QNO. 1

(a) Define reservior also explain which type of reservior will be more economical and why

Definition of Reservior..

> the reservior which place where large amount of water get stored.

it is also be used to describe great amount of other things such as when o refer to a trivia expert as reservior of use less knowledge

Lake

Lake naturally occer body of water

(2) In hilly areas the chances of rain is maximum because of high altitude So if we construct earth fill embankment dam the capacity of intensity of rain will damage its down of earth fill dam So because of this reason I will suggest to construct rock fill dam in hilly area.

(b) Which type of embankment you will Suggest in a hilly area and why?

ANS

• I will Suggest rock fill embankment dam for hilly an because.

(i) rock fill embankment dam is constructed from Impervious material Such masonery, Concrete. Asphaltic concrete, sheet of steel piller. timber and other material and transition layer. because the Impervious membrane is employed as the water proof and can be placed either within the embankment are on the upstream Slope.

Reservior:-

reservior is artificial.

reservior are more economical than other.

(i) the reservior perform Sereal function including ensuring Sufficient head of water in the distribution System of water

(ii) Service reservior provide water capacity to even out of peak demand from consumer

(iii) Service reservior also reduce the cost of pumping between Service reservior constructed at high location elevation.

Q No. 2

ANS

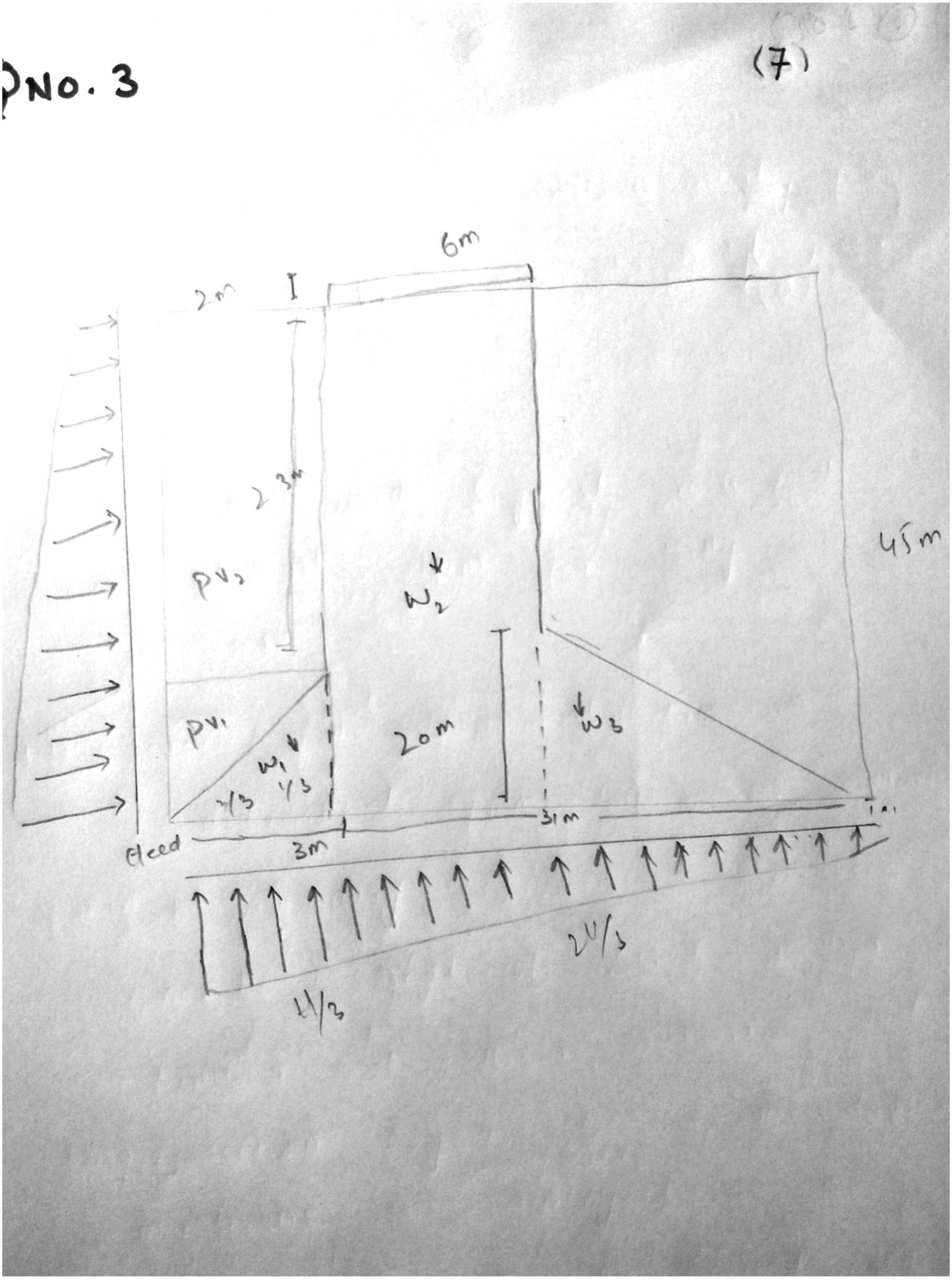
Types of Spillways

1. Straight drop Spillways
2. ogee Spill way
3. Shaft Spill way
4. chute Spill way
5. Side channel Spillway
6. Siphen spillway
7. Labyrinth Spill way

In the condition where freezing point is less then -10 Centegrade or writers the most efficient spill way dispose water from upstream to dow stream through steep sloped open channel so that the flow will open ver fast the flowing water pressure will be high and will be in supercritical condition that will dissipate energy

from the falling water energy dissipate
are also provided in this type of spillway
this the temp of water go freez
and hight and will not allow water
to freeze and stop so the water
will move freely in this cold area.

NO. 3



Force	Forces calculation	Fv (kN)	FH	lever m	Mr	Mo
W	1/2 x 3 x 20 x 24	720		31 + 3/x 1/8 = 37	23040	
w	6 x 45 x 74	6480		25 + 6/2 = 28	181440	
w	1/2 x 25 x 35 x 24	10500		31 x 2/3 = 21	230500	
Pv1	1/2 x 3 x 20 x 10	300		31 + 3 x 2/3 = 33	9100	
Pv2	3 x 23 x 10	690		31 + 3/2 = 32.5	22425	
PH	- 1/2 x 34 x 42 x 10	-7140		33 x 2/3 = 22		157080
PH	43²/2 x 60		-9254	43/3 = 14.33		
		ΣFv = 11550	ΣFH 9245			ΣMo 289560 .85

$$e = B/_2 - \bar{x}$$

$$\bar{x} = \frac{\Sigma M_1 - \Sigma M_0}{\Sigma FV}$$

$$\bar{x} = \frac{457305 - 2894560.85}{11550}$$

$$\bar{x} = 14.52$$

$$e = 34/_2 - 14.52 = 17 - 14.52 = 2.48$$

Factor of Safety for tens. cr

$$e < B/6.$$

$2.48 < 5.67$ clear in tension

Stress Wheel > 0

$$Y = \Sigma FV/_{1B}\left(1 \pm \frac{6e}{B}\right)$$

$$Y_{toe} = \Sigma Fv/_{13}\left(1 + 6e/_{B}\right)$$

$$Y_{toe} = \frac{11550}{34}\left(1 + 6\frac{x2.48}{34}\right)$$

$$Y_{toe} = (339.71)(1.48)$$

$$\boxed{Y_{toe} = 502.778}$$

$$Y_{heel} > 0$$

$$Y_{heel} = \frac{11550}{34}\left(1 - \frac{6 \times 2.48}{34}\right)$$

$$Y_{heel} = (339.71)(1 - 0.44)$$

$$Y_{heel} = (339.71)(0.56)$$

$$Y_{heel} = 190.24 \text{ ok Safe}$$

Factor of Safety against overturning

$$\frac{\Sigma M_r}{\Sigma M_o} > 2$$

$$\frac{457305}{289560.85} > 2 \qquad \Sigma M_r > \Sigma M_o$$

$$457305 > 289560.85$$

$1.58 < 2$ (Not Safe)

$\Rightarrow$ F.O.S against Sliding

$$\frac{\mu \Sigma F_v + B \times q}{\Sigma F_H} > 1$$

$$\frac{(0.7)(11550) + (34)(1400)}{9245} > 1$$

$6.02 > 1$ (ok Safe against sliding)