ORIENTEERING NSW

COMPARISON OF MAPPING SPECIFICATIONS

LANDFORMS

Green = symbol change, map needs to change.

Yellow = symbol change, gets smaller.

Blue = symbol change that might need manual adjustment of map nearby, eg new symbol is bigger.

Pink = ISOM 2017 and ISSprOM differ.

Red = symbol different, fix when field checking map.

Olive green = not sure about this change in symbol.

Red text = recommended annotations to IOF Specifications.

ISOM 2000	ISOM 2017-2 (Adjusted version published January 2019)	ISSOM 1 January 2007	ISSprOM 2019 (valid from 1 January 2020, with errata)
4.1 Land forms	**3.1 Landforms**	**5.1 LAND FORMS**	**4.1 Landforms**

ISOM 2000	ISOM 2017-2 (Adjusted version published January 2019)	ISSOM 1 January 2007	ISSprOM 2019 (valid from 1 January 2020, with errata)
The shape of land is shown by means of very detailed contours, aided by the special symbols for small knolls, depressions, etc. This is complemented in black by the symbols for rock and cliffs. Orienteering terrain is normally best represented with a 5m contour interval. Excessive use of form lines should be avoided as this will complicate the map and give a wrong impression of height differences. If the representation of an area needs a large number of form lines, a smaller contour interval provides a more legible alternative. [The paragraph on relative height difference has been moved to Contours.]	The shape of the terrain is shown by means of contours, aided by special symbols for small knolls, depressions, etc. This is complemented in black by symbols for rock and cliffs. While it is important to show the smaller features of the terrain, such as re-entrants, spurs, knolls and depressions, it is essential that an abundance of small features do not hide the main features of the terrain, such as hills, valleys and major fault lines. Excessive use of form lines must be avoided as this complicates the map and gives a wrong impression of height differences.	[No introductory text]	[No introductory text]

101 Contour A line joining points of equal height. The standard vertical interval between contours is 5 metres. The smallest bend in a contour is 0.25 mm from centre to centre of the lines. Colour: brown. Line width: 0.14mm **104 Slope line** Slope lines may be drawn on the lower side of a contour line, e.g. along the line of a re-entrant or in a depression. They are used only where it is necessary to clarify the direction of slope.	**101 Contour (L)** A line joining points of equal height. The standard vertical interval between contours is 5 m. A contour interval of 2.5 m may be used for flat terrains. Colour: brown. Line width: 0.14mm **[Slope line included in 100 Contour]** Slope lines may be drawn on the lower side of a contour line to clarify the direction of slope. When used, they should be placed in re-entrants. A closed contour represents a knoll or a depression. A depression has to have at least one slope line. Minimum height/depth should be 1 m. Relationships between adjacent contour lines are important. Adjacent contour lines show form and structure. Small details on contours should be avoided because	**101 Contour** A line joining points of equal height. The standard vertical interval between contours is 2 or 2.5 m. To emphasize the 3-dimensional effect of the contour line image, contour lines shall be represented as continuous lines through all symbols, also *building* (526.1) and *canopy* (526.2). Colour: brown. Line width: 0.21mm **104 Slope line** Slope lines should be drawn on the lower side of a contour line where it is necessary to clarify the direction of slope, e.g. along the line of a re-entrant or in a depression.	**101 Contour (L)** A line joining points of equal height. The standard vertical interval between contours is 2 or 2.5 m. To emphasize the 3-dimensional effect of the contour line image, contour lines shall be represented as continuous lines through all symbols, also *Building* (521) and *Canopy* (522). Colour: brown. Line width: 0.21mm **[Slope line included in 100 Contour]** Slope lines may be drawn on the lower side of a contour line to clarify the direction of slope. When used, they should be placed in re-entrants.

The relative height difference between neighbouring features must be represented on the map as accurately as possible. Absolute height accuracy is of less importance. It is permissible to alter the height of a contour slightly if this will improve the representation of a feature. This deviation should not exceed 25% of the contour interval and attention must be paid to neighbouring features. [This paragraph has been moved from the introduction.]	they tend to hide the main features of the terrain. Prominent features such as depressions, re-entrants, spurs, earth banks and terraces may have to be exaggerated. Absolute height accuracy is of little importance, but the relative height difference between neighbouring features should be represented on the map as accurately as possible. It is permissible to alter the height of a contour slightly if this improves the representation of a feature. This deviation should not exceed 25% of the contour interval, and attention must be paid to neighbouring features. The smallest bend in a contour line is 0.25 mm from centre to centre of the line (footprint 4 m). The mouth of a re-entrant or a spur must be wider than 0.5 mm from centre to centre of the line (footprint 8 m). The minimum length of a contour knoll is 0.9 mm (footprint 13.5 m) and the minimum width is 0.6 mm (footprint 9 m) outside measure. Smaller prominent knolls can be represented using symbol *Small knoll* (109) or *Small elongated knoll*	The relative height difference between neighbouring features must be represented on the map as accurately as possible. Absolute height accuracy is of less importance. It is permissible to alter the height of a contour slightly if this will improve the representation of a feature. This deviation should not exceed 25% of the contour interval and attention must be paid to neighbouring features. The smallest bend in a contour is 0.4mm from centre to centre of the lines.	The relative height difference between neighbouring features must be represented on the map as accurately as possible. Absolute height accuracy is of less importance. It is permissible to alter the height of a contour slightly if this will improve the representation of a feature. This deviation should not exceed 25% of the contour interval and attention must be paid to neighbouring features. The smallest bend in a contour is 0.4 mm from centre to centre of the line.

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	(110) or they can be exaggerated on the map to satisfy the minimum dimension. A depression must accommodate a slope line, so the minimum length is 1.1 mm (footprint 16.5 m) and the minimum width is 0.7 mm (footprint 10.5 m) outside measure. Smaller, prominent depressions can be represented using symbol *Small depression* (111) or they can be exaggerated to satisfy the minimum dimension.		
	Contours should be adapted (not broken) in order not to touch symbol *Small knoll* (109) or *Small elongated knoll* (110).	However, contour lines shall be cut out for better legibility, if they touch the following symbols: *small earth wall* (108.1), *small knoll* (112), *small elongated knoll* (113), *small depression* (115), *pit or hole* (116), *prominent landform feature* (118), *step or edge of paved area* (529.1).	However, contour lines shall be cut out for better legibility, if they touch the following symbols: *Small earth wall* (105), *Small knoll* (109), *Small elongated knoll* (110), *Small depression* (111), *Pit or hole* (112), *Prominent landform feature* (115), *Stairway* (532).
Colour: brown. Slope line [for all contours]: length 0.5mm, line width 0.14mm	Colour: brown. Slope line [for a contour or index contour]: length 0.4mm (OM), line width 0.14mm	Colour: brown. Slope line: length 0.75mm, line width 0.21mm	Colour: brown. Slope line [for a contour or index contour]: length 0.75mm (OM), line width 0.21mm

102 Index contour Every fifth contour shall be drawn with a thicker line. This is an aid to the quick assessment of height difference and the overall shape of the terrain surface. Where an index contour coincides with an area of much detail, it may be shown with a normal contour line. Colour: brown. Line: width 0.25mm **105 Contour value** Contour values may be included to aid assessment of large height differences. They are inserted in the index contours in positions where other detail is not obscured. The figures should be orientated so that the top of the figure is on the higher side of the contour. Colour: brown. Text height: 1.5mm	**102 Index contour (L, T)** Every fifth contour shall be drawn with a thicker line. This is an aid to the quick assessment of height difference and the overall shape of the terrain surface. An index contour may be represented as an ordinary contour line in an area with much detail. Small contour knolls and depressions are normally not represented using index contours. The index contour level must be carefully selected in flat terrain. The ideal level for the index contour is the central contour in the most prominent slopes. Colour: brown. Line: width 0.25mm **[Contour value included in 102 Index contour]** An index contour may have a height value assigned. A height value should only be inserted in an index contour in places where other detail is not obscured. It shall be orientated so that the top of the label is on the higher side of the contour. Colour: brown. The index value (label) shall be 1.5 mm high and represented in a sans-serif font.	**102 Index contour** Every fifth contour shall be drawn with a thicker line. This is an aid to the quick assessment of height difference and the overall shape of the terrain surface. Where an index contour coincides with an area of much detail, it may be shown with symbol *contour* (101). Colour: brown. Line: width 0.35mm **105 Contour value** Contour values may be included to aid assessment of large height differences. The figures shall be orientated so that the top of the figure is on the higher side of the contour. They are inserted in the index contours in positions where other detail is not obscured. Colour: brown. Text height: 1.52mm = 6 pt	**102 Index contour (L, T)** Every fifth contour shall be drawn with a thicker line. This is an aid to the quick assessment of height difference and the overall shape of the terrain surface. Where an index contour coincides with an area of much detail, it may be shown with symbol *Contour* (101). Colour: brown. Line: width 0.30mm **[Contour value included in 102 Index contour]** Contour values may be included to aid assessment of large height differences. The labels shall be orientated so that the top of the label is on the higher side of the contour. They are inserted in the index contours in positions where other detail is not obscured. Colour: brown. Contour values: 1.52mm, 6 pt

103 Form line Form lines are used where more information can be given about the shape of the ground. They are used only where representation is not possible with ordinary contours. An intermediate contour line. Only one form line may be used between neighbouring contours.	**103 Form line (L)** Form lines are used where more information must be given about the shape of the ground. Form lines are added only where representation would be incomplete with ordinary contours. They shall not be used as intermediate contours. Only one form line should be used between neighbouring contours. It is very important that a form line fits logically into the contour system, so the start and end of a form line should be parallel to the neighbouring contours. The gaps between the form line dashes must be placed on reasonably straight sections of the form line. Form lines can be used to differentiate flat knolls and depressions from more distinct ones (minimum height / depth should be 1 m). Excessive use of form lines must be avoided as this disturbs the three-dimensional picture of the ground shape and will complicate map reading. Minimum length (non-closed): two dashes. Minimum length of a form line, knoll or depression: 1.1 mm (footprint 16.5 m) outside measure.	**103 Form line** Form lines are used where more information can be given about the shape of the ground. They are used only where representation is not possible with ordinary contours. An intermediate contour line. Only one form line may be used between neighbouring contours.	**103 Form line (L)** Form lines are used where more information can be given about the shape of the ground. They are used only where representation is not possible with ordinary contours. An intermediate contour line. Only one form line may be used between neighbouring contours.

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Colour: brown. Line: width 0.14mm Dash length: 1.25mm Gap length: 0.25mm	Colour: brown. Line: width 0.1mm Dash length: 2.0mm Gap length: 0.2mm Slope tag: 0.4mm long (OM), 0.1mm wide [slope tags in ISOM 2000 had the same dimensions for contours and form lines]	Colour: brown. Line: width 0.21mm Dash length: 1.87mm Gap length: 0.35mm	Colour: brown. Line: width 0.15mm Dash length: 3.0mm Gap length: 0.3mm Slope tag: 0.6mm long (OM), 0.15mm wide [slope tags in ISSOM had the same dimensions for contours and form lines]

ISOM 2000	ISOM 2017-2 (Adjusted version published January 2019)	ISSOM 1 January 2007	ISSprOM 2019 (valid from 1 January 2020, with errata)
106 Earth bank A steep earth bank is an abrupt change in ground level which can be clearly distinguished from its surroundings, e.g. gravel or sand pits, road and railway cuttings or embankments.	**104 Earth bank (L)** An earth bank is an abrupt change in ground level which can be clearly distinguished from its surroundings, e.g. gravel or sand pits, road and railway cuttings or embankments. Minimum height: 1 m. An earth bank may impact runnability.	**106 Earth bank** A steep earth bank is an abrupt change in ground level which can be clearly distinguished from its surroundings, e.g. gravel or sand pits, roads and railway cuttings or embankments.	**104 Earth bank (L)** A steep earth bank is an abrupt change in ground level which can be clearly distinguished from its surroundings, e.g. gravel or sand pits, roads and railway cuttings or embankments.
The tags should show the full extent of the slope,	The tags represent the full extent of the earth bank. For long earth banks it is allowed to use tags shorter than the minimum length at the ends.	The tags should show the full extent of the slope, …	The tags should show the full extent of the slope, …
[The tags] may be omitted if two banks are close together. Impassable banks should be drawn with symbol 201 (impassable cliff).	If two earth banks are close together, tags may be omitted. Impassable earth banks shall be represented using symbol *Impassable cliff* (201).	[The tags] may be omitted if two banks are close together. Impassable banks shall be drawn with the symbol *impassable cliff* (201).	[The tags] may be omitted if two banks are close together. Impassable banks shall be drawn with the symbol *Impassable cliff* (201).
The line width of very high earth banks may be 0.25 mm.		The line width of very high earth banks may be 0.37 mm.	The line width of very high earth banks may be 0.37 mm.
Min length 0.6mm	Minimum length: 0.6 mm (footprint 9 m).		
Colour: brown. Main line: width 0.18mm, Tags: width 0.14mm, length 0.5mm, gap between tags 0.5mm	Colour: brown. Main line: width 0.18mm Tags: width 0.14mm, length 0.4mm (OM), gap between tags 0.5mm (CC)	Colour: brown. Main line: width 0.27mm Tags: width 0.21mm, Min length: 0.75mm, gap between tags 0.75mm	Colour: brown. Main line: width 0.27mm, Tags: width 0.21mm, Min length 0.75mm (OM), gap between tags 0.75mm (CC)

ISOM 2000	ISOM 2017-2 (Adjusted version published January 2019)	ISSOM 1 January 2007	ISSprOM 2019 (valid from 1 January 2020, with errata)
107 Earth wall Distinct earth wall. Minimum height is 1 m. Colour: brown. Line width: 0.14mm Distance between dots: 2.5mm Dot diameter: 0.4mm	**105 Earth wall (L)** Distinct earth wall. Minimum height: 1 m. Minimum length: 1.4 mm (footprint 21 m). Colour: brown. Line width: 0.18mm Distance between dots: 2.0mm (CC) Distance dot to end of line 0.77mm (OM) Dot diameter: 0.45mm	**108.1 Small earth wall** A small distinct earth wall, usually man made. Larger earth walls should be represented with the symbols *contour* (101), *form line* (103) or *earth bank* (106). The minimum height is 0.5 m. Colour: brown. Line width: 0.21mm Distance between dots: 3.75mm Dot diameter: 0.6mm	**105 Small earth wall (L)** A small distinct earth wall, usually man-made. Larger earth walls should be represented with the symbols *Contour* (101), *Form line* (103) or *Earth bank* (104). Minimum height: 0.5 m. Minimum length: 1.4 mm (footprint 5.6 m). Colour: brown. Line width: 0.21mm Distance between dots: 3.75mm (CC) Dot diameter: 0.6mm
108 Small earth wall A small or partly ruined earth wall shall be shown with a dashed line. Minimum height is 0.5 m. Colour: brown. Line width: 0.14mm Gap between dashes: 0.25mm Dot diameter: 0.4mm	**106 Ruined earth wall (L)** A ruined or less distinct earth wall. Minimum height: 0.5 m. Minimum length: two dashes (3.65 mm - footprint 55 m). If shorter, the symbol must be exaggerated to the minimum length or changed to symbol *Earth wall* (105). Colour: brown. Line width: 0.18mm Gap between dots: 2.0mm (CC) Gap between dashes: 0.35mm Dot diameter: 0.45mm	[no symbol]	[no symbol]

ISOM 2000	ISOM 2017-2 (Adjusted version published January 2019)	ISSOM 1 January 2007	ISSprOM 2019 (valid from 1 January 2020, with errata)
109 Erosion gully An erosion gully or trench which is too small to be shown by symbol 106 is shown by a single line. The line width reflects the size of the gully. Minimum depth 1 m. Colour: brown. Line width: max 0.25mm The end of the line is pointed.	**107 Erosion gully (L)** An erosion gully which is too small to be shown using symbol *Earth bank* (104) is shown by a single line. Minimum depth: 1 m. Minimum length: 1.15 mm (footprint 17 m). Contour lines should not be broken around this symbol. Colour: brown. Line width: 0.25mm Length of taper: 0.75mm	**109 Erosion gully or trench** An erosion gully or trench which is too small to be represented with the symbol *earth bank* (106), *contour* (101), *index contour* (102) or *form line* (103) is represented by a single line. The line width reflects the size of the gully. Minimum depth is 1 m. Minimum length is 3mm on the map. Colour: brown. Line width: min 0.37mm The end of the line is pointed. Length of taper: 0.75mm	**107 Erosion gully or trench (L)** An erosion gully or trench which is too small to be represented with the symbol *Earth bank* (104), *Contour* (101), *Index contour* (102) or *Form line* (103) is represented by a single line. Minimum depth: 1 m. Minimum length: 2.0 mm (footprint 8 m). Contour lines may be broken around this symbol for better readability. Colour: brown. Line width: min 0.37mm The end of the line is pointed. Length of taper: 0.75mm
110 Small erosion gully A small erosion gully or trench. Minimum depth 0.5 m. Colour: brown. Dot diameter: 0.25mm Distance between dots: 0.5mm	**108 Small erosion gully (L)** A small erosion gully, dry ditch or trench. Minimum depth: 0.5 m. Minimum length (isolated): three dots (1.15 mm - footprint 17 m). Contour lines should be broken around this symbol. Colour: brown. Dot diameter: 0.25mm Distance between dots: 0.45mm(CC)	**110 Small erosion gully** A small erosion gully or trench. Minimum depth is 0.5 m. Colour: brown. Dot diameter: 0.37mm Distance between dots: 0.6mm	**108 Small erosion gully (L)** A small erosion gully or trench. Minimum depth: 0.5 m. Minimum length (isolated): three dots (1.6 mm - footprint 6.4 m). Contour lines should be broken around this symbol. Colour: brown. Dot diameter: 0.37mm Distance between dots: 0.6mm (CC)

ISOM 2000	ISOM 2017-2 (Adjusted version published January 2019)	ISSOM 1 January 2007	ISSprOM 2019 (valid from 1 January 2020, with errata)
111 Knoll [shown with contour lines]			
112 Small knoll A small obvious mound or rocky knoll which cannot be drawn to scale with a contour (diameter of mound less than ca. 5 m). The height of the knoll should be a minimum of 1m from the surrounding ground. The symbol may not touch a contour line. Colour: brown. Diameter: 0.5mm	**109 Small knoll (P)** An obvious mound or knoll which cannot be drawn to scale with a contour. Minimum height: 1 m. The symbol shall not touch or overlap contours. Footprint: 7.5 m x 7.5 m. Colour: brown. Diameter: 0.5mm	**112 Small knoll** A small obvious mound or rocky knoll which cannot be drawn to scale with a *contour* (101), *index contour* (102) or *form line* (103). The height of the knoll should be a minimum of 1m from the surrounding ground. Colour: brown. Diameter: 0.75mm	**109 Small knoll (P)** A small obvious mound or rocky knoll which cannot be drawn to scale with a *Contour* (101), *Index contour* (102) or *Form line* (103). Minimum height: 0.5 m. The symbol shall not touch or overlap contours. Footprint: 3 m in diameter. Colour: brown. Diameter: 0.75mm

ISOM 2000	ISOM 2017-2 (Adjusted version published January 2019)	ISSOM 1 January 2007	ISSprOM 2019 (valid from 1 January 2020, with errata)
113 Elongated knoll A small obvious elongated knoll which cannot be drawn to scale with a contour (length less than 12m and width less than 4 m). The height of the knoll should be a minimum of 1 m from the surrounding ground. Knolls larger than this must be shown by contours. The symbol may not be drawn in free form or such that two elongated knoll **[some text missing from specification]** Dimensions: 0.8mm long, 0.4mm wide	**110 Small elongated knoll (P)** An obvious elongated knoll which cannot be drawn to scale with a contour. Minimum height: 1 m. The symbol shall not touch or overlap contours. Footprint: 12 m x 6 m. Colour: brown. Dimensions: 0.8mm long, 0.4mm wide	**113 Small elongated knoll** A small obvious elongated knoll which cannot be drawn to scale with a *contour* (101), *index contour* (102) or *form line* (103). The maximum length should be 6m and the maximum width 2 m. The height of the knoll should be a minimum of 1 m from the surrounding ground. Knolls larger than this shall be shown by contours. The symbol may not be drawn in free form or such that two elongated knoll symbols touch or overlap. Colour: brown. Dimensions: 1.2mm long, 0.6mm wide	**110 Small elongated knoll (P)** A small obvious elongated knoll which cannot be drawn to scale with a *Contour* (101), *Index contour* (102) or *Form line* (103). The maximum length should be 6 m and the maximum width 2 m. Minimum height: 0.5 m. Knolls larger than this shall be shown by contours. The symbol shall not be drawn in free form or such that two elongated knoll symbols touch or overlap. The symbol shall not touch or overlap contours. Footprint: 4.8 m x 2.4 m. Colour: brown. Dimensions: 1.2mm long, 0.6mm wide
114 Depression [shown with contour lines]			

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115 Small depression Small shallow natural depressions and hollows (minimum diameter 2 m) which cannot be shown to scale by contours are represented by a semicircle. Minimum depth from the surrounding ground should be 1 m. Symbol 116 is used for man-made pits. Location is the centre of gravity of the symbol, which is orientated to north. Colour: brown. Line width: 0.18mm Horizontal width (top of U): 0.8mm	**111 Small depression (P)** A small depression or hollow without steep sides that is too small to be shown by contours. Minimum depth: 1 m, minimum width: 2 m. Small depressions with steep sides are represented with symbol Pit (112). The symbol shall not touch or overlap other brown symbols. Location is the centre of gravity of the symbol, and the symbol is orientated to north. Footprint: 12 m x 6 m. Colour: brown. Line width: 0.18mm Horizontal width (top of U): 0.8mm (OM) Height: 0.4mm (OM)	**115 Small depression** A small shallow natural depression or hollow which cannot be represented by the symbol *contour* (101) or *form line* (103) is represented by a semicircle. The minimum depth from the surrounding ground should be 1 m. The minimum diameter should be 2 m. The symbol is oriented to north. Colour: brown. Line width: 0.25mm Horizontal width (top of U): 0.95mm	**111 Small depression** (P) A small shallow natural depression or hollow which cannot be represented by the symbol *Contour* (101) or *Form line* (103) is represented by a semicircle. Minimum depth: 0.5 m. Minimum width: 1 m. The symbol shall not touch or overlap other brown symbols. The symbol is orientated to north. Footprint: 4.8 m x 2.4 m. Colour: brown. Line width: 0.25mm Horizontal width (top of U): 1.2mm (OM) Height: 0.6mm (OM)

ISOM 2000	ISOM 2017-2 (Adjusted version published January 2019)	ISSOM 1 January 2007	ISSprOM 2019 (valid from 1 January 2020, with errata)
116 Pit Pits and holes with distinct steep sides which cannot be shown to scale by symbol 106. Minimum depth from the surrounding ground should be 1 m. (minimum diameter 2 m) Location is the centre of gravity of the symbol which is orientated to north. Colour: brown. Line width: 0.18mm Horizontal width (top of V): 0.7mm Height: 0.8mm	**112 Pit (P)** Pits and holes with distinct steep sides which cannot be shown to scale using symbol *Earth bank* (104). Minimum depth: 1 m, minimum width: 1 m. A pit larger than 5 m x 5 m should normally be exaggerated and drawn using *Earth bank* (104). Pits without steep sides are represented with symbol *Small depression* (111). The symbol shall not touch or overlap other brown symbols. Location is the centre of gravity of the symbol, and the symbol is orientated to north. Footprint: 10.5 m x 12 m. Colour: brown. Line width: 0.18mm Horizontal width (top of V): 0.7mm (OM) Height: 0.8mm (OM)	**116 Pit or hole** A pit or hole with distinct steep sides which cannot be represented to scale with the symbol *earth bank* (106). The minimum depth from the surrounding ground shall be 1 m. The minimum diameter shall be 2m. The symbol is orientated to north. Colour: brown. Line width: 0.25mm Horizontal width (top of V): 0.82mm Height: 1.25mm	**112 Pit or hole (P)** A pit or hole with distinct steep sides which cannot be represented to scale with the symbol *Earth bank* (104). Minimum depth: 0.5 m. Minimum width: 1 m. The symbol is orientated to north. Footprint: 4.4 m x 5.0 m. Colour: brown. Line width: 0.25mm Horizontal width (top of V): 1.1mm (OM) Height: 1.25mm (OM)

ISOM 2000	ISOM 2017-2 (Adjusted version published January 2019)	ISSOM 1 January 2007	ISSprOM 2019 (valid from 1 January 2020, with errata)
117 Broken ground An area of pits or knolls which is too intricate to be shown in detail.	**113 Broken ground (A)** An area of pits and / or knolls which is too intricate to be shown in detail, or other types of rough and uneven ground that is clearly distinguishable but has little impact on runnability.	**117 Broken ground** An area of pits or knolls, which is too complex to be represented in detail.	**113 Broken ground (A)** An area of pits or knolls, which is too complex to be represented in detail.
The density of randomly placed dots may vary according to the detail on the ground.	The dots should be randomly distributed but not interfere with the representation of important terrain features and objects. The minimum number of dots is three (footprint 10 m x 10 m). The maximum centre to centre distance between neighbouring dots is 0.6 mm. The minimum centre to centre distance between neighbouring dots is 0.5 mm. Contours should not be cut in broken ground areas. The dots shall not be arranged to form a single point wide line. Density: 3-4 dots / mm².	The density of randomly placed dots may vary according to the detail on the ground.	The density of randomly placed dots may vary according to the detail on the ground. The dots shall not interfere with the representation of important terrain features or objects. Contours shall not be cut in broken ground areas. Dots shall not be arranged to form a single point wide line.
Colour: brown. Diameter of dots: 0.18-0.25mm	Colour: brown. Diameter of dots: 0.2mm Max distance between dots: 0.6mm (CC)	Colour: brown. Diameter of dots: 0.2-0.3mm	Colour: brown. Diameter of dots: 0.2-0.3mm

ISOM 2000	ISOM 2017-2 (Adjusted version published January 2019)	ISSOM 1 January 2007	ISSprOM 2019 (valid from 1 January 2020, with errata)
	114 Very broken ground (A) An area of pits and/or knolls, which is too intricate to be shown in detail, or other types of rough and uneven ground that is clearly distinguishable and affects runnability. The dots should be randomly distributed but not interfere with the representation of important terrain features and objects. The minimum number of dots is three (footprint 7 m x 7 m). The maximum centre to centre distance between neighbouring dots is 0.38 mm. The minimum centre to centre distance between neighbouring dots is 0.25 mm. Contours should not be cut in broken ground areas. The dots shall not be arranged to form a single point wide line. Density: 7-9 dots / mm². Colour: brown. Diameter of dots: 0.2mm		

ISOM 2000	ISOM 2017-2 (Adjusted version published January 2019)	ISSOM 1 January 2007	ISSprOM 2019 (valid from 1 January 2020, with errata)
118 Special land form feature This symbol can be used for a special small land form feature. The definition of the symbol must be given in the map legend. Colour: brown. Symbol: X Line width: 0.18mm Height: 0.8mm	**115 Prominent landform feature (P)** The feature must be very clearly distinguishable from its surroundings. Location is the centre of gravity of the symbol, which is orientated to north. The symbol shall not touch or overlap other brown symbols. The definition of the symbol must be given on the map. Footprint: 13.5 m x 11.5 m. Colour: brown. Symbol: equilateral triangle Line width: 0.18mm Length of sides: 0.9mm (OM)	**118 Prominent landform feature** A small landform feature which is significant or prominent. The symbol is orientated to north. The definition of the symbol shall always be given in the map legend. Colour: brown. Symbol: X Line width: 0.25mm Height: 1.2mm	**115 Prominent landform feature (P)** A small landform feature which is significant or prominent. The symbol is orientated to north. The symbol shall not touch or overlap contour lines or other brown symbols. The definition of the symbol must be given on the map. Footprint: 5.4 m x 4.6 m. Colour: brown. Symbol: equilateral triangle Line width: 0.25mm Length of sides: 1.35mm (OM)

SITUATIONS WHERE USE OF NON-STANDARD SYMBOLS IS OK

In the gold mining areas of Hill End, the following deviations to land form symbols were necessary:

- fewer and shorter tags on the embankment symbol;
- an index contour to show a high embankment that does not have room for tags;
- a smaller brown dot knoll to allow more space to fit other terrain details;
- some erosion gullies are shorter than specification. Generally, these end in an earth bank. They are significant if you want to run on top of, or go up or down, the earth bank.