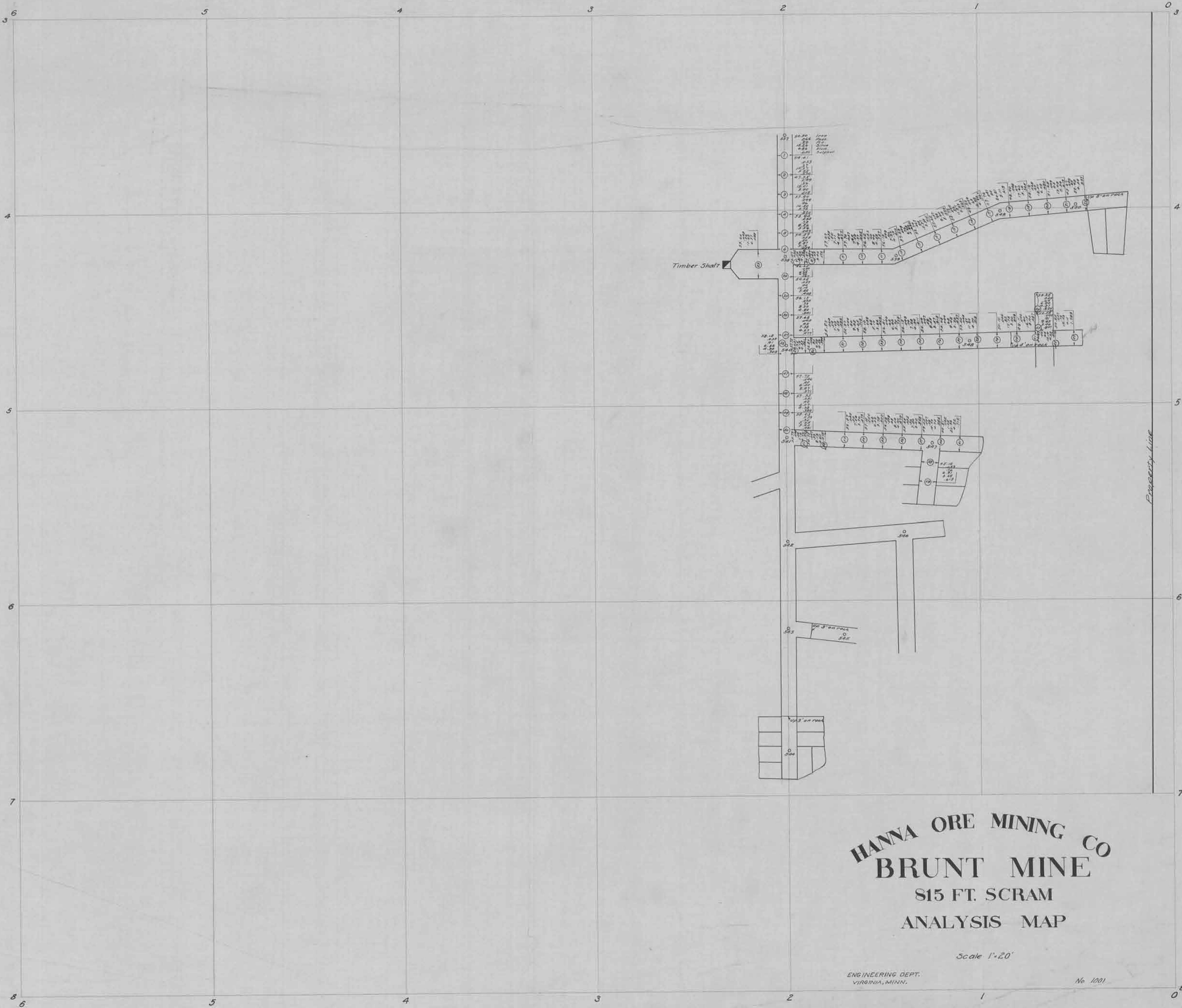


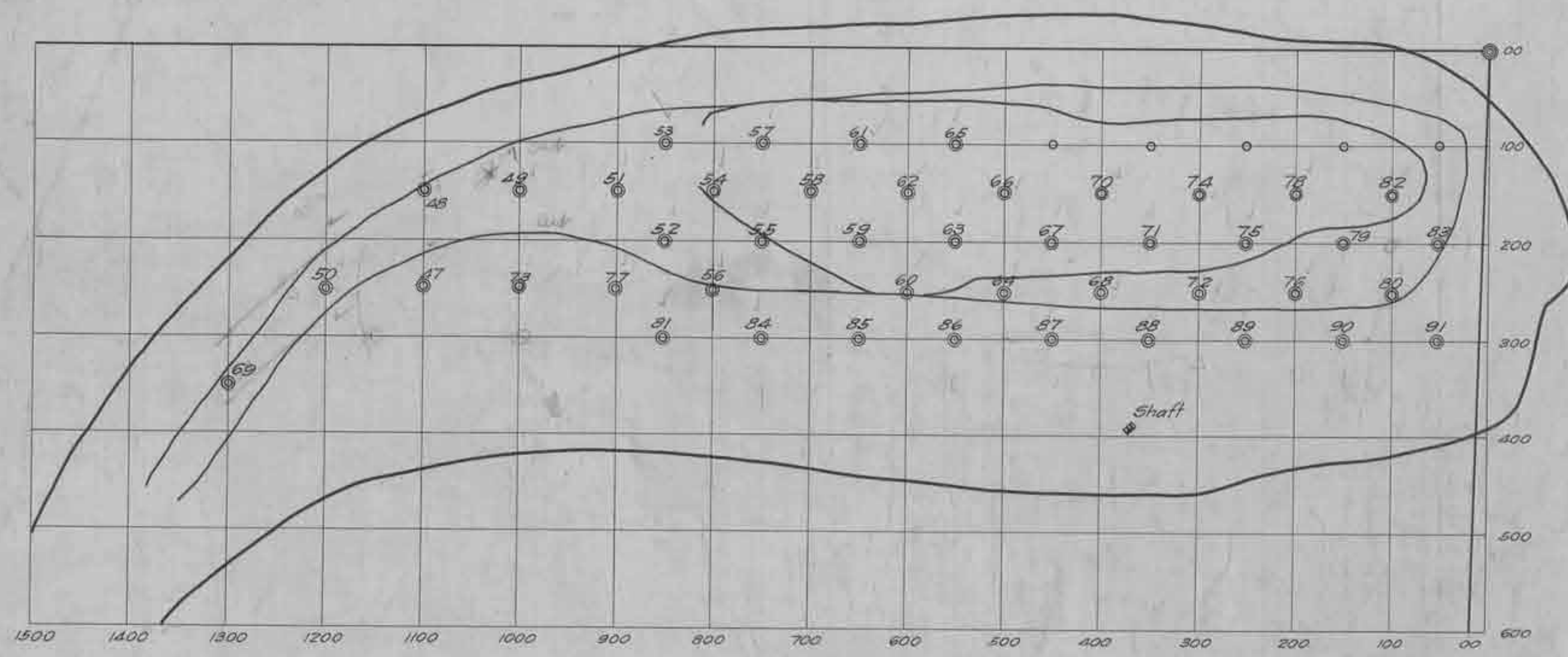


HANNA ORE MINING CO
BRUNT MINE
815 FT. SCRAM
ANALYSIS MAP

Scale 1"=20'

ENGINEERING DEPT.
VIRGINIA, MINN.

No 1001



47 El. 860.7 5 45.02 .037 .70 14.87 10 46.45 .032 .89 14.90 15 49.47 .033 .82 14.98 20 47.12 .034 .91 17.04 25 50.38 .046 .74 13.63 30 48.47 .037 .56 13.34 35 52.50 .043 .54 14.49 40 52.60 .042 .43 16.16	48 El. 848.1 5 51.68 .036 .68 13.04 10 49.41 .045 .73 16.63 15 53.04 .048 .28 14.85 20 52.47 .042 .35 15.67 25 50.90 .041 .60 17.75 30 52.97 .046 .28 15.70 35 54.08 .053 .45 10.39 40 52.00 .042 .30 17.33	49 El. 845.1 5 49.95 .035 .74 19.12 10 47.80 .036 .40 21.62 15 41.12 .044 .95 28.21 20 48.21 .032 .34 23.87 25 47.63 .047 .67 20.39 30 54.22 .054 1.09 9.60 35 50.82 .055 1.87 12.56 40 51.63 .062 .56 12.50	50 El. 851.9 5 55.24 .043 .72 6.44 10 53.17 .041 .95 8.86 15 56.23 .044 .61 8.73 20 54.95 .040 .88 9.48 25 53.70 .047 .20 14.35 30 49.60 .049 .41 19.73	51 El. 845.6 5 49.54 .042 .26 11.14 10 52.70 .044 .27 15.80 15 54.34 .046 .08 12.99 20 47.14 .037 .30 23.91 25 50.21 .040 .85 20.05 30 56.80 .046 .75 9.70	52 El. 844.5 5 49.30 .040 .16 18.09 10 53.08 .037 .25 11.88 15 55.01 .031 .24 13.28 20 48.27 .046 .29 20.85 25 54.39 .037 .30 23.61 30 51.80 .042 .49 17.06 35 55.65 .044 1.24 9.96 40 51.96 .053 1.74 14.97
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53 El. 835.6 5 48.56 .058 .85 21.91 10 46.75 .042 .30 24.57 15 52.19 .043 .78 15.48 20 46.57 .062 .62 10.54 25 52.79 .068 .73 11.30 30 56.19 .048 .55 23.43 35 40	54 El. 834.0 5 50.17 .040 .54 19.29 10 43.77 .034 .43 28.03 15 52.21 .041 .63 16.41 20 54.80 .057 .89 10.22 25 52.61 .060 1.05 13.21	55 El. 841.5 5 49.76 .046 .29 19.43 10 52.17 .042 .83 16.15 15 51.94 .043 .29 17.15 20 52.47 .048 .35 14.44 25 53.53 .044 .30 14.87 30 53.75 .047 .56 13.39 35 56.00 .045 .89 8.93 40 53.25 .056 1.32 11.34	56 El. 843.7 5 40.30 .038 .30 29.95 10 36.57 .031 .26 36.91 15 41.76 .036 .21 30.27 20 40.12 .036 .33 32.80 25 30 35 40	57 El. 830.6 5 53.14 .050 .52 14.09 10 58.67 .048 .64 9.22 15 56.41 .050 .55 9.60 20 58.20 .061 1.16 9.17 25 58.38 .058 1.14 11.49 30 51.58 .063 .55 13.36	58 El. 824.9 5 51.78 .033 .55 16.84 10 43.03 .037 .41 27.83 15 56.13 .063 1.22 9.11 20 52.52 .065 2.07 10.97 25 51.47 .060 1.13 13.98 30 35 40
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59 El. 834.6 5 54.05 .040 .48 11.77 10 54.08 .049 .63 11.76 15 50.59 .039 1.03 17.01 20 51.78 .048 .57 16.15 25 50.24 .036 .32 18.47 30 48.43 .040 1.54 9.14 35 53.20 .052 1.15 10.78	60 El. 839.1 5 55.69 .045 .36 9.08 10 53.04 .043 .43 11.72 15 52.32 .049 1.50 10.64 20 49.20 .040 1.40 15.60 25 53.20 .044 .43 14.66 30 35	61 Caved	62 El. 820.6 5 52.46 .048 .80 14.85 10 55.87 .050 .67 11.39 15 55.44 .049 .60 12.00 20 53.24 .057 1.62 9.66 25 55.08 .059 1.02 11.57 30	63 El. 831.9 5 56.67 .047 .50 9.40 10 56.02 .046 .57 10.02 15 47.36 .032 2.54 12.04 20 49.19 .039 2.49 11.69 25 52.35 .042 .57 15.15 30 58.10 .053 .97 11.09	64 El. 837.1 5 57.55 .049 .46 7.28 10 54.81 .045 .57 9.09 15 50.50 .044 .35 6.40 20 57.01 .044 .38 7.44 25 58.00 .048 .56 8.61 30 57.46 .045 .36 10.45 35 56.05 .049 .80 10.75 40 52.44 .055 .79 10.69	65 El. 822.2 5 54.95 .039 .34 13.72 10 54.49 .052 .55 9.37 15 55.16 .058 1.15 9.77 20 51.03 .076 1.86 12.06 25 51.16 .060 .75 13.60	66 El. 818.4 5 58.43 .048 .63 9.93 10 57.91 .044 .62 9.95 15 55.84 .049 .71 10.66 20 56.10 .047 1.02 9.58 25 53.00 .052 1.45 11.61	67 El. 831.0 5 56.32 .052 .35 9.21 10 58.23 .049 .48 8.32 15 50.21 .050 .39 5.91 20 56.64 .056 .92 7.52 25 55.30 .045 1.24 10.56 30 51.79 .056 .74 16.79 35 40	68 El. 835.9 5 57.08 .055 .30 7.49	69 El. 848.2 5 50.98 .036 .50 10.09 10 49.37 .038 .59 11.97 15 58.25 .052 .65 8.94 20 56.25 .052 .42 8.58 25 55.84 .044 .22 11.03	70 El. 818.3 5 56.76 .046 1.21 8.42 10 56.39 .059 .98 9.43 15 56.59 .056 .62 10.62	71 El. 831.6 5 56.13 .049 .36 6.91 10 53.04 .051 .75 5.94 15 60.31 .052 .36 6.04 20 54.95 .050 1.18 8.42 25 54.22 .049 1.28 9.67 30 52.38 .043 .62 14.37 35 55.49 .043 .43 12.40 40 57.35 .059 .78 9.65
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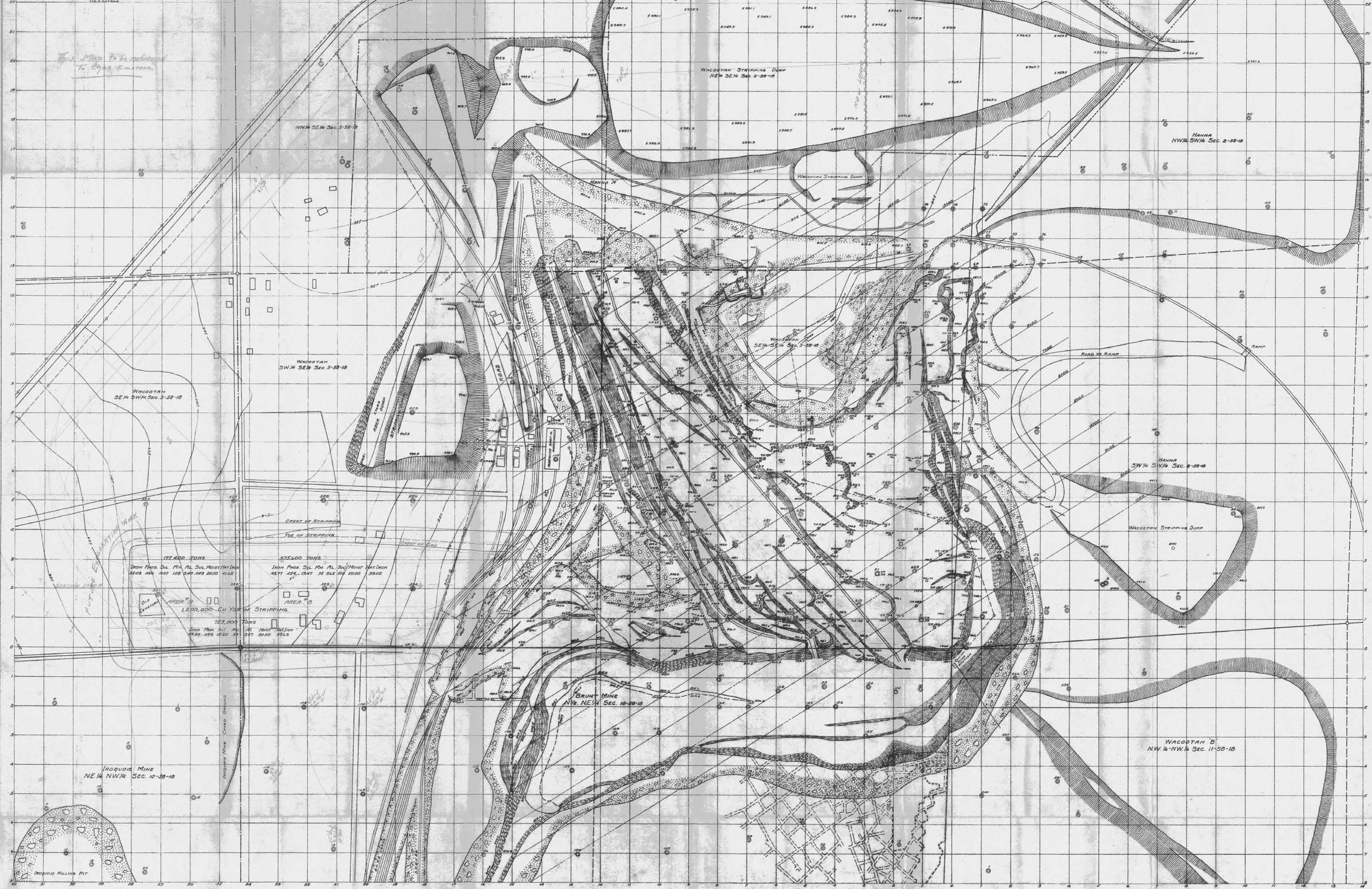
72 El. 835.1 5 53.81 .050 .21 10.01 10 57.22 .051 .25 7.03 15 58.03 .057 .46 5.42 20 58.59 .051 .38 7.15 25 54.52 .049 .54 10.80	73 El. 862.9 5 52.97 .031 .86 10.30 10 49.60 .035 .37 13.10 15 44.90 .033 .53 13.87 20 52.79 .028 .33 20.53 25 45.16 .034 .21 22.95 30 42.53 .033 .22 28.15 35 46.09 .023 .23 36.92 40 47.75 .032 .22 22.86	74 El. 818.0 5 54.08 .048 1.63 9.69 10 53.30 .044 1.22 9.97 15 52.62 .042 .43 15.68 20 55.67 .057 .97 10.57 25 51.98 .051 .65 17.76 30 58.81 .052 1.16 7.37	75 El. 829.1 5 59.63 .043 .32 6.70 10 53.44 .055 1.32 9.30 15 58.89 .047 .91 11.25 20 50.96 .047 1.52 12.16 25 46.50 .037 .45 22.65 30 52.90 .043 1.08 18.89	76 El. 833.6 5 57.96 .060 .51 7.24 10 58.52 .050 .30 8.42 15 52.28 .043 .62 14.17 20 52.10 .040 .63 14.79 25 48.90 .038 .87 16.75 30 55.16 .038 .12 25.73	77 El. 858.3 5 44.74 .032 .60 17.87 10 39.23 .027 .43 27.74 15 43.64 .044 .20 24.03 20 40.34 .033 .16 31.25 25 42.43 .033 .19 29.24 30 45.16 .038 .12 25.73	78 El. 820.0 5 52.90 .047 1.40 11.07 10 53.14 .048 1.43 9.96	79 5 58.20 .056 .38 7.79 10 56.26 .052 .40 9.65 15 57.88 .045 .34 8.79 20 52.97 .047 1.06 11.61 25 52.41 .038 1.38 11.20	80 El. 831.6 5 57.46 .063 .04 6.06 10 56.86 .055 .98 7.46 15 57.71 .043 .65 7.14 20 56.18 .048 .38 10.31 25 56.64 .039 .36 33.92 30 40.04 .037 .20 32.76 35 38.52 .029 .08 34.77 40 42.17 .034 .07 29.07	81 El. 861.5 5 56.69 .061 .76 27.39 10 59.10 .038 .47 26.98 15 57.71 .043 .65 7.14 20 56.18 .048 .38 10.31 25 56.64 .039 .36 33.92 30 40.04 .037 .20 32.76 35 38.52 .029 .08 34.77 40 42.17 .034 .07 29.07	82 El. 822.6 5 47.72 .064 .47 7.30 10 53.94 .049 .69 6.99 15 56.28 .043 .50 8.75 20 47.72 .047 .34 9.54	83 42	84 El. 862.8 5 55.64 .076 .02 13.07 10 49.37 .039 .92 11.24 15 45.39 .048 1.28 15.40 20 43.79 .032 .67 21.05 25 43.58 .036 .40 21.93 30 40.20 .037 .26 31.02 35 39.42 .033 .17 34.08 40 41.90 .030 .18 30.19
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85 El. 860.7 5 48.47 .057 .35 15.31 10 43.52 .057 .32 20.50 15 20 25 30 35 40 Caved	86 El. 855.9 5 48.00 .052 .21 11.22 10 49.40 .047 .54 10.94 15 52.90 .047 .46 7.63 20 56.19 .051 .30 7.16 25 55.97 .043 .24 7.93 30 50.82 .043 .27 14.79 35 52.97 .050 .22 13.69 40 47.56 .056 .28 21.67	87 El. 857.6 5 50.06 .055 .50 10.98 10 51.60 .052 .52 9.45 15 51.50 .051 .64 7.22 20 53.74 .056 .73 7.30 25 54.90 .053 .28 8.72 30 52.17 .043 .34 10.91 35 58.33 .056 .32 6.28 40 57.90 .047 .28 8.23 45 55.22 .057 .34 9.85 50 57.49 .041 .32 9.06 55 55.52 .046 1.06 9.78	88 El. 856.6 5 51.58 .059 .22 10.01 10 51.68 .052 .34 8.48 15 51.87 .049 .30 9.17 20 51.55 .048 .24 8.95 25 52.34 .048 .23 8.97 30 52.80 .048 .24 11.03 35 55.52 .050 .28 10.06 40 59.05 .054 .48 5.25 45 52.62 .052 .32 7.28	89 El. 856.8 5 57.96 .060 .51 7.24 10 58.52 .050 .30 8.42 15 52.28 .043 .62 14.17 20 52.10 .040 .63 14.79 25 48.90 .038 .87 16.75 30 55.16 .038 .12 25.73	90 El. 857.9 5 44.74 .032 .60 17.87 10 39.23 .027 .43 27.74 15 43.64 .044 .20 24.03 20 40.34 .033 .16 31.25 25 42.43 .033 .19 29.24 30 45.16 .038 .12 25.73	91 El. 860.0 5 49.41 .033 .28 7.98 10 46.59 .052 .40 10.27 15 52.19 .050 .39 7.74 20 49.18 .057 .50 10.79 25 49.11 .059 .51 14.01 30 48.76 .056 .54 11.89
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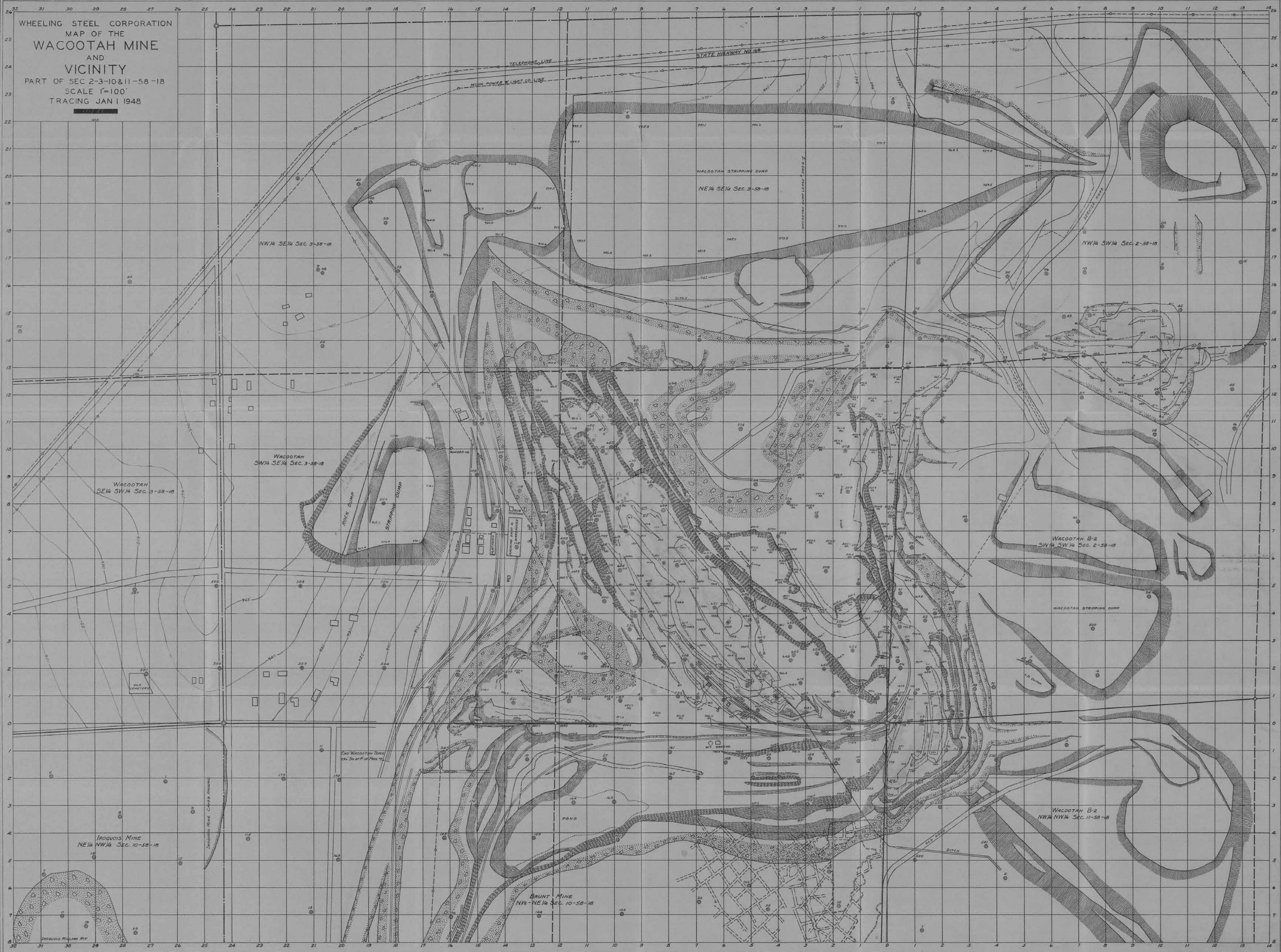
TEST PIT EXPLORATIONS
BRUNT MINE.
SCALE
Map 1"=100'
Pits 1"=20'
Virginia, Minn.

12-58-18
White Print on File

JAN. 1 - 1943



WHEELING STEEL CORPORATION
MAP OF THE
WACOOTAH MINE
AND
VICINITY
PART OF SEC 2-3-10&11-58-18
SCALE 1"=100'
TRACING JAN 1 1948





GENERAL MAP
OF
WACOOTAH
BRUNT AND HANNA
MINES
AND
ADJACENT LAND
MOUNTAIN IRON MINN

SCALE OF FEET
0 100 200 300 400

Aurora, Minn. April 28, 1920.