

झारखण्ड सरकार
जल संसाधन विभाग



माइक्रोलिफ्ट सिंचाई योजना का प्राक्कलन

ग्राम	-	
पंचायत	-	
प्रखण्ड	-	
जिला	-	राँची
प्राक्कलित राशि	-	रु0 2,51,250/-

कार्यपालक अभियन्ता
लघु सिंचाई प्रमण्डल, राँची।

MICROLIFT IRRIGATION SCHEME

REPORT

This estimate Amounting to Rs. 2,51,250.00 (Rupees two lakhs fifty one thousand two hundred fifty) only has been framed to meet the cost of construction of Microlift Irrigation Scheme near village..... Block in District Ranchi.

In this estimate, an intake well of 8'-0" dia has been provided for collection of water. A pump house of size 6' 0" × 7' 0" × 7' 0" has also been provided for installing 5 H.P. Diesel Pump for safety of Pump. In addition to this, provision of construction of tower has been made to create necessary head as needed for water distribution. Water distribution will be made through underground 140mm PVC pipes in 600 metres length. Provision for construction of 3 nos. Vats have also been made at appropriate places. This scheme will provide irrigation facility to cultivators of the locality of this scheme.

Construction of this Microlift Scheme will provide Irrigation to 10 Hectares in Kharif and 4 hectares in Rabbi crops. B.C. ratio of this scheme at interest @ 5% and @ 10% is 7.09:1 and 4.3:1 respectively. The rates adopted are mainly based on the current schedule of rate effective from 21st April 2006, but rates of Non-scheduled items are based on present market rate. Cost of Incidence of this Scheme is Rs. 17,946.00 / Hect.

An early sanction of this estimate is solicited.

Junior Engineer

Assistant Engineer
M.I. Sub Div., Ranchi

Executive Engineer
M.I.Div., Ranchi

Salient Feature of Microlift Irrigation Scheme

IN VILLAGE, BLOCK

1.	Dia of Intake well	–	8' 0"
2.	Depth of Intake well	–	10' 6"
3.	Size of Pump house	–	6' 0" × 7' 0" × 7' 0"
4.	Size of Distribution Tank	–	2' 6" × 2' 6" × 2' 6"
5.	5 H.P. of Diesel Engine pump set	–	1 No.
6.	Type of Tower	–	G.I. Pipe 5" Dia
7.	Height of tower	–	7.5 M above G.I.
8.	Command area :-		
	(i) Kharif	–	10 hectare
	(ii) Rabbi	–	4 hectare
9.	B. C. Ratio - @ 5% Interest	–	7.09 : 1
	@ 10% Interest	–	4.30 : 1
10.	Length of pipe		
	5" dia PVC pipe	–	600 mtr
11.	Cost of Incidence	-	Rs. 17,946 / Hect.

Junior Engineer

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Executive Engineer
M.I.Div., Ranchi

(MODEL ESTIMATE)

**GENERAL ABSTRACT OF COST FOR CONSTRUCTION OF MICROLIFT
IRRIGATION SCHEME. IN VILLAGE, BLOCK**

1.	Construction of Intake well 8'0" dia	–	Rs. 31,200.00
2.	Construction of Pump House (6'0" × 7' 0" × 7' 0")	–	Rs. 38,074.00
3.	Construction of 3 Nos. vat, tower, pillar etc.	–	Rs. 16,320.00
4.	Labour charge for laying, fitting and fixing etc.	–	Rs. 19,311.00
5.	Cost of carriage of construction Materials	–	<u>Rs. 15,885.00</u>
	Total	–	Rs. 1,20,790.00
	Less 9.1% C.P.	(–) –	<u>Rs. 10,992.00</u>
			Rs. 1,09,798.00
	Add 1% Contingency	–	<u>Rs. 1,098.00</u>
			Rs. 1,10,896.00
6.	Supply of mechanical materials, 140mm P.V.C. pipr, 4" dia G.I. sluice volve and 5 H.P. Diesel pump set	–	Rs. 1,38,146.00
	Add difference of cost of Cement- 130 bags (Rs. 177/- – Rs. 160/- = Rs. 17.00/ bag) –		<u>Rs. 2,210.00</u>
	Total	–	Rs. 2,51,252.00
	Say	–	Rs. 2,51,250.00

Junior Engineer

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M.I.Div., Ranchi

Model Estimate

Technically sanctioned for Rs. 2,51,250.00 (Rupees two lacs fifty one thousand two hundred fifty) only for construction of Mcrolift Irrigation Scheme (Model Estimate) under Ranchi District of different places. Carriage of materials will be paid as per actual lead involved. Non-scheduled item materials will be purchased after approval of competent authority. Rate of scheduled items should also be checked before payment.

Certified Copy

Sd/-
Executive Engineer
Minor Irrigation Division
RANCHI

Sd/-
Executive Engineer
Minor Irrigation Division
RANCHI

BENEFIT COST RATIO

Statement – III

Sl. No.	Items	Cost in Lacs	Interest Charged @ 5% (in Lakhs)	Interest Charged @ 10% (in lakh)
1	2	3	4	5
1.	Estimated Cost of the Scheme	2.513	0.126	0.252
2.	Depreciation @ 2%		0.054	0.054
3.	Administrative Expenditure Rs. 100.00 /Hect. For 14 Hect.		0.014	0.014
			0.194	0.320

1. Net Profit = 1.418 – 0.042 = 1.376

2. B.C.Ratio @ 5% interest = $\frac{1.376}{0.194}$ = 7.09 : 1

3. B.C.Ratio @ 10% interest = $\frac{1.376}{0.32}$ = 4.3 : 1

4. Cost of Incidence = $\frac{2,51,250}{14}$ = Rs. 17,946.00 / Hect.

Junior Engineer

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Executive Engineer
M.I.Div., Ranchi

SCHEMES
BENEFIT COST RATIO (STATEMENT – II)
(AFTER IRRIGATION)
STATEMENT – II

Sl. No.	Name of Crop	Area in Ha	Yield per Ha. (In Qtl.)	Total Yield (In Qtl.)	Rate of Sale Per Qtl.	Total value of procdue in Lacs	Expenditures						Total Expenditure (in Lacs)
							Fertilizer	Seed	Labour	Plant Protection	Irrigation	Total	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.	Paddy	10	45	450	600	2.70	0.27	0.054	0.81	0.02	--	--	1.154
2.	Wheat	4	40	160	700	1.12	0.112	0.077	0.28	0.01	0.066	--	0.545
3.	Cash Crop	--	--	--	--	--	--	--	--	--	--	--	--
Total =						3.82							1.699

Expenditure :

	(Rs. in Lacs)
1. Seed Fertilizer, Labour, Plant, Protection etc.	1.699
2. Depreciation @ 2% of Farm Produce :	0.076
3. Land Revenue @ 3% of Farm Produce :	0.114
4. Share & Cash Rent @ 5% of Farm Produce :	0.190
5. Foder Expenses @ 5% of Farm Produce :	<u>0.570</u>
Total Expenditure =	2.649

Receipts

1. Gross value of farm produce	=	3.82
2. Foder Receipt @ 5% of Farm Produce	=	0.190
3. Dung Receipt @ 30% of Foder Receipt	=	<u>0.057</u>
Total Receipt	=	4.067

Net Benefit = Total Receipt – Total Expenditure = 4.067 – 2.649 = 1.418 Lacs

SCHEMES
BENEFIT COST RATIO (STATEMENT – II)
(BEFORE IRRIGATION)
STATEMENT – I

Sl. No.	Name of Crop	Area in Ha	Yield per Ha. (In Qtl.)	Total Yield (In Qtl.)	Rate of Sale Per Qtl.	Total value of produce in Lacs	Expenditures						Total Expenditure (in Lacs)
							Fertilizer	Seed	Labour	Plant Protection	Irrigation	Total	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.	Irrigation Paddy	4	20	80	600	0.48	--	0.022	0.325	0.008	--	--	0.355
2.	Un-irrigation Paddy	--	--	--	--	--	--	--	--	--	--	--	--
3.	Irrigation Rabbi	--	--	--	--	--	--	--	--	--	--	--	--
4.	Un-irrigation Rabbi	--	--	--	--	--	--	--	--	--	--	--	--
Total =						0.48							0.355

Expenditure :

	(Rs. in Lacs)
1. Seed Fertilizer, Labour, Plant, Protection etc.	0.355
2. Depreciation @ 2% of Farm Produce :	0.009
3. Land Revenue @ 3% of Farm Produce :	0.009
4. Share & Cash Rent @ 5% of Farm Produce :	0.024
5. Fodder Expenses @ 5% of Farm Produce :	<u>0.072</u>
Total Expenditure =	0.469

Receipts

1. Gross value of farm produce	=	0.48
2. Fodder Receipt @ 5% of Farm Produce	=	0.024
3. Dung Receipt @ 30% of Fodder Receipt	=	<u>0.007</u>
Total Receipt	=	0.511

Net Benefit = Total Receipt – Total Expenditure = 0.511 - 0.469 = 0.042

**ABSTRACT OF COST FOR CONSTRUCTION OF INTAKE WELL OF MICROLIFT
IRRIGATION SCHEME UNDER BLOCK, DISTRICT- RANCHI**

1/12.1.64	Supplying labour and equipment for digging well vide classification of soil item –do- -do- as per specification and direction of E/l. Qty. 40.00 M ³ Rate Rs. 36.90 per M ³	Rs. 1476.00
	(A) Extra for E/W in hard soil vide classification of soil item – Bdo.....do..... E/l. 20.00 M ³ Rate Rs. 6.00 per M ³	Rs. 120.00
	(B) Extra for each subsequent lift upto 1 m beyond the initial lift of 1.5 Mdo...do.... as per E/l. 20.00 M ³ Rate Rs. 4.00 per M ³	Rs. 80.00
2/10.1.22	Extra for wet earth –do—do- as as per specification and direction of E/l. Qty. 20.00 M ³ Rate Rs. 3.00 per M ³	Rs. 60.00
3/12.1.68	Supplying labours and materials for providing RCC in Well curb (1:2:4) –do- -do- as per specification and direction of E/l. Qty. 0.90 M ³ Rate Rs. 2659.95 per M ³	Rs. 2393.95
4/8.4.8	Providing rough dressed random rubble stone masonry work in CM(1:4) –do- -do- as per specification and direction of E/l. Qty. 7.61 M ³ Rate Rs. 1065.25 per M ³	Rs. 8106.55
5/5.3.6	Providing R.C.C M-150 with nominal mix of (1:2:4) in Bend –do- -do- as as per specification and direction of E/l. Qty. 0.795 M ³ Rate Rs. 2825.95 per M ³	Rs. 2246.63
6/5.3.27	Providing 50mm thick precast (1:2:4) –do- -do- as per specification and direction of E/l. Qty. 2.23 M ² Rate Rs. 209.95 per M ²	<u>Rs. 468.18</u>

Total Amount = Rs. 14,951.31

7/8.6.1	Providing supplying and laying sand filter -do- -do- as per specification and direction of E/l. Qty. 0.11 M ³ Rate Rs. 260.85 per M ³	Rs. 28.69
8/8.6.2	Providing supplying and laying gravel filter -do- -do- as per specification and direction of E/l. Qty. 0.11 M ³ Rate Rs. 160.00 per M ³	Rs. 17.60
9/8.6.3	Supplying and laying stone metal filter -do- -do- as per specification and direction of E/l. Qty. 0.11 M ³ Rate Rs. 463.25 per M ³	Rs. 50.95
10/8.5.5	Providing 25mm thick cement plaster (1:4) -do- -do- as per specification and direction of E/l. Qty. 13.06 M ² Rate Rs. 89.72 per M ²	Rs. 1172.13
11/5.3.9	Providing RCC M-150 with nominal mix (1:2:4) in cover slab -do- -do- as per specification and direction of E/l. Qty. 0.74 M ³ Rate Rs. 3383.35 per M ³	Rs. 2503.67
12/5.5.4	Providing for steel reinforcement 8mm dia. -do- -do- as per specification and direction of E/l. Qty. 0.134 MT Rate Rs. 36913.30 per MT	Rs. 4946.38
13/5.5.5	Providing for steel reinforcement 10mm dia to 16mm dia -do- -do- as per specification and direction of E/l. 10mm dia Qty. 0.079 MT Rate Rs. 36633.80 per MT	Rs. 2894.07
14/12.1.71	Supplying labour and materials fixing 20mm dia MS bar steps -do- -do- as per specification and direction of E/l. Qty. 10 Nos. Rate Rs. 97.15 per Each	Rs. 971.50
15.	Providing for dewatering 1 No. of 5 HP diesel engine pumps for 10 days rate 4 hours/day 1 X 10 X 4 Hrs. with P.O.L. and operator complete.... Qty. 40 Hrs. Rate Rs. 89.70 per Each	<u>Rs. 3588.00</u>
	Total -	Rs. 31,124.30
		Say Rs. 31,200.00

Junior Engineer

Assistant Engineer
M.I. Sub Div., Ranchi

Executive Engineer
M.I.Div., Ranchi

**DETAIL MEASUREMENT FOR CONSTRUCTION OF INTAKE WELL OF
VILL. - , MICROLIFT SCHEME UNDER BLOCK
DISTRICT- RANCHI.**

1/12.1.64	Supplying labour and equipment for digging well vide classification of soil item-A -do- -do- as per specification and direction of E/l. $2 \times \pi/4\{(15'9" + 10'6")/2\}^2 \times (10'6") = 1410.85 \text{ Cft.}$	40.00 M ³
(B)	Extra for E/W in hard soil vide classification of soil item-B -do- -do- as per specification and direction of E/l. 50% Qty. same as item No. – 1	20.00 M ³
2/10.1.22	Extra for wet earth –do—do- as as per specification and direction of E/l. 50% Qty. same as item No. – 1	20.00 M ³
3/12.1.68	Supplying labours and materials for providing RCC in Well curb (1:2:4) –do- -do- as per specification and direction of E/l. $1 \times \pi/4\{(10'6")^2 - (7'6")^2\} \times 9" = 31.81 \text{ Cft.}$	0.90 M ³
4/8.4.8	Providing rough dressed random rubble stone masonry work in CM(1:4) –do- -do- as per specification and direction of E/l. $1 \times \pi/4(10')^2 - (8')^2 \times (11') = 308.88 \text{ Cft.}$ Deduct Qty. of Band $3 \times \pi/4(10')^2 - (8')^2 \times (6') = 28.08 \text{ Cft.}$ Jali $6 \times 2' \times 1' \times 1'0" = 12.00$ Net Qty. = 7.61 M ³	7.61 M ³
5/5.3.6	Providing R.C.C M-150 with nominal mix of (1:2:4) in Bend –do- -do- as as per specification and direction of E/l. $3 \times \pi/4(10')^2 - (8')^2 \times (4") = 28.08 \text{ Cft.}$	0.795 M ³
6/5.3.27	Providing 50mm thick precast RCC M-150 with nominal mix of (1:2:4) –do- -do- as per specification and direction of E/l. 12 Nos. $\times 2'10" \times 1'0" = 24.00 \text{ Sft}$	2.23 M ²
7/8.6.11	Providing supplying and laying same filter of E/l. 6 Nos. $\times 2'10" \times 0'4" \times 1'0" = 4.00 \text{ Cft}$	0.11 M ³

8/8.6.2	Providing supplying and laying stone metal filter –do- -do- as per specification and direction of E/l. 16 Nos. X 2'0" X 0'4" X 1'0" = 4.00 Cft.	0.11 M ³
9/8.6.3	Providing supplying and laying stone metal gravel filter –do- -do- as per specification and direction of E/l. 6 Nos. X 2'0" X 0'4" X 1'0" = 4.00 Cft.	0.11 M ³
10/8.5.5	Providing 25mm thick C.P. (1:4) do-do- as per specification and direction of E/l. Inside $1 \times \pi \times 8' \times 2'0'' = 50.24$ Sft. Outside $1 \times \pi \times 10' \times 2'0'' = 62.81$ Sft. Top of well $1 \times \pi \times (11'+8'')/2 \times 1'6'' = 27.46 / 140.065$ Sft.	13.06 M ³
11/5.3.9	Providing RCC M-150 with nominal mix of (1:2:4) in cover slab –do- -do- as per specification and direction of E/l. $1 \times \pi/4 \times (10')^2 \times 4'' = 26.16$ Cft.	0.74 M ³
12/5.5.4	Providing for steel reinforcement 8mm dia –do- -do- as per specification and direction of E/l. Well curb - 31.81 Cft. @ 2.5 Kg./Cft. Band - 28.08 Cft. @ 2.5 Kg./Cft. Cover slab of well - 25.74 cft. @ 2.5 Kg./Cft.	79.52 Kg. 70.20 Kg. <u>64.35 Kg.</u> 214.07 Kg.
13/5.5.5	(a) 8mm dia Rods - 134.55 Kg. (b) 10mm dia tor Rods - 79.52 Kg.	0.134 MT 0.079 MT
14/12.1.71	Supplying materials and labours for fixing 20mm dia MS for steps in staining well 0.3 M internal -do- -do- as per specification and direction of E/l.	10 Nos.
15.	Providing for dewatering one no. Diesel Pump Set for 10 days @ 4 Hrs. / day 1 X 10 X 4 Hrs. = 40 Hrs.	- 40 Hrs.

Junior Engineer

Assistant Engineer
M.I. Sub Div., Ranchi

Executive Engineer
M.I.Div., Ranchi

Abstract of cost for Construction of pump house for Microlift.

Irrigation Scheme.

<u>1.</u> 10.1.3	Providing Jungle clearance including wooding out shrubs do do as per specification and direction of E/l. 37.20 M ²	- Rs. 2.05 /M ²	Rs.	76.26
<u>2.</u> 5.1.1	Earth work in excavation of foundation trenches in ordinary soil do do..... as per specification and direction of E/l. 8.16 M ³	- Rs. 34.05 /M ³	Rs.	277.55
<u>3.</u> 5.1.2	Extra for earth work in hard soil as per specification and direction of E/l. 8.16 M ³	- Rs. 3.45 /M ³	Rs.	85.15
<u>4.</u> 5.1.10	Providing coarse clean sand filling in foundation trenches or in plinth do do..... as per specification and direction of E/l. 1.95 M ³	- Rs. 96.10 /M ³	Rs.	187.40
<u>5.</u> 5.3.3	Providing R.C.C. or P.c.C. M-100 with nominal mix of (1:3:6) in foundation do do..... as per specification and direction of E/l. 1.64 M ³	- Rs. 1828.15 /M ³	Rs.	2,998.17
<u>6.</u> 5.2.29	Providing rough dressed random rubble stone masonry in C.M. (1:6) in foundation do do..... as per specification and direction of E/l. 4.98 M ³	- Rs. 971.05 /M ³	Rs.	4,835.83
<u>7.</u> 5.2.38	Providing rough dressed coarse stone masonry in c.m. (1:6) in super structure do do..... as per specification and direction of E/l. 7.30 M ³	- Rs. 1011.00 /M ³	Rs.	7,381.76
<u>8.</u> 5.3.9	Providing R.C.C. M-150 with nominal mix of (1:2:4) in roof slab do do..... as per specification and direction of E/l. 1.23 M ³	- Rs. 3303.35 /M ³	Rs.	4,161.52

<u>9.</u> 5.5.29	Supplying, fitting and fixing 20 guage G.C.I. sheet gate do do..... as per specification and direction of E/I. 4.83 M ³ - Rs. 1618.25 /M ³	Rs. 7,816.15
<u>10.</u> 5.5.30	Supplying and fixing Mis. grill in window do do..... as per specification and direction of E/I. 15 Kg. - Rs. 45.10/Kg	Rs. 676.50
<u>11.</u>	Providing 25mm thick C.P. (1:6) in cement mortar..... do do..... as per specification and direction of E/I. 48.60 M ² - Rs. 73.10 /M ²	Rs. 3,552.66
<u>12.</u>	White washing three coats over new surface do do..... as per specification and direction of E/I. 44.70 M ² - Rs. 4.99 /M ²	Rs. 219.03
<u>13.</u>	Providing one coats primer over steel surface or with red lead do do..... as per specification and direction of E/I. 10.88 M ² - Rs. 18.35 /M ²	Rs. 199.65
<u>14.</u>	Providing two coats of painting with read mix paint over steel surface..... do do..... as per specification and direction of E/I. 10.88 M ² - Rs. 28.55 /M ²	Rs. 310.62
<u>15.</u>	Providing tor steel reinforcement of 8mm dia including bending, binding as per specification and direction of E/I. 0.145 M.T. - Rs. 36,913.30 /MT	Rs. 5,352.43
Total –		Rs. 38,073.98
Say –		Rs. 38,074.00

Junior Engineer

Assistant Engineer
M.I. Sub Div., Ranchi

Executive Engineer
M.I.Div., Ranchi

**DETAIL ESTIMATE FOR CONSTRUCTION OF PUMP HOUSE
FOR CONSTRUCTION OF MICROLIFT IRRIGATION**

SHERME

<u>1.</u> 10.1.3	Jungle clearance including wooding out shrubs do do as E/l. $1 \times 20'0" \times 20'0" = 400 \text{ sft.}$	or	37.20 M ²
<u>2.</u> 5.1.1	Earth work in excavation of foundation trenches in ordinary soil do do..... E/l. Long wall – $2 \times 8'6" \times 3'0" \times 3'0" = 153.00 \text{ cft.}$ Short wall – $2 \times 7'6" \times 3'0" \times 3'0" = 135.00 \text{ cft.}$ <u>288.00 cft.</u>	or	8.16 M ³
<u>3.</u> 5.1.2	Extra for earth work in hard soil (vide classification of soil item –B) Qty. same as in item no. 2		8.16 M ³
<u>4.</u> 5.1.10	Providing coarse clean sand filling in foundation trenches or in plinth do do..... E/l. Long wall – $2 \times 8'6" \times 3'0" \times 0'6" = 25.50 \text{ cft.}$ Short wall – $2 \times 7'6" \times 3'0" \times 0'6" = 22.50 \text{ cft.}$ Floor – $1 \times 6'0" \times 7'0" \times 0'6" = 21.00 \text{ cft.}$ <u>69.00 cft.</u>	or	1.95 M ³
<u>5.</u> 5.3.3	Providing R.C.C. or P.c.C. M-100 with nominal mix of (1:3:6) in foundation do do..... E/l. Long wall – $2 \times 8'6" \times 3'0" \times 0'4" = 16.98 \text{ cft.}$ Short wall – $2 \times 7'6" \times 3'0" \times 0'4" = 14.98 \text{ cft.}$ Floor – $1 \times 6'0" \times 7'0" \times 0'4" = 13.98 \text{ cft.}$ Platform – $1 \times 4'0" \times 3'0" \times 1'0" = 12.00 \text{ cft.}$ <u>57.94 cft.</u>	or	1.64 M ³
<u>6.</u> 5.2.29	Providing rough dressed random rubble stone masonry in C.M. (1:6) in foundation and plinth do do..... E/l. <u>1st fooling</u> Long wall – $2 \times 8'6" \times 2'6" \times 1'0" = 42.50 \text{ cft.}$ Short wall – $2 \times 7'6" \times 2'6" \times 1'0" = 37.50 \text{ cft.}$ <u>2nd fooling</u> Long wall – $2 \times 8'6" \times 2'0" \times 1'6" = 51.00 \text{ cft.}$ Short wall – $2 \times 7'6" \times 2'0" \times 1'6" = 45.00 \text{ cft.}$ <u>176.00 cft.</u>	or	4.98 M ²

7.
5.2.38 Providing stone masonry in c.m. (1:6) in super structure do do..... E/l.
Long wall – $2 \times 8'6" \times 1'6" \times 7'0" = 178.50$ cft.
Short wall – $2 \times 7'6" \times 1'6" \times 7'0" = \underline{157.50}$ cft.
Total = 336.00 cft.
Deduction-
Door – $1 \times 4'0" \times 1'6" \times 7'0" (-) = 42.00$ cft.
Window – $2 \times 3'0" \times 1'6" \times 4'0" (-) = \underline{36.00}$ cft.
Total ded (-) = 78.00 cft.
Net quantity = $336.00 - 78.00 = 258.00$ cft. or 7.30 M³
8.
5.3.9 Providing R.C.C. M-150 with nominal mix of (1:2:4) in roof slab do do..... E/l.
 $1 \times 12'0" \times 11'0" \times 0'4" = 43.56$ CFT. or 1.23 M³
9.
Supplying, fitting and fixing 20 guage G.C.I. sheet gate do do..... E/l.
Door – $1 \times 7'0" \times 4'0" = 28.00$ cft.
Window – $2 \times 3'0" \times 4'0" = \underline{24.00}$ cft.
Total ded = 52.00 cft. or 4.83 M²
10.
5.5.30 Supplying, fitting and fixing Ms. grill in window do do..... E/l.
Window – $2 \times 4'0" \times 3'0" = 24.00$ cft.
weight of grill rate 0.62 kg. /sft. = 14.88 kg. say 15.00 Kg.
11.
5.7.13 Providing 25mm thick cement plaster (1:6)..... do do..... E/l.
In side-
Long wall – $2 \times 7'0" \times 7'0" = 98.00$ sft.
Short wall – $2 \times 6'0" \times 7'0" = 84.00$ sft.
Out side-
Long wall – $2 \times 10'0" \times 7'4" = 146.60$ sft.
Short wall – $2 \times 9'0" \times 7'4" = 131.94$ sft.
Palor plinth – $2 \times 11'0" \times 1'0" = 22.00$ sft.
– $2 \times 10'0" \times 1'0" = 20.00$ sft.
Ceiling – $1 \times 9'0" \times 8'0" = \underline{72.00}$ sft.
Total = 574.54 sft.
Deduction –
Door – $\frac{1}{2} \times 2 \times 4'0" \times 7'0" = (-) 28.00$ sft.
Window – $\frac{1}{2} \times 2 \times 2 \times 3'0" \times 4'0" = \underline{(-) 24.00}$ sft.
Total ded = 52.00 sft.
Net quantity = $574.54 - 52.00 = 522.54$ sft. or 48.60 M²

<u>12.</u> 5.8.3	White washing three coats over new surface do do..... E/l. Area per item (II) - = 522.54 sft. Deduction area below plinth - (22.00+20.00) = <u>42.00 sft.</u> Total = 480.54 sft.	or 44.70 M ²
<u>13.</u> 5.5.41	Providing one coats primer with red lead do do..... E/l. Door - 1× 2.25 × 7'0" × 4'0" = 63.00 sft. Window - 2× 2.25 × 4'0" × 3'0" = <u>54.00 sft.</u> Total = 117.00 sft.	or 10.88 M ²
<u>14.</u> 5.5.43	Providing two coats of painting with read mix paint over steel surface..... do do..... E/l. Qty. same as item 13 -	or 10.88 M ²
<u>15.</u> 5.5.4	Providing for steel reinforcement of 8mm do do E/l. total qty of R.C.C. - 57.94 cft. 2.5 kg. cft. = 144.85 kg.	or 0.145 M.T.

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**ABSTRACT OF COST FOR CONSTRUCTION OF 3 NOS. VATS, TOWER AND
PILLAR OF SIZE (2'6" × 2'6" × 2'6") FOR MICROLIFT IRRIGATION SCHEME**

S C H E M E

<u>1.</u> 5.1.1	Earth work in excavation of foundation trenches as per design section in all kinds of soil do. do as per specification and direction of E/l. 6.42 M ³	- Rs. 34.05 /M ³	Rs. 218.60
<u>2.</u> 5.1.10	Providing coarse clean sand filling in foundation trenches or in plinth do do..... as per specification and direction of E/l. 0.74 M ³	- Rs. 96.10 /M ³	Rs. 71.11
<u>3.</u> 5.3.2	Providing R.C.C. or P.C.C. M-150 with nominal mix of (1:2:4) in foundation do do..... as per specification and direction of E/l. 3.79 M ³	- Rs. 2458.40 /M ³	Rs. 9,317.33
<u>4.</u> 5.2.29	Providing rough dressed random rubble stone masonry in C.M. (1:6) in foundation do do..... as per specification and direction of E/l. 4.16 M ³	- Rs. 971.05 /M ³	Rs. 4,039.57
<u>5.</u> 5.7.13	Providing 25mm thick Cement Plaster (1:6) do do..... as per specification and direction of E/l. 31.22 M ²	- Rs. 73.10 /M ²	Rs. 2,282.18
<u>6.</u> 5.7.8	Providing 12mm thick Cement Plaster (1:6) do do..... as per specification and direction of E/l. 8.33 M ²	- Rs. 46.90 /M ²	Rs. 391.61
		Total –	Rs. 16,320.40
		Say –	Rs. 16,320.00

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DETAILS ESTIMATE FOR CONSTRUCTION OF VAT TOWER AND PILLAR
FOR MICROLIFT IRRIGATION SCHEME.

<u>1.</u> 5.1.1	Earth work in excavation of foundation trenches in ordinary soil do. do E/l.		
	Vat – $3 \times 5'0" \times 5'0" \times 1'4" = 131.25$ cft.		
	Pillar -1 – $1 \times 5'0" \times 5'0" \times 3'6" = 87.50$ cft.		
	Pillar -2 – $1 \times 2'0" \times 2'0" \times 2'0" = \underline{8.00}$ cft.		
	Total = 226.75 cft.	or	6.42 M ³
<u>2.</u> 5.1.10	Providing clean coarse sand filling in foundation do do..... E/l.		
	vat – $3 \times 5'0" \times 5'0" \times 0'3" = 18.75$ cft.		
	Pillar -1 – $1 \times 5'0" \times 5'0" \times 0'3" = 6.25$ cft.		
	Pillar -2 – $1 \times 2'0" \times 2'0" \times 0'3" = \underline{1.00}$ cft.		
	Total = 26.90 cft.	or	0.74 M ³
<u>3.</u> 5.3.2	Providing R.C.C. or P.c.C. M-150 with nominal mix of (1:2:4) in foundation do do..... E/l.		
	Vat – $3 \times 5'0" \times 5'0" \times 0'6" = 37.50$ cft.		
	Pillar -1 – $1 \times 5'0" \times 5'0" \times 1'0" = 25.00$ cft.		
	– $\frac{1 \times 4'6" \times 4'6" + 2'0" \times 2'0" \times 5'0"}{2} = 60.62$ cft.		
	Pillar -2 – $1 \times 1'6" \times 1'6" \times 5'0" = \underline{11.25}$ cft.		
	Total = 134.37 cft.	or	3.79 M ³
<u>4.</u> 5.2.29	Providing rough dressed random rubble stone masonry in C.M. (1:6) in foundation with do do..... E/l.		
	Vat – $3 \times 4 \times 3'6" \times 1'0" = 147.00$ cft.	or	4.16 M ³
<u>5.</u> 5.7.13	Providing 25mm thick Cement Plaster (1:6) do do..... E/l.		
	vat-innerfree – $3 \times 4 \times 2'6" \times 3'6" = 105.00$ sft.		
	Outer face – $3 \times 4 \times 4'6" \times 3'6" = 189.00$ sft.		
	Top of wall – $3 \times 4 \times 3'6" \times 1'0" = \underline{42.00}$ sft.		
	Total = 336.00 sft.	or	31.22 M ³

6.
5.7.8 Providing 12mm thick Cement Plaster (1:6)
do do..... E/l.

$$\text{vat bottom} - 3 \times 2'6" \times 2'6" = 18.75 \text{ sft.}$$

$$\text{Pillar -1} - 4 \times \frac{4'6" \times 2'0"}{2} \times 3'3" = 42.25 \text{ sft.}$$

$$\text{Top} - 1 \times 8'0" \times 2'0" = 4.00 \text{ sft.}$$

$$\text{Pillar -2} - 4 \times 1'6" \times 3'9" = \underline{22.50 \text{ sft.}}$$

$$- 1 \times 1'6" \times 1'6" = \underline{2.25 \text{ sft.}}$$

$$\text{Total} = \underline{89.75 \text{ sft.}}$$

or 8.35 M³

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**DETAILED ESTIMATE FOR MECHANICAL ITEM FOR CONSTRUCTION OF
MICROLIFT IRRIGATION SCHEME**

1.	Supply of materials of approved make with all taxes			
(1)	5" dia G.I. pipe – 9.0 M	950.00 /M	Rs.	8,550.00
(2)	2.5" dia G.I. pipe – 10.0 M	280.00 /M	Rs.	2,800.00
(3)	5" to 2.5" dia G.I. reducer – 1 No.	240.00 /each	Rs.	240.00
(4)	5" dia G.I. band – 1 No.	232.00 /each	Rs.	232.00
(5)	5" dia G.I. socket – 2 Nos.	120.00 /each	Rs.	240.00
(6)	5" dia G.I. flange – 2 Nos.	285.00 /each	Rs.	570.00
(7)	5" dia G.I. tee – 1 No.	290.00 /each	Rs.	290.00
(8)	3" to 2.5" dia G.I. reducer – 1 No.	175.00 /each	Rs.	175.00
(9)	2.5" dia G.I. socket – 1 No.	40.00 /each	Rs.	40.00
(10)	2.5" dia G.I. flange – 2 Nos.	130.00 /each	Rs.	260.00
(11)	¾" dia G.I. Air vent pipe 1 M long – 1 No.	80.00 /each	Rs.	80.00
(12)	5" dia 2'0" long C.D. short pieces - 1No.	318.00 /each	Rs.	318.00
(13)	5" to 4" dia G.I. Reducer – 1 No.	295.00 /each	Rs.	295.00
(14)	4" dia G.I. flange – 6 Nos.	210.00 /each	Rs.	1260.00
(15)	4" dia x 4" long G.I. nipple – 6 No.	38.00 /each	Rs.	228.00
(16)	5" dia G.I. Plug – 1 No.	68.00 /each	Rs.	68.00
(17)	5" dia PVC Socket – 5 Nos.	98.00 /each	Rs.	490.00
(18)	5" dia PVC M.T.A. – 1 No.	175.00 /each	Rs.	175.00
(19)	4" dia PVC F.T.A. – 6 Nos.	67.00 /each	Rs.	402.00
(20)	5" dia PVC Tee – 2 Nos.	320.00 /each	Rs.	640.00
(21)	5" dia PVC Bend – 2 Nos.	210.00 /each	Rs.	420.00
(22)	Solvent cement 10 Lit.	148.00 /ltr.	Rs.	1480.00
(23)	Rubber incertion sheet 10 Kg.	38.50 /Kg. .	Rs.	385.00
(24)	Nut, bolt, washer - 10 Kg..	30.80 /ltr.	Rs.	308.00
(25)	M – seal - 5 pack	60.00 /pack	Rs.	300.00
2.	Supplying 140mm dia P.V.C. pipe with 5mm wall thickness and 2.5 kg/cum ² working pressure of I.S.I. wall and ISO as per direction of E/I.			
	600 M .	142.00 /M	Rs.	85200.00

3.	Supplying fitting and fixing of 5" dia G.I. sluice valve including fitting of 5" dia flange, bend, PVC tee including earth work cutting and small base of P.C.C. for valve etc. complete work as per direction of E/l.	3 Nos. .	3650.00 /each	Rs. 10950.00
4.	Supplying 5 H.P. Diesel pump set of I.S.I. mark with all accessories like suction pipe Delivery pipe, G.I. Nipple, hose pipe champ, foot valve and etc. with trolley complete as per specification and direction of E/l.	1 No.	21,750.00 /each	<u>Rs. 21750.00</u>
			Total (from 1 to 4) =	Rs. 138146.00
5.	Labour charge for fitting and fixing including cutting, welding etc. of 5" to 2.5" dia reducer, flange etc. for construction of tower as per direction of E/l.	1 job.	2000.00 /each	Rs. 2000.00
6.	labour charge for laying and fixing of PVC pipe in socket with solvent cement including cutting of trenches of required minimum depth of cutting 1.0 M and 0.15 M thick sand filling including cost of back filling of earth with watering as per direction of E/l.	600 M .	25.26 /M	Rs. 15156.00
7.	Commissioning charge of complete work at site as per direction of E/l.	1 Job.	1000.00 /each	Rs. 1000.00
8.	Carriage of materials to work site as per direction of E/l.			
	(i) Pipe fitting and Diesel pump set. ½ days		2309.44 / day	<u>Rs. 1154.72</u>
			Total (from 5 to 8) =	Rs. 19310.72
			Say	= Rs. 19311.00

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Rate analysis for laying of 5" dia PVC Pipe for 100 metre length

<u>1.</u> 5.1.1	Earth work in excavation of foundation trenches as per design section in all kinds of soil do. do as per specification and direction of E/l.	$100\text{ M} \times 0.30 \times 1.00 = 30\text{ M}^3$	Rs. 34.05/M ³	Rs. 1021.50
<u>2.</u> 5.1.10	Providing coarse clean sand filling in foundation trenches or in plinth do do..... as per specification and direction of E/l.	$100\text{ M} \times 0.30 \times 0.15 = 4.50\text{M}^3$	Rs.96.10/M ³	Rs. 432.45
<u>3.</u> 11.	Labour charge for laying fitting and fixing of 75mm to 110mm dia PVC pipe --- do --- do as per specification and direction of E/l.	100.00 M	Rs. 3.65/M	Rs. 365.00
<u>4.</u> 5.1.8	Earth work in filling in foundation trenches as per denigned section in all kinds of soil --- do – do --- as per specification and direction of E/l.	$100\text{ M} \times 0.30 \times 1.00 = 30.00\text{M}^3$ Deduction qty of sand filling (-) 4.50 M ³ (Vide item no. 2) Deduction for pipe $\times (0.055)^2 \times 100$ $= (-) 0.95\text{ M}^3$ $\frac{\quad}{24.55\text{ M}^3}$	Rs. 28.88/M ³	Rs. 707.04
			Total –	Rs. 2525.99
			Say –	Rs. 2526.00

Cost of 100 M = 2526.00
 Cost of 1.0 M = 25.26 /Metre

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COST OF CARRIAGE OF CONSTRUCTION MATERIALS

1.	Cement with a lead of 5 K.m. including km. last katcha rd.	- 6.48 M.T.	@ Rs. 76.06 /M.T.	Rs. 492.87
2.	Local sand with a lead of 3 Km. on katcha road	- 29.8 M ³	@ Rs.113.60 / M ³	Rs 3385.28
3.	Sand with a lead of 25 km. including 3 Km. initial and 1km. last katcha road	- 17.16 M ³	@ Rs.282.05 / M ³	Rs 4839.98
4.	Stone metal with a lead of 15 km. including and 1 km. initial and 1 km. last katcha road	- 1.65 M ³	@ Rs.229.70 / M ³	Rs 379.00
5.	Stone Chips with a lead of 15 km. including and 1 km. initial and 1 km. last katcha road	- 6.93 M ³	@ Rs.211.43 / M ³	Rs 1465.21
6.	Stone Boulder with a lead of 15 km. including and 1 km. initial and 1 km. last katcha road	- 24.05 M ³	@ Rs.220.20 / M ³	Rs 5295.81
7.	M. S. Rods	- 0.358 MT	@ Rs.76.06 / MT	Rs. 27.23
			Total	= Rs. 15885.38
	(N.B. – Average lead has been adopted)		Say	= Rs. 15885.00

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MATERIALS STATEMENT

Sl. No.	Item of work	Qty.	Cement (M ³)	Sand (M ³)	Local Sand (M ³)	Stone Metal (M ³)	Stone Chips (M ³)	Stone Bolder (M ³)	M.S.Rods	
									8mm dia	10mm dia
1.	P.C.C. (1:3:6)	1.64M ³	0.256M ³	0.77M ³	--	1.54M ³	--	--	--	--
2.	R.C.C. (1:2:4)	7.568M ³	1.703M ³	3.41M ³	--	--	6.82M ³	--	--	--
3.	Stone Masonry (1:4)	7.61M ³	0.746M ³	2.98M ³	--	--	--	7.61M ³	--	--
4.	Stone Masonry (1:6)	16.44M ³	1.167M ³	7.00M ³	--	--	--	16.44M ³	--	--
5.	Sand filling	29.8M ³	--	--	29.8M ³	--	--	--	--	--
6.	Stone Metal filter	0.22M ³	--	--	--	0.11M ³	0.11M ³	--	--	--
7.	25mm C.P. (1:4)	13.06M ²	0.095M ³	0.38M ³	--	--	--	--	--	--
8.	25mm C.P. (1:6)	79.82M ²	0.415M ³	2.49M ³	--	--	--	--	--	--
9.	12mm C.P. (1:6)	8.33M ²	0.022M ³	0.13M ³	--	--	--	--	--	--
10.	Steel reinforcement									
	i) 8mm dia -	0.279MT	--	--	--	--	--	--	0.279MT	--
	ii) 10mm dia -	0.079MT	--	--	--	--	--	--	--	0.079 MT
	Total -		4.404 M ³ or 6.48 MT or 130 bag	17.16 M ³	29.8 M ³	1.65 M ³	6.93 M ³	24.05 M ³	0.279 MT	0.079 MT

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**ABSTRACT OF QUANTITY FOR CONSTRUCTION OF INTAKE WELL, PUMP
HOUSE & VATS ETC.**

Sl. No.	Item of work	T				Total
		Intake Well	Pump House	Vats	Pipe Line	
1.	P.C.C. (1:3:6)	--	1.64 M ³	--	--	1.64 M ³
2.	R.C.C. (1:2:4)	2.548 M ³	1.23 M ³	3.79 M ³	--	7.568 M ³
3.	Stone Masonry (1:4)	7.61 M ³	--	--	--	7.61 M ³
4.	Stone Masonry (1:6)	--	12.28 M ³	4.126 M ³	--	16.44 M ³
5.	Sand filling	0.11 M ³	1.95 M ³	0.74 M ³	27.0 M ³	29.8 M ³
6.	Stone Metal filter	0.11 M ³	--	--	--	0.11 M ³
7.	25mm C.P. (1:4)	13.06 M ²	--	--	--	13.06 M ³
8.	25mm C.P. (1:6)	--	48.60 M ²	31.22 M ²	--	79.82 M ³
9.	12mm C.P. (1:6)	--	--	8.33 M ²	--	8.33 M ³
10.	Steel reinforcement					
	i) 8mm dia -	0.134 MT	0.145 MT	--	--	0.279 MT
	ii) 10mm dia -	0.079 MT	--	--	--	0.079 MT

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