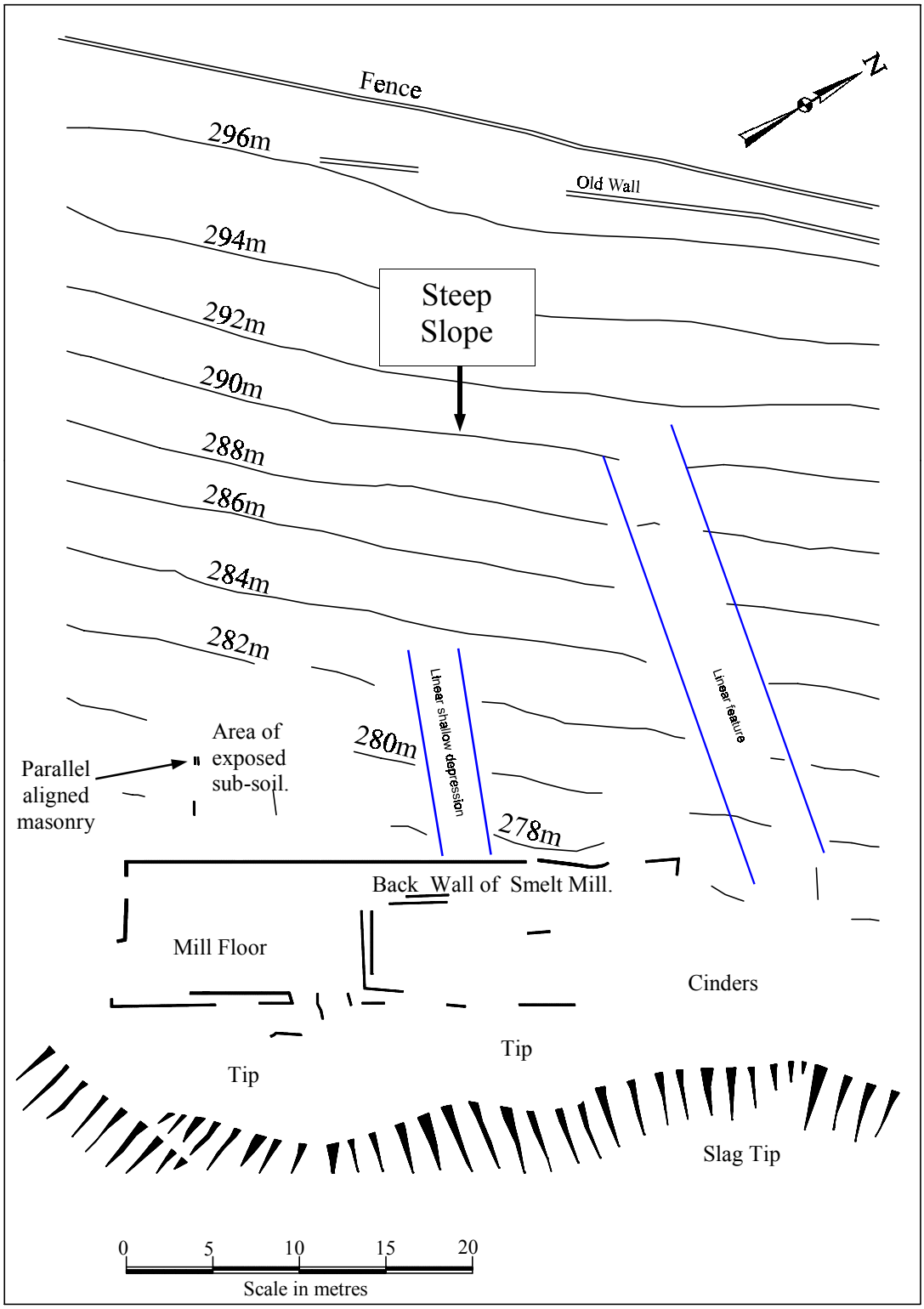
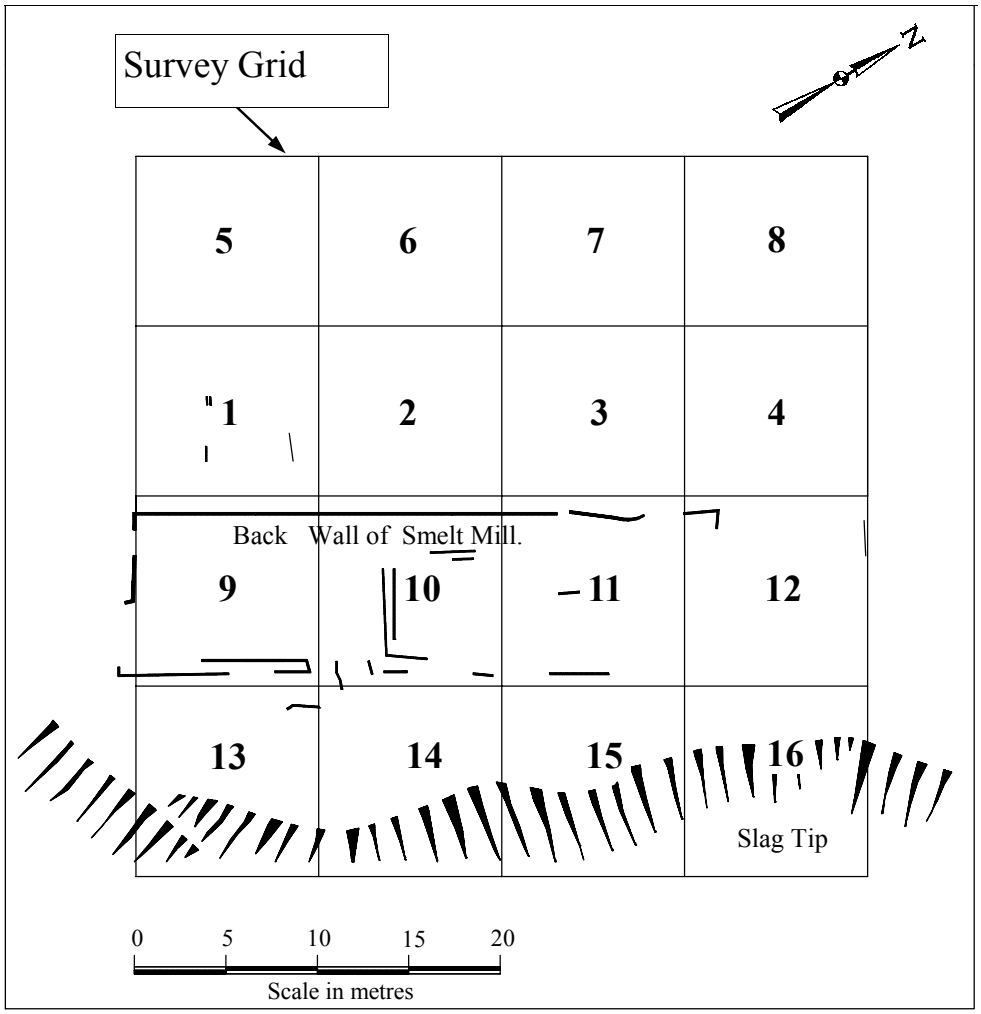


Figure 5.2.26. Lead: Marrick Cupola Smelt Mill. Site plan and topography.

(*Source*: *Based on a survey by*
E. Dennison and R.Lamb.)



Grid No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
High +ve value	19.0	48.7	11.6	26.4	14.8	19.5	35.0	88.7	135.9	119.0	96.5	25.4	423.0	305.0	42.5	44.4
Low -ve value	-7.5	-5.0	-11.4	-21.8	-4.4	0.0	-15.0	-63.0	-119.7	-22.0	-42.0	-8.0	-24.0	-318.0	-27.6	-21.0

Figure 5.2.27. Lead: Marrick Cupola Smelt Mill. Fluxgate gradiometer grid. Numbers denote the sequence of the surveyed grid and the spread of data from each grid.

(*Source*: Vernon 2000b)

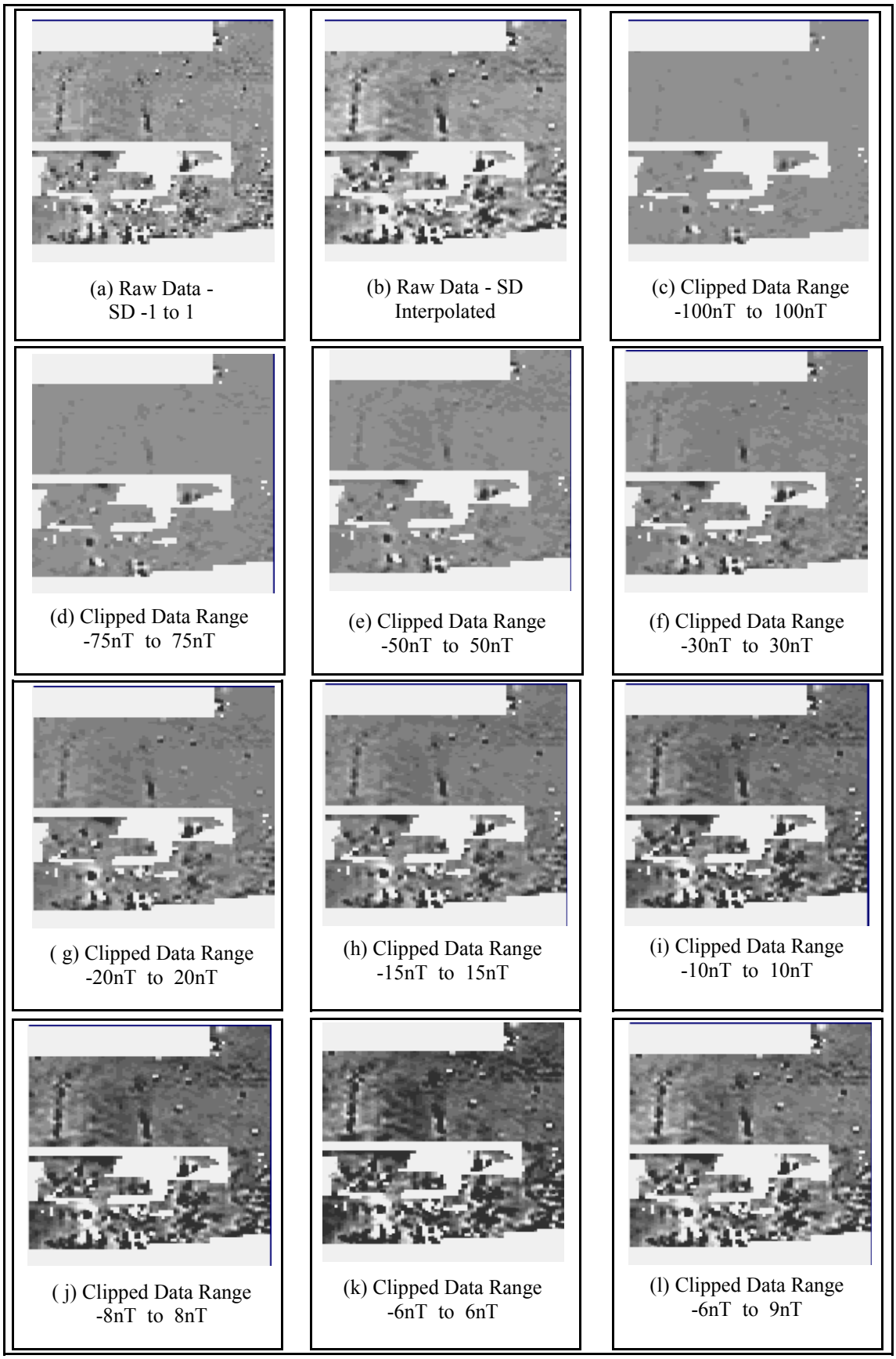
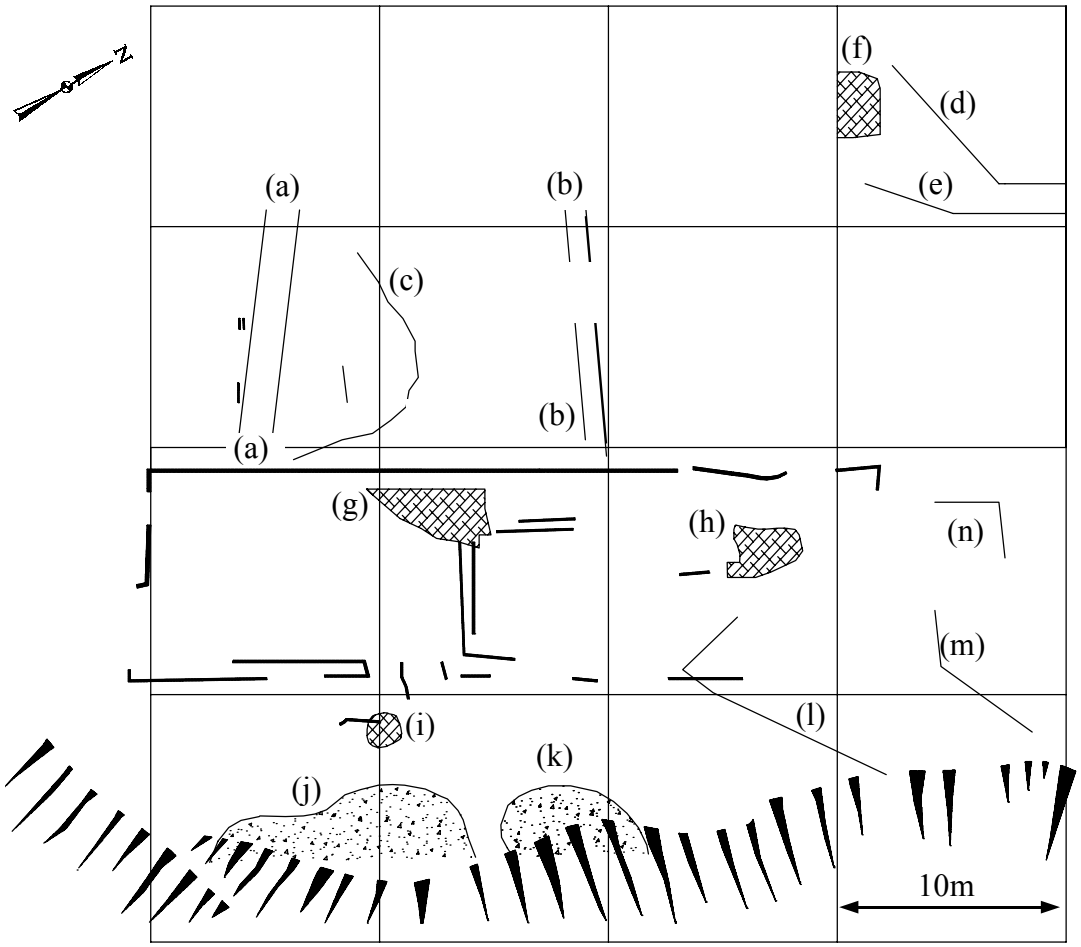


Figure 5.2.28 (a to l). Lead: Marrick Cupola Smelt Mill. Fluxgate gradiometer data (0.5m Resolution). (Negative end of range = white | Positive end of range = black). (*Source*: Vernon 2000b)



The following anomalies were identified on the survey:

(a) A linear anomaly of positive data trending approximately north-west / south-east up the hillside.

(b) A linear anomaly of positive data trending approximately west-north-west / east-south-east up the hillside. Unlike anomaly (b), this anomaly does not appear to be continuous.

(c) is the junction between low data (less tha 3nT) and the slightly higher mean value (5nT to 6nT) of the remaining hillside. It is thought that this is the junction between the exposed sub-soil and vegetation covered gound

(d) & (e) Linear anomalies.

(f) Grouping of positive data with a maximum value of 89nT.

(g) to (k) Positive anomalies -high values of 119, 82,423,278 and 305 respectively.

(l) to (n) Weak linear anomalies.

Figure 5.2.29. Lead: Marrick Cupola Smelt Mill. Features identified on the fluxgate gradiometer survey.

(*Source*: Vernon 2000b)

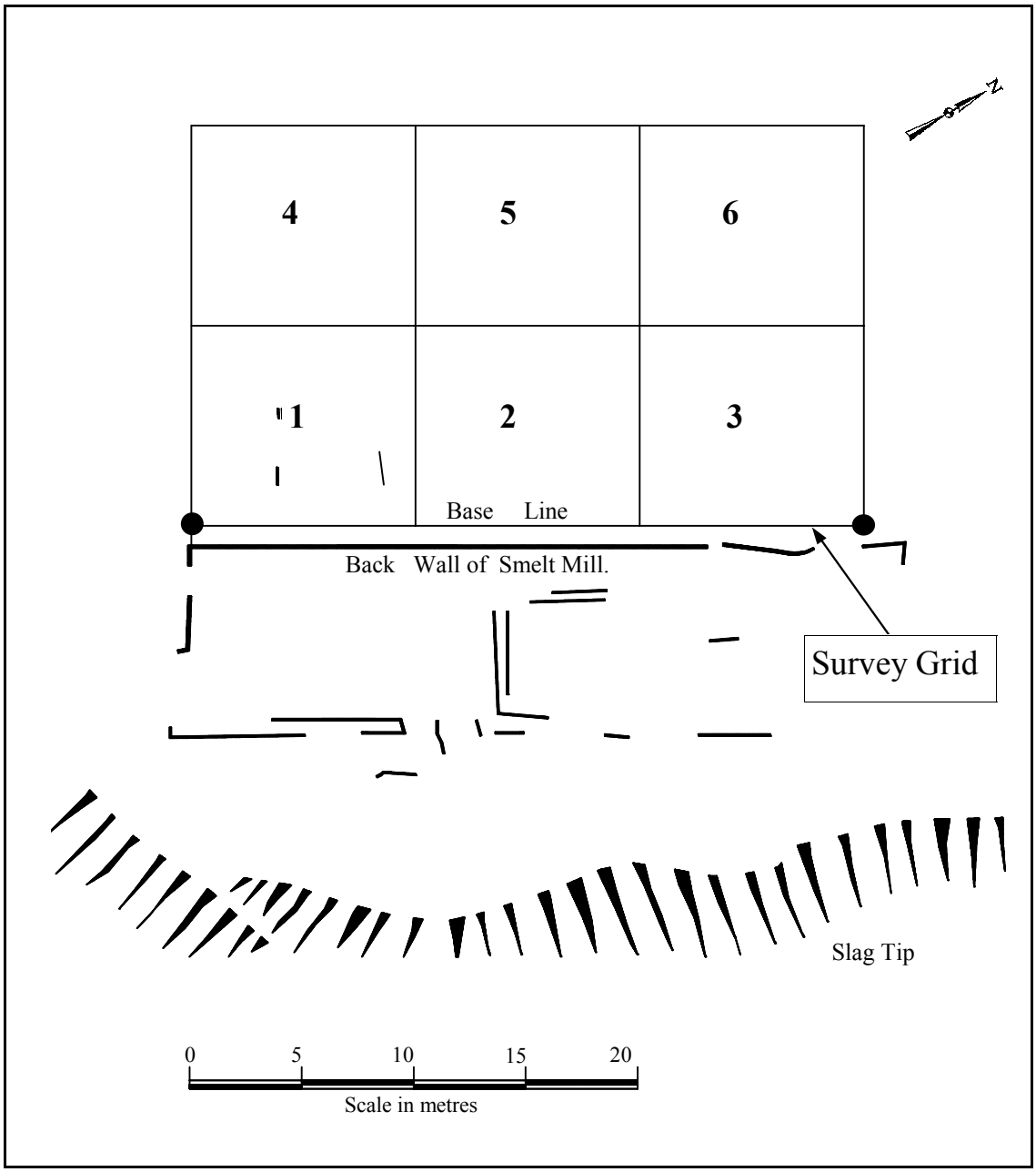


Figure 5.2.30. Lead: Marrick Cupola Smelt Mill. Earth resistance survey grids.

(*Source*: Vernon 2000b)

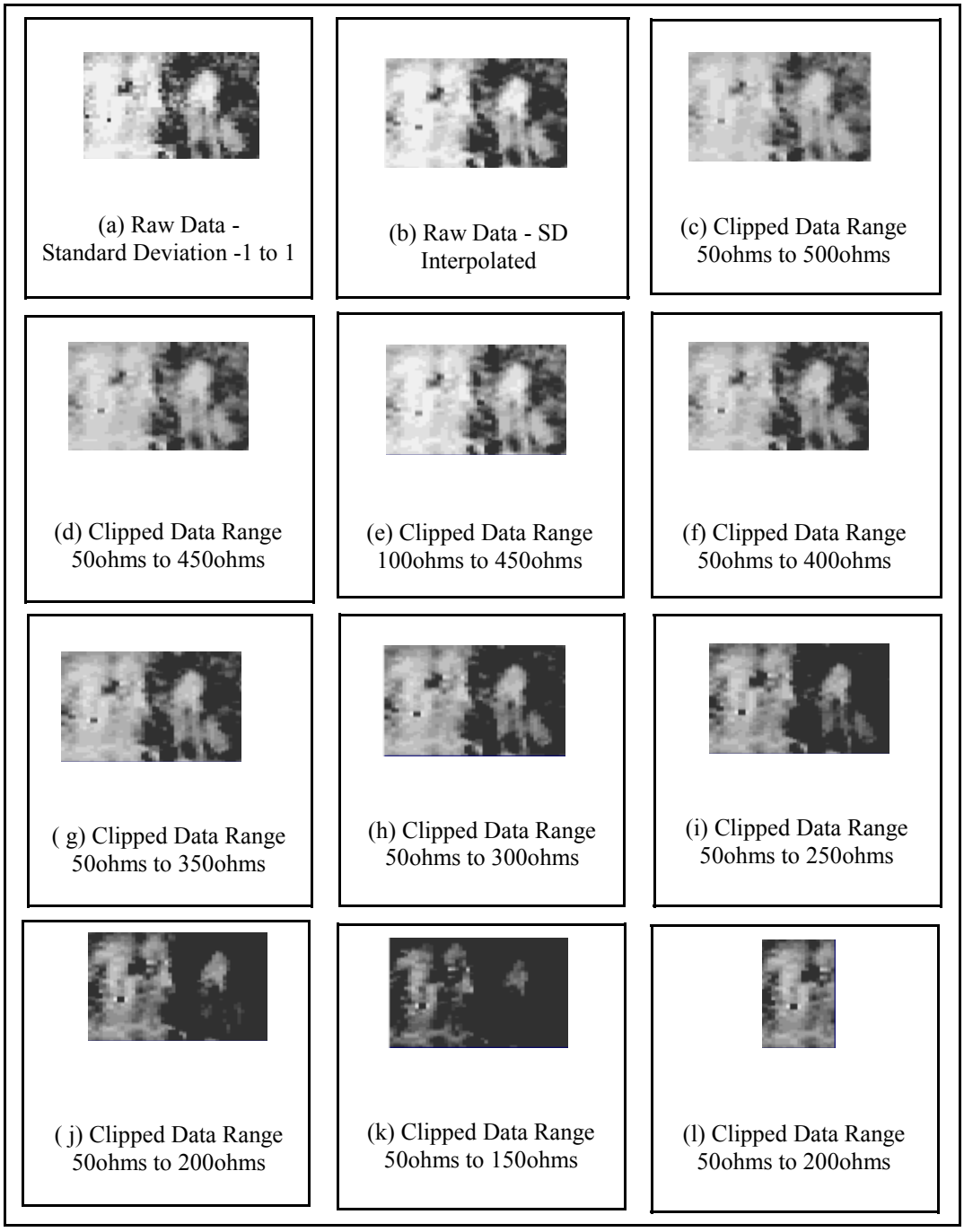
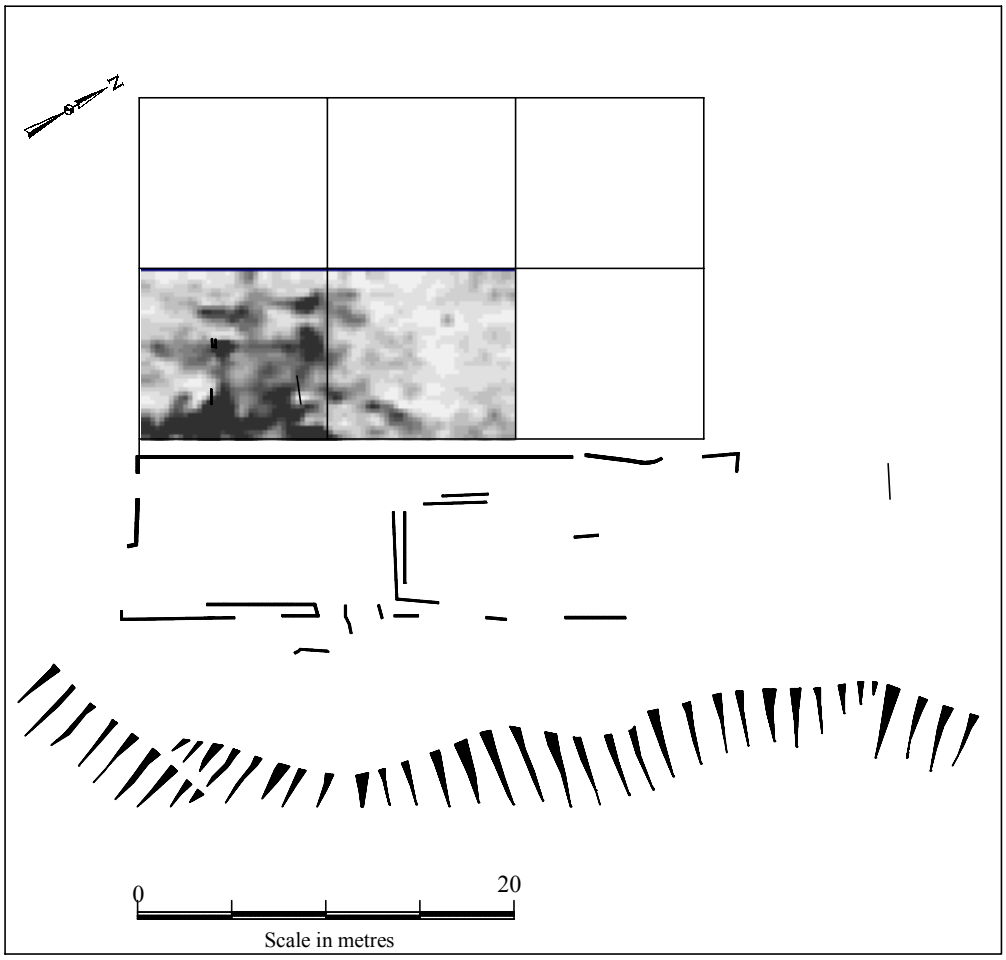


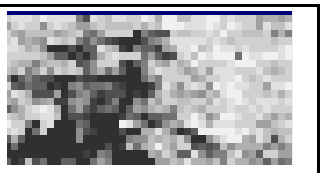
Figure 5.2.31(a to l). Lead: Marrick Cupola Smelt Mill. Earth resistance data (0.5m Resolution).

(Low end of range = white | High end of range = black)

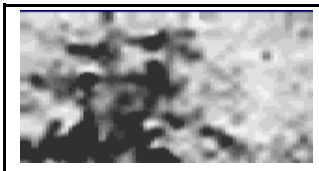
(*Source*: Vernon 2000b)



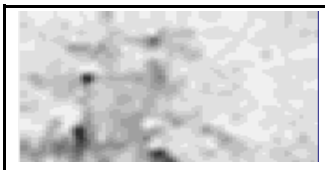
Magnetic Susceptibility data fitted to the grid. Clipped Data Range 3x 10^{-5} (SI) Units (white) to 40x 10^{-5} (SI) Units (black).



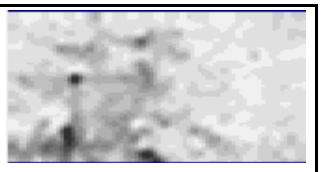
(a) Raw Data - SD-1 to 1



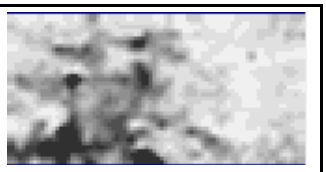
(b) Raw Data - SD Interpolated



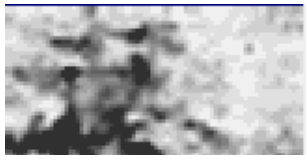
(c) Clipped Data Range 1 to 100 x 10^{-5} (SI)



(d) Clipped Data Range 1 to 90x 10^{-5} (SI)



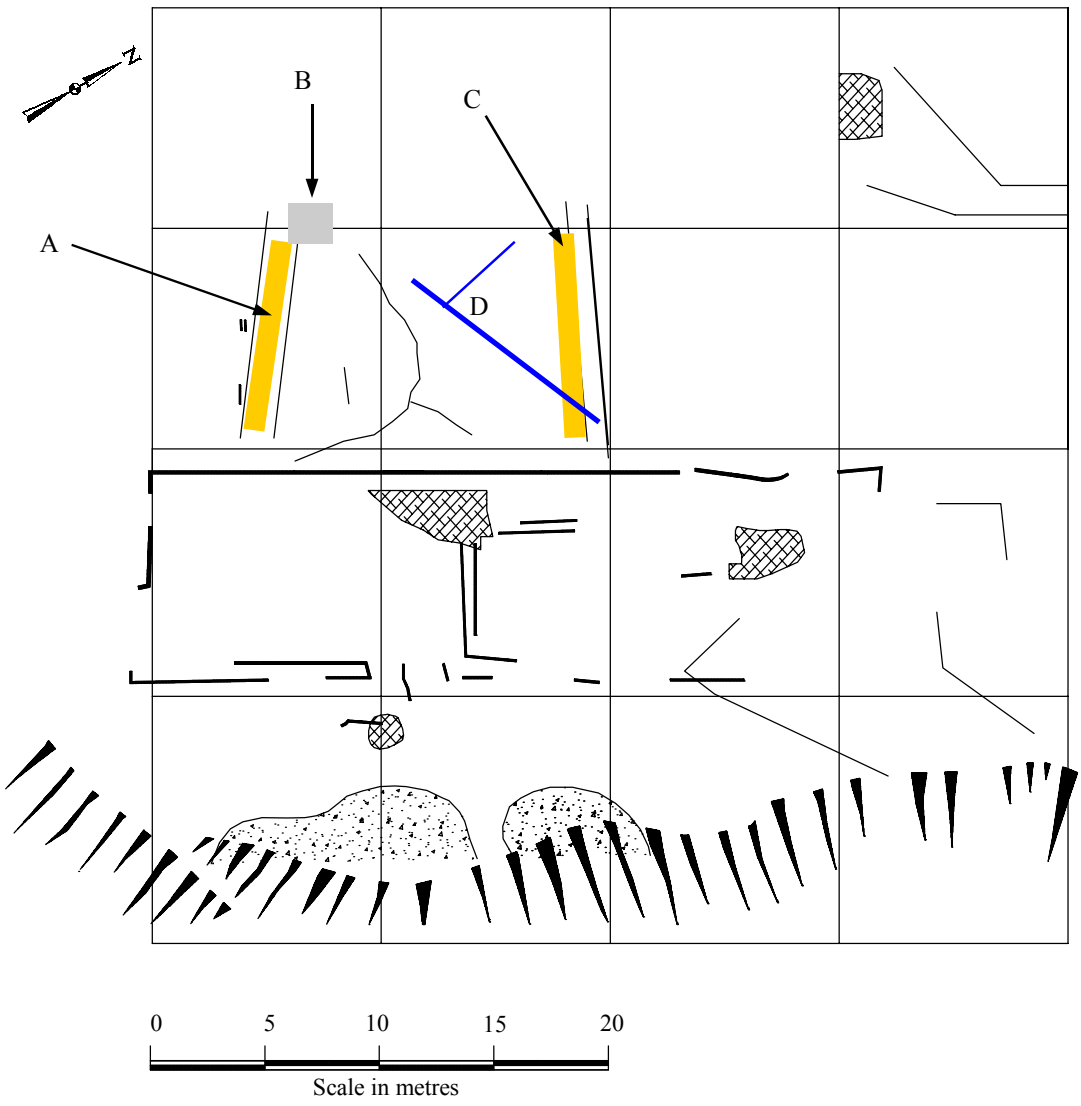
(e) Clipped Data Range 3 to 50x 10^{-5} (SI)



(f) Clipped Data Range 3 to 40x 10^{-5} (SI)

Figure 5.2.32 (a to f). Lead: Marrick Cupola Smelt Mill. Magnetic susceptibility data (0.5m Resolution).
(Low end of range = white | High end of range = black)

(*Source*: Vernon 2000b)



(A) A linear anomaly of weakly contrasting data trending approximately northwest / southeast up the hillside.

(B) A cluster of high earth resistance data.

(C) A linear anomaly of high value data trending approximately westnorthwest/ eastsoutheast up the hillside.

It is probable that anomalies (A) to (C) represent flues and related features. Anomaly B may represent foundations of a small chimney.

(D) Two weakly contrasting linear anomalies intersecting and at right-angles to each other identified on the magnetic susceptibility survey.

Figure 5.2.33. Lead: Marrick Cupola Smelt Mill. Features identified on the earth resistance and magnetic susceptibility survey superimposed on the fluxgate gradiometer survey.

(*Source*: Vernon 2000b)

Figure 5.2.34. Lead: Marrick Cupola Smelt Mill.

Top: Surveying the mill floor. Such sites contain numerous obstructions that restrict the amount of reliable data that can be obtained from a geophysical survey.

Bottom: Laying out the grid on the slope above the back wall of the mill.

(*Source*: Vernon 2000b)