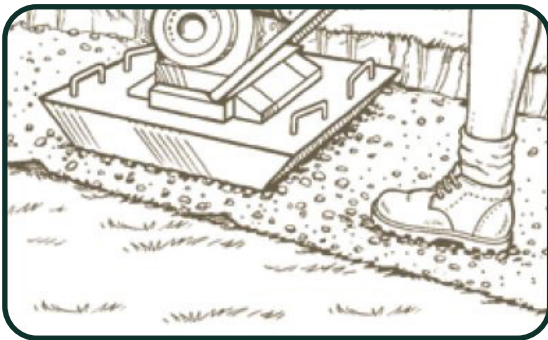


## Step 1: Planning your wall

When building a retaining wall there are a few things that you must consider before starting:

- Plan where you are going to build the retaining wall, the height and length, straight or curved, etc.
- Is the ground firm where the retaining wall will be built?
- Are there going to be any building, driveways, pools, etc. near the top of the retaining wall?
- In the area where the wall is to be built, is there any storm water drainage or underground water problems?
- Check with your local council to see if you require a permit, often this will depend on how high the wall will be.
- Don't try to cut corners. It is important that you build the wall properly. Make sure you fully understand all the steps.
- This is only a guide. If you don't understand each step seek advice from a professional.



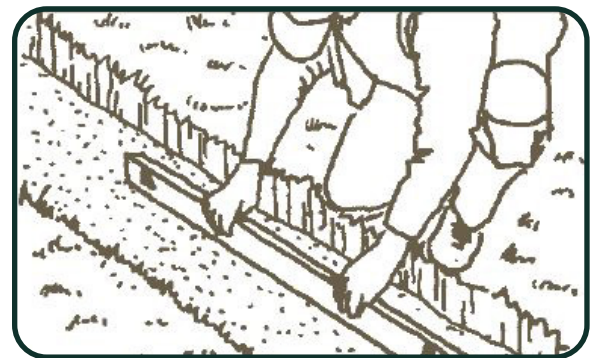
## Step 2: Foundation

The foundation should be compacted by several passes of a plate vibrator. In spots where there are significant vibrations, this indicates soft spots or ponding of ground water. This material should be removed and replaced with compaction material, foundation should not exceed 150mm thick.

## Step 3: Bearing pad

The face of the wall shall be built on a bearing pad, no less than 150mm thick and 300 – 600mm wide, consisting of one of the following options:

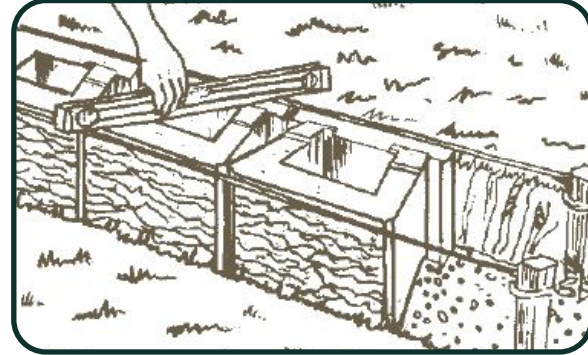
- Compacted road base
- Compacted crushed rock, well graded and without any clay content, compacted by a plate vibrator
- Cement stabilised crushed rock, with an additional 5% by mass of cement thoroughly mixed, moistened and compacted by a plate vibrator
- Lean-mix concrete with a compressive strength of no less than 15MPa.



## Step 4: First Course

Spread metal dust, 25mm thick, with an additional 5% by mass of cement over the compacted base. The first course is now bedded into the metal dust. The use of a level and string line is recommended to ensure that the first course is laid correctly. Make sure that each block is filled with free draining material, such as; blue metal, or crushed rock aggregate.

For walls less than 1 metre high, make sure at least 100mm of the first course blocks are buried below the finished ground level. For walls between 1 metre and 3 metres high allow 200mm.



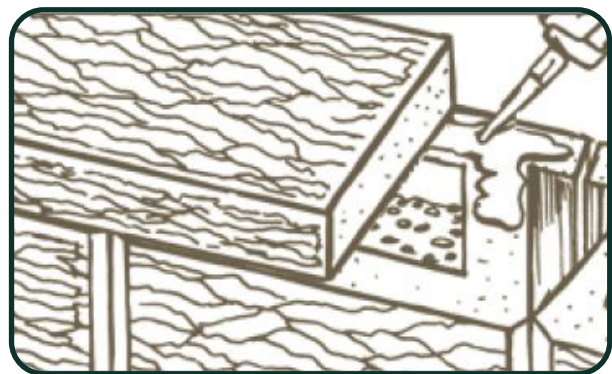
## Step 5: Drainage and back fill

Place agricultural pipe with geo textile sock behind the wall, with a 1 in 100 fall. Backfill behind the courses of blocks with a width of 300mm using 10 – 20mm free draining material. Ensure each block is also well filled with free draining material.

Backfill behind the drainage layer with the selected backfill material in a maximum of 200mm layers. Compaction rate of 95% must be achieved (use only hand operated plate compactors within 1 metre from the back of the wall). Do not use expansive clay to backfill. Be careful not to mechanically compact too close to the wall.

## Step 6: Laying additional courses

Clean the top of the wall to ensure that the next block is laid correctly. Ensure each block is filled with drainage material, and place the next course on top. Place the drainage material behind the blocks to 300mm. stack units, placing drainage material and compact backfill for each block layer until the wall is complete.



## Step 7: Capping units

Once cleaning and backfilling is completed, fix the capping blocks with cement based flexible adhesive.

