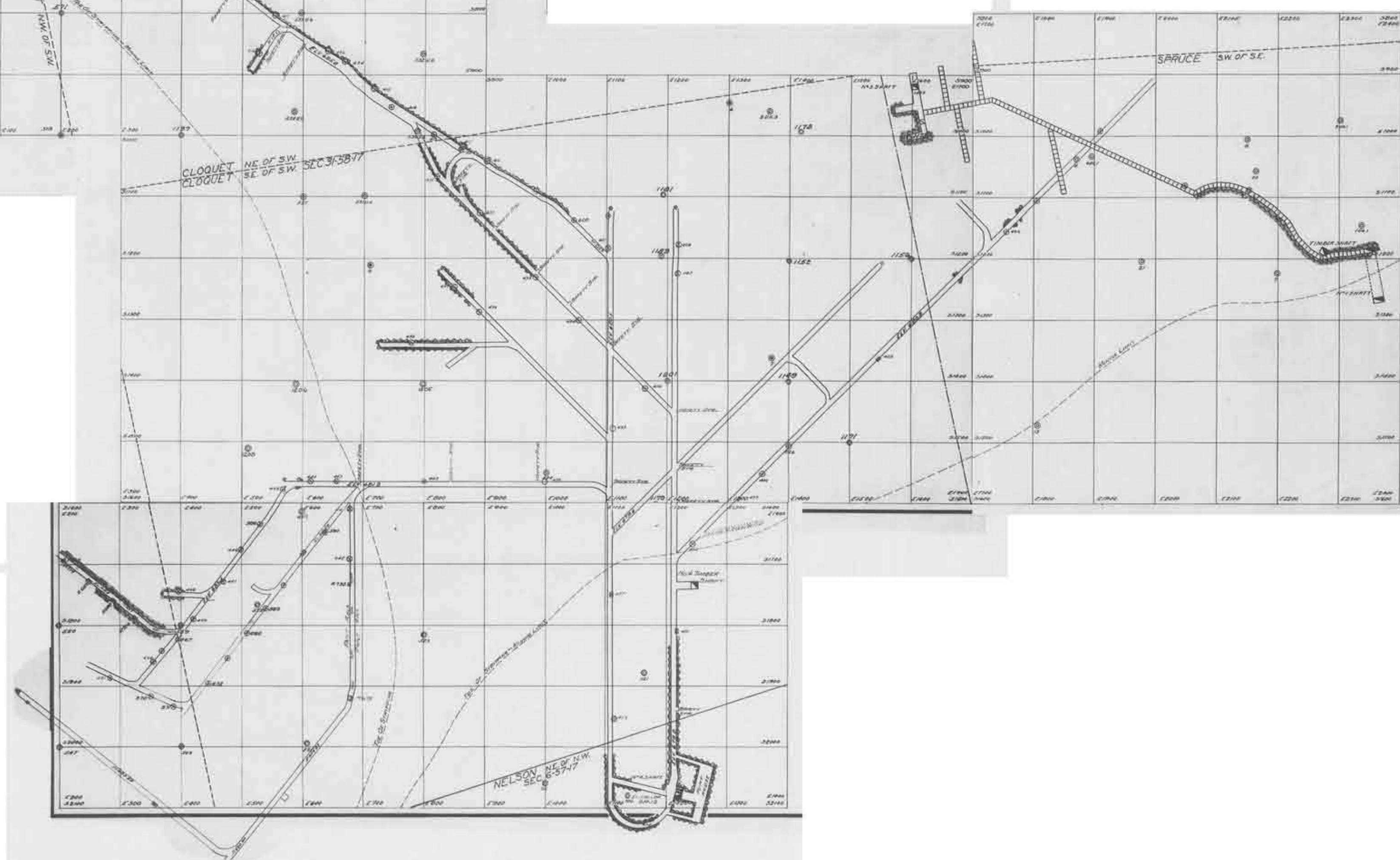
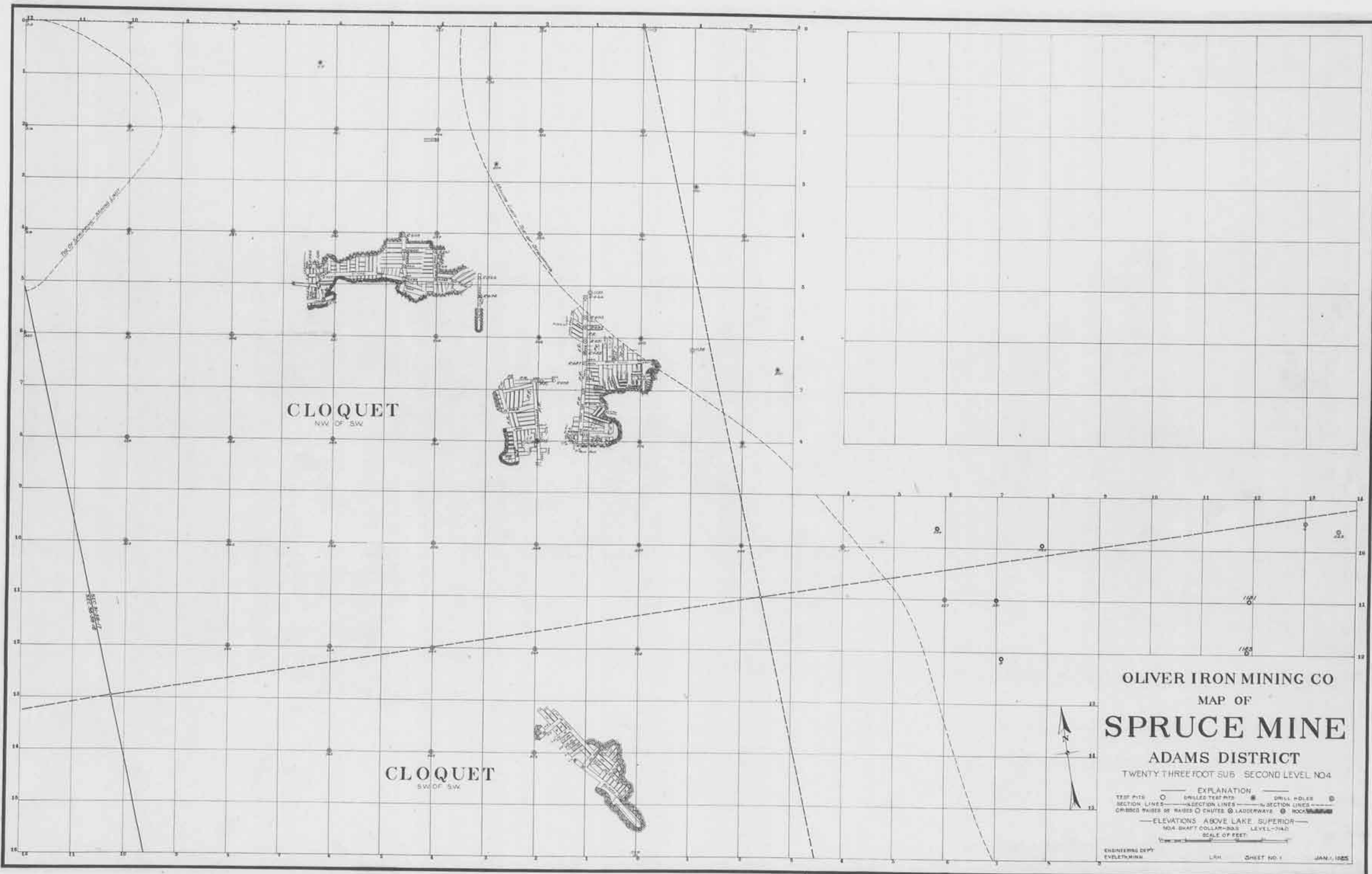


OLIVER IRON MINING CO.
MAP OF
SPRUCE MINE
ADAMS DISTRICT
SECOND LEVEL NO.4 - THIRD LEVEL NO.3.

TEST PITS ○ DRILLED TEST PITS ○ GRILL HOLES ○
SECTION LINES — SECTION LINES — SECTION LINES —
CRIBBED RAISES — RAISES ○ DINTED ○ LADDERWAYS ○ ROCK —
— ELEVATIONS ABOVE LAKE SUPERIOR —
NORTH-SHAFT-COLLAR 9133 LEVEL 6756 NO.3 SHAFT-COLLAR 9134 LEVEL 6182
SCALE OF FEET

ENGINEERING DEPT.
EVELETH MINN.
JAN. 1, 1916





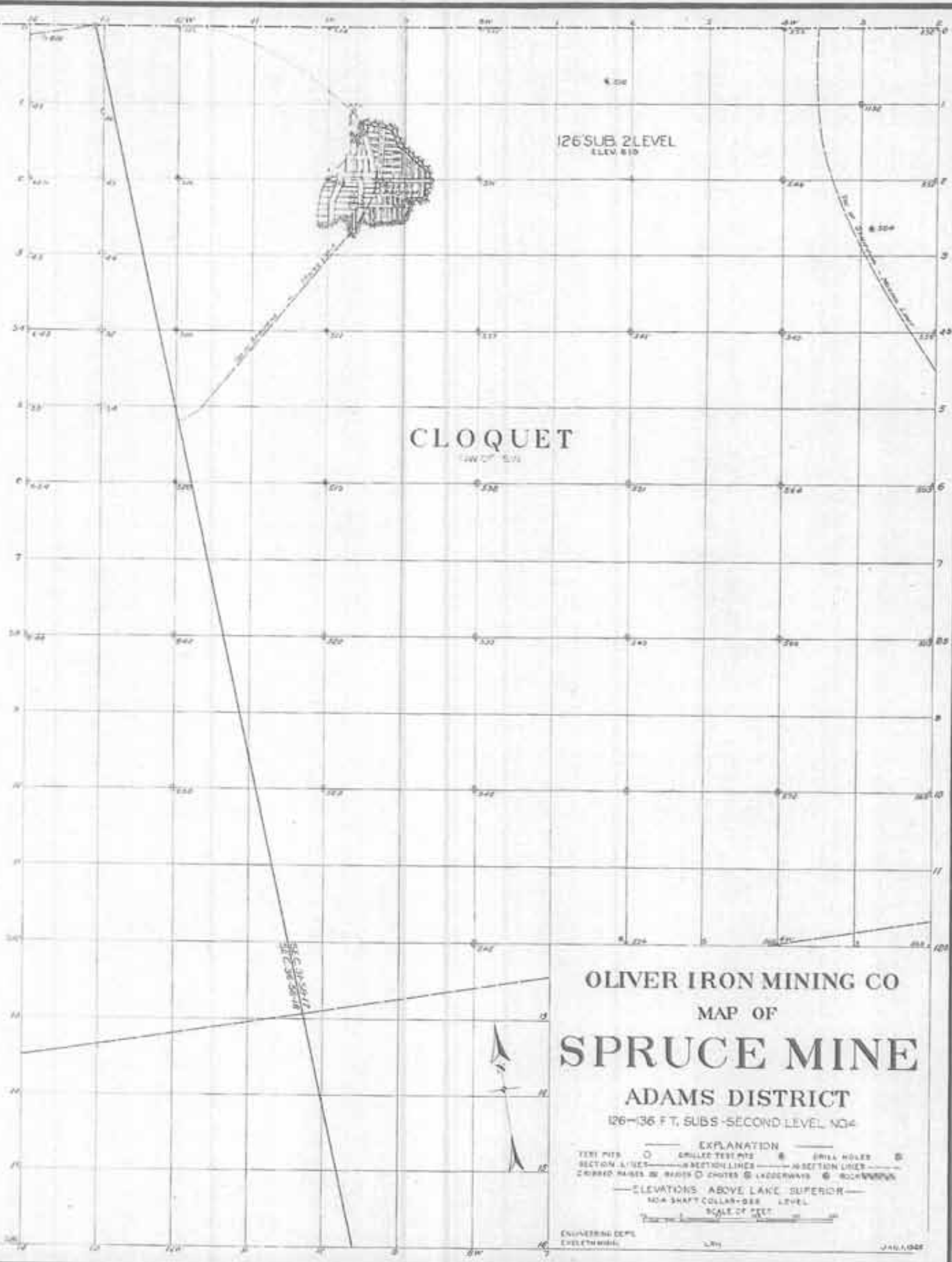
CLOQUET
NW OF SW

CLOQUET
SW OF SW

OLIVER IRON MINING CO
MAP OF
SPRUCE MINE
ADAMS DISTRICT
TWENTY THREE FOOT SUB - SECOND LEVEL NO 4

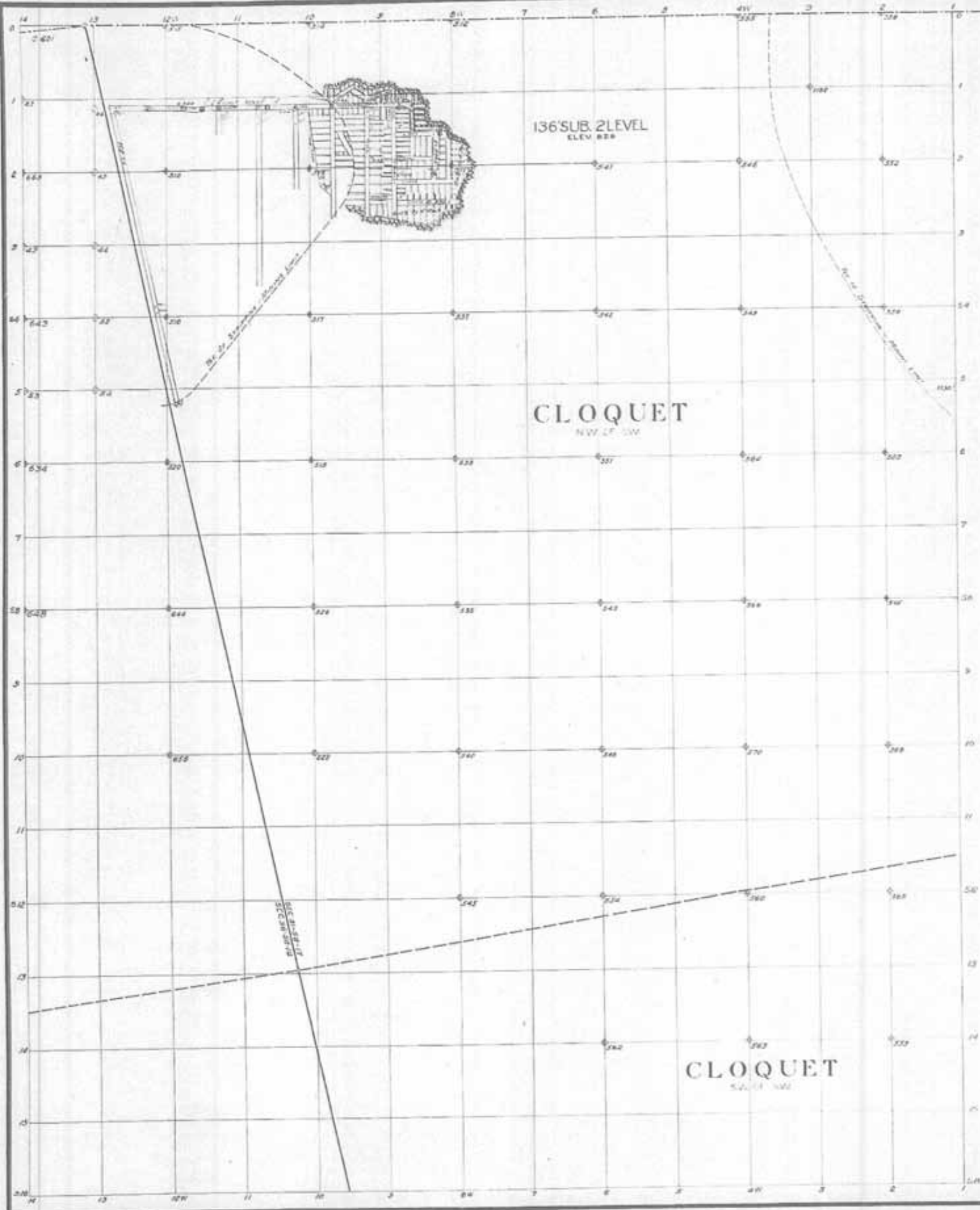
EXPLANATION
TEST PITS ○ DRILLED TEST PITS ● DRILL HOLES ⊙
SECTION LINES — SECTION LINES — SECTION LINES —
CHIMNEY RAISED OR RAISED ○ CHUTES ⊗ LADDERWAYS ⊗ ROCK
— ELEVATIONS ABOVE LAKE SUPERIOR —
NO 4 SHAFY COLLAR-NO 4 LEVEL-7440
SCALE OF FEET

ENGINEERING DEPT
EVELETH MINN LRM SHEET NO 1 JAN 1, 1905



OLIVER IRON MINING CO
MAP OF
SPRUCE MINE
ADAMS DISTRICT
126-136 FT. SUBS-SECOND LEVEL NO. 4

EXPLANATION
TEXT PITS ○ DRILL TEST PITS ● DRILL HOLES ⊗
SECTION LINES — SECTION LINES — SECTION LINES —
CHIPPED RAISED OR RAISED ○ CHUTES ⊗ LADDERWAYS ⊗ ROCK TUNNELS
— ELEVATIONS ABOVE LAKE SUPERIOR —
NO. 4 SHAFT COLLAR-SEE LEVEL
SCALE OF FEET
0 10 20 30 40 50 60 70 80 90 100



CLOQUET
S.W. OF SW

CLOQUET
S.E. OF SW

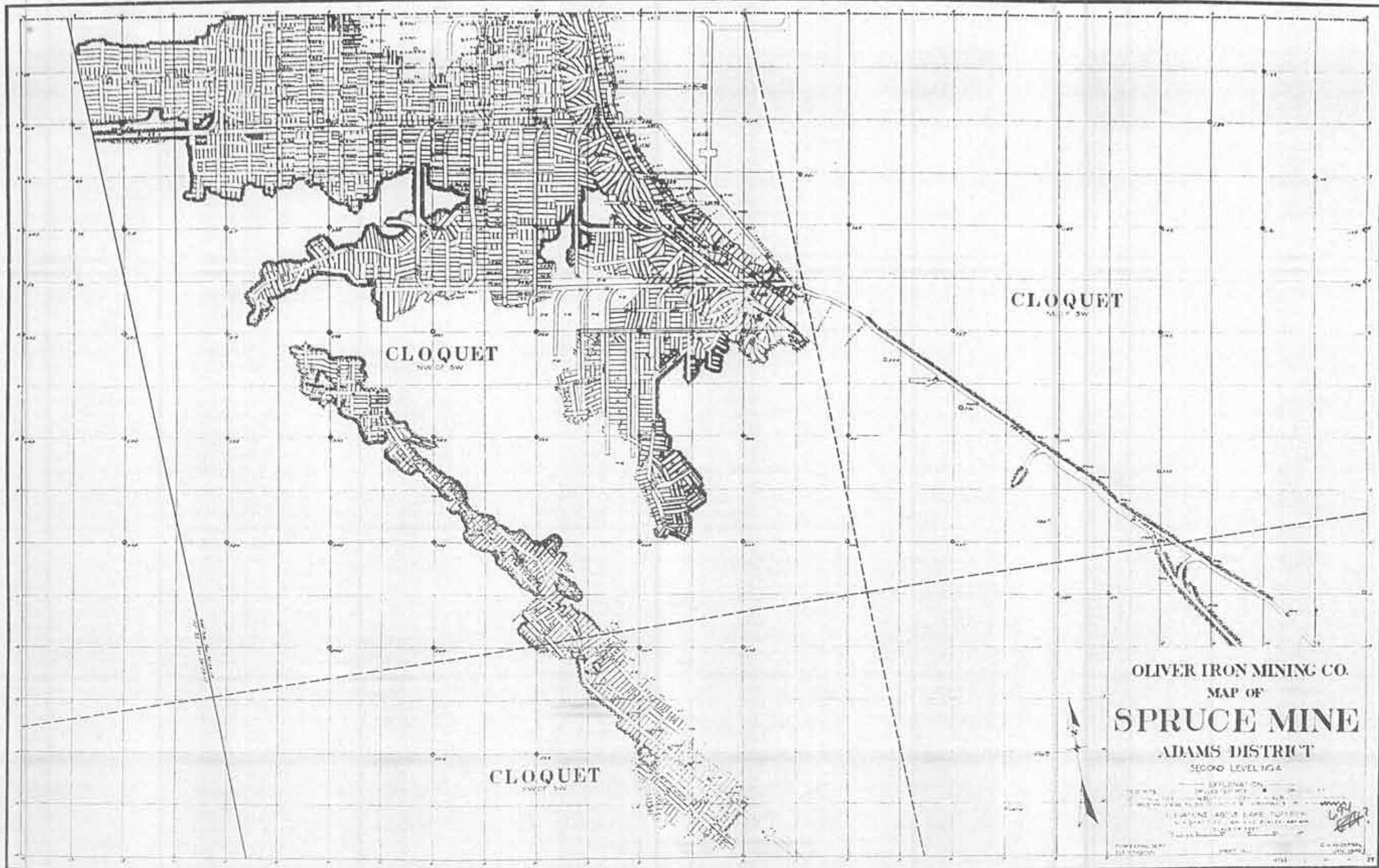
NELSON
N.E. OF N.W.

CLOQUET
N.W. OF NW

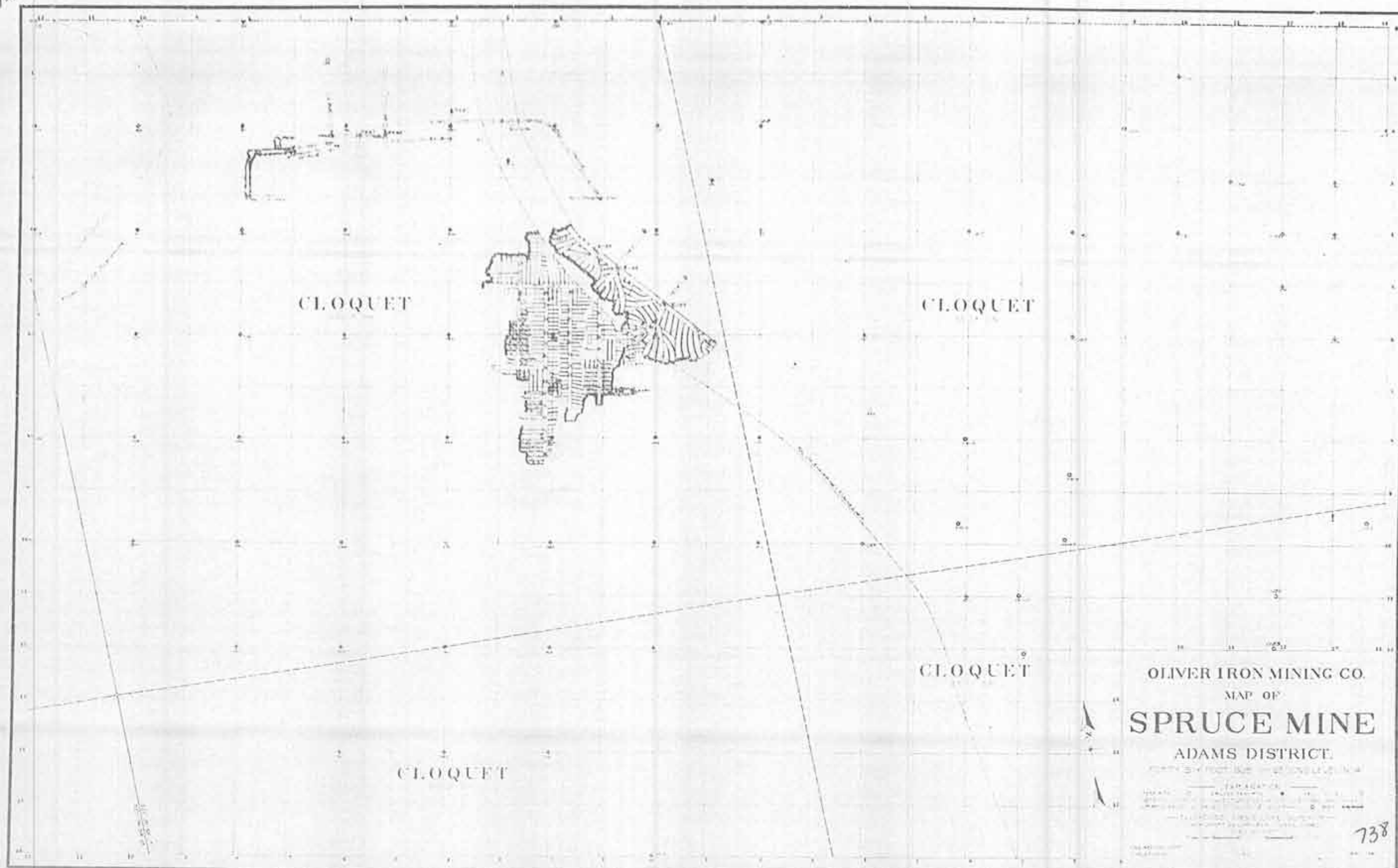
OLIVER IRON MINING CO.
MAP OF
SPRUCE MINE
23 FT SUB. 2ND LEV.

SCALE
LAKE SUPERIOR DATUM
ENGINEERING DEPT.
EVELETH, MINN.
SHEET 2
L.R.H.
JAN. 31 1923

N 63



09 1531 1-1-40 Spruce 2nd lev No 4 A-98



091531 1943 81-1-41 Spruce 76 ft Sub 2-60V No 1
A-82

760

CLODDIE NW OF SW
CLODDIE SW OF SW
CLODDIE NE OF SW
CLODDIE SE OF SW

SPRUCE NW OF SE
SPRUCE SW OF SE

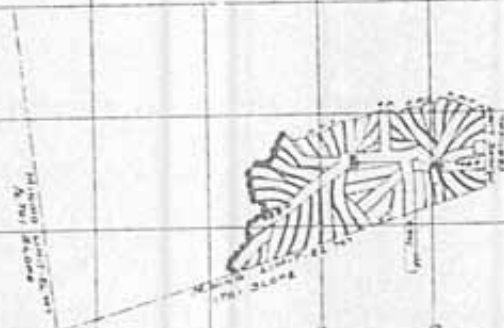
EDGE OF PIT AT ELEVATION 200

WELSON NE OF NW

OLIVER IRON MINING CO.
MAP OF THE
SPRUCE MINE.
KODAKSIL MINE
Map as of April 1 - 1941

Legend	
—	Surface
—	Subsurface
—	Shaft
—	Drift
—	Adit
—	Wreck
—	Water
—	Rock
—	Gravel
—	Sand
—	Clay
—	Coal
—	Iron
—	Other

09 1531 1943 1-1-41 Spruce 1-Lev 4-shaft Plan A-82



OLIVER IRON MINING CO
MAP OF
SPRUCE MINE
784-772-760-747 SUBS



LAKE SUPERIOR DATUM

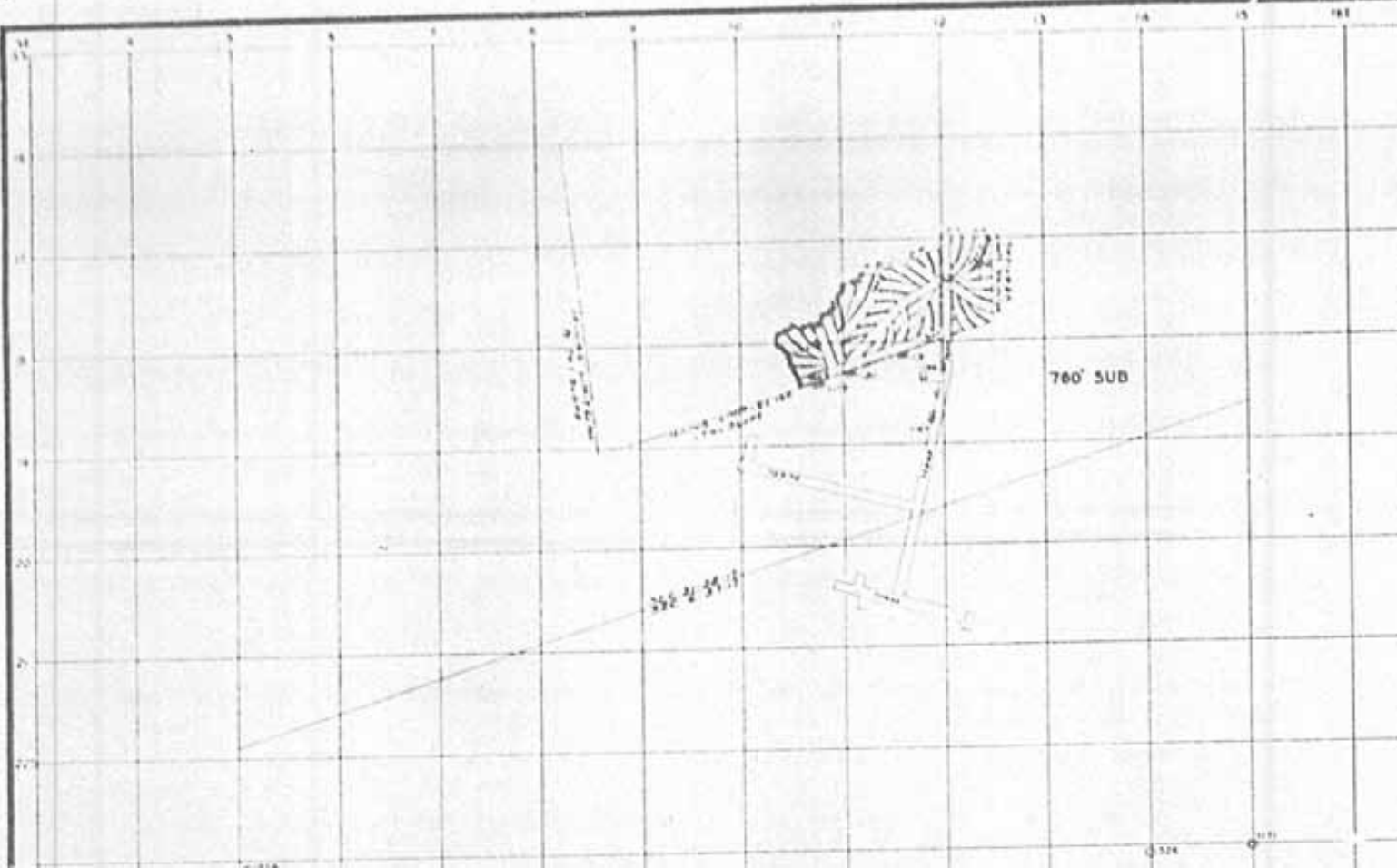
ENGINEERING DEPT
VIRGINIA, MINN

SHEET NO 2

No 4

L. E. LAMBERT,
JAN 1 1944

09 1531 1943 1-1-43 Spruce 784-772-760: 747 Subs A-82



7659
7665

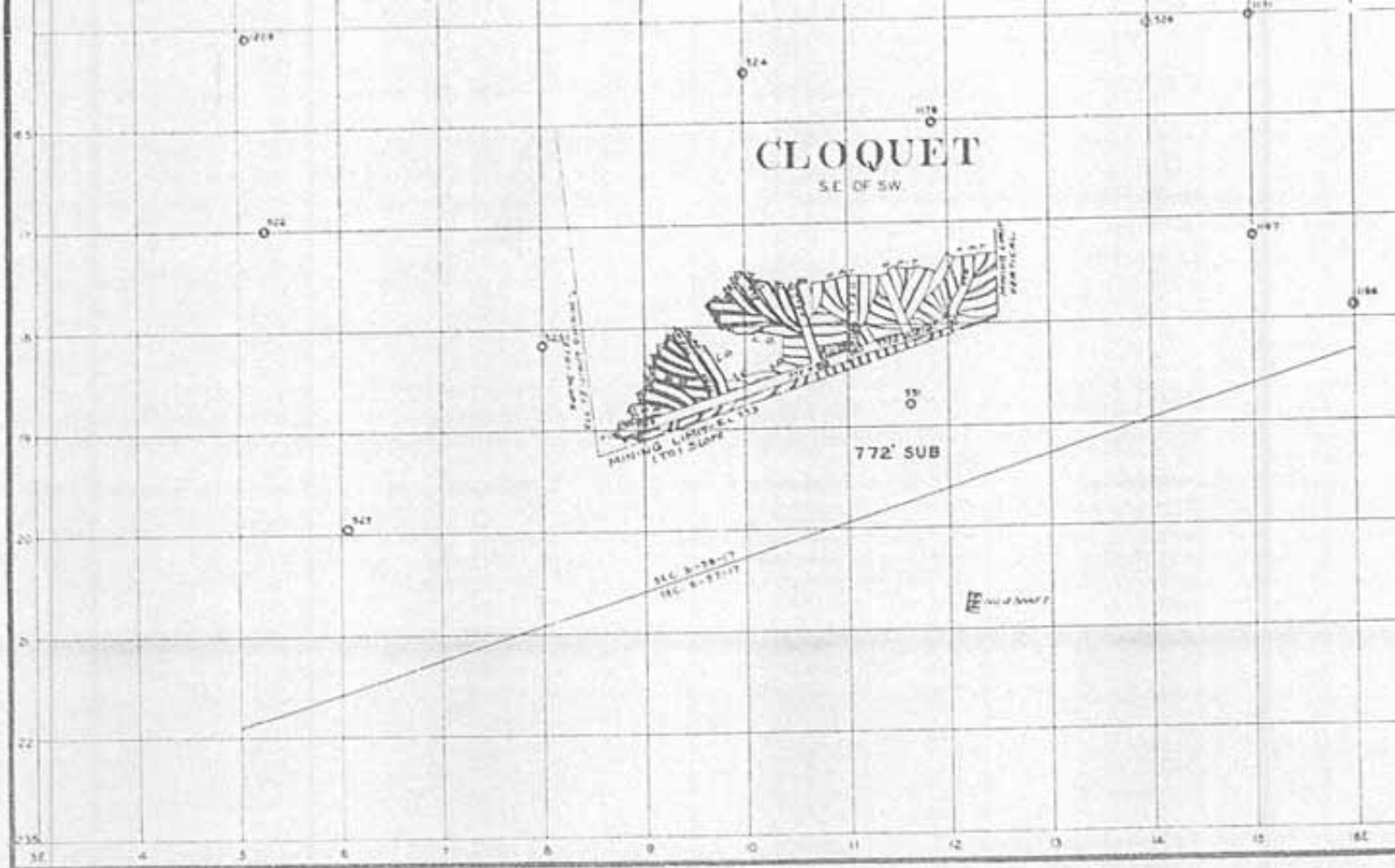
OLIVER IRON MINING CO.
MAP OF
SPRUCE MINE
ADAMS DISTRICT,
81 FOOT SUB SECOND LEVEL NO 4 SHAFT

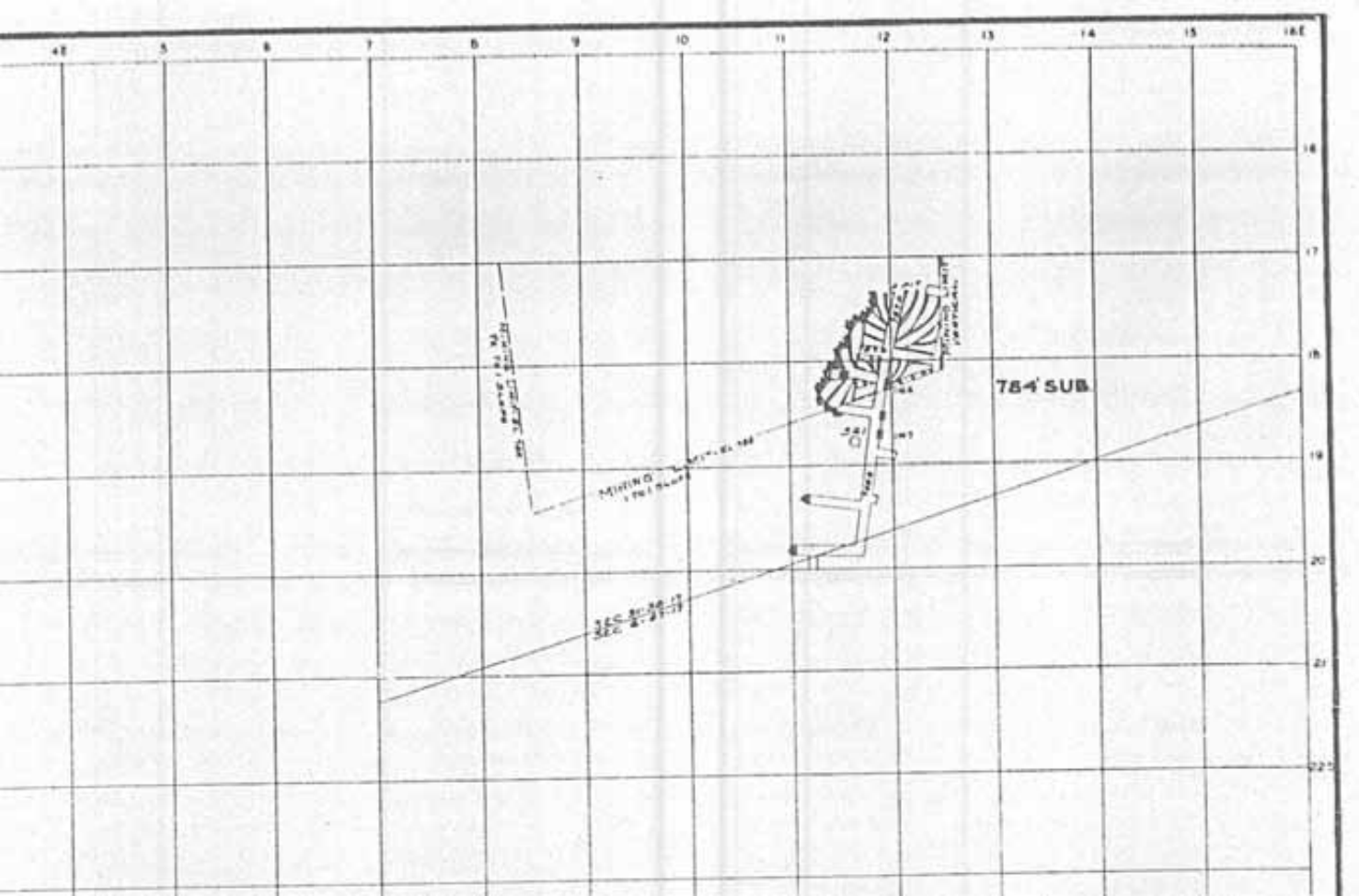
EXPLANATION
 TEST PITS (O) DRILLED TEST PITS (X) DRILL HOLES (X)
 SECTION LINES (---) SECTION LINES (---) SECTION LINES (---)
 CRIBBED RAILS OR RAILS (O) CHUTES (X) LADDERWAYS (X) RAILS (X)
 ELEVATIONS ABOVE LAKE SUPERIOR
 NO 4 SHAFT COLLAR RISE LEVEL 740.0 NO 2 SHAFT COLLAR 802.2 LEVEL
 SCALE OF FEET

ENGINEERING DEPT.
EHELETHAN WED JANUARY 1, 1943



765.9 09 1531 1943 1-1-13 Spruce 81ft Sub 2-lev No 4 A-82





CLOQUET

SE OF TW



602' SUB

OLIVER IRON MINING CO.
MAP OF
SPRUCE MINE

802, 814, 828, & 844' SUBS

SCALE



LAKE SUPERIOR DATUM

ENGINEERING DEPT
EVELETH, MINN.

L. E. LAMBERT,
JAN 1, 1941

09 1531 1943 1-1-41 Spruce 802-814-828-844 Subs A-82

CLOQUET

SE OF SW



64 SUB

SEC 3-38-17
T2C 8-27-17

BY SHARP

65
6
17
16
19
20
21
22

17 7 8 9 10 11 12 13 14 15 16 17

CLOQUET

SE OF 54



MIN. NO. LIMIT

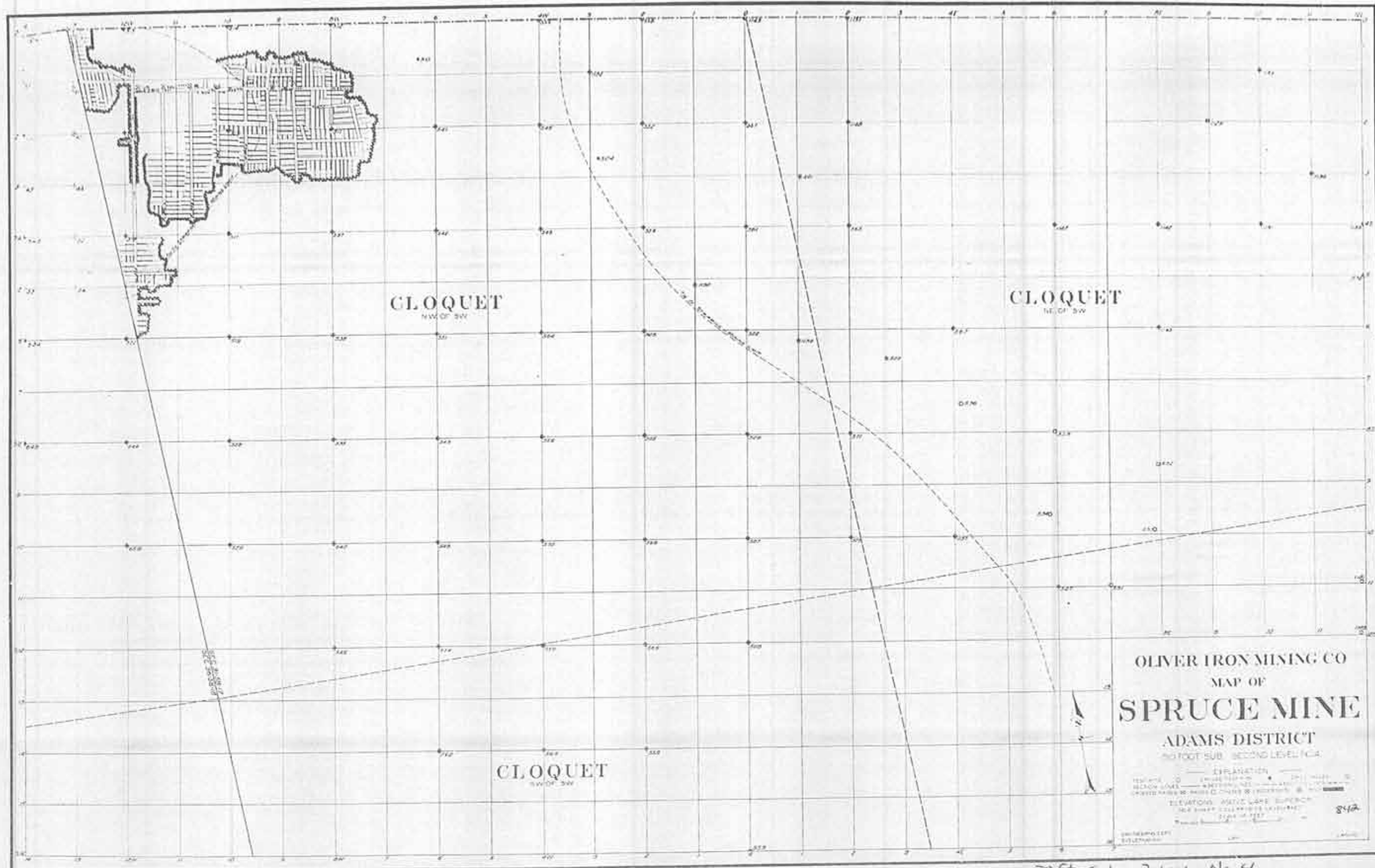
828 508

SEC. 3-28-17
SEC. 8-28-17

NO. 4 5000

35 100 SEC. 9-18-17

802



09 1531 1943 Spruce 150ft sub 2-Lev No 4

843

09 1531 1943 1-1-15 Spruce 75ft Sub 1-lev No 4 A-82

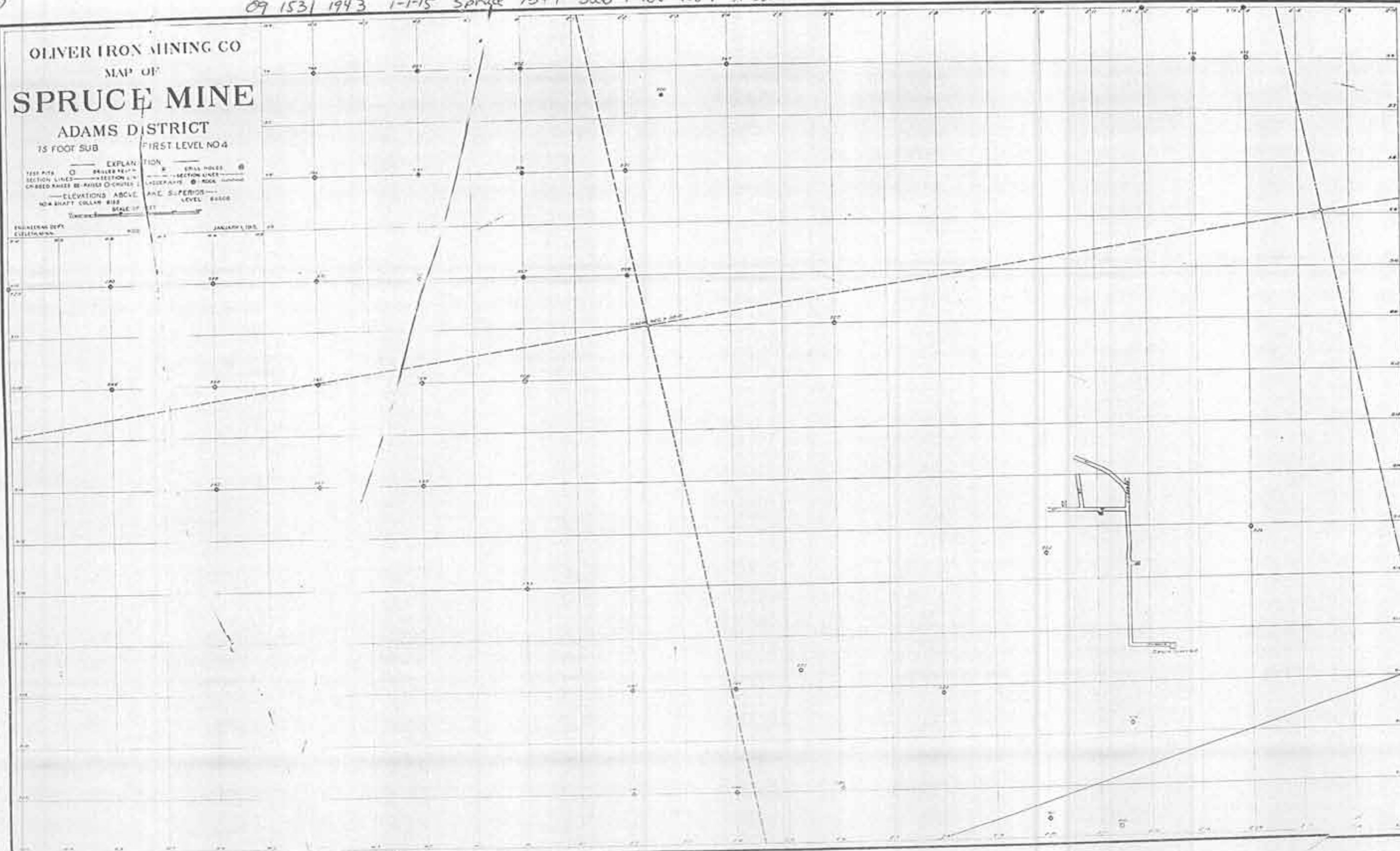
OLIVER IRON MINING CO
MAP OF
SPRUCE MINE

ADAMS DISTRICT
75 FOOT SUB FIRST LEVEL NO 4

TEST PITS DRILLER'S MARK
SECTION LINES SECTION LINES
CHANGED RAILS BE RAILS CHUTES
ELEVATIONS ABOVE SEA LEVEL AND SUPERIOR LEVEL
NO. 4 SHAFT COLLAR RISE
SCALE OF FEET

ENGINEER'S DEPT.
CLEVELAND, OHIO

JANUARY 1943



CLOQUET

SE OF SW



844 SUB

W. N. S.

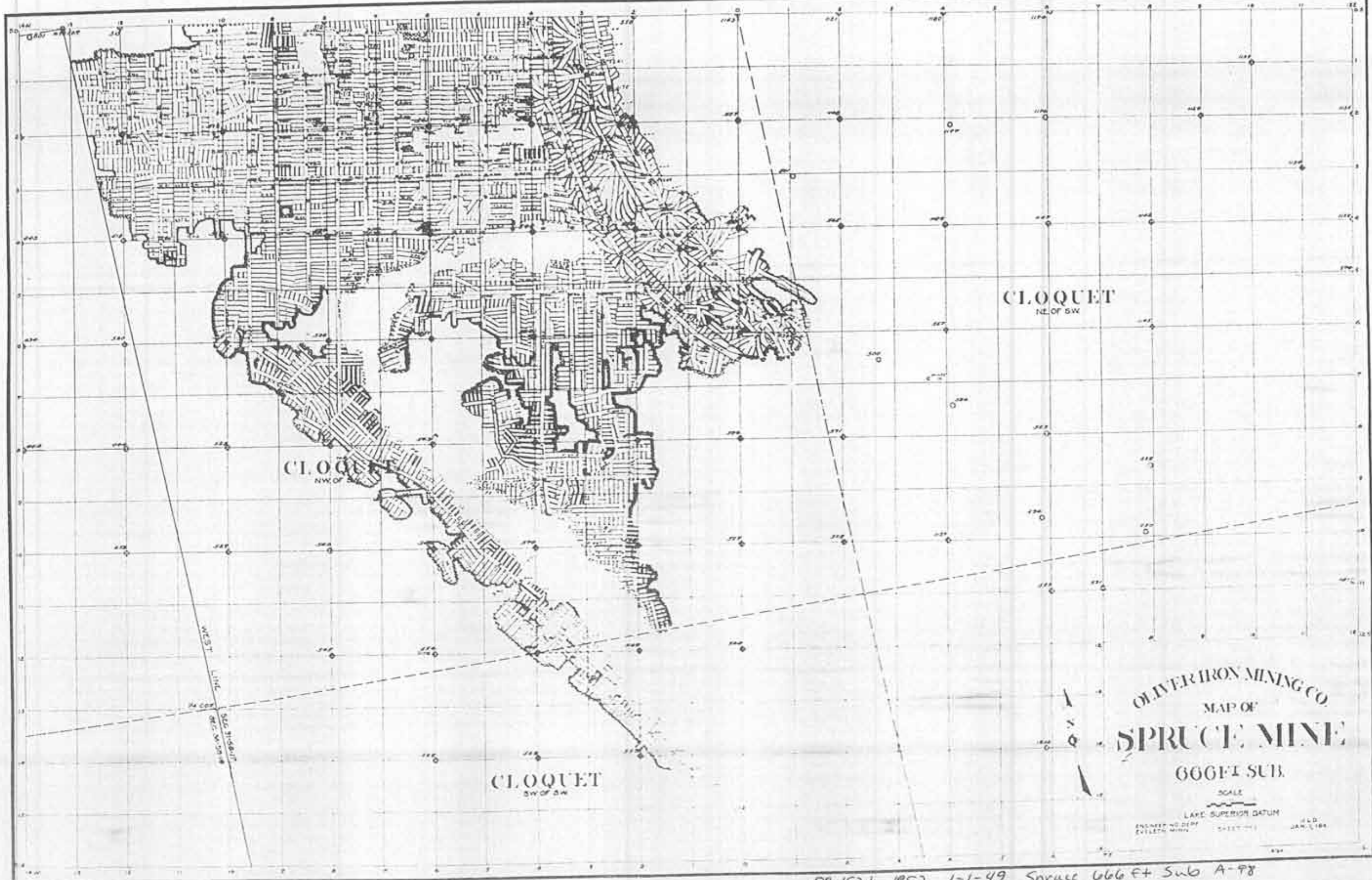
C. W. S.

S. E. COA SEC. 34-35-17

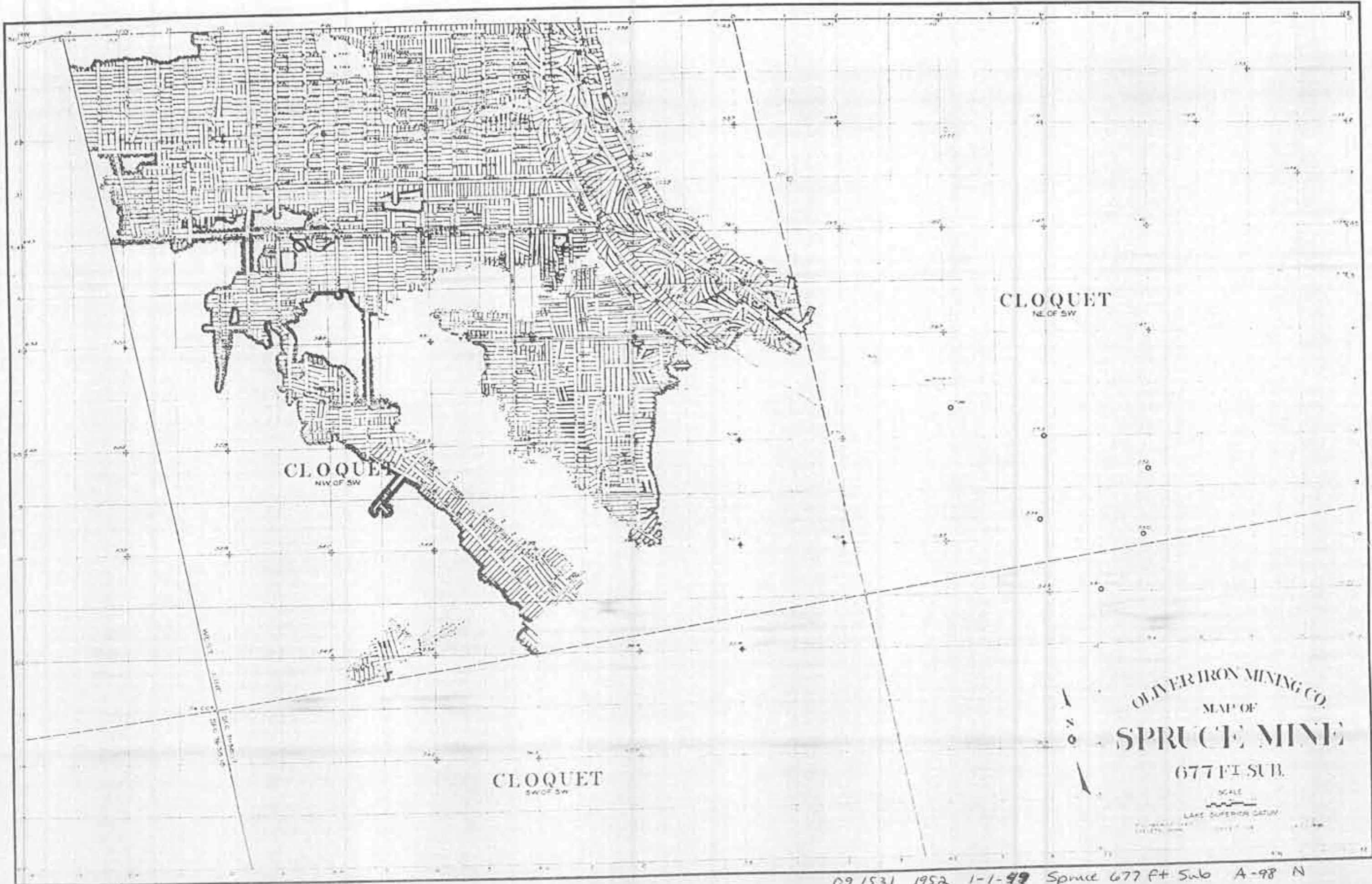
SEC. 34-35-17
SEC. 34-35-17

SEC. 34-35-17

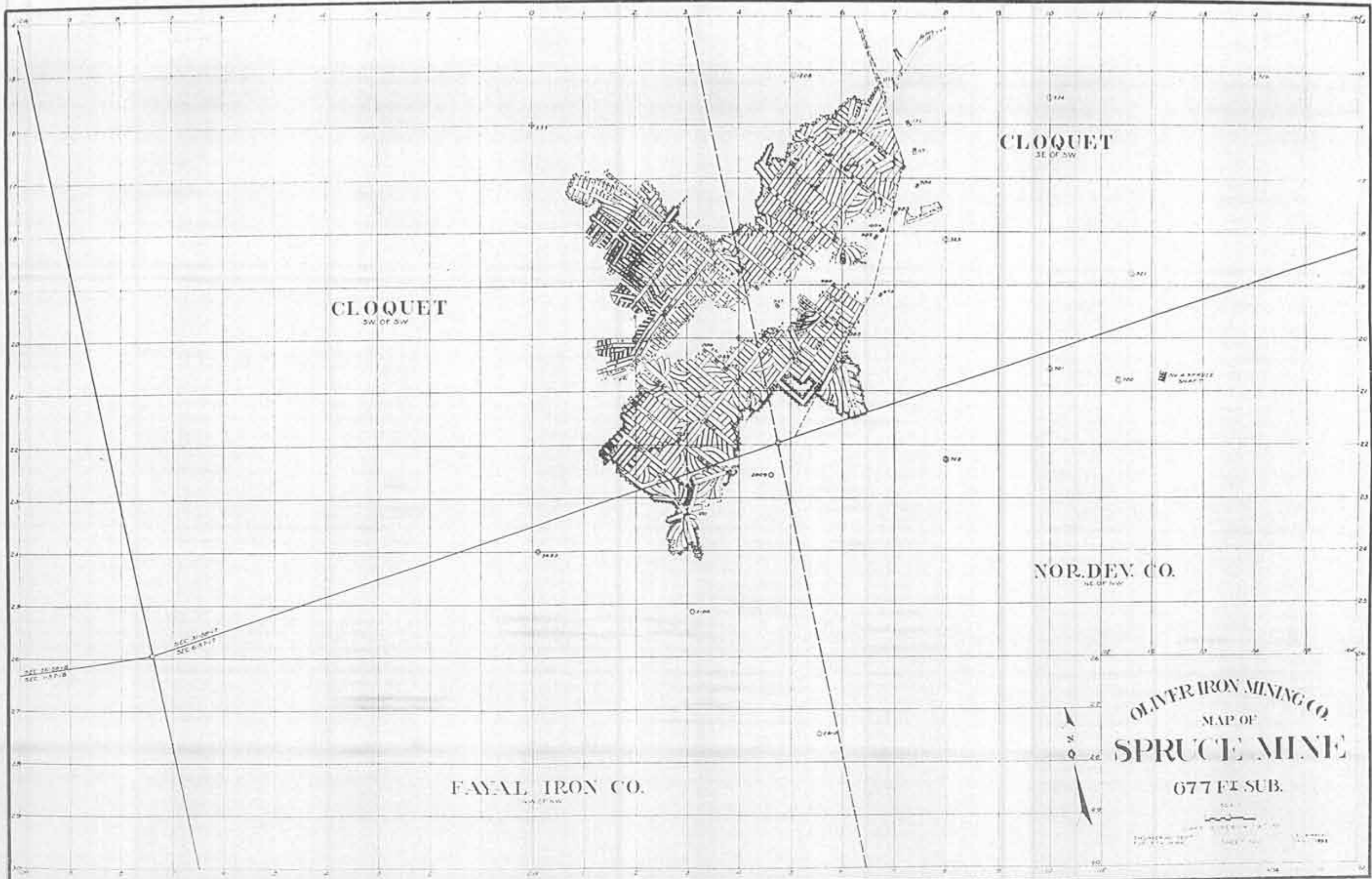
666



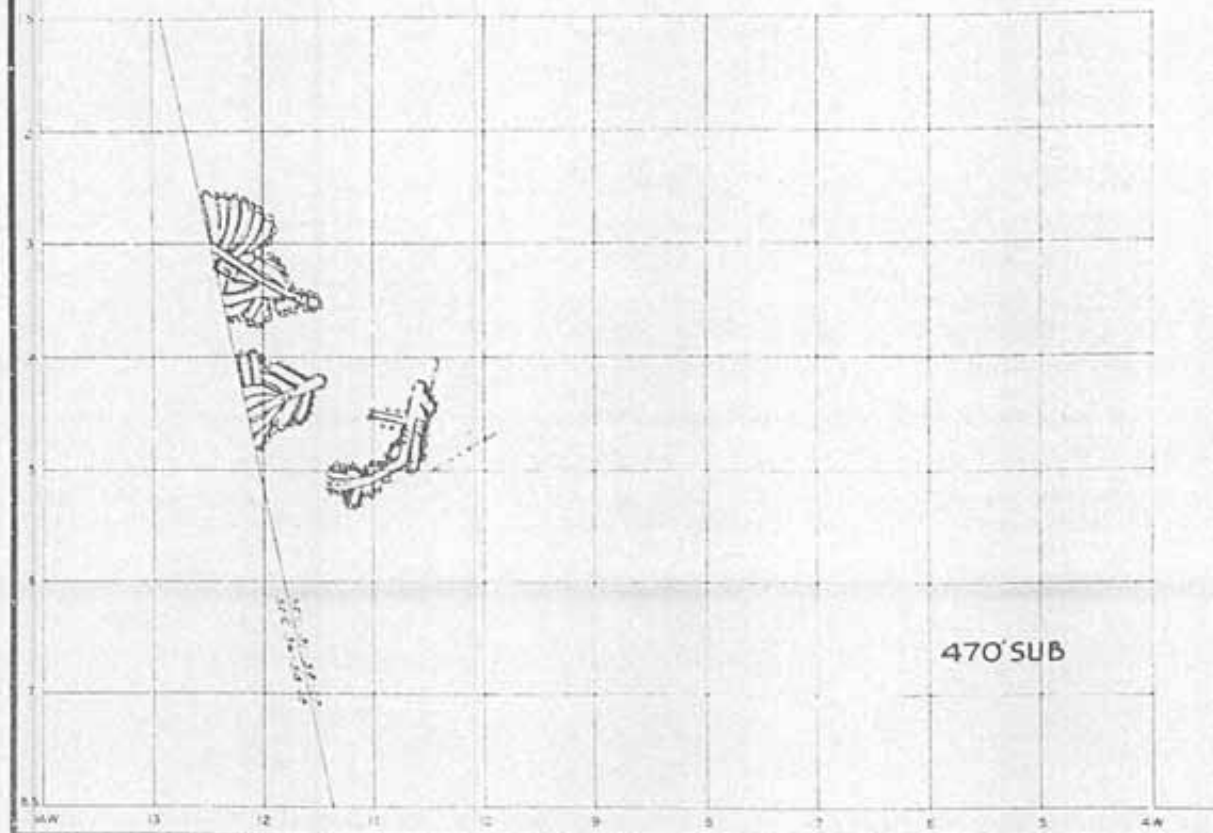
677

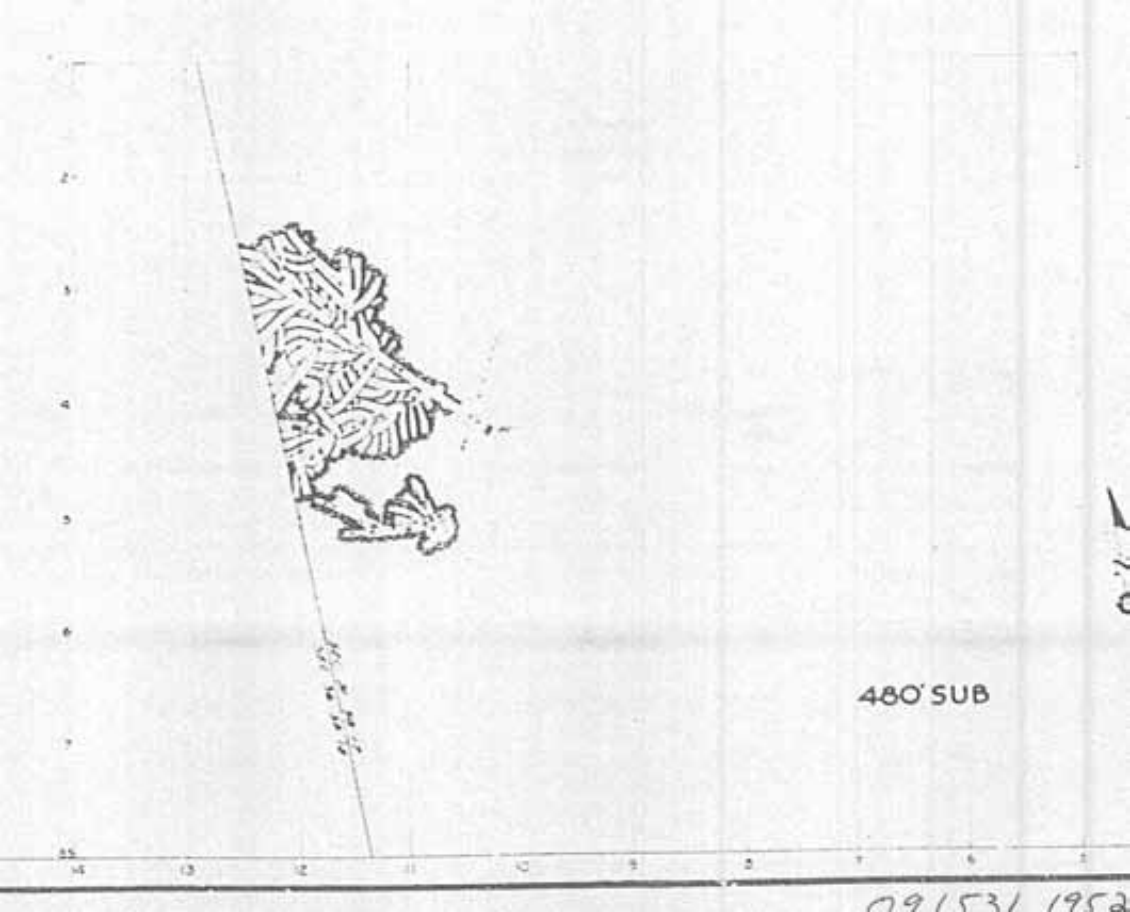


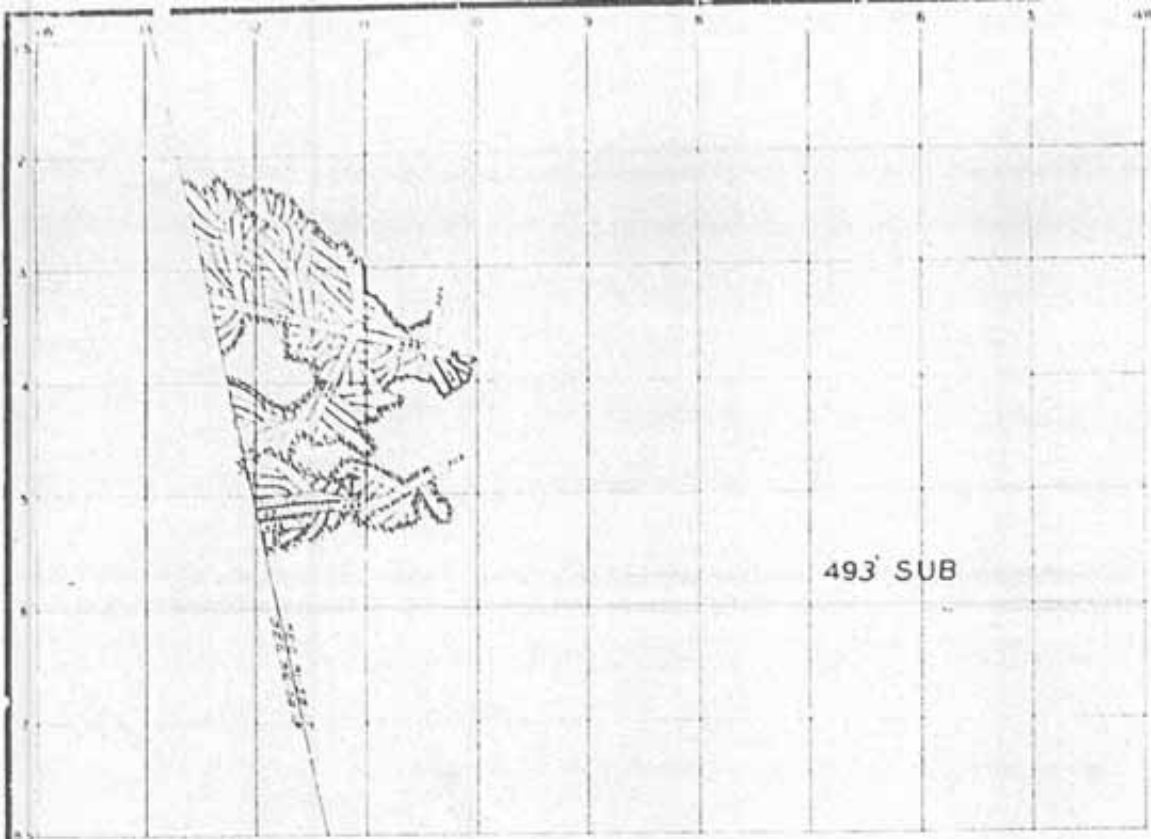
09 1531 1952 1-1-99 Spruce 677 Ft Sub A-98 N



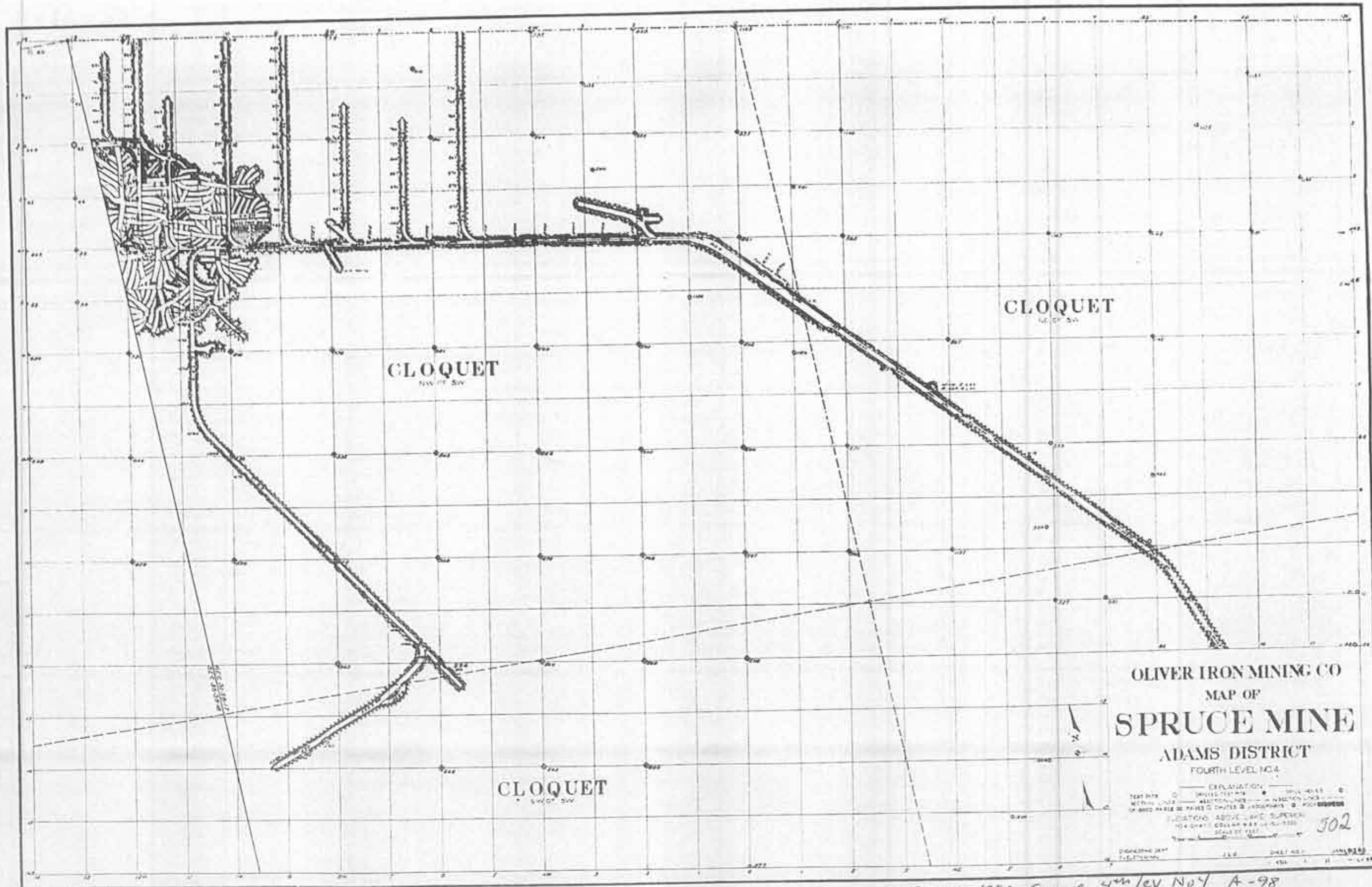
09 1531 1952 1-1-59 Spruce 677 Ft Sub A-985

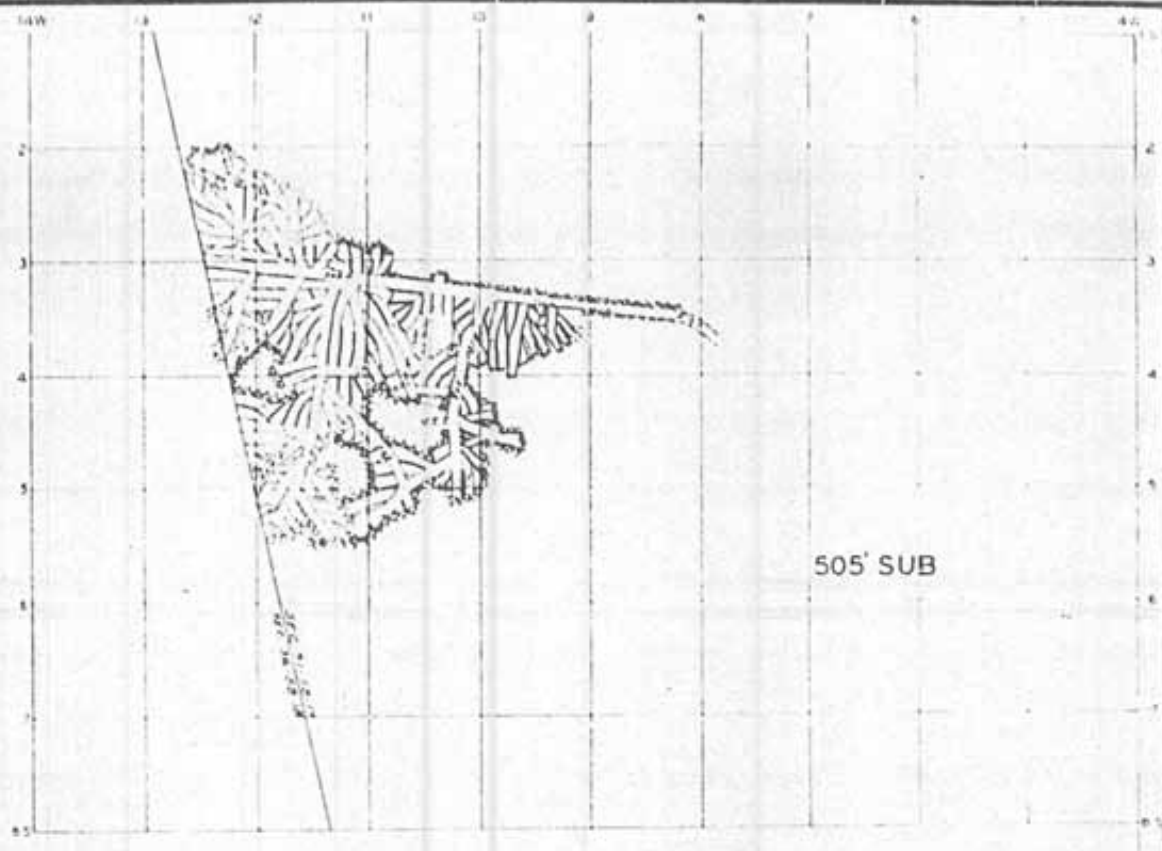




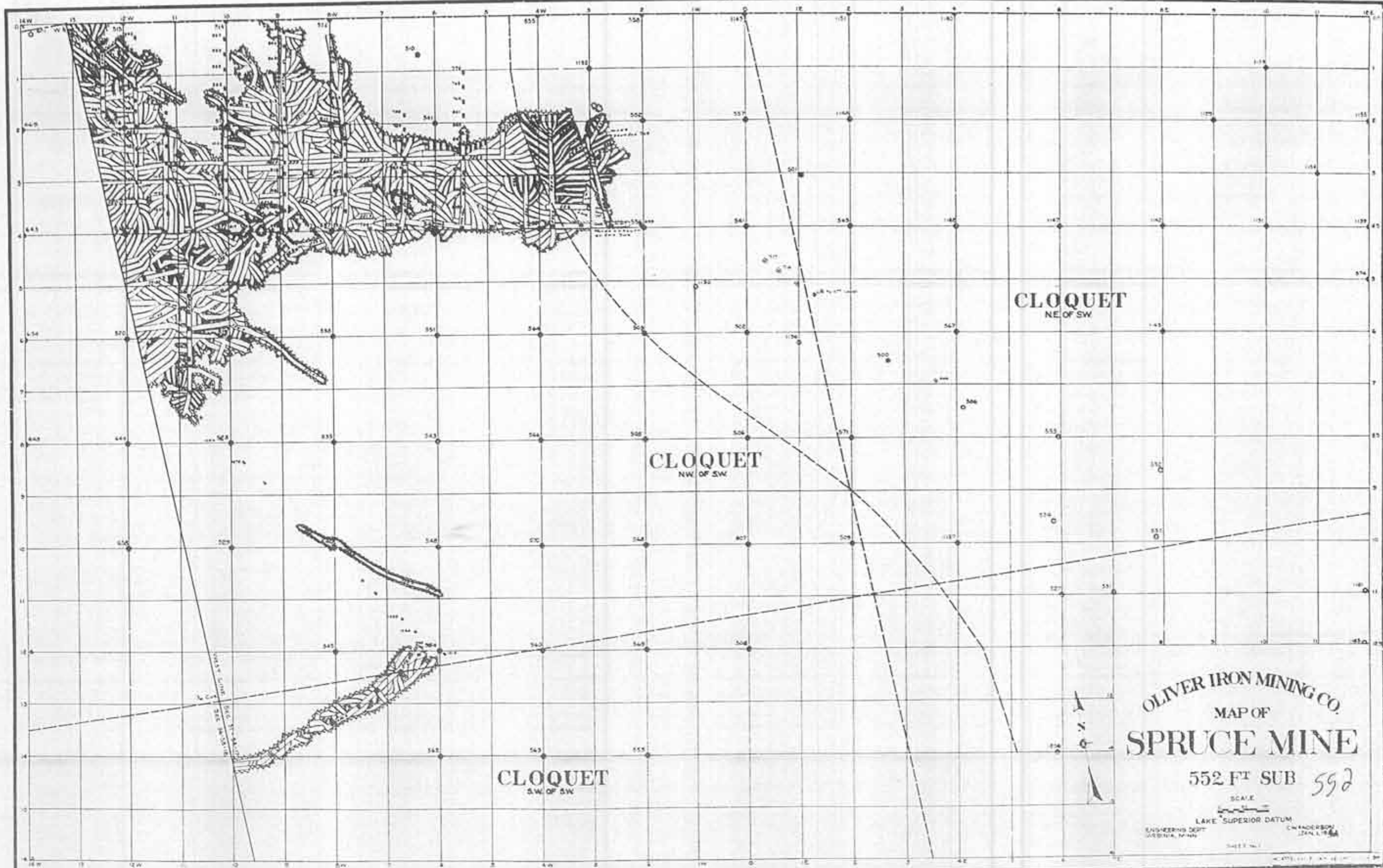


502

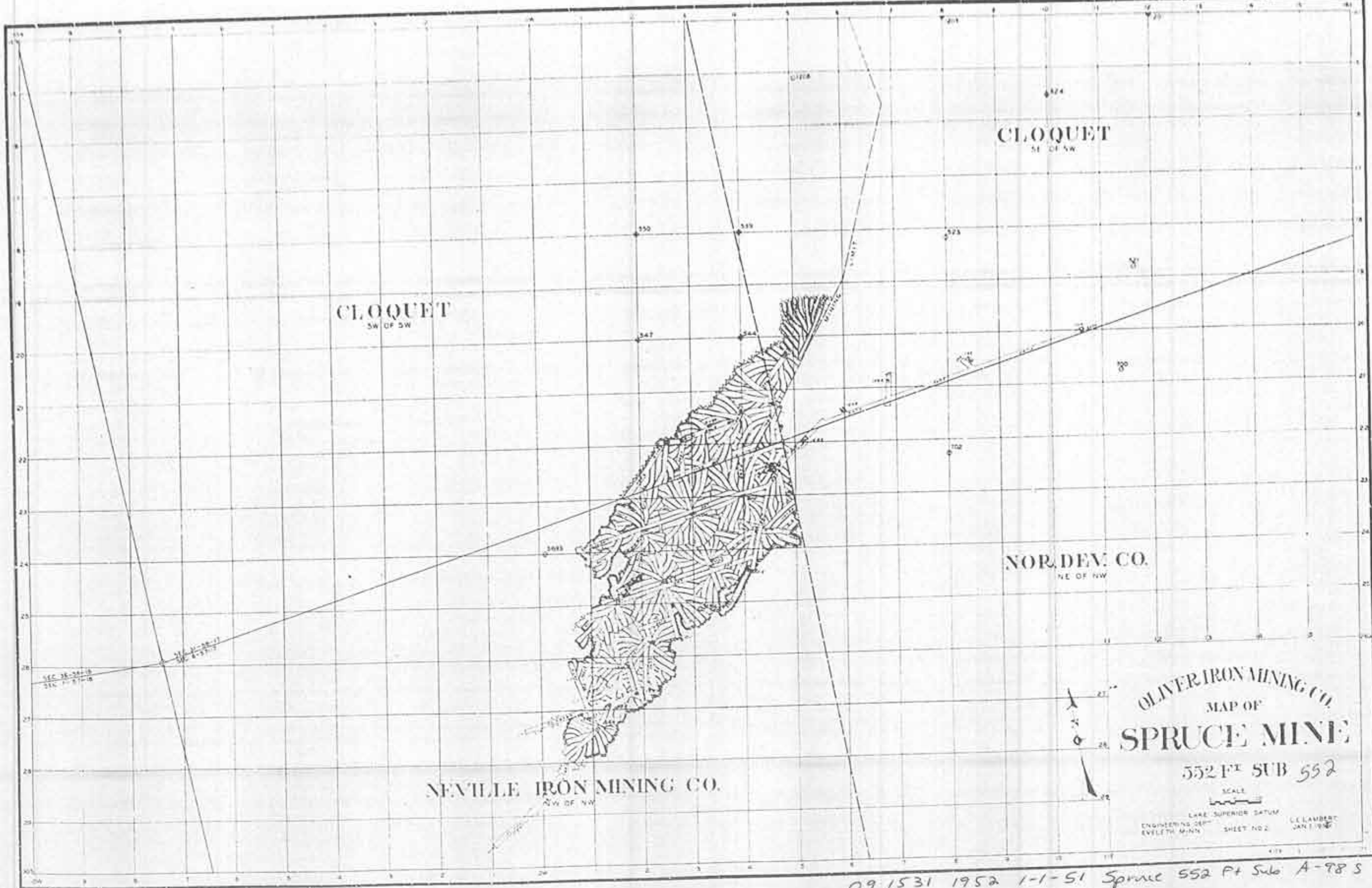




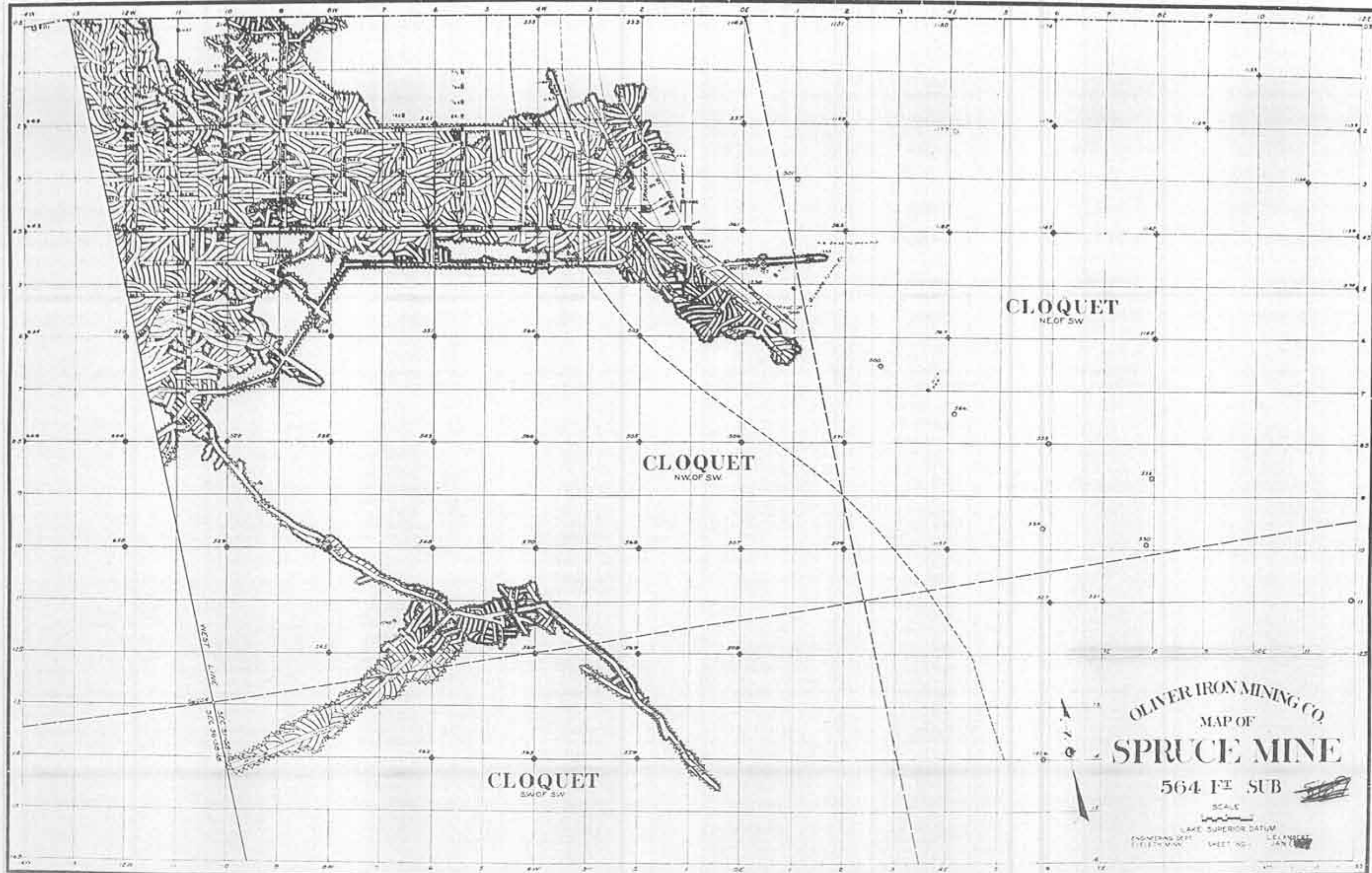
592



09 1531 1952 Spruce 552 Ft Sub A-98 N

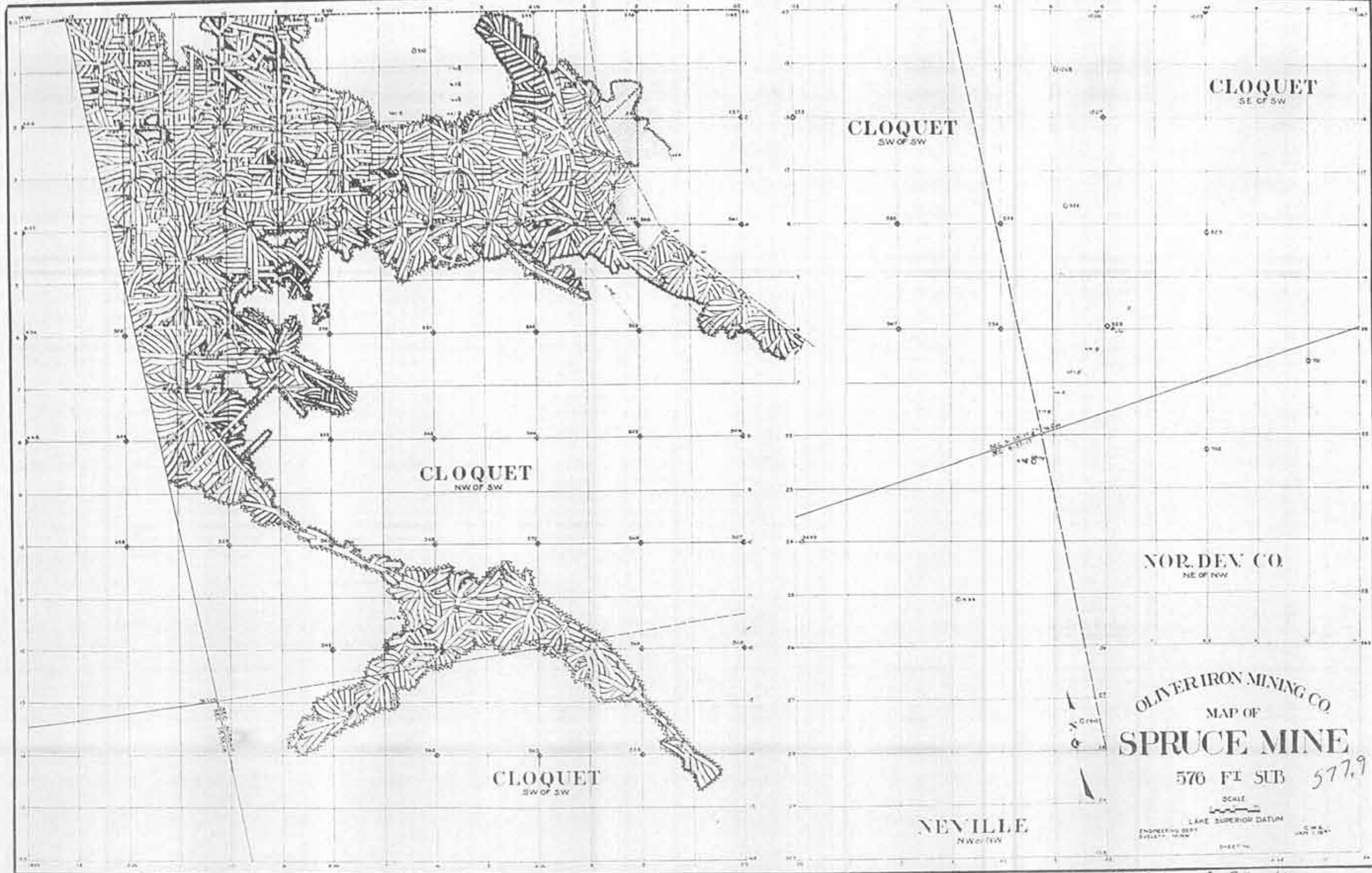


564

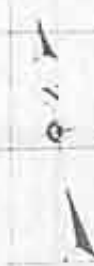
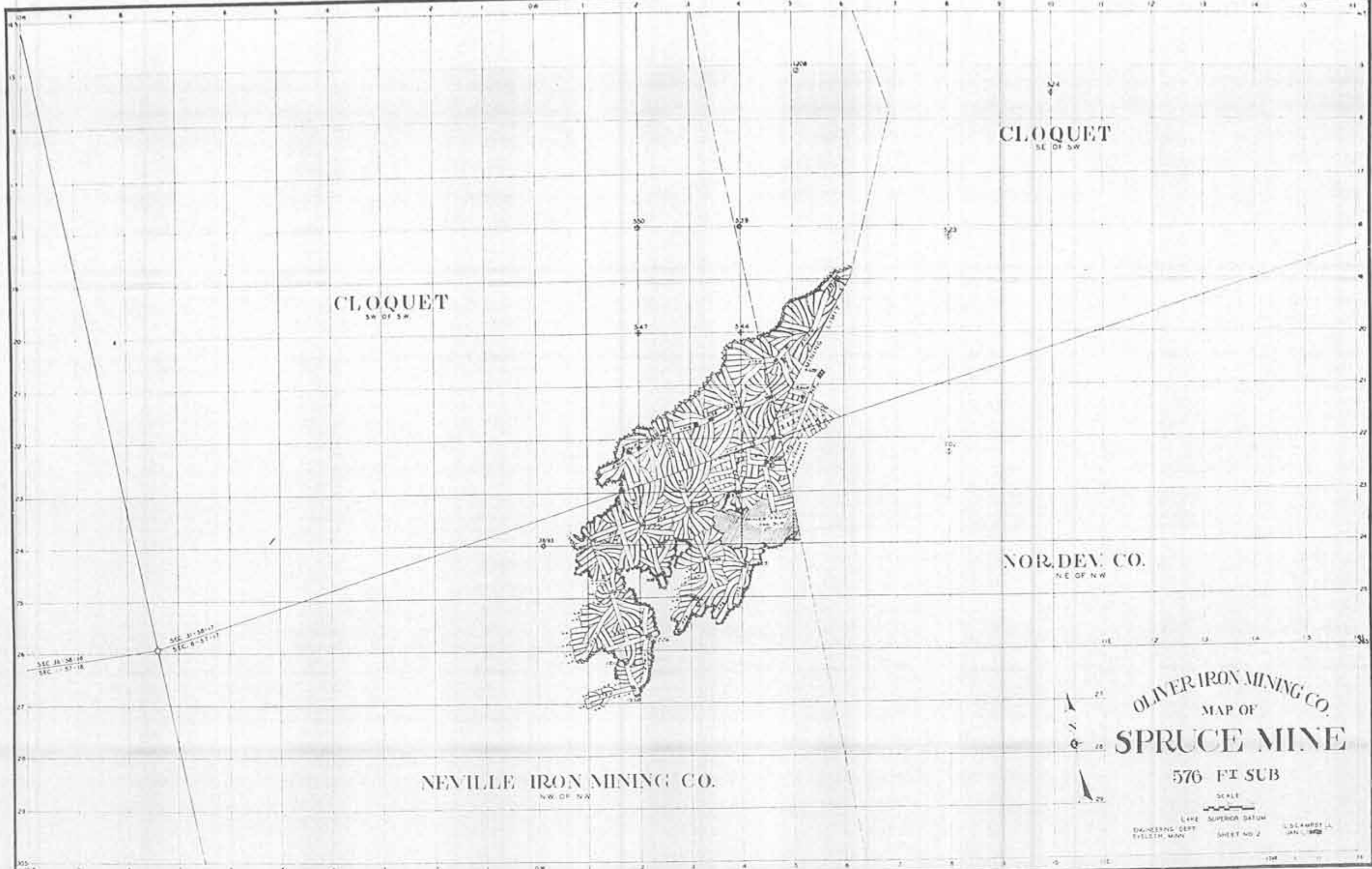


09 1531 1952 Spruce 564 Ft Sub A-98 N

540



09 1531 1952 Spruce 576 Ft Sub A-98 N



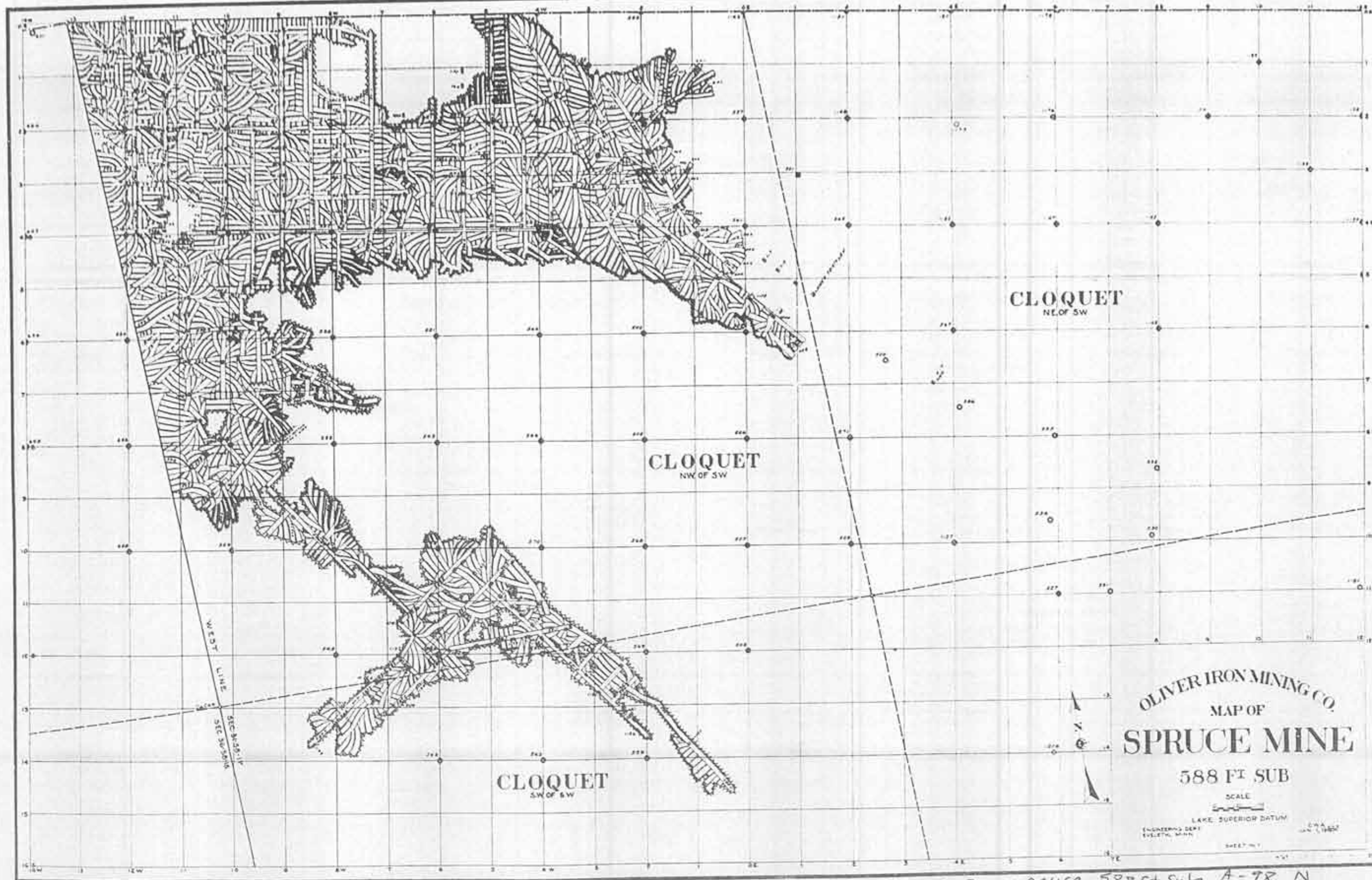
OLIVER IRON MINING CO.
MAP OF
SPRUCE MINE

576 FT SUB

SCALE

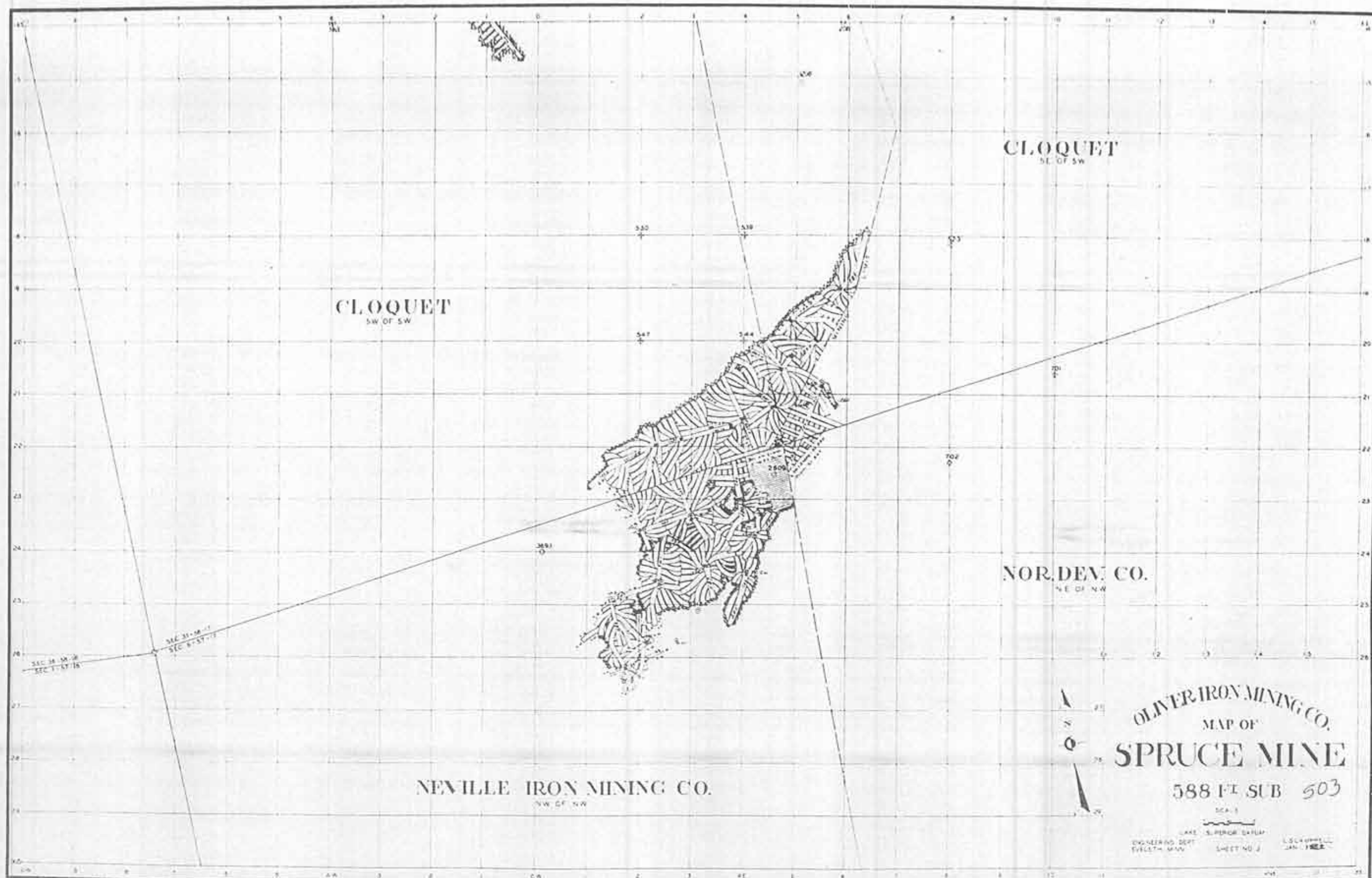
ENGINEERING DEPT
EVELETH, MINN.
SHEET NO. 2
L. SCAMPTON
JAN. 1952

588 N



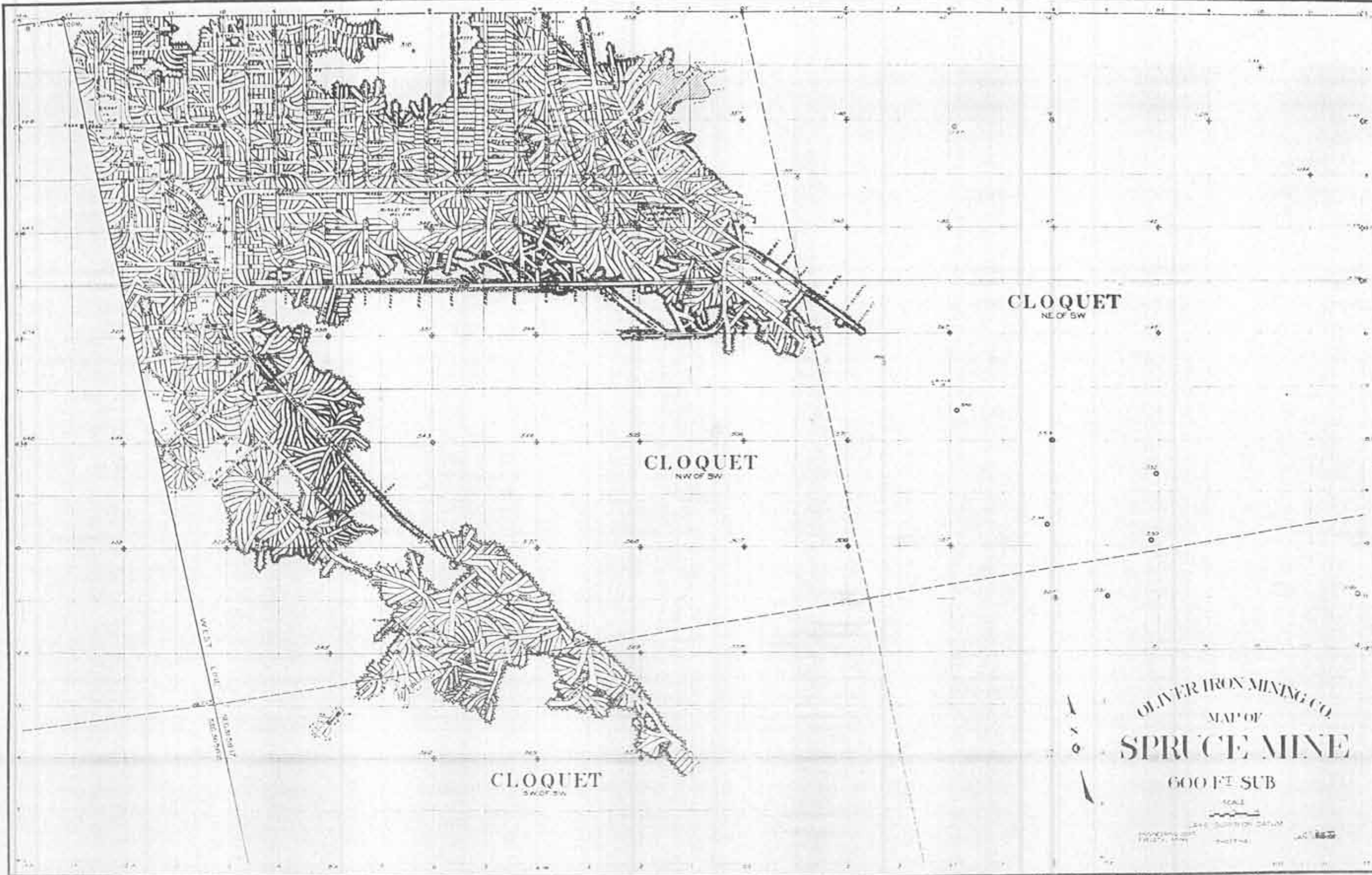
09 1531 1952 SPRUCE 588 FT SUB A-78 N

485

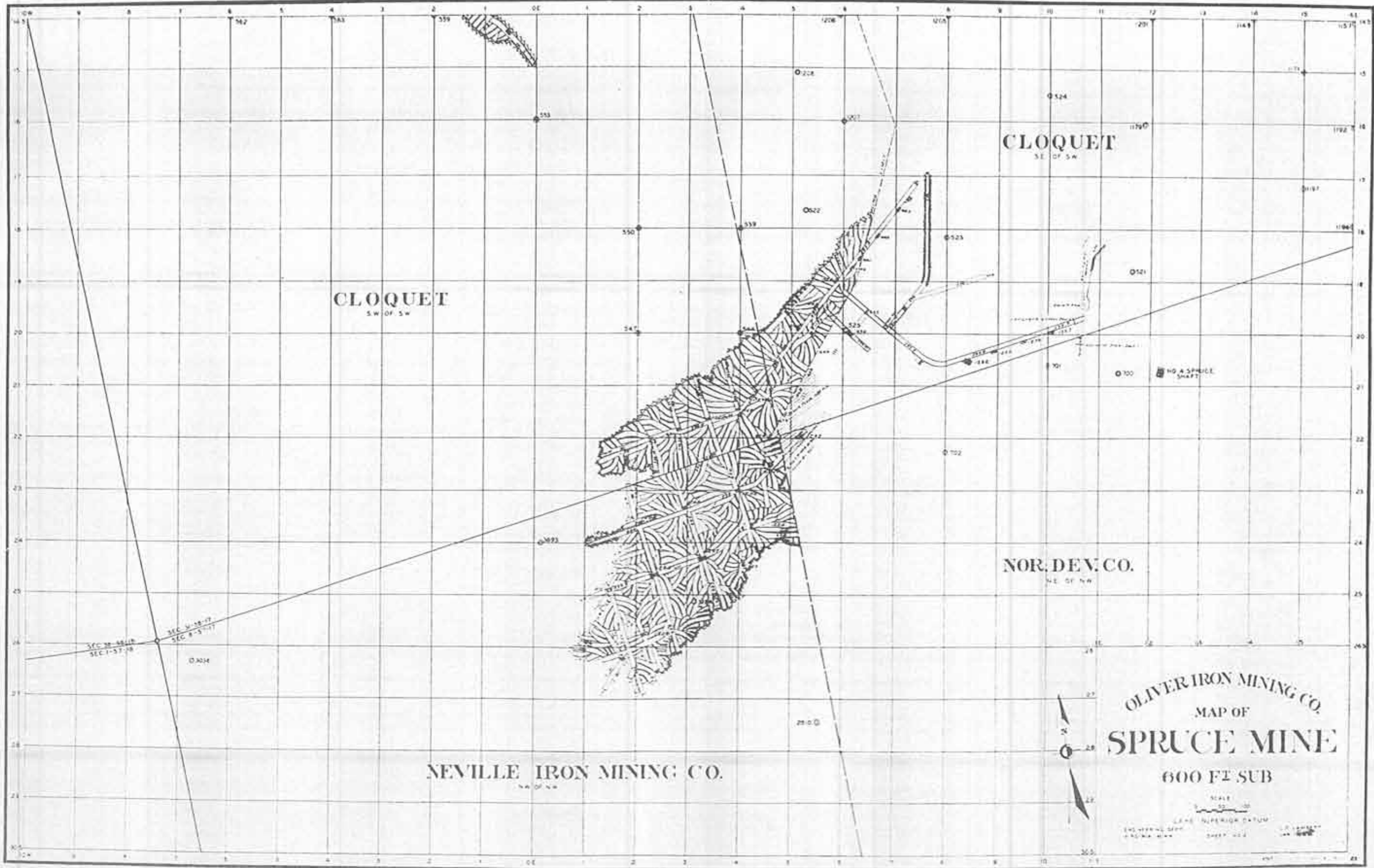


09 1531 1952 1-1-52 Spruce 588 ft Sub A-98

689

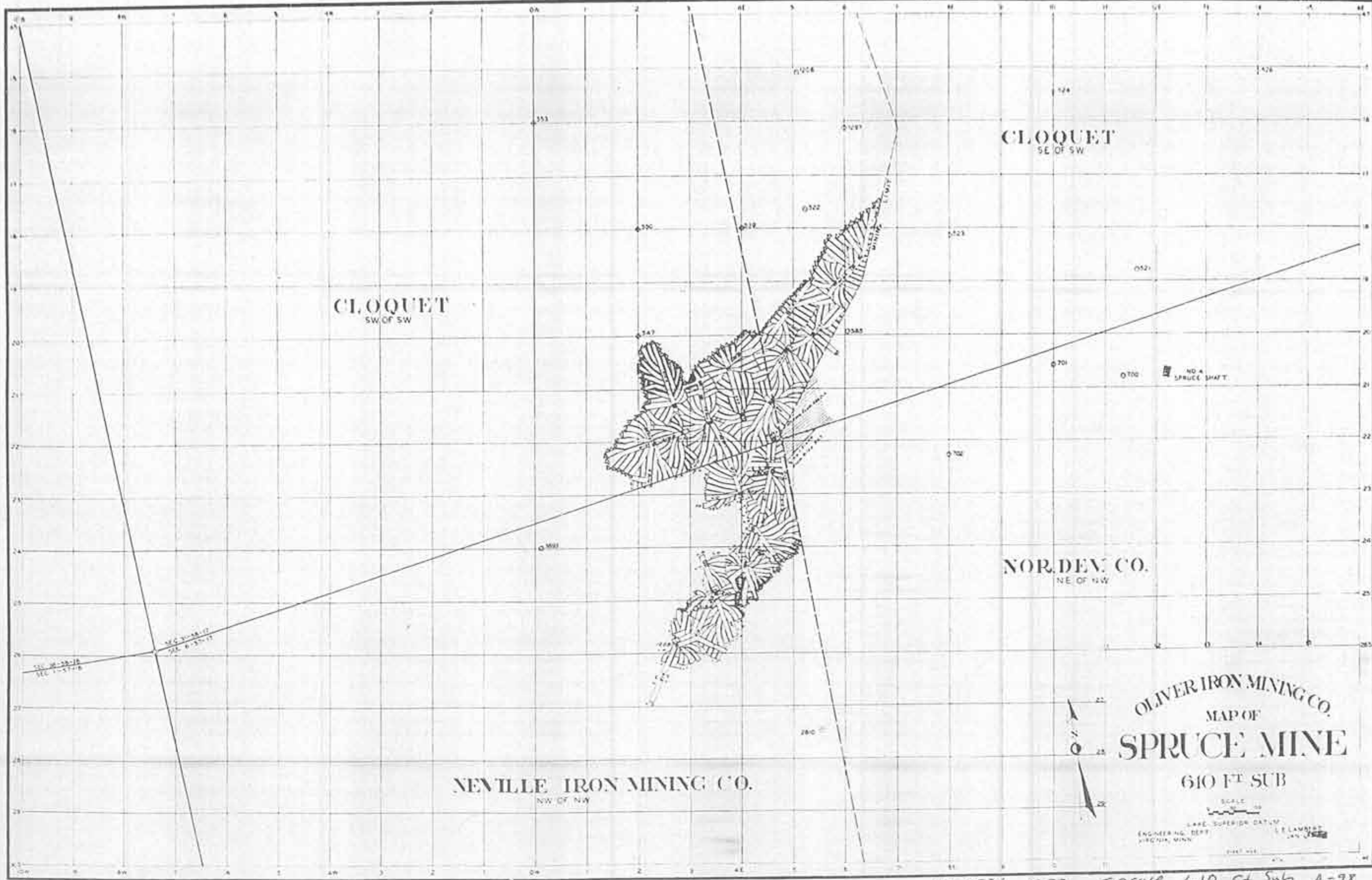


09 1531 1952 Spruce 600 Ft Sub A-98 N



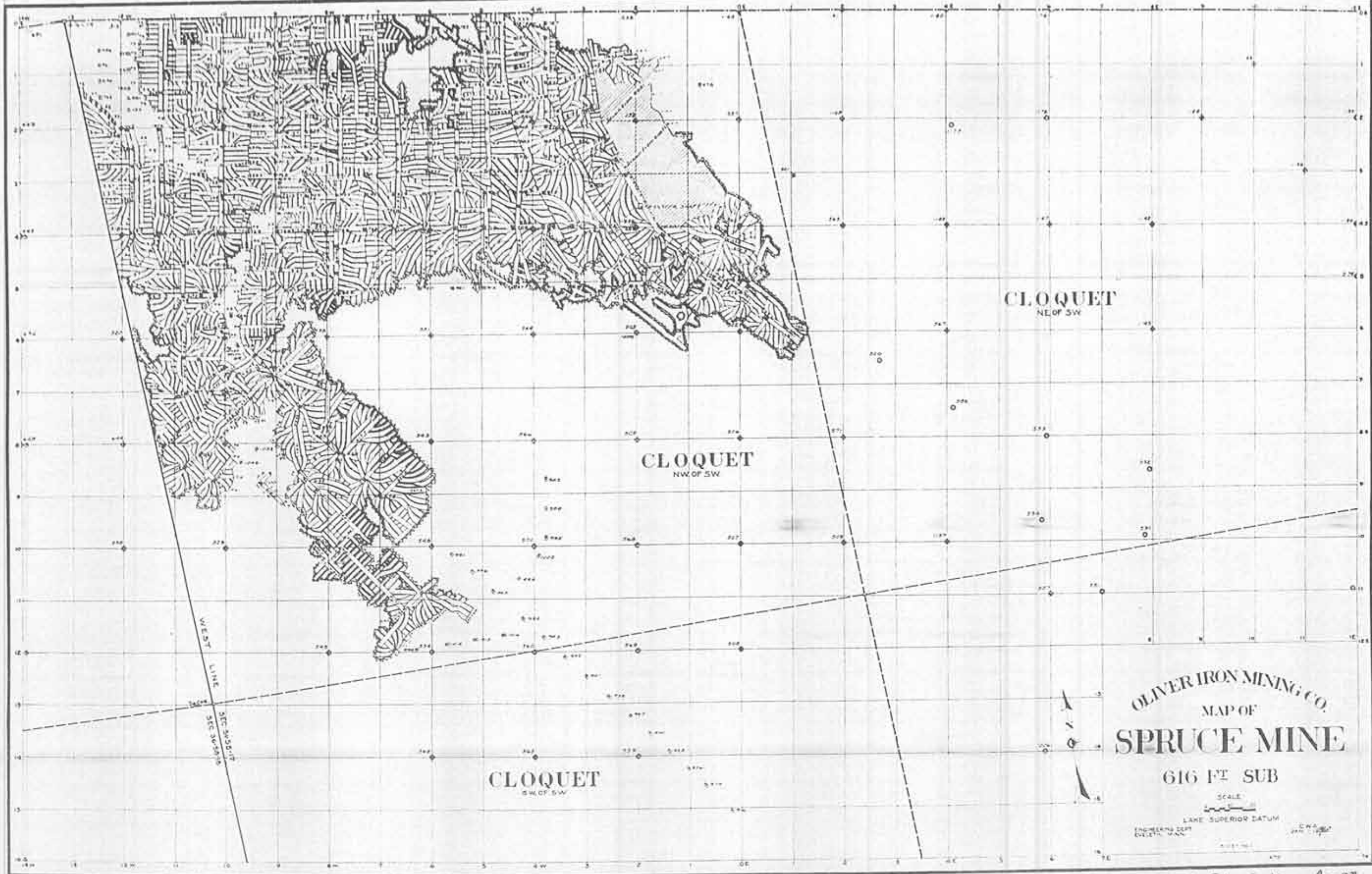
09 1531 1952 Spruce 600 ft Sub A-98 5

610



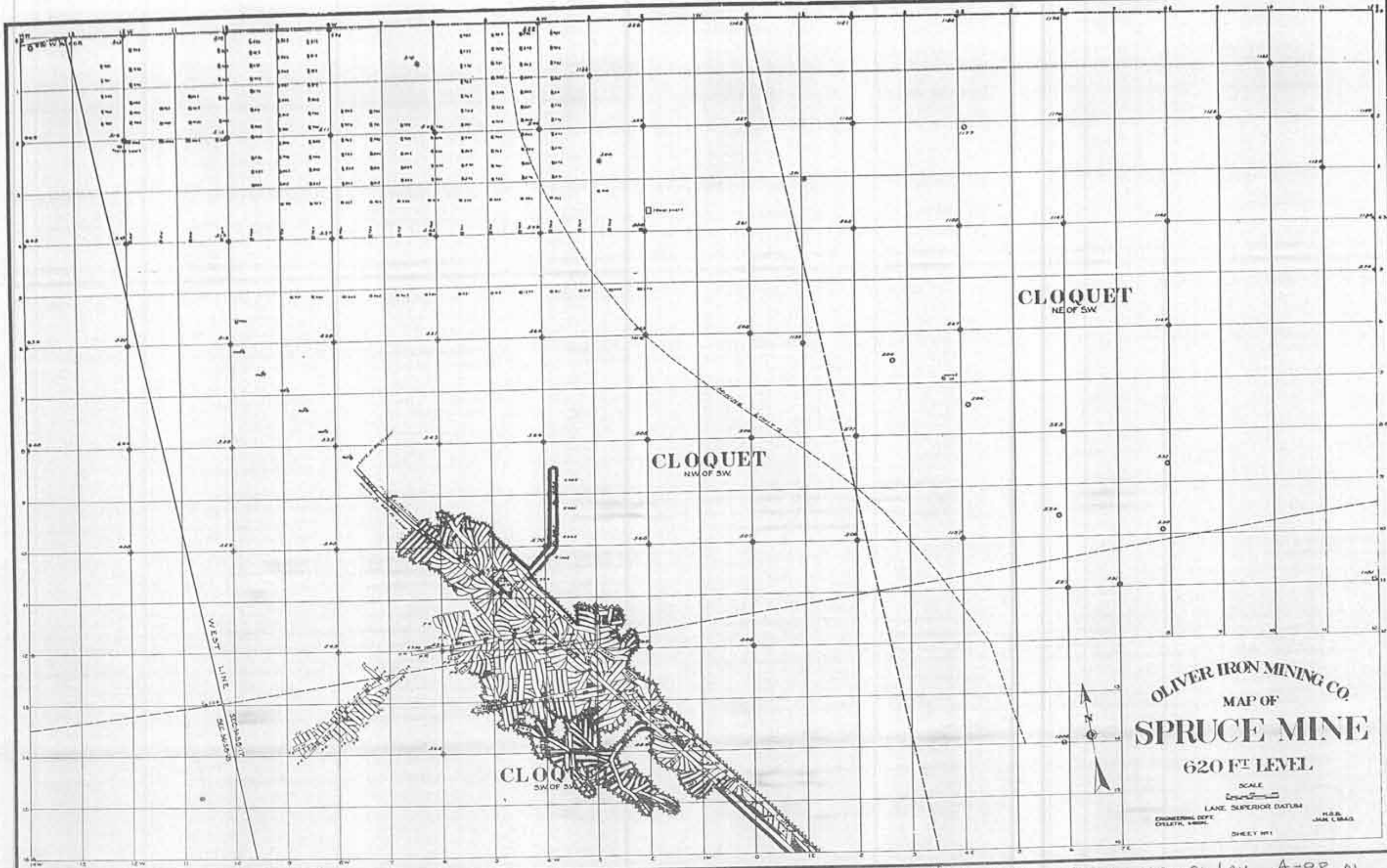
09 1531 1952 Spruce 610 ft Sub A-78

616



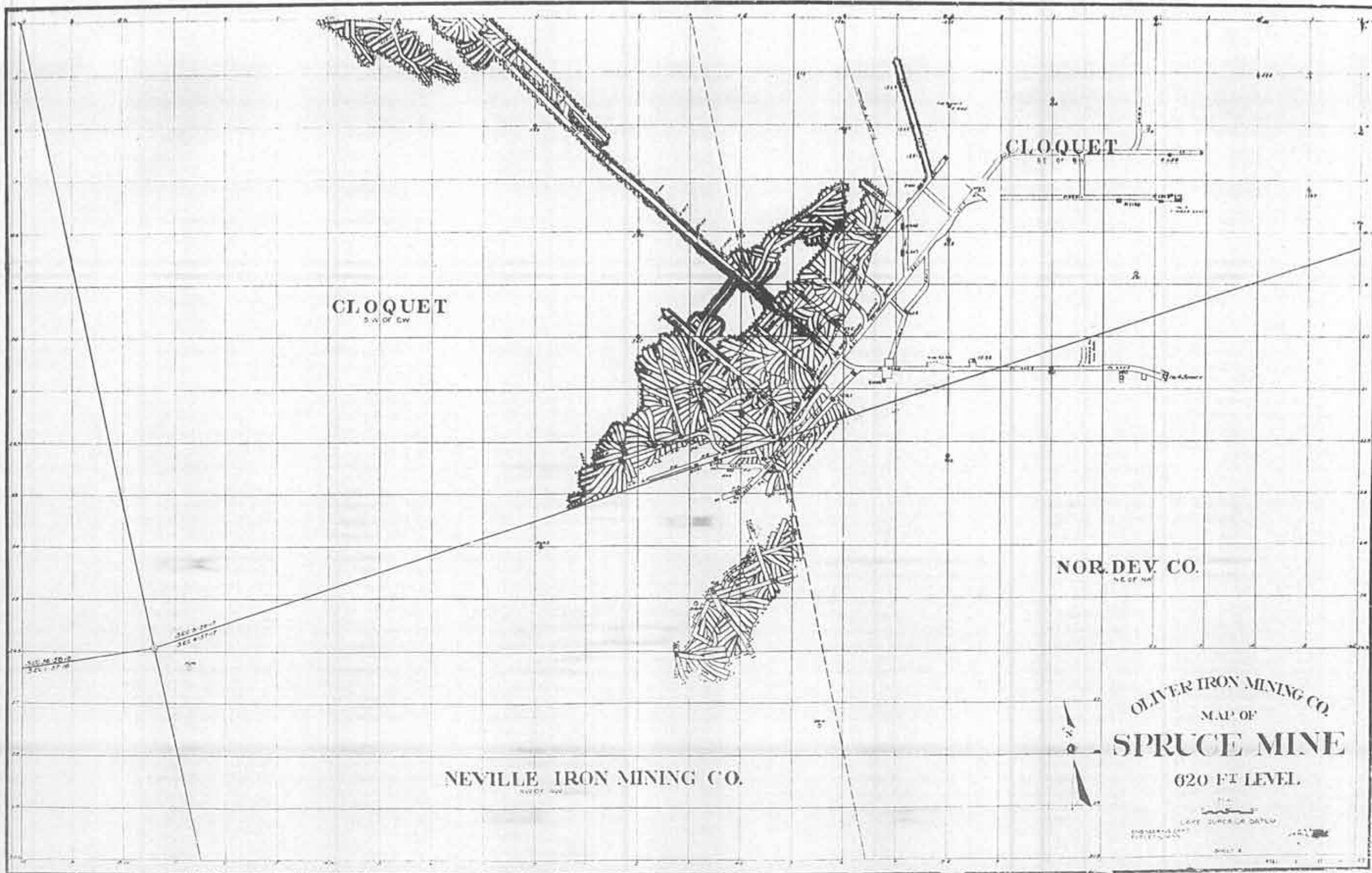
09 1531 1952 Spruce 616 Ft Sub A-98

620
N



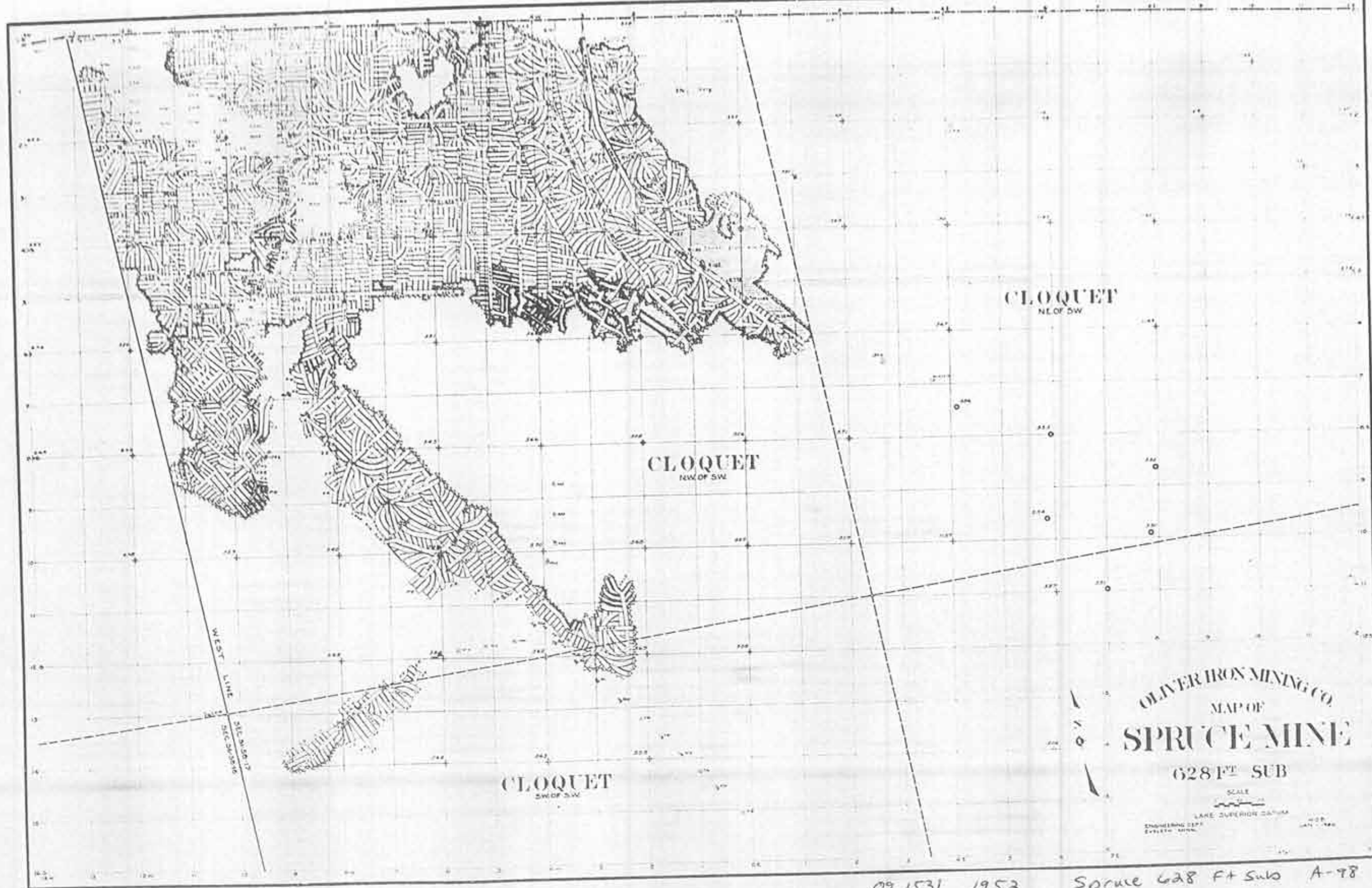
09 1531 1952 Spruce 620 ft Lev A-98 N

640
5



09 1531 1952 1-1-40 Spruce 620 ft lev A-98 5

33



CLOQUET
NE OF SW

CLOQUET
NW OF SW

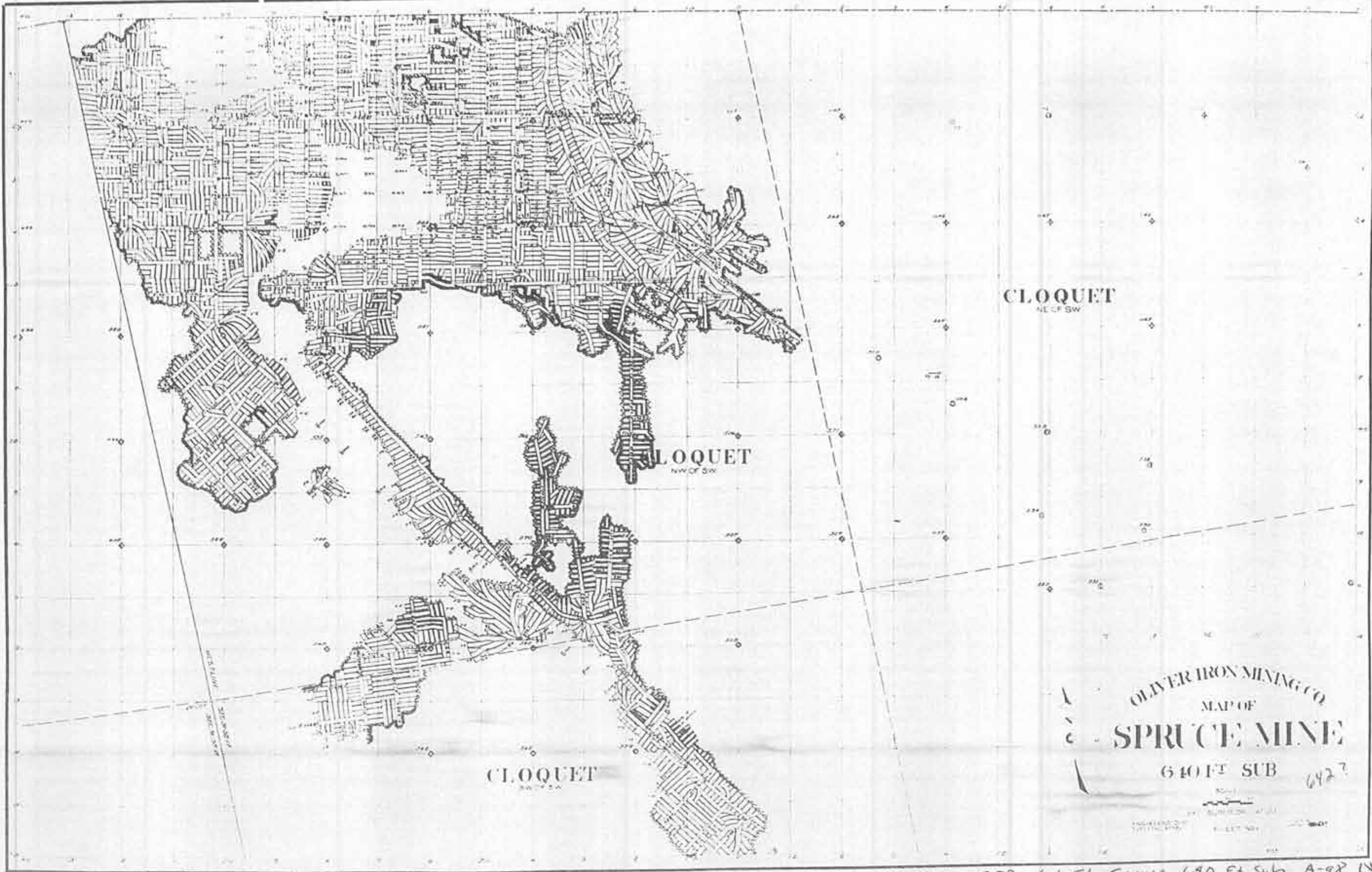
CLOQUET
SW OF SW

OLIVER IRON MINING CO.
MAP OF
SPRUCE MINE
628 FT SUB

SCALE
LAKE SUPERIOR DISTRICT
ENGINEERING DEPT.
EARTH DIVISION
JAN - 1950

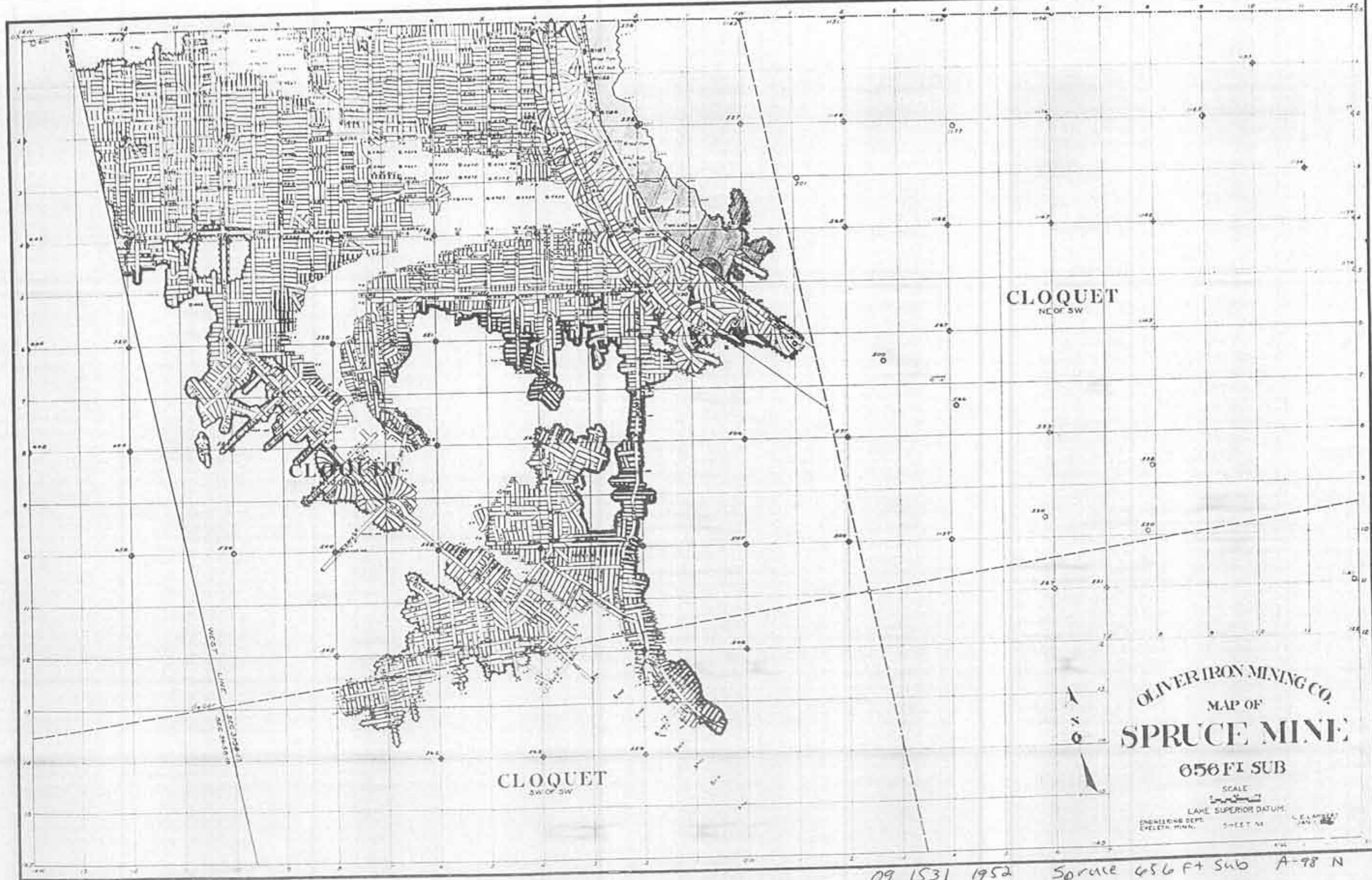
09 1531 1952 Spruce 628 F+Sub A-98

351
1



09 1531 1952 1-1-51 Spruce 640 Ft Sub A-98 IN

556



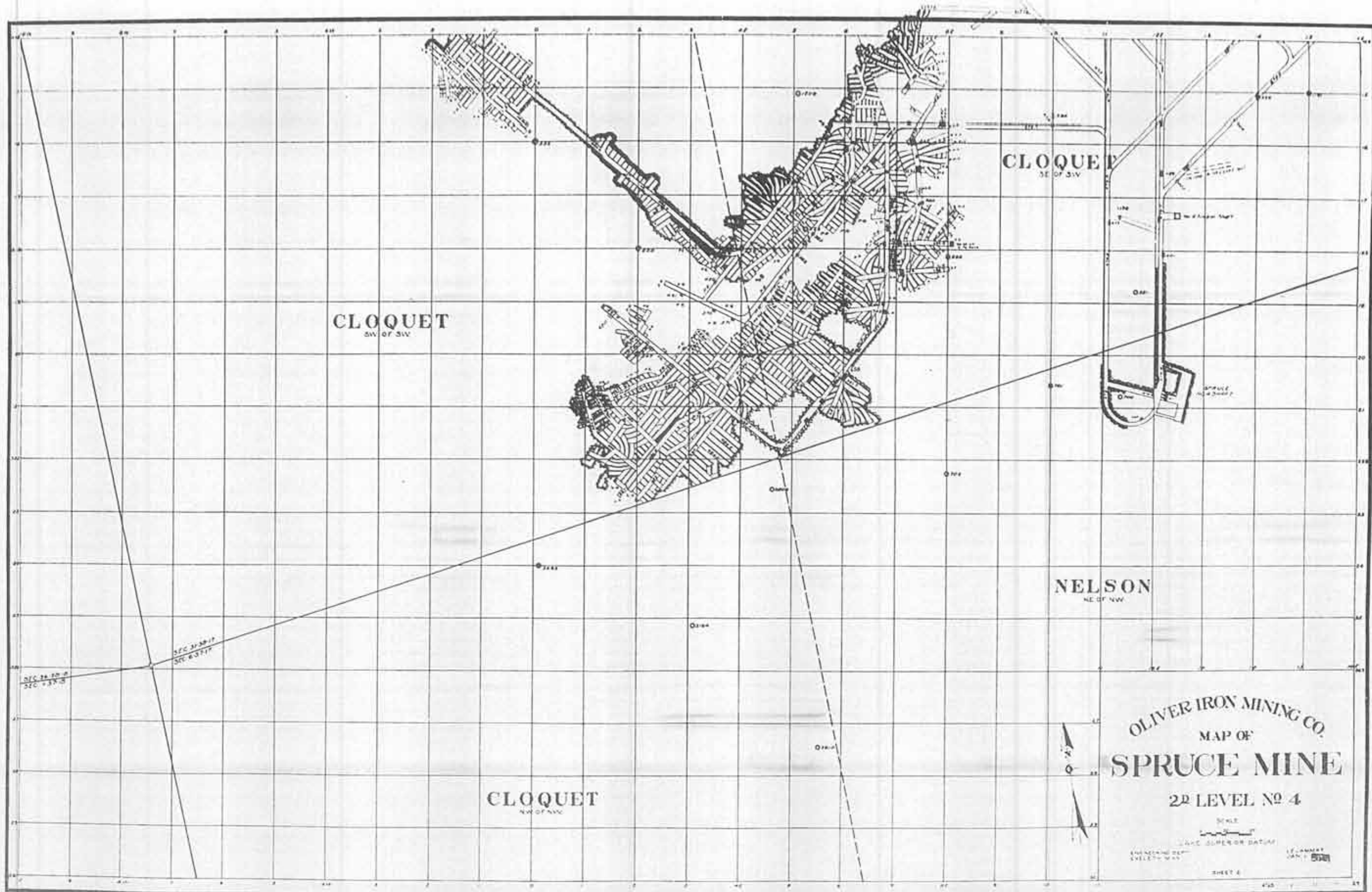
OLIVER IRON MINING CO.
MAP OF
SPRUCE MINE

656 FT SUB

SCALE
LAKE SUPERIOR DATUM
ENGINEERING DEPT.
EVELETH MINN.
SHEET NO. 1
JAN 1952

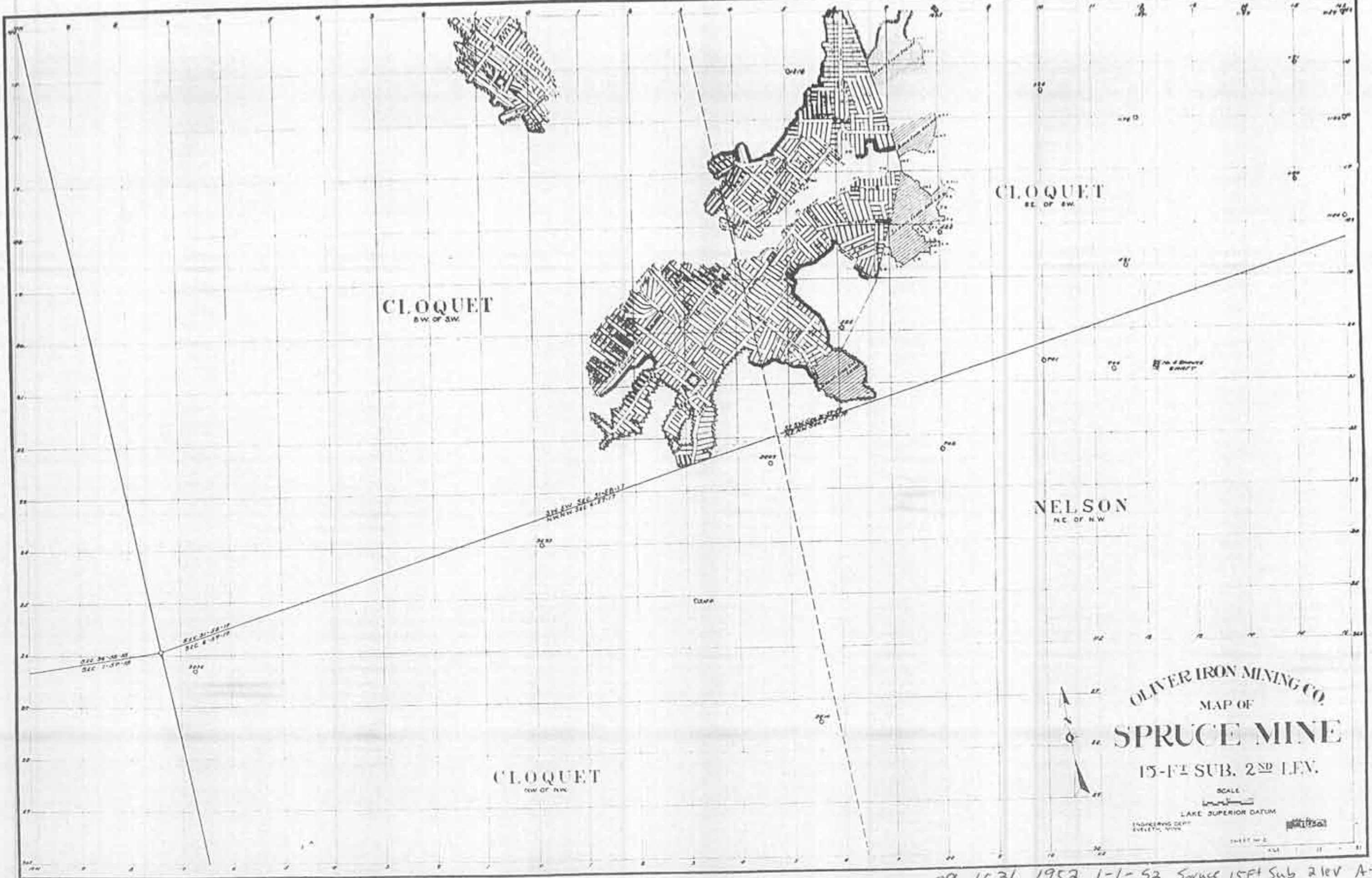
09 1531 1952 Spruce 656 Ft Sub A-98 N

5 674

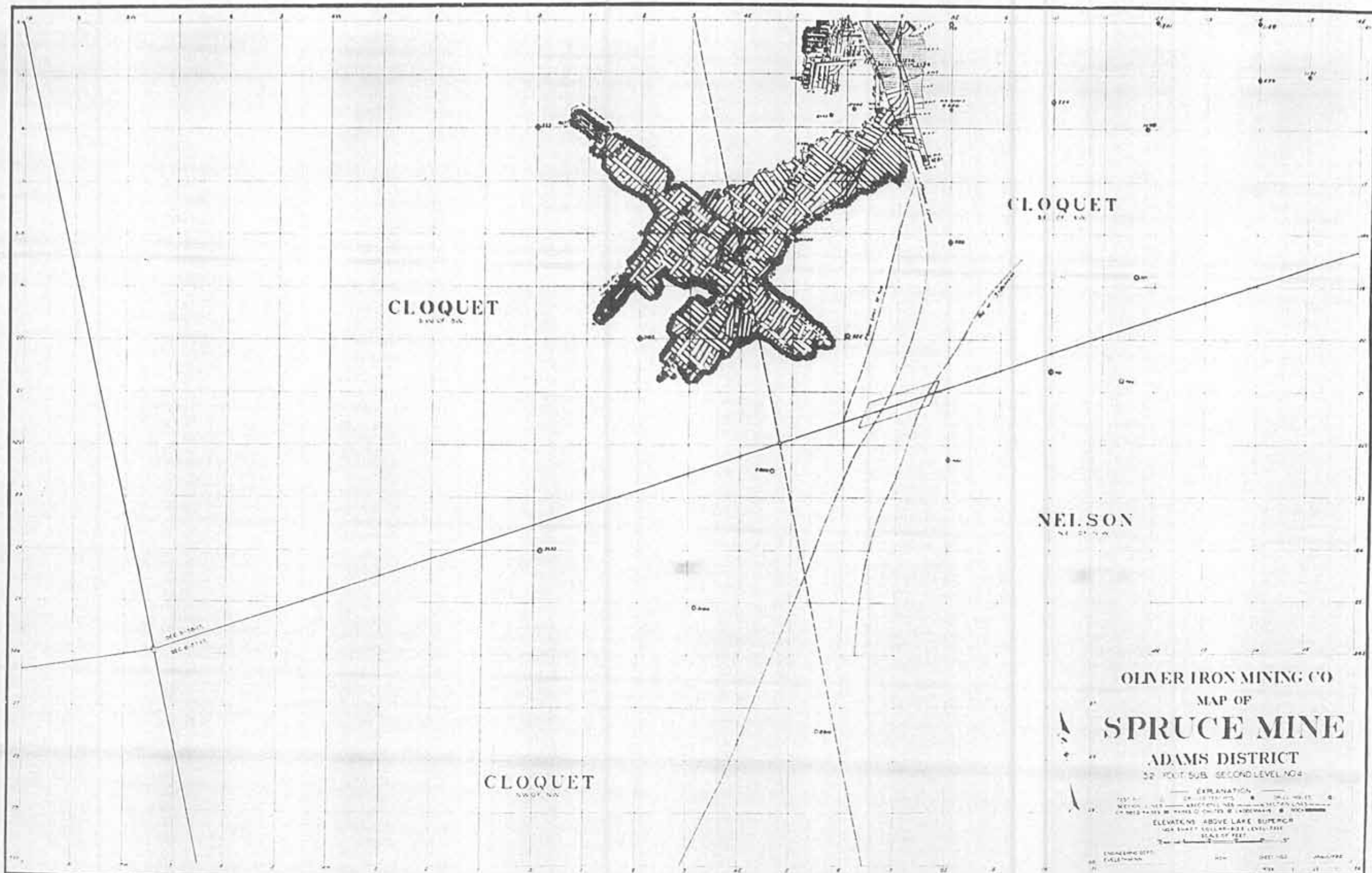


07 1531 1-1-52 Spruce 2nd lev No 4 A-78

697

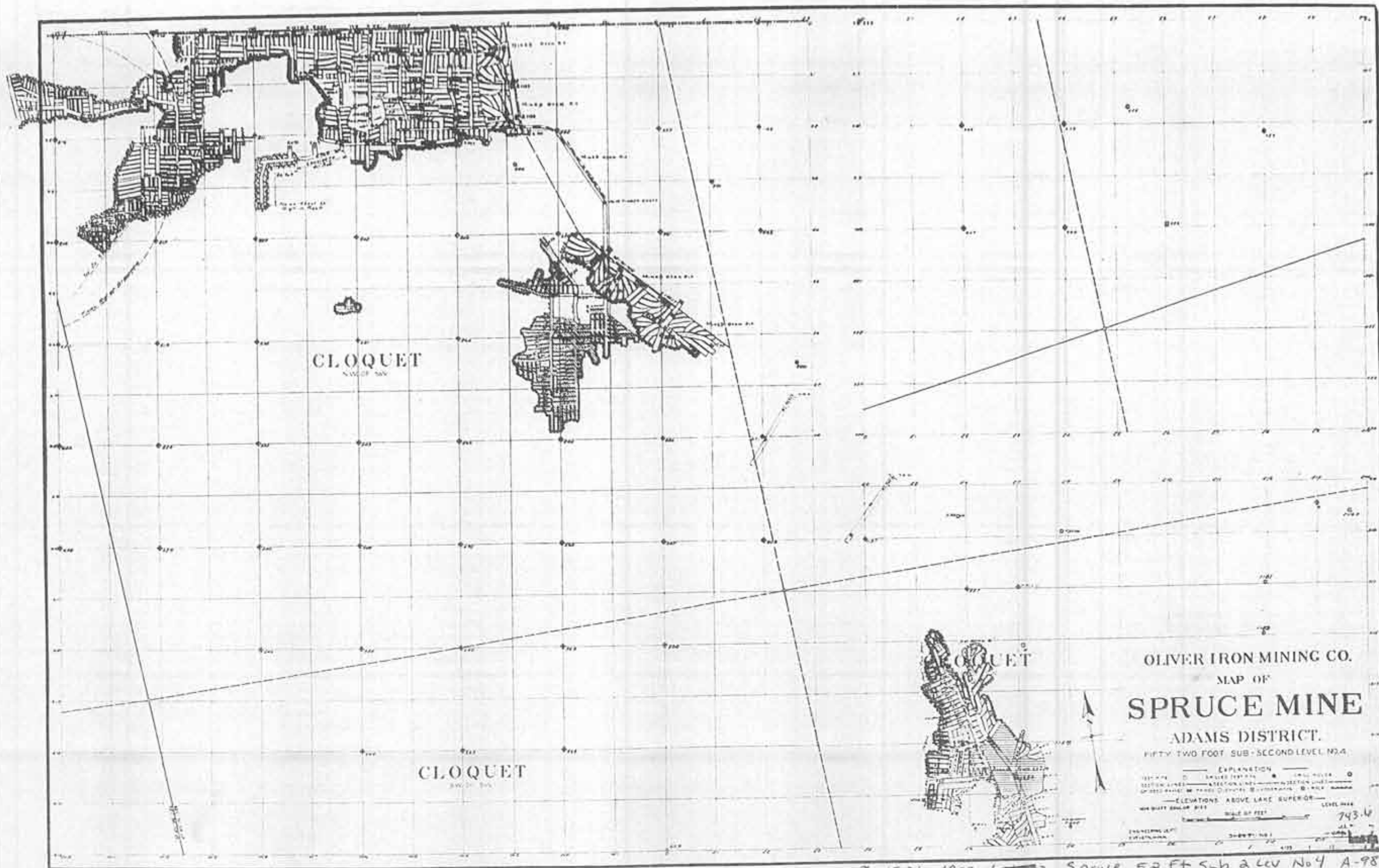


09 1531 1952 1-1-52 Spruce 15ft Sub 2 lev A-98

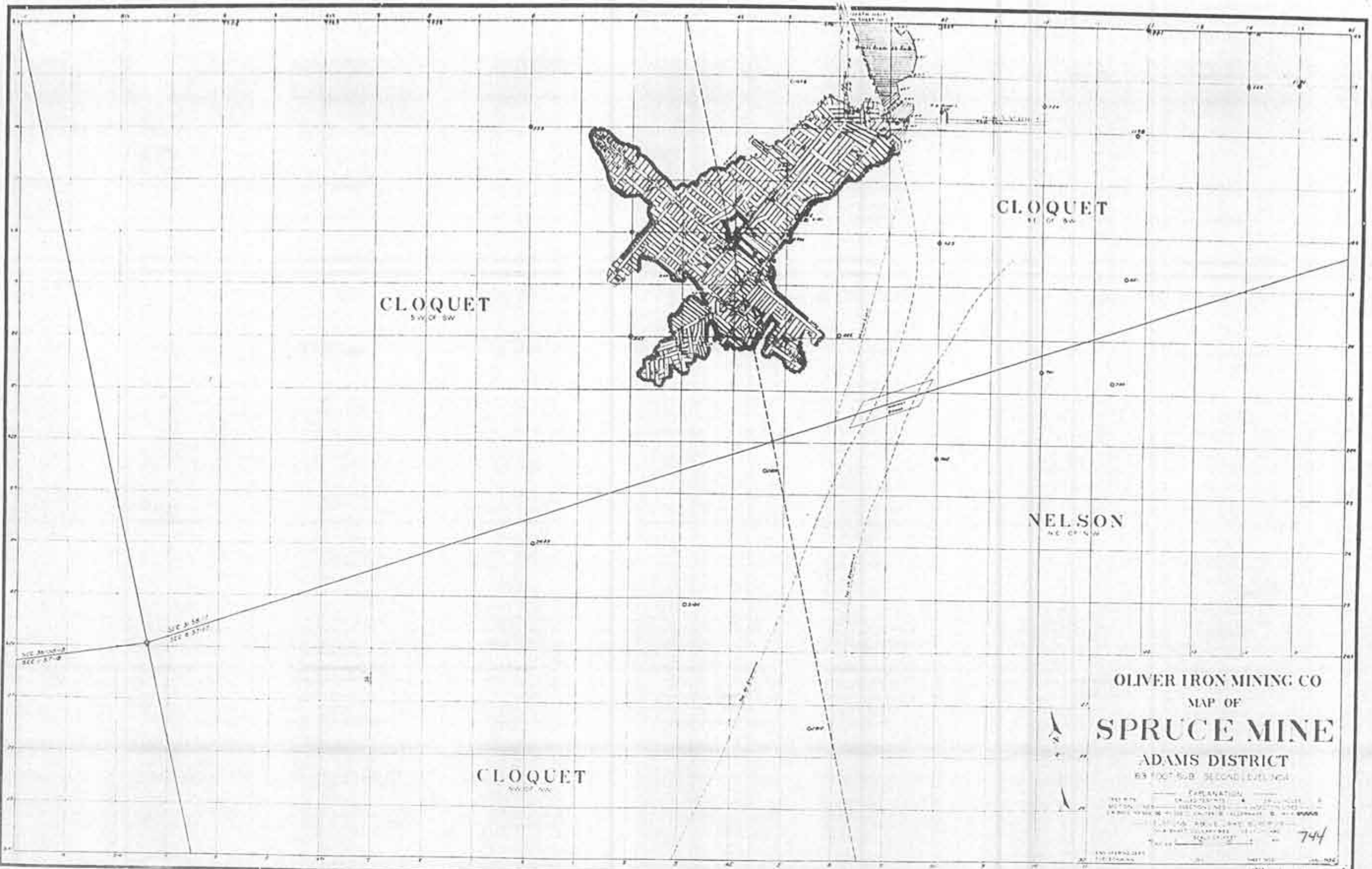


09 1531 1952 1-1-52 Spruce 52F+ sub 2 lev No 4 A-98

7430
744

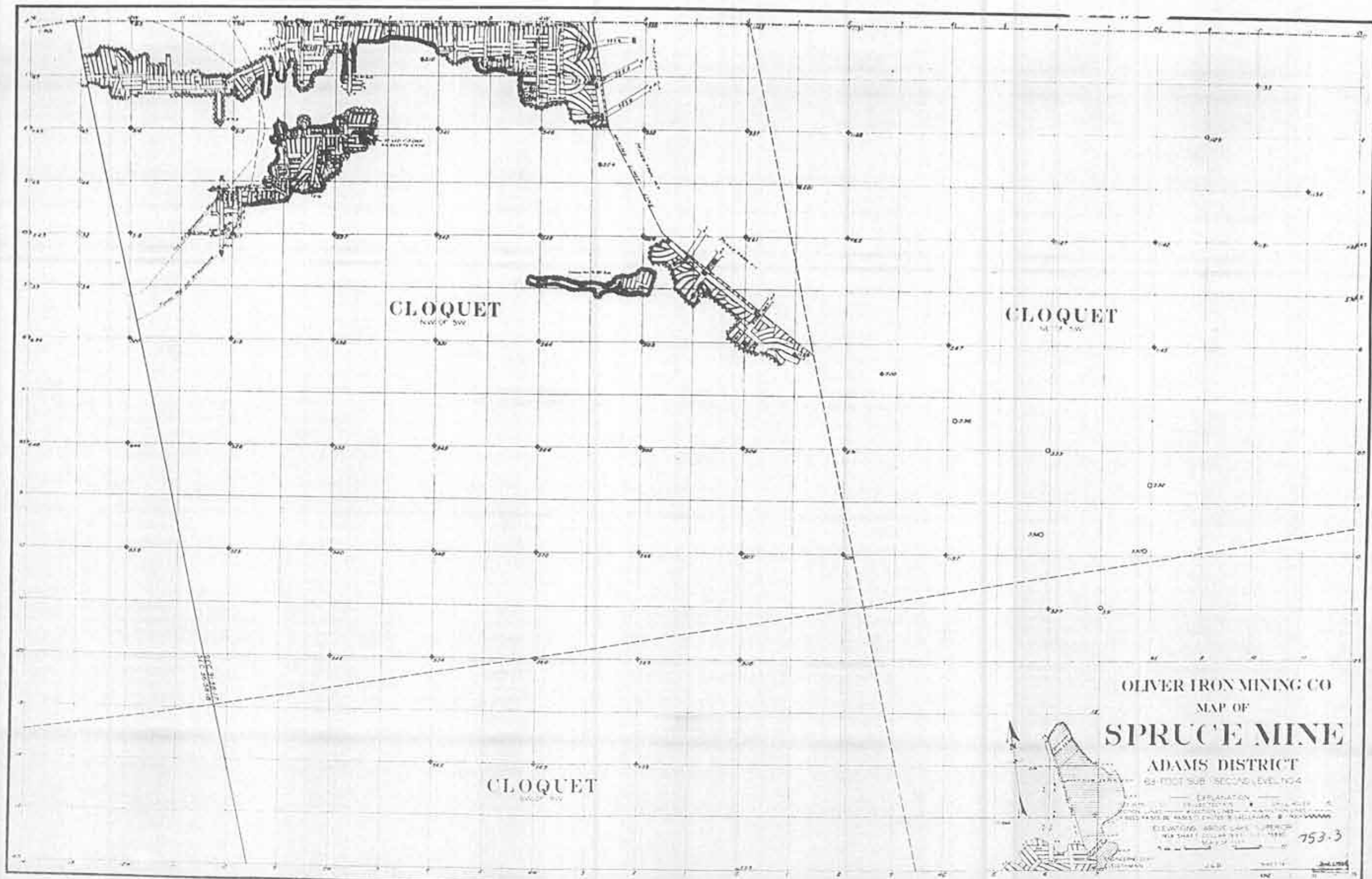


09 1531 1952 ~~1952~~ Spruce 52 Ft Sub 2 Lev No 4 A-98

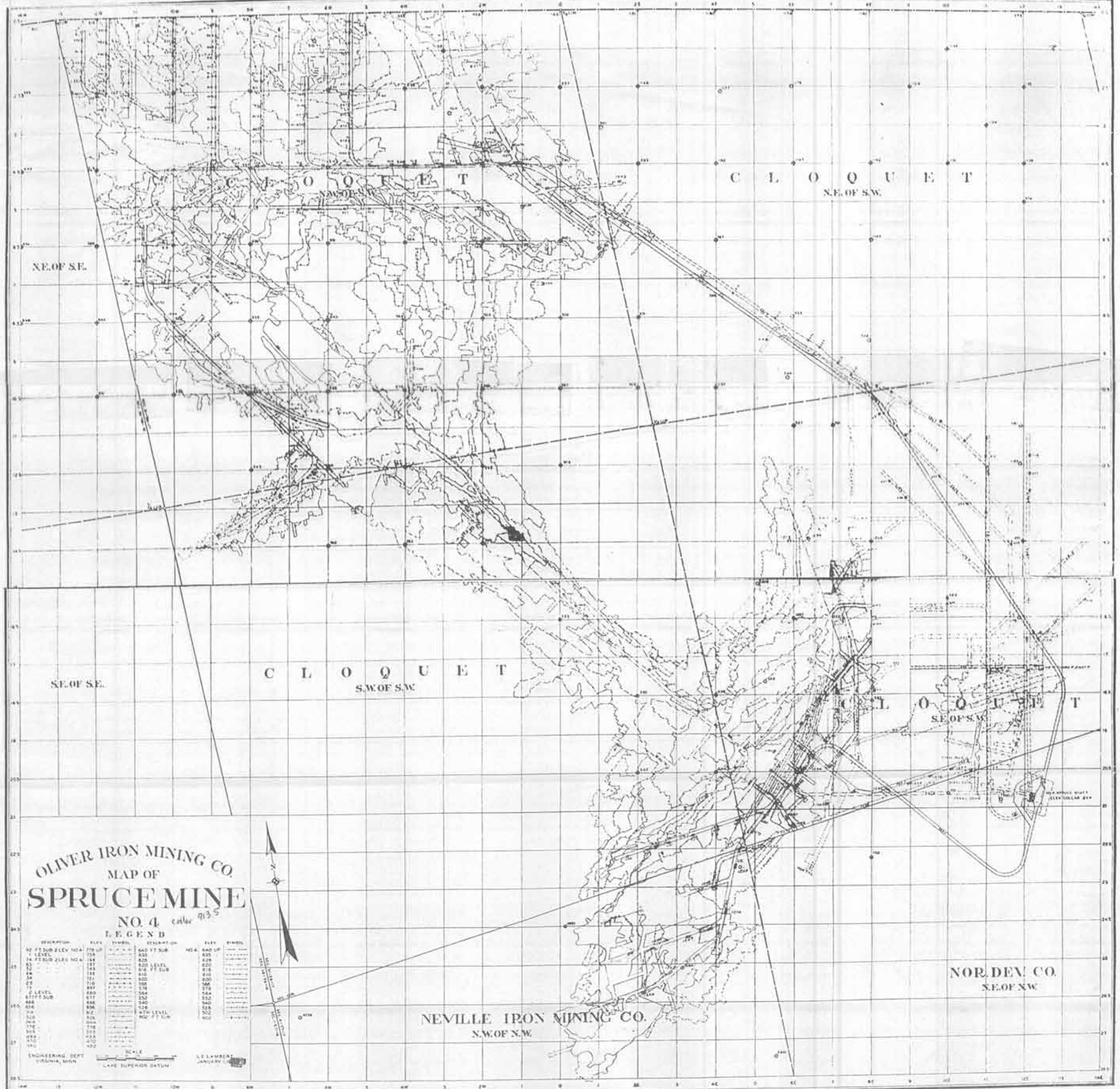


09 1531 1952 1-1-52 Spruce 63 ft. Sub 2 lev NW 4 A-78

753-3



09 1531 1952 Spruce 63 F+ Sub 2 lev No 4 A-78



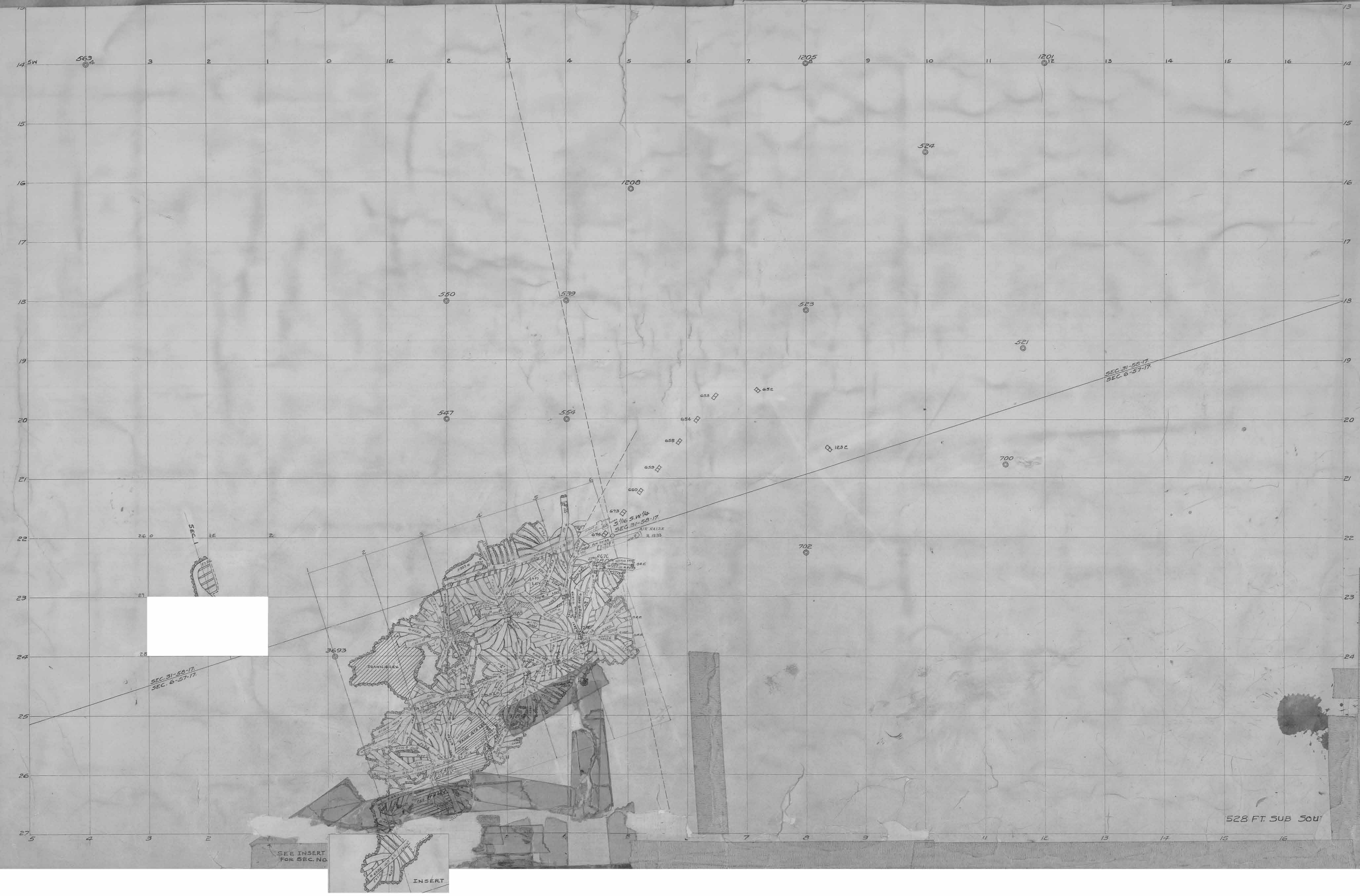
OLIVER IRON MINING CO.
MAP OF
SPRUCE MINE
NO. 4 color 9135

LEGEND

DESCRIPTION	ELEV.	SYMBOL	DESCRIPTION	ELEV.	SYMBOL
NO. 1 SUB 2 CEV NO. 4	775	UP	640 FT SUB	640	UP
1 LEVEL	775		635	635	
74 FT SUB 2 LBS NO. 4	775		625	625	
63	775		620	620	
72	775		615	615	
64	775		610	610	
54	775		600	600	
25	775		595	595	
10	775		590	590	
0 LEVEL	775		585	585	
677 FT SUB	775		580	580	
668	775		575	575	
660	775		570	570	
654	775		565	565	
648	775		560	560	
642	775		555	555	
636	775		550	550	
630	775		545	545	
624	775		540	540	
618	775		535	535	
612	775		530	530	
606	775		525	525	
600	775		520	520	
594	775		515	515	
588	775		510	510	
582	775		505	505	
576	775		500	500	
570	775		495	495	
564	775		490	490	
558	775		485	485	
552	775		480	480	
546	775		475	475	
540	775		470	470	
534	775		465	465	
528	775		460	460	
522	775		455	455	
516	775		450	450	
510	775		445	445	
504	775		440	440	
498	775		435	435	
492	775		430	430	
486	775		425	425	
480	775		420	420	
474	775		415	415	
468	775		410	410	
462	775		405	405	
456	775		400	400	
450	775		395	395	
444	775		390	390	
438	775		385	385	
432	775		380	380	
426	775		375	375	
420	775		370	370	
414	775		365	365	
408	775		360	360	
402	775		355	355	
396	775		350	350	
390	775		345	345	
384	775		340	340	
378	775		335	335	
372	775		330	330	
366	775		325	325	
360	775		320	320	
354	775		315	315	
348	775		310	310	
342	775		305	305	
336	775		300	300	
330	775		295	295	
324	775		290	290	
318	775		285	285	
312	775		280	280	
306	775		275	275	
300	775		270	270	
294	775		265	265	
288	775		260	260	
282	775		255	255	
276	775		250	250	
270	775		245	245	
264	775		240	240	
258	775		235	235	
252	775		230	230	
246	775		225	225	
240	775		220	220	
234	775		215	215	
228	775		210	210	
222	775		205	205	
216	775		200	200	
210	775		195	195	
204	775		190	190	
198	775		185	185	
192	775		180	180	
186	775		175	175	
180	775		170	170	
174	775		165	165	
168	775		160	160	
162	775		155	155	
156	775		150	150	
150	775		145	145	
144	775		140	140	
138	775		135	135	
132	775		130	130	
126	775		125	125	
120	775		120	120	
114	775		115	115	
108	775		110	110	
102	775		105	105	
96	775		100	100	
90	775		95	95	
84	775		90	90	
78	775		85	85	
72	775		80	80	
66	775		75	75	
60	775		70	70	
54	775		65	65	
48	775		60	60	
42	775		55	55	
36	775		50	50	
30	775		45	45	
24	775		40	40	
18	775		35	35	
12	775		30	30	
6	775		25	25	
0	775		20	20	

ENGINEERING DEPT
VIRGINIA, MINN.
SCALE
LAKE SUPERIOR DATUM
J. L. LAMBERT
JANUARY 1952

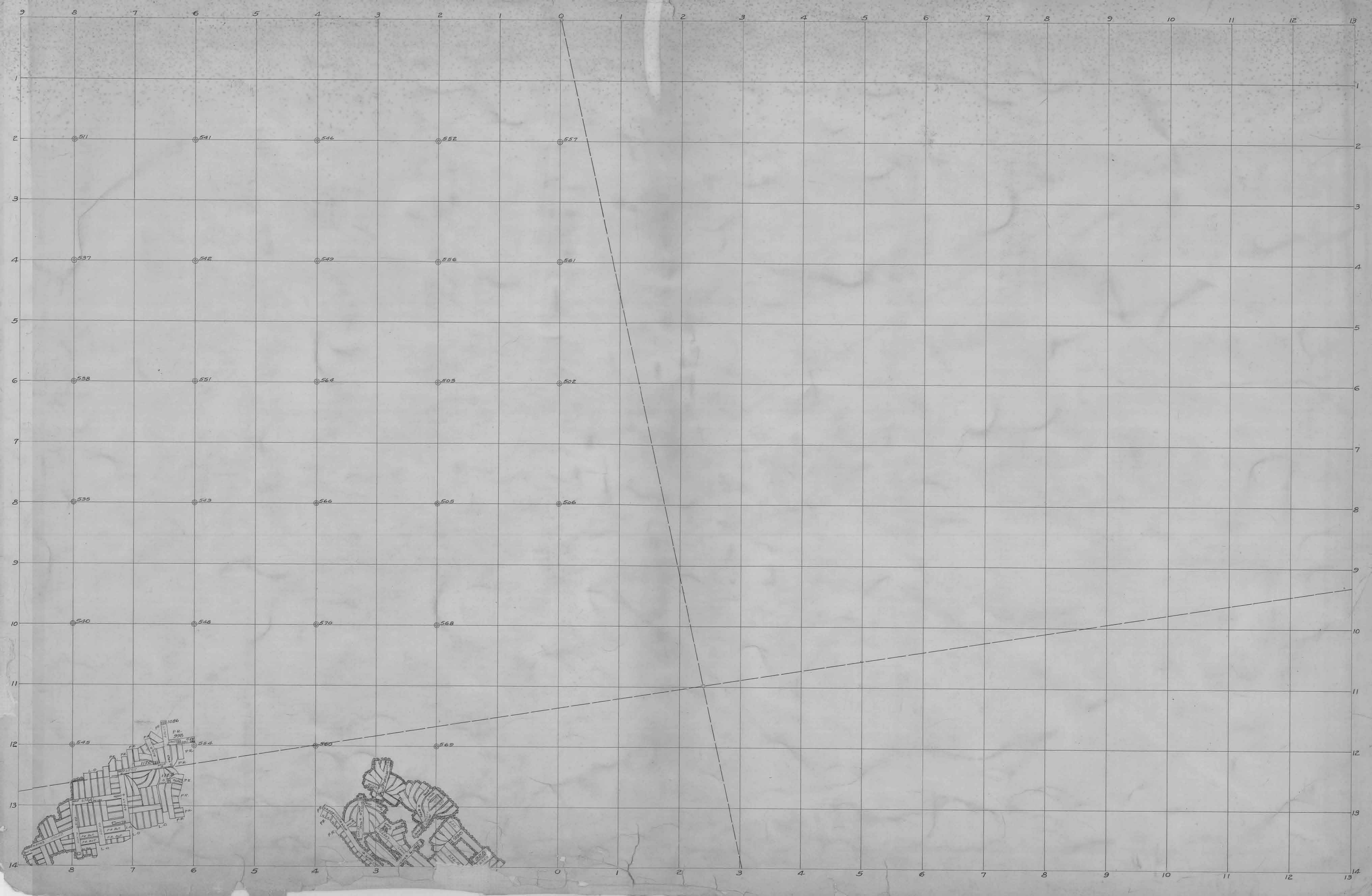








564 FT SUB
SOUTH

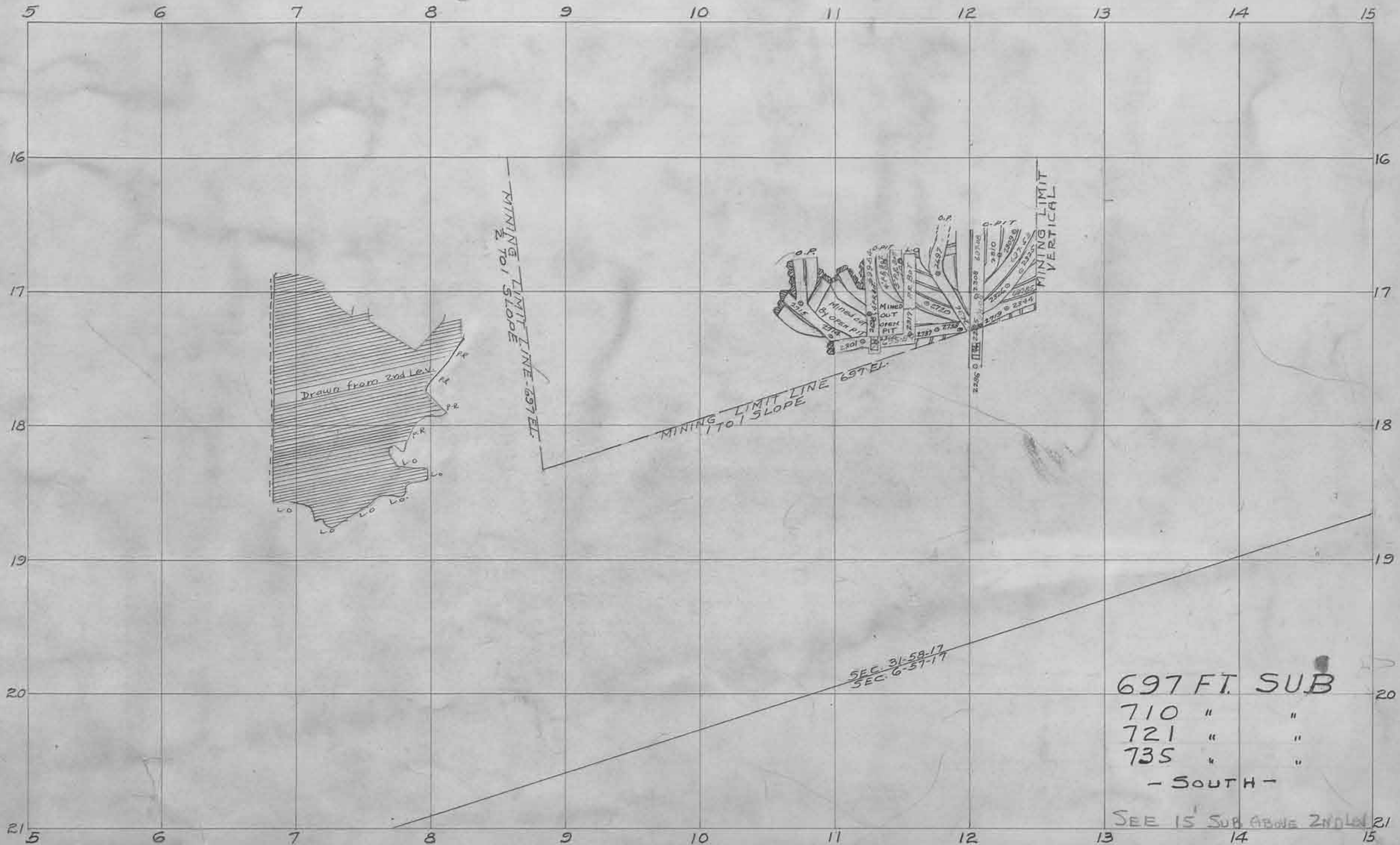




SPRUCE MINE
CEASED OPERATIONS MAY 30, 1953

635 FT. SUB
SOUTH

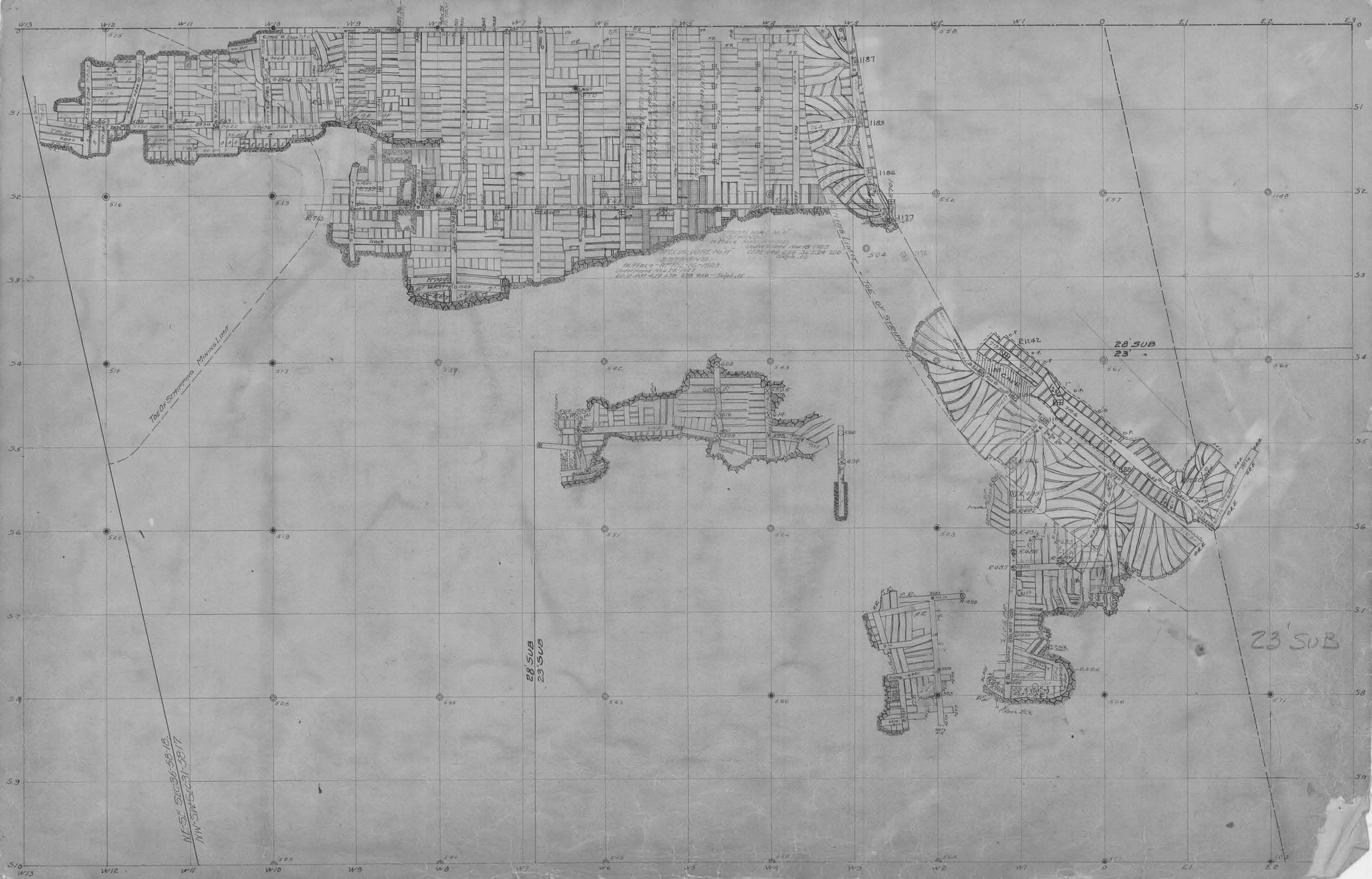


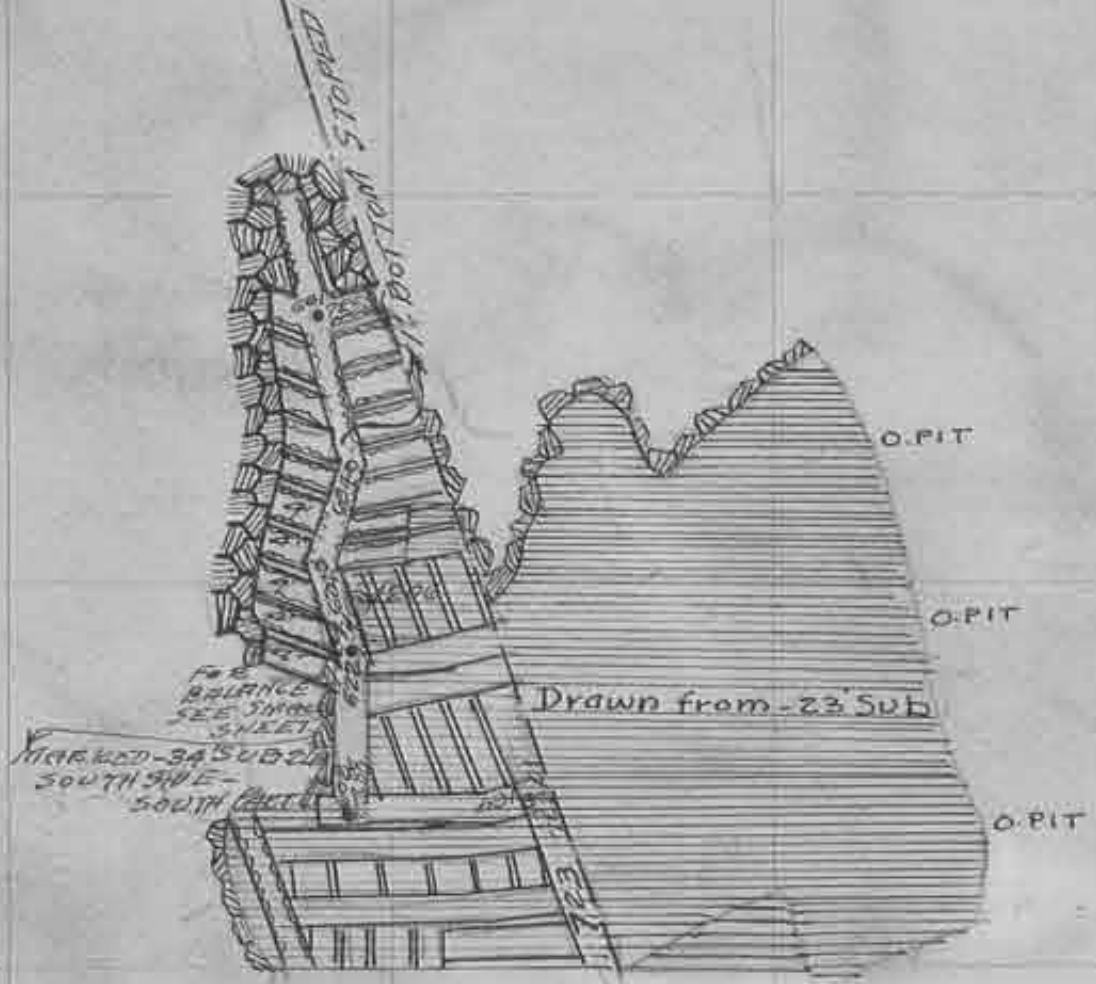




SEC. 31-58-17
SEC. 6-57-17

710 FT. SUB
SEE 23' SUB. 2ND LEV.





SPRUCE MINE
CEASED OPERATIONS MAY 30, 1953

No. 4 Spruce
34' Sub of 2nd Level
SOUTH SIDE - NORTH PART

SHEET NO. 1

34 FT SUB
SOUTH END
SHEET E















MINING OPERATIONS DISCONTINUED
MAY 30, 1953

ORE 22,835.2500
SHIPPED 11,700.0000
ORE 23,806.2500
ORE 12,700.0000
TO STOCK PILES 30,475.0000
TOTAL BY MEASUREMENT 30,475.0000

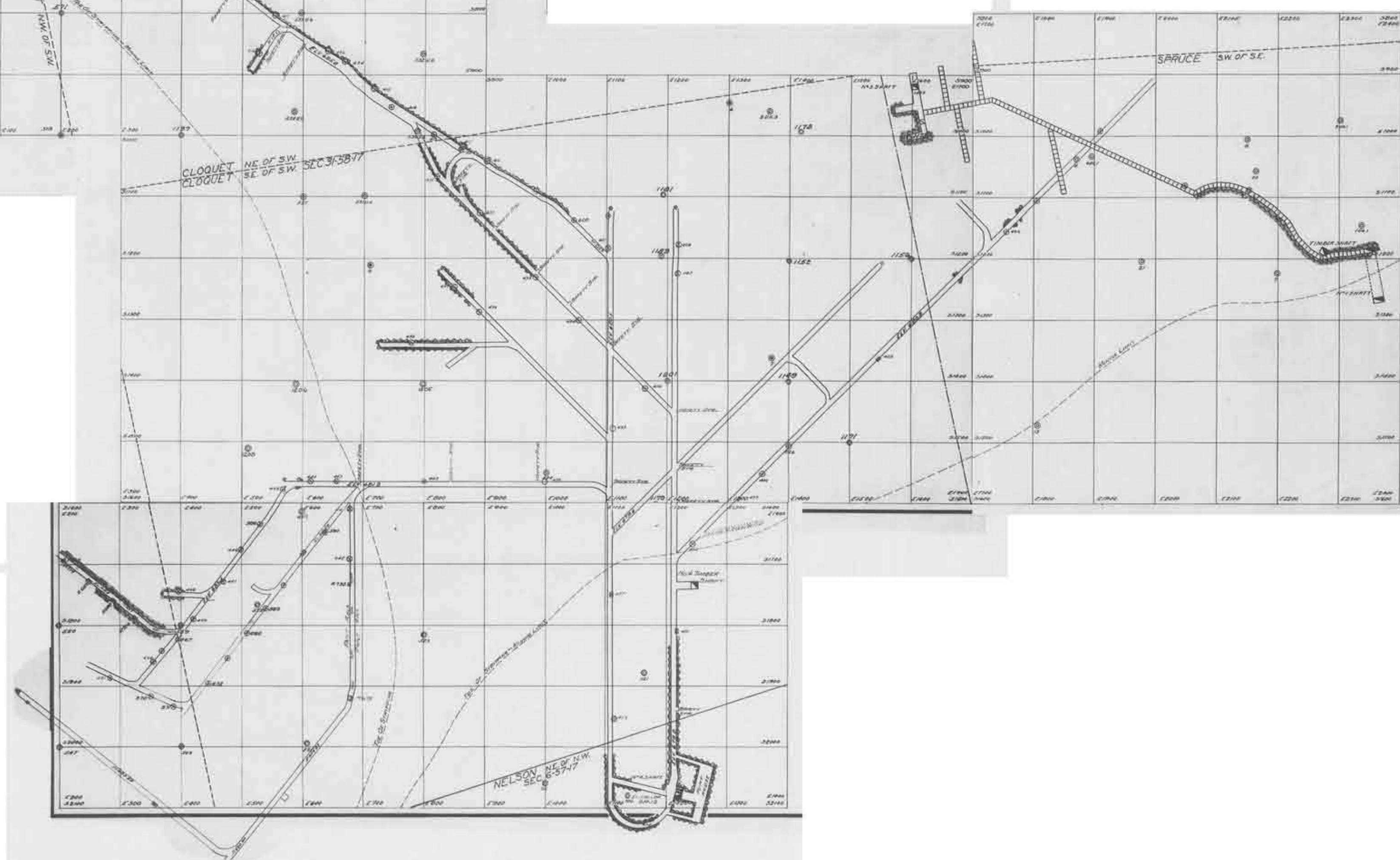
4TH LEVEL SOUTH

1953.07.10

OLIVER IRON MINING CO.
MAP OF
SPRUCE MINE
ADAMS DISTRICT
SECOND LEVEL NO.4 - THIRD LEVEL NO.3.

TEST PITS ○ DRILLED TEST PITS ○ GRILL HOLES ○
SECTION LINES — SECTION LINES — SECTION LINES —
CRIBBED RAISES — RAISES ○ DINTED ○ LADDERWAYS ○ ROCK —
— ELEVATIONS ABOVE LAKE SUPERIOR —
NORTH-SHAFT-COLLAR 9133 LEVEL-6756 NO.3 SHAFT-COLLAR 9134 LEVEL-6182
SCALE OF FEET

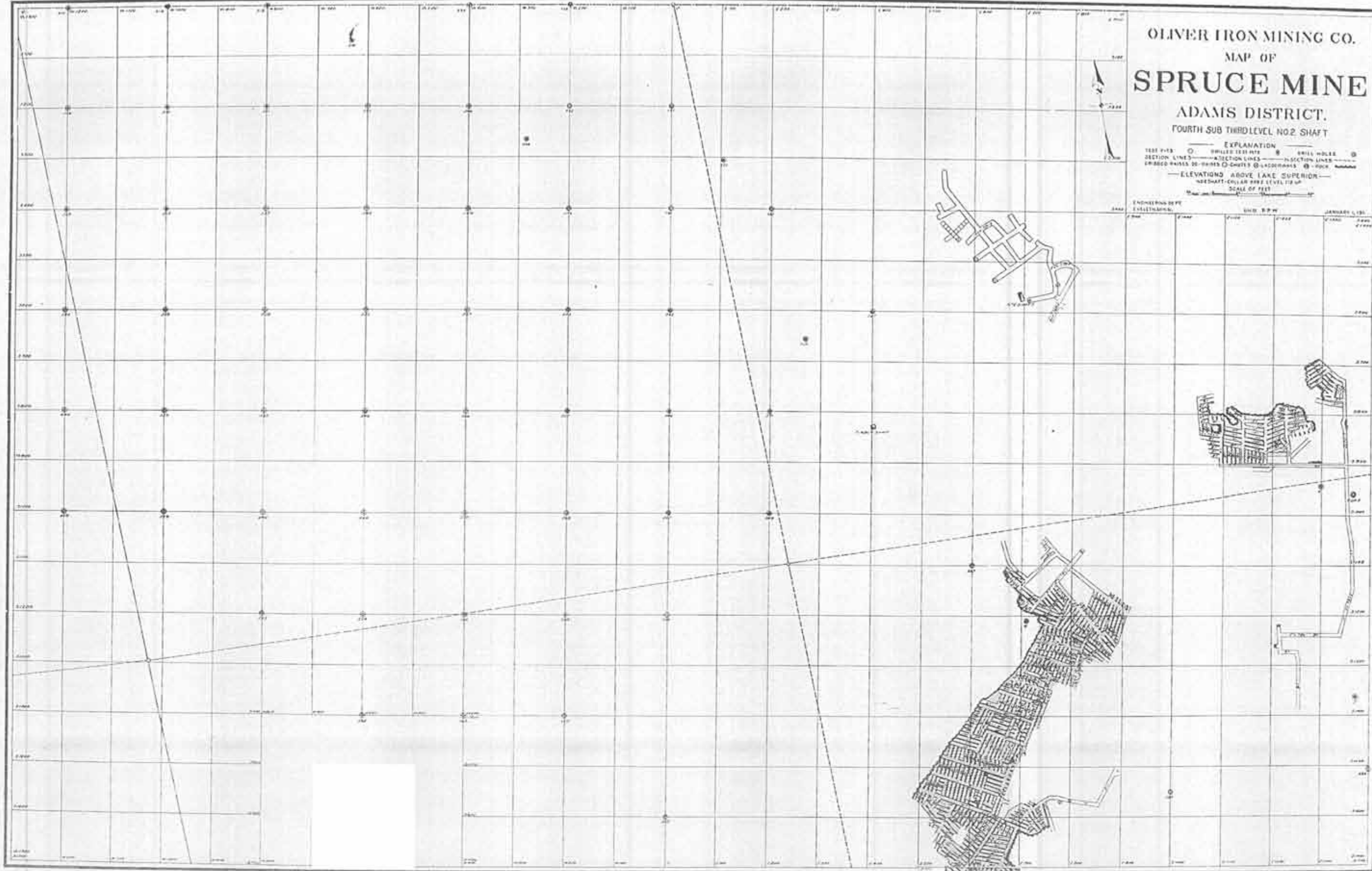
ENGINEERING DEPT.
EVELETH MINN.
JAN. 1, 1916



OLIVER IRON MINING CO.
 MAP OF
SPRUCE MINE
 ADAMS DISTRICT.
 FOURTH SUB THIRD LEVEL NO. 2 SHAFT

EXPLANATION
 TEST PITS: ○ DRILLED TEST PITS: ● BRILL HOLES: ⊙
 SECTION LINES: — SECTION LINES: — SECTION LINES: —
 CRIBBED RAFTS: ⊞ CRIBBED RAFTS: ⊞ CRIBBED RAFTS: ⊞
 — ELEVATIONS ABOVE LAKE SUPERIOR —
 — SHAFT COLLAR 882 LEVEL 112 UP —
 SCALE OF FEET

ENGINEERING DEPT.
 EXAMINING: _____
 UND. S.P.M. _____
 JANUARY 1, 1901



3 1-1-16 Spruce 4-sub 3-Lov 2-shaft A-82

091531 1943 1-17 Spruce 2S 1L No1; 153L No2

OLIVER IRON MINING CO.
MAP OF THE
SPRUCE MINE.

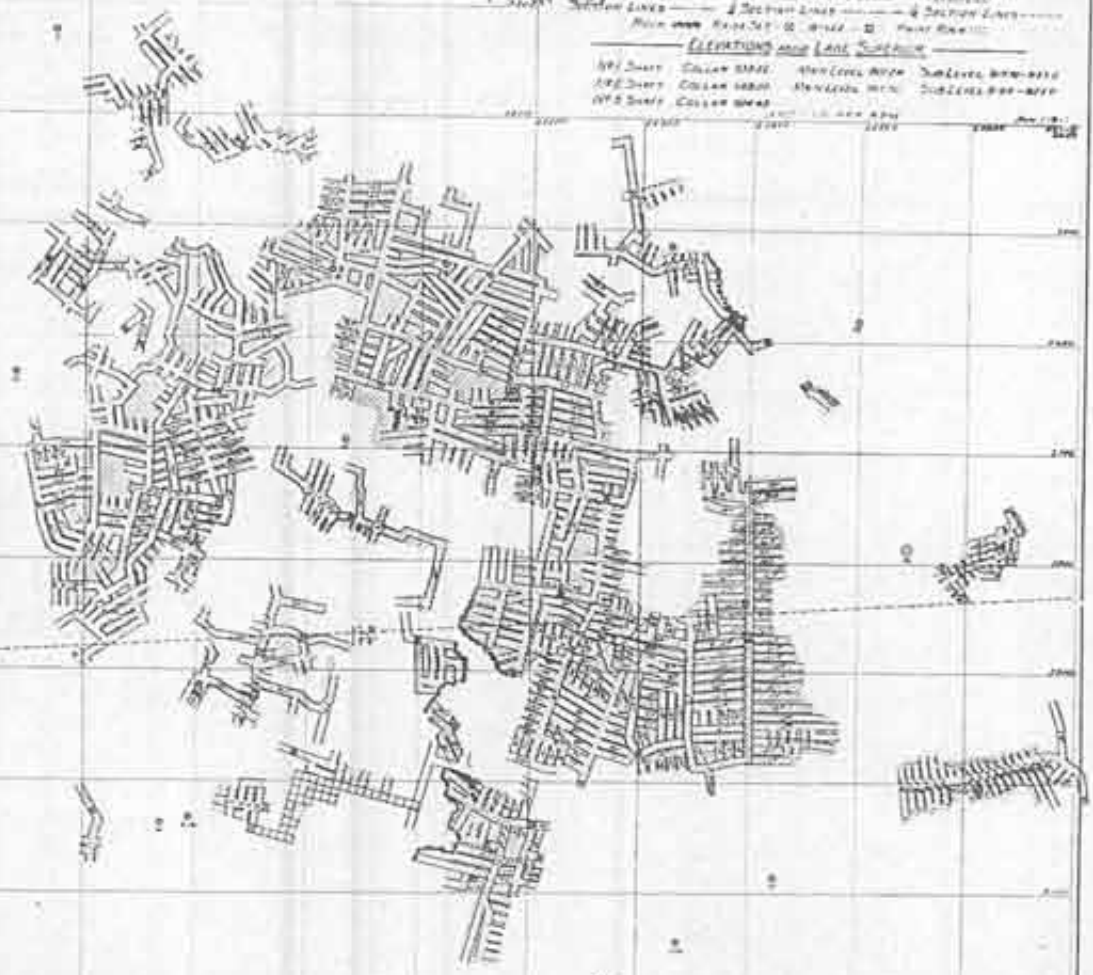
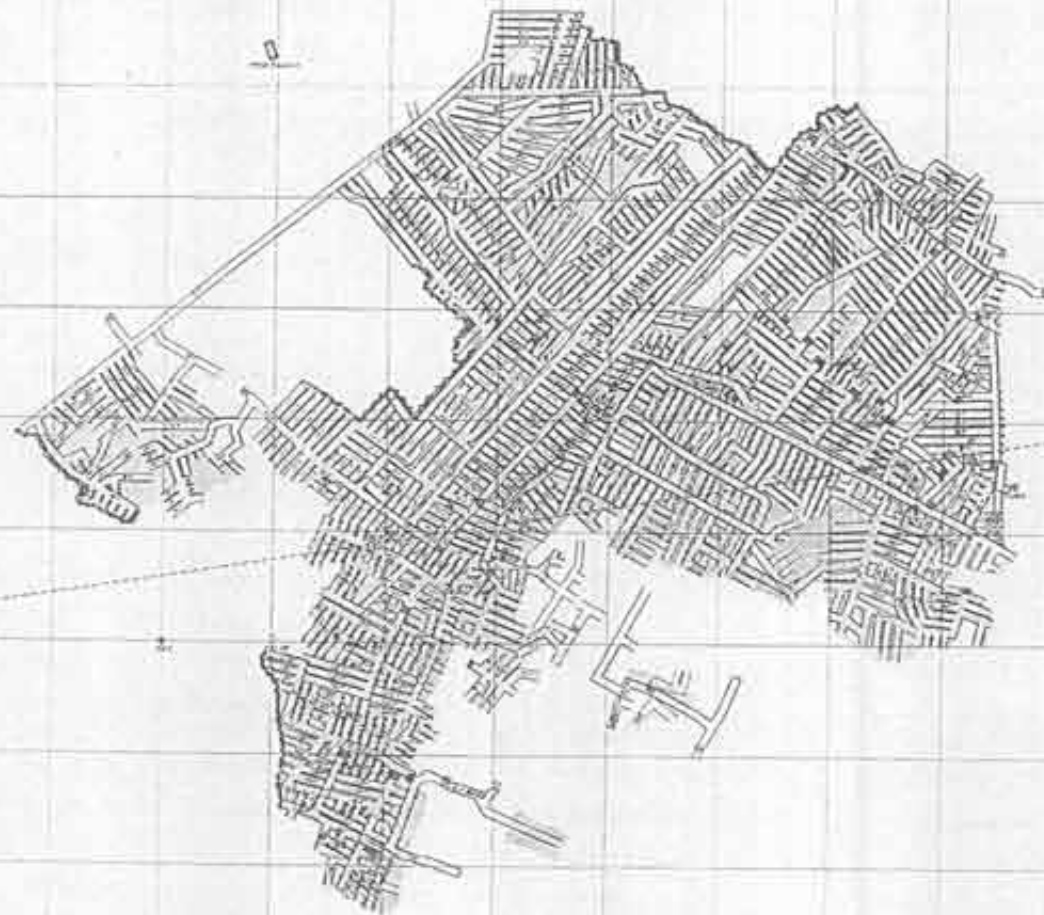
EVELYN, MINE.
Second Sub-First Lateral and First Sub-Third Lateral No. 2

DATE OF FILE

LETS ANALYZE

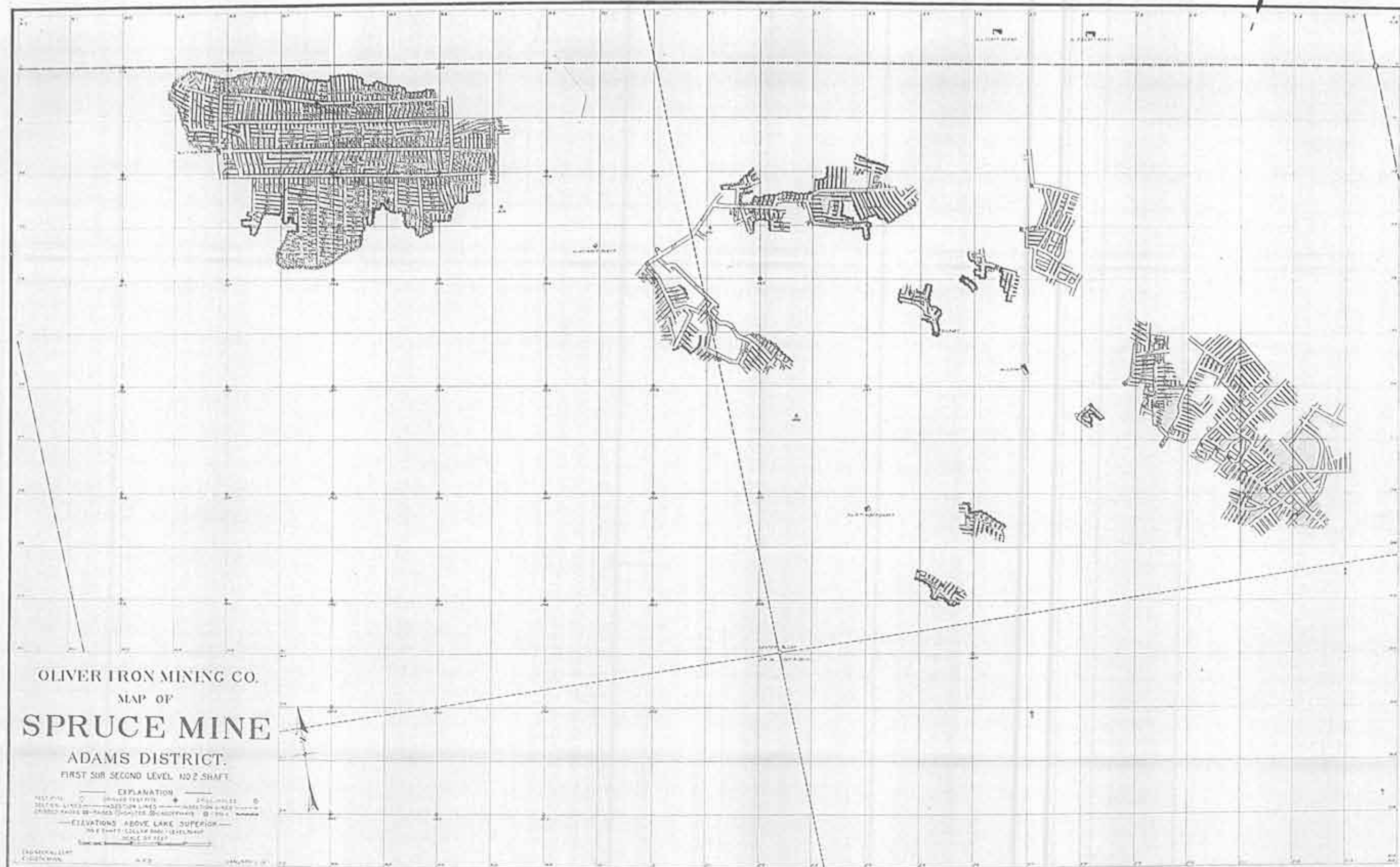
File	Smaller Gap	Smaller Angle
ADN LINES	ADN LINES	ADN LINES
SECTION LINES	SECTION LINES	SECTION LINES
RAIN LINES	RAIN LINES	RAIN LINES

<u>ELEVATIONS and LAKE SURFACE</u>			
AP1 Surt	Collar 5842	AP1 Coll. Area	Sublevel 400-450
AP2 Surt	Collar 5850	AP2 Coll. Area	Sublevel 400-450
AP3 Surt	Collar 5848		

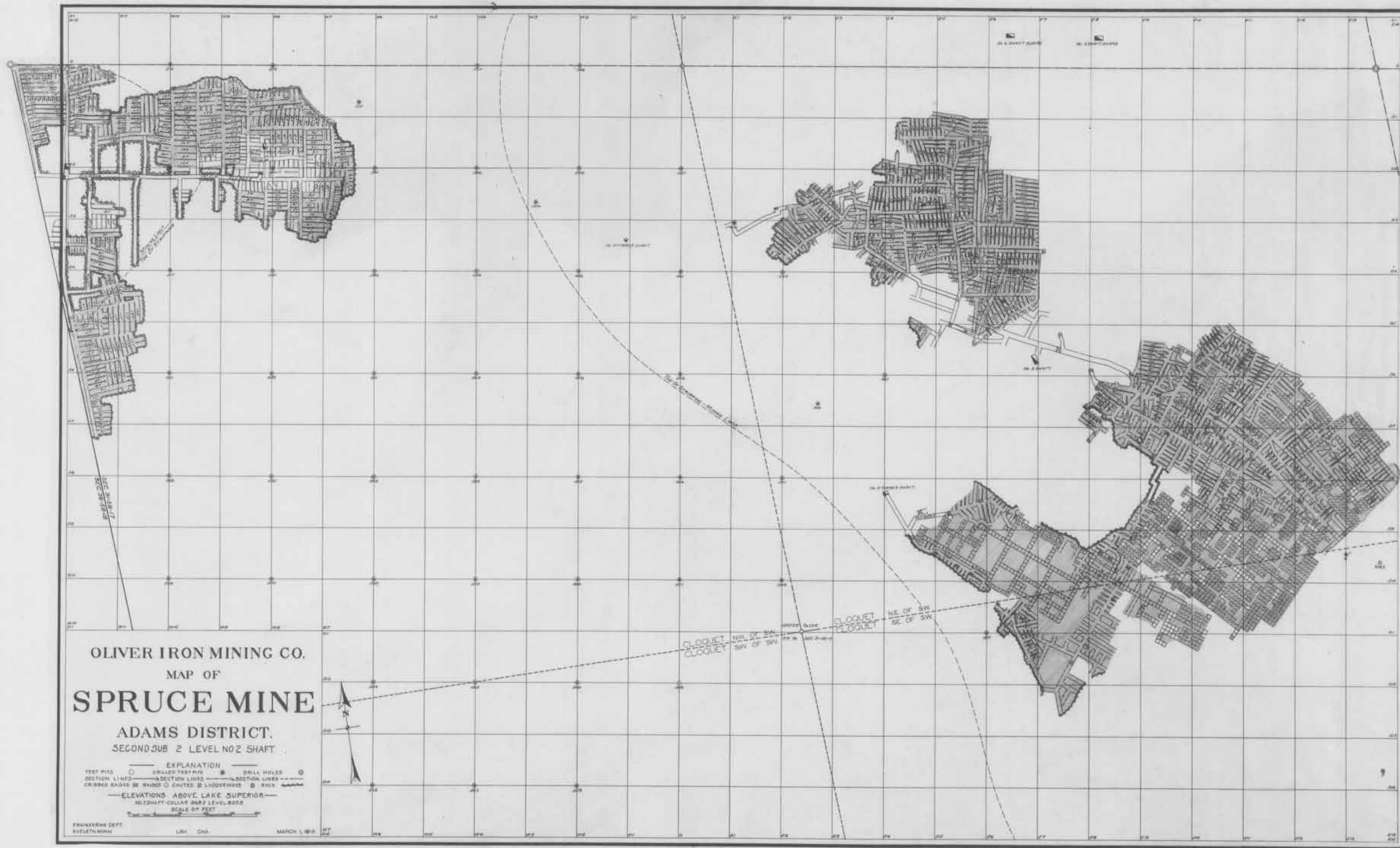


869

1170



091531 1943 1-1-18 Spruce 1-Sub 2-Lev 2-Shaft



OLIVER IRON MINING CO.
MAP OF THE
SPRUCE MINE.
EVELETH, MINN.
PLAN OF THE THIRD LEVEL, — No. 2 SHAFT.

SCALE OF FEET
EXPLANATORY

Joint Pipe	Drill Hole	Drill Hole
Main Level	Sub Level	Sub Level
Section Line	Section Line	Section Line
Room	Room	Room

ELEVATIONS AND LAKE SUPERIOR
No. 2 Shaft, Collar 368 Main Level 748 Sub Level





EVELETH, MINN.

THIRD SERIES OF THE THIRD LEVEL.—No. 251 APT.

DATE OF FILE

— *Calypso* *calypso*

[illegible]

819

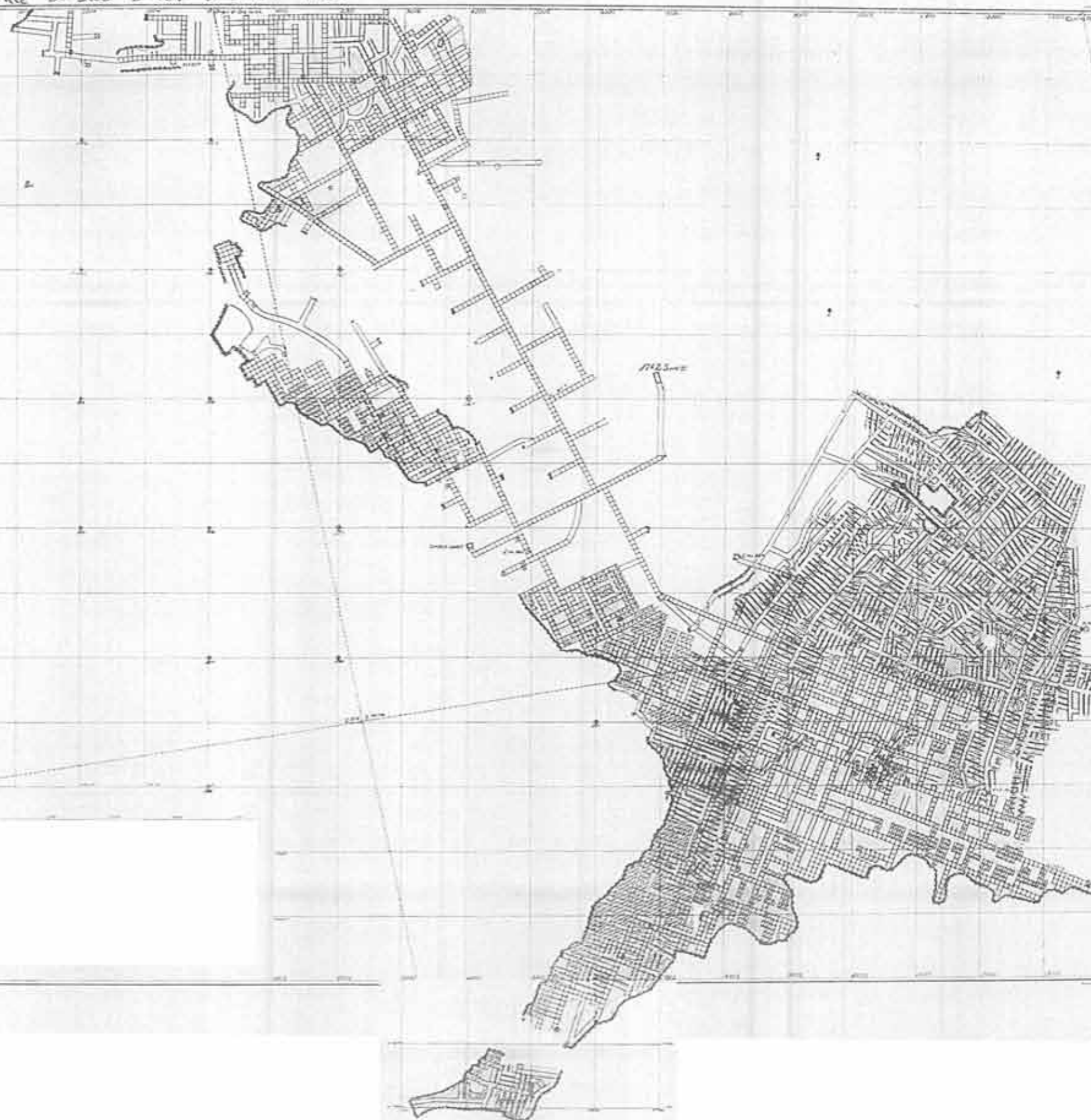
09 1531 1943 Spruce 2-Sub 3-Lev 2-shaft A-82

OLIVER IRON MINING CO.
MAP OF THE
SPRUCE MINE.

EVELETH, MINN.

Second Side of the Tilted Level. — No. 2 Shaft.

Scale of Feet
Exploration
Main Shaft — 0 — Double Main Shaft — 1 — 2nd Shaft — 3
Adit Level — 4 — 5th Level — 6
Section Line — Section Line — Section Line — Section Line —
Rise — Rise — Rise — Rise — Rise — Rise — Rise — Rise —
Elevations and Level Bearings
A-2 Shaft. Section 118. Adit Level. Section 118. A-2 Shaft.



09 1531 1943 1-1-10 Spruce 35 3L No 15 3L No 3

OLIVER IRON MINING CO. MAP OF THE SPRUCE MINE.

EVELETH, MINN.
Third Side of Third Level - No. 15 Shaft
First Side of Third Level - No. 35 Shaft

Scale of Feet

EXPLANATION		
Iron Pipe	Drill Hole	Drill Hole
Rock	Drill Hole	Drill Hole
Section Line	Section Line	Section Line

Legend

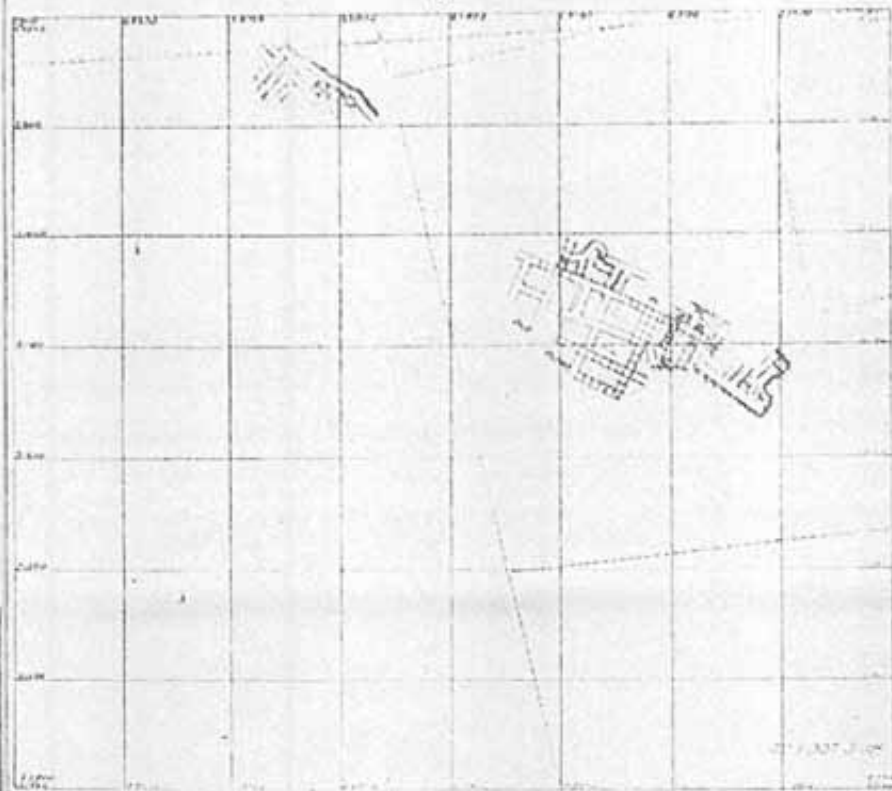
No. 1 Shaft	Section 22	Section 23	Section 24
No. 35 Shaft	Section 25	Section 26	Section 27



104 ft Sub



40 ft Sub

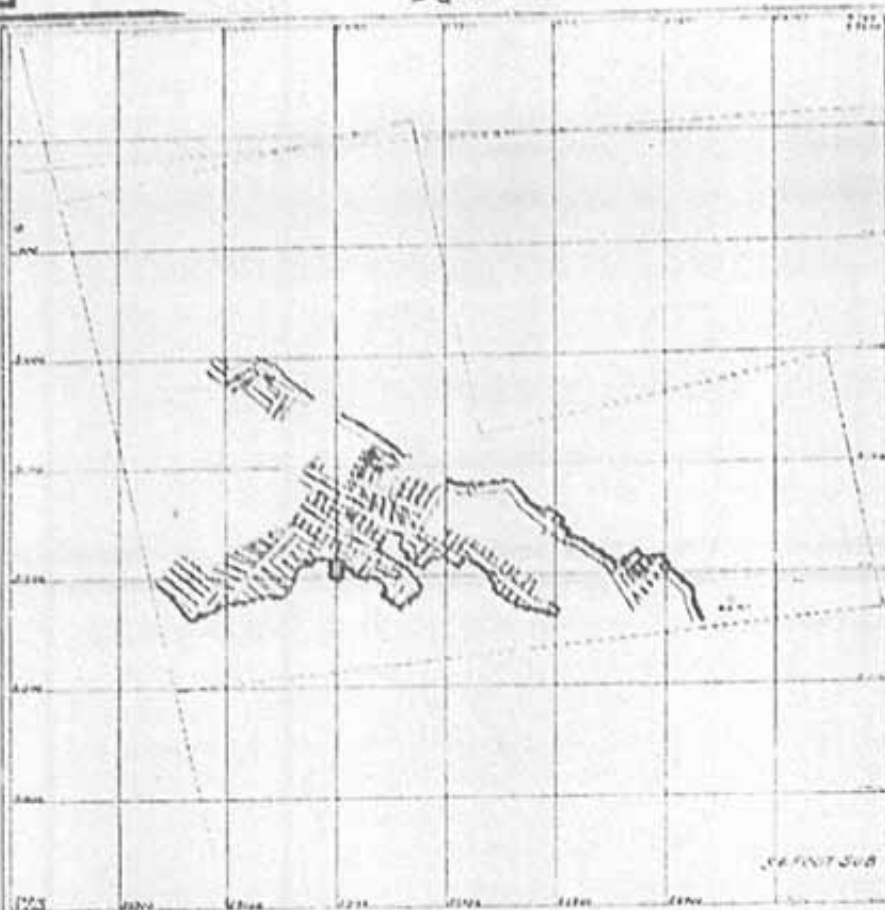


48 ft sub

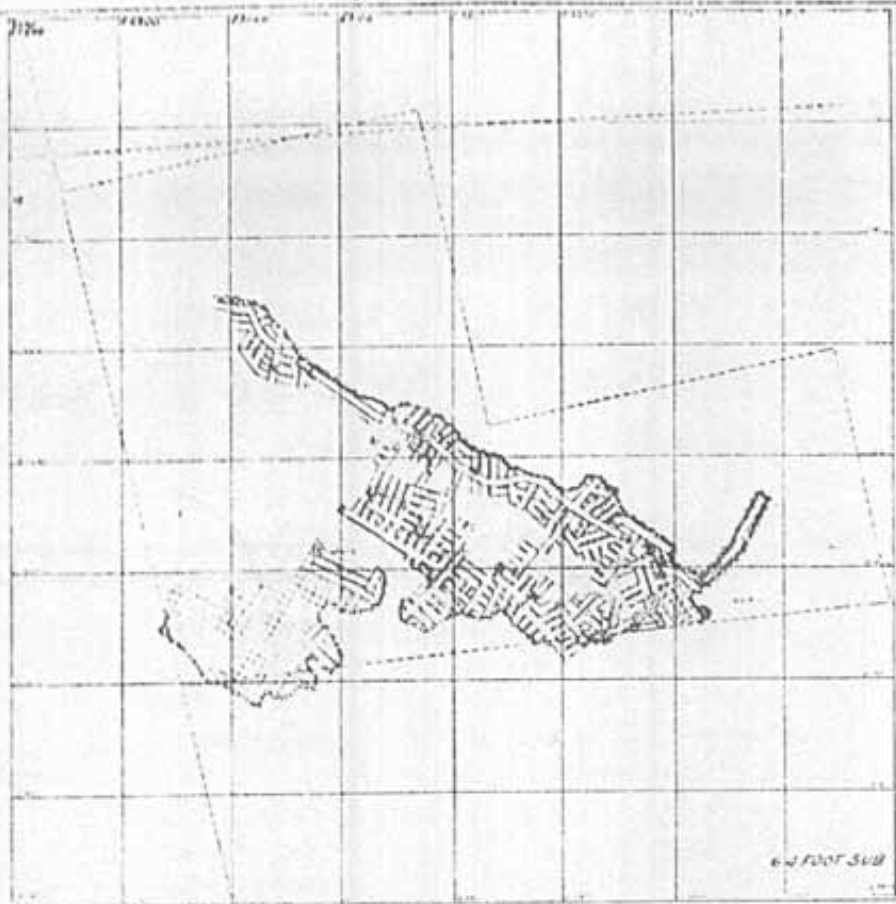


09 1531 1943 1-1-

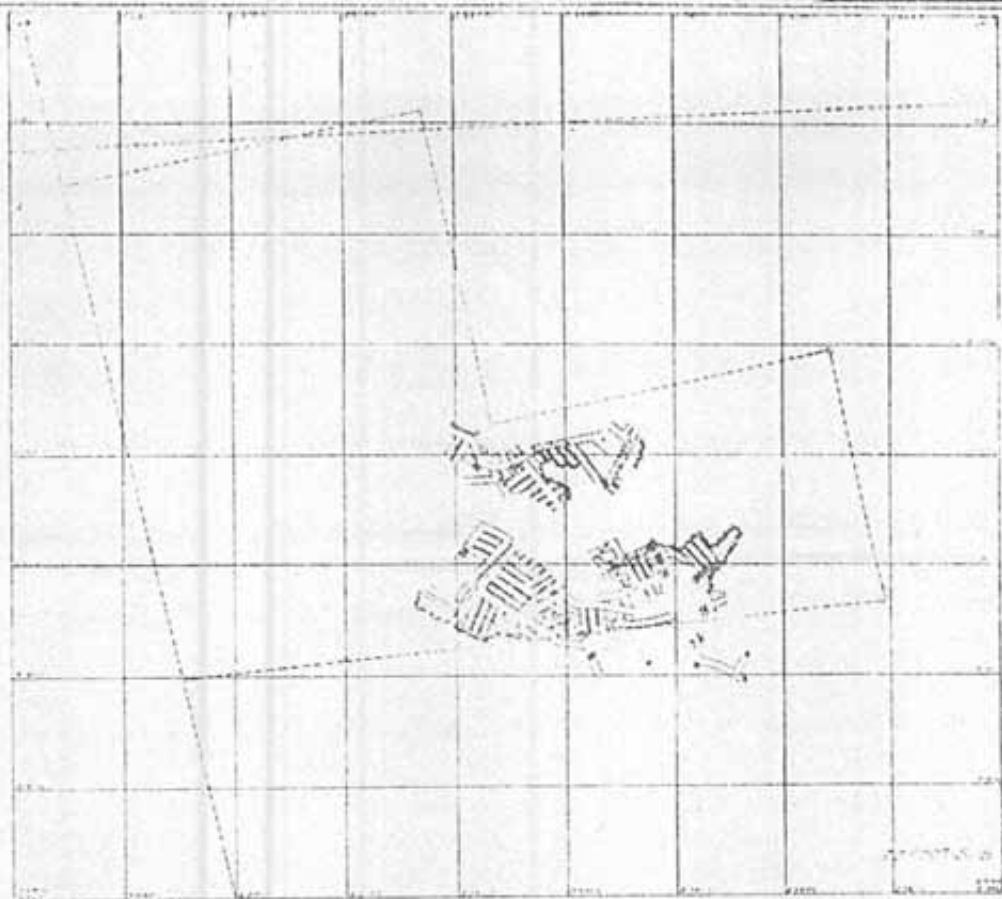
56 Pt Sub



64 Ft Sub



72 ft Sub



88 ft Sub



96 Ft Sub



Sub Below Top Sub



Sub below Top Sub

OLIVER IRON MINING CO.

MAP OF THE

SPRUCE MINE.

THE STATE, MINN.

STATE OF THE FIRST LEVEL - No. 1 Shaft

Scale of Feet

Feet & Inches

Legend

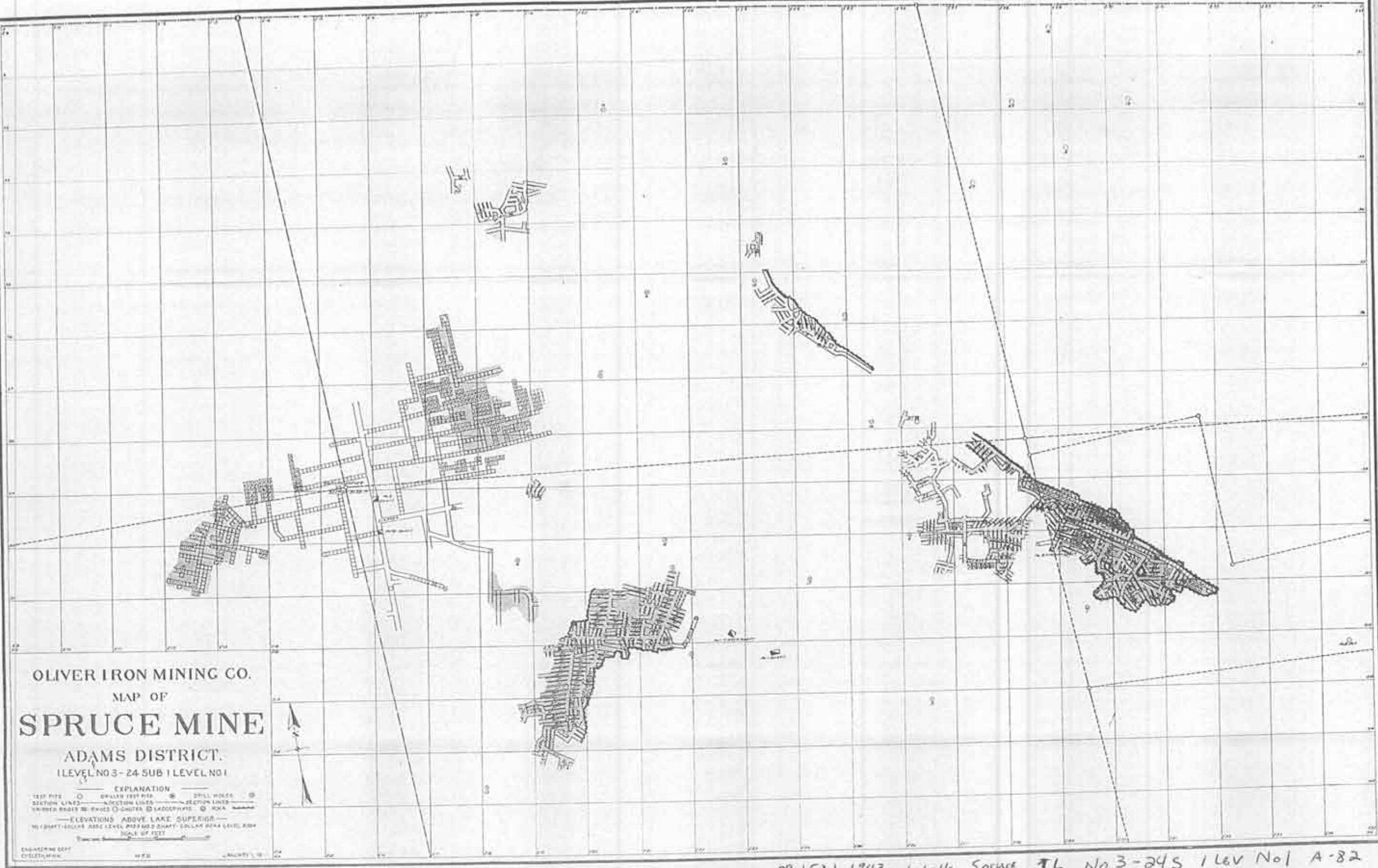
Shaft	Drift	Adit	Stope
...	...	...	...

...

-15 Spruce Subs of 1 lev 1 shaft A-82

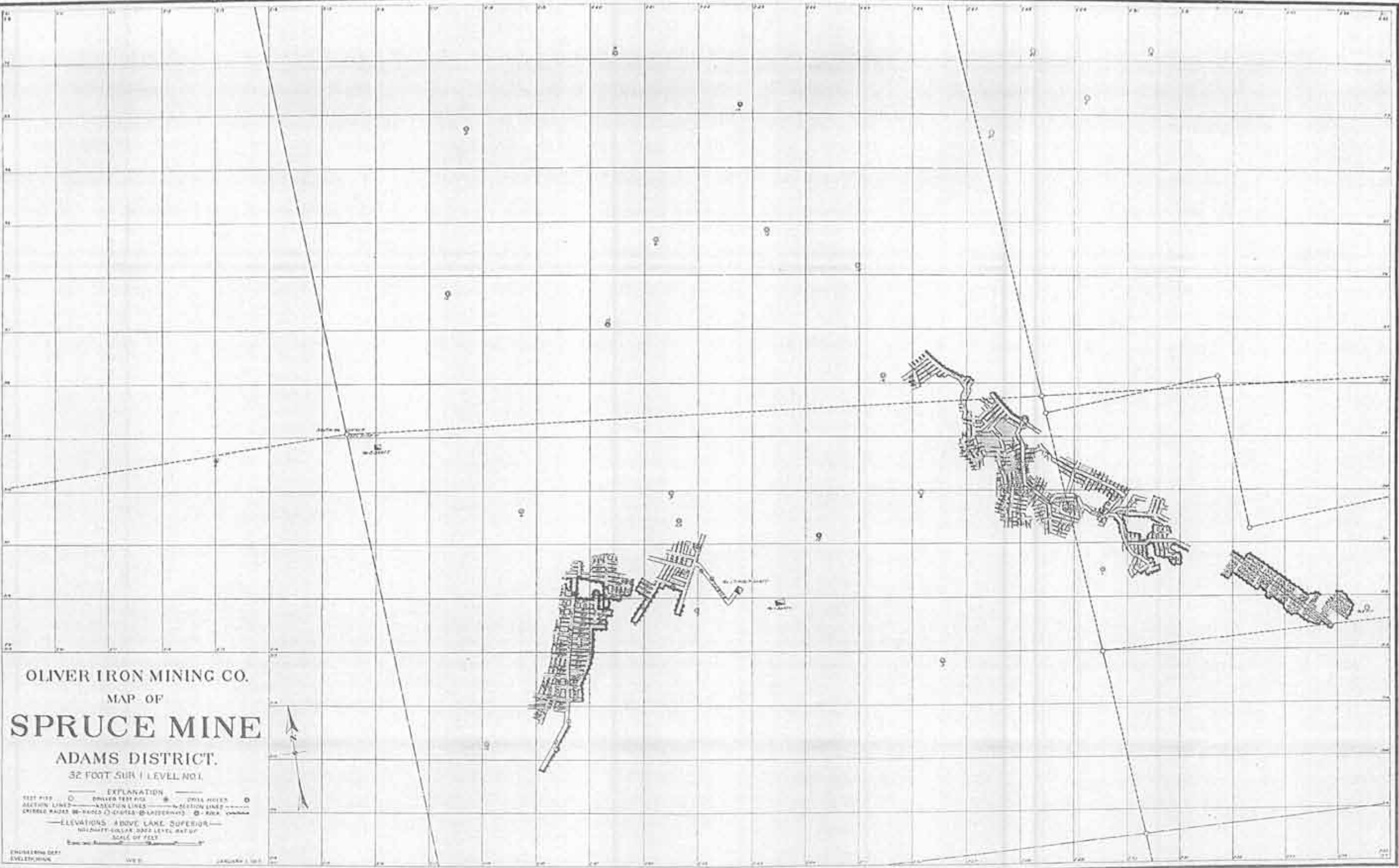


833



091531 1743 1-1-16 Spruce IL No 3-24S 1 lev No 1 A-82

897



OLIVER IRON MINING CO.
 MAP OF
SPRUCE MINE
 ADAMS DISTRICT.
 32 FOOT SUB I LEVEL NO. 1

EXPLANATION
 TEST PITS (O) DRILLED TEST PITS (X) DRILL HOLES (•)
 SECTION LINES (---) SECTION LINES (---) SECTION LINES (---)
 CRIBBED RAFTS (H) CRIBS (C) CRIBS (C) CRIBS (C) CRIBS (C)
 ELEVATIONS ABOVE LAKE SUPERIOR
 HIGHEST SOLAR 3000 LEVEL DATUM
 SCALE OF FEET
 ENGINEERING DEPT.
 ELEVATION

09 1531 1943 1-1-16 Spruce 32ft Sub I-LEV No-1 A-82

09 1531 1943 1-1-17 Spruce 2S 1L No1 & 1S 3L No2

OLIVER IRON MINING CO. MAP OF THE SPRUCE MINE.

EVELETH, MINN.
Second Sub-First Level No1 and First Sub-Third Level No2



SCALE OF FEET

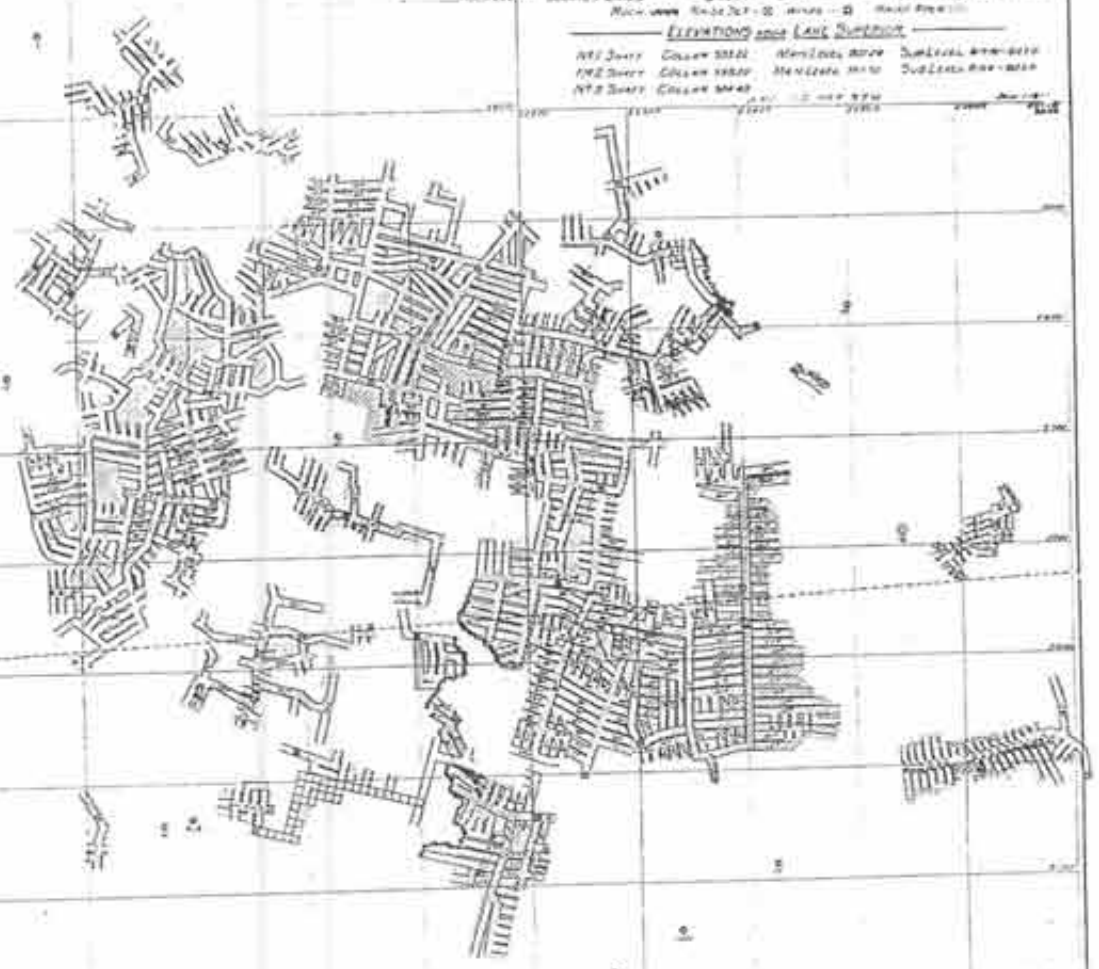
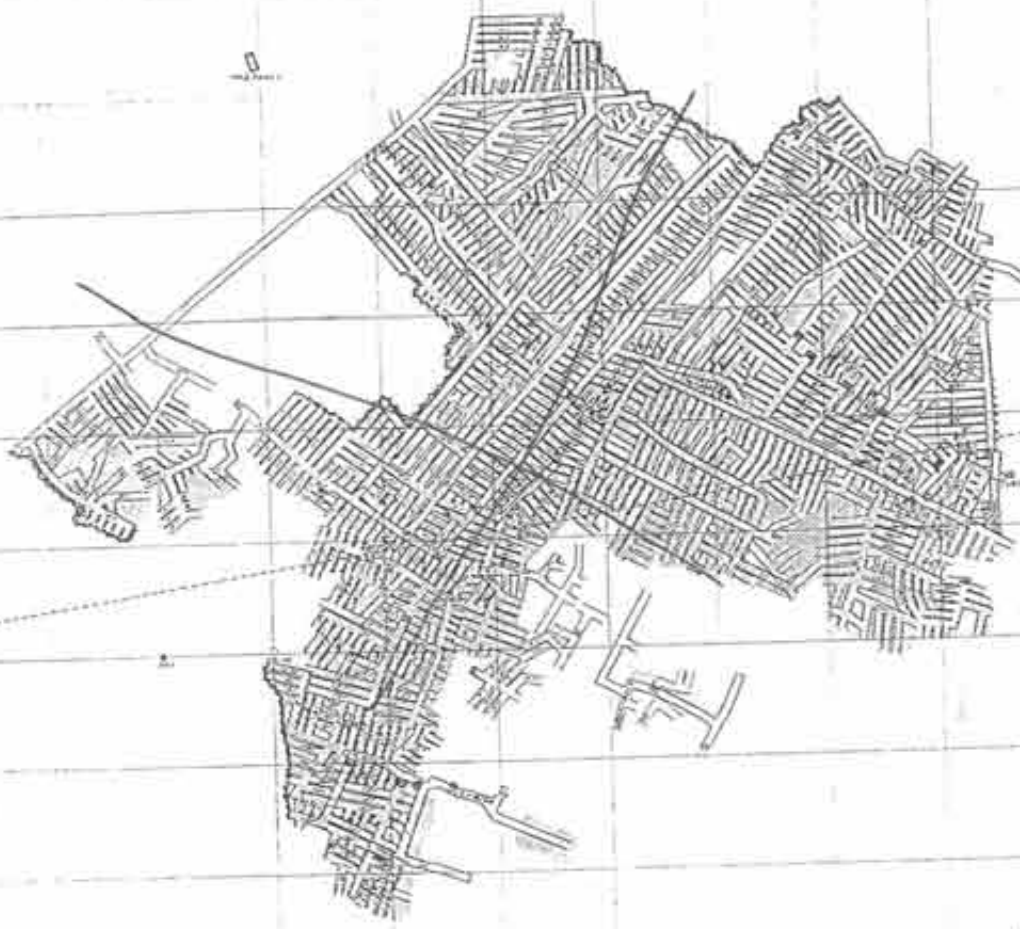
0	100	200	300	400	500	600	700	800	900	1000
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EXPLANATORY

MINES	DRILLING	ADDS	ADDS	ADDS	ADDS	ADDS	ADDS	ADDS	ADDS	ADDS
MINES	DRILLING	ADDS	ADDS	ADDS	ADDS	ADDS	ADDS	ADDS	ADDS	ADDS
MINES	DRILLING	ADDS	ADDS	ADDS	ADDS	ADDS	ADDS	ADDS	ADDS	ADDS

ELEVATIONS AND LAKE SUPERIOR

100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
-----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------



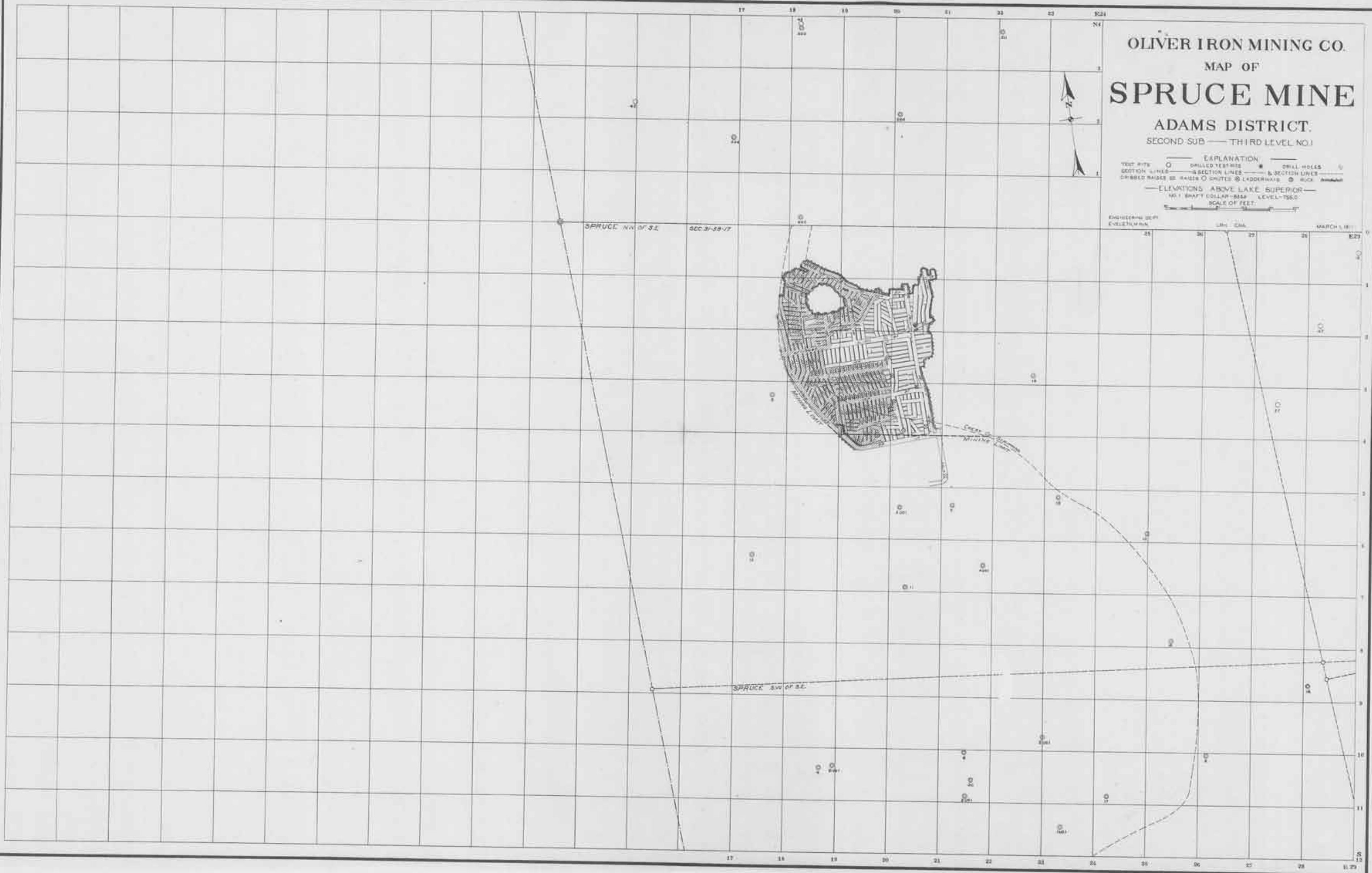
OLIVER IRON MINING CO.
MAP OF
SPRUCE MINE

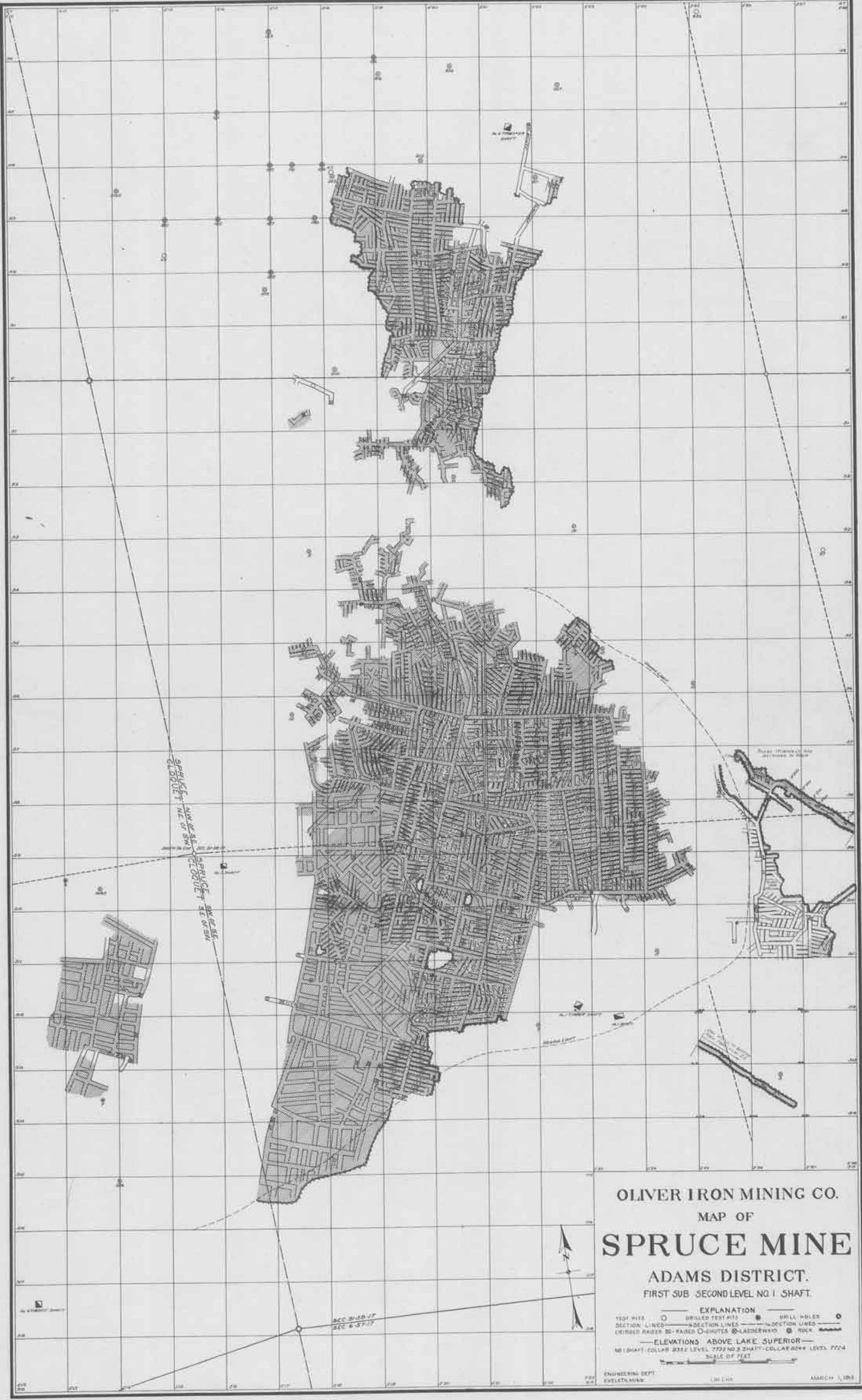
ADAMS DISTRICT.

SECOND SUB — THIRD LEVEL NO. 1

EXPLANATION
TEST PITS — DRILLED TEST PITS — DRILL HOLES —
SECTION LINES — SECTION LINES — SECTION LINES —
DOTTED RAISES OR RAISES — SHUTTER — LADDERWAYS — RICK —
ELEVATIONS ABOVE LAKE SUPERIOR —
NO. 1 SHAFT COLLAR — 884' LEVEL — 756' LEVEL —
SCALE OF FEET: 0 10 20 30 40 50 60 70 80 90 100

ENGINEERING DEPT.
ELEVATION MAP
LITH. — CMA
MARCH 1, 1911





OLIVER IRON MINING CO.
MAP OF
SPRUCE MINE
ADAMS DISTRICT.
FIRST SUB SECOND LEVEL NO. 1 SHAFT.

TEST PITS ○ DRILLED TEST PITS ○ DRILL HOLES ○
SECTION LINES — SECTION LINES — SECTION LINES —
CRUISED RAISED DR-RAISED O-CHUTES @-LADDERWAYS @ RICK @
—ELEVATIONS ABOVE LAKE SUPERIOR—
NO 1 SHAFT COLLAR 3382 LEVEL 7722 NO 3 SHAFT COLLAR 3244 LEVEL 7724
SCALE OF FEET



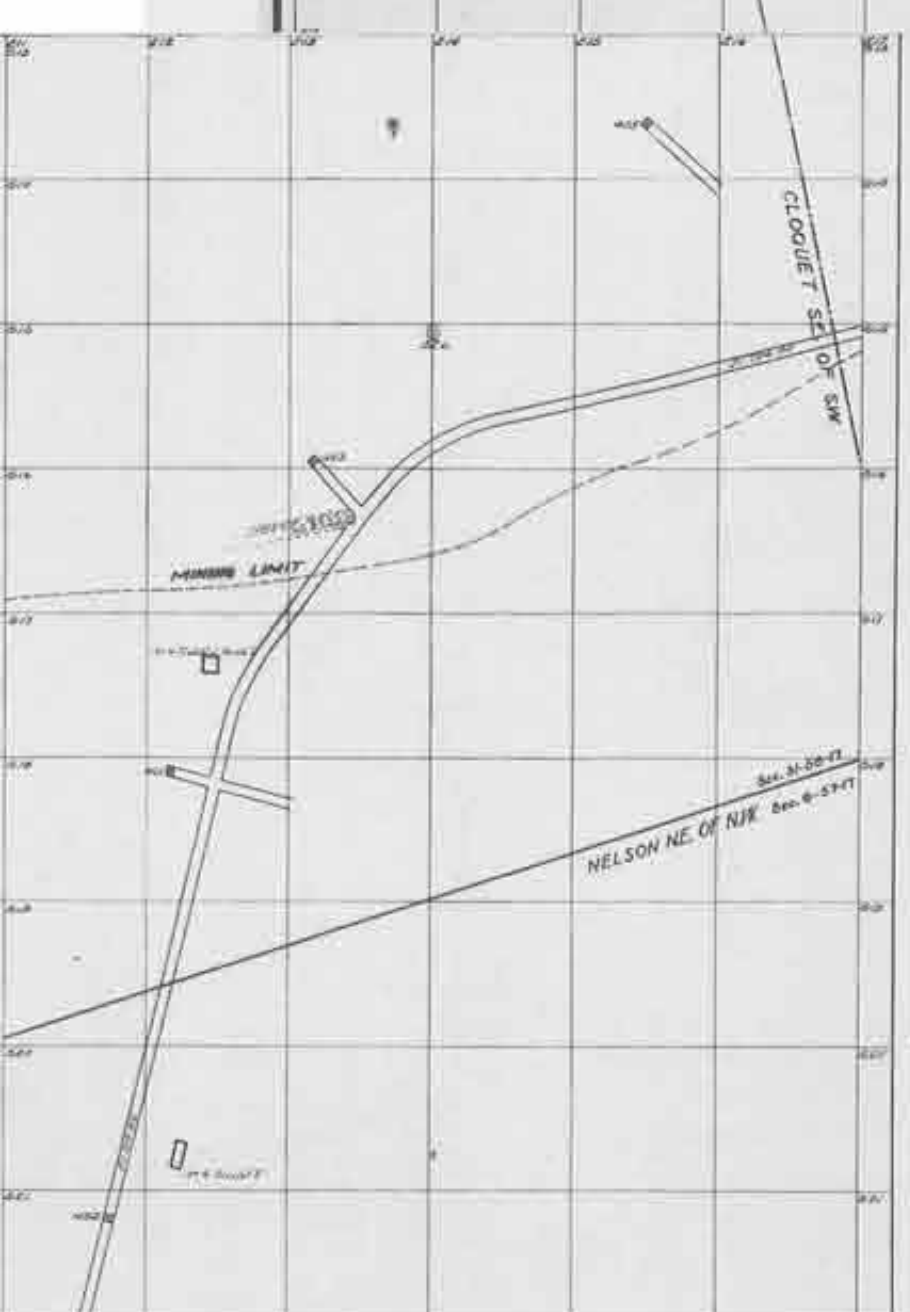
OLIVER IRON MINING CO.
 MAP OF THE
SPRUCE MINE.
 EVELETH, MINN.
 FIRST LEVEL — No 1 SHAFT.

SCALE OF FEET.

EXPLANATORY			
Test Pit	Driller Test Pit	Drill Hole	Drill Hole
Min Level	Min Level	Min Level	Min Level
Section Line	Section Line	Section Line	Section Line
Rock	Rock	Rock	Rock
Point	Point	Point	Point

ELEVATIONS IN FEET

No 1 Shaft	Color 1832	First Level, 1802, 1804	Sea Level
1832	1832	1802	1804





OLIVER IRON MINING CO.
MAP OF THE
SPRUCE MINE.
EVELETH, MINN.
PLAN OF THE SECOND LEVEL, SHAFT NO. 1

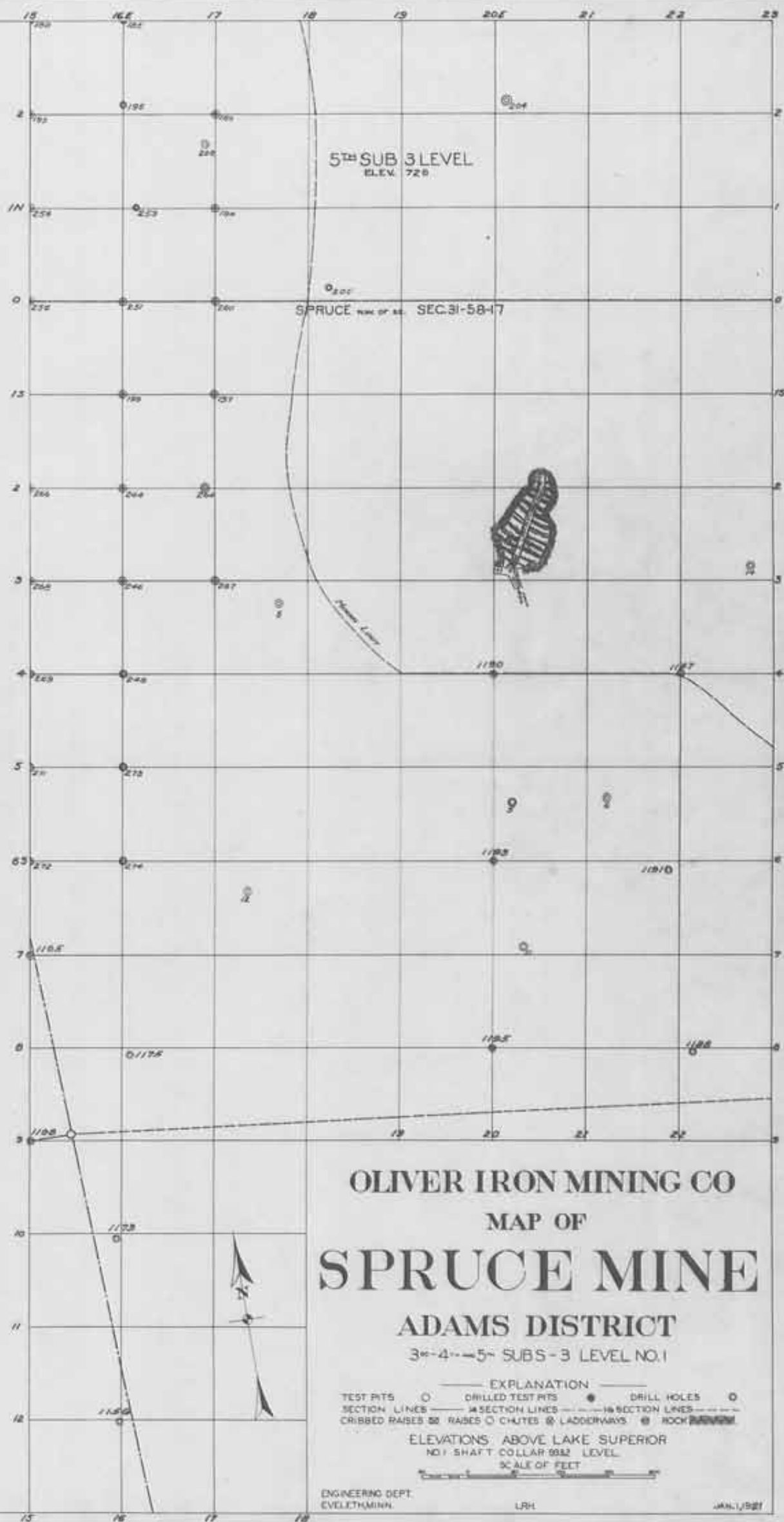
SCALE OF FEET
0 100 200 300 400 500 600 700 800 900 1000

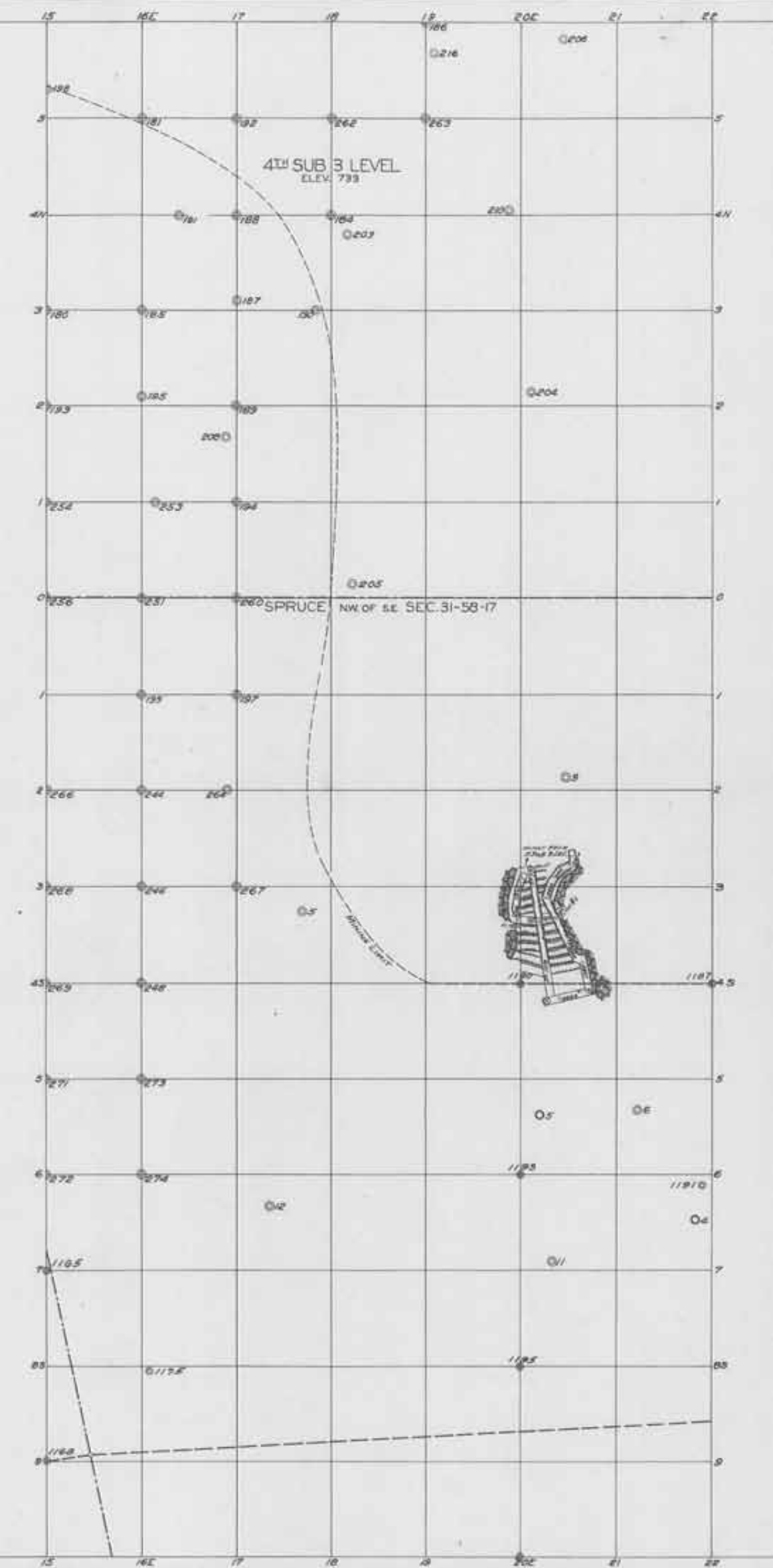
EXPLANATION

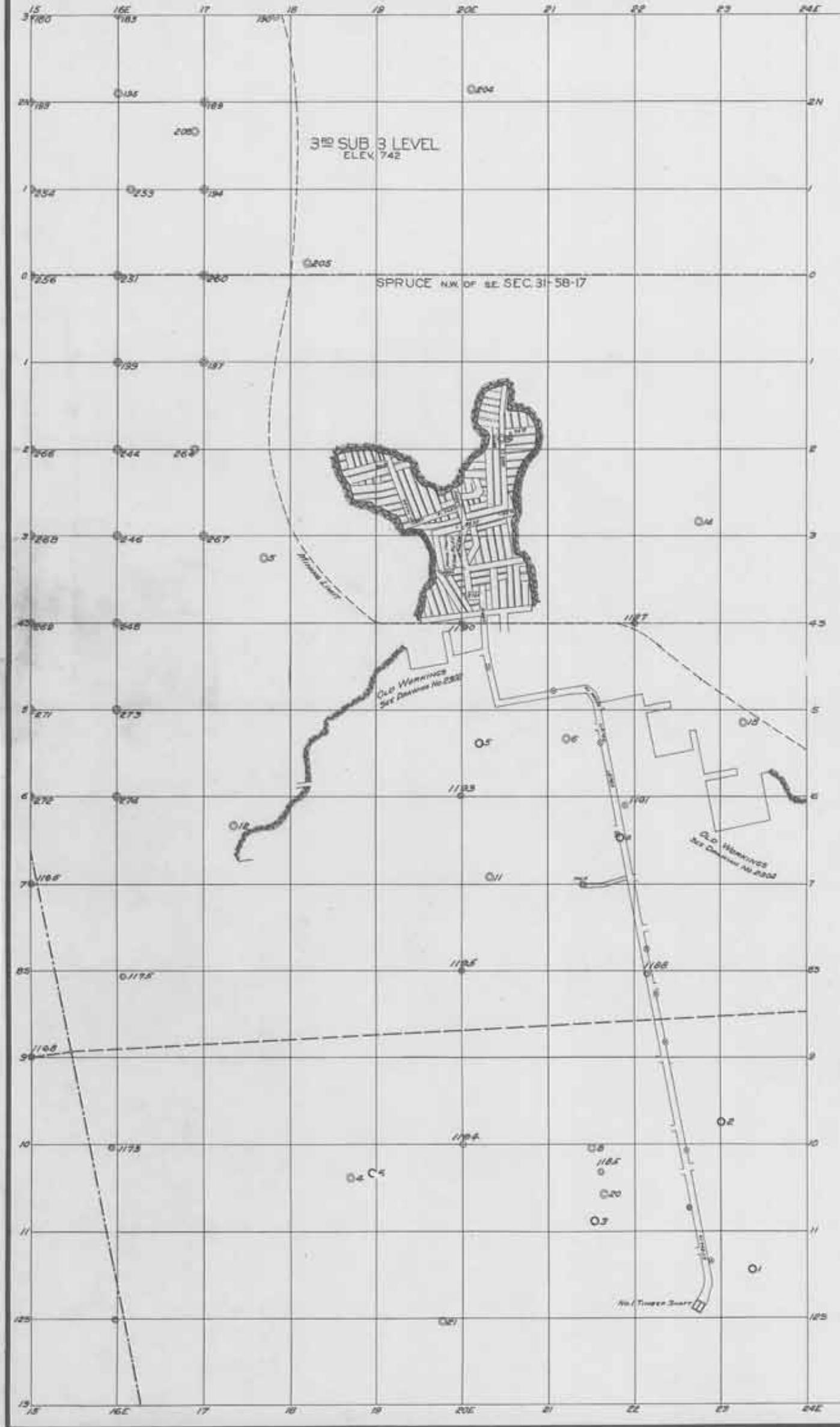
Test Pits	Drilled Test Pits	Drill Holes
Foot Level	Section Lines	Section Lines
Foot Level	Section Lines	Section Lines
Foot Level	Section Lines	Section Lines
Foot Level	Section Lines	Section Lines

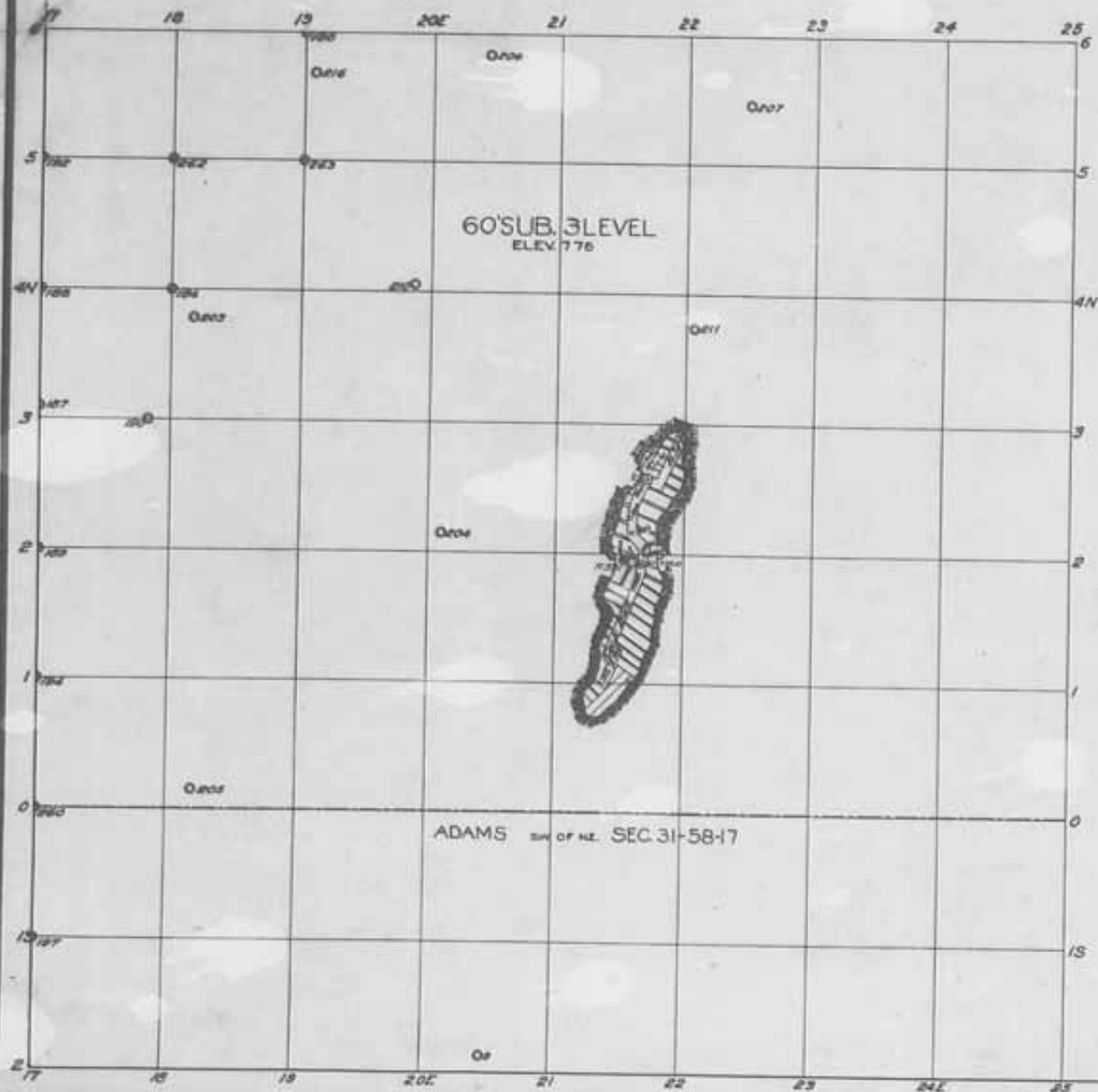
ELEVATIONS AND LAKE SUPERIOR

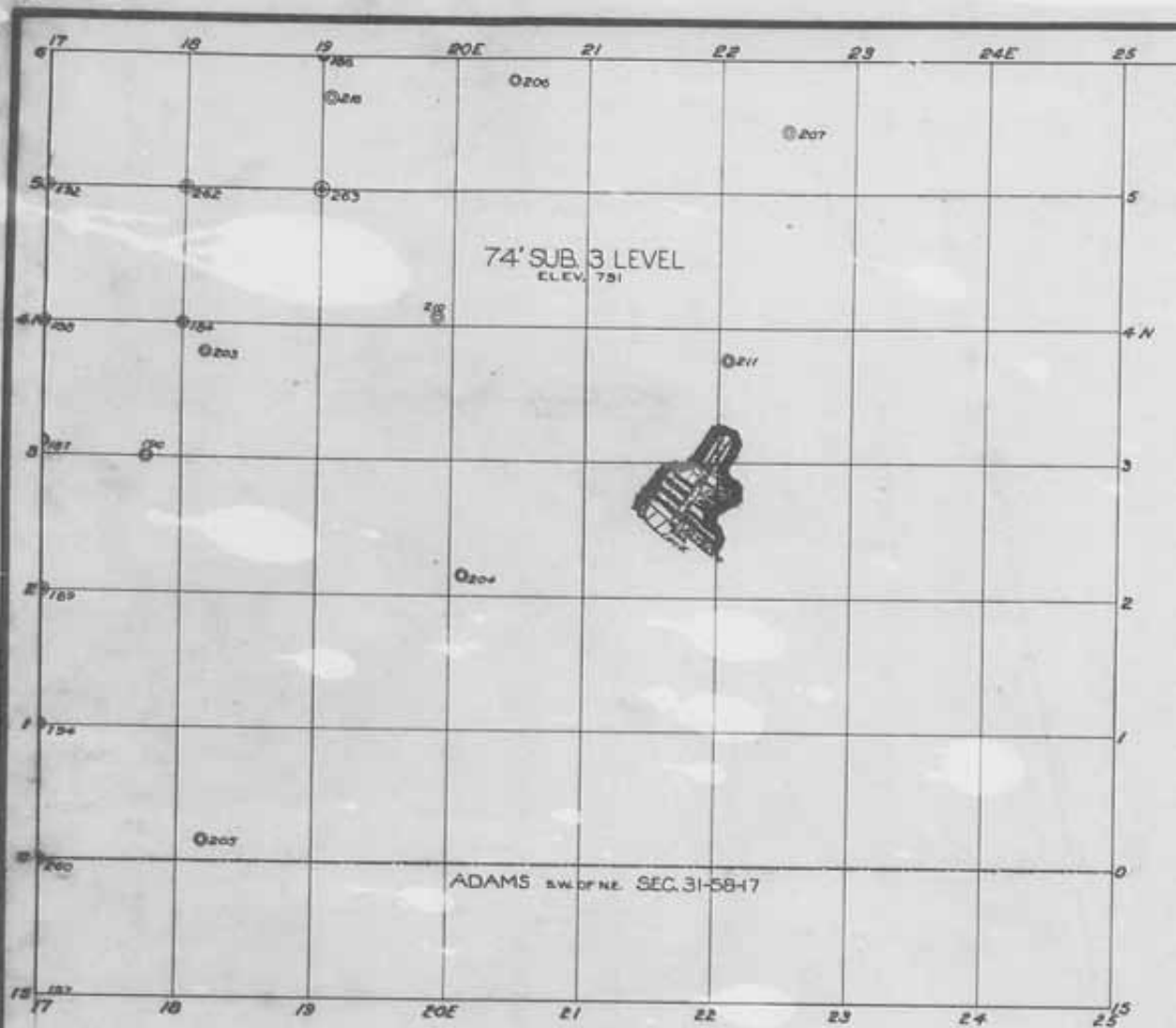
1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500 2600 2700 2800 2900 3000

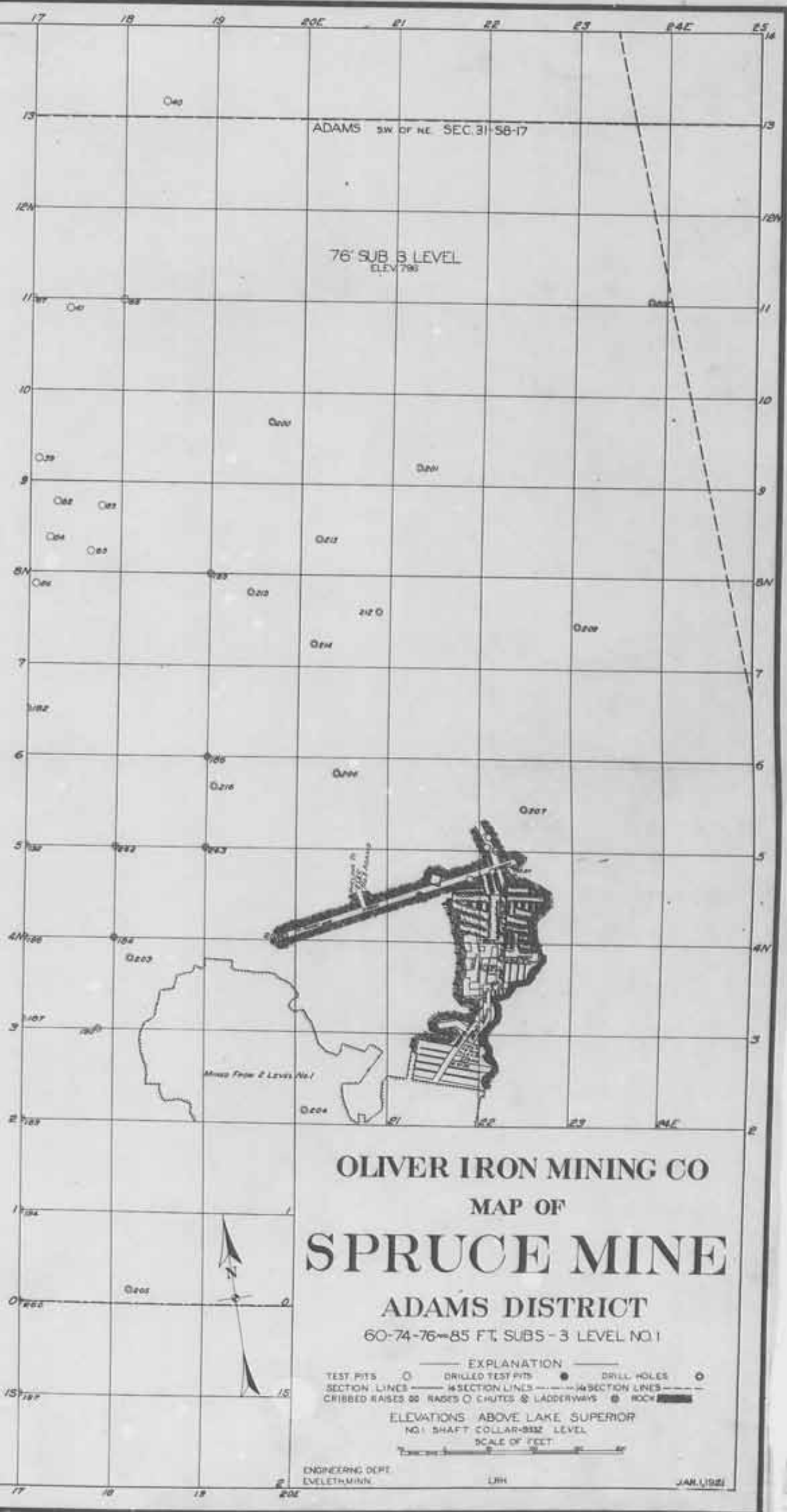












ADAMS SW OF NE. SEC. 31-58-17

76' SUB B LEVEL
ELEV 795

OLIVER IRON MINING CO MAP OF SPRUCE MINE

ADAMS DISTRICT

60-74-76-85 FT. SUBS - 3 LEVEL NO. 1

EXPLANATION

TEST PITS ○ DRILLED TEST PITS ● DRILL HOLES ○

SECTION LINES — SECTION LINES — SECTION LINES —

CRIBBED RAISES ○ RAISES ○ CHUTES & LADDERS ● ROCK ■

ELEVATIONS ABOVE LAKE SUPERIOR

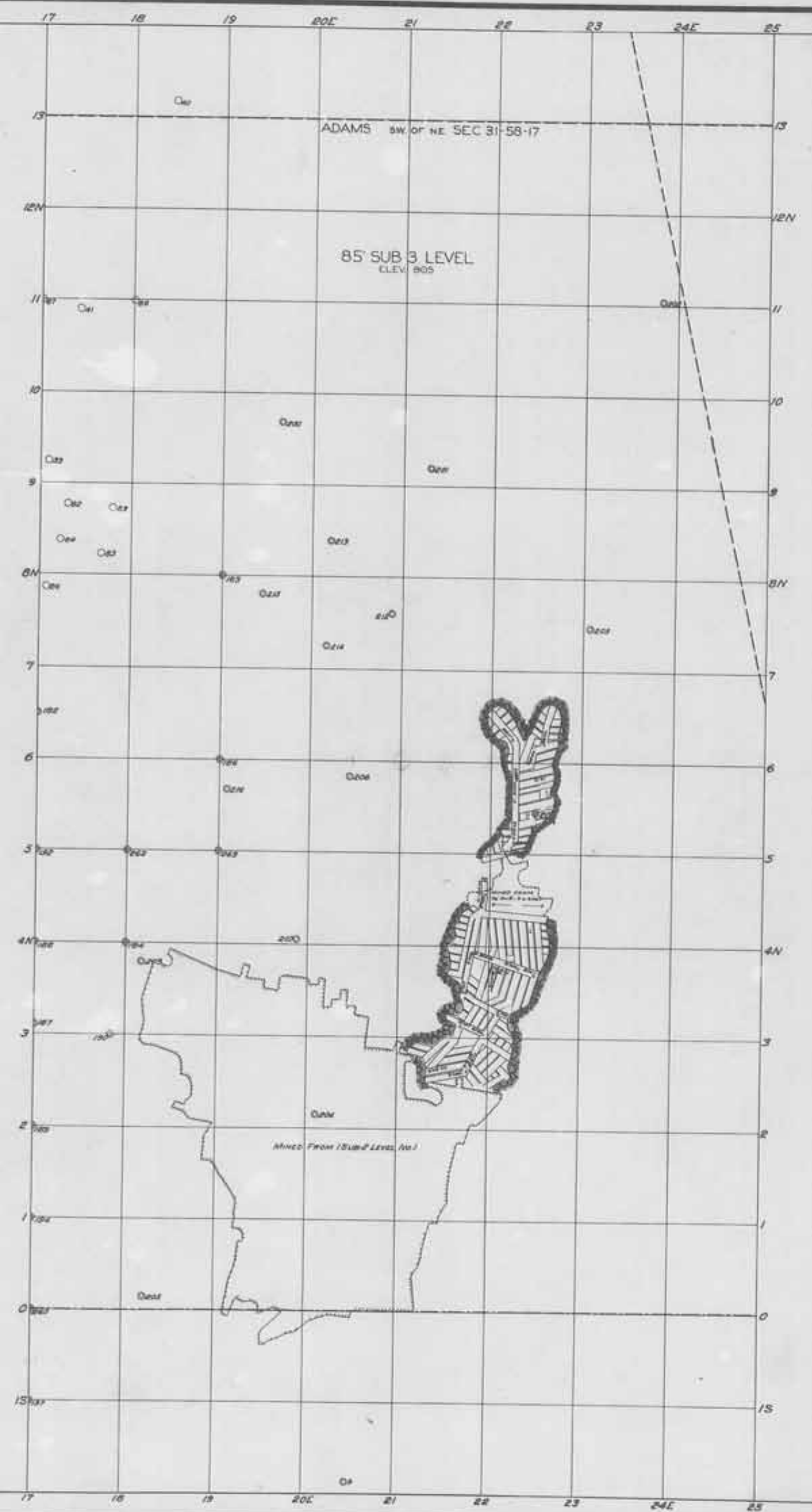
NO. 1 SHAFT COLLAR-9332 LEVEL

SCALE OF FEET

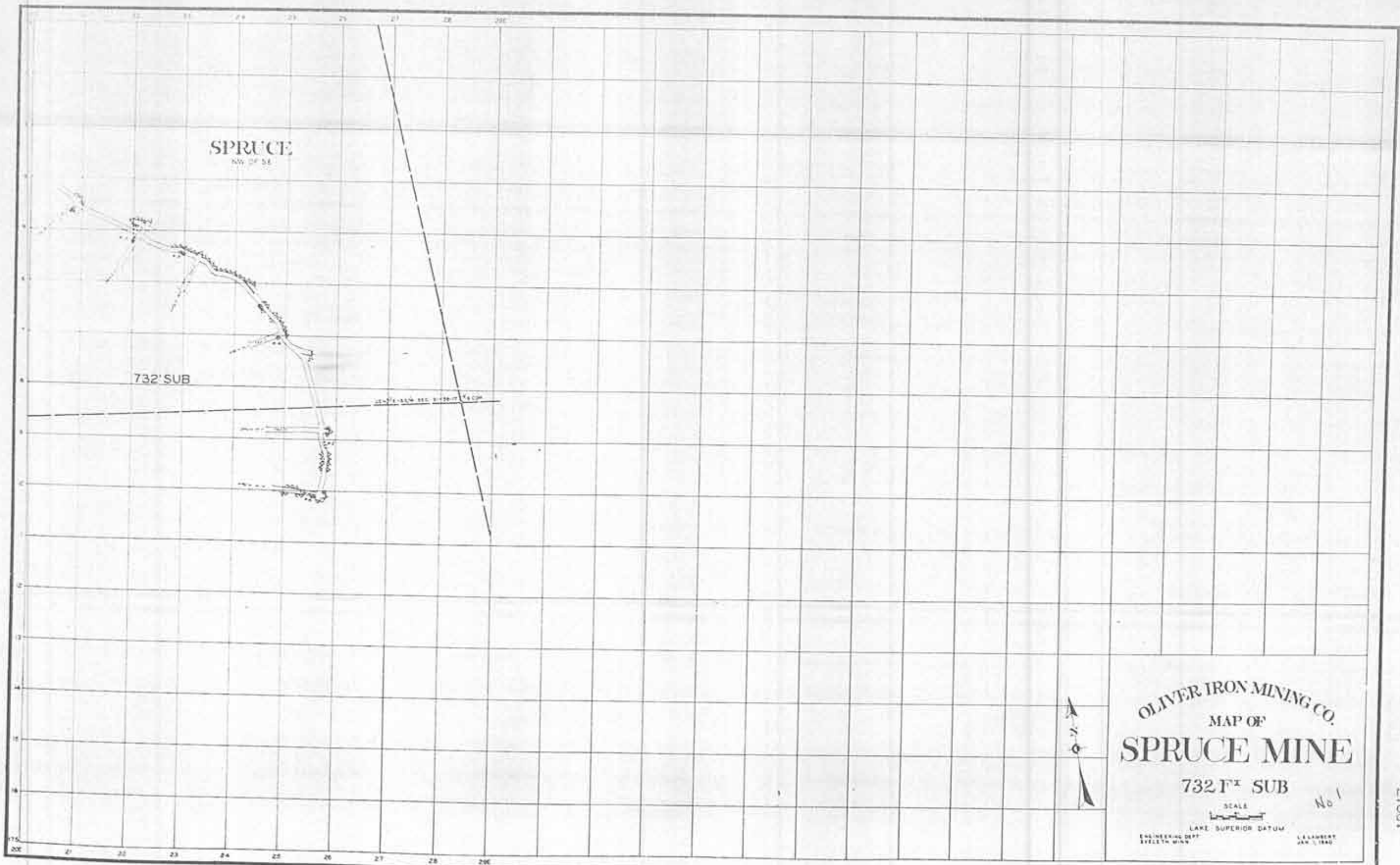
ENGINEERING DEPT.
EVELETH, MINN.

L.H.H.

JAN. 1921



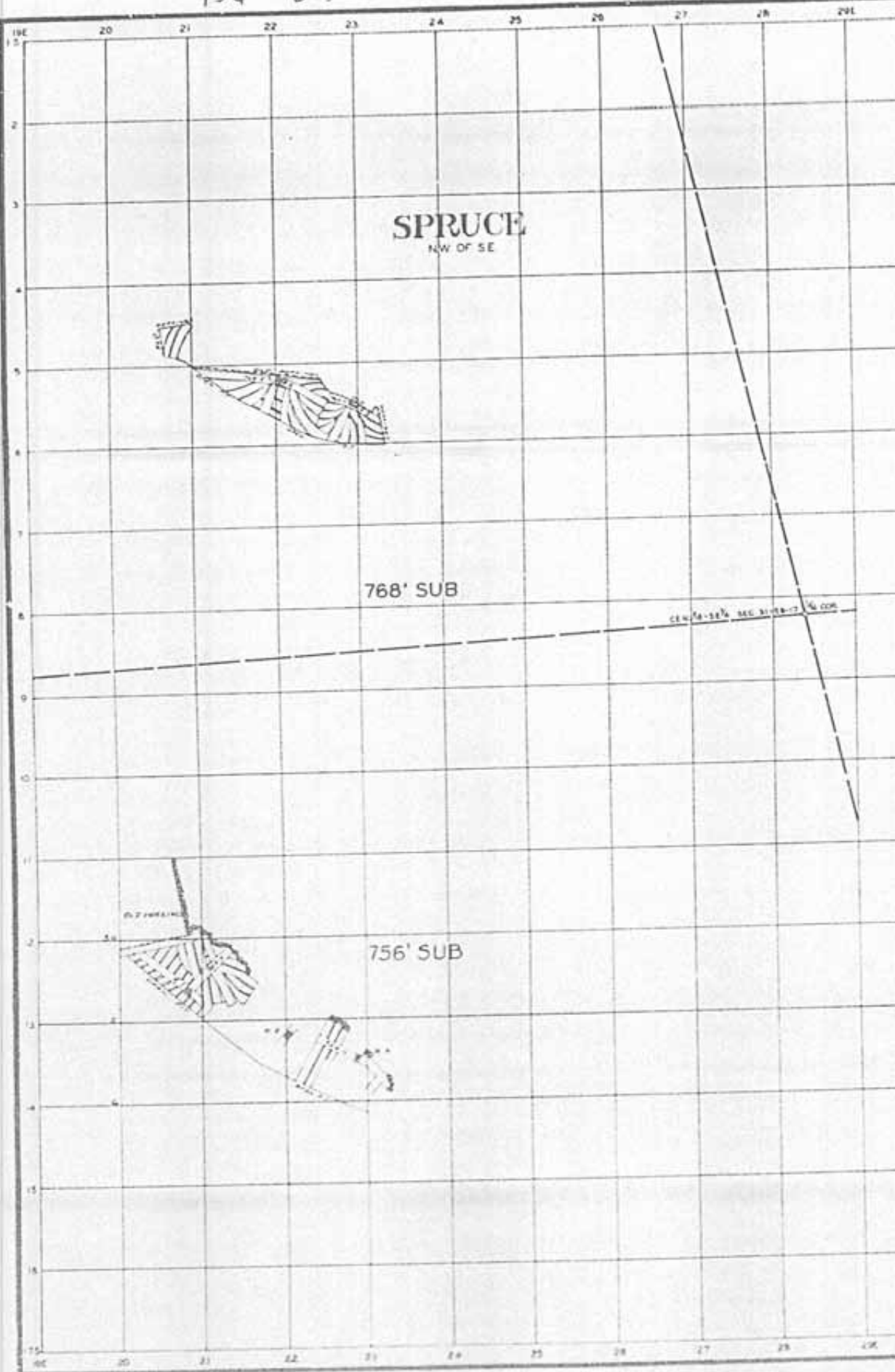
730



OLIVER IRON MINING CO.
MAP OF
SPRUCE MINE
732 F^x SUB
No 1
SCALE
LAKE SUPERIOR DATUM
ENGINEERING DEPT.
EVELYN MINN.
JAN. 1, 1940

091531 1943 1-1-40 Spruce 732 to 805 F+ subs A-82

754-805



241

251

26

27

28

291

CCN 10-12-14 SEC 14-20-17

1/4 COR

SPRUCE

SW OF SE



780' SUB

241

25

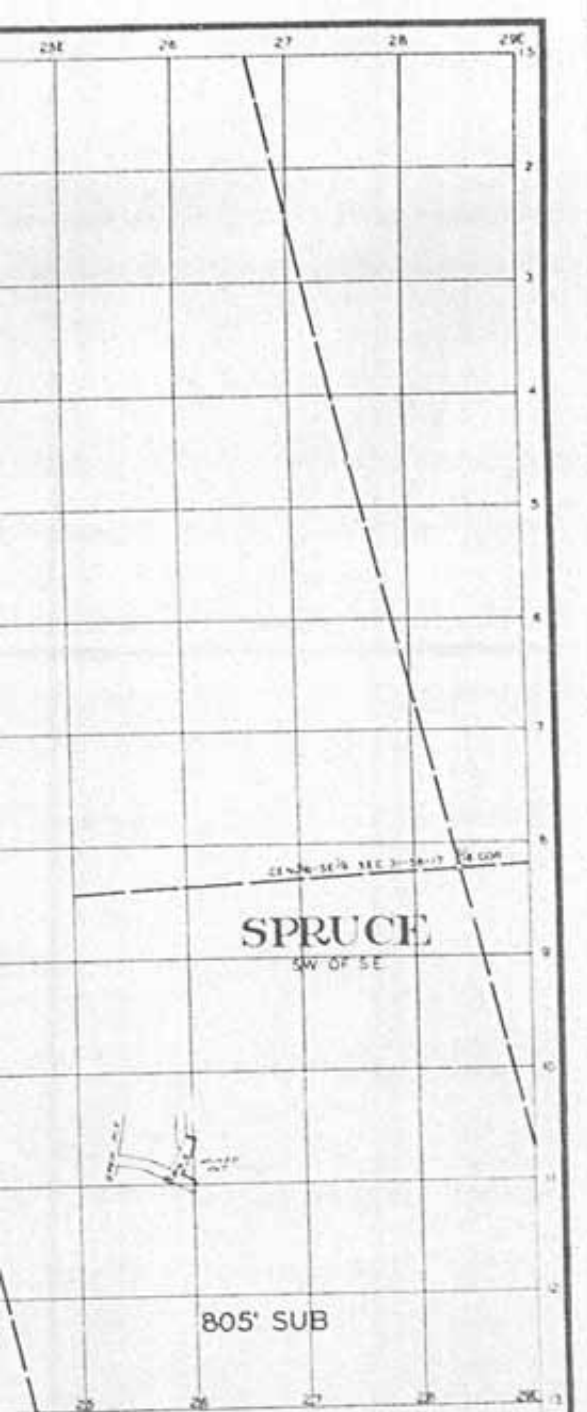
26

27

28

291

09 15



226-839

09 1531 1943 Spruce 1-Sub 1-Lv 1-shaft A-82

OLIVER IRON MINING CO. MAP OF THE SPRUCE MINE.

EVELETH, MINN.
FIRST SUB-FIRST LEVEL-NO. 1 SHAFT

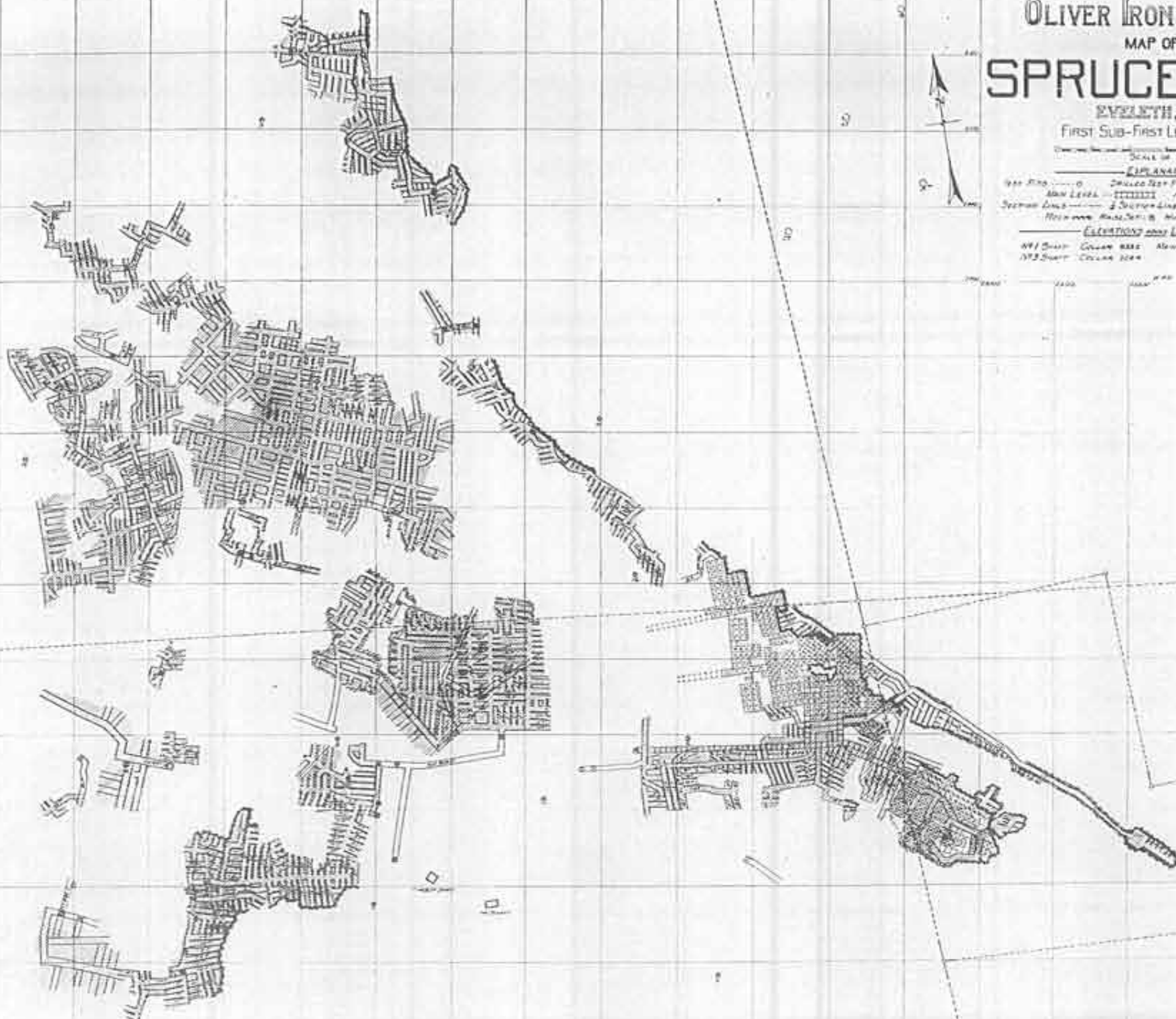
SCALE OF FEET

EXPLANATORY

1000 Feet	Drilled Test Pits	Drill Holes
Adm Level	Adm Level	Drill Holes
Section Lines	Section Lines	Section Lines
Flow Lines	Flow Lines	Flow Lines

ELEVATIONS AND LONG DISTANCES

491 Shaft	6000 Feet	Adm Level	6000 Feet	Drill Holes
1000 Shaft	6000 Feet	Adm Level	6000 Feet	Drill Holes



958

OLIVER IRON MINING CO.
MAP OF THE
ADAMS MINE.
EVELETH, MINN.

---FIRST LEVEL No 3-4500 LEVEL No 2-24Foot SUE No 5

[illegible]

09 1531 1909 1-1-09 Adams m, 23-4
sub 2-24 SU A-31

ADAMS DISTRICT:
FIRST LEVEL NO.2—1SUB 3LEVEL NO.4,
1SUB 2LEVEL NO.6—1SUB 3LEVEL NO.5

TEST PITS ○ DRILL TESTS ● DRILL HOLES ●
SECTION LINES ○ SECTION LINES ○ SECTION LINES ○
GRAVEL SANDS ● RAISED ○ GAUTES ○ SANDS ● RAISED ○ RICK ● RAISED ○

— ELEVATIONS ABOVE LAKE SUPERIOR —
NO. 3 SHATT-COLLAR 219 1/2 LEVEL SHIP NO. 4 SHATT-COLLAR 208 1/2 LEVEL SHIP
NO. 5 SHATT-COLLAR 211 LEVEL SHIP NO. 6 SHATT-COLLAR 208 1/2 LEVEL SHIP

ENGINEERING DEPT. SCALE OF FEET JAN. LIB. 1964

09 1531 1913 1-1-13 Adams m 1 293 Levels A-34



872

OLIVER IRON MINING CO.
 MAP OF THE
ADAMS MINE.
 EVLEATH, MINN.
 FIRST LEVEL No 3 - 45th LEVEL No 2 - 36 Foot BUS No 5



Scale of Feet

EXPLANATORY

Level No. 3	Level No. 2	Level No. 1	Level No. 0
Sub Level No. 1	Sub Level No. 2	Sub Level No. 3	Sub Level No. 4
Sub Level No. 5	Sub Level No. 6	Sub Level No. 7	Sub Level No. 8
Sub Level No. 9	Sub Level No. 10	Sub Level No. 11	Sub Level No. 12
Sub Level No. 13	Sub Level No. 14	Sub Level No. 15	Sub Level No. 16
Sub Level No. 17	Sub Level No. 18	Sub Level No. 19	Sub Level No. 20
Sub Level No. 21	Sub Level No. 22	Sub Level No. 23	Sub Level No. 24
Sub Level No. 25	Sub Level No. 26	Sub Level No. 27	Sub Level No. 28
Sub Level No. 29	Sub Level No. 30	Sub Level No. 31	Sub Level No. 32
Sub Level No. 33	Sub Level No. 34	Sub Level No. 35	Sub Level No. 36
Sub Level No. 37	Sub Level No. 38	Sub Level No. 39	Sub Level No. 40
Sub Level No. 41	Sub Level No. 42	Sub Level No. 43	Sub Level No. 44
Sub Level No. 45	Sub Level No. 46	Sub Level No. 47	Sub Level No. 48
Sub Level No. 49	Sub Level No. 50	Sub Level No. 51	Sub Level No. 52
Sub Level No. 53	Sub Level No. 54	Sub Level No. 55	Sub Level No. 56
Sub Level No. 57	Sub Level No. 58	Sub Level No. 59	Sub Level No. 60
Sub Level No. 61	Sub Level No. 62	Sub Level No. 63	Sub Level No. 64
Sub Level No. 65	Sub Level No. 66	Sub Level No. 67	Sub Level No. 68
Sub Level No. 69	Sub Level No. 70	Sub Level No. 71	Sub Level No. 72
Sub Level No. 73	Sub Level No. 74	Sub Level No. 75	Sub Level No. 76
Sub Level No. 77	Sub Level No. 78	Sub Level No. 79	Sub Level No. 80
Sub Level No. 81	Sub Level No. 82	Sub Level No. 83	Sub Level No. 84
Sub Level No. 85	Sub Level No. 86	Sub Level No. 87	Sub Level No. 88
Sub Level No. 89	Sub Level No. 90	Sub Level No. 91	Sub Level No. 92
Sub Level No. 93	Sub Level No. 94	Sub Level No. 95	Sub Level No. 96
Sub Level No. 97	Sub Level No. 98	Sub Level No. 99	Sub Level No. 100

ELEVATIONS AND LAMP SURVEY

1st Level	2nd Level	3rd Level	4th Level
5th Level	6th Level	7th Level	8th Level
9th Level	10th Level	11th Level	12th Level
13th Level	14th Level	15th Level	16th Level
17th Level	18th Level	19th Level	20th Level
21th Level	22th Level	23th Level	24th Level
25th Level	26th Level	27th Level	28th Level
29th Level	30th Level	31th Level	32th Level
33th Level	34th Level	35th Level	36th Level
37th Level	38th Level	39th Level	40th Level
41th Level	42th Level	43th Level	44th Level
45th Level	46th Level	47th Level	48th Level
49th Level	50th Level	51th Level	52th Level
53th Level	54th Level	55th Level	56th Level
57th Level	58th Level	59th Level	60th Level
61th Level	62th Level	63th Level	64th Level
65th Level	66th Level	67th Level	68th Level
69th Level	70th Level	71th Level	72th Level
73th Level	74th Level	75th Level	76th Level
77th Level	78th Level	79th Level	80th Level
81th Level	82th Level	83th Level	84th Level
85th Level	86th Level	87th Level	88th Level
89th Level	90th Level	91th Level	92th Level
93th Level	94th Level	95th Level	96th Level
97th Level	98th Level	99th Level	100th Level

863

09 1531 1915 1-1-15 Adams m1 lev 3-4 sub 1 lev A-36

OLIVER IRON MINING CO.
MAP OF
ADAMS MINE

ADAMS DISTRICT

LEGEND



D O R R
NE OF NE

D O R R
SE OF NE

A D A M S
NW OF NE

D A M S
NE OF SW

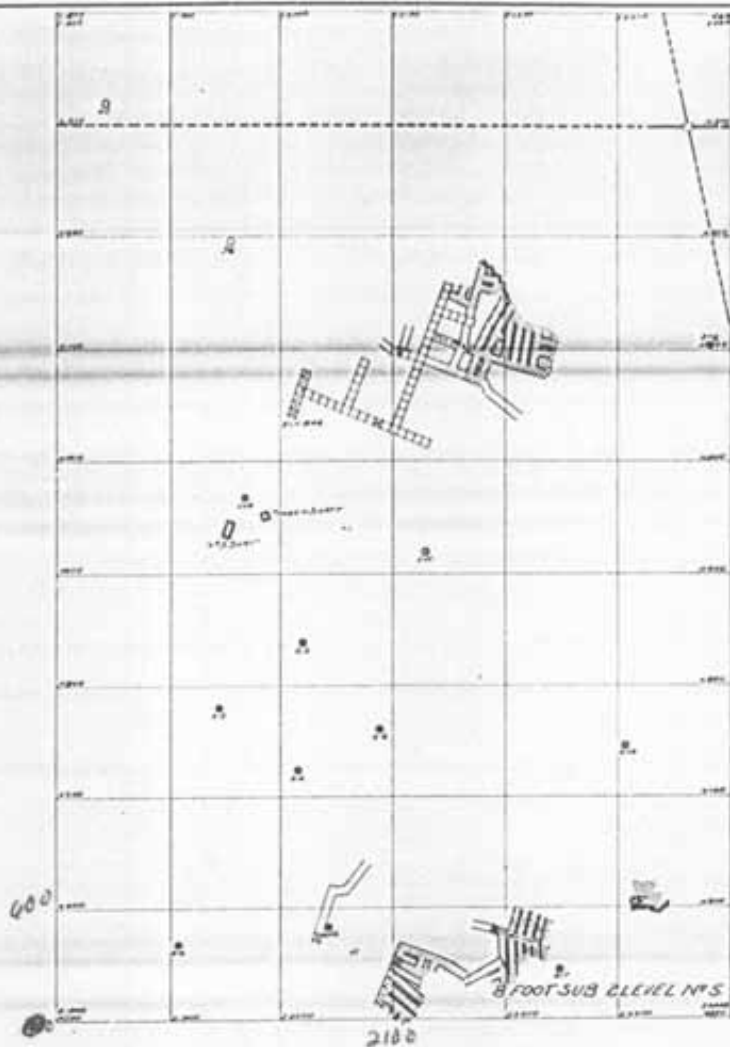
A D A M S
SE OF NW

A D A M S
SW OF NE

NELSON

H U L L
SW OF SW

844

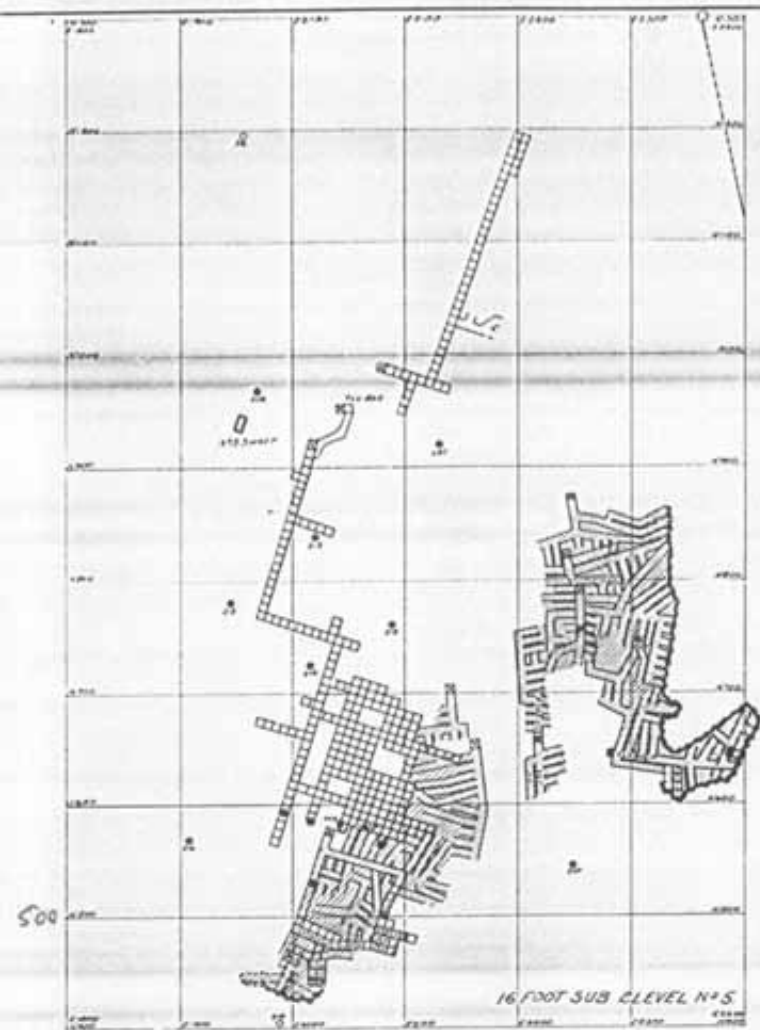


852

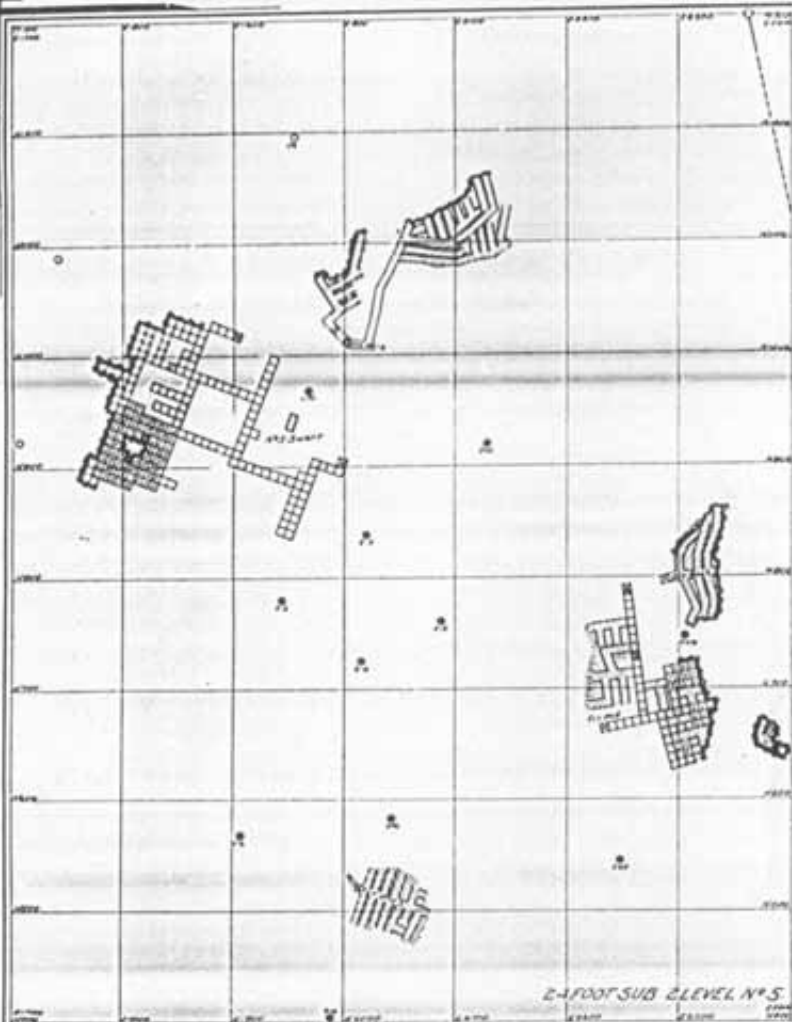
500

16 FOOT SUB LEVEL N°5

2110



860



2-FOOT SUB ELEV. N° 5.

2100

[illegible]

09 1531 1916 1-1-16 Adams m / Subs / Levs No 25
A-37

900 17

20



9

8

7

9 Foot Sub Level No 5

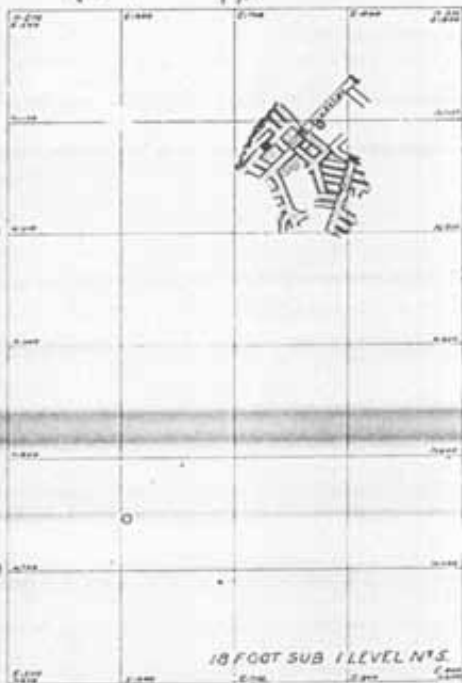


A

Subs of 2 Lev 5-15 ~~09 1531 1110~~
A-37

909

1700



920

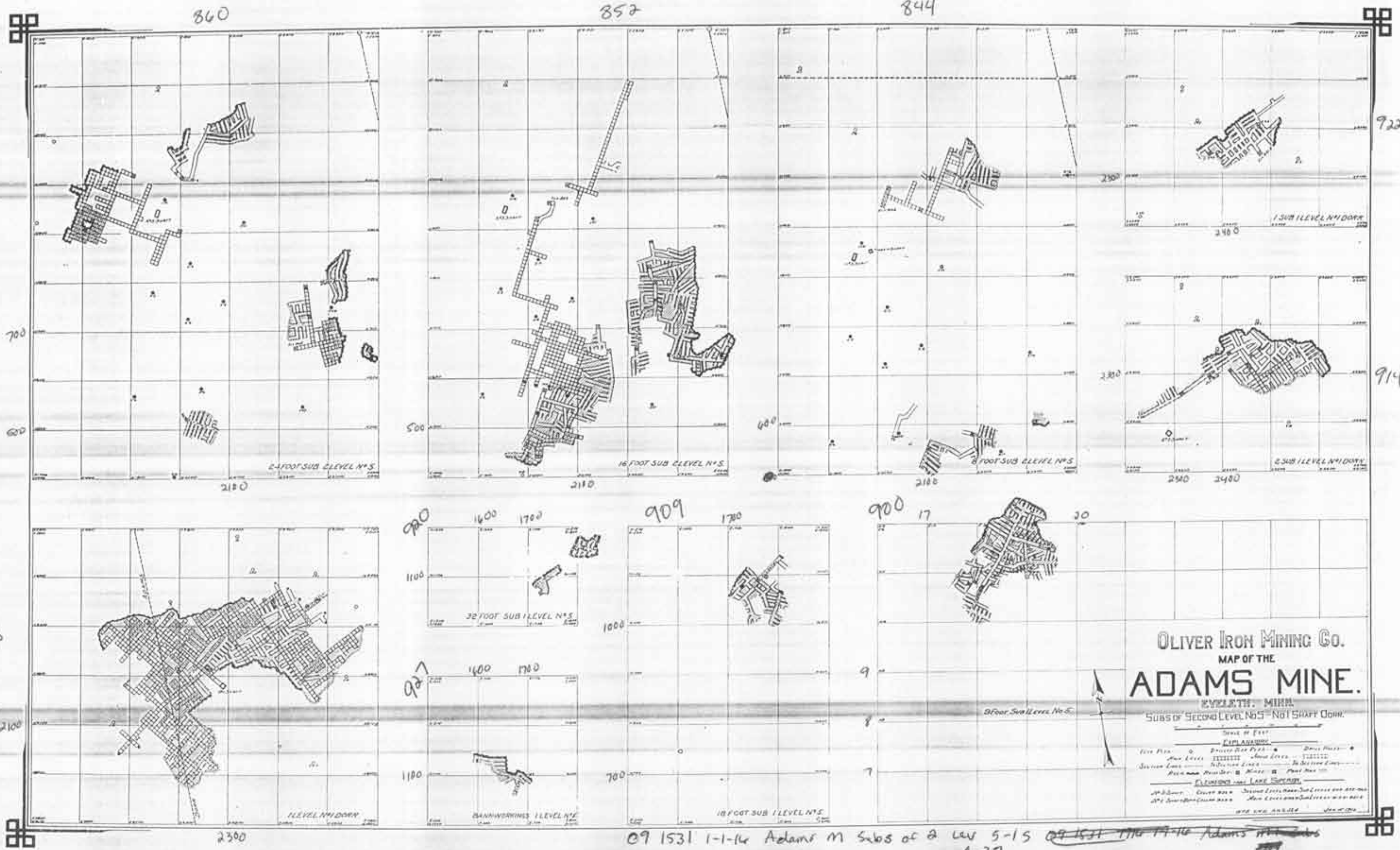
1400

1700

1100



32 FOOT SUB LEVEL N° 5



927

1400

1700

1100

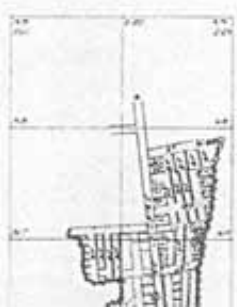
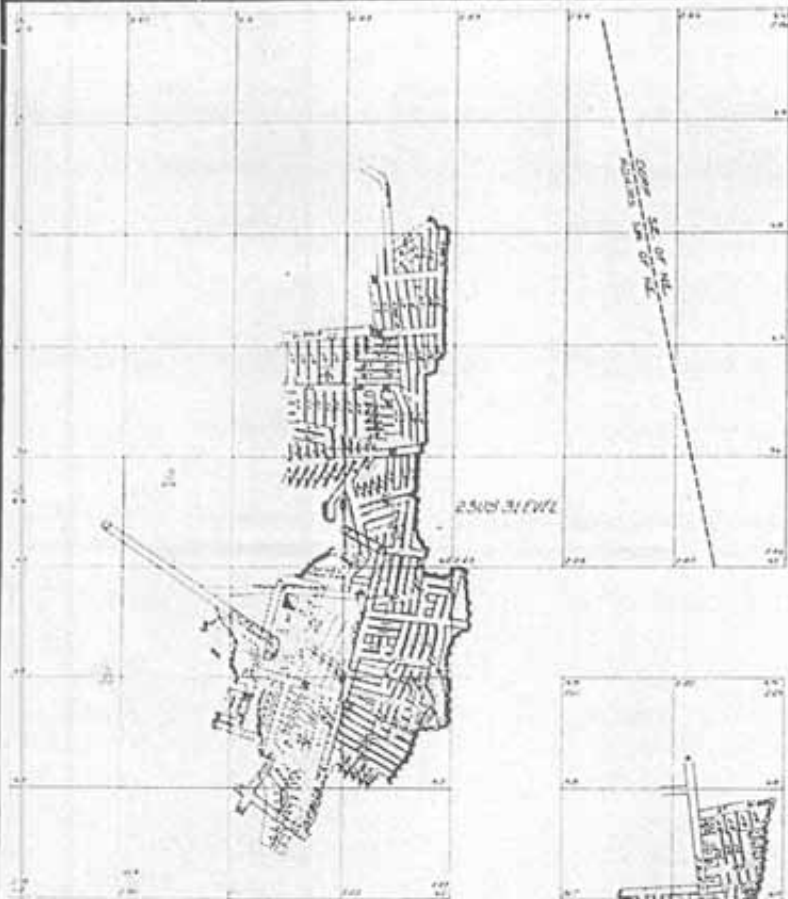


BANKWORKINGS LEVEL N°8





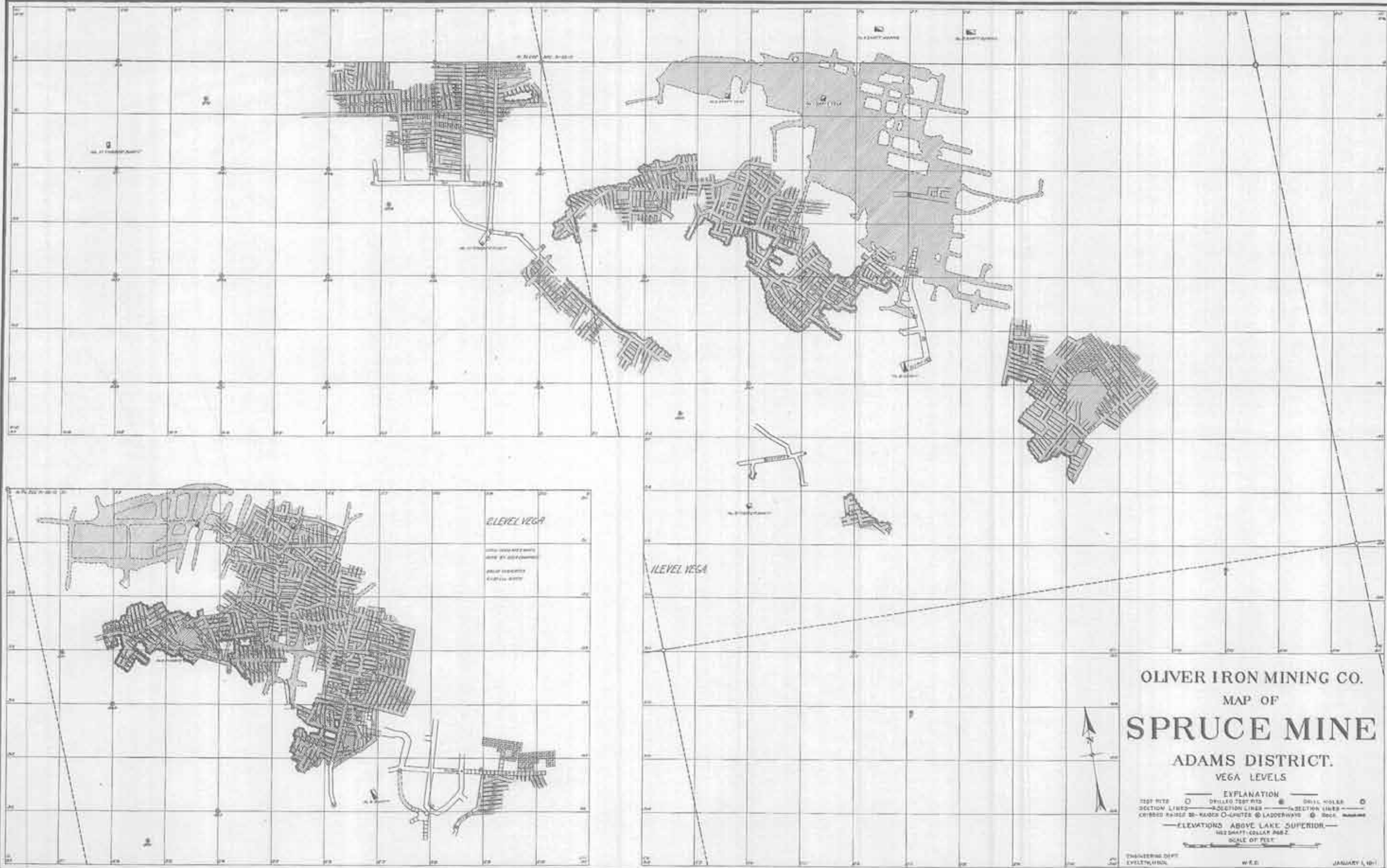
Kings of S-shaft A-82





THIRD LEVEL

ONE OF THE SQUARES
WAS 1/2 MILE



OLIVER IRON MINING CO.
MAP OF
SPRUCE MINE
ADAMS DISTRICT.
VEGA LEVELS

EXPLANATION

TEST PITS	DRILLED TEST PITS	DRILL HOLES
SECTION LINES	SECTION LINES	SECTION LINES
CRIBBED RAISED DR. RAISER	CRIBBED RAISED DR. RAISER	CRIBBED RAISED DR. RAISER
CRIBBED RAISED DR. RAISER	CRIBBED RAISED DR. RAISER	CRIBBED RAISED DR. RAISER

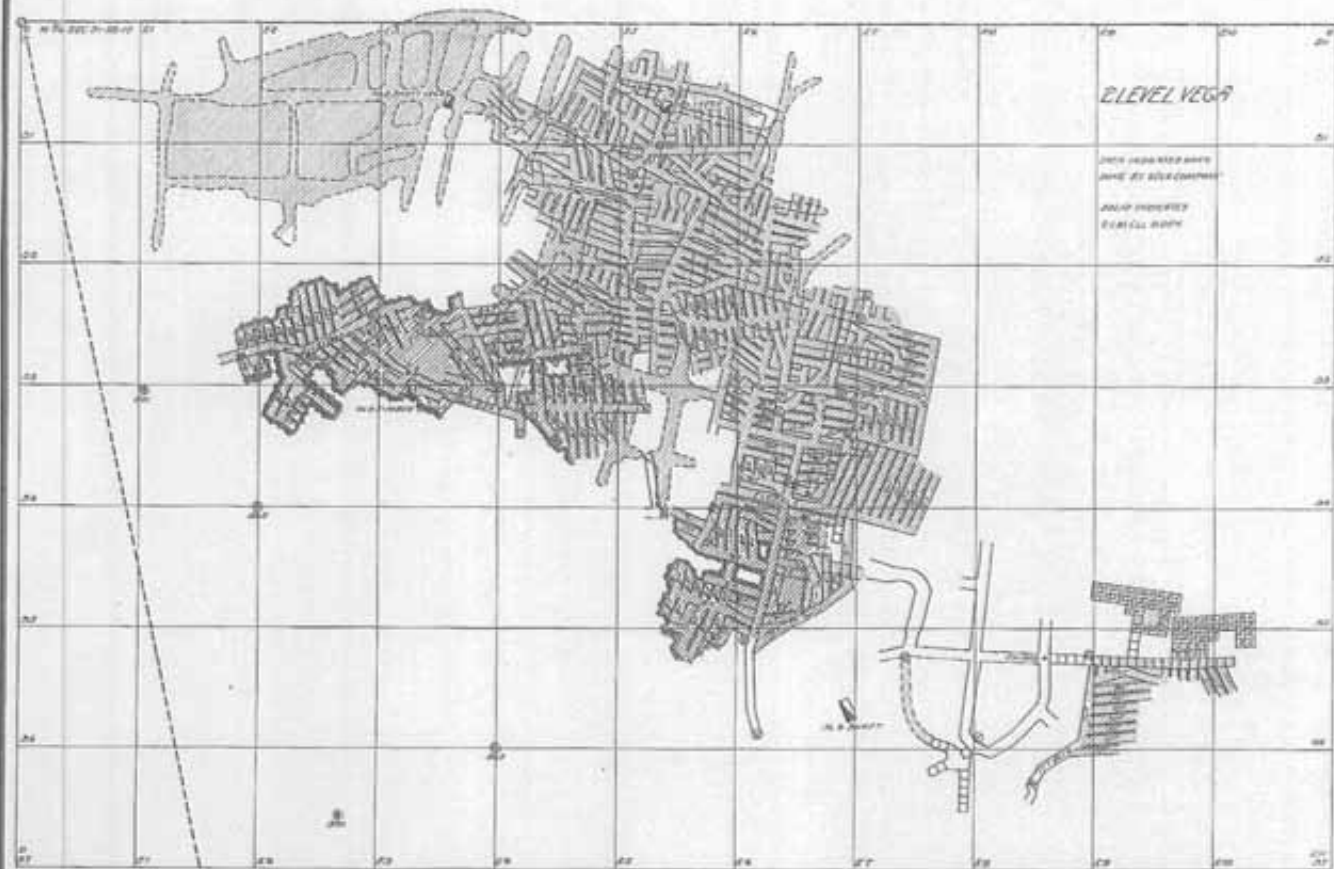
ELEVATIONS ABOVE LAKE SUPERIOR
1125 SHAF. COLLAR 1162

SCALE OF FEET

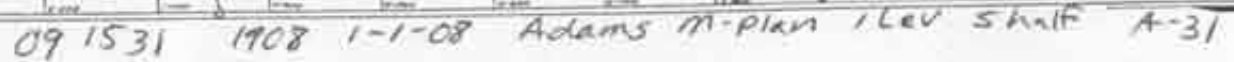
ENGINEERING DEPT.
EVELYN, MINN.

W.E.S.

JANUARY 1, 1911



906



OLIVER IRON MINING CO
MAP OF THE
ADAMS MINE.
EVELETH, MINN.
Part of the First Level - South Half.

[illegible]

797

MINNESOTA IRON CO.
MAP OF THE
ADAMS MINE.

EVERTH, MINN.
Part of the Second Level - South Half.

Scale of Feet

Contours

100' and 200' Contours
100' and 200' Contours
100' and 200' Contours

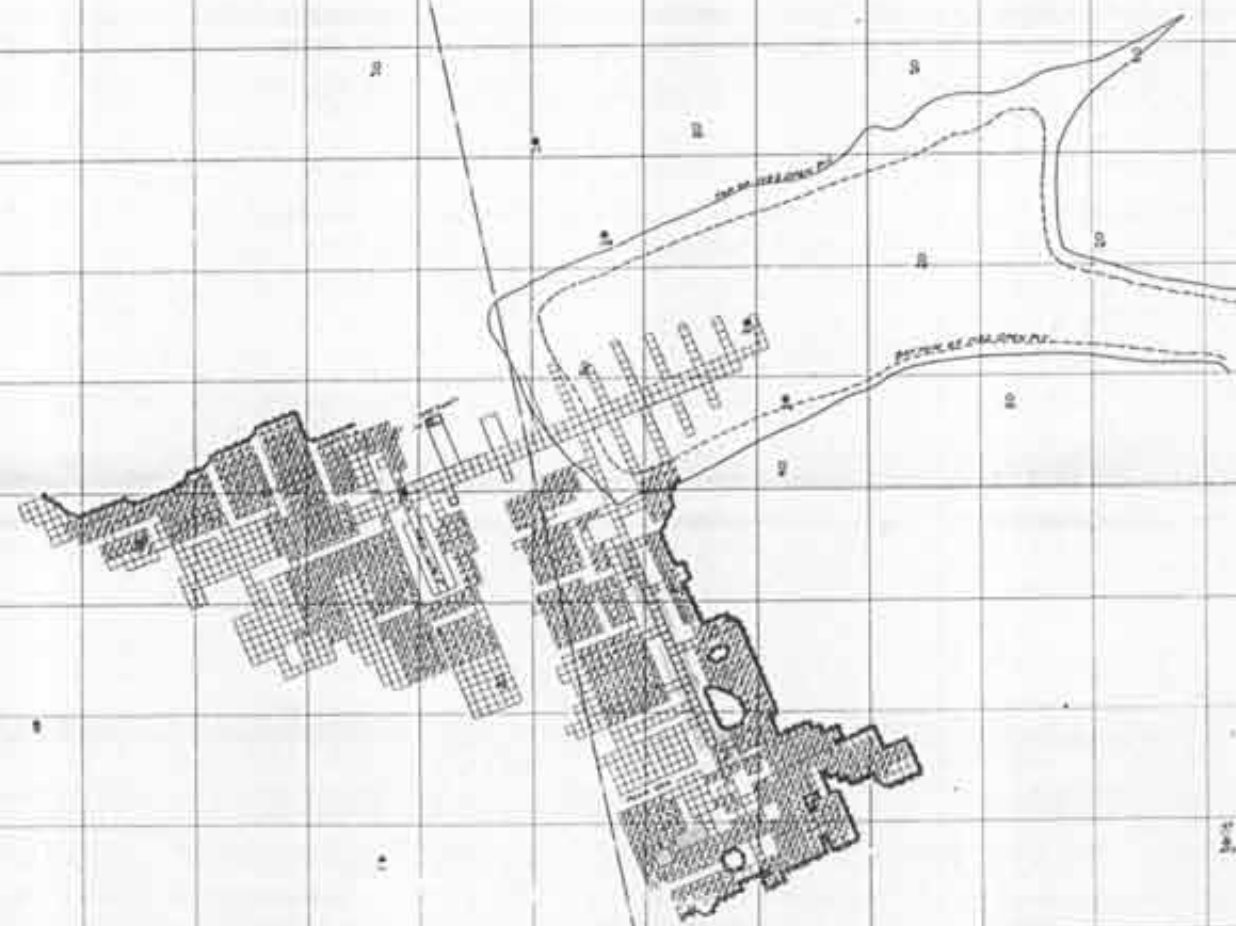
Contours and Level

Contours and Level
Contours and Level
Contours and Level

S P R U C E

794

836



OLIVER IRON MINING CO.
MAP OF THE
ADAMS MINE.
EVELETH, MINN.

PLAN OF THE FIRST LEVEL - No 2 SHAFT

SCALE OF FEET

Test Pits	Drilled Test Pits	Drill Holes
Main Levels	Adit Levels	Adit Levels
Section Lines	Adit Section Lines	Adit Section Lines
Rock	Rock	Rock

ELEVATIONS AND LAPE SURFACES

No 2 Shaft	Collar 5100	Main Level 5140	Top Level
No 2 Shaft	Collar 5100		

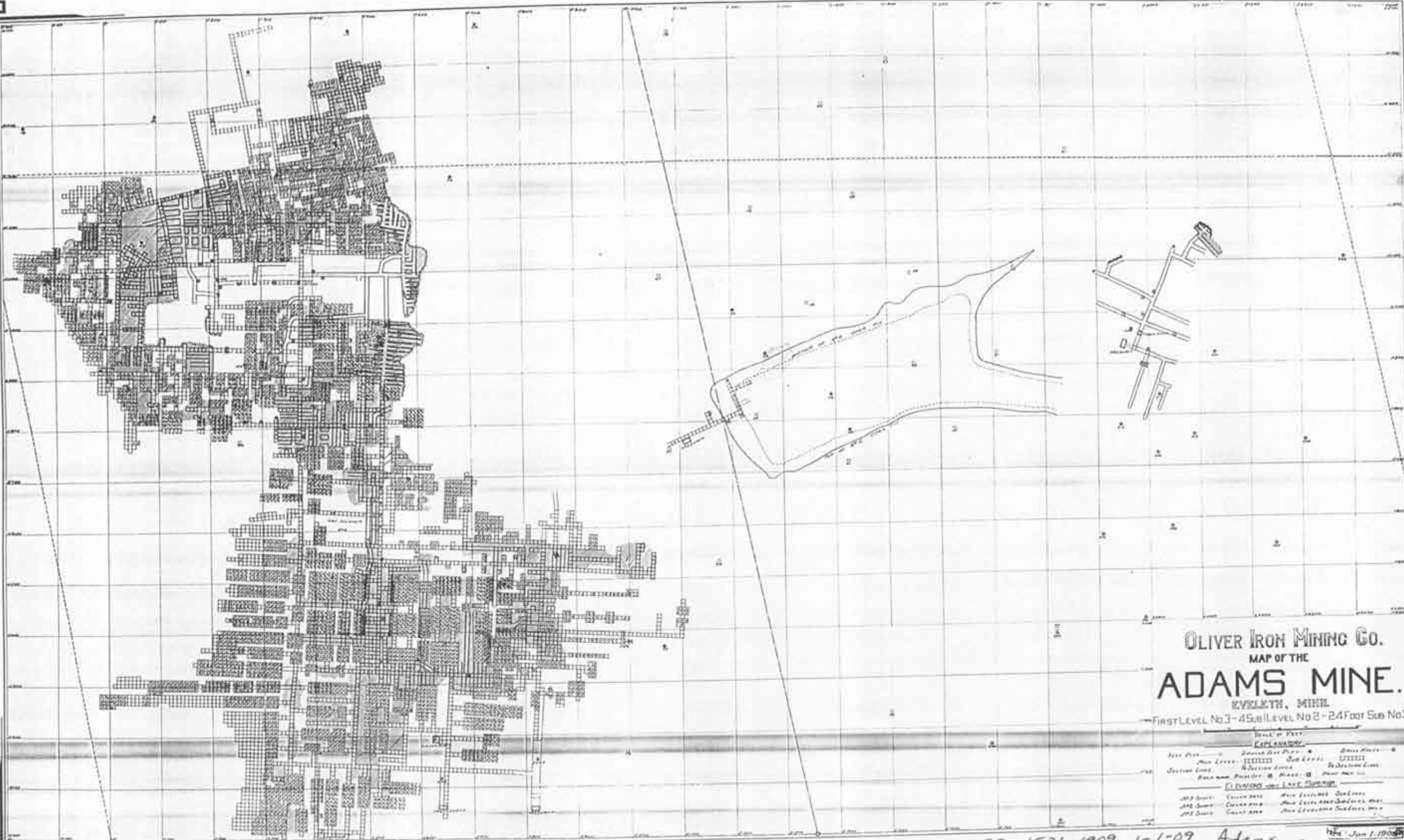
09 1531 1909 1-1-07 Adams M-Plan 1st Lev 2 shaft A-31

5893-1909

863 ↓

866
←

855



OLIVER IRON MINING CO.
MAP OF THE
ADAMS MINE.
EVELLTH, MINN.

First Level No 3-45, Level No 2-24 Foot Sub No 5

Scale of Feet

EXPLANATORY

Best Pros.	Shaded Area Pros.	Shaded Area
Main Level	Shaded Area	Shaded Area
Section Line	Shaded Area	Shaded Area
Shaded Area	Shaded Area	Shaded Area

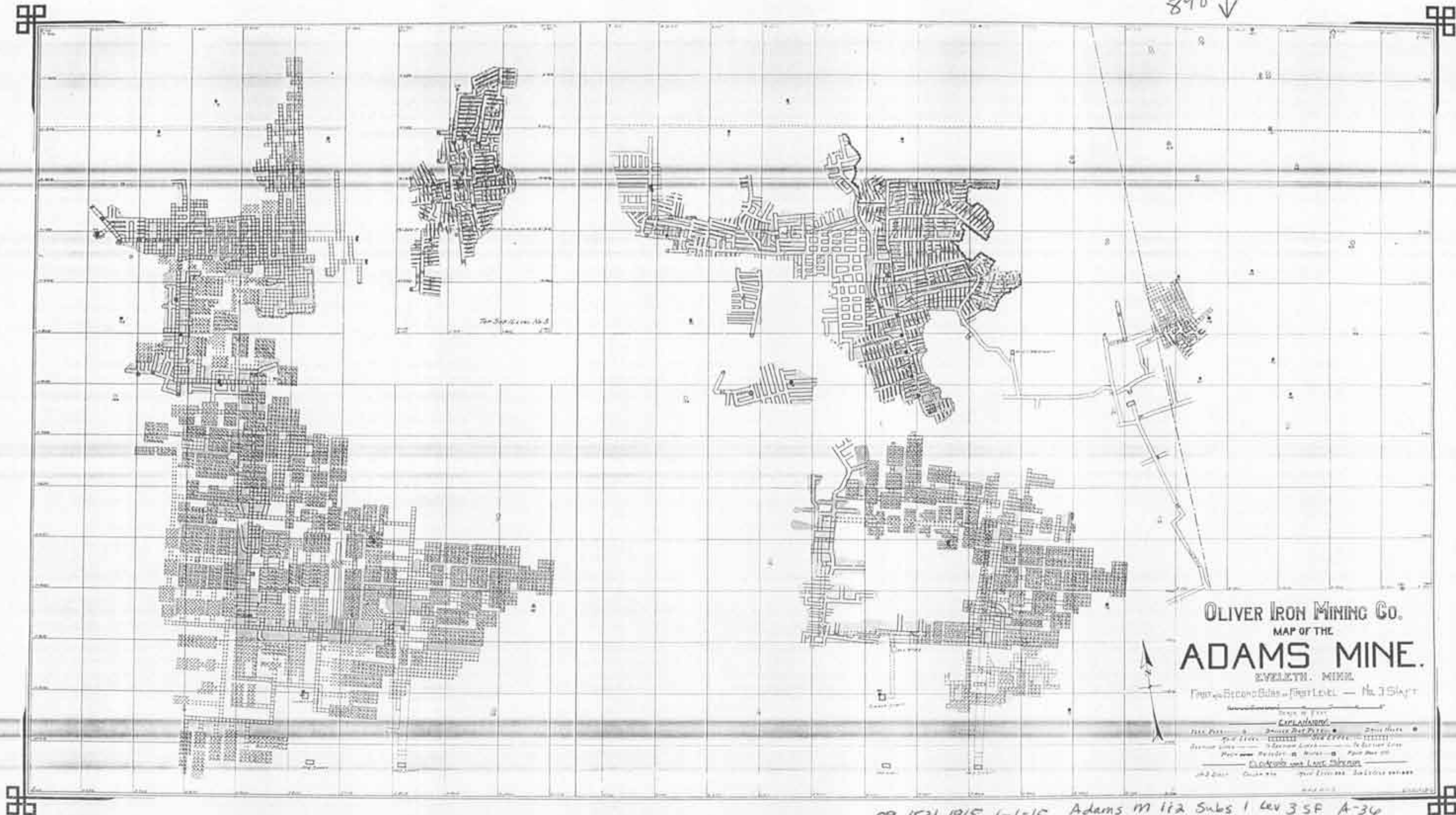
EXPLANATORY

Shaded Area	Shaded Area	Shaded Area
Shaded Area	Shaded Area	Shaded Area
Shaded Area	Shaded Area	Shaded Area

09 1531 1909 1-1-09 Adams m1 23-4
sub 2-24 SU A-31
1909 Jan 1 1909

837-880

898 ↓



09 1531 1915 1-1-15 Adams M 112 Subs 1 Lev 3 SF A-34

890↓

885

Notes: 1. This map was prepared by the U.S. Geological Survey, Washington, D.C., in 1916, and is published by the U.S. Geological Survey, Washington, D.C., in 1916. It is published by the U.S. Geological Survey, Washington, D.C., in 1916. It is published by the U.S. Geological Survey, Washington, D.C., in 1916.

OLIVER IRON MINING CO.
MAP OF THE
ADAMS MINE.
EVELETH, MINN.
FIRST SUBS FIRST LEVELS NOS 2-3-1 LEVEL NO 9.



EXPLANATION

First Sub	Second Sub	Third Sub	Fourth Sub	Fifth Sub
First Level	Second Level	Third Level	Fourth Level	Fifth Level
First Level	Second Level	Third Level	Fourth Level	Fifth Level
First Level	Second Level	Third Level	Fourth Level	Fifth Level

LEGEND

1st Sub	2nd Sub	3rd Sub	4th Sub	5th Sub
1st Level	2nd Level	3rd Level	4th Level	5th Level
1st Level	2nd Level	3rd Level	4th Level	5th Level
1st Level	2nd Level	3rd Level	4th Level	5th Level

09 1531 1916 1-1-16 Adams M 1 Subs 1 Levels Nos 2-3-1
A-37

830-869

836↓

864



854

09 1531 1904 --- Adams Mine Plan - 1st Level A-29

838

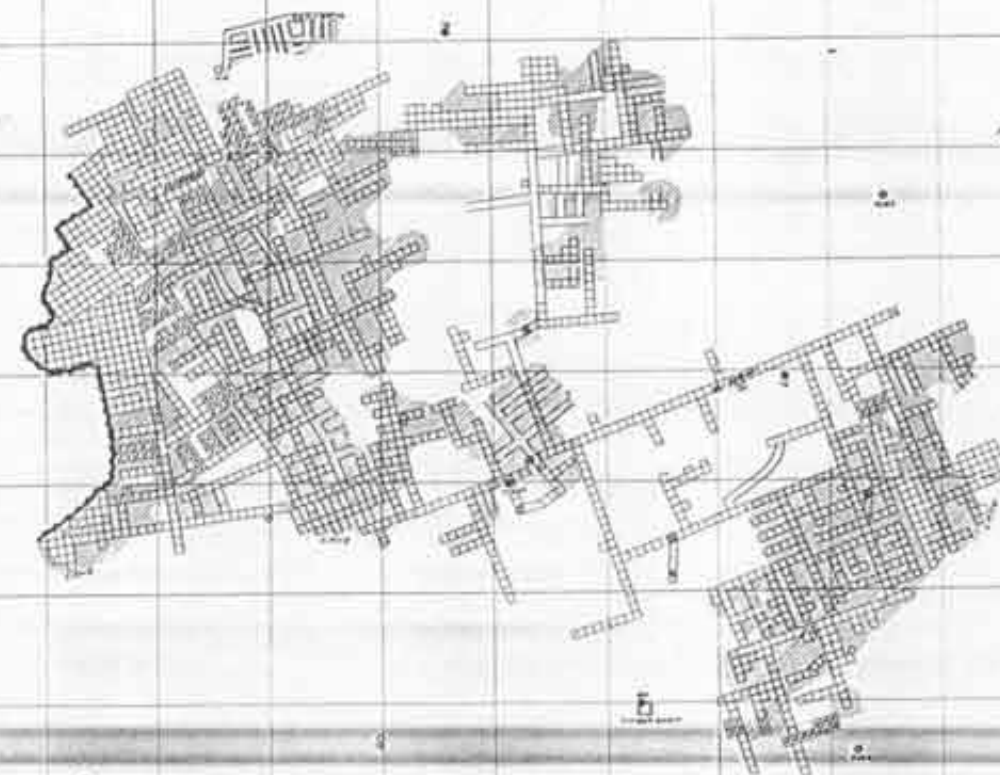
OLIVER IRON MINING CO.
MAP OF THE
ADAMS MINE.
EVELETH MINN.
Yellow North Side. — No 2 Shaft.
Sub Second Level. — No 4 Shaft.

Scale of Feet.
Explaining
Foot Pit. — Double Bar Pit. — Small Hole. —
Foot Level. — Double Bar Level. — Small Level. —
Second Level. — Double Bar Level. — Small Level. —
Main. — Double Bar. — Small. —
Explaining and Large Shafts
No 2 Shaft. — Double Bar. — Small Level. —
No 4 Shaft. — Double Bar. — Small Level. —



09 1531 1908 1-1-08 Adams Mine 214 shafts A-31

858



OLIVER IRON MINING CO.
 MAP OF THE
ADAMS MINE.
 EVELETH, MINN.
 Yellow Sub No. 2 and Top Sub Third Level No. 4

Scale of Feet
 0 100 200 300 400 500 600 700 800 900 1000

EXPLANATORY

Main Shaft	— O —	Drift Shaft	— • —	Iron Shaft	— • —
Main Level	— IIIIII —	Adams Level	— IIIIII —	Section Level	— IIIIII —
Section Level	— IIIIII —	Section Level	— IIIIII —	Section Level	— IIIIII —
Section Level	— IIIIII —	Section Level	— IIIIII —	Section Level	— IIIIII —

ELEVATIONS ABOVE LAKE SUPERIOR

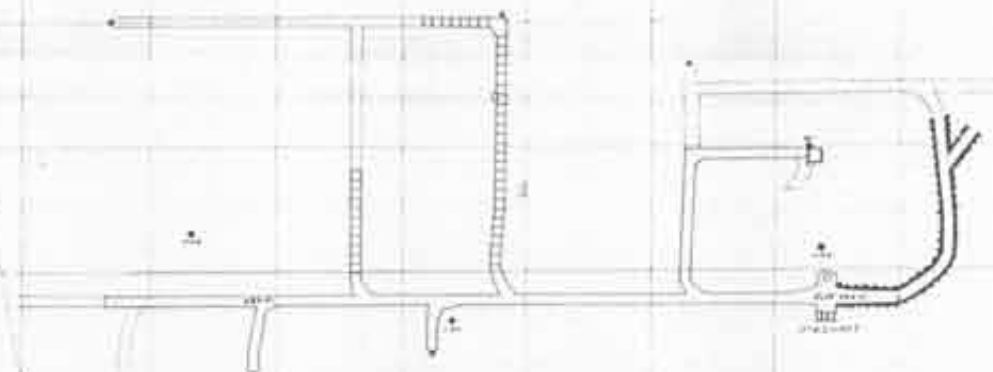
Ad. Shaft	Col. 100	Main Level	100	Sub Level	100
Ad. Shaft	Col. 100	Main Level	100	Sub Level	100

Jan 1 1909

09 1531 1900 1-1-09 Adams m 3rd level i Area A-31

684.

684



OLIVER IRON MINING CO.
MAP OF THE
ADAMS MINE.

LEVEL 4TH, MINN.
 (Part of the fourth level) — No. 6.5 ft.

Box of First

Explaining

First Page: Golden Day Don't Hides
Your Letter: XXXXXXXX Don't Hides
Second Page: XXXXXXXX Don't Hides
Third Page: XXXXXXXX Don't Hides
Fourth Page: XXXXXXXX Don't Hides
Fifth Page: XXXXXXXX Don't Hides
Sixth Page: XXXXXXXX Don't Hides
Seventh Page: XXXXXXXX Don't Hides
Eighth Page: XXXXXXXX Don't Hides
Ninth Page: XXXXXXXX Don't Hides
Tenth Page: XXXXXXXX Don't Hides

PL	Loc	Y	Y Date	Time	Site	Notes
09	1531	1913	1-1-13	Adams	M-plan	41ev 6 shaft A-34

810

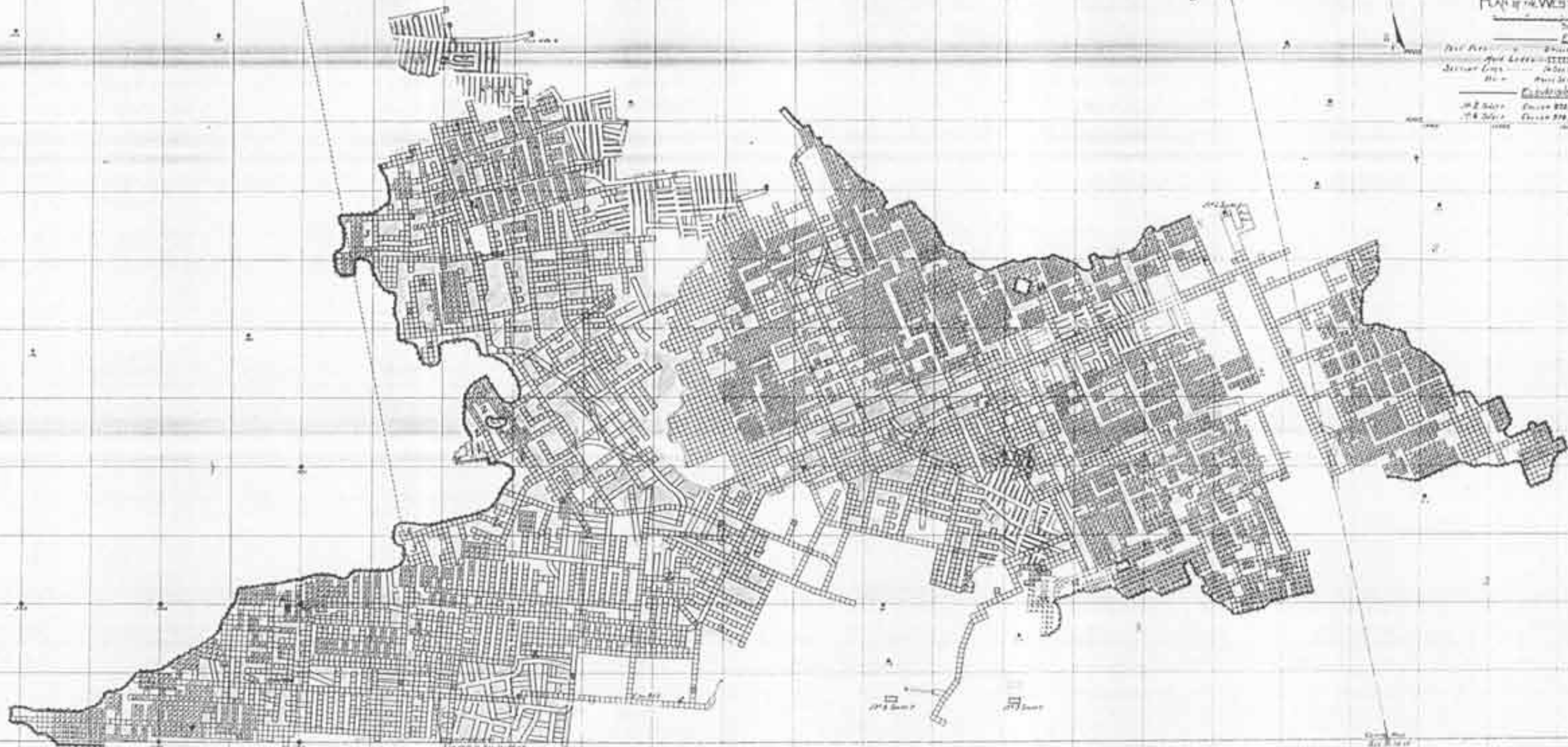
OLIVER IRON MINING CO.
MAP OF THE
ADAMS MINE.

EVELETH, MINN.

PLAN OF SECOND LEVEL. - No. 2 Shaft.

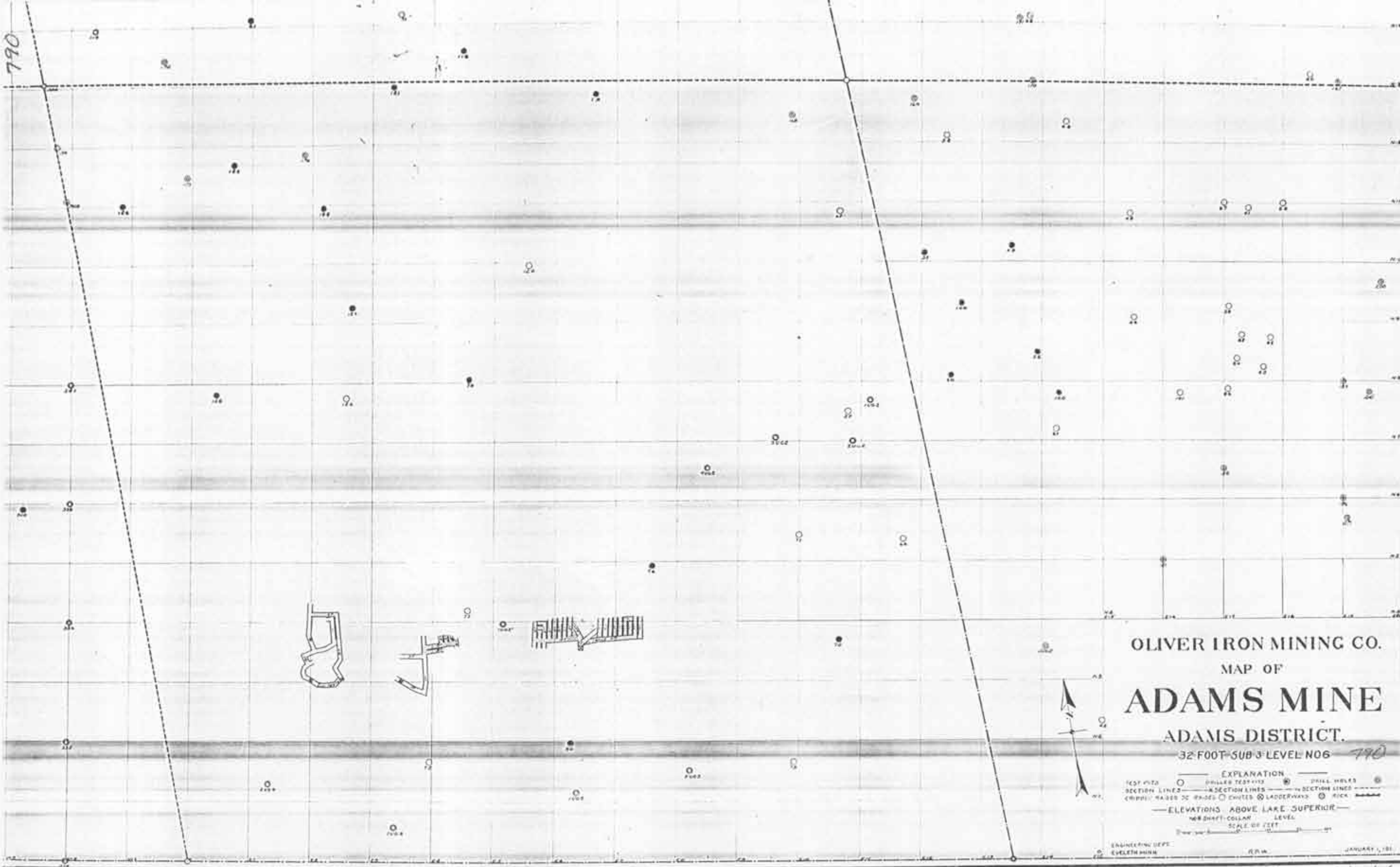
PLAN OF WEST SHAFT. - No. 6 Shaft.

Scale of Feet
Explorations
First Shaft
Second Shaft
Third Shaft
Fourth Shaft
Fifth Shaft
Sixth Shaft
Seventh Shaft
Eighth Shaft
Ninth Shaft
Tenth Shaft
Eleventh Shaft
Twelfth Shaft
Thirteenth Shaft
Fourteenth Shaft
Fifteenth Shaft
Sixteenth Shaft
Seventeenth Shaft
Eighteenth Shaft
Nineteenth Shaft
Twentieth Shaft
Twenty-first Shaft
Twenty-second Shaft
Twenty-third Shaft
Twenty-fourth Shaft
Twenty-fifth Shaft
Twenty-sixth Shaft
Twenty-seventh Shaft
Twenty-eighth Shaft
Twenty-ninth Shaft
Thirtieth Shaft
Thirty-first Shaft
Thirty-second Shaft
Thirty-third Shaft
Thirty-fourth Shaft
Thirty-fifth Shaft
Thirty-sixth Shaft
Thirty-seventh Shaft
Thirty-eighth Shaft
Thirty-ninth Shaft
Fortieth Shaft
Forty-first Shaft
Forty-second Shaft
Forty-third Shaft
Forty-fourth Shaft
Forty-fifth Shaft
Forty-sixth Shaft
Forty-seventh Shaft
Forty-eighth Shaft
Forty-ninth Shaft
Fiftieth Shaft
Fifty-first Shaft
Fifty-second Shaft
Fifty-third Shaft
Fifty-fourth Shaft
Fifty-fifth Shaft
Fifty-sixth Shaft
Fifty-seventh Shaft
Fifty-eighth Shaft
Fifty-ninth Shaft
Sixtieth Shaft
Sixty-first Shaft
Sixty-second Shaft
Sixty-third Shaft
Sixty-fourth Shaft
Sixty-fifth Shaft
Sixty-sixth Shaft
Sixty-seventh Shaft
Sixty-eighth Shaft
Sixty-ninth Shaft
Seventieth Shaft
Seventy-first Shaft
Seventy-second Shaft
Seventy-third Shaft
Seventy-fourth Shaft
Seventy-fifth Shaft
Seventy-sixth Shaft
Seventy-seventh Shaft
Seventy-eighth Shaft
Seventy-ninth Shaft
Eightieth Shaft
Eighty-first Shaft
Eighty-second Shaft
Eighty-third Shaft
Eighty-fourth Shaft
Eighty-fifth Shaft
Eighty-sixth Shaft
Eighty-seventh Shaft
Eighty-eighth Shaft
Eighty-ninth Shaft
Ninetieth Shaft
Ninety-first Shaft
Ninety-second Shaft
Ninety-third Shaft
Ninety-fourth Shaft
Ninety-fifth Shaft
Ninety-sixth Shaft
Ninety-seventh Shaft
Ninety-eighth Shaft
Ninety-ninth Shaft
One hundred Shaft



09 1531 1913 1-1-13 Adams M 216 shafts & 2 level
A-34

790



OLIVER IRON MINING CO.

MAP OF

ADAMS MINE

ADAMS DISTRICT.

32 FOOT SUB 3 LEVEL NO. 6

EXPLANATION
TEST PITS ○ DRILLED TEST PITS ● DRILL HOLES
SECTION LINES — SECTION LINES — SECTION LINES —
CHIPPED RAISED OR GRADES ○ CHUTES ○ LADDERWAYS ○ RICK
— ELEVATIONS ABOVE LAKE SUPERIOR —
NO. DRAFT COLLAR LEVEL
SCALE OF FEET
0 10 20 30 40 50 60 70 80 90 100

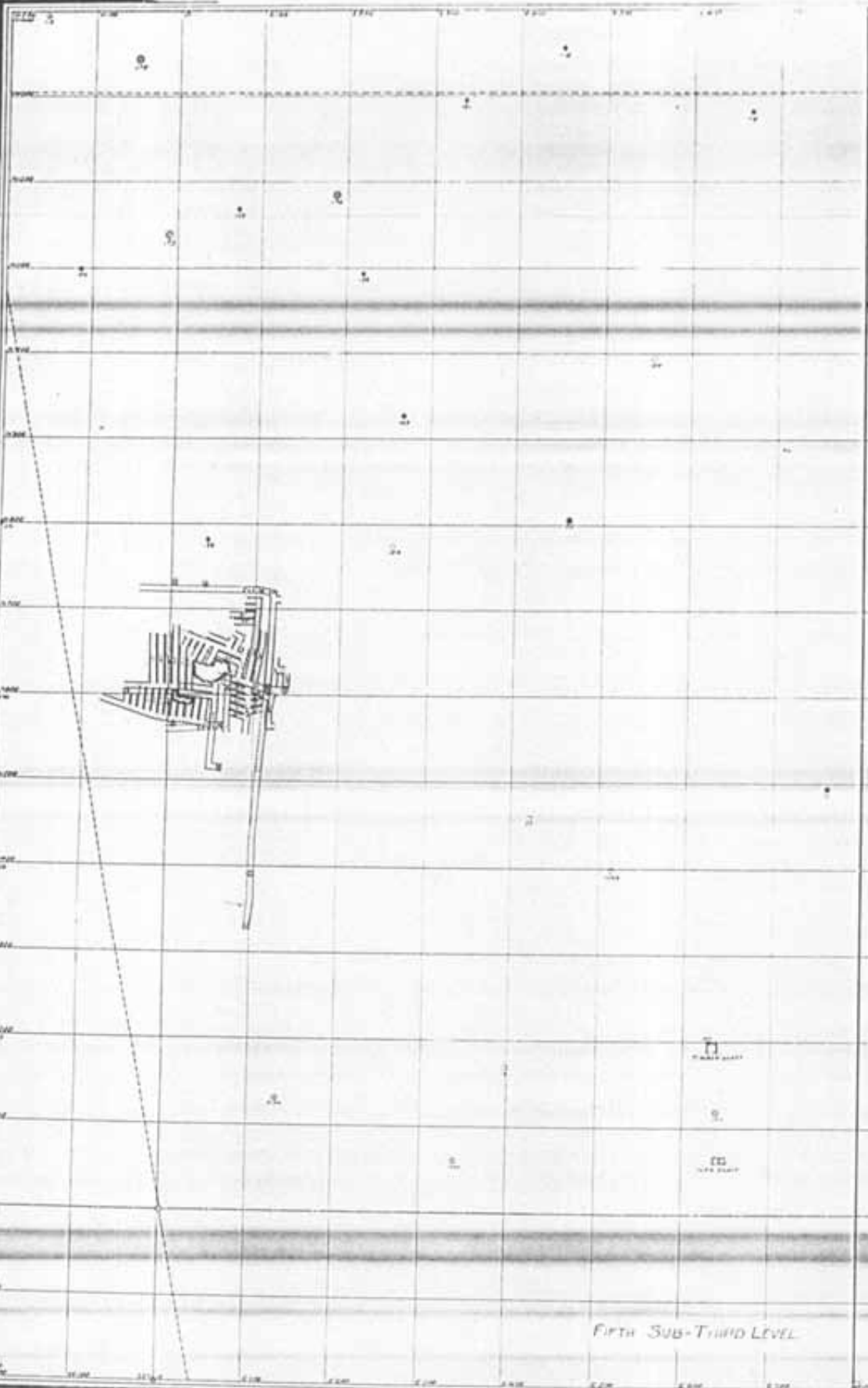
ENGINEERING DEPT.
EVELETH MINN.

1914

JANUARY 1, 1914

09 1531 1914 H-14 Adams m 32 Ft sub 3 level 6 A-35

779



Fifth Sub-Third Level

789

OLIVER IRON MINING CO. MAP OF THE ADAMS MINE.

EVELETH, MINN.

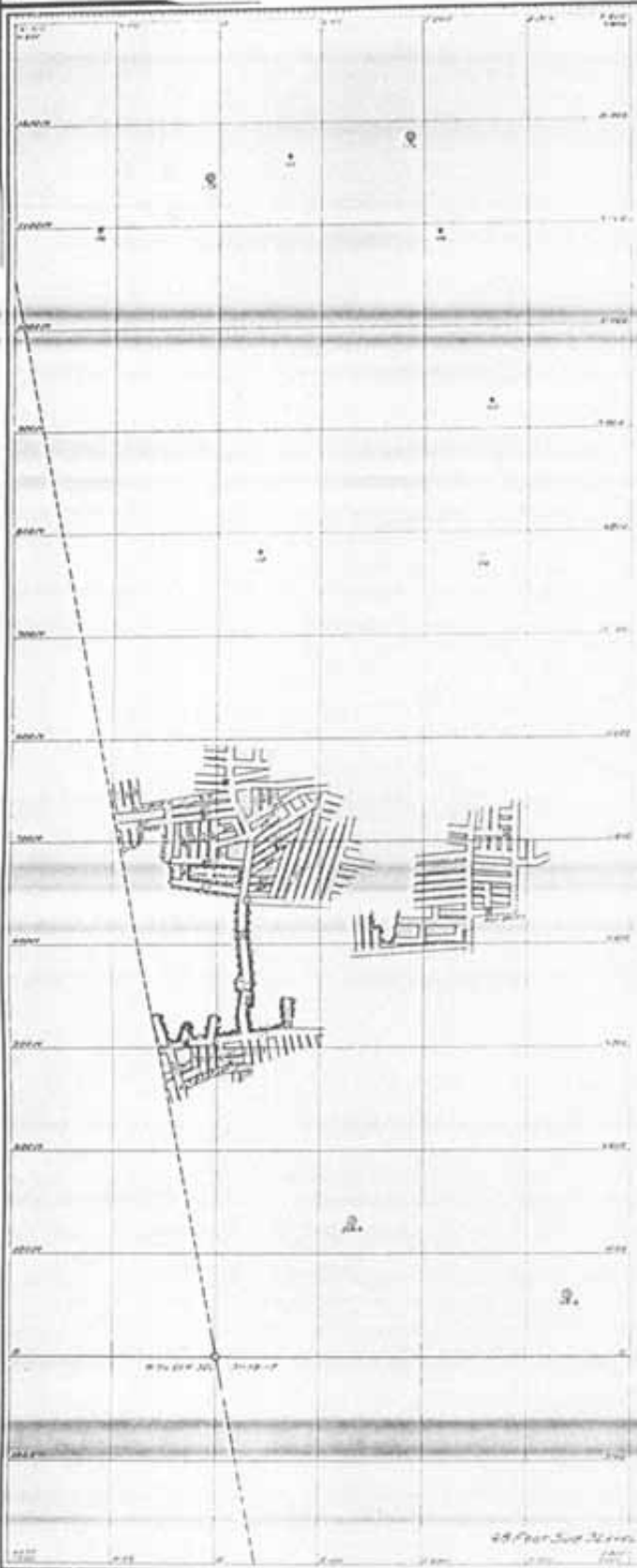
MOORE EASTING HILL SUB. - NO. 5 SHAF. T.

EXPLANATION
 Dotted Line - Boundary of Property
 Solid Line - Boundary of Mine
 Dashed Line - Boundary of Section
 Solid Line - Boundary of Township
 Dotted Line - Boundary of Range
 Solid Line - Boundary of County
 Dotted Line - Boundary of State
 Solid Line - Boundary of Country



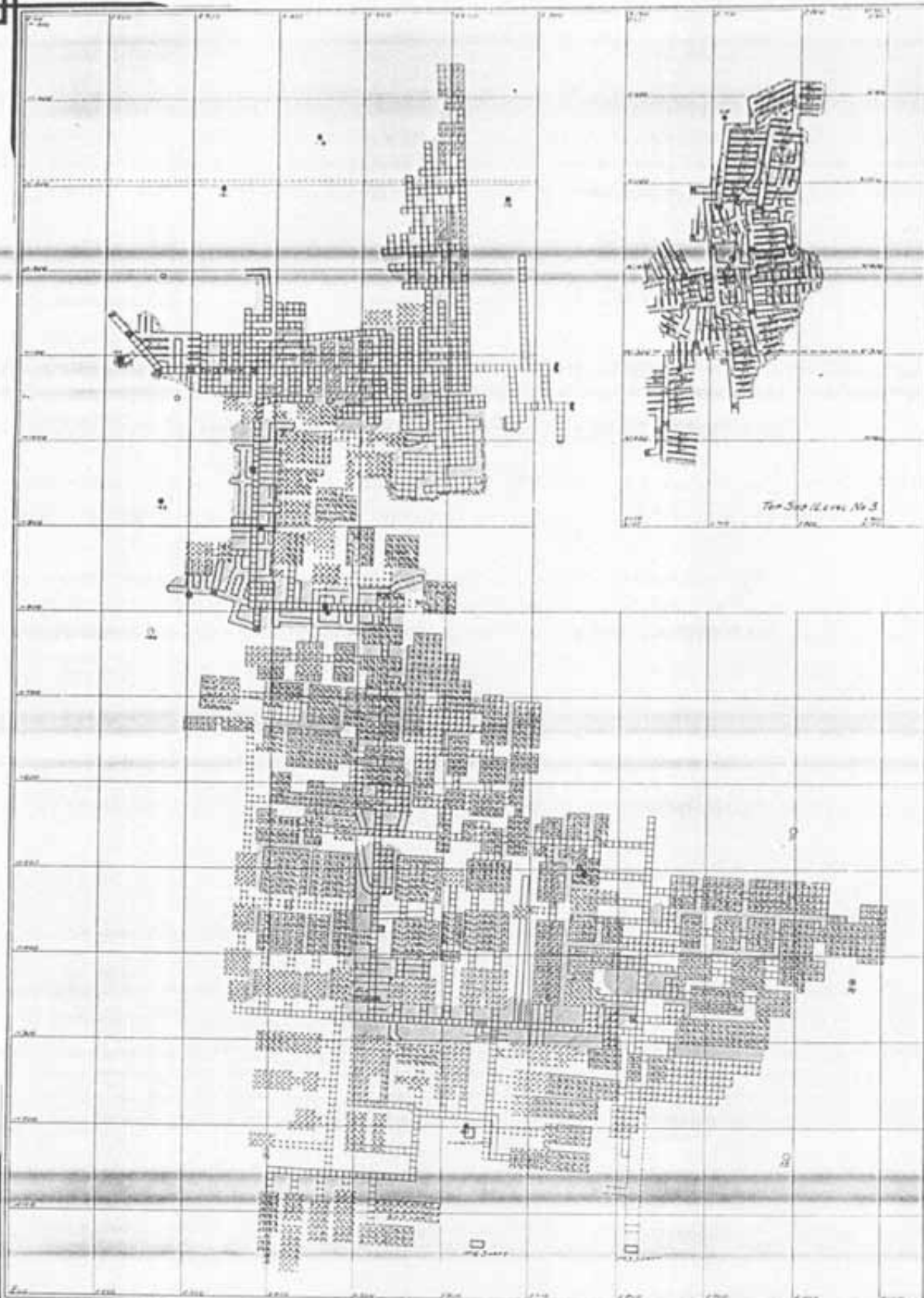
09 1531 1715 1-1-15 Adams m mid r Hill subs 65
 A-36

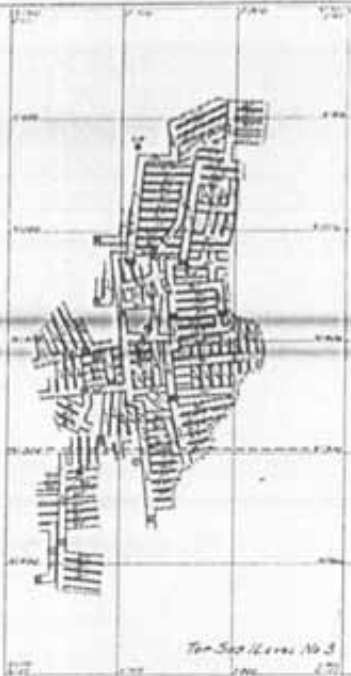
801



24 Feet Sur. 2000 1/4

837-880





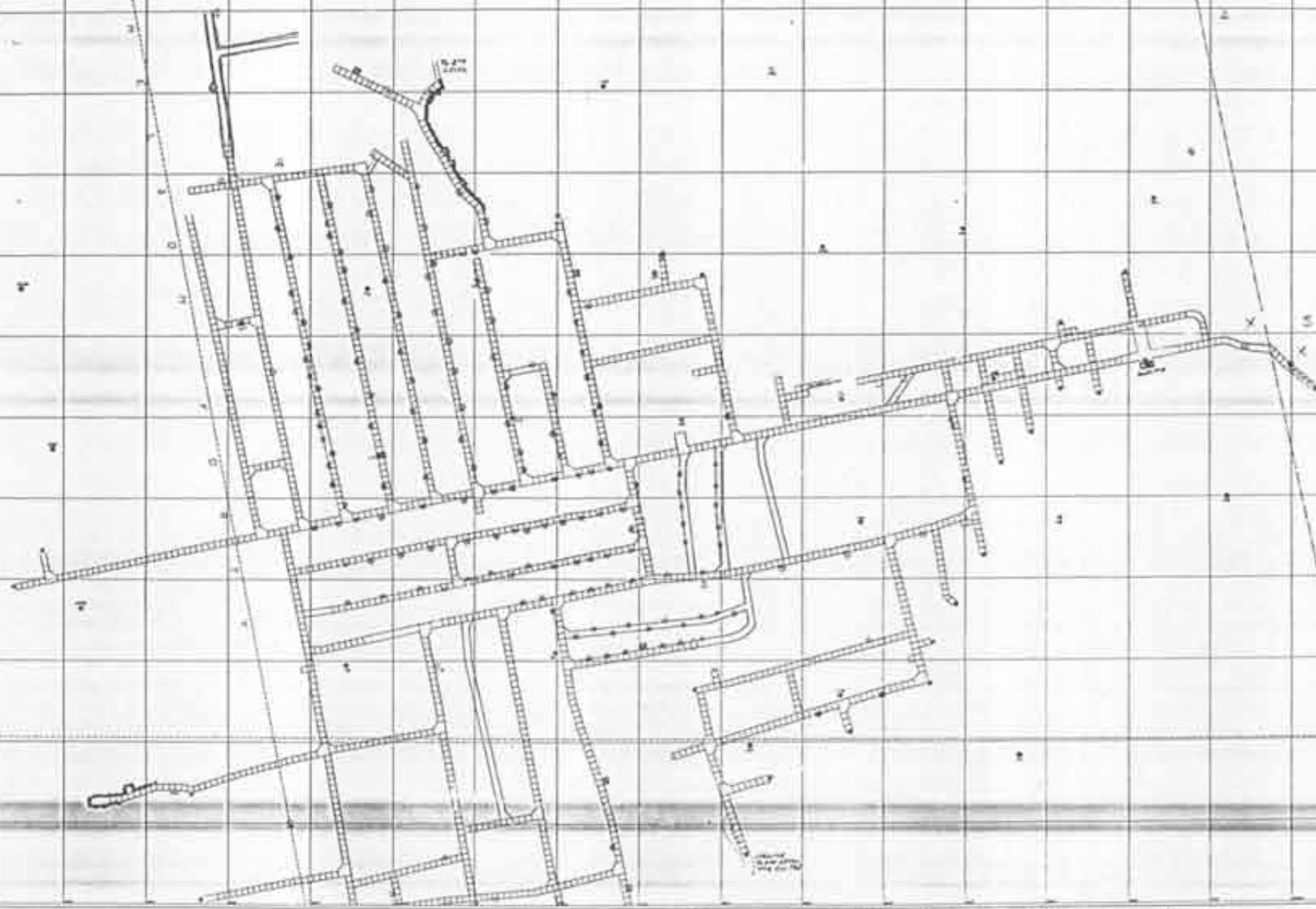
794

OLIVER IRON MINING CO. MAP OF THE ADAMS MINE.

EVERETT, MINN.
 Plan of the Third Level, - North Half.

Scale of Feet
 EXPLANATION
 First Air - Second Air - Drill Hole -
 Section Line - Section Line - Section Line -
 Main - Branch - Mine -
 Clouds and Land -
 The Iron - Copper - Lead - Zinc -

Jan 1, 1900



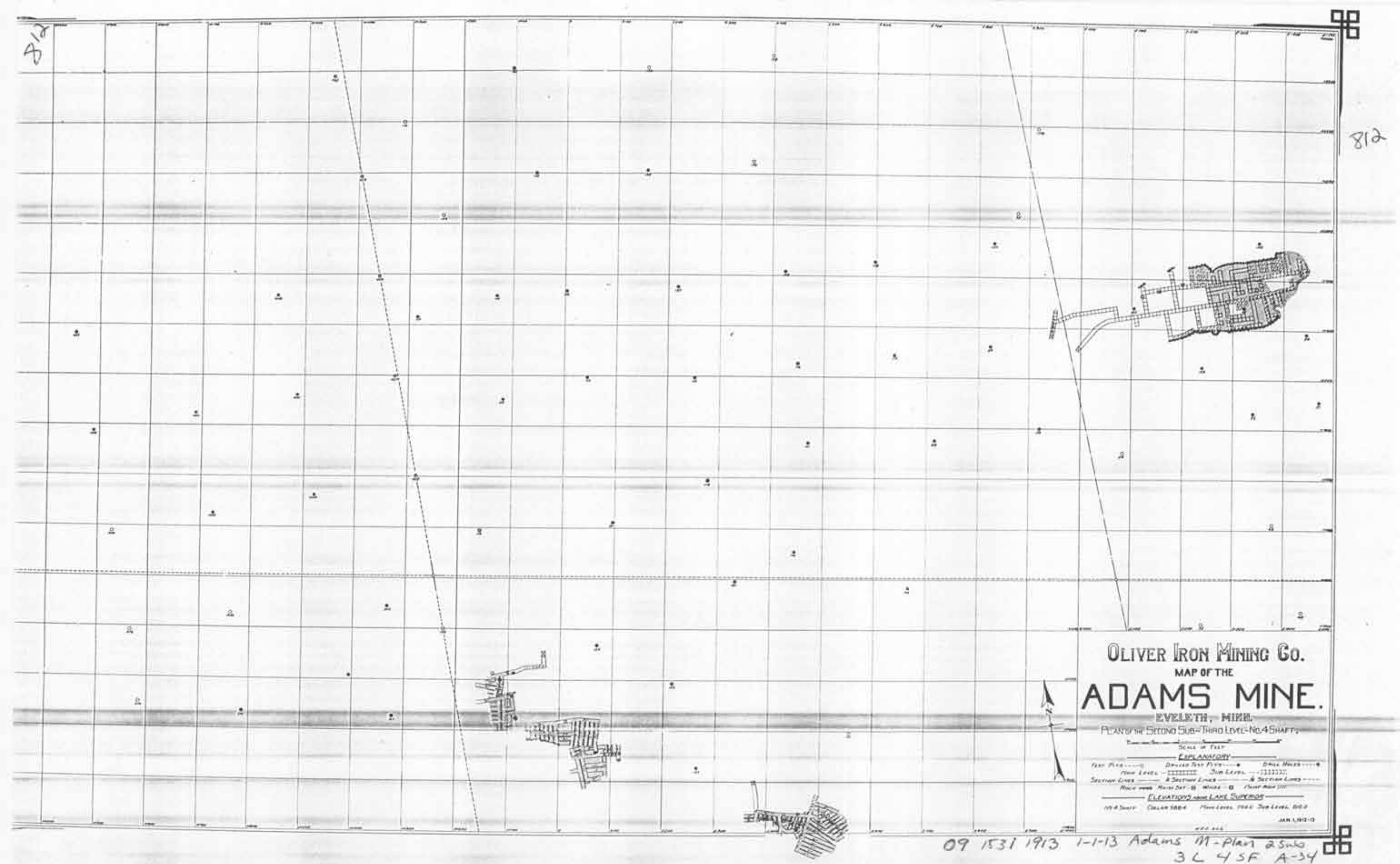
09 1531 1900 1-1-09 Adams m-plan 3 lev N half A-31

OLIVER IRON MINING CO.
MAP OF THE
ADAMS MINE.
EVELETH, MINN.
Floor of the Second Level NORTH HALF

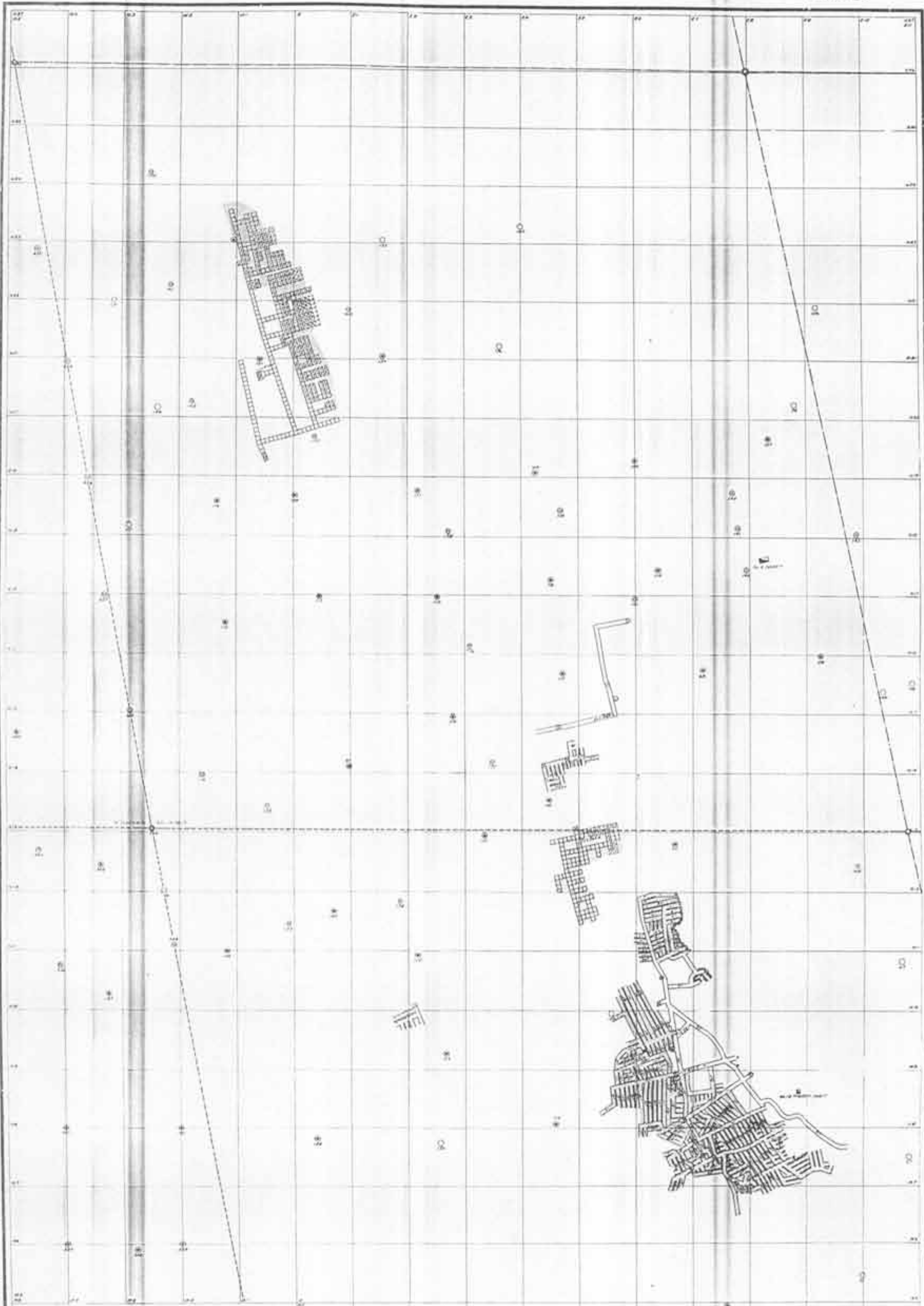
Page of 101
EXPLANATION
 First Part..... Second Part Part..... Third Part.....
 And Letter..... See Letter.....
 Second Case..... See Second Case..... See Second Case.....
 Third Case..... See Third Case..... See Third Case.....
EXPLANATION
 And Letter..... See Letter.....
 See Letter..... See Letter..... See Letter.....

Jan. 1, 1900.

09 1531 1900 1-1-09 Adams 15901-1909
M-Plan 2 Level N half A-32



09 1531 1915 1-1-15 Adams M & S. L. 4 shaft A-36



OLIVER IRON MINING CO.

MAP OF

ADAMS MINE

ADAMS DISTRICT.

SECOND SUB SECOND LEVEL NO4 SHAFT

EXPLANATION
— TEST PITS — DRILLED TEST PITS — CHILL PITS —
— SECTION LINES — SECTION LINES —
— ELEVATIONS ABOVE LAKE SUPERIOR —
— SHAFT COLLAR IN OPEN PIT LEVEL 2nd OF
— SCALE OF FEET —



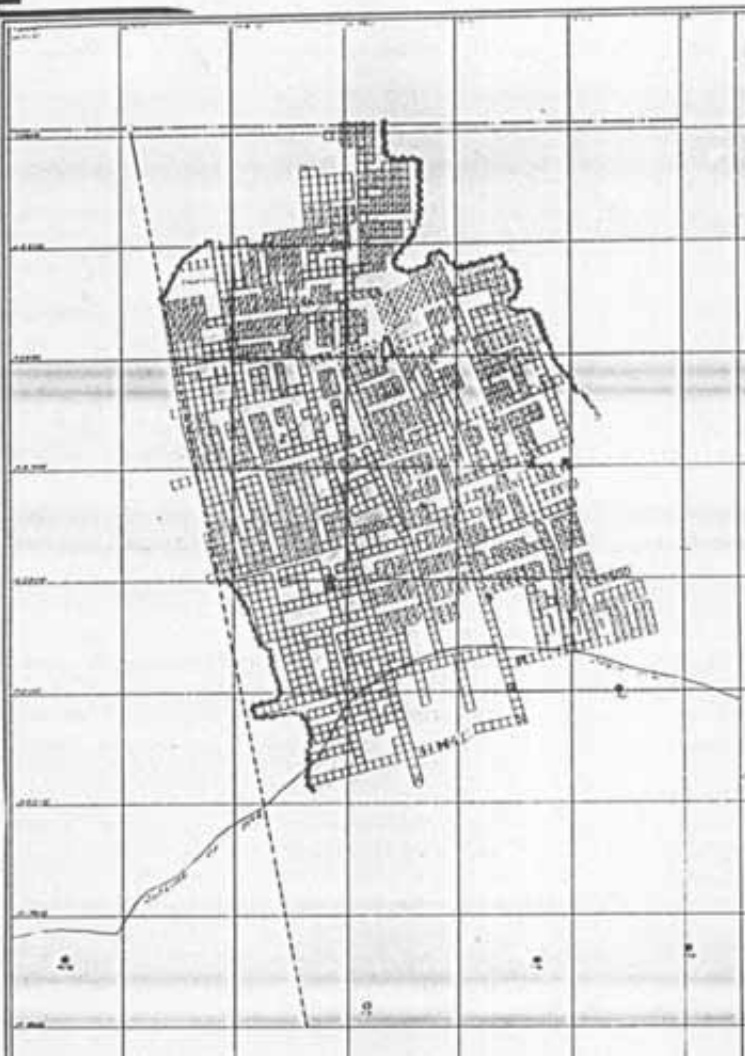
ENGINEERING OFFICE
ELEVATION

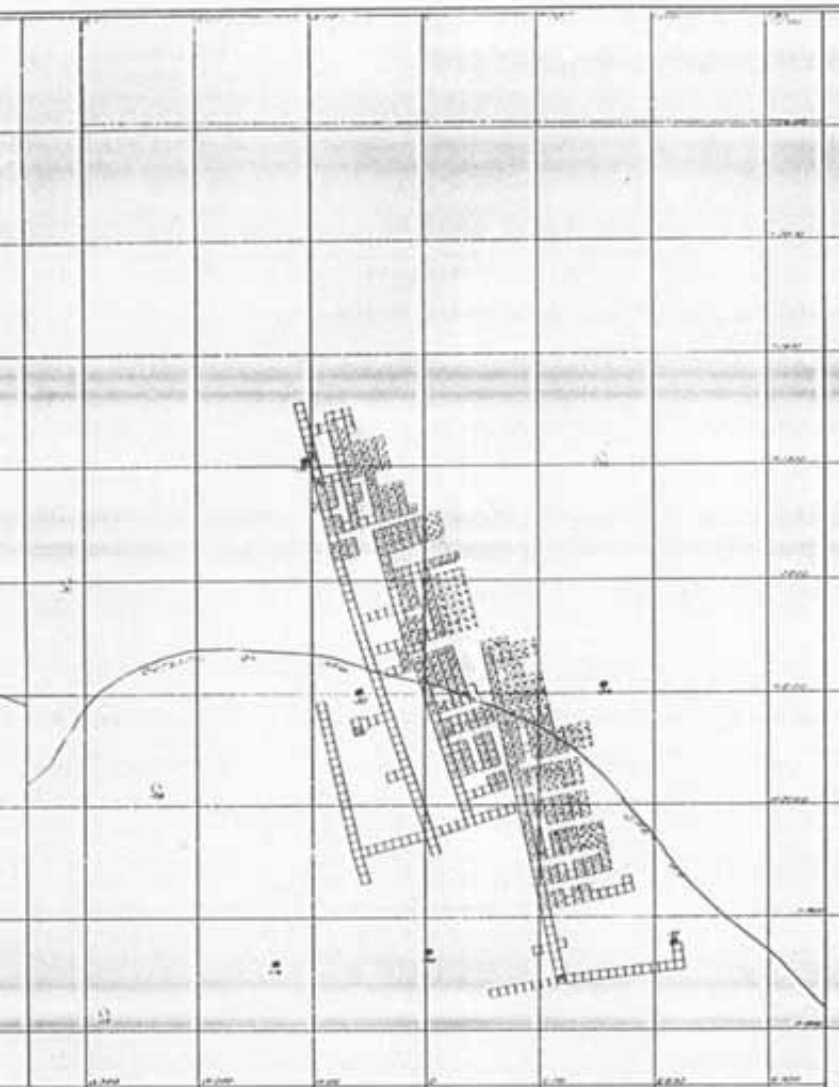
1915

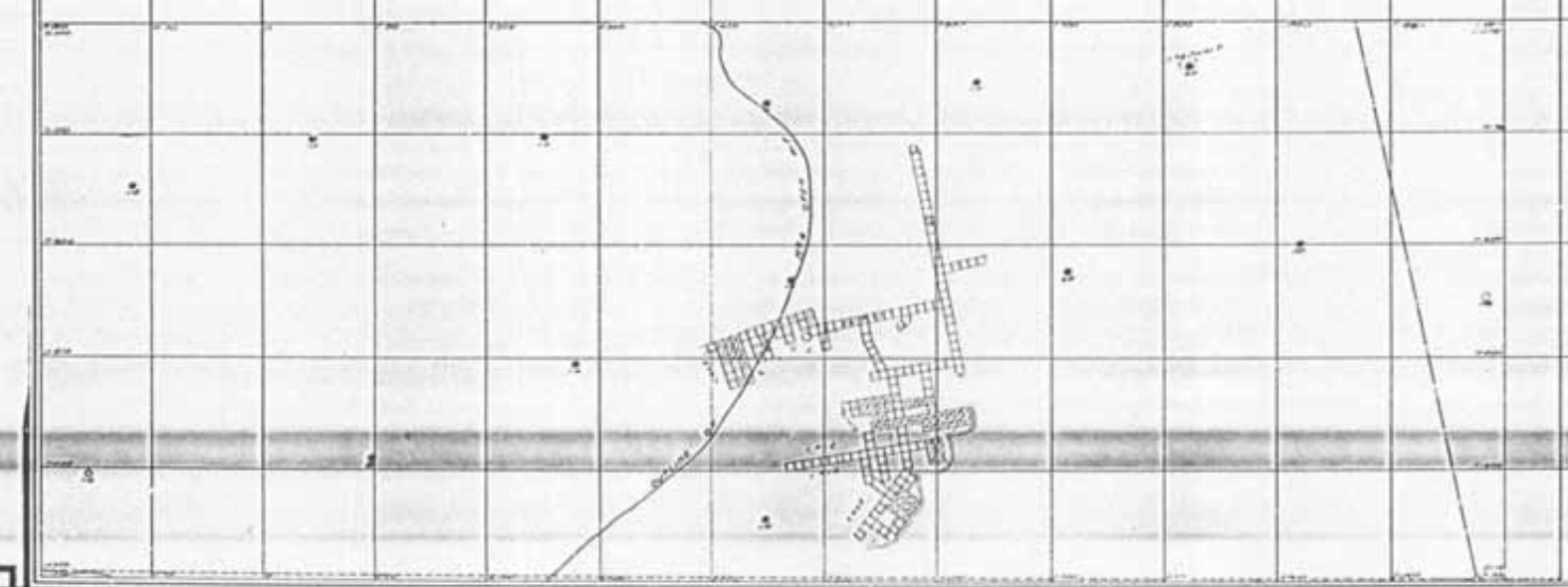
ADAMS MINE

ADAMS MINE

872-894







863-870



09 1531 1909 1-1-09 Adams MI Sub 2 Lev 194 A-31



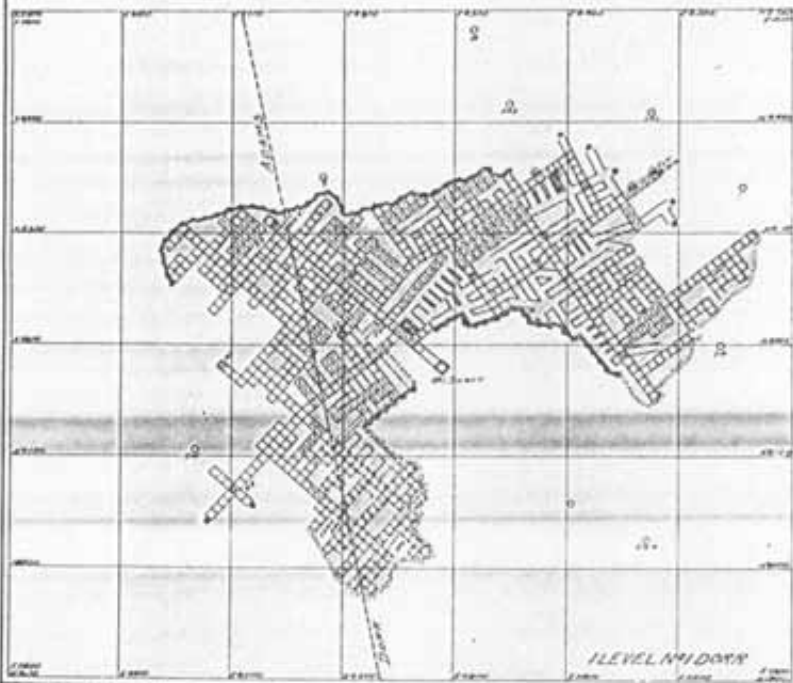
OLIVER IRON MINING CO.
MAP OF THE
ADAMS MINE.
EVELETH, MINN.
Subs. No 4 Shift Adams — No 1 Shift Dorr

Scale of Feet
EXPLANATION
 Shaft Pits ———— 2nd Shift Pitts ———— 2nd Shift House ————
 4th Shift ———— 2nd Shift ———— 2nd Shift ————
 Section Lines ———— Section Lines ———— Section Lines ————
 Rock ———— 2nd Shift ———— 2nd Shift ————
Electricity and Lamp Stations
 2nd Shift. Cables 2nd Shift. Cables 2nd Shift. Cables
 2nd Shift. Cables 2nd Shift. Cables 2nd Shift. Cables

09 1531 1907 1-1-07 Adams M 1 Sub 2 Lev 154 A-31

898

2100



2300

