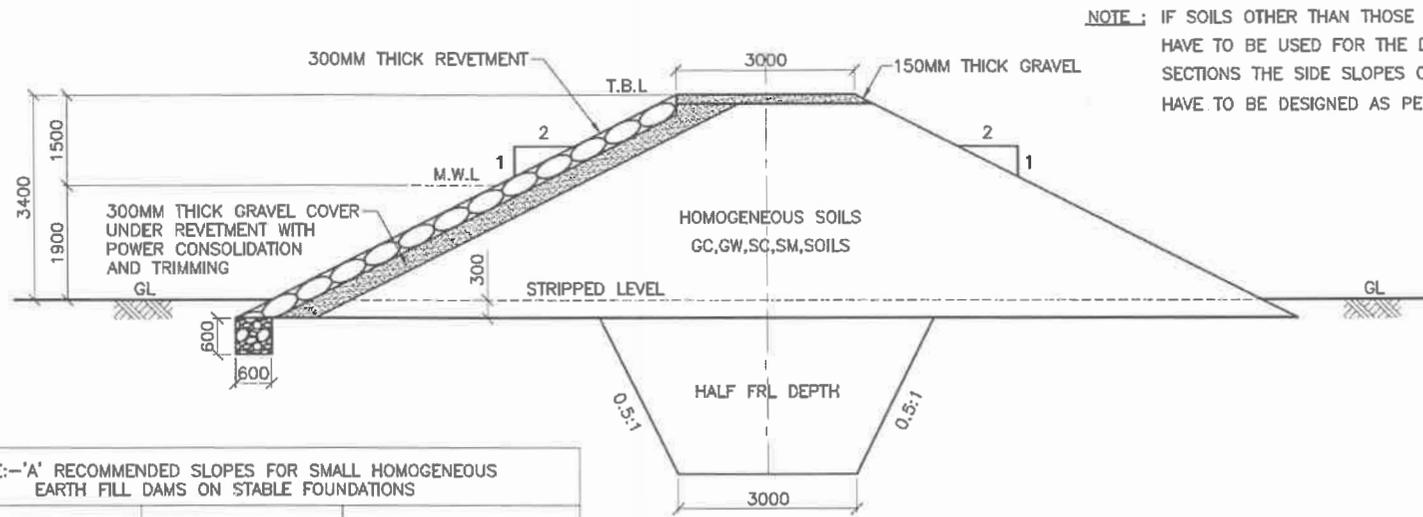


**EARTH DAM SECTION 0.0 TO 3.4M HEIGHT**

**ANNEXURE-I**



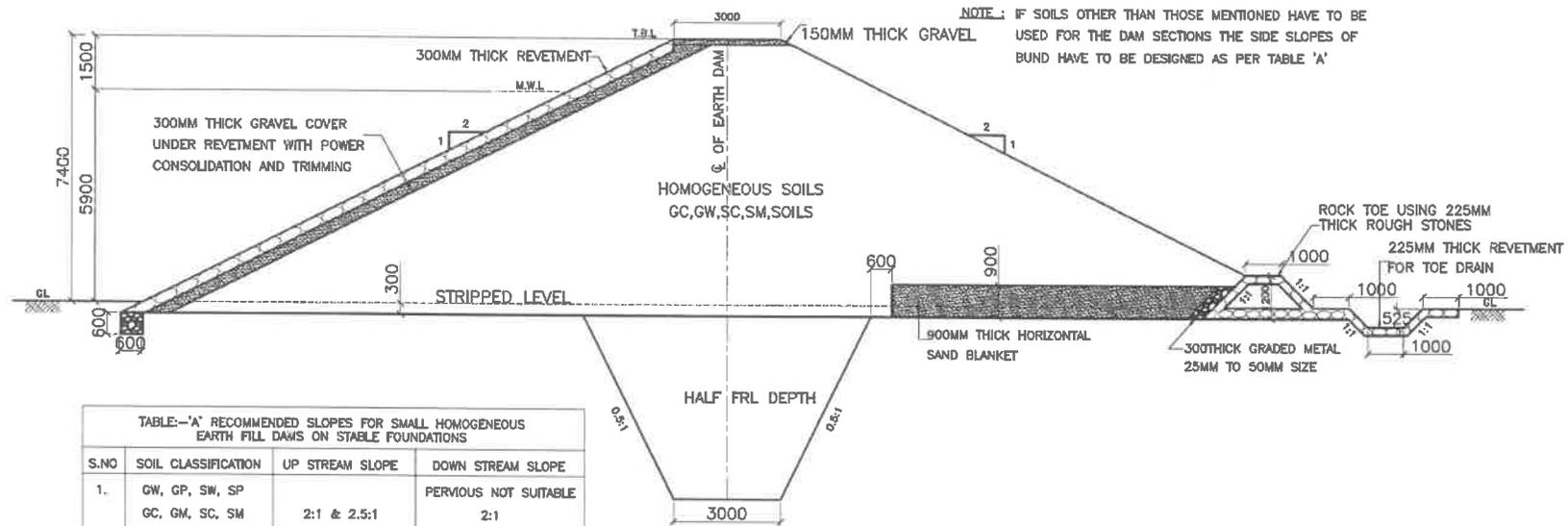
**NOTE :** IF SOILS OTHER THAN THOSE MENTIONED HAVE TO BE USED FOR THE DAM SECTIONS THE SIDE SLOPES OF BUND HAVE TO BE DESIGNED AS PER TABLE 'A'

**TABLE:--'A' RECOMMENDED SLOPES FOR SMALL HOMOGENEOUS EARTH FILL DAMS ON STABLE FOUNDATIONS**

S.NO	SOIL CLASSIFICATION	UP STREAM SLOPE	DOWN STREAM SLOPE
1.	GW, GP, SW, SP		PERVIOUS NOT SUITABLE
	GC, GM, SC, SM	2:1 & 2.5:1	2:1
2.	CL, GM, SC, SM	2.5:1 & 3:1	2.5:1
	CH, MH	3:1 & 3.5:1	2.5:1

## EARTH DAM SECTION 3.5M TO 7.4M HEIGHT

## ANNEXURE-II



S.NO	SOIL CLASSIFICATION	UP STREAM SLOPE	DOWN STREAM SLOPE
1.	GW, GP, SW, SP GC, GM, SC, SM	2:1 & 2.5:1	PERVIOUS NOT SUITABLE 2:1
2.	CL, CM, SC, SM CH, MH	2.5:1 & 3:1 3:1 & 3.5:1	2.5:1 2.5:1

### EARTH DAM SECTION 7.5M TO 10.4M

### ANNEXURE-III

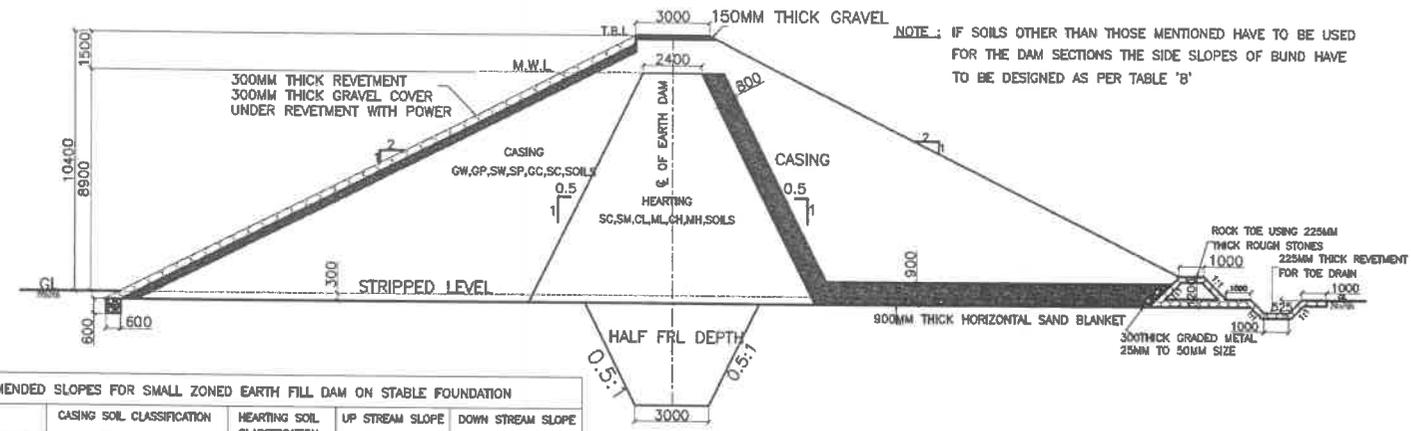
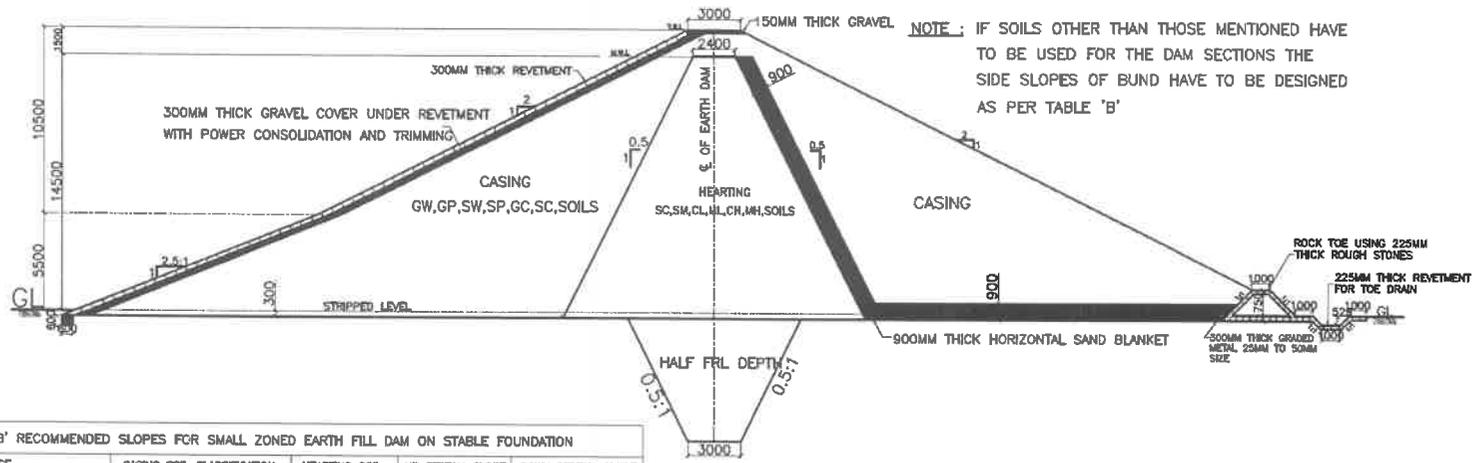


TABLE: - 'B' RECOMMENDED SLOPES FOR SMALL ZONED EARTH FILL DAM ON STABLE FOUNDATION

S.NO	CASE	CASING SOIL CLASSIFICATION	HEARTING SOIL CLASSIFICATION	UP STREAM SLOPE	DOWN STREAM SLOPE
1.	ZONEL SECTION WITH 0.5:1 SLOPES FOR HEARTING SOILS	GW, GP, SW (GRAVELLY) SP (GRAVELLY) GC, SC	SC, SM, CL ML, CH, MH	2:1	2:1
2.	ZONEL SECTION WITH 1:1 SLOPES FOR HEARTING SOILS	GW, GP, SW (GRAVELLY) SP (GRAVELLY) GC, SC	CL, ML CH, MH	2.5:1 3:1	2.5:1 3:1

### EARTH DAM SECTION 10.5M TO 16.0M

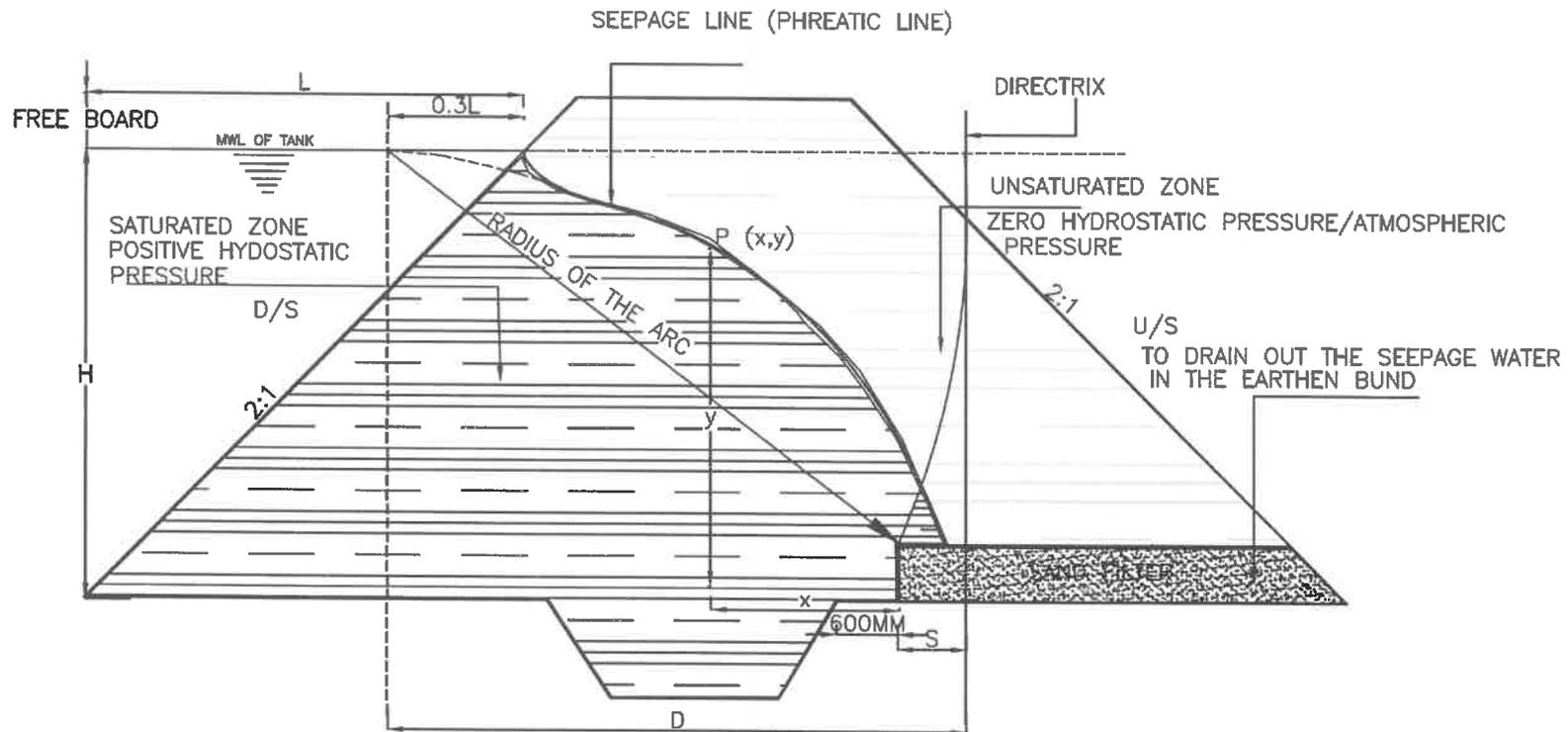
### ANNEXURE-IV



**TABLE-'B' RECOMMENDED SLOPES FOR SMALL ZONED EARTH FILL DAM ON STABLE FOUNDATION**

S.NO	CASE	CASING SOIL CLASSIFICATION	HEARTING SOIL CLASSIFICATION	UP STREAM SLOPE	DOWN STREAM SLOPE
1.	ZONEL SECTION WITH 0.5:1 SLOPES FOR HEARTING SOILS	GW, GP, SW (GRAVELLY) SP (GRAVELLY) GC, SC	SC, SM, CL ML, CH, MH	2:1	2:1
2.	ZONEL SECTION WITH 1:1 SLOPES FOR HEARTING SOILS	GW, GP, SW (GRAVELLY) SP (GRAVELLY) GC,SC	CL, ML CH, MH	2.5:1 3:1	2.5:1 3:1

TYPICAL HOMOZENIOUS CROSS SECTION OF EARTHEN BUND



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- NOTE:-
- 1) SEEPAGE LINE IS WITH IN THE BUND SECTION BELOW WHICH THERE ARE POSITIVE HYDROSTATIC PRESSURE THE HYDROSTATIC PRESSURE ON THE SEEPAGE LINE IS ZERO/ATMOSPHERIC PRESSURE.
  - 2) Seepage through bund section  $q = k \cdot e = k \cdot \sqrt{D^2 + H^2} - D$ ,  $k =$  coefficient of permeability of the earth,  $s =$  focal distance
  - 3) SEEPAGE THROUGH BUND SECTION WILL BE DRAIN OUT FROM SAND FILTER AND TOE DRAINS.
  - 4) IN THE ABSENCE OF ANY SAND FILTER OR TOE DRAINS, THE SEEPAGE LINE WILL CUT THE DOWN STREAM SLOPE AT SOME POINT ABOVE THE BASE OF THE BUND, LEADS TO SLIDING OF D/S SLOPE
  - 5) TOP OF THE SEEPAGE LINE =  $y = \sqrt{2sx + s^2}$   $y =$  vertical distance at P,  $x =$  horizontal distance at p,  $s =$  focal distance