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PROGRESS REPORT

March, 1960

Docket No. DMEA-4947

Contract No. Idm-E 1224

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Roland F. Beers, Inc. Troy, New York

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DRILL LOG

Hole No.:	P-1	Azimuth:	N 42° W
Location:	18.2N + 5.20E	Angle:	-45°
	Harriman Grid	Depth:	662'6"
	H. A. Perpall	Elevation:	242.5' a.s.l.
	No. 9.0-1-8	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" - 662'6"	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.
464' 0"	-	622' 0"	Pegmatite: quartz, biotite; coarse-grained; ordinarily 20' to 30' of pegmatite is maximum, this section probably represents drilling parallel to strike of pegmatite dike.
622' 0"	-	632' 5"	Schist: hornblende, biotite; fine-grained; shows gradual tendency toward quartz biotite schist.
632' 5"	-	633' 0"	Pegmatite: quartz, biotite.
633' 0"	-	662' 6"	Schist: quartz, biotite; fine-grained; garnets below 650'; poor schistosity at 652', shows 50° to 60° angle with core axis.

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Total Depth - 662' 6"

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DRILL LOG

Hole No.:	S-2	Azimuth:	N 60° W
Location:	91.2S + 1.0E	Angle:	-45°
	Crawford Pond	Depth:	290' 11"
	Ice Grid	Elevation:	110' a.s.l. (water level)
		Logged by:	D. E. Wyke

Drill Hole Data:

0' 0" - 54' 4"	BX casing (removed)
51' 10" - 54' 4"	BX core
54' 4" - 290' 11"	AX core

Depth			Lithology
0' 0"	-	13' 0"	Ice and water.
13' 0"	-	51' 10"	Mud and sand.
51' 10"	-	72' 0"	Schist: quartz, biotite; graphite 2% to 5%; minor garnet; bands of pegmatite and quartz 1/2" to 3"; veinlets of pyrite parallel to schistosity, pyrite -1% to 1%.
72' 0"	-	116' 8"	Schist: quartz, biotite; graphite generally 1% to 5%; increase in pegmatite and quartz over section above; below 87' 10" increase in pyrite and graphite, graphite maximum 8%.
116' 8"	-	127' 10"	Schist: quartz, biotite; minor graphite; minor garnet.
127' 10"	-	130' 5"	Gabbro: biotite present; pyrrhotite to 1%.
130' 5"	-	132' 8"	Pegmatite: quartz, biotite.
132' 8"	-	136' 2"	Gabbro: biotite present; pyrrhotite to 2%.
136' 2"	-	139' 7"	Pegmatite: quartz, biotite-rich.
139' 7"	-	140' 7"	Gabbro: pyrrhotite 1%.
140' 7"	-	189' 7"	Schist: quartz, biotite; graphite 1% to 5%; 175'0" - 175'2" pyrrhotite, massive 4' 2" / 1" 179'2" - 179'3" pyrrhotite, massive (continued)

			5" 179'4" - 179'9" pyrrhotite, massive 1" 180'6" - 180'7" pyrrhotite, massive 3' 185'5" - 188'4" pyrrhotite, massive chalcopyrite 1% to 5% throughout the massive pyrrhotite; approximately 1% serpentine, feldspar, quartz, and garnet crystals visible in massive pyrrhotite.
189' 7"	-	191' 7"	Peridotite: biotite-rich, pyroxene; pyrrhotite to 1%.
191' 7"	-	194' 11"	Pegmatite: quartz, biotite.
194' 11"	-	198' 8"	Schist: quartz, biotite; graphite to 1%.
198' 8"	-	203' 8"	Pegmatite: quartz, biotite, muscovite; minor narrow bands of quartz, biotite schist; biotite-rich lower 1'.
203' 8"	-	204' 6"	Schist: quartz, biotite; no graphite.
204' 6"	-	207' 7"	Pegmatite: quartz, biotite, muscovite.
207' 7"	-	210' 5"	Gabbro: biotite present; pyrrhotite to 1% to 2%.
210' 5"	-	215' 10"	Gabbro: increase in feldspar; pyrrhotite to 1%.
215' 10"	-	221' 10"	Schist: generally a pegmatized schist; 216'0" - 216'4" pegmatite: quartz, biotite. 216'4" - 216'10" schist: quartz, biotite. 216'10" - 217'5" pegmatite: quartz, biotite. 217'5" - 220'0" schist: quartz, biotite. 220'0" - 221'0" pegmatite: quartz, biotite. 221'0" - 221'10" schist: quartz, biotite, chlorite, garnet.
221' 10"	-	248' 9"	Schist: quartz, biotite, serpentine, garnet; thin veins of pegmatite with muscovite, veins 2" to 4"; minor graphite: schistosity angle 45° to core axis; core blocking barrel.
248' 9"	-	250' 1"	Pegmatite: quartz, muscovite; minor garnet.
250' 1"	-	269' 1"	Schist: quartz, biotite, muscovite; garnet present; minor graphite; strong pegmatization.

269' 1"	-	270' 8"	Schist: quartz, biotite.
270' 8"	-	271' 7"	Pegmatite: quartz, muscovite.
271' 7"	-	290' 11"	Schist: numerous pegmatites; several zones which fracture and block core barrel; 273'0" - 273'5" quartz and biotite. 275'5" - 276'3" quartz and muscovite. 277'2" - 279'0" quartz and muscovite. 279'0" - 284'4" schist with serpentine; blocking core barrel. 284'4" - 285'3" quartz, muscovite. 289'6" - 289'11" quartz, biotite, muscovite. 289'11" - 290'11" schist: quartz, biotite, serpentine.

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Total depth: 290'11"

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DRILL LOG

Hole No.: S-3
Location: 93.70S + 1.0E
Crawford Pond
Ice Grid

Angle: - 90°
Depth: 215'6"
Elevation: 110' a.s.l. (water level)
Logged by: D. E. Wyke

Drill Hole Data:

0' 0"	- 39' 9"	BX casing (removed)
35' 5"	- 39' 9"	BX core
39' 9"	- 215' 6"	AX core

Depth			Lithology
0' 0"	-	35' 5"	Ice, water, mud.
35' 5"	-	36' 10"	Pegmatite: quartz, minor biotite, muscovite.
36' 10"	-	47' 2"	Schist: quartz, biotite, chlorite; graphite 1% to 3%.
47' 2"	-	48' 4"	Schist: quartz, biotite; fine-grained; minor sulfide in veinlets parallel to schistosity, pyrrhotite 1% to 2%, pyrite -1% on fractures.
48' 4"	-	50' 5"	Schist: quartz, biotite; strong pegmatization; crystals of pyrrhotite and chalcopyrite to 2% of rock volume; 50'2" - 50'4" pyrrhotite, massive with 1% chalcopyrite.
50' 5"	-	55' 10"	Gabbro: biotite-rich; generally 1% to 3% pyrrhotite; 53'8" - 54'2" pegmatite with biotite. 54'2" - 54'9" pyrrhotite; massive, with high copper content; lower 13" fine-grained with approximately 1% pyrrhotite.
55' 10"	-	61' 3"	Pegmatite: quartz, muscovite and minor biotite; 57'0" a 1/2" vein massive pyrrhotite with chalcopyrite; 57'5" - 57'6" massive pyrrhotite; 57'8" - 58'4" semi-massive pyrrhotite 50% to 80% with high copper content; (Continued)

58'4" - 58'10" vein pyrrhotite parallel to core axis with copper veinlets present, sulfide approximately 25% total volume;
60'8" - 61'3" dominantly quartz with pyrrhotite and copper in veinlets and disseminated.

61' 3"	-	63' 11"	Gabbro: biotite-rich; pyrrhotite 1%; 62'11" - 63'5" narrow quartz veins.
63' 11"	-	64' 9"	Peridotite: biotite-rich; generally 1% pyrrhotite; lower 2" pyrrhotite to 20%.
64' 9"	-	66' 9"	Pegmatite: quartz, biotite; pyrrhotite veins with copper and pyrrhotite 20% of total volume; 65' 2" - 65' 8" band of quartz, biotite schist.
66' 9"	-	68' 0"	Gabbro: biotite-rich; pyrrhotite 1%.
68' 0"	-	68' 9"	Peridotite: pyroxene probably anthophyllite; pyrrhotite 50% to 60%.
68' 9"	-	74' 0"	Gabbro: biotite-rich; fine-grained; pyrrhotite 1% to 2%.
74' 0"	-	75' 8"	Peridotite: biotite-rich; pyrrhotite 20% at top, decreasing to 3% at bottom of section.
75' 8"	-	76' 3"	Pegmatite: quartz, biotite; 1% pyrrhotite and chalcopyrite.
76' 3"	-	79' 3"	Peridotite: pyroxene and anthophyllite; pyrrhotite 5% to 15%.
79' 3"	-	92' 2"	Pegmatite: generally quartz, muscovite; minor biotite; 79'3" - 83'2" pegmatite; coarse-grained; biotite in long blades; pyrrhotite and chalcopyrite 1% to 2%; (Continued)

			80'10" - 81'3" gabbro; biotite-rich; pyrrhotite 1%; 83'2" - 92'2" pegmatite; quartz, muscovite; minor biotite; pyrrhotite to 1%.
92' 2"	-	93' 6"	Gabbro: biotite-rich; pyrrhotite to 2%.
93' 6"	-	99' 10"	Gabbro: biotitic; fine-grained; finely disseminated pyrrhotite to 2% visible with hand lens.
99' 10"	-	100' 7"	Pegmatite: quartz-biotite; band of quartz-biotite schist 2" in thickness at 100'2".
100'7"	-	102' 9"	Gabbro: biotite-rich; pyrrhotite to 5% within 4" of upper and lower limits of section; pyrrhotite to 70% in center of section.
102' 9"	-	107' 3"	Peridotite: pyroxene, chlorite; pyrrhotite 75% to 85%; chalcopyrite 2% to 5% visible.
107' 3"	-	115' 2"	Peridotite: pyroxene, anthophyllite; pyrrhotite 15% to 30% with high percentage of copper; 107'8" - 108'1" band of quartz, biotite schist.
115' 2"	-	117' 8"	Gabbro: pyrrhotite 1% to 2%.
117' 8"	-	125' 7"	Peridotite: pyroxene, probably anthophyllite; pyrrhotite 10% to 15% in large crystals; lower 12" pyrrhotite 2%; lower 3" biotite-rich zone.
125' 7"	-	126'6"	Pegmatite: quartz, biotite; 1" dolomite at 125'10".
126' 6"	-	157' 9"	Schist: quartz, biotite; minor garnet; graphite 1% to 3%, occasionally to 5%; chlorite present; schistosity angle with core axis: 126'7" - 127'0" 80° 131' - 132' 60° 132' - 139' 30° 139' - 140' 10° 140' - 145' 80° Illustrates unreliable information derived from local drag folds.

157' 9"	-	160' 6"	Schist: hornblende; minor pyrrhotite.
160'6"	-	161' 4"	Pegmatite: quartz, biotite.
161' 4"	-	162' 5"	Peridotite: biotite-rich; pyrrhotite 2% to 5%; numerous garnet crystals.
162' 5"	-	169' 4"	Schist: hornblende; minor pyrrhotite.
169' 4"	-	171' 0"	Pegmatite: quartz, biotite.
171' 0"	-	179' 8"	Schist: hornblende with narrow veins of quartz; 176'0" - 176'10" quartz-biotite schist; 177'2" - 177'8" quartz-biotite schist.
179' 8"	-	206' 5"	Schist: quartz, biotite; several 2" to 3" bands of quartz-biotite pegmatite; 183'5" - 183'8" hornblende schist 184'1" - 184'6" hornblende schist.
206' 5"	-	215' 6"	Schist: quartz, biotite; schistosity angle with core axis 45°.

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Total Depth: 215' 6"

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DRILL LOG

Hole No. S-4
Location: 88S + 1.4E
Crawford Pond
Ice Grid

Angle: -90°
Depth: 342' 0"
Elevation: 110' a.s.l. (water level)
Logged by: D. E. Wyke

Drill Hole Data:

0'0"	- 51'0"	BX casing (removed)
48'7"	- 51'0"	BX core
51'0"	- 342'0"	AX core

Depth			Lithology
0' 0"	-	48' 7"	Overburden
48' 7"	-	54' 6"	Schist: quartz, biotite; garnet.
54' 6"	-	57' 1"	Schist: quartz, biotite; biotite-rich; chlorite; possible serpentine; pyrrhotite to 1%.
57' 1"	-	60' 1"	Schist: quartz, biotite; chlorite; several 1" veins quartz parallel to schistosity.
60' 1"	-	122' 0"	Schist: quartz, biotite, muscovite; chlorite; graphite to 3%, occasionally to 10% in 1/2" zones; minor garnet; minor pyrite as coating on fractures; 64' to 67' quartz-muscovite pegmatite; generally a pegmatized section.
122' 0"	-	130' 2"	Schist: hornblende; biotite; several zones of pegmatite: 122' 5" - 122' 10" quartz-biotite pegmatite; 123' 5" - 123' 8" quartz-biotite pegmatite; 124' 3" - 125' 7" quartz-biotite pegmatite.
130' 2"	-	136' 9"	Diorite: highly altered; pegmatized.
136' 9"	-	161' 2"	Pegmatite: quartz, muscovite; minor biotite.
161' 2"	-	176' 10"	Schist: quartz, muscovite; minor biotite; chlorite; graphite 1% to 3%.
176' 10"	-	222' 0"	Schist: quartz, muscovite; serpentinized; generally a fracture zone, schistosity angle 60° to 70° results in fractured core; 213'0" to bottom of section. Schistosity approximately parallel to core axis prevents fractured core.

222' 0"	-	228' 6"	Schist: quartz, biotite, muscovite; minor fracture zones.
228' 6"	-	231' 5"	Pegmatite: quartz, biotite, muscovite.
231' 5"	-	237' 5"	Schist: quartz, biotite; 234'8" - 236'0" quartz dominant; garnet.
237' 5"	-	240' 6"	Diorite: fine-grained.
240' 6"	-	258' 2"	Schist: quartz, biotite, muscovite; serpentine; garnet; graphite to 2%: 253'8" - 254'4" quartz-biotite pegmatite.
258' 2"	-	268' 0"	Pegmatite: quartz dominant; minor biotite and muscovite.
268' 0"	-	280' 11"	Schist: quartz, biotite; garnet; serpentine; minor graphite.
280' 11"	-	283' 10"	Pegmatite: quartz, muscovite.
283' 10"	-	337' 2"	Schist: siliceous, dolomitic; mica probably phlogopite.
337' 2"	-	338' 6"	Schist: hornblende; fine-grained.
338' 6"	-	342' 0"	Schist: quartz, biotite.

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Total Depth: 342' 0"

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DRILL LOG

Hole No.:	F-2	Azimuth:	S 20° E
	Fuller's	Angle:	-60°
	Island No. 2	Depth	274' 6"
Location:	59.2S + 23.9W	Elevation:	110' a.s.l. (water level)
	Crawford Pond	Logged by:	D. E. Wyke
	Ice Grid		

Drill Hole Data:

0' 0" - 45' 8"	BX casing (removed)
44' 0" - 45' 8"	BX core
45' 8" - 274' 6"	AX core

Depth			Lithology
0' 0"	-	19' 3"	Ice (18") and water.
19' 3"	-	44' 0"	Mud, sand and boulders.
44' 0"	-	54' 9"	Pegmatite: quartz, muscovite.
54' 9"	-	63' 0"	Marble and Dolomite: 54'9" - 56'5" 5% to 15% sulfide, identified as pyrrhotite; serpentine present. 56'5" - 57'6" serpentine; minor quartz-biotite schist bands; 5% to 10% sulfide, identified as pyrrhotite. 59'0" - 59'7" biotite schist bands to 1/2" in thickness. 59'7" - 60'9" probably a pegmatized marble or dolomite; 1% to 20% sulfide, identified as pyrrhotite.
63' 0"	-	82' 10"	Dolomite: gray in color; 75'4" - 75'10" 1% to 3% disseminated sulfide, identified as pyrrhotite. 79'4" - 80'0" quartz-biotite schist; minor serpentine. 81'10" - 82'10" Pegmatite: quartz, biotite, muscovite; 60% of volume. Lower 2" contains pyrrhotite crystals adjacent to contact.
82' 10"	-	83' 0"	Diorite: 1% to 5% disseminated pyrrhotite.
83' 0"	-	84' 7"	Schist: quartz, biotite; graphite 1% to 3%; sulfide 2% to 4%, identified as pyrrhotite; Schistosity angle with core axis is 45°.

84' 7"	-	85' 4"	Dolomite: minor serpentine.
85' 4"	-	91' 10"	Schist: quartz, biotite; graphite 2% to 4%; 1% to 2% sulfide in veinlets parallel to schistosity, identified as pyrrhotite.
91' 10"	-	102' 8"	Diorite: highly altered to 99'7"; pyrrhotite 1% to 3% to 99'7".
102' 8"	-	109' 5"	Schist: quartz, biotite; 1% disseminated pyrrhotite; schistosity angle 45° to 50° with core axis; 103'11" - 104'3" marble.
109' 5"	-	112' 5"	Schist: minor quartz; micaceous; graphite 5% to 10%; 10% to 15% sulfide, identified as pyrrhotite; pyrite in veinlets and on fracture surfaces; schistosity angle 40° to 50° to core axis.
112' 5"	-	114' 8"	Schist: biotite and muscovite; quartz lenses parallel to schistosity; a highly altered rock; pyroxene, serpentine and hornblende present in minor amounts; occasional pyrrhotite crystals.
114' 8"	-	125' 0"	Schist: biotite, muscovite, graphite; a highly altered rock; pyrrhotite present to 5%.
125' 0"	-	129' 0"	Dolomite: highly altered; minor biotite in thin bands; pegmatized; pyrrhotite 1% to 2% associated with quartz; 126'10" - 127'9" quartz-biotite schist.
129'0"	-	134' 10"	Pegmatite: quartz, muscovite, biotite; minor garnet; occasional pyrrhotite crystal.
134' 10"	-	139' 8"	Schist: quartz, biotite; schistosity angle 60° with core axis.
139' 8"	-	142' 9"	Schist: quartz, biotite; marked increase in biotite; schistosity angle 50° with core axis.
142' 9"	-	180' 10"	Schist: quartz, biotite, hornblende; calcite on fractures; bands 6" to 18" in thickness alternately rich in hornblende and biotite; 174'2" - 175'3" quartz-muscovite pegmatite with minor tourmaline and garnet; 145' - 173' angle increases from 50° to 80° 173' - 183' angle decreases from 80° to 45°.

180' 10"	-	182' 0"	Dolomite.
182' 0"	-	226' 2"	Schist: quartz, biotite; increase in biotite below 196'0"; 184'6" - 185'2" quartz, muscovite pegmatite.
226' 2"	-	229' 7"	Pegmatite: quartz, biotite; 6" biotite schist in center of section.
229' 7"	-	242' 0"	Schist: quartz, biotite; 230'8" - 231'8" quartz-biotite pegmatite.
242' 0"	-	256' 4"	Schist: quartz, biotite, hornblende; hornblende and biotite are alternately dominant.
256' 4"	-	274' 6"	Schist: quartz, biotite; increase in biotite below 261'; schistosity angle with core axis 40° to 55°.

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Total Depth - 274' 6"

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DRILL LOG

Hole No.	E-1	Azimuth:	Vertical
Location:	42S + 4.0E	Angle:	-90°
	Crawford Pond	Depth:	356'
	Ice Grid	Elevation:	110' a.s.l. (water level)
		Logged by:	D. E. Wyke

Drill Hole Data:

0'0" - 78'0"	BX casing (removed)
78'0" - 356'0"	AX core

Depth	Lithology
0'0" - 78' 0"	Ice, water, mud and sand.
78' 0" - 79' 5"	Pegmatite: quartz, biotite; occasional sulfide crystal, pyrrhotite and chalcopyrite.
79' 5" - 88' 0"	Schist: hornblende, biotite; quartz veinlets in fractures; pyrrhotite -1% and minor chalcopyrite in top 2'; more schistose and increased quartz below top 2'.
88' 0" - 96' 2"	Schist: quartz, biotite; minor sulfide parallel to schistosity, pyrrhotite -1%.
96' 2" - 107' 11"	Schist: quartz, biotite, chlorite, serpentine; minor garnet; narrow quartz bands: Pegmatite: 98'3" - 98'6" 99'3" - 99'4" 102'4" - 102'7" 103'1" - 104'0" 104'8" - 105'10" 106'5" - 107'11"
107' 11" - 123' 0"	Schist: quartz, chlorite, serpentine; minor garnet; generally 1% to 5% sulfide. 108'4" - 110'2" pegmatite 110'5" - 111'4" fine-grained garnet gneiss 111'4" - 112'1" pegmatite 112'1" - 113'0" quartz, garnet, serpentine, pyrrhotite 20% to 30% 113'0" - 123'0" pegmatized schist; minor graphite lower 2'.

123' 0"	-	125' 9"	Schist: quartz, serpentine; graphite 1% to 3%.
125' 9"	-	131' 4"	Schist: quartz, biotite, serpentine, graphite 5% to 15%; schistosity has 45° angle with core axis.
131' 4"	-	135' 4"	Schist: quartz, biotite-rich; minor graphite 1% to 2%; sulfide along fractures and parallel to schistosity 5% to 10% in top 1'.
135' 4"	-	137' 9"	Schist: quartz, biotite.
137' 9"	-	152' 5"	Schist: biotite-rich, minor garnet; chlorite and serpentine present; minor graphite.
152' 5"	-	154' 0"	Schist: quartz, biotite, hornlende; minor garnet; poor schistosity.
154' 0"	-	154'9"	Pegmatite: quartz, biotite.
154' 9"	-	157' 10"	Schist: biotite, chlorite, serpentine; minor garnet; minor graphite; lower 2' pegmatized.
157' 10"	-	160' 5"	Schist: hornblende, quartz, biotite; minor garnet; fine-grained.
160' 5"	-	164' 0"	Pegmatite: quartz, muscovite, minor tourmaline.
164' 0"	-	171' 6"	Gabbro: pyroxene, biotite, feldspar; minor chlorite; pyrrhotite to 1%.
171' 6"	-	172' 11"	Quartz: minor feldspar; minor pyrrhotite.
172' 11"	-	174' 1"	Gabbro: pyroxene, biotite; pyrrhotite 1%.
174' 1"	-	175' 3"	Gabbro: ditto with quartz veins and calcite on fractures.

175' 3"	-	189' 2"	Gabbro: generally 1% pyrrhotite visible; 178'9" - 179'2" Pegmatite 180'9" - 182'4" Pegmatite 188'8" - 189'2" Pegmatite.
189' 2"	-	192' 10"	Schist: hornblende; minor biotite and garnet.
192' 10"	-	196' 2"	Schist: quartz, chlorite; generally 2% graphite; 195'6" - 196'2" graphite 10% to 30%.
196' 2"	-	197' 2"	Pegmatite.
197' 2"	-	205' 2"	Schist: hornblende, biotite; minor quartz.
205' 2"	-	224' 1"	? Gabbro: pyroxene, biotite, feldspar; generally 1% pyrrhotite; 209'3" - 209'6" pegmatite with biotite, coarse-grained; 210'6" - 211'10" pegmatite with minor biotite.
224' 1"	-	230' 3"	Schist: hornblende, biotite; pyrrhotite 1%.
230' 3"	-	239' 4"	Schist: quartz, biotite, chlorite; graphite generally 1% to 5%; 234' 10" - 235'9" hornblende schist.
239' 4"	-	241' 0"	Pegmatite: quartz, biotite.

Core barrel accidentally dropped down the drill hole. Fishing procedure was unsuccessful. Began reaming hole. Drill hole lost during reaming at approximately 200' depth. AX core saved below 208'0".

208' 0"	-	208' 5"	Gabbro: biotitic; pyrrhotite to 1%.
208' 5"	-	209' 3"	Pegmatite: quartz, minor biotite.

209' 3"	-	214' 7"	Schist: hornblende, biotite; fine-grained; schistosity angle 10° to 20° to core axis.
214' 7"	-	218' 0"	Pegmatite: 214'7" - 215'5" quartz, minor biotite, striated feldspar present, minor chlorite. 215'5" - 215'8" quartz with 20% biotite. 215'8" - 218'0" quartz, minor biotite.
218' 0"	-	228' 4"	Gabbro: minor biotite; pyrrhotite to 1%. 222'0" - 222'6" pegmatite.
228' 4"	-	235' 3"	Schist: hornblende, biotite; 1% pyrrhotite lower 1'.
235' 3"	-	248' 0"	Gabbro: with biotite and chlorite; 1% pyrrhotite: 238'10" - 239'0" pegmatite; quartz, muscovite. 240'11" - 241'1" pegmatite; quartz, biotite. 247'9" - 248'0" pegmatite, quartz, biotite.
248' 0"	-	264' 6"	Schist: quartz, biotite, chlorite; minor graphite.
264' 6"	-	272' 0"	Pegmatite: quartz, muscovite; 267'3" - 270'1" minor muscovite.
272' 0"	-	273' 5"	Schist: quartz, biotite, chlorite; minor graphite.
273' 5"	-	276' 5"	Schist: quartz, biotite: pyrrhotite 10% to 15%.
276'5"	-	282' 3"	Gabbro: pyroxene, biotite, feldspar; serpentine and hornblende present; pyrrhotite 5% to 10%.
282' 3"	-	286' 9"	Peridotite: pyroxene; pyrrhotite 15% to 25%.

286' 9"	-	288' 0"	Peridotite: soft, altered, serpentine present: pyrrhotite 10% to 20%.
288' 0"	-	298' 5"	Peridotite: chloritic; pyrrhotite 2% to 10% with progressive decrease toward bottom of section. 297'2" - 298'0" biotite-rich quartz. 298'0" - 298'5" pyrrhotite 10% to 15%.
298' 5"	-	303' 10"	Pegmatite: quartz, biotite; top 10" biotite-rich.
303' 10"	-	305' 0"	Anthophyllite: minor biotite; pyrrhotite to 2%.
305' 0"	-	314' 10"	Schist: quartz, biotite, chlorite; graphite 2% to 5%.
314' 10"	-	324' 10"	Schist: quartz, biotite; minor garnet; graphite 2% to 5%.
324' 10"	-	325' 5"	Pegmatite: quartz, biotite.
325' 5"	-	334' 5"	Schist: hornblende with veins of quartz 1/8" to 1/4" in thickness; pegmatite veins present from 4" to 10" in thickness.
334' 5"	-	337' 0"	Gabbro: pyrrhotite to 1%.
337' 0"	-	338' 8"	Pegmatite: quartz, biotite.
338' 8"	-	343' 0"	Schist: quartz, biotite; very minor graphite,
343' 0"	-	344' 1"	Schist: hornblende.
344' 1"	-	349' 7"	Schist: quartz, biotite.
349' 7"	-	351' 3"	Dolomite: with talc and serpentine present.
351' 3"	-	356' 0"	Schist: quartz, biotite.

* * * * Total Depth: 356' 0" * * * *

DRILL LOG

Hole No.:	E-2	Angle:	-90°
Location:	74S + 1.9W	Depth:	463'
	Crawford Pond	Elevation:	110' a.s.l. (water level)
	Ice Grid	Logged by:	D. E. Wyke

Drill Hole Data:

0' 0"	- 149' 10"	BX casing (removed)
147' 0"	- 149' 10"	BX core
149' 10"	- 463' 0"	AX core

Depth			Lithology
0' 0"	-	147' 0"	Overburden.
147' 0"	-	257' 0"	Pegmatite: quartz, biotite; fine-grained; increase in feldspar below 232'; increase in biotite below 254'.
257' 0"	-	263' 8"	Schist: hornblende; quartz present; 261' 3" - 261' 11" quartz-biotite pegmatite.
263' 8"	-	265' 2"	Schist: quartz, biotite; thin bands of biotite schist.
265' 2"	-	274' 5"	Pegmatite: quartz-biotite; 265'2" - 266'6" coarse-grained 266'6" - 269'4" fine-grained 269'4" - 274'5" fine-grained, muscovite included.
274' 5"	-	291' 6"	Schist: quartz, biotite; 277'0" - 277'8" quartz-biotite-muscovite pegmatite; 278'6" - 279'6" quartz-biotite-muscovite pegmatite; 282' vein of calcite; schistosity angle with core axis 50° to 60°.
291' 6"	-	305' 0"	Schist: hornblende; thin bands of quartz; 295'0" - 296'6" quartz-muscovite pegmatite below 298'8" a fracture zone with numerous bands of quartz-biotite schist.

305' 0" - 382' 8"

Schist: quartz, biotite; numerous bands of quartz-muscovite pegmatite:
344' 7" - 345' 3"
346' 2" - 346' 6"
362' 5" - 366' 6"
375' 6" - 376' 0"

382' 8" - 463' 0"

Schist: quartz, biotite; garnet; muscovite; numerous zones with chlorite; effervescence in zones rich in quartz indicate dolomite near drill hole; Occasional large pyrrhotite crystal in calcareous zones:
385' 6" - 386' 0" pegmatite and lime
390' 0" - 390' 7" quartz
392' 11" - 393' 11" pegmatite and lime
396' 5" - 397' 10" pegmatite, fine-grained
399' 5" - 400' 0" pegmatite, fine-grained
401' 1" - 401' 7" pegmatite, fine-grained
406' 10" - 407' 9" pegmatite and lime
409' 4" - 409' 8" quartz
411' 1" - 413' 7" pegmatite and lime; minor garnet
414' 4" - 415' 0" pegmatite and lime; minor garnet
418' 4" - 425' 6" pegmatite and lime; minor garnet
427' 9" - 430' 1" pegmatite and lime
431' 2" - 434'10" quartz
Note: pyrrhotite crystals apparently replace feldspar in pegmatite.

* * * * * *

Total Depth: 463' 0"

* * * * * *

DRILL LOG

Hole No.:	E-3	Angle:	-90°
Location:	52S + 3.75E	Depth:	322' 6"
	Crawford Pond	Elevation:	110' a.s.l. (water level)
	Ice Grid	Logged by:	D. E. Wyke

Drill Hole Data:

0' 0" - 135' 0"	BX casing (removed)
134' 6" - 135' 0"	BX core
135' 0" - 322' 6"	AX core

Depth			Lithology
0' 0"	-	0' 20"	Ice.
0' 20"	-	58' 0"	Water.
58' 0"	-	80' 0"	Mud.
80' 0"	-	134' 6"	Sand, cobbles and boulders.
134' 6"	-	153' 6"	Schist: quartz, biotite, muscovite; serpentine; graphite to 10%; pyrrhotite 2% to 4%.
153' 6"	-	156' 0"	Pegmatite: quartz, muscovite.
156' 0"	-	160' 9"	Marble: pegmatized; 2" to 6" bands of quartz-muscovite pegmatite.
160' 9"	-	192' 4"	Schist: quartz, biotite, muscovite; graphite to 2%; abundant garnet; serpentine; calcite in fractures; 182'6" - 188'5" quartz-muscovite pegmatite with minor pyrrhotite crystals.
192' 4"	-	200' 11"	Schist: quartz, biotite, hornblende; minor garnet; several 6" bands of quartz-biotite pegmatite.
200' 11"	-	214' 11"	Diorite: 1" to 2" bands of quartz-biotite pegmatite; minor pyrrhotite associated with pegmatite.

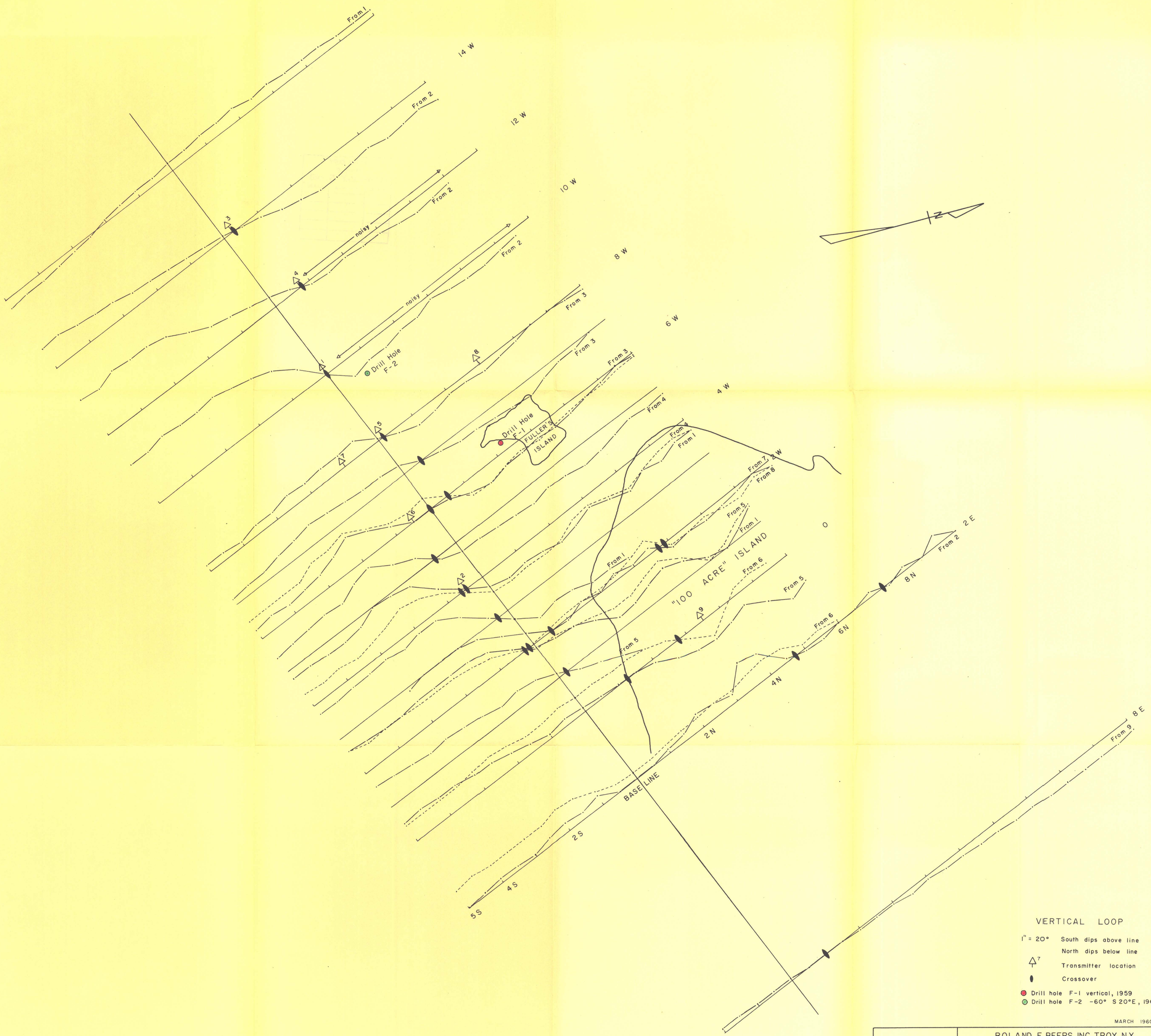
214' 11" - 224' 6"		Schist: quartz, biotite; graphite 2% to 5%; two 1" bands of hornblende schist; 222'6" - 222'10" chlorite-rich peridotite with minor garnet and 1% pyrrhotite.
224' 6" - 241' 9"		Peridotite: pyroxene, chlorite, anthophyllite; 1% to 10% pyrrhotite with increase toward bottom of section; 228'3" - 229'6" quartz-biotite pegmatite.
241' 9" - 243' 0"		Pegmatite: quartz, biotite.
243' 0" - 245' 5"		Peridotite: pyroxene, chlorite, anthophyllite; minor biotite; serpentine; pyrrhotite 2% to 8%.
245' 5" - 247' 0"		Pegmatite: quartz, biotite.
247' 0" - 251' 1"		Peridotite; pyroxene, chlorite; minor biotite; pyrrhotite 5% to 15%.
251' 1" - 253' 10"		Pegmatite: quartz, biotite.
253' 10" - 254' 8"		Schist: quartz, biotite, hornblende.
254' 8" - 279' 7"		Peridotite: pyroxene, chlorite; pyrrhotite with high copper content; 254'8" - 259'8" 15% 259'8" - 264' 40% to 50% 264' - 279'7" 50% to 70%.
279' 7" - 290' 1"		Altered zone: hornblende with biotite; generally fine-grained; pyrrhotite with high copper content generally 10% to 15%; 279'7" - 280'0" pyrrhotite massive 280'3" - 280'5" pyrrhotite massive 280'7" - 280'8" pyrrhotite massive 283'0" - 284'5" pyrrhotite semi-massive 285'6" - 285'11" three 1" veins of massive pyrrhotite 286'0" - 289'0" pyrrhotite semi-massive 289'5" - 290'1" pyrrhotite semi-massive

290' 1"	-	292' 10"	Pegmatite: quartz, biotite; 290'5" - 290'10" pyrrhotite semi-massive
292'10"	-	295' 3"	Schist: quartz, biotite; minor garnet; graphite to 5%; generally 5% pyrrhotite; some 1" to 2" zones with 30% pyrrhotite.
295' 3"	-	296' 4"	Pegmatite: quartz, biotite.
296' 4"	-	303' 0"	Schist: quartz, biotite; to 2% graphite; generally 5% pyrrhotite, decreasing toward bottom of section.
303' 0"	-	312' 7"	Schist: quartz, biotite, muscovite; minor garnet; pyrrhotite 1%.
312' 7"	-	314' 6"	Pegmatite: quartz, biotite, muscovite.
314' 6"	-	322' 6"	Schist: quartz, biotite;minor garnet; abundant serpentine; graphite to 10%.

* * * * * *

Total Depth: 322' 6"

* * * * * *



VERTICAL LOOP

1" = 20°

South dips above line

North dips below line

Transmitter location

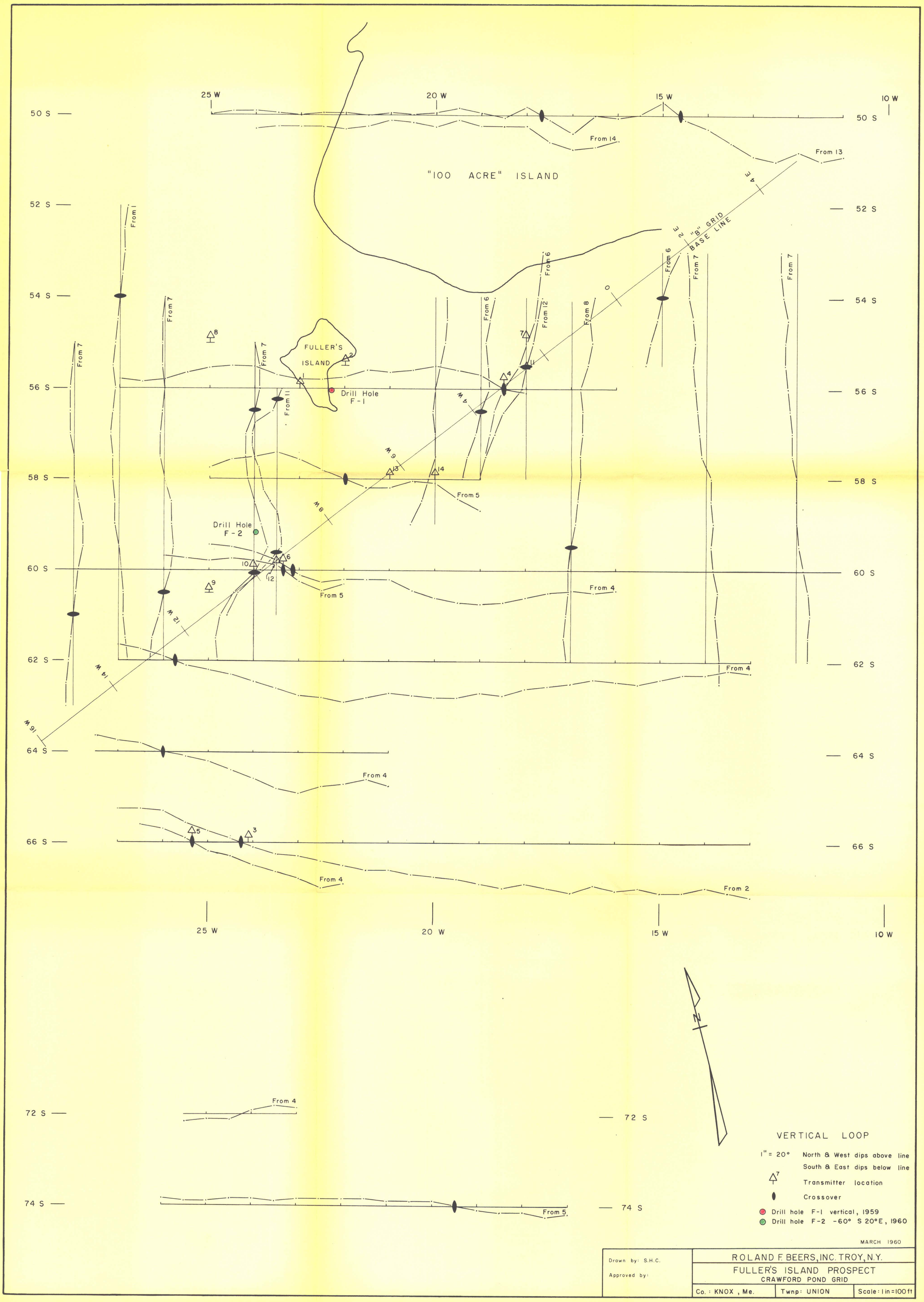
Crossover

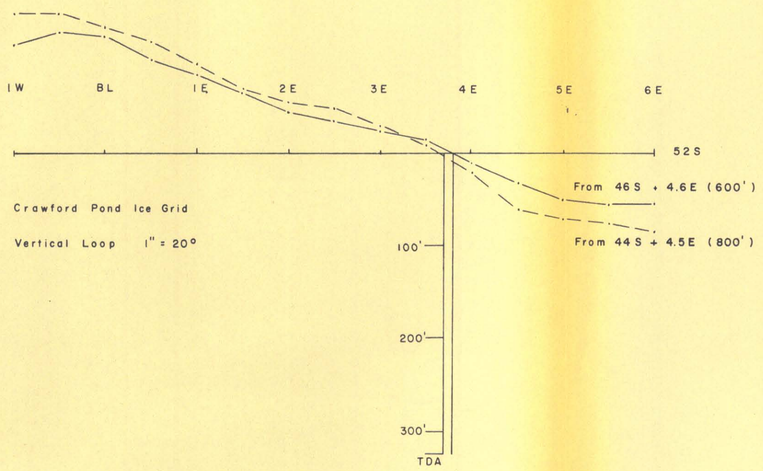
Drill hole F-1 vertical, 1959

Drill hole F-2 -60° S 20°E, 1960

MARCH 1960

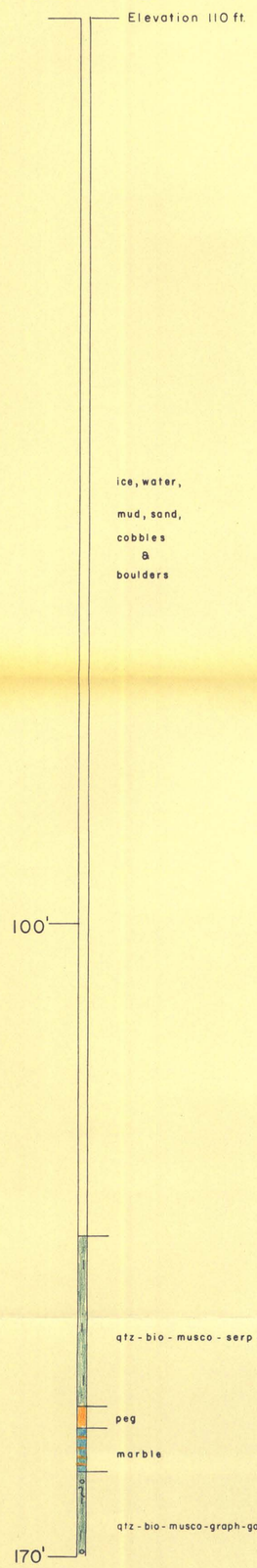
Drawn by: S.H.C.	ROLAND F. BEERS, INC. TROY, N.Y.		
Approved by:	FULLER'S ISLAND PROSPECT "B" GRID		
	Co. KNOX, Me.	Twnp UNION	Scale: 1in=100ft.

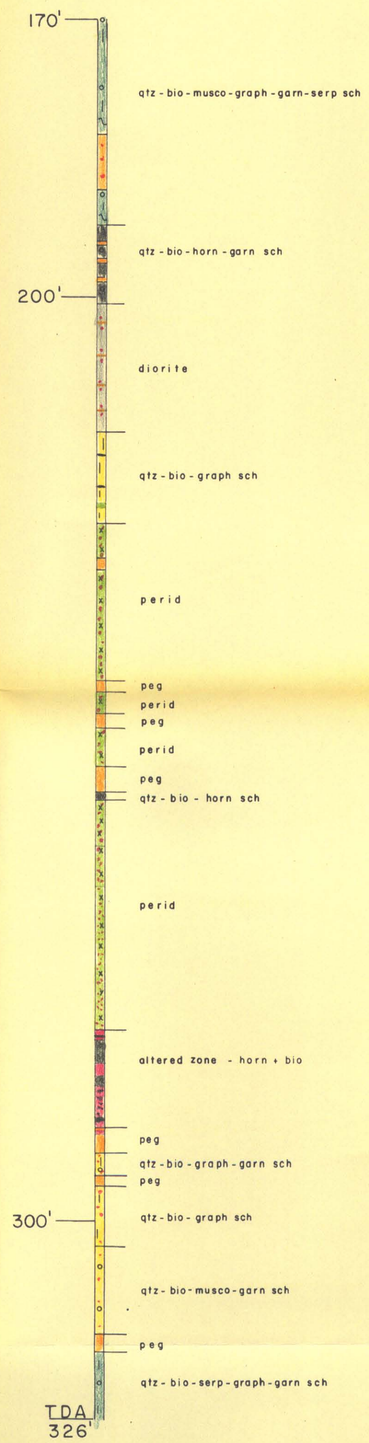

"100 ACRE" ISLAND
FULLER'S ISLAND
Drill Hole F-1
Drill Hole F-2
"B" GRID BASE LINE
25 W
20 W
15 W
10 W
50 S
52 S
54 S
56 S
58 S
60 S
62 S
64 S
66 S
72 S
74 S
From 1
From 2
From 4
From 5
From 6
From 7
From 8
From 11
From 12
From 13
From 14
VERTICAL LOOP
1" = 20°
North & West dips above line
South & East dips below line
Transmitter location
Crossover
Drill hole F-1 vertical, 1959
Drill hole F-2 -60° S 20°E, 1960
MARCH 1960
Drawn by: S.H.C.
Approved by:
ROLAND F. BEERS, INC. TROY, N.Y.
FULLER'S ISLAND PROSPECT
CRAWFORD POND GRID
Co.: KNOX, Me.
Twnp: UNION
Scale: 1 in = 100 ft

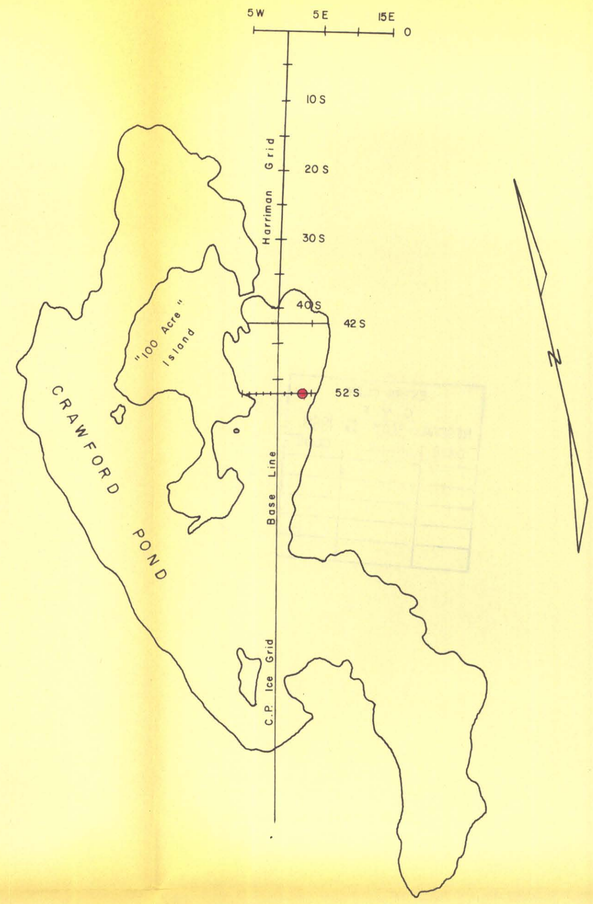


E-3

52 S + 3.75 E -90°







Drill Hole Location Map

Scale 4 in. = 1 mile

— SEE DRILL LOG FOR DETAIL —

CORE SIZE

0'-135' BX CASING (removed)
134'6"-135' BX CORE
135' -322'6" AX CORE

LEGEND

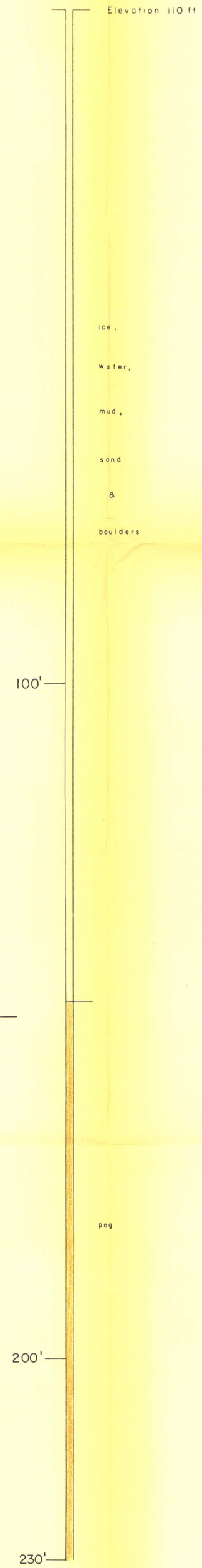
- Pegmatite
- Marble & Dolomite
- Quartz-biotite schist
- Quartz-biotite-chlorite schist + serpentine
- Diorite
- Hornblende schist
- Gabbro
- Peridotite
- Massive sulfides } Pyrrhotite
- Sulfide crystals } Pyrrhotite
- Garnet
- Graphite
- Calcite on fractures

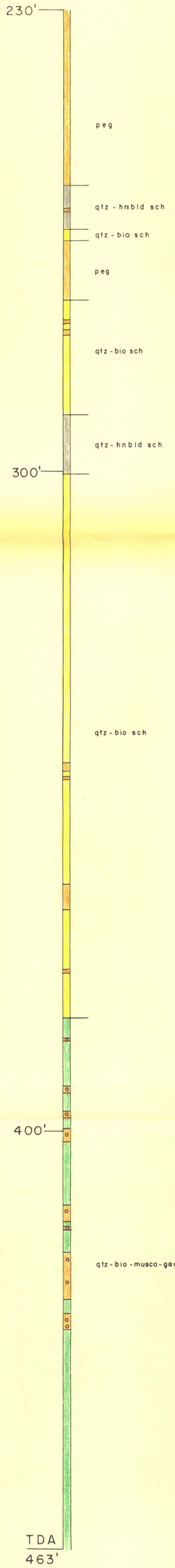
Drawn by R.P.	Stage 3	ROLAND F BEERS, INC. TROY, N.Y.
Traced by	Area	DRILL HOLE CROSS SECTION E-3 LINE 52.0S
Approved by	Phase	County KNOX · Twnp UNION · Scale 1 in = 10 ft.

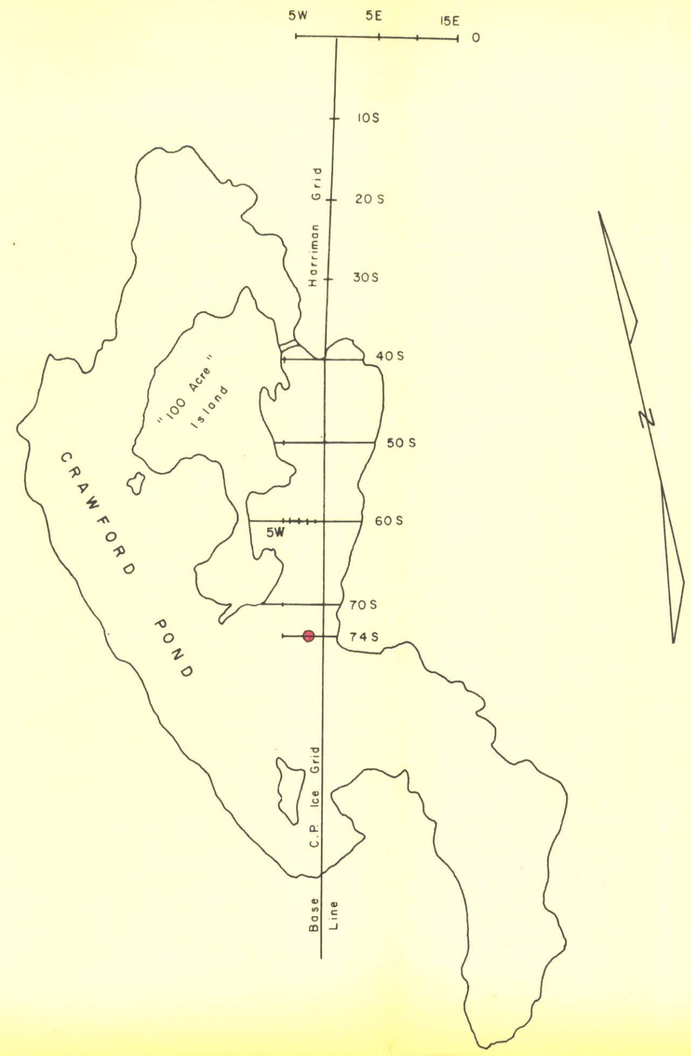
N
MANS-FIELD POND
ALFORD LAKE GRID
ALFORD LAKE
72 N
64 N
56 N
48 N
40 N
32 N
24 N
16 N
8 N
0
54 N
50 N
42 N
34 N
26 N
24 N
16 N
8 N
0
8 S
12 S
PERPALL GRID
HOPE UNION
LERMOND POND
FISH POND
SOUTH HOPE
EAST UNION
HOPE UNION
30 N
24 N
16 N
8 N
0
8 S
12 S
16 S
24 S
32 S
36 S
40 S
48 S
56 S
64 S
72 S
80 S
88 S
96 S
100 S
108 S
112 S
P-1
HARRIMAN GRID
WS-1
E-1
E-3
F-1
F-2
E-2
S-4
S-2
S-3
S-1
CRAWFORD POND GRID
CRAWFORD POND
SOUTH UNION
UNION WARREN
UNION WARREN
WATTONS MILL
Holes Drilled 1960
Holes Drilled 1959 Excluding those on the Harriman Grid
0
1/2
1 mile
APRIL 1960
ROLAND F. BEERS, INC. TROY, N.Y.
D.H. PROGRESS MAP
KNOX Co., Maine
Scale: 4 in. = 1 mile

E-2

74.0 S + 1.9 W - 90°



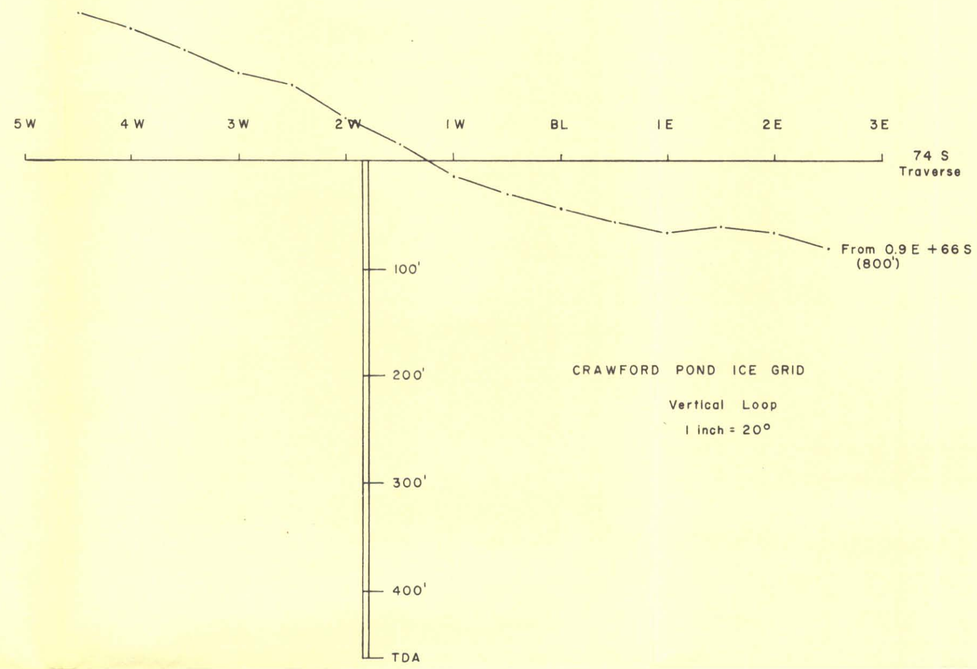




Drill Hole Location Map

● E-2 Drill Hole

Scale 4 in. = 1 mile



CRAWFORD POND ICE GRID

Vertical Loop

1 inch = 20°

— SEE DRILL LOG FOR DETAIL —

CORE SIZE

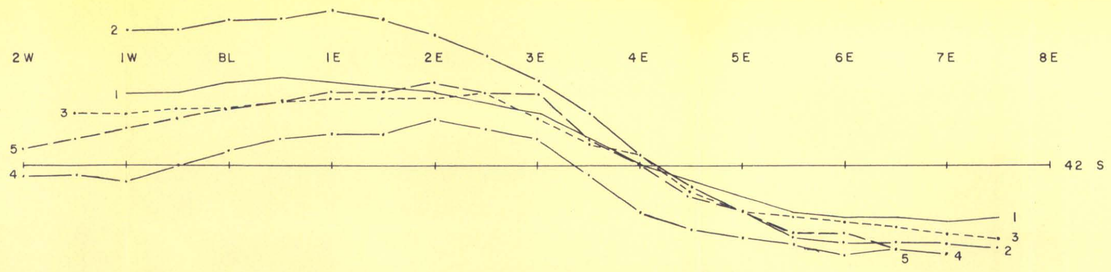
0'-149'10" BX CASING (removed)
147'-149'10" BX CORE
149'10"-463'0" AX CORE

LEGEND

- Pegmatite
- Quartz - biotite schist
- Hornblende schist
- Quartz - biotite - muscovite - garnet schist
- Pyrrhotite crystals

March, 1960

Drawn by : R.P.	Stage	ROLAND F. BEERS, INC. TROY, N.Y.
Traced by :	Area	DRILL HOLE CROSS SECTION E-2 LINE 74.0S
Approved by :	Phase	County KNOX · Twnp UNION · Scale 1in = 10 ft.

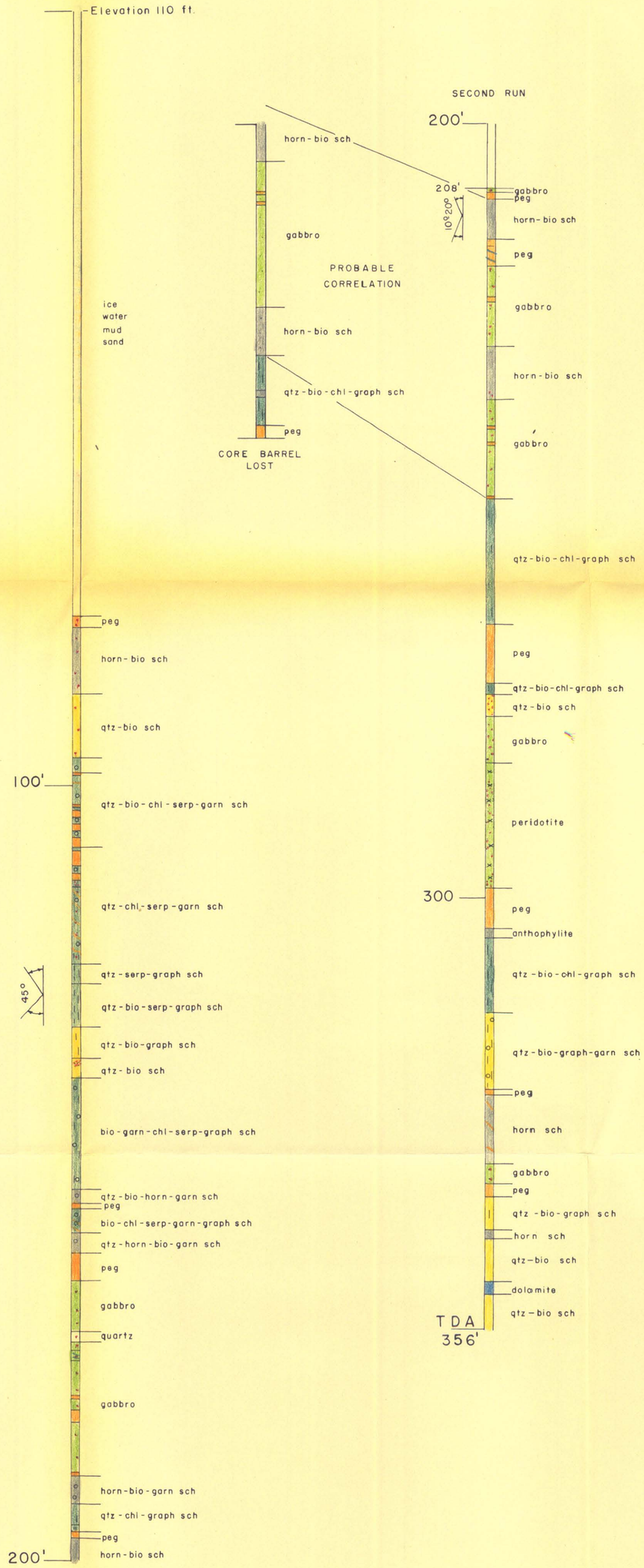


TRANSMITTER STATION
VERTICAL COIL E.M.
Scale: 1 in = 20°

1	S.U. at	48 S + 4.62 E	(600')
2	" "	52 S + 4.20 E	(1000')
3	" "	36 S + 3.50 E	(600')
4	" "	36 S + 2.40 E	(600')
5	" "	34 S + 1.50 E	(800')

E-1

42.0S + 4.0E -90°



— SEE DRILL LOG FOR DETAIL —

CORE SIZE

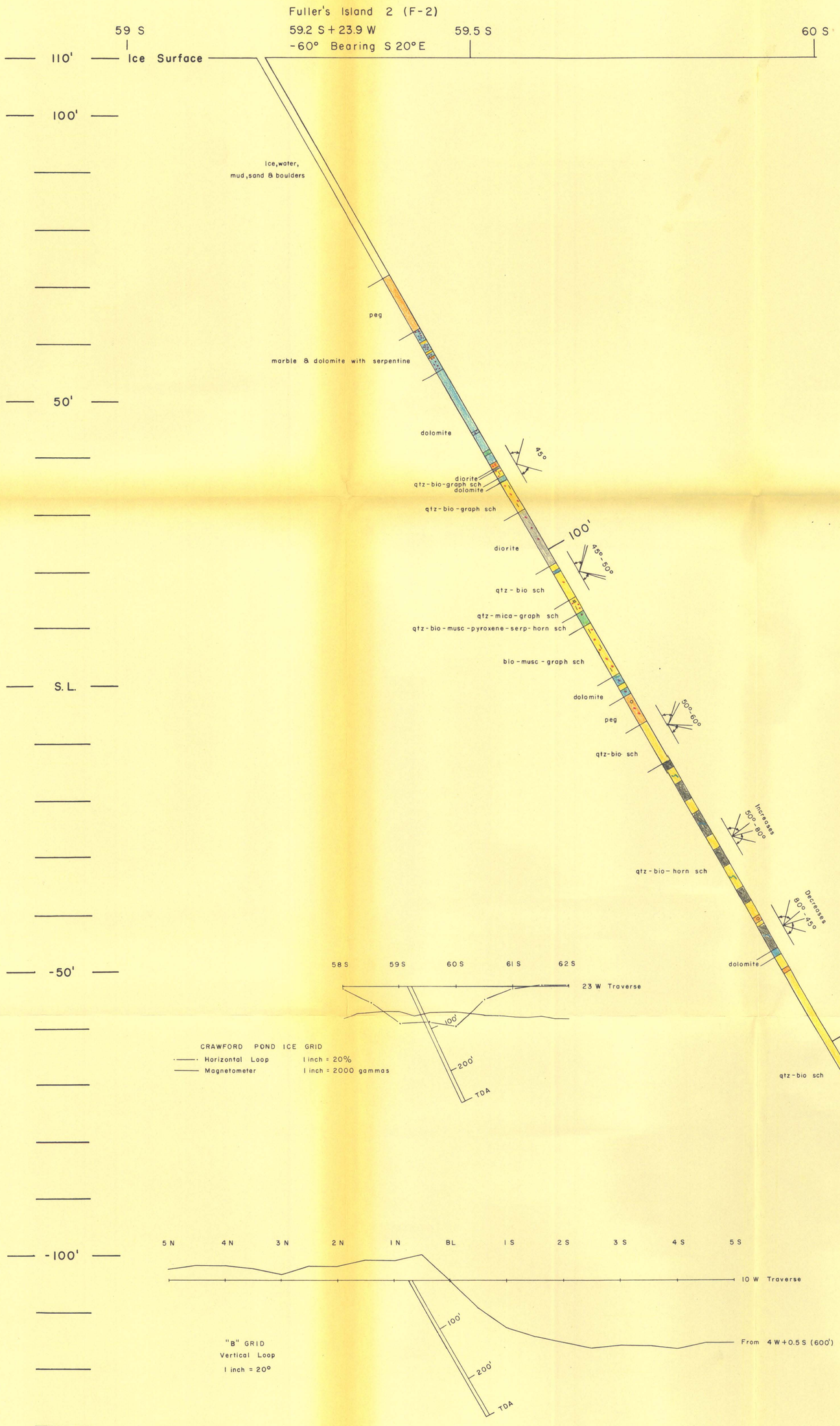
0'-78' BX CASING
78'-356' AX CORE

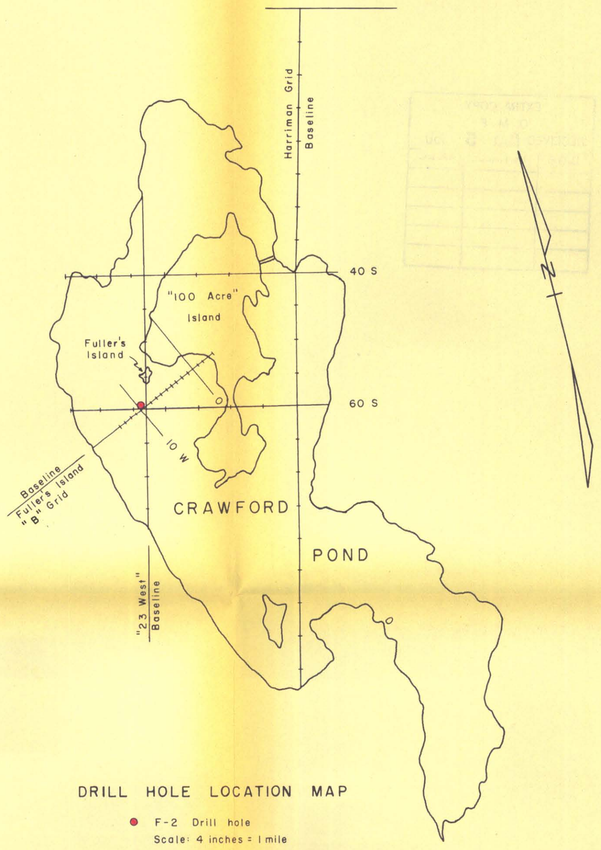
LEGEND

- Quartz
- Pegmatite
- Marble & Dolomite
- Quartz - biotite schist
- Quartz-biotite-chlorite schist
- Horneblende schist
- Gabbro
- Peridotite
- Sulfide crystals
- Garnet
- Graphite
- Calcite on fractures

March, 1960

Drawn by: R.P	Stage 3	ROLAND F. BEERS, INC. TROY, N.Y.
Traced by:	Area	DRILL HOLE CROSS SECTION E-1 LINE 42.0S
Approved by:	Phase	County KNOX · Twnp UNION · Scale 1in = 10ft





— SEE DRILL LOG FOR DETAIL —

CORE SIZE

0' - 45' 8"	BX Casing (removed)
44' - 45' 8"	BX Core
45' 8" - 274' 6"	AX Core

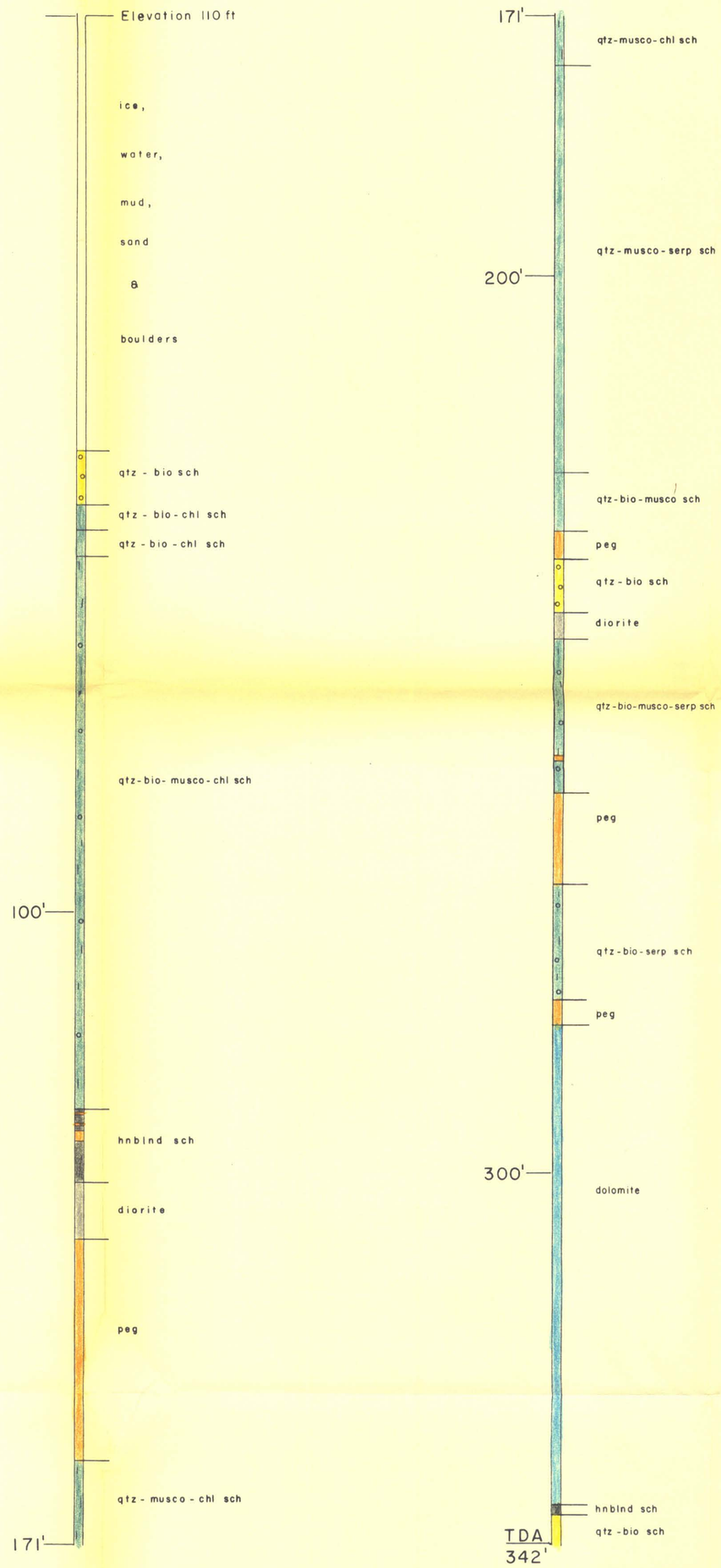
LEGEND

- Ice, water, mud, sand, etc.
- Pegmatite
- Marble & dolomite
- Quartz-biotite schist
- Quartz-biotite-chlorite schist + serpentine
- Hornblende schist
- Diorite
- Sulfide crystals
- Garnet
- Pyrite
- Graphite
- Calcite on fractures

Drawn by: S.H.C.	Stage	ROLAND F. BEERS, INC. TROY, N.Y.
Approved by	Area	DRILL HOLE CROSS SECTION F-2 LINE 59.2 S
	Phase	County: KNOX · Township: UNION · Scale: 1 in. = 10 ft.

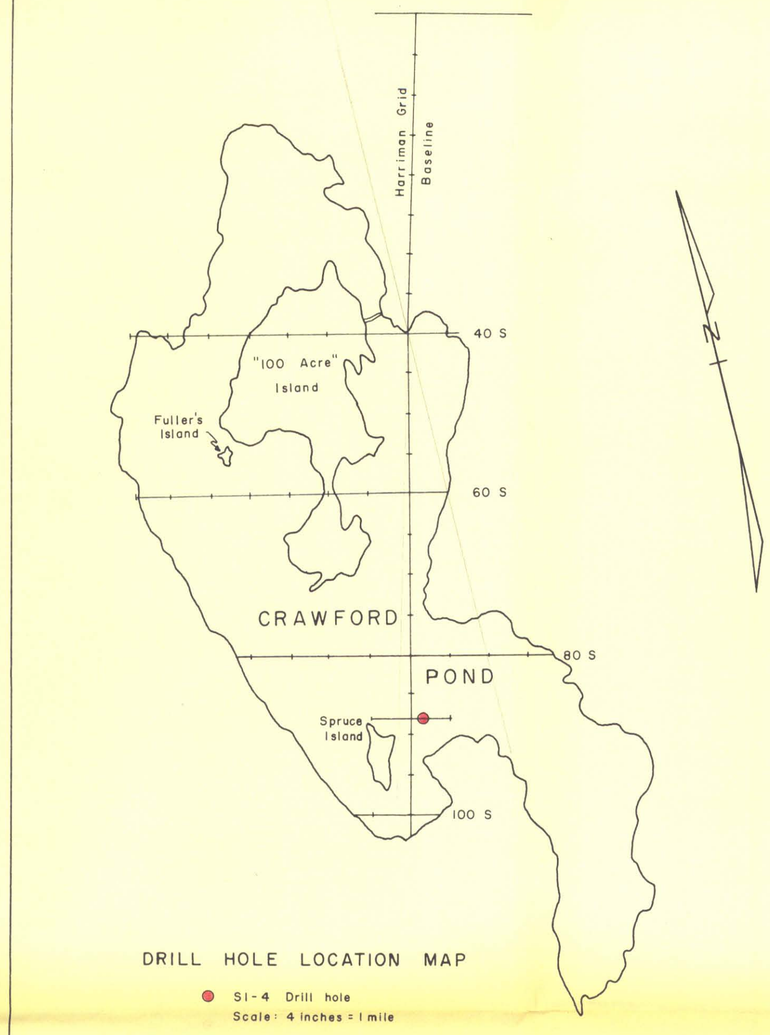
S1-4

88 S + 1.4 E -90°

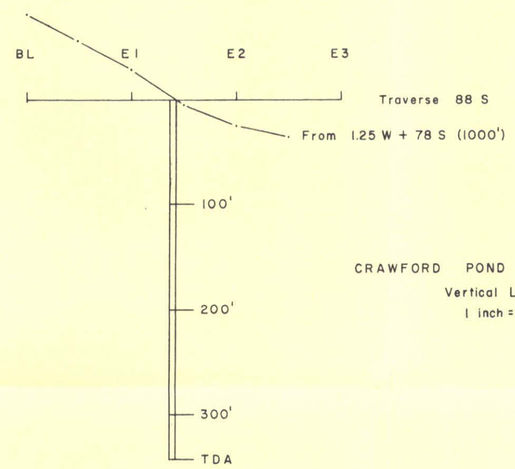


CORE SIZE

0' - 51'	BX Casing (removed)
48'7" = 51'	BX Core
51' - 342'	AX Core



— SEE DRILL LOG FOR DETAIL —



CRAWFORD POND ICE GRID
Vertical Loop
1 inch = 20°

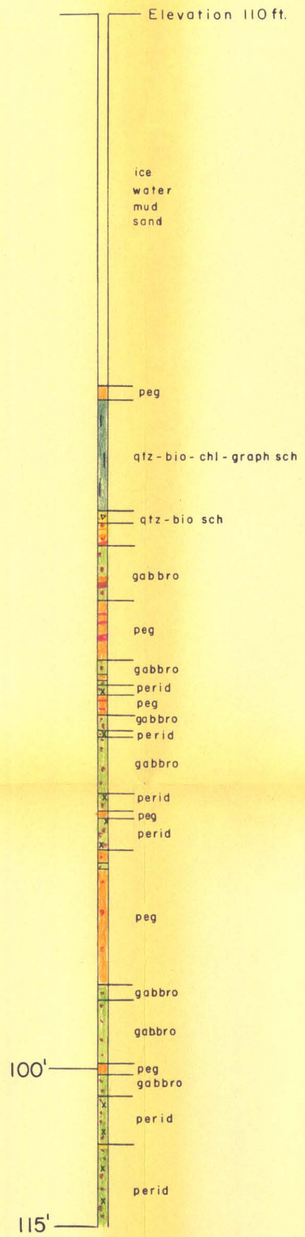
- Pegmatite
- Diorite
- Dolomite
- Hornblende schist
- Quartz-biotite schist
- Quartz-biotite-chlorite-muscovite schist + serpentine
- Garnet
- Graphite

March, 1960

Drawn by : R. P.	Stage	ROLAND F. BEERS, INC. TROY, N.Y.
Traced by :	Area	DRILL HOLE CROSS SECTION S1-4 LINE 88.0 S
Approved by :	Phase	County KNOX · Twnp UNION · Scale 1 in = 10 ft.

SI - 3

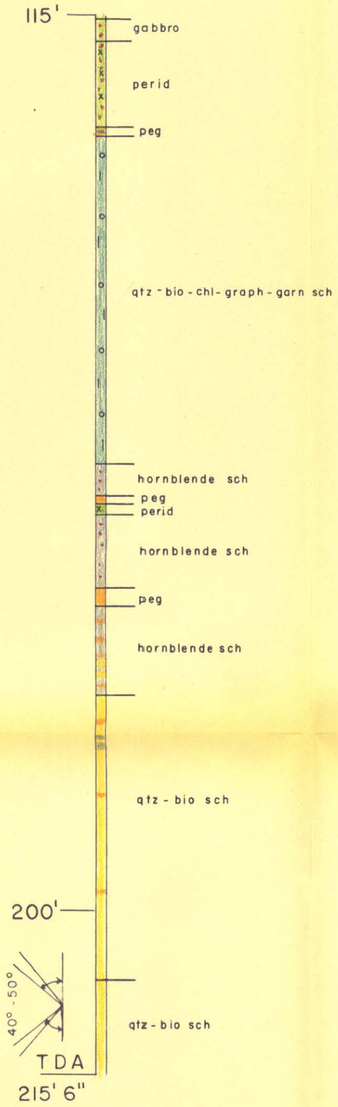
93.7S + 1.0 E -90°

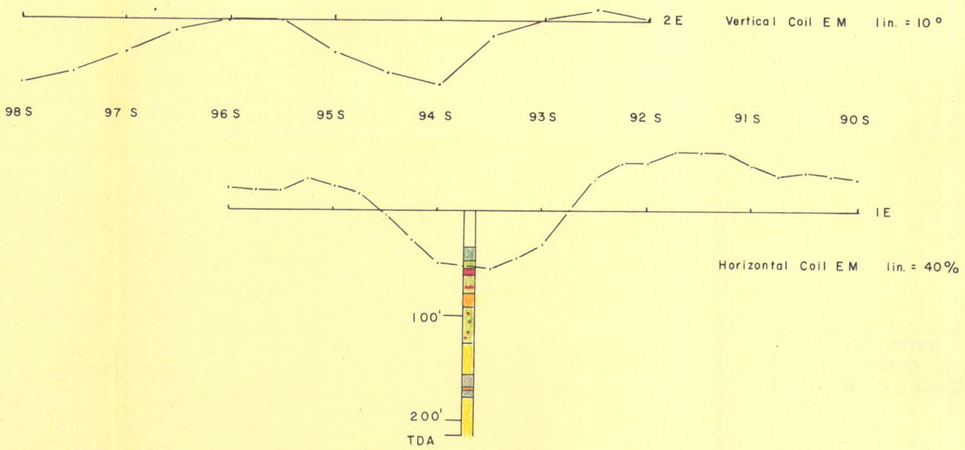


— SEE DRILL LOG FOR DETAIL —

CORE SIZE

0' - 39'9"	BX CASING
35'5" - 39'9"	BX CORE
39'9" - 215'6"	AX CORE



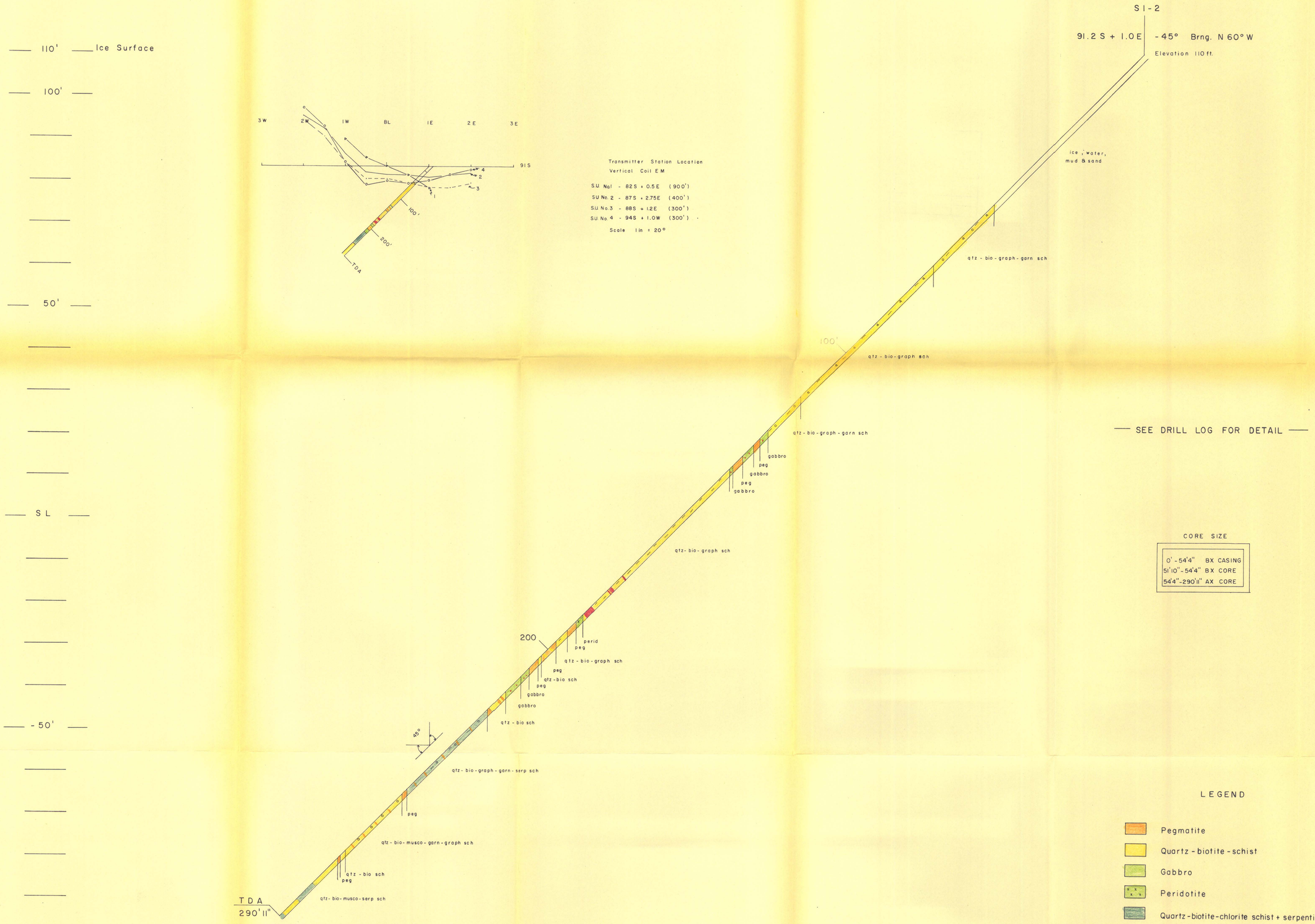


LEGEND

- Pegmatite
- Marble & Dolomite
- Quartz - biotite schist
- Quartz - biotite - chlorite schist
- Hornblende schist
- Gabbro
- Peridotite
- Massive sulfides } Pyrrhotite
- Sulfide crystals } Pyrrhotite
- Garnet
- Pyrite
- Graphite

March, 1960

Drawn by: R. P.	Stage 3	ROLAND F. BEERS, INC. TROY, N.Y.
Traced by:	Area	DRILL HOLE CROSS SECTION SI - 3 LINE 93.7S
Approved by:	Phase	County KNOX · Twnp UNION · Scale lin = 10 ft.



Transmitter Station Location
Vertical Coil E M

S.U. No1 - 82 S + 0.5 E (900')
SU No. 2 - 87 S + 2.75 E (400')
SU No. 3 - 88 S + 1.2 E (300')
SU No. 4 - 94 S + 1.0 W (300')

Scale 1 in = 20°

CORE SIZE

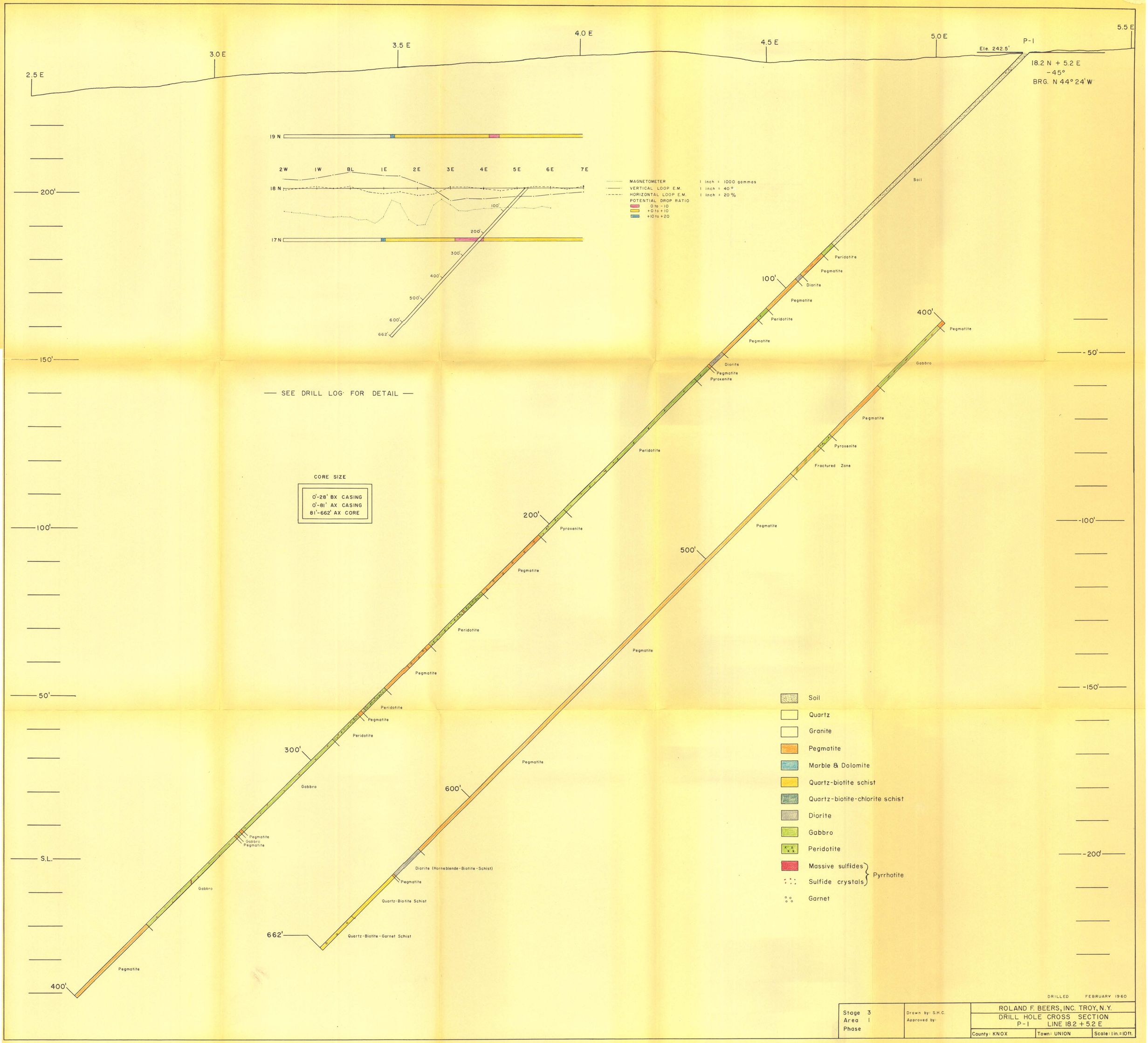
0' - 54'4"	BX CASING
51'10" - 54'4"	BX CORE
54'4" - 290'11"	AX CORE

LEGEND

- Pegmatite
- Quartz - biotite - schist
- Gabbro
- Peridotite
- Quartz - biotite - chlorite schist + serpentine
- Massive sulfides } Pyrrhotite
- Sulfide crystals } Pyrrhotite
- Garnet
- Pyrite
- Graphite

March, 1960

Drawn by : R. P.	Stage 3	ROLAND F. BEERS, INC. TROY, N.Y.
Traced by :	Area	DRILL HOLE CROSS SECTION S1-2 LINE 91.2 S
Approved by :	Phase	County : KNOX · Twnp : UNION · Scale : 1 in = 10 ft.


2.5 E
3.0 E
3.5 E
4.0 E
4.5 E
5.0 E
5.5 E
P-1
Ele. 242.5'
18.2 N + 5.2 E
-45°
BRG. N 44° 24' W
19 N
18 N
17 N
2W
1W
BL
1E
2E
3E
4E
5E
6E
7E
MAGNETOMETER 1 inch = 1000 gammas
VERTICAL LOOP E.M. 1 inch = 40°
HORIZONTAL LOOP E.M. 1 inch = 20%
POTENTIAL DROP RATIO
0 to -10
+0 to +10
+10 to +20
200'
150'
100'
50'
S.L.
400'
-50'
-100'
-150'
-200'
— SEE DRILL LOG FOR DETAIL —
CORE SIZE
0'-28' BX CASING
0'-81' AX CASING
81'-662' AX CORE
Soil
Peridotite
Pegmatite
Diorite
Pyroxenite
Gabbro
Fractured Zone
Diorite (Horneblende-Biotite-Schist)
Quartz-Biotite Schist
Quartz-Biotite-Garnet Schist
Soil
Quartz
Granite
Pegmatite
Marble & Dolomite
Quartz-biotite schist
Quartz-biotite-chlorite schist
Diorite
Gabbro
Peridotite
Massive sulfides
Sulfide crystals
Pyrrhotite
Garnet
DRILLED FEBRUARY 1960
Stage 3
Area 1
Phase
Drawn by: S.H.C.
Approved by:
ROLAND F. BEERS, INC. TROY, N.Y.
DRILL HOLE CROSS SECTION
P-1 LINE 18.2 + 5.2 E
County: KNOX
Town: UNION
Scale: 1 in. = 10 ft.