

**Model estimate of roof top rain water harvesting scheme for 10000 litre capacity  
reservoir (R.C.C) under NREGA**

**Calculation of Quantities of different Items.**

Sl. No.	Description of Item	No.	Length	Breadth	Height	Quantity	Total Quantity
1	Earthwork in excavation (ordinary mixed soil) in foundation as required complete @ 2.49 m <sup>3</sup> / male USK & 2.12 m <sup>3</sup> / female USK		PI x 2.050 x 0.600 x 0.450 =			1.739 m <sup>3</sup>	<b>1.739 m<sup>3</sup></b>
2	Cement Concrete (1:4:8) to foundation and below reservoir bed. @ 2 skilled & 3 unskilled / 2 m <sup>3</sup> (i)		PI x 2.050 x 0.600 x 0.150 =			0.580 m <sup>3</sup>	<b>0.852 m<sup>3</sup></b>
	(ii)		PI x (2.150) <sup>2</sup> x 0.075/4 =			0.272 m <sup>3</sup>	
3	Brickwork with Cement Mortar(1:4) in foundation and plinth @ 1 skilled & 2 unskilled / 1.1 m <sup>3</sup> (i)		PI x 2.275 x 0.375 x 0.750 =			2.010 m <sup>3</sup>	<b>3.848 m<sup>3</sup></b>
	(ii)		PI x 2.400 x 0.250 x 0.975 =			1.838 m <sup>3</sup>	
4	Earth filling above G.L. (i)		PI x (1.900) <sup>2</sup> x 0.450 /4=			1.276 m <sup>3</sup>	<b>3.817 m<sup>3</sup></b>
	(ii)		PI x (2.150/4) <sup>2</sup> x 0.70 =			2.541 m <sup>3</sup>	
5	Silversand filling below P.C.C		PI x (2.150) <sup>2</sup> x 0.20 / 4			0.726 m <sup>3</sup>	<b>0.726 m<sup>3</sup></b>
6	75 mm thick R.C.C.(1:2:4) work @ 2 skilled & 3 unskilled / 2 m <sup>3</sup> (i) At bottom of tank		PI x (2.650) <sup>2</sup> x 0.075 /4=			0.414 m <sup>3</sup>	<b>2.074 m<sup>3</sup></b>
	(ii) At circumference		PI x 2.575 x 0.075 x 2.200 =			1.335 m <sup>3</sup>	
	(iii) At top		PI x (2.875) <sup>2</sup> x 0.050 / 4 =			0.325 m <sup>3</sup>	
7	Centring and shuttering complete @ 2 skilled and 1 unskilled / 14 m <sup>2</sup>	2	PI x 2.575 x 2.200 =			35.59 m <sup>2</sup>	<b>42.08 m<sup>2</sup></b>
		1	PI x (2.875) <sup>2</sup> / 4 =			6.49 m <sup>2</sup>	
8	Steel cutting, bending binding and fixing as per drawing and specification complete. (i) 8 mm dia		8x(2.482+2.427+2.332+2.193+2.00+1.735+1.356+0.700)+4x2.500 = 115.8 m = 45.16 kg			45.16 kg	<b>132.08 kg</b>
	(ii) 10 mm dia		42 x 2.200 = 92.400 m = 57.30 kg			57.30 kg	
	(iii) 6 mm dia		16 x 8.418 = 134.68 m =29.62 kg			29.62 kg	
9	12 mm thick plastering (1:4) (i) Internal & External surface	2	PI x 2.575 x 2.200 =			35.59 m <sup>2</sup>	<b>53.00 m<sup>2</sup></b>
	(ii) At Tank bed	1	PI x (2.500) <sup>2</sup> / 4 =			4.91 m <sup>2</sup>	
	(iii) Plaster on Brick work	1	PI x 2.650 x 1.50 =			12.49 m <sup>2</sup>	
10	Neat cement punning (i) Inner surface	1	PI x 2.500 x 2.200 =			17.28 m <sup>2</sup>	<b>22.19 m<sup>2</sup></b>
	(ii) Tank bed	1	PI x (2.500) <sup>2</sup> / 4 =			4.91 m <sup>2</sup>	

## Total Labours Required

Sl. No.	Items	Quantity of work	Unit	Skilled (Nos)	Semi Skilled (Nos)	Unskilled (Nos)
1	Earthwork in excavation (ordinary mixed soil) in foundation as required complete	1.739	m3	0	0	1
2	Cement Concrete (1:4:8) to foundation and below reservoir bed. @ 2 skilled & 3 unskilled / 2 m3	0.852	m3	1	0	1.5
3	Brickwork with Cement Mortar(1:4) in foundation and plinth @ 1 skilled & 2 unskilled / 1.1 m3	3.848	m3	3.5	0	7
4	Earth filling above G.L.(compacting every 150 mm height)	3.817	m3	0	0	2
5	Silversand filling below P.C.C	0.726	m3	0	0	0.3
6	75 mm thick R.C.C.(1:2:4) work @ 2 skilled & 3 unskilled / 2 m3	2.074	m3	2	0	3
7	Centring and shuttering complete @ 2 skilled and 1 unskilled / 14 m2	42.08	m2	6	0	3
8	Steel cutting, bending binding and fixing as per drawing and specification complete. ( 3 skilled & 2 unskilled per 220 kg)	132.08	kg	1.8	0	1.2
9	12 mm thick plastering (1:4), ( 2 skilled & 3 unskilled per 18 m2)	53.00	m2	6	0	9
10	Neat cement punning ( 2 skilled & 1 unskilled per 50 m2)	22.19	m2	1	0	0.5
<b>Total =</b>				21.3	0	28.5
				( Say 22 Nos.)		(Say 29 Nos.)

## A. Wage Components

29 Nos. of Unskilled labour @ Rs. 100/- = **Rs. 2900.00**

## Calculation of required materials.

Sl. No	Description	Quantity	Rate	Amount (Rs.)
1	Cement	33 Bags	275/- per bag	9075.00
2	Sand (medium)	3.40 m3	610/- per m3	2074.00
3	Brick	1500 Nos	4.40/- per no.	6600.00
4	Fine Sand	0.726 m3	200/- per m3	145.00
5	5/8" Stone Chips	2.70 m3	1216/- per m3	3283.00
6	Steel (i) 6 mm dia	29.62 kg	46.75 per kg	1385.00
	(ii) 8 mm dia	45.16 kg	46.75/- per kg	2111.00
	(iii) 10 mm dia	57.30 kg	46.75/- per kg	2679.00
7	Binder Wire	3.0 kg	25/- per kg	75.00
8	Bib Cock	1 pc	45/- per pc.	45.00
9	3" dia pipe	140 rft	30/- per rft	4200.00
10	Valve	1 pc	900/- per pc.	900.00
11	M - Seal			50.00
12	Cico			300.00
13	Filter Bucket	1 No.	150 per No.	150.00
14	T- Pipe, Bend	2 pcs	100/- per pc	200.00
15	Iron Clamp for fitting gully & outlet pipe			500.00
16	Hiring plank for shuttering and centring works	42.08 m2	35/- per m2	1473.00
<b>Total Material Cost =</b>				<b>35245.00</b>

## **B. Non Wage Component**

(i) Wage of Supervisor 1 no. ( Semi Skilled labour)	150.00
(ii) Wage of Skilled labour (22 Nos @ Rs. 200/- per Skilled labour)	4400.00
(ii) Material Cost	35245.00
(iii) Work site facilities (a) Shed	200.00
(b) First Aid Box	100.00
© Water pot & Jug	250.00
(d) Display board	500.00
<b>Total Non Wage Cost =</b>	<b>40845.00</b>

**Total Project Cost = ( A +B) = (Rs.2900 + Rs.40845) = Rs.43745.00**

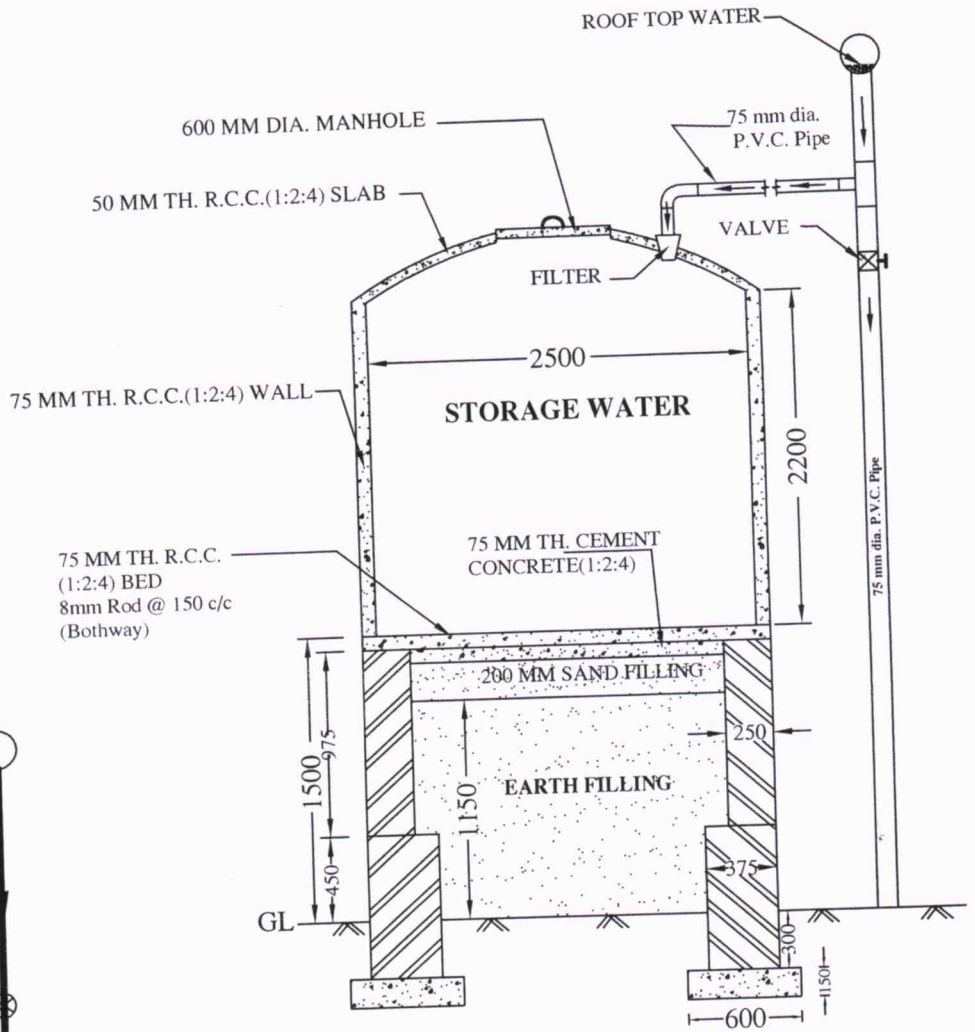
**( Rupees Forty Three Thousand Seven Hundred and Forty Five only)**

  
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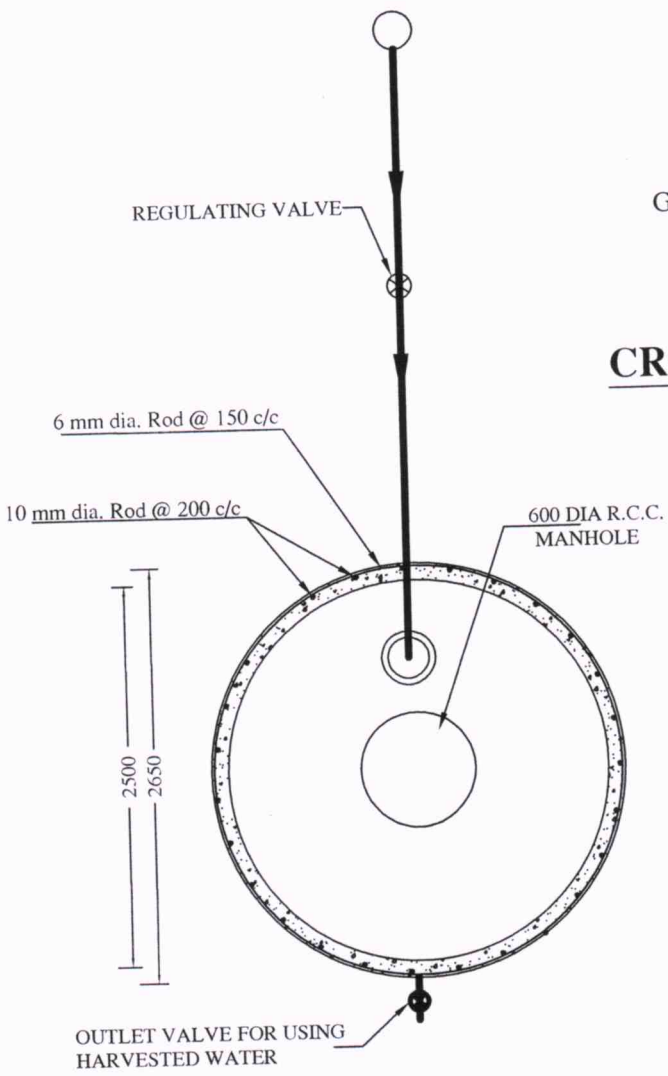
Prepared By

  
05-02-2010  
ASSISTANT ENGINEER  
DIST. NREGA CELL  
NADIA

Vetted By



**CROSS SECTION OF STORAGE TANK**  
**( 10,000 Litres Capacity)**  
**NOT TO SCALE**



**PLAN OF STORAGE TANK**  
**NOT TO SCALE**

Note: All dimensions are in millimeter (If not specified)

**PLAN & SECTION OF STORAGE TANK**  
**( 10,000 Litres Capacity)**

**ROOF TOP RAIN WATER HARVESTING**

*[Signature]*  
 05-02-2010  
 Asst. Engineer  
 Dist. NREGA Cell

**DRAWN & CHECKED BY**                      **APPROVED BY**