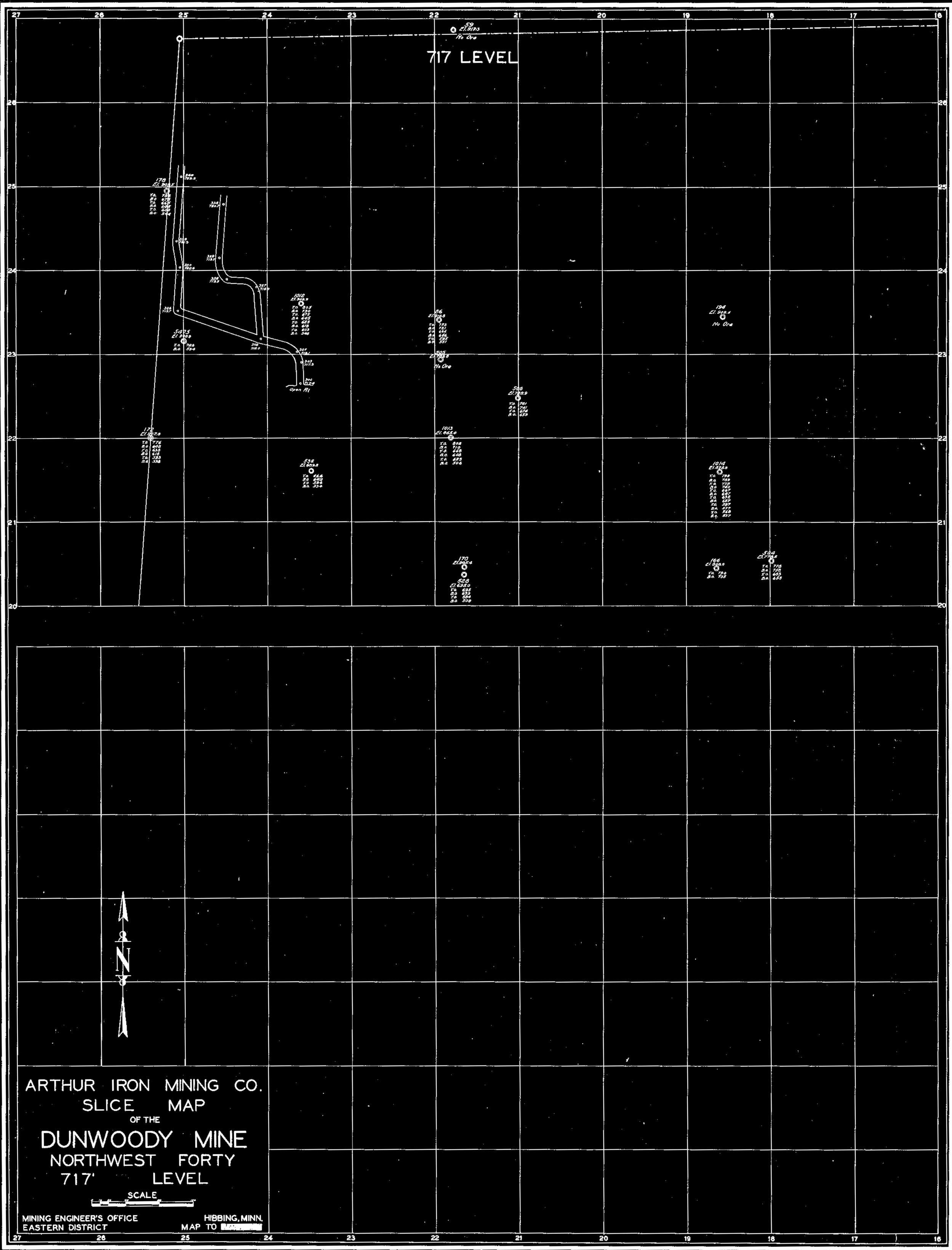
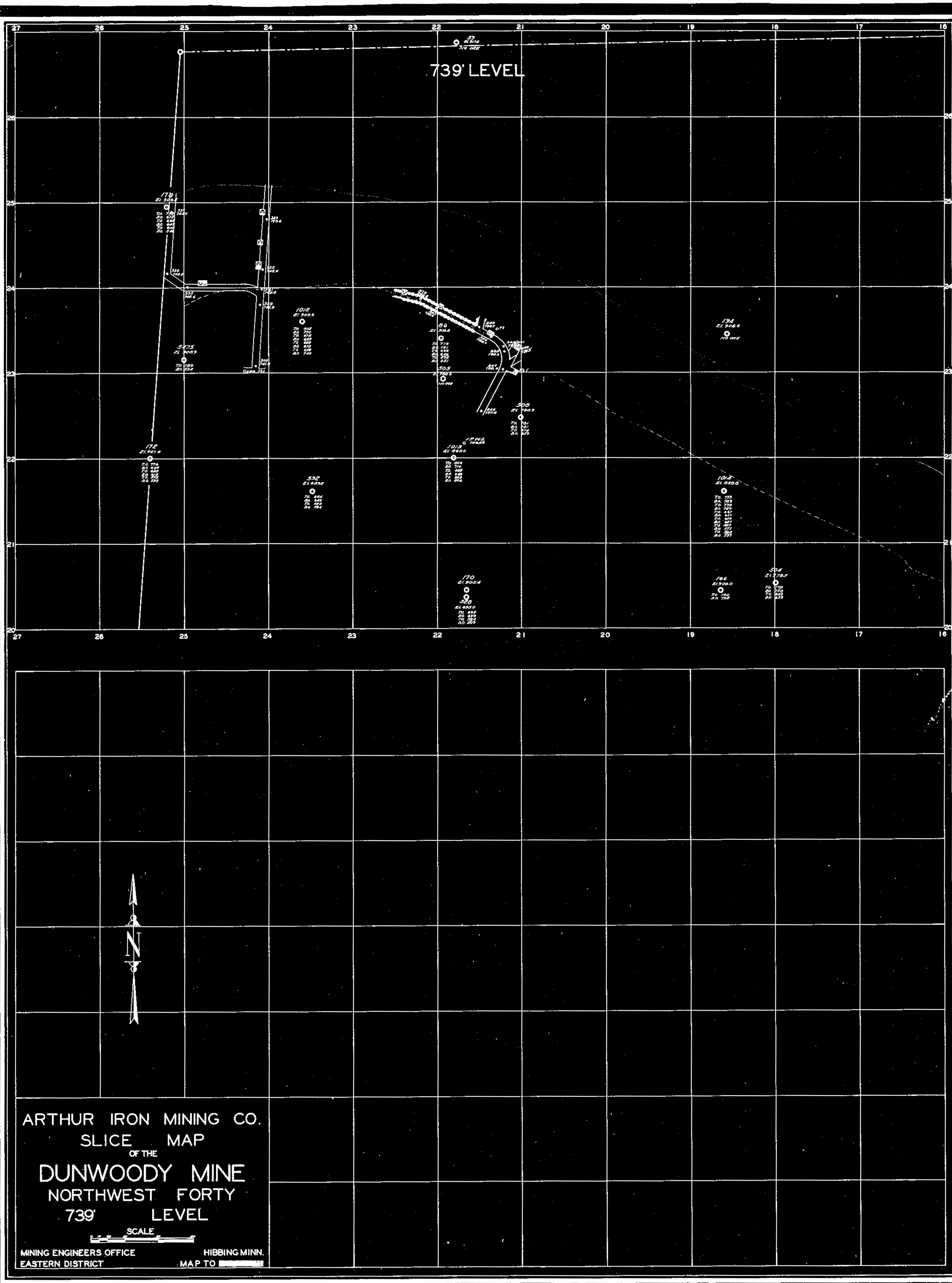

717 LEVEL
59
No Ore
178
1012
5475
86
No Ore
194
No Ore
Open Pit
508
172
1013
536
1014
170
528
166
504
N
ARTHUR IRON MINING CO.
SLICE MAP
OF THE
DUNWOODY MINE
NORTHWEST FORTY
717' LEVEL
SCALE
MINING ENGINEER'S OFFICE
EASTERN DISTRICT
HIBBING, MINN.
MAP TO

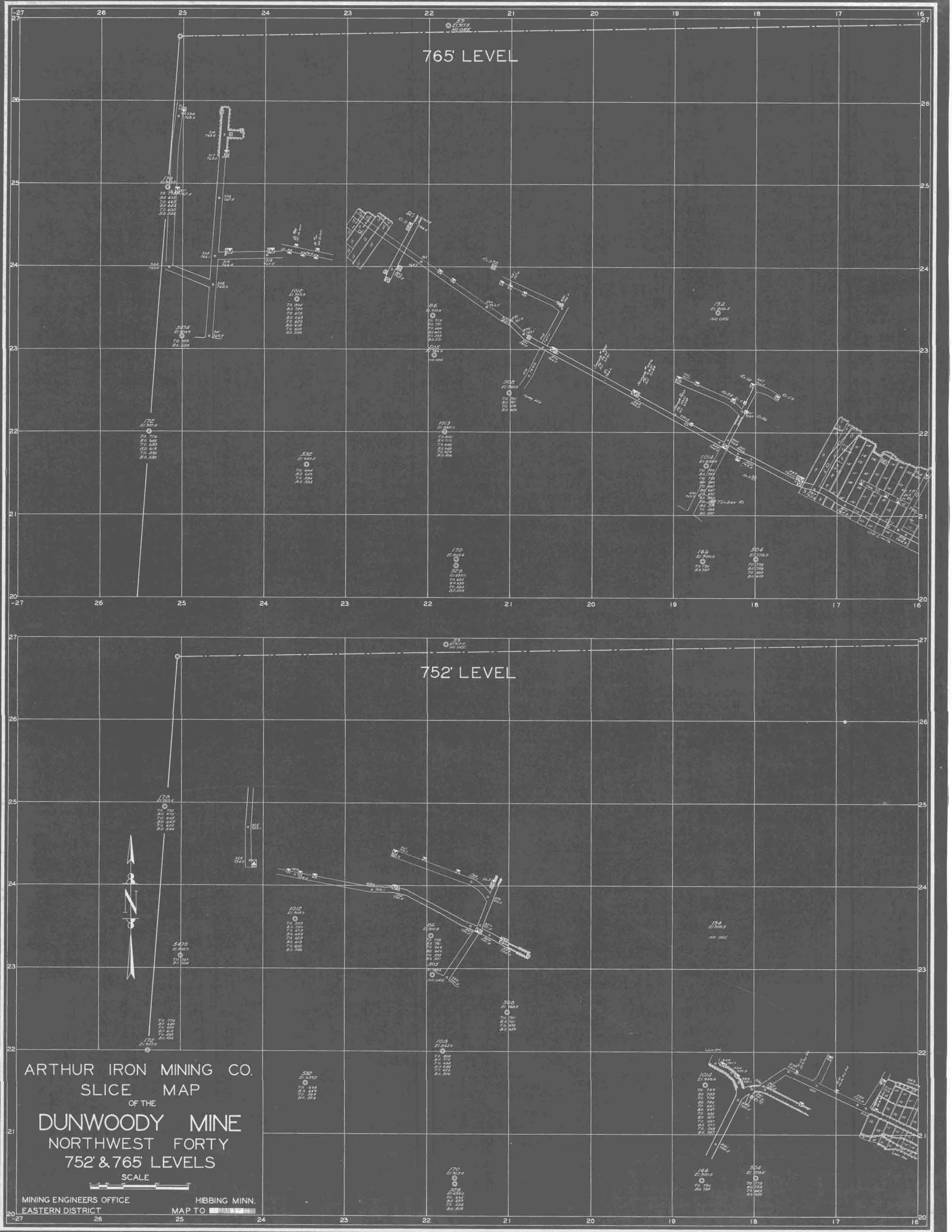


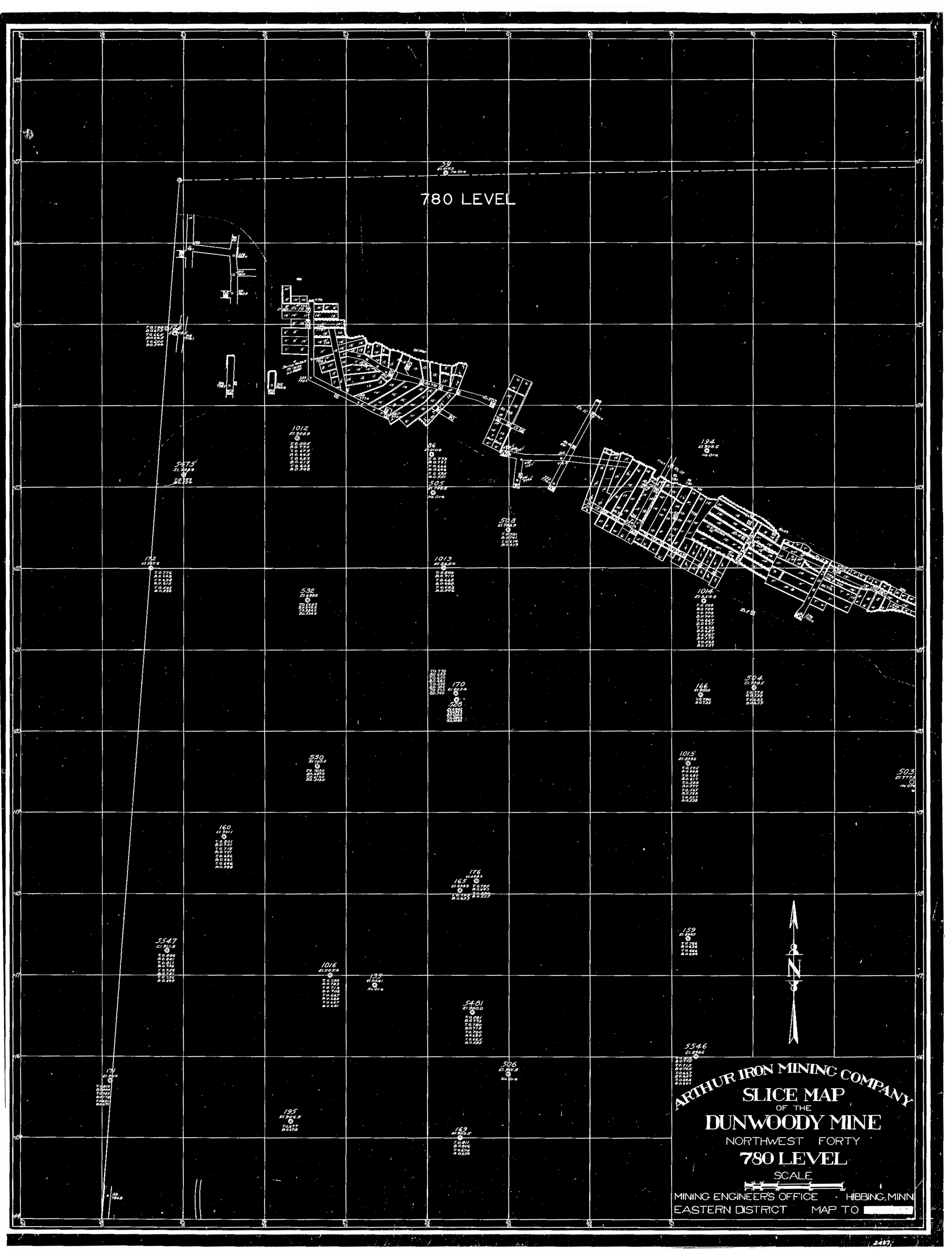
ARTHUR IRON MINING CO.
SLICE MAP
OF THE
DUNWOODY MINE
NORTHWEST FORTY
739' LEVEL

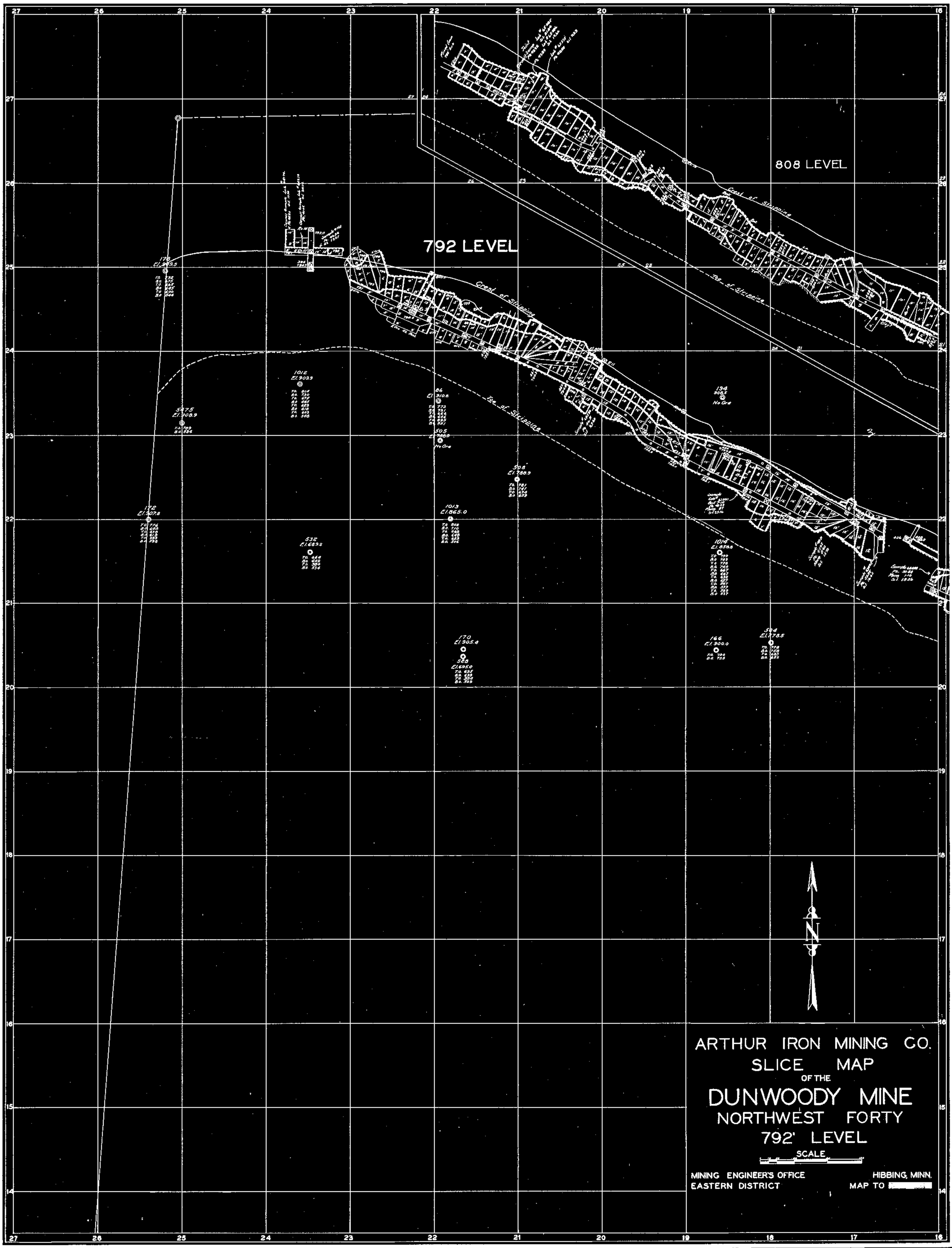
SCALE

MINING ENGINEERS OFFICE
EASTERN DISTRICT

HIBBING MINN.
MAP TO

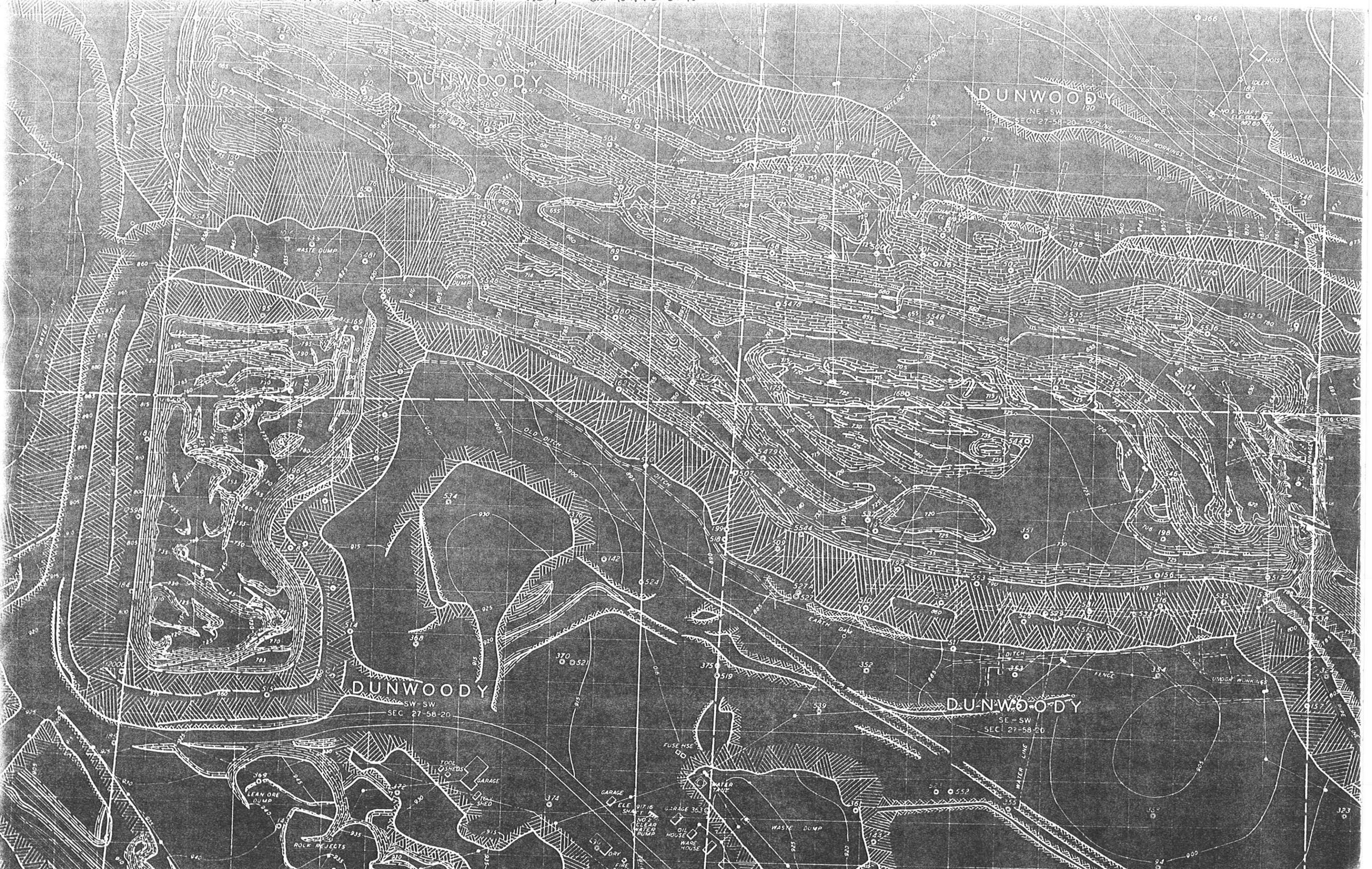

765' LEVEL
752' LEVEL
ARTHUR IRON MINING CO.
SLICE MAP
OF THE
DUNWOODY MINE
NORTHWEST FORTY
752' & 765' LEVELS
SCALE
MINING ENGINEERS OFFICE
EASTERN DISTRICT
HIBBING MINN.
MAP TO


780 LEVEL
ARTHUR IRON MINING COMPANY
SLICE MAP
OF THE
DUNWOODY MINE
NORTHWEST FORTY
780 LEVEL
SCALE
MINING ENGINEER'S OFFICE · HIBBING, MINN.
EASTERN DISTRICT MAP TO


792 LEVEL
808 LEVEL
Crest of Stripping
Toe of Stripping
N
ARTHUR IRON MINING CO.
SLICE MAP
OF THE
DUNWOODY MINE
NORTHWEST FORTY
792' LEVEL
SCALE
MINING ENGINEER'S OFFICE
EASTERN DISTRICT
HIBBING, MINN.
MAP TO

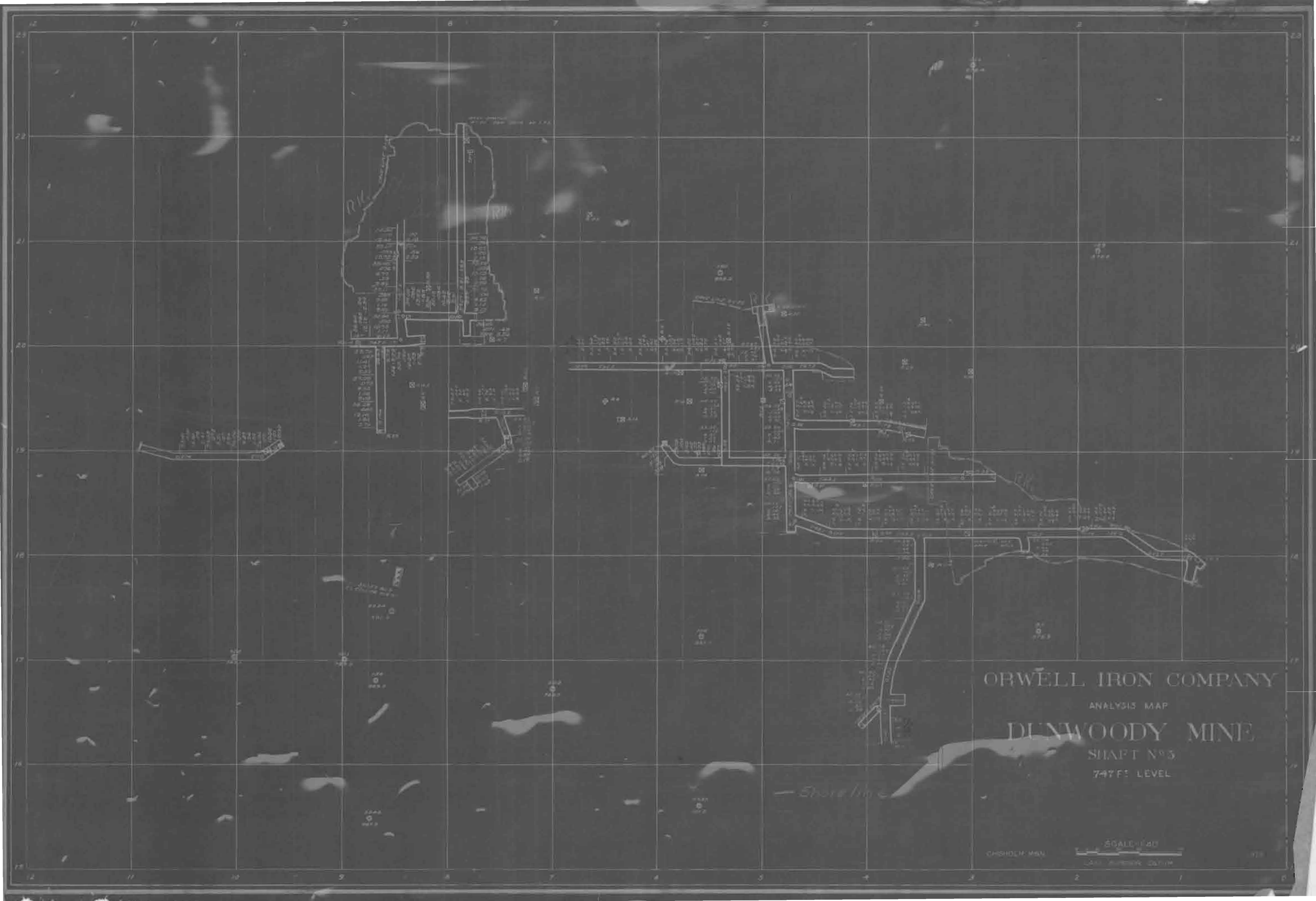
09 1531 1951 1-1-45 DUNWOODY MINE & VICIN A-96 (1 OF 2) DUW45IRPLN01N

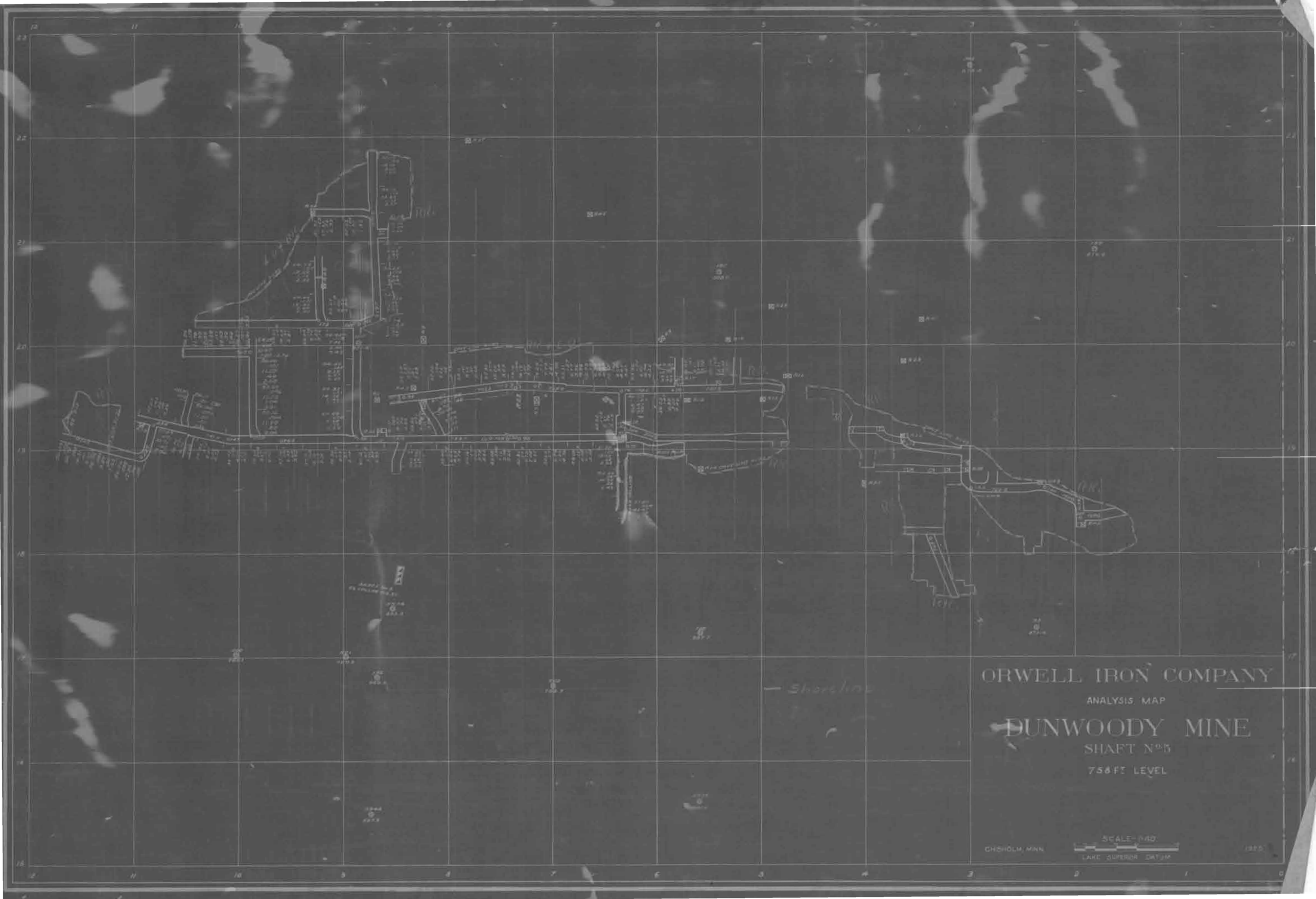
09 1531 1951 1-1-45 DUNWOODY MINE + VICIN A-96 (2 OF 2 - EXPANDED VIEW) DUW45IRPLN02N

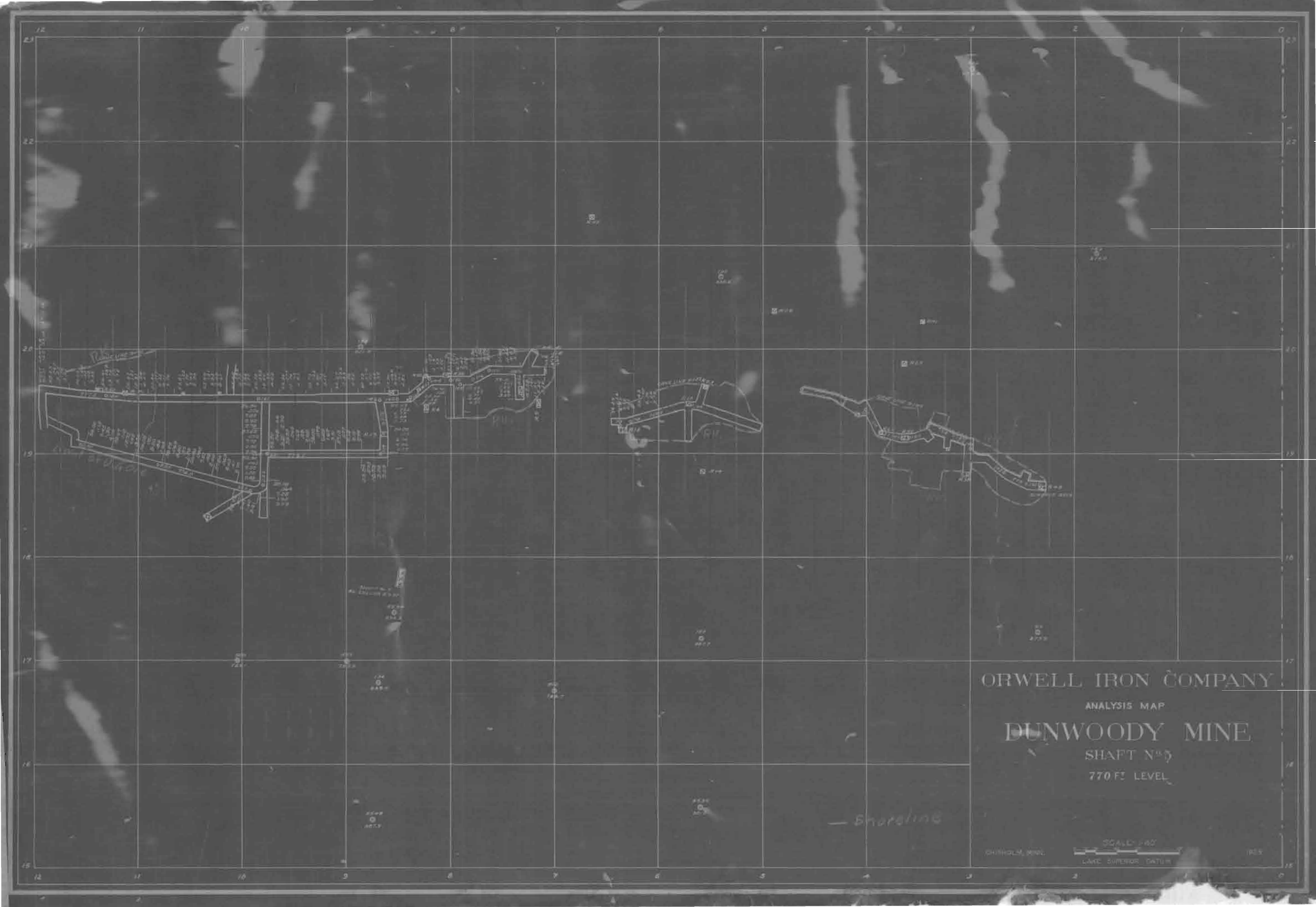


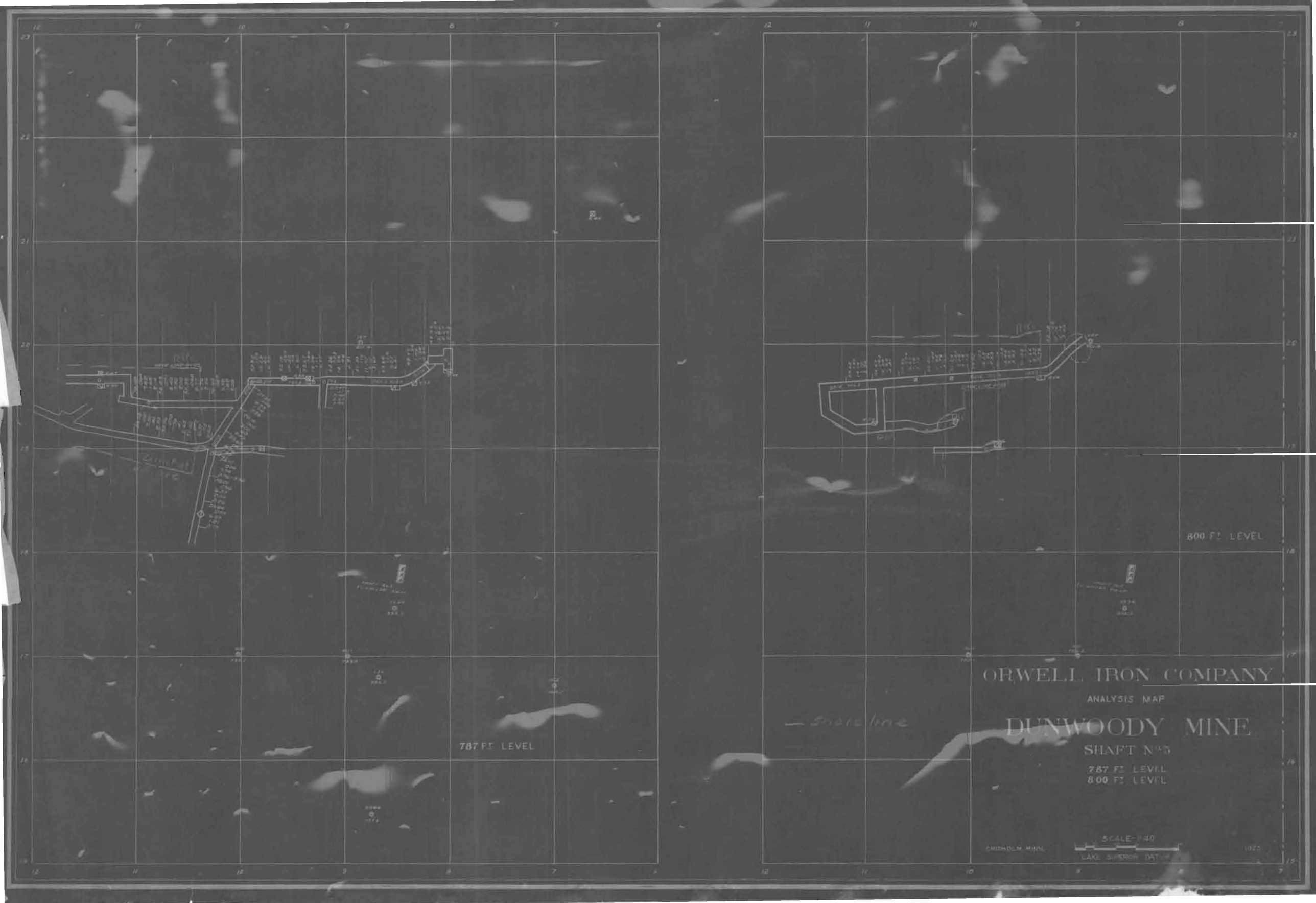
DOUGLAS-DUNCAN-SHENANGO BILLINGS AREA
T58N R20W
INCHES = 400 FEET
GAMMA CONTOUR INTERVAL 500 OR 1000
INTERESTING MAGNETIC AREA
RELATIVELY NON-MAGNETIC AREA
AREAS OF POSSIBLE MAGNETIC TACONITE WITH LOW STRIPPING RATIO
DATE
22
23
26
27
34
35
T58N R20W
ROYAL MIN. ASS'N.
JORDAN
ALWORTH
HUMPHREY
HARTLEY
HARTLEY-BURT
ST. CLAIR
BILLINGS
OLIVER RES.
LAKEVIEW 1ST. ADD.
LAKEVIEW SECOND ADD.
TWIN CITY RES.
MYERS
SHENANGO
FRASER
SHERMAN
ELIZABETH
CRESCENT RES.
SO. MYERS RES.
SHENANGO RES.
IRON RANGE RES.
CHESTER
BRUCE
NILES RES.
DOUGLAS MNG. CO.
BRUCE ANNEX
DUNWOODY
MAC DOUGALD RES.
PETTIT-ROBINSON ET AL
W. JOHNSON
HALEY-YOUNG MNG. CO.
DUNCAN
DOUGLAS
GODFREY
G.N.I.O.P.
NEVILLE RES.
KOVANEN
S. BOVITZ
J. BOVITZ
W. MACYNSKI
H. LINKO
WHITESIDE ANNEX RES.
A. PINGATORE
J. PENONCELLO ET UX
F. SUSHAK ET AL
D. HAJDUKOVICH
137. 23. 16. 3

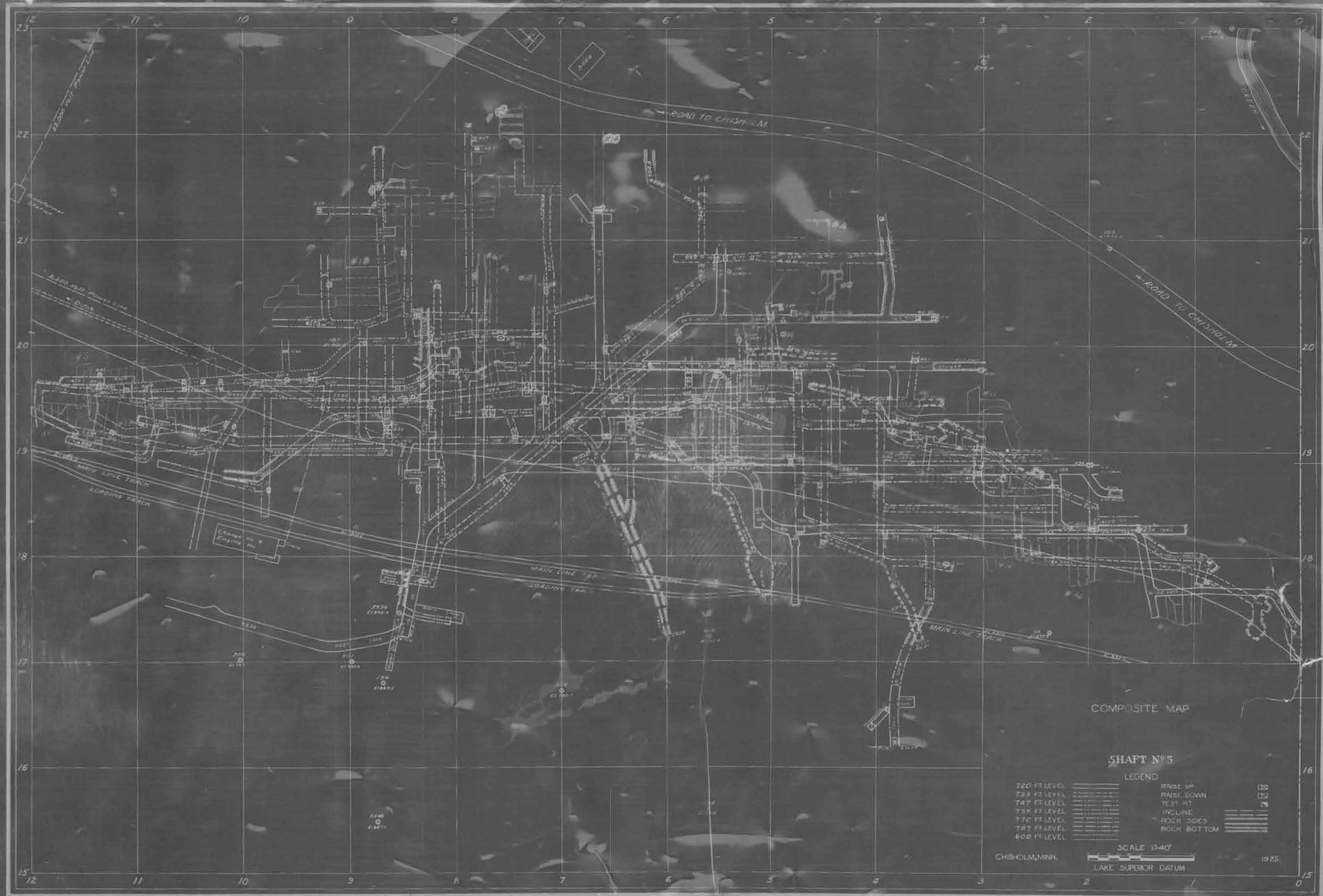
ORWELL IRON COMPANY
ANALYSIS MAP
DUNWOODY MINE
SHAFT Nº5
733FT LEVEL
Shoreline
CHISHOLM, MINN
SCALE 1:40
LAKE SUPERIOR

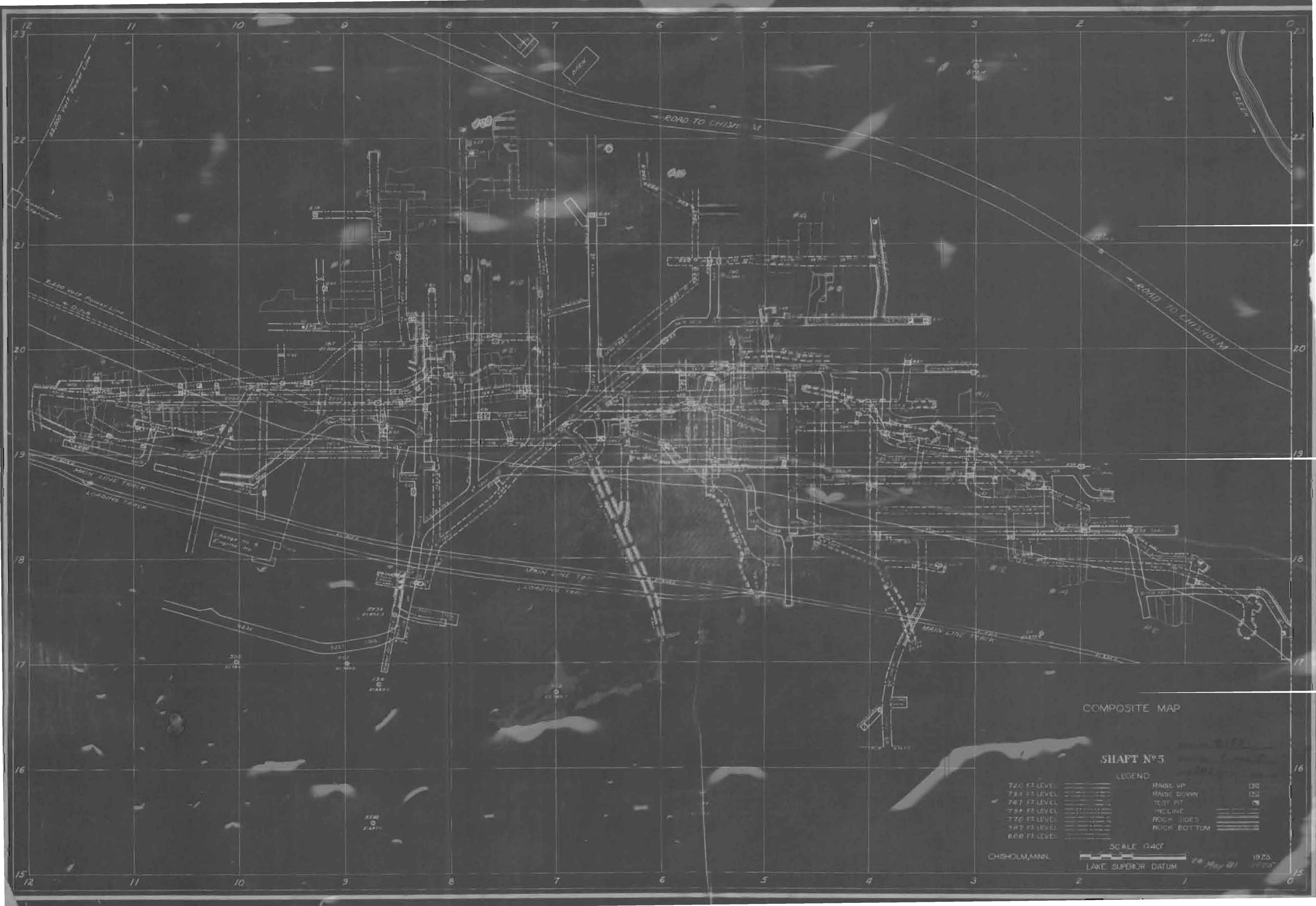

ORWELL IRON COMPANY
ANALYSIS MAP
DUNWOODY MINE
SHAFT No 3
747 Ft LEVEL
Shoreline

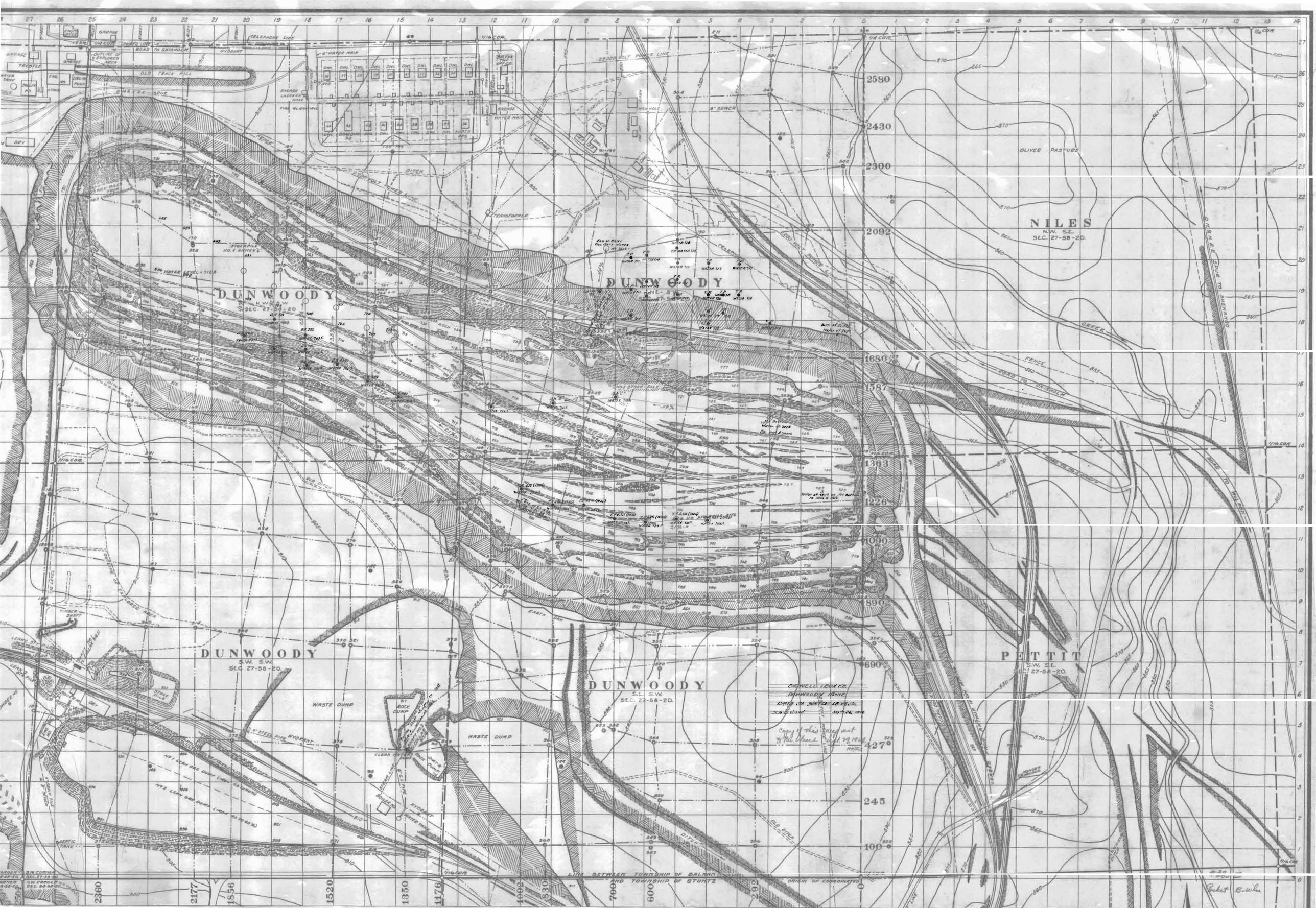

ORWELL IRON COMPANY
ANALYSIS MAP
DUNWOODY MINE
SHAFT No 5
758 FT LEVEL
CHISHOLM, MINN.
SCALE: 1"=40'
LAKE SUPERIOR DATUM
Shoreline


ORWELL IRON COMPANY
ANALYSIS MAP
DUNWOODY MINE
SHAFT No 3
770 Ft LEVEL
Shoreline
SCALE: 1 INCH
LAKE SUPERIOR DATUM


787 FT LEVEL
800 FT LEVEL
Shoreline
ORWELL IRON COMPANY
ANALYSIS MAP
DUNWOODY MINE
SHAFT No 5
787 FT LEVEL
800 FT LEVEL
SCALE-1:40
LAKE SUPERIOR DATUM


ROAD TO CHISHOLM
ROAD TO CHISHOLM
MAIN LINE TRACK
LOADING TRACK
MAIN LINE TRACK
LOADING TRACK
MAIN LINE TRACK
COMPOSITE MAP
SHAFT Nº5
LEGEND
720 FT LEVEL
733 FT LEVEL
747 FT LEVEL
758 FT LEVEL
770 FT LEVEL
787 FT LEVEL
800 FT LEVEL
RAISE UP
RAISE DOWN
TEST PIT
INCLINE
ROCK SIDES
ROCK BOTTOM
SCALE 1:240'
CHISHOLM, MINN.
1925
LAKE SUPERIOR DATUM


ROAD TO CHISHOLM
ROAD TO CHISHOLM
MAIN LINE TRACK
LOADING TRACK
MAIN LINE TRACK
LOADING TRACK
MAIN LINE TRACK
COMPOSITE MAP
SHAFT No 5
LEGEND
RAISE UP
RAISE DOWN
TEST PIT
INCLINE
ROCK SIDES
ROCK BOTTOM
SCALE 1:240'
CHISHOLM, MINN.
LAKE SUPERIOR DATUM
1925


DUNWOODY
N.W. N.W.
SEC. 27-58-20
DUNWOODY
N.E. S.W.
SEC. 27-58-20
DUNWOODY
S.W. S.W.
SEC. 27-58-20
DUNWOODY
S.E. S.W.
SEC. 27-58-20
NILES
N.W. S.E.
SEC. 27-58-20
PETTIT
S.W. S.E.
SEC. 27-58-20
OLIVER PASTURE
WASTE DUMP
LINE BETWEEN TOWNSHIP OF BALMAN AND TOWNSHIP OF STUNTZ
ORIGIN OF COORDINATES
ROAD TO GRISHOLM
ROAD TO NILES
TELEPHONE LINE
OLD TRACK FILL
GREASE TRESTLE
GREASE LADDERS
GREASE WATER MAIN
6" WATER MAIN
6" SEWER
33,000 VOLT POWER LINE
DITCH
FENCE
EARTH DAM
TRANSFORMER
HYDRANT
CLEAR
2580
2430
2300
2092
1680
1587
1363
1226
1090
890
690
427
245
100
2360
2177
1856
1520
1350
1176
1002
830
700
600
292
0

PICKANDS, MATHER & CO.

MEMORANDUM

Dunwoody Mine Office.

Sept. 26, 1928.

To Mr. Kenneth Duncan, Superintendent.
Dunwoody Mine.

DUNWOODY WATER LEVELS.

Form 484

On accompanying map we have shown all available data on Dunwoody water level.

While the No. 5 shaft was in operation the water in the shaft proper was held at the elevation 700. During the mining of the 720' water level, a number of test pits were sunk to determine the quality of the ore below. Water was encountered in all of the test pits at from 0 to 5' below the floor of the drifts. From information derived from these test pits, it is indicated that the pumping being done in the shaft did not materially affect the water level in the mining area outside of a radius of 100' from the shaft. Within a radius of 100' a gradient of 15% was formed.

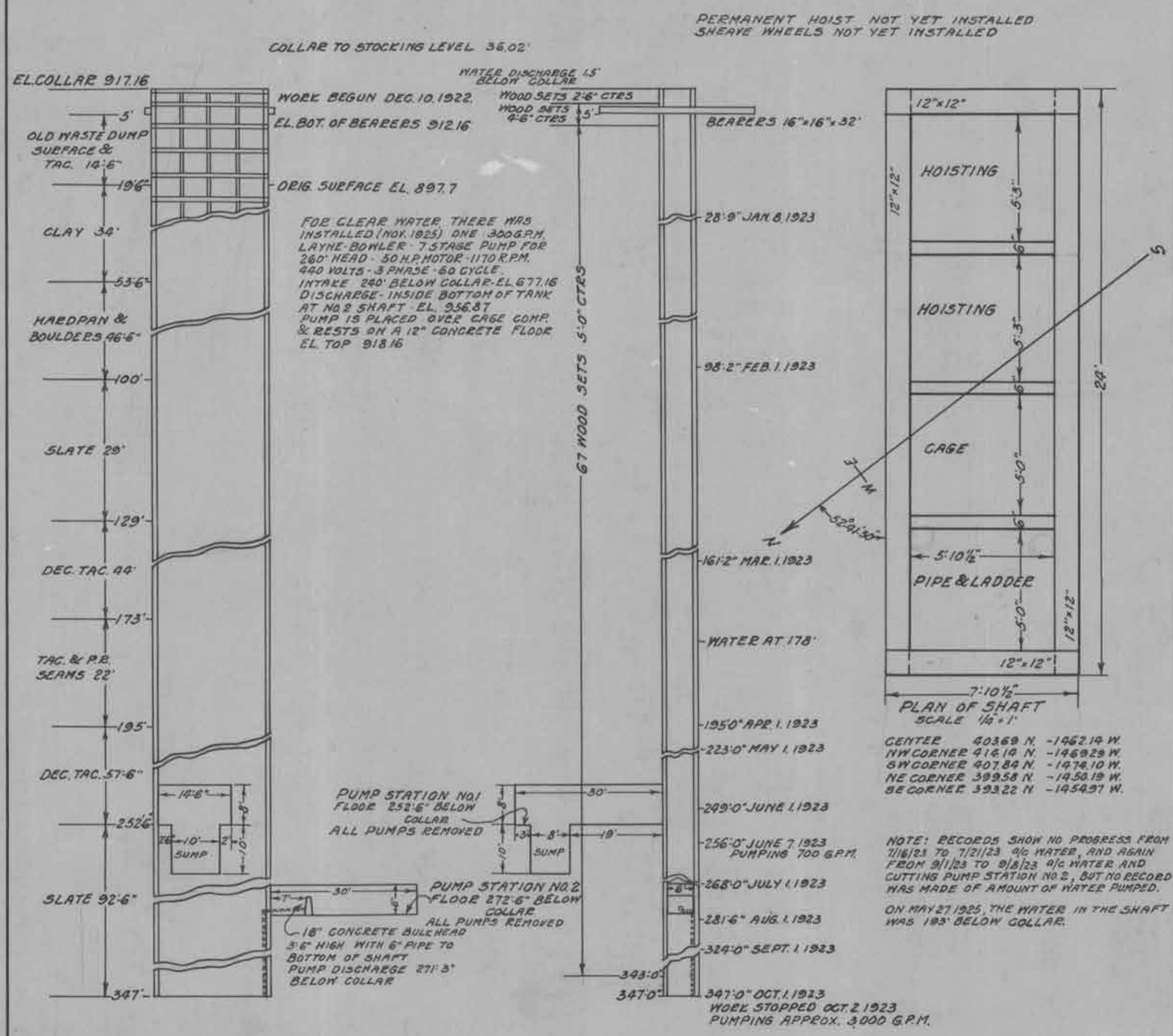
Drill holes A, B and C on sections 18, 10 and 8 in the north side of the open pit were sunk 25' with a No. 2 Tripod drill, at the commencing of the dewatering operations in the west end of the pit in early July 1928. As the dewatering progressed, water readings were taken in these holes from time to time covering a period of five weeks and found that no change occured in the drill holes at any time.

The information in the test pits on sections 5 to 11 inclusive, on the south side of the pit, was gathered during the sinking of the test pits in 1926. Some variations in the water levels are shown by this data. In the end of the shovel cut shown on section 1100 west, which is being mined at the present time to an elevation of 715, the water rises to an elev. of 720 and must be lowered from time to time while the shovel is in operation.

Data from the drill holes on sections 15 to 20 inclusive, was taken after the hole was finished and abandoned at least 12 hours, thus permitting the water to reach its proper level before the reading was made. Three weeks previous to the drilling of this series of eight holes, the water in the west end of the pit had been lowered to an elev. of 690 and held there to the present date.

From foregoing information it appears that gradients vary considerably in different parts of the open pit and that the structure of the ore appears to be of a kind, difficult to drain at any great range.

Engineer.



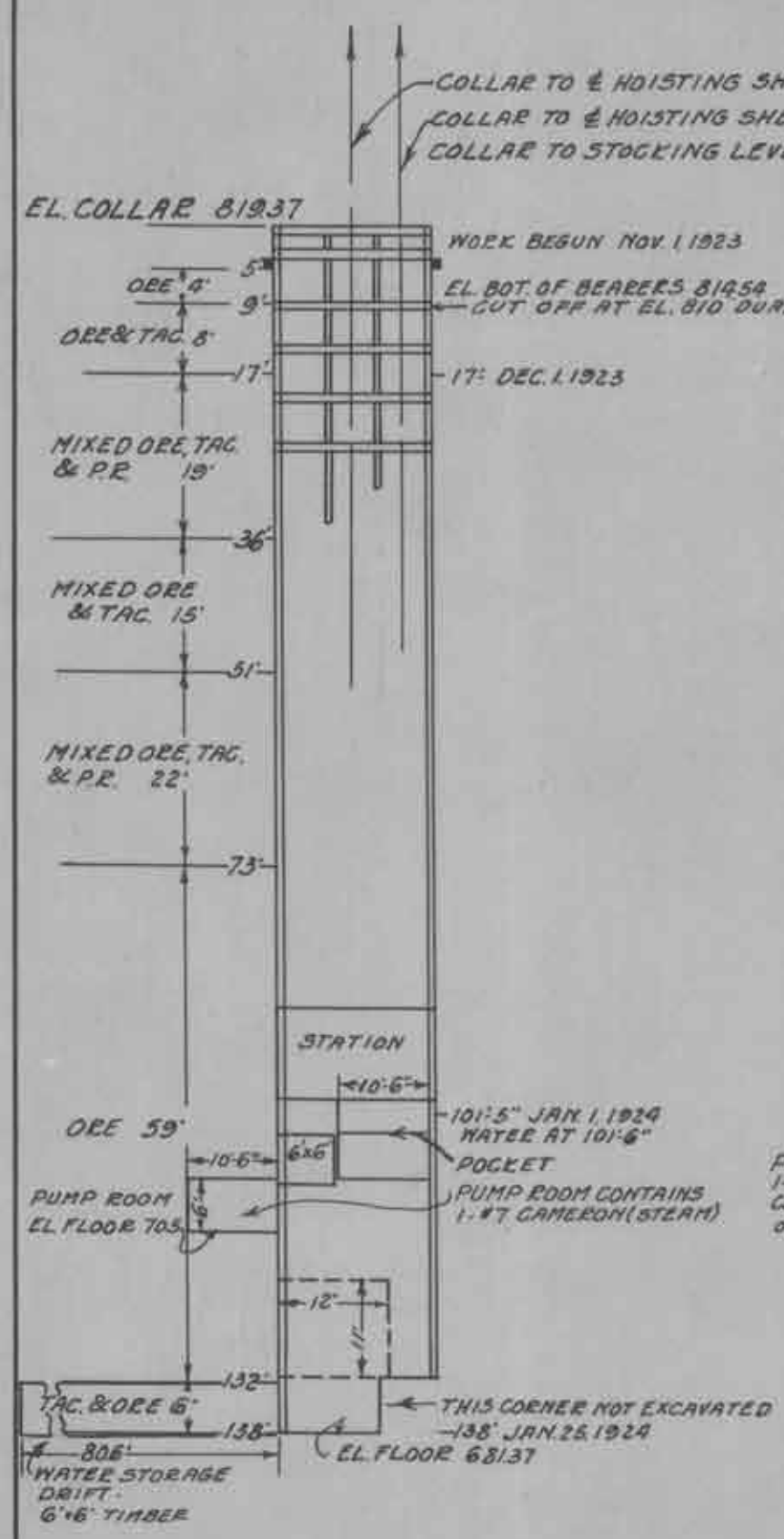
REPAIRS & RENEWALS				
WORK	FROM	TO	KIND	WHEN DONE
NONE				UP TO 1/1/26
NONE				UP TO 1/1/29
NONE				UP TO 1/1/30
NONE				UP TO 1/1/32
NONE				UP TO 1/1/39
NONE				UP TO 1/1/41
NONE				UP TO 1/1/44

DIMENSIONS OF SHAFT		
FROM	TO	INSIDE
0	347	5'-10½"x22'

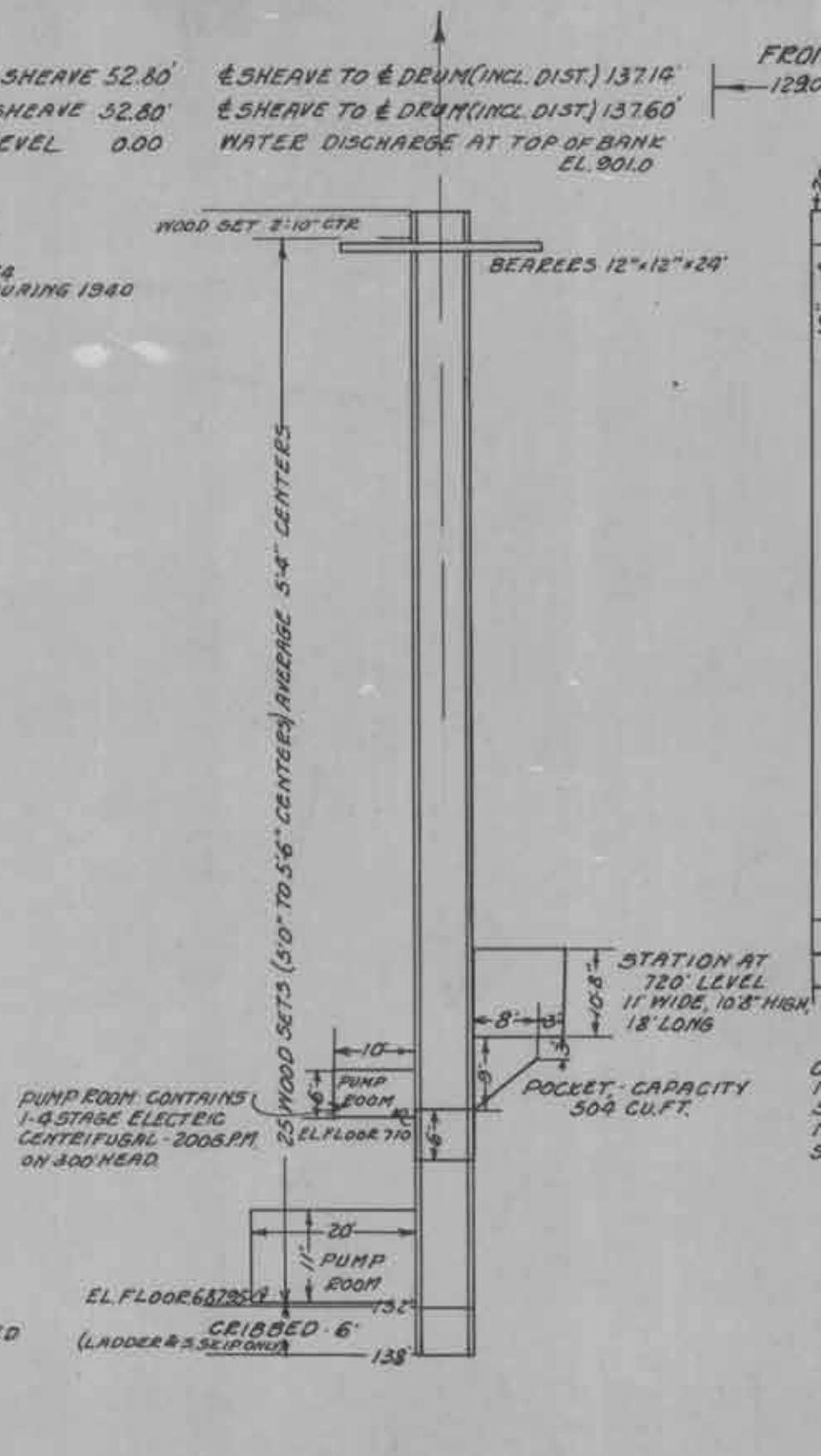
ORWELL IRON COMPANY
DUNWOODY MINE
No. 2 HOISTING SHAFT
SCALE 1" = 20' JAN. 1, 1944
CHISHOLM, MINN.

G.H.C.

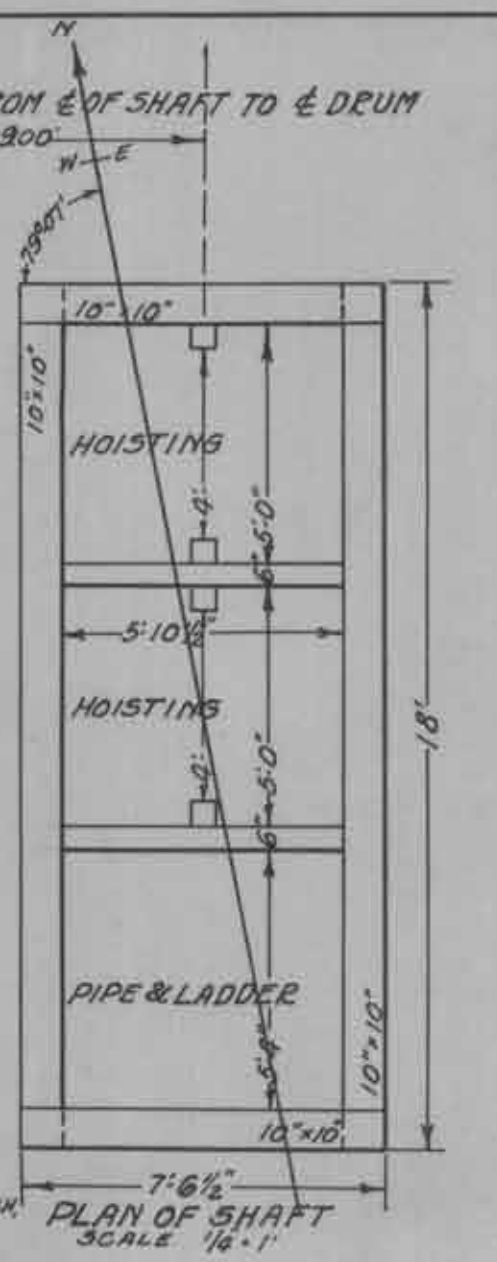
INDEX NO. 386
SHEET NO. 3 TOTAL
CASE 5 DWG. SEC. SHEET 22



LOOKING WEST



LOOKING NORTH



PLAN OF SHAFT
SCALE 1/4" = 1'

CENTER	1779.92 N.	- 853.15 W.
NW CORNER	1788.97 N.	- 848.85 W.
SW CORNER	1771.30 N.	- 852.25 W.
NE CORNER	1787.55 N.	- 841.45 W.
SE CORNER	1769.87 N.	- 844.84 W.

AVERAGE GAL'S WATER PUMPED
1925 100 G.P.M.
1926 (TO 6/1/26) 100 G.P.M.

REPAIRS & RENEWALS

WORK	FROM	TO	KIND	WHEN DONE
NONE				UP TO 1/1/26
NONE				UP TO 1/1/28
NONE				UP TO 1/1/30
NONE				UP TO 1/1/32
NONE				UP TO 1/1/39
NONE				UP TO 1/1/41

DIMENSIONS OF SHAFT

FROM	TO	INSIDE
0.	132	5'-10½" x 16'-4"
132	138	5'-10½" x 11'-0"

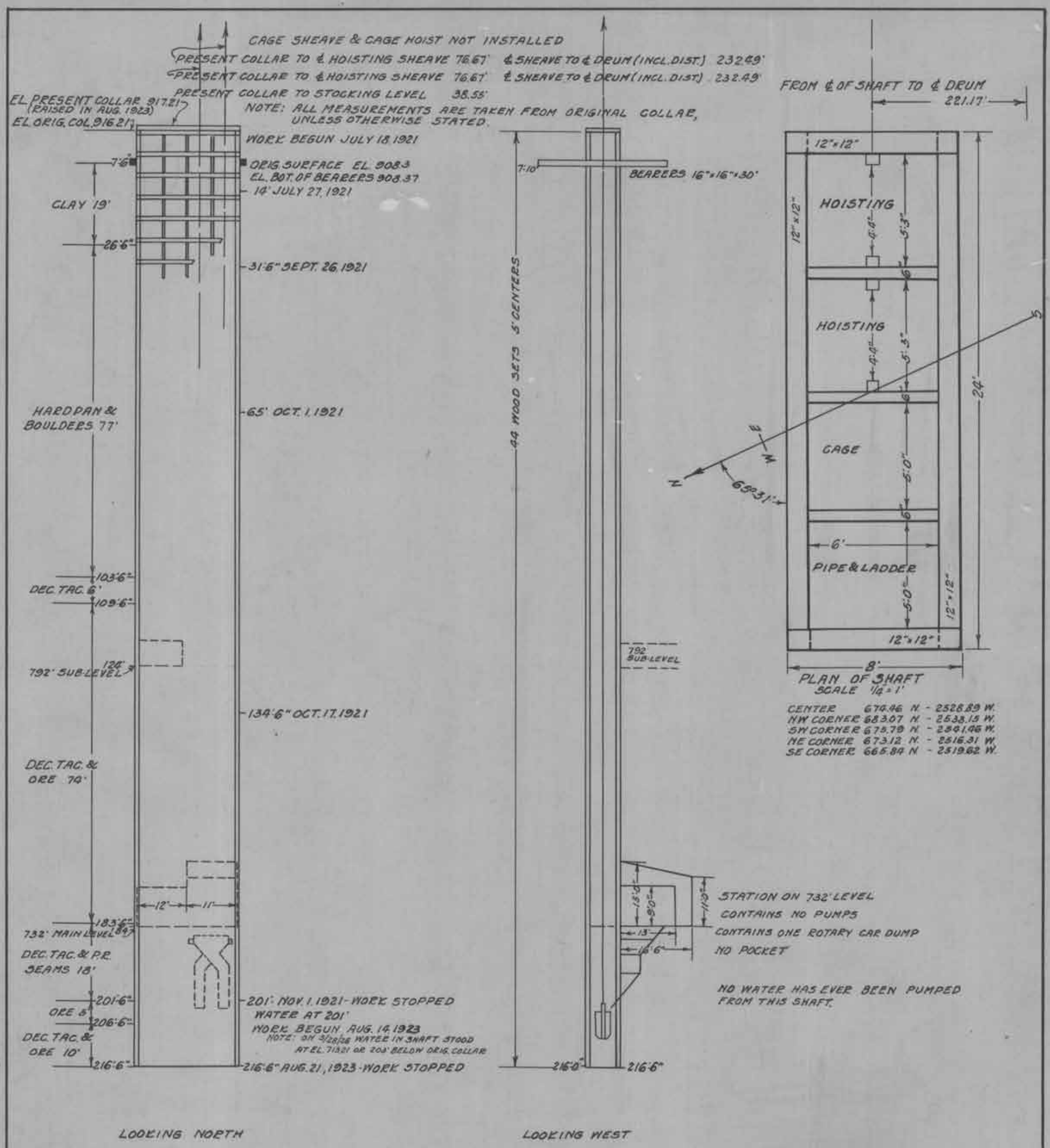
ORWELL IRON COMPANY
DUNWOODY MINE
No. 5 HOISTING SHAFT
SCALE 1" = 20' JAN. 1, 1941.
CHISHOLM, MINN.

THIS SHAFT IS CAVED

G.M.C.

386

INDEX NO.
SHEET NO. 4 TOTAL
CASE 5 DWR SEC FILE 22



REPAIRS & RENEWALS				
WORK	FROM	TO	KIND	WHEN DONE
NONE				UP TO 1/1/26
NONE				UP TO 1/1/29
NONE				UP TO 1/1/30
NONE				UP TO 1/1/32
NONE				UP TO 1/1/38
NONE				UP TO 1/1/41

DIMENSIONS OF SHAFT		
FROM	TO	INSIDE
0	216'6"	6'0" x 22'0"

ORWELL IRON COMPANY
DUNWOODY MINE
No. 1 HOISTING SHAFT
SCALE 1" = 20' JAN. 1, 1941.
CHISHOLM, MINN.

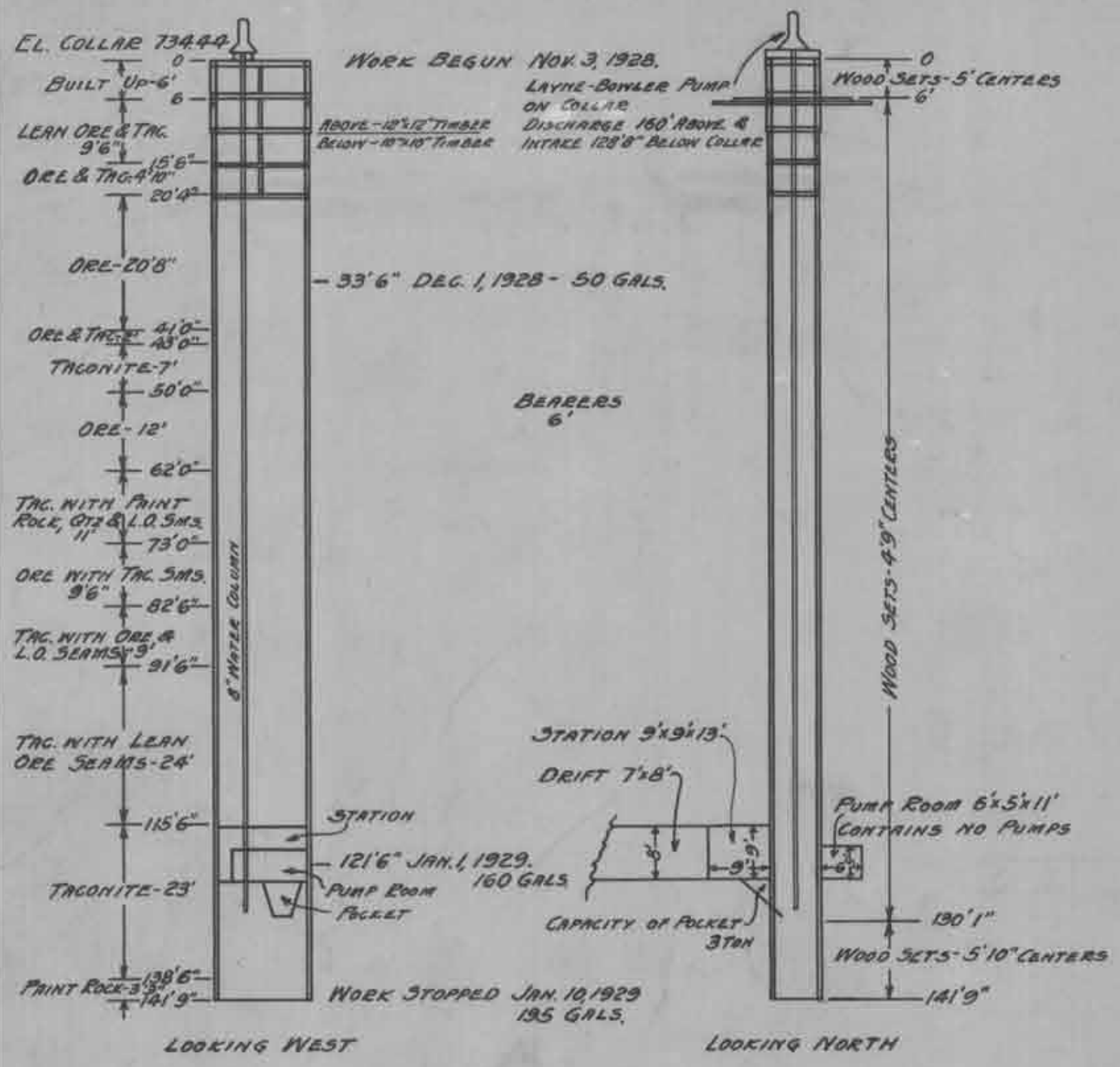
THIS SHAFT IS CAVED

386

G.W.C.

2

5 22



SINCE 1934 ORE HAS SLOUGHED FROM TIMBER CAUSING SHAFT TIMBERS TO CAVE TO APPROIMATELY EL. 630.0

AVERAGE GALLONS WATER PUMPED		
1929	500	G.P.M.
1930	500	"
1931	500	"
1932	500	"
1933	600	"
1934	600	"

REPAIRS & RENEWALS				
WORK	FROM	TO	DESCRIPTION	DATE
NONE				UP TO 1/1/32
NONE				UP TO 1/1/33
NONE				UP TO 1/1/39
NONE				UP TO 1/1/41

DIMENSIONS OF SHAFT		
FROM	TO	INSIDE
0	141'9"	6'4" x 11'4"

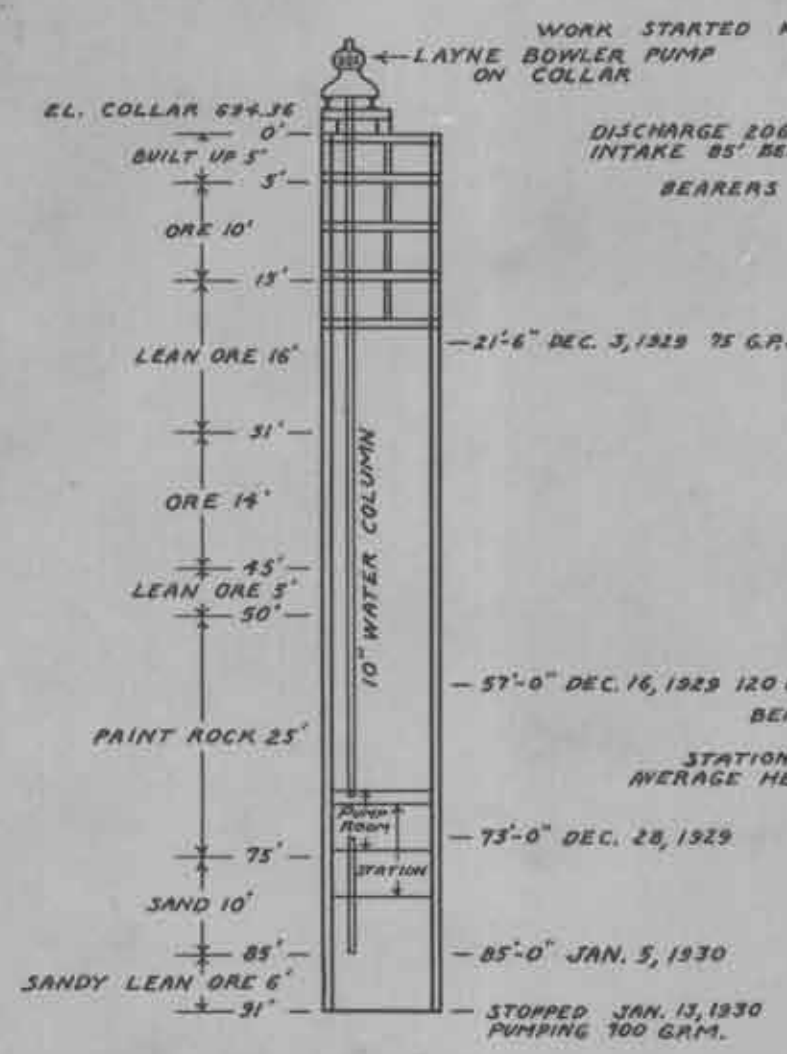
ORWELL IRON CO.
DUNWOODY MINE
EAST END DRAINAGE SHAFT
SCALE 1"=20' JAN. 1, 1941.
CHISHOLM, MINN.

THIS SHAFT IS DUG OUT

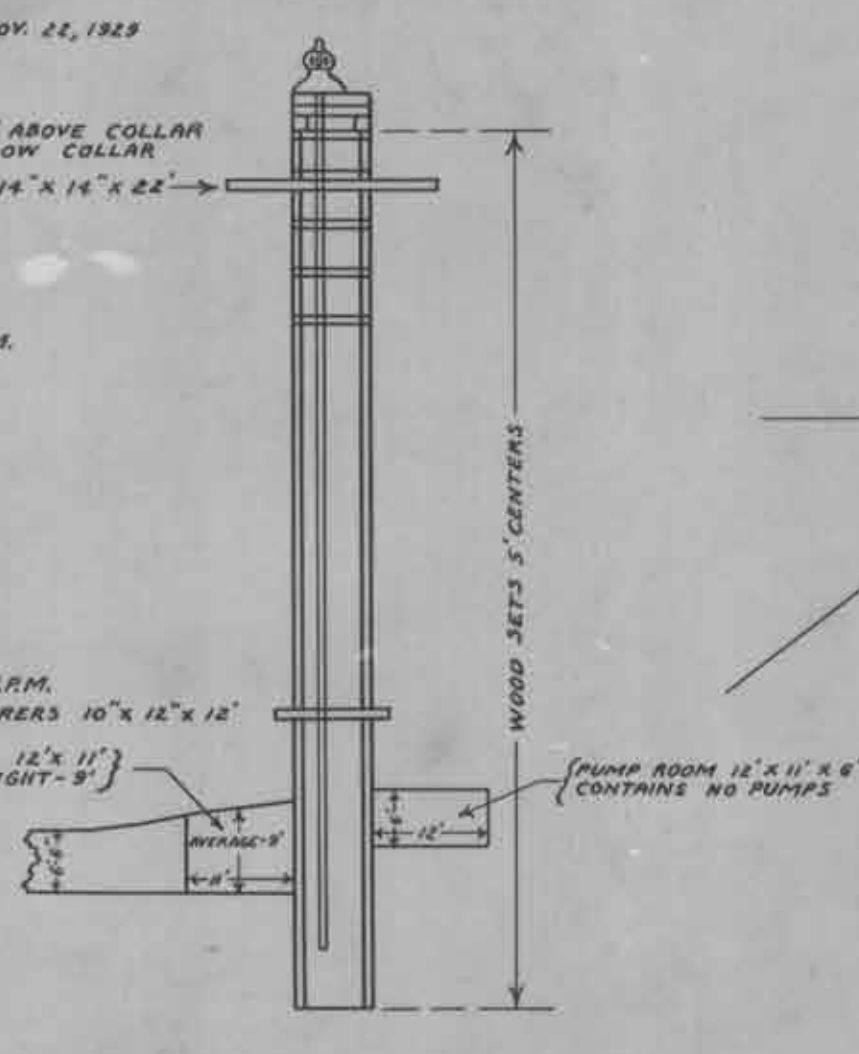
N.W.K.

INDEX NO. 386
SHEET NO. 12 TOTAL
CAS. DWR 5 SEC FIL 22

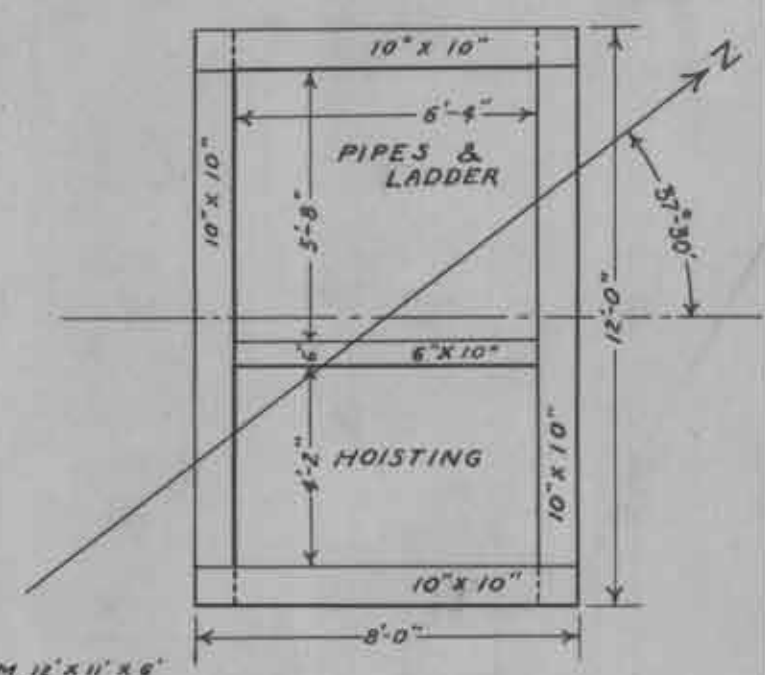
DRAWING No. 150
DRAWER 2 POCKET 5.



LOOKING NORTH - EAST



LOOKING NORTH - WEST



PLAN OF SHAFT
SCALE 1/4" = 1'

AVERAGE GALLONS OF WATER PUMPED

1929 -	550	G.P.M.
1930 -	600	"
1931 -	600	"
1932 -	600	"
1933 -	600	"
1934 -	600	"

REPAIRS & RENEWALS				
WORK	FROM	TO	DESCRIPTION	DATE
NONE				UP TO 1/1/32
NONE				UP TO 1/1/39
NONE				UP TO 1/1/41

DIMENSIONS OF SHAFT		
FROM	TO	INSIDE
0'	91'	6'-4" X 10'-4"

ORWELL IRON CO.
DUNWOODY - MINE
WEST END DRAINAGE SHAFT
SCALE 1" = 20' JAN. 1, 1941.
CHISHOLM, MINNESOTA

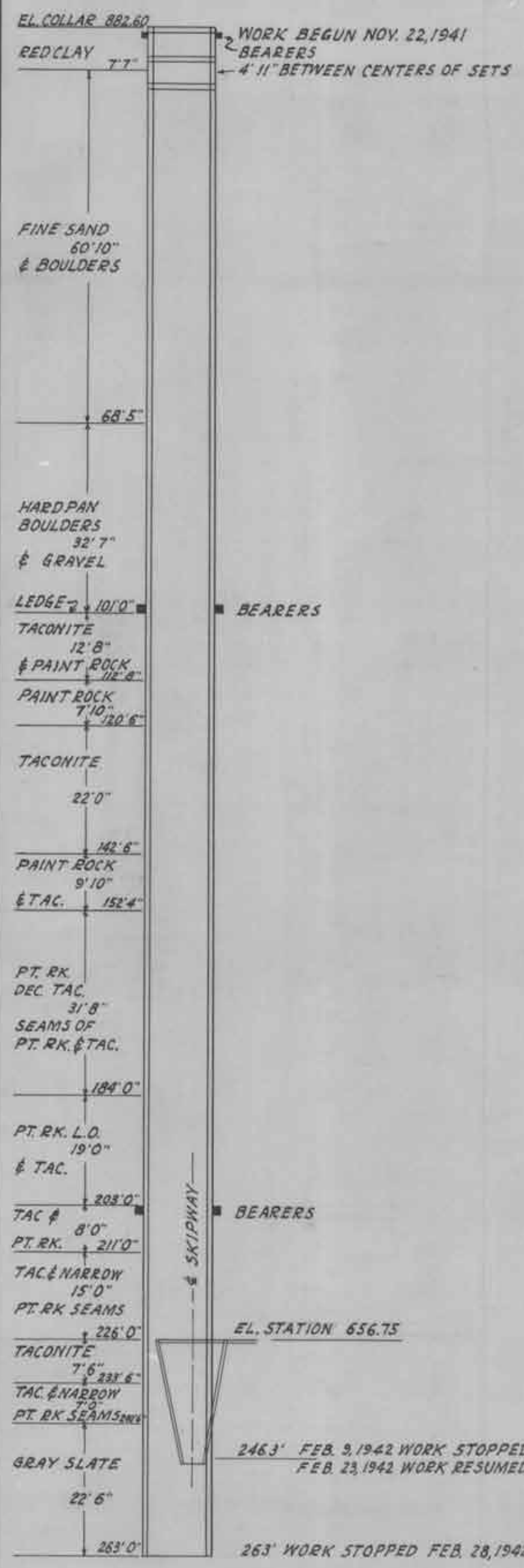
THIS SHAFT IS DUG OUT

INDEX NO. 386

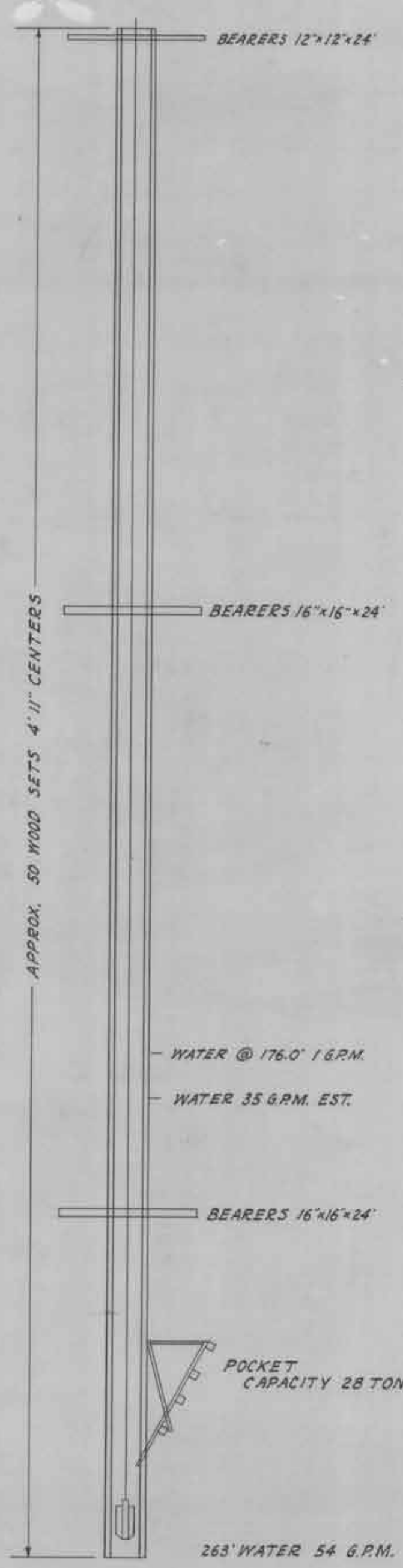
G.M.M.

SHEET NO. 3 TOTAL

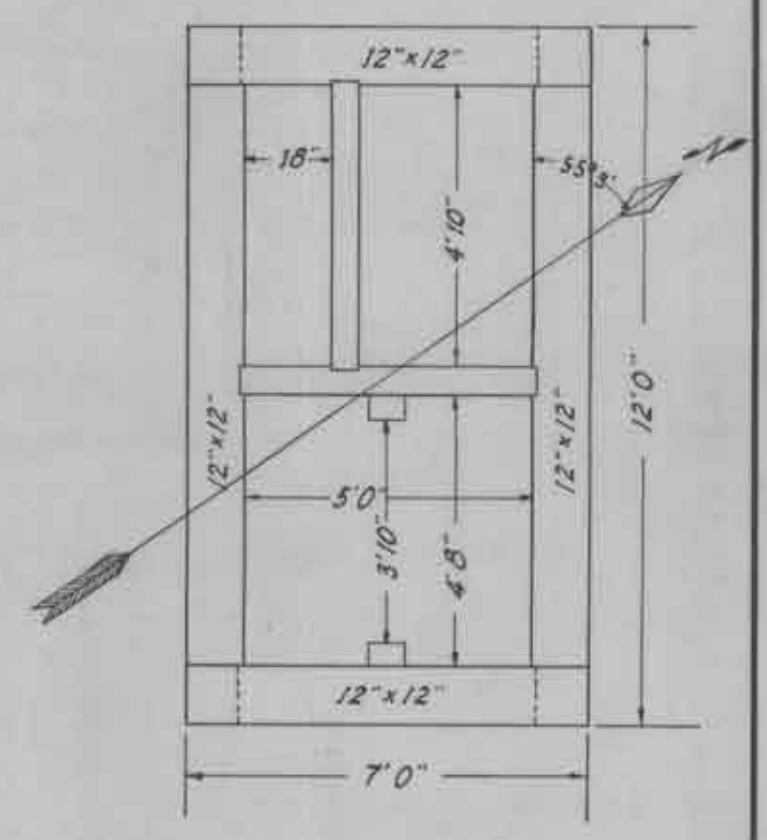
5 22



LOOKING NORTH



LOOKING WEST



PLAN OF SHAFT

SCALE 1/4" = 1'

CENTER	2047.80 N.	259.98 W
NE CORNER	2047.24 N.	253.07 W
NW CORNER	2054.11 N.	262.90 W
SW CORNER	2048.36 N.	266.89 W
SE CORNER	2041.49 N.	257.06 W

NOTE:
THIS IS THE SECOND NO. 5 SHAFT. THE ORIGINAL NO. 5 SHAFT WAS CAVED BY MINING OPERATIONS IN NO. 5 AREA DURING THE SEASON OF 1941 & 1942.

AVERAGE GALLONS OF WATER PUMPED

2/28/42 TO 7/13/43	54 G.P.M.
7/13/43 TO 1/1/44	NONE

REPAIRS & RENEWALS

WORK	FROM	TO	KIND	WHEN DONE
NONE				1/1/44

DIMENSIONS OF SHAFT

FROM	TO	INSIDE
0	263'	5'-0" x 10'-0"

DUNWOODY IRON CO.
DUNWOODY MINE
NO. 5 HOISTING SHAFT
SCALE 1" = 20' JAN. 1, 1944
CHISHOLM MINN.