Te Tari Pūreke
Firearms Safety Authority

Determining a range danger area by manual application of an Ammunition Danger Area Template ADAT

Template Application 2

Firing Line – with a left (LOA) and right (ROA) of arc

Introduction

Before starting you will need information about your range:

- Grid location of the firing line (FL) from the left hand grid reference to the right hand grid reference

    (A Firing Line is defined as being longer than 100m)

- Grid bearing (not magnetic) of the range axis

- Grid bearings of the Left of Arc (LOA) and the Right of Arc (ROA) where applicable

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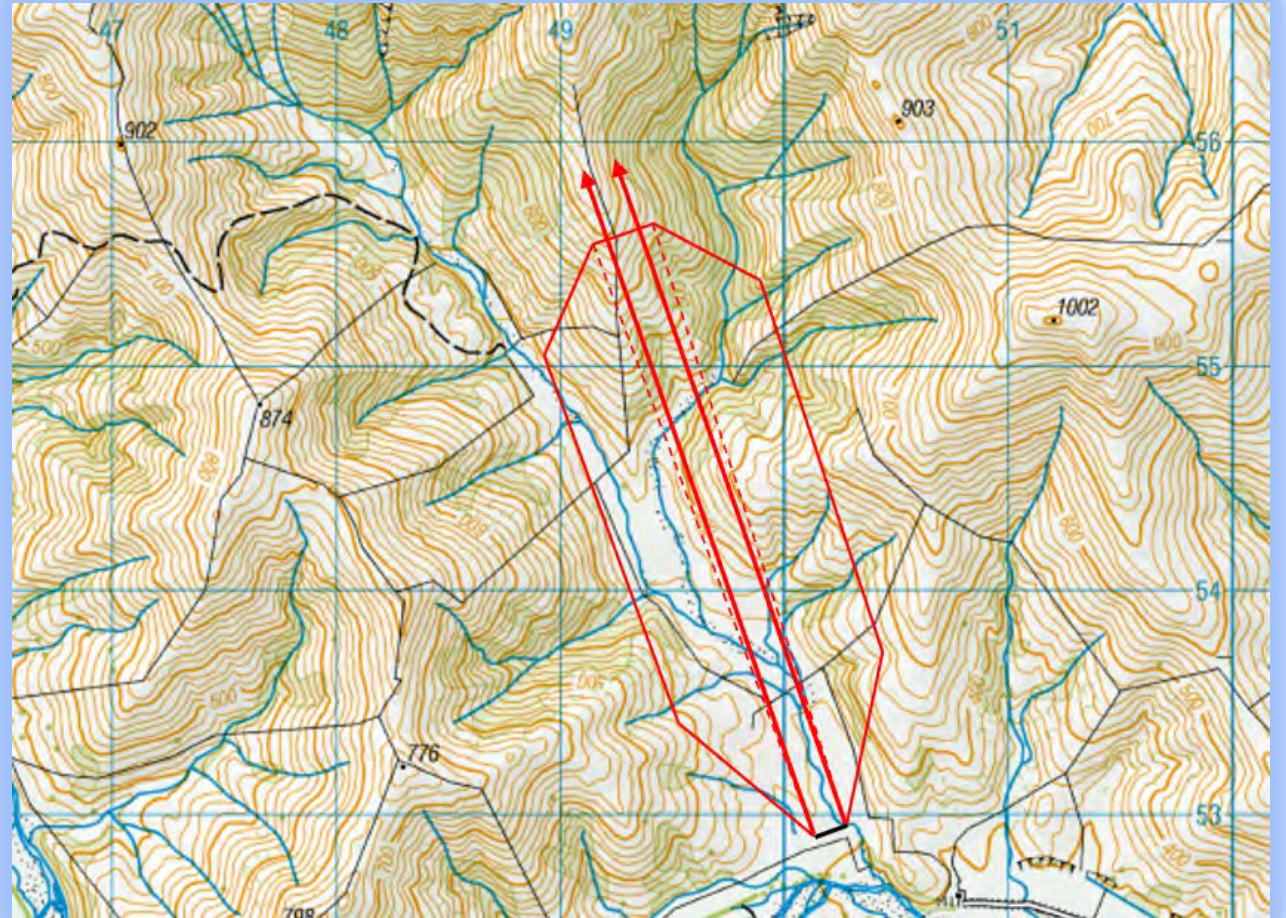
Software selection

There are many pieces of software out there that could be used to create a range template.

Microsoft PowerPoint has been chosen in this instance because many Shooting Range Operators will already be using the Office Suite of products and will be familiar with its use.

It can be used on both PC and Mac computers. These instructions will be using shortcuts for a PC.

To begin:

Start PowerPoint and open a blank page.

Step by step instructions for applying an ammunition danger area template onto a Topo50Map are in the following pages.

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Getting the map onto your computer

» There are many websites you can use but for this example I have used the free TopoMap NZ - https://www.topomap.co.nz/

» Find the location of your range and zoom in closer using the mouse wheel or the +/- buttons on the upper right hand side of the screen.

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Zoom in to find the general location

Keep zooming to get closer
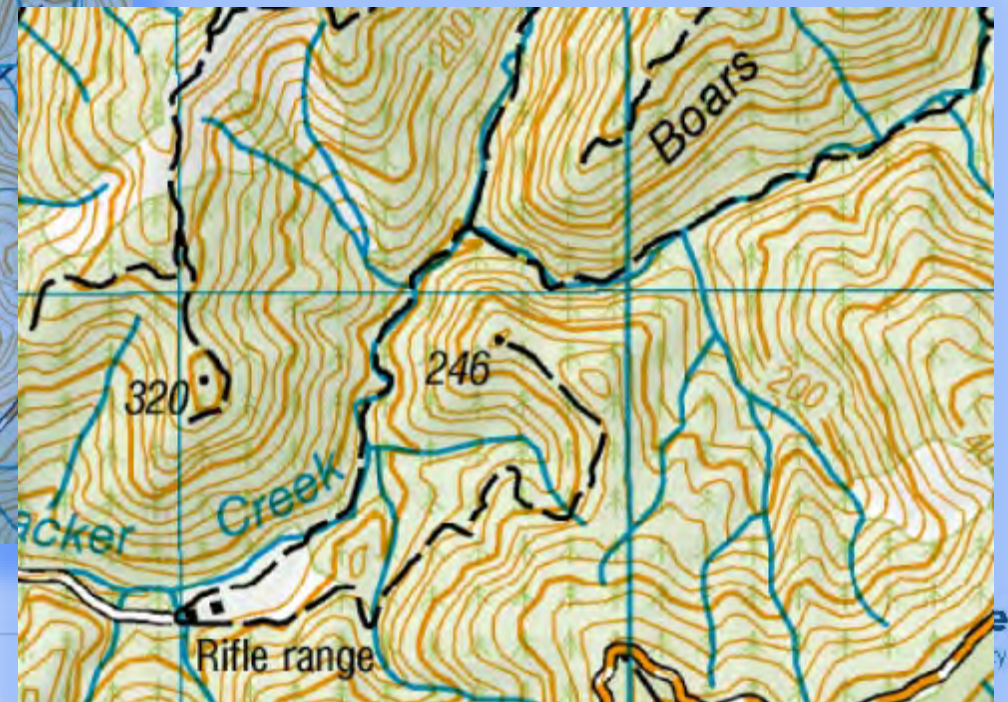
It will zoom in as far as it will go.
Next we need to copy that area of the map
onto your computer.

NZ Topo Map
www.topomap.co.nz

ℹ️ Info 🔗 Share Map 🖨️ Print ❤️ Donate ❗ Important ⋯ More ▾

Search 🔍

Print ✕

Drag and resize the **highlighted area** to select the area of map you would like to print out.

Page orientation:

○ Portrait
● Landscape

Page size:

A4 (210 × 297 mm) ▾

Map series:

NZTM Topo50 (1:50,000) ▾

☑ Include grid ref coordinates

Print (beta)

Print Ready PDF - 11:28:04 AM
Print Ready PDF - 11:21:37 AM

Finding this service useful?

Don't like the new PDF print output?

☐ Use legacy print

Printed Topo50 / 1:50,000 map sheets are available from Bivouac Outdoor, both online and in store.

1 km

Leaflet | NZ Topo Map images sourced from LINZ - Crown Copyright Reserved

Copying your map
Click the print button at the top to bring up the menu.
Make sure you select the **Include grid ref coordinates** check box.
Select print:
This will download a .pdf to your computer.

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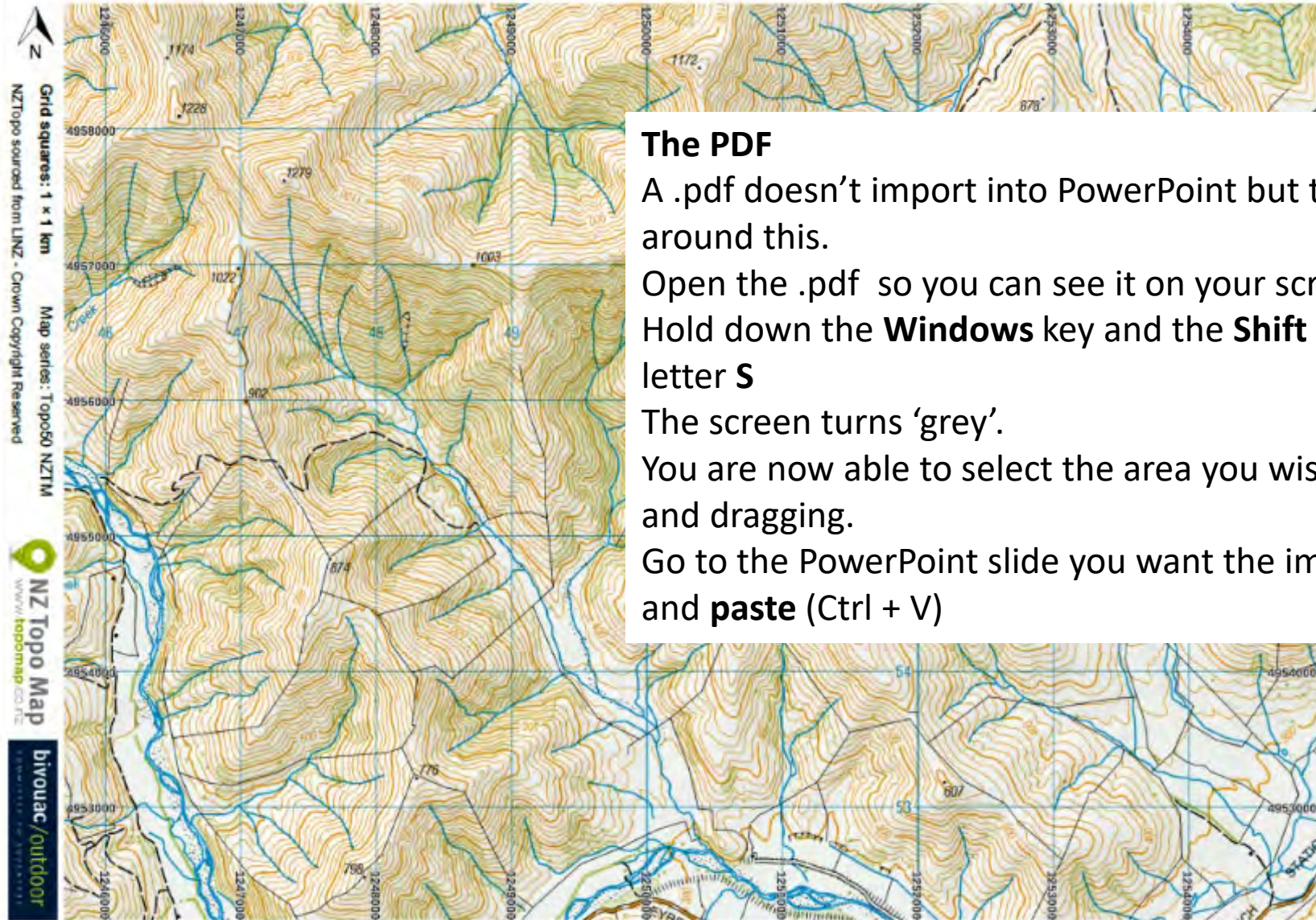
The PDF
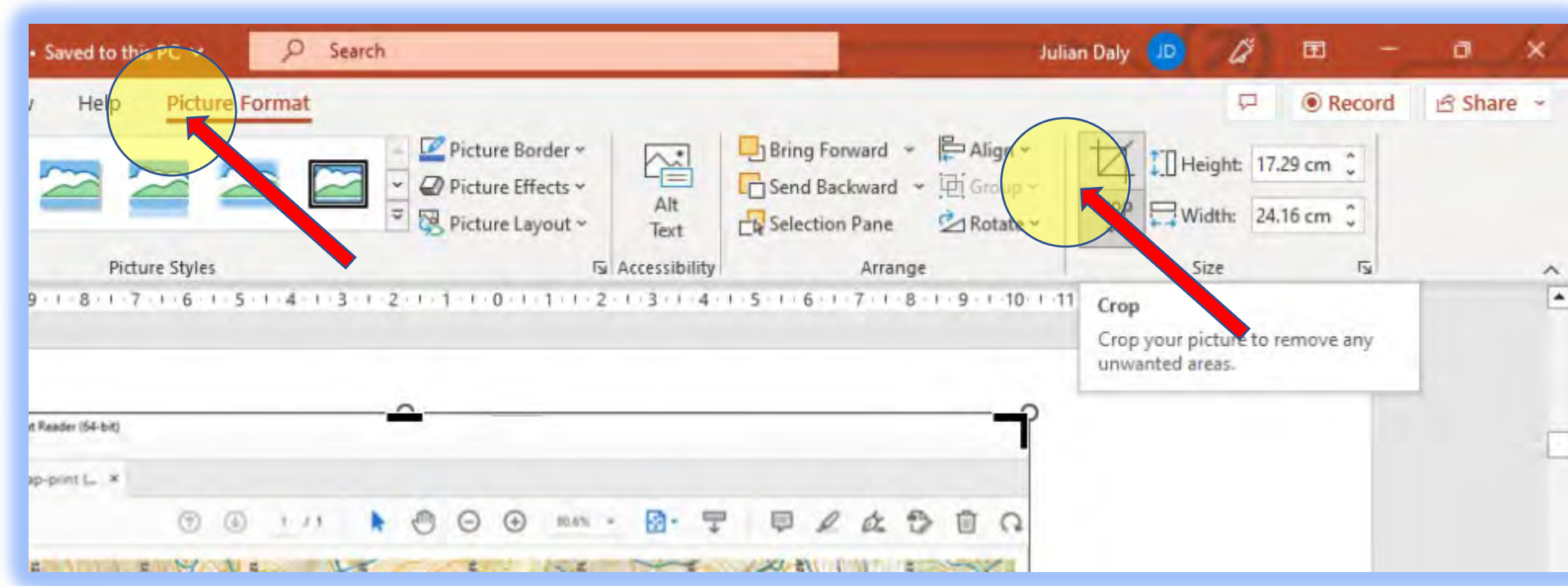A .pdf doesn't import into PowerPoint but there are ways around this.
Open the .pdf so you can see it on your screen.
Hold down the **Windows** key and the **Shift** key then tap on the letter **S**
The screen turns 'grey'.
You are now able to select the area you wish to copy by clicking and dragging.
Go to the PowerPoint slide you want the image to appear in and **paste** (Ctrl + V)

Cropping
There areas of the image you might not want to see.
Crop the image by clicking on the image, chose Picture Format
at the top and then Crop from the top ribbon.

Copying and pasting

» You have zoomed in and are ready to copy an area of the map

» Hold down the **Windows** key + **Shift** key and tap on the letter **S** (for snip). This will activate the snipping tool.

» The screen now has a 'grey tinge' to it.

» Using your mouse, click with the left mouse button and drag to cover the area you want.

» Once you release the left mouse button, that area will be stored in the clipboard (a short term memory of things that you copy).

» Switch back to your PowerPoint presentation and the slide you wish to add the map to.

» You can either right click and choose **Paste** or use the shortcut **Crtl + V**

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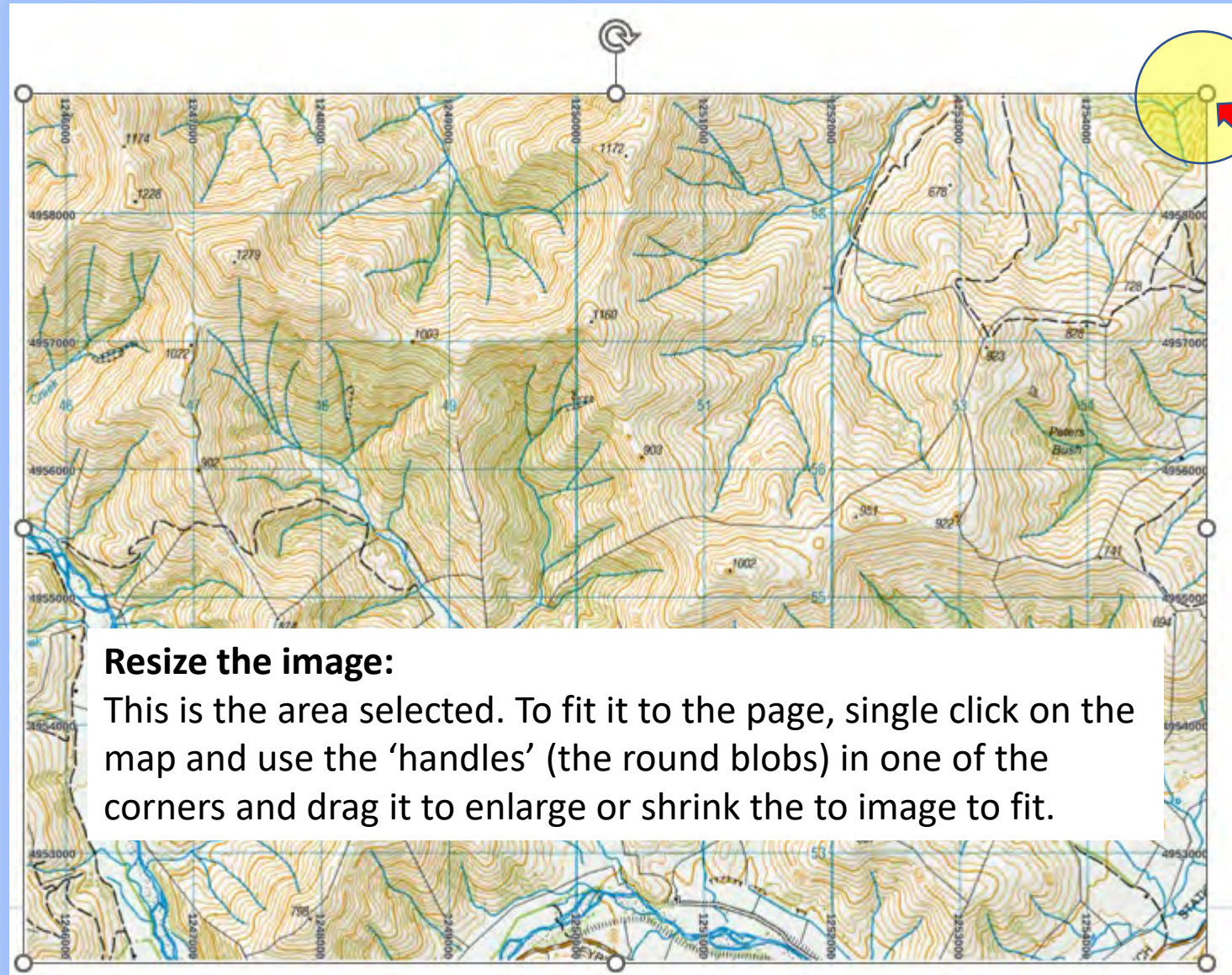
Resize the image:
This is the area selected. To fit it to the page, single click on the map and use the 'handles' (the round blobs) in one of the corners and drag it to enlarge or shrink the to image to fit.

Now your image should only have the area you wish to see.
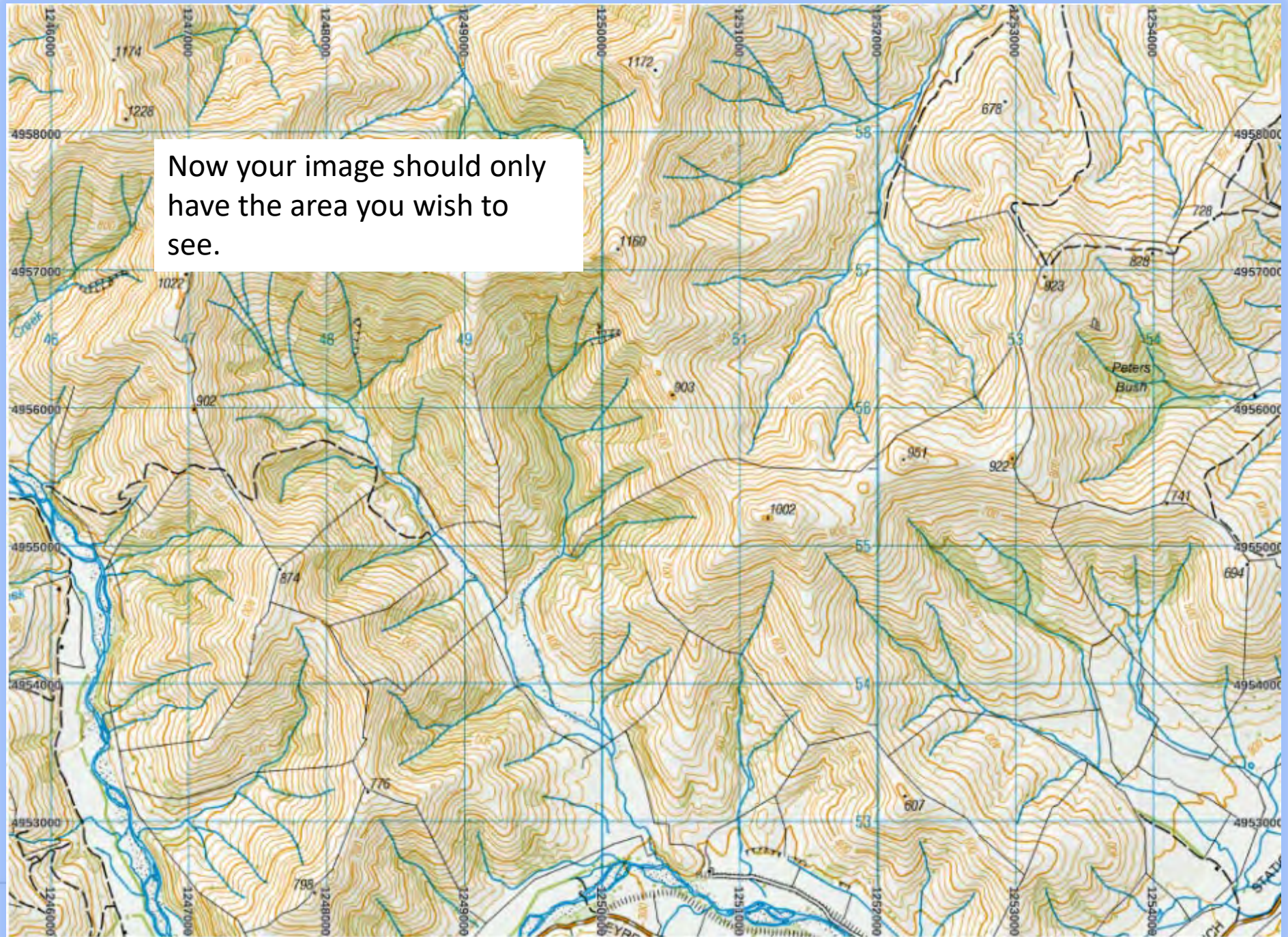
Selecting the template

Now the required area has been selected and made to fit the page we are able to apply the correct template to the map.

In this example, the width of the shooting line will be 150m and the maximum caliber used is 0.308/7.62, therefore the T6 Template has been selected.

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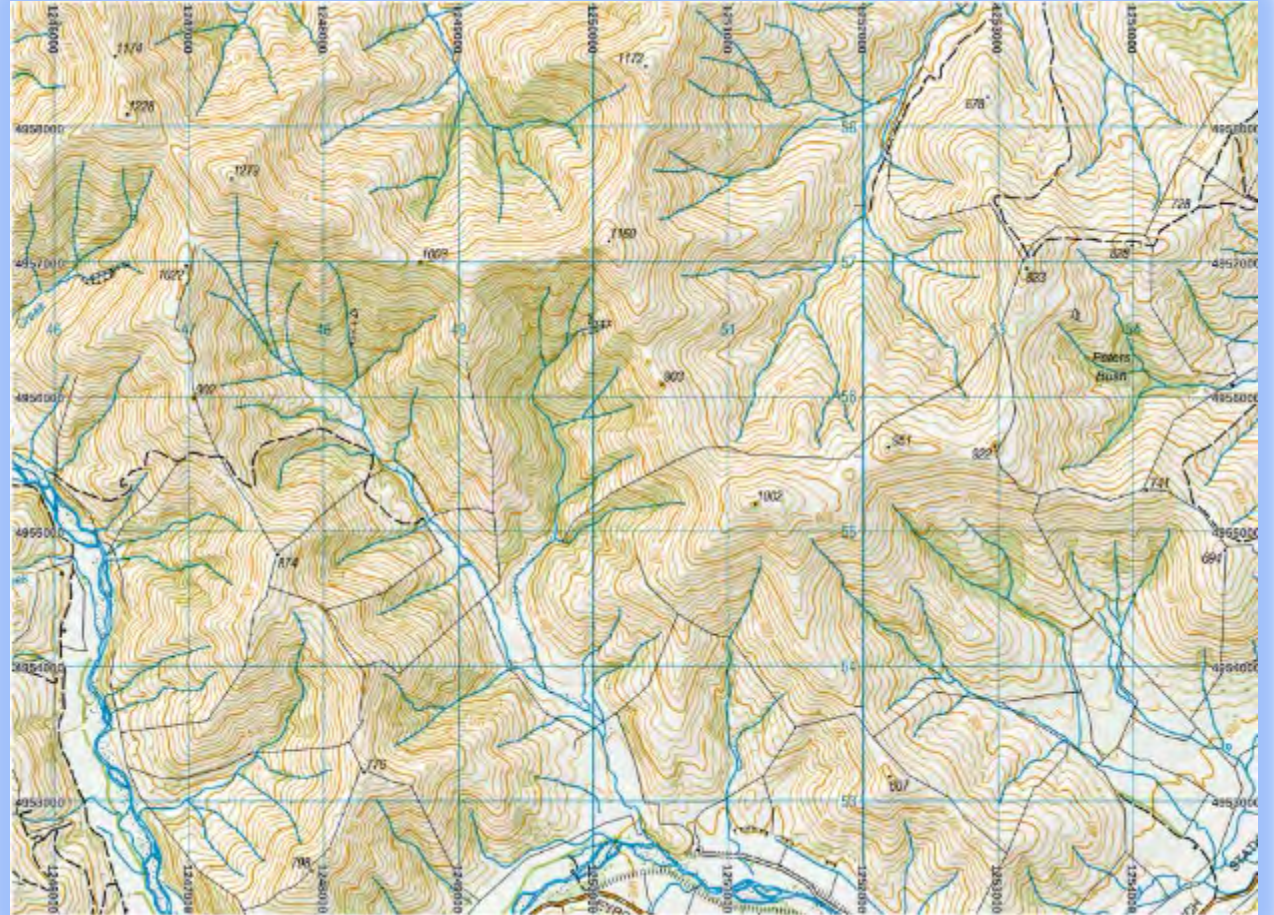
Template selection

There are two pages for the T6 Template. In this instance, the firing line is 150m wide and not a hard surface, therefore we require left and right halves of the template.

Click on one of the template lines, copy it then paste it onto your map.
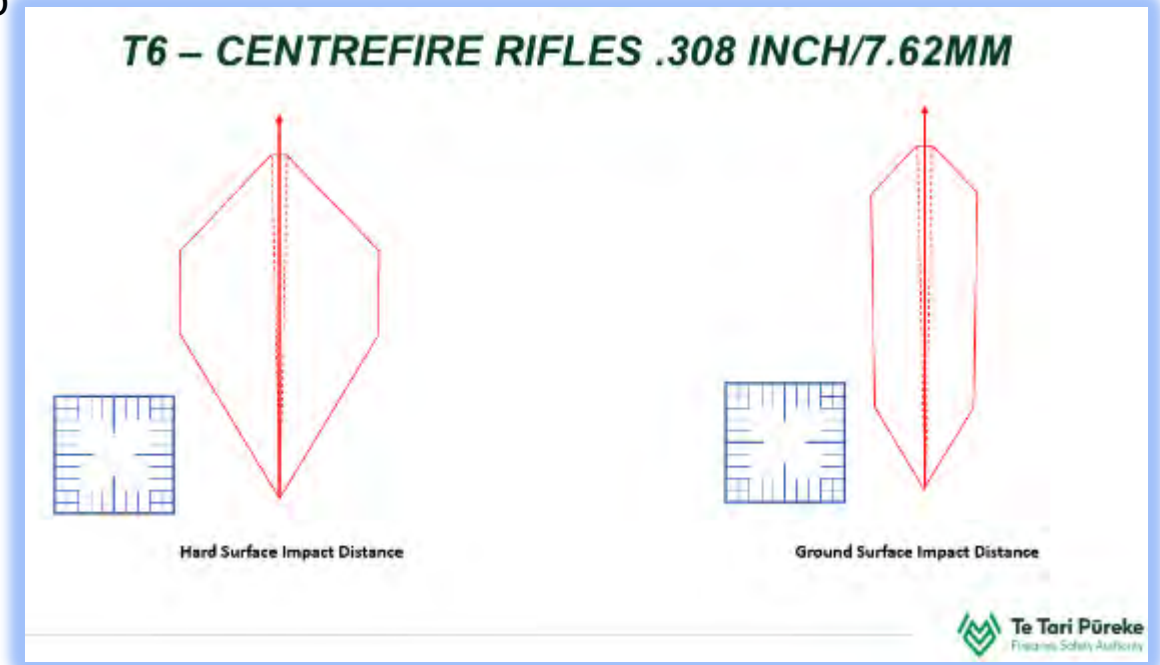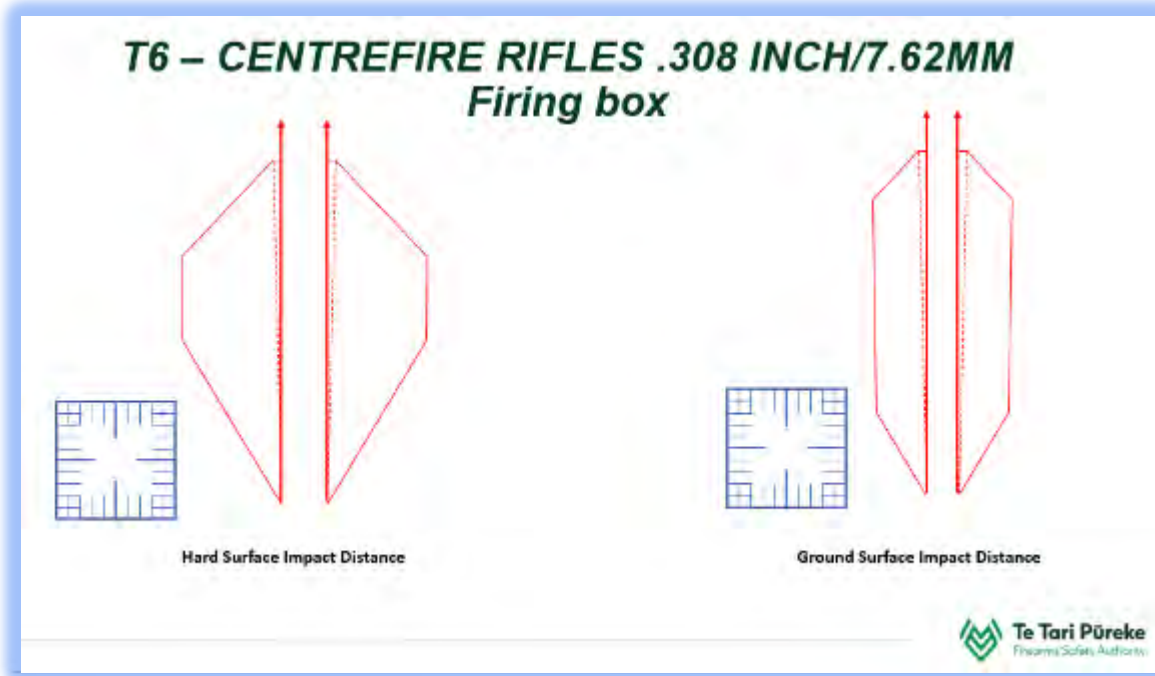
Scaling the template

This shows the before and after of scaling the template.
To make it easier, when close to the correct size, use the zoom function in combination with the arrow keys to get the scale just right.
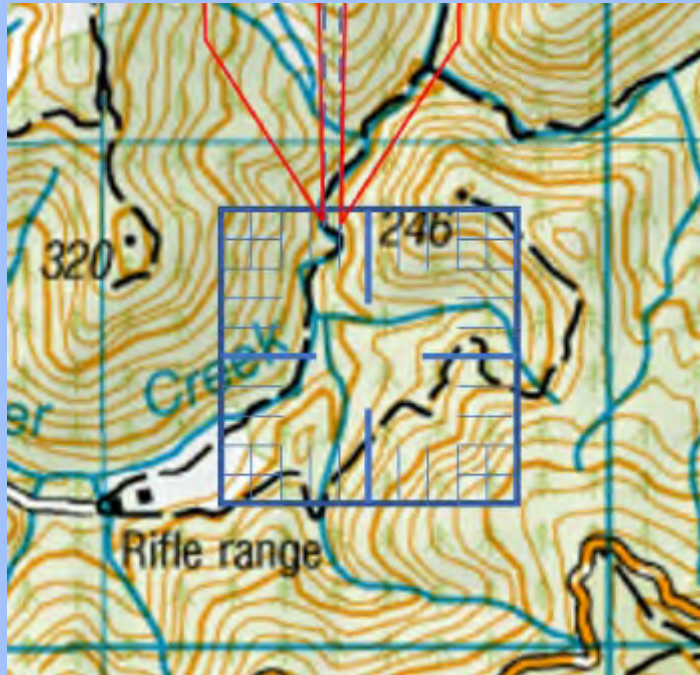
Before

After

Scaling
To achieve the correct scale, the romer and the grid have to be exactly the same size.
This is made a lot easier if you are able to zoom in to the image
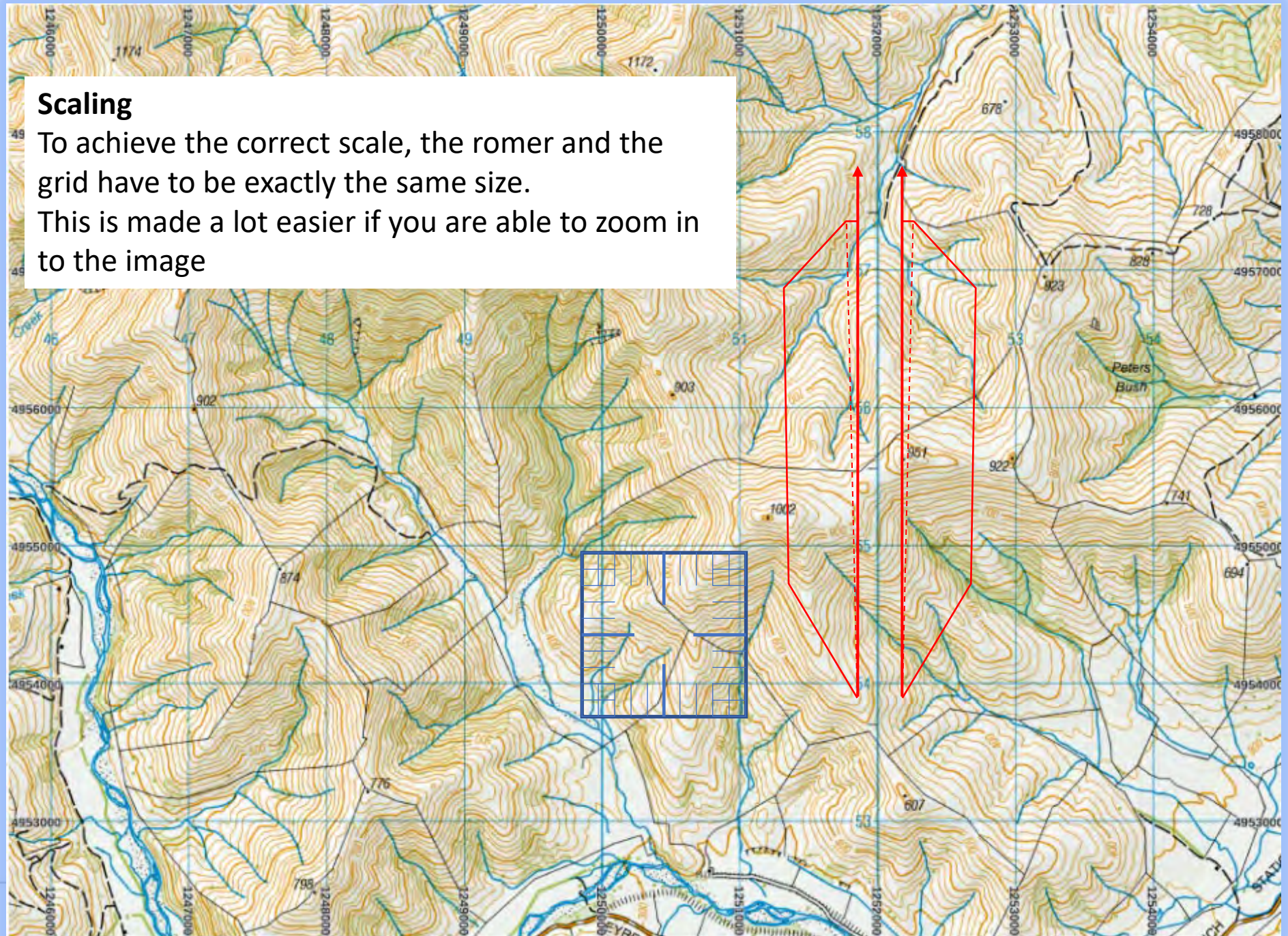
Zooming in and out

It's much easier to see things and move parts accurately when you are able to zoom in.

For this example, the map will be used to demonstrate the zoom function in PowerPoint.

The Zoom slider

If you look on the bottom right of your screen you will find the zoom slider. Moving to the left will move your point of view closer, to the right, further away.
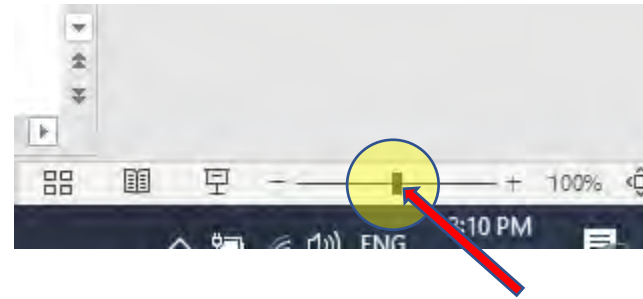
Tip

You can achieve the same result by holding the Ctrl button on the keyboard and using the mouse scroll button.

No zoom (normal view)

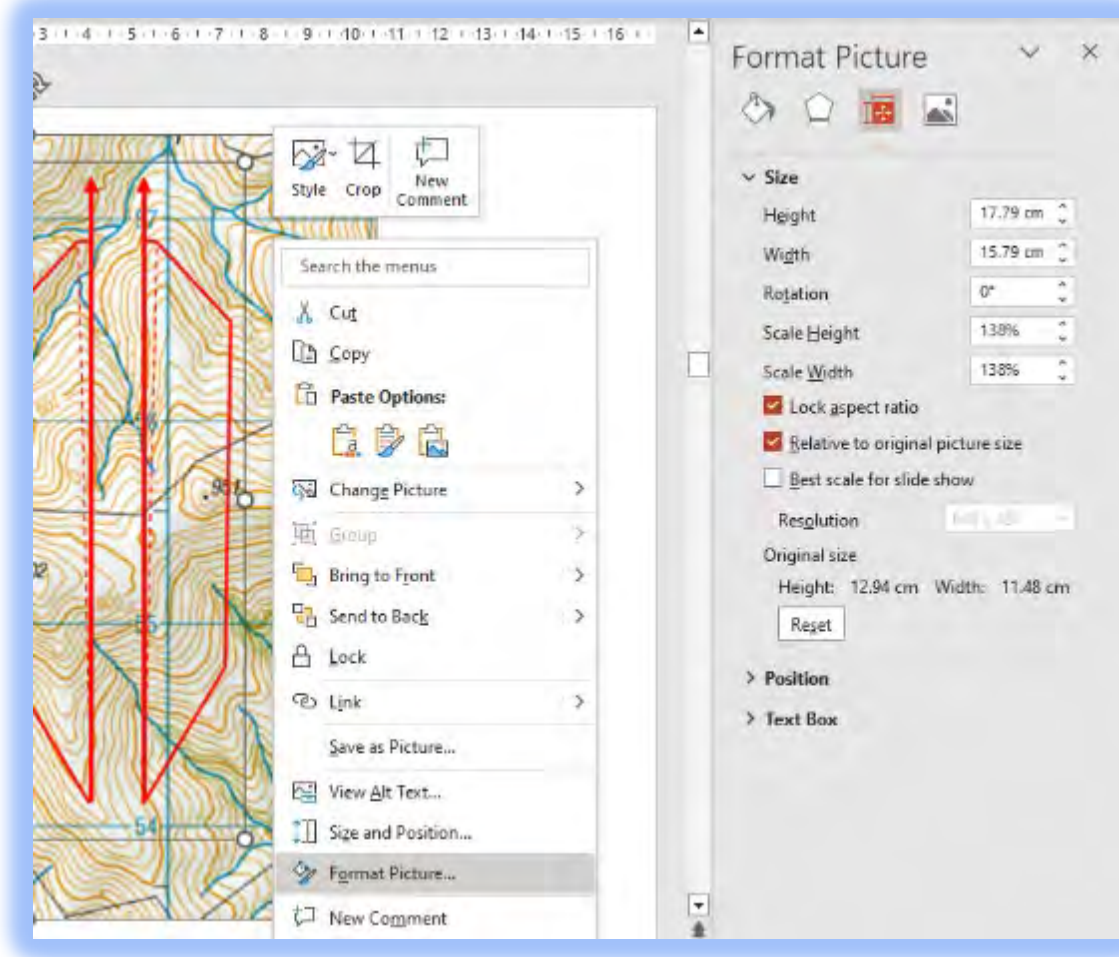Zoomed in

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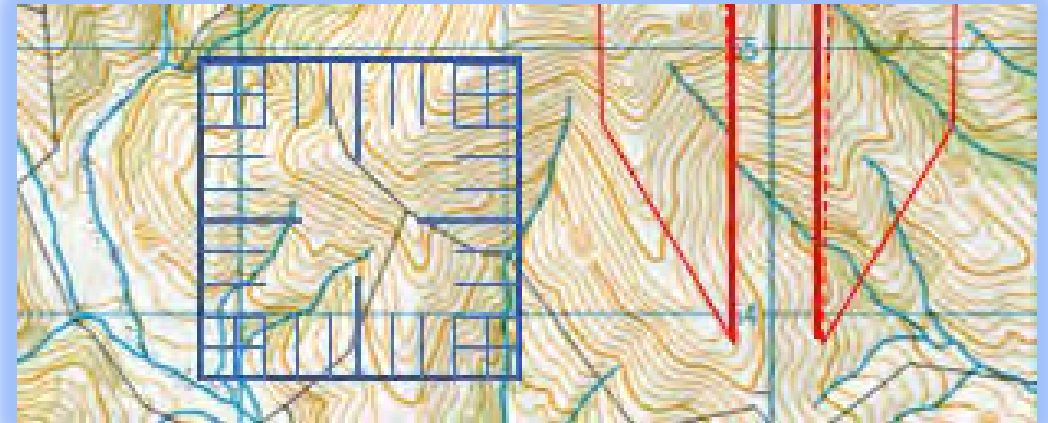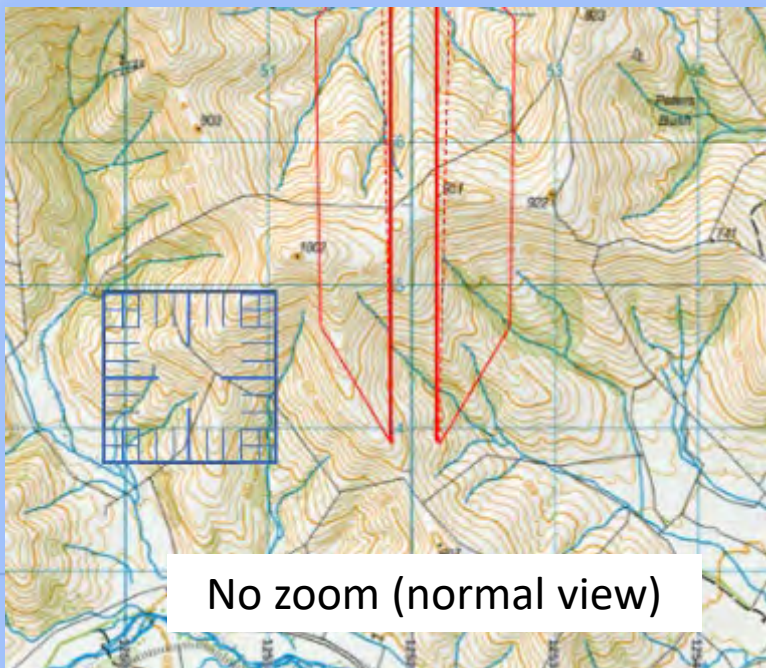
Scaling
Zoom in and use the corner handles to get the scale roughly right.
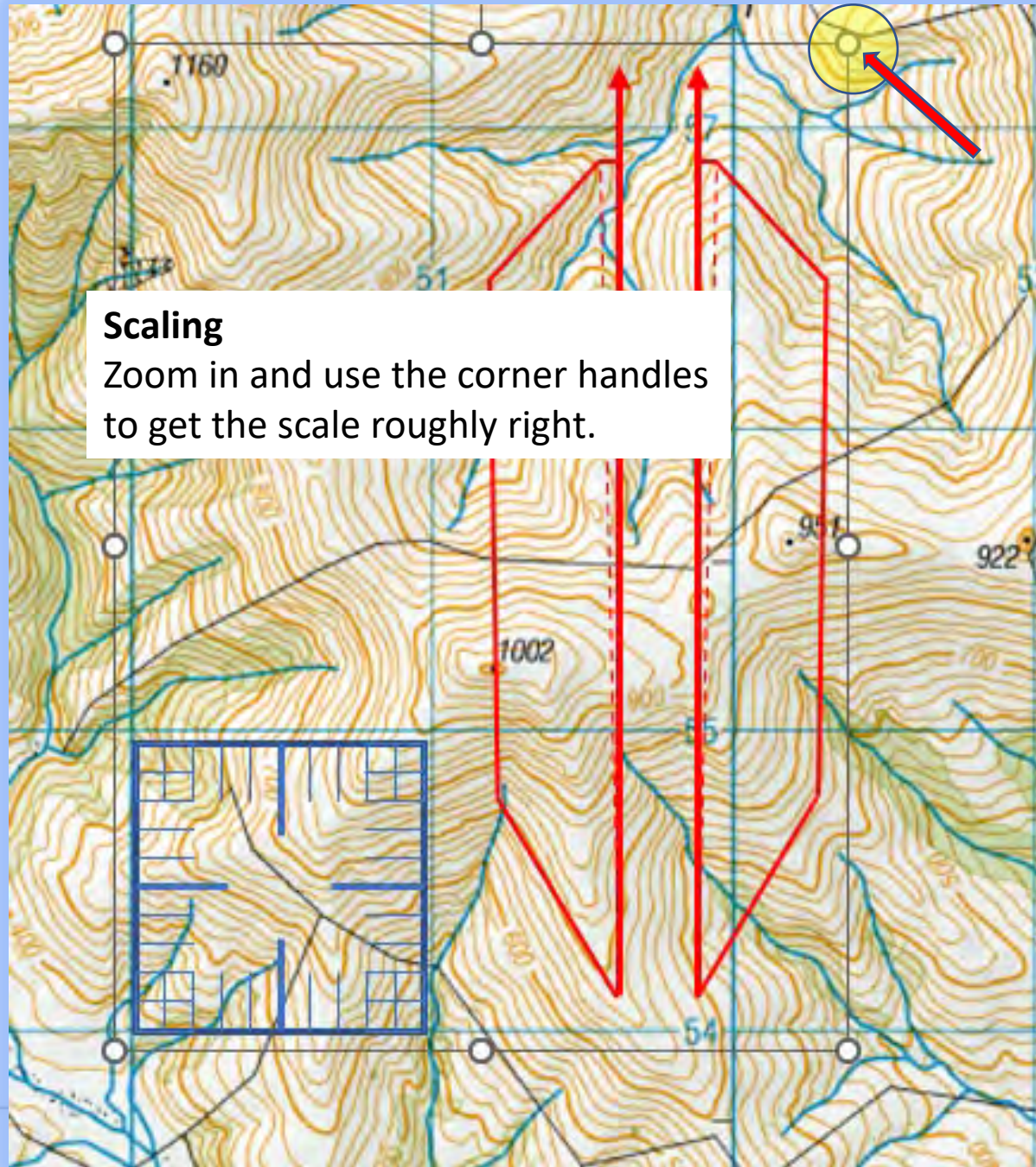
SCALING TIP

If you right click on one of the lines and select **Format Shape,** it activates a menu on the right of your screen
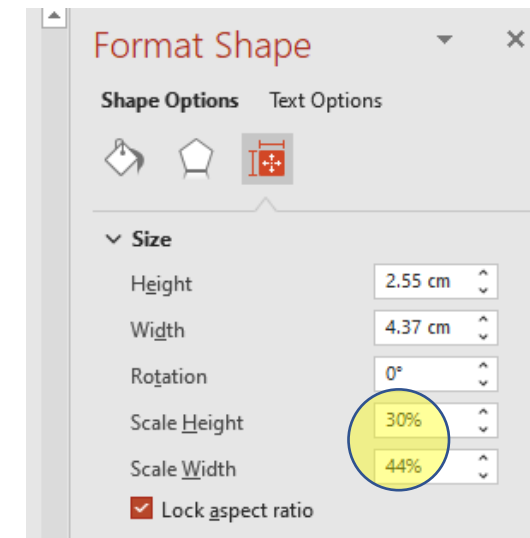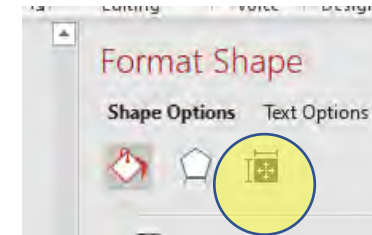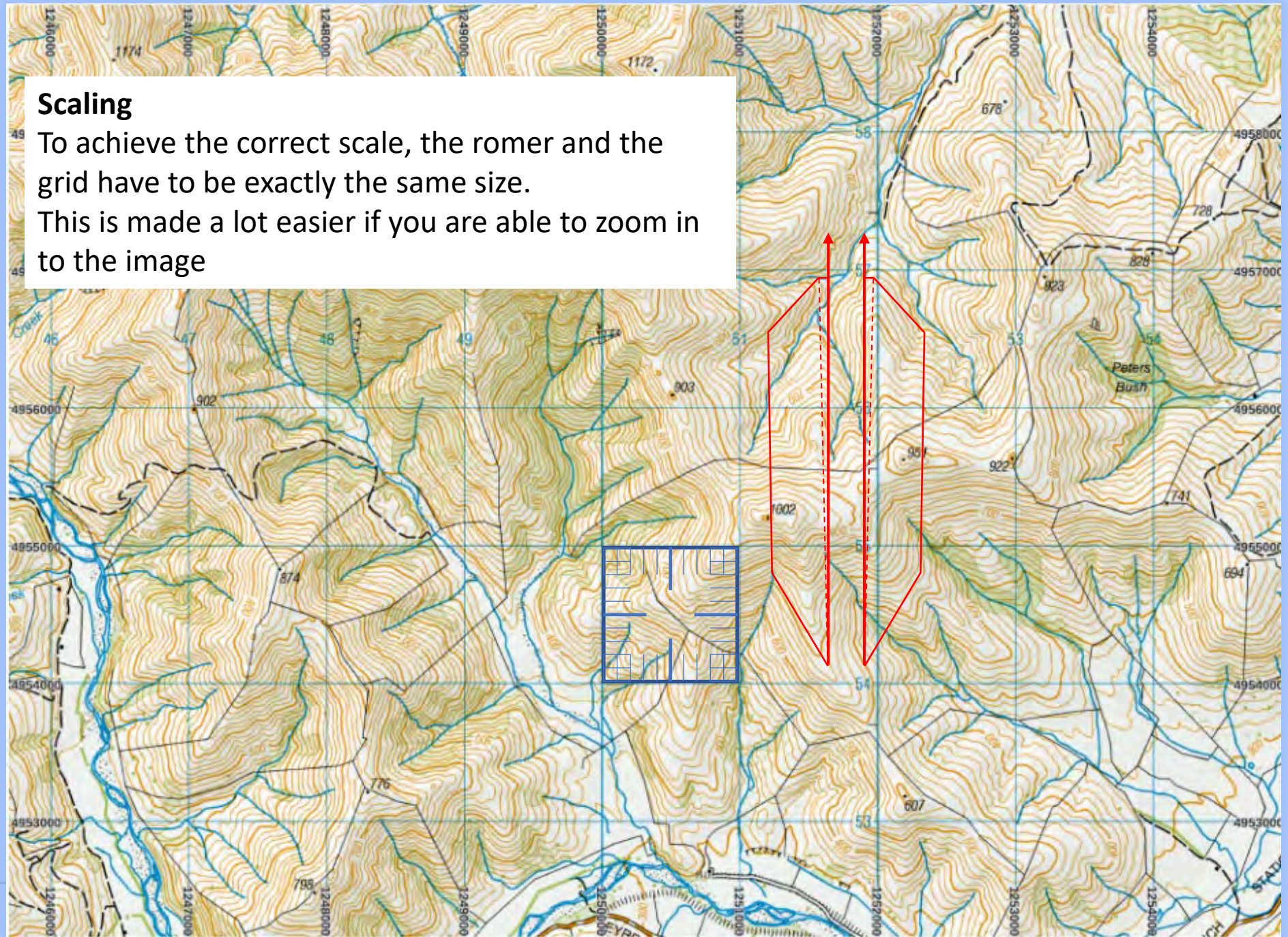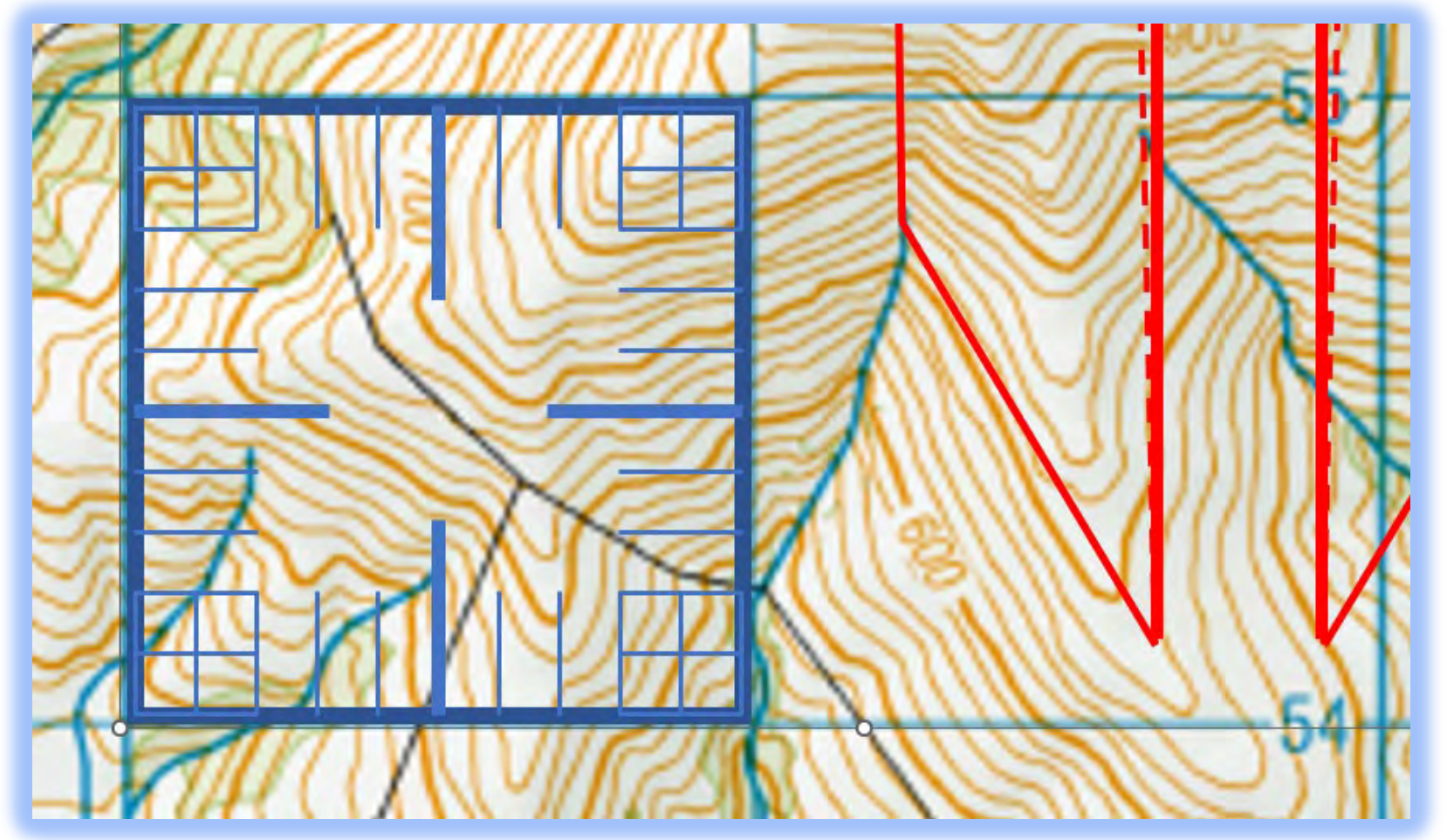
Make sure that the **Lock aspect ratio** box has been checked. Either type or use the up and down arrows to make the romer fit the grid squares.

Scaling

To achieve the correct scale, the romer and the grid have to be exactly the same size.
This is made a lot easier if you are able to zoom in to the image

Zooming in and out
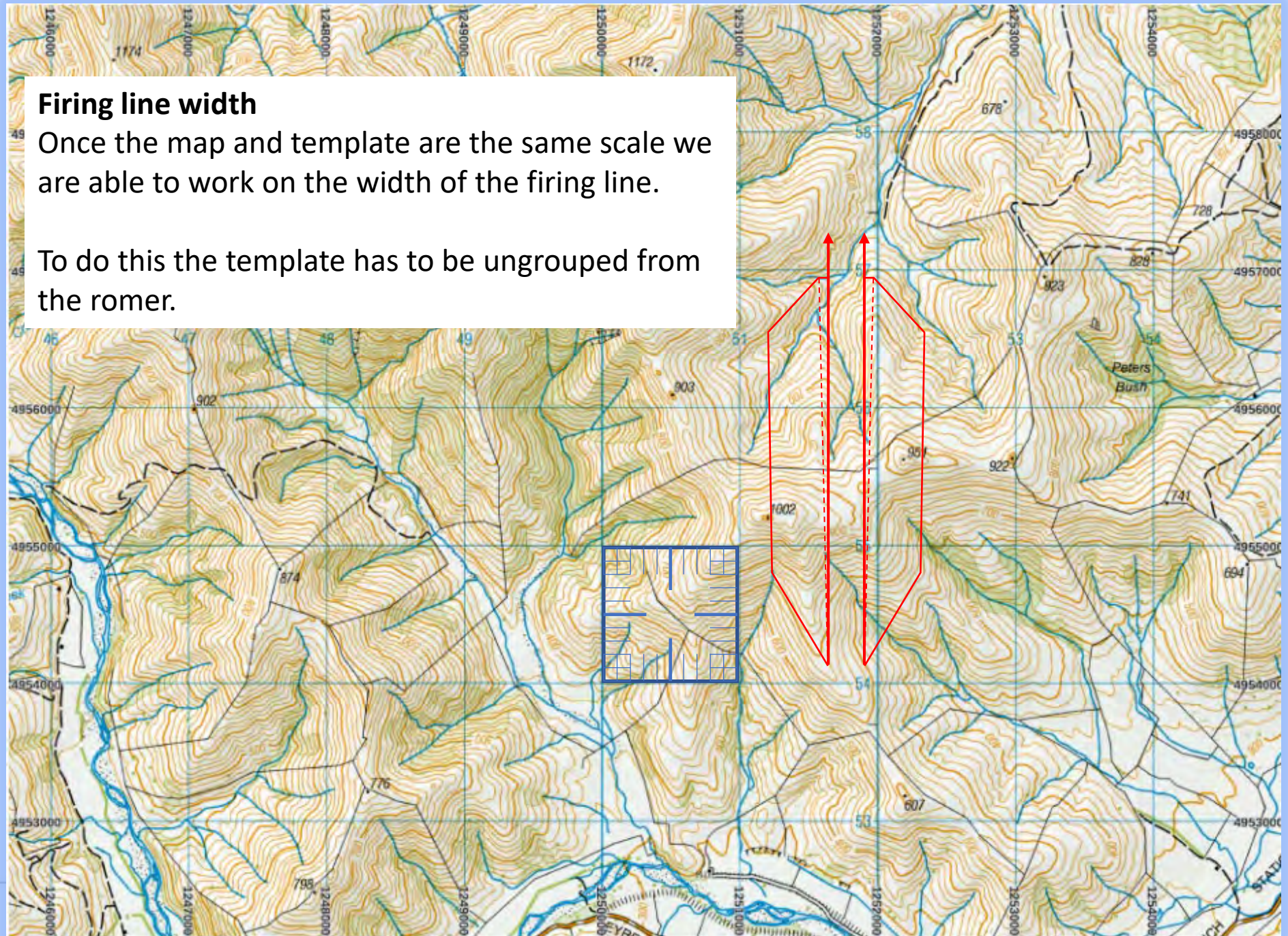Now, showing at 400% the template and the map
are at the same scale

Width

Firing line width

Once the map and template are the same scale we are able to work on the width of the firing line.

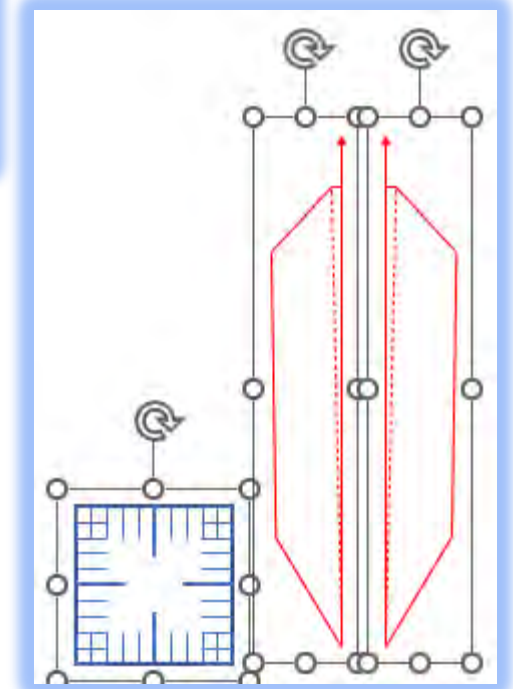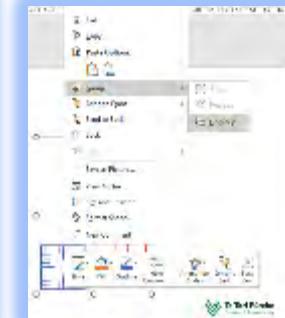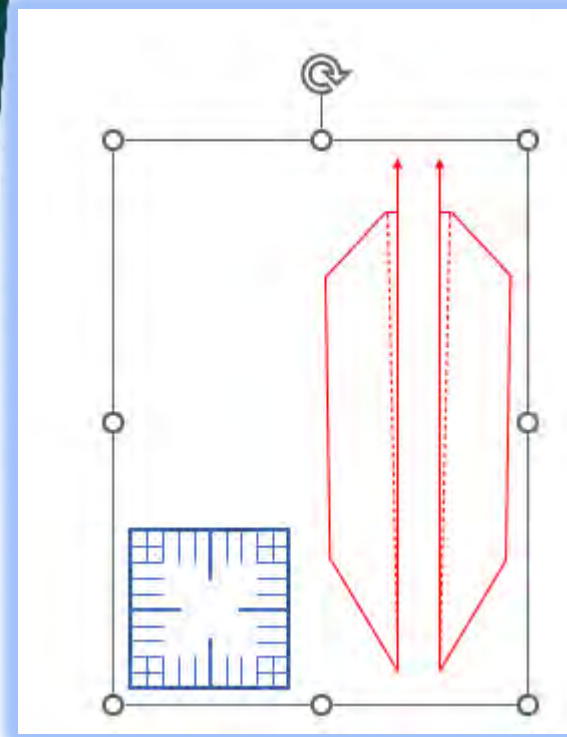To do this the template has to be ungrouped from the romer.

Ungrouping the template

In the template you copied there are three 'objects'. The romer and left and right halves of the template.

They were grouped, now they need to be ungrouped in order to move the components around separately.

Right click on one of the lines and select **Group** then **Ungroup**.

Here you can see that there are now three separate objects we are able to move around

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Firing line width
After ungrouping, move the romer below the template.

Width of the firing line

Move the romer underneath so one of the 'bars' aligns with the base of the template. Get close by zooming and then use the arrow keys to accurately to the right place.

Here you can see that the right template to align with one of the bars.

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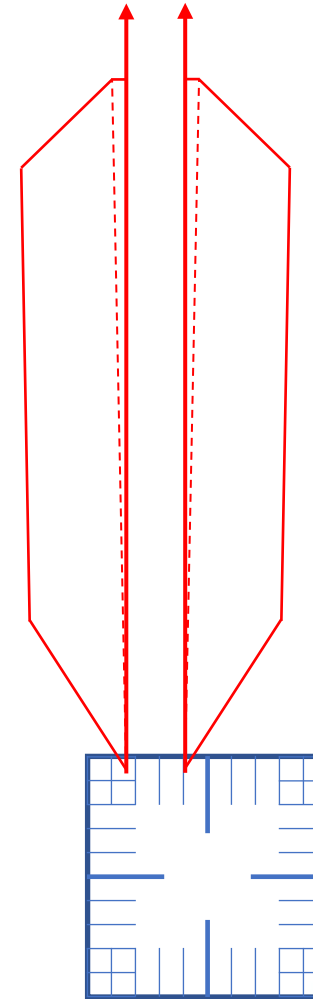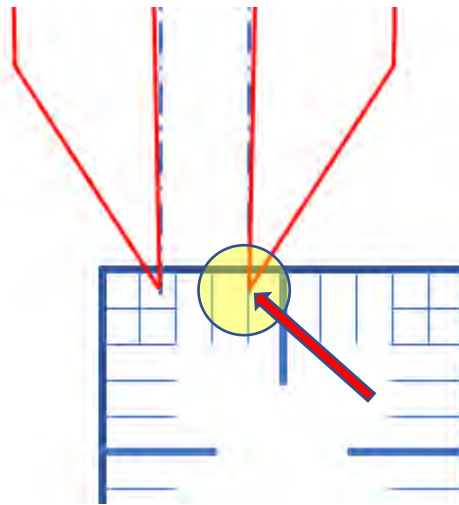
Width of the firing line

Now move the other side of the template to the correct distance.
In this example, the firing line is 150m wide. Therefore, one and a half spaces are used.
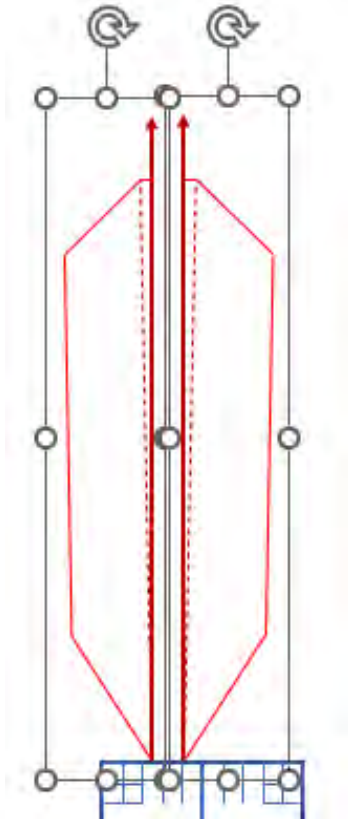
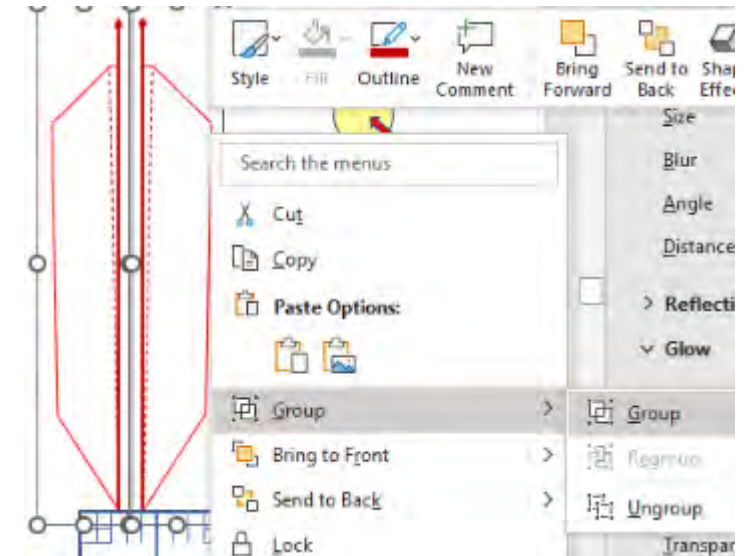Now the left hand template is one and a half spaces from the right.

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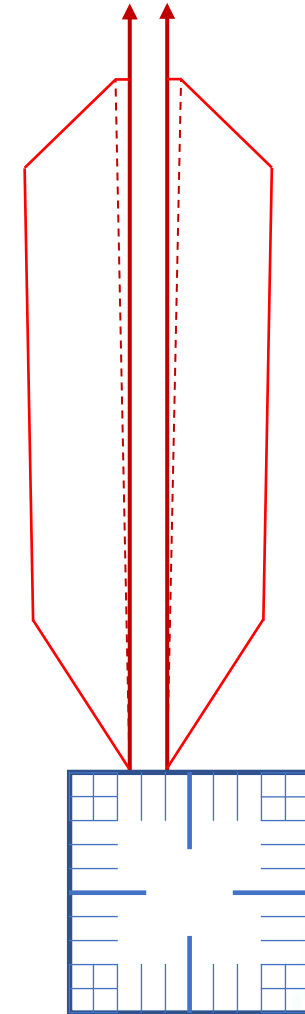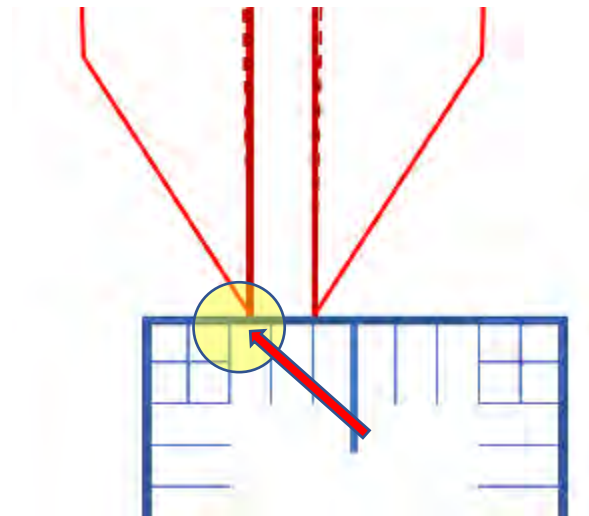
Grouping the firing line

The firing line is now the correct width. To prevent any 'accidental' movement is grouping the templates is suggested.

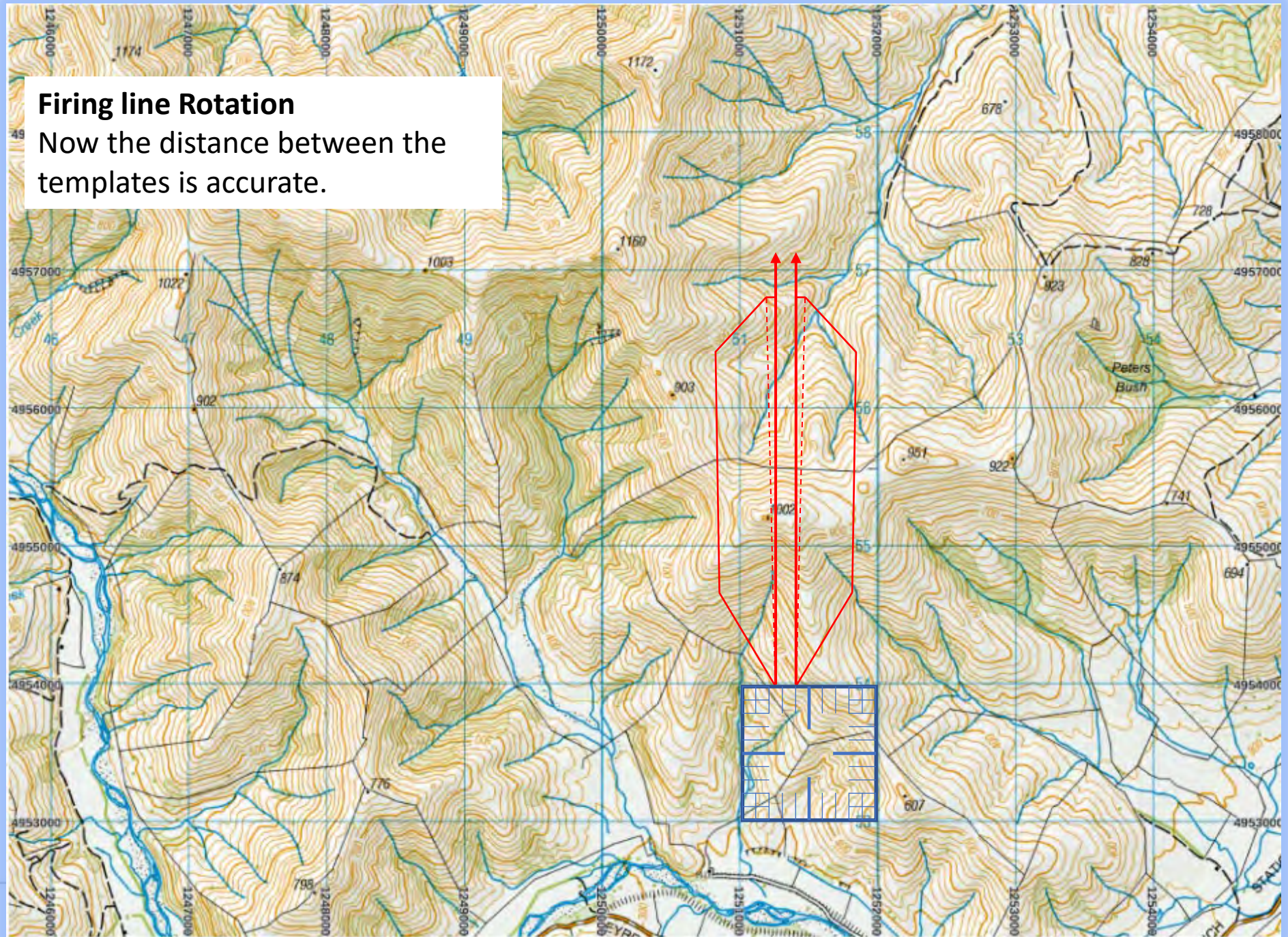Click on the left template, hold **Ctrl** and click the right template.

Right click and select **Group**

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Firing line Rotation
Now the distance between the templates is accurate.

Rotation

Firing line Rotation
With the template at the correct width and scale it can now be rotated to the correct grid bearing.

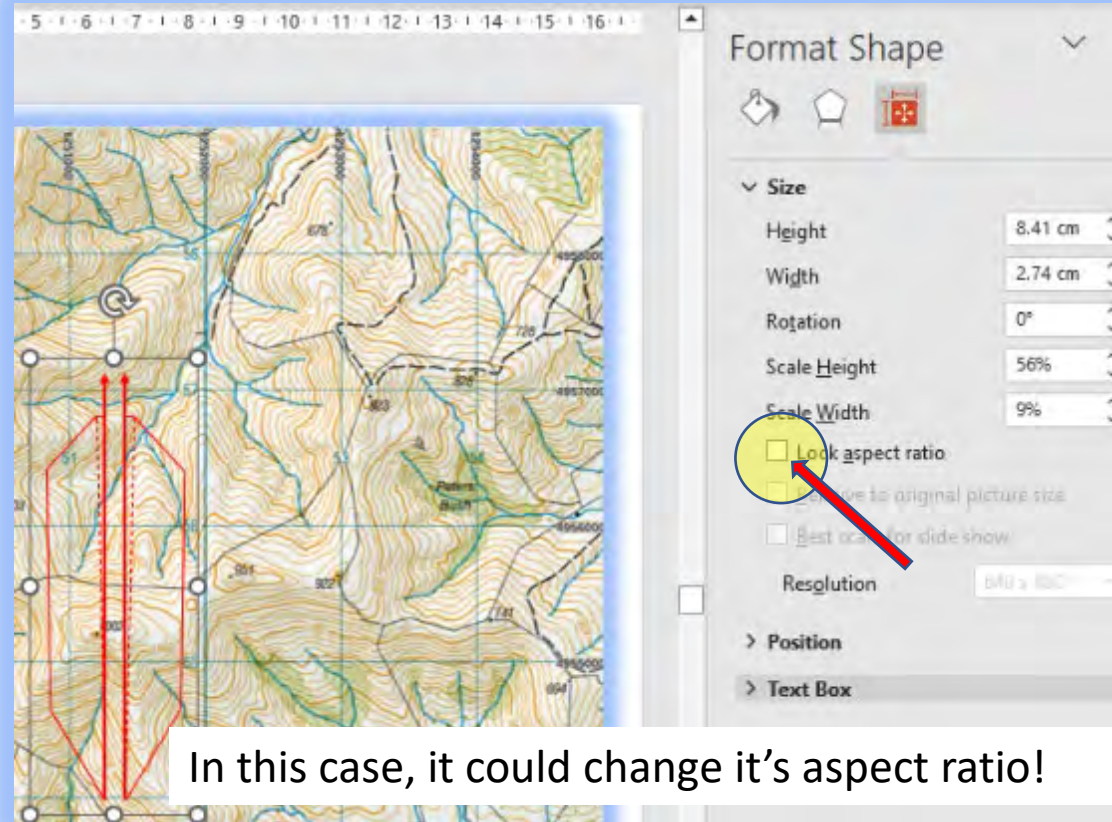It is easier if you move the romer out of the way.
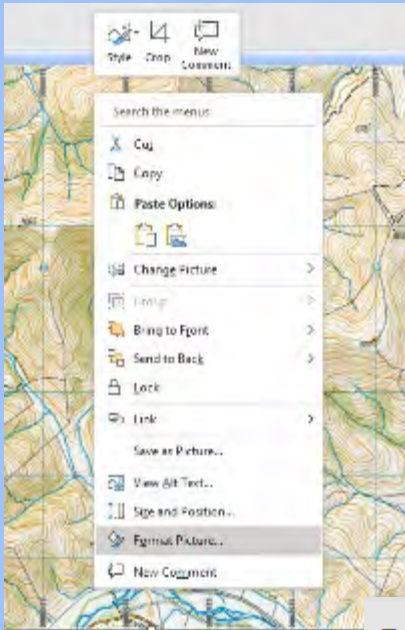
Locking the aspect ratio
Ensure that the aspect ratio is still checked.
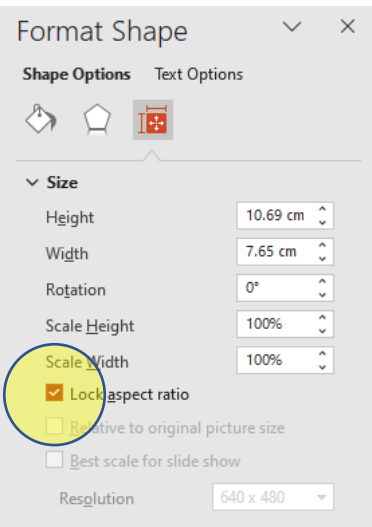Right click the template.
Select Format Shape
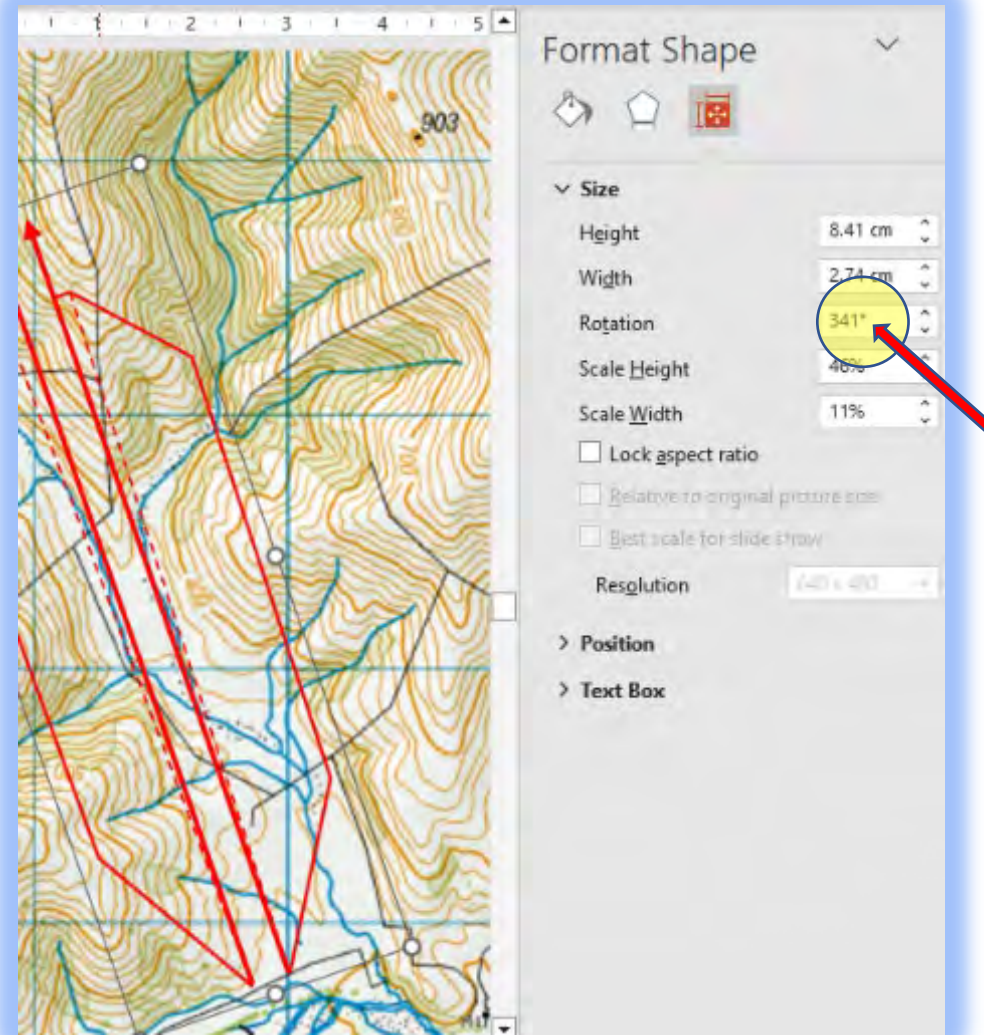
Select **Size & Properties**

In this case, it could change it's aspect ratio!

Tick the box that says
Lock Aspect Ratio

Rotation

The template can be rotated accurately by using the rotation function in the Format menu.

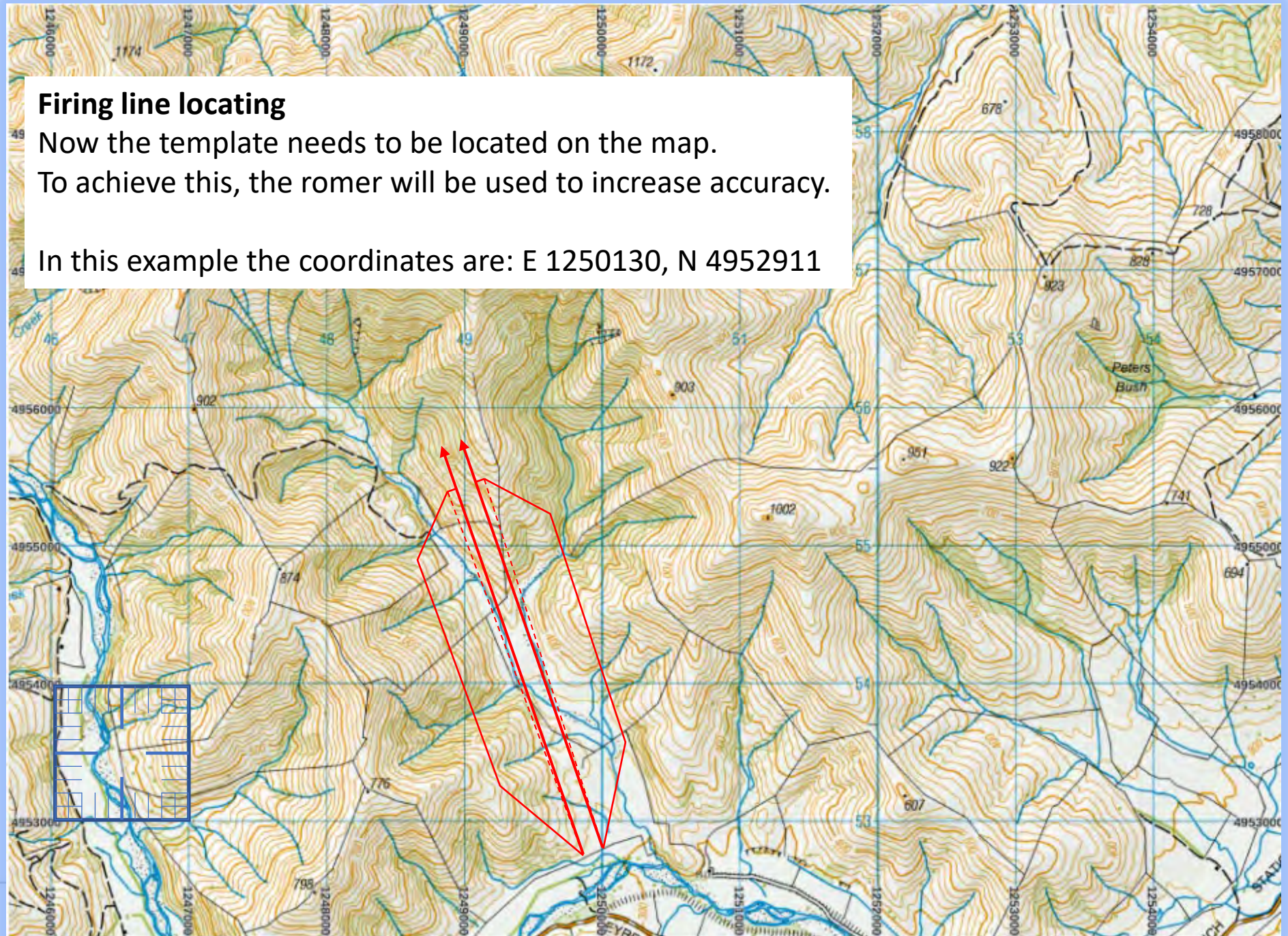In this case the axis of the range is 341^0 grid

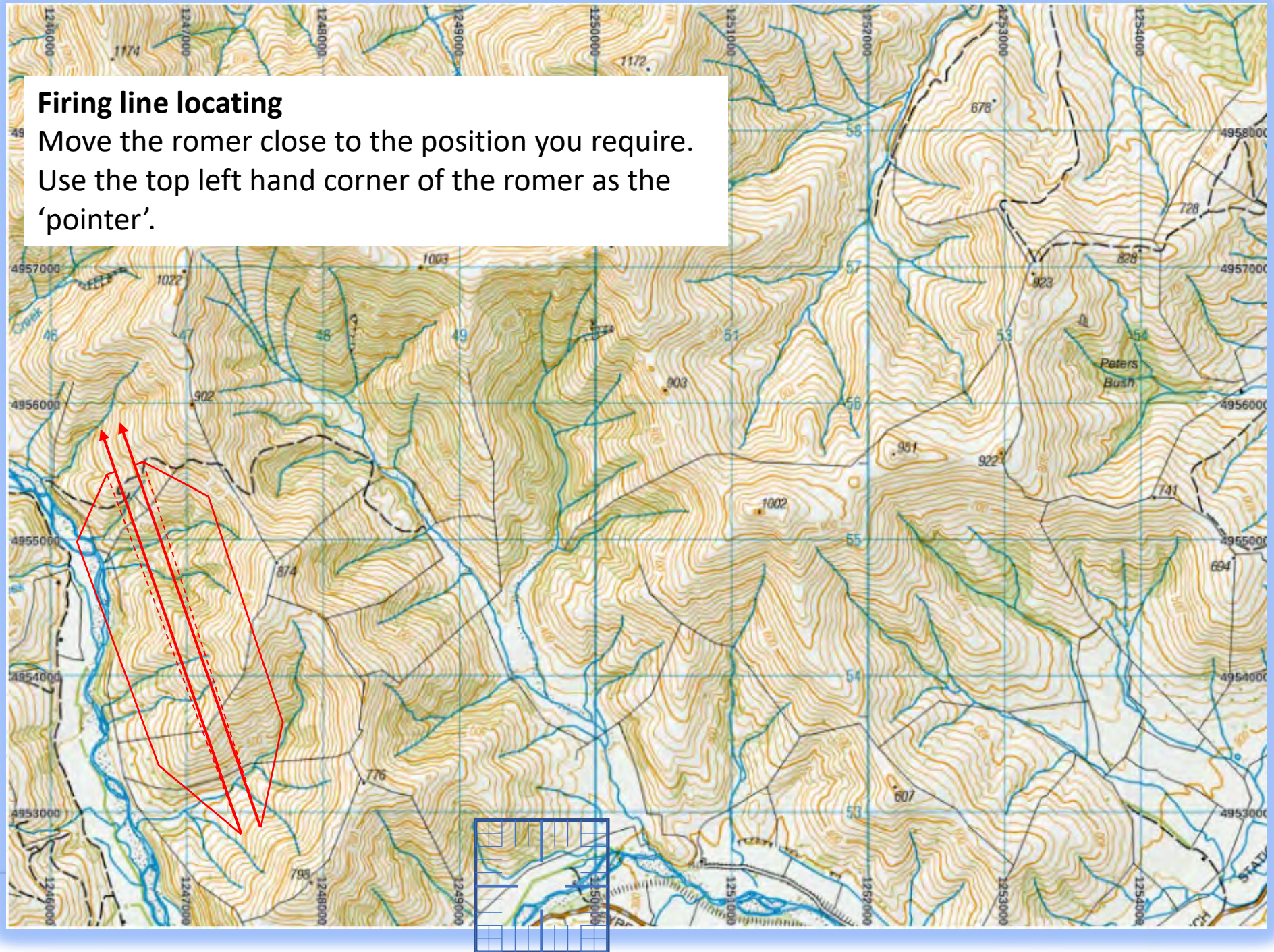# *Location using the romer*

Firing line locating
Now the template needs to be located on the map.
To achieve this, the romer will be used to increase accuracy.

In this example the coordinates are: E 1250130, N 4952911

Firing line locating
Move the romer close to the position you require.
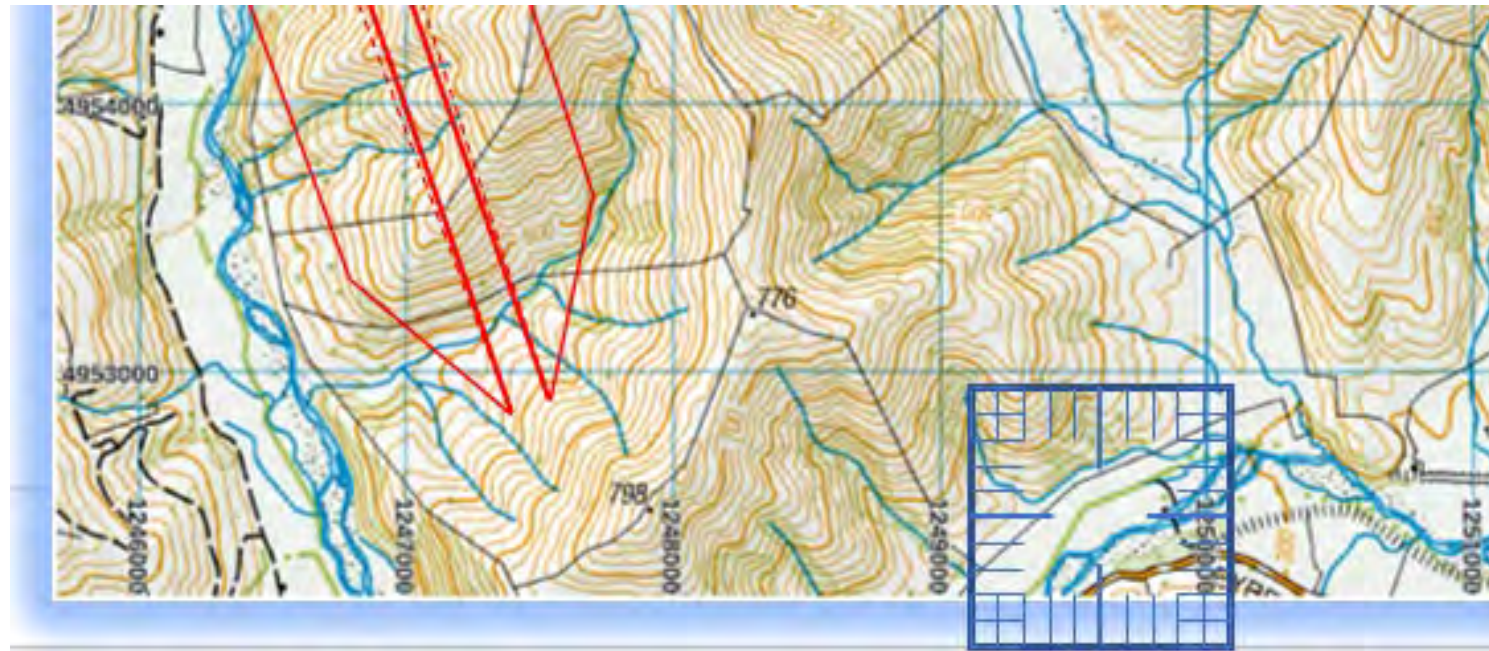Use the top left hand corner of the romer as the 'pointer'.
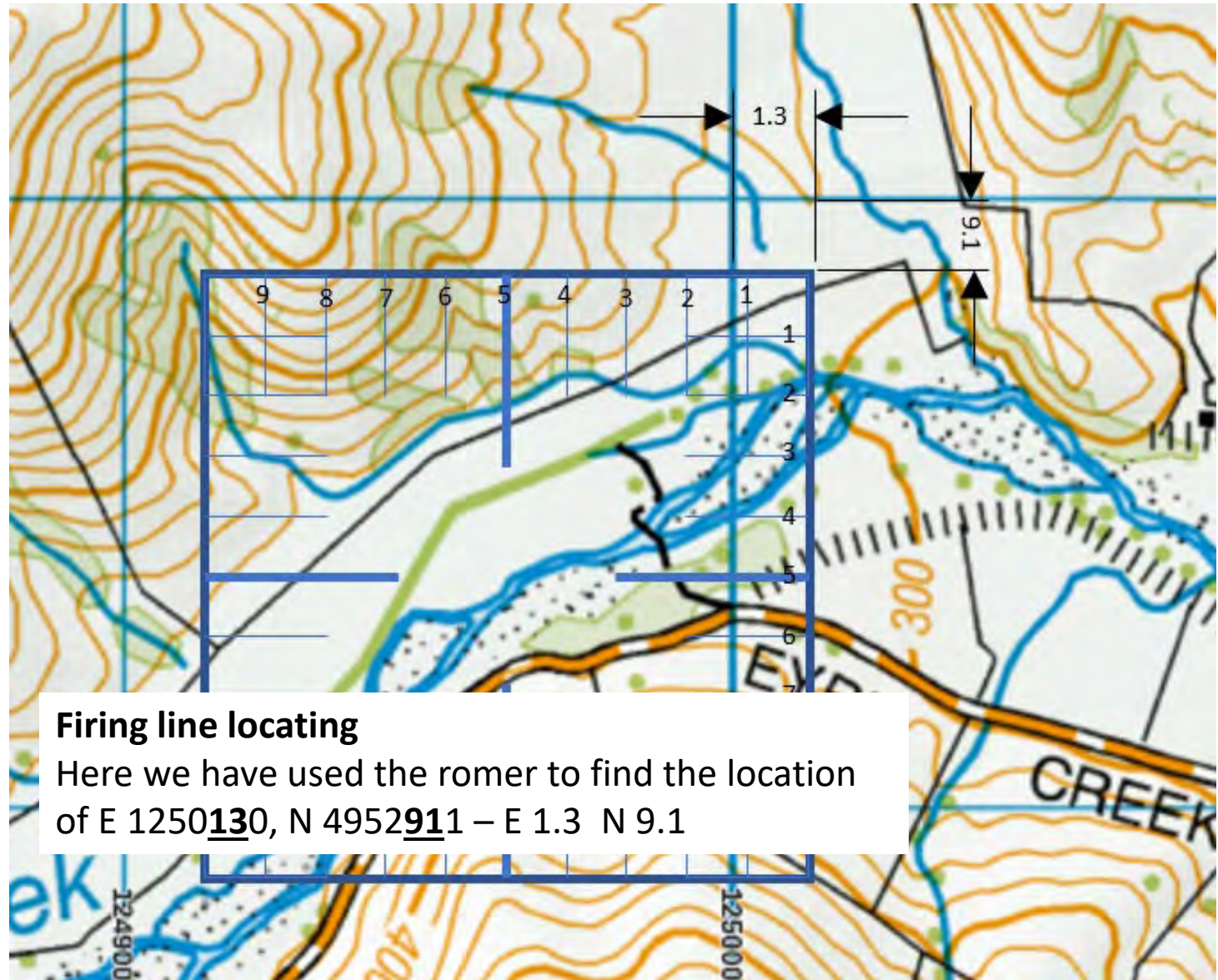
Firing line locating

Now the romer needs to be accurately located

At: E 1250130, N 4952911

Using the map legend we can see where the square E **1250**130, N **4952**911

Next is to move it accurately to E 1250**13**0, N 4952**91**1

Firing line locating
Here we have used the romer to find the location of E 1250**13**0, N 4952**91**1 – E 1.3 N 9.1

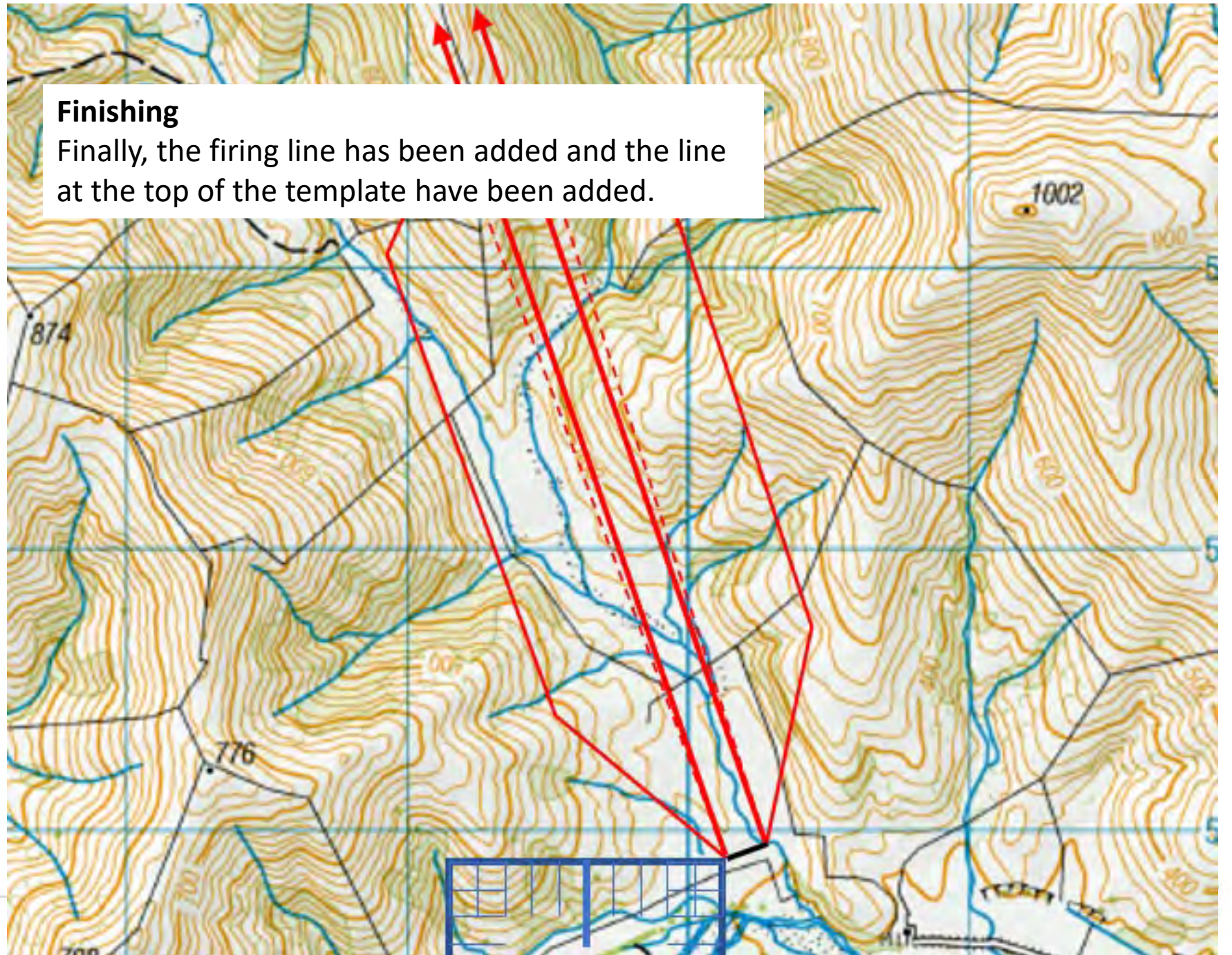Te Tari Pūreke
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Firing line locating
During the site inspection, the coordinates were taken from the left hand side of the firing line.
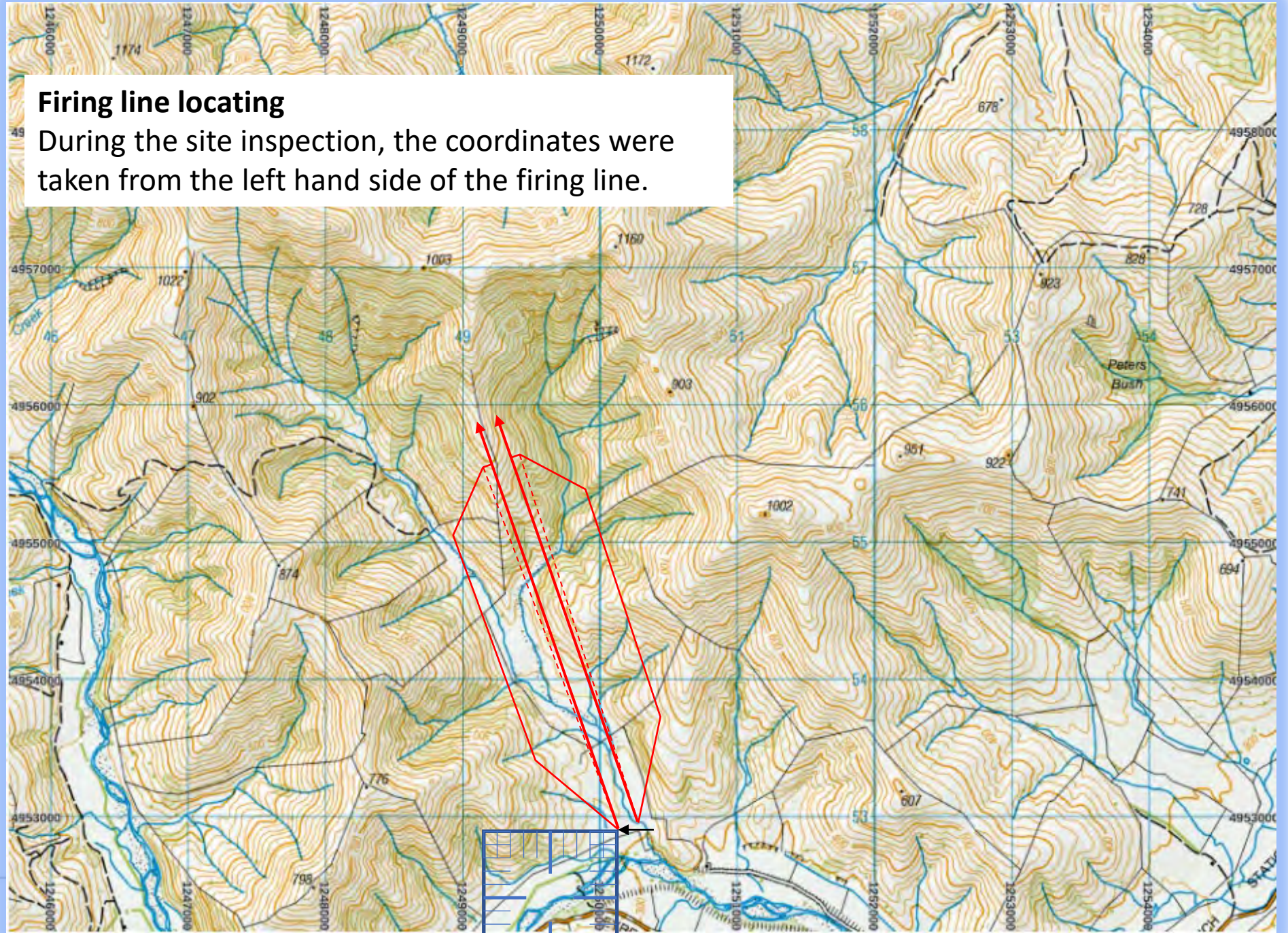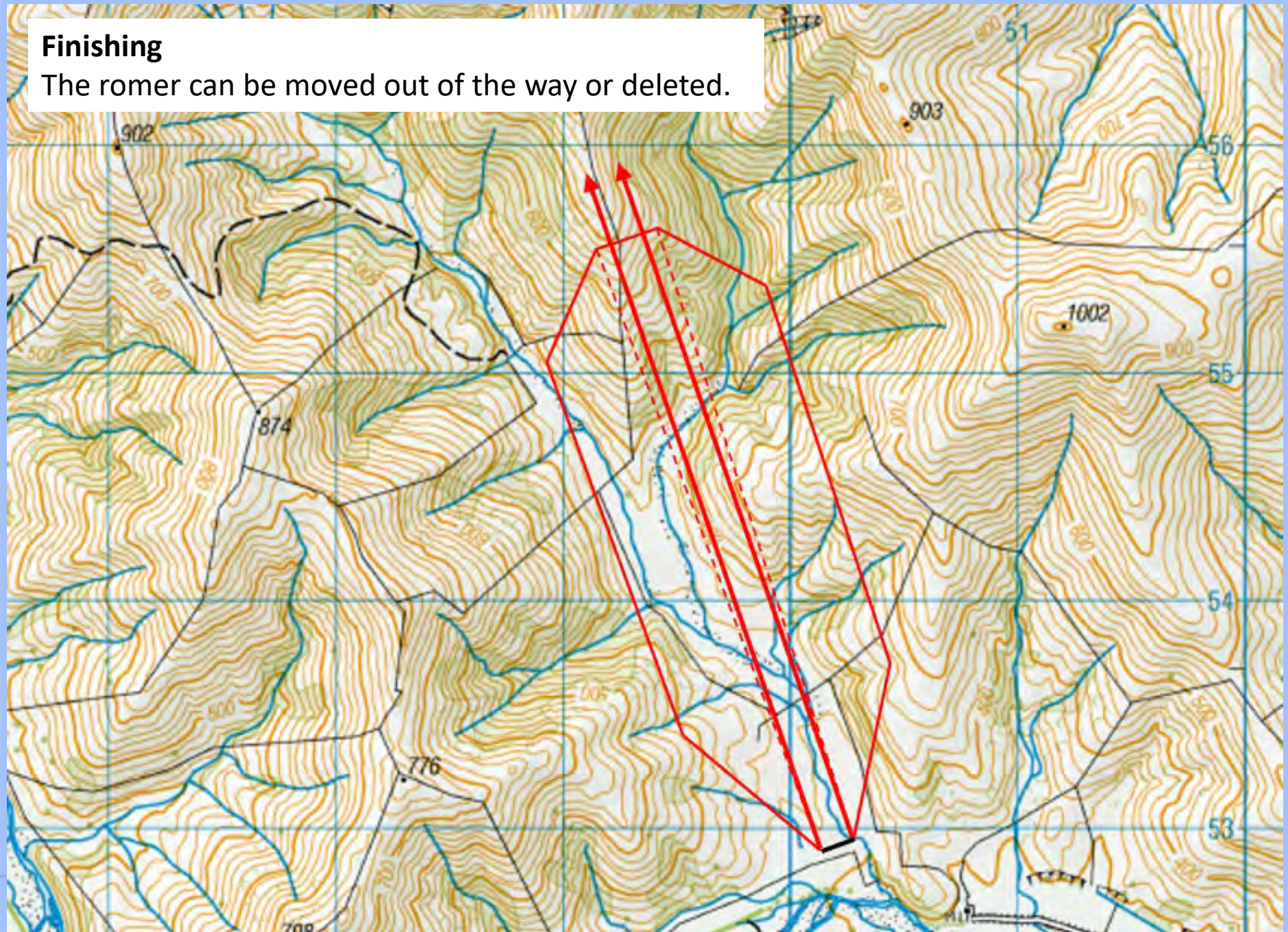
Finishing
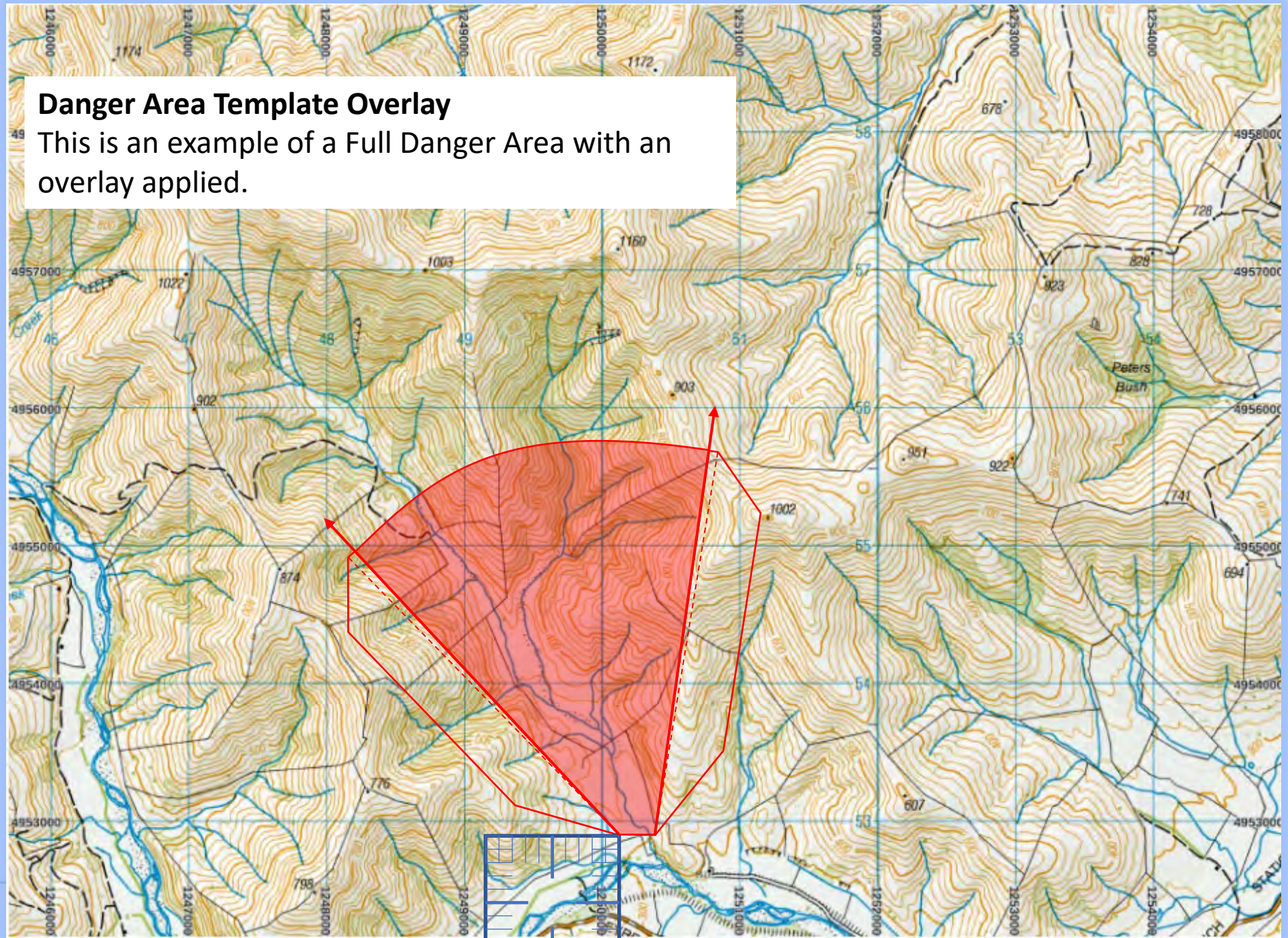Finally, the firing line has been added and the line at the top of the template have been added.

Finishing
The romer can be moved out of the way or deleted.

Danger Area Template Overlay
This is an example of a Full Danger Area with an overlay applied.

Example Annex for inclusion in RSOs

Once the scale diagram for the range danger area is checked for accuracy and complete. The SRO should paste it into the a word document for inclusion in RSOs.

It will be necessary to include the relevant range details in order for the SRI to check for accuracy during their review of RSOs as part of their Shooting Range Inspection reporting procedure.

The Clubs and Ranges Team will also be checking the range details for accuracy as part of review process for an Application for Range Certification.

EXAMPLE RANGE - RANGE STANDING ORDERS

ANNEX B: Range Danger Area

Range Name:	- Example Range
Map Reference:	- NZTM Map Sheet AB1234 - 1:50,000
ADAT:	- T7 Centrefire
FP (200m):	- E1989666 N567889
Range Axis:	- 349°
RDA:	- Defined at the 140m contour line (red border)

EXAMPLE ONLY - Not the range in the presentation

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If you have any questions contact:
[*ClubsandRanges@police.govt.nz*](mailto:ClubsandRanges@police.govt.nz)

Thank you.