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Firearms Safety Authority

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

Template Application 1

Firing Point – with a single line of fire (range axis)

Introduction

Before beginning, you will need information about your range

- *Grid location of the firing point (FP) expressed as an NZTM grid reference*
- *Grid bearing (not magnetic) of your direction of fire/range axis*
- *Type of template required e.g. T6 for relevant calibre and hard surface or ground surface to be used*

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.

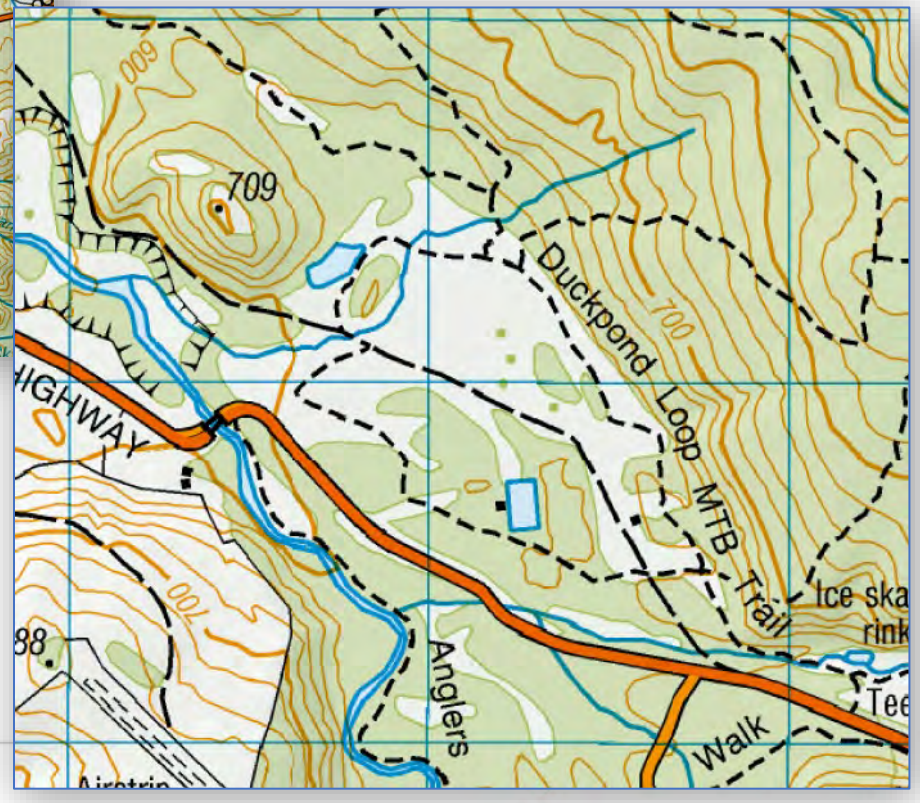
Step by step instructions for applying an ammunition danger area template onto a topo map are in the following pages.

Getting the map onto your computer

- There are many websites you can use to obtain a map but for this example the free TopoMap NZ - https://www.topomap.co.nz/ is used
- Find the location of your range, zoom in closer using the mouse wheel or the +/- buttons on the upper right hand side of the screen.

Zoom in to find the general location

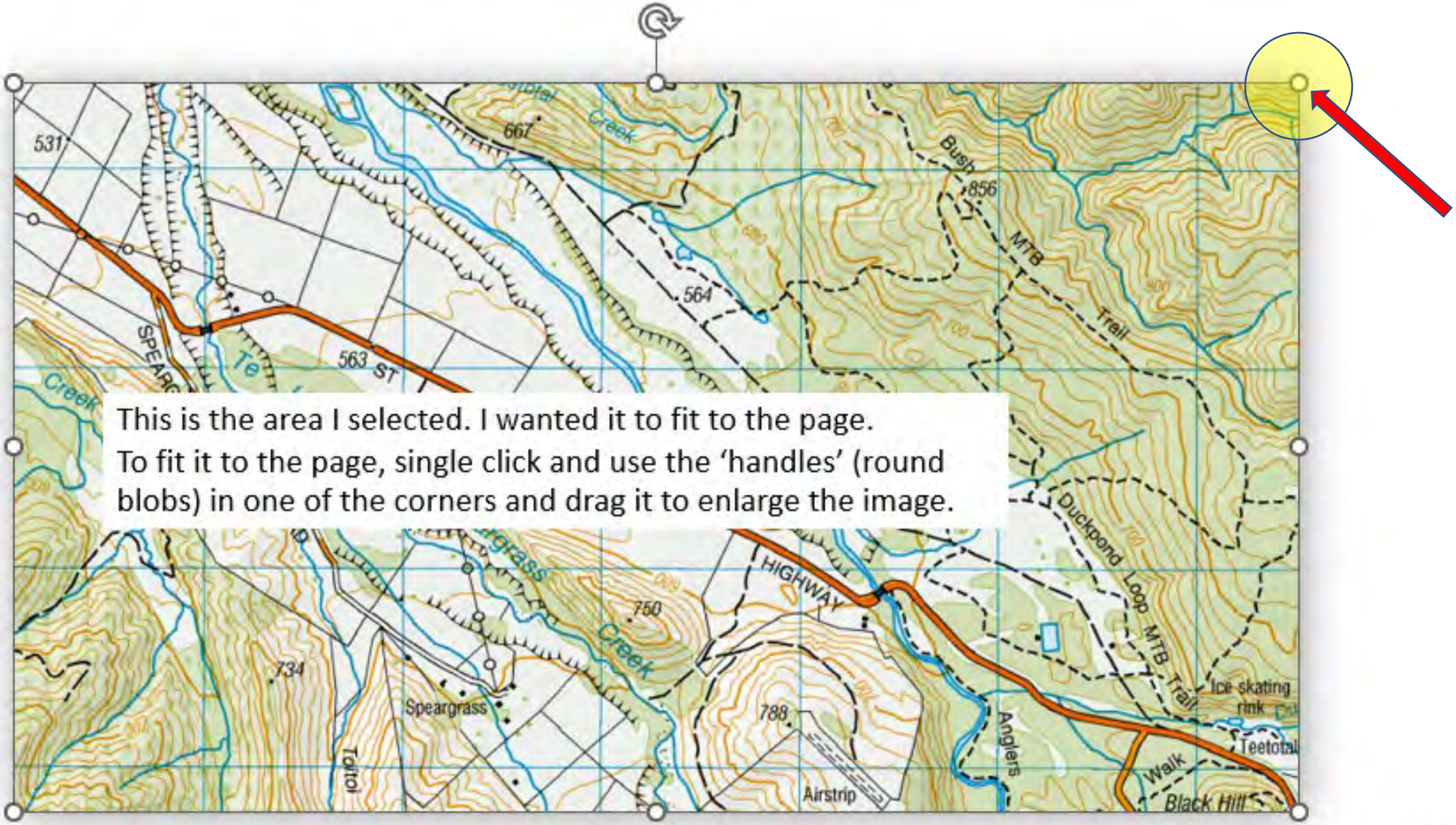
Keep zooming to get closer

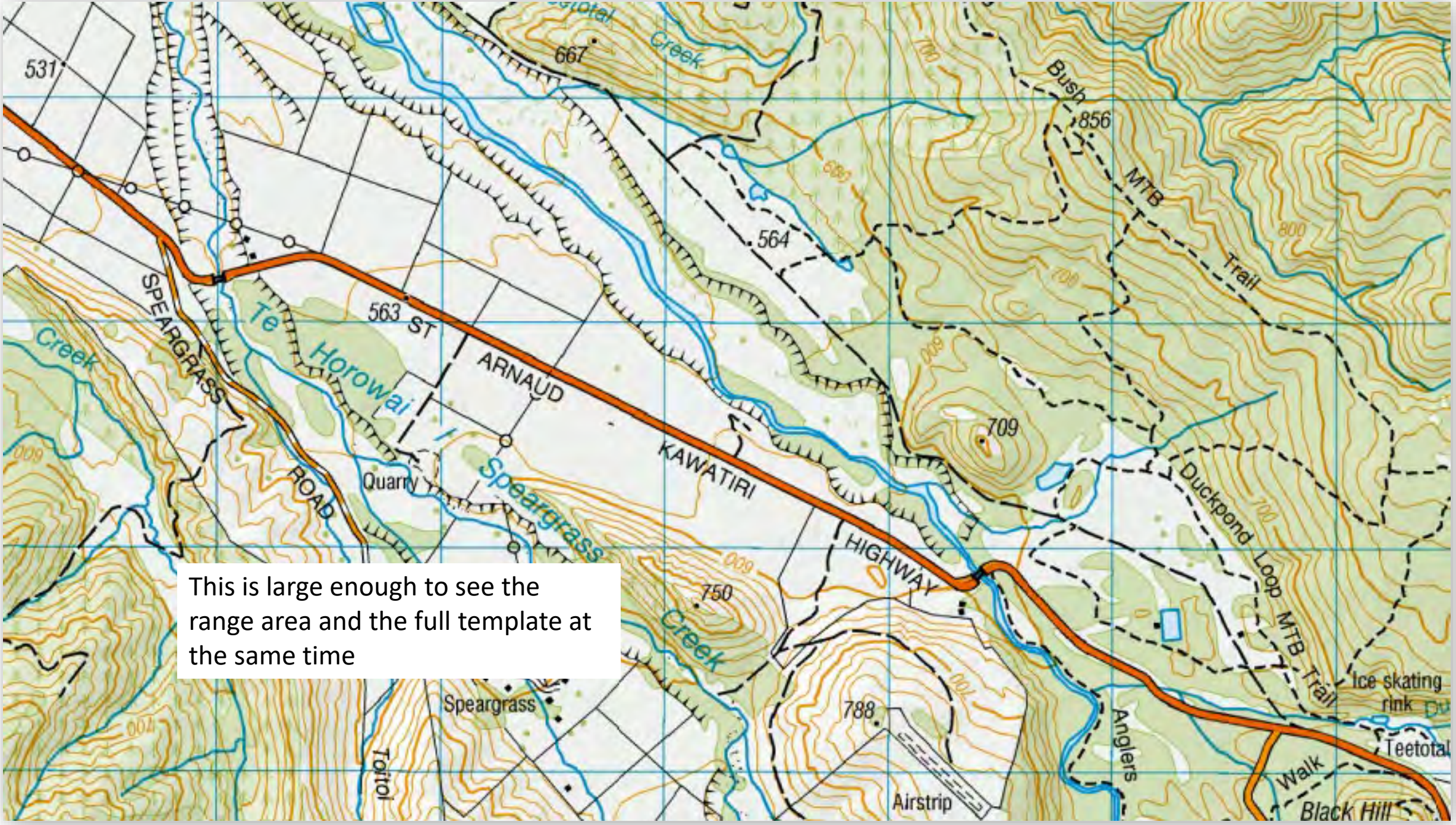


It will zoom in as far as it will go.
Next we need to copy that area of the map onto your computer.
Ensure you select an approx. area of 4X3 grid squares to allow for the template.

Copying and pasting the map

- 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


This is the area I selected. I wanted it to fit to the page.
To fit it to the page, single click and use the 'handles' (round blobs) in one of the corners and drag it to enlarge the image.
531
667
Creek
Bush
856
MTB
Trail
564
563 ST
Creek
Duckpond
Loop
MTB
Trail
HIGHWAY
750
Creek
734
Speargrass
788
Airstrip
Anglers
Ice skating rink
Walk
Black Hill



This is large enough to see the range area and the full template at the same time

Adding and scaling the template

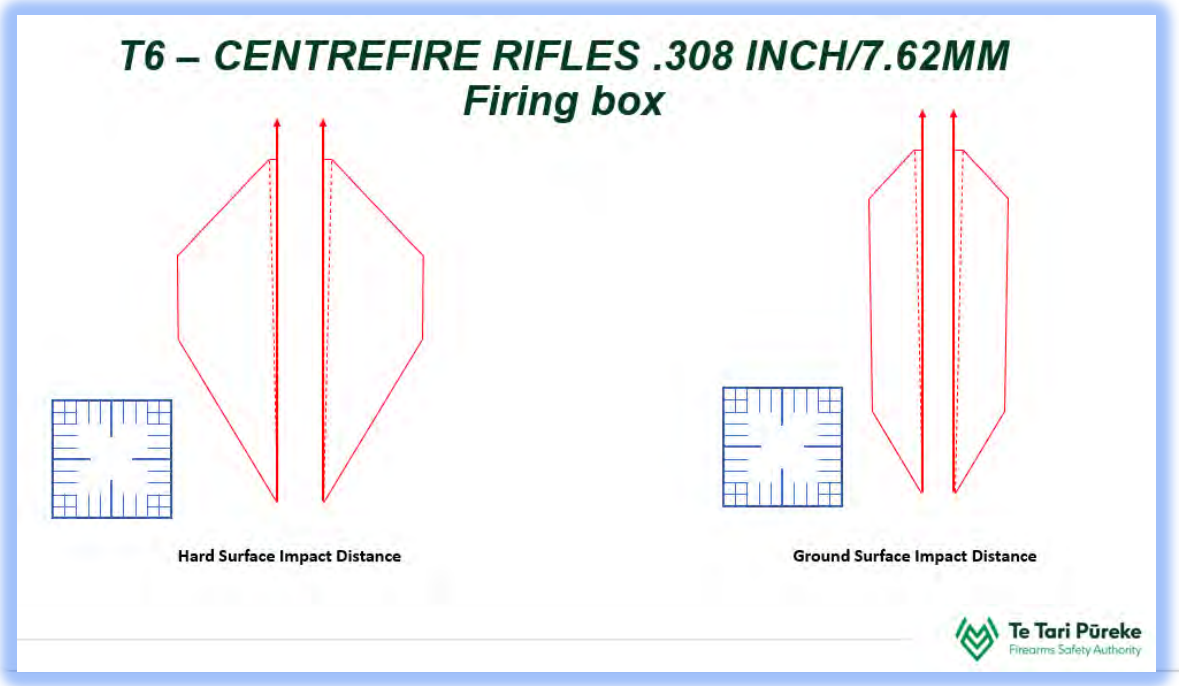
- Select the template you require for your range. In this case, we have selected the T6 – CENTREFIRE RIFLES .308 INCH/7.62MM UP TO 8MM. The **Ground Impact Surface** dimension will be used
- Single click on one of the lines on the template with the left mouse button
- Keeping the mouse still, right click and select **Copy**
- Go back to your map and paste it on top of the template using right click, paste or use the keyboard shortcut **Ctrl + V**

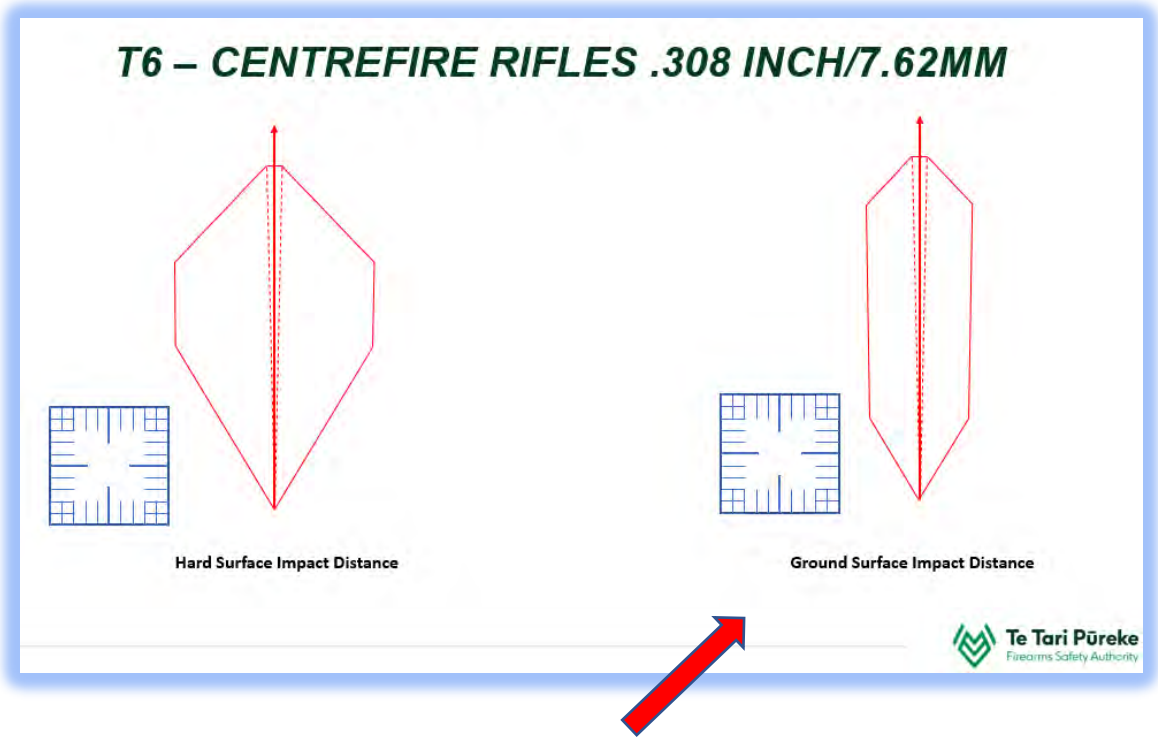
Template selection

There are two pages for the T6 Template. In this instance, the firing line is 50m wide and not a hard surface. Therefore, the single axis range template with a Ground Surface Impact Distance on the right is selected.

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

These templates can be found on the Clubs and Ranges website. https://www.police.govt.nz/sites/default/files/publications/adat-scale-drawings.pdf





Selected template

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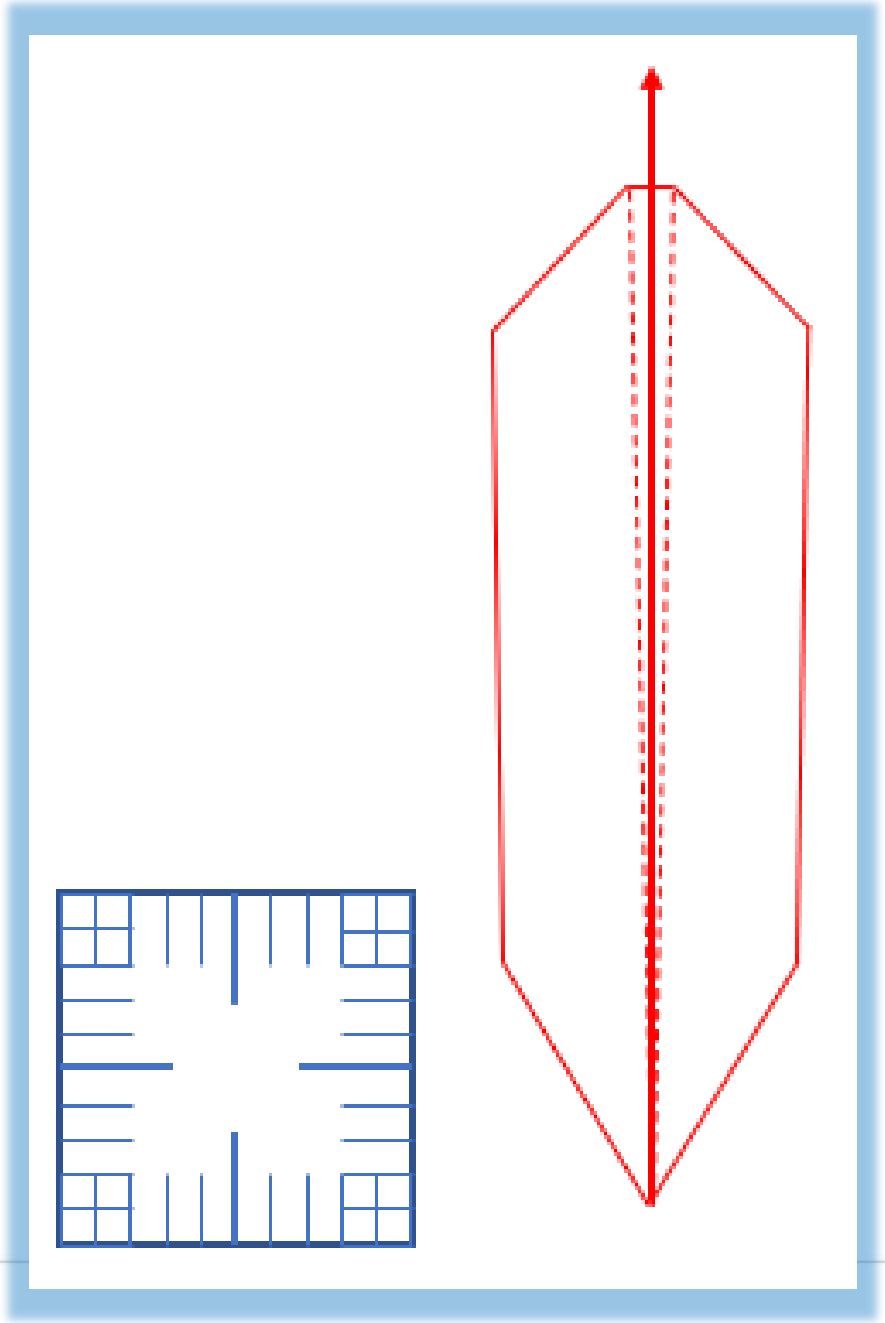

There are several objects which have been grouped together

The romer will be used for scaling (making sure that your map and the template are using the same scale).

We will now copy this and paste it onto our page with the map.

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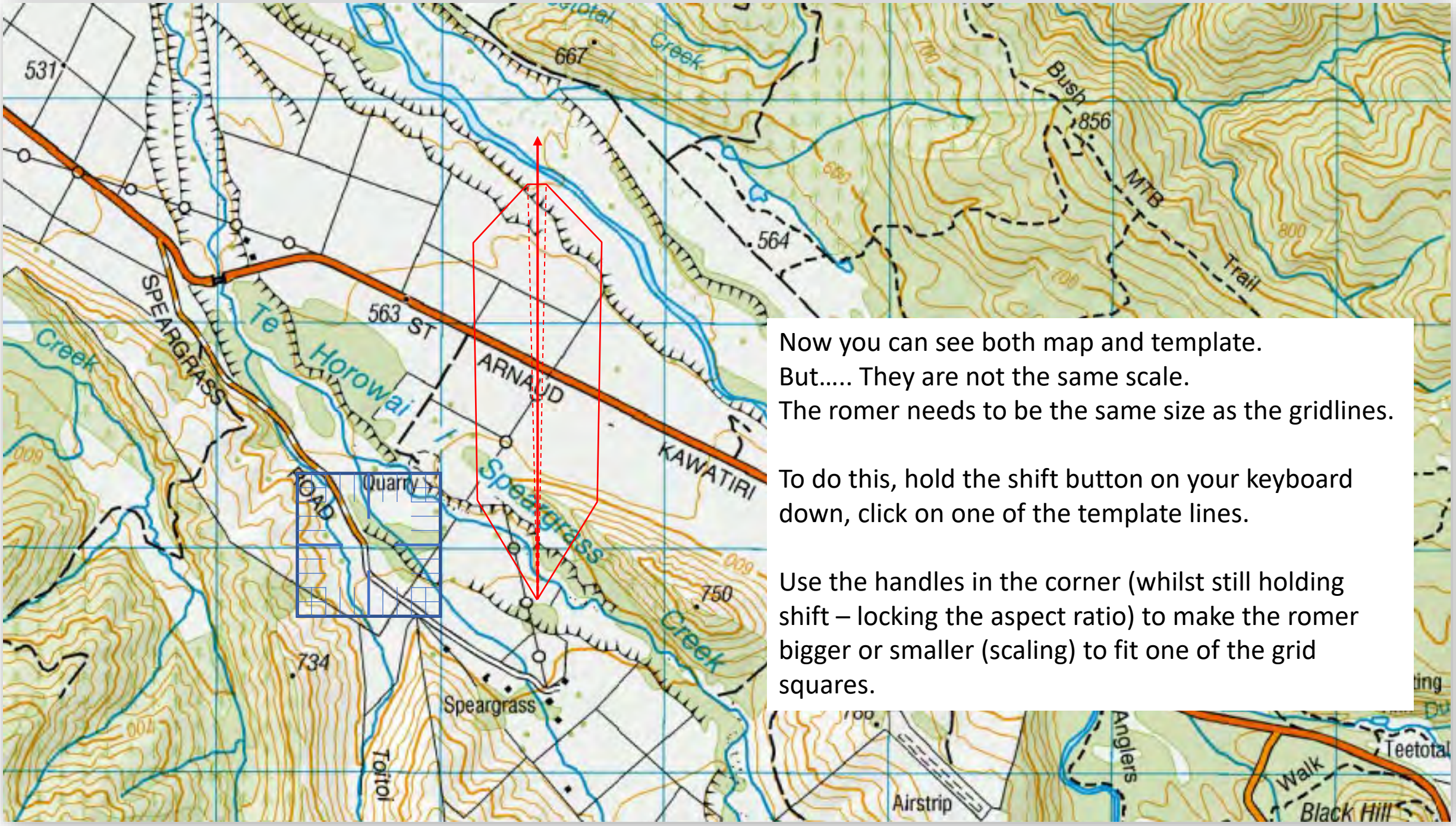
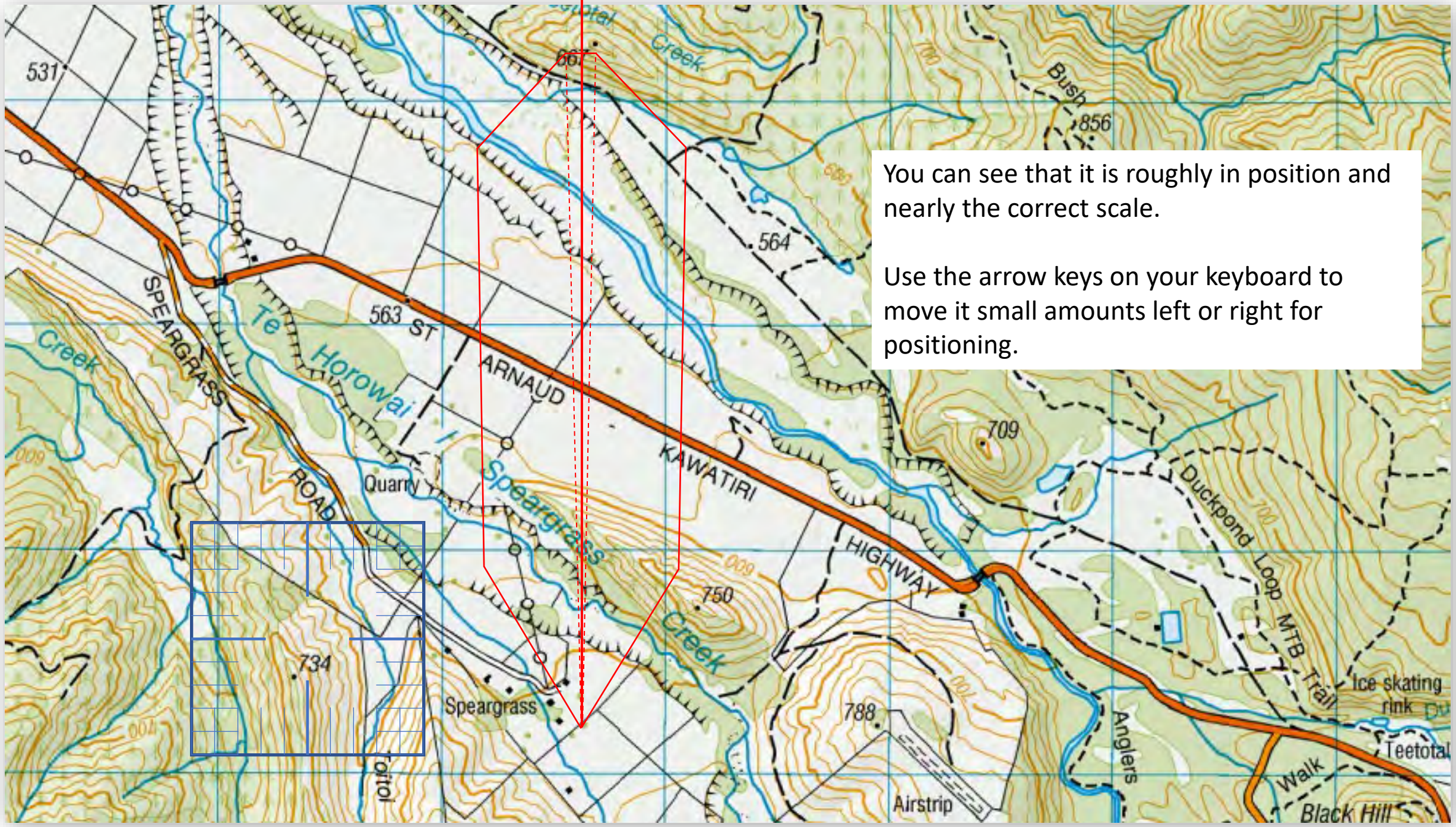
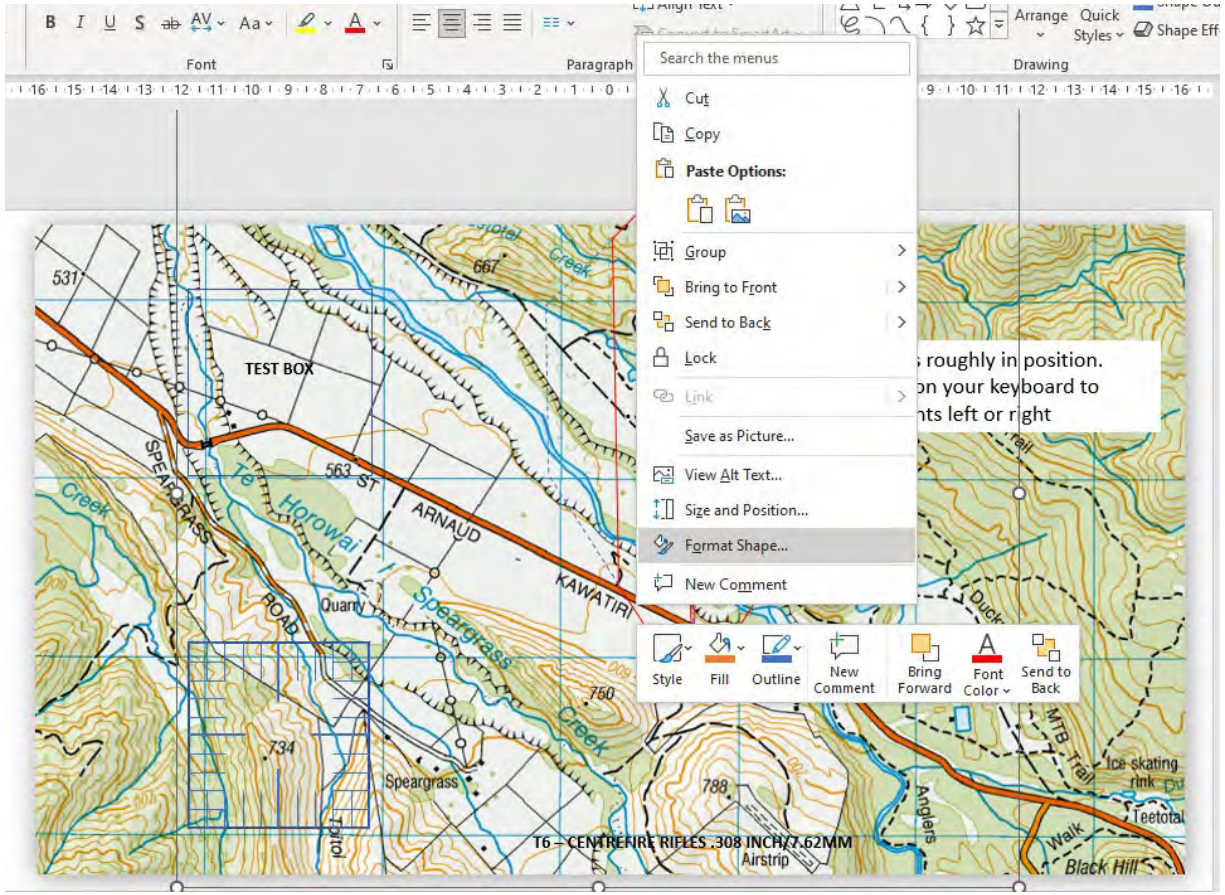


Now you can see both map and template.
But….. They are not the same scale.
The romer needs to be the same size as the gridlines.

To do this, hold the shift button on your keyboard down, click on one of the template lines.

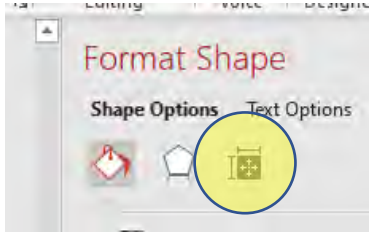
Use the handles in the corner (whilst still holding shift – locking the aspect ratio) to make the romer bigger or smaller (scaling) to fit one of the grid squares.

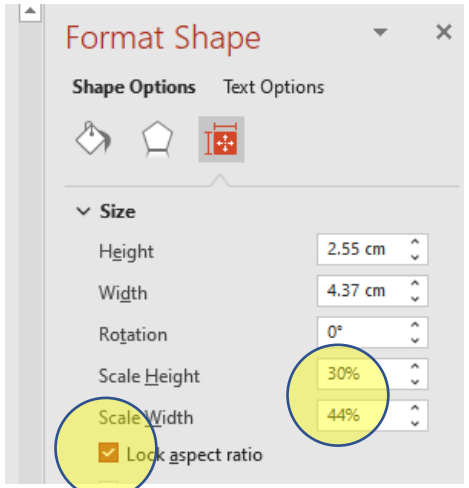

You can see that it is roughly in position and nearly the correct scale.
Use the arrow keys on your keyboard to move it small amounts left or right for positioning.
531
Creek
SPEARGRASS
ROAD
563
ST
ARNAUD
KAWATIRI
HIGHWAY
Te Horowai / Speargrass
Creek
Quarry
564
856
Bush
709
Duckpond Loop MTB Trail
750
734
Speargrass
788
Airstrip
Anglers
Ice skating rink
Walk
Black Hill



TIP

If you right click on one of the lines and select **Format Shape,** it activates a menu on the right of your screen

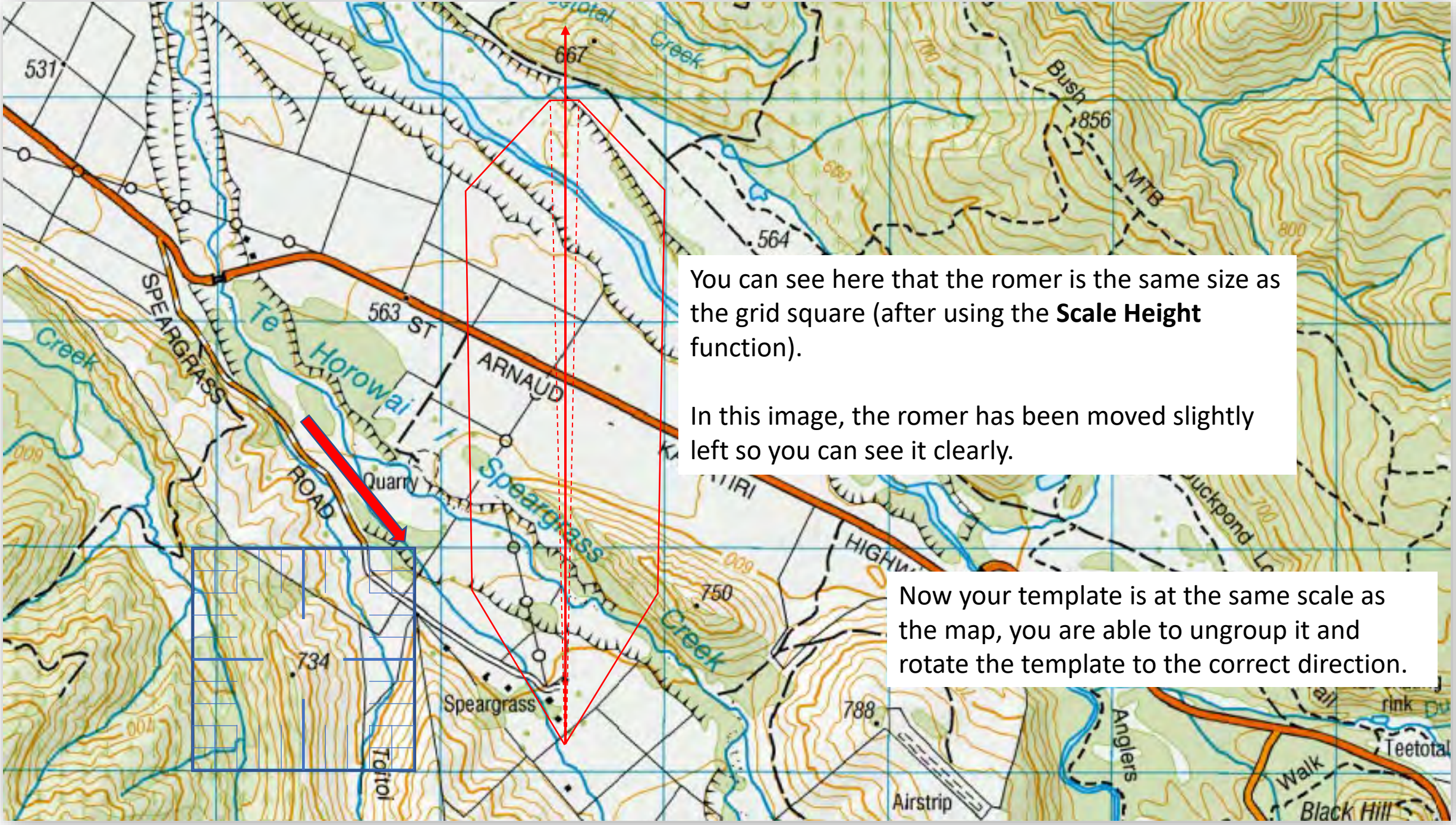




Click on the **Size** button.

Make sure that the **Lock aspect ratio** has a tick in the box

Use the **Scale height** to adjust the size of the box to fit the grid


You can see here that the romer is the same size as the grid square (after using the **Scale Height** function).
In this image, the romer has been moved slightly left so you can see it clearly.
Now your template is at the same scale as the map, you are able to ungroup it and rotate the template to the correct direction.
667
531
563
564
856
734
750
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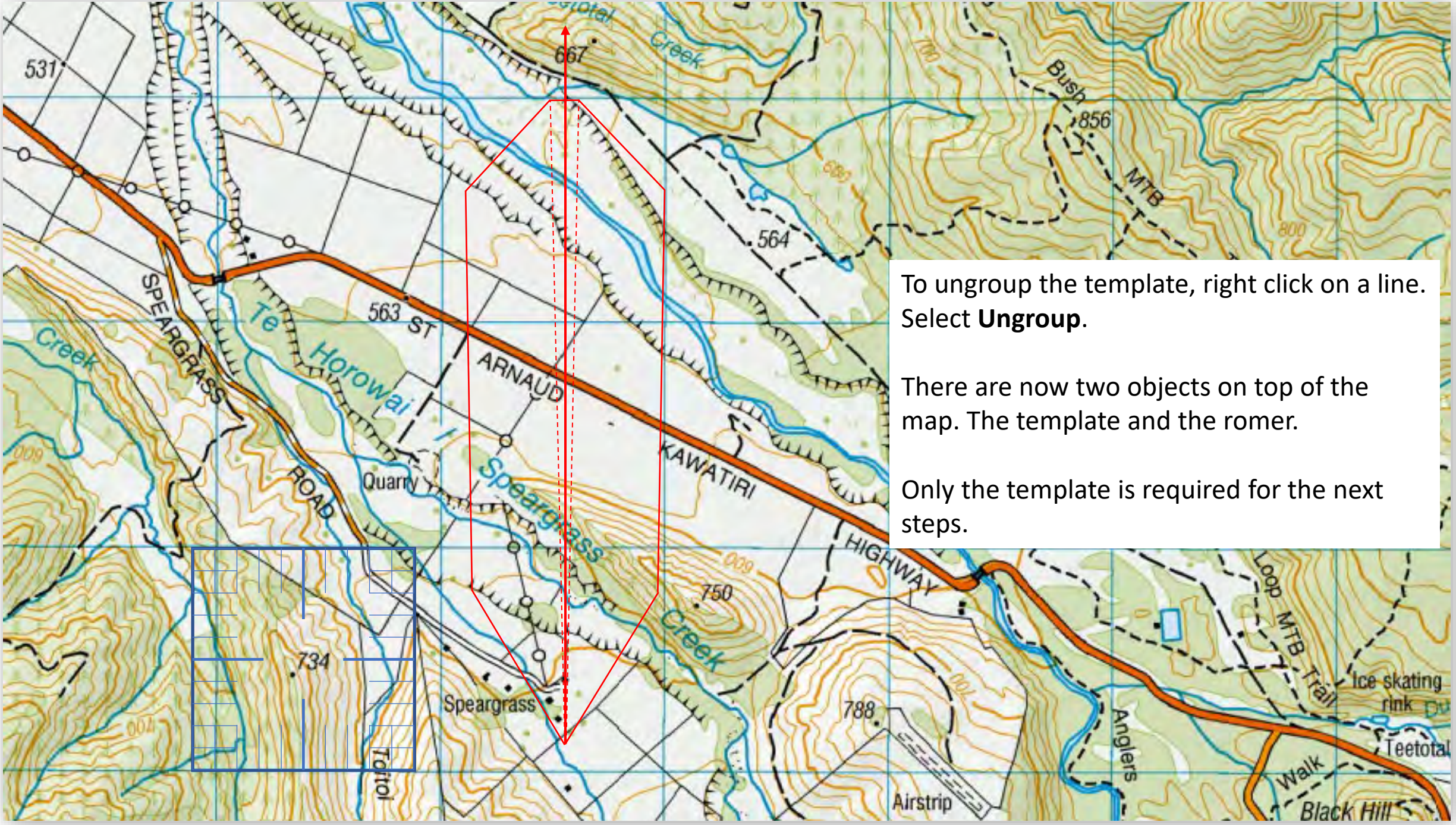
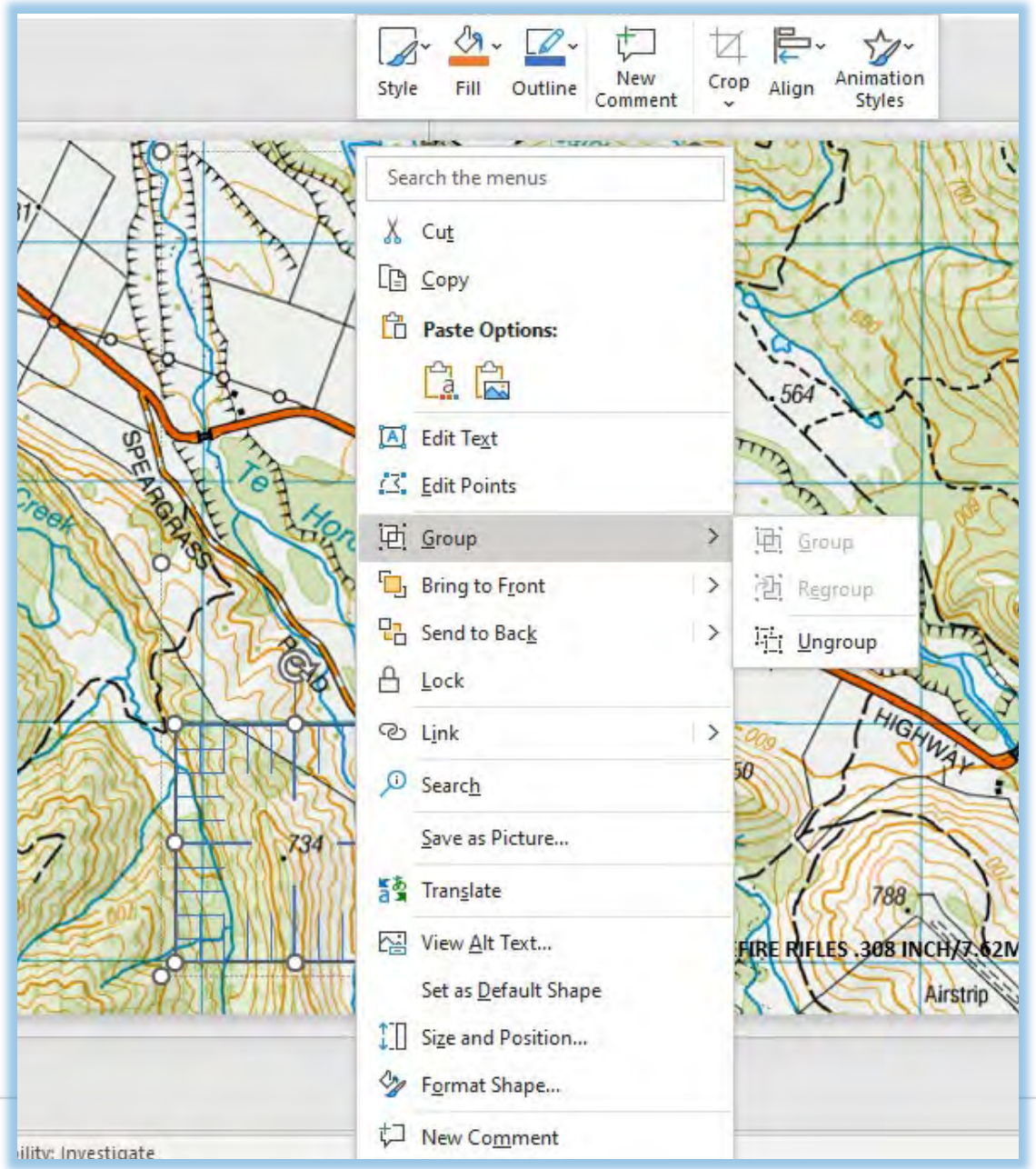
SPEARGRASS
ROAD
ARNAUD
Quarry
Creek
Bush
MTB
Airstrip
Anglers
Walk
Black Hill
Teetotal
Toitoi


To ungroup the template, right click on a line. Select **Ungroup**.
There are now two objects on top of the map. The template and the romer.
Only the template is required for the next steps.
531
667
Creek
Bush
856
MTB
564
563
ST
ARNAUD
KAWATIRI
HIGHWAY
SPEARGRASS
ROAD
Te Horowai / Speargrass
Creek
Quarry
750
734
Speargrass
Creek
788
Airstrip
Anglers
Loop MTB Trail
Ice skating rink
Walk
Black Hill



Ungrouping the template

To ungroup the template, right click on a line in the template.
Select **Group**, slide the cursor to the right and select **Ungroup**.

This will now show two selected objects; the template and the romer.

Click somewhere off the template so nothing is selected, click back on a template line and you are now able to move the objects around the screen independently.

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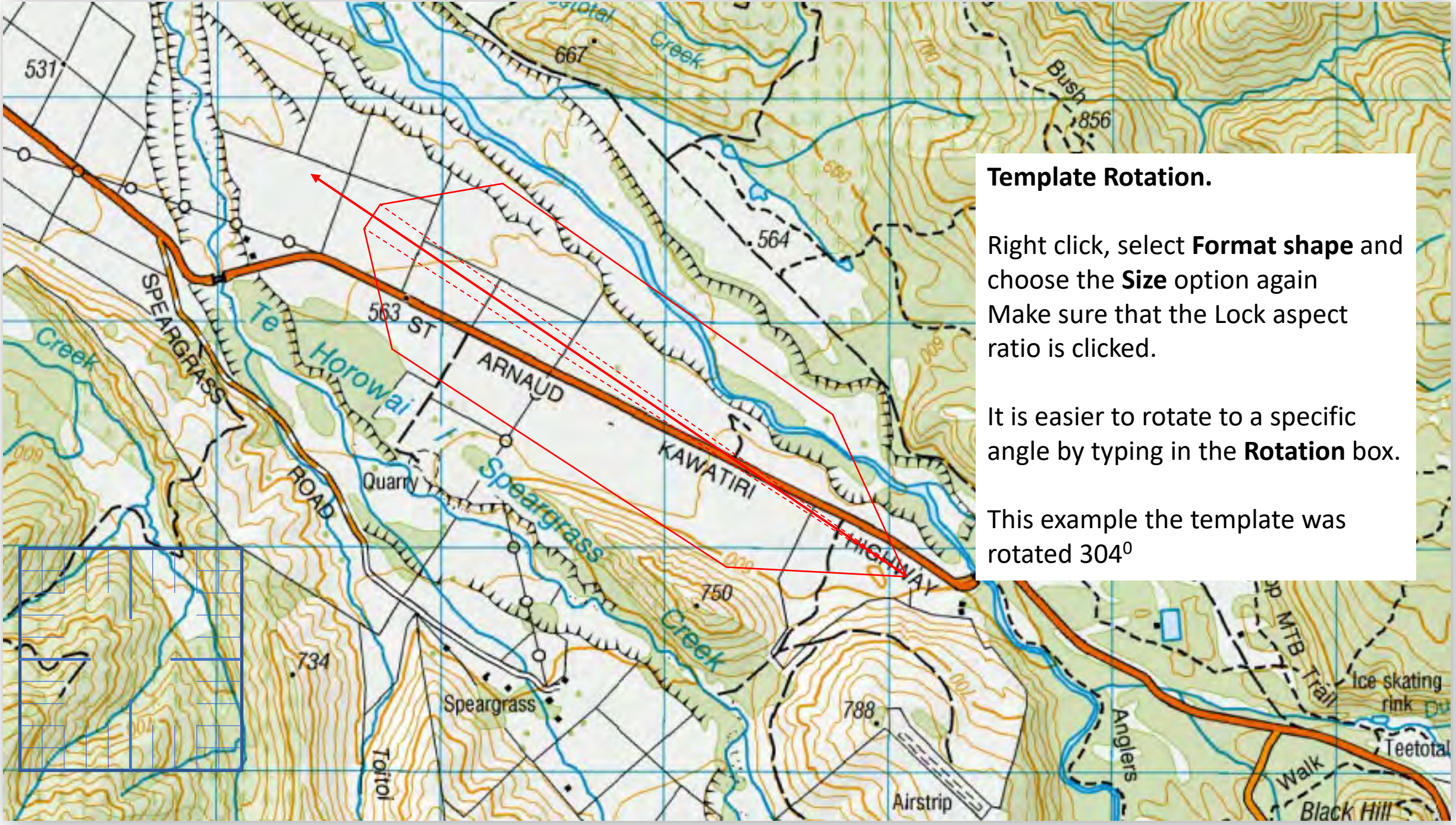
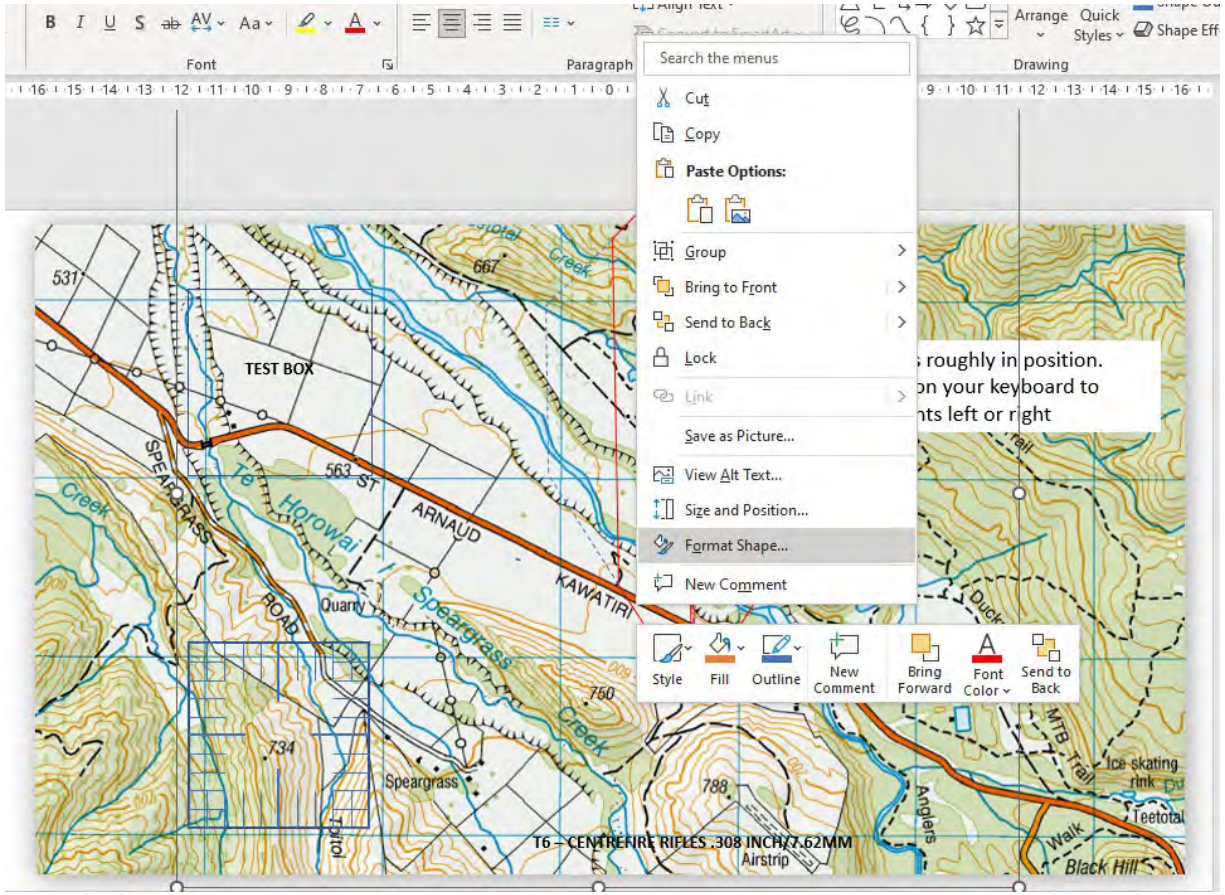
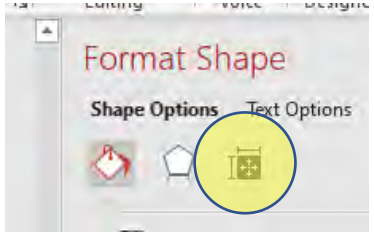
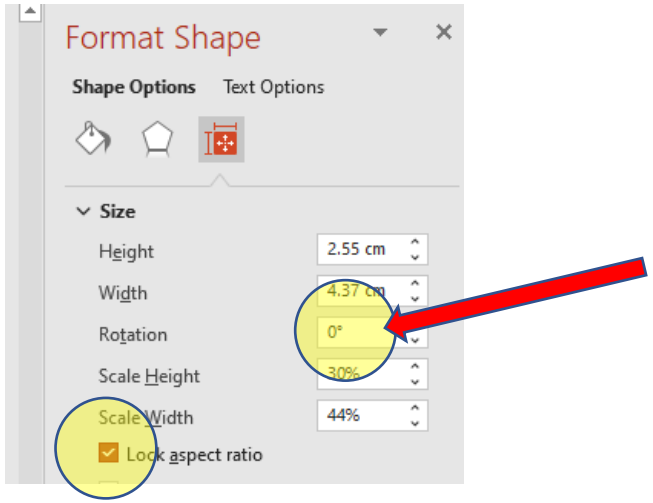

Template Rotation.
Right click, select Format shape and choose the Size option again
Make sure that the Lock aspect ratio is clicked.
It is easier to rotate to a specific angle by typing in the Rotation box.
This example the template was rotated 304⁰
531
667
Creek
Bush
856
564
563
ST
ARNAUD
KAWATIRI
HIGHWAY
SPEARGRASS
ROAD
Te Horowai / Speargrass
Creek
Quarry
750
734
Speargrass
Toitoi
788
Airstrip
Anglers
MTB Trail
Ice skating rink
Walk
Black Hill

Template Rotation

Right click on one of the lines and select **Format Shape,** it activates a menu on the right of your screen







Click on the **Rotation** box.
Make sure that the **Lock aspect ratio** has a tick in the box
Either use the up and down arrows in the box or type in the angle of rotation you require.

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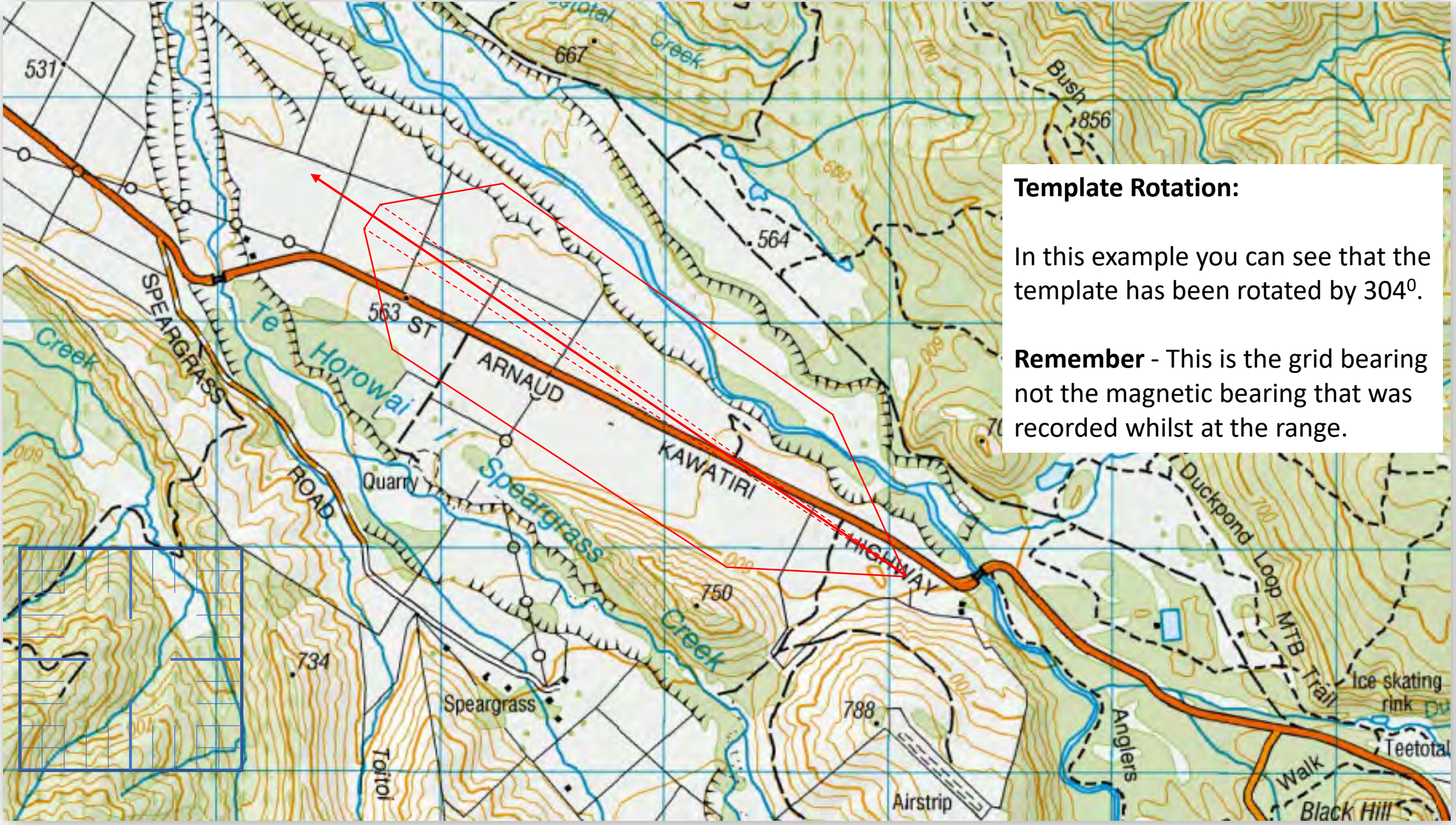

Template Rotation:
In this example you can see that the template has been rotated by 304⁰.
Remember - This is the grid bearing not the magnetic bearing that was recorded whilst at the range.
531
667
Creek
Bush
856
564
563
ST
ARNAUD
KAWATIRI
HIGHWAY
SPEARGRASS
ROAD
Te Horowai
Creek
Quarry
Speargrass
Creek
750
734
Speargrass
Toitoi
788
Airstrip
Anglers
Duckpond Loop MTB Trail
Ice skating rink
Teetotal
Walk
Black Hill

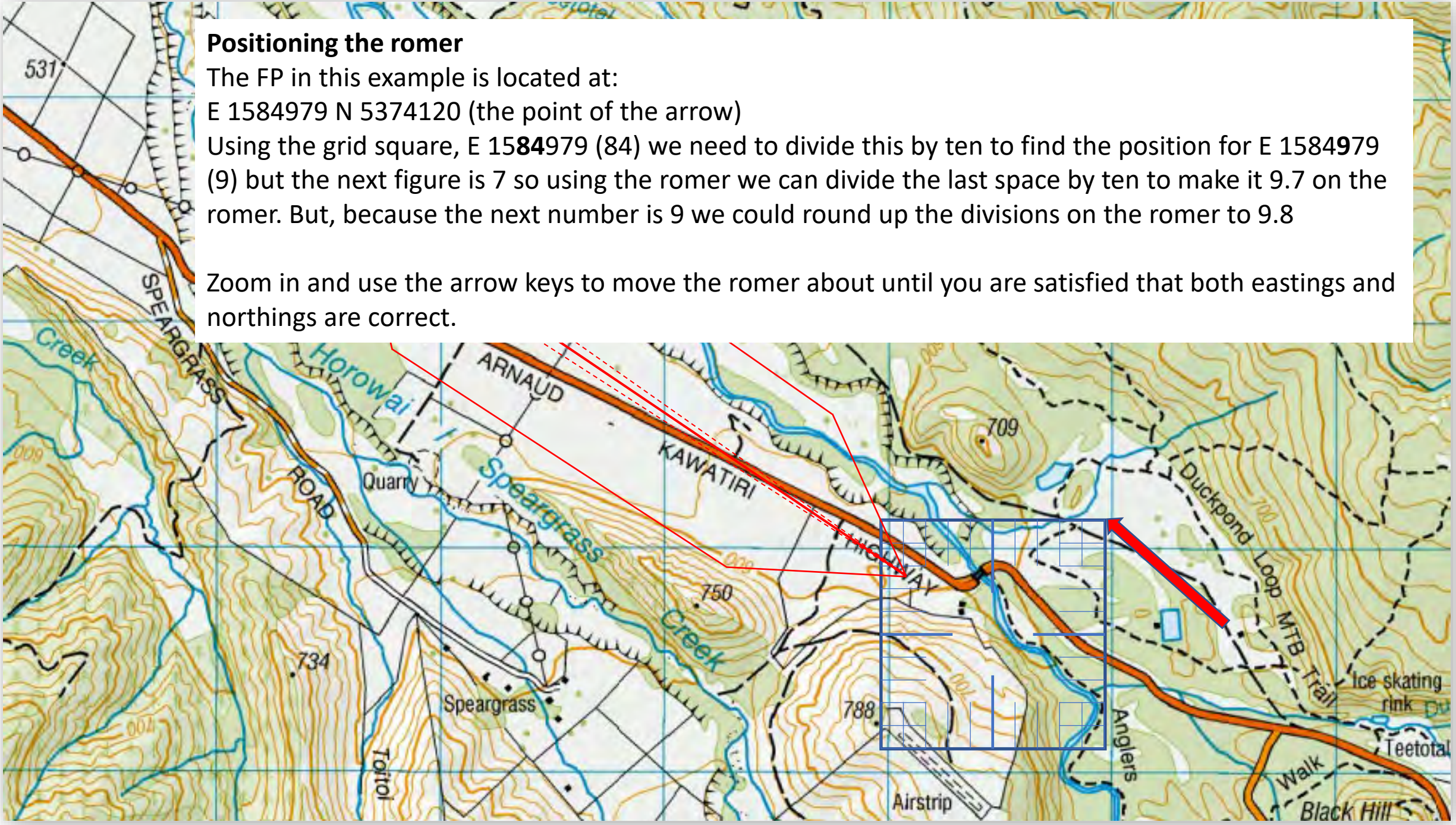
Positioning the romer

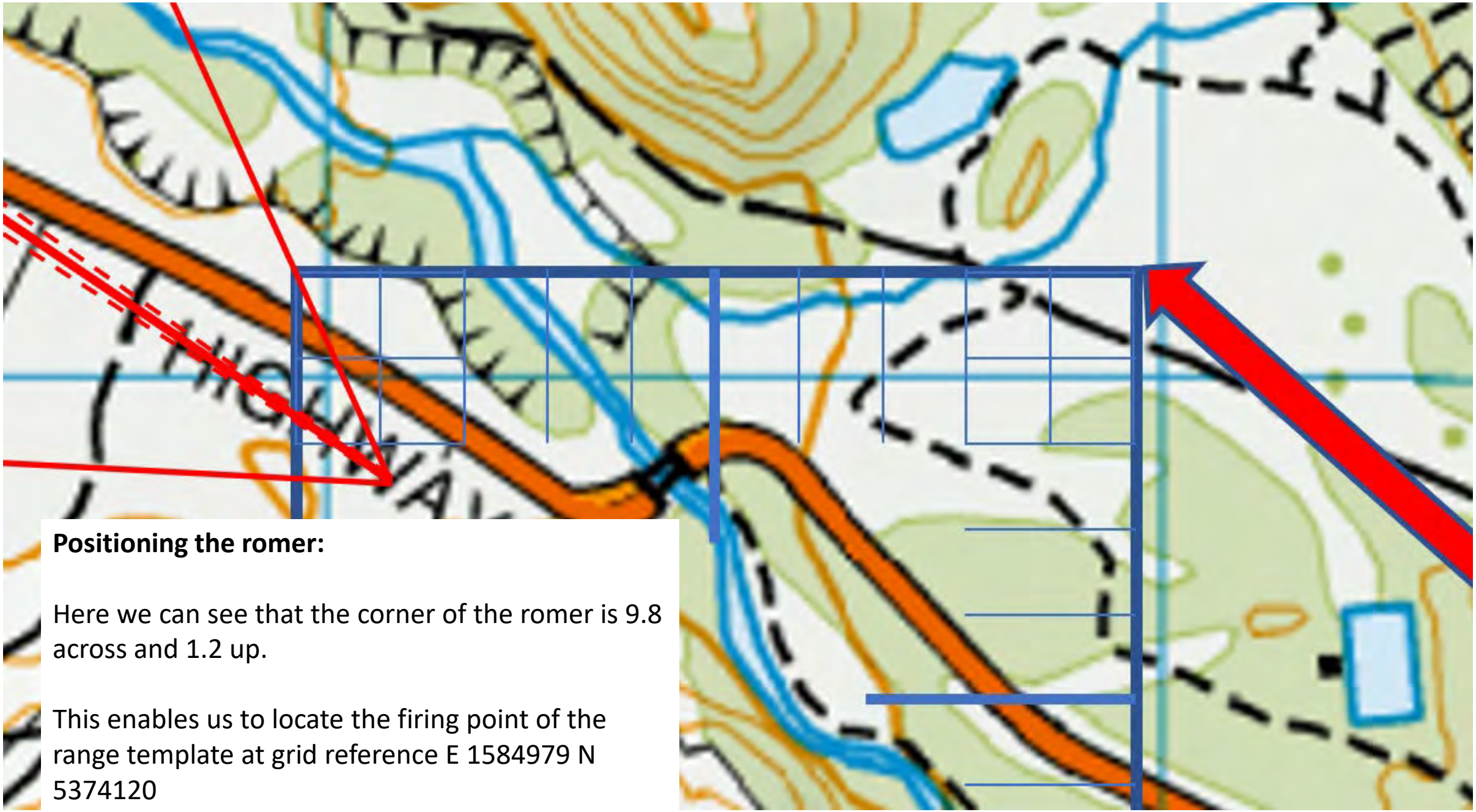
The FP in this example is located at:

E 1584979 N 5374120 (the point of the arrow)

Using the grid square, E 15**84**979 (84) we need to divide this by ten to find the position for E 1584**9**79 (9) but the next figure is 7 so using the romer we can divide the last space by ten to make it 9.7 on the romer. But, because the next number is 9 we could round up the divisions on the romer to 9.8

Zoom in and use the arrow keys to move the romer about until you are satisfied that both eastings and northings are correct.

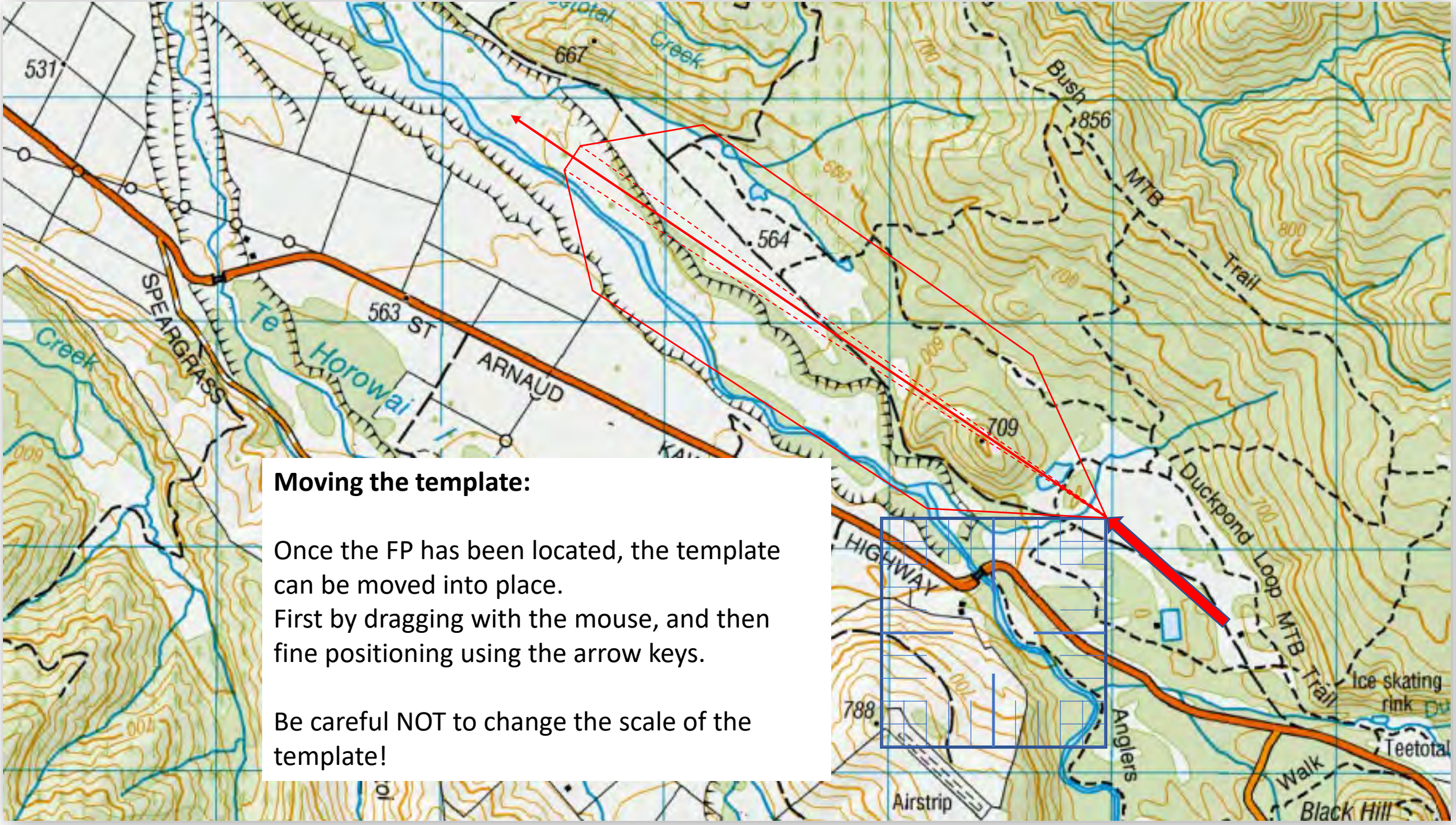




Positioning the romer:

Here we can see that the corner of the romer is 9.8 across and 1.2 up.

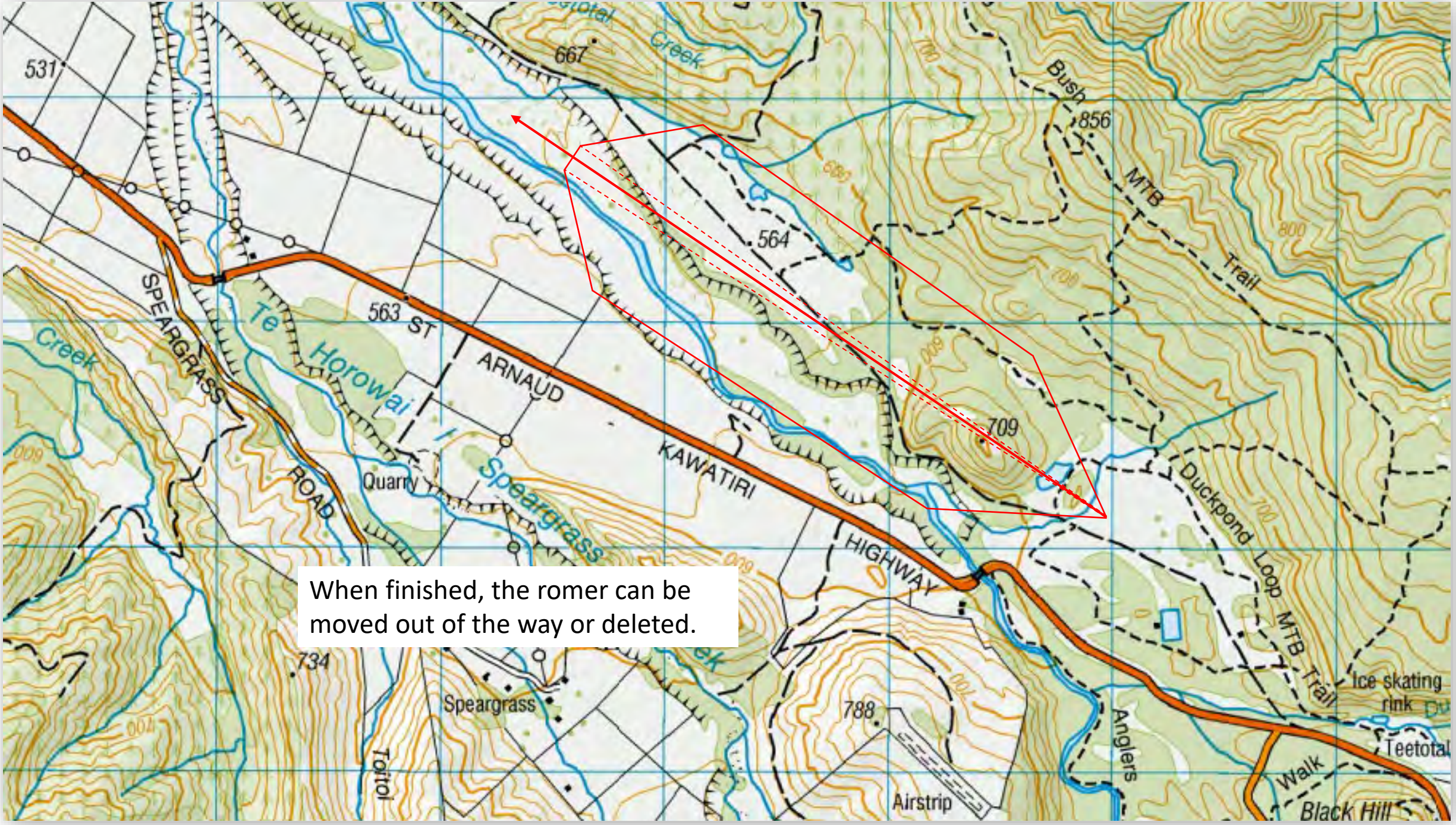
This enables us to locate the firing point of the range template at grid reference E 1584979 N 5374120



Moving the template:

Once the FP has been located, the template can be moved into place.
First by dragging with the mouse, and then fine positioning using the arrow keys.

Be careful NOT to change the scale of the template!


531
667
Creek
Bush
856
MTB
Trail
564
563
ST
ARNAUD
SPEARGRASS
Creek
Te Horowai / Speargrass
ROAD
Quarry
KAWATIRI
HIGHWAY
709
Duckpond Loop MTB Trail
When finished, the romer can be moved out of the way or deleted.
734
Speargrass
Toitoi
788
Airstrip
Anglers
Ice skating rink
Walk
Black Hill

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

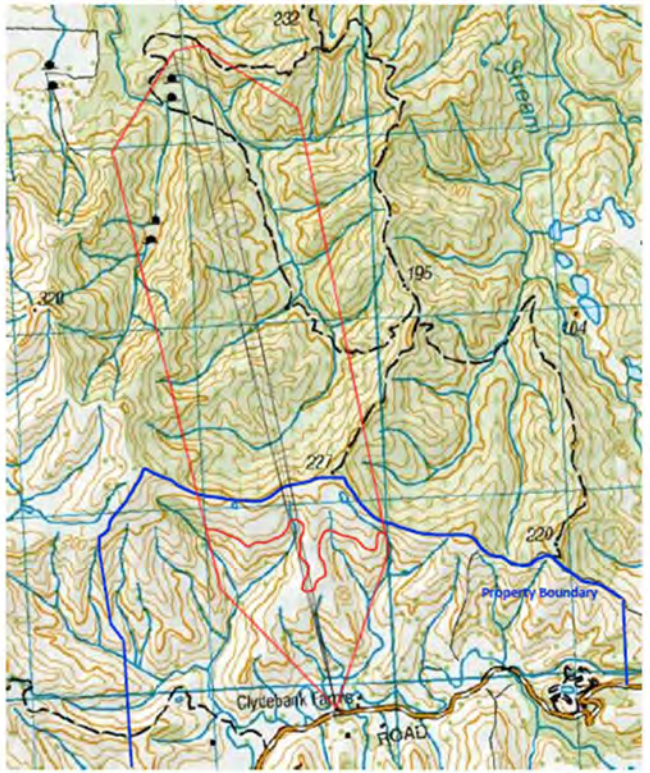
Map Reference: - NZTM Map Sheet AB1234 - 1:50,000

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

Thank you.