STONE PITCHED CONTOUR BUND

This measure involves construction of horizontal lines of stone pitched contour bunds across the sloping land surface. Contour bunding is practiced to intercept the runoff flowing down the slope by an embankment with either open or closed ends to conserve moisture as well as to reduce erosion. The land treatment in between the bunds is desirable for uniform conservation of moisture. The practice of contour bunding is found to increase crop yield by about 15-20 per cent.

Objectives

1. To increase the time of concentration of rainwater where it falls and thereby allowing rainwater to percolate into the soil
2. Converting a long slope into several ones so as to minimize velocity and thereby reducing the erosion by runoff water
3. To divert runoff for water harvesting purposes

The term contour bunding used in India is same as “level terraces” and “ridge type terraces”. The bund acts as barrier to the flow of water and at the same time impound water to build up soil moisture storage. The spacing of bunds is so arranged that the flowing water is intercepted before it attains the erosive velocity. The vertical interval between the two bunds is determined by the following formula:

Ramser’s formula

V.I. = 0.3 (S/3 + 2) Where, S = Degree of slope in percent V.I. = Vertical interval between two bunds,

The spacing is increased by 25% in highly permeable soils and decreased by 15 percent in poorly permeable soils. It is always desirable to remove local ridges and depressions before building contour bunds.

Contour Bunds: DO's and DONT's

i. Always provide a berm (distance from excavated portion to bund) of minimum 30 cm.
ii. Always provide a settlement allowance of 10-15% depending on soil type.
iii. Exit must be provided in sloping land and in impermeable soils, depending on site conditions.
iv. In impermeable soils increase the cross section area of bunds.
v. Do not start the lay-out of bunds from the shorter section. Always begin from the longest section within the largest area of uniform slope.
vi. Do not make bunds on slopes higher than 10%. On relatively high slopes do not make bunds closer than 30 m.
vii. On low slopes do not make bunds farther than 60 m.

viii. Do not construct bunds where there is already dense vegetation.

ix. Do not excavate if roots of a tree are encountered

x. Do not excavate soil continuously in permeable soils.

DETAILED ESTIMATE FOR STONE PITCHED CONTOUR BUND

Description of Work	Rate	Amount
Contour bunding with dry rubble, granite, or jungle stone laying and filling the uphill portion with uniform slope earth packing etc. complete pitching the stone with a slope of 1:3 to 1:5, 1 m height and top width 50 cm. (using 15 cm, 20cm thick quarried stone) Man days required for 100 m^2 1man complete 1.67225 m^2/day	$\frac{1 \text{ man} \times 140 \text{ m}^2}{1.67225 \text{ m}^2}$	59.799 man days for 100 m^2
Amount required for completing 100 m^2 contour bund @ Rs. 168/ day	**59.799 x 168= 10046.23** **Say Rs. 10046/ 100 m^2**	