



Longitude
Latitude 33°

15'	30'	45'	20°
A	B	A	B
C	D	C	D
A	B	A	B
C	D	C	D

1st Letter
Indicates
big block
2nd Letter
Indicates
small block

Scale = **RATIO SCALE**,
Meaning every
1mm on the map = 50 00 in real life

Notice the **dark contour lines**
(every 5th contour line)
Called **INDEX CONTOURS**.
They indicate round 100-values

Spot high
788 m above
sea level

LONGITUDE
We always do
Longitude 2nd

LATITUDE
We always start
with latitude

EXTRACT FROM WORCESTER 3319 CB

CALCULATE AREA

L x B
= (L x scale) X (B x scale)
= (20mm x 50 000) X (12mm x 50 000)
= 1 000 000mm x 600 000mm
1 000 000(convert mm to km's)
= 1km x 0,6 km
= 0,6km²

Drainage basins of river, in close
proximity. The reason why more than one
exist is because of watersheds (Separating
them).

Magnetic Declination

Calculate Mag. Declination to the year 2020

2020- 1970 = 50 years
Mean annual change is 2' eastward/year
50 years X 2' = 100'

23° 42' W
- 100' E (100" = 1° 40')

22° 02' W

(We subtract the 100', as the annual
change is going east-
Therefore making the angle smaller)

A spur

ORCHARDS AND VINEYARDS

Indicating farming
Notice **flat topography**-
absence of contour lines

Perennial river
Solid blue line
Permanent river

Non-perennial
Broken blue line
A **seasonal river**

Name of river

RIVER CHARACTERISTICS

The river shows signs of being in it's
lower course.

1. Braided steams
2. Marshes and swamps
3. Meandering
4. Lack of contour lines- flat gradient

SIGNS OF IRRIGATION

1. Pump- underground water
2. Voor- Canal- transporting water
3. Reservoir
4. Storage dams

Usually used by commercial farmers.
Commercial farmers produce a surplus
to be sold on the markets to generate
an income and ensure food security.

Dam wall indicates that water is flowing
from the North east and the damming up
from the direction where it flows, stopping
it from flowing out of the dam.

TRANSPORT ROUTES

1. Secondary roads
2. Other roads
3. Multiple track railway
4. Railway station

They provide accessibility to the
Town for services and delivery of
produce to the markets.

Windbreak: Trees planted in a row to
protect crops or sometimes to stop
erosion

Take note of East London's shape

It cannot follow the roughly circular patterns of most cities. As it has physical restrictions, i.e. the ocean.
The **Buffalo river** furthermore divides the city into north and south. Creating **transport restrictions**.

CBD

Transport routes converge here, making it **highly accessible**.
Major services found here.

High Socio-economic
Residential area, overlooking the ocean and large plots of land

Beach, Aquarium and caravan park
Indicating tourism

Coastal Rocks
Indicating rugged coastline

Lighthouse
Needed to regulate shipping

Harbour
Lends itself to **imports and exports**.
Boost the areas economy, as well as the secondary activities.
(Mercedes exports locally build C-class from this harbour to right hand drive countries.)

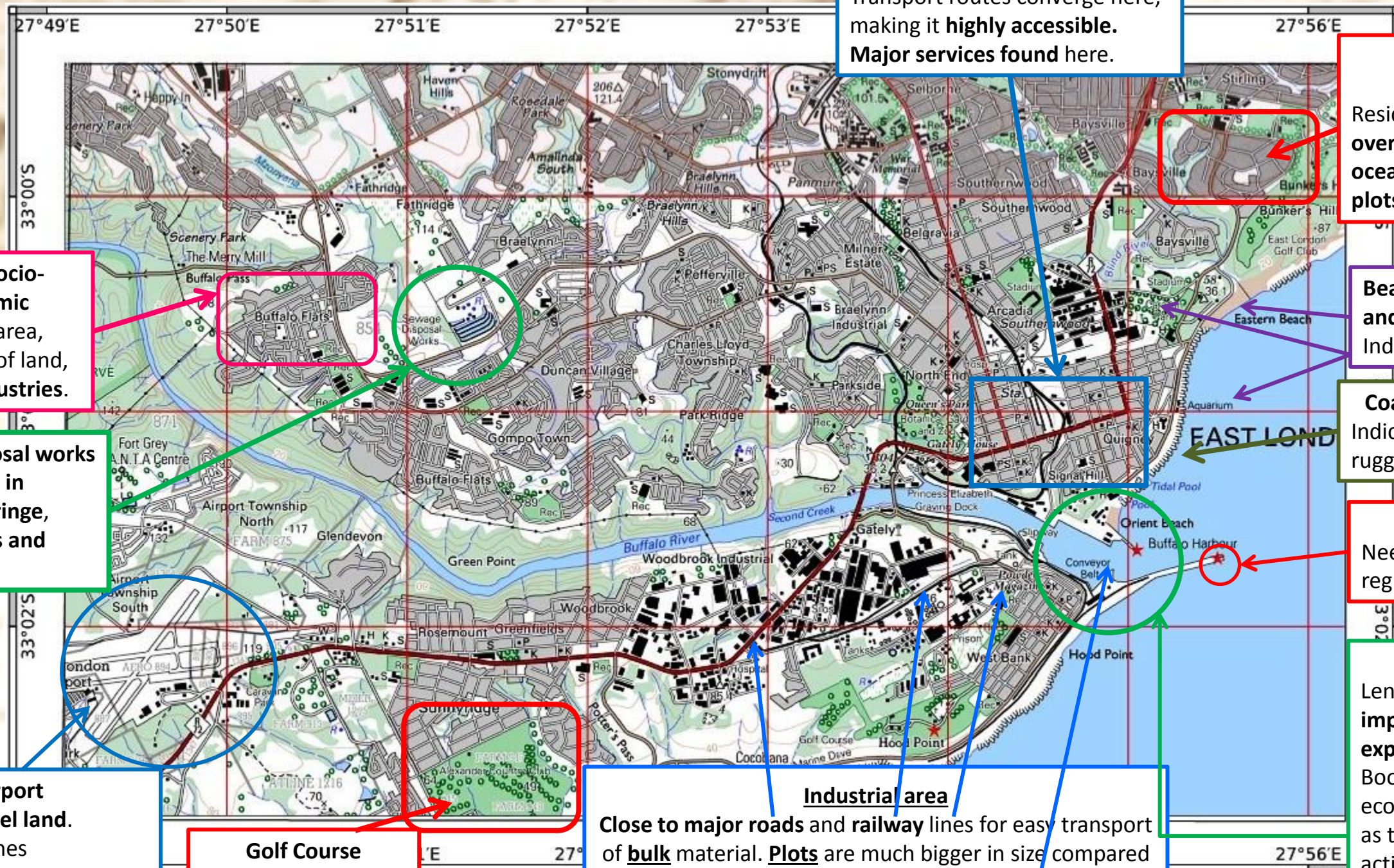
Lower Socio-economic
Residential area, **small plots** of land, close to industries.

Sewage disposal works
Usually found in **rural-urban fringe**, due to **smells and air pollution**

Airport
Always on **level land**.
No contour lines
Away from residential
Areas due to **noise pollution**

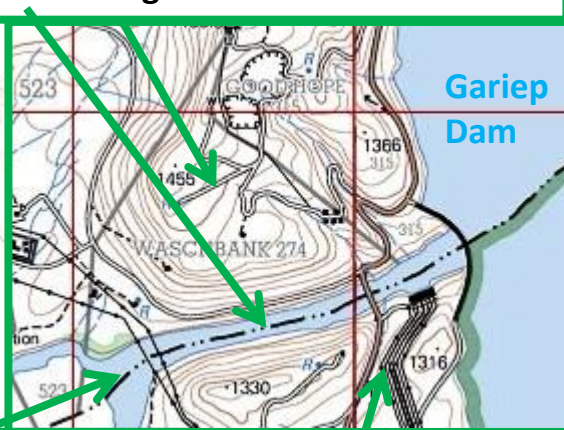
Golf Course
Form of **recreation**, found on outskirts of city due to extensive land usage

Industrial area
Close to **major roads and railway lines** for easy transport of **bulk** material. **Plots** are much bigger in size compared to residential areas. Also **close to the harbour**, for easy imports and exports. It also indicates that the **main economic activity** for the area might be industries. (secondary activities)



HERE ARE A FEW EXAMPLES ON INTERPRETING CONTOUR LINES AS WELL AS BOUNDARIES VISIBLE ON MAPS

Gariep Dam
Notice the two areas of concentrated contour lines, either side of the dam wall.
This allowed the engineers to construct a relatively short dam wall, that can store many millions of mega litres of water



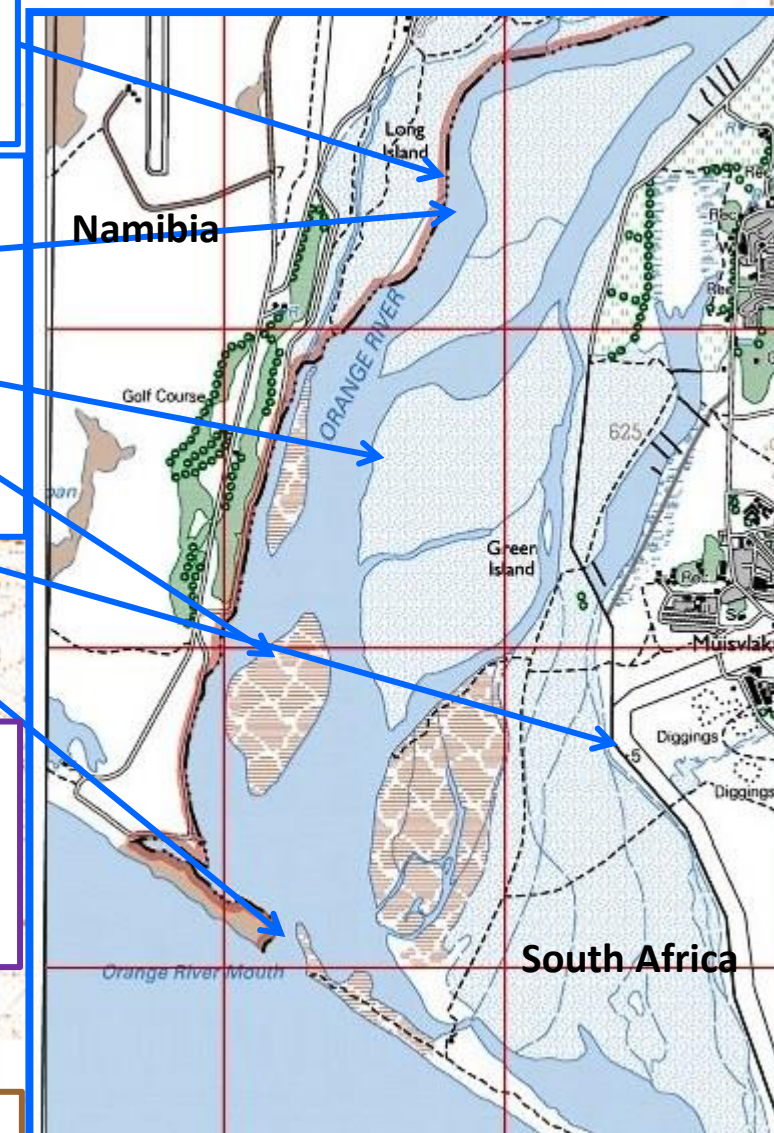
Relative flat topography of Interior of South Africa
result in dams that stretches over vast areas, increasing **high evaporation** from these dams

Gariep dam ensures water supply to places as far as the Eastern Cape via **pipelines and tunnels**

International boundary
Notice that this time the boundary is on the northern shore, thus the whole river belongs to SA

River features show characteristics of the lower course on Flat terrain
Meandering
Braided streams
Deposition of silt in its own course
River mouth
Total lack of contour lines
Note 5m spot height

Alexander Bay
Most western point of South Africa



Namibia

South Africa

Alluvial diamond diggings

Provincial boundary
In this case the middle of the river was used as the border

Generation of **hydro electricity**



Punto da Ouro
Means point of gold
Most eastern point of South Africa

Wetland Protection areas.
Very eco-sensitive & acts as natural purifiers for polluted water

Low lying topography creates lagoons.
Also causes swamps

Beit Bridge
Most northern South African border crossing



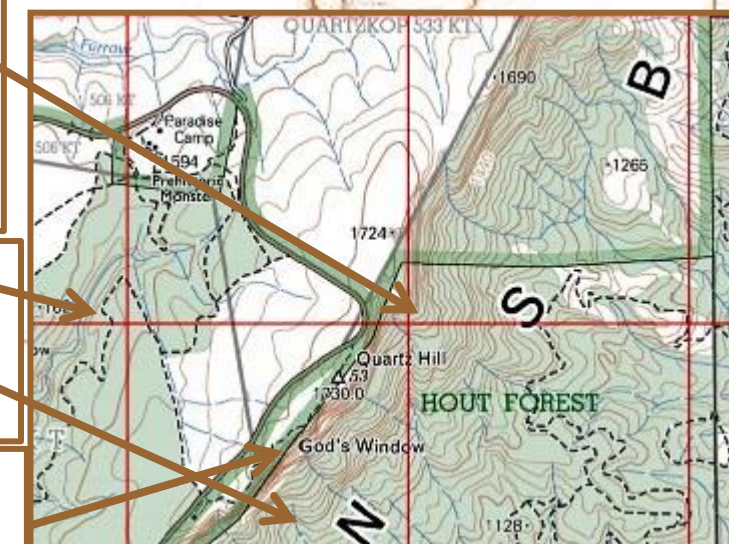
International boundary
We use the middle of the river as the border, Both countries have access to river

Notice many contour Lines creating the **Steep eastern Escarpment**. It also gives rise to **orographic rain**, when moisture laden air is forced to rise up the escarpment

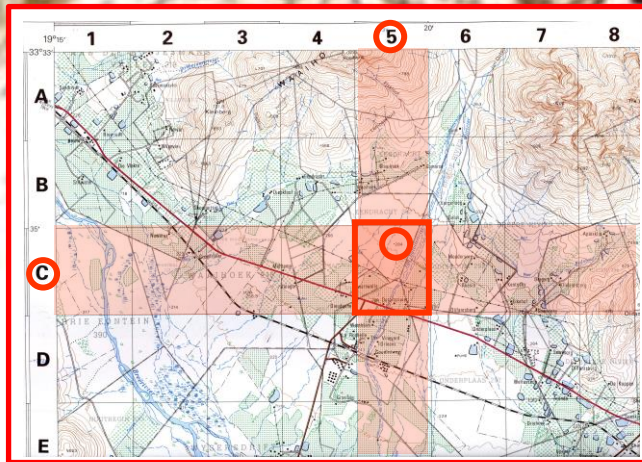
National Highway
The N1 runs from Beit Bridge To Cape Town

Slopes to steep for normal agricultural activities, therefore area and rainfall **used for forestry**

God's Window
Tourist attraction in Mpumalanga

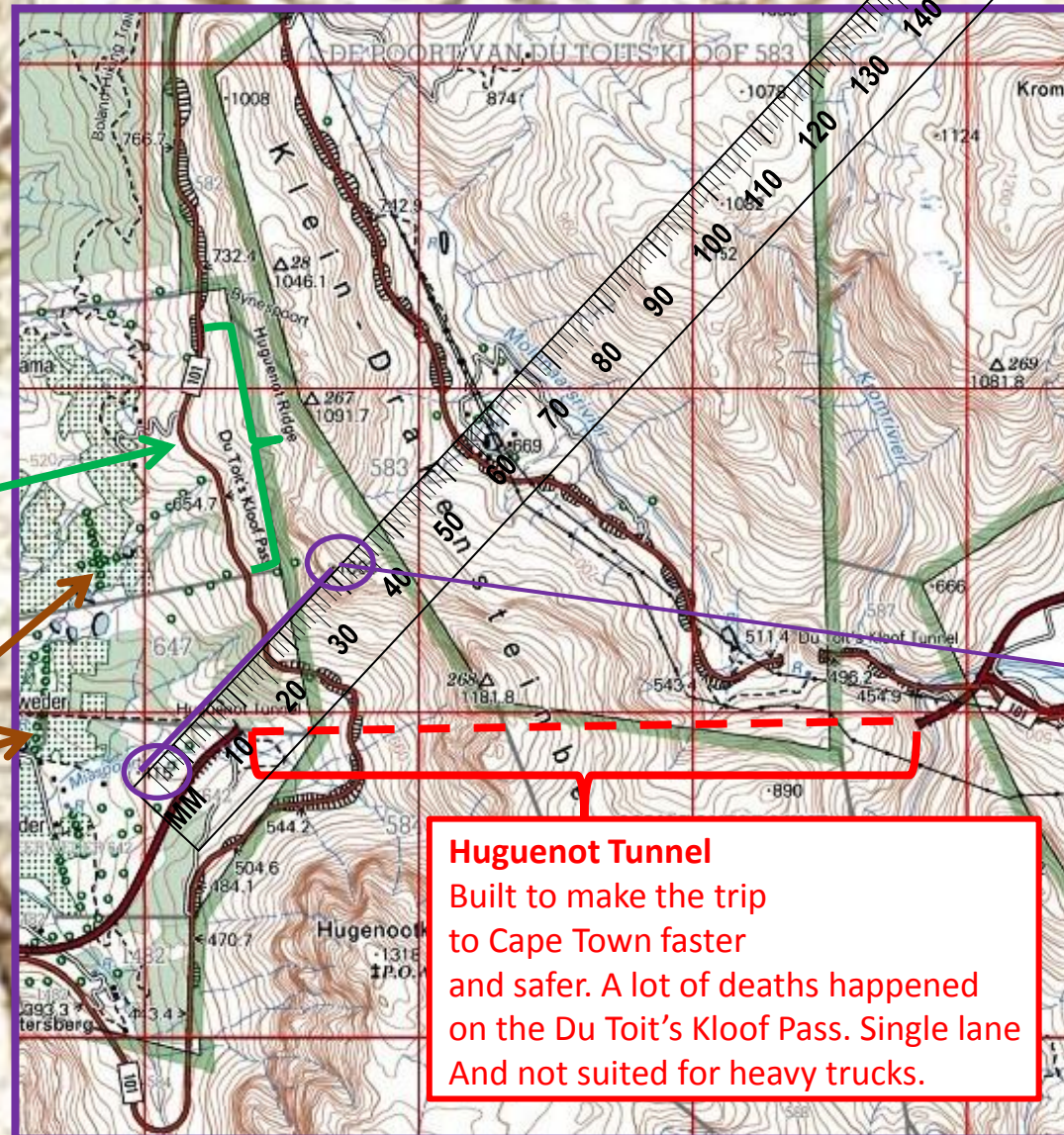


Find the spot height .284 found in Grid C-5 using the alpha-numerical method
 Step 1 C is in the left hand margin and symbolises latitude (**Always do latitude first**)
 Step 2 5 indicates longitude and is found in the top margin
 Where the two columns intersect, is where we find the grid C-5
 Only look in that grid for the spot height.



Notice how the road follows the contour lines.
 This makes the road less steep.
 Railway lines do the same.

The rows of trees form a windbreak. Protecting Crops from strong winds



Huguenot Tunnel
 Built to make the trip to Cape Town faster and safer. A lot of deaths happened on the Du Toit's Kloof Pass. Single lane And not suited for heavy trucks.

Calculate gradient from spot height .415 to spot height 1 003

$$\text{Gradient} = \frac{VI}{HE}$$

$$VI = 1\ 003 - 415 = 588\text{m}$$

$$HE = \frac{36\text{mm} \times \text{map scale } 1:50\ 000}{1\ 000 \text{ (convert mm's to m's)}}$$

$$HE = \frac{36 \times 50\ 000}{1\ 000} = 1\ 800\text{m}$$

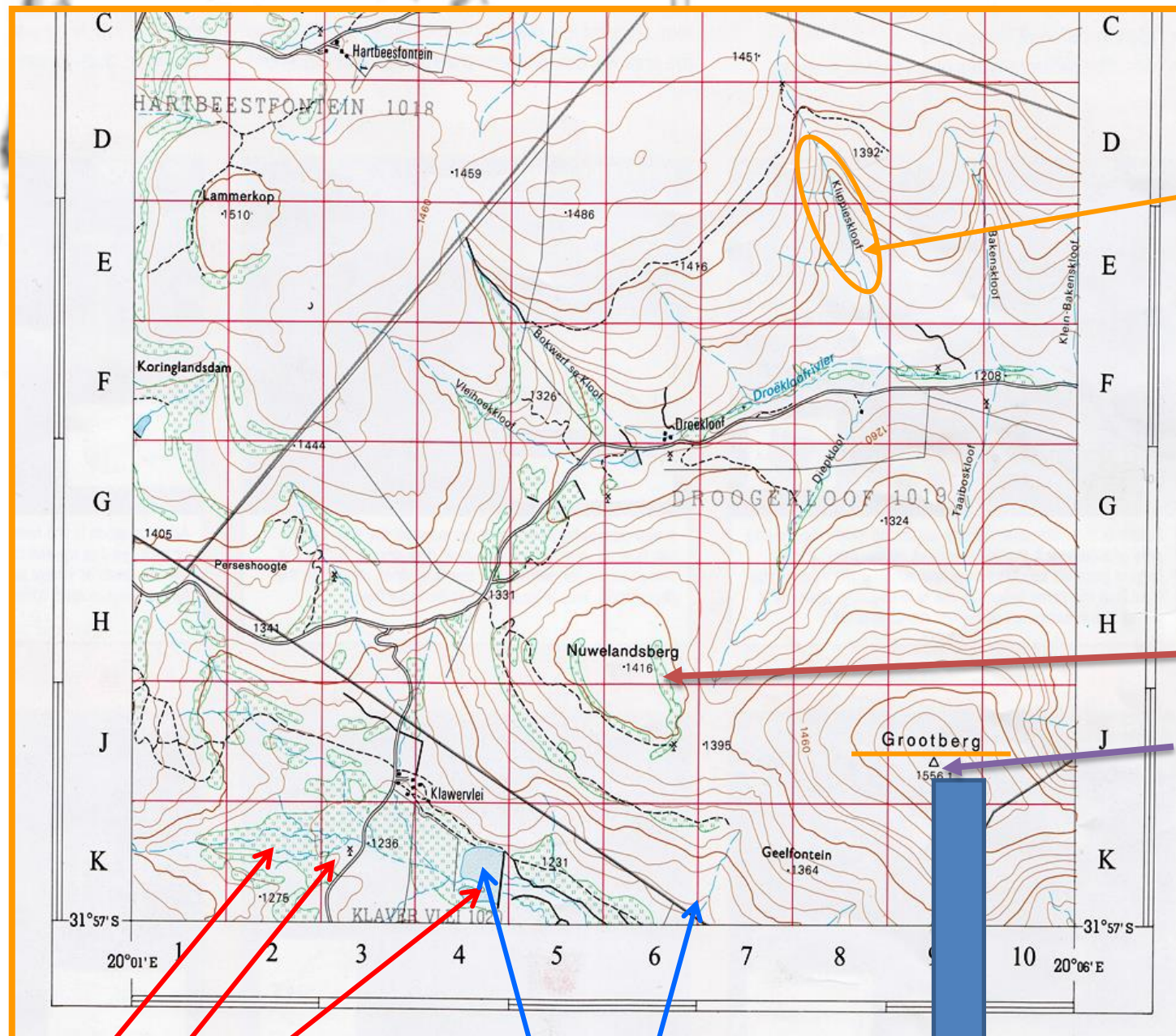
$$G = \frac{VI}{HE} = \frac{588}{1\ 800} = \frac{588}{588} = 1$$

Therefore Gradient = 1:3 (we round off)
 This is a very steep gradient, we will not be able to walk up this slope



Light house

Cape Agulhas
 Southern most point of Africa and therefore South Africa.
 This where the Indian ocean(east) and the Atlantic Ocean (west) meet



River valley

$VS = 10\text{mm} = 20\text{m}$
 $10\text{ mm} = 20\,000\text{mm}$
 $= 1:2000$

Spot height
 &
 Trigonometrical
 beacon. Indicating
 specific height

Cultivated land
 Windmill and
 Storage dam indicate
 irrigation

Storage dam and
 non-perennial streams
 indicate seasonal rainfall

Vertical Exaggeration = $\frac{VS}{HS}$

$$= \frac{1}{\frac{2\,000}{1}} = \frac{1}{50\,000} \times \frac{50\,000}{1} = \frac{50\,000}{2000} \quad VE = 25 \text{ times}$$

