

BUREAU OF INDIAN STANDARDS

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भारतीय मानक मसौदा

खान योजनाओं में उपयोग के लिए ग्राफीय प्रतीक

(आई एस 13230 का पहला पुनरीक्षण)

DRAFT Indian Standard

GRAPHICAL SYMBOLS FOR USE ON MINE PLANS

(First Revision of IS 13230)

ICS 01.080.30

Mining Techniques and Equipment
Sectional Committee, MED 08

Last date for receipt of comments:
06 July 2025

FOREWORD

(Formal clause will be added later)

This standard was first published in 1992. This standard is being revised to keep pace with the latest technological developments and international practices. Also, in this revision, the standard has been brought into the latest style and format of Indian Standards, and references of Indian Standards, wherever applicable have been updated.

This standard is prepared to harmonizing the graphical symbols for use on mine plans in mining industry.

Symbols and graphical representations are used to convey instructions and messages at a glance and considered to be quick methods of communication. Any ambiguity or misinterpretation of a symbol may lead to problem. Therefore symbols should be devised with utmost care to convey what exactly is to be conveyed.

The symbols may have to be devised for use at national level or company level or for specific area/field of use.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

DRAFT Indian Standard
GRAPHICAL SYMBOLS FOR USE ON MINE PLANS
(*First Revision*)

1 SCOPE

This standard lays down the graphical symbols for use on mine plans required to be maintained by mine management under statutory requirements.

2 REFERENCES

The standards given below contain provisions which, through reference in this text, constitute provision of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of these standards:

<i>IS No.</i>	<i>Title</i>
IS 788 : 1971	Specification for ink, drawing, waterproof, coloured (<i>first revision</i>)
IS 789 : 2018	Ink, drawing, waterproof, black — Specification (<i>second revision</i>)
IS 1064 : 1980	Specification for paper sizes (<i>second revision</i>)

3 RULES OF PRESENTATION

3.1 Classification

For ease of utilization, symbols have been classified into two groups:

- a) Symbols for coal mines; and
- b) Symbols for metalliferous mines.

3.1.1 Individual symbols are specified in **6**.

3.2 Size of Symbols

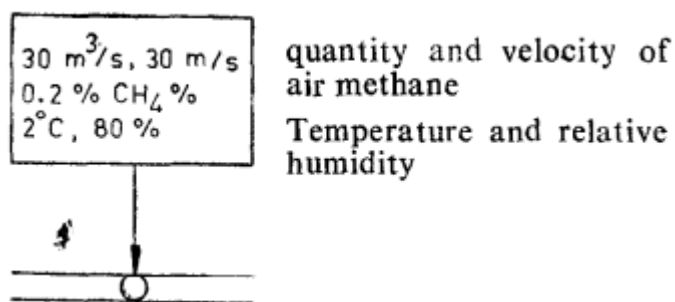
Size of symbols shall vary proportionately according to the scale used for the plan. In this standard, the size has been specified for the scale of 1 : 2 000.

3.3 Size of Letters

Letters used in the preparation of the mine plan shall be of 20 mm, 14 mm, 10 mm, 7 mm, 5 mm, 3 mm and 2 mm size. Letters shall be written in the capital letters (except for standard abbreviation for units) for clear and easy comprehension on drawings.

3.4 When several measurements pertaining to a measurement point in the working are to be written on the mine plan, the point shall be indicated by a circle and quantities shall be enclosed in a rectangle.

Example:



3.5 Drawing Inks

The drawing inks used in the preparation of mine plans shall conform to IS 788 and IS 789. The colours specified in this standard are the same as specified in IS 788.

4 SIZE OF MINE PLANS

The mine plans shall be prepared on drawing sheets of sizes specified for A-series of IS 1064. For other aspects of drawing such as layout, numbering and referencing of sheets etc.

5 SCALES

For preparation of various mine plans, the use of following scales is recommended:







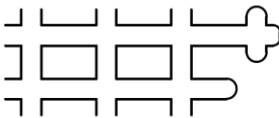
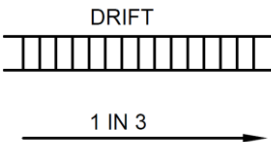
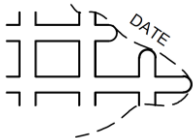

1 : 200, 1 : 500, 1 : 1 000, 1 : 2 000, 1 : 5 000, 1 : 10 000, 1 : 20 000, 1 : 50 000, 1 : 100 000.


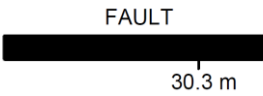

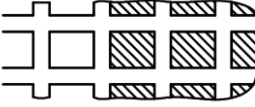
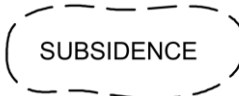
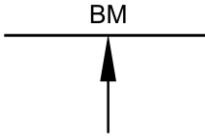

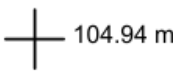
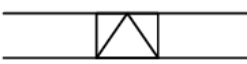
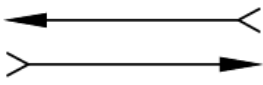

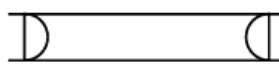
6 SYMBOLS




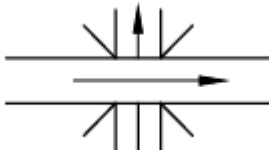
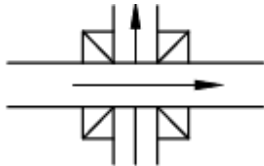
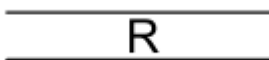

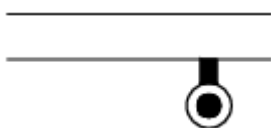
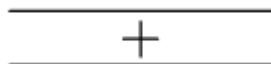
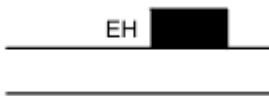

Symbols for coal mines and metalliferous mines are given in column 3 of Table 1 and Table 2 respectively. Column 4 of Table 1 and Table 2 indicate the colour schemes and other additional information, if any, of these symbols.

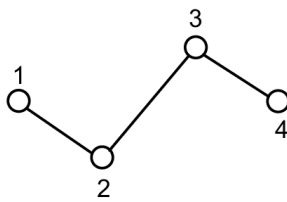
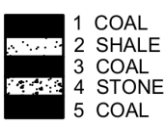


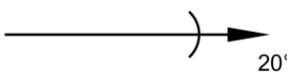
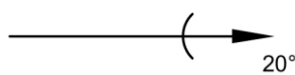
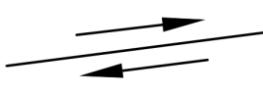
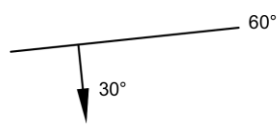
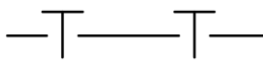
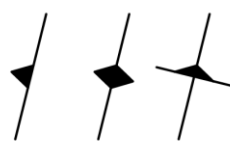
Table 1 Symbols for Coal Mines

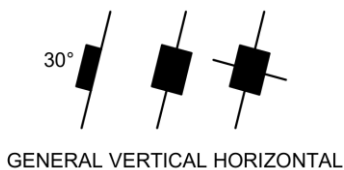


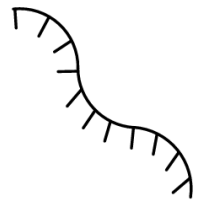

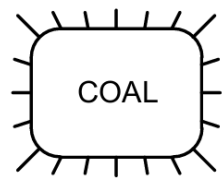
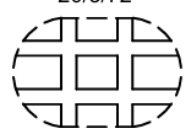
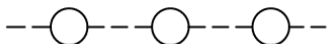
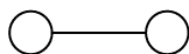

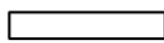
(Clause 6)


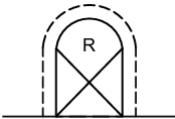
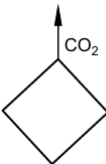
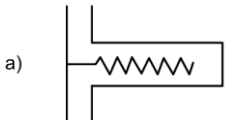
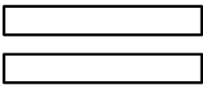






Symbol No.	Name	Symbol	Remarks
(1)	(2)	(3)	(4)
1	BOUNDARY OF LEASE HOLD		Red
2	UNDERGROUND BARRIER COAL		Green
3	SHAFT		—
4	ABANDONED SHAFT		—
5	INCLINE		—
6	ABANDONED INCLINE		—
7	PILLARS AND GALLERIES		—
8	DRIFT		Burnt sienna showing gradient in black
9	QUARTERLY SURVEY LINE		
10	STAPLE SHAFT		Red, should state the distance up and down to all insets

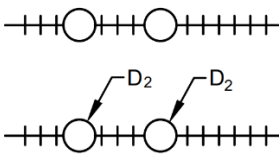
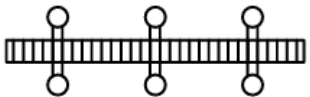
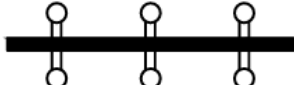



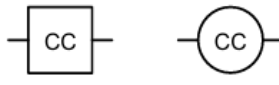





11	ABANDONED STAPLE SHAFT		Red
12	FAULT		Red, showing the amount and direction of throw
13	DYKE OR OTHER INTRUSION		Green
14	GOAF		—
15	SUBSIDENCE		Red
16	BANCH MARK		—
17	SURFACE CONTOUR		Burnt sienna
18	UNDERGROUND SPOT LEVEL		Blue
19	WATER DAM		Red
20	DIRECION OF AIR CURRENT		Intake in blue Return in red
21	BRATTICE		Red
22	DOORS		Red




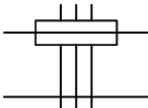






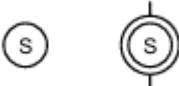

23	BRICKSTONE OR CONCRETE VENTILATION STOPPING		Red
24	FIRE DAM, SEAL OR STOPPING		Red
25	EXPLOSION PROOF STOPPING		Red
26	AIR CROSSING		Black
27	EXPLOSION PROOF AIR CROSSING		Black
28	REGULATOR		Red
29	AUXILIARY FAN		Red
30	TELEPHONE		Red
31	UNDERGROUND FIRST AID STATION		Thick cross red
32	ENGINE HOUSE OR ROOM		—
33	BORE HOLE	15 cm  B.M. No. 37	Should show serial number and diameter






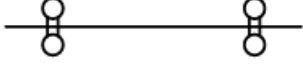

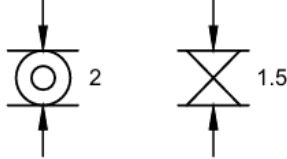
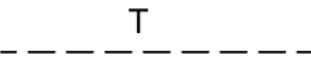
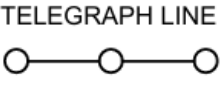
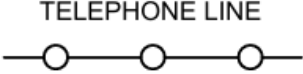
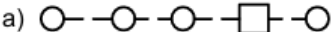
34	SURVEY LINES AND STATION		Red
35	SECTION OF SEAM	<div>WORKING SECTIONS</div> 	—
36	TEMPERATURE	—	Black
37	RELATIVE HUMIDITY	—	Black
38	AIR VELOCITY	—	Black
39	AIR FLOW	—	Black
40	GAS CONTENT	—	Scarlet
41	CONFIRMED GEOLOGICAL BOUNDARY		Black
42	INFERRED GEOLOGICAL BOUNDARY		Black
43	ARTCLINE		Prussian blue
44	SYNCLINE		Prussian blue
45	HORIZONTAL		Light green
46	STRIKE AND DIP OF STRATA		Black
47	THRUST FORMATION		Black
48	SCHIST CITY OR FOLIATION	 GENERAL VERTICAL HORIZONTAL	Black

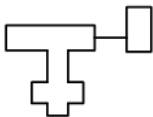




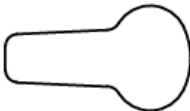
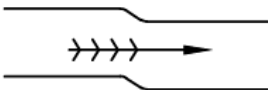

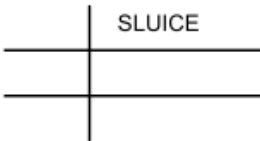


49	JOINT		Black
50	TRAVELLING ROAD		Black and Yellow
51	LADDER WAY		Black
52	OPEN PIT		Black
			
53	STOCK PILE		Black
54	OLD WORKINGS	<p>20/3/72</p> 	Black
55	PLANE TABLE TRANSVERSE LINES WITH STATIONS		Scarlet
56	THEODOLITE TRANSVERSE LINES WITH STATIONS		Black
57	TRIANGULATION STATIONS		Scarlet
58	LIMIT OF RESTRICTED AREA		Light green verged yellow

59	SAFETY PILLAR		Black line with scarlet shade
60	RESERVE STATION FOR BLASTING MATERIAL		Black
61	GAS EMISSION AREA/BLOWERS		Scarlet
62	VENTILATION BRATTICE PARTITION		Scarlet
63	STONE DUST SPRAYED SITE		Yellow
64	STONE DUST BARRIER		Yellow
65	WATER SPRAYED AREA		Cobalt blue
66	FENCING		Scarlet
67	REGULATOR		Scarlet
68	LOADING STATION		Black
69	SHELTER		Light green

70	MINE TRACKS		Black
71	AERIAL ROPEWAY		
	a) BICABLE	a) 	Black
	b) MONOCABLE	b) 	—
72	DRILL		Black
73	COAL CUTTER		Black
74	LOADER		Black
75	CONVEYOR		Black
76	HOIST/WINDER		Black
77	PIPE LINES		Light green
78	AIR COMPRESSOR		Black
79	BATTERY STATION CHARGING		Black
80	BOILER		Scarlet

81	FIRE EXTINGUISHER		Scarlet
82	WATER SUPPLY POINT		Black
83	TIPPER		Black
84	TRAVERSER		Black
85	TURN TABLE		Black
86	POWER PLANT		Black
87	GENERATOR		Black
88	SUB-STATION		Black
89	MAIN SWITCH		Black
90	TRANSFORMER		Black
91	SWITCH		Black
92	ORDINARY ELECTRIC LAMP		Scarlet

93	FLAME PROOF SAFETY LAMP		Scarlet
94	TURBO LAMP		Scarlet
95	MOTOR		Black
96	HIGH TENSION CABLE		Black
97	LOW TENSION CABLE OR CAN TYPE CABLE		Scarlet
98	HIGH VOLTAGE LINE		Scarlet
			
99	SIGNAL LINE		Black
100	TELEPHONE CABLE		Cobalt blue
101	TELEPHONE LINE		Black
102	TELEPHONE LINE		Black
103	ELECTRIC POWER LINE		Black

104	MINE BUILDING		Scarlet
105	RESCUE STATION		Cobalt blue
106	OIL STORAGE		Black with scarlets for letters
107	WATER TANK		Cobalt blue
108	DRAIN		Cobalt blue
109	WATER RESERVOIR		Black line with cobalt blue shade
110	STREAM OR RIVER		Black line with cobalt blue shade arrow in black
111	DRY NALA		Black line with cobalt blue shade
112	CANAL WITH SLUICE		Scarlet
113	WELL		Scarlet
114	WATER CLOSET		Black




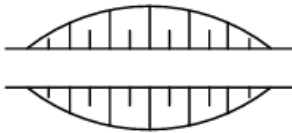
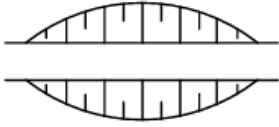
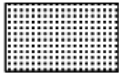
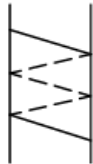

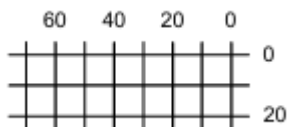



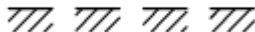
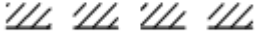
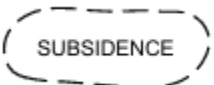



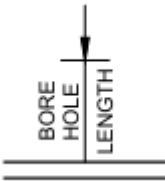





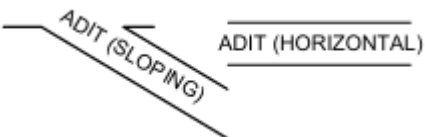

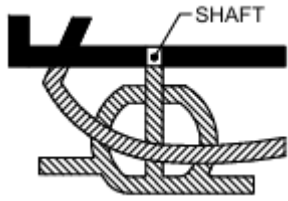



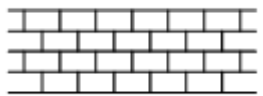
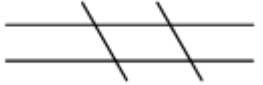

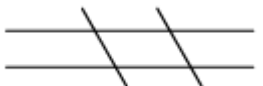
115	BRIDGE		Black
116	RAILWAY LINE		Black
117	ROADS		Black
118	EMBANKMENT		Black
119	CUTTING		Black
120	SAND STORED AREA		Black
121	SPIRAL CHUTE		Black
122	PROHIBITED AREA		—


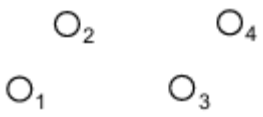


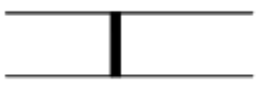


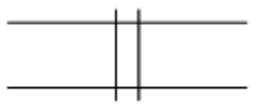
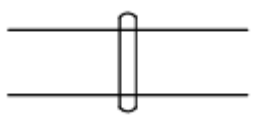

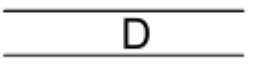

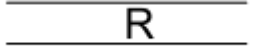
Table 2 Symbols for Metalliferous Mines

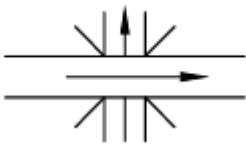












(Clause 6)


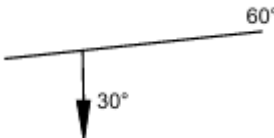


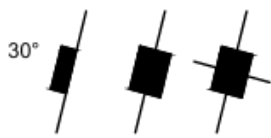




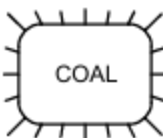
Symbol No.	Name	Symbol	Remarks
(1)	(2)	(3)	(4)

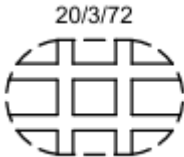




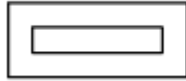
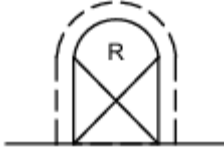
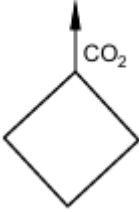
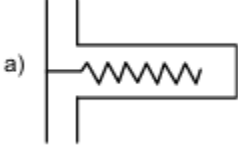


1	CO-ORDINATE LINES		Black
2	BOUNDARY OF MINING LEASEHOLD	<p>PROPERTY CLASS 'A'</p>  <p>PROPERTY CLASS 'B'</p> 	Red
3	OUTCROP OF REET, VEIN, LOAD ETC.		Yellow
4	OUTCROP OF DYKE	 	Brown
5	SUBSIDENCE OF SURFACE		Red
6	PROHIBITED MINING AREA		Red
7	a) BOREHOLE (VERTICAL) FROM SURFACE	 <p>DEPTH DATE</p>	Red
	b) BOREHOLE (INCLINED) FROM SURFACE	 <p>LENGTH ANGLE DIRECTIONAL DATE</p>	Red
	c) BOREHOLES (UNDERGROUND)	 <p>BORE HOLE LENGTH</p>	Red
8	a) SHAFTS	 	Black
	b) ABANDONED SHAFTS	 	Black






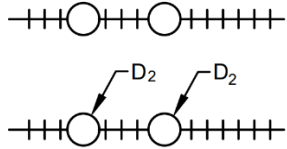
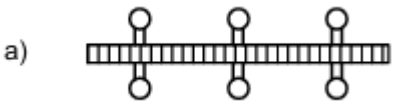
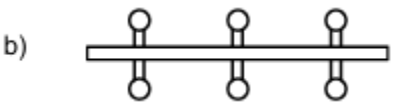



9	WINZES		According to shape
10	ADIT		—
11	CROSS CUTS		—
12	LEVELS		—
13	VERTICAL PROJECTION OF UNDER-GROUND WORKINGS		Black
14	a) PACK AND SAND FILLING		Black
	b) WASTE ROCK FILLING		Black
	c) GRANITE PACK WALLS		Black
15	a) FAULT PLANES		Green
	b) PEGMATITES INTRUSIONS		Blue
16	DYKE		Brown

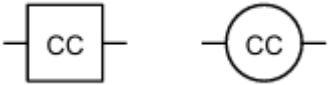








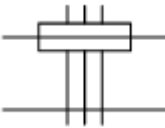
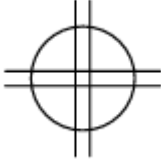

17	DATE OF LAST SURVEY		Black
18	a) SURVEY STATION		Black
	b) PERMANENT STATION		Black
19	BENCH MARK		Black
20	a) BRICK, STONE OR CONCRETE VENTILATION STOPPINGS		Black
	b) HORIZONTAL SEALS		Black
21	BRATTICE		Red
22	a) FIRE DAMS OR SEALS, OPEN		Red
	b) FIRE DAMS OR SEALS, CLOSED		Red
23	WATER DAMS		Blue
24	a) DOORS OPEN		Black
	b) DOOR CLOSED		Black
25	REGULATORS		Red












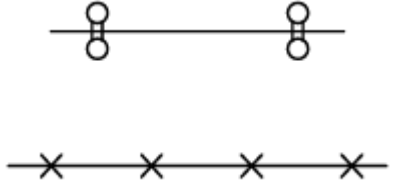
26	AIR CROSSINGS		–
27	a) DIRECTION OF AIR CURRENT INTAKE		Blue
	b) RETURN		Red
28	AUXILIARY FAN		Black
29	TELEVISIONS		Green
30	UNDERGROUND AMBULANCE STATION		Red
31	FIRE REFUGE CHAMBER		Black
32	UNDERGROUND MAGAZINE		Black
33	PUMP STATION		Blue
34	TEMPERATURE	–	Black
35	RELATIVE HUMIDITY	–	Black
36	AIR VELOCITY	–	Black
37	AIR FLOW	–	Black
38	GAS CONTENT	–	Scarlet
39	CONFIRMED GEOLOGICAL BOUNDARY		Black
40	INFERRED GEOLOGICAL BOUNDARY		Black
41	ARTICLINE		Prussian blue
42	SYNCLINE		Prussian blue

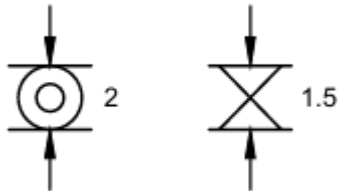
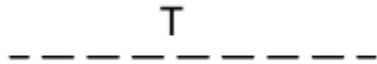
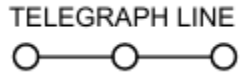
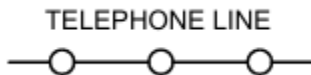
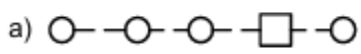
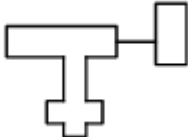



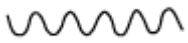

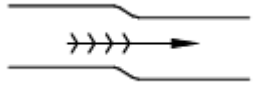
43	HORIZONTAL		Light green
44	STRIKE AND DIP OF STRATA		Black
45	THRUST FORMATION		Black
46	SCHISTOCITY OR FOLIATION	 GENERAL VERTICAL HORIZONTAL	Black
47	JOINT	 GENERAL VERTICAL HORIZONTAL	Black
48	TRAVELLING ROAD		Black and yellow
49	LADDER WAY		Black
50	OPEN PIT	 	Black
51	STOCK PILE		Black


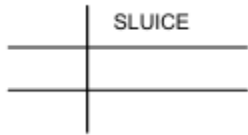


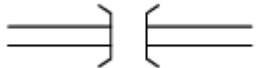


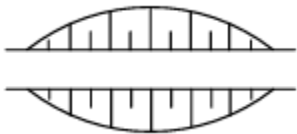
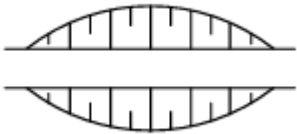
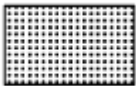
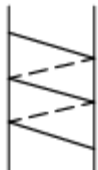

52	OLD WORKINGS		Black
53	PLANE TABLE TRANSVERSE LINES WITH STATIONS		Scarlet
54	THEODOLITE TRANSVERSE LINES WITH STATIONS		Black
55	TRIANGULATION STATIONS		Scarlet
56	LIMIT OF RESTRICTED AREA		Light green verged yellow
57	SAFETY PILLAR		Black line with scarlet shade
58	RESERVE STATION FOR BLASTING MATERIAL		
59	GAS EMISSION AREA/BLOWERS		Scarlet
60	VENTILATION BRATTICE PARTITION		Scarlet
61	STONE DUST SPRAYED SITE		Yellow
62	STONE DUST BARRIER		Yellow

63	WATER SPRAYED AREA		Cobalt blue
64	FENCING		Scarlet
65	REGULATOR		Scarlet
66	LOADING STATION		Black
67	SHELTER		Light green
68	MINE TRACKS		Black
69	AERIAL ROPEWAY		
	a) BICABLE		Black
	b) MONOCABLE		—
70	DRILL		Black
71	COAL CUTTER		Black
72	LOADER		Black

73	CONVEYOR		Black
74	HOIST/WINDER		Black
75	PIPE LINES		Light green
76	AIR COMPRESSOR		Black
77	BATTER CHARGING STATION		Black
78	BOILER		Scarlet
79	FIRE EXTINGUISHER		Scarlet
80	WATER SUPPLY POINT		Black
81	TIPPLER		Black
82	TRAVERSER		Black
83	TURN TABLE		Black
84	POWER PLANT		Black

85	GENERATOR		Black
86	SUB-STATION		Black
87	MAIN SWITCH		Black
88	TRANSFORMER		Black
89	SWITCH		Black
90	ORDINARY ELECTRIC LAMP		Scarlet
91	FLAME PROOF SAFETY LAMP		Scarlet
92	TURBO LAMP		Scarlet
93	MOTOR		Black
94	HIGH TENSION CABLE		Scarlet
95	LOW TENSION CABLE OR CAB TYPE CABLE		Scarlet
96	HIGH VOLTAGE LINE		Scarlet

97	SIGNAL LINE		Black
98	TELEPHONE CABLE		Cobalt Blue
99	TELEGRAPH LINE		Black
100	TELEPHONE LINE		Black
101	ELECTRIC POWER LINE		Black
102	MINE BUILDING		Scarlet
103	RESCUE STATION		Cobalt blue
104	OIL STORAGE		Black with scarlets for letters
105	WATER TANK		Cobalt blue
106	DRAIN		Cobalt blue
107	WATER RESERVOIR		Black line with cobalt blue shade
108	STREAM OR RIVER		Black line with cobalt blue shade arrow in black

109	DRY NALA		Black line with cobalt blue shade
110	CANAL WITH SLUIVE		Scarlet
111	WELL		Scarlet
112	WATER CLOSET		Black
113	BRIDGE		Black
114	RAILWAY LINE		Black
115	ROADS		Black
116	EMBANKMENT		Black
117	CUTTING		Black
118	SAND STORED AREA		Black
119	SPIRAL CHUTE		Black
120	UNDERGROUND COAL		Green

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121	STAPLE SHAFT		Red
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