

## ONSW GUIDANCE FOR MAPPERS

### OUT-OF-BOUNDS SYMBOLS – ISOM

This Guidance is based on “ISOM 2017-2 (Adjusted version published January 2019) International Specification for Orienteering Maps”. This International Orienteering Federation publication is published on the Mapping page of the IOF website. It applies to forest maps, as opposed to sprint maps.

The Guidance is still to be tested. Please send any questions or comments to ONSW Technical Director (Andrew Lumsden) at [lumsden.byers@gmail.com](mailto:lumsden.byers@gmail.com) or 9412 3545.

#### Application of this guidance

This guidance applies to any ONSW or ONSW club map that looks like an ISOM map. It applies to work undertaken to make a new map or update an existing map. It applies to producers of base maps, field workers, cartographers and field checkers. It also applies to course setters, vettors and controllers who update maps in preparation for a specific event.

The rationale for this guidance is:

1. Consistency should reduce the number of orienteers who go out-of-bounds.
2. Consistency helps assuage land owners who have doubts about allowing orienteers on their land.
3. It is fairer to those orienteers that do not read or hear instructions, speak another language, tend to forget things or concentrate 100% on the map when they orienteer.
4. Some out-of-bounds symbols mark dangerous places. If a critical incident occurs, the organisers are in a better position if they stick to the rules.

This Guidance does not extend to how to tape out-of-bounds features or crossing points or how to use marshals. If you are course setting, vetting or controlling, please consider this when you are looking at a feature. If the edge of an out-of-bounds feature or the approach to a crossing point is unclear, it might be better to set courses to avoid the feature.

#### What ISOM says and ONSW Guidance

*In sections 2.4 and 2.11.3 below, text is copied and pasted from ISOM 2017-2. ONSW comments are contained in square brackets.*

##### 2.4 Barriers

There may ... be features that are out-of-bounds to the competitor, that is, they shall not be crossed or entered. Examples are environmentally sensitive areas and private land.

Such features are very important for route choice and may also present a danger to the competitor. They must be clearly identifiable on the map by using very visible symbols as indicated in this specification.

### **2.11.3 Graphical minimum dimensions**

The graphical minimum dimensions apply to the base scale of 1:15 000. This means that for enlarged maps, the graphical minimum dimensions will be proportionally larger (1.5 times larger for the 1:10 000 map scale).

#### **Minimum gaps**

To be able to identify the individual symbols, minimum gaps are important. In general, the minimum gap of 0.15 mm applies. The minimum gap between two symbols is the minimum distance between the outlines of the symbols.

Passages between symbols representing impassable / uncrossable features ... must be clearly recognizable, so the minimum gap should be 0.4 mm. Examples are symbols ... Out-of-bounds area (520). [ONSW does not understand this paragraph. See section on 520 borders below.]

Openings in line symbols that represent impassable features (fence, wall) must be clearly recognizable and need to be at least 0.4 mm wide. This includes 708 Out-of-bounds boundary.

#### **Minimum dimensions for areas**

Providing minimum dimensions for areas is difficult as the shape varies. The minimum width is as important as the minimum area. Very thin parts of areas must be exaggerated. Minimum widths for area symbols (if not specified for the symbol):

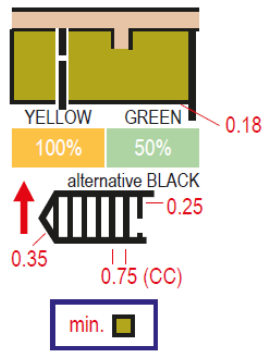
100% green: 0.25 mm (footprint 3.75 m).

100% yellow: 0.3 mm (footprint 4.5 m).

[ONSW Guidance: 0.3mm applies to symbol 520 Area that shall not be entered.]

### **3. SYMBOLS**

*Pictures of symbols with a heading and descriptive text to the right have been copied from ISOM 2017-2. For example, the next paragraph. Other text has been written by ONSW.* Symbol 520 can only be added on the map. 708-711 can be added on the map or in the course setting file.



### 520 Area that shall not be entered (A)

An out-of-bounds area is a feature such as a private house, a garden, a factory or another industrial area. Only contours and prominent features such as rail-ways and large buildings shall be shown inside an out-of-bounds area. Vertical black stripes may be used for areas where it is important to show a complete representation of the terrain (e.g. when a part of the forest is out-of-bounds). The area shall be discontinued where a path or track goes through.

Out-of-bound areas with a clear border shall be bounded by a black boundary line or another black line, if the border is unclear no black line shall occur. Course planning symbol 709 can be used for temporary out-of bounds areas. The vertical black stripes version of the symbol is orientated to north.

An out-of-bounds area shall not be entered.

Minimum area: 1 mm x 1 mm (footprint 15 m x 15 m).

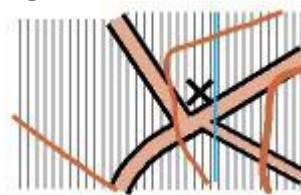
Colour: yellow + green 50%, or black .

## 520 - Residential and private property

### Map complying with ISOM 2017-2 520



### Map using additional ONSW symbol



The additional ONSW symbol can be used in urban areas with large areas of residential and private property.

Complying strictly with the IOF olive green Specification can result in maps that are insufficiently generalised. And, complying with the IOF olive green specification takes a lot of time to field work, draw and update. The olive green 520 symbol has not been used on most maps in Sydney. Without the additional detail the olive green is unattractive and, depending on printing, can obscure contours.

ONSW Rule 7.1 specifies an additional symbol. It is Black 50%, 0.20mm line width, 0.70mm distance between lines. The lines are oriented to North. The ONSW symbol is better for many orienteers with colour impaired vision, it differentiates private property from out-of-bounds bush and was chosen by a survey of competitors in Sydney.

In-bounds pathways should be shown as below – with the relevant path vegetation symbols. If the pathway is entirely paved, show the path symbol with a paved area background.



Lanes and other roads less than 5m wide within an area shown with ONSW symbol can be shown using 502 Wide Road. In this instance, it's OK for the footprint of the brown infill to be less than 4.5m wide.

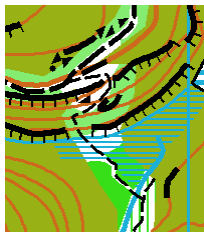
### Areas that are permanently out-of-bounds to orienteers that are not clearly private property

These include public land, areas people use in general life or are in bounds on other maps. Examples include railway line reserves, motorways, schools, large gardens, tennis courts, petrol stations on street corners where competitors can short cut). Prominent features such as railways and large buildings should be shown in the olive green area.

If the area is large enough, text can be added to describe the nature of the area. Text shall be orientated to north.

### 520 -Out-of-bounds forest

On maps where orienteers are allowed to run on tracks only, the olive green symbol should be used. The olive green with a gap beside the track allows changes of vegetation beside the track and the rock features to be seen.



On maps where the forest is partly in bounds and partly out-of-bounds, olive green should also be used for the out-of-bounds forest.

Text, oriented to north, can be added to the olive green area. For example, to indicate it is out-of-bounds or to remind orienteers to stay on tracks.

### 520 – thick black lines

The thick black line symbol in ISOM 2017-2 is recommended by the IOF for areas where it is important to show a complete representation of the terrain (e.g. when a part of the forest is out-of-bounds). ONSW believes that this symbol reduces the legibility of a map when it is used in large areas.

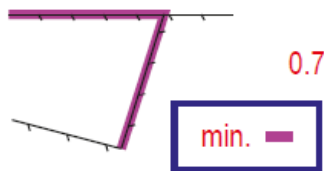
ONSW prefers the olive green 520 or the 50% black thin line symbols. The 520 thick black line symbol should be used sparingly, if at all.

## 520 – borders

ISOM says: “Out-of-bound areas with a clear border shall be bounded by a black boundary line or another black line, if the border is unclear no black line shall occur.”

ONSW has seen instances of competitors, believing the map is showing a road, trying to run along the thicker black boundary lines associated with the symbol 520. We believe any line symbol of a feature that is visible on the ground can be used as a border to 520. This also applies to other areas symbols bounded by a line, eg a large building or a lake. If the boundary is clear, but there is no other mappable symbol, use 415 Distinct cultivation boundary.

See also 708 (below) in relation to out-of-bounds boundaries that are not clearly visible.



### **708 Out-of-bounds boundary (L)**

A boundary which it is not permitted to cross.

An out-of-bounds boundary shall not be crossed.

Minimum length: 1 mm (footprint: 15 m).

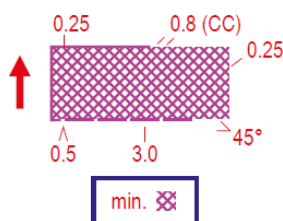
Colour: purple (under purple).

A boundary can be any linear feature that orienteers are not allowed to cross in a competition. These include fences, walls, busy roads, creeks. They also include the edges of areas that are out-of-bounds – for example mangroves, out-of-bounds forest.

If the feature being shown as out-of-bounds is not obvious on the ground it might need to be taped by an event organiser or avoided by the course setter. The master map of an area, as opposed to the competition map, should show any non-obvious out-of-bounds features or boundaries, so that organisers and course setters are aware of them.

In the IOF Specification, “under purple” means “lower purple” and is Purple (course setting) in the IOF’s CMYK Printing and Colour Definitions Appendix (see IOF [mapping page](#)).

Gaps in an out-of-bounds boundary should be marked with a crossing point symbol.



### **709 Out-of-bounds area (A)**

An out-of-bounds area. A bounding line may be drawn if there is no natural boundary, as follows:

- A solid line indicates that the boundary is marked continuously (tapes, etc.) in the terrain.
- A dashed line indicates intermittent marking in the terrain.
- No line indicates no marking in the terrain.

An out-of-bounds area shall not be entered.

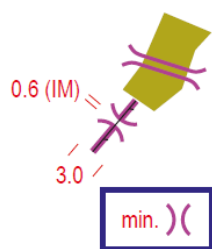
Minimum area: 2 mm x 2 mm (footprint 30 m x 30 m).

Colour: purple (upper purple).

This symbol is used for temporary out-of-bounds areas. These include:

- areas that are open to the public, but the organisers have decided are out-of-bounds (eg a sporting field that might be in use during the orienteering event);
- areas that have been mapped, are , but not open to orienteers at this particular event (eg a school); and/or
- construction sites – which can change or disappear between course setting and the event.

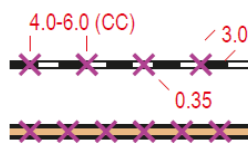
In the IOF Specification, “upper purple” is Purple in the IOF’s CMYK Printing and Colour Definitions Appendix (see IOF mapping page). It is above all other colours in the colour chart.



#### 710 Crossing point (P)

A crossing point, for instance through or over a wall or fence, across a road or railway, through a tunnel or out-of-bounds area, or over an uncrossable boundary is drawn on the map with two lines curving outwards. The lines shall reflect the length of the crossing.

Colour: purple (lower purple).



#### 711 Out-of-bounds route (L)

A route which is out-of-bounds. Competitors are allowed to cross directly over a forbidden route, but it is forbidden to go along it.

An out-of-bounds route shall not be used.

Minimum length: 2 symbols (6 mm – footprint 90 m).

Colour: purple (upper purple).

This symbol should be used for features such as:

- a road which it is dangerous to run along, but is OK to cross;
- a forest path that is being closed by the land owner, but is still visible on the ground.

### Legend

ONSW strongly recommends out-of-bounds symbols be described in a legend on the competition map. The legend should say in relation to the out-of-bounds symbols: “Do not enter or cross. Offenders may be disqualified.”

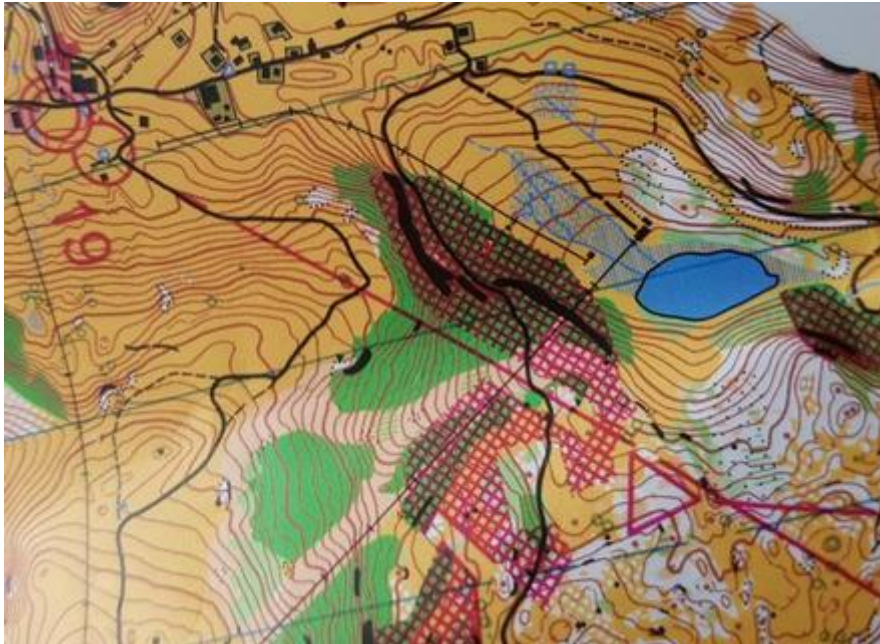
### An ONSW note on mapping out-of-bounds areas

Out-of-bounds areas should be legible and should not be ambiguous.

Significant issues arose in the following examples from major international events.



In the event below, many competitors ran down the road on the way 19, thinking it was not out-of-bounds. The jury decided to use the result at the second last control as the final result.



In the event below, the narrow out-of-bounds areas south of control 5 were hedges. Many competitors could not read the out-of-bounds on the competition map, so crossed the hedges. One competitor took the dog leg route shown in red.

The jury decided that it could not disqualify the runners going through the out-of-bounds areas (the out-of-bounds was less wide than the ISOM specified 0.45mm - the map was 1:10,000, so 0.3mm times 1.5 applied). The jury considered the overall result with these runners included in the results is fair enough - the leg involved time discrepancies from 30 seconds to 2 minutes for some top 10 runners.



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