EM Survey-Feb. 1960
West Side Conductor Vertical Loop EM Survey-Feb. 1960

Crawford Pond Ice Grid
Magnetic Map - Winter 1958-1959

Fuller's Island Conductor
Horizontal Loop EM Survey - Winter 1958-1959

Spruce Island Conductor
Horizontal Loop EM Survey - Winter 1958-1959

West Side Conductor
Horizontal Loop EM Survey - Winter 1958-1959

EAST SIDE CONDUCTOR - ICE GRID

In the January, 1960 report, notice was made of the intention to connect the known ore conductor on the Harriman Grid with the conductor at Spruce Island on the Crawford Pond Ice Grid.

Using separations of 600 feet and more between the transmitter and receiver on the Vertical Coil EM unit, the survey was completed during the month of February. The conductor was extended northward from the vicinity of Spruce Island to land at 36 S + 4.25 E on the Harriman Grid, a distance of approximately 5,400 feet. The Vertical Coil EM crossovers which define the East Side Ice Conductor migrated eastward with an increase in transmitter-to-receiver separation. Since an increase in separation probes to a greater depth, an east dip of the conductor is concluded. This is supported by the east dip of the rocks on the shore line immediately east of the conductor trend.

The Harriman conductor was rechecked using the increased separation system from Traverse 6 S to its previously known southern limit on Traverse 26S; then extended southward to connect with the East Side Ice Grid Conductor.

Due to the existence of a partly inferred land conductor situated parallel to and located from 400 feet to 1000 feet east of the main Harriman conductor, the connection of the Harriman and East Side Ice conductors has been questioned. Doubt arose from the facts that the two "land" conductors are separated by only 400 feet on Traverse 34 S, and that the East Side conductor is offset approximately 300 feet to the east on Traverse 38S.

Since the southward extension of the main Harriman conductor contributes greatly toward the completion of the overall picture in the search for additional nickel ore, it is necessary that all doubt be dispelled regarding the above-mentioned connection. It is planned to run Vertical Coil EM reconnaissance in this area, using Traverse 34 S for transmitter setups.

The conductor on the east side of Spruce Island will be extended southward onto the land and then traced as far as possible. Suggestions have been made that it will turn toward the P-3 Prospect at 106 S + 19 E on the Crawford Pond Ice Grid or toward the Hupper-Sobeleski-Simmons Prospect.

WEST SIDE CONDUCTOR - ICE GRID

The West Side Anomaly on the Crawford Pond Ice Grid was previously defined by Magnetometer, Horizontal Coil EM, and Vertical Coil EM surveys during the winter of 1958 to 1959. During this period the northern and southern limits of this conductor were determined to be 12S and 42S respectively.

During the latter part of February, 1960 a Vertical Coil EM survey extended the southern limit of the conductor onto the land at approximately 56S + 38W. The Vertical Coil EM inflections at 40S + 25W and at 42S + 27W were extended a short distance to the south and are believed to represent a second conductor created by the mineralization of a large drag fold.

FULLER's ISLAND ANOMALY - ICE GRID

During the previous winter the Fuller's Island Anomaly was defined by Magnetic and Horizontal Coil EM surveys. Out of this anomalous area a northeast-southwest trend was established, but attempts to confirm this conductor trend with the Vertical Coil EM were unsuccessful.

This February, the use of the increased separation system on the Vertical Coil EM equipment resulted in a confirmation of the previously determined northeast-southwest trend, and the location of a more exact conductor axis. This conductor axis was traced southwestward to approximately 62S + 27W where it apparently makes a right angle bend and heads southeastward to the co-ordinates 72S + 20W. During the month of March, the possibility of a second conductor in the Fuller's Island area will be investigated. Attempts will also be made to extend the conductor to the north and south.

POSSIBLE CROSS FOLDING

The northeast-southwest trend of the Fuller's Island and the West Side conductors suggest the possibility of cross folding in the general area under investigation. If all doubt is erased concerning the connection of the Harriman and East Side Ice Grid conductors, then the conductors on the west side of Crawford Pond could be associated with cross folds cutting the main trend.

If additional data continue to support this theory then the implication is strong that a cross fold through the Fuller's Island anomaly cuts the Harriman baseline between Traverses 32S and 42S, also that a cross fold through the West Side anomaly would cut the Harriman baseline between the Traverses 0 and 8N. Attempts to extend the main nickel-ore conductor to the north and south encountered considerable difficulty in both of the above mentioned areas.

STAGE III DRILLING

Drill Hole No. 3 (P-1)

The location of Perpall No. 1 was tentatively approved by telephone conversation by Mr. Williams on January 28, 1960. By letter dated March 7, 1960 formal approval for this drill hole was given by Mr. Robert A. Laurence, Executive Officer, OME Field Team.

Both the location and the characteristics for this drill hole were based on the information presented in the January Progress Report. The information provided by the Geological Survey suggested that P-1 would cut a substantial thickness of ultra-basic rock. The Magnetometer Survey showed that the area of interest was characterized by the same uniform magnetic intensity that outlines the known nickel-ore body to the south. The data obtained from the Horizontal Coil EM, the Vertical Coil EM, the Potential Drop Ratio, and the Self-Potential Surveys were also similar to that produced by the respective surveys over ore to the south. From Resistivity Surveys the depth to the top of the conductor was determined to be as follows:

Traverse 14N - 40 feet
Traverse 16N - 90 feet
Traverse 18N - 150 feet

The increase in depth to the top of the conductor in the area of interest relative to that over ore between the Traverses 0 and 2S was believed to result from an increase in elevation which placed more overburden, both consolidated and unconsolidated, over the conductor; and, therefore, not primarily due to a northward plunge of the host rock.

The specific characteristics of Drill Hole P-1 with respect to azimuth, inclination, and location of the collar were designed to obtain information relating to the geophysical anomalies without exceeding limitations imposed relative to property control.

The following statistics relating to Drill Hole P-1, completed March 2, are offered:

Rock Type	Drill Hole Footage	Per Cent
Peridotite and Pyroxenite:	126' 8"	21.80
Gabbro:	102' 4"	17.60
Diorite:	17' 6"	03.03
Pegmatite:	305' 4"	52.50
Schist:	29' 6"	5.07
Total:	581' 4"	100.00
Overburden:	81' 0"	
Total Depth:	662' 4"	

The percentage of pyrrhotite in the peridotite and pyroxene generally approximated 1% to 2% although fluctuating from -1% to 5%. The percentage of pyrrhotite occasionally amounted to 10% and 20% but these concentrations were related to veins or to lithologic contacts. These concentrations were disregarded with respect to the general picture, but will be selected and included in assays. It was unfortunate that the drill cut a pegmatite dike along its dip thus lowering the percentage of basic rock and eliminating information normally obtainable.

STAGE III DRILLING

Sprague and Henwood Drill No. 2 arrived at Union, Maine on February 24 and the personnel for its operation arrived February 26. This second drill rig was placed on the Crawford Pond Ice Grid on February 26 in preparation for drilling Spruce Island No. 2 (S-2).

The exact location of this hole was tentatively approved by telephone conversation with Mr. Williams of the OME Field Team and formally by Mr. Robert A. Laurence by letter on March 7, 1960.

Hole No. S-2

Co-ordinates:	91.20S + 1.00E
Azimuth:	N 60° W
Inclination:	-45°
Estimated Depth:	350 feet

The location of S-2 was determined by extensive and detailed Magnetometer, Horizontal Coil EM, and Vertical Coil EM surveys. The majority of these surveys were run during the winter of 1958 to 1959 and during the current season the Vertical Coil EM unit was used to locate the conductor on the re-established ice grid. The later survey was more detailed in that the conductor was traced from both the north and the south while using varying separations between the transmitter and the receiver. On Traverse 91S the Vertical Coil EM cross-over located at 0.90W with the transmitter setup 300 feet to the south and on the Baseline with the transmitter 900 feet to the north. The migration of the cross-over toward the east with the increased separation strongly suggests that the conductor dips to the east. The inclination and collar of the hole were designed to cut the conductor from 140 feet to 260 feet drill hole depth; exactly where will be determined by the dip of the conductor. Preliminary work through February 29 amounted to probing through ice, water, and mud to bedrock at 54'4" drill hole depth.

DRILL LOG

Hole No.:	P-1	Azimuth:	N 42° W
Location:	18.2N + 5.20E Harriman Grid H. A. Perpall No. 9.0-1-8	Angle:	-45°
		Depth:	464'0" (in progress)
		Elevation:	242.5' a.s.l.
		Logged by:	D. E. Wyke

0' 0" - 28' 0"	BX casing . .	overburden and boulders.
0' 0" - 81' 0"	AX casing . .	unconsolidated overburden, boulders, bottomed by 8' glacial clay.
81' 0" - 464' 0"	AX core	

Depth		Lithology
81' 0" - 85' 3"		Peridotite: soft, talcose, pyroxene; serpentinized; pyrrhotite -1%.
85' 3" - 94' 2"		Pegmatite: quartz, biotite; coarse-grained; occasional pyrrhotite and pyrite crystals.
94' 2" - 96' 0"		Diorite: hornblende, biotite, pyroxene; fine-grained; possibly grades to hornblende schist.
96' 0" - 108' 6"		Pegmatite: quartz, biotite; coarse-grained; minor biotite lower 18".
108' 6" - 112' 4"		Peridotite: talcose, serpentinized; pyrrhotite -1%; minor chalcopyrite; minor carbonate; grades to anthophyllite. 108' 6" - 108' 10" dolomite 30% 109' 11" - 110' 7" dolomite 30% 110' 7" - 112' 0" anthophyllite 112' 0" - 112' 4" biotite-rich
112' 4" - 127' 0"		Pegmatite: quartz, biotite; 112' 4" - 113' 1" biotite-rich 113' 1" - 119' 2" quartz, biotite 119' 2" - 127' 0" minor biotite
127' 0" - 132' 3"		Diorite: hornblende, biotite, minor pyroxene; quartz-diorite lower 24"; pyrrhotite -1%.

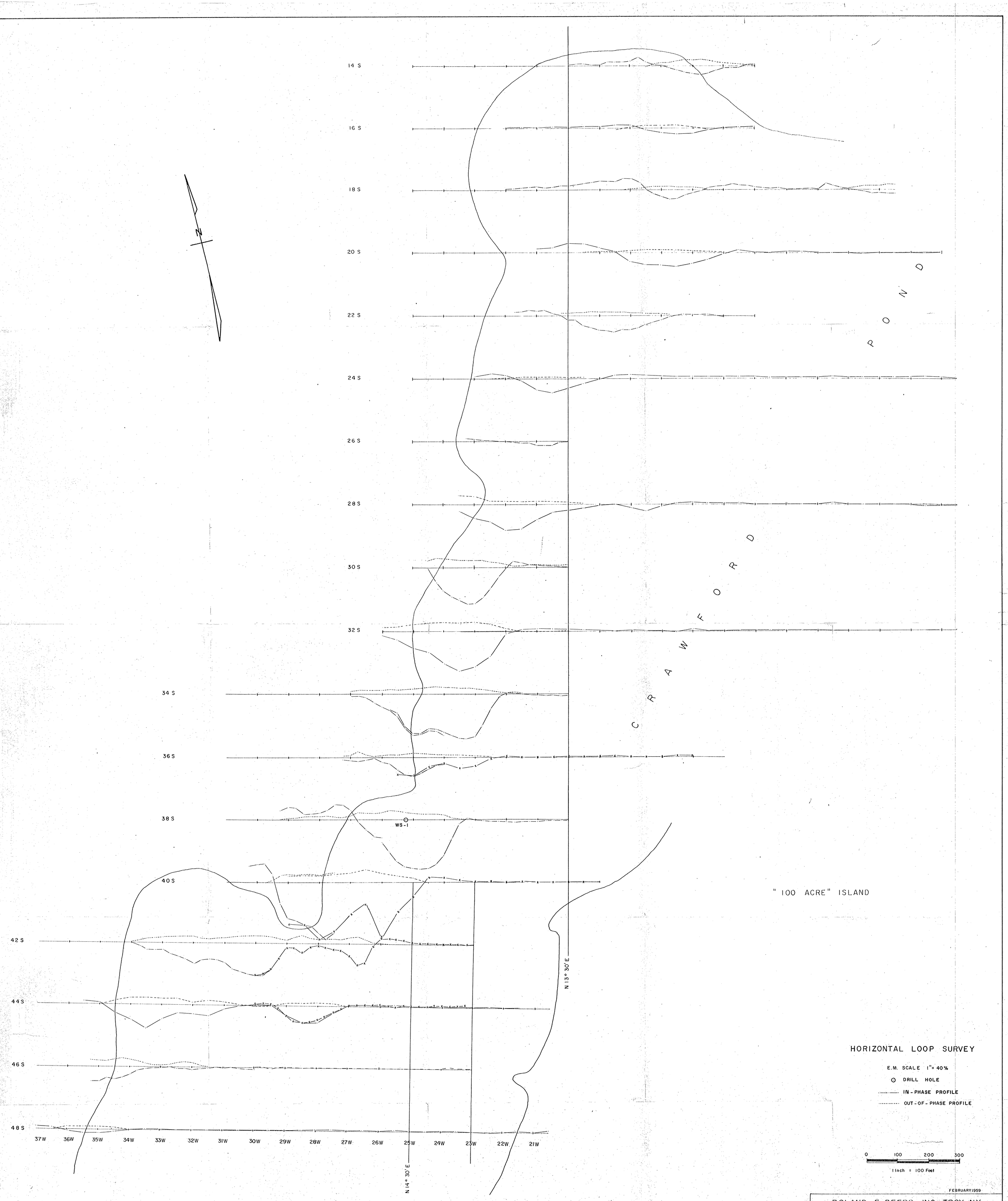
132' 3"	- 133' 0"	Pegmatite: quartz, biotite; coarse-grained.
133' 0"	- 138' 5"	Pyroxenite: pyrrhotite -1% to 1%.
138' 5"	- 194' 3"	Peridotite: pyroxene, chlorite, minor serpentine, minor biotite; pyrrhotite -1%.
194' 3"	- 204' 7"	Pyroxenite: minor serpentine; pyrrhotite -1% to 1%.
204' 7"	- 228' 7"	Pegmatite: quartz, biotite; large garnet crystals.
228' 7"	- 250' 8"	Peridotite: pyroxene, chlorite, serpentine; 233' 8" to 238' 6" minor chlorite 236' 3" to 236' 8" pegmatite; generally -1% pyrrhotite to 241' 6"; 241' 6" to 248' 5" pyrrhotite 1% to 2%; 248' 5" to 250' 8" pyrrhotite -1%; lower 8" biotite-rich.
250' 8"	- 269' 2"	Pegmatite: quartz, biotite; 250' 8" to 252' 2" quartz, biotite; 250' 2" to 259' 9" quartz, minor biotite; large garnet crystals; 259' 9" to 269' 2" quartz, minor biotite.
269' 2"	- 279' 0"	Peridotite: pyroxene, serpentine; increase in chlorite below 278' 0"; pyrrhotite 1% to 3%.
279' 0"	- 280' 5"	Pegmatite: quartz, minor biotite.
280' 5"	- 291' 0"	Peridotite: pyroxene; generally 1% pyrrhotite.
291' 0"	- 329' 7"	Gabbro: pyroxene, basic feldspar; pyrrhotite 1% to 2% to 290'; below 290' pyrrhotite -1% to 1%; lower 9" has minor biotite.
329' 7"	- 330' 5"	Pegmatite: quartz, biotite; quartz dominant.
330' 5"	- 331' 9"	Gabbro: pyrrhotite - 1%.

331' 9"	- 332' 5"	Pegmatite: quartz, minor biotite.
332' 5"	- 369' 6"	Gabbro: pyroxene, basic feldspar; possible serpentine, minor biotite; pyrrhotite -1%; 351' 7" to 353' 0" 1/4" vein pyrrhotite parallel to core axis; at 369' 0" two 1/8" pyrrhotite veinlets cut across core; minor carbonate at 389'; lower 6" dolomitic.
369' 6"	- 401' 10"	Pegmatite: quartz, biotite.
401' 10"	- 427' 2"	Gabbro: pyroxene, basic feldspar, minor serpentine; minor biotite; pyrrhotite -1%.
427' 2"	- 447' 8"	Pegmatite: quartz, biotite.
447' 8"	- 452' 4"	Pyroxenite: pyrrhotite -1% to 1%.
452' 4"	- 464' 0"	Fractured zone: probably consisting of pegmatite with thin zone of gabbro; some pegmatite, iron-stained from ground water; time-consuming blocking of core barrel with poor core recovery.

* * * * * *

P-1 in progress

* * * * * *


N
14 S
16 S
18 S
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28 S
30 S
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33W
32W
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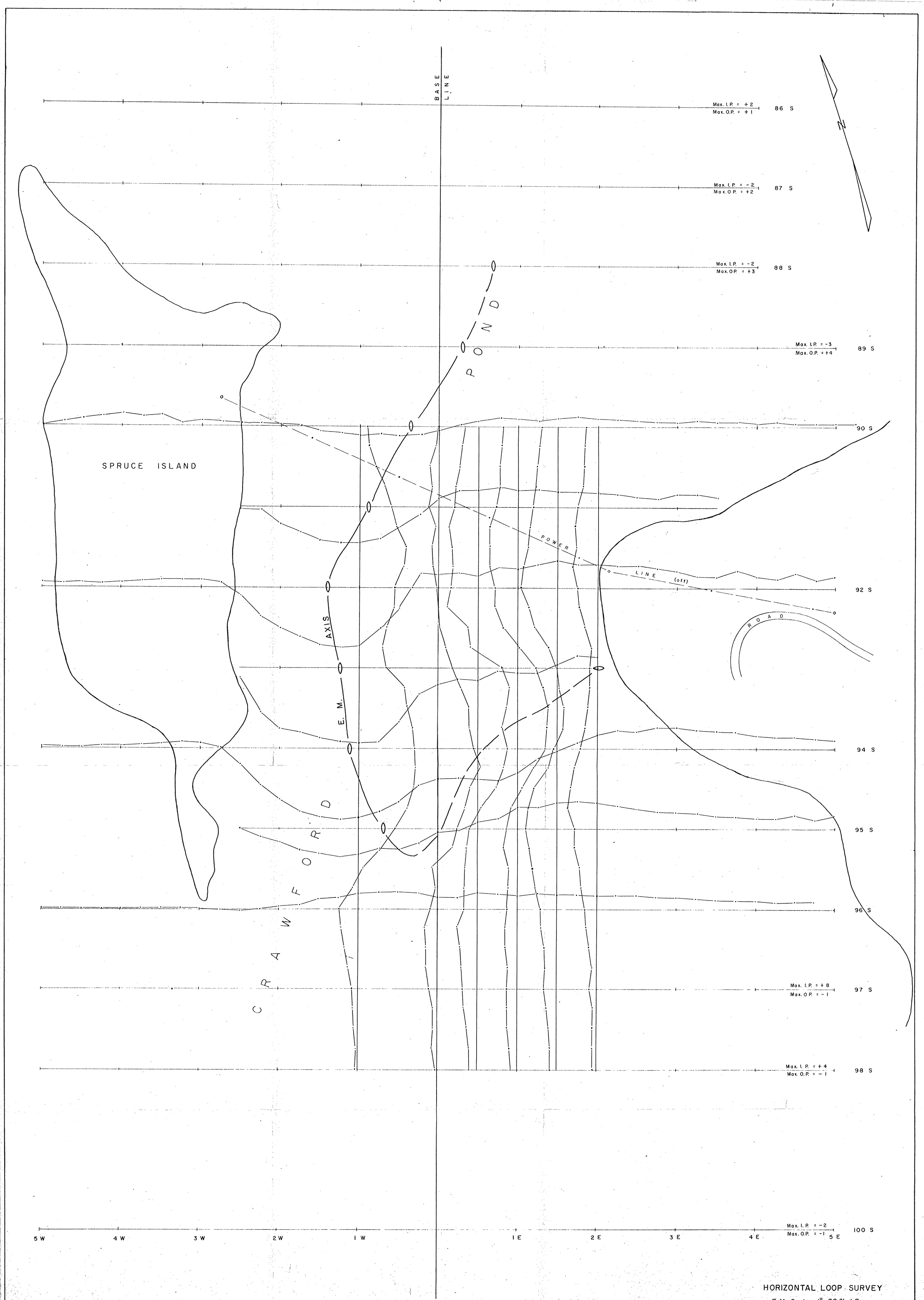
30W
29W
28W
27W
26W
25W
24W
23W
22W
21W
WS-1
N 13° 30' E
N 14° 30' E
CRAWFORD POND
"100 ACRE" ISLAND
HORIZONTAL LOOP SURVEY
E.M. SCALE 1" = 40%
DRILL HOLE
IN-PHASE PROFILE
OUT-OF-PHASE PROFILE
0
100
200
300
1 inch = 100 Feet
FEBRUARY 1959
ROLAND F. BEERS, INC., TROY, N.Y.
WEST SIDE ANOMALY
CRAWFORD POND GRID
Drawn by : R.A.P.
Approved by :
Stage 1
Area 2
Phase 2
County : KNOX
Township : UNION



HORIZONTAL LOOP SURVEY

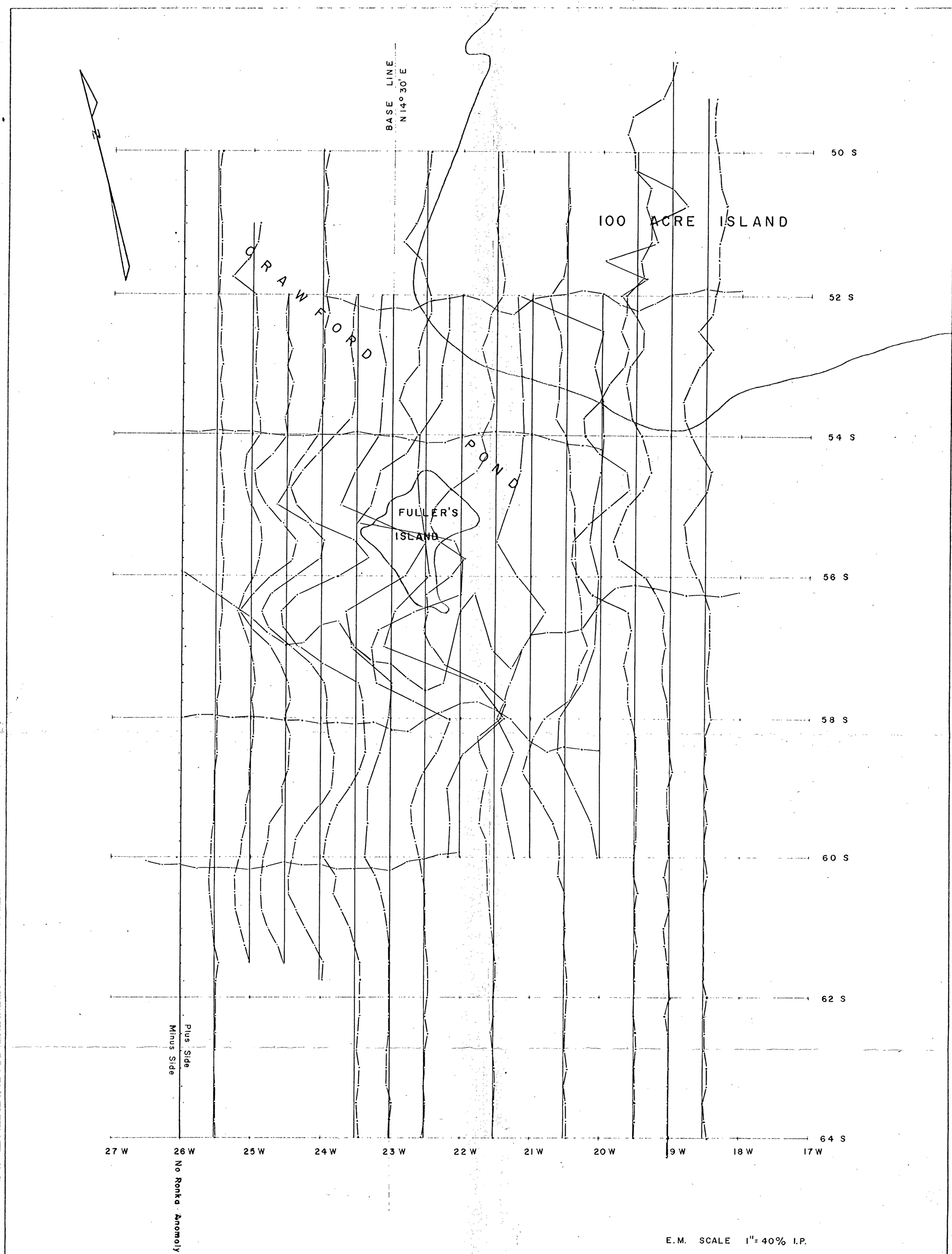
E.M. Scale 1" = 30 % I.P.

Longitudinal profile

Dip-angle crossover

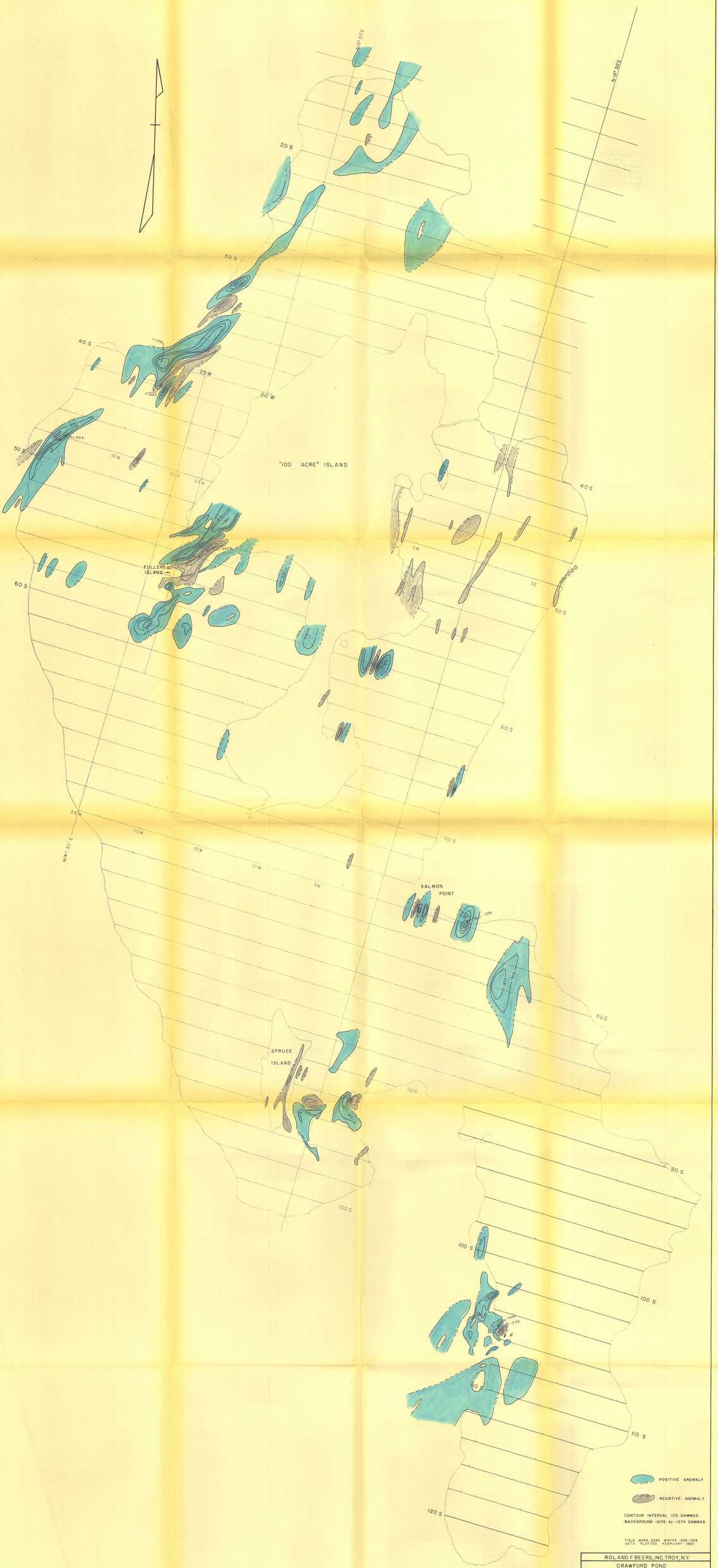
FEBRUARY 1959

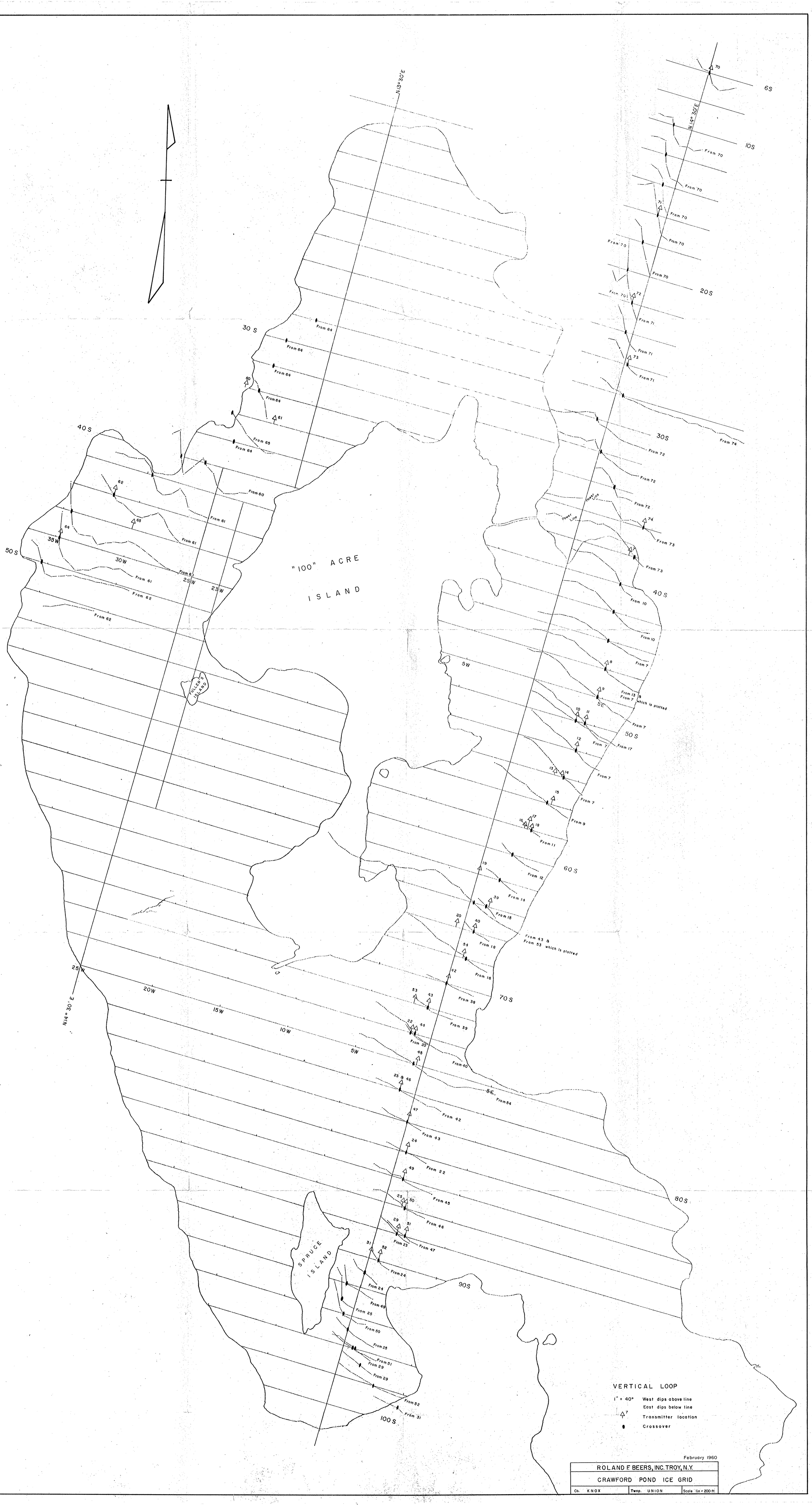
Drawn by: S.H.C.	Stage 1	ROLAND F. BEERS, INC. TROY, N.Y.
Approved by:	Area 2	SPRUCE ISLAND PROSPECT CRAWFORD POND GRID
	Phase 2	County: KNOX · Twnp: UNION · Scale: 1 in. = 50 ft.



FEBRUARY 1959

Drawn by : S.H.C.	Stage 1	ROLAND F. BEERS, INC. TROY, N.Y.
Approved by:	Area 2	FULLER'S ISLAND PROSPECT CRAWFORD POND GRID
	Phase 2	County : KNOX · Twnp: UNION · Scale : 1in = 100ft.


"100 ACRE" ISLAND
FULLERS ISLAND
SALMON POINT
SPRUCE ISLAND
N 14° 30' E
N 12° 30' W
POSITIVE ANOMALY
NEGATIVE ANOMALY
CONTOUR INTERVAL 100 GAMMAS
BACKGROUND -1076 to -1374 GAMMAS
FIELD WORK DONE WINTER 1958-1959
DATA PLOTTED FEBRUARY 1960
ROLAND F. BEERS, INC. TROY, N.Y.
CRAWFORD POND
ICE GRID
Co. KNOX, Me.
UNION
T.wnp. WARREN
Scale: 1" = 200'


N 13° 30' E
N 14° 30' E
"100" ACRE
ISLAND
FULLER'S ISLAND
SPRUCE ISLAND
Power Line
6S
10S
20S
30S
40S
50S
60S
70S
80S
90S
100S
30 S
40 S
50 S
35W
30W
25W
23W
20W
15W
10W
5W
5E
VERTICAL LOOP
1" = 40°
West dips above line
East dips below line
Transmitter location
Crossover
February 1960
ROLAND F. BEERS, INC. TROY, N.Y.
CRAWFORD POND ICE GRID
Co. KNOX
Twnp. UNION
Scale 1in = 200 ft.