

DESIGN & DRAWING OF RCC WATER HARVESTING DAM

Table of Contents

| Sr.No. | Particulars | Page No. |
|--------|--|----------|
| 1. | Design Data of RCC WHS | 1-2 |
| 2. | Storage Capacity | 2 |
| 3. | Detailed Estimate of Dam Body | 3-4 |
| 4. | Calculation of MS Bar & Material | 5 |
| 5. | Cost Analysis of Dam Body | 6-7 |
| 6. | Detailed Estimate of Intake Structure | 8 |
| 7. | Material Statement of Intake Structure | 8 |
| 8. | Cost Analysis of Intake Structure | 9 |
| 9. | Detailed Estimate of Crate Wire Structure | 10 |
| 10. | Material Statement of Crate Wire Structure | 10 |
| 11. | Cost Analysis of Crate Wire Structure | 11 |
| 12. | X-Section | 12 |
| 13. | Plan | 13 |
| 14. | Section AB | 14 |
| 15. | Summary of Cost | 15 |

Typical Design of Reinforced Cement Masonry Water Harvesting Structure

I. Brief Summary of Structure

| | | |
|--|---|-------------------|
| • Mean annual rain fall | : | 1000 mm |
| • Catchment area | : | 225 ha |
| • Type of Structure proposed | : | RCC WHS |
| • Peak Discharge | : | 29 Cum/Sec |
| • Depth of foundation below NSL | : | 1.75 m |
| • Height of water harvesting structure above NSL | : | 7.50 m |
| • Net height | : | 5.50 m |
| • Top Width | : | 0.75 m |
| • Base Width | : | 3.50 m |
| • Drop of Dam | : | 5.50 m |
| • Spillway Length | : | 8.50 m |
| • Height of Weir | : | 1.60+0.40 =2.00 m |
| • Apron Length | : | 11.00 m |
| • Thickness of Base Slab | : | 0.50 m |

II. Hydrological Data

| | | |
|------------------------|---|--|
| • Catchment Area | : | 225 ha |
| • Type of Soil | : | Loamy Sand to Sandy Loam with Gravels |
| • Elevation difference | : | 80.0 m |
| 1. Bed level R.L | : | 102.00 |
| 2. Average rainfall | : | 1000 mm/year |
| 3. Peak discharge | : | Q=CIA /360 |

$$C=0.33$$

$$I=140 \text{ mm/hr}$$

$$A=225 \text{ ha}$$

$$\frac{CIA}{360} = \frac{0.33 \times 140 \times 225}{360} = \frac{10395}{360} = 28.88 \text{ Say } 29 \text{ cum}$$

III. Hydraulic Data

▪ Design of spillway

$$Q= 1.711 LH^{3/2}$$

$$L = \frac{29}{1.71 \times 1.60^{3/2}} = 8.38 \text{ Say } 8.50 \text{ m}$$

$$\text{Designed crest length} = 8.50 \text{ m}$$

$$\text{Height of the weir} = 1.60 \text{ m}$$

$$\text{Free board} = 0.40 \text{ m}$$

- **Apron Length**

$$=2.28H + 1.18 F$$

$$=2.28 \times 1.60 + 1.18 \times 6 \text{ m}$$

$$=3.65 + 7.08 = 10.73 \text{ Say } 11 \text{ M}$$

- **Base Width**

$$\frac{f}{\sqrt{\delta}} = \frac{5.50}{\sqrt{2.4}} = \frac{5.50}{1.55} = 3.55 \text{ Say } 3.50 \text{ m}$$

IV. Storage Capacity

| RL | HT | Area in Sq m | Average Area Sq m | Volume m ³ | Cumulative volume m ³ |
|---------|----|--------------|-------------------------------|-----------------------|----------------------------------|
| 102 | - | - | | - | - |
| 102-104 | 2 | 3950 | $\frac{0+3950}{2}=1975$ | 3950 | 3950 |
| 104-106 | 2 | 9675 | $\frac{3950+9675}{2}=6812.50$ | 13625 | 17575 |
| 106-108 | 2 | 19625 | $\frac{9675+19625}{2}=14650$ | 29300 | 46875 =4.687 = 4.69 Ha m |

Irrigation Potential:

Water Required per Ha keeping irrigation 7.5 cum = 750 cumic

Area irrigated with one storage = 46875/750=62.5 Ha

V. Estimated Cost: Rs. 12,72,966/-

Detailed Estimate of Cement Masonry Water Harvesting Structure

| S. No | Particulars | No | L | B | H | Contents | |
|------------------------------|--|-------------|-------------|-------|-------------------|-------------------|------|
| | | | M | M | M | M ³ | |
| 1 | Earthwork Excavation of foundation of Dam Body | 1 | 10.50 | 14.00 | 2.00 | 294.00 Cum | |
| | Heal, Apron, Side Wall & Toe Wall | | | | | | |
| | Left Side | | | | | | |
| | 1st Step | 1 | 1.70 + 0.80 | 0.75 | 2.00 | | 1.87 |
| | | | 2 | | | | |
| | 2nd Step | 1 | 1.80 + 1.00 | 0.75 | 1.50 | | 1.57 |
| | | | 2 | | | | |
| | 3rd Step | 1 | 2.00 + 0.80 | 0.75 | 2.00 | | 2.10 |
| | | | 2 | | | | |
| | 5th Step | 1 | 2.30 + 0.00 | 0.75 | 2.30 | | 1.98 |
| | | | 2 | | | | |
| | Right Side | | | | | | |
| | 1st Step | 1 | 1.70 + 1.20 | 0.75 | 2.00 | | 2.17 |
| | | | 2 | | | | |
| 2nd Step | 1 | 1.20 + 1.20 | 0.75 | 1.50 | 1.35 | | |
| | | 2 | | | | | |
| 3rd Step | 1 | 1.20 + 1.20 | 0.75 | 2.00 | 1.80 | | |
| | | 2 | | | | | |
| 5th Step | 1 | 1.20 + 0.00 | 0.75 | 3.50 | 1.57 | | |
| | | 2 | | | | | |
| Toe Wall Extension Left Side | 1 | 5.00 | 1.00 | 2.00 | 10.00 | | |
| Toe Wall Extension Side | 1 | 1.00 | 1.00 | 2.00 | 2.00 | | |
| Total | | | | | 26.41 Cum | | |
| 2 | RCC 1:2:4 | | | | | | |
| | Base heal, Apron, Sidewall, Toe Slab | 1 | 10.50 | 14.00 | 0.50 | 73.50 | |
| | Main Dam Structure | | | | | | |
| | Part A | 1 | 10.50 | 0.52 | 1.25 | 6.82 | |
| | Part B | 1 | 11.50 | 0.52 | 2.00 | 11.96 | |
| | Part C | 1 | 12.50 | 0.52 | 1.50 | 9.75 | |
| | Part D | 1 | 13.50 | 0.52 | 2.00 | 14.04 | |
| | RCC Toewall & Extension | 1 | 14.50 | 0.52 | 1.25 | 9.42 | |
| Total | | | | | 125.49 | | |
| Less for Desiltor | 1 | 1.00 | 0.52 | 1.00 | -0.52 | | |
| Total | | | | | 124.97 Cum | | |
| 3 | PCC 1:2:4 | | | | | | |
| | Head Wall & Extension | 1 | 7.00 | 0.52 | 2.00 | 7.28 Cum | |
| | Side Wall | | | | | | |
| | Part A' | 2 | 11.50 | 0.27 | 1.25 | 7.76 | |
| | Part B' | 2 | 12.00 | 0.27 | 2.00 | 12.96 | |
| | Part C' | 2 | 9.25 + 0.75 | 0.27 | 5.50 | 14.85 | |
| | | | 2 | | | | |
| | Buttress | | | | | | |
| Part A | 2 | 11.50 | 0.27 | 1.25 | 7.76 | | |
| Part B | 2 | 9.25 + 0.00 | 0.27 | 5.50 | 13.73 | | |
| | | 2 | | | | | |
| Total | | | | | 64.34 Cum | | |
| 4 | Brick Work 1:4 | | | | | | |
| | Main Dam Body | | | | | | |
| | Part A | 2 | 10.50 | 0.114 | 1.25 | 2.99 | |

| S. No | Particulars | No | L | B | H | Contents | |
|-------|--|--------------------------------|--------------|-------------|-------------|---------------------|--------------------|
| | | | M | M | M | M ³ | |
| | Side Wall | Part B | 2 | 11.50 | 0.114 | 2.00 | 5.24 |
| | | Part C | 2 | 12.50 | 0.114 | 1.50 | 4.27 |
| | | Part D | 2 | 13.50 | 0.114 | 2.00 | 6.15 |
| | | Part E | 2 | 7.00 | 0.114 | 2.00 | 3.19 |
| | | Part A' | 2x2 | 11.50 | 0.114 | 1.25 | 6.55 |
| | | Part B' | 2x2 | 12.00 | 0.114 | 2.00 | 10.94 |
| | | Part C' | 2x2 | 9.25 + 0.75 | 0.114 | 5.50 | 12.54 |
| | Buttress | | | 2 | | | |
| | | Part A | 2x2 | 11.50 | 0.114 | 1.25 | 6.55 |
| | | Part B | 2x2 | 9.25 + 0.00 | 0.114 | 5.50 | 11.59 |
| | | | | 2 | | | |
| | | Total | | | | | 70.01 |
| | | | | | | | Say 70 Sq M |
| | 5 | 15 mm thick cement plaster 1:4 | | | | | |
| | U/s of Dam Body | 1 | 8.50 + 13.50 | - | 8.75 | 96.25 | |
| | | | 2 | | | | |
| | Top of Dam Body | 1 | 19.50 | 0.75 | - | 14.62 | |
| | D/s of Dam Body | 1 | 7.50 | - | 6.75 | 50.62 | |
| | Side Wall | | | | | | |
| | Part A | 2 | 11.50 | - | 1.25 | 28.75 | |
| | Part B | 2 | 12.00 | - | 2.00 | 48.00 | |
| | Part C | 2 | 9.25 + 0.00 | - | 5.50 | 50.87 | |
| | | | 2 | | | | |
| | Part D | 2 | 0.75 | - | 5.50 | 8.25 | |
| | Top of Side Walls | 2 | 13.75 | 0.50 | - | 13.75 | |
| | Buttress | | | | | | |
| | Part A | 2x2 | 11.50 | - | 1.25 | 57.50 | |
| | Part B | 2x2 | 9.25 + 0.00 | - | 5.50 | 101.75 | |
| | | | 2 | | | | |
| | Top of Buttress | 2 | 12.50 | 0.50 | - | 12.50 | |
| | Toe of Toe wall & Toe wall extension | 1 | 18.50 | 0.75 | - | 13.87 | |
| | Inside of Toe wall | 1 | 7.50 | - | 1.25 | 9.37 | |
| | Outside of Toe wall | 1 | 8.50 | - | 1.25 | 10.62 | |
| | Front of Toe Wall Left Side | 1 | 5.00 | - | 2.00 | 10.00 | |
| | Front of Toe Wall Right Side | 1 | 1.00 | - | 2.00 | 2.00 | |
| | Total | | | | | 528.72 | |
| | Less for crest | 1 | 8.50 | - | 2.00 | -17.00 | |
| | Total | | | | | 511.72 Sq M | |
| | | | | | | Say 512 Sq M | |
| 6 | Filling of Earthwork behind the side walls | | | | | | |
| | Left Side | 1 | 4.50 | 11.00 | 7.50 + 0.00 | 185.63 | |
| | | | | | 2 | | |
| | Right Side | 1 | 1.50 + 0.50 | 11.00 | 7.50 + 0.00 | 41.25 | |
| | | | 2 | | 2 | | |
| | Total | | | | | 226.88 | |
| | | | | | | Say 227 Cum | |

Calculation of MS Bars

Base Slab

| | | | | |
|-------------------------|---------|--------------------------|---|-------------|
| Width 10 mm dia | 10.50 | <u>10.50 x 100</u> 15 | <u>70 No bars x 14 M</u> 980 x 2 | 1960.00 |
| Length 10 mm dia | 14.00 m | <u>14.00 x 100</u> 15 | <u>93 No bars x 10.50 M</u> 976.50 x 2 | 1953.00 |
| Total | | | | 0.00 |

Vertical Slab 16 mm dia

| | | | | |
|---------------------|----------------------|---------------------------|------------|----------------|
| Vertical Bar | <u>10.50</u> 0.15 | 70 No Bar c/c 6.75 m long | 472.50 x 2 | 945.00 |
| Right Side | <u>120.00</u> 15 | 8 No Bars 6.75 m c/c | 54 x 2 | 108.00 |
| Left Side | <u>100.00</u> 15 | 7 No Bars 2.75 m c/c | 19.25 x 2 | 38.50 |
| | <u>100.00</u> 15 | 7 No Bars 1.50 m c/c | 10.50 x 2 | 21.00 |
| Total | | | | 1112.50 |

| | | | | |
|----------------------------------|---------------------|------------|---------|----------------|
| Horizontal Bars 12 mm dia | <u>7.25</u> 0.15 | 48 No Bars | 624 x 2 | 1248.00 |
|----------------------------------|---------------------|------------|---------|----------------|

| | | | | |
|---------------------------|--|---------------|--|--------------|
| Buttress 16 mm dia | | 8 m 4 No bars | | 32.00 |
|---------------------------|--|---------------|--|--------------|

| | | | | |
|-----------------------|--|------------------|---------|--------------|
| 12 mm Vertical | | Two Bars 6.5 m | 6.5 x 2 | 13.00 |
| | | 2 No Bars 4.5 m | 4.5 x 2 | 9.00 |
| | | 2 No Bars 3.00 m | 3 x 2 | 6.00 |
| Total | | | | 28.00 |

| | | | | |
|---------------------------|----------------------|----------------------|---------|--------|
| Toe Wall 16 mm dia | <u>11.50</u> 0.15 | 77 Bars c/c 2 m long | 154 x 2 | 308.00 |
|---------------------------|----------------------|----------------------|---------|--------|

| | | | | |
|--------------|---------------------|---------------------|-----------|--------|
| 12 mm | <u>2.00</u> 0.15 | 13 Bars c/c 11.50 m | 149.5 x 2 | 299.00 |
|--------------|---------------------|---------------------|-----------|--------|

16 mm dia=1112.50+32+308=1452.50 x 1.58 = 2294.95

10 mm dia=3913 = 3913.00x 0.62 = 2426.06

12 mm dia=1248+28+299 = 1575.00x0.89 = 1401.75

Total 6122.76

Say 6123 Kg

Material Statement

| S. No | Particular | Qty | Cement Bags | River Sand Cum | Crusher Bajri Cum | MS Bars Kg | Brick Nos |
|-------|------------------------------|--------|------------------------------------|------------------------------|---------------------------------|-------------------|--------------------|
| 1 | RCC 1:2:4 | 124.97 | 812.31 | 56.23 | 112.47 | 6123 | - |
| 2 | PCC 1:2:4 | 64.34 | 418.21 | 28.95 | 57.90 | - | - |
| 3 | Brick Work 1:4 | 70.00 | 127.40 | 17.50 | - | - | 33600 |
| 4 | Plaster Work 1:4 15 mm thick | 512 | 58.88 | 8.19 | - | - | - |
| | Total | | 1416.80 Say 1417 Bags | 110.88 Say 111 Cum | 170.37 Say 170 Cum | 6123 Kg | 33600 No |

Cost Analysis of RCC Water Harvesting Structure

| S. No | Particular | Qty | Unit | Rate | Amount |
|-------|--|--------|-------|--------|----------|
| 1 | Excavation in foundation, trenches etc in earth work, lift upto 1.50 m, stacking the excavated soil not more than 3 m clear from the edge of excavation and their returning the stacked soil in 15 cm layers, where required, into plinth, sides of foundation etc. consolidating each deposited layer by ramming and watering and then disposing of all surplus excavated earth as directed with in a lead of 20 m. Pick Work | 294.00 | Cum | 62.70 | 18433.80 |
| 2 | Earth cutting in earthwork and disposal of excavated earth upto a lead of 20 m. Hard Rock | 26.41 | Cum | 257.00 | 6787.37 |
| 3 | Reinforced Cement Concrete RCC Work 1:2:4 I/c curing complete but excluding cost of form work ad reinforcement. Walls (any thickness but not less than 0.10 m thick) I/c attached pilasters, buttresses, plinth and string courses from top of foundation up to floor two level | 124.97 | Cum | 209.20 | 26143.72 |
| 4 | Laying of Plain CC 1:2:4 in foundation Cement/Lime Concrete in Foundation and Under Floors. Plain 1:2:4 in walls including buttresses pilasters and their caps and bases and string courses etc | 64.34 | cum | 254.40 | 16368.10 |
| 5 | Mild Steel for steel reinforcement for RCC work including bending and placing in position complete upto floor two level I/c cost of binding wire | 61.23 | Qtl | 250.60 | 15344.24 |
| 6 | First Class Brick Work 1:4 | 70.00 | Sq M | 298.00 | 20860.00 |
| 7 | Hiring and operating charge for vibrator and mixer, incase vibrator is used for compacting the concrete. RCC+ PCC = (124.97 + 64.34 = 189.31 RCC = 135.55 PCC = 84.81 Total = 220.36 | 189.31 | Cum | 25.00 | 4732.75 |
| 8 | Carriage of Cement from Store to site of work. Lead 15 km including unloading and stocking (1417/20=70.85 Tonne) upto 5 Km = 61.36 6 to 10 Km @ 4.25 = 21.25 11 to 15 Km @ 3.31 = 16.55 Total =99.16 | 70.85 | Tonne | 99.16 | 7025.49 |
| 9 | Carriage of Bajri and sand from crusher to work site by Tractor Trolly including loading and unloading. Average lead 8 km (Bajri+Sand = 170+111=281) upto 5 Km = 92.06 6 to 8 Km @ 6.36 = 19.08 Total = 111.14 | 281.00 | Cum | 111.14 | 31230.34 |
| 10 | Side Filling: Excavation in earthwork, pick work and filling in foundation, plinth and under floor in layers of 15 cm to 25 cm i.e watering ramming, consolidating and dressing complete. Spade Work | 227 | Cum | 43.00 | 9761.00 |
| 11 | 15 mm thick cement plaster in 1:3/1:4/1:5 /1:6/1:7/1:8 (cement:sand in respectvarations in fair/rough side of brick/stone/concrete walls for plastering up to floor two levels I/c arises internal rounded angles, champers and/or rounded not exceeding 10 mm in girth and finished even and smooth I/c scaffolding. | 512 | Cum | 23.00 | 11776.00 |

Cost Analysis of RCC Water Harvesting Structure

| S. No | Particular | Qty | Unit | Rate | Amount |
|-------------------------|--|-------------------------|-----------------|------|-------------------|
| | Total | | | | 168462.80 |
| | Add 100% enhancement on items above | | | | 168462.80 |
| A | Total | | | | 336925.61 |
| Cost of Material | | | | | |
| 1 | Cement | 1417 | Bags | 179 | 253643 |
| 2 | River Sand including carriage. | 111 | Cum | 200 | 22200 |
| 3 | Crusher Aggregate (bajri) 12-15 mm Size including carriage | 170 | Cum | 400 | 68000 |
| 4 | 1st Class Bricks including carriage | 33600 | Per Thousand | 4000 | 134400.00 |
| 5 | MS Bars including carriage | 6123 | Kg | 35 | 214305 |
| 5 | MS Flanged pipe 6" dia | 24 | M | 1000 | 24000 |
| 6 | Sluice Valve 6" dia | 2 | No | 5000 | 10000 |
| 7 | Desiltor Fixed Gate | 1 | No | LS | 50000 |
| B | Total | | | | 776548.00 |
| | Total (A+B) | 336925.61+776548 | | | 1113473.61 |
| | Add 3% Contingency | | | | 33404.21 |
| | Grand Total | | | | 1146877.82 |

Say 11,46,878/-

Rs. Eleven Lakh Forty Six Thousand Eight Hundred and Seventy Eight Only

*** The rates applied are general in nature. To calculate the exact cost, appropriate rates may please be applied**

Detailed Estimate of Intake Structure

| S. No | Particulars | No | L | B | H | Contents |
|-------|--|----|------|------|------|-----------------|
| | | | M | M | M | M ³ |
| 1 | 1st Class Brick Work 1:4 | | | | | |
| | Long walls | 2 | 1.92 | 0.23 | 3.00 | 2.64 |
| | Short Walls | 2 | 1.00 | 0.23 | 3.00 | 1.38 |
| | Total | | | | | 4.02 Cum |
| 2 | Fixing og MS Bars Jal on the top of Intake Structure | 1 | | | | 1 No |

Material Statement

| S. No | Particular | Qty | Cement Bags | River Sand Cum | Bajri Cum | Bricks No | MS Jal No |
|-------|---|------|-------------------------------|---------------------------|-------------|--------------------|-------------|
| 1 | Brick Work 1:4 | 4.02 | 7.31 | 1.00 | - | 1930 | - |
| 2 | Fixing of MS Jal on top of intake Structure | 1.00 | - | - | - | - | 1 |
| 3 | Fixing of PVC pipe 50 mm dia | 6.00 | - | - | - | - | - |
| | Total | | 7.31 Say 7 Bag | 1.00 Say 1 Cum | 0.00 | 1930 No | 1 No |

Cost Analysis of Intake Structure

| S. No | Particular | Qty | Unit | Rate | Amount |
|-------------------------|--|-------------------------|--------------|---------|-----------------|
| 1 | First Class Brick Work 1:4 | 4.02 | Sq M | 298.00 | 1197.96 |
| 2 | Carriage of Cement from Store to site of work. Lead 15 km including unloading and stocking (7/20=0.35 Tonne) | 0.35 | Tonne | 99.16 | 34.71 |
| | upto 5 Km = 61.36 | | | | |
| | 6 to 10 Km @ 4.25 = 21.25 | | | | |
| | 11 to 15 Km @ 3.31 = 16.55 | | | | |
| | Total = 99.16 | | | | |
| 3 | Carriage of sand from crusher to work site by Tractor Trolley including loading and unloading. Average lead 8 km | 1.00 | Cum | 111.14 | 111.14 |
| | upto 5 Km = 92.06 | | | | |
| | 6 to 8 Km @ 6.36 = 19.08 | | | | |
| | Total = 111.14 | | | | |
| | Total | | | | 1343.81 |
| | Add 100% enhancement on items above | | | | 1343.81 |
| A | Total | | | | 2687.61 |
| Cost of Material | | | | | |
| 1 | Cement | 7 | Bags | 179 | 1253 |
| 2 | Washed Sand | 1 | Cum | 200 | 200 |
| 3 | Bricks | 1930 | Per Thousand | 4000 | 7720 |
| 4 | MS Jal (1 x 1 m) including carriage & Fixing | 1 | No | 3000.00 | 3000.00 |
| B | Total | | | | 12173.00 |
| | Total (A+B) | 2687.61+12173.00 | | | 14860.61 |
| | Add 3% Contingency | | | | 445.82 |
| | Grand Total | | | | 15306.43 |

Say 15,306/-

Rs. Fifteen Thousand Three Hundred and Six Only

*** The rates applied are general in nature. To calculate the exact cost, appropriate rates may please be applied**

Detailed Estimate of Crate Wire Structure

| S. No | Particular | No | L M | B M | H M | Content M ³ |
|-------|--|---|--|--|--|---|
| 1 | Excavation in foundation and trenches etc in earthwork Foundation | 1 | 12.00 | 3.00 | $\frac{1.75 + 0.75}{2}$ | 45.00 Cum |
| 2 | Weaving of wire crates 4 mm thick 15 cm x 15 cm mesh (Size = 3 m x 1m x 1m= 4 No x 3 = 12 Nos) Top and Bottom Front and Back Sides 1st Step Top and Bottom Front and Back Sides Total | 12 x 2 12 x 2 12 x 2 8x2 8x2 8x2 Total | 3.00 3.00 - 3.00 3.00 - Total | 1.00 - 1.00 1.00 - 1.00 Total | - 1.25 1.25 - 0.50 0.50 Total | 72.00 90.00 30.00 48.00 24.00 8.00 272.00 Sq M |
| 3 | Filling of stone in wire crate Foundation 1st Step Total | 12x1 8x1 Total | 3.00 3.00 Total | 1.00 1.00 Total | 1.25 0.50 Total | 45.00 12.00 57.00 Cum |
| 4 | Tipping of Wire crates | - | - | - | - | 57.00 Cum |
| 5 | Spreading of wire crates | - | - | - | - | 272.00 Sq M |

Material Statement

| S. No | Particulars | Qty | G.I.Wire | Stone |
|-------|----------------------------|-----|--------------------------------------|-----------------------------------|
| 1 | GI Wire | 272 | 606.56 | - |
| 2 | Filling of stone in crates | 57 | - | 62.7 |
| | Less 1/7 voids | - | - | -8.95 |
| | Total | | 606.56 Say 607 Sq M | 53.75 Say 54 Cum |

Cost Analysis of Crate Wire Structure

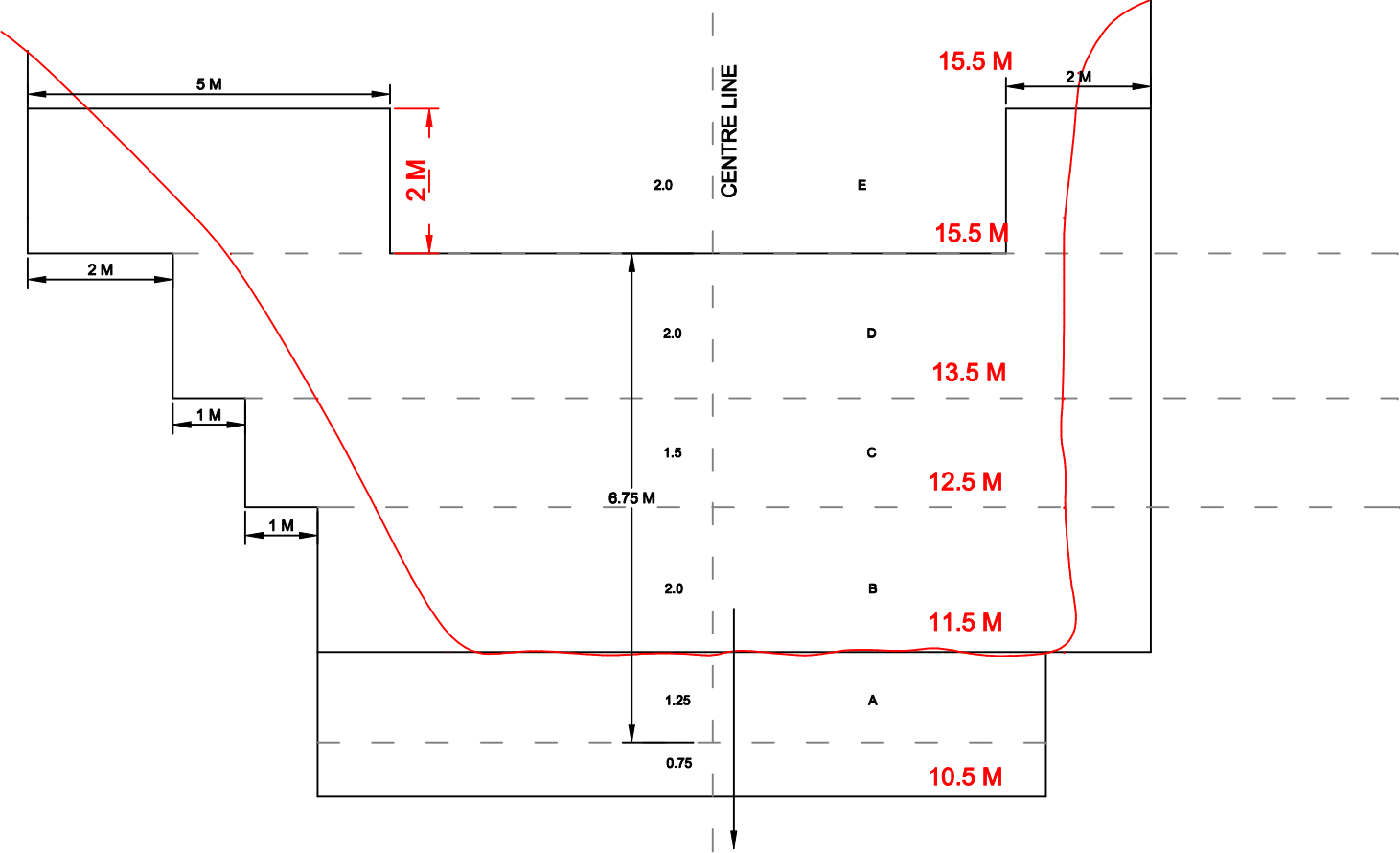
| S. No | Particular | Qty | Unit | Rate | Amount |
|-------------------------|--|------|-------|-------|--------------------------|
| 1 | Excavation in foundation, trenches etc in earth work, lift upto 1.50 m, stacking the excavated soil not more than 3 m clear from the edge of excavation and their returning the stacked soil in 15 cm layers, where required, into plinth, sides of foundation etc. consolidating each deposited layer by ramming and watering and then disposing of all surplus excavated earth as directed with in a lead of 20 m. Pick Work | 45 | Cum | 62.70 | 2821.50 |
| 2 | Weaving of wire netting for wire crate with GI wire 4 mm/5 mm or SWG No 6/8 I/c binding sides & portions to make crate of 15cmx 15 cm and 25 cm x 7.5 cm. Mesh | 272 | Sq m | 8.70 | 2366.40 |
| 3 | Filling of stone in to wire crates | 57 | Cum | 57.70 | 3288.90 |
| 4 | Tipping of wire crates | 57 | Cum | 39.60 | 2257.20 |
| 5 | Spreading wire crates over pitching | 272 | Sq m | 11.80 | 3209.60 |
| 6 | Carriage of GI Wire from Store to site of work. Lead 10 km including unloading and stocking (272 x 2.23 =606.56 Say 607 Kg) upto 5 Km = 61.36 6 to 10 Km @ 4.25 = 21.25 | 0.67 | Tonne | 82.61 | 55.35 |
| | Total | | | | = 82.61 |
| | Total | | | | 13998.95 |
| | Add 100% enhancement on items above | | | | 13998.95 |
| A | Total | | | | 27997.90 |
| Cost of Material | | | | | |
| 1 | GI Wire 4 mm dia | 607 | Kg | 51 | 30957 |
| 2 | Stone including carriage | 54 | Cum | 900 | 48600 |
| B | Total | | | | 79557.00 |
| | Total (A+B) | | | | 27997.90+79557.00 |
| | Add 3 % Contingency | | | | 3226.65 |
| | Grand Total | | | | 110781.54 |

Say 1,10,782/-

Rs. One Lakh Ten Thousand Seven Hundred and Eighty Two Only

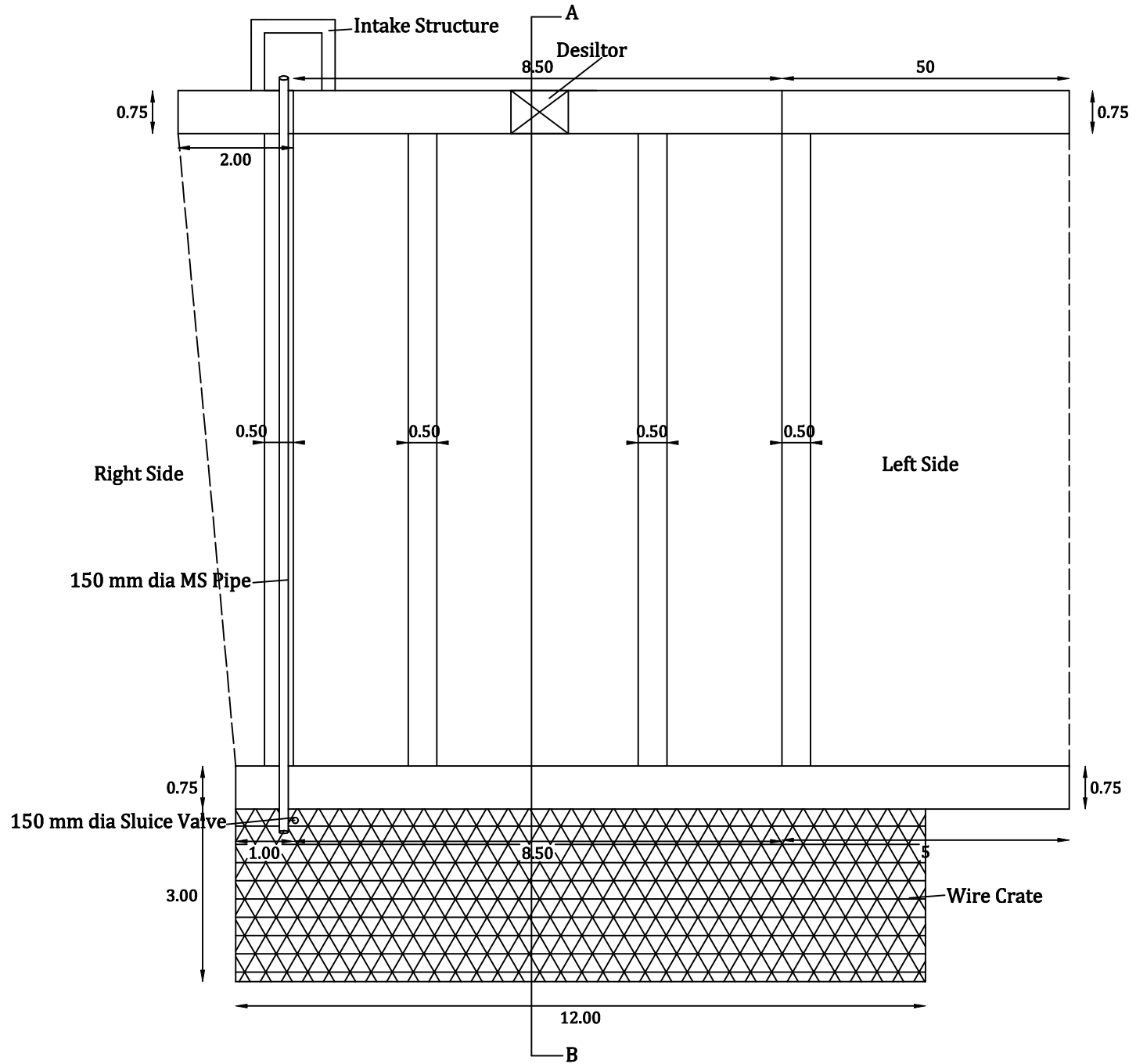
*** The rates applied are general in nature. To calculate the exact cost, appropriate rates may please be applied**

X-SECTIONAL VIEW

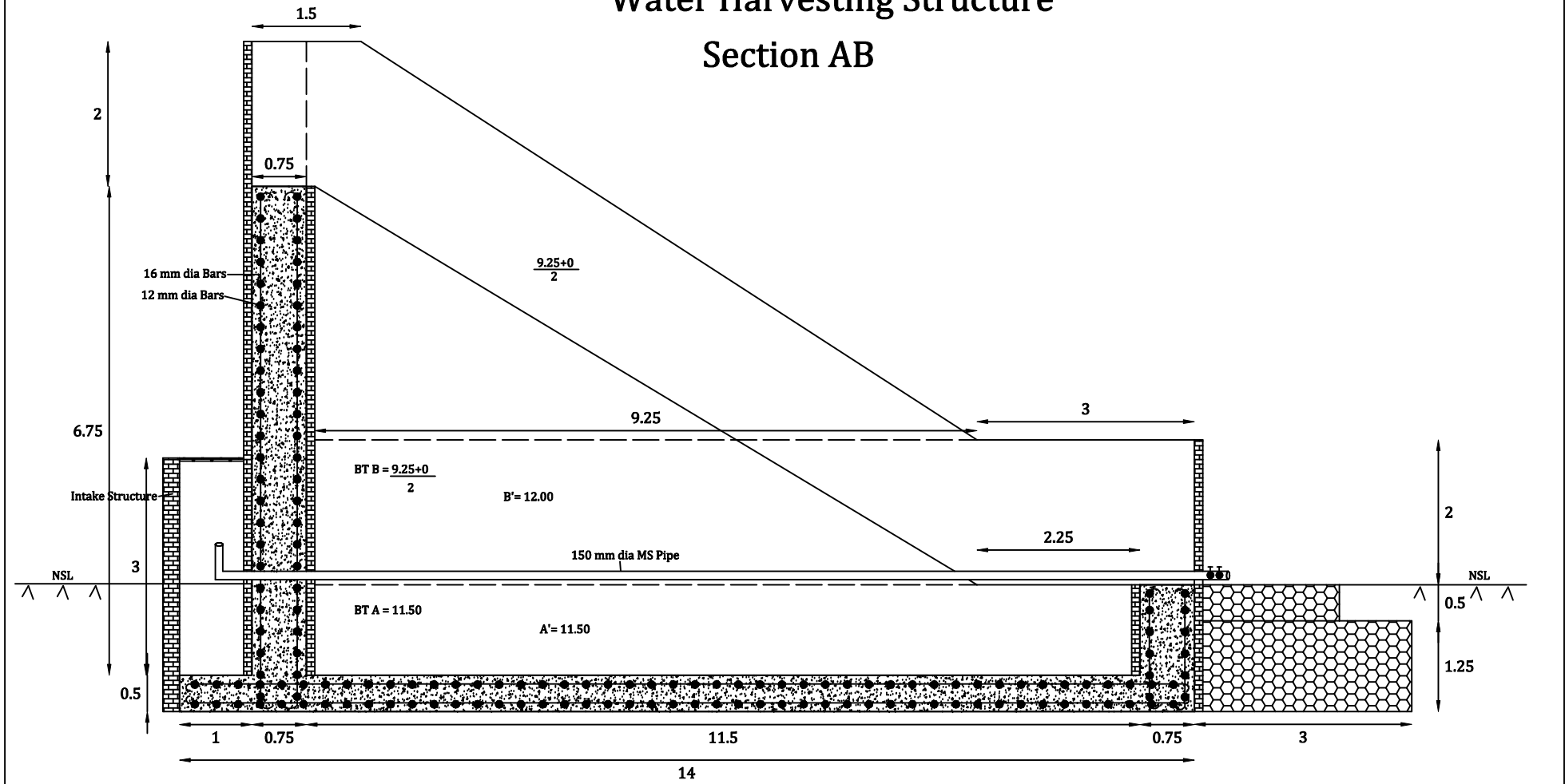


Water Harvesting Structure

Plan



Water Harvesting Structure Section AB



Summary of Cost

| S. No | Particulars | Amount |
|--------------|------------------------------------|---------------------|
| 1 | Cost of Water Harvesting Structure | 11,46,878.00 |
| 2 | Cost of Intake Structure | 15,306.00 |
| 3 | Cost of Crate Wire Structure | 1,10,782.00 |
| | Total | 12,72,966.00 |

Rs. Twelve Thousand Seventy Two Thousand Nine Hundred and Sixty Six Only