

1994.311113' Hbb1
050504070

Helmer
Location of
ore dump ground

State of Minnesota
AUDITOR'S DEPARTMENT

HELMER MINE
AND VICINITY

SHOWING LOCATION OF ORE DUMP
GROUND AT THE HELMER MINE

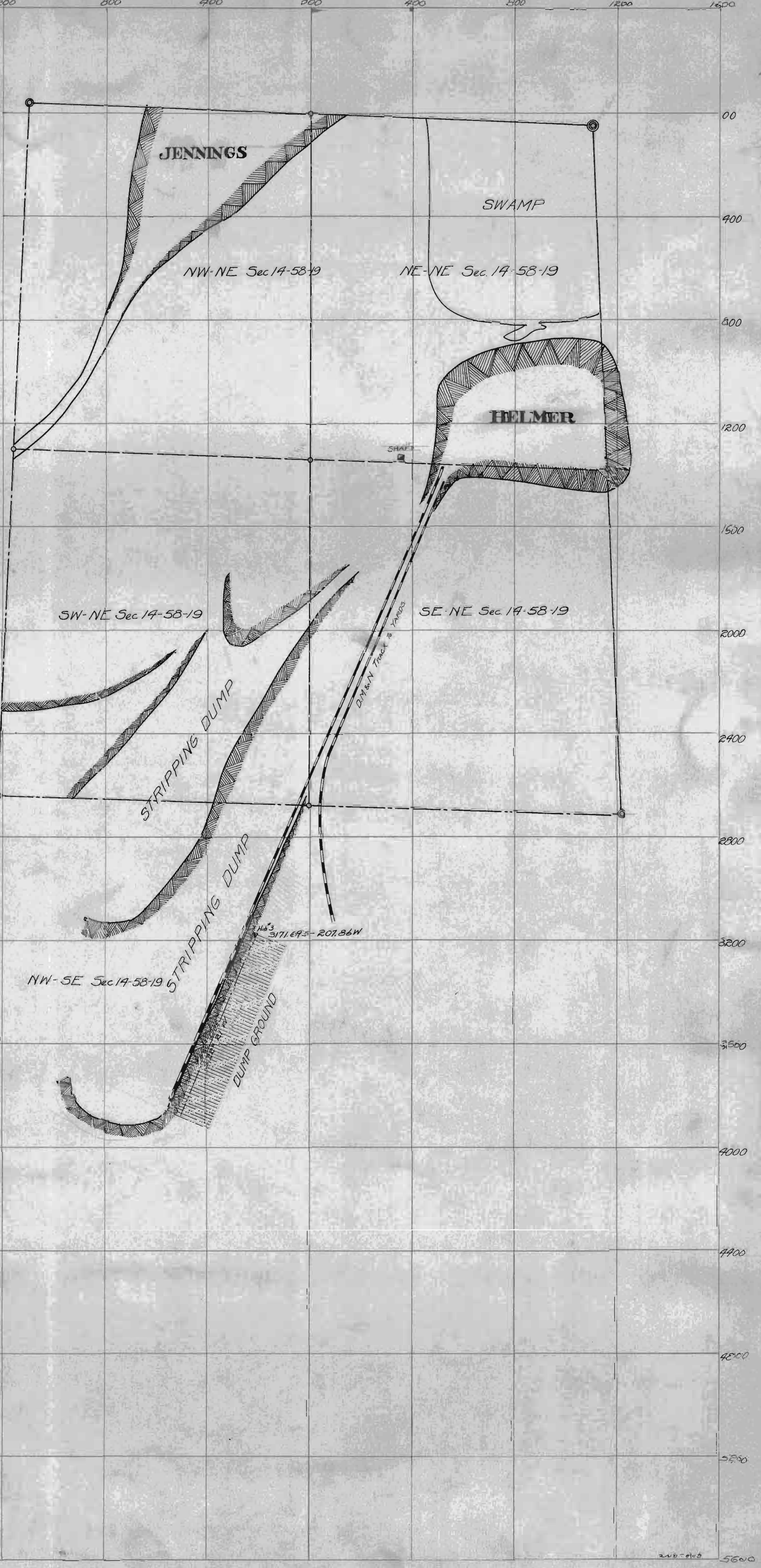
Scale 1" = 200'

Sec. 14-58-19

STATE MINING ENGR
1620

2000

NORTH



160' SUB

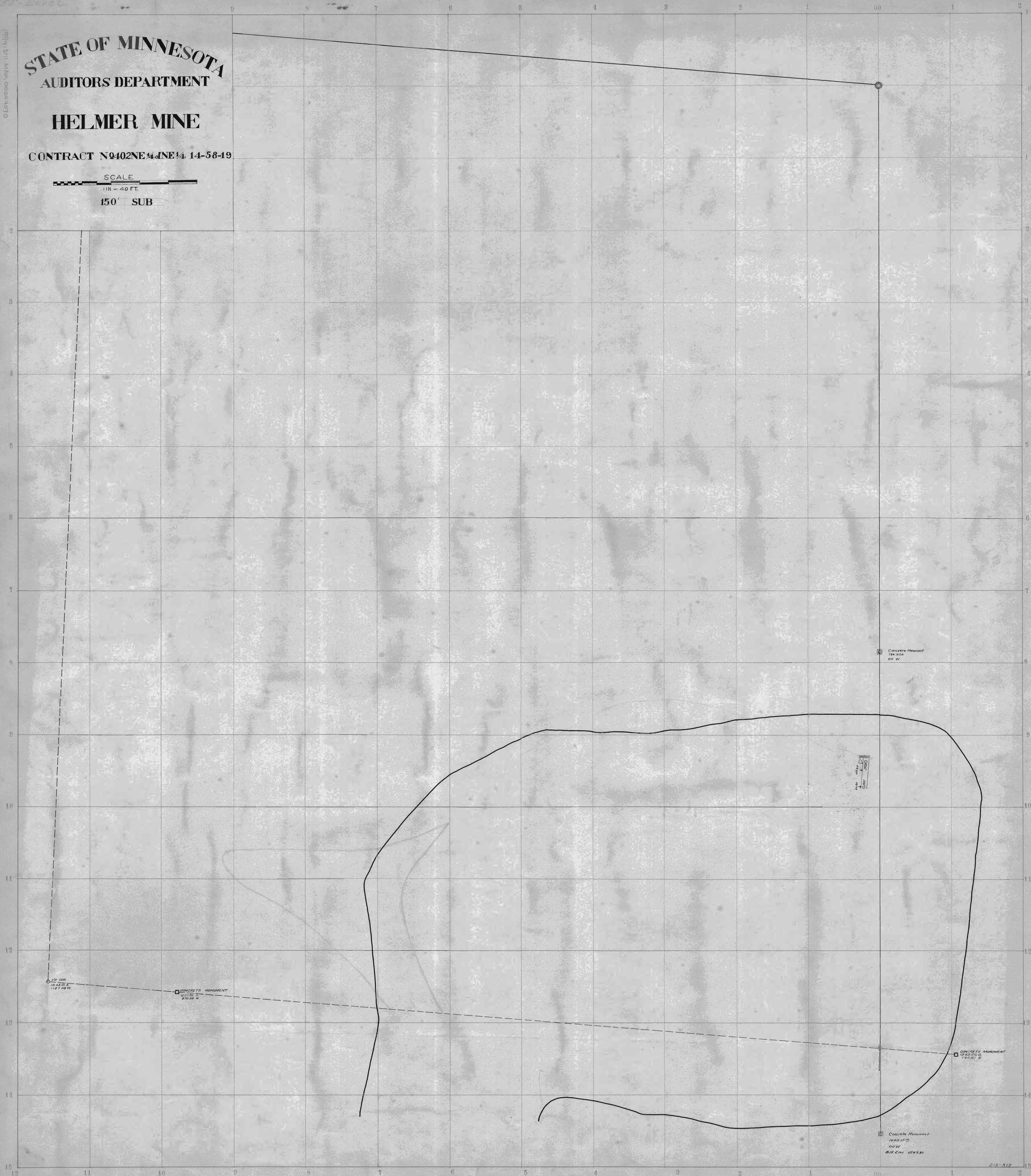
159-2000 L

STATE OF MINNESOTA
AUDITORS DEPARTMENT

HELMER MINE

CONTRACT N402NE1/4, NE1/4 14-58-19

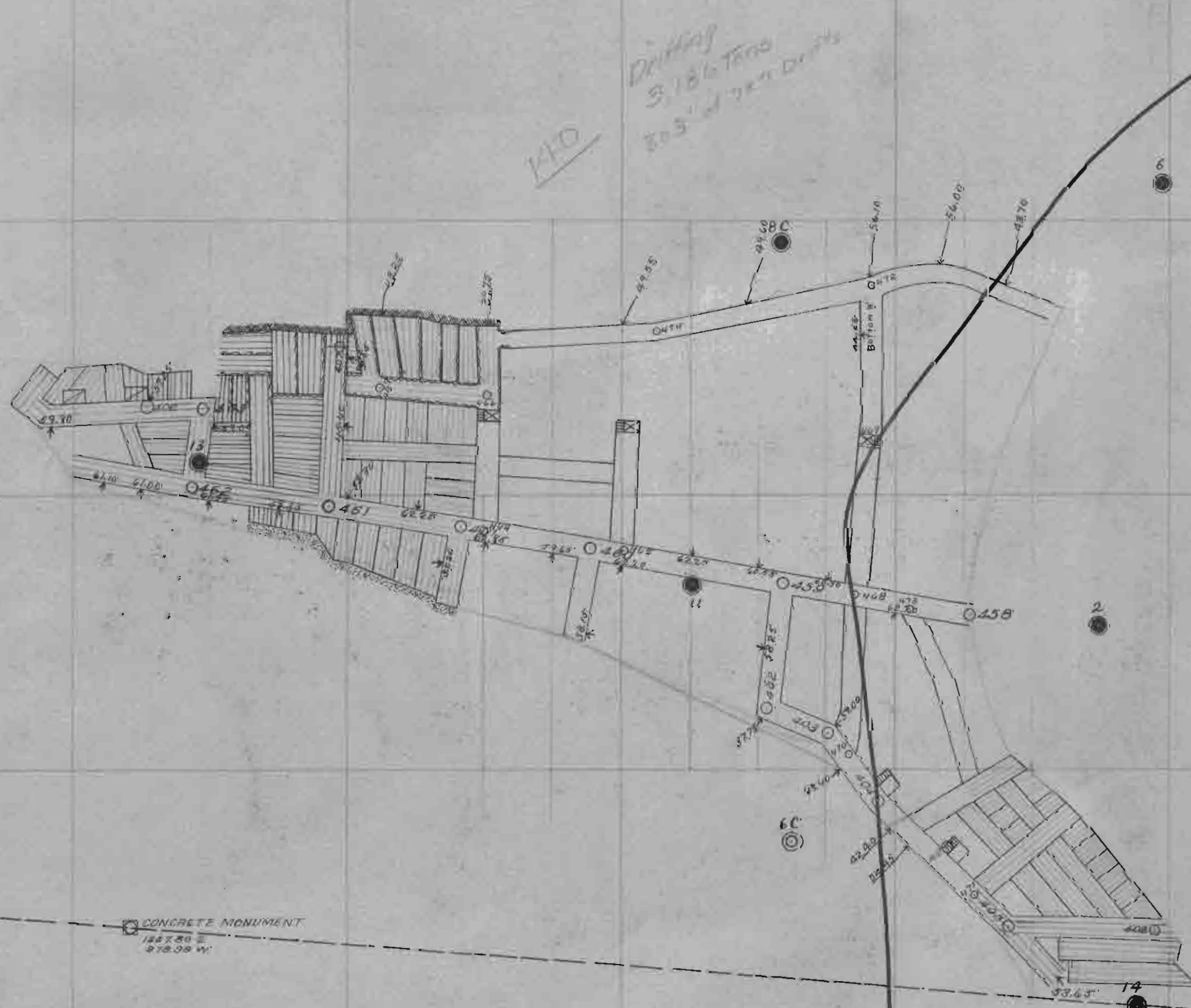
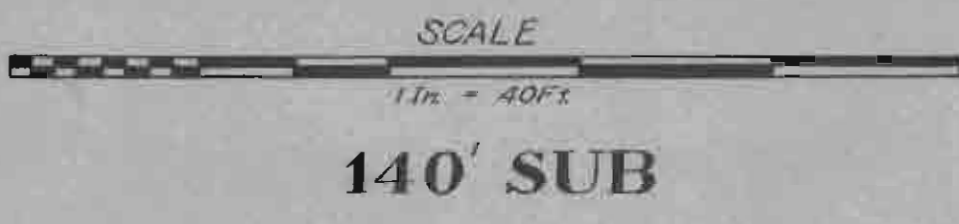
SCALE
1" = 40 FT.
150' SUB



STATE OF MINNESOTA
AUDITORS DEPARTMENT

HELMER MINE

CONTRACT N° 402, NE ¼ of NE ¼ 14-58-19



*Drift
3,180 ft.
283' of open drift*

Concrete Monument
104,212
104,212

Concrete Monument
104,212
104,212

Concrete Monument
104,212
104,212

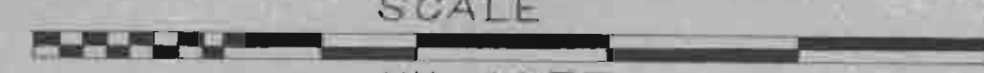
HELMER MINE

CONTRACT N^o 402 NE $\frac{1}{4}$ of NE $\frac{1}{4}$ 14-58-19

SCALE

11N=40 FT.

120 SUB



1994, 311, MP-00004070

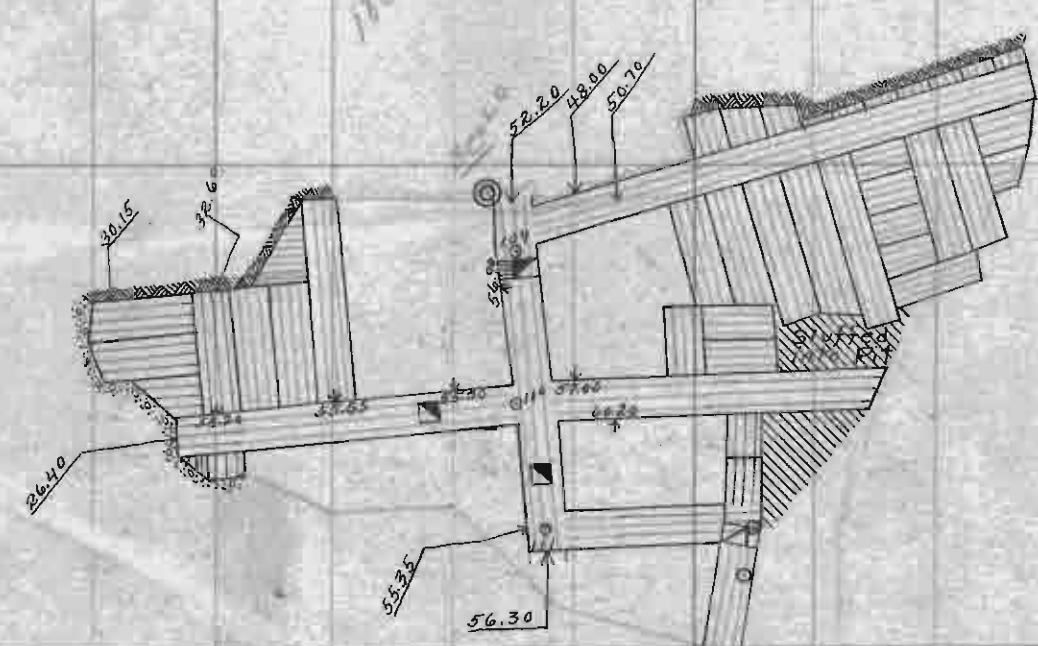
1073

1073

1073

1073

1073

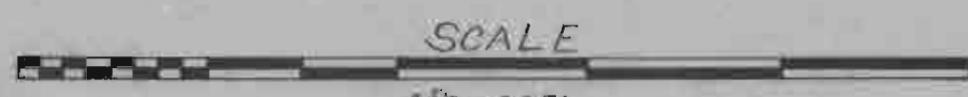


5

STATE OF MINNESOTA
AUDITORS DEPARTMENT

HELMER MINE

CONTRACT N° 402, NE ¼ of NE ¼ 14-58-19



100' SUB

Concrete Monument
102.25 ft

Concrete Monument
102.25 ft

Concrete Monument
102.25 ft

See Cont.
102.25 ft
102.25 ft

Concrete Monument
102.25 ft
102.25 ft

STATE OF MINNESOTA
AUDITOR'S DEPARTMENT

HELMER MINE

CONTRACT 402 NE-NE-14-58-19

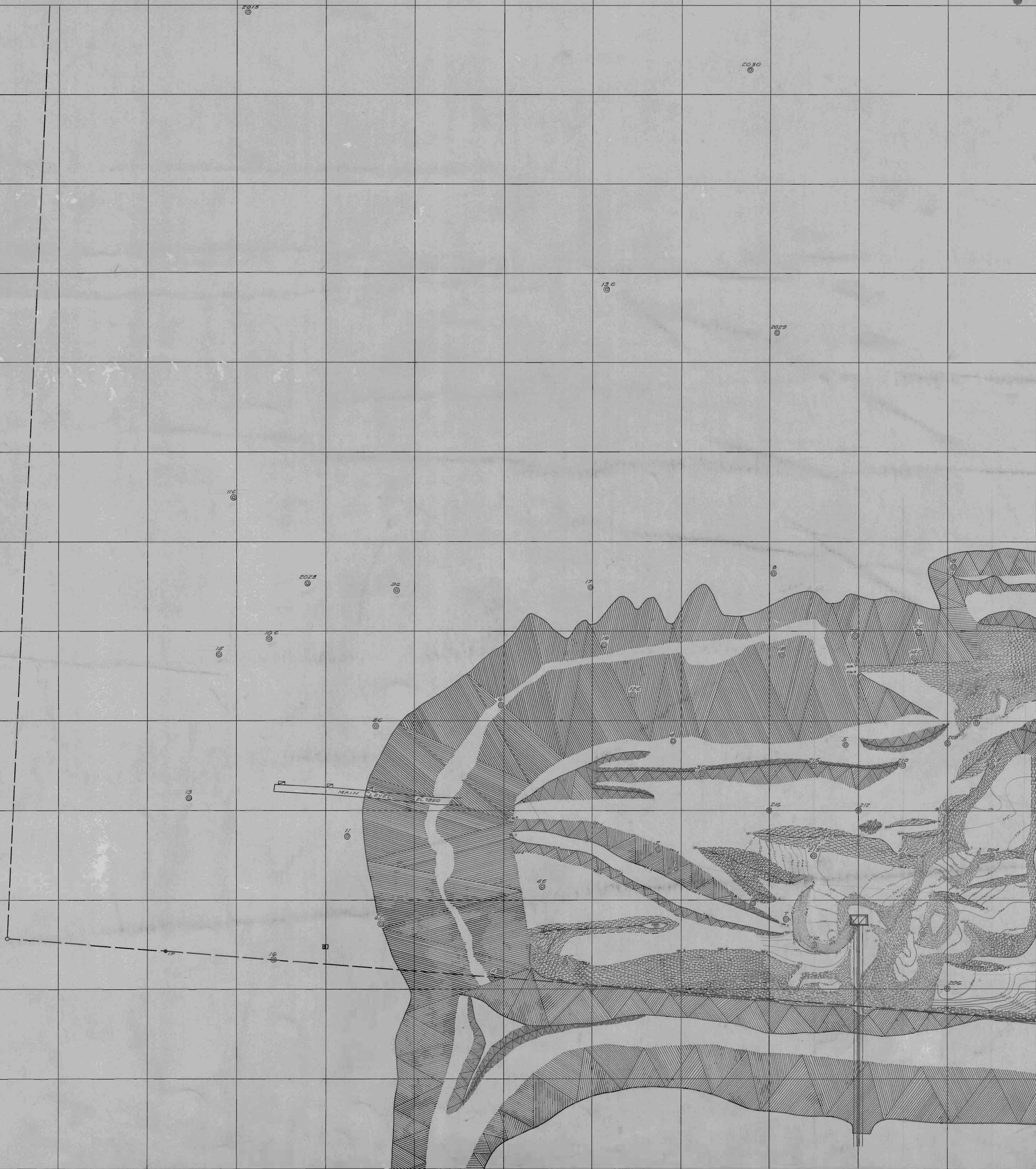
SCALE

1 IN = 40 FT.

STATE MINING ENGINEER

HIBBING, MINN.

JAN. 1, 1927



HELMER MINE

1420 FOOT SUB LEVEL

Scale: 1"=50'



NE 1/4 OF NE 1/4 SEC. 14 T⁵⁸R¹⁹W.

Scale 20' 1"

11 12
14 13

No 2028

HELMER

Feet	Iron Phos
75	40.48 .072
80	34.72 .044
85	35.24 .032
90	35.76 .035
95	42.64 .020
100	
105	
110	
115	
120	
125	
130	
135	
140	
145	
150	
155	
160	
165	
170	

Feet	Iron Phos
80	40.34 .047
85	51.90 .073
90	59.00 .072
95	63.9 .051
100	59.68 .039
105	65.00 .030
110	61.93 .050
115	61.47 .041
120	61.42 .061
125	62.02 .067
130	60.24 .061
135	61.47 .073
140	56.46 .082
145	58.18 .060
150	58.32 .078
155	55.14 .075
160	
165	
170	

Feet	Iron Phos
80	54.91 .072
85	58.87 .102
90	61.53 .069
95	64.74 .052
100	64.89 .063
105	63.96 .060
110	64.15 .056
115	63.47 .052
120	60.75 .087
125	61.46 .082
130	61.02 .070
135	57.67 .080
140	59.72 .079
145	
150	
155	
160	
165	
170	

Feet	Iron Phos
80	31.57 .055
85	60.44 .069
90	61.09 .068
95	64.71 .056
100	61.83 .053
105	60.86 .051
110	64.51 .055
115	61.31 .075
120	63.77 .060
125	62.03 .068
130	58.75 .056
135	54.90 .074
140	48.23 .088
145	60.78 .061
150	58.72 .052
155	63.03 .057
160	44.74 .048
165	51.35 .061
170	

Feet	Iron Phos
70	60.26 .097
75	54.44 .069
80	59.00 .072
85	58.78 .086
90	60.02 .073
95	64.55 .072
100	65.53 .039
105	65.91 .018
110	64.03 .060
115	64.51 .055
120	61.31 .075
125	63.22 .103
130	64.35 .081
135	59.26 .105
140	62.44 .092
145	57.63 .089
150	52.84 .072
155	55.84 .080
160	
165	
170	

Feet	Iron Phos
70	60.48 .072
75	63.00 .082
80	61.27 .091
85	62.00 .083
90	64.48 .051
95	63.22 .047
100	64.74 .042
105	64.32 .067
110	64.43 .069
115	64.38 .081
120	58.74 .086
125	59.26 .105
130	62.44 .092
135	61.43 .117
140	61.89 .087
145	54.81 .078
150	58.90 .071
155	62.31 .072
160	60.53 .095
165	60.02 .132
170	

Feet	Iron Phos
68	53.93 .103
73	60.20 .090
78	50.67 .084
83	50.96 .056
88	45.61 .026
93	57.00 .100
98	61.08 .091
103	
108	
113	
118	
123	
128	
133	
138	
143	
148	
153	
158	
163	
168	
173	
178	
183	

Feet	Iron Phos
102	59.17 .064
107	61.11 .042
112	65.10 .044
117	65.32 .039
122	57.51 .039
127	57.46 .058
132	56.64 .052
137	51.82 .063
142	58.22 .040
147	60.50 .049
152	58.64 .073
157	62.24 .077
162	54.54 .121
167	63.38 .053
172	61.00 .043
177	55.76 .077
182	

Feet	Iron Phos
80	62.81 .048
85	62.08 .072
90	60.50 .111
95	56.89 .040
100	47.58 .055
105	
110	
115	
120	
125	
130	
135	
140	
145	
150	
155	
160	
165	
170	
175	
180	

Feet	Iron Phos
92	60.92 .052
97	58.19 .086
102	60.92 .043
107	63.58 .039
112	63.67 .072
117	63.09 .039
122	64.03 .039
127	65.45 .023
132	64.22 .035
137	61.36 .038
142	62.84 .054
147	60.50 .048
152	62.64 .051
157	61.34 .062
162	61.27 .068
167	61.63 .063
172	61.57 .078
177	
182	

Feet	Iron Phos
92	60.92 .052
97	58.19 .086
102	60.92 .043
107	63.58 .039
112	63.67 .072
117	63.09 .039
122	64.03 .039
127	65.45 .023
132	64.22 .035
137	61.36 .038
142	62.84 .054
147	60.50 .048
152	62.64 .051
157	61.34 .062
162	61.27 .068
167	61.63 .063
172	61.57 .078
177	
182	

Feet	Iron Phos
92	60.92 .052
97	58.19 .086
102	60.92 .043
107	63.58 .039
112	63.67 .072
117	63.09 .039
122	64.03 .039
127	65.45 .023
132	64.22 .035
137	61.36 .038
142	62.84 .054
147	60.50 .048
152	62.64 .051
157	61.34 .062
162	61.27 .068
167	61.63 .063
172	61.57 .078
177	
182	

Feet	Iron Phos
92	60.92 .052
97	58.19 .086
102	60.92 .043
107	63.58 .039
112	63.67 .072
117	63.09 .039
122	64.03 .039
127	65.45 .023
132	64.22 .035
137	61.36 .038
142	62.84 .054
147	60.50 .048
152	62.64 .051
157	61.34 .062
162	61.27 .068
167	61.63 .063
172	61.57 .078
177	
182	

ELEVATION OF DRILL HOLES SURFACE

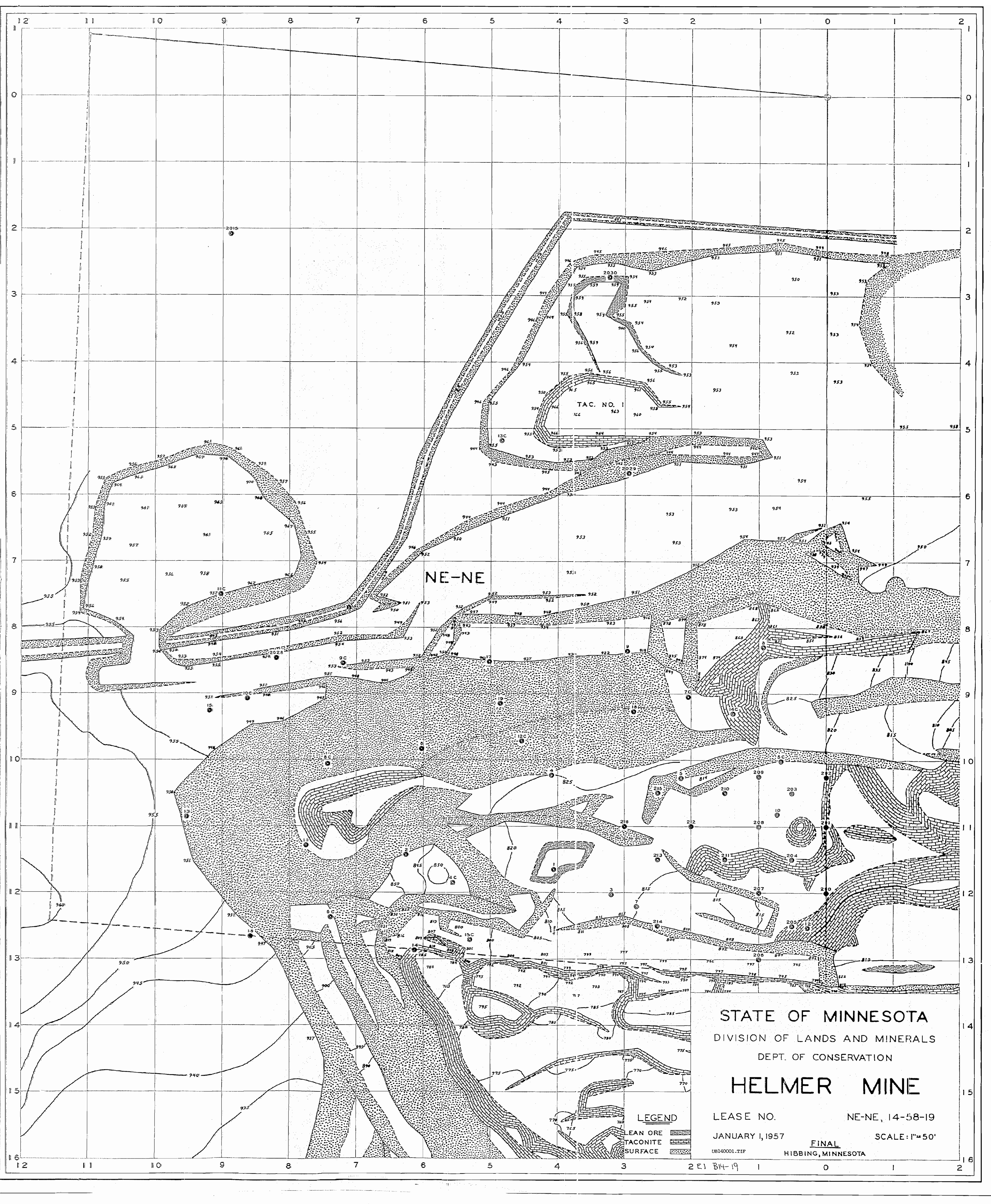
No	ELL	FE	FE
5	88.4		
3	84.5		
1	84.5		
2	87.2		
4	84.7		
6	84.2		

W. A. HANNA & CO.
Engineering Dept.

No. 522

HELMER

Printed
File



STATE OF MINNESOTA
DIVISION OF LANDS AND MINERALS
DEPT. OF CONSERVATION

HELMER MINE

LEASE NO.

NE-NE, 14-58-19

JANUARY 1, 1957

SCALE: 1"=50'

FINAL

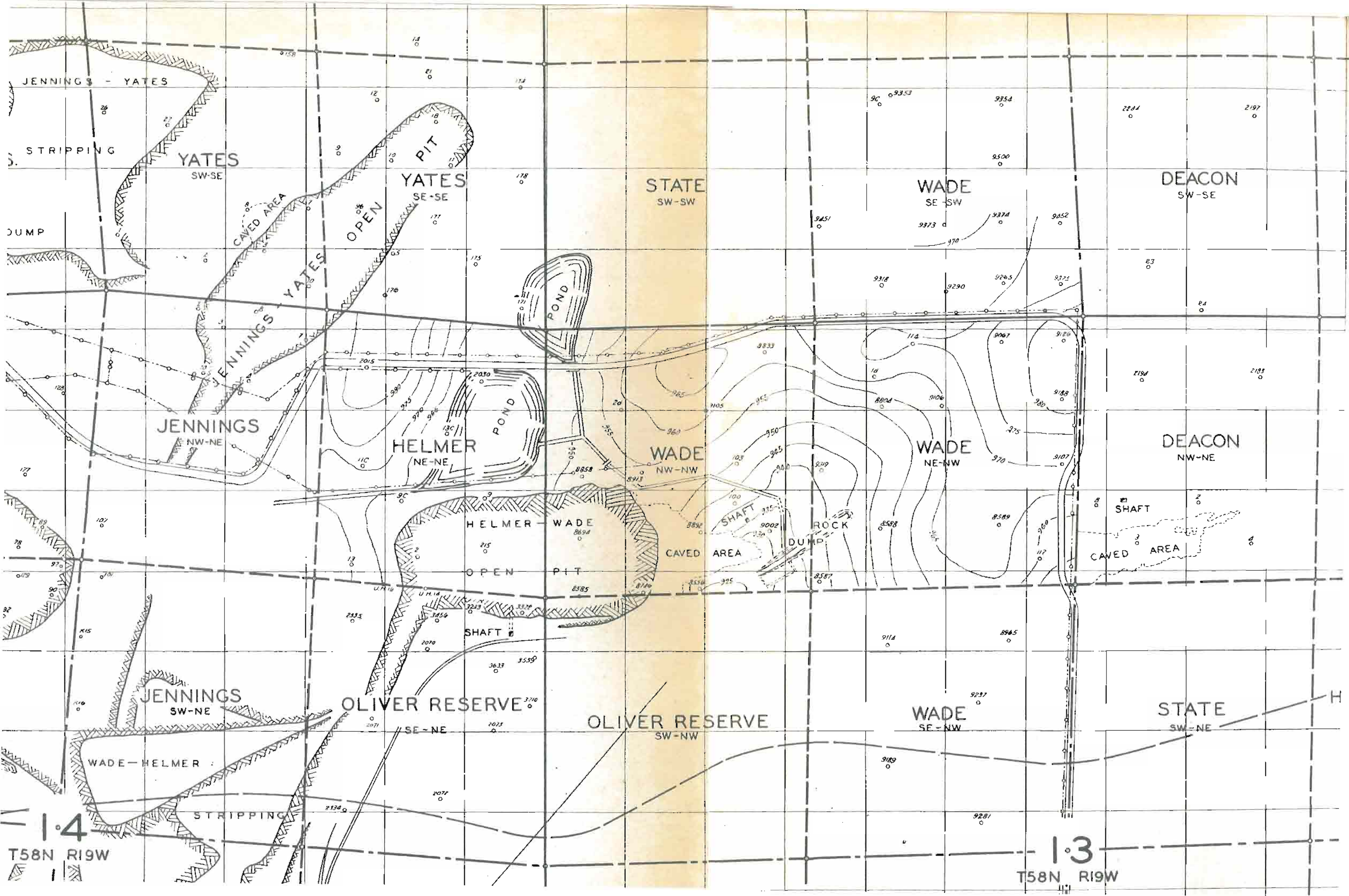
HIBBING, MINNESOTA

LEGEND

LEAN ORE
TACONITE
SURFACE

UB140001.TIF

2 E1 B14-19



JENNINGS - YATES

STRIPPING

YATES

SW-SE

YATES

SE-SE

STATE

SW-SW

WADE

SE-SW

DEACON

SW-SE

DUMP

JENNINGS

NW-NE

HELMER

NE-NE

WADE

NW-NW

WADE

NE-NW

DEACON

NW-NE

HELMER - WADE

OPEN PIT

CAVED AREA

ROCK DUMP

SHAFT

CAVED AREA

JENNINGS

SW-NE

OLIVER RESERVE

SE-NE

OLIVER RESERVE

SW-NW

WADE

SE-NW

STATE

SW-NE

1.4

T58N R19W

1.3

T58N R19W