



GOVERNMENT OF ORISSA

ANALYSIS OF RATES

2006

WORKS DEPARTMENT

CONTENTS

Sl. No.	DESCRIPTION	Page No.
(i)	Earth Work	1
(ii)	Special Item for Irrigation Work	11
(iii)	Concrete	43
(iv)	R.C.C. Work	49
(v)	Reinforced Brick Work	69
(vi)	Masonry Brick Work	71
(vii)	Masonry Stone Work	75
(viii)	Flooring	84
(ix)	Painting	93
(x)	Plastering	102
(xi)	Roofing	115
(xii)	Wood Work	132
(xiii)	Road Work	140
(xiv)	Site Clearance	195
(xv)	Pile Foundation	209
(xvi)	Dismantling	214
(xvii)	Iron Work	224
(xviii)	Well Sinking	228
(xix)	Other Building Items.	235
(xx)	Bridge Works	258

I EARTH WORK

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

1(a) Earth work in ordinary soil within 50m, initial lead and 1.5m, initial lift including rough dressing and breaking clods to maximum 5cm to 7cm and laying in layers not exceeding 0.3m in depth and as per direction of the Engineer-in-charge per 100 cum.

i) Labour

Man Mulia	16 nos	Each	55.00	880.00	
Female Mulia	16 nos	Each	55.00	880.00	

ii) Overhead Charges @ 10 % on (i) - - - 176.00

iii) 2% Sundries and T & P etc. on (i) - - - 35.20

Total (i + ii+ iii) 1971.20

Or Say 1971.20 / 100 cum

(b) Earth work in ordinary soil in embankments, roads, etc. within 50m initial lead and 1.5m initial lift including rough dressing and breaking clods to maximum 5cm to 7cm and laying in layers not exceeding 0.3m in depth and as per specification approved by the department along with proper compaction with P.R.R. including hire and running charges of P.R.R. (Measurement to be taken on the finished compacted section of the fill). per 100 cum

i) rate as per item (a) 1971.20

Out turn of PRR

Earth work compaction considered 708.00 cum per day ordinarily

Hire and running charges of PRR as per mechanical wings comes to Rs 269.00 / Hr

For 708 cum Rs 269.00 x 8 = 2152.00

ii) For 100 cum = $2152.00 \times 100 / 708 = 303.95$ 303.95

iii) Overhead Charges @ 10 % on (ii) - - - 30.40

Total (i + ii+ iii) 2305.55

Or Say 2305.60 / 100cum

(c) Earth work in ordinary soil in embankments, roads, etc. within 50m initial lead and 1.5m initial lift including rough dressing and breaking clods to maximum 5cm to 7cm and laying in layers not exceeding 0.3m in depth and as per specification approved by the department including proper compaction with H.R.R. (section measurement to be taken on the finished compacted section of the fill). per 100 cum.

i) Rate as per item no 1 (a) 1971.20

ii) Compaction by HRR as per item No 9 (a) 271.99

Total (i+ii) 2243.20 / 100 cum

Or Say 2243.20 /100 Cum

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

(d) Earth work in ordinary soil in embankments, roads, etc. maximum laboratory dry density not less than 1.44Gm/1.52Gm/1.65Gm per cubic centimeter in road embankments respectively upto 3m/more than 3m high and top 0.5m below sub-grade level within 50m initial lead and 1.5m initial lift from approved borrow pits away from the toe of the final section of the road embankment bottom of the pit not being cut by an imaginary line having a slope 1:4 projected from the edge of the final section of the bank including rough dressing and breaking clods maximum 5cm. to 7cm and laying in layers each layer not exceeding 23cm in depth upto required level including removal of roots, shrubs, bushes and all foreign debris from the earth and benching the old embankment, sectioning and cambering the earth work and conveyance of all material. T & P articles required for the work complete in all respect as per specification of work and direction of the Engineer-in-charge and to be measured on section measurement after compaction under O.M.C. condition (100cum) including cost of controlled compaction with P.R.R. watering upto O.M.C. and confirming to approved specification including hire and running charges of PRR.

i) rate as per item 1 (a)					1971.20	
Out turn for controlled specification of and PRR as per NH standard =425 cum /day						
ii) Hire and running charges of PRR and cost of labour for compaction at OMC as per item no 9(b)I					2422.60	
Total(i+ii)	-	-			4393.80 / 100 cum	
				Or Say	4393.80 / 100 cum	

2(a) Earth work in hard soil or gravelly soil within 50m. Initial lead and 1.5m initial lift including rough dressing and breaking clods to maximum 5cm to 7cm and laying in layers not exceeding 0.3m in depth and as per the direction of the Engineer-in-charge.

i) Labour						
Man Mulia	21.5 nos	Each	55.00		1182.50	
Woman Mulia	21.5 nos	Each	55.00		1182.50	
ii) Overhead Charges @ 10 % on (i)	-	-	-		236.50	
iii) 2% Sundries and T & P etc.on (i)	-	-	-		47.30	
Total (i + ii+ iii)					2648.80	
				Or Say	2648.80 / 100 cum	

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

(b) Earth work in hard soil or gravelly soil in embankment, roads etc. within 50m initial lead and 1.5m initial lift including rough dressing and breaking clods to maximum 5cm to 7cm and laying in layers not exceeding 0.3m in depth and as per specification approved by the Department alongwith proper compaction with P.R.R. including hire and running charges of P.R.R. (section measurement to be taken on the finished compacted section of the fill)

i) Rate as per item no 2(a) 2648.80
ii) compaction by PRR as per item no 9(b)ii 334.40
Total(i+ii) 2983.20

Or Say 2983.20 / 100 cum

(c) Earth work in hard soil or gravelly soil in embankment, roads etc. within 50m initial lead and 1.5m initial lift including rough dressing and breaking clods to maximum 5cm to 7cm and laying in layers not exceeding 0.3m in depth and as per specification approved by the Department alongwith proper compaction with H.R.R. (section measurement to be taken on the finished compacted section of the fill)

i) Rate as per item no 2(a) 2648.80
ii) compaction by PRR as per item no 9(a) 271.99
Total(i+ii) 2920.79

Or Say 2920.80 / 100 cum

(d) Earth work in hard soil or gravelly soil in embankment, roads etc. maximum laboratory dry density not less than 1.44Gm/1.52Gm/1.65Gm per cubic centimeter in road embankment respectively upto 3m./more than 3m. high and top 0.5m below sub-grade level within 50m. initial lead and 1.5m initial lift from approved borrow pit 5m. away from the toe of final section of the road embankment bottom of the pit not being cut by an imaginary line having a slope 1:4 projected from the edge of the final section of the bank including rough dressing and breaking clods maximum 5cm to 7cm and laying in layers each layer not exceeding 23cm in depth upto required level including removal of roots, shrubs, bushes and all foreign debris from the earth and benching the old embankment, sectioning and cambering the earth work, cost and conveyance of all materials. T & P articles etc required for the work complete in all respect as per specification of work and direction of the Engineer-in-charge and to be measured on section measurement after compaction under O.M.C. condition (100 cum) including cost of controlled compaction with P.R.R. watering upto O.M.C. and confirming to approved specification including hire and

i) Rate as per item no 2(a) 2648.80

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

ii)	cost of labour charges for compaction for OMC and hire and running charges of PRR as per item no 9(b) I				2422.60	
	Total(i+ii)				5071.40	
				Or Say	5071.40 / 100 cum	
3	Earth work in stoney earth and gravels mixed with stone and boulder not exceeding 0.014cum in volume within 50m. Initial lead and 1.5m initial lift including rough dressing and breaking clods to maximum 5cm to 7cm and laying in layer not exceeding 0.3m in depth and as per specification approved by the department					
i)	Labour					
	Man Mulia	33.53 nos	Each	55.00	1844.15	
	Woman Mulia	33.53 nos	Each	55.00	1844.15	
ii)	Overhead Charges @ 10 % on (i)	-	-	-	368.83	
iii)	2% Sundries and T & P etc.on (i)	-	-	-	73.77	
	Total (i + ii+ iii)				4130.90	
				Or Say	4130.90 / 100 cum	
4	Earth work in slushy soil (in water upto 0.6m depth requiring the aid of pans and vessels) within 50m. Initial lead and 1.5m initial lift as per the direction and specification of the Department.					
i)	Labour					
	Man Mulia	21 nos	Each	55.00	1155.00	
	Woman Mulia	23 nos	Each	55.00	1265.00	
ii)	Overhead Charges @ 10 % on (i)	-	-	-	242.00	
iii)	2% Sundries and T & P etc.on (i)	-	-	-	48.40	
	Total (i + ii+ iii)				2710.40	
				Or Say	2710.40 / 100 cum	
5	Cutting in disintegrated rock not requiring blasting to be removed by pick axes and crow bars and depositing materials within 50m initial lead and 1.5m initial lift including rough dressing as per direction and specification of the department including stacking the useful materials separately as ordered.					
i)	Labour					
	Man Mulia	55 nos	Each	55.00	3025.00	
	Woman Mulia	54 nos	Each	55.00	2970.00	
ii)	Overhead Charges @ 10 % on (i)	-	-	-	599.50	
iii)	2% Sundries and T & P etc.on (i)	-	-	-	119.90	
	Total (i + ii+ iii)				6714.40	
				Or Say	6714.40 / 100 cum	

Sl. No.	Description	Quantity required		Unit	Rate		Amount		Remarks
					Rs.	P	Rs.	P	
1	2	3		4	5		6		7

6 Blasting hard and compacted sheet rock excluding sand stone measured in solid including jumping holes cost of explosive fuse, detonator, etc and stacking the blasted debris clear of work within 50m lead.
Date for 2.83 cum

i) Labour

Blaster	1 no	Each	85.00	85.00
Man Mulia	2 nos	Each	55.00	110.00
Stone cutter	2 nos	Each	75.00	150.00
Sangi mulia	2 nos	Each	65.00	130.00

ii) cost of explosive fuse, detonator L.S. 80.60

iii) Overhead Charges @ 10 % on (i+ii) - - - 55.56

iv) 2% Sundries T & P etc.on (i+ii) - - - 11.11

Total (i + ii+ iii+iv) 622.27

For 1 cum = 622.27/2.83 =Rs. 219.88 219.88 /1 cum

Or Say 219.90 / 1 cum

7 Extra lead of 25m or part there of over the initial lead of 50m for earth work in all kinds of embankment and road works and ordinary earth work in general.

a) 50m to 75m

i) Labour

Man Mulia	3 nos	Each	55.00	165.00
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ii) Overhead Charges @ 10 % on (i) - - - 16.50

iii) 2% Sundries and T & P etc.on (i) - - - 3.30

Total (i + ii+ iii) Total= 184.80 /100 cum

Or Say 184.80 /100 cum

b) 75m to 100m

i) Labour

Man Mulia	3.5 nos	Each	55.00	192.50
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ii) Overhead Charges @ 10 % on (i) - - - 19.25

iii) 2% Sundries and T & P etc.on (i) - - - 3.85

Total (i + ii+ iii) 215.60 /100 cum

Or Say 215.60 /100 cum

c) 100m to 125m

i) Labour

Man Mulia	4 nos	Each	55.00	220.00
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ii) Overhead Charges @ 10 % on (i) - - - 22.00

iii) 2% Sundries and T & P etc.on (i) - - - 4.40

Total (i + ii+ iii) 246.40 /100 cum

Or Say 246.40 /100 cum

d) 125m to 150m

i) Labour

Man Mulia	4.5 nos	Each	55.00	247.50
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ii) Overhead Charges @ 10 % on (i) - - - 24.75

iii) 2% Sundries and T & P etc.on (i) - - - 4.95

Total (i + ii+ iii) 277.20 /100 cum

Or Say 277.20 /100 cum

e) 150m to 175m

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7
	i) Labour					
	Man Mulia	5 nos	Each	55.00	275.00	
	ii) Overhead Charges @ 10 % on (i)	-	-	-	27.50	
	iii) 2% Sundries and T & P etc.on (i)	-	-	-	5.50	
	Total (i + ii+ iii)				308.00	/100 cum
				Or Say	308.00	/100 cum
8	Extra lift of 1.5m or part there of over the initial lift of 1.5m in all kinds of embankments and road works and ordinary earth work in general. 1st Extra lift of 1.5m (upto 7.5m)					
	i) Labour					
	Man Mulia	4.1 nos	Each	55.00	225.50	
	ii) Overhead Charges @ 10 % on (i)	-	-	-	22.55	
	iii) 2% Sundries and T & P etc.on (i)	-	-	-	4.51	
	Total (i + ii+ iii)				252.56	/100 cum
				Or Say	252.60	/100 cum
9	(a) Ramming or rolling eath work with light H.R.R. in embankment in layers not exceeding 0.3m Data for 28.31 cum					
	i) Labour					
	Man Mulia	0.75 nos	Each	55.00	41.25	
	woman mulia	0.5 nos	Each	55.00	27.50	
	ii) Overhead Charges @ 10 % on (i)	-	-	-	6.88	
	iii) 2% Sundries and T & P etc.on (i)	-	-	-	1.38	
	Total (i + ii+ iii)				77.00	
	For 100 cum = Rs.77.00 X 100/28.31 = Rs. 272.02				271.99	/100 cum
				Or Say	272.00	/100 cum
9	(b) (i) Compacting and watering upto O.M.C. rolling earth work with P.R.R. in embankment in layers not exceeding 0.23m by power road roller including hire and running charges of the roller (measurement to be taken on the finished compacted section of the fill under O.M.C. condition) 1. Hire and running charges of P.R.R. Rs. 269.00/hr (considering a roller will compact 425 cum/day) for 100 cum (Rs269.00 X 8 X 100) / 425 506.35 2. Cost of watering with an av. Lead of 5km by truck (considering carrying water 20Nos. Of maxphalt drums in each trip) 5 trips of water required for 390cum of earth For 100 cum of earth $\frac{5 \times 100}{390} = 1.28 \text{ trips}$ 1.28 trip 775.00 992.00					

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

3. Labour charges for sprinkling water, labour required for 390 cum 50 Nos.

	For 100 cum of earth	$\frac{50 \times 100}{390}$	12.8 nos			
	Man mulia	12.80	Each	55.00	704.00	
	Overhead Charges 10 %	-	-	-	220.24	
	Total				2422.59 /100 cum	
					Or Say 2422.60 /100 cum	

9 (b) (ii) for ordinary compaction by P.R.R. per day (Ordinary compaction by P.R.R.) 708 cum

	So for 100cum	$\frac{269.00 \times 8 \times 100}{708}$			303.95	
	Overhead Charges @10%				30.40	
	Total				334.35	
				Say	334.40 /100 cum	

10 Fine dressing of earth work in ordinary or hard soil in road formaton according to the direction of the department including cutting or filling earth upto 0.15m depth of surface.

i) Labour						
	Man Mulia	1 no	Each	55.00	55.00	
	ii) Overhead Charges @ 10 % on (i)	-	-	-	5.50	
	iii) 2% Sundries & T & P etc. on (i)	-	-	-	1.10	
	Total (i + ii+ iii)				61.60 /100 sqm	
					Or Say 61.60 /100 Sqm	

11 Triangular or square section of 0.15m trench cutting for alignment and demarcation purpose of dug belling 10cm to 15cm (Data for 304.80 R.M.)

i) Labour						
	Man Mulia	3 nos	Each	55.00	165.00	
	Female mulia	2 nos	Each	55.00	110.00	
	ii) Overhead Charges @ 10 % on (i)	-	-	-	27.50	
	iii) 2% Sundries & T & P etc. on (i)	-	-	-	5.50	
	Total (i + ii+ iii)				308.00	
	For 1 RM = Rs308.00/304.80 = Rs 1.01					
						Say Rs1.00 per 1RM

12 Puddle filling of good clay including initial lead 50m and 1.5m initial lift

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7
	i) Labour					
	Man Mulia for digging stiff clay and sand if required	15 nos	Each	55.00	825.00	
	female mulia for carrying	15 nos	Each	55.00	825.00	
	Man mulia for weathering pulversing, etc	15 nos	Each	55.00	825.00	
	Female mulia for weathering, pulversing etc. laying	10 nos	Each	55.00	550.00	
		20 nos	Each	55.00	1100.00	
	female mulia for carrying and for trodding	18 nos	Each	55.00	990.00	
	ii) Overhead Charges @ 10 % on (i)	-	-	-	511.50	
	iii) 2% Sundries & T & P etc. on (i)	-	-	-	102.30	
	Total (i + ii+ iii)				5728.80 /100 cum	
					Or Say	5728.80 /100 cum
13	Sectioning and cambering earth work in road formation to proper specification approved by the department					
	i) Labour					
	Female mulia	0.75 no	Each	55.00	41.25	
	ii) Overhead Charges @ 10 % on (i)	-	-	-	4.13	
	iii) 2% Sundries & T & P etc. on (i)	-	-	-	0.83	
	Total (i + ii+ iii)				46.20 /100 cum	
					Or Say	46.20 /100 cum
14	Filling in foundation and plinth with excavated materials including watering and ramming as directed by the Engineer-in-charge for 100 cum					2/3 rate of respective item of work
15	Filling in foundatin and plinth with sand watered and rammed (Labour only)					
	i) Labour					
	Man Mulia	12.36 nos	Each	55.00	679.80	
	ii) Overhead Charges @ 10 % on (i)	-	-	-	67.98	
	iii) 2% Sundries & T & P etc. on (i)	-	-	-	13.60	
	Total (i + ii+ iii)				761.38 /100 cum	
					Or Say	761.40 /100 cum
16	Fine dressing and turfing with initial lead of 50m and 1.5m initial lift as per direction of Engineer-in-charge					
	i) Labour					
	Female mulia for dressing	0.4 no	Each	55.00	22.00	
	Man mulia for cutting turf	1 no	Each	55.00	55.00	
	Female mulia for carrying	0.8 no	Each	55.00	44.00	
	Man mulia for placing turfing in posting and ramming with thapies	0.74 no	Each	55.00	40.70	
	ii) Overhead Charges @ 10 % on (i)	-	-	-	16.17	
	iii) 2% Sundries & T & P etc. on (i)	-	-	-	<u>3.23</u>	
	Total (i + ii+ iii)				181.10 /100 Sqm	
					Or Say	181.10 /100 Sqm
17	Extra lead of 50m or part there of over the initial lead of 50m turfing					

Sl. No.	Description	Quantity required		Unit	Rate		Amount		Remarks
					Rs.	P	Rs.	P	
1	2	3		4	5		6		7
	i) Labour								
	Man mulia	0.95	no	Each	55.00		52.25		
	ii) Overhead Charges @ 10 % on (i)	-		-			5.23		
	iii) 2% Sundries & T & P etc. on (i)	-		-			1.05		
	Total (i + ii+ iii)						58.52 /100 Sqm		
							Or Say		58.50 /100 Sqm
18	Extra lift of 1.5m or part thereof overinitial lift of 1.5m for turfing								
	i) Labour								
	Man mulia	0.42	no	Each	55.00		23.10		
	ii) Overhead Charges @ 10 % on (i)	-		-			2.31		
	iii) 2% Sundries & T & P etc. on (i)	-		-			0.46		
	Total (i + ii+ iii)						25.87 /100 Sqm		
							Or Say		25.90 /100 Sqm
19	Excavation of founation in hard rock (granite) removed by chiselling including dressing and levelling the bed not exceeding 1.5m in depth and depositing the soil within initial lead of 50m and as per specification approved by the Department								
	i) Labour								
	Man mulia	5.68	nos	Each	55.00		312.40		
	ii) Overhead Charges @ 10 % on (i)	-		-			31.24		
	iii) 2% Sundries & T & P etc. on (i)	-		-			6.25		
	Total (i + ii+ iii)						349.89 /1 cum		
							Or Say		349.90 /1 cum
20	Excavation of founation in laterite rock or any hard rock (other than granite or disintegrated rock) removed by chiselling including dressing and levelling the bed not exceeding 1.5m in depth and depositing the soil within initial lead of 50m and as per specification approved by the Department								
	i) Labour								
	Man mulia	3.74	nos	Each	55.00		205.70		
	ii) Overhead Charges @ 10 % on (i)	-		-			20.57		
	iii) 2% Sundries & T & P etc. on (i)	-		-			4.11		
	Total (i + ii+ iii)						230.38 /1 cum		
							Or Say		230.40 /1 cum
21	Shoring and shuttering foundation trenches, pits etc. with close wooden planks or sheets shuttering etc. excluding cost of planks and sheets (labour only)								
	i) Labour								
	Carpenter (2nd class)	0.5	no	Each	75.00		37.50		
	ii) Overhead Charges @ 10 % on (i)	-		-			3.75		
	iii) 2% Sundries & T & P etc. on (i)	-		-			0.75		
	Total (i + ii+ iii)						42.00 /Sqm		
							Or Say		42.00 /Sqm

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

22 Earth work in open well excavation with lead upto 50m for 100cum

- a) 1st depth of 1.5m initial rate of foundation same nature of soil
- b) 2nd depth of 1.5m –1½ times initial rate + 1½ times lift
- c) 3rd depth of 1.5m –2 times initial rate + 2½ times lift
- d) 4th depth of 1.5m –2½ times initial rate + 3½ times lift
- e) 5th depth of 1.5m –3 times initial rate + 4½ times lift
- f) 6th depth of 1.5m –3½ times initial rate + 5½ times lift
- g) 7th depth of 1.5m –4 times initial rate + 6½ times lift
- h) 8th depth of 1.5m –4½ times initial rate + 7½ times lift

(and so on for further depth)

Notes :

- (i) Ordinary soil - light black cotton, sandy earth, sandy loam, dry silt, fragile, red earth, soft earth, and soft moorum.
- (ii) Hard soil - Hard stiff clay, stiff black cotton, hard red earth, shales, moorum, ordinary gravels.
- (iii) Stony earth- earth mixed with gravel and boulders not exceeding 0.014 cum in volume
- (iv) Slushy soil - A soil having the characteristics of liquid mud with negligible bearing capacity which can be removed with the aid of pans and vessels only.
- (v) For excavation of foundation including dressing and levelling the bed and depositing the soil with initial lead of 50m and initial lift of 1.5m add 20 percent extra over the respective rates of earth work in excavation
- (vi) Dewatering during excavation to be paid as per actuals.
- (vii) The rate for extra lead and lift for blasted stone work will be double of the respective rates of leads and lifts for earth work.
- (viii) In the event of any difference in opinion regarding classification of soil the decision of the Engineer-in-charge (E.E.) is final and binding.
- (ix) 10 per cent excess on the above rates will be allowed for the works being executed inside jail premises.

II. SPECIAL ITEMS FOR IRRIGATION WORKS

1. Excavation of any approved type of soil in approved borrow area by mechanical means loading into and transportation by mechanical means and unloading the soil within initial lead of 1km on properly prepared and scientifically approved surface including spreading and levelling the earth in 22.5 cm layers to make ready for watering and compaction with sheep foot rollers and dozers but excluding watering and compaction in dams and dykes for all heights including construction, maintenance, watering and lighting of haul road and borrow area etc. complete as per the direction of Engineer-in-charge. (measurement of the fill to be taken on the finished compacted section under OMC condition.)

Per 1 cum

(A) Excavation by Mechanical means :

Considering Hitachi Excavator of the following specification :

Capacity of bucket =	0.91 cum	
Cycle time for one bucket excavation =	16.00 sec	
Bucket fill factor =	0.90	
Overall efficiency =	83.00 %	
Considering effective working of 50 min./ hour		
Production per hour (loose earth) =		
$(50 \times 60 \times 0.91 \times 0.9 \times 0.83)/16 =$	127.46 cum	
Hire charge excluding supervision charge per hour =	1717.64	
Cost of mechanical excavation per 1 cum =		Rs13.48

(B) Transportation cost :

Capacity of Tipper (loose soil) =	5.70 cum	
Taking 80% carrying capacity, the capacity of Tipper =	4.56 cum	
Lead =	1.00 km	

a) Loading time = (Body capacity/Excavator output per min)

$$= \frac{4.56}{2.15} = 2.15 \text{ min}$$

b) Loaded haul @ 25km/hr = 2.40 min

c) Empty haul @ 25km/hr = 2.40 min

d) Spotting, turning and unloading time = 1.40 min

Total cycle time = 8.35 min

Say 8.00 min

Quantity to be carried per hour = $(50 / 8.00 \times 4.56) = 28.50 \text{ cum}$

Hire charge of TATA Tipper excluding supervision charge/hr : Rs498.31

Depreciation of tyres & tubes :-

$(6 \times 6000)/(2 \times 2000) =$ Rs9.00

Hire charge of Tipper per hour =	Rs507.31
Cost of transportation of loose earth within initial lead of 1km = (507.31/28.50) =	Rs17.80
Add construction & maintenance of haul roads (L.S.)=	Rs1.50
Add for spreading earth (L.S.)=	Rs4.00

Total prime cost =	Rs36.78
Add overhead charges (10% of prime cost) =	Rs3.68

Total =	Rs40.46

For an average soil 120 cum of loose earth when compacted to 95% Proctor density under O.M.C. condition will measure 100 cum.

So rate per 1 cum of compacted earth = Rs.40.46X120/100	Rs48.55
Or say	Rs48.60 /cum

2. Watering earthwork upto OMC condition and compaction by sheepfoot rollers and dozer in layers not exceeding 22.5 cm to 95% dry density including hire and running charges of all the machineries complete as per direction of Engineer-in-charge. (measurement to be taken on the finished compacted section of the fill under OMC condition.)

- A. Machines used - Dozer and two pairs of sheepfoot rollers of total weight 20 tonnes
 B. Out turn - 100 cum of earthwork per working hour of machine

Hire charge of Dozer(D-80/A-12) excluding supervision charge per hour =	Rs2,141.79
Hire charge of sheepfoot roller excluding supervision charge per hour =	Rs77.86

Total hire charge = Rs2,219.64

Hence cost for 100 cum of compacted earth = Rs2,219.64

Add towards watering (3 % of cost of compaction)= Rs67.00

Rs2,286.64

Prime cost per 1 cum of watering and compaction = 2286.64/100 = Rs22.87

Overhead charges 10% = Rs2.29

 Or say Rs25.16 /cum
 Rs25.20 /cum

3. Fine dressing and turfing the slopes of the dam or dyke with compact Dub grass with initial lifts and lead and as per the direction of the Engineer-in-charge.

Unit - 1 sqm.

- A) Fine dressing of earthwork :

Male Worker	0.01 nos.	@	Rs55.00	Rs0.55
B) Cutting Turf :				
Male Worker	0.01 nos.	@	Rs55.00	Rs0.55
C) Male worker required to place turf and ramming with thapies				
	0.007 nos.	@	Rs55.00	Rs0.41
D) Watering Charges				
			L.S.	Rs0.30
			(A+B+C)	Rs1.81
i) Overhead charges @ 10% (A+B+C) =				Rs0.18
ii) Sundries and T&P @ 2% on labour charge=				Rs0.04
				Rs2.03
Or Say				Rs2.00 /Sqm.

4. Supplying and spreading sand of approved specification on compacted surfaces of earth dam or dykes for filter blanket and other horizontal filter zone to proper thickness including surface dressing within initial lead complete as directed by the Engineer-in-charge. (Cost of transportation to be added)

Unit - 1 cum.

A. Cost of Sand	1.00 cum	@	Rs29.00	Rs29.00
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B. Labour charges

Dressing surface

Considering sand to be laid in layers of 0.2m, 0.20 m
 Spreading area /cum = $1/0.2 = 5.00$ sqm

Male Worker	0.05 nos.	@	Rs55.00	Rs2.75
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Spreading within 50m lead from stacks

Male Worker	0.40 nos.	@	Rs55.00	Rs22.00
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(A + B) = Rs53.75

Overhead charges @ 10% on (A+B) =				Rs5.38
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Or Say Rs59.13 /cum.
Rs59.10 /cum.

5. Supplying and spreading 20mm down graded chips satisfying filter criteria in horizontal filter zones and filter blankets to proper thickness including surface dressing within an initial lead complete as directed by the Engineer-in-charge. (Cost of transportation to be added)

Unit - 1 cum.

A.Materials

Cost of Chips

20mm to 10mm	0.50 cum	@	Rs638.00	Rs319.00
10mm to 6mm	0.50 cum	@	Rs671.00	Rs335.50

B. Labour charges				Rs654.50
Labour for spreading & levelling				
Male Worker	0.50 nos.	@	Rs55.00	Rs27.50

(A + B) =				Rs682.00
Overhead charges @ 10% on (A+B) =				Rs68.20

				Rs750.20 /cum.
Or Say				Rs750.20 /cum.

6. Supplying and spreading 40mm to 20mm size granite metal filter in horizontal filter zones and filter blankets including levelling etc complete within initial lead as directed by the Engineer-in-charge. (Cost of transportation to be added)

Unit - 1 cum.

A.Materials

Cost of Metal				
40mm	0.50 cum	@	Rs464.00	Rs232.00
20mm	0.50 cum	@	638.00	319.00

B. Labour charges

Male Worker	0.55 nos.	@	Rs55.00	Rs30.25

(A + B) =				Rs581.25
Overhead charges @ 10% on (A+B) =				Rs58.13

				Rs639.38 /cum.
Or Say				Rs639.40 /cum.

7. Supplying and spreading sand of approved specification for filter in rock toe riprap and filter drains in earth dam and dyke to proper slope and level within an initial lead as directed by the Engineer-in-charge. (Cost of transportation to be added)

Unit - 1 cum.

A.Materials

Cost of sand	1.00 cum	@	Rs29.00	Rs29.00
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B. Labour charges

Considering thickness of filter as 0.3m

Spreading area per cum = $1 / 0.3 = 3.33$ sqm

Male Worker	0.033 nos.	@	Rs55.00	Rs1.82
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Filling & levelling

Male Worker	0.50 nos.	@	Rs55.00	Rs27.50

				Rs29.32
			(A + B) =	Rs58.32
Overhead charges @ 10% on (A+B) =				Rs5.83

			Or Say	Rs64.15 /cum.
				Rs64.20 /cum.

8. Supplying and spreading granite chips of size 20mm down graded in filter in rock toe riprap and filter drains in earth dam or dyke to proper slope and level within initial lead as directed by the Engineer-in-charge. (Cost of transportation to be added)

Unit - 1 cum.

A.Materials

Cost of Chips				
20mm to 10mm	0.50 cum	@	Rs638.00	Rs319.00
10mm to 6mm	0.50 cum	@	Rs671.00	Rs335.50

				Rs654.50

B. Labour charges

Labour for site conveyance & filling

Male Worker	0.625 nos.	@	Rs55.00	Rs34.38

			(A + B) =	Rs688.88
Overhead charges @ 10% on (A+B)=				Rs68.89

			Or Say	Rs757.77 /cum.
				Rs757.80 /cum.

9. Supplying and spreading 40mm to 20mm size granite metal in filter in rock toe riprap and filter drains in earth dam or dyke to proper slope and level within initial lead as directed by the Engineer-in-charge. (Cost of transportation to be added)

Unit - 1 cum.

A.Materials

Cost of metal

40mm	0.50 cum	@	Rs464.00	Rs232.00
20mm	0.50 cum	@	Rs638.00	Rs319.00

B. Labour charges

Male Worker	0.69 nos.	@	Rs55.00	Rs37.79

(A + B) =				588.79

Overhead charges @ 10% on (A+B)=

Rs58.88

-

Rs647.67 /cum.

Or Say

Rs647.70 /cum.

10. Supplying and filling sand of approved specification in vertical chimney to proper line & level using removable sheet metal separators upto designed height of filter chimney within initial lead lead as directed by the Engineer-in-charge. (Cost of transportation to be added)

Unit - 1 cum.

A.Materials

Cost of sand	1.00 cum	@	Rs29.00	Rs29.00
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B. Labour charges for raising & spreading

Male Worker	0.55 nos.	@	Rs55.00	Rs30.25
Add for depreciation charges of metal separators			L.S.	Rs1.00

(A + B) =

Rs60.25

Overhead charges @ 10% on (A+B)=

Rs6.03

Rs66.28 /cum.

Or Say

Rs66.30 /cum.

11. Providing dry rubble rock toe with blasted and quarried granite boulders of sizes 30cm and above with all leads and lifts including dumping with packing interstices properly and surface packing to proper line and level complete as directed by the Engineer-in-charge. (No deduction to be made towards voids in finished section.) (Cost of transportation to be added)

Unit - 1 cum.

A.Materials

Blasted R R stone	1.00 cum	@	Rs148.00	Rs148.00
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B. Labour charges for lifting & laying etc.

i) Stone packer	0.20 nos.	@	Rs65.00	Rs13.00
ii)Male Worker	0.35 nos.	@	Rs55.00	Rs19.25
iii)Hammer Man	0.10 nos.	@	Rs65.00	Rs6.50

(A + B) =

Rs186.75

Overhead charges @ 10% on (A+B)=

Rs18.68

Rs205.43 /cum.

Or Say

Rs205.40 /cum.

12. Providing stone riprap to the slopes of earthdam and dyke with quarried and blasted granite stone boulders of size 0.30m and above including dumping on slopes filling interstices with small stones & wedges and packing surface to proper line and levels including fixing wave breakers complete with all leads & lifts complete as directed by the Engineer-in-charge. (No deduction towards voids in finished section.) (Cost of transportation to be added)

Unit - 1 cum.

A. Materials

Blasted R R stone	1.00 cum	@	Rs148.00	Rs148.00
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B. Labour charges

i) Stone packer	0.32 nos.	@	Rs65.00	Rs20.80
ii) Male Worker	0.45 nos.	@	Rs55.00	Rs24.75
iii) Hammer Man	0.10 nos.	@	Rs65.00	Rs6.50

(A + B) =	Rs200.05
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Overhead charges @ 10% on (A+B)=	Rs20.01
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	Rs220.06
Or Say	Rs220.10 /cum.

13. Excavation in all kinds of soil including moorum, stoney earth, gravel etc. excepting all kinds of rock & boulders exceeding 0.014cum in volume for dam base stripping, cut-off trenches, outfall drains and stripping in borrow areas including rough dressing and dumping the excavated materials away from work site manually within 50m initial lead and 1.5m initial lift as per the direction of Engineer-in-charge including stacking of useful materials as directed.

Per 1 cum.

A) Labour Charge

Male Worker	0.237 nos.	@	Rs55.00	Rs13.04
Female Worker	0.237 nos.	@	Rs55.00	Rs13.04

Prime cost =	Rs26.08
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B) Other Charges

i) Overhead charges @10% of prime cost=	Rs2.61
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	Rs28.69 /cum
Or Say	Rs28.70 /cum

14. Excavation of foundation in Disintegrated rock not requiring blasting to be removed by pick axes and crow bars and depositing excavated materials manually within 50m. initial lead and 1.5m. initial lift including stacking useful materials separately as per direction of Engineer-in-charge.

Per 1 cum.

A) Labour Charge

Male Worker	0.55 nos.	@	Rs55.00	Rs30.25
Female Worker	0.54 nos.	@	Rs55.00	Rs29.70
			Prime cost =	Rs59.95

B) Other Charges

i) Overhead charges @10% of prime cost=

Rs6.00

Rs65.95 /cum

Or Say

Rs66.00 /cum

15. Excavation of foundation in hard rock of all toughness and boulders above 0.03 cum in volume within 50 m. initial lead and 1.5 m. initial lift including rough dressing as per specification of the department including stacking useful stones and disposal of muck manually as directed by the Engineer-in-charge.

Per 1 cum.

A) Drilling and blasting charge :

(a) Compressor Charges

Hire charge of 400 cfm compressor per hour = Rs.766.35

3 Jack hammer can be operated at a time and outturn of jack hammer = 5 holes drilling.

Blasted Rock out turn per 1.0 m hole is 1.00 cum.

Total out turn of blasted rock/hr= (3 x 5 x 1.00) 15.00 cum.

Hire charge of compressor per cum =

Rs.51.09

(b) Jack hammer charges

Hire charge of jack hammer per hour = Rs.7.93

Out turn per hour =(5 x 1.0)= 5.00 cum.

Hire charge of jack hammer per cum =

Rs.1.59

(c) Consumables

Cost of drill rod 2'6" (c1)= Rs.1,650.00

Cost of drill rod 5'0" (c2)= Rs.2,450.00

Avg. cost of drill rod (c3)=(c1+c2)/2 Rs.2,050.00

Life of one drill rod = 150.00 r.m.

Cost of drill rod per cum (c3 /(150 x 1.0)) =

Rs.13.67

Cost of air line per cum (L.S.) =

Rs.5.00

(d) Labour Charges

Driller 3 nos. @ 75.00 /day = Rs.225.00

Male Worker 4 nos. @ 55.00 /day = Rs.220.00

Blaster 1 no. @ 85.00 /day = Rs.85.00

Add for hidden cost of labour @10% of direct labour charges =

Rs.53.00

Rs.583.00

Labour charges for drilling/cum taking 7hrs/shift =

Rs.5.55

(e) Explosives (Data for 2.4 m hole)

2/7th kg of Gelatine @ 75.00 /kg = Rs.21.43

1 no. of Electric Detonator = 12.00 /no. Rs.12.00

Lead wire (L.S.) = Rs.5.00

Ammonium Nitrate 0.8 kg @ 25.00 /kg = Rs.20.00

Total on explosives =				Rs.58.43	
Cost of explosive per cum =(cost of explosive/(2.4 x 1.0))=					Rs.24.35
DRILLING AND BLASTING COST (Q1) =					Rs.101.25
ADD FOR SECONDARY BLASTING (Q2) = 20% OF Q1 =					Rs.20.25
					<u>Rs.121.50</u>
B) Labour charge					
Hammer man	0.10 nos.	@	Rs65.00		Rs6.50
Male Worker	0.50 nos.	@	Rs55.00		Rs27.50
			(A + B) =		<u>Rs155.50</u>
Overhead charges @ 10% of (A+B)					<u>Rs15.55</u>
					Rs171.05 /cum
			Or Say		Rs171.10 /cum

16. Excavation, loading, unloading and carriage by mechanical means of all kinds of soil, including stoney earth, gravel and moorum etc interspread with boulders upto 1/2 cum size with all lifts and delifts including trimming of slopes and bed to design section and depositing the the excavated materials away from work site as per the specification and as directed by the Engineer-in-charge within an initial lead of 1km from the place of excavation complete.

Per 1 cum.

(A) Excavation by Mechanical means

Considering Hitachi Excavator of the following specification :

Capacity of bucket =	0.91 cum
Cycle time for one bucket excavation =	16.00 sec
Bucket fill factor =	0.90
Overall efficiency =	83.00 %

Taking effective working per hr = 50 min,	
Production per hour (loose earth) =	
$(50 \times 60 \times 0.91 \times 0.9 \times 0.83)/16 =$	127.46 cum

Considering a swell factor of 0.86 for all kinds of soil,	
Quantity of land excavation per hour =	109.62 cum

Hire charge of excavator	
excluding supervision charges =	1717.64

Cost of excavtion per 1 cum = $1717.64/109.62 =$	Rs15.67
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(B) Trasportation cost

Capacity of Tipper (loose soil) =	5.70 cum
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Taking 80% carrying capacity, the	
capacity of Tipper =	4.56 cum
Lead =	1.00 km

a) Loading time = (Body capacity/Excavator output per min)	
=	2.15 min

b) Loaded haul @ 20km/hr =	3.00 min
c) Empty haul @ 20km/hr =	3.00 min
d) Spotting, turning and unloading time =	<u>1.40</u> min
Total cycle time =	9.55 min

Quantity to be carried per hour = 23.88 cum

Considering a swell factor of 0.86 for all kinds of soil,
Quantity of land excavation per hour = 20.54 cum

Hire charge of Tipper excluding supervision charge / hr = Rs498.31
Depreciation of tyres & tubes :- (6 x 9500/4000) Rs14.25
Hire charge of Tipper per hour = Rs512.56

Cost of transportation of all kinds of soil within initial lead of 1km = (512.56/20.54) = Rs24.95

Total of excavation and transportation = 15.67+24.95 = Rs40.62
Add for trimming of slope and bed manually L.S. Rs1.00
(A + B) = Rs41.62

Overhead charges @ 10% of (A+B) Rs4.16
Total = Rs45.78 /cum
Or Say Rs45.80 /cum

17. Excavation, loading and carriage by mechanical means in D.I. rock, laterite and soft rock not requiring blasting interspread with boulders upto 1/2 cum size with all lifts and delifts including trimming of slopes and bed to design section and depositing the excavated materials away from work site as per the specification and as directed by the Engineer-in-charge within an initial lead of 1km from the place of excavation complete.

Per 1 cum.

A. Excavation by Mechanical means

Capacity of excavator for excavation of loose earth = 127.46 cum

Considering a swell factor of 0.715 for D.I. rock,
Quantity of soil excavation per hour = 91.13 cum

Hire charge of excavator excluding supervision charges = 1717.64

Cost of excavation per 1 cum = 1717.64/91.13 = Rs18.85

B. Transportation cost

Capacity of Tipper (loose soil) = 5.70 cum
Taking 80% carrying capacity, the capacity of Tipper = 4.56 cum
Lead = 1.00 km

a) Loading time = (Body capacity/Excavator output per min)	=	2.15 min
b) Loaded haul @ 20km/hr =		3.00 min
c) Empty haul @ 20km/hr =		3.00 min
d) Spotting, turning and unloading time =		<u>2.23</u> min
Total cycle time =		10.38 min

Quantity to be carried per hour = 21.97 cum

Considering a swell factor of 0.715 for D.I. rock
Quantity of soil excavation per hour = 15.71 cum

Hire charge of Tipper per hour = Rs512.56
(As per Item No.16)

Cost of transportation of D.I. rock earth within
initial lead of 1km = $(512.56/15.71) =$ Rs32.63

Total of excavation and transportation = 18.85+32.63 =		Rs51.48
Add for trimming of slope and bed manually =	L.S.	<u>Rs2.00</u>
	(A + B) =	Rs53.48

Overhead charges @ 10% of (A+B)		<u>Rs5.35</u>
	Total =	Rs58.83 /cum
	Or Say	Rs58.80 /cum

18. Excavation of hard rock of all toughness in canal and cutoff trench of earth dam and other deep cutting sections by mechanical drilling and appropriate blasting with all lifts and delifts, loading into and transportation by transport vehicle within 1 km of initial lead and depositing the excavated materials neatly in specified dump yard as directed by Engineer-in-charge and trimming of bed and slope to the design finished section by manually, if necessary complete. (Recovery of useful materials of all sizes will normally be 0.7 cum per cum of excavation measured in dump condition. In case of change of recovery due to rock condition, percentage is to be fixed by Chief Engineer-in-charge).

Per 1 cum.

- Operations involved :
- Rock is to be blasted continuously.
 - The blasted materials is to be heaped.
 - The heaped rock are to be loaded on Tipper by excavator.
 - The loaded materials is to be carried within a lead of 1 km.
 - Trimming of bed and slope.

A. Cost of Drilling and blasting per 1 cum = Rs101.25
(As per Item of Hard Rock)

B. Loading by excavator /cum= $1717.64/72 =$ Rs23.86
(Taking outturn in rock as 72 cum/hr)

C. Transportation by Tipper

Capacity of Tipper (loose soil) = 5.70 cum

Taking 80% carrying capacity, the capacity of Tipper = 4.56 cum

Lead = 1.00km

a) Loading time = (Body capacity/Excavator output per min) = 3.80 min

b) Loaded haul @ 20km/hr = 3.00 min

c) Empty haul @ 20km/hr = 3.00 min

d) Spotting, turning and unloading time = 1.40 min

Total cycle time = 11.20 min

Quantity to be carried per hour = 20.36 cum

Considering a swell factor of 0.715

Quantity carried per hour = 14.56 cum

Hire charge of Tipper per hour = Rs512.56
(As per Item No.16)

Cost of transportation within initial lead of 1km = (512.56/14.56) = Rs35.20

D. Hire charge of Dozer per hour Rs2,141.79
(excluding supervision charge)Cost of spreading by Dozer = 2141.79/120 = Rs17.85(A+B+C+D)= Rs178.16Overhead charges @10% of (A+B+C+D)= Rs17.82Total = Rs195.98 /cumOr Say Rs196.00 /cum

19. Preparation of bed of foundation by wedging and barring in hard rock including removal of loose rock complete and disposal of muck by mechanical means within initial lead & lift as directed by Engineer-in-charge.

Per 1 cum.

A. Labour Charge

Stone Cutter 1.00 nos. @ Rs75.00 Rs75.00

Hammer man 1.00 nos. @ Rs65.00 Rs65.00

Male Worker 2.00 nos. @ Rs55.00 Rs110.00(A) = Rs250.00

i) Overhead charges @10% of (A)= Rs25.00

Rs275.00 /cumOr Say Rs275.00 /cum

20. Clearance of slush and muck from foundation pit by manual means including removal of debris within 50 m. initial lead and initial lift of 1.5m as directed by the Engineer-in-charge.

Per 1 cum.

A. Labour Charge

Male Worker	0.22 nos.	@	Rs55.00	Rs12.10
Female Worker	0.44 nos.	@	Rs55.00	Rs24.20
			(A) =	<u>Rs36.30</u>

i) Overhead charges @10% of (A)= Rs3.63

Or Say Rs39.93 /cum
Rs39.90 /cum

21. Preparation of foundation bed in hard rock requiring chieselling, hammering and tampering; wire brushing and air & water jetting etc including hire charges of all equipments and T & P etc. complete for dams, barrages and power house etc. over rock foundation as directed by Engineer-in-charge.

Per 1 sqm.

A. Chipping

Stone Cutter	0.20 nos.	@	Rs75.00	Rs15.00
Male Worker	0.10 nos.	@	Rs55.00	Rs5.50

B. Brushing and removal of debris

Female Worker	0.10 nos.	@	Rs55.00	Rs5.50
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C. Air and Water jetting in three operations

i) Air compressor / one point supply charges	0.05 hr.	@	Rs324.79	Rs16.24
ii) Water charges			L.S.	Rs1.00
iii) Air hose, water hose & fittings and jet point charges			L.S.	Rs1.50
iv) Jet operator	0.01 nos.	@	Rs65.00	Rs0.65
v) Helper	0.01 nos.	@	Rs65.00	Rs0.65
			(A + B + C) =	<u>Rs46.04</u>

Overhead charges @10% of (A+B+C)= Rs4.60

Or Say Rs50.64 /sqm
Rs50.60 /sqm

22. Fixing 25 mm. dia anchor bars in foundation rock including drilling 35 mm. dia holes, fixing wedged anchor and grouting with cement mortar 1:4 complete as per the direction of Engineer-in-charge excluding cost of M.S. rods for dams, barrages and power house structures including pull testing of 30% of anchors. (Depth of hole only to be measured for payment purpose).

Per 1 r.m.

A. Drilling Hole

i) 400cfm Compressor with crew	0.145 hr.	@	Rs766.35	Rs111.12
ii) Jack Hammer	0.435 hr.	@	Rs7.93	Rs3.45
iii) Labour for drilling holes -				
Driller	0.07 nos.	@	Rs75.00	Rs5.25
Male Worker	0.07 nos.	@	Rs55.00	Rs3.85

iv) Cost of drill rod	1/150 nos.	@	Rs2,050.00	Rs13.67
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B. Making wedged anchors and fixing

i) Cutting & splitting upto 10 cm. -

Fitter Special	0.10 nos.	@	Rs85.00	Rs8.50
Male Worker	0.10 nos.	@	Rs55.00	Rs5.50

ii) Fixing anchors into holes -

Hammer man	0.05 nos.	@	Rs65.00	Rs3.25
Male Worker	0.05 nos.	@	Rs55.00	Rs2.75

iii) Cost of wedge L.S. Rs2.50

iv) Grouting with cement mortar including materials and labours

L.S. Rs6.00

Add for pull testing

L.S. Rs2.50

(A+B) = Rs168.34

Overhead charges @10% of (A+B)=

Rs16.83

Rs185.17 /1R.M.

Or Say

Rs185.20 /1R.M.

23. Random rubble stone masonry in dams, barrages and weirs etc. with cement mortar 1:3 with quarried stone boulders of approved quality including providing all materials, machineries and labour etc complete as per the direction of Engineer-in-charge including construction of necessary ramps, cat ways etc. for all lifts and delifts upto 10m of dam from average N.S.L. of block. (Cost of transportation to be added)

For 1 cum

A. Materials:

i) Rubble stones including bond stones, spalls and wedges 1cum	1.00 cum	@	Rs122.90	Rs122.90
ii) Sand of approved quality 0.45 cu	0.45 cum	@	Rs29.00	Rs13.05
iii) Cement	2.15 qtl	@	Rs354.00	Rs761.10
iv) Water cost (not allowed if supply mains provided by department)			L.S.	Rs2.50
v) Admixtures (if used add extra)			L.S.	<u>Rs0.00</u>
			Total =	Rs899.55

B. Labour charges for feeding mixer, carrying materials from stock piles, laying masonry, curing etc. including cleaning.

Labour charges for 7.86 cum of masonry constructed per day with the following labour for +/- 10m lift.

Mason Special	1.00 nos.	@	Rs85.00	Rs85.00
Mason Ordinary	1.00 nos.	@	Rs75.00	Rs75.00
Hammer man	0.50 nos.	@	Rs65.00	Rs32.50
Sangi mulia	5.00 nos.	@	Rs65.00	Rs325.00
Male Worker	5.00 nos.	@	Rs55.00	Rs275.00
Female worker	9.00 nos.	@	Rs55.00	<u>Rs495.00</u>

Rs1,287.50

For lift/delift upto 20m add 20 % extra on labour =

Rs257.50

Rs1,545.00

Quantity done in cum = 7.86
 Rate/cum = Rs196.56

C. Hire charge of mixer

A 10/7 concrete mixer can produce Mortar @4cum/hour

For 0.45 cum time = $1/4 \times 0.45 =$ 0.1125 hr.

Hire charges @ Rs126.96 /hr = Rs14.28

D. Cost of providing Ramps & Scaffolding and catways etc.

@ 10 % cost of materials (A) (A+B+C+D)= $\frac{Rs89.96}{Rs1,200.35}$

Overhead charges @10% of (A+B+C+D)= $\frac{Rs120.04}{Rs1,320.39}$ /cum
 Or Say Rs1,320.40 /cum

24. Random rubble stone masonry in dams, barrages and weirs etc. with cement mortar 1:4 with quarried stone boulders of approved quality including providing all materials, machineries and labour etc complete as per the direction of Engineer-in-charge including construction of necessary ramps, catways etc. for all lifts and delifts upto 10m of dam from average N.S.L. of block. (Cost of transportation to be added)

For 1 cum

A. Materials:

i) Rubble stones including bond stones, spalls and wedges	1.00 cum	@	Rs122.90	Rs122.90
ii) Sand of approved quality	0.45 cum	@	Rs29.00	Rs13.05
iii) Cement	1.60 qtl	@	Rs354.00	Rs566.40
iv) Water cost (not allowed if supply mains provided by department)		L.S.		Rs2.50
v) Admixtures (if used add extra)		L.S.		<u>Rs0.00</u>
		Total =		Rs704.85

C. Labour charges for feeding mixer, carrying materials from stock piles, laying masonry, curing etc. including cleaning.

(As per Item R.R.stone Masonry with C:M 1:3) Rs196.56

D. Hire charge of mixer

(As per Item R.R.stone Masonry with C:M 1:3) Rs14.28

E. Cost of providing Ramps & Scaffolding and catways etc.

@ 10 % cost of materials (A) (A+B+C+D)= $\frac{Rs70.49}{Rs986.18}$

Overhead charges @10% of (A+B+C+D)= $\frac{Rs98.62}{Rs1,084.80}$ /cum

Or Say

Rs1,084.80 /cum

25. Cement concrete M10 grade with crushed granite coarse aggregate of size 40mm down graded mixed in batching and mixing plant including cost of all materials, machineries and labour for materials up to mixing yard and transportation of mixed concrete within initial lead of 1km by mechanical means and laying in dams, barrages, power house and pen stock with all lifts/delifts upto 1.5m height above average ground level as per direction of Engineer-in-charge. (Cost of transportation of materials to be added)

For 1 cum

A. Materials

- i) Cost of 40mm down graded aggregate for 0.93 cum :

40 mm down graded metal will contain

40mm	50.00%	@	Rs464.00	Rs232.00
20mm	25.00%	@	Rs638.00	Rs159.50
10mm	25.00%	@	Rs671.00	<u>Rs167.75</u>
Rate/cum =(464x0.50+638x0.25+671x0.25)=				Rs559.25
Rate for 0.93 cum	0.93 cum	@	Rs559.25	Rs520.10

ii) Sand	0.37 cum	@	Rs29.00	Rs10.73
iii) Cement	2.07 qtl	@	Rs354.00	Rs732.78
iv) Admixtures (to be added if used)		L.S.		Rs0.00
v) Water cost (to be added if supply mains not provided by the department)		L.S.		<u>Rs2.50</u>
Total =				Rs1,266.11

B. Labour charges

- i) Feeding batching plant :

Male Worker	0.20 nos.	@	Rs55.00	Rs11.00
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- ii) Placement and laying :

Mason Special	0.05 nos.	@	Rs85.00	Rs4.25
Male/Female worker	0.67 nos.	@	Rs55.00	Rs36.85

- iii) Cleaning surface and green cutting and curing :

Jet Operator	0.10 nos.	@	Rs65.00	Rs6.50
Female worker	0.20 nos.	@	Rs55.00	<u>Rs11.00</u>
Total =				Rs69.60

C. Hire charge of machineries

- i) Hire charge of transport vehicle :

(Conveyance of Green concrete from batching plant to work site)

Transportation up to 1km by Tipper

One Tipper can carry 1.8 cum per trip, which is manufactured by Batching Plant in two batches of 3 minutes each i.e. in 6 minutes.

Loading time 6.0 min

Loaded haul (@ 20 kmph)	3.0 min
Empty haul (@ 30 kmph)	2.0 min
Unloading, turning, dumping etc.	<u>3.3</u> min
Total cycle time =	14.30 min

No. of trips / hr considering time = (50/14.30)	50.00 min effective 3.50 trips
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Quantity of concrete transported considering 80% efficiency =	5.04 cum
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Use rate of Tiper / hr without P.O.L. =				221.47
Cost of P.O.L. & lubricants -				
a) Diesel	2.00 lt	@	Rs34.00	Rs68.00
b) Lubricant @20% of Diesel				<u>Rs13.60</u>
				303.07

Hire charge of Tipper / cum =	Rs60.13
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ii) Hire charge of Batching and Mixing Plant :

Out turn per hour =	15.00 cum		
Hire charge of Batching Plant/hr =			468.70
Hire charge of Batching Plant / cum =			Rs31.25

iii) Hire charge of compressor for washing, cleaning
and green cutting :

Hire charge of 400cfm compressor/hr =	766.35
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Compressor can supply air to 3 points and time
for cleaning in 3 phases is considered to be
0.03 hr each for 1 cum of concrete.

Hire charge of Compressor / cum =	Rs22.99
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iv) Hire charge of vibrator :

Considering working conditions, one vibrator
can consolidate 5.04 cum concrete in 1 hr.

Use rate of Vibrator / hr =	94.90
Hire charge of Vibrator / cum =	<u>Rs18.83</u>
Total =	Rs133.20

(A + B + C) = Rs1,468.91

Overhead charges @10% of (A+B+C)	<u>Rs146.89</u>
Or Say	Rs1,615.80 /cum
	Rs1,615.80 /cum

26. Cement concrete M15 grade with crushed granite coarse aggregate of size 40mm down graded mixed in batching and mixing plant including cost of all materials, machineries and labour and transportation of mixed concrete within initial lead of 1km by mechanical means and laying in dams, barrages, power house and pen stock with all lifts/delifts upto 1.5m height above average ground level as per direction of Engineer-in-charge. (Cost of transportation of materials to be added)

Unit - Per 1 cum

A. Materials

i) Cost aggregates

40mm	0.54 cum	@	Rs464.00	Rs250.56
20mm	0.27 cum	@	Rs638.00	Rs172.26
10mm	0.09 cum	@	Rs671.00	Rs60.39
ii) Sand	0.45 cum	@	Rs29.00	Rs13.05
iii) Cement	2.70 qtl	@	Rs354.00	Rs955.80
iv) Admixtures (to be added if used)			L.S.	Rs0.00
v) Water cost (to be added if supply mains not provided by the department)			L.S.	<u>Rs2.50</u>
			Total =	Rs1,454.56

B. Labour charges

Same as per M10 concrete Rs69.60

C. Hire charge of machineries :

Same as per M10 concrete Rs133.20
 (A + B + C) = Rs1,657.36

Overhead charges @10% of (A+B+C)= Rs165.74
Rs1,823.10 /cum
 Or Say Rs1,823.10 /cum

27. Cement concrete M15 grade with crushed granite coarse aggregate of size 20mm and down graded mixed in batching and mixing plant including cost of all materials, machineries and labour and transportation of mixed concrete within initial lead of 1km by mechanical means and laying in dams, barrages, power house and pen stock with all lifts/delifts upto 1.5m height above average ground level in respective blocks as per direction of Engineer-in-charge. (Cost of transportation to be added)

Unit - Per 1 cum

A. Materials

i) Cost of 20mm down graded aggregate

20 mm down graded metal will contain

20mm	0.54 @		Rs638.00	Rs344.52
10mm	0.36 @		Rs671.00	Rs241.56
ii) Sand	0.45 cum	@	Rs29.00	Rs13.05
iii) Cement	2.88 qtl	@	Rs354.00	Rs1,019.52

iv) Admixtures (to be added if used)	L.S.	Rs0.00
v) Water cost (to be added if supply mains not provided by the department)	L.S.	<u>Rs2.50</u>
	Total =	Rs1,621.15

B. Labour charges for feeding materials, laying cleaning and curing etc. :

Same as per M10 concrete Rs69.60

C. Hire charge of machineries :

Same as per M10 concrete Rs133.20
(A + B + C) = Rs1,823.95

Overhead charges @10% of (A+B+C)= Rs182.40
Rs2,006.35 /cum
Or Say Rs2,006.40 /cum

28. Cement concrete M20 grade with crushed granite coarse aggregate of size 20mm and down graded mixed in batching and mixing plant including cost of all materials, machineries and labour and transportation of mixed concrete within initial lead of 1km by mechanical means and laying in dams, barrages, power house and pen stock with all lifts/delifts upto 1.5m height above average ground level in respective blocks as per direction of Engineer-in-charge.

Unit - Per 1 cum

A. Materials

i) Cost of 20mm down graded aggregate				
20mm	0.54 cum	@	Rs638.00	Rs344.52
10mm	0.36 cum	@	Rs671.00	Rs241.56
ii) Sand	0.45 cum	@	Rs29.00	Rs13.05
iii) Cement	3.47 qtl	@	Rs354.00	Rs1,228.38
iv) Admixtures (to be added if used)		L.S.		Rs0.00
v) Water cost (to be added if supply mains not provided by the department)		L.S.		<u>Rs2.50</u>
		Total =		Rs1,830.01

B. Labour charges :
Same as per M10 concrete Rs69.60

C. Hire charge of machineries :
Same as per M10 concrete Rs133.20
(A + B + C) = Rs2,032.81

Overhead charges @10% of (A+B+C+D) Rs203.28
Rs2,236.09 /cum
Or Say Rs2,236.10 /cum

29. Providing porous cement concrete pipes of size 0.69m x 0.69m cross section with 23cm dia holes with porous concrete 1:3.5 proportion with 20mm downgraded coarse aggregate within initial lead and lift/ delift of 20m from average N.S.L. of dam block including supply of all materials, shuttering charges, labour charges including positioning in dam with curing complete as per the direction of Engineer-in-charge.

Unit - 1 r.m.

Volume of porous concrete/m =
 $(0.69^2 - (\pi/4) \times 0.23^2) =$ 0.435 cum.

A. Materials

i) Cost of 20mm down graded aggregate 0.435 cum

20 mm down graded metal will contain

20mm to 10mm (60%)	60% @	Rs638.00	
10mm to 6mm (40%)	40% @	Rs671.00	

Rate/cum = $(638 \times 0.60 + 671.00 \times 0.40) =$		Rs651.20	
Rate for 0.435 cum	0.435 cum @	Rs651.20	Rs283.27

ii) Cement	1.76 qtl @	Rs354.00	Rs623.04
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iii) Water cost (to be added if supply mains not provided by the department)		L.S.	<u>Rs2.50</u>
		Total =	Rs908.81

B. Labour charges

i) Washing of aggregate :

Female Worker	0.15 nos. @	Rs55.00	Rs8.25
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ii) Feeding Mixer :

Male/Female Worker	0.15 nos. @	Rs55.00	Rs8.25
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iii) Shuttering :

Fitter/Carpenter	0.04 nos. @	Rs85.00	Rs3.40
Male Worker	0.04 nos. @	Rs55.00	Rs2.20

iv) Laying concrete, finishing, curing :

Mason Special	0.05 nos. @	Rs85.00	Rs4.25
Male/Female Worker	0.25 nos. @	Rs55.00	Rs13.75

v) Conveyance of precast block to placement spot and aligning & fixing :

Mason Special	0.05 nos. @	Rs85.00	Rs4.25
Male/Female Worker	0.75 nos. @	Rs55.00	<u>Rs41.25</u>
		Total =	Rs85.60

C. Shuttering Charges

One steel centring box and one M.S. pipe 23cm dia can be used for 60 times and salvage value will be 20% only.

The porous blocks shall be cast in 0.5m high pieces.

For one shutter of 0.5m height

a) M.S. angle 50x50x6mm thick 7.6m @ 4.5 kg/m =	34.20 kg
b) M.S. plate 2.3mm thick $(4 \times 0.65 \times 0.5) = 1.3$ sqm @ 18 kg/sqm =	<u>23.40</u> kg
	57.60 kg

Cost of 57.60 kg	@	Rs30.64	Rs1,764.86
Manufacturing cost with incidentals for 57.60 kg	@	Rs5.00	Rs288.00
Cost of 23cm dia M.S. pipe of 0.5m =	L.S.		<u>Rs200.00</u>
Cost of one shutter =			Rs2,252.86

Cost of 2 sets =			Rs4,505.72
Deduct scrap value (20%) =		(-)	<u>Rs901.14</u>
			Rs3,604.58
Cost /use for block of 1m height = 3604.58/60 =			Rs60.08

D. Hire charge of mixer for	0.176 hr		
Hire charge of mixer /hr =	Rs126.96		
Hire charge of mixer /r.m. = 126.96 x 0.176=			Rs22.34
(A + B + C + D) =			Rs1,076.83

Overhead charges @10% of (A+B+C+D)			<u>Rs107.68</u>
			Rs1,184.51 /r.m.
	Or Say		Rs1,184.50 /r.m.

30. Flush pointing to stone masonry in cement mortar 1:3 including racking out joints 5mm deep, cleaning, pressing cement mortar finishing and curing including cost of materials, labour, scaffolding with initial lead and lift upto 10m etc. complete as per the direction of Engineer-in-charge.

Unit - 1 sqm

A. Materials

i) Cement	0.043 qtl	@	Rs354.00	Rs15.22
ii) Sand	0.009 cum	@	Rs29.00	<u>Rs0.26</u>
			Total =	Rs15.48

B. Labour charges

Mason Special	0.11 nos.	@	Rs85.00	Rs9.35
Male Worker	0.10 nos.	@	Rs55.00	Rs5.50
Female Worker	0.30 nos.	@	Rs55.00	<u>Rs16.50</u>
			Total =	Rs31.35

C. Scaffolding Charges

3 % of Labour charges (C) =				Rs0.94
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(A + B + C) = Rs47.77

Overhead charges @10% of (A+B+C)			<u>Rs4.78</u>
			Rs52.55 /sqm
	Or Say		Rs52.60 /sqm

31. Rule pointing to stone masonry in cement mortar 1:3 including racking out joints 5mm deep, cleaning, pressing cement mortar finishing and curing including cost of materials, labour, scaffolding with initial lead and lift up to 10m etc. complete as per the direction of Engineer-in-charge.

Unit - 1 sqm

A. Materials

i) Cement	0.0516	qtl	@	Rs354.00	Rs18.27
ii) Sand	0.011	cum	@	Rs29.00	<u>Rs0.32</u>
Total =					Rs18.59

B. Labour charges

Mason Special	0.172	nos.	@	Rs85.00	Rs14.62
Male Worker	0.10	nos.	@	Rs55.00	Rs5.50
Female Worker	0.30	nos.	@	Rs55.00	<u>Rs16.50</u>
Total =					Rs36.62

C. Scaffolding Charges

3 % of Labour charges (C) = Rs1.10

(A + B + C) = Rs56.31

Overhead charges @10% of (A+B+C)

Rs5.63

Rs61.94 /sqm

Or Say

Rs61.90 /sqm

32. 25mm thick (average) cement plaster in contraction joints in masonry dams in cement mortar 1:3 including surface preparation by racking out joints etc.and curing including cost of materials, labour, scaffolding with initial lead and lift up to 10m etc.complete as per the direction of Engineer-in-charge.

Unit - 1 sqm

A. Materials

i) Cement	0.145	qtl	@	Rs354.00	Rs51.33
ii) Sand	0.026	cum	@	Rs29.00	<u>Rs0.75</u>
Total =					Rs52.08

B. Labour charges

Mason Special	0.18	nos.	@	Rs85.00	Rs15.30
Male Worker	0.15	nos.	@	Rs55.00	Rs8.25
Female Worker	0.11	nos.	@	Rs55.00	<u>Rs6.05</u>
Total =					Rs29.60

C. Scaffolding Charges

3 % of Labour charges (C) = Rs0.89

(A + B + C) = Rs82.57

Overhead charges @10% of (A+B+C)

Rs8.26

Rs90.83 /sqm

Or Say

Rs90.80 /sqm

33. Providing contraction joints of masonry and concrete dams by installation of two lines of Z-type copper sealing strips of 16 S.W.G (1.63mm thick) excluding cost of copper strips, G.I. pipes of 20mm dia, fabrication, filling with asphalt of approved grade complete, excluding cost of copper sheet as per the direction of Engineer-in-charge. (Any plastering or shuttering required for groove or notch to be paid separately.)

Unit - 1 r.m.

A. Materials

i) Copper sheet 1.63mm thick 0.6m wide 2nos.x0.6x1.0x(1.63x8900)/1000 = (Weight of copper 8900 kg/cum)				17.41 kg
Brazing charges of copper strips at ends	0.24 m	@	Rs50.00	Rs12.00
ii) 10mm dia M.S. rods for fixing copper strips (2x4nos.x0.75mx0.62)	3.72 kg	@	Rs28.58	Rs106.32
iii) Cost of 20mm dia G.I. Pipes 2m.	2.00 m	@	Rs55.00	Rs110.00
iv) Cost of Asphalt			L.S.	<u>Rs120.00</u>
			Total =	<u>Rs348.32</u>

B. Labour charges

Fitter Special	1.00 nos.	@	Rs85.00	Rs85.00
Male Worker	3.00 nos.	@	Rs55.00	<u>Rs165.00</u>
			Total =	Rs250.00

(A + B) = Rs598.32

Overhead charges @10% of (A+B) =

Rs59.83

Rs658.15 /r.m.

Or Say

Rs658.20 /r.m.

34. Providing contraction joint in the dam including fixing one line of Z-type copper sealing strip of 16 SWG (1.63 mm thick) and one line of P.V.C. water stop of approved design including fixing 20 mm dia G.I. pipes for heating and filling with asphalt of approved grade but excluding cost of copper strip and P.V.C. strip but including cost of all other materials complete including jointing sheets with bredzing/araldite etc. as directed by the Engineer-in- Charge (Any plastering or shuttering required for groove or notch to be paid separately).

Unit - 1 r.m.

A. Materials

i) Copper sheet 1.63mm thick 0.6mm wide 1 meter - 8.705 K.G				
ii) P.V.C. water stop - 1 mtr				
iii) Brazing copper sheet	0.60 mtr	@	Rs50.00	Rs30.00
iv) 10mm dia MS rods for fixing strips	3.72 kg	@	Rs28.58	Rs106.32
v) 20mm dia G.I pipe	2.00 mtr	@	Rs55.00	Rs110.00
vi) Cost of Asphalt			L.S.	<u>Rs120.00</u>
				<u>Rs366.32</u>

B. Labour Charges

i) Fitter Special	0.80 nos	@	Rs85.00	Rs68.00
ii) Male worker	2.00 nos	@	Rs55.00	<u>Rs110.00</u>
				Rs178.00

(A + B) = Rs544.32

Overhead charges @10% of (A+B) =

Rs54.43

Rs598.75

Or Say

Rs599.00 /1r.m.

35. Providing P.V.C. water stop for drainage gallery as per approved design including fixing in proper alignment and joining with araldite etc. excluding cost of P.V.C water stop as directed by Engineer-in-Charge.

Unit 1 R.M.

A. Materials

i) Cost of P.V.C. water stop - 1 mtr. Rs0.00

ii) 10mm dia MS rods for supporting in position
2x2x0.75 = 3m @ 0.62 K.G/m =

1.86 kg @ 28.58 Rs53.16

B. Labour Charges

i) Fitter Special 0.25 nos @ Rs85.00 Rs21.25

ii) Male worker 0.50 nos @ Rs55.00 Rs27.50

Rs48.75

(A + B) = Rs101.91

Overhead charges @10% of (A+B) =

Rs10.19

Rs112.10

Or Say

Rs112.10 /R.M.

36. Providing rigid shuttering with the box type steel shuttering plates with keys for intermediate construction joints in rafts of weirs, barrages and dam blocks including cost of all materials, labour, T. & P. etc. complete as directed by the Engineer-in-charge including removal of forms.

Unit- 1 cum of concrete / 1 sqm of shuttering

It is assumed that the concrete shall be laid in 0.5m layers in confined areas of 15m x 10m. Considering two vertical faces of the confined area require intermediate shuttering and two other faces is already available,

Area of shuttering =(15.00+10.00)x0.5 =

12.50

Zig zag faces = 25 x 0.15 x 0.5 =

1.88

14.38 sqm

Volume of concrete = (15.00x10.00x0.5)=

75.00 cum

A. Materials

a) Cost of shuttering boxes :-

Boxes of 1.00mx0.5mx0.5m having three faces shall be used with 50x50x6mm angles and 2.5mm plates.

M.S. Angles 50x50x6mm

8.0m @ 4.5 kg/m =	36.00 kg			
M.S. plate 2.5mm thick				
1 sqm @ 19.62 kg/sqm =	<u>19.62</u> kg			
	55.62 kg			
Structural Steel 55.62 kg		@	Rs30.64	Rs1,704.20
Fabrication charges for 55.62 kg		@	Rs2.70	<u>Rs150.17</u>
				Rs1,854.37
Fixing keys 25mm dia rod, 0.3m @ 3.85 kg/m				
	= 1.16 kg	@	Rs15.00	Rs17.40
Support Angle 50x50x6mm				
1.0m @ 4.5 kg/m =	4.50 kg	@	Rs30.64	Rs137.88
Fixing bolts and nuts 2nos. 16mm dia 5cm bolts		L.S.		<u>Rs3.00</u>
				Rs2,012.65
Deduct scrap value after uses @ 20% =				<u>Rs402.53</u>
				Rs1,610.12

Considering 70 uses, cost per use = $1610.12/70 =$ Rs23.00

For 25 nos. of shutters & fixtures = $23.00 \times 25 =$ Rs575.00

B. Labour charges for fixing, removal etc.

Fitter	1.00 nos.	@	Rs75.00	Rs75.00
Male Worker	4.00 nos.	@	Rs55.00	<u>Rs220.00</u>
		Total =		Rs295.00
		(A+B)=		Rs870.00

Overhead charges @10% of (A+B) Rs87.00
Rs957.00

1. Volume of Concrete = 75.00 cum
Rate per cum of concrete = $957.00 / 75 =$ Rs12.76
Or Say Rs12.80 /cum

2. Area of Shuttering = 14.38 sqm
Rate per sqm = $957.00 / 14.38 =$ Rs66.57
Or Say Rs66.60 /sqm

37. Providing formwork for concrete with F1 finish for upstream faces of dam, spillway, glacis of barrages, unexposed surfaces of foundation, block joints etc. with steel shutters rigidly fixed and removal of forms and making good to the surfaces where necessary complete with all labour, materials and T & P complete as directed by the Engineer-in-charge.

Unit 1 sqm

A. Materials

1) Cost of steel shuttering plates and channels :

It is assumed that 1m x 1m size steel shuttering plates manufactured by using 2.15 mm thick plates and 50 x 50 x 6mm angles shall be used with 100 x 50 x 6mm channels.

a) Cost of shutter plates :

M.S. Angles 50x50x6mm				
8.0m @ 4.5 kg/m =	36.00	kg		
M.S. plate 2.15mm thick				
1 sqm @ 16.89 kg/sqm =	<u>16.89</u>	kg		
	52.89	kg		

Structural Steel 52.89 kg	52.89	kg	@	Rs30.64	Rs1,620.55
Fabrication charges	52.89	kg	@	Rs2.70	<u>Rs142.80</u>
					Rs1,763.35
Miscellaneous & unforeseen @ 5% =					<u>Rs88.17</u>
					Rs1,851.52

b) Cost of channel 100x50x6mm					
2.0m @ 9.0 kg/m =	18.00	kg	@	Rs30.64	<u>Rs551.52</u>
					Rs2,403.04

Deduct scrap value of shutter & channel					
after use @ 20% of cost i.e.(52.89+18.00)x30.64x0.20 = (-)					<u>Rs434.41</u>
					Rs1,968.63

Considering shutter & channel to be used					
40 times for F1 finish cost per use =				1968.63/40 =	Rs49.22

Area covered = 1.0 x 1.1 =			1.10	sqm	
				Cost per 1 sqm =	Rs44.75

II) Cost of tie rods and anchors :

12 mm tie 1.5+0.15 =					
1.65 m @ 0.89 kg/m =	1.47	kg	@	Rs28.58	Rs42.01

Cost of gas electrode, nut bolt, oil etc. =				L.S.	<u>Rs10.00</u>
					Rs96.76

B. Labour Charges

One gang consisting of 1 Fitter (special), one Fitter, 5 male workers and one welder can fix and align 10 nos. of shutters in one day having formed area of 10 x 1.1 = 11.00 sqm

Fitter Special	1.00	nos.	@	Rs85.00	Rs85.00
Fitter	1.00	nos.	@	Rs75.00	Rs75.00
Male Worker	5.00	nos.	@	Rs55.00	Rs275.00
Welder	1.00	nos.	@	Rs75.00	Rs75.00
For Dismatling :					
Male Worker	3.00	nos.	@	Rs55.00	<u>Rs165.00</u>
				Total =	Rs675.00

Labour cost/sqm = 675.00/11.00 =					Rs61.36
Add for Hoisting and Scaffolding @ 20% of labour =					<u>Rs12.27</u>
					Rs73.63

(A+B)= Rs170.39

Overhead charges @10% of (A+B)					<u>Rs17.04</u>
					Rs187.43

Or Say Rs187.40 /sqm

38. Providing formwork for concrete with F2 finish for all permanently exposed surfaces not prominently exposed to public view such as in galleries, adits, bridges, retaining walls, open spillways etc. with steel shutters or plywood shutters including supply of rigid tie and supports with all labour, materials and T & P complete including finishing complete as directed by the Engineer-in-charge (abrupt surface irregularities over 5mm and gradual over 10mm measured with 1.5m template is not permitted).

Unit 1 sqm

A. Materials

Assuming use of steel shuttering plates of 1m x 1m with channel supports

I) Cost of steel shutter 1m x 1m size with 50 x 50 x 6mm angles and 3.15mm plates:

a) Cost of shutter plates :

Weight of M.S. Angles				
8.0m @ 4.5 kg/m =	36.00	kg		
Weight of M.S. plate				
1 sqm @ 24.75 kg/sqm =	<u>24.75</u>	kg		
	60.75	kg		
Structural Steel	60.75	kg	@	Rs30.64
Fabrication charges	60.75	kg	@	Rs2.70
				<u>Rs1,861.38</u>
				<u>Rs164.03</u>
				Rs2,025.41

b) Cost of channel 150x75x6mm

2.0m @ 14.15 kg/m =	28.30	kg	@	Rs30.64	<u>Rs867.11</u>
					Rs2,892.52

Deduct scrap value of shutter & channel					
after use @ 20% of cost i.e.(60.75+28.30)x30.64x0.20 = (-)					<u>Rs545.70</u>
					Rs2,346.82

Considering shutter & channel to be used					
35 times for F2 finish cost per use =				2346.82/35 =	Rs67.05

Area covered = 1.0 x 1.15 =		1.15	sqm		
				Cost per 1 sqm =	Rs58.30

II) Cost of tie rods and anchors :
(Same As F1 finish)

Rs42.01

Cost of gas electrode, nut bolt, oil etc. =			L.S.	<u>Rs10.00</u>
				Rs110.31

B. Labour Charges

Data for fixing 10 shutters :

Fitter Special	1.00	nos.	@	Rs85.00	Rs85.00
Fitter	1.00	nos.	@	Rs75.00	Rs75.00
Male Worker	6.00	nos.	@	Rs55.00	Rs330.00
Welder	1.00	nos.	@	Rs75.00	Rs75.00
For Dismatling :					
Male Worker	3.00	nos.	@	Rs55.00	<u>Rs165.00</u>
				Total =	Rs730.00

Area of shuttering =	10 x 1.15 =		11.50	sqm	
				Labour per 1 sqm =	Rs63.48

Add for Hoisting and Scaffolding @ 20% of labour =	<u>Rs12.70</u>
	Rs76.18
Add for finishing tie holes and exposed metals etc. = L.S. =	<u>Rs1.00</u>
	Rs77.18
(A+B)=	Rs187.49
Overhead charges @10% of (A+B)=	<u>Rs18.75</u>
	Rs206.24
Or Say	Rs206.20 /sqm

39. Providing formwork for concrete with F2 finish for all permanently exposed surfaces not prominently exposed to public view such as in bucket, ogee, pier noses and other curved surfaces with steel shuttering plates including supply of rigid ties and supports with all labour, materials and T & P including finishing complete as directed by the Engineer-in-charge.(abrupt surface irregularities over 5mm and gradual over 10mm measured with 1.5m template is not permitted).

Unit 1 sqm

A. Materials

Assuming use of steel shuttering plates of 1m x 1m with channel supports,

1) Cost of structural steel for 1m x 1m size with 50 x 50 x 6mm angles and 3.15mm plates :

a) Cost of shutter plates :

Weight of M.S. Angles				
8.0m @ 4.5 kg/m =	36.00 kg			
Weight of M.S. plate				
1 sqm @ 24.75 kg/sqm =	<u>24.75 kg</u>			
	60.75 kg			
Structural Steel 60.75 kg		@	Rs30.64	Rs1,861.38
Fabrication charges for curved plates	60.75 kg	@	Rs2.70	<u>Rs164.03</u>
				Rs2,025.41

b) Cost of channel 150x75x6mm

2.0m @ 14.15 kg/m =	28.30 kg	@	Rs30.64	Rs867.11
Bending & drilling holes	28.30 kg	@	Rs2.50	<u>Rs70.75</u>
				Rs2,963.27

Deduct scrap value of shutter & channel

after use @ 20% of cost i.e.(60.75+28.30)x30.64x0.20 = (-)				<u>Rs545.70</u>
			Net Cost	Rs2,417.57

Considering shutter & channel to be used

30 times for F2 finish cost per use =		2417.57/30 =	Rs80.59
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Area covered = 1.0 x 1.15 =

1.15 sqm	
Cost per 1 sqm =	Rs70.08

II) Cost of tie rods and anchors :
(Same As F1 finish) Rs42.01

Cost of gas electrode, nut bolt, oil etc. = L.S. Rs10.00
Rs122.09

B. Labour Charges

Same as item F2 finish Rs77.18

(A+B)= Rs199.27

Overhead charges @10% of (A+B) Rs19.93

Rs219.20

Or Say Rs219.20 /sqm

40. Providing Blockouts in concrete for fixing embedded parts in gate grooves and other embedments for dams and barrages etc. with wooden planks with cost of all materials labour charges, T & P etc complete including fixing anchor rods complete as directed by the Engineer-in-charge.(Cost of anchor bars to be paid separately)

Unit 1 sq.mtr.

Considering a block out of 0.6m x 0.4m x 12m long as representative one.

Area of shuttering = 2 x 0.4 x 12 = 9.60 sqm
1 x 0.6 x 12 = 7.20 sqm
Total 16.80 sqm

A. Materials

i) Non sal planks 19 mm thick
2 x 0.45 x 12 x 0.019 = 0.205

ii) Non sal scantling
1 x 0.56 x 12 x 0.019 = 0.128
2 x 13 x 0.45 x 0.032 x .025 = 0.009
1 x 13 x 0.56 x 0.032 x .025 = 0.006
2 x 13 x 0.50 x 0.032 x .032 = 0.013
0.361 cum

Add wastage 10 % 0.036
0.397 cum

Cost = 0.397 cum @ Rs14,548.00 Rs5,775.56

iii) Cost of nails @ 2 % Rs115.51

iv) Cost of M.S.rod supports 12mm dia
2 x 13 x 0.3 = 7.80 m
@ 0.89 kg/m = 6.94 kg

Cost = 6.940 kg @ 28.58 Rs198.35

v) Welding & fixing charges @ 15 % of rod cost Rs29.75
Rs6,119.17

B. Labour charge

i) Carpenter special 4.00 nos. @ Rs85.00 Rs340.00
ii) Male Worker 5.00 nos. @ Rs55.00 Rs275.00
iii) Black smith special 1.00 nos. @ Rs85.00 Rs85.00

Total = Rs700.00

C.Add for staging @ 20% of labour charge 140.00

(A+B+C)= Rs6,959.17

Overhead charges @10% of (A+B+C)

Rs695.92
Rs7,655.09

Rate/sqm = Rs.7655.09/16.80 =

Or Say Rs455.66
Rs455.70 /sqm

41. Supplying, Manufacturing & Fixing Embedded parts in concrete including anchoring and Placing in specified positions including supply of all materials, Labour, T&P etc. for manufacturing embedded parts as per design and fixing in position in proper alignment by welding rigidly to reinforcement as directed by Engineer-in-charge.

Unit 1 quintal

a) Manufacturing embedded parts

Data for one embedded parts of 0.15m x 0.1m x 12mm thick plate and 20mm dia anchor 2 nos each of length 0.4m cranked & welded.

A. Materials

i) 12mm thick M.S. plate

1 x 0.15 x 0.1 =

0.015 sqm

@ 94.2 kg/sqm =

1.413 kg

Add wastage 3 %

0.042 kg

1.455 kg

Cost = 1.455 kg @ 30.64 Rs44.58

ii) 20mm dia R.T.S. rod

2 x 0.4 =

0.80 m

@ 2.46 kg/m =

1.97 kg

Add wastage 3 %

0.06 kg

Cost = 2.03 kg @ 28.58 Rs57.99

iii) Fabrication charge for (1.455+2.03) 3.485 kg @ Rs2.70 Rs9.41

Total Rs111.98

Rate per quintal = Rs.111.98x100/3.485 = Rs3,213.20

Prime cost/qntl = Rs3,213.20

Overhead charges @10% Rs321.32

Or Say Rs3,534.52
Rs3,534.50 /qntl

b) Alignment and fixing in position

Considering 24 nos. of Embedded parts weighing 24 x 3.485 =

= 83.64 kg
0.8364 qntl

Labour charge

i) Fitter for alignment 1.00 nos. @ Rs85.00 Rs85.00

ii) Welder 1.00 nos. @ Rs75.00 Rs75.00

ii) Male Worker	3.00 nos.	@	Rs55.00	<u>Rs165.00</u>
			Total =	Rs325.00

Consumable, Supports & Machinery

i) Electrodes	24.00 nos.	@	Rs4.30	Rs103.20
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ii) Support rods 12 mm dia				
2 x 24 x 0.25 =	12.00 m			
@ 0.89 kg/m =	10.68 kg			

Cost =	10.680 kg	@	28.58	Rs305.23
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iii) Welding transformer charges 6 hours	6.00 hrs	@	Rs79.47	<u>Rs476.79</u>
			Prime Cost =	<u>Rs1,210.22</u>

Overhead charges @10%				<u>Rs121.02</u>
				Rs1,331.24

Rate/sqm = Rs.1331.24/0.8364 =				Rs1,591.63
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Or Say Rs1,591.60 /qntl

Rate for supplying & fixing embedded parts complete =				
= Rs.3534.50 + 1591.60 =				Rs5,126.10 /qntl

42. Manufacturing 400mm dia vent pipes from 3.15mm thick M.S. plates and embedding the same in concrete or masonry in dam including necessary supporting arrangement before embedment complete as directed by the Engineer-in-charge.

Unit 1 mtr.

A. Materials

i) Cost of M.S. plate =				
3.14 x 0.4 x 1.0 =			1.26 kg	
3.15mm thick plate @ 24.73 kg/cum =			31.16 kg	
Cost =	31.160 kg	@	Rs30.64	Rs954.74

ii) Manufacturing Cost	31.160 kg	@	Rs4.00	Rs124.64
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iii) Cost of fixtures and supports and welding materials at site			L.S.	<u>Rs10.00</u>
				Rs1,089.38

B. Labour charge

i) Welder	0.25 nos.	@	Rs75.00	Rs18.75
ii) Fitter	0.25 nos.	@	Rs75.00	Rs18.75
iii) Male worker	0.50 nos.	@	Rs55.00	<u>Rs27.50</u>

Total = Rs65.00

(A+B)= Rs1,154.38

Overhead charges @10% of (A+B)				<u>Rs115.44</u>
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Or Say Rs1,269.82 /1r.m.
Rs1,269.80 /1r.m.

43. Providing and laying cement concrete of grade M15 with 20mm down graded granite coarse aggregate for concrete lining to the bed and slopes of canal with sleeper beams, keys etc. in panels including supply of all materials, labour and machineries compacting with space vibrator or manually and finishing the concrete surface including trimming and dressing of canal bed and slopes including cutting trenches for sleeper beam, keys and drainage etc. including watering and compaction of slopes and bed with hand rammers to proper profile and supplying and laying polythene film of 100 micron complete as directed by the Engineer-in-charge.

Unit 1 cum

A. Materials

(i) Coarse Aggregate				
20mm	0.54 cum	@	Rs638.00	Rs344.52
10mm	0.36 cum	@	Rs671.00	Rs241.56
(ii) Sand	0.45 cum	@	Rs29.00	Rs13.05
(iii) Cement	2.88 qntl	@	Rs354.00	<u>Rs1,019.52</u>
			Total =	Rs1,618.65

B. Labour charges

i) Mate	0.06 nos.	@	Rs65.00	Rs3.73
ii) Mason	0.10 nos.	@	Rs85.00	Rs8.50
iii) Male worker	1.33 nos.	@	Rs55.00	<u>Rs73.33</u>
			Total =	Rs85.56

C. Hire charges of machineries

Concrete mixture	0.40 hrs	@	161.27	Rs64.51
Generator	0.40 hrs	@	386.48	<u>Rs154.59</u>
				Rs219.10
			(A + B + C) =	Rs1,923.31

D. Formwork @ 4% of (A+B+C) Rs76.93

E. Labour charges for trimming

(Assume 10sqm of trimming for 1 cum of lining)

Male worker	0.20 Nos	@	Rs55.00	Rs11.00
Cost of polythene film				
100 micron	10.00 sqm	@	Rs1.50	<u>Rs15.00</u>
				Rs26.00

Overhead charges @ 10% of (A+B+C+D+E)=

	Rs202.62
Total =	Rs2,254.86 /cum
Or say	Rs2,254.90 /cum

III. CONCRETE

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7
1	Grinding lime mortar (Labour only)per 1 cum Pair of bullocks or buffaloes with plough man					
	a. labour					
	Man mulia	0.71	pair	85.00	60.35	
	Women mulia	2.12	nos	55.00	116.60	
	b. Overhead Charges @ 10 % on (a)	-	-	-	17.70	
	c. 2% Sundries & T & P on item (a) etc.	-	-	-	3.54	
	Total = (a+b+c)=				198.19	
				Say	198.20	/ cum
2	Concrete with broken stones in lime mortar (1:2) with 4cm size metal per 1 Cum					
	a. Materials					
	Hand broken granite stone 4cm size	0.96	cum	356.00	341.76	
	Lime (ghooting)unslaked	0.18	cum	1720.00	309.60	
	Sand (screened & washed)	0.36	cum	29.00	10.44	
	T&P (as in item 1)	0.36	cum	176.95	63.70	
	b. Labour					
	Mason second class	0.18	no	75.00	13.50	
	Man mulia	1.8	nos	55.00	99.00	
	Women mulia	1.4	nos	55.00	77.00	
	c. Overhead Charges @ 10 % (a+b)				91.50	
	Total = (a+b+c) =				1006.50	
				Say	1006.50	/ cum
3	Cement concrete (1:3:6)with 4cm size hard granite metal per 1cum					
	a. Materials					
	Hand broken granite stone 4cm size	0.96	cum	356.00	341.76	
	Sand (screened & washed)	0.48	cum	29.00	13.92	
	Cement	0.16	cum			
		2.29	quintal	341.00	780.89	
	b. Labour					
	Labour same as per item no 2				189.50	
	Man mulia for mixing stone, sand and cement and getting water	0.70	no	55.00	38.50	
	c. Overhead Charges @ 10 % on (a+b)				136.46	
	Total = (a+b+c) =				1501.03	
				Say	1501.00	/ cum
4	Cement concrete (1:4:8)with 4cm size hard granite metal per 1cum					
	a. Materials					
	Hand broken granite stone 4cm size	0.96	cum	356.00	341.76	
	Sand (screened & washed)	0.48	cum	29.00	13.92	
	Cement	0.12	cum			
		1.72	quintal	341.00	586.52	
	b. Labour					
	Labour same as per item no 2				189.50	
	Man mulia for mixing stone, sand and cement and getting water	0.70	no	55.00	38.50	

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7
	c. Overhead Charges @ 10 % on (a+b)				117.02	
	Total = (a+b+c) =				1287.22	
				Say	1287.20 / cum	
5	Cement concrete (1:5:10)with 4cm size hard granite metal per 1cum					
	a. Materials					
	Hand broken granite stone 4cm size	0.96	cum	cum	356.00	341.76
	Sand (screened & washed)	0.48	cum	cum	29.00	13.92
	Cement	0.096	cum	cum		
		1.38	quintal	quintal	341.00	470.58
	b. Labour					
	Labour same as per item 2					189.50
	Man mulia for mixing stone, sand and cement and getting water	0.70	no	each	55.00	38.50
	c. Overhead Charges @ 10 % on (a+b)					105.43
	Total = (a+b+c) =				1159.69	
				Say	1159.70 / cum	
6	Cement concrete (1:6:12)with 4cm size hard granite metal per 1cum					
	a. Materials					
	Hand broken granite stone 4cm size	0.96	cum	cum	356.00	341.76
	Sand (screened & washed)	0.48	cum	cum	29.00	13.92
	Cement	0.08	cum	cum		
		1.15	quintal	quintal	341.00	392.15
	b. Labour					
	Labour same as per item 2					189.50
	Man mulia for mixing stone, sand and cement and getting water	0.70	no	each	55.00	38.50
	c. Overhead Charges @ 10 % on (a+b)					97.58
	Total = (a+b+c) =				1073.41	
				Say	1073.40 / cum	
7	Cement concrete (1:2:4)with 12mm size hard broken granite chips per 1cum					
	a. Materials					
	Hand broken granite chips 12mm size	0.90	cum	cum	494.00	444.60
	Sand (screened & washed)	0.45	cum	cum	29.00	13.05
	Cement	0.225	cum	cum		
		3.23	quintal	quintal	341.00	1101.43
	b. Labour					
	Labour same as per item 2					189.50
	Man mulia for mixing stone, sand and cement and getting water	1.40	nos	each	55.00	77.00
	Mason 2nd class	0.50	no	each	75.00	37.50
	c. Overhead Charges @ 10 % on (a+b)					186.31
	Total = (a+b+c) =				2049.39	
				Say	2049.40 / cum	

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7
8	Cement concrete (1:2 1/2:5)with 12mm size hard broken granite chips per 1cum					
a. Materials	Hand broken granite chips 12mm size	0.90	cum	cum	494.00	444.60
	Sand (screened & washed)	0.45	cum	cum	29.00	13.05
	Cement	0.18	cum	cum		
		2.58	quintal	quintal	341.00	879.78
b. Labour	Labour same as per item 2					189.50
	Man mulia for mixing stone, sand and cement and getting water	1.40	nos	each	55.00	77.00
	Mason 2nd class	0.50	no	each	75.00	37.50
c. Overhead Charges @ 10 % on (a+b)						164.14
	Total = (a+b+c) =					1805.57
					Say	1805.60 / cum
9	Cement concrete (1:3:6)with 12mm size hard broken granite chips per 1cum					
a. Materials	Hand broken granite chips 12mm size	0.90	cum	cum	494.00	444.60
	Sand (screened & washed)	0.45	cum	cum	29.00	13.05
	Cement	0.15	cum	cum		
		2.15	quintal	quintal	341.00	733.15
b. Labour	Labour same as per item 2					189.50
	Man mulia for mixing stone, sand and cement and getting water	1.40	nos	each	55.00	77.00
	Mason 2nd class	0.50	no	each	75.00	37.50
c. Overhead Charges @ 10 % on (a+b)						149.48
	Total = (a+b+c) =					1644.28
					Say	1644.30 / cum
10	Grouting aprons and revetment 23cm deep with cement concrete (1:4:8) with 2.5cm broken granite metal per 1sqm.					
a. Cement concrete (1:4:8) excluding 10 % OHC (Item No-4)		0.03	cum	cum	1170.20	35.11
b. Add difference in cost of hand broken granite stone metal 4 cm to 2.5 cm (Rs. 385.00 - Rs. 356.00)=Rs.29.00		0.03	cum	cum	29.00	0.87
c. Extra Labour	Mason (special)	0.05	no	each	85.00	4.25
	Man Mulia	0.11	no	each	55.00	6.05
	Women mulia	0.11	no	each	55.00	6.05
d. Overhead Charges @ 10 % on (a+b+c)						5.23
	Total = (a+b+c+d) =					57.56
					Say	57.60 / sqm

Sl. No.	Description	Quantity required		Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3		4	5	6	7
11	Grouting aprons and revetment 15cm deep with cement concrete (1:4:8) with 2.5cm broken granite metal per 1sqm. Take 2/3rd rate of item No. 10					38.40	
					Total=	38.40	
					Say	38.40 / sqm	
12	Grouting aprons and revetment 23cm deep with concrete broken stone in lime mortar (1:2) with 2.5cm broken granite metal per 1sqm.						
	a. Lime concrete (rate as per item 2 excluding 10 % OHC)	0.038	cum	cum	915.00	34.77	
	b. Add different in cost of metal 4 cm to 2.5cm (Rs. 385.00 - Rs. 356.00)=Rs.29.00	0.038	cum	cum	29.00	1.10	
	c. Extra labour Mason (special)	0.05	no	each	85.00	4.25	
	Man Mulia	0.11	no	each	55.00	6.05	
	Women mulia	0.11	no	each	55.00	6.05	
	d Overhead Charges @ 10 % on (a+b+c)					5.22	
	Total = (a+b+c+d) =					57.44	
					Say	57.40 / sqm	
13	Grouting aprons and revetment 15cm deep with concrete broken stone in lime mortar (1:2) with 2.5cm broken granite metal per 1sqm. Rate 2/3rd of item No. 12					38.27	
					Total=	38.27	
					Say	38.30 / sqm	
14	Cement plum concrete (1:2:4) with 4cm size hard granite metal with 15% plum stones (granite) per 1cum.						
	a. Rate as per cement concrete 1:4:8 (vide item No.4 excluding 10 % OHC)	1.00	cum	cum	1170.20	1170.20	
	b. Add extra cost of cement for 1:2:4 proportion	0.12	cum	cum			
		1.72	quintal	quintal	341.00	586.52	
	c. Deduct-15% cost from the rate towards plums					-263.51	
	d. Add for cost of plums (Not less than 0.0025	0.15	cum	cum	148.00	22.20	
	e. Extra labour for hoisting or lowering the stones and placing in position	0.08	no	each	55.00	4.40	
	f. Overhead Charges @ 10 % on (a+b-c+d+e)					151.98	
	Total = (a+b-c+d+e+f)=					1671.79	
					Say	1671.80 / cum	

Sl. No.	Description	Quantity required		Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3		4	5	6	7
15	Cement plum concrete (1:3:6) with 4cm size hard granite metal with 15% plum stones (granite) per 1cum.						
	a. Rate as per cement concrete 1:3:6 with 4cm metal rate as per item 3 excluding 10 % OHC	1.00	cum	cum	1364.57	1364.57	
	b. Deduct-15% cost from the rate towards plums					-204.69	
	c. Add extra cost of plums and labour for placing (as in item 14)					26.60	
	d. Overhead Charges @ 10 % on (a-b+c)					118.65	
	Total = (a-b+c+d)				Total	1305.13	
					Say	1305.10 / cum	
16	Cement plum concrete (1:4:8) with 4cm size hard granite metal with 15% plum stones granite per 1cum.						
	a. Rate of concrete item 4 excluding 10 % OHC	1.00		cum	1170.20	1170.20	
	b. Deduct-15% cost from the rate towards plums					-175.53	
	c. Add extra cost of plums and labour for placing (as in item 14) I					26.60	
	d. Overhead Charges @ 10 % on (a-b+c)					102.13	
	Total = (a-b+c+d)				Total	1123.40	
					Say	1123.40 / cum	
17	2.5 cm thick grading concrete (1:2:2) on roof slab with 6mm size hard granite chips. On new work per 1 sqm.						
	a. Materials.						
	4.7 mm size hard granite chips	0.0169	cum	cum	424.00	7.17	
	sand (screened & washed).	0.0169	cum	cum	29.00	0.49	
	Cement	0.0085	cum	cum			
		0.1208	quintal	quintal	341.00	41.19	
	b. Labour						
	Mason (special)	0.10	no	each	85.00	8.50	
	Man Mulia	0.33	no	each	55.00	18.15	
	man mulia for mixing chips,sand and cement	0.03	no	each	55.00	1.65	
	c. Overhead Charges @ 10 % on (a+b)					7.71	
	Total = (a+b+c)				Total=	84.86	
					Say	84.90 / sqm	

Sl. No.	Description	Quantity required		Unit	Rate		Amount		Remarks
		3			Rs.	P	Rs.	P	
1	2	3		4	5	6	7		

18 4 cm thick grading concrete (1:2:4) on roof slab with 12mm & down grade size black hard granite

chips for old work.

Per 1 Sqm

a. Materials.

Hand broken granite chips

12mm size

0.018 cum cum 494.00 8.89

4.7 mm size

0.018 cum cum 424.00 7.63

Sand (screened & washed).

0.018 cum cum 29.00 0.52

Cement

0.009 cum cum

0.1287 quintal quintal 341.00 43.89

b. Labour

Mason (special)

0.165 no each 85.00 14.03

Man Mulia

0.528 no each 55.00 29.04

Man mulia for mixing chips,sand and cement

0.48 no each 55.00 26.40

c. Overhead Charges @ 10 % on (a+b)

13.04

Total = (a+b+c)=

Total= 143.44

Say 143.40 / sqm

Note :

- (i) If more than 15% of plums are used in cement concrete similar analysis based on the respective percentage of plums is to be worked out:
- (ii) If variation of size and nature of metal or stone is involved due to change in specification of items, the difference of cost of such metal or stone should be taken in to consideration and rate arrived at
- (iii) If stone lime is used in the work add difference in cost of lime to the respective items of works
- (iv) The rates have been arrived using hand broken metal & chips and if crusher broken metal & chips are used, the difference in cost should be added to arrive at the finished rates
- (v) For C.C. work in 1st floor and subsequent upper floor add 15% extra labour over and above the rates from the next lower floor.
- (vi) For cement concrete work below ground level beyond 1.5m and upto 4.5m depth add 15per cent extra labour over and above the rates of the respective items for lowering the materials.
- (vii) For cement concrete work below ground level beyond 4.5m and upto 7.5m depth add 20% extra labour over and above the rates of the respective items for lowering the materials.
- (viii) 10% excess on the above rates will be allowed in the works being executed inside jail premises

IV R.C.C WORK

Sl. No.	Description	Quantity required		Unit	Rate		Amount		Remarks
					Rs.	P	Rs.	P	
1	2	3		4	5		6		7
	1 Cement concrete (1:2:4) with 12mm size broken hard granite chips for R.C.C. works including hoisting and laying per 1 cum (To be used for minor repair work only)								
	a) cement concrete with 12mm size hard broken granite chips (rate as per item 7 of concrete)	1.00	cum	cum			1863.08		
	b) Overhead Charges @ 10 % on (a)						186.31		
	Total (a+b)						2049.39		
					Say		2049.40	/ cum	
	2 Cement concrete (1:1 1/2:3) with 12mm size broken hard granite chips for R.C.C. works including hoisting and lying per 1 cum (To be used for minor repair work only)								
	a) Materials								
	Hand broken granite chips 12mm size	0.90	cum	cum	494.00		444.60		
	Sand (screened & washed)	0.45	cum	cum	29.00		13.05		
	Cement	0.30	cum	cum					
		4.29	qntl.	quintal	341.00		1462.89		
	b) Labour								
	Mason 2nd class	0.68	no	each	75.00		51.00		
	Man Mulia	1.8	nos	each	55.00		99.00		
	Women mulia	1.4	nos	each	55.00		77.00		
	Man mulia for mixing stone, sand and cement and getting water	1.4	nos	each	55.00		77.00		
	c) Overhead Charges @ 10 % on (a+b)						222.45		
	Total (a+b+c)						2446.99		
					Say		2447.00	/ cum	
	3 R.C.C. work of M-15 grade with 20mm and down grade black hard granite (crusherbroken) stone chips including hoisting and laying Data for 1 cum								
	a) Material								
	20mm size chips	0.54	cum	cum	638.00		344.52		
	10mm size chips	0.36	cum	cum	671.00		241.56		
	coarse sand (screened and washed)	0.45	cum	cum	29.00		13.05		
	Cement	2.80	qntl.	quintal	341.00		954.80		
	b) Labour								
	Mate	0.06	no	each	65.00		3.90		
	Mason 2nd class	0.10	no	each	75.00		7.50		
	Man Mulia	1.33	nos	each	55.00		73.15		
	c) Machinery								
	Concrete mixer	0.40	hour	hour	161.00		64.40		
	Generator 33 KVA	0.40	hour	hour	240.00		96.00		
	d) Overhead Charges @ 10 % on (a+b+c)						179.89		
	Total (a+b+c+d)						1978.77		
					Say		1978.80	/ cum	

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7
	4 R.C.C. work of M-20 grade with 20mm and down grade black hard granite (crusherbroken) stone chips including hoisting and laying Data for 15 cum					
	a) Material					
	20 mm size chips	8.10 cum	cum	638.00	5167.80	
	10mm size chips	5.40 cum	cum	671.00	3623.40	
	coarse sand (screened and washed)	6.75 cum	cum	29.00	195.75	
	Cement	5.21 MT	MT	3,410.00	17766.10	
	b) Labour					
	Mate	0.86 no	each	65.00	55.90	
	Mason 2nd class	1.50 nos	each	75.00	112.50	
	Man Mulia	20.00 nos	each	55.00	1100.00	
	c) Machinery					
	Concrete mixer(cap. 0.40/0.28 cum)	6.00 hour	hour	161.00	966.00	
	Generator 33 KVA	6.00 hour	hour	240.00	1440.00	
	d) Overhead Charges @ 10 % on (a+b+c)				3042.75	
	Cost of 15 cum = (a+b+c+d) =				33470.20	
	Rate per cum=(a+b+c+d)/15				2231.35	
				Say	2231.30 / cum	
	5 R.C.C. work of M-25 grade with 20mm and down grade black hard granite (crusherbroken) stone chips including hoisting and laying Data for 15 cum					
	a) Material					
	20 mm size chips	8.10 cum	cum	638.00	5167.80	
	10mm size chips	5.40 cum	cum	671.00	3623.40	
	coarse sand (screened and washed)	6.75 cum	cum	29.00	195.75	
	Cement	6.05 MT	MT	3,410.00	20630.50	
	b) Labour					
	Mate	0.86 no	each	65.00	55.90	
	Mason 2nd class	1.50 nos	each	75.00	112.50	
	Man Mulia	20.00 nos	each	55.00	1100.00	
	c) Machinery					
	Concrete mixer(cap. 0.40/0.28 cum)	6.00 hour	hour	161.00	966.00	
	Generator 33 KVA	6.00 hour	hour	240.00	1440.00	
	d) Overhead Charges @ 10 % on (a+b+c)				3329.19	
	Cost of 15 cum =(a+b+c+d)=			Say	36621.04 / cum	
	Rate per cum=(a+b+c+d)/15				2441.40	
				Say	2441.40 / cum	

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7
	6 R.C.C. work of M-30 grade with 20mm and down grade black hard granite (crusherbroken) stone chips including hoisting and laying Data for 15 cum					
	a) Material					
	20 mm size chips	8.10 cum	cum	638.00	5167.80	
	10mm size chips	5.40 cum	cum	671.00	3623.40	
	coarse sand (screened and washed)	6.75 cum	cum	29.00	195.75	
	Cement	6.10 MT	MT	3,410.00	20801.00	
	b) Labour					
	Mate	0.86 no	each	65.00	55.90	
	Mason 2nd class	1.50 nos	each	75.00	112.50	
	Man Mulia	20.00 nos	each	55.00	1100.00	
	c) Machinery					
	Concrete mixer(cap. 0.40/0.28 cum)	6.00 hour	hour	161.00	966.00	
	Generator 33 KVA	6.00 hour	hour	240.00	1440.00	
	d) Overhead Charges @ 10 % on (a+b+c)				3346.24	
	Cost of 15 cum =a+b+c+d=			Say	36808.59	
	Rate per cum=(a+b+c+d)/15			Say	2453.91	
				Say	2453.90 / cum	
	7 R.C.C. work of M-35 grade with 20mm and down grade black hard granite (crusherbroken) stone chips including hoisting and laying Data for 15 cum					
	a) Material					
	20 mm size chips	8.10 cum	cum	638.00	5167.80	
	10mm size chips	5.40 cum	cum	671.00	3623.40	
	coarse sand (screened and washed)	6.75 cum	cum	29.00	195.75	
	Cement	6.33 MT	MT	3,410.00	21585.30	
	b) Labour					
	Mate	0.86 no	each	65.00	55.90	
	Mason 2nd class	1.50 nos	each	75.00	112.50	
	Man Mulia	20.00 nos	each	55.00	1100.00	
	c) Machinery					
	Concrete mixer(cap. 0.40/0.28 cum)	6.00 hour	hour	161.00	966.00	
	Generator 33 KVA	6.00 hour	hour	240.00	1440.00	
	d) Overhead Charges 10 % (a+b+c)				3424.67	
	Cost of 15 cum =a+b+c+d=			Say	37671.32 / cum	
	Rate per cum=(a+b+c+d)/15			Say	2511.42	
				Say	2511.40 / cum	

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

8 R.C.C. work of M-40 grade with 20mm and down grade black hard granite (crusherbroken) stone chips including hoisting and laying

Using concrete mixer.

Unit = 1 cum

Taking output = 15 cum

a) Material

Cement	6.45	MT	MT	3410.00	21994.50
Coarse sand	6.75	cum	cum	29.00	195.75
20 mm Aggregate	8.10	cum	cum	638.00	5167.80
10 mm Aggregate	5.40	cum	cum	671.00	3623.40
Admixture @ 0.4 per cent of cement	25.80	kg	kg	40.00	1032.00

b) Labour

Mate	0.96	no	each	65.00	62.40
Mason 2nd class	2.00	nos	each	75.00	150.00
Mulia unskilled	22.00	nos	each	55.00	1210.00

c) Machinery

Concrete mixer (cap. 0.40/0.28 cum)	6.00	hour	hour	161.00	966.00
Generator 33 KVA	6.00	hour	hour	240.00	1440.00

d) Overhead Charges 10 % (a+b+c)

Cost of 15 cum =a+b+c+d=				Say	39426.04 / cum
Rate per cum=(a+b+c+d)/15					2628.40
				Say	2628.40 / cum

9 (A) Supplying ,fitting and placing uncoated HYSD bar reinforcement complete as per drawing and technical specification.

Unit - 1 MT

Taking Output = 1 MT

a) Material

HYSD bars including 5 percent overlaps and wastage	1.05	MT	MT	28,817.00	30257.85
Binding wire	8.00	kg	kg	39.00	312.00

b) Labour

Labour for cutting ,bending, shifting to site, tying and placing in position

Mate	0.44	no	each	65.00	28.60
Blacksmith (special)	3.00	nos	each	85.00	255.00
Man mulia	8.00	nos	each	55.00	440.00

c) Overhead Charges @ 10 % on (a+b)

Total (a+b+c)					34422.80
Rate per MT				Say	34422.80
Rate per 1 Quintal				Rs.	3442.28
				Say	3442.30

B) Extra for welding higher diameter rods each cm 5.00

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

10 Rigid and smooth centering and shuttering for R.C.C. works including false works and dismantling them after casting including cost of materials complete in ground floor
i) R.C.C. floor and roof slabs, landings, balconies, projecting sun shades and chajjas
upt 4.3m height
Details for 9 sqm.

a) Materials

Non sal wood scantling planks 38mm	0.112 cum	cum	14,548.00	1629.38
120mm dia sal bullah	0.34 cum	cum	14,548.00	4946.32
Carriage of wood	56.00 Mtr.	Mtr.	69.00	3864.00
Total	1.142 cum	cum	72.00	82.22
				10521.92

Considering 10 times use of the materials, for use once

1052.19

b) Labour

Carpenter (second class)	2.75 nos	each	75.00	206.25
semi-skilled mulia	2.75 nos	each	65.00	178.75

c) Overhead Charges @ 10 % on (a+b)

Total (a+b+c) 143.72

Rate per 1 Sqm = (a+b+c)/9 = 1580.91

175.66

Say 175.70 / sqm

ii)(a) For each additional height of 0.3m over initial height of 4.3m in ground floor and extra upto a height of 5.5m

1sqm 5.00

(b) For each additional height of 0.3m add extra over 5.5m

1sqm 8.00

iii) R.C.C. stairs excluding landing but including railing details for 5 Sqm

a) Materials

Non sal wood 38mm thick planks	0.228 cum	cum	14,548.00	3316.94
Non sal wood scantling	0.039 cum	cum	14,548.00	567.37
120mm dia non sal bullah	6.5 Mtr	1Mtr	52.00	338.00
Carriage of wood	0.35 cum	cum	72.00	25.20
Total				4247.51

Considering 10times use of the materials, for use once

424.75

b) Labour

carpenter (second class)	2.75 nos	each	75.00	206.25
semiskilled mulia	2.75 nos	each	65.00	178.75

c) Overhead Charges @ 10 % on (a+b)

Total (a+b+c) 80.98

Rate for 1sqm = (a+b+c)/5 = **890.73**

178.15

Say 178.10 / sqm

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7
	iv) R.C.C. foundation , plinth band and footings bases of columns mass concrete pre-cast slabs etc details for 10 Sqm					
	a) Materials					
	25mm thick non sal planks	0.267 cum	cum	14,548.00	3884.32	
	Non-sal bullah 80mm dia for strutting	12.60 mtr	mtr	33.00	415.80	
	Carriage of wood	0.3284 cum	cum	72.00	23.64	
	Total				4323.76	
	Considering 10times use of the materials, for use once				432.38	
	b) Labour					
	carpenter (second class)	0.50 no	each	75.00	37.50	
	semiskilled mulia	0.50 no	each	65.00	32.50	
	c) Overhead Charges @ 10 % on (a+b)				50.24	
	Total (a+b+c)				552.62	
	Rate for 1sqm =(a+b+c)/10=				55.26	
				Say	55.30 / sqm	
	v) R.C.C. beams, column, grider and bressmer, etc. Data for 4.2sqm					
	a) Materials					
	38mm thick non sal planks	0.218 cum	cum	14,548.00	3171.46	
	120mm dia sal bullah	15.20 mtr	mtr	69.00	1048.80	
	80mm dia sal bullah for bracing	8.00 mtr	mtr	69.00	552.00	
	Carriage of wood	0.456 cum	cum	72.00	32.83	
	Total				4805.09	
	Considering 10 times use of the materials, for				480.51	
	b) Labour					
	carpenter (second class)	2.75 nos	each	75.00	206.25	
	semiskilled mulia	2.75 nos	each	65.00	178.75	
	c) Overhead Charges @ 10 % on (a+b)				86.55	
	Total (a+b+c)			Total	952.06	
	Rate for 1sqm = (a+b+c)/4.20 =				226.68	
				Say	226.70 / sqm	
	vi) R.C.C. Lintels Data for 7.8 sqm					
	a) Materials					
	38mm thick non sal planks	0.413 cum	cum	14,548.00	6008.32	
	120mm dia non sal bullah	21 mtr	mtr	52.00	1092.00	
	Carriage of wood	0.689 cum	cum	72.00	49.61	
	Total				7149.93	
	Considering 10times use of the materials, for use once				714.99	
	b) Labour					
	carpenter (second class)	1.25 nos	each	75.00	93.75	
	semiskilled mulia	1.25 nos	each	65.00	81.25	
	c) Overhead Charges @ 10 % on (a+b)				89.00	
	Total (a+b+c)				978.99	
	Rate for 1sqm = (a+b+c)/7.80 =				125.51	
				Say	125.50 / sqm	

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

vii) R.C.C. walls and fins including attached pillasters

Data for 23.90 sqm

a) Materials

38mm thick non sal planks	0.954	cum	cum	14548.00	13878.79
Non sal wood scantling	0.269	cum	cum	14548.00	3913.41
120mm dia non sal bullah	100.8	cum	cum	52.00	5241.60
Carriage of wood	2.461	cum	cum	72.00	177.19

Total 23210.99

Considering 10times use of the materials, for

2321.10

b) Labour

carpenter (second class)	13.5	nos	each	75.00	1012.50
semiskilled mulia	13.5	nos	each	65.00	877.50

c) Overhead Charges @ 10 % on (a+b)

421.11

Total (a+b+c)

Total

4632.21

Rate for 1sqm = (a+b+c)/23.90 =

193.82

Say 193.80 / sqm

viii) Double stage centering and shuttering for roof slabs Balconies and projections above 3.60mand upto 7.20m heights

Data for 9.30 sqm

a) Materials

38mm thick non sal planks					
planks	0.7068	cum	cum	14548.00	10282.53
120mm dia sal bullah	112.00	mtr	mtr	69.00	7728.00
80mm non sal bullah	24.38	mtr	mtr	33.00	804.54
Non-sal wood scanting 25mm	0.2438	cum	cum	14548.00	3546.80
Carriage of wood	2.339	cum	cum	72.00	168.41

Total 22530.28

Considering 10 times use of the materials, for use once

2253.03

b) Labour

carpenter (second class)	6.05	nos	each	75.00	453.75
semiskilled mulia	6.05	nos	each	65.00	393.25

c) Overhead Charges @ 10 % on (a+b)

310.00

Total (a+b+c)

Total

3410.03

Rate for 1sqm = (a+b+c)/9.30 =

366.67

Say 366.70 / sqm

ix) Tripple stage centering and shuttering for roof slabs balconies and projection above 7.20m and upto 10.80m heights

Data for 9.30 sqm

a) Materials

38mm thick non sal planks	1.0602	cum	cum	14548.00	15423.79
120mm dia sal bullah	168.00	mtr	mtr	69.00	11592.00
80mm non sal bullah	36.57	mtr	mtr	33.00	1206.81
Non-sal wood scanting 25mm	0.3657	cum	cum	14548.00	5320.20
Carriage of wood	3.5086	cum	cum	72.00	252.62

Total 33795.42

Considering 10times use of the materials, for use once

3379.54

b) Labour

carpenter (second class)	10	nos	each	75.00	750.00
semiskilled mulia	10	nos	each	65.00	650.00

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

c) **Overhead Charges @ 10 % on (a+b)** 477.95
Total (a+b+c) **Total** **5257.50**
Rate for 1sqm = (a+b+c)/9.30 = **565.32**
Say 565.30 / sqm

x) Centering and shuttering for shell roof
1) upto 5.50m height
Details for 9.30sqm

a) **Materials**

Non-sal wood 38mm Planks	0.353	cum	cum	14548.00	5135.44
120mm dia sal bullah	110	cum	cum	69.00	7590.00
80mm dia non sal bullah	15.23	mtr	mtr	33.00	502.59
Non-sal wood scanting 25mm	0.2258	cum	cum	14548.00	3284.94
Carriage of wood	1.8987	cum	cum	72.00	136.71
				Total	16649.68

Considering 10times use of the materials, for use once 1664.97

b) **Labour**

carpenter (second class)	4.12	nos	each	75.00	309.00
semiskilled mulia	4.12	nos	each	65.00	267.80
					224.18

c) **Overhead Charges @ 10 % on (a+b)**
Total (a+b+c) **Total** **2465.95**
Rate for 1sqm = (a+b+c)/9.3 = **265.16**
Say 265.20 / sqm

2) For each additional height of 0.30m over 5.50m and upto 7.5m height
Details for 9.30sqm

a) **Materials**

120mm dia sal bullah	4.80	mtr	mtr	69.00	331.20
Carriage of wood	0.054	cum	cum	72.00	3.89
				Total	335.09

Considering 10times use of the materials, for use once 33.51

b) **Labour**

carpenter (second class)	0.225	no	each	75.00	16.88
semiskilled mulia	0.225	no	each	65.00	14.63

c) **Overhead Charges @ 10 % on (a+b)**
Total (a+b+c) **Total** **71.52**
Rate for 1sqm =(a+b+c)/9.30 = **7.69**
Say 7.70 / sqm

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

xi) Centering and shuttering for slope roof upto 3.60m

Details for 9.30sqm

a) Materials

Non-sal wood scanting 38mm	0.394	cum	cum	14548.00	5731.91
120mm dia sal bullah	73.17	mtr	mtr	69.00	5048.73
80mm non sal bullah	14.02	mtr	mtr	33.00	462.66
Non-sal wood scanting 25mm	0.0701	cum	cum	14548.00	1019.81
Carriage of wood	1.3612	cum	cum	72.00	98.01
				Total	12361.12

Considering 10 times use of the materials, for use once

1236.11

b) Labour

carpenter (second class)	3.43	nos	each	75.00	257.25
semiskilled mulia	3.43	nos	each	65.00	222.95

c) Overhead Charges @ 10 % on (a+b)

Total (a+b+c) 171.63

Rate for 1sqm = (a+b+c)/9.30 = **203.00**

Say 203.00 / sqm

xii) R.C.C. Work in slab for culverts and Bridges upto 8M span.

a) Upto 4M height

Rate as per item 10(i) 175.70

Add 20% extra for the strong Posts and bracing

35.14

Total 210.84

Say 210.80 / sqm

b) Above 4m and upto 8m height rate as calculated in item(a)

210.80

Add 25% extra for the strong Posts and bracing

52.70

Total 263.50

Say 263.50 / sqm

c) Above 8m and upto 13m height

Rate as calculated above 263.50

Add 40% extra for strong posts or bracings 105.40

Total 368.90

Say 368.90 / sqm

(xiii) a) R.C.C. beams for bridges upto 15m span and height upto 5m

Rate for the beams as per item 10(v) 226.70

Add 25% extra for strong posts 56.68

Total 283.38

Say 283.40 / sqm

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

b) R.C.C. beams for bridges upto 15m span and height above 5m and upto 8m

Rate as calculated in item (a) 283.40
Add 20% extra for strong posts 56.68
Total **340.08**
Say **340.10 / sqm**

c) R.C.C. beams for bridges upto 15m span and height above 8m and upto 13m

Rate as calculated in item (b) 340.10
Add 25% extra for strong posts 85.03
Total **425.13**
Say **425.10 / sqm**

(xiv) a) R.C.C. beams for bridges above 15m span upto 5m height

Rate as calculated in item xiii(a) 283.40
Add 50% extra for strong posts 141.70
Total **425.10**
Say **425.10 / sqm**

b) R.C.C. beam for bridge above 15m span above 5m height and upto 8m height

Rate as calculated in item (a) 425.10
Add 20% extra for strong posts 85.02
Total **510.12**
Say **510.10 / sqm**

c) R.C.C. beam for bridge above 15m span above 8m height and upto 13m height

Rate as calculated in item (b) 510.10
Add 10% extra for strong posts 51.01
Total **561.11**
Say **561.10 / sqm**

xv)a) R.C.C. slabs for culverts and bridge above 8m span and upto 5m height

Rate as calculated in item xii (a) 210.80
Add 30% extra for strong posts 63.24
Total **274.04**
Say **274.00 / sqm**

b) R.C.C. slabs for culverts and bridge above 8m span and above 5m height and upto 8m.

Rate as calculated in item (a) 274.00
Add 25% extra for strong posts 68.50
Total **342.50**
Say **342.50 / sqm**

c) R.C.C. slabs for culverts and bridge above 8m span and above 8m height upto 13m height

Rate as calculated in item (b) 342.50
Add 40% extra for strong posts 137.00
Total **479.50**
Say **479.50 / sqm**

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

11 Rigid and smooth centering and shuttering at all heights of trough and road slab of aqueduct bridges, deck slab and soffit slabs using required nos of pylons for vertical supports of scaffolding centering and shuttering with joists, N.G. rails and channels and shuttering plates including welding, bolting, cost, conveyance, royalty and all other taxes of all materials and cost of scaffolding gangway etc. including cost of conveyance of dismantling and disposing debris clear of work site complete to receive reinforcement grills and concrete as per requirement as directed by Engineer-in-Charge

1 Cost of one pylon

A. Angle 65×65×6mm

4×1.50×6.00m (vertical member)

2×4.00×0.7-5.60 (cross member)

Total 1.60m @ 5.8kg/meter = 67.28kg

67.28kg or 0.06728M ton

0.06728 MT MT 30640.00 2061.46

25mm M.S. Rod

4.00×4=16.00m@3.85Kg/Meter

61.60 kg or 0.0616 Mton

0.0616 MT MT 28580.00 1760.53

Weilding charges

4×260mm= 1040mm

4×6×50 = 1200mm

2240mm

or 224cm @ Rs 5.00/cm

224.00 cm cm 5.00 1120.00

Market rate

Total 4941.99

Hire charges of one pylon for single use

considering one pylon can be used 36 times 4941.99/36

137.28

Cost of materials (Rate as per actual)

From bottom slabs and side beam (for one span)

a) ISMB 250 on top of pylon 2 rows

2×6.00 = 12.00m @ 37.30kg/meter

447.6 kg

ISMB300 on 9 rows 2 Nos. in each row

18×5.5 = 99m @ 44.2kg/m

4375.8

4823.4 kg

or

4.823 Mton

a) 4.823 M.ton @ Rs. 30770.00/M.Ton

4.823 MT MT 30770.00 148403.71

b) Channel 125 × 65mm

Side shuttering 20 × 2.52 = 50.40m.

Inside shuttering 20 × 1.885 = 37.70m

Total 88.1 m @ 13.1 kg/m

1.154 MT MT 30770.00 35508.58

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

c) M.S.Plate

(i) Bottom slab = 66

(ii) side = 98

Total 164 nos

164 nos	nos	1500	246000.00
Total			429912.29

B. Top slab in 2nd operation

a) Bottom as per 1A (a)

148403.71

shuttering plates as per item 1A© (i) 66No

66 nos	nos	1500	99000.00
Total			247403.71

b) Top ISMB 250= 5 × 4.7 = 23.5Mtr. @

37.30kg/M.tr

876.55Kg or 0.87655 M.Ton @

30770.00/M.Ton

0.87655 MT	MT	30770.00	26971.44
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c) N.G. Rails 81No. X 6.00 = 486M @

10kg/M

4.86 MT	MT	28580.00	138898.80
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d) Top plates 54 Nos.

54 nos	nos	1500.00	81000.00
Total			494273.95

Labour charges for one span (Bottom slab & beam)

2 Labour charges for fixing pylon including welding for keeping rigid
a) for erection (as per observation)

Highly skilled mulias 6 No. × 2days = 12days

12 nos	each	85.00	1020.00
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skilled mulia 8 No. × 2days = 16days

16 nos	each	75.00	1200.00
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conveying staking at site

skilled mulia 6 No. × 2days = 12days

12 nos	each	75.00	900.00
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Welding MS Rods on both sides 2 Nos. in each side

2×4×25cm = 200cm @ Rs. 5.00/cm (Market rate)

200 cm	cm	5.00	1000.00
Total (a)			4120.00

b) Hoisting joists and placing in position 4.83 ton
(as per item no 1 of Iron Works)

4.83 MT	MT	1639.00	7916.37
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Carrying from store to site

skilled mulia5 Nos. × 2 days = 10days @ Rs. 75.00

10 nos	each	75.00	750.00
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Mulia 5 Nos. × 2 days = 10days @ Rs. 55.00

10 nos	each	55.00	550.00
Total (b)			9216.37

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7
	c) Hoisting and laying shuttering plates Sangi mulia for carying from stock yard to site					
	10Nos.	10 nos	each	65.00	650.00	
	For taking to Top 10 Nos.	10 nos	each	65.00	650.00	
	For laying 10Nos.	10 nos	each	65.00	650.00	
				Total	1950.00	
	Welding side shuttering plates to keep rigidly 2×2×11×5 = 220cm	220 cm	cm	5.00	1100.00	
				Total (c)	3050.00	
	d) Side shuttering and fixing with wielding etc.					
	Outside 2×11.2×2.52 = 56.45sqm					
	Inside 2×11.2 × 1.88 = 42.11Sqm					
	Total =98.56 sqm	98.56 sqm	sqm	35.00	3449.60	
	98.56sqm					
	Weilding to keep rigid outside 2×40×4cm=320cm. 2×30×4cm.=240cm.					
	Total =560 cm	560 cm	cm	5.00	2800.00	
				Total (d)	6249.60	
				Total (a+b+c+d)	22635.97	
	Greasing the plates 10 mulias for 1day= 10Nos.@ Rs.55.00 per each	10 nos	each	55.00	550.00	
	Cost of white grease 10 kg.	10 kg	kg	100.00	1000.00	
					24185.97	
	25% overhead charges on labour as per O.C.C.				4571.49	
	[24185.97- (1000.00+1100.00+2800.00+1000.00)]x1/4					
					28757.46	
	D) Hire charges of pylon 40Nos.	40 nos	no	137.28	5491.20	
	Cost of material taking 36 time use = 429912.29/36				11942.01	
				Total	46190.67	
	Rate per Sqm. = 46190.67/154.56				298.85	
	For top in second operation					
	a) Laying ISMB	876.55 kg	kg			
	N.G. Rails	4860 kg	kg			
	Total	5736.55 kg	kg			
		5.73655 MT	MT	1639.00	9402.21	
	Carrying to top 7 Sangi mulia for 1 day	7 nos	each	65.00	455.00	
				Total(a)	9857.21	

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7
	b) Laying shuttering plates including carriage Sangi mulia 15Nos.	15 nos	each	65.00	975.00	
	For taking to top Sangi mulia 15Nos. each	15 nos	each	65.00	975.00	
		15 nos	each	65.00	975.00	
				Total(b)	2925.00	
	c) Weilding side - 2×11×5 = 110cm. @ Rs. 5.00/cm.	110 cm	cm	5.00	550.00	
	d) Laying pylon including carrying and taking to top by rope etc.					
	Highly skilled mulia 6Nos. for one day	6 nos	each	85.00	510.00	
	Skilled mulia 8Nos. For one day=8Nos.@Rs.75.00 pereach	8 nos	each	75.00	600.00	
				Total (d)	1110.00	
	e) Removing materials					
	Top pylon					
	Skilled mulia 6Nos. for 2days = 12Nos. @ 75.00 / day	12 nos	each	75.00	900.00	
	Top joist and NG. Rails skilled mulias 4Nos. For 2days=	8 nos	each	75.00	600.00	
	Top shuttering plates skilled mulia 4Nos. For 2days =	8 nos	each	75.00	600.00	
	Mulias 10Nos. for 2days = 20Nos. @ 55.00 / day	20 nos	each	55.00	1100.00	
	Bottom slab plates					
	Skilled mulia 4Nos. for 2days = 8Nos.	8 nos	each	75.00	600.00	
	Mulias 8Nos. for 2days = 16Nos.	16 nos	each	55.00	880.00	
	Bottom joists and Pylon and side shuttering plates					
	Skilled mulia 10Nos. for 2days = 20Nos.	20 nos	each	75.00	1500.00	
	Mulias 10Nos. for 2days = 20Nos.	20 nos	each	55.00	1100.00	
				Total(e)	7280.00	
				Total (a+b+c+d+e)	21722.21	
	Add overhead charges as per OCC 25% on labour items				5293.05	
	=(21722.21-550.00) x 1/4					
				Total	27015.26	
	f) Hire charges of pylon 55Nos. @ Rs. 137.28 per each	55 nos	each	137.28	7550.40	
	g) Hire charge of departmental materials ISMB, channel,NG Rails					
	Shuttering plates (items 11B) using 36 times = 494273.95/36				13729.83	
				Total	48295.49	
	Taking 36 times of use Rate per Sqm. = 48295.49/36				1341.54	
	Total cost = 46190.67+48295.49				94486.16	
	Rate per Sqm. = 94486.16/213.9				441.73	
				Say	441.70 / sqm	

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

12 Hoisting and placing in position of steel girder trusses, centering and shuttering with steel shutter N.G. rails wooden shuttering plates, welding etc, complete for R.C.C. work in Well/ Grider of bridge including cost, conveyance, royalty of all materials and dismantling them after casting and disposing of the useful materials away from site complete in all respect as per direction of Engineer-in -charge.
 {Hoisting materials, steel shutter plates, N.G. rails etc, are to be supplied by department for which no hire charges will be recovered}
 {Labour rates are inclusive of paid holiday}.
 Rate per Sqm.

A Cost of staging including labour

a) Excavation of anchor pits for derricks after refilling the pits after the refilling anchorage including watering for settlement.

12Nos. of labour for 1 pit for 5Nos. of pit = 60 Nos. labour for 2 days

120 nos each 55.00 6600.00

b) Cost of 10Nos. Of sleepers of size and carriage (0.22×0.80×3)=0.528Cum.

0.528 cum cum 25934.00 13693.15

Outturn 10 pits (5pits in each side)

Excavation 10×3.00×3.00×3.50=315 Cum

Refilling after compaction the same =315 Cum.

Labour for making and providing erecting of deriks

Labour

I. 2 Nos. of Riggers (Highly skilled for 2 days at the rate

4 nos each 85.00 340.00

ii. 15 Nos. of skilled labour for 2 days at the rate of Rs. 72.50

30 nos each 75.00 2250.00

iii. Cost of wooden deriks at the rate of Rs. 1500 for 2 dericks

2 nos each 1500.00 3000.00

iv. Cost of 2 paid pipes dericks at the rate of 1200

2 nos each 1200.00 2400.00

28,283.15

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

Total for 6 Nos. of span Rs.					28,283.15	
For one span =		28,283.15	=		4713.86	
		6				

i Labour charges for launching & placing trusses

and N.G. Rails about 150 quintals. 2 No. of Rigger at the rate of Rs. 85.00 per each for 2 days

	4 nos	each		85.00	340.00	
ii High skilled labour 25nos of launching of 2 Nos. trusses for 2 days at the rate of 85.00	50 nos	each		85.00	4250.00	
iii Placing of N.G. rails over trusses for one day skilled labour engaged 15 nos	15 nos	each		75.00	1125.00	
iv. Labour charges for delaunching trusses and N.G. rails for 2 days total 15 nos of skilled labour	30 nos	each		75.00	2250.00	
Total 2 Nos. of high skilled labour at the rate of	2 nos	each		85.00	170.00	
Carriage of N.G. rails and shifting of subsequent spans 20Nos. Skilled labour for a day	20 nos	each		75.00	1500.00	
Welding of N.G. rails about 500 joints for 3 days						
Welder 3 nos. for 3 days at the rate of Rs. 85.00/each/day	9 nos	each		85.00	765.00	
6 Nos. for 3 days at the rate of Rs. 65.00/each/day	18 nos	each		65.00	1170.00	
Welding rods 15 Pkts at the rate of Rs.300/per Pkt	15 pkt	pkt		300.00	4500.00	
Diesel welding machine for 6 hr/day=18 hours at the of	18 hour	hour		60.00	1080.00	
Manila rope etc. for one span					500.00	
Total for 164.50sqm					22,363.86	

For 1Sqm. 135.95

B Cost of centering and shuttering for one span

a) Cost and carriage of sal wood (10cm×7.5cm) scantling	1.403 cum	cum		25934.00	36385.40	
b) Cost and carriage of sal wood planks 2.29cum @ 25,698/cum @ Rs. 69.00	2.29 cum	cum		25698.00	58848.42	
	450 mtr.	mtr		69.00	31050.00	
			Total		126283.82	
The set will be utilised for 3 times						
For one time					42094.61	

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

d) Cost bolts, nuts, washers, 20kg @

49.00 20 Kg Kg 49.00 980.00

Butt washer 10kg, @ Rs. 49.00/kg 10 Kg Kg 49.00 490.00

Nails 40 Kg Kg 37.00 1480.00

e) Cost of welding rods 8 pkts 8 pkt pkt 300.00 2400.00

Hours per day

for 4 days 8 hr @ 60.00per hrs 8 hour hour 60.00 480.00

g) Cost putty 250.00

48174.61

Deduct cost of damage (wood) -1500

Total **46,674.61**

for 1 sqm 283.74

C Labour charges

for 35.60sqm

(i) Carpenter(2nd class) 2 Nos. for 7 days 14 nos each 75.00 1050.00

(ii) Helper to carpenter 2 Nos. for 7 days 14 nos each 65.00 910.00

Total **1960.00**

for one use **653.30**

b) Labour charges of centering and shuttering

(i) Welder(special) 2 Nos. @ 85.00 each day for 5 days 10 nos each 85.00 850.00

(ii) Helper to welder 2 Nos. @ 65.00 each day for 5 days 10 nos each 65.00 650.00

(iii) Carpenter(2nd class) 12.86 Nos. @ 75.00 each day for 7 days 90.02 nos each 75.00 6751.50

(iv) Labour 30Nos. @55.00 each day for 7 days 210 nos each 55.00 11550.00

For 164.50sqm , Cost = Rs. 20454.80 Total 20454.80

for 1 sqm 124.35

Abstract of cost

A. Cost of staging including labour 135.95

B. Cost of centering and shuttering 283.74

C. Labour charges 124.35

544.03

Add 25% extra 136.01

Total 680.04

Rate per 1sqm. Say 680.00 / Sqm

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

13 Rigid & smooth centering and shuttering for R.C.C. work in pergola including false work and dismantling them after casting including cost of materials complete in ground floor.

Details for 9sqm

a) Materials

120mm dia Sal bullah	56.00	mtr	mtr	69.00	3864.00
Non-sal wood scanting	0.112	cum	cum	14548.00	1629.38
Non-sal wood planks 38mm thick	0.34	cum	cum	14548.00	4946.32
Carriage of wood	1.142	cum	cum	72.00	82.22
				Total=	10521.92

Considering 10 times use of materials
=10521.92/10

Total= 1052.20

Non-Sal wood planks 25mm thick

Cost of wood	0.409	cum	cum	14548.00	5950.13
Carriage of wood	0.409	cum	cum	72.00	29.45

b) Labour

Carpenter (2nd class)	3.3	nos	each	75.00	247.50
Sangi Mulia	3.3	nos	each	65.00	214.50

c) Overhead charges 10 % on a+b

749.38

Total a+b+c+d

8243.16

Rate per 1sqm. = Rs. 8243.16/9 =

915.90 / Sqm

14 Closed deep chipping and cleaning to R.C.C. surface for receiving cement plaster per 1 Data for 10 sqm

a) Labour

Man mulia	0.5	no	Each	55.00	27.50
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b) Overhead charges @ 10% on (a)

2.75

c) 2% sundries and Nalls etc. on (a)

0.55

Total

30.80

Rate for 1 Sqm = Rs. 30.8/10 =

3.10 / Sqm

15 Rigid and smooth Steel centering and shuttering at all heights of bridge work such as well curb, well steining, well cap, pier and abutment shaft, pier and abutment cap, wing wall, tie beam, road kerb and dirt wall using required nos of vertical and horizontal supports of scaffolding with joists, N.G. rails and channels and steel shuttering plates including welding, bolting, cost, conveyance, royalty and all other taxes of all materials and cost of scaffolding gangway etc. including cost of conveyance of dismantling and disposing debris clear of work site complete to receive reinforcement grills and concrete as per requirement as directed by Engineer-in-Charge

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

Per 1Sqm

a) Material

Cost of Steel shuttering plate 1.524m x

M.S Angle of size 50mm x 50mm x6mm

3 x 1.524m = 4.572m

5 x 0.914m = 4.570m

Total = 9.142m

Weight of Angle = 9.142m @ 4.5kg/mtr =

41.139kg

M.S Plate 4mm thick = 1.524m x 0.914m =

1.393sqm

Weight of Plate = 1.393sqm @ 31.40kg/sqm

=43.740kg

Total weight of 1 plate 84.879 Kg Kg 30.64 2600.69

= 41.139kg + 43.740kg = 84.879kg

Cost of fabrication

Labour for fabrication

84.879 Kg Kg 2.708 229.85

Cost of welding rod for fabrication

1.00 pkt. Packet 300.00 300.00

3130.54

Cost of steel shuttering plate per 1sqm =

3130.54/1.393

2247.34

Considering 36times use of materials, rate for

use once

Rs.2100.66/36

62.43

Cost of nut and bolt @2kg/sqm for 1sqm @

Rs.49.00/kg

Considering 4times use of materials, rate for

use once

2 x 49.00 / 4

24.50

Cost of sal bullah 150mm to 200mm dia up to

5.50m long

Requirement = 12m /sqm @Rs.76.00/mtr =

Rs.912.00

Considering 10times use of materials, rate for

use once

Rs.912.00/10

91.20

Total of a

178.13

b) Labour

Data for 4.20sqm

Carpenter 2nd class

2.75 nos each 75.00 206.25

Semiskilled mulia

2.75 nos each 65.00 178.75

385.00

Total of b = Rate per sqm = 385.00/4.20

91.67

Total (a + b) = Rs.178.13 + Rs.91.67

269.79

c) Overhead charges @ 10% on a+b

26.98

Rate per sqm = (a+b+c)

296.77

Say

296.80 / Sqm

Sl. No.	Description	Quantity required		Unit	Rate		Amount		Remarks
					Rs.	P	Rs.	P	
1	2	3		4	5		6		7

Note :

- (i) For centering and shuttering for R.C.C. work (in floor and Roof slab, Landings, Balconies, Projection, Sunshades, Chajja, Stairs, Plinth band, Footing and base of columns, Precast slab, Beams and columns, Lintels, R.C.C. walls and Fins) in first floor and subsequent upper floors add 20 percent extra to the rates of respective centering and shuttering items over and above the rates from the next lower floor.
- (ii) For R.C.C. work in 1st floor or any additional floor add 15 per cent extra labour over and above the rate of next lower floor for lifting of concrete etc.
- (iii) For reinforcement work in 1st floor or any additional floor add 5 percent extra labour over and above the rate of next lower floor.
- (iv) The rates of R.C.C. items (except item No.3,4 ,5,6,7&8) have been arrived using hand broken chips and if crusher broken chips are used the difference in cost should be added to arrive at the finished rates.
- (v) For R.C.C. and reinforcement works below ground level beyond 1.5m and upto 4.5m depth add 15 percent extra labour over and above the rates of the respective items for lowering the materials.
- (vi) For R.C.C. and reinforcement works below ground level beyond 4.5m and upto 7.5m depth add 20 percent extra labour over and above the rates of the respective items for lowering the materials
- (vii) For centering and shuttering work below ground level beyond 1.5m and upto 7.5m depth add 20 per cent extra labour over and above the rates of the respective items for lowering the materials
- (viii) For R.C.C. work in shell roof add 25 per cent extra labour over and above the rate for lifting and laying concrete.
- (ix) For R.C.C. work in slope roof add 10 per cent extra labour (on labour calculated for the floor) over and above the rates of the floor for lifting and laying concrete.
- (x) For R.C.C. work in pergola add 10 percent extra labour over and above the rate of next lower floor for lifting and laying concrete
- (xi) The under reamed diameter in pile foundation has been assumed as 2.5 times the stem diameter.
- (xii) In case of Steel Reinforcement work reinforcement shall be measured in length including hooks, if any , separately for different diameter as actually used in work, excluding overlaps. from the length so measured , the weight of reinforcement shall be calculated in tonnes on the basis of IS: 1732, wastage , overlaps, couplings, welded joints, spacer bars , chairs , stays , hangers and annealed steel wire or other methods for binding and placing shall not be measured and cost of these items shall be deemed to be included in the rates for reinforcement.
- (xiii) 10 per cent excess on the above rates will be allowed for the works being executed inside jail premises

V. REINFORCED BRICK WORK

Sl. No.	Description	Quantity required		Unit	Rate		Amount		Remarks
		3			Rs.	P	Rs.	P	
1	2	3		4	5	P	6	P	7
1	Reinforced brick work in roof slab and lintels using 1:2:4 cement concrete with 4.7 mm size hard granite chips in joint excluding cost of reinforcement bending and binding, centering and shuttering per 1cum								
	a) Materials								
	Brick work with K.B. bricks 25cm x 12cm x 8cm having crushing strength not less than 75 Kg/cm ² with dimensional tolerance ±8 percent cement concrete 1:2:4 with 0.35cum 12mm hard granite chips for 25mm average joint (rate as per item 7 of concrete excluding 10 % OHC)	254 nos	1000 Nos		2192.00		556.77		
	Deduct difference between cost of 4.7 mm and 12mm chips (Rs. 494.00-Rs.424.00 = Rs. 70.00)	0.38 cum		cum	70.00		-26.60		
	b) Labour								
	same as item No.1 of 25cm K.B. brick work in cement mortar 1:3 Add extra labour involved for R.B. works								271.30
	Mason special	0.35 no		each	85.00		29.75		
	Man mulia	0.35 no		each	55.00		19.25		
	c) Overhead Charges @ 10 % on (a+b)								150.25
	Total= (a+b+c)=				Total		1652.80		
					Say		1652.80 / cum		
2	Reinforced brick work in in cement mortar 1:3 excluding cost of M.S. rods centering and shuttering (per 1cum)material 25cm × 12cm × 8cm size K.B. bricks having crushing strength not less than 75kg/cm ² with dimensional tolerance ±8 %	254 nos	1000 Nos		2192.00		556.77		
	a) Materials								
	Sand	0.35 cum		cum	29.00		10.15		
	Cement	1.70 qntl.		quintal	341.00		579.70		
	b) Labour								
	Same as item No.1 of 25cm K.B. brick masonry in cement mortar1:3. Add-Extra labour involved for R.B. work								271.30
	Mason special	0.35 no		each	85.00		29.75		
	Man mulia	0.35 no		each	55.00		19.25		
	c) Overhead Charges @ 10 % on (a+b)								146.69
	Total= (a+b+c)=						1613.61		
					Say		1613.60 / cum		
3	Centering and shuttering for R.B. Works (Same as Item No. 7(i) of R.C.C.)			1sqm			175.70		

Sl. No.	Description	Quantity required		Unit	Rate		Amount		Remarks
					Rs.	P	Rs.	P	
1	2	3		4	5		6		7

Note

- (i) For R.B. work in 1st floor and subsequent floor, add 15% extra labour over and above the rates of the next lower floor
- (ii) For centering and shuttering for R.B. work in 1st floor and subsequent upper floor, add 20 per cent extra to the rates of centering & shuttering over & above the rates in the next lower floor
- (iii) Rates for concrete items have been arrived on the assumption that hand broken chips have been utilised. If crusher broken chips are to be utilised, necessary addition to the rates may be effected.
- (iv) For brick masonry work below ground level and beyond 1.5m and upto 4.5m depth add 15 per cent extra labour over and above the rates of the respective item for lowering the materials.
- (v) For brick masonry work below ground level and beyond 4.5m and upto 7.5m depth add 20 percent extra labour over and above the rates of the respective item for lowering the materials.
- (vi) 10 per cent excess on the above rates will be allowed for the work being executed in side jail premises.

VI. MASONRY BRICK WORK WITH 25CM BRICKS

Sl. No.	Description	Quantity required		Unit	Rate		Amount		Remarks
		3			Rs.	P	Rs.	P	
1	2	3		4	5		6	7	
1	Brick work with K.B. bricks 25cm x 12cm x 8cm size having crushing strength not less than 75 Kg/cm ² with dimensional tolerance ± 8 percent in cement mortar (1:3) in foundation and plinth per cum.								
	a) Material								
	K.B. Brick 25cm x 12cm x 8cm	350	nos	1000 Nos	2192.00		767.20		
	Sharp sand (screened and washed)	0.28	cum	cum	29.00		8.12		
	Cement	0.093	cum	cum					
		1.33	qtl	quintal	341.00		453.53		
	b) Labour								
	Mason special	0.35	no	each	85.00		29.75		
	Mason 2nd class	1.05	nos	each	75.00		78.75		
	Man mulia	1.41	nos	each	55.00		77.55		
	Women mulia	1.41	nos	Each	55.00		77.55		
	Preparing mortar and getting water etc.	0.14	no	each	55.00		7.70		
	c) Overhead Charges @ 10 % on (a+b)						150.02		
	Total (a+b+c) =						1650.17		
						Say	1650.20 / cum		
2	Brick work with K.B. bricks 25cm x 12cm x 8cm size having crushing strength not less than 75 Kg/cm ² with dimensional tolerance ± 8 percent in cement mortar (1:4) in foundation and plinth per cum.								
	a) Material								
	K.B. Brick 25cm x 12cm x 8cm	350	nos	1000 Nos	2192.00		767.20		
	Sharp sand (screened and washed)	0.28	cum	cum	29.00		8.12		
	Cement	0.07	cum	cum					
		1	qtl.	quintal	341.00		341.00		
	b) Labour								
	labour same as per item 1						271.30		
	c) Overhead Charges @ 10 % on (a+b)						138.76		
	Total (a+b+c) =						1526.38		
						Say	1526.40 / cum		
3	Brick work with K.B. bricks 25cm x 12cm x 8cm size having crushing strength not less than 75 Kg/cm ² with dimensional tolerance ± 8 percent in cement mortar (1:6) in foundation and plinth per cum.								
	a) Material								
	K.B. Brick 25cm x 12cm x 8cm	350	nos	1000 Nos	2192.00		767.20		
	Sharp sand (Screened and Washed)	0.28	cum	cum	29.00		8.12		
	Cement	0.047	cum	cum					
		0.672	qtl.	quintal	341.00		229.15		

Sl. No.	Description	Quantity required		Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3		4	5	6	7

b) Labour

labour same as per item 1 271.30

c) Overhead Charges @ 10 % on (a+b) 127.58

Total (a+b+c) = 1403.35

Say 1403.30 / cum

4 Brick work with K.B. bricks 25cm x 12cm x 8cm size having crushing strength not less than 75 Kg/cm² with dimensional tolerance ± 8 percent in cement mortar (1:8) in foundation and plinth per cum.

a) Material

K.B. Brick 25cm x 12cm x 8cm 350 nos 1000 Nos 2192.00 767.20

Sharp sand (screened and washed) 0.28 cum cum 29.00 8.12

Cement 0.035 cum cum

0.501 qtl. quintal 341.00 170.84

b) Labour

labour same as per item 1 271.30

c) Overhead Charges @ 10 % on (a+b) 121.75

Total (a+b+c) = 1339.21

Say 1339.20 / cum

5 Brick work with K.B. bricks 25cm x 12cm x 8cm size having crushing strength not less than 75 Kg/cm² with dimensional tolerance ± 8 percent in cement mortar (1:12) in foundation and plinth per cum.

a) Material

K.B. Brick 25cm x 12cm x 8cm 350 nos 1000 2192.00 767.20

Sharp sand (screened and washed) 0.28 cum cum 29.00 8.12

Cement 0.0235 cum cum

0.336 qtl. quintal 341.00 114.58

b) Labour

labour same as per item 1 271.30

c) Overhead Charges @ 10 % on (a+b) 116.12

Total (a+b+c) = 1277.32

Say 1277.30 / cum

6 Brick work with K.B. bricks 25cm x 12cm x 8cm size having crushing strength not less than 75 Kg/cm² with dimensional tolerance ± 8 percent in clay in foundation and plinth per cum.

a) Material

K.B. Brick 25cm x 12cm x 8cm 350 nos 1000 Nos 2192.00 767.20

Clay mortar as per S/R

Item No.20 in rate of material 0.32 cum cum 37.00 11.84

b) Labour

Mason 2nd class 1.05 nos each 75.00 78.75

Man mulia 1.05 nos each 55.00 57.75

women mulia 1.05 nos each 55.00 57.75

Sl. No.	Description	Quantity required		Unit	Rate		Amount		Remarks
					Rs.	P	Rs.	P	
1	2	3		4	5		6		7
	c) Overhead Charges @ 10 % on (a+b)							97.33	
	Total (a+b+c) =							1070.62	
									Say 1070.60 / cum
	7 Brick work with K.B. bricks 25cm x 12cm x 8cm having crushing strength not less than 75 Kg/cm ² with dimensional tolerance ±8 percent in lime mortar (1:2) in foundation and plinth per cum.								
	a) Material								
	K. B. Bricks	350	nos	1000 Nos	2192.00			767.20	
	Ghooting lime(unslaked)	0.15	cum	cum	1720.00			258.00	
	Sharp sand (screened and washed)	0.3	cum	cum	29.00			8.70	
	b) Labour								
	Labour same as item No.1							271.30	
	Grinding lime mortar vide no 1 of Conc.excluding 10 % OHC and 2% T&P	0.3	cum	cum	176.95			53.09	
	c) Overhead Charges @ 10 % on (a+b)							135.83	
	Total (a+b+c) =							1494.11	
									Say 1494.10 / cum
	8 Honey comb masonry with 25cm ×12cm ×8cm size Kiln burnt bricks having crushing strength not less than 75 kg/cm ² in cement mortrar (1:4) and plastered with 16mm, thick cement mortar (1:6) including white washing 2 coats Per 1 sqm								
	a) Material								
	Kiln burnt bricks as specified	61	nos	1000 Nos	2192.00			133.71	
	Cement 0.02 cum	0.286	qtl.	quintal	341.00			97.53	
	Sharp sand (screened and washed)	0.08	cum	1cum	29.00			2.32	
	b) Labour								
	Mason 2nd class	0.54	no	each	75.00			40.50	
	Man mulia	0.22	no	each	55.00			12.10	
	Women mulia	0.32	no	each	55.00			17.60	
	White washing 2 coats with shell lime excluding 10% OHC and 2% T&P	3.50	sqm	1sqm	3.86			13.51	
	c) Overhead Charges @ 10 % on (a+b)							31.73	
	Total (a+b+c) =							348.99	
									Say 349.00 / sqm
	9 Wattle and dub walling including 12mm Mud plaster on both sides per 1sqm								
	a) Material								
	Non-sal bullah 75mm mean dia	1.31	mtr.	mtr.	33.00			43.23	
	Belangi bamboo 2.51cm to 7.7cm & 4m to 6m	0.54	no	100Nos.	1700.00			9.18	
	b) Labour								
	Man mulia for cutting Green things and brush wood	0.11	no	each	55.00			6.05	
	Man mulia for cutting Bullahs to required size splitting the bamboos fixing the bullah in the pits after excavating and typing twigs etc.	0.16	no	each	55.00			8.80	
	Women mulia for applying mud plaster on both sides	0.11	no	each	55.00			6.05	

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

c) Overhead Charges @ 10 % on (a+b)					7.33	
Total (a+b+c) =					80.64	
				Say	80.60	/ sqm

10 Mud walling per 1cum clay mortar (paddle, clay mixed with sand in suitable proportion)	1.00 cum	cum	37.00	37.00		
a) Labour						
Man Mulia	1.41 nos	each	55.00	77.55		
Women mulia	0.71 no	each	55.00	39.05		
b) Overhead Charges @ 10 % on (a)					15.36	
c) 2% sundries& T&P					3.07	
Total (a+b+c) =					172.03	
				Say	172.00	/ cum

Notes

	Unit	Rate
(i) For brick masonry in superstructure add extra to wards extra labour and scaffolding to the rate in foundation and	cum	33.00
(ii) For brick arch masonry work not exceeding 1.5m. Span add extra for scaffolding and centering to the rate for brick work in superstructure.	cum	66.20
(iii) For brick masonry in well steining add extra towards extra labour for scaffolding and lowering materials to the rate in foundation and plinth.	cum	46.20
(iv) For brick masonry in item for first floor and subsequent higher floors add 15 percent extra labour over and above the rates of next lower floor.		
(v) For honey comb brick masonry in first floor and subsequent higher floors add 15 percent extra labour over and above the rates of next lower floor.		
(vi) For brick masonry with different quality of bricks add or subtract the difference in cost of bricks from respective items of rates.		
(vii) For brick masonry with 23cm.×11cm.×8cm. Size brick 400 nos. of bricks are required for one cum. of masonry. Labour and material components remain the same in that for respective items of brick masonry with 25cm.×12cm.×8cm. size bricks.		
(viii) For brick masonry work below ground level beyond 1.5m. and upto 4.5m. depth add 15 percent extra labour over and above the rates of the respective items for lowering the material.		
(ix) For brick masonry work below ground level beyond 4.5 m. and upto 7.5m. depth add 20 percent extra labour over and above the rates of the respective items for lowering the material.		
(x) 10 percent excess on the above rates will be allowed in works being executed inside jail premises.		

VII. MASONRY STONE WORK

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7
	1 Random rubble H.G. stone Masonry in lime mortar (1:2) in foundation and plinth. Per 1 cum.					
	a) Material					
	Rough granite stone quarried including bond stones.	1 cum	1cum.	148.00	148.00	
	Lime (Ghooting) unslaked	0.17 cum	1cum.	1720.00	292.40	
	Sand (screened & washed)	0.24 cum	1cum.	29.00	6.96	
	Grinding lime mortar (vide item No 1 of concrete excluding O.H.C)	0.34 cum	1cum.	176.95	60.16	
	b) Labour					
	Mason special	0.35 Nos	Each	85.00	29.75	
	Mason 2nd class	1.41 Nos	Each	75.00	105.75	
	Man Mulia	1.41 Nos	Each	55.00	77.55	
	Woman Mulia	1.41 Nos	Each	55.00	77.55	
	c) Overhead charges @ 10% on (a+b)				79.81	
	Total (a+b+c)				877.94	
		Say Rs.	877.90	/ cum		
	2 Random rubble H.G. stone Masonry in cement mortar (1:5) in foundation and plinth. Per 1 cum.					
	a) Material					
	Rough stone granite quarried including bond stones.	1 cum	1cum.	148.00	148.00	
	Sand (screened & washed)	0.34 cum	1cum.	29.00	9.86	
	cement 0.068cum	0.9724 Qntl	1Qntl	341.00	331.59	
	b) Labour					
	Man Mulia for mixing mortar	0.35 Nos	Each	55.00	19.25	
	Labour as per item No.1				290.60	
	c) Overhead charges @ 10% on (a+b)				79.93	
	Total (a+b+c)				879.23	
		Say Rs.	879.20	/ cum		
	3 Random rubble H.G. stone Masonry in cement mortar (1:6) in foundation and plinth. Per 1 cum.					
	a) Material					
	Rough stone granite quarried including bond stones.	1 cum	1cum.	148.00	148.00	
	Sand (screened & washed)	0.34 cum	1cum.	29.00	9.86	
	cement 0.057 cum	0.8151 Qntl	1Qntl	341.00	277.95	
	b) Labour					
	Man Mulia for mixing mortar	0.35 Nos	Each	55.00	19.25	
	Labour as per item No.1				290.60	
	c) Overhead charges @ 10% on (a+b)				74.57	
	Total (a+b+c)				820.23	
		Say Rs.	820.20	/ cum		

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7
	4 Random rubble H.G. stone Masonry in cement mortar (1:8) in foundation and plinth. Per 1 cum.					
	a) Material					
	Rough stone granite quarried including bond stones.	1 cum	1cum.	148.00	148.00	
	Sand (screened & washed)	0.34 cum	1cum.	29.00	9.86	
	cement 0.0425cum	0.6078 Qntl	1Qntl	341.00	207.26	
	b) Labour					
	Man Mulia for mixing mortar	0.35 Nos	Each	55.00	19.25	
	Labour as per item No.1				290.60	
	c) Overhead charges @ 10% on (a+b)				67.50	
	Total (a+b+c)			Total	742.47	
		Say Rs.	742.50	/ cum		
	5 Random rubble H.G. stone Masonry in cement mortar (1:4) in foundation and plinth. Per 1 cum.					
	a) Material					
	Rough stone granite quarried including bond stones.	1 cum	1cum.	148.00	148.00	
	Sand (screened & washed)	0.34 cum	1cum.	29.00	9.86	
	cement 0.085cum	1.2156 Qntl	1Qntl	341.00	414.52	
	b) Labour					
	Man Mulia for mixing mortar	0.35 Nos	Each	55.00	19.25	
	Labour as per item No.1				290.60	
	c) Overhead charges @ 10% on (a+b)				88.22	
	Total (a+b+c)			Total	970.45	
		Say Rs.	970.50	/ cum		
	6 Coursed rubble hard Granite stone masonry (first class) in lime mortar (1:2) in foundation and plinth Per 1 cum					
	a) Material					
	Rough stone granite including Bond stone	1 cum	1cum.	148.00	148.00	
	Lime (Ghooting) unslaked	0.12 cum	1cum.	1720.00	206.40	
	Sand (screened & washed)	0.24 cum	1cum.	29.00	6.96	
	Grinding lime mortar	0.24 cum	1cum.	176.95	42.47	
	b) Labour					
	Labour as per item No.1excluding O.H.C				290.60	
	Add difference in cost of Sangi and Man mulia	1.41 Nos	Each	10.00	14.10	
	Add. Extra mason special..	2.47 Nos	Each	85.00	209.95	
	c) Overhead charges @ 10% on (a+b)				91.85	
	Total (a+b+c)				1010.33	
		Say Rs.	1010.30	/ cum		

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7
7	Coursed rubble hard Granite stone masonry (first class) in cement mortar (1:5) in foundation and plinth Per 1 cum.					
	a) Material					
	Rough stone granite including	1 cum	1cum.	148.00	148.00	
	Bond stone					
	Sand (screened & washed)	0.24 cum	1cum.	29.00	6.96	
	cement	0.048cum	0.6864 Qntl	1Qntl 341.00	234.06	
	b) Labour					
	Labour as per item No.6				514.65	
	Man mulia for mixing sand and cement in small quantities and gettinger water	0.25 Nos	Each	55.00	13.75	
	c) Overhead charges @ 10% on (a+b)				91.74	
	Total (a+b+c)				1009.16	
		Say Rs.	1009.20	/ cum		
8	Coursed rubble hard Granite stone masonry (first class) in cement mortar (1.4) in foundation and plinth Per 1 cum.					
	a) Rate as per item No.7				1009.20	
	b) Add, extra cost of cement with 10% OHC	0.1716 Qntl	1qntl	375.10	64.37	
	Total (a+b)				1073.57	
		Say Rs.	1073.60	/ cum		
9	Coursed rubble hard Granite stone masonry (first class) in cement mortar (1.6) in foundation and plinth Per 1 cum.					
	a) Material					
	Rough stone granite including	1 cum	1cum.	148.00	148.00	
	Bond stone					
	Sand (screened & washed)	0.24 cum	1cum.	29.00	6.96	
	cement	0.04cum	0.572 Qntl	1Qntl 341.00	195.05	
	b) Labour					
	Labour as per item No.6				514.65	
	Man mulia for mixing sand and cement in small quantities and gettinger water	0.25 Nos	Each	55.00	13.75	
	c) Overhead charges @ 10% on (a+b)				87.84	
	Total (a+b+c)				966.25	
		Say Rs.	966.30	/ cum		
10	Coursed rubble hard Granite stone masonry (first class) in cement mortar (1.8) in foundation and plinth Per 1 cum.					
	a) Material					
	Rough stone granite including	1 cum	1cum.	148.00	148.00	
	Bond stone					
	Sand (screened & washed)	0.24 cum	1cum.	29.00	6.96	
	cement	0.03cum	0.429 Qntl	1Qntl 341.00	146.29	

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

b) Labour

Labour as per item No.6 514.65

Man mulia for mixing sand 0.25 Nos Each 55.00 13.75
and cement in small quantities
and geting water

c) Overhead charges @ 10% on (a+b)

82.96

Total (a+b+c)

Total 912.61

Say Rs. **912.60** / cum

11 Random rubble hard granite stone masonry
in clay or sand or gravel grouted in foundation
and plinth Per 1 cum.

a) Material

Rough stone granite including 1 cum 1cum. 148.00 148.00

Bond stone

Puddle clay or sand earth 0.24 cum 1cum. 37.00 8.88
or gravel grouted including
watering

b) Labour

Mason 2nd class 1.41 Nos Each 75.00 105.75

Man mulia 1.06 Nos Each 55.00 58.30

Woman Mulia 1.41 Nos Each 55.00 77.55

c) Overhead charges @ 10% on (a+b)

39.85

Total (a+b+c)

438.33

Say Rs. **438.30** / cum

12 Dry stone masonry or rough stone dry masonry
for guard walls and retaining walls with
hard granite stones
Per 1 cum.

a) Material

Rough stone granite including 1 cum 1cum. 148.00 148.00

Bond stone

b) Labour

Mason 2nd class 0.52 Nos Each 75.00 39.00

Semiskilled mulia 0.52 Nos Each 65.00 33.80

Man mulia 0.52 Nos Each 55.00 28.60

Woman Mulia 0.35 Nos Each 55.00 19.25

c) Overhead charges @ 10% on (a+b)

26.87

Total (a+b+c)

295.52

Say Rs. **295.50** / cum

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

13 Rough stone dry packing in aprons and revetments with hard granite stones (15cm to 30cm)
Per 1 cum.

a) Material

Rough stone granite including spalls for filling and wedging

1 cum	1cum.	148.00	148.00
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b) Labour

Mason special	0.17 Nos	Each	85.00	14.45
stone packer	0.35 Nos	Each	65.00	22.75
Woman Mulia	0.52 Nos	Each	55.00	28.60
male mulia	0.52 Nos	Each	55.00	28.60

c) Overhead charges @ 10% on (a+b)

Total (a+b+c) 24.24

Say Rs. **266.60** / cum

14 Removing old revetment and aprons and repacking with old stones
Per 1 cum.

a) Rate as per item No.13

266.64

Deduct

Cost of H.G. stone including 10% O.H.C (-) 162.80

103.84

b) Add for dis-mantling

Man mulia	0.35 Nos	Each	55.00	19.25
Woman Mulia	1 No	Each	55.00	55.00

c) Overhead charges @ 10% on (b)

7.43

Total (a+b+c) 185.52

Say Rs. **185.50** / cum

15 Rough stones dry packing in aprons and revetment with hard granite stone 30cm and above size
Per 1 cum.

a) Rate as per item No.13

266.60

b) Man mulia extra for carryng heavy stones

0.35 Nos	Each	55.00	19.25
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c) Overhead charges @ 10% on (b)

1.93

Total (a+b+c) Total 287.78

Say Rs. **287.80** / cum

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

16 Laterite stone masonry in cement mortar (1:8)
in foundation and plinth
Per 1 cum.

a) Materials

Rough dressed laterite stone	1 cum	1cum.	372.00	372.00	
Sand (screened & washed)	0.24 cum	1cum.	29.00	6.96	
cement	0.03cum	0.429 Qntl	1 qntl	341.00	146.29

b) Labour

stone dresser or cutter,	2.12 Nos	Each	85.00	180.20
Sangi mulia	1.41 Nos	Each	65.00	91.65
Mason (special)	0.175 Nos	Each	85.00	14.88
Mason 2nd class	1.05 Nos	Each	75.00	78.75
Man mulia	1.05 Nos	Each	55.00	57.75
Man mulia for preparing mortar and curring etc	0.16 Nos	Each	55.00	8.80

c) Overhead charges @ 10% on (a+b)

Total (a+b+c) 95.73

Total 1053.00
Say Rs. **1053.00** / cum

17 Laterite stone masonry in cement mortar (1 : 6)
in foundationand plinth
Per 1 cum.

a) Rate as per item No.16

1053.00

b) Add difference in cost including 10% O.H.C of cement (0.572 - 0.429)Qntl=0.143 Qntl

0.143 Qntl 1qntl 375.10 53.64

Total (a+b)

1106.64

Say Rs. **1106.60** / cum

18 Laterite stone masonry in cement mortar (1:4)
in foundationand plinth
Per 1 cum.

a) Rate as per item No.16

1053.00

b) Add difference in cost including 10% O.H.C of cement (0.858 - 0.428)Qntl=0.43 Qntl

0.43 Qntl 1qntl 375.10 161.29

Total (a+b)

Total **1214.29**

Say Rs. **1214.30** / cum

19 Laterite stone masonry in cement mortar (1 : 12)
in foundationand plinth
Per 1 cum.

a) Rate as per item No.16

1053.00

b) Deduct cost including 10% O.H.C for less cement (0.429-0.2868=0.1422Qntl)

-0.142 Qntl 1qntl 375.10 -53.34

Total (a-b)

Total **999.66**

Say Rs. **999.70** / cum

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7
20	Laterite stone masonry in lime mortar (1:2) in foundation and plinth Per 1 cum. Rate as per item No.16 Deduct cost including 10% O.H.C cement as per item 16 Add-Cost of lime including 10% O.H.C (Ghooting unslaked) Total	-0.429 0.12 cum	1qntl 1cum.	375.10 1926.40	1053.00 -160.92 231.17 1123.25	
		Say Rs.	1123.30	/ cum		
21	Laterite stone masonry in clay in foundation and plinth Per 1 cum. a) Material clay mortar for masonry work Rough dressed laterite stone b) Labour stone dresser, sangi mulia Mason, 2nd class Man mulia c) Overhead charges @ 10% on (a+b) Total (a+b+c)	0.24 cum 1 cum 2.12 Nos 1.41 Nos 1.05 Nos 1.05 Nos	1cum. 1cum. each each each each	37.00 372.00 85.00 65.00 75.00 55.00	8.88 372.00 180.20 91.65 78.75 57.75 78.92 868.15	
		Say Rs.	868.20	Total / cum		
22	Laterite block edge packing Per 1 cum. a) (Labour only) stone packer Semiskilled mulia Man mulia b) Overhead charges @ 10% on (a) c) 2% sundries and T.&P. etc on (a). Total (a+b+c)	0.71 Nos 0.71 Nos 0.71 Nos	each each each	65.00 65.00 55.00	46.15 46.15 39.05 13.14 2.63 147.11	
		Say Rs.	147.10	/ cum		
23	Laterite block packing flat (Labour only) Per 1 cum. a) (Labour only) stone packer Semiskilled mulia Man mulia b) Overhead charges @ 10% on (a) c) 2% sundries and T.&P. etc on (a). Total (a+b+c)	0.35 Nos 0.71 Nos 0.35 Nos	each each each	65.00 65.00 55.00	22.75 46.15 19.25 8.82 1.76 98.73	
		Say Rs.	98.70	/ cum		

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

24 Collecting scattered rubbles and stacking within 50m lead Per 1 cum.

a) Labour

Man mulia 0.53 Nos each 55.00 29.15

b) Overhead charges @ 10% on (a)

2.92

c) 2% sundries and T.&P. etc on (a).

0.58

Total 32.65

Say Rs. **32.70** / cum

25 Gravel backing to revetments Per 1 cum.

a) Material

Gravel (moorum) 1 cum 1cum. 45.00 45.00

b) Labour

Man mulia for working up with water to plastic state 0.71 Nos each 55.00 39.05

Woman Mulia 0.35 Nos each 55.00 19.25

c) Overhead charges @ 10% on (a+b)

10.33

Total (a+b+c) 113.63

Say Rs. **113.60** / cum

26 Metal spall backing in the rear of wall steining or weep holes of abutments and for deep drains, per 1cum

a) Material

Hand broken granite metal 5cm size 1 cum 1cum. 311.00 311.00

b) Labour

Man mulia for lowering the materials and packing in the rear of the steining 0.88 Nos each 55.00 48.40

c) Overhead charges @ 10% on (a+b)

35.94

Total (a+b+c) 395.34

Say Rs. **395.30** / cum

Note

	Unit	Rate
1 For stone masonry in super structure add extra labour for scaffolding to the rate in foundation and plinth	cum	41.90
2 For stone masonry in well steining add extra towards extra labour and scaffolding etc. to the rate in foundation and plinth .	cum	71.70
3 For dry stone masonry or rough stonedry masonry for well steining add extra towards labour and scaffolding etc to the rate of dry stone masonry for retaining walls (Item 12)	cum	58.50
4 Where stone other than granite are used deduct the difference between the cost of stones from the respective items		

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

5 When crusher broken metals and chips are used, the difference in cost between hand broken and crusher broken materials in respective items are to be added.

6 For stone masonry work below ground level beyond 1.5m and upto 4.5m depth add 15 percent extra labour over and above and above the rates of the respective item for lowering the materials

7 For stone masonry work below ground level beyond 4.5m and upto 7.5m depth and 20percent extra labour over and above the rates of the respective items for lowering the materials.

8 10 per cent on the above rate will be allowed for the works being executed inside jail premises.

VIII. FLOORING

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7
1	10cm moorum flooring (Gravel) per 1 Sqm.					
	a) Material					
	Gravel	0.15 cum	cum	45.00	6.75	
	b) Labour					
	Man mulia	0.11 Nos	Each	55.00	6.05	
	Women mulia	0.05 Nos	Each	55.00	2.75	
	c) Overhead charges @ 10% on (a+b)				1.56	
	Total (a+b+c)			Total	17.11	
		Say Rs.		17.10	/ Sqm	
2	2.5cm artificial stone flooring with cement concrete (1:2:4) including punning using 12 mm size hand broken granites chips.					
	a) Material					
	Hand broken granite Chips (12mm, screened)	0.023 cum	1cum	494.00	11.36	
	sand (Screened and washed)	0.012 cum	1cum	29.00	0.35	
	Cement (0.006 cum)	0.0858 Qntl	1qntl	341.00	29.26	
	b) Labour					
	Man mulia for mixingchips cement and sand in small quantity and watering	0.03 Nos	Each	55.00	1.65	
	Mason special	0.13 Nos	Each	85.00	11.05	
	Women mulia	0.22 Nos	Each	55.00	12.10	
	Man mulia	0.11 Nos	Each	55.00	6.05	
	c) Overhead charges @ 10% on (a+b)				7.18	
	Total (a+b+c)			Total	79.00	
		Say Rs.		79.00	/ Sqm	
3	2.5cm thick artificial stone flooring (1:2:4) with washed gravel including punning Per 1sqm					
	a) Rate as per item No.2	.....	.....	.....	79.00	
	b) Deduct-The difference of rate for hard granite chips and washed gravel 543.0-93.50 =449.50 including OHC	-0.023 cum	cum	449.50	-10.34	
	Total (a-b)				68.66	
		Say Rs.		68.70	/ Sqm	
4	2.5cm artificial stone flooring with cement concrete (1:3:5) using 12mm size hand broken granite chips including punning per 1 Sqm.					
	a) Material					
	Hand broken granite chips	0.023 cum	1cum	494.00	11.36	
	12mm size screened sand (screened and washed)	0.0138 cum	1cum	29.00	0.40	
	cement 0.0046cum	0.0658 Qntl	1qntl	341.00	22.44	

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

b) Labour

Labour as per item No.2 30.85

c) Overhead charges @ 10% on (a+b)

6.51

Total (a+b+c) 71.56

Say Rs. **71.60** / Sqm

5 2.5cm artificial stone flooring with cement concrete (1:3:6) using 12mm size hand broken granite chips including punning per 1 sqm

a) Rate as per item No.2 79.00

b) Deduct-Difference in quantity -0.031 Qntl 1qntl 375.10 -11.63

of cement due to less proportion

(0.006 cum - 0.0038cum)

0.0022 cum or, 0.031 Qntl. incl. OHC

Total (a-b) 67.37

Say Rs. **67.40** / Sqm

6 2.5cm artificial stone flooring with cement concrete (1:3:6) with washed gravel including punning per 1 sqm

a) Rate as per item No.3 including OHC 68.70

b) Deduct-Difference in quantity -0.031 Qntl 1qntl 375.10 -11.63

of cement due to less proportion including OHC

Total (a-b) 57.07

Say Rs. **57.10** / Sqm

7 Flooring with 10cm. thick concrete broken stone, hard granite in lime mortar and renderd smooth with 9kgs of portland cement per 1 sqm

a) Material

Concrete broken stone in lime mortar (1:2) as per item 0.10 cum 1cum 1006.50 100.65

No.2 of concrete incl. OHC

cement 0.0005cum 0.0072 Qntl 1qntl 341.00 2.46

b) Labour

Manson, special 0.03 Nos each 85.00 2.55

Women mulia 0.08 Nos each 55.00 4.40

c) Overhead charges @ 10% on (a+b)

0.94

Total (a+b+c) 111.00

Say Rs. **111.00** / Sqm

8 Flooring with dry stone, jelly 10cm sand grouted and finished the top with 12mm thick cement plaster (1:3) including punning per 1 sqm

a) Material

Hand broken metal other than 0.10 cum 1cum 199.00 19.90

Granite broken to 4cm size

Gravel (washed) for grouting 0.03 cum 1cum 85.00 2.55

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

b) Labour

Man mulia for ramming laying gravel or sand for grouting	0.11 Nos	each	55.00	6.05
women mulia for watering and ramming	0.22 Nos	each	55.00	12.10
plastering with cement mortar (1:3) 12mm, thick (As per item No.3 of plastering including OHC)		1sq		46.10

c) Overhead charges @ 10% on (a+b)

4.06

Total (a+b+c)

90.76

Say Rs. **90.80** / Sqm

9 10cm thick dry brick khoa well watered & rammed to receive A.S.flooring
Per 1 sqm.

a) Material

K.B.brick khoa 4cm size	0.14 cum	1cum	239.00	33.46
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b) Labour

Mason 2nd class	0.05 Nos	each	75.00	3.75
Man mulia for ramming	0.16 Nos	each	55.00	8.80
women mulia for watering	0.22 Nos	each	55.00	12.10

c) Overhead charges @ 10% on (a+b)

5.81

Total (a+b+c)

63.92

Say Rs. **63.90** / Sqm

10 10cm dry epidorite metal or any other hard metal of 4cm size well watered and rammed per 1 sqm

a) Labour as per item No.9

24.65

b) Add. Cost of hard metal

0.14 cum	1cum	199.00	27.86
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c) Overhead charges @ 10% on (a+b)

5.25

Total (a+b+c)

57.76

Say Rs. **57.80** / Sqm

11 Brick on edge flooring over one brick flat set in cement mortal (1:8)
per 1 sqm

a) Material

1st class kiln burnt bricks of size (25cm ×12cm×8cm) Having crushing strength not less than 75 Kg/cm2	80 nos	1000	2192.00	175.36
sand (Screened and washed)	0.06 cum	cum	29.00	1.74
cement 0.0071 cum	0.1015 Qntl	1qntl	341.00	34.61

b) Labour

Take 0.19 times of labour of item No. 1 of brick masonry =0.19X271.30 =				51.55
Man mulia for mixing sand and cement	0.07 Nos	each	55.00	3.85

c) Overhead charges @ 10% (a+b)

26.71

Total (a+b+c)

293.82

Say Rs. **293.80** / Sqm

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

12 35mm thick marble chips flooring of dark, light of medium shade rubbed and polished to granolithic finish under layer 25mm thick C.C (1:2:4) with 12m size black hard granitechips and top layer 10mm thick with marble chips of 4 to 7 mm nominal size laid in cement marble powder mix 3:1 (3 cement :1 marble powder by weight) in prop.4:7 (4 cement marble powder mix :7 marble chips by volume.)

Per 1 sqm

Details of cost for 10sqm with

a) Material

ordinary cement.

Bottom layer

12mm size chips

sand (Screened & washed)

Cement

0.23 cum	1cum	494.00	113.62
0.12 cum	1cum	29.00	3.48
0.754 Qntl	1Qntl	341.00	257.11
Total			374.21

Top Layer Marble chips 4 mm. to 7mm size

Cement

Marble powder

1.4 Qntl	1Qntl	458.00	641.20
0.578 Qntl	1Qntl	341.00	197.10
0.1927 Qntl	1Qntl	309.00	59.54
Total			897.84

b) Labour

Mason special

Bottom layer

Manson, special(toplayer)

Mulia (Bottom layer)3.3Nos.

Mulia (top layer)=1.35 Nos

Semi-skilled mulia or rubbing (top layer)

1.3	2.3	each	85.00	195.50
1				
4.65	each	55.00	255.75	
10.8	each	65.00	702.00	

c) Overhead charges @ 10% (a+b)

Total (a+b+c)

242.53
2667.83

$$\text{Rate per 1 Sqm} = \frac{2667.83}{10} = 266.78 / \text{Sqm}$$

Say Rs. **266.80** / Sqm

Add for wax polishing

8.50

Total **275.30** / Sqm

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

13	31mm thick marble chips flooring of dark, light of medium shade rubbed and polished to granolithic finish under layer 25mm thick C.C (1:2:4) with 6m size black hard granite chips and top layer 10mm thick with marble chips of 4 to 7 mm nominal size laid in cement marble powder mix 3:1 (3 cement : 1 marble powder by weight) in prop. 4:7 (4 cement marble powder mix : 7 marble chips by volume) Per 1 sqm (Data for 10Sqm) With ordinary cement -					
a)	Bottom layer same as Item No.-12				374.21	
b)	Top Layer					
	Marble chips	0.872 Qntl	1qntl	458.00	399.38	
	Cement	0.405 Qntl	1Qntl	341.00	138.11	
	marble powder	0.135 Qntl	1Qntl	309.00	41.72	
c)	Labour same as item No.12				1153.25	
d)	Overhead charges @ 10% on (a+b+c)				210.67	
	Total (a+b+c+d)				2317.34	

$$\text{Rate per 1 Sqm} = \frac{2317.34}{10} = 231.73 \text{ / Sqm}$$

Say Rs. 231.70 / Sqm

Wax polishing 8.50

Say Rs. **240.20** / Sqm

14	18mm thick marble chips skirting to dados with dark light or medium shade rubbed and polished to granolithic finish with under layer 12mm. Thick cement plaster (1:3) and top layer 6mm thick with marble chips of 4 to 7mm nominal size laid in cement marble powder mix 3:1 (3 cement : 1 marble powder by weight) in prop 4:7 (4 cement marble powder. Mix : 7 marble chips in volume) per 1sqm (Data for 10sqm) with ordinary cement					
a)	Bottom layer					
	cement	0.715 Qntl	1qtn	341.00	243.82	
	sand (Screened & washed)	0.15 cum	1cum	29.00	4.35	
b)	Top Layer same as item No.13				579.21	
c)	Labour					
	Mason special (top layer) 1.1 No	2.5 Nos	each	85.00	212.50	
	Mason special (Bottom layer) 1.4					
	Mulia (Bottom layer) 1.2 Nos.	2.55 Nos	each	55.00	140.25	

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

Mulia (top layer)=1.35 Nos						
Semi-skilled mulia or rubbing	10.8 Nos	each	65.00		702.00	
d) Overhead charges @ 10% (a+b+c)					188.21	
Total (a+b+c+d)				Total =	2070.34	

$$\text{Rate per 1 Sqm} = \frac{2070.34}{10} = 207.03 \text{ / Sqm}$$

Say Rs. 207.00 / Sqm

Wax polishing 8.50

Total Rs. **215.50 / Sqm**

15 Labour charges for fixing glass/ aluminium strips in joints of marble chips floor per 1 metre (Details for 10M)

a) Labour

Mason (2nd class)	0.25 Nos	each	75.00	18.75
Mulia	0.25 Nos	each	55.00	13.75
b) Overhead charges @ 10% on (a)				3.25
c) 5% sundries, including T & P				1.63
Total (a+b)				37.38

$$\text{Rate per 1 m} = \frac{37.38}{10} = 3.74 \text{ / RM}$$

Say Rs. **3.70 / RM**

16 Fixing tiles in floors treads or steps and landing on 25mm thick bed of cement mortar 1:1 (1cement : 1sand) jointed with neat cement slurry mixed with pigment to match the shades of the tiles including rubbing and polishing complete excluding cost of precast tiles per 1 sqm (Data for 10sqm)

a) Material

Cement 0.13cum	1.857 Qntl	1qntl	341.00	633.24
sand (Screened & washed)	0.13 cum	1cum	29.00	3.77
cement for slurry at the rate of 4.4 kg/sqm	0.44 Qntl	1qntl	341.00	150.04
Cement for grouting	0.44 Qntl	1qtn	341.00	150.04

b) Labour

Mason, special	2.16 Nos	each	85.00	183.60
Semi-skilled mulia or rubbing	5.5 Nos	each	65.00	357.50
Mulia	2.16 Nos	each	55.00	118.80

c) Overhead charges @ 10% on (a+b)

Total (a+b+c)				1756.69
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$$\text{Rate per 1 sqm} = \frac{1756.69}{10} = 175.67$$

Say 175.70

Wax polishing = 8.50

184.20 / Sqm

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

17 Fixing tiles in dados skirting and risers of steps on 12mm thick cement plaster (1:3) jointed with neat cement slurry mixed with pigments to match the shade of the tiles including rubbing and polishing complete excluding cost of precast tiles.
per 1 sqm
(Details for 10sqm)

a) Material

a) Using ordinary cement

UNDER LAYER

Sand (screened & washed)	0.15 cum	1cum	29.00	4.35
cement	0.715 Qntl	1qntl.	341.00	243.82
cement for slurry	0.66 Qntl	1qntl.	341.00	225.06

b) Labour

Mason (special)	3.25 Nos	each	85.00	276.25
Mulia	3.25 Nos	each	55.00	178.75
Semi-skilled mulia for rubbing	7.6 Nos	each	65.00	494.00

c) Overhead charges @ 10% on (a+b)

Total (a+b+c) 1564.45

$$\text{Rate per 1 sqm} = \frac{1564.45}{10} = 156.44$$

Say 156.40

$$\text{Wax polishing} = \frac{8.50}{10} = 0.85$$

164.90 / Sqm

18 Extra labour for laying tile flooring on stair treads not exceeding 30cm. in width including cost of forming, nosing etc.
per 1 sqm
(Details for 10sqm)

a) Labour

Mason (special)	0.3 Nos	each	85.00	25.50
Helper (semi-skilled mulia)	0.3 Nos	each	65.00	19.50
Mulia	0.3 Nos	each	55.00	16.50

b) Overhead charges @ 10% on (a)

5% Sundries, T&P., 6.15

Total (a+b) 70.73

$$\text{Rate per 1 Sqm} = \frac{70.73}{10} = 7.07 \text{ / Sqm}$$

Say Rs. **7.10 / Sqm**

19 Extra labour for making chequers of approved pattern on cement concrete, flooring steps, landing pavement or overplastered surface
per 1 sqm
(Data for 10sqm)

a) Labour

Mason (2nd class)	0.36 Nos	each	75.00	27.00
Semi-skilled mulia	0.36 Nos	each	65.00	23.40

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

b) Overhead charges @ 10% on (a) 5.04
c) 2% Sundries, etc. 1.01
Total (a+b+c) 56.45

$$\text{Rate per 1sqm} = \frac{56.45}{10} = 5.64 / \text{Sqm}$$

Say Rs. **5.60 / Sqm**

20 2.5 cm. Damp proof course with C.C. (1:2:4)
using 12mm. Size hard broken granite Chips
per1 Sqm.

a) Material

Hand broken granite chips 12mm. Size	0.023 cum	1cum.	494.00	11.36
Sand (Screened & washed)	0.012 cum	1cum.	29.00	0.35
Cement	0.0754 Qntl	1Qntl.	341.00	25.71

b) Labour

Man Mulia	0.33 Nos	each	55.00	18.15
Mason special	0.103 Nos	each	85.00	8.76
Man Mulia for mixing chips,sand and cement	0.03 Nos	each	55.00	1.65

c) Overhead charges @ 10% (a+b) 6.60
Total (a+b+c) 72.58

Say Rs. **72.60 / Sqm**

21 32mm. thick red oxide flooring, under layer
of 25mm. thick C.C. (1:2:4) with 12mm. Size
granite chips and top layer of 6mm. Thick
plaster cement red oxide mix, using 3.5kg. Of
red oxide per 50kg. of cement 1:3 finished
with a floating coat of cement and oxide mix
of same proportion:
Per 1 Sqm
(Data for 10 Sqm.)

a) Material

chips 0.23 Cum.	0.23 cum	1cum	494.00	113.62
Sand (Screened & washed)	0.12 cum	1cum.	29.00	3.48
Cement	0.754 Qntl	1Qntl.	341.00	257.11
6mm. Colour topping Cement	0.357 Qntl	1Qntl.	341.00	121.74
Sand (Screened & washed)	0.075 cum	1cum.	29.00	2.18
Cement for floating coat	0.114 Qntl	1Qntl.	341.00	38.87
Red oxide (3.5kg. Per 50kgs. Of cement) $\frac{11.40 \times 3.5}{50}$	0.8 kg	1kg.	83.00	66.40

b) Labour

Mason special	2.7 Nos	each	85.00	229.50
Semi-skilled mulia helper	8.56 Nos	each	65.00	556.40
Mulia	1.62 Nos	each	55.00	89.10

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

c) Overhead charges @ 10% (a+b) 147.84
Total (a+b+c) **1626.24**

$$\text{Rate per 1 sqm} = \frac{1626.24}{10} = 162.62 \text{ / Sqm}$$

Say Rs. **162.60 / Sqm**

Note

- 1) Rate have been arrived on hand broken chips and if crusher broken chips used the difference in cost of materials to be added to arrive at finished rate.
- 2) For flooring work in 1st floor or any additional floor add 5 percent extra labour over & above the rate of next lower floor.
- 3) For repair item of flooring in 1st. Floor or any additional floor add 2 percent extra labour over & above the rate of next lower floor.
- 4) For stone cladding to outer walls of 1st floor and subsequent higher floors add 10 percent extra labour over and above the next lower floor.
- 5) In case of stone cladding to outer walls & glazed tile fixing on walls provision of semi-skilled mulia for rubbing & wax polishing as in analysis will not be considered.
- 6) Fixing tiles in item No. 16,17 and 18 includes marble, kota, khandalite, granite, kodapa, dholpuri stone, chequered tiles, glazed tiles and terrazzo tiles etc.
- 7) For flooring work below ground level beyond 1.5m. And upto 4.5m. Depth add 5% extra labour over and above the rates of the respective items for lowering the materials.
- 8) For flooring work below ground level beyond 4.5m. And upto 7.5m. Depth add 7% extra labour over and above the rate of the respective items for lowering the materials.
- 9) 10% on the above rates will be allowed for the works being executed inside jail premises.

IX. PAINTING

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7
	1 Priming 1 coat with any approved Primer (Labour only) Per 1 Sqm. Data for 9.30 Sqm.					
	a) Labour					
	Painter Special	0.5 Nos	each	85.00	42.50	
	Man Mulia for preparation of surface.	0.5 Nos	each	55.00	27.50	
	b) Overhead charges @ 10% on (a)				7.00	
	c) 2% Sundries, brushes, putty etc. on (a)				1.40	
	Total (a+b+c)=				78.40	
	Rate per 1 Sqm.	<u>78.4</u>	=	8.43		
		9.3				
			Say Rs	8.40	/ Sqm	
	2 Painting 1 coat with any approved paint on new wood work (labour only) Per 1 Sqm. Data for 9.30 Sqm.					
	a) Labour					
	Painter Special	0.75 Nos	each	85.00	63.75	
	Man Mulia	0.75 Nos	each	55.00	41.25	
	Man Mulia for preparation of surface.	0.07 Nos	each	55.00	3.85	
	b) Overhead charges @ 10% on (a)				10.89	
	c) 2% Sundries, brushes, putty etc. on (a)				2.18	
	Total (a+b+c)=				121.92	
	Rate per 1 Sqm.	<u>121.92</u>	=	13.11		
		9.3				
			Say Rs	13.10	/ Sqm	
	3 Painting two coats with approved paint on new wood work (labour only) Per 1 Sqm. Data for 9.30 Sqm.					
	a) Labour					
	Painter Special	1.25 Nos	each	85.00	106.25	
	Man Mulia	1 No	each	55.00	55.00	
	Man Mulia for preparation of surface.	0.1 Nos	each	55.00	5.50	
	b) Overhead charges @ 10% on (a)				16.68	
	c) 2% Sundries, brushes, putty etc. on (a)				3.34	
	Total (a+b+c)=				186.77	
	Rate per 1 Sqm.	<u>186.77</u>	=	20.08		
		9.3				
			Say Rs	20.10	/ Sqm	

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

4 Painting 1 coat with approved paint on old wood work (labour only)
Per 1 Sqm.
Data for 9.30 Sqm.

a) Labour

Labour as per item 2 108.85

b) Overhead charges @ 10% on (a) 10.89

c) 2% Sundries, brushes, putty etc. on (a) 2.18

Total (a+b+c)= 121.92

Rate per 1 Sqm. $\frac{121.92}{9.3} = 13.11$

Say Rs **13.10** / Sqm

5 Painting two coats with approved paint on old wood work (labour only)
Per 1 Sqm.
Data for 9.30 Sqm.

a) Labour

Labour as per item 3 166.75

b) Overhead charges @ 10% on (a) 16.68

c) 2% Sundries, brushes, putty etc. on (a) 3.34

Total (a+b+c)= 186.77

Rate per 1 Sqm. $\frac{186.77}{9.3} = 20.08$

Say Rs **20.10** / Sqm

6 Coaltaring 1 coat (labour only)
Per 1 Sqm.
Data for 9.30 Sqm.

a) Labour

Man Mulia 1 No each 55.00 55.00

b) Overhead charges @ 10% on (a) 5.50

c) 2% Sundries, brushes, putty etc. on (a) 1.10

Total (a+b+c)= Total 61.60

Rate per 1 Sqm. $\frac{61.6}{9.3} = 6.62$

Say Rs **6.60** / Sqm

7 Coaltarring 2 coats (labour only)
Per 1 Sqm.
Data for 9.30 Sqm.

a) Labour

Man Mulia 1.5 Nos each 55.00 82.50

b) Overhead charges @ 10% on (a) 8.25

c) 2% Sundries, brushes, putty etc. on (a) 1.65

Total (a+b+c)= 92.40

Rate per 1 Sqm. $\frac{92.4}{9.3} = 9.94$

Say Rs **9.90** / Sqm

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

8 Wood oiling 1 coat with a tinge of paint (Labour only)
Per 1 Sqm.
Data for 9.30 Sqm.

a) Labour

Man Mulia	1 No	each	55.00	55.00
Man Mulia for preparation of surface.	0.07 Nos	each	55.00	3.85

b) Overhead charges @ 10% on (a)

5.89

c) 2% Sundries, brushes, putty etc. on (a)

1.18

Total (a+b+c)=

65.92

Rate per 1 Sqm.

$$\frac{65.92}{9.3} = 7.09$$

Say Rs **7.10** / Sqm

9 Wood oiling 2 coats with a tinge of paint (Labour only)
Per 1 Sqm.
Data for 9.30 Sqm.

a) Labour

Man Mulia	1.75 Nos	each	55.00	96.25
Man Mulia for preparation of surface.	0.1 Nos	each	55.00	5.50

b) Overhead charges @ 10% on (a)

10.18

c) 2% Sundries, brushes, putty etc. on (a)

2.04

Total (a+b+c)=

113.97

Rate per 1 Sqm.

$$\frac{113.97}{9.3} = 12.25$$

Say Rs **12.30** / Sqm

10 French polishing to wood work
1 coat (labour only)
Per 1 Sqm.
Data for 9.30 Sqm.

a) Labour

Painter or polisher (special)	0.63 Nos	each	85.00	53.55
Man Mulia	0.75 Nos	each	55.00	41.25
Man Mulia for preparation of surface.	0.07 Nos	each	55.00	3.85

b) Overhead charges @ 10% on (a)

9.87

c) 2% Sundries, brushes, putty etc. on (a)

1.97

Total (a+b+c)=

110.49

Rate per 1 Sqm.

$$\frac{110.49}{9.3} = 11.88$$

Say Rs **11.90** / Sqm

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

11 French polishing to wood work
2 coats (labour only)
Per 1 Sqm.
Data for 9.30 Sqm.

a) Labour

Painter or polisher (special)	1 No	each	85.00	85.00
Man Mulia	1 No	each	55.00	55.00
Man Mulia for preparation of surface.	0.1 No	each	55.00	5.50

b) Overhead charges @ 10% on (a)

14.55

c) 2% Sundries, brushes, putty etc. on (a)

2.91

Total (a+b+c)=

162.96

Rate per 1 Sqm.

$$\frac{162.96}{9.3} = 17.52$$

Say Rs **17.50** / Sqm

12 Varnishing one coat to wood work (labour only)
Per 1 Sqm.
Data for 9.30 Sqm.

a) Labour

Painter or polisher (special)	0.25 Nos	each	85.00	21.25
Man Mulia	0.25 Nos	each	55.00	13.75
Man Mulia for preparation of surface.	0.07 Nos	each	55.00	3.85

b) Overhead charges @ 10% on (a)

3.89

c) 2% Sundries, brushes, putty etc. on (a)

0.78

Total (a+b+c)=

43.52

Rate per 1 Sqm.

$$\frac{43.52}{9.3} = 4.68$$

Say Rs **4.70** / Sqm

13 Varnishing two coats to wood work (labour only)
Per 1 Sqm.
Data for 9.30 Sqm.

a) Labour

Painter or polisher (special)	0.5 Nos	each	85.00	42.50
Man Mulia	0.5 Nos	each	55.00	27.50
Man Mulia for preparation of surface.	0.1 Nos	each	55.00	5.50

b) Overhead charges @ 10% on (a)

7.55

c) 2% Sundries, brushes, putty etc. on (a)

1.51

Total (a+b+c)=

84.56

Rate per 1 Sqm.

$$\frac{84.56}{9.3} = 9.09 \text{ / sqm}$$

Say Rs **9.10** / Sqm

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

14 One coat of priming for bridges including scaffolding above 4.60m. to any height (labour only)
Per 1 Sqm.
Data for 9.30 Sqm.

a) Labour

Painter or polisher (special)	0.68 Nos	each	85.00	57.80
Semi-skilled Man Mulia	0.68 Nos	each	65.00	44.20
Man Mulia for preparation of surface.	0.07 Nos	each	55.00	3.85

b) Overhead charges @ 10% on (a)

10.59

c) 2% Sundries, brushes T&P etc. on (a)

2.12

Scaffolding L.S.

2.20

Total (a+b+c)=

120.76

Rate per 1 Sqm.

$$\frac{120.76}{9.3} = 12.98$$

Say Rs **13.00** / Sqm

15 Painting one coat over old girder and built up girders of bridges including scaffolding above 4.60m. to any height (labour only)
Per 1 Sqm.
Data for 9.30 Sqm.

a) Labour

Painter or polisher (special)	1 No	each	85.00	85.00
Semi-skilled Man Mulia	1 No	each	65.00	65.00
Man Mulia for preparation of surface.	0.07 No	each	55.00	3.85

b) Overhead charges @ 10% on (a)

15.39

c) 2% Sundries, brushes, putty etc. on (a)

3.08

Scaffolding L.S.

3.27

Total (a+b+c)=

175.59

Rate per 1 Sqm.

$$\frac{175.59}{9.3} = 18.88$$

Say Rs **18.90** / Sqm

16 Painting second coat over old girder and built up girders of bridges including scaffolding above 4.60m. to any height (labour only)
Per 1 Sqm.
Data for 9.30 Sqm.

a) Labour

Painter or polisher (special)	0.75 Nos	each	85.00	63.75
Semi-skilled Man Mulia	0.75 Nos	each	65.00	48.75
Man Mulia for preparation of surface.	0.1 Nos	each	55.00	5.50

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

b) Overhead charges @ 10% on (a) 11.80

c) 2% Sundries, brushes T&P etc. on (a) 2.36

Total (a+b+c)= 132.16

Rate per 1 Sqm. $\frac{132.16}{9.3} = 14.21$

Say Rs **14.20** / Sqm

17 Finishing walls with water proofing cement paint of approved shade on old work one coat to give an even shade excuding cost of paint.

Per 1 Sqm.

Data for 10 Sqm.

a) Labour

Painter or polisher (special) 0.15 Nos each 85.00 12.75

Man Mulia 0.15 Nos each 55.00 8.25

Man Mulia for preparation of surface. 0.07 Nos each 55.00 3.85

b) Overhead charges @ 10% on (a) 2.49

c) 2% Sundries, brushes T&P etc. on (a) 0.50

Total (a+b+c)= 27.84

Rate per 1 Sqm. $\frac{27.84}{10} = 2.78$

Say Rs **2.80** / Sqm

18 Finishing walls with water proofing cement paint of approved shade on new work two coat to give an even shade excuding cost of paint.

Per 1 Sqm.

Data for 10 Sqm.

a) Labour

Painter or polisher (special) 0.22 Nos each 85.00 18.70

Man Mulia 0.22 Nos each 55.00 12.10

Man Mulia for preparation of surface. 0.1 Nos each 55.00 5.50

b) Overhead charges @ 10% on (a) 3.63

c) 2% Sundries, brushes T&P etc. on (a) 0.73

Total (a+b+c)= 40.66

Rate per 1 Sqm. $\frac{40.66}{10} = 4.07$

Say Rs **4.10** / Sqm

19 Wall painting 1 coat with plastic emulsion paint of approved shade on old work to give an even shade excuding cost of paint.

Per 1 Sqm.

Data for 10 Sqm.

a) Labour

Painter or polisher (special) 0.36 Nos each 85.00 30.60

Man Mulia 0.36 Nos each 55.00 19.80

Man Mulia for preparation of surface. 0.07 Nos each 55.00 3.85

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

b) Overhead charges @ 10% on (a) 5.43

c) 2% Sundries, T&P etc. on (a) 1.09

Total (a+b+c)= 60.77

Rate per 1 Sqm. $\frac{60.765}{10} = 6.08$

Say Rs **6.10** / Sqm

20 Wall painting 2 coats with plastic emulsion paint of approved shade on new work to give an even shade excuding cost of paint (For 10 Sqm.)

Painter (special) 0.54 Nos each 85.00 45.90

a) Labour

Man Mulia 0.54 Nos each 55.00 29.70

Man Mulia for preparation of surface. 0.10 Nos each 55.00 5.50

b) Overhead charges @ 10% on (a) 8.11

c) 2% Sundries and T&P etc. on (a) 1.62

Total (a+b+c)= 90.83

Rate per 1 Sqm. $\frac{90.83}{10} = 9.08$

Say Rs **9.10** / Sqm

21 Distemping one coat to walls with distemper of approved shade on old work to give an even shade excuding cost of distemper.

Per 1 Sqm.
Data for 10 Sqm.

a) Labour

Painter (special) 0.33 Nos each 85.00 28.05

Man Mulia 0.33 Nos each 55.00 18.15

Man Mulia for preparation of surface. 0.07 Nos each 55.00 3.85

b) Overhead charges @ 10% on (a) 5.01

c) 2% Sundries and T&P etc. on (a) 1.00

Total (a+b+c)= 56.06

Rate per 1 Sqm. $\frac{56.06}{10} = 5.61$

Say Rs **5.60** / Sqm

22 Distemping two coats to walls with distemper of approved shade on new work to give an even shade excuding cost of distemper.

Per 1 Sqm.
Data for 10 Sqm.

a) Labour

Painter or polisher (special) 0.52 Nos each 85.00 44.20

Man Mulia 0.52 Nos each 55.00 28.60

Man Mulia for preparation of surface. 0.1 Nos each 55.00 5.50

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

b) Overhead charges @ 10% on (a) 7.83

c) 2% Sundries and T&P etc. on (a) 1.57

Total (a+b+c)= 87.70

Rate per 1 Sqm. $\frac{87.70}{10} = 8.77$

Say Rs **8.80** / Sqm

23 Finishing plastered surfaces of walls with plaster of paris & marking smooth to receive painting.(labour only)
Per 1 Sqm.
Data for 10 Sqm.

a) Labour

Painter 2nd class 0.5 Nos each 75.00 37.50

Man Mulia 0.5 Nos each 55.00 27.50

Man Mulia for preparation of surface. 0.07 Nos each 55.00 3.85

b) Overhead charges @ 10% on (a) 6.89

c) 2% Sundries and T&P etc. on (a) 1.38

Total (a+b+c)= Total 77.12

Rate per 1 Sqm. $\frac{77.12}{10} = 7.71$

Say Rs **7.70** / Sqm

NOTE

A) For painting of shutter including choukaths-

- a) Batten and pannel - Take 2 1/4 times the opening
- b) Glazed -Take 1 1/2 times the opening
- c) 2/3 pannelled and 1/3 glazed - Take 2 times the opening
- d) 1/3 pannelled and 2/3 glazed - Take 1 3/4 times the opening
- e) 1/3 pannelled and glazed 2/3 venetian - Take 2 3/4 times the opening
- f) For window grating - Take 1/2 times the openings
- g) Venetian and rolling shutters - Takes 3 times the openings.

B) Paints should be used as follows per 10M²

a) Primer 1 coat-

Wood 0.75lt.

Steel 0.54lt.

Plastered surface 0.84lt.

b) Painting wood and iron works

1coat 0.75lt.

2coats 1.25lt.

c) Coaltaring

1coat 1.80lt.

2coats 2.80lt.

d) Distemper-

1coat 1.66kg.

2coats 2.50kg.

e) Plastic paint

1coat 0.75lt.

2coats 1.25lt.

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

f) Cement paint

1coat	1.66kg.
2coats	2.50kg.

- 1 For inside painting in each subsequent floor above ground level add 3 percent extra labour over and above the rates of ground floor.
- 2 For outside painting add 5 percent extra on labour for scaffolding over and above the rates of next lower floor.
- 3 For repair item of painting add 2 percent extra labour to the respective items.
- 4 10 percent excess on the above rates will be allowed in the works being executed inside jail premises.

X. PLASTERING

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7
1	12mm. thick lime plaster (1:2) on brick work per 1 Sqm					
	a) Materials					
	Lime (Ghooting unslaked) including punning.	0.008 cum	1 cum	1720.00	13.76	
	Sand (Screened and washed)	0.016 cum	1 cum	29.00	0.46	
	b) Labour					
	Grinding lime mortar as per item No. 1 of concrete excluding 10% OHC .	0.016 cum	1 cum	176.95	2.83	
	Mason 2 nd class	0.14 Nos	Each	75.00	10.50	
	Man Mulia	0.05 Nos	Each	55.00	2.75	
	Women Mulia	0.05 Nos	Each	55.00	2.75	
	c) Overhead charges @10% on (a+b)				3.31	
	Total(a+b+c)				36.36	
			Say Rs	36.40	/ Sqm	
2	20mm, thick lime plaster (1:2) for stone work per 1 Sqm.	0.011 cum	1 cum	1720.00	18.92	
	a) Materials					
	Lime (Ghooting unslaked) including punning					
	Sand (Screened and washed)	0.022 cum	1 cum	29.00	0.64	
	Grinding lime mortar as per item No. 1 of concrete excluding 10% OHC .	0.022 cum	1 cum	176.95	3.89	
	b) Labour					
	Mason (2nd class)	0.16 Nos	Each	75.00	12.00	
	Man Mulia	0.11 Nos	Each	55.00	6.05	
	Woman Mulia	0.11 Nos	Each	55.00	6.05	
	c) Overhead charges @10% on (a+b)				4.76	
	Total(a+b+c)				52.31	
			Say Rs	52.30	/ Sqm	
3	12mm. thick cement plaster (1:3) on brick work per 1 Sqm					
	a) Materials					
	Sand (Screened and washed)	0.015 cum	1 cum	29.00	0.44	
	Cement	0.0715 Qntl	1Qntl	341.00	24.38	
	Man mulia for mixing sand and cement in small quantities and Watering	0.02 Nos	Each	55.00	1.10	
	b) Labour					
	Labour as per lime plaser on brick works as per items (I)				16.00	
	c) Overhead charges @10% on (a+b)				4.19	
	Total(a+b+c)				46.11	
			Say Rs	46.10	/ Sqm	

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7
4	12mm. thick cement plaster (1:6) for brick work per 1 Sqm					
	a) Materials					
	Sand (Screened and washed)	0.015 cum	1cum	29.00	0.44	
	Cement 0.0025 cum	0.0358 Qntl	1Qntl	341.00	12.21	
	b) Labour					
	Labour as per item No3	....	... ..		17.10	
	c) Overhead charges @10% on (a+b)				2.97	
	Total(a+b+c)				32.72	
				Say Rs	32.70	/ Sqm
5	12mm. Thick cement plaser (1:8) for brick work per 1 Sqm.	...	... ..	
	a) Rate as per item No.4				32.70	
	b) Deduct - Difference in cost of cement including OHC (0.0225-0.0019) = 0.0006cum or 0.0086Qntl	-0.0086	1qntl	375.10	-3.23	
	Total(a-b)				29.47	
				Say Rs	29.50	/ Sqm
6	12mm thick cement plaster (1 : 4) over brick work with cement punning for skirting per 1 Sqm.					
	a) Materials					
	Sand(Screened and washed)	0.015 cum	1cum	29.00	0.44	
	Cement 0.0045 cum	0.0644 Qntl	1Qntl	341.00	21.96	
	b) Labour					
	Manson 2nd Class	0.15 Nos	Each	75.00	11.25	
	Man Mulia	0.04 Nos	Each	55.00	2.20	
	Women Mulia	0.05 Nos	Each	55.00	2.75	
	Man Mulia for mixing	0.02 Nos	Each	55.00	1.10	
	Sand & Cement					
	c) Overhead charges @10% on (a+b)				3.97	
	Total(a+b+c)				43.66	
				Say Rs	43.70	/ Sqm
7	12mm thick cement plaster (1:4) over brick work including cement punning and bitumen painting over top of wall per 1 Sqm.					
	a) Rate as per item No.6	1Sqm	.... ..		43.70	
	b) Add for bitumen painting one coat	1Sqm	.... ..		6.60	
	Total(a+b)				50.30	
				Say Rs	50.30	/ Sqm
8	20mm. thick cement plaster (1:6) for stone work per 1 Sqm.					
	a) Materials					
	Sand (Screened and washed)	0.021 cum	1 cum	29.00	0.61	
	Cement 0.004 cum	0.057 Qntl	1Qntl	341.00	19.44	

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

b) Labour

Man mulia for mixing sand and cement in small quantities and watering 0.02 Nos Each 55.00 1.10

Labour as per lime plaster on stone work (Vide item 2) 24.10

c) Overhead charges @10% on (a+b) 4.52

Total(a+b+c) 49.77

Say Rs **49.80 / Sqm**

9 20 mm. thick cement plaster (1 : 8) for stone work per 1Sqm.

a) Rate as per item No. 8 49.80

b) Deduct - difference in cost of cement including OHC -0.0143 Qntl 1 qntl 375.10 -5.36

Total(a-b) 44.44

Say Rs **44.40 / Sqm**

10 Lime flush pointing to stone masonry (1 : 1.5) Per 1 Sqm

a) Materials

Lime (Ghooting unslaked) 0.006 cum 1 cum 1720.00 10.32

Sand (screened & washed) 0.006 cum 1 cum 29.00 0.17

Grinding lime mortar as per item No. 1 of concrete excluding 10% OHC and 2% T&P. 0.009 cum 1 cum 176.95 1.59

b) Labour

Mason (2 nd class) 0.11 Nos Each 75.00 8.25

Man Mulia 0.05 Nos Each 55.00 2.75

Women Mulia 0.11 Nos Each 55.00 6.05

c) Overhead charges @10% on (a+b) 2.91

Total(a+b+c) Total = 32.05

Say Rs **32.10 / Sqm**

11 Lime flush pointing to brick masonry (1:1 1/2) per 1 Sqm

a) Materials

Lime (ghooting unslaked) 0.0045 1cum 1720.00 7.74

Sand (Screened and washed) 0.006 1 cum 29.00 0.17

Grinding lime mortar as per item No. 1 of concrete excluding 10% OHC and 2% T&P. 0.009 1 cum 176.95 1.59

b) Labour

Mason (2nd class) 0.13 Nos Each 75.00 9.75

Man Mulia 0.05 Nos Each 55.00 2.75

Women Mulia 0.11 Nos Each 55.00 6.05

c) Overhead charges @10% on (a+b) 2.81

Total(a+b+c) 30.86

Say Rs **30.90 / Sqm**

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7
12	Cement flush pointing to stone masonry (1 :3) per 1 Sqm.					
	a) Materials					
	Sand (screened & washed)	0.009	1cum	29.00	0.26	
	Cement 0.003 cum	0.043	1qntl	341.00	14.66	
	b) Labour					
	Man mulia for mixing cement and sand in small quantities and watering.	0.009 Nos	Each	55.00	0.50	
	labour as per lime flush pointing to stone masonry (vide item 10)				17.05	
	c) Overhead charges @10% on (a+b)				3.25	
	Total(a+b+c)				35.72	
			Say Rs	35.70	/ Sqm	
13	Cement flush pointing to brick masonry (1 : 3) per1 Sqm					
	a) Materials					
	Sand (Screed and washed)	0.006	1cum	29.00	0.17	
	Cement 0.002 cum	0.0286	1qntl	341.00	9.75	
	b) Labour					
	Man Mulia for mixing cement and sand in small quantities and getting water for mixing	0.006 Nos	Each	55.00	0.33	
	Labour as per lime flush pointing to brick masonry (Vide item 11)	....	.....	.....	18.55	
	c) Overhead charges @10% on (a+b)				2.88	
	Total(a+b+c)				31.69	
			Say Rs	31.70	/ Sqm	
14	16 mm. thick cement plaster (1 :6) over brick or stone masonry per 1Sqm.					
	a) Materials					
	Sand (screened and washed)	0.018	1cum	29.00	0.52	
	Cement 0.003 cum	0.043	1qntl	341.00	14.66	
	b) Labour					
	Labour as per item No. 8	.....	.....	.....	25.20	
	c) Overhead charges @10% on (a+b)				4.04	
	Total(a+b+c)				44.42	
			Say Rs	44.40	/ Sqm	
15	16 mm thick cement plaster (1:8) over brick or stone masonry per 1Sqm					
	a) Materials					
	Sand (Screened and washed)	0.018	1cum	29.00	0.52	
	Cement	0.0329	1qntl	341.00	11.22	
	b) Labour					
	Labour as per item No. 14				25.20	
	c) Overhead charges @10% on (a+b)				3.69	
	Total(a+b+c)				40.63	
			Say Rs	40.60	/ Sqm	

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

16	12mm. thick cement plaster (1:4) over brick work per 1 Sqm.					
	a) Materials					
	Sand (Screened and washed)	0.015	1cum	29.00	0.44	
	Cement 0.0038 cum	0.0543	1qntl	341.00	18.52	
	b) Labour					
	Labour as per cement plaster (1:6) for brick work in item No.4	.....	.....	.....	17.10	
	c) Overhead charges @10% on (a+b)				3.61	
	Total(a+b+c)			Total =	39.66	
				Say Rs	39.70	/Sqm

17	20mm. thick cement plaster (1:4) per 1Sqm					
	a) Materials					
	Sand (Screened and washed)	0.021	1cum	29.00	0.61	
	Cement	0.0744	1qntl	341.00	25.37	
	b) Labour					
	Labour as per 20 mm, thick cement plaster (1:6) vide Item.No.8				25.20	
	c) Overhead charges @10% on (a+b)				5.12	
	Total(a+b+c)				56.30	
				Say Rs	56.30	/Sqm

18	12mm. thick sand and mud plaster er 1 Sqm					
	a) Labour					
	Manson (2nd Class)	0.108 Nos	Each	75.00	8.10	
	Woman mulia	0.04 Nos	Each	55.00	2.20	
	Man mulia for preparation of mortar and watering	0.012 Nos	Each	55.00	0.66	
	b) Overhead charges @10% on (a)				1.10	
	c) 10% preparation of mud and cowdung including cost of mud, sand and cowdung				1.10	
	Total(a+b+c)				13.15	
				Say Rs	13.20	/Sqm

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7
19	Cement flush pointing to tile ceiling (1:3) size of tiles 30 cm ×15cm. Per 1Sqm.					
	a) Materials					
	Cement	0.0257	1qntl	341.00	8.76	
	Sand (Screened and washed)	0.0055	1cum	29.00	0.16	
	b) Labour					
	Manson (Special)	0.057 Nos	Each	85.00	4.85	
	Women mulia	0.081 Nos	Each	55.00	4.46	
	Man Mulia for preparation of mortar and watering	0.012 Nos	Each	55.00	0.66	
	c) Overhead charges @10% on (a+b)				1.89	
	d) Add - Extra for scaffolding				0.64	
	Total(a+b+c+d)				21.41	
			Say Rs	21.40	/ Sqm	
20	Cement rule pointing including racking out joints (1 :3) over brick work per 1Sqm.					
	a) Materials					
	Cement 0.0018 cum	0.02574	1qntl	341.00	8.78	
	Sand (Screened and washed)	0.0055	1cum	29.00	0.16	
	b) Labour					
	Manson (Special)	0.054 Nos	Each	85.00	4.59	
	Mason (2nd class)	0.108 Nos	Each	75.00	8.10	
	Woman mulia	0.162 Nos	Each	55.00	8.91	
	Man mulia for Preparation of mortar and watering etc	0.012 Nos	Each	55.00	0.66	
	c) Overhead charges @10% on (a+b)				3.12	
	Total(a+b+c)				34.32	
			Say Rs	34.30	/ Sqm	
21	Cement rule pointing (1:3) including racking out joints over brick work per 1Sqm(Labour only)					
	a) Labour					
	Manson (Special)	0.108 Nos	Each	85.00	9.18	
	Woman mulia	0.18 Nos	Each	55.00	9.90	
	man mulia for Preparation of mortar and watering	0.012 Nos	Each	55.00	0.66	
	b) Overhead charges @10% on (a)				1.97	
	c) 2% sundries including watering for curing racking out joints, tools and plants etc.				0.39	
	Total(a+b+c)				22.11	
			Say Rs	22.10	/ Sqm	

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7
22	Pebble dashed plaster with black hard granite chips 12mm. Size & 12mm. Thick cement plaster (1:4) per 1 sqm	.....	.....	
	a) Rate of 12 mm thick cement plaster (1:4) as per item No 16 excluding OHC				36.05	
	b) Hard black granite chips 12 mm size hand broken	0.0091	1 cum	494.00	4.50	
	c) Labour					
	Manson (Special)	0.155 Nos	Each	85.00	13.18	
	Man Mulia	0.135 Nos	Each	55.00	7.43	
	d) Overhead charges @10% on (a+b+c)				6.11	
	Total(a+b+c+d)				67.26	
				Say Rs	67.30	/Sqm
23	Rusticated (gravel planted) plaster with cement plaster 12mm. thick (1:4) and washed gravel per 1 Sqm.					
	a) Rate for 12 mm. thick cement plaster (1 :4) as per item No. 16 excluding OHC				36.05	
	b) Cost of washed gravel	0.0152	1 cum	85.00	1.29	
	c) Labour					
	Manson (Special)	0.081 Nos	Each	85.00	6.89	
	Man Mulia	0.108 Nos	Each	55.00	5.94	
	d) Overhead charges @10% on (a+b+c)				5.02	
	Total(a+b+c+d)				55.19	
				Say Rs	55.20	/Sqm
24	Lime rule pointing over brick work with the admixture of surki per 1Sqm.					
	a) Materials					
	Ghooting lime unslacked	0.0024	1 cum	1720.00	4.13	
	Surki (C. B Brick)	0.0035	1 cum	301.00	1.05	
	b) Labour					
	Manson (Special)	0.162 Nos	Each	85.00	13.77	
	Woman Mulia	0.162 Nos	Each	55.00	8.91	
	Man Mulia for Preparation of mortar and watering	0.014 Nos	Each	55.00	0.77	
	c) Overhead charges @ 10% on (a+b)				2.86	
	Total(a+b+c)				31.49	
				Say Rs	31.50	/Sqm
25	2.5 cum. thick surki beaten plaster (1:2) per 1 Sqm					
	a) Materials					
	Ghooting lime unskacked	0.0122	1 cum	1720.00	20.98	
	Surki screened clampburnt	0.0244	1 cum	301.00	7.34	

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7
	b) Labour					
	Manson (2nd class)	0.162 Nos	Each	75.00	12.15	
	Man Mulia	0.108 Nos	Each	55.00	5.94	
	Woman Mulia	0.216 Nos	Each	55.00	11.88	
	c) Overhead charges @ 10% on (a+b)				5.83	
	Total(a+b+c)				64.13	
			Say Rs	64.10	/ Sqm	
26	6 mm thick cement plaster (1 : 4) finished smooth per 1 Sqm. Sand (Screened & Washed).	0.0075	1 cum	29.00	0.22	
	a) Materials					
	Cement 0.0019 cum	0.0271	1 Qtl	341.00	9.24	
	b) Labour					
	Labour as per cement plaster (1 : 6) for brick work items No 4.				17.10	
	c) Overhead charges @ 10% on (a+b)				2.66	
	Total(a+b+c)				29.21	
			Say Rs	29.20	/ Sqm	
27	6 mm thick cement plaster (1:4) to R CC surfaces finished smooth including closed deep chipping and slury treatment. Per 1 Sqm					
	a) Materials					
	Sand(Screened & Washed)	0.0075	1 cum	29.00	0.22	
	Cement 0.0026 cum	0.0372	1Qntl	341.00	12.69	
	b) Labour					
	Labour as per cement plaster (1 : 6) for brick work items No 4.				17.10	
	Labour for closed deep chipping & cleaning					
	Man Mulia	0.05 Nos	Each	55.00	2.75	
	c) Overhead charges @ 10% on (a+b)				3.28	
	Total(a+b+c)				36.03	
			Say Rs	36.00	/ Sqm	
28	16 mm thick cement plaster (1:6) over brick or stone masonry including punning . Per 1 Sqm.					
	a) Materials					
	Sand (screened & washed)	0.018	1Cum	29.00	0.52	
	Cement	0.053	1 Quintal	341.00	18.07	
	b) Labour					
	Mason (2nd class)	0.18 Nos	Each	75.00	13.50	
	Man Mulia	0.11 Nos	Each	55.00	6.05	
	Woman Mulia	0.11 Nos	Each	55.00	6.05	
	man mulia for mixing sand & cement	0.02 Nos	Each	55.00	1.10	
	c) Overhead charges @ 10% on (a+b)				4.53	
	Total(a+b+c)				49.82	
			Say Rs	49.80	/ Sqm	

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

29 Cement punning per Sqm.

a) Materials

Cement 0.0008 cum 0.0114 1Qntl 341.00 3.89

b) Labour

Mason (Special) 0.027 Nos Each 85.00 2.30

Woman mulia 0.027 Nos Each 55.00 1.49

c) Overhead charges @ 10% on (a+b)

0.77

Total(a+b+c) 8.43

Say Rs **8.40 / Sqm**

30 White washing 1 coat with shell lime Per 1 Sqm.

Data for 93Sqm.

a) Materials

Shell lime unslacked 11.8 1kg 13.00 153.40

b) Labour

Painter (2nd class) 0.75 Nos Each 75.00 56.25

Man Mulia 0.5 Nos Each 55.00 27.50

c) Overhead charges @ 10% on (a+b)

23.72

Total(a+b+c) 260.87

$$\text{Rate per 1 Sqm} = \frac{260.87}{93} = 2.81 / \text{Sqm}$$

Say Rs. **2.80 / Sqm**

31 White washing 1 coat with stone lime, per 1Sqm,

Data for 93 Sqm

a) Materials

Stone lime (unslaked) 0.021 1 cum 1500.00 31.50

b) Labour

Labour as per white washing with shell lime item 30 83.75

c) Overhead charges @ 10% on (a+b)

11.53

Total(a+b+c) 126.78

$$\text{Rate per 1 Sqm} = \frac{126.78}{93} = 1.36 / \text{Sqm}$$

Say Rs. **1.40 / Sqm**

32 White washing two coats with Shell lime per 1

Sqm Data for 93 Sqm.

a) Materials

Shell lime (unslaked) 18.66 1kg 13.00 242.58

b) Labour

painter (2nd class) 1 Nos Each 75.00 75.00

Man Mulia 0.75 Nos Each 55.00 41.25

c) Overhead charges @ 10% on (a+b)

35.88

Total(a+b+c) 394.71

$$\text{Rate per 1 Sqm} = \frac{394.71}{93} = 4.24 / \text{Sqm}$$

Say Rs. **4.20 / Sqm**

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

33 White washing 2 coat with stone lime per 1Sqm

Data for 93 Sqm.

a) Materials

Stone lime unslaked 0.032 1 cum 1500.00 48.00

b) Labour

Labour as per white washing two coats with shell lime item 32 ... 116.25

c) Overhead charges @ 10% on (a+b) 16.43

Total(a+b+c) 180.68

$$\text{Rate per 1 Sqm} = \frac{180.68}{93} = 1.94 / \text{Sqm}$$

Say Rs. **1.90** / Sqm

34 White washing 3 coats with shell lime per 1Sqm

Data for 93 Sqm

a) Materials

Shell lime unslaked 23.32 1kg 13.00 303.16

b) Labour

Painter (2nd class) 1.5 Nos Each 75.00 112.50

Man mulia 1 Nos Each 55.00 55.00

c) Overhead charges 10% on (a+b) 47.07

Total(a+b+c) Total = 517.73

$$\text{Rate per 1 Sqm} = \frac{517.73}{93} = 5.57 / \text{Sqm}$$

Say Rs. **5.60** / Sqm

35 White washing 3 coats with stone lime per 1Sqm

Data for 93 Sqm

a) Materials

Stone lime unslaked 0.0425 1 cum 1500.00 63.75

b) Labour

Labour as per white washing 3 coats with shell lime (item 34) ... 167.50

c) Overhead charges @ 10% on (a+b) 23.13

Total(a+b+c) 254.38

$$\text{Rate per 1 Sqm} = \frac{254.38}{93} = 2.74 / \text{Sqm}$$

Say Rs. **2.70** / Sqm

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

36 Colour washing 1 coat with Shell lime and colouring materials per 1 Sqm.

Data for 93 Sqm

a) Rate for white washing one coat with shell lime (vide item No. 30)	..	... ..	260.87
b) Add for extra labour and colouring materials.	....	... ..	18.00
Total(a+b)			278.87

$$\text{Rate per 1 Sqm} = \frac{278.87}{93} = 3.00 / \text{Sqm}$$

Say Rs. **3.00** / Sqm

37 Colour washing one coat with stone lime and colouring materials per 1 Sqm

Data for 93 Sqm.

a) Rate for white washing one coat with shell lime (vide item No. 31)	....	.....	126.78
b) Add for extra labour and colouring materials.			18.00
Total(a+b)			144.78

$$\text{Rate per 1 Sqm} = \frac{144.78}{93} = 1.56 / \text{Sqm}$$

Say Rs. **1.60** / Sqm

38 Colour washing two coats with shell lime and colouring materials per 1 Sqm

Data for 93 Sqm.

a) Rate for white washing two coats with shell lime (vide item No. 32)	...	... ..	394.71
b) Add for extra labour and colouring materials			25.00
Total(a+b)			419.71

$$\text{Rate per 1 Sqm} = \frac{419.71}{93} = 4.51 / \text{Sqm}$$

Say Rs. **4.50** / Sqm

39 Colour washing two coats with Stone lime and colouring materials per 1 Sqm.

Data for 93 Sqm.

a) Rate for white washing 2 coat with stone lime (vide item NO.33)	...	.....	180.68
b) Add for extra labour and colouring materials.			30.00
Total(a+b)			210.68

$$\text{Rate per 1 Sqm} = \frac{210.68}{93} = 2.27 / \text{Sqm}$$

Say Rs. **2.30** / Sqm

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

40 Cement washing 1 coat per 1 Sqm
Data for 93 Sqm

a) Materials

Cement 0.07 cum 1.001 1Qntl 341.00 341.34

b) Labour

Labour as per white washing one coat (item No.31) 83.75

Extra labour for mixing cement for application 0.5 Nos Each 55.00 27.50

c) Overhead charges @ 10% on (a+b) 45.26

Total(a+b+c) 497.85

$$\text{Rate per 1 Sqm} = \frac{497.85}{93} = 5.35 / \text{Sqm}$$

Say Rs. **5.40** / Sqm

41 Cement washing two coats per 1 Sqm
Data for 93 Sqm

a) Materials

Cement 0.105 cum 1.5015 1Qntl 341.00 512.01

b) Labour

Labour as per white washing two coat (item No 32) 116.25

Extra labour for mixing cement for application (Man Mulia) 0.88 Nos Each 55.00 48.40

c) Overhead charges @ 10% on (a+b) 67.67

Total(a+b+c) 744.33

$$\text{Rate per 1 Sqm} = \frac{744.33}{93} = 8.00 / \text{Sqm}$$

Say Rs. **8.00** / Sqm

42 Mud and cowdung leaping per 1Sqm
Data for 9.3 Sqm

a) Labour

Woman mulia 0.33 Nos Each 55.00 18.15

b) Overhead charges @ 10% on (a) 1.82

c) 2% sundries, gum indigo and brushes on (a) 0.36

Total(a+b+c) 20.33

$$\text{Rate per 1 Sqm} = \frac{20.33}{9.3} = 2.19 / \text{Sqm}$$

Say Rs. **2.20** / Sqm

43 Plastering inside the well steining (labour only)
per 1 Sqm.

Data for scaffolding lowering material , etc

a) Labour

Mason (Special) 0.5 Nos Each 85.00 42.50

Man Mulia 0.5 Nos Each 55.00 27.50

Woman mulia 1 Nos Each 55.00 55.00

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

b) Overhead charges @ 10% on (a)	...	....	....		12.50	
c) 2% sundries, gum indigo and brushes on (a)	...	...	...		2.50	
Total(a+b+c)				Total	140.00	

Rate for Sqm= 15.05

Say Rs. **15.10** / Sqm

- Note (I) For inside cement or lime plaster or pointing in each subsequent floor above ground floor add 3 percent extra labour over and above the rates of next lower floor.
- (ii) For inside white washing, colour washing, and cement washing in each subsequent floor above ground floor add 3 percent extra labour over and above the rates to next lower floors.
- (iii) For repair items of white washing and colour washing inside add 2 percent extra labour to the respective items of next lower floor.
- (iv) For repair items of plastering add 2 percent extra labour to the respective items of next lower floor.
- (v) For out side cement plaster, white washing, colour washing and cement washing add 5 percent extra labour for scaffolding etc. over and above the rates of next lower floor.
- (vi) for plastering, pointing, cement washing, white washing and colour washing works below ground level beyond 1.5m and upto 4.5m depth add 5 percent extra labour over and above the rates of the respective item for lowering the materials.
- (vii) for plastering, pointing, cement washing, white washing and colour washing works below ground level beyond 4.5m and upto 7.5m depth and 7 percent extra labour over and above the rates of the respective items for lowering the materials.
- (viii) 10 percent excess on the above rates will be allowed in the works being executed inside jail premises.

XI ROOFING

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

1 20cm to 25cm. Single Nuria tiles roofing with cement mortar (1:6) borders 23cm×5cm at 1.8 meters intervals complete per 1 sqm.

Data for 9.3 sqm.

a) Materials

Nuria tiles 20cm to 25 cm long		1000 Nos	1000	523.00	523.00
Cement	0.0372 cum	0.530 qtl	qtl	341.00	180.73
Sand(Screened and Washed)		0.19 cum	cum	29.00	5.51

b) Labour

Gharami or Thacher		2 Nos	Each	65.00	130.00
Mason (Second class) for forming cement mortar border		0.25 Nos	Each	75.00	18.75
Woman Mulia		0.50 Nos	Each	55.00	27.50

c) Overhead charges @ 10% on (a+b)

-	-	-	-	-	88.55
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Total (a+b+c) = 974.04

$$\text{Rate per 1 Sqm} = \frac{974.04}{9.3} = 104.74 / \text{Sqm}$$

Say Rs. **104.70** / Sqm

2 25cm to 30cm.long Single Nuria tiles roofing with cement mortar(1:6) borders 23cm×5cm at 1.80 meters intervals complete per 1 sqm.

Data for 9.3 sqm.

a) Materials

Nuria tiles 25cm to 30 cm		800 Nos	1000	647.00	517.60
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b) Labour

Labour and other materials as per item NO.1					362.49
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c) Overhead charges @ 10% on (a+b)

-	-	-	-	-	88.01
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Total (a+b+c) = 968.10

$$\text{Rate per 1 Sqm} = \frac{968.10}{9.3} = 104.10 / \text{Sqm}$$

Say Rs. **104.10** / Sqm

3 20cm to 25cm. Long double Nuria tiles roofing with cement mortar(1:6) borders 23cm×5cm at 1.80 meters intervals complete per 1 sqm.

Data for 9.3 sqm.

a) Materials

Nuria tiles 20cm to 25 cm		2000 Nos	1000	523.00	1046.00
Cost of cement and sand mortar as in Item No.1					186.24

b) Labour

Gharami or Thatches		3 Nos	Each	65.00	195.00
Labour as per item No.1 above (except Gharami)					46.25

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

c) Overhead charges @ 10% on (a+b) - - - 147.35
Total (a+b+c) = 1620.84

Rate per 1 Sqm = $\frac{1620.84}{9.3} = 174.28$ / Sqm
 Say Rs. **174.30** / Sqm

4 25cm to 30cm. Long double Nuria tiles roofing cement mortar (1:6) borders 23cm×5cm at 1.8 meters intervals complete per 1 sqm.
 Data for 9.3 sqm.

a) **Materials**
 Nuria tiles 25cm to 30 cm long 1600 Nos 1000 647.00 1035.20
 b) **Labour**
 Labour and other materials as per item NO.3 427.49
 c) **Overhead charges @ 10% on (a+b)** - - - 146.27
Total (a+b+c) = Total = 1608.96

Rate per 1 Sqm = $\frac{1608.96}{9.3} = 173.01$ / Sqm
 Say Rs. **173.00** / Sqm

5 Roofing with pan tiles with cement mortar(1:6) border 23cm×5cm at 1.80 meter intervals, complete per 1 sqm
 Data for 9.3 sqm.

a) **Materials**
 Pan tiles 2400 Nos 1000 227.00 544.80
 Cement 0.0372 0.530 qtl 341.00 180.73
 Sand(Screened and Washed) 0.19 Cum 29.00 5.51
 b) **Labour**
 Mason (special) 1.25 Nos Each 85.00 106.25
 Man Mulia 1 Nos Each 55.00 55.00
 Woman Mulia 3.5 Nos Each 55.00 192.50
 c) **Overhead charges @ 10% on (a+b)** 108.48
Total (a+b+c) = 1193.27

Rate per 1 Sqm = $\frac{1193.27}{9.3} = 128.31$ / Sqm
 Say Rs. **128.30** / Sqm

6 Roofing with an flat and pan tiles and cement mortar (1:6) borders 23cm ×5cm at 1.80 meters intervals, complete per 1 sqm
 Data for 9.3 sqm.

a) **Materials**
 Pan tiles 2400 Nos 1000 227.00 544.80
 Flat tiles 14cm×14 cm×1cm 500 Nos 1000 222.00 111.00
 Unslacked shell lime for white washing underneath the flat tiles 2 kg 13.00 26.00
 Cement 0.105 1.50 qtl 341.00 511.50
 Sand(Screened and Washed) 0.30 Cum 29.00 8.70

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

b) Labour

Mason (special)	2	Nos	85.00	170.00
Man Mulia	1	Nos	55.00	55.00
Woman Mulia	5	Nos	55.00	275.00

c) Overhead charges @ 10% on (a+b)

170.20

Total (a+b+c) =

1872.20

$$\text{Rate per 1 Sqm} = \frac{1872.20}{9.3} = 201.31 / \text{Sqm}$$

Say Rs. **201.30** / Sqm

7 Roofing with pan tiles over existing G.C.I. Sheet or
A.C. sheet per 1 sqm
Data for 9.3 sqm.

a) Materials

Pan tiles	1800 Nos	1000	227.00	408.60
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b) Labour

Mason (special)	1 Nos	Each	85.00	85.00
Man Mulia	1 Nos	Each	55.00	55.00
Woman Mulia	3 Nos	Each	55.00	165.00

c) Overhead charges @ 10% on (a+b)

71.36

Total (a+b+c) =

Total = 784.96

$$\text{Rate per 1 Sqm} = \frac{784.96}{9.3} = 84.40 / \text{Sqm}$$

Say Rs. **84.40** / Sqm

8 Forming Cement mortar(1:6) border, 23cm×5cm at
1.80 metres intervals per 1 sqm
Data for 9.3 sqm.

a) Materials

Cement	0.0372 cum	0.530	qtl	341.00	180.73
Sand(Screened and Washed)		0.19	Cum	29.00	5.51

b) Labour

Mason (2nd class)	0.25 Nos	Each	75.00	18.75
Woman Mulia	0.50 Nos	Each	55.00	27.50

c) Overhead charges @ 10% on (a+b)

23.25

Total (a+b+c) =

255.74

$$\text{Rate per 1 Sqm} = \frac{255.74}{9.3} = 27.50 / \text{Sqm}$$

Say Rs. **27.50** / Sqm

9 Shifting pan tiles (labour only) per 1 sqm
Data for 9.3 sqm.

a) labour

Mason (2nd class)	1 Nos	Each	75.00	75.00
Woman Mulia	1 Nos	Each	55.00	55.00

b) Overhead charges @ 10% on (a)

- - - 13.00

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

c) **2% Sundries T & P etc.** - - - 2.60
Total (a+b+c) = 145.60

Rate per 1 Sqm = $\frac{145.60}{9.3} = 15.66 / \text{Sqm}$
Say Rs. **15.70 / Sqm**

10 Roofing or re-tiling with old flat & pan tiles over
G.C.I or asbestos sheets on repers (labour only) per 1
Data for 9.3 sqm.

a) labour

Mason (Special)	1 Nos	Each	85.00	85.00
Man Mulia	1 Nos	Each	55.00	55.00
Woman Mulia	2 Nos	Each	55.00	110.00

b) Overhead charges @ 10% on (a) - - - 25.00

c) 2% Sundries T & P etc. - - - 5.00

Total (a+b+c) = 280.00

Rate per 1 Sqm = $\frac{280.00}{9.3} = 30.11 / \text{Sqm}$
Say Rs. **30.10 / Sqm**

11 Re-roofing with old flat & pan tiles including cost of
cement mortar(1: 6) borders per 1 sqm.
Data for 9.3 sqm.

a) Materials

Cement	0.063 cum	0.911	qtl	341.00	310.65
Sand(Screened and Washed)		0.19	cum	29.00	5.51

b) Labour

Mason (Special)	1.75 Nos	Each	85.00	148.75
Man Mulia	1 Nos	Each	55.00	55.00
Woman Mulia	4.5 Nos	Each	55.00	247.50

c) Overhead charges @ 10% on (a+b) - - - 76.74

Total (a+b+c) = 844.15

Rate per 1 Sqm = $\frac{844.15}{9.3} = 90.77 / \text{Sqm}$
Say Rs. **90.80 / Sqm**

12 Renewing eaves of nuria tile roof with old tiles set in
cement mortar(1:6) per 1 metre
Data for 30.48 metre

a) Materials

Cement	0.0372 cum	0.530	qtl	qtl	341.00	180.73
Sand(Screened and Washed)		0.19	Cum	Cum	29.00	5.51

b) Labour

Mason (2nd Class)	3 Nos	Each	75.00	225.00
Man Mulia	2 Nos	Each	55.00	110.00
Woman Mulia	2 Nos	Each	55.00	110.00

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

c) Overhead charges @ 10% on (a+b) 63.12
Total (a+b+c) = 694.36

Rate per 1 metre = $\frac{694.36}{30.48} = 22.78 / \text{RM}$
Say Rs. **22.80 / RM**

13 Renewing eaves of nuria tile roof with new tiles, 20cm to 25cm long set in cement mortar(1:6) per 1 metre
Data for 30.48 metre

a) **Materials**
Nuria tiles 20cm to 25 cm 500 1000 523.00 261.50

b) **Labour**
Labour, materials as per item 12 above 631.24

c) Overhead charges @ 10% on (a+b) - - 89.27
Total (a+b+c) = 982.01

Rate per 1 metre = $\frac{982.01}{30.48} = 32.22 / \text{RM}$
Say Rs. **32.20 / RM**

14 Renewing eaves of nuria tile roof with new tiles, 25cm to 30cm long set in cement mortar(1:6) per 1 metre
Data for 30.48 metres

a) **Materials**
Nuria tiles 25cm to 30 cm long 400 Nos 1000 647.00 258.80

b) **Labour**
Labour, materials as per item 12 above 631.24

c) Overhead charges @ 10% on (a+b) 89.00
Total (a+b+c) = 979.04

Rate per 1 meter = $\frac{979.04}{30.48} = 32.12 / \text{m}$
Say Rs. **32.10 / m**

15 Renewing mortar band with new nuria tiles 25cm to 30 cm long set in cement mortar(1:6) per 1 meter
Data for 30.48 meter.

a) **Materials**
Nuria tiles 25cm to 30cm long 275 Nos 1000 647.00 177.93
cement 0.01 cum 0.14 qtl 341.00 48.76
Sand(Screened and Washed) 0.08 Cum 29.00 2.32

b) **Labour**
Mason (2nd Class) 2 Nos Each 75.00 150.00
Man Mulia 2 Nos Each 55.00 110.00
Woman Mulia 2 Nos Each 55.00 110.00

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

c) Overhead charges @ 10% on (a+b) 59.90
Total (a+b+c) = 658.91

Rate per 1 meter = $\frac{658.91}{30.48} = 21.62 / m$
 Say Rs. **21.60 / m**

16 Renewing ridges of Nuria tiles roofs with new ridge tiles set in mud mortar and top pointed with cement mortar(1:6) per 1 meter
 Data for 30.48 meter.

a) Materials

Ridge tiles		250 Nos	1000	741.00	185.25
Cement	0.028 cum	0.40040	qtl	341.00	136.54
Sand(Screened and Washed)		0.057	Cum	29.00	1.65

b) Labour

labour as per item 12	-	-	-		445.00
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c) Overhead charges @ 10% on (a+b) 76.84
Total (a+b+c) = 845.28

Rate per 1 m = $\frac{845.28}{30.48} = 27.73 / m$
 Say Rs. **27.70 / m**

17 25cm to 30 cm long single layer of Nuria tile roofing over a layer of 30 cm ×30cm ×2.50cm of flat tiles per 1 sqm
 Data for 9.3 sqm.

a) Materials

Nuria tiles		800 Nos	1000	647.00	517.60
Flat tiles		105 Nos	1000	1210.00	127.05

b) Labour

Mason (2nd Class)		0.75 Nos	Each	75.00	56.25
Man Mulia		1 Nos	Each	55.00	55.00
Woman Mulia		2 Nos	Each	55.00	110.00

c) Overhead charges @ 10% on (a+b) 86.59
Total (a+b+c) = 952.49

Rate per 1 Sqm = $\frac{952.49}{9.3} = 102.42 / Sqm$
 Say Rs. **102.40 / Sqm**

18 25cm to 30 cm long double Nuria tile over a layer of (30 cm ×30cm ×2.50cm) flat tiles per 1 sqm
 Data for 9.3 sqm.

a) Materials

Nuria tiles		1600 Nos	1000	647.00	1035.20
Flat tiles		105 Nos	1000	1210.00	127.05

b) Labour

Mason (2nd Class)		1 Nos	Each	75.00	75.00
Man Mulia		3 Nos	Each	55.00	165.00
Woman Mulia		3 Nos	Each	55.00	165.00

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

c) **Overhead charges @ 10% on (a+b)** 156.73
Total (a+b+c) = 1723.98

Rate per 1 Sqm = $\frac{1723.98}{9.3} = 185.37 / \text{Sqm}$
Say Rs. **185.40 / Sqm**

19 Shifting or relaying Nuria tiles in single Nuria tiles roof (labour only) per 1 sqm.
Data for 9.3 sqm.

a) Labour

Gharami 1 Nos Each 65.00 65.00
Man Mulia 0.5 Nos Each 55.00 27.50

b) Overhead charges @ 10% on (a) - - - 9.25

c) 2% Sundries T & P etc on (a). - - - 1.85

Total (a+b+c) = 103.60

Rate per 1 Sqm = $\frac{103.60}{9.3} = 11.14 / \text{Sqm}$
Say Rs. **11.10 / Sqm**

20 Shifting or relaying Nuria tiles in double Nuria tiles roof (labour only) per 1 sqm.
Data for 9.3 sqm.

a) Gharami 2 Nos Each 65.00 130.00
Man Mulia 0.75 Nos Each 55.00 41.25

b) Overhead charges @ 10% on (a) - - - 17.13

c) 2% Sundries T & P etc on (a). - - - 3.43

Total (a+b+c) = 191.80

Rate per 1 Sqm = $\frac{191.80}{9.3} = 20.62 / \text{Sqm}$
Say Rs. **20.60 / Sqm**

21 8 cm beaten lime terracing for roof with hard stone other than granite broken to 2.5cm per 1 Sqm.
Data for 9.3 sqm.

a) Materials

Hardstone other than granite broken to 2.5 cm size 0.79 Cum 217.00 171.43
Lime(Ghooting unslaked) including 0.014 cum for lime mortar 0.23 Cum 1720.00 395.60
Surkhi(C.B.Brick) 0.21 Cum 301.00 63.21

b) Labour

Mason (Special) 1 Nos Each 85.00 85.00
Man Mulia 2.5 Nos Each 55.00 137.50
Woman Mulia for beating and watering for 3 weeks 10 Nos Each 55.00 550.00

c) Overhead charges @ 10% on (a+b) - - - 140.27

Total (a+b+c) = 1543.01

Rate per 1 Sqm = $\frac{1543.01}{9.3} = 165.92 / \text{Sqm}$

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

Say Rs. **165.90** / Sqm

22 8 cm beaten lime terracing for roof with washed gravel per 1 Sqm.

Data for 9.3 sqm.

a) Materials

Screen washed gravel (12 mm to 20 mm) material as per item no 21(a) 0.79 Cum 85.00 67.15 630.24

b) Labour

Labour as per item no 21(b) 772.50

c) Overhead charges @ 10% on (a+b) 146.99

Total (a+b+c) = 1616.88

Rate per 1 Sqm = $\frac{1616.88}{9.3} = 173.86$ / Sqm

Say Rs. **173.90** / Sqm

23 10 cm beaten lime terracing for roof with hard broken stone other than granite broken to 2.5cm per 1 Sqm.

Data for 9.3 sqm.

a) Materials

Hardstone other than granite broken to 2 cm size 1.05 Cum 217.00 227.85

lime mortar 0.30 Cum 1720.00 516.00

Surkhi(C.B.Brick) 0.28 Cum 301.00 84.28

b) Labour

Mason (Special) 1 No Each 85.00 85.00

Man Mulia 3 Nos Each 55.00 165.00

Woman Mulia 12 Nos Each 55.00 660.00

c) Overhead charges @ 10% on (a+b) 173.81

Total (a+b+c) = 1911.94

Rate per 1 Sqm = $\frac{1911.94}{9.3} = 205.59$ / Sqm

Say Rs. **205.60** / Sqm

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

24 10 cm beaten lime terracing for roof with washed gravel per 1 Sqm.

Data for 9.3 sqm.

a) Materials

Rate with hard broken stone as in item 23

1911.94

b) Deduct-Difference in cost of hard broken stone and washed gravel (217.00-65.00)

-1.05

Cum

152.00

-159.60

Total (a-b) =

Total =

1752.34

$$\text{Rate per 1 Sqm} = \frac{1752.34}{9.3} =$$

188.42 / Sqm

Say Rs. **188.40** / Sqm

25 13 cm beaten lime terracing for roof with hard stone other than granite broken to 2.5cm per 1 Sqm.

Data for 9.3 sqm.

a) Materials

Hardstone other than granite broken to 1 cm size

1.27

Cum

217.00

275.59

lime mortar

0.37

Cum

1720.00

636.40

Surkhi

0.35

Cum

301.00

105.35

b) Labour

Mason (Special)

1.50 Nos

Each

85.00

127.50

Man Mulia

4 Nos

Each

55.00

220.00

Woman Mulia for beating and watering for 3 weeks

15 Nos

Each

55.00

825.00

c) Overhead charges @ 10% on (a+b)

218.98

Total (a+b+c) =

2408.82

$$\text{Rate per 1 Sqm} = \frac{2408.82}{9.3} =$$

259.01 / Sqm

Say Rs. **259.00** / Sqm

26 13 cm beaten lime terracing for roof with washed gravel per 1 Sqm.

Data for 9.3 sqm.

a) Rate with hard broken stone as in item 25

2408.82

b) Deduct-Difference in cost of hard broken stone and washed gravel (217.00-65.00)

-1.27

Cum

152.00

-193.04

Total (a-b) =

Total =

2215.78

$$\text{Rate per 1 Sqm} = \frac{2215.78}{9.3} =$$

238.26 / Sqm

Say Rs. **238.30** / Sqm

27 8 cm thick beaten terrace in lime with brick khoa and ghooting lime per 1 Sqm.

Data for 9.3 sqm.

a) Materials

4cm brick khoa (1st class)C.B.Brick

0.71

Cum

172.00

122.12

Ghooting lime unslaked

0.212

Cum

1720.00

364.64

Surkhi

0.212

Cum

301.00

63.81

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

b) Labour

Labour as per item 21 772.50

c) Overhead charges @ 10% on (a+b) 132.31

Total (a+b+c) = Total = 1455.38

$$\text{Rate per 1 Sqm} = \frac{1455.38}{9.3} = 156.49 \text{ / Sqm}$$

Say Rs. **156.50** / Sqm

28 10 cm thick beaten lime terrace in lime with brick khoa and ghooting lime per 1 Sqm.

Data for 9.3 sqm.

a) Material

4cm brick khoa (C.B.Brick) 0.962 cum 172.00 165.46

Ghooting lime (unslaked) 0.218 cum 1720.00 374.96

Surkhi (CB Brick) 0.283 cum 301.00 85.18

b) Labour

Labour as per item 25 1172.50

c) Overhead charges @ 10% on (a+b) 179.81

Total (a+b+c) = 1977.92

$$\text{Rate per 1 Sqm} = \frac{1977.92}{9.3} = 212.68 \text{ / Sqm}$$

Say Rs. **212.70** / Sqm

29 13 cm average thick beaten terrace with brick khoa and ghooting lime per 1 Sqm.

Data for 9.3 Sqm

a) Material

Material 4 cm brick khoa 1.19 Cum 172.00 204.68

Ghooting lime (Unslaked) 0.354 Cum 1720.00 608.88

Surkhi 0.354 Cum 301.00 106.55

b) Labour

Labour as per item no 25 1172.50

c) Overhead charges @ 10% on (a+b) 209.26

Total (a+b+c) = 2301.88

$$\text{Rate per 1 Sqm} = \frac{2301.88}{9.3} = 247.51 \text{ / Sqm}$$

Say Rs. **247.50** / Sqm

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

30 Laying two layers of earthen tiles 2.5 cm thick 30cm ×30 cm and 30 cm ×15 cm with 2.50 cm cement mortar(1: 6)in between to receive terracing per 1 sqm
Data for 9.3 sqm.

a) Material

Tiles 30cm×30 cm×2.5cm		105 Nos	1000	1210.00	127.05
Tiles 30cm×15 cm×2.5cm		210 Nos	1000	1005.00	211.05
cement	0.114 cum	1.630	qtl	341.00	555.83
Sand (screened and washed)		0.362	Cum	29.00	10.50

b) Labour

Labour					
Mason (2nd class)		2 Nos	Each	75.00	150.00
Man mulia		2 Nos	Each	55.00	110.00
Woman Mulia for carring materials		4 Nos	Each	55.00	220.00

c) Overhead charges @ 10% on (a+b)

Total (a+b+c) = 1522.87

$$\text{Rate per 1 Sqm} = \frac{1522.87}{9.3} = 163.75 / \text{Sqm}$$

Say Rs. **163.70** / Sqm

31 Picking out old lime terracing on roof and clearing the debris for laying half terracing per 1 sqm
Data for 9.3 sqm.

a) Labour

Man Mulia		1.5 Nos	Each	55.00	82.50
Woman Mulia		2.25 Nos	Each	55.00	123.75

b) Overhead charges @ 10% on (a)

20.63

c) 2 % sundries and T&P etc on (a)

4.13

Total (a+b+c) = 226.88

$$\text{Rate per 1 Sqm} = \frac{226.88}{9.3} = 24.40 / \text{Sqm}$$

Say Rs. **24.40** / Sqm

32 Labour for fixing G.C.I. Sheet in roof drilling hole in wind ties including fixing of ridges valleys wind ties etc. excluding cost of fitting per 1 Sqm.
Data for 9.3 sqm.

a) Labour

Carpenter (Secial)		0.5 Nos	Each	85.00	42.50
Fitter(Secial)		1 Nos	Each	85.00	85.00
Man Mulia		2 Nos	Each	55.00	110.00

b) Overhead charges @ 10% on (a)

23.75

c) 2 % sundries and T&P etc on (a)

4.75

Total (a+b+c) = Total = 266.00

$$\text{Rate per 1 Sqm} = \frac{266.00}{9.3} = 28.60 / \text{Sqm}$$

Say Rs. **28.60** / Sqm

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

33 Labour for fixing big six or trafford A.C. Sheet in roof including fixing of ridges wind ties etc. complete but excluding cost of fitting including drilling holes in wind ties per 1 Sqm.

Data for 9.3 sqm.

a) Labour

Carpenter (Secial) 1 Nos Each 85.00 85.00
Man Mulia 3 Nos Each 55.00 165.00

b) Overhead charges @ 10% on (a)

c) 2 % sundries and T&P etc on (a) - - - 5.00

Total (a+b+c) = Total = 280.00

Rate per 1 Sqm = $\frac{280.00}{9.3} = 30.11 / \text{Sqm}$

Say Rs. **30.10 / Sqm**

34 Labour for fixing and fitting Asbestos sheet ridges or valleys (double) per 1 RM

Data for 30.48 RM

a) Labour

Carpenter (Special) 0.5 Nos Each 85.00 42.50
Carpenter (2nd Class) 1.5 Nos Each 75.00 112.50
Fitter(1st Class) 3 Nos Each 85.00 255.00
Man Mulia 4 Nos Each 55.00 220.00

b) Overhead charges @ 10% on (a)

c) 2 % sundries and T&P etc on (a) - - - 12.60

Total (a+b+c) = Total = 705.60

Rate per 1 RM = $\frac{705.60}{30.48} = 23.15 / \text{RM}$

Say Rs. **23.10 / RM**

35 Labour for fixing corrugated iron sheets in walling including cost of nuts and bolts etc. but excluding cost of sheets per 1 Sqm.

Data for 9.30 sqm

a) Rate as per item for fixing corrugated sheet in roof (item NO.32)

266.00

b) Add for cost of bolts and nuts

40.00

c) Deduct-for cost of fixing ridges

(-) 10.00

Total (a+b-c) = 296.00

Rate per 1 Sqm = $\frac{296.00}{9.3} = 31.83 / \text{Sqm}$

Say Rs. **31.80 / Sqm**

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

36 Fixing asbestos sheets in walls excluding cost of A.C. sheet but including cost of bolts and nuts (labour only) per 1 sqm.

Data for 9.30 sqm

a) Rate as per item No.33)					280.00	
b) Add for cost of bolts and nuts					40.00	
c) Deduct-for cost less labour and scaffolding				(-)	12.00	
Total (a+b-c) =					308.00	

$$\text{Rate per 1 Sqm} = \frac{308.00}{9.3} = 33.12 / \text{Sqm}$$

Say Rs. **33.10** / Sqm

37 New bamboo frames made of 2.5cm to 4cm dia bamboo for nuria tile roofing for single and double layers per 1 Sqm.

Data for 9.30 Sqm

a)						
2.5cm to 4cm dia 1st class bamboos= ...292.61.....						
R.M. (4.15 meters each av) or say 70 Nos	70 Nos	100	1700.00		1190.00	
b) 5cm long french reapers nails	1.36	kg	40.00		54.40	
c) Man Mulia	1.5 Nos	Each	55.00		82.50	
d) Overhead charges @ 10% on (a+b+c)					132.69	
Total (a+b+c+d) =					1459.59	

$$\text{Rate per 1 Sqm} = \frac{1459.59}{9.3} = 156.95 / \text{Sqm}$$

Say Rs. **156.90** / Sqm

38 Non-sal wood reapers fixed on rafters with reaper nails at 10cm centres including coaltering the top of the reapers for receiving pan tiled roof per 1 Sqm Data for 9.3 sqm.

a) Material

Non Sal wood reapers 5cm × 2.5cm

99.06m or 0.1238 cum

5cm long french reapers nails

0.1238	Cum	9340.00	1156.29
1.36	kg	40.00	54.40

b) Labour

Carpenter (2nd class)

women mulia

0.88 Nos	Each	75.00	66.00
1 Nos	Each	55.00	55.00

c) Overhead charges @ 10% on (a+b)

Total (a+b+c) =

133.17
1464.86

$$\text{Rate per 1 Sqm} = \frac{1464.86}{9.3} = 157.51 / \text{Sqm}$$

Say Rs. **157.50** / Sqm

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

39 Non-sal wood reapers fixed on rafters with reaper nails at 15cm centres including coaltaring the top of the reapers for receiving flat and pan tiled roof per 1 Sqm Data for 9.3 sqm.

a) Material

Non Sal wood reapers 5cm × 2.5cm

68.60m or

0.085 Cum 9340.00 793.90

5cm long french reapers nails

1 kg 40.00 40.00

b) Labour

Carpenter (2nd class)

0.75 Nos Each 75.00 56.25

women mulia

1 Nos Each 55.00 55.00

c) Overhead charges @ 10% on (a+b)

94.52

Total (a+b+c) =

1039.67

Rate per 1 Sqm = $\frac{1039.67}{9.3} = 111.79 / \text{Sqm}$

Say Rs. **111.80 / Sqm**

40 Best thatched roofing 22.5cm in two layers 7.5cm bottom layer and 15cm top layers including split bamboo jaffry on top per 1 sqm.
Data for 9.3 sqm

a) Material

Bundle of thatch 30 cm girth

350 100 208.00 728.00

2.5cm to 4cm dia bamboos for jaffry on top and bottom of thatch layers

18 100 1700.00 306.00

b) Labour

Man mulia

2 Nos Each 55.00 110.00

Thatcher of Gharami

1.5 Nos Each 65.00 97.50

c) Overhead charges @ 10% on (a+b)

124.15

Total (a+b+c) =

Total = 1365.65

Rate per 1 Sqm = $\frac{1365.65}{9.3} = 146.84 / \text{Sqm}$

Say Rs. **146.80 / Sqm**

41 Split bamboo jaffry fitted and fixed on thatched roof per 1sqm.
Data for 9.3 sqm

a) Material

2.5cm to 4cm dia bamboo

8 Nos 100 1700.00 136.00

b) Labour

Man mulia

0.5 Nos Each 55.00 27.50

c) Overhead charges @ 10% on (a+b)

16.35

Total (a+b+c) =

179.85

Rate per 1 Sqm = $\frac{179.85}{9.3} = 19.34 / \text{Sqm}$

Say Rs. **19.30 / Sqm**

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

42 Best thatched roofing 15cm thick including split bamboo jaffry on top per 1 sqm.
Data for 9.3 sqm

a) Material

Bundles of thatch 30cm girth	230 Nos	100	208.00	478.40
2.5cm to 4.cm dia bamboo of jaffry on top and bottom of the thatchelayers	15 Nos	100	1700.00	255.00

b) Labour

Thatcher or Gharami	1 Nos	Each	65.00	65.00
Man mulia	1.5 Nos	Each	55.00	82.50

c) Overhead charges @ 10% on (a+b)

88.09

Total (a+b+c) =

968.99

$$\text{Rate per 1 Sqm} = \frac{968.99}{9.3} = 104.19 / \text{Sqm}$$

Say Rs. **104.20** / Sqm

43 Best thatched roofing 7.5cm thick including split bamboo jaffry on top per 1sqm.
Data for 9.3 sqm

a) Material

Bundles of thatch 30cm girth	115 Nos	100	208.00	239.20
2.5cm to 7.cm dia bamboo of jaffry on top and bottom of the thatchelayers	12 Nos	100	1700.00	204.00

b) Labour

Thatcher or Gharami	0.75 Nos	Each	65.00	48.75
Man mulia	1 Nos	Each	55.00	55.00

c) Overhead charges @ 10% on (a+b)

54.70

Total (a+b+c) =

601.65

$$\text{Rate per 1 Sqm} = \frac{601.65}{9.3} = 64.69 / \text{Sqm}$$

Say Rs. **64.70** / Sqm

44 First class strong bamboo framing for 23cm apart 22.5 thick thatching per 1sqm.
Data for 9.3 sqm

a) Material

7cm to 10cm dia bamboo 1st class	36.58 mtr.	6	100.00	609.67
Belangi bamboo	20 Nos	100	1700.00	340.00

b) Labour

carpenter 2nd class	0.5 Nos	Each	75.00	37.50
Thatcher or Gharami	0.75 Nos	Each	65.00	48.75
Man mulia	1 Nos	Each	55.00	55.00

c) Overhead charges @ 10% on (a+b)

109.09

Total (a+b+c) =

1200.01

$$\text{Rate per 1 Sqm} = \frac{1200.01}{9.3} = 129.03 / \text{Sqm}$$

Say Rs. **129.00** / Sqm

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

45 Bamboo mat over bamboo frame fitted and fixed per 1sqm
Data for 9.3 sqm

a) Material
Bamboo mat including laps 9.75 Sqm 85.00 828.75
Belangi bamboo 2.51 cm to 4 cm dia and above 5 mtr. l 5 100 1700.00 85.00

b) Labour
Thatcher or Gharami 0.5 No Each 65.00 32.50
Man mulia 0.5 No Each 55.00 27.50

c) Overhead charges @ 10% on (a+b) 97.38
Total (a+b+c) = 1071.13

Rate per 1 Sqm = $\frac{1071.13}{9.3} = 115.17 / \text{Sqm}$
Say Rs. **115.20 / Sqm**

46 Roofing with 2 layers of flat tiles 30cm×15cm×2.5cm set in cement mortar (1:3) with 2.5cm. Thick cement mortar (1:6) in between and top cement grouted (Cuttack pattern) including cost of cement per 1Sqm.

Data for 9.3 sqm

a) Material
Flat tiles 30cm × 15cm × 2.50cm 410 Nos 1000 1005.00 412.05
Sand (screened & washed) 0.26 Cum 29.00 7.54
cement 0.047 cum 0.6721 Qntl 341.00 229.19

b) Labour
Manson special 1.25 Nos Each 85.00 106.25
Man mulia 1.5 Nos Each 55.00 82.50
women mulia 6 Nos Each 55.00 330.00
Man mulia for mixing sand and cement 1 Nos Each 55.00 55.00

c) Overhead charges @ 10% on (a+b) 122.25
Total (a+b+c) = 1344.78

Rate per 1 Sqm = $\frac{1344.78}{9.3} = 144.60 / \text{Sqm}$
Say Rs. **144.60 / Sqm**

47 15cm thick thatch with old and new straw thatching including top jaffery after removal of old thatch as per necessity per 1sqm
Data for 9.3 sqm

a) Rate as per item No.42 - - - 968.99
b) Deduct cost of thatch 115 100 208.00 239.20
(230 - 115) = 115 bundles
Total (a-b) = 729.79

Rate per 1 Sqm = $\frac{729.79}{9.3} = 78.47 / \text{Sqm}$
Say Rs. **78.50 / Sqm**

48 2nd class country bamboo framing for 1.5cm thatching
Data for 9.3 sqm

a) Material
Country bamboo 7cm to 10cm dia 20.12 Nos 6 60.00 201.20
Belangi bamboos 15 Nos 100 1700.00 255.00

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7
	Coir rope	1.87	kg	25.00	46.75	
	b) Labour					
	Carpenter 2nd class	0.5 Nos	Each	75.00	37.50	
	Gharami or thatcher	0.5 Nos	Each	65.00	32.50	
	Man mulia	1 Nos	Each	55.00	55.00	
	c) Overhead charges @ 10% on (a+b)				62.80	
	Total (a+b+c) =				690.75	
				Rate per 1 Sqm = $\frac{690.75}{9.3} =$	74.27 / Sqm	
				Say Rs.	74.30 / Sqm	
49	Bamboo mat ceiling inclusive of bamboo frame fitting fixing etc. complete per 1sqm Data for 9.3 sqm					
	a) Material					
	Bamboo mat including over lapping	10.22	Sqm	85.00	868.70	
	Half split belangi bamboos 2.5cm to 4cm dia for battens 3 metres long each	8 Nos	100	1700.00	136.00	
	5cm long french reaper nails	0.11	kg	40.00	4.40	
	b) Labour					
	carpenter 2nd class	0.25 Nos	Each	75.00	18.75	
	Man mulia	1.5 Nos	Each	55.00	82.50	
	Women mulia	1 Nos	Each	55.00	55.00	
	c) Overhead charges @ 10% on (a+b)				116.54	
	Total (a+b+c) =				1281.89	
				Rate per 1 Sqm = $\frac{1281.89}{9.3} =$	137.84 / Sqm	
				Say Rs.	137.80 / Sqm	
50	6mm thick A.C. sheet flat ceiling fitted and fixed complete excluding cost of A.C.sheets but including battens 5cm × 3cm × 1cm Per 1sqm Data for 9.3 sqm					
	a) Material					
	50mm × 30mm × 10mm Sal wooden strips including framing and beading the edges	1.06	Sqm	135.00	143.10	
	4 cm nail 200 Nos	1.135	kg	36.00	40.86	
	5cm long wood screws	100 Nos	100	63.00	63.00	
	b) Labour					
	Carpenter 2nd class	1 Nos	Each	75.00	75.00	
	Man mulia	2 Nos	Each	55.00	110.00	
	Women mulia	2 Nos	Each	55.00	110.00	
	c) Overhead charges @ 10% on (a+b)				54.20	
	Total (a+b+c) =				596.16	
				Rate per 1 Sqm = $\frac{596.16}{9.3} =$	64.10 / Sqm	
				Say Rs.	64.10 / Sqm	

Notes :

1 10 per cent excess on the above rates will be allowed for the work being executed inside jail premises.

XII. WOOD WORK

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7
1	Dressed seasoned sal wood work framed and fixed (wrought and put up) in burgahs, rafters and posts per 1cum Data for 0.028 cum.					
	a) Material					
	Sal wood scantling sawn (Rate based on forest corporation rates)	0.028 Cum	Cum	25934.00	726.15	
	b) Labour					
	Carpenter 2nd class	0.33 Nos	Each	75.00	24.75	
	Man mulia	0.33 Nos	Each	55.00	18.15	
	c) Overhead charges@ 10% on (a+b)				76.91	
	Total (a+b+c) =				845.96	
				Rate per 1 cum = $\frac{845.96}{0.028} =$	30212.76 / cum	
				Say Rs.	30212.80 / cum	
2	Dressed seasoned sal wood work framed and fixed (wrought and put up) in trusses, purlines, frames of doors, windows, ventilabours and beams per 1cum Data for 0.028 cum.					
	a) Material					
	Sal wood scantling sawn (Rate based on forest corporation rates)	0.028	Cum	28378.00	794.58	
	Carpenter special	0.5 Nos	Each	85.00	42.50	
	b) Labour					
	Man mulia	0.5 Nos	Each	55.00	27.50	
	c) Overhead charges@ 10% on (a+b)				82.21	
	Total (a+b+c) =				946.79	
				Rate per 1 cum = $\frac{946.79}{0.028} =$	33814.01 / cum	
				Say Rs.	33814.00 / cum	
3	32mm piasal wood or local Teak wood panelled shutters moulded panels with all labour, iron fittings, and wooden hinged cleats etc fitted and fixed complete in all respect. But excluding the cost of iron fittings Per 1Sqm Data for a doors 1.07m x 2.13m					
	a) Material					
	Area of shutters $0.94 \times 2.0m = 1.88sqm$					
	Piasal wood planks for shutters	2.08 sqm				
	or	0.06656 Cum	Cum	40414.00	2689.96	
	Wooden hinged cleats	2 Nos	Each	12.50	25.00	

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

b) Labour

Labour for making shutters	1.88 Sqm	Sqm	300.00	564.00	
(I) Carpenter Special 2 Nos 85.00/each = 170.00					
(ii) Helper 2 Nos. 65.00/each = 130.00 (170.00+130.00 = 300.00)	-	-	-		
Labour for fixing shutters					
Carpenter 2nd class	1 Nos	Each	75.00	75.00	
Man mulia	1 Nos	Each	55.00	55.00	
c) Overhead charges@ 10% on (a+b)					340.90

Total (a+b+c) = **Total = 3749.85**
Rate per 1 Sqm = $\frac{3749.85}{1.88} = 1994.60$ / Sqm
Say Rs. **1994.60** / Sqm

4 32mm thick piasal wood or local teak wood
fully glazed shutters complete with iron fitting
and wooden hinged cleats etc., fitted and fixed
in position including all labour, but excluding
the cost of glass panes and iron fittings

Per 1Sqm
Data for a door 1.08m × 2.15 sqm.

a) Material

Area of shutters 0.94 × 2.0m = 1.88sqm					
Piasal wood planks for shutters	1.42				
	0.04544	Cum	40414.00	1836.41	

b) Labour

Labour for making shutters	1.88	Sqm	249.70	469.44	
(I) Carpenter special 1.5Nos at the rate of 85.00/each = 127.50					
(ii) Helper 1.88 Nos. at the rate of 65.00 = 122.20					

Wooden hinged cleats	2 Nos	Each	12.50	25.00	
Labour for fixing shutters					
Carpenter 2nd class	1 Nos	Each	75.00	75.00	
Man mulia	1 Nos	Each	55.00	55.00	

c) Overhead charges@ 10% on (a+b)

Total (a+b+c) = 2706.93

Rate per 1 Sqm = $\frac{2706.93}{1.88} = 1439.86$ / Sqm
Say Rs. **1439.90** / Sqm

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

5 25mm thick piasal wood or local teak wood ledged, braced and planked 25 mm thick ledges and braces and 25mm thick ledges and braces and 25mm thick plank shutters completed with iron fittings. Wooden hinged cleates etc. fixed in position including all labour charges but excluding the cost of iron fittings.

Per 1Sqm

Data for a doors 0.90m × 1.95 sqm.

a) Material

Area of shutters 0.79 × 1.89m = 1.49sqm

Piasal wood planks for shutters

2.16 sqm

0.054

Cum

40414.00

2182.36

b) Labour

Labour for making shutters

(I) Carpenter special 1 Nos

1.49

Sqm

194.85

290.33

at the rate of 85.00/each = 85.00

(ii) Helper 1.69 Nos. at the rate of 65.00/each

85.00+109.85=194.85

Wooden hinged cleats

2 Nos

Each

12.50

25.00

Labour for fixing shutters

Carpenter 2nd class

0.5 Nos

Each

75.00

37.50

Man mulia

0.5 Nos

Each

55.00

27.50

c) Overhead charges@ 10% on (a+b)

256.27

Total (a+b+c) =

2818.95

$$\text{Rate per 1 Sqm} = \frac{2818.95}{1.49} =$$

1891.91 / Sqm

Say Rs.

1891.90 / Sqm

6 25mm thick piasal wood or local teak wood false pannel shutters complete with iron fittings and wooden hinged cleats, etc. fixed in position including all labour charges, but excluding the cost of fittings

Per 1Sqm

Data for 1.07m × 2.13 sqm.

a) Material

Area 0.94 × 2.00m = 1.88sqm

Piasal wood planks for shutters

2.08 sqm

0.052

Cum

40414.00

2101.53

Wooden hinged cleats

2 Nos

Each

12.50

25.00

Labour for making shutters

1.88

Sqm

196.15

368.76

b) Labour

(I) Carpenter special 1 No. @ Rs85.00/

Each =

85.00

(ii) Helper 1.71 Nos. @ Rs.65.00/

Each =

111.15

196.15

Labour for fixing shutters as per item No.3

-

-

-

130.00

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

c) **Overhead charges@ 10% on (a+b)** 262.53
Total (a+b+c) = 2887.82

Rate per 1 Sqm = $\frac{2887.82}{1.88} = 1536.07$ / Sqm
 Say Rs. **1536.10** / Sqm

7 19mm thick piasal wood or local teak wood ledged, braced and planked 19 mm thick ledges and braces and 19mm thick plank shutters completed with iron fittings. Wooden hinged cleats etc.fitted and fixd in position including all labour charges but excluding the coot of iron fittings

per 1sqm
 Data for 0.90m × 1.95 m.

a) Material

Area of 0.79 × 1.89m = 1.49sqm

Piasal wood planks for shutters 1.85 sqm
 0.03515 Cum 40414.00 1420.55
 Wooden hinged cleats 2 Nos Each 12.50 25.00

b) Labour

Labour for making shutters as per item No.5 - - - 290.33
 Labour for fixing shutters as per item No.5 - - - 65.00

c) Overhead charges@ 10% on (a+b)

Total (a+b+c) = Total = 180.09
 1980.97

Rate per 1 Sqm = $\frac{1980.97}{1.49} = 1329.51$ / Sqm
 Say Rs. **1329.50** / Sqm

8 38mm thick piasal pannel shutter 38mm style and 22mm to 25 mm. thick pannel plank complete with iron fitting and wooden hinged cleats etc. fitted and fixed in position for doors and windows including all labour charges, but excluding the cost of iron fittings

Per 1 sqm

a) Rate as per item No.3 1994.60
 b) Add-for excess quantity of wood 0.00664 Cum 40414.00 268.35
 c) **Overhead charges@ 10% on (b)** 26.83
Total (a+b+c) = 2289.78

Rate per 1 Sqm = **2289.80** / Sqm

9 25mm thick piasal pannel shutter 25mm style & 12 mm. thick pannel plank complete with iron fitting and wooden hinged cleates etc. including all labour charges, but excluding the cost of iron fittings per 1sqm

a) Rate as per item No. 3 1994.60
 b) Deduct-less cost of wood including OHC 0.00775 Cum 45263.68 350.79
Total (a-b) = 1643.81

Rate per 1 Sqm = **1643.80** / Sqm

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

10 25mm thick piasal fully glazed shutter 25mm style complete with iron fittings and wooden hinged cleats, etc. fitted and fixed in position for doors and windows including all labour charges, but excluding the cost of glass panes and iron fittings per 1sqm rate

a) Rate as per item No. 4					1439.90	
b) Deduct-less cost of wood including OHC	0.00529	Cum	45263.68		239.44	
Total (a-b) =			Total =		1200.46	
	Rate per 1 Sqm =		1200.50	/ Sqm		

11 38mm thick piasal fully glazed shutter 38mm style complete with iron fittings and wooden hinged cleats, etc. fitted and fixed in position for doors and windows including all labour charges, but excluding the cost of glass panes and iron fittings per 1sqm

a) Rate as per item No. 4	.....	.....	.....		1439.90	
Add-for excess quantity of wood including						
b) OHC	0.00453	Cum	45263.68		205.04	
Total (a+b) =					1644.94	
	Rate per 1 Sqm =		1644.90	/ Sqm		

12 38mm thick sal wood planks fitted and fixed for shelves
Per 1 sqm

a) Material						
Sal planks	0.038	Cum	25698.00		976.52	
b) Labour						
Carpenter 2nd class	0.75	each	75.00		56.25	
Man Mulia	1	each	55.00		55.00	
Total (a+b) =					1087.77	
	Rate per 1 Sqm =		1087.80	/ Sqm		

13 2.5cm thick sal wood frame and 19mm thick planked door shutters complete with iron fitting and wooden hinged cleats etc, but excluding the cost of iron fittings.

Per 1 sqm						
Data for a door 1.20m × 1.95m						
a) Material						
Area of shuttes 1.08m × 1.89m						
= 2.04sqm						
Sal wood planks for shutters	2.04sqm					
	0.051	Cum	25698.00		1310.60	

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

b) Labour

Labour for making shutters 2.04 Sqm 218.25 445.23

(I) Carpenter (second class) = 1.48Nos

Rs. 75.00/each 111.00

(ii) Helper 1.65 Nos. @ 65.00/each 107.25 - -

Rs. 218.25

Wooden hinged cleats 2 Nos Each 12.50 25.00

Labour for fixing shutters as per item No.5 65.00

c) Overhead charges@ 10% on (a+b) 184.58

Total (a+b) = 2030.41

Rate per 1 Sqm = $\frac{2030.41}{2.04} = 995.30$ / Sqm

Say Rs. **995.30** / Sqm

14 Dressed sal wood works in beams above 15cm

size and above 5m length per 1cum

Data for 0.0283cum

a) Seasoned sal wood 0.0283 Cum 28340.00 802.02

b) 2% sawing, shapping, fitting & fixing etc.on 16.04

c) Overhead charges@ 10% on (a+b) 81.81

Total (a+b+c) = 899.87

Rate per 1 cum = $\frac{899.87}{0.0283} = 31797.48$ / cum

Say Rs. **31797.50** / cum

15 Sal wood work squared and rough dressed

fitted and fixed complete per 1cum

Data for 0.0283cum

a) seasoned sal wood 0.0283 Cum 25934.00 733.93

b) 2% sawing, shapping, fitting & fixing etc.on 14.68

c) Overhead charges@ 10% on (a+b) 74.86

Total (a+b+c) = 823.47

Rate per 1 cum = $\frac{823.47}{0.0283} = 29097.95$ / cum

Say Rs. **29097.90** / cum

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7
16	10cm dia sal bullah upto 5.50m long fitted and fixed complete per 1R.M. Data for 0.3048cum					
	a) seasoned sal bullah	0.3048	RM	69.00	21.03	
	b) 2% sawing, shapping, fitting & fixing etc. on				0.42	
	c) Overhead charges@ 10% on (a+b)				2.15	
	Total (a+b+c) =				23.60	
	Rate per 1 RM = $\frac{23.60}{0.3048}$			77.42 / RM		
	Say Rs.			77.40 / RM		
17	15cm to 20cm dia sal bullah fitted and fixed complete per 1R.M. Data for 0.3048 RM					
	a) seasoned sal bullah	0.3048	1 R M	76.00	23.16	
	b) 2% sawing, shapping, fitting & fixing etc.on				0.46	
	c) Overhead charges@ 10% on (a+b))				2.36	
	Total (a+b+c) =				25.99	
	Rate per 1 RM = $\frac{25.99}{0.3048}$			85.27 / RM		
	Say Rs.			85.30 / RM		
18	Sal bullah above 200mm and upto 250mm mean dia dia upto 2.75m long fitted and fixed complete per 1cum					
	a) seasoned sal bullah	1	Cum	6503.00	6503.00	
	b) 2% sawing, shapping, fitting & fixing etc. on				130.06	
	c) Overhead charges@ 10% on (a+b)				663.31	
	Total (a+b+c) =				7296.37	
	Rate per 1 cum = $\frac{7296.37}{1}$				/ cum	
	Say Rs.			7296.40	/ cum	
19	Sal bullah above 200mm and upto 250mm mean dia above 2.75 m & upto 4.75m long fitted and fixed complete per 1cum.					
	a) seasoned sal bullah	1	Cum	7284.00	7284.00	
	b) 2% sawing, shapping, fitting & fixing etc. on				145.68	
	c) Overhead charges@ 10% on (a+b)				742.97	
	Total (a+b+c) =				8172.65	
	Rate per 1 cum = 8172.65				/ cum	
	Say Rs.			8172.60	/ cum	
20	75mm to 100mm mean dia nonsal bullah fitted and fixed complete per 1R.M. Datafor 0.3048m					
	a) Non-sal bullah	0.3048	1 RM	(33+41)/2	11.28	
	b) 2% sawing, shapping, fitting & fixing etc.on				0.23	
	c) Overhead charges@ 10% on (a+b)				1.15	
	Total (a+b+c) =				12.65	
	Rate per 1 RM = $\frac{12.65}{0.3048}$			41.51 / RM		
	Say Rs.			41.50 / RM		

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

21 Non-sal bullah 125mm mean dia fitted and fixed complete

per 1R.M.

Datafor 0.3048m

a) Non-sal bullah	0.3048	1 RM	52.00	15.85
b) 2% sawing, shapping, fitting & fixing etc.on				0.32
c) Overhead charges@ 10% on (a+b)				1.62
Total (a+b+c) =				17.78

$$\text{Rate per 1 RM} = \frac{17.78}{0.3048} = 58.34 / \text{RM}$$

Say Rs. **58.30** / RM

22 Non-sal bullah 150mm to 200mm mean dia fitted and fixed complete

per 1R.M.

Data for 0.3048 m

a) Non-sal bullah of above size	0.3048	1 RM	64.00	19.51
b) 2% sawing, shapping, fitting & fixing etc. on				0.39
c) Overhead charges@ 10% on (a+b)				1.99
Total (a+b+c) =				21.89

$$\text{Rate per 1 RM} = \frac{21.89}{0.3048} = 71.81 / \text{RM}$$

Say Rs. **71.80** / RM

23 Labour for fitting and fixing expanded metal or wiremesh for windows etc. including sal wood beading with cost of nails, screws, beads, etc. complete, but excluding cost of expanded metal or wire mesh.

Per 1sqm

Details for 1.54sqm

a) Material

sal wood plank	0.0065	Cum	25698.00	167.04
cost of nails & screws				12.00

b) Labour

carpenter 2nd class	0.33 Nos	Each	75.00	24.75
skilled mulia	0.25 Nos	Each	65.00	16.25

c) Overhead charges@ 10% on (a)				22.00
Total (a+b+c) =				242.04

$$\text{Rate per 1 Sqm} = \frac{242.04}{1.54} = 157.17 / \text{Sqm}$$

Say Rs. **157.20** / Sqm

Note

- 1 When 1/3 pannelled and 2/3 glazed or vice versa shutter is specified, the proportionate rate of the respective items should be worked out and the rate for the shutter arrived.
- 2 Diameter of bullahs to be measured above 2m high from the bottom.
- 3 The standard fittings for Doors and windows should be as per the I.S.I. specification
- 4 10 per cent excess on the above rates will be allowed for the work being executed inside jail premises.

XIII ROAD WORK

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

- 1** Picking up hard stone metal surface to a depth of 5 cm. including screening useful materials and removing rubbish and replacing usable road metal to camber

Unit = 100 Sqm.

Taking output = 9.3 sqm

a) Labour

Man Mulia	each	0.500	55.00	<u>27.50</u>
				27.50

b) Overhead Charges @ 10% on (a)

2.75

c) Sundries, T & P @ 2% on (a)

0.55

Cost per 9.3 Sqm = a+b+c

30.80

Rate per 100 Sqm = (a+b+c) x 100 / 9.3

331.18

Say 331.20

- 2** Scarifying old graveled surface before consolidation of new gravel

Unit = 100 Sqm.

Taking output = 9.3 sqm

a) Labour

Woman Mulia	each	0.070	55.00	<u>3.85</u>
				3.85

b) Overhead Charges @ 10% on (a)

0.39

c) Sundries, T & P @ 2% on (a)

0.08

Cost per 9.3 Sqm = a+b+c

4.32

Rate per 100 Sqm = (a+b+c) x 100 / 9.3

46.45

Say 46.50

- 3** Sectioning old gravelled surface to proper camber

Unit = 100 Sqm.

Taking output = 9.3 sqm

a) Labour

Man Mulia	each	0.100	55.00	<u>5.50</u>
				5.50

b) Overhead Charges @ 10% on (a)

0.55

c) Sundries, T & P @ 2% on (a)

0.11

Cost per 9.3 Sqm = a+b+c

6.16

Rate per 100 Sqm = (a+b+c) x 100 / 9.3

66.24

Say 66.20

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

4 Flank dressing to proper camber

Unit = 100 Sqm.

Taking output = 9.3 sqm

a) Labour

Man Mulia	each	0.120	55.00	6.60
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6.60

b) Overhead Charges @ 10% on (a)

0.66

c) Sundries, T & P @ 2%.on (a)

0.13

Cost per 9.3 Sqm = a+b+c

7.39

Rate per 100 Sqm = (a+b+c) x 100 / 9.3

79.46

Say 79.50

5 Labour for spreading metal to proper camber and consolidation with H.R.R. including watering and turf edging but excluding cost and conveyance of metal and filler materials

Unit = Cum

Taking output = 2.83 cum

a) Labour

Man Mulia for removing from stacks spreading metal to proper camber turf edging and rolling.	each	3.000	55.00	165.00
--	------	-------	-------	--------

Women Mullia for conveying metal from stacks and watering and turfing.	each	2.000	55.00	110.00
--	------	-------	-------	--------

275.00

b) Overhead Charges @ 10% on (a)

27.50

c) Sundries, T & P @ 2% on (a)

5.50

Cost per 2.83 Cum = a+b+c

308.00

Rate per Cum = (a+b+c) / 2.83

108.83

Say 108.80

6 Labour for admixing sand and moorum etc. complete including cost of all labours and hire charges of T & P materials required for work as per specification and direction of Engineer-in- Charge but excluding cost and conveyance of sand and moorum

Unit = Cum

Taking output = 1 cum

a) Labour

Man Mulia for mixing sand and moorum	each	0.250	55.00	13.75
--------------------------------------	------	-------	-------	-------

13.75

b) Overhead Charges @ 10% on (a)

1.38

c) Sundries, T & P @ 2% on (a)

0.28

Rate per 1Cum = a+b+c

15.41

Say 15.40

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

7 Labour for spreading moorum and consolidation with HRR including watering but excluding cost and conveyance of moorum

Unit = Cum

Taking output = 2.83 cum

a) Labour

Man Mulia for removing from stacks spreading and rolling.	each	1.500	55.00	82.50
---	------	-------	-------	-------

Women Mulia for watering & conveyance etc.	each	1.500	55.00	82.50
--	------	-------	-------	-------

165.00

b) Overhead Charges @ 10% on (a)

16.50

c) Sundries, T & P @ 2% on (a)

3.30

Cost per 2.83 Cum = a+b+c

184.80

Rate per Cum = (a+b+c) / 2.83

65.30

8 Labour for laying sub-base in layers not exceeding 100mm watering and compacting to the required density in O.M.C with PRR but excluding cost and conveyance of sub base materials

Unit = Cum

Taking output = 2.83 cum

a) Labour

Man Mulia for removing from stacks spreading and rolling.	each	1.000	55.00	55.00
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Women Mulia for watering & conveyance, etc.	each	1.500	55.00	82.50
---	------	-------	-------	-------

137.50

b) Machinery

Add hire and running charges of PRR for consolidation considering 425Cum of out turn with PRR per day (8 hours) = 2.83 x 8 x 269.00 /425	hour	0.05327	269.00	14.33
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14.33

c) Overhead Charges @ 10% on (a+b)

15.18

d) Sundries, T & P @ 2% on (a+b)

3.04

Cost per 2.83 Cum = a+b+c+d

170.05

Rate per Cum = (a+b+c+d) / 2.83

60.09

Say 60.10

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

9 Labour for spreading metal and packing the voids with small stones and hand packing the same to proper camber including conveying spreading of filler materials and filling the interstices by spreading the same over the surface, watering and consolidation with PRR including hire and running charges of PRR complete but excluding cost and conveyance of metal and filler materials

(To be used for minor repair works

Unit = Cum

Taking output = 2.83 cum

a) Labour

Man mulia for removing from stacks spreading metal to proper camber & turf edging	each	1.000	55.00	55.00
Women Mulia	each	3.000	55.00	165.00
				220.00

b) Machinery

Add hire and running charges of PRR for consolidation considering 42 Cum of out turn with PRR per day (8 hours) = 2.83 x 8 x 269.00 /42	hour	0.539048	269.00	145.00
				145.00

c) Overhead Charges @ 10% on (a+b)

36.50

d) Sundries, T & P @ 2% on (a+b)

7.30

Cost per 2.83 Cum = a+b+c+d

408.80

Rate per Cum = (a+b+c+d) / 2.83

144.45

Say 144.50

Note To be used for minor repair works only

10 Labour for soling road surface with soling stones including filling the interstices with earth and rolling with hand road roller but excluding cost and conveyance of soling stones.

Unit = Cum

Taking output = 2.83 cum

a) Labour

Stone packer	each	0.500	65.00	32.50
Man mulia	each	0.500	55.00	27.50
Woman Mulia	each	2.500	55.00	137.50
				197.50

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7
	b) Overhead Charges @ 10% on (a)				19.75	
	c) Sundries, T & P @ 2% on (a)				3.95	
	Cost per 2.83 Cum = a+b+c				221.20	
	Rate per Cum = (a+b+c) / 2.83				78.16	
				Say	78.20	
11	Labour for spreading metal for patch or pot hole repairs and consolidation with H.R.R. or rammers, crusher screening/gravelling and sand binding, etc. complete but excluding cost and conveyance of metal, crusher screening/moorum and sand					
	Unit = Cum					
	Taking output = 2.83 cum					
	a) Labour					
	Man Mulia for picking the portion for patch repairs, removing metal from stacks and spreading and rolling or ramming (1 + ½ + ¼ + 1½)	each	3.250	55.00	178.75	
	Women Mulia for conveying materials watering, gravelling and sand binding.	each	3.500	55.00	192.50	
					371.25	
	b) Overhead Charges @ 10% on (a)				37.13	
	c) Sundries, T & P @ 2% on (a)				7.43	
	Cost per 2.83 Cum = a+b+c				415.81	
	Rate per Cum = (a+b+c) / 2.83				146.93	
				Say	146.90	
12	Blinding road surface with gravel 6mm thick (labour only)					
	Unit = 100 Sqm					
	Taking output = 93 sqm					
	a) Labour					
	Man Mulia	each	0.250	55.00	13.75	
					13.75	
	b) Overhead Charges @ 10% on (a)				1.38	
	c) Sundries, T & P @ 2% on (a)				0.28	
	Cost per 9.3 Sqm = a+b+c				15.41	
	Rate per 100 Sqm = (a+b+c) x 100 / 93				16.57	
				Say	16.60	
13	Binding road surface with sand 6mm thick (labour only)					
	Unit = 100 Sqm					
	Taking output = 93 sqm					
	a) Labour					
	Man Mulia	each	0.300	55.00	16.50	
					16.50	

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7
	b) Overhead Charges @ 10% on (a)				1.65	
	c) Sundries, T & P @ 2% on (a)				0.33	
	Cost per 9.3 Sqm = a+b+c				18.48	
	Rate per 100 Sqm = (a+b+c) x 100 / 93				19.87	
				Say	19.90	
14	Earth topping on metalled surface 12mm thick (labour only)					
	Unit = 100 Sqm					
	Taking output = 93 sqm					
	a) Labour					
	Man Mulia	each	0.500	55.00	27.50	
					<u>27.50</u>	
	b) Overhead Charges @ 10% on (a)				2.75	
	c) Sundries, T & P @ 2% on (a)				0.55	
	Cost per 9.3 Sqm = a+b+c				30.80	
	Rate per 100 Sqm = (a+b+c) x 100 / 93				33.12	
				Say	33.10	
15	Conveyance of hand road roller					
	Unit = Per ton per km.					
	Taking output = 1 ton per km.					
	a) Labour					
	Man Mulia	each	0.310	55.00	17.05	
					<u>17.05</u>	
	b) Overhead Charges @ 10% on (a)				1.71	
	c) Sundries, T & P @ 2% on (a)				0.34	
	Rate Per ton per km.= a+b+c				19.10	
16	Removing soling of old road surface and stacking the available good and useful stones within 50 meters clear of the work site					
	Unit = Cum					
	Taking output = 2.83 cum					
	a) Labour					
	Man mulia	each	0.500	55.00	27.50	
	Woman Mulia	each	1.500	55.00	82.50	
					<u>110.00</u>	
	b) Overhead Charges @ 10% on (a)				11.00	
	c) Sundries, T & P @ 2% on (a)				2.20	
	Cost per 2.83 Cum = a+b+c				123.20	
	Rate per Cum = (a+b+c) / 2.83				43.53	
				Say	43.50	

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

- 17 Cleaning the existing granular base surface including removal of binding materials and other foreign materials with wire brushes and small picks, sweeping with brooms or soft brushes and finally dusting with old gunny bags and/or compressed air to receive bituminous

Unit = Sqm

Taking output = 5889 sqm

a) Labour

Mulia	each	250.000	55.00	13750.00
				<u>13750.00</u>

b) Overhead Charges @ 10% on (a)

1375.00

c) Sundries, T & P @ 2% on (a)

275.00

Cost per 5889 Sqm = a+b+c

15400.00

Rate per Sqm = (a+b+c) / 5889

2.62

Say 2.60

- 18 Cleaning the existing black topped surface with removal of foreign materials with brooms or soft brushes and finally dusting with old gunny bags and/or compressed air to receive bituminous

Unit = Sqm

Taking output = 5889 sqm

a) Labour

Mulia	each	60.000	55.00	3300.00
				<u>3300.00</u>

b) Overhead Charges @ 10% on (a)

330.00

c) Sundries, T & P @ 2% on (a)

66.00

Cost per 5889 Sqm = a+b+c

3696.00

Rate per Sqm = (a+b+c) / 5889

0.63

Say 0.60

- 19 Labour for applying primer coat / tack

Unit = Sqm

Taking output = 5889 sqm

a) Labour

Mulia	each	100.000	55.00	5500.00
Semi skilled Mulia	each	20.000	65.00	1300.00
				<u>6800.00</u>

b) Overhead Charges @ 10% on (a)

680.00

c) Sundries, T & P @ 2% on (a)

136.00

Cost per 5889 Sqm = a+b+c

7616.00

Rate per Sqm = (a+b+c) / 5889

1.29

Say 1.30

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

20 Labour for surface dressing with 12Kg. penetration grade of bitumen and 0.15 cum of 19mm nominal size chips per 10 sqm and rolling with PRR including hire and running charges of PRR but excluding cost and conveyance of chips
(To be used for minor repair works

Unit = Sqm

Taking output = 5889 sqm

a) Labour

Man mulia spreading chips etc.	each	300.000	55.00	16500.00
Semi-Skilled mulias for heating and applying road tar	each	50.000	65.00	3250.00
				19750.00

b) Materials

Fuel for heating tar

@ 2.30 quintals per 1.016 metric tonne

Tar required = $\frac{12 \times 5889}{10}$

=70.67 Qntl. Or 7.067M.T

Fuel required = $\frac{2.30 \times 7.067}{1.016}$	MT	1.600	3200.00	5120.00
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=16.00 Qntl. Or 1.60 M.T

5120.00

c) Machinery

Hie and running charges of PRR.	hour	80.000	269.00	21520.00
				21520.00

d) Overhead Charges @ 10% on

4639.00

e) Sundries, T & P @ 2% on (a+b+c)

927.80

Cost per 5889 Sqm = a+b+c+d+e

51956.80

Rate per Sqm = (a+b+c+d+e) / 5889

8.82

Say 8.80

Note To be used for minor repair works only

21 Labour for laying 20mm thick premix carpet using 0.27cum of 13.2mm to 5.6mm size crushed stone chipping and 14.60kg. penetration grade of bitumen for 10sqm including hand packing to proper camber and consolidation with PRR including hire and running charges of PRR, hot mix plant, bitumen boilers and all other T & P articles but excluding cost and conveyance of chips and bitumen complete as per specification and direction of the Engineer-in-charge

Unit = Sqm

Taking output = 5889 sqm

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

a) Labour

Semi Skilled Mulia

$\frac{0.27 \times 80 \text{ Nos.}}{0.23} = 94 \text{ Nos.}$

0.23

(Reducing 50 percent due to use of Hot Mix Plant). each 47.000 65.00 3055.00

Mulia for mixing and spreading carpet

@ 7Nos. for 0.23cum per 92.90sqm

$= \frac{0.27 \times 7 \times 5889}{0.23 \times 92.90} = 521 \text{ Nos.}$

0.23 x 92.90

Man Mulia = 521 - 94 = 427 each 427.000 55.00 23485.00
26540.00

b) Materials

Fuel for heating tar @ 305kg per 1.02MT

Tar required = $\frac{14.60 \times 5889}{10 \times 1000} = 8.60 \text{ MT}$

Fuel required = $\frac{305 \times 8.60}{1.02 \times 1000} = 2.57 \text{ MT}$ MT 2.570 3200.00 8224.00
8224.00

c) Machinery

Time for heating

$\frac{0.027 \times 5889}{10.612} = 14.9 \text{ hours}$

Hire and running charges of H.M Plant 8-10TPH hour 14.900 1025.00 15272.50

Hire and running charges of bitumen boiler 5 Nos. hour 5x 14.90 74.00 5513.00

Hire and running charges of PRR considering 535sqm of out turn with PRR per day (8 hours) = $5889 \times 2152.00 / 535$ hour 88.05981 269.00 23688.09
44473.59

d) Overhead Charges @ 10% on

e) Sundries, T & P @ 2% on (a+b+c)

Cost per 5889 Sqm = a+b+c+d+e 88746.10

Rate per Sqm = (a+b+c+d+e) / 5889 15.07

Say 15.10

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

22 Labour for laying 6mm thick precast seal coat Type-B using 0.06 cum of 6.7mm size chips as per sieve analysis and 6.8Kg of bitumen per 10sqm.including hire and running charges of PRR, hot mix plant, tar boiler and all other T&P articles but excluding cost and conveyance of chips and bitumen

Unit = Sqm

Taking output = 5889 sqm

a) Labour

Semi Skilled Mulia

$\frac{0.06 \times 80 \text{ Nos.}}{0.27} = 18 \text{ Nos.}$

(Reducing 50 percent due to use of Hot Mix Plant).	each	9.000	65.00	585.00
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Mulia for mixing and spreading chips

@ 5Nos. Per 92.90sqm

$= \frac{5 \times 5889}{92.90} = 317 \text{ Nos.}$

Man Mulia = 317 - 18 = 299	each	299.000	55.00	16445.00
				17030.00

b) Materials

Fuel for heating tar @ 305kg per 1.02MT

Tar required = $\frac{6.80 \times 5889}{10 \times 1000} = 4.00 \text{ MT}$

Fuel required = $\frac{305 \times 4.00}{1.02 \times 1000} = 1.20 \text{ MT}$	MT	1.200	3200.00	3840.00
				3840.00

c) Machinery

Time required

$\frac{0.006 \times 5889}{10.612} = 3.30 \text{ hours}$

Hire and running charges of H.M Plant 8-10TPH	hour	3.300	1025.00	3382.50
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Hire and running charges of bitumen boiler 5 Nos.	hour	5 x 3.30	74.00	1221.00
---	------	----------	-------	---------

Hire and running charges of PRR considering 535sqm of out turn with PRR per day (8 hours) = $\frac{5889 \times 2152.00}{929}$	hour	50.71259	269.00	13641.69
				18245.19

d)Overhead Charges@10% on (a+b+c)

3911.52

e) Sundries, T & P @ 2% on (a+b+c)

782.30

Cost per 5889 Sqm = a+b+c+d+e

43809.01

Rate per Sqm = (a+b+c+d+e) / 5889

7.44

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

Say **7.40**

- 23** Spreading and consolidation 10 Cm thick laterite road metal (labour only)

Unit = Cum

Taking output = 2.83 cum

a) Labour

Man Mulia	each	1.000	55.00	55.00
Woman Mulia for watering	each	0.250	55.00	13.75
Man Mulia for rolling with HRR	each	3.000	55.00	165.00

233.75

b) Overhead Charges @ 10% on (a)

23.38

c) Sundries, T & P @ 2% on (a)

4.68

Cost per 2.83 Cum = a+b+c

261.81

Rate per Cum = (a+b+c) / 2.83

92.51

Say **92.50**

- 24** Picking laterite stone metal surface to 3cm depth and removing rubbish.

Unit = 100 Sqm

Taking output = 9.30 sqm

a) Labour

Man Mulia	each	0.250	55.00	13.75
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13.75

b) Overhead Charges @ 10% on (a)

1.38

c) Sundries, T & P @ 2% on (a)

0.28

Cost per 9.30 Sqm = a+b+c

15.41

Rate per 100 Sqm=(a+b+c)x 00 / 9.30

165.70

- 25** K.B. Bricks 25cm size having crushing strength between 75Kgs. to 99Kgs. per cm² pitching on end including filling the interstices with sand or sandy soil.

Unit = Sqm

Taking output = 9.30 sqm

a) Materials

K.B. Bricks (75Kg.to 99Kg / Cm ²)	1000	920.000	2192.00	2016.64
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2016.64

b) Labour

Mason 2 nd class.	each	0.500	75.00	37.50
Man Mulia	each	3.000	55.00	165.00
Woman Mulia	each	2.000	55.00	110.00

312.50

c) Overhead Charges @ 10% on (a+b)

232.91

Cost per 9.30 sqm = a+b+c

2562.05

Rate per Sqm = (a+b+c) / 9.3

275.49

Say **275.50**

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

26 K.B. Bricks 25cm. size having crushing strength between 75Kgs. to 99Kgs. per cm² pitching on edge including filling the interstices with sand or sandy soil.

Unit = Sqm

Taking output = 9.30 sqm

a) Materials

K.B. Bricks (75Kg.to 99Kg / Cm ²)	1000	460.000	2192.00	1008.32
				1008.32

b) Labour

Mason 2 nd class.	each	0.250	75.00	18.75
Man Mulia	each	1.000	55.00	55.00
Woman Mulia	each	2.000	55.00	110.00
				183.75

c) Overhead Charges @ 10% on (a+b)

Cost per 9.30 sqm = a+b+c				1311.28
Rate per Sqm = (a+b+c) / 9.3				141.00

27 Labour for scraping cleaning the road surface applying tack coat using 3.0Kg of bitumen for 10 Sqm and laying 75mm thick built up spray grouting in two layers 37.5mm thick each layer using 0.45cum of 25mm to 40mm size hard granite metal and 12.00Kg penetration grade of bitumen for 10 Sqm in each layer with 0.12cum of 12mm size hard granite chips as key stone for 10 Sqm spreading over and laying including heating pouring and spreading over and spreading bitumen metal and chips and rolling with PRR including hire and running charges of PRR and all other machineries but excluding cost and conveyance of bitumen, metal and chips complete as per specification and direction of Engineer-in-Charge

Unit = Sqm

Taking output = 5889 sqm

a) Labour

Man mulia for cleaning the surface	each	190.000	55.00	10450.00
Man mulia required for spreading metal and chips	each	2040.000	55.00	112200.00
Semi Skilled mulia for applying tack coat and spreading bitumen	each	90.000	65.00	5850.00
				128500.00

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

b) Materials

Maxphalt required at 27Kg per 10.00 sqm

$$\frac{5889 \times 27}{10 \times 1000} = 15.90 \text{MT}$$

10x1000

Fuel required $\frac{15.90 \times 0.305 \text{ MT}}{1.02}$

$$= 4.75 \text{MT}$$

=4.75MT

4.75

15200.00

15200.00

c) Machinery

Hie and running charges of PRR considering outturn of roller as 200 Sqm / day, hence days required

Hire charges of Tar boilers

day 29.445 2152.00 63365.64

day 29.445 592.00 17431.44

80797.08

22449.71

d) Overhead Charges @ 10% on

(a+b+c)

e) Sundries, T & P @ 2% on (a+b+c)

Cost per 5889 Sqm = a+b+c+d+e

Rate per Sqm = (a+b+c+d+e) / 5889

4489.94

251436.73

42.70

- 28 Labour for scraping cleaning the road surface applying tack coat using 3.0Kg of bitumen for 10 Sqm and laying 37,5mm thick built up spray grouting in one layer using 0.45cum of 25mm to 40mm size hard granite metal and 12.00Kg penetration grade of bitumen for 10 Sqm with 0.12cum of 12mm size hard granite chips as key stone for 10 Sqm spreading over and laying including heating pouring and spreading over and spreading bitumen metal and chips and rolling with PRR including hire and running charges of PRR and all other machineries but excluding cost and conveyance of bitumen, metal and chips complete as per specification and direction of Engineer-in-Charge

To be used for minor repair works only

Unit = Sqm

Taking output = 5889 sqm

a) Labour

Man mulia for cleaning the above surface each 190.000 55.00 10450.00

Man mulia required for spreading metal and chips each 1140.000 55.00 62700.00

Semi Skilled mulia for applying tack coat and spreading bitumen each 50.000 65.00 3250.00

76400.00

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

b) Materials

Maxphalt required at 15Kg per 10.00 sqm

$$\frac{5889 \times 15}{10 \times 1000} = 8.83 \text{MT}$$

10x1000

Fuel required $\frac{8.83 \times 0.305 \text{ MT}}{1.02} = 3.88 \text{MT}$ MT 2.640 3200.00 8448.00

8448.00

c) Machinery

Hie and running charges of PRR day 19.630 2152.00 42243.76
 considering outturn of roller as 300 Sqm /
 day, hence days required

Hire charges of Tar boilers day 19.630 592.00 11620.96

53864.72

d) Overhead Charges @ 10% on

(a+b+c)

13871.27

e) Sundries, T & P @ 2% on (a+b+c)

2774.25

Cost per 5889 Sqm = a+b+c+d+e

155358.25

Rate per Sqm= (a+b+c+d+e) / 5889

26.38

Say 26.40

Note To be used for minor repair works only

29 Rolling and compacting to sub grade or formation loosening by cutting ordinary earth for 0.15 Mtr. depth including watering and rolling by PRR as per specification and direction of Engineer-in Charge

Unit = Cum

Data for 100sqm x 0.15m= 15 Cum

Rate of earth work vide Item No. 1(a) 100 Cum 15.000 1971.20 295.68

Compaction at OMC with P.R.R. for 15 cum @ Rs.2422.60 per 100 cum vide item 9 b (i) of Earth Work 100 Cum 15.000 2422.60 363.39

659.07

Rate per Cum = 659.07 / 15 =

43.94

Say 43.90

Note Analysis of rates has been made taking ordinary earth. In case of hard soil or gravelly soil and stoney earth and gravels mixed with stone and boulder

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

30 Supplying and fixing 15cm dia 1.00m long guard posts of RCC (1:2:4) using 7.5Kg of steel for each guard post with 12mm size black hard granite stone chips including cost of all reinforcement and materials centering shuttering and watering carrying etc complete.

Unit = No.

Data for 1No.

For one guard post

Cost of RCC (1:2:4) with 12mm size chips (as per A/R item No. 1 of RCC = Rs.2179.80 / cum)

Qty = $\frac{22}{7} \times (0.15)^2 \times 1.00 = 0.018\text{cum}$ cum 0.018 2049.40 36.89

For one guard post steel required 3.5Kg or 0.035Qntl

Steel reinforcement qntl. 0.035 3442.30 120.48
(As per A/R Item No.8a of RCC)

Rate per 1 No.

157.37

Say 157.40

31 Labour for laying sub-base in layers not exceeding 225mm watering and compacting to the required density in O.M.C with Vibratory Roller but excluding cost and conveyance of sub base materials

Unit = Cum

Taking output = 300cum

a) Labour

Mate	each	0.480	65.00	31.20
Skilled Mulia	each	2.000	75.00	150.00
Mulia unskilled	each	10.000	55.00	550.00
				731.20

b) Machinery

Motor grader 110HP @ 50cum per hour	hour	6.000	1545.00	9270.00
Tractor - Rotavator	hour	12.000	242.00	2904.00
Vibratory roller 8-10 tonne capacity	hour	6.000	994.00	5964.00
Water tanker 6KL capacity	hour	3.000	506.00	1518.00
				19656.00

c) Materials

Cost of water	KL	18.000	10.00	180.00
				180.00

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7
	d) Overhead Charges @ 10% on (a+b+c)				2056.72	
	e) Sundries, T & P @ 2% on (a+b+c)				411.34	
	Cost per 300 Cum = a+b+c+d+e				23035.26	
	Rate per Cum = (a+b+c+d)/300				76.78	
				Say	76.80	
32	Labour for laying 20mm thick premix carpet using 0.23cum of 13.2mm to 5.6mm size crushed stone chipping and 12.70kg. penetration grade of bitumen for 9.29sqm including hire and running charges of PRR etc. complete but excluding cost and conveyance of					
	Unit = Sqm					
	Taking output = 5889 sqm					
	a) Labour					
	Mulia for mixing and spreading carpet @ 7Nos. For 92.90sqm					
	= $\frac{7 \times 5889}{92.90}$ = 444Nos.					
	Semi Skilled Mulia for handling hot	each	44.000	65.00	2860.00	
	Man Mulia = 444 - 44 = 400	each	400.000	55.00	22000.00	
					24860.00	
	b) Materials					
	Fuel for heating tar @ 305kg per 1.016MT					
	Tar required = $\frac{12.70 \times 5889}{9.29 \times 1000}$ = 8.05MT					
	Fuel required = $\frac{305 \times 8.05}{1.016 \times 1000}$ = 2.42MT	MT	2.420	3200.00	7744.00	
					7744.00	
	c) Machinery					
	Hire and running charges of PRR considering 535sqm of out turn with PRR per day (8 hours)	day	11.000	2152.00	23672.00	
					23672.00	
	d) Overhead Charges @ 10% on (a+b+c)				5627.60	
	e) Sundries, T & P @ 2% on (a+b+c)				1125.52	
	Cost per 5889 Sqm = a+b+c+d+e				63029.12	
	Rate per Sqm = (a+b+c+d+e) / 5889				10.70	

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

33 Scarifying the existing granular road surface to a depth of 50 mm and disposal of scarified material within all lifts and leads upto 1000 metres.

Unit = sqm

Taking output = 100 sqm

a) Labour

Mate	each	0.200	65.00	13.00
Mazdoor unskilled including loading and unloading	each	5.000	55.00	275.00

288.00

b) Machinery

Tractor-trolley	hour	1.670	231.00	385.77
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385.77

c)Overhead charges @ 10% on (a+b)

67.38

Cost for 100 sqm = a+b+c

741.15

Rate per sqm = (a+b+c) / 100

7.41

Say 7.40

Note In case material is to be reused at site, transportation cost catered above for disposal shall be deleted.

34 Scarifying the existing bituminous road surface to a depth of 50 mm and disposal of scarified material with in all lifts and lead upto 1000 metres.

Unit = sqm

Taking output = 100 sqm

a) Labour

Mate	each	0.010	65.00	0.65
Mulia unskilled	each	0.250	55.00	13.75

14.40

b) Machinery

Tractor with ripper attachment @ 60 cum per hour	hour	0.080	249.00	19.92
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Front end loader 1 cum bucket capacity	hour	0.200	520.00	104.00
--	------	-------	--------	--------

Tipper 5.5 cum capacity, 4 trips per hour.	hour	0.230	506.00	116.38
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240.30

c)Overhead charges @ 10% on (a+b)

25.47

Cost for 100 sqm = a+b+c

280.17

Rate per sqm = (a+b+c)/100

2.80

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

35 Construction of embankment with approved material obtained from borrow pits with all lifts and leads, transporting to site by mechanical means within a lead of **5kms**, spreading, grading to required slope and compacting to meet requirement of table 300-2 & Clause 305 of MoSRT&H Specifications for Road & Bridge works(4th Revision)

Unit = cum

Taking output = 100 cum

a) Labour

Mate	each	0.040	65.00	2.60
Mulia unskilled	each	1.000	55.00	55.00
				57.60

b) Machinery

Hydraulic Excavator 1 cum bucket capacity @ 60 cum per hour	hour	1.670	840.00	1402.80
Tipper 10 tonne capacity	tonne.k	160 x 5(L)	2.00	1600.00
Add 10 per cent of cost of carriage to cover cost of loading and unloading				160.00
Dozer 80 HP for spreading @ 200 cum per hour	hour	0.500	1592.00	796.00
Motor grader for grading @ 100 cum per hour	hour	1.000	772.50	772.50
Water tanker 6 KL capacity	hour	4.000	506.00	2024.00
Vibratory roller 8 -10 tonnes @ 100 cum per hour	hour	1.000	994.00	994.00
				7749.30

c) Material

Cost of water	KL	24.000	10.00	240.00
Compensation for earth taken from private land	cum	100.000	0.00	0.00
				240.00

d) Overhead charges @ 10% on (a+b+c)

				804.69
Cost for 100 cum = a+b+c+d				8851.59
Rate per cum = (a+b+c+d)/100				88.52
				Say 88.50

Note Compensation for earth will vary from place to place and will have to be assessed realistically as per particular ground situation. In case earth is available from Govt. land, compensation for earth will not be required. The position is required to be clearly stated in the cost

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

36 Loosening of the ground upto a level of 500 mm below the sub-grade level, watered, graded and compacted in layers to meet requirement of table 300-2 for sub-grade construction & Clause 305 of MoSRT&H Specifications for Road & Bridge works (4th Revision).

Unit = cum

Taking output = 600 cum

a) Labour

Mate	each	0.120	65.00	7.80
Mulia unskilled	each	3.000	55.00	165.00
				172.80

b) Machinery

Tractor with ripper attachment	hour	9.000	249.00	2241.00
Motor grader for grading @ 100 cum per hour	hour	6.000	772.50	4635.00
Water tanker 6 KL capacity	hour	4.000	506.00	2024.00
Vibratory roller 8-10 tonne @ 80 cum/hour	hour	7.500	994.00	7455.00
				16355.00

c) Material

Cost of water	KL	24.000	10.00	240.00
				240.00

d) Overhead charges @ 10% on

(a+b+c)

Cost for 600 cum = a+b+c+d 18444.58

Rate per cum = (a+b+c+d) / 600 30.74

Say 30.70

37 Loosening, leveling and Compacting original ground supporting embankment to facilitate placement of first layer of embankment, scarified to a depth of 150 mm, mixed with water at OMC and then compacted by rolling so as to achieve minimum dry density as given in table 300-2 for embankment construction & Clause 305 of MoSRT&H Specifications for Road & Bridge works (4th Revision)

Unit = cum

Taking output = 600 cum

a) Labour

Mate	each	0.080	65.00	5.20
Mulia unskilled	each	2.000	55.00	110.00
				115.20

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

b) Machinery

Tractor with ripper attachment	hour	6.000	249.00	1494.00
Vibratory road roller 8-10 tonne capacity	hour	7.500	994.00	7455.00
Water tanker 6 KL capacity	hour	4.000	506.00	2024.00
				10973.00

c) Material

Cost of water	KL	24.000	10.00	240.00
				240.00

d) Overhead charges @ 10% on (a+b+c)

1132.82

Cost for 600 cum = (a+b+c+d)

12461.02

Rate per cum = (a+b+c+d) / 600

20.77

Say 20.80

- 38** Construction of aggregate sub surface drain 300 mm x 450 mm with aggregates conforming to table 300-4, excavated material to be utilised in roadway & Clause 309 of MoSRT&H Specifications for Road & Bridge works (4th Revision).

Unit = metre

Taking output = 10 metres

a) Labour

Mate	each	0.060	65.00	3.90
Mulia unskilled for excavation and back filling with aggregates	each	1.500	55.00	82.50
				86.40

b) Material (Type-B)

Crushed stone as per table 300-4	cum	1.350	509.00	687.15
				687.15

c) Overhead charges @ 10% on (a+b)

77.36

Cost for 10 metres = a+b+c

850.91

Rate per metre = (a+b+c) / 10

85.09

Say 85.10

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

39 Construction of granular sub-base by providing Close graded Granular sub-base Grading-III material as per table 400-1, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory roller to achieve the desired density complete as per Clause 401 of MoSRT&H Specifications for Road & Bridge works (4th Revision)

Unit = cum

Taking output = 300 cum

a) Labour

Mate	each	0.480	65.00	31.20
Mulia skilled	each	2.000	75.00	150.00
Mulia unskilled	each	10.000	55.00	550.00
				731.20

b) Machinery

Motor Grader 110 HP @ 50 cum per hour	hour	6.000	1545.00	9270.00
Vibratory roller 8 -10 tonne capacity	hour	6.000	994.00	5964.00
Tractor - Rotavator	hour	12.000	242.00	2904.00
Water tanker 6 KL capacity	hour	3.000	506.00	1518.00
				19656.00

c) Material

9.5 mm to 4.75 mm @ 35 per cent	cum	134.400	490.00	65856.00
4.75 mm to 2.36 mm @ 12.5 per cent	cum	48.000	424.00	20352.00
2.36 mm below @ 52.5 per cent	cum	201.600	50.00	10080.00
Cost of water	KL	18.000	10.00	180.00
				96468.00

d)Overhead charges @ 10% on (a+b+c)

11685.52

Cost for 300 cum = a+b+c+d

128540.72

Rate per cum = (a+b+c+d)/300

428.47

Say 428.50

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

40 Making 50 mm x 50 mm furrows, 25mm/50mm deep, 45 degree to the center line of the road and at one metre interval in the existing thin bituminous wearing coarse including sweeping and disposal of excavated material within 1000 metres lead

Unit = sqm

Taking output = 30 m x 7 m = 210 sqm

(i)25mm deep furrow cutting

a) Labour

Mate	each	0.080	65.00	5.20
Mulia unskilled	each	2.000	55.00	110.00
				<u>115.20</u>

b) Machinery

Tractor-trolley	hour	0.200	231.00	46.20
				<u>46.20</u>

c) Overhead charges @ 10% on (a+b)

Cost for 210 sqm= a+b+c 177.54

Rate per sqm =(a+b+c)/210 0.85

Say 0.90

(ii)50mm deep furrow cutting

a) Labour

Mate	each	0.160	65.00	10.40
Mulia unskilled	each	4.000	55.00	220.00
				<u>230.40</u>

b) Machinery

Tractor-trolley	hour	0.400	231.00	92.40
				<u>92.40</u>

c) Overhead charges @ 10% on (a+b)

Cost for 210 sqm= a+b+c 355.08

Rate per sqm =(a+b+c)/210 1.69

Say 1.70

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

41 Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with 3 wheeled steel roller 8-10 tonnes in stages to proper grade and camber, applying and brooming requisite type of screening/binding materials to fill up the interstices of coarse aggregate, watering and compacting to the required density as per Clause 404 of MoSRT&H Specifications for Road & Bridge works (4th Revision)

Unit = cum

Taking output = 360 cum

a) Labour

Mate	each	10.080	65.00	655.20
Mulia skilled	each	2.000	75.00	150.00
Mulia unskilled	each	250.000	55.00	13750.00
				14555.20

b) Machinery

Smooth 3 wheeled steel roller @ 30cum/hour	hour	12.000	269.00	3228.00
Water tanker 6 KL capacity	hour	24.000	506.00	12144.00
				15372.00

c) Material

(i)Grading-I

(A) Using moorum or gravel

Grading-I 90 mm to 45 mm @ 1.21cum per 10 sqm for compacted thickness of 100 mm	cum	435.600	380.00	165528.00
Crushable type such as Moorum or Gravel for grading-I @ 0.30 cum per 10 sqm	cum	108.000	45.00	4860.00
Cost of water	KL	144.000	10.00	1440.00
				171828.00

d) Overhead charges @ 10% on

(a+b+c)

Cost for 360 cum = a+b+c+d

Rate per cum = (a+b+c)/360

	20175.52
	221930.72
	616.47
Say	616.50

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7
(B) Using Type-A 13.2mm Stone Screening						
	Grading-I 90 mm to 45 mm @ 1.21cum per 10 sqm for compacted thickness of 100 mm	cum	435.600	380.00	165528.00	
	Type A 13.2 mm for grading-I @ 0.27 cum per 10 sqm	cum	97.200	379.00	36838.80	
	Binding Material @ 0.08cum per 10 sqm for grading I material	cum	28.800	50.00	1440.00	
	Cost of water	KL	144.000	10.00	1440.00	
					205246.80	
	d) Overhead charges @ 10% on (a+b+c)					
	Cost for 360 cum = a+b+c+d				258691.40	
	Rate per cum = (a+b+c+d)/360				718.59	
				Say	718.60	
(C) Using stone screened dust						
	Grading-I 90 mm to 45 mm @ 1.21cum per 10 sqm for compacted thickness of 100 mm	cum	435.600	380.00	165528.00	
	Stone screened dust for grading-I @ 0.27 cum per 10 sqm	cum	97.200	50.00	4860.00	
	Binding Material @ 0.08cum per 10 sqm for grading I material	cum	28.800	50.00	1440.00	
	Cost of water	KL	144.000	10.00	1440.00	
					173268.00	
	d) Overhead charges @ 10% on (a+b+c)					
	Cost for 360 cum = a+b+c+d				223514.72	
	Rate per cum = (a+b+c+d)/360				620.87	
				Say	620.90	
(ii)Grading-II						
(A) Using moorum or gravel						
	Grading-II 63 mm to 45 mm @ 0.91 cum per 10 sqm for compacted thickness of 75 mm	cum	435.600	427.00	186001.20	
	Crushable type such as Moorum or Gravel for grading II @ 0.22 cum per 10 sqm	cum	105.590	45.00	4751.55	
	Cost of water	KL	144.000	10.00	1440.00	
					192192.75	
	d) Overhead charges @ 10% on (a+b+c)					
	Cost for 360 cum = a+b+c+d				244331.95	
	Rate per cum = (a+b+c+d)/360				678.70	

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

(B) Using Type-A 13.2mm Stone Screening

Grading-II 63 mm to 45 mm @ 0.91 cum per 10 sqm for compacted thickness of 75 mm	cum	435.600	427.00	186001.20	
Type A 13.2 mm for grading-II @ 0.12 cum per 10 sqm	cum	57.600	379.00	21830.40	
Binding Material @ 0.06cum per 10 sqm for grading II material	cum	28.800	50.00	1440.00	
Cost of water	KL	144.000	10.00	1440.00	

210711.60

**d) Overhead charges @ 10% on
(a+b+c)**

Cost for 360 cum = a+b+c+d 264702.68

Rate per cum = (a+b+c+d)/360 735.29

Say 735.30

(C) Using Type-B 11.2mm Stone Screening

Grading-II 63 mm to 45 mm @ 0.91 cum per 10 sqm for compacted thickness of 75 mm	cum	435.600	427.00	186001.20	
Type B 11.2 mm for grading-II @ 0.20 cum per 10 sqm	cum	96.010	237.00	22754.37	
Binding Material @ 0.06cum per 10 sqm for grading II material	cum	28.800	50.00	1440.00	
Cost of water	KL	144.000	10.00	1440.00	

211635.57

**d) Overhead charges @ 10% on
(a+b+c)**

Cost for 360 cum = a+b+c+d 265719.05

Rate per cum = (a+b+c+d)/360 738.11

Say 738.10

(D) Using stone screened dust

Grading-II 63 mm to 45 mm @ 0.91 cum per 10 sqm for compacted thickness of 75 mm	cum	435.600	427.00	186001.20	
Stone screened dust for grading-II @ 0.18 cum per 10 sqm	cum	96.010	50.00	4800.50	
Binding Material @ 0.06cum per 10 sqm for grading II material	cum	28.800	50.00	1440.00	
Cost of water	KL	144.000	10.00	1440.00	

193681.70

**d) Overhead charges @ 10% on
(a+b+c)**

Cost for 360 cum = a+b+c+d 245969.79

Rate per cum = (a+b+c+d)/360 683.25

Say 683.30

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

(iii) Grading-III

(A) Using crushable type such as moorum or gravel

Grading-III 53 mm to 22.4 mm @ 0.91 cum per 10 sqm for compacted thickness of 75 mm	cum	435.600	465.00	202554.00	
Crushable type such as Moorum or Gravel for grading III @ 0.22 cum per 10 sqm	cum	105.590	45.00	4751.55	
Cost of water	KL	144.000	10.00	1440.00	

208745.55

d) Overhead charges @ 10% on

(a+b+c)

Cost for 360 cum = a+b+c+d 262540.03

Rate per cum = (a+b+c+d)/360 729.28

Say 729.30

(B) Using Type-B 11.2mm Stone Screening

Grading-III 53 mm to 22.4 mm @ 0.91 cum per 10 sqm for compacted thickness of 75 mm	cum	435.600	465.00	202554.00	
Type B 11.2 mm for grading-III @ 0.18 cum per 10 sqm	cum	86.400	237.00	20476.80	
Binding Material @ 0.06cum per 10 sqm for grading III material	cum	28.800	50.00	1440.00	
Cost of water	KL	144.000	10.00	1440.00	

225910.80

d) Overhead charges @ 10% on

(a+b+c)

Cost for 360 cum = a+b+c+d 281421.80

Rate per cum = (a+b+c+d)/360 781.73

Say 781.70

(C) Using stone screened dust

Grading-III 53 mm to 22.4 mm @ 0.91 cum per 10 sqm for compacted thickness of 75 mm	cum	435.600	465.00	202554.00	
Stone screened dust for grading-III @ 0.18 cum per 10 sqm	cum	86.400	50.00	4320.00	
Binding Material @ 0.06cum per 10 sqm for grading III material	cum	28.800	50.00	1440.00	
Cost of water	KL	144.000	10.00	1440.00	

209754.00

d) Overhead charges @ 10% on

(a+b+c)

Cost for 360 cum = a+b+c+d 263649.32

Rate per cum = (a+b+c+d)/360 732.36

Say 732.40

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

Note 1, (Anyone of the aggregate grading, screening and binding material may be used as per design)

2, In case of filler as moorum or gravel, blinding material is not required.

42 Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, laying in uniform layers with paver in sub-base/base course on well prepared surface and compacting with vibratory roller to achieve the desired density as per Clause 406 of MoSRT&H Specifications for Road & Bridge works

(4th Revision)

Unit = cum

Taking output = 225 cum (495 tonnes)

a) Labour

Mate	each	0.480	65.00	31.20
Mulia skilled	each	2.000	75.00	150.00
Mulia unskilled	each	10.000	55.00	550.00
				731.20

b) Machinery

Wet mix plant of 75 tonne hourly capacity	hour	6.600	1036.00	6837.60
Electric generating set 125 KVA	hour	6.000	823.00	4938.00
Front end loader 1 cum capacity	hour	6.000	520.00	3120.00
Paver finisher Mechanical 100TPH	hour	6.000	739.00	4434.00
Vibratory roller 8 - 10 tonne (6.00 x 0.65*)	hour	3.900	994.00	3876.60

or

Smooth 3 wheeled steel roller 8-10 tonnes	hour	7.800		
Water tanker 6 KL capacity	hour	3.000	506.00	1518.00
Tipper	tonne.k m	495x1(L)	2.00	990.00

Add 10 per cent of cost of carriage to cover cost of loading and unloading 99.00

25813.20

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

c) Material (Table 400-11)

45 mm to 22.4 mm@ 30 per cent	cum	89.100	490.00	43659.00
22.4 mm to 2.36 mm @ 40 per cent	cum	118.800	565.00	67122.00
2.36 mm to 75 micron@ 30 per cent	cum	89.100	50.00	4455.00
Cost of water	KL	18.000	10.00	180.00

115416.00

d) Overhead charges @ 10% on

(a+b+c)

Cost for 225 cum = a+b+c+d

156156.44

Rate per cum = (a+b+c+d)/225

694.03

Say 694.00

Note 1. Though vibratory roller is required only for 3 hours as per norms, the same is required to be available at site for 6 hours to match with other machines. The usage rates of vibratory roller have been multiplied with a factor of 0.65

2. As three wheeled smooth steel rollers are commonly in use, the same has been provided as an alternative which can be used if the thickness of individual layer does not exceed 100 mm.

43 Providing and applying primer coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying primer at the rate of 0.60 kg/sqm using mechanical means as per Clause 502 of MoSRT&H Specifications for Road & Bridge works (4th Revision).

Unit = sqm

Taking output = 3500 sqm

a) Labour

Mate	each	0.080	65.00	5.20
Mulia unskilled	each	2.000	55.00	110.00
				115.20

b) Machinery

Mechanical broom	hour	2.800	230.00	644.00
@ 1250 sqm per hour				
Air compressor 250 cfm	hour	2.800	206.00	576.80
Emulsion pressure distributor	hour	2.000	516.00	1032.00
@ 1750 sqm per hour				
Water tanker 6 KL capacity	hour	1.000	506.00	506.00
@ 1 trip per hour				
				2758.80

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

c) Material

Slow setting Bitumen emulsion @ 0.6 kg per sqm	tonne	2.100	15929.94	33452.87	
Cost of water	KL	6.000	10.00	60.00	

33512.87

d) Overhead charges @ 10% on

(a+b+c)

Cost for 3500 sqm = a+b+c+d 40025.56

Rate per sqm = (a+b+c+d)/3500 11.44

Say 11.40

Note Bitumen primer has been provided @ 0.60 kg per sqm as per clause 502.8. Payment shall be made with adjustment, plus or minus, for the variation between this quantity and the actual quantity approved by the Engineer after the preliminary trials referred to Clause No.502.4.3

44 Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.20 kg per sqm on the prepared bituminous/granular surface cleaned with mechanical broom as per Clause 503 of MoSRT&H Specifications for Road & Bridge works (4th Revision)

Unit = sqm

Taking output = 3500 sqm

a) Labour

Mate	each	0.080	65.00	5.20	
Mulia unskilled	each	2.000	55.00	110.00	

115.20

b) Machinery

Mechanical broom @ 1250 sqm per hour	hour	2.800	230.00	644.00	
Air compressor 250 cfm	hour	2.800	206.00	576.80	
Emulsion pressure distributor @ 1750 sqm per hour	hour	2.000	516.00	1032.00	

2252.80

c) Material

Rapid setting Bitumen emulsion @ 0.2 kg per sqm	tonne	0.700	15769.53	11038.67	
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11038.67

d) Overhead charges @ 10% on

(a+b+c)

Cost for 3500 sqm = a+b+c+d 14747.34

Rate per sqm = (a+b+c+d)/3500 4.21

Say 4.20

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

Note 1. Bitumen emulsion has been provided @ 0.20 kg per sqm as per clause 503.8. Payment shall be made with adjustment, plus or minus, for the variation between this quantity and actual quantity approved by the Engineer after preliminary trials referred to in Clause No.503,4,3

2. An output of 3500 sqm has been considered in case of prime coat and tack coat which can be covered by bituminous courses on the same day.

- 45** Providing and laying bituminous macadam with hot mix plant using crushed aggregates of specified grading premixed with bituminous binder of 60/70 penetration grade of bitumen, transported to site, laid over a previously prepared surface with a hydrostatic paver finisher with sensor control to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per Clause 504 of MoSRT&H Specifications for Road & Bridge works (4th Revision)

Unit = cum

Taking output = 205 cum (450 tonnes)

a) Labour

Mate	each	0.760	65.00	49.40
Mulia unskilled working with HMP, mechanical broom, paver, roller, asphalt cutter and assistance for setting out lines, levels and layout of	each	14.000	55.00	770.00
Mulia Skilled for checking line & levels	each	5.000	75.00	375.00

1194.40

b) Machinery

Batch mix HMP 100-120 TPH @ 75 tonne per hour actual output	hour	6.000	11167.00	67002.00
Paver finisher hydrostatic with sensor control @ 75 cum per hour	hour	6.000	1725.00	10350.00
Generator 250 KVA	hour	6.000	1125.00	6750.00
Front end loader 1 cum bucket	hour	6.000	520.00	3120.00
Tipper 10 tonne capacity	tonne.k m	450x1(L)	2.00	900.00

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

Add 10 per cent of cost of carriage to cover cost of loading and unloading 90.00

Smooth wheeled roller 8-10 tonnes for initial break down rolling (6.00 X 0.65* = 3.90 hours)	hour	3.900	269.00	1049.10	
Vibratory roller 8 tonnes for intermediate rolling.(6.00 X 0.65* =	hour	3.900	994.00	3876.60	
Finish rolling with 6-8 tonnes smooth wheeled tandem roller. (6.00 X 0.65* = 3.90 hours)	hour	3.900	738.00	2878.20	

96015.90

c) Material

(A) *Grading I (40 mm nominal size)

(i) 60/70 penetration grade of Bitumen @ 3.1 per cent of mix	tonne	13.950	21791.08	303985.57	
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Weight of mix = 205 x 2.2 = 450 tonne

ii) Aggregate

Total weight of mix = 450 tonnes

Weight of bitumen = 13.95 tonnes

Weight of aggregate = 450.00 - 13.95 = 436.05 tonnes

Taking density of aggregate = 1.5 ton/cum

Volume of aggregate = 290.7 cum

37.5 - 25 mm @ 15 per cent	cum	43.605	464.00	20232.72	
25 - 10 mm @ 45 per cent	cum	130.815	638.00	83459.97	
10 - 5 mm @ 25 per cent	cum	72.675	547.50	39789.56	
5 mm and below @ 15 per cent	cum	43.605	237.00	10334.39	

457802.20

d) Overhead charges @ 10% on

(a+b+c)

Cost for 205 cum = a+b+c+d 610513.75

Rate per cum = (a+b+c+d)/205 2978.12

Say 2978.10

(B) Grading II (19 mm nominal size)

(i) 60/70 penetration grade of Bitumen @ 3.3 per cent of mix	tonne	14.850	21791.08	323597.54	
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Weight of mix = 205 x 2.2 = 450 tonne

ii) Aggregate

Total weight of mix = 450 tonnes

Weight of bitumen = 14.85 tonnes

Weight of aggregate = 450.00 - 14.85 = 435.15 tonnes

Taking density of aggregate = 1.5 ton/cum

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

Volume of aggregate = 290.1 cum

25 - 10 mm @ 40 per cent	cum	116.040	638.00	74033.52
10 - 5 mm @ 40 per cent	cum	116.040	547.50	63531.90
5 mm and below @ 20 per cent	cum	58.020	237.00	13750.74

474913.70

d) Overhead charges @ 10% on

(a+b+c)

Cost for 205 cum = a+b+c+d

629336.40

Rate per cum = (a+b+c+d)/205

3069.93

Say 3069.90

* Any one of the alternative may be adopted as per approved design

Note *1. Although the rollers are required only for 3 hours as per norms of output, but the same have to be available at site for six hours as the hot mix plant and paver will take six hours for mixing and paving the output of 450 tonnes considered in this analysis. To cater for the idle period of this rollers, their usage rates have been multiplied by a factor of 0.65.

2. Quantity of Bitumen has been taken for analysis purpose. The actual quantity will depend upon job mix formula.

3. Labour for traffic control, watch and ward and other miscellaneous duties at site including sundries have been included in administrative overheads of

4. BM is to be laid over freshly laid tack coat otherwise provision of Mechanical broom and 2 mazdoors for the same shall be included which has been deleted as provided in the cost of tack coat.

46 Providing and laying dense graded bituminous macadam with hot mix plant using crushed aggregates of specified grading, premixed with bituminous binder of 60/70 penetration grade of bitumen, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per Clause 507 of MoSRT&H Specifications for Road & Bridge works (4th Revision)

Unit = cum

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

Taking output = 195 cum (450 tonnes)

a) Labour

Mate	each	0.760	65.00	49.40
Mulia unskilled working with HMP, mechanical broom, paver, roller, asphalt cutter and assistance for setting out lines, levels and layout of construction	each	14.000	55.00	770.00
Mulia Skilled for checking line & levels	each	5.000	75.00	375.00

1194.40

b) Machinery

Batch mix HMP 100-120TPH @ 75 tonne per hour	hour	6.000	11167.00	67002.00
Paver finisher hydrostatic with sensor control @ 75 cum per hour	hour	6.000	1725.00	10350.00
Generator 250 KVA	hour	6.000	1125.00	6750.00
Front end loader 1 cum bucket capacity	hour	6.000	520.00	3120.00
Tipper 10 tonne capacity	tonne.k m	450x1(L)	2.00	900.00

Add 10 per cent of cost of carriage to cover cost of loading and unloading 90.00

Smooth wheeled roller 8-10 tonnes for initial break down rolling. (6.00 x 0.65* = 3.90)	hour	3.900	269.00	1049.10
Vibratory roller 8 tonnes for intermediate rolling (6.00 x 0.65* = 3.90)	hour	3.900	994.00	3876.60
Finish rolling with 6-8 tonnes smooth wheeled tandem roller (6.00 x 0.65* = 3.90)	hour	3.900	738.00	2878.20

96015.90

c) Materials

(A) Grading - I (40 mm Nominal Size)

(i)60/70 penetration grade of Bitumen @ 4 per cent of weight of mix	tonne	18.000	21791.08	392239.44
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Aggregate

Total weight of mix = 450 tonnes
Weight of bitumen = 18.00 tonnes
Weight of aggregate = 450.00 - 18.00 = 432.00 tonnes

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

Taking density of aggregate =

1.5 ton/cum

Volume of aggregate = 288.00 cum

37.5 - 25 mm @ 22 per cent	cum	63.360	464.00	29399.04
25 - 10 mm @ 13 per cent	cum	37.440	638.00	23886.72
10 -4.75 mm @ 19 per cent	cum	54.720	547.50	29959.20
4.75 mm and below @ 44 per cent	cum	126.720	237.00	30032.64
Filler @ 2 per cent of weight of aggregates.	cum	5.760	50.00	288.00

505805.04

d) Overhead charges @ 10% on (a+b+c)

60301.53

Cost for 195 cum = a+b+c+d

663316.87

Rate per cum = (a+b+c+d)/195

3401.62

Say 3401.60

(B) Grading - II (25 mm Nominal Size)

60/70 penetration grade of Bitumen @ 4.5 per cent of weight of mix	tonne	20.250	21791.08	441269.37
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Aggregate

Total weight of mix = 450 tonnes

Weight of bitumen = 20.25 tonnes

Weight of aggregate = 450.00 - 20.25 = 429.75 tonnes

Taking density of aggregate =

1.5 ton/cum

Volume of aggregate = 286.50 cum

25 - 10 mm @ 30 per cent	cum	85.950	638.00	54836.10
10 - 5 mm @ 28 per cent	cum	80.220	547.50	43920.45
5 mm and below @ 40 per cent	cum	114.600	237.00	27160.20
Filler @ 2 per cent of weight of aggregates.	cum	5.730	50.00	286.50

567472.62

d) Overhead charges @ 10% on (a+b+c)

66468.29

Cost for 195 cum = a+b+c+d

731151.21

Rate per cum = (a+b+c+d)/195

3749.49

Say 3749.50

* Any one of the alternative may be adopted as per approved design

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

Note *1. Although the rollers are required only for 3 hours as per norms of output, but the same have to be available at site for six hours as the hot mix plant and paver will take six hours for mixing and paving the output of 450 tonnes considered in this analysis. To cater for the idle period of this rollers, their usage rates have been multiplied by a factor of 0.65.

2.Quantity of Bitumen has been taken for analysis purpose. The actual quantity will depend upon job mix formula.

3. Labour for traffic control, watch and ward and other miscellaneous duties at site including sundries have been included in administrative overheads of the contractor.

4. DBM is to be laid over freshly laid tack coat otherwise provision of Mechanical broom and 2 mazdoors for the same shall be included which has been deleted as provided in the cost of tack coat.

5. The individual density for each size of aggregates to be used for construction I.e. 37.5-25 mm, 25-10 mm etc. should be found in the laboratory and accordingly the quantities should be ammended for use in field. The average density of 1.5 tonne/cum is only a reference density in this Data Book,

6. The individual percentage of aggregates should be calculated from the total weight of dry aggregates i.e.. excluding the weight of bitumen. The weight of filler will also be 2 per cent by weight of dry aggregates.

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

47 Providing and laying semi dense bituminous concrete with batch type hot mix plant using crushed aggregates of specified grading, premixed with bituminous binder of 60/70 penetration grade of bitumen, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per Clause 508 of MoSRT&H Specifications for Road & Bridge works (4th Revision)

Unit = cum

Taking output = 195 cum (450 tonnes)

a) Labour

Mate	each	0.760	65.00	49.40
Mulia unskilled working with HMP, mechanical broom, paver, roller, asphalt cutter and assistance for	each	14.000	55.00	770.00
Mulia Skilled for checking line &	each	5.000	75.00	375.00
				1194.40

b) Machinery

Batch mix HMP 100-120TPH @ 75 tonne per hour	hour	6.000	11167.00	67002.00
Paver finisher hydrostatic with sensor control @ 75 cum per hour	hour	6.000	1725.00	10350.00
Generator 250 KVA	hour	6.000	1125.00	6750.00
Front end loader 1 cum bucket	hour	6.000	520.00	3120.00
Tipper 10 tonne capacity	tonne.k	450x1(L)	2.00	900.00
Add 10 per cent of cost of carriage to cover cost of loading and unloading				90.00
Smooth wheeled roller 8-10 tonnes for initial break down rolling. (6.00 X 0.65* = 3.90)	hour	3.900	269.00	1049.10
Vibratory roller 8 tonnes for intermediate rolling (6.00 x 0.65* = 3.90)	hour	3.900	994.00	3876.60
Finish rolling with 6-8 tonnes smooth wheeled tandem roller. (6.00 x 0.65* = 3.90)	hour	3.900	738.00	2878.20
				96015.90

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

c) Material

(A) Grading I: 13 mm (Nominal Size)

i) 60/70 penetration grade of Bitumen @ 4.5 per cent of weight of mix

tonne	20.250	21791.08	441269.37
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ii) Aggregate

Total weight of mix = 450 tonnes
Weight of bitumen = 20.25 tonnes
Weight of aggregate = 450.00 - 20.25 = 429.75 tonnes
Taking density of aggregate = 1.5
Volume of aggregate = 286.5 cum
13.2 - 10 mm @ 20 per cent
10 - 5 mm @ 38 per cent
5 mm and below @ 40 per cent
Filler @ 2 per cent of weight of aggregates.

cum	57.300	642.00	36786.60
cum	108.870	547.50	59606.33
cum	114.600	237.00	27160.20
cum	5.730	50.00	286.50

565109.00

d) Overhead charges @ 10% on (a+b+c)

66231.93

Cost for 195 cum = a+b+c+d

728551.22

Rate per cum = (a+b+c+d)/195

3736.16

Say 3736.20

(B) Grading II: 10 mm (Nominal Size)

60/70 penetration grade of Bitumen @ 5 per cent of weight of mix

tonne	22.500	21791.08	490299.30
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weight of mix = 450 tonne

Aggregate

Total weight of mix = 450 tonnes
Weight of bitumen = 22.5 tonnes
Weight of aggregate = 450.00 - 22.50 = 427.50 tonnes
Taking density of aggregate = 1.5 ton/cum

Volume of aggregate = 285 cum

cum	162.450	547.50	88941.38
cum	116.850	237.00	27693.45
cum	5.700	50.00	285.00

607219.13

d) Overhead charges @ 10% on (a+b+c)

70442.94

Cost for 195 cum = a+b+c+d

774872.37

Rate per cum = (a+b+c+d)/195

3973.70

*Any one of the alternative may be adopted as per approved design

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

Note *1. Although the rollers are required only for 3 hours as per norms of output, but the same have to be available at site for six hours as the hot mix plant and paver will take six hours for mixing and paving the output of 450 tonnes considered in this analysis. To cater for the idle period of this rollers, their usage rates have been multiplied by a factor of 0.65.

2.Quantity of Bitumen has been taken for analysis purpose. The actual quantity will depend upon job mix formula.

3. Labour for traffic control, watch and ward and other miscellaneous duties at site including sundries have been included in administrative overheads of

4. SDBC is to be laid over freshly laid tack coat otherwise provision of Mechanical broom and 2 mazdoors for the same shall be included which has been deleted as provided in the cost of tack coat.

5. The quantity of Bitumen to be adjusted as per job mix formula.

- 48** Providing and laying bituminous concrete with batch type hot mix plant using crushed aggregates of specified grading, premixed with bituminous binder of 60/70 penetration grade of bitumen, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per Clause 509 of MoSRT&H Specifications for Road & Bridge works (4th Revision)

Unit = cum

Taking output = 191 cum (450 tonnes)

a) Labour

Mate	each	0.760	65.00	49.40
Mulia unskilled working with HMP, mechanical broom, paver, roller, asphalt cutter and assistance for	each	14.000	55.00	770.00
Mulia Skilled for checking line & levels	each	5.000	75.00	375.00

1194.40

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

b) Machinery

Batch mix HMP 100-120TPH @ 75 tonne per hour	hour	6.000	11167.00	67002.00	
Paver finisher hydrostatic with sensor control @ 75 cum per hour	hour	6.000	1725.00	10350.00	
Generator 250 KVA	hour	6.000	1125.00	6750.00	
Front end loader 1 cum bucket capacity	hour	6.000	520.00	3120.00	
Tipper 10 tonne capacity	tonne.k m	450x1(L)	2.00	900.00	
Add 10 per cent of cost of carriage to cover cost of loading and unloading				90.00	
Smooth wheeled roller 8-10 tonnes for initial break down rolling. (6.00 X 0.65* = 3.90)	hour	3.900	269.00	1049.10	
Vibratory roller 8 tonnes for intermediate rolling (6.00 x 0.65* = 3.90)	hour	3.900	994.00	3876.60	
Finish rolling with 6-8 tonnes smooth wheeled tandem roller. (6.00 x 0.65* = 3.90)	hour	3.900	738.00	2878.20	

96015.90

c) Material

**i) 60/70 penetration grade of
Bitumen
@ 5 per cent of weight of mix**

ii) Aggregate

Total weight of mix = 450 tonnes
Weight of bitumen = 22.5 tonnes
Weight of aggregate = 450.00 - 22.50 =
427.50 tonnes

**Taking density of aggregate = 1.5
ton/cum**

Volume of aggregate = 285 cum

(A) * Grading - I (19 mm Nominal Size)

60/70 penetration grade of bitumen	tonne	22.500	21791.08	490299.30	
20 - 10 mm @ 35 per cent	cum	99.750	640.00	63840.00	
10 - 5 mm @ 23 per cent	cum	65.550	547.50	35888.63	
5 mm and below @ 40 per cent	cum	114.000	237.00	27018.00	
Filler @ 2 per cent of weight of aggregates.	cum	5.700	50.00	285.00	

617330.93

d) Overhead charges @ 10% on

(a+b+c)

Cost for 191cum = a+b+c+d 785995.35

Rate per cum = (a+b+c+d)/191 4115.16

Say 4115.20

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

(B) Grading - II (13 mm Nominal Size)

60/70 penetration grade of bitumen	tonne	22.500	21791.08	490299.30	
13.2 - 10 mm @ 30 per cent	cum	85.500	642.00	54891.00	
10 - 5 mm @ 25 per cent	cum	71.250	547.50	39009.38	
5 mm and below @ 43 per cent	cum	122.550	237.00	29044.35	
Filler @ 2 per cent of weight of aggregates.	cum	5.700	50.00	285.00	

613529.03

d) Overhead charges @ 10% on

71073.93

(a+b+c)

Cost for 191 cum = a+b+c+d

781813.26

Rate per cum = (a+b+c+d)/191

4093.26

Say 4093.30

***Any one of the alternative may be adopted as per approved design**

Note *1. Although the rollers are required only for 3 hours as per norms of output, but the same have to be available at site for six hours as the hot mix plant and paver will take six hours for mixing and paving the output of 450 tonnes considered in this analysis. To cater for the idle period of this rollers, their usage rates have been multiplied by a factor of 0.65.

2. Quantity of Bitumen has been taken for analysis purpose. The actual quantity will depend upon job mix formula.

3. Labour for traffic control, watch and ward and other miscellaneous duties at site including sundries have been included in administrative overheads of

4. BC is to be laid over freshly laid tack coat otherwise provision of Mechanical broom and 2 mazdoors for the same shall be included which has been deleted as provided in the cost of tack coat.

5. The individual density for each size of aggregates to be used for construction i.e. 37.5-25 mm, 25-10 mm etc. should be found in the laboratory and accordingly the quantities should be ammended for use in field. The average density of 1.5 tonne/cum is only a reference density in this Data Book.

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

6. The individual percentage of aggregates should be calculated from the total weight of dry aggregates i.e., excluding the weight of bitumen. The weight of filler will also be 2 per cent by weight of dry aggregates.

- 49** Providing and laying surface dressing as wearing course in single coat using crushed stone aggregates of specified size on a layer of bituminous binder of 60/70 penetration grade of bitumen laid on prepared surface and rolling with 8-10 tonne smooth wheeled steel roller as per Clause 510 of MoSRT&H Specifications for Road & Bridge works (4th Revision)

Unit = sqm

Taking output = 9000 sqm

a) Labour

Mate	each	0.440	65.00	28.60
Mulia unskilled	each	9.000	55.00	495.00
Mulia skilled	each	2.000	75.00	150.00
				673.60

b) Machinery

Mechanical broom @ 1250 sqm per hour	hour	7.200	230.00	1656.00
Air compressor 250 cfm	hour	7.200	206.00	1483.20
Hydraulic self propelled chip spreader @ 1500 sqm per hour	hour	6.000	1700.00	10200.00
Tipper 10 tonne capacity for carriage of stone chips from stockpile on road side to chip spreader	hour	6.000	506.00	3036.00
Front end loader 1 cum bucket	hour	6.000	520.00	3120.00
Bitumen pressure distributor	hour	6.000	692.00	4152.00
Smooth wheeled roller 8-10 tonne weight	hour	6.000	269.00	1614.00
				25261.20

c) Material

(i) Case -I:-19 mm nominal size chipping

60/70 penetration grade of bitumen	tonne	10.800	21791.08	235343.66
Bitumen @ 1.20 kg per sqm				
Crushed stone chipping, 19 mm nominal size @ 0.015 cum per sqm	cum	135.000	638.00	86130.00
				321473.66

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

d) Overhead charges @ 10% on **34740.85**

(a+b+c)

Cost for 9000 sqm = a+b+c+d 382149.31

Rate per sqm = (a+b+c+d)/9000 42.46

Say 42.50

(ii) Case - II: 13 mm nominal size chipping

60/70 penetration grade of bitumen tonne 9.000 21791.08 196119.72

Bitumen @ 1.00 kg per sqm

Crushed stone chipping, 13 mm cum 90.000 642.00 57780.00

nominal size @ 0.01 cum per sqm

253899.72

d) Overhead charges @ 10% on **27983.45**

(a+b+c)

Cost for 9000 sqm = a+b+c+d 307817.97

Rate per sqm = (a+b+c+d)/9000 **34.20**

Note 1. Where the proposed aggregate fails to pass the stripping test, an approved adhesion agent may be added to the binder as per clause 510.2.4. Alternatively, chips may be pre-coated as per clause 510.2.5

2. Input for the second coat, where required, will be the same as per the 1st coat mentioned above

50 Providing, laying and rolling of open - graded premix surfacing of 20 mm thickness composed of 13.2 mm to 5.6 mm aggregates with batch type hot mix plant and using 60/70 penetration grade of bitumen to required line, grade and level to serve as wearing course on a previously prepared base including mixing in a suitable plant, laying and rolling with a smooth wheeled roller 8-10 tonne capacity, finished to required level and grades as per Clause 511 of MoSRT&H Specifications for Road & Bridge works (4th Revision)

Unit = sqm

Taking output = 10250 sqm

(205 cum = 450tonne)

a) Labour

Mate each 0.760 65.00 49.40

Mulia unskilled working with HMP, road sweeper, paver and roller each 14.000 55.00 770.00

Mulia Skilled for checking line & each 5.000 75.00 375.00

1194.40

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

b) Machinery

i) Batch type HMP 100-120 TPH @ 75 tonne per hour	hour	6.000	11167.00	67002.00	
ii) Electric Generator Set 250 KVA	hour	6.000	1125.00	6750.00	
iii) Front end loader 1 cum bucket capacity	hour	6.000	520.00	3120.00	
iv) Tipper 10 tonne capacity	tonne.k m	450x1(L)	2.00	900.00	
Add 10 per cent of cost of carriage to cover cost of loading and unloading				90.00	
v) Paver finisher Mechanical 100TPH	hour	6.000	739.00	4434.00	
iv) Smooth wheeled roller 8-10 tonnes weight	hour	6.000	269.00	1614.00	

83910.00

c) Material

60/70 penetration grade of bitumen Bitumen @ 14.60 kg per 10 sqm	tonne	14.965	21791.08	326103.51	
Crushed stone chipping, 13.2 mm to 5.6 mm @ 0.27 cum per 10 sqm					
13.2mm nominal size @ 0.18 cum per 10 sqm	cum	184.500	640.00	118080.00	
11.2mm nominal size @ 0.09 cum per 10 sqm	cum	92.250	663.00	61161.75	

505345.26

59044.97

d) Overhead charges @ 10% on

(a+b+c)

Cost for 10250 sqm = a+b+c+d

649494.63

Rate per sqm = (a+b+c+d)/10250

63.37

Say 63.40

Note Premix sand seal coat of 'B' type is proposed to be provided over the open graded premix carpet immediately on the same day. As the same HMP and other machines will be used for laying of premix sand seal coat, out of 6 effective working hours, 4.00 hours may be utilised for laying of premix carpet and balance 2.00 hours for the purpose of seal coat. In case type-A seal coat is proposed, HMP can be worked out for six hours for the premix carpet as type-A seal coat does not require the use of HMP.

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

51 Providing, laying and rolling of close-graded premix surfacing material of 20 mm thickness composed of specified size of stone aggregates using 60/70 penetration grade of bitumen to the required line, grade and level to serve as wearing course on a previously prepared base including mixing in a suitable plant, laying and rolling with a smooth wheeled roller 8-10 tonne capacity and finishing to required level and grade as per Clause 512 of MoSRT&H Specifications for Road & Bridge works (4th Revision)

Unit = sqm

Taking output = 10250 sqm (205 cum)

a) Labour

Mate	each	0.760	65.00	49.40
Mulia unskilled working with HMP, road sweeper, paver and roller	each	14.000	55.00	770.00
Mulia Skilled for checking line &	each	5.000	75.00	375.00
				1194.40

b) Machinery

i) Batch type HMP 100-120 TPH @ 75 tonne per hour	hour	6.000	11167.00	67002.00
ii) Electric Generator Set 250 KVA	hour	6.000	1125.00	6750.00
iii) Front end loader 1 cum bucket capacity	hour	6.000	520.00	3120.00
iv) Tipper 10 tonne capacity	tonne.k m	450x1(L)	2.00	900.00

Add 10 per cent of cost of carriage to cover cost of loading and unloading

v) Paver finisher Mechanical 100TPH	hour	6.000	739.00	4434.00
iv) Smooth wheeled roller 8-10 tonnes weight	hour	6.000	269.00	1614.00
				83910.00

c) Material

(I) Type-A(11.2mm to 0.09mm nominal size)

60/70 penetration grade of Bitumen @ 22 kg per 10 sqm	tonne	22.550	21791.08	491388.85
Stone crushed aggregates 11.2 mm to 0.09mm @ 0.27 cum per 10 sqm	cum	276.750	457.00	126474.75
				617863.60

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

d) Overhead charges @ 10% on (a+b+c) **70296.80**

Cost for 10250 sqm = a+b+c+d 773264.80

Rate per sqm = (a+b+c+d)/10250 75.44

Say 75.40

(ii) Type-B(13,2mm to 0,09mm nominal size)

60/70 penetration grade of Bitumen @ 19 kg per 10 sqm 424381.28

Stone crushed aggregates 13.2 mm to 0.09 mm @ 0.27 cum per 10 sqm 150413.63

574794.91

d) Overhead charges @ 10% on (a+b+c) **65989.93**

Cost for 10250 sqm = a+b+c+d 725889.24

Rate per sqm = (a+b+c+d)/10250 70.82

Say 70.80

* Any one of the alternative may be adopted

52 Providing and laying seal coat sealing the voids in a bituminous surface laid to the specified levels, grade and cross fall using Type-A seal coat with 0.09cum of 6.7mm size chips and 9.80kg. of 60/70 penetration grade of bitumen for 10sqm as per Clause No. 513 of MoSRT&H specifications for Road & Bridge works (4th Revision)

Unit = sqm

Taking output = 10250 sqm (92.25 cum)

a) Labour

Mate 15.60

Mulia unskilled 330.00

345.60

b) Machinery

Hydraulic self propelled chip spreader 10200.00

Tipper 5.5 cum capacity 3036.00

Front end loader 1 cum bucket 3120.00

capacity

Bitumen pressure distributor 4152.00

@ 1750 sqm per hour

Smooth wheeled roller 8 -10 tonne 1614.00

weight

22122.00

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

c) Material

60/70 penetration grade of Bitumen @ 9.80 kg per 10 sqm	tonne	10.045	21791.08	218891.40	
Crushed stone chipping of 6.7 mm size defined as 100 per cent passing 11.2 mm sieve and retained on 2.36 mm sieve applied @ 0.09 cum per 10	cum	92.250	424.00	39114.00	

258005.40

d) Overhead charges @ 10% on

(a+b+c)

Cost for 10250 sqm = a+b+c+d+e

308520.30

Rate per sqm = (a+b+c+d+e)/10250

30.10

Note Since seal coat is provided immediately over the bituminous layers, mechanical broom for clearing has not been catered.

53 Providing and laying 6mm thick precoated seal coat Type-B using 0.06cum of 6.7mm size chips and 6.80kg.of 60/70 penetration grade of bitumen for 10sqm with 100-120 TPH HMP by transporting the Hot Mix to work site laying with a Mechanical Paver Finisher to the required grade, level and alignment as per Clause No. 513 of MoSRT&H specifications for Road &

Unit = sqm

Taking output = 7858 sqm

(47.16 cum = 104tonne)

a) Labour

Mate	each	0.160	65.00	10.40	
Mulia unskilled	each	4.000	55.00	220.00	
				230.40	

b) Machinery

Batch type HMP 100-120 TPH @ 75 tonne per hour	hour	2.000	11167.00	22334.00	
Electric Generator Set 250 KVA	hour	2.000	1125.00	2250.00	
Front end loader 1 cum bucket capacity	hour	2.000	520.00	1040.00	
Tipper 10 tonne capacity	tonne.k m	104x1(L)	2.00	208.00	

Add 10 per cent of cost of carriage to cover cost of loading and unloading

Paver finisher Mechanical 100TPH	hour	2.000	739.00	1478.00	
Smooth wheeled 8-10 tonnes capacity	hour	2.000	269.00	538.00	

27868.80

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

c) Material

60/70 penetration grade of Bitumen @ 6.80 kg per 10 sqm	tonne	5.343	21791.08	116429.74	
Crushed stone chipping of 6.7 mm size defined as passing 11.2 mm sieve and retained on 2.36 mm sieve applied @ 0.06 cum per 10 sqm	cum	47.150	490.00	23103.50	

139533.24

d) Overhead charges @ 10% on

(a+b+c)

Cost for 7858 sqm = a+b+c+d

184395.68

Rate per sqm = (a+b+c+d)/7858

23.47

Say 23.50

Note Since seal coat is required to be provided over the premix carpet on the same day, out of the 6 working hours of the HMP, 4.00 hours are proposed to be utilised for the premix carpet and the balance 2.00 hours for the seal coat. Hence 2.00 hours have been considered for this case. This may be linked to rate analysis worked out under Clause 511.

54 Providing and laying 25 mm thick mastic asphalt wearing course with paving grade bitumen meeting the requirements given in table 500-29, prepared by using mastic cooker and laid to required level and slope after cleaning the surface, including providing antiskid surface with bitumen pre-coated fine grained hard stone chipping of 13.2mm nominal size @ 0.005cum per 10sqm and at an approximate spacing of 10cm center to center in both directions, pressed into surface when the temperature of surfaces is not less than 100 degree centigrade, protruding 1 mm to 4 mm over mastic surface all complete as per Clause 515 of MoSRT&H Specifications for Road & Bridge works (4th Revision)

Unit = sqm

Taking output = 35.00 sqm (0.87 cum)

assuming a density of

2.3 tonnes/cum.-2 tonnes

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

a) Labour

Mate	each	0.44	65.00	28.60
Mulia unskilled	each	10.00	55.00	550.00
Mulia skilled	each	1.00	75.00	75.00

653.60

b) Machinery

Mechanical broom @ 1250 sqm per hour	hour	0.06	230.00	13.80
Air compressor 250 cfm	hour	0.06	206.00	12.36
Mastic cooker 1 tonne capacity	hour	6.00	1442.00	8652.00
Bitumen boiler 1500 litres capacity	hour	6.00	128.00	768.00
Tractor for towing and positioning of mastic cooker and bitumen boiler	hour	1.00	231.00	231.00

9677.16

c) Material

Base mastic (without coarse aggregates) =
60 per cent

Coarse aggregate (6.3mm to 13.2 mm) =
40 per cent .

Proportion of material required for mastic
asphalt with coarse aggregates (based on
mix design done by CRRRI for a specific
case)

i) Bitumen 30/40 penetration grade @ 10.2 per cent by weight of mix. 2 x $10.2/100 = 0.204$	tonne	0.204	23160.72	4724.79
ii) Fine aggregate passing 2.36mm and retained on 0.075mm sieve @ 31.9 per cent by weight of mix = 2 x $31.9/100 = 0.638$ tonnes = $0.638/1.625 = 0.39$	cum	0.390	50.00	19.50
iii) Lime stone dust filler with calcium content not less than 80 per cent by weight @ 17.92 per cent by weight of mix = 2 x $17.92/100 = 0.36$	tonne	0.360	9000.00	3240.00
iv) Coarse aggregates 6.3 mm to 13.2 mm @ 40 per cent by weight of mix = 2 x $40/100 = 0.8$ MT = $0.8/1.456 =$ 0.55	cum	0.550	671.00	369.05
v) Pre-coated stone chips of 13.2 mm nominal size for skid resistance = 35 x $0.005/10 = 0.018$	cum	0.018	1000.00	18.00
vi) Bitumen for coating of chips @ 2 per cent by weight = $0.018 \times 1.456 \times$ $2/100 = 0.0005$ MT = 0.5kg	kg	0.500	21.79	10.90

8382.23

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

d) Overhead charges @ 10% on **1871.30**

(a+b+c)

Cost for 35.00 sqm = a+b+c+d 20584.29

Rate per sqm = (a+b+c+d)/35 588.12

Say 588.10

Note 1.The rates for 50 mm & 40 mm thick layers may be worked out on pro-rata basis.

2.Where tack coat is required to be provided before laying mastic asphalt, the same is required to be measured and paid separately.

3.The quantities of binder, filler and aggregates are for estimating purpose. Exact quantities shall be as per mix design.

4.This rate analysis is based on design made by CRRI for a specific case and is meant for estimating purposes only. Actual design is required to be done for each case.

55 Construction of dry lean cement concrete Sub- base over a prepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, aggregate cement ratio not to exceed 15:1, aggregate gradation after blending to be as per Table 600.1, cement content not to be less than 150kg/cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10Mpa at 7 days, mixed in a batching plant, transported to site, laid with a paver and compacting with vibratory roller, finishing and curing as per Clause 601 of MoSRT&H Specifications for Road & Bridge works (4th Revision)

Unit = cum

Taking output = 450 cum (990 tonne)

a) Labour

Mate	each	1.12	65.00	72.80
Mulia skilled	each	6.00	75.00	450.00
Mulia unskilled	each	22.00	55.00	1210.00
				1732.80

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

b) Machinery

Front end loader 1 cum bucket	hour	6.00	520.00	3120.00	
Cement concrete batch mix plant @ 75 cum per hour	hour	6.00	2760.00	16560.00	
Electric generator 100 KVA	hour	6.00	450.00	2700.00	
Paver finisher Mechanical @75cum/hour	hour	6.00	1846.00	11076.00	
Vibratory roller 8-10 t capacity	hour	8.00	994.00	7952.00	
Water tanker 6 KL capacity	hour	8.00	506.00	4048.00	
Tipper	tonne.k m	990x1(L)	2.00	1980.00	

Add 10 per cent of cost of carriage to cover cost of loading and unloading

198.00

47634.00

c) Material

Crushed stone coarse aggregate of 25 mm and 12.5 mm nominal sizes graded as per table 600-1 @ 0.90 cum/cum of concrete conforming to clause 602.2.4.	cum	405.00	650.50	263452.50	
Coarse Sand as per IS: 383 @ 0.45 cum/cum of concrete	cum	203.00	29.00	5887.00	
Cement @ 150 kg/cum of concrete	tonne	67.50	3410.00	230175.00	
Cost of water	KL	48.00	10.00	480.00	

499994.50

d) Overhead charges @ 10% on

(a+b+c)

Cost for 450 cum = a+b+c+d 604297.43

Rate per cum = (a+b+c+d)/450 1342.88

Say 1342.90

Note Quantity provided for aggregate is for estimating purpose. Exact quantity shall be as per mix design.

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

56 Construction of un-reinforced, dowel jointed, plain cement concrete pavement over a prepared sub base with 43 grade cement @ 400 kg per cum, coarse and fine aggregate conforming to IS 383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a batching and mixing plant as per approved mix design, transported to site, laid with a fixed form or slip form paver, spread, compacted and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints, joint filler, separation membrane, sealant primer, joint sealant, debonding strip, dowel bar, tie rod, admixtures as approved, curing compound, finishing to lines and grades as per drawing and as per Clause 602 of MoSRT&H Specifications for Road & Bridge works (4th Revision)

Unit = cum

Taking output = 1050 cum (2415 tonne)

a) Labour

Mate	each	2.00	65.00	130.00
Mulia skilled	each	15.00	75.00	1125.00
Mulia unskilled	each	35.00	55.00	1925.00
				3180.00

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

b) Machinery

Road Sweeper @ 1250 sqm per hour	hour	2.80	230.00	644.00	
Front end loader 1 cum bucket capacity	hour	18.00	520.00	9360.00	
Cement concrete batch mix plant @ 175 cum per hour (effective)	hour	6.00	5160.00	30960.00	
Electric generator 250 KVA	hour	6.00	1125.00	6750.00	
Slip form paver with electronic sensor	hour	6.00	16188.00	97128.00	
Water tanker 6 KL capacity	hour	36.00	506.00	18216.00	
Transit truck agitator 5 cum capacity.	tonne.k m	2415x1(L)	2.00	4830.00	
Add 10 per cent of cost of carriage to cover cost of loading and unloading				483.00	
Concrete joint cutting machine .	hour	12.00	300.00	3600.00	
Texturing machine .	hour	12.00	250.00	3000.00	

174971.00

c) Material

Crushed stone coarse aggregates of 25mm and 12.5mm nominal size @ 0.90 cum/cum of concrete conforming to clause 602.2.4. .	cum	945.00	650.50	614722.50	
Sand as per IS: 383 and conforming to clause 602.2.4 @ 0.45 cum/cum of concrete	cum	473.00	29.00	13717.00	
Cement 43 grade @ 400 kg/cum of concrete	tonne	414.00	3410.00	1411740.00	
32 mm mild steel dowel bars of grade S 240	tonne	9.45	27587.50	260701.88	
16 mm deformed steel tie bars of grade S 415	tonne	1.17	27587.50	32277.38	
Separation Membrane of impermeable plastic sheeting 125 micron thick	sqm	3675.00	3.00	11025.00	
Pre moulded Joint filler 25 mm thick for expansion joint.	sqm	16.33	962.00	15709.46	
Joint sealant	kg	875.00	50.00	43750.00	
Sealant primer	kg	116.67	30.00	3500.10	
Plastic sheath, 1.25 mm thick for dowel bars	sqm	46.67	200.00	9334.00	
Curing compound	liter	1850.00	40.00	74000.00	

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7
	Super plastisizer admixture IS marked as per 9103-1999	kg	2070.00	40.00	82800.00	
	@ 0.5 per cent by weight of cement					
	Cost of water	KL	216.00	10.00	2160.00	
					<u>2575437.31</u>	
	Add 1 per cent of material for cost of miscellaneous materials like tarpauline, Hessian cloth, metal cap, cotton / compressible sponge and cradle for dowel bars, work bridges for men to approach concrete surface without walking over it, cutting blades and bites, minor equipments like scabbling machine, threads, ropes, guidewires and any other unforeseen items				25754.37	
					<u>2601191.68</u>	
	d) Overhead charges @ 10% on (a+b+c)				277934.27	
	Cost for 1050cum = a+b+c+d				3057276.95	
	Rate per cum = (a+b+c+d)/1050				2911.69	
					Say 2911.70	

Note The quantities for cement, coarse aggregate and fine aggregates are for estimating only. The exact quantities will be as per mix design.

57 Construction of rolled cement concrete base course with coarse and fine aggregate conforming to IS:383, the size of coarse aggregate not exceeding 25 mm with minimum, aggregate cement ratio 15:1 and minimum cement content of 200 kg/cum, aggregate gradation to be as per Table 600.4 after blending, mixing in batching plant at optimum moisture content, transporting to site, laying with a paver, compacting with vibratory roller to achieve the designed flexural strength, finishing and curing as per Clause 603 of MoSRT&H Specifications for Road & Bridge works (4th Revision)

Unit = cum

Taking output = 450 cum (990 tonne)

a) Labour

Mate	each	1.20	65.00	78.00
Mulia skilled	each	7.00	75.00	525.00
Mulia unskilled	each	23.00	55.00	1265.00
				<u>1868.00</u>

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

b) Machinery

Front end loader 1 cum bucket	hour	6.00	520.00	3120.00
Cement concrete batch mix plant @ 75 cum per hour	hour	6.00	2760.00	16560.00
Electric generator 100 KVA	hour	6.00	450.00	2700.00
Paver with electronic sensor @ 75 cum/hr.	hour	6.00	1846.00	11076.00
Vibratory roller 8-10 t capacity	hour	8.00	994.00	7952.00
Water tanker with 5 km lead 6 KL capacity	hour	8.00	200.00	1600.00
Tipper	tonne.k m	990x1(L)	2.00	1980.00

Add 10 per cent of cost of carriage to cover cost of loading and unloading

198.00

45186.00

c) Material

Crushed stone coarse aggregates of 25mm and 12.5mm nominal size @ 0.90 cum/cum of concrete conforming to clause 602.2.3.	cum	405.00	650.50	263452.50
Sand as per IS: 383 and conforming to clause 602.2.3 @ 0.45 cum/cum of concrete	cum	203.00	29.00	5887.00
Cement @ 200 kg/cum of concrete	tonne	90.00	3410.00	306900.00
Cost of water	KL	48.00	10.00	480.00

576719.50

d) Overhead charges @ 10% on

(a+b+c)

Cost for 450cum = a+b+c+d 686150.85

Rate per cum = (a+b+c+d)/450 1524.78

Say 1524.80

Note The quantities for cement, coarse aggregate and fine aggregates are for estimating only. The exact quantities will be as per mix design.

NOTES:-

1) 10% excess on the above rates will be allowed for the work being executed in side the Jail premises.

2) Generally Bitumen Emulsion @ 6Kg/10Sq m is to be used in Primer Coat. However, the quantity may be increased as specified in the Contract or as determined by site trials carried out as directed by the Engineer-in-Charge depending upon the porosity.

3) In case of tack coat, bitumen emulsion / bitumen @ 0.2Kg / Sq m in case of normal bituminous surface, @ 0.3Kg / Sq m in case of granular base treated with primer and @ 0.4Kg/Sq m in case of granular base (not primed) is to be used

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

4) In case of WMM with Wet Mix Plant, BM, DBM, SDBC, BC, open graded PMC, close graded premix surfacing and Seal Coat with Hot Mix plant, carriage of plant mixed materials from plant site to work site (L) has been calculated as 1Km. distance. This is to be ascertained as per the actual requirement. For example, the distance from quarry to work site is 20Kms, then the lead from quarry to plant may be considered as 5Kms. and from plant to work site (L) as 15Kms. If it is 65 Kms., then the lead from quarry to plant may be considered as 5Kms. and from plant to work site (L) as 60Kms. But in any case, (L) should not exceed more than 60Kms. If the distance from quarry site to work site is 85 Kms., then the lead from quarry to plant may be considered as 25Kms. and from plant to work site (L) as 60Kms

5) The rates provided for sub-base and metalling is for compacted Cum

6) For 1 Cum of compacted granular sub-base, 1.28 Cum of loose quantity will be taken into consideration

7) In case of Built up spray grouting, no extra payment towards cleaning the surface and applying tack coat is to be made as the same has been included in the concerned item.

8) In case of Primer Coat / Tack Coat to be done by mechanical means, cleaning item is not to be provided separately as the same has been included in the said items.

XIV SITE CLEARANCE

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7
1	Cutting of trees, including cutting of trunks, branches and removal of stumps, roots, stacking of serviceable material with all lifts and up to a lead of 1000 metres and earth filling in the depression/pit.					
	Unit = Each					
	(i) Girth from 300 mm to 600 mm					
	a) Labour					
	Mate	day	0.024	65.00	1.56	
	Mulia unskilled for cutting trees including cutting, refilling, compaction of backfilling and stacking of serviceable materials within 1000 metres lead by manual means.	day	0.600	55.00	33.00	
					34.56	
	b) Machinery					
	Tractor-trolley	hour	0.100	231.00	23.10	
					23.10	
	c) Overhead charges @ 10% on (a+b)				5.77	
	Rate for each tree = a+b+c				63.43	
				Say	63.40	
	(ii) Girth from 600 mm to 900 mm					
	a) Labour					
	Mate	day	0.036	65.00	2.34	
	Mulia unskilled for cutting trees including cutting, refilling, compaction of backfilling, and stacking of serviceable materials within 1000 metres lead by manual means	day	0.900	55.00	49.50	
					51.84	
	b) Machinery					
	Tractor-trolley	hour	0.300	231.00	69.30	
					69.30	
	c) Overhead charges @ 10% on (a+b)				12.11	
	Rate for each tree = a+b+c				133.25	
				Say	133.30	
	(iii) Girth from 900 mm to 1800 mm					
	a) Labour					
	Mate	day	0.080	65.00	5.20	
	Mulia unskilled for cutting trees including cutting, refilling, compaction of backfilling and stacking of serviceable materials within 1000 metres	day	2.000	55.00	110.00	
					115.20	
	b) Machinery					
	Tractor-trolley	hour	0.400	231.00	92.40	
					92.40	
	c) Overhead charges @ 10% on (a+b)				20.76	
	Rate for each tree = a+b+c				228.36	
				Say	228.40	
	(iv) Girth above 1800 mm					
	a) Labour					
	Mate	day	0.160	65.00	10.40	

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7
	Mulia unskilled for cutting trees including cutting, refilling, compaction of backfilling and stacking of serviceable materials within 1000 metres	day	4.000	55.00	220.00	
					230.40	
	b) Machinery					
	Tractor-trolley	hour	0.600	231.00	138.60	
					138.60	
	c) Overhead charges @ 10% on (a+b)				36.90	
	Rate for each tree = a+b+c				405.90	
2	Clearing grass and removal of rubbish up to a distance of 50 metres outside the periphery of the area .					
	Unit = Hectare					
	Taking output = 1 Hectare					
	a) Labour					
	Mate	day	2.000	65.00	130.00	
	Mulia unskilled	day	50.000	55.00	2750.00	
					2880.00	
	b) Overhead charges @ 10% on (a)				288.00	
	Rate per Hectare = a+b+c				3168.00	
3	Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned, up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.					
	Unit = Hectare					
	Taking output = 1 Hectare					
	(i) In area of light jungle					
	a) Labour					
	Mate	day	6.000	65.00	390.00	
	Mulia unskilled	day	150.000	55.00	8250.00	
					8640.00	
	b) Machinery					
	Tractor-trolley	hour	1.000	231.00	231.00	
					231.00	
	c) Overhead charges @ 10% on (a+b)				887.10	
	Rate per Hectare = a+b+c				9758.10	
	(ii) In area of thorny jungle					
	a) Labour					
	Mate	day	8.000	65.00	520.00	
	Mulia unskilled	day	200.000	55.00	11000.00	
					11520.00	
	b) Machinery					
	Tractor-trolley	hour	2.000	231.00	462.00	
					462.00	
	c) Overhead charges @ 10% on (a+b)				1198.20	
	Rate per Hectare = a+b+c				13180.20	

SI. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7
4	Dismantling of Lime Concrete, cement concrete grade M-10 and below including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 1000 metres Unit = cum Taking output = 1.25 cum					
	a) Labour					
	Mate	day	0.040	65.00	2.60	
	Mulia unskilled for dismantling and loading	day	1.000	55.00	55.00	
					57.60	
	b) Machinery					
	Tractor-trolley	hour	0.270	231.00	62.37	
					62.37	
	c) Overhead charges @ 10% on (a+b)				12.00	
	Cost for 1.25 cum = a+b+c+d				131.97	
	Rate per Cum = (a+b+c)/1.25				105.57	
				Say	105.60	
5	Dismantling of Cement Concrete Grade M-15 & M-20 including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 1000 metres Unit = cum Taking output = 1.25 cum					
	a) Labour					
	Mate	day	0.050	65.00	3.25	
	Mulia unskilled for dismantling and loading	day	1.250	55.00	68.75	
					72.00	
	b) Machinery					
	Tractor-trolley	hour	0.270	231.00	62.37	
					62.37	
	c) Overhead charges @ 10% on (a+b)				13.44	
	Cost for 1.25 cum = a+b+c				147.81	
	Rate per Cum = (a+b+c)/1.25				118.25	
				Say	118.30	
6	Dismantling of Prestressed / Reinforced cement concrete grade M-20 & above including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 1000 metres Unit = cum Taking output = 1.25 cum					
	a) Labour					
	Mate	day	0.150	65.00	9.75	
	Blacksmith 2nd class	day	0.250	75.00	18.75	
	Mazdoor for dismantling, loading and unloading	day	3.500	55.00	192.50	
					221.00	
	b) Machinery					
	Tractor-trolley	hour	0.270	231.00	62.37	
					62.37	
	c) Overhead charges @ 10% on (a+b)				28.34	
	Cost for 1.25 cum = a+b+c				311.71	

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

Rate per Cum = (a+b+c)/1.25

249.37

Say 249.40

- 7 Dismantling Brick / Tile work in lime mortar including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 1000 metres

Unit = cum

Taking output = 1.25 cum

a) Labour

Mate	day	0.020	65.00	1.30
Mulia unskilled for dismantling, loading and unloading	day	0.500	55.00	27.50
				28.80

b) Machinery

Tractor-trolley	hour	0.270	231.00	62.37
				62.37

c) Overhead charges @ 10% on (a+b)

Cost for 1.25 cum = a+b+c 100.29

Rate per cum = (a+b+c)/ 1.25 80.23

Say 80.20

- 8 Dismantling Brick / Tile work in cement mortar including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 1000 metres

Unit = cum

Taking output = 1.25 cum

a) Labour

Mate	day	0.030	65.00	1.95
Mulia unskilled for dismantling, loading and unloading	day	0.750	55.00	41.25
				43.20

b) Machinery

Tractor-trolley	hour	0.270	231.00	62.37
				62.37

c) Overhead charges @ 10% on (a+b)

Cost for 1.25 cum = a+b+c 116.13

Rate per cum = (a+b+c)/ 1.25 92.90

- 9 Dismantling Brick / Tile work in mud mortar including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 1000 metres

Unit = cum

Taking output = 1.25 cum

a) Labour

Mate	day	0.016	65.00	1.04
Mulia unskilled for dismantling and loading	day	0.400	55.00	22.00
				23.04

b) Machinery

Tractor-trolley	hour	0.270	231.00	62.37
				62.37

c) Overhead charges @ 10% on (a+b)

Cost for 1.25 cum = a+b+c 93.95

Rate per cum = (a+b+c)/ 1.25 75.16

Say 75.20

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7
10	Dismantling Dry brick pitching or brick soling including T&P, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 1000 metres					
	Unit = cum					
	Taking output = 1.25 cum					
	a) Labour					
	Mate	day	0.014	65.00	0.91	
	Mulia unskilled for Dismantling, loading and unloading	day	0.350	55.00	19.25	
					20.16	
	b) Machinery					
	Tractor-trolley	hour	0.270	231.00	62.37	
					62.37	
	c) Overhead charges @ 10% on (a+b)				8.25	
	Cost for 1.25 cum = a+b+c				90.78	
	Rate per cum = (a+b+c)/ 1.25				72.63	
				Say	72.60	
11	Dismantling Rubble stone masonry in lime mortar including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 1000 metres					
	Unit = cum					
	Taking output = 1.25 cum					
	a) Labour					
	Mate	day	0.024	65.00	1.56	
	Mulia unskilled for dismantling, loading and unloading.	day	0.600	55.00	33.00	
					34.56	
	b) Machinery					
	Tractor-trolley	hour	0.270	231.00	62.37	
					62.37	
	c) Overhead charges @ 10% on (a+b)				9.69	
	Cost for 1.25 cum = a+b+c				106.62	
	Rate per cum = (a+b+c)/ 1.25				85.30	
12	Dismantling Rubble stone masonry in cement mortar including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 1000 metres					
	Unit = cum					
	Taking output = 1.25 cum					
	a) Labour					
	Mate	day	0.030	65.00	1.95	
	Mulia unskilled for dismantling, loading and unloading.	day	0.750	55.00	41.25	
					43.20	
	b) Machinery					
	Tractor-trolley	hour	0.270	231.00	62.37	
					62.37	
	c) Overhead charges @ 10% on (a+b)				10.56	
	Cost for 1.25 cum = a+b+c				116.13	
	Rate per cum = (a+b+c)/ 1.25				92.90	

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7
13	Dismantling Rubble Stone Masonry in mud mortar including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 1000 metres Unit = cum Taking output = 1.25 cum					
	a) Labour					
	Mate	day	0.020	65.00	1.30	
	Mulia unskilled for dismantling, loading and unloading.	day	0.500	55.00	27.50	
					28.80	
	b) Machinery					
	Tractor-trolley	hour	0.270	231.00	62.37	
					62.37	
	c) Overhead charges @ 10% on (a+b)				9.12	
	Cost for 1.25 cum = a+b+c				100.29	
	Rate per cum = (a+b+c)/ 1.25				80.23	
				Say	80.20	
14	Dismantling Dry rubble masonry including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 1000 metres Unit = cum Taking output = 1.25 cum					
	a) Labour					
	Mate	day	0.018	65.00	1.17	
	Mulia unskilled for dismantling, loading and unloading.	day	0.450	55.00	24.75	
					25.92	
	b) Machinery					
	Tractor-trolley	hour	0.270	231.00	62.37	
					62.37	
	c) Overhead charges @ 10% on (a+b)				8.83	
	Cost for 1.25 cum = a+b+c				97.12	
	Rate per cum = (a+b+c)/ 1.25				77.70	
15	Dismantling stone pitching/ dry stone spalls including T&P, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 1000 metres Unit = cum Taking output = 1.25 cum					
	a) Labour					
	Mate	day	0.016	65.00	1.04	
	Mulia unskilled for dismantling, loading and unloading.	day	0.400	55.00	22.00	
					23.04	
	b) Machinery					
	Tractor-trolley	hour	0.270	231.00	62.37	
					62.37	
	c) Overhead charges @ 10% on (a+b)				8.54	
	Cost for 1.25 cum = a+b+c				93.95	
	Rate per cum = (a+b+c)/ 1.25				75.16	
				Say	75.20	

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7
16	Dismantling boulders laid in wire crates including opening of crates and stacking dismantled materials including T&P, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 1000 metres Unit = cum Taking output = 1.25 cum					
	a) Labour					
	Mate	day	0.020	65.00	1.30	
	Mulia unskilled for dismantling, loading and unloading	day	0.500	55.00	27.50	
					28.80	
	b) Machinery					
	Tractor-trolley	hour	0.270	231.00	62.37	
					62.37	
	c) Overhead charges @ 10% on (a+b)				9.12	
	Cost for 1.25 cum = a+b+c				100.29	
	Rate per cum = (a+b+c)/ 1.25				80.23	
				Say	80.20	
17	Dismantling Wood Work wrought framed and fixed in frames of trusses upto a height of 5 m above plinth level including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 1000 metres Unit = cum Taking output = 1.25 cum					
	a) Labour					
	Mate	day	0.060	65.00	3.90	
	Carpenter 2nd class	day	0.500	75.00	37.50	
	Mulia unskilled for dismantling, loading and unloading.	day	1.000	55.00	55.00	
					96.40	
	b) Machinery					
	Tractor-trolley	hour	0.270	231.00	62.37	
					62.37	
	c) Overhead charges @ 10% on (a+b)				15.88	
	Cost for 1.25 cum = a+b+c				174.65	
	Rate per cum = (a+b+c)/ 1.25				139.72	
				Say	139.70	
18	Dismantling Steel Work in all types of sections upto a height of 5 m above plinth level including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 1000 metres excluding cutting of rivet but including dismembering Unit = tonne Taking output = 1 tonne					
	a) Labour					
	Mate	day	0.140	65.00	9.10	
	Blacksmith 2nd class	day	1.000	75.00	75.00	
	Mulia unskilled for dismantling, loading and unloading	day	2.500	55.00	137.50	
					221.60	

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7
	Add 2.5 per cent of cost of labour for gas cutting, ropes, pulleys etc.				5.54	
					<u>227.14</u>	
	b) Machinery					
	Tractor-trolley	hour	0.170	231.00	39.27	
					<u>39.27</u>	
	c) Overhead charges @ 10% on (a+b)				26.64	
	Rate per tonne = a+b+c				293.05	
				Say	293.10	
19	Dismantling Steel Work in all types of sections upto a height of 5 m above plinth level including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 1000 metres but excluding cutting of rivet and excluding dismembering					
	Unit = tonne					
	Taking output = 1 tonne					
	a) Labour					
	Mate	day	0.100	65.00	6.50	
	Mulia unskilled for dismantling, loading and unloading	day	2.000	55.00	110.00	
	Blacksmith 2nd class	day	0.500	75.00	37.50	
					<u>154.00</u>	
	Add 2.5 per cent of cost of labour for gas cutting, ropes, pulleys etc.				3.85	
	b) Machinery				<u>157.85</u>	
	Tractor-trolley	hour	0.170	231.00	39.27	
					<u>39.27</u>	
	c) Overhead charges @ 10% on (a+b)				19.71	
	Rate per tonne = a+b+c				216.83	
				Say	216.80	
20	Extra over item No.18 and 19 for cutting rivets.					
	Unit = each					
	Taking output = 10 rivets					
	a) Labour					
	Mate	day	0.010	65.00	0.65	
	Blacksmith 2nd class	day	0.130	75.00	9.75	
	Mulia unskilled	day	0.130	55.00	7.15	
					<u>17.55</u>	
	b) Overhead charges @ 10% on (a)				1.76	
	Cost for 10 rivets = a+b				19.31	
	Rate for each rivet = (a+b)/10				1.93	
				Say	1.90	
21	Scraping of Bricks dismantled from Brick Work in lime or cement mortar including T&P, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 1000 metres					
	Unit = numbers					
	Taking output = 1000 numbers					
	a) Labour					
	Mate	day	0.140	65.00	9.10	
	Mulia unskilled	day	3.500	55.00	192.50	
					<u>201.60</u>	
	b) Overhead charges @ 10% on (a)				20.16	
	Rate per1000 Nos = a+b				221.76	
				Say	221.80	

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7
22	Scraping of Bricks dismantled from Brick Work in mud mortar including T&P, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 1000 metres Unit = numbers Taking output = 1000 numbers					
	a) Labour					
	Mate	day	0.050	65.00	3.25	
	Mulia unskilled	day	1.250	55.00	68.75	
					<u>72.00</u>	
	b) Overhead charges @ 10% on (a)				7.20	
	Rate per1000 Nos = a+b				79.20	
23	Scraping of Stone from dismantled Stone Masonry in lime or cement mortar including T&P, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 1000 metres Unit = cum Taking output = 1 cum					
	a) Labour					
	Mate	day	0.056	65.00	3.64	
	Mulia unskilled	day	1.400	55.00	77.00	
					<u>80.64</u>	
	b) Overhead charges @ 10% on (a)				8.06	
	Rate per cum = a+b				88.70	
24	Scraping of Stone from dismantled Stone Masonry in mud mortar including T&P, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 1000 metres Unit = cum Taking output = 1 cum					
	a) Labour					
	Mate	day	0.012	65.00	0.78	
	Mulia unskilled	day	0.300	55.00	16.50	
					<u>17.28</u>	
	b) Overhead charges @ 10% on (a)				1.73	
	Rate per cum = a+b				19.01	
					Say 19.00	
25	Scarping Plaster in Lime or Cement Mortar from Brick/ Stone Masonry including T&P, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 1000 metres Unit = sqm Taking output = 100 sqm					
	a) Labour					
	Mate	day	0.160	65.00	10.40	
	Mulia unskilled for scarping and loading	day	4.000	55.00	220.00	
					<u>230.40</u>	
	b) Machinery					
	Tractor-trolley	hour	0.320	231.00	73.92	
					<u>73.92</u>	
	c) Overhead charges @ 10% on (a+b)				30.43	
	Cost for 100 sqm = a+b+c				334.75	
	Rate per sqm = (a+b+c)/100				3.35	
					Say 3.40	

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7
26	Removing all type of Hume Pipes and Stacking within a lead of 1000 metres including Earthwork and Dismantling of Masonry Works including T&P, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead of 1000 metres					
	Unit = metre					
	Taking output = 1 metre					
(i)	Up to 600 mm dia					
	a) Labour					
	Mate	day	0.021	65.00	1.37	
	Mulia unskilled	day	0.520	55.00	28.60	
					29.97	
	b) Overhead charges @ 10% on (a)				3.00	
	Rate per metre = a+b				32.97	
					Say 33.00	
(ii)	Above 600 mm to 900 mm dia					
	a) Labour					
	Mate	day	0.028	65.00	1.82	
	Mulia unskilled	day	0.700	55.00	38.50	
					40.32	
	b) Overhead charges @ 10% on (a)				4.03	
	Rate per metre = a+b				44.35	
					Say 44.40	
(iii)	Above 900 mm					
	a) Labour					
	Mate	day	0.048	65.00	3.12	
	Mulia unskilled	day	1.200	55.00	66.00	
					69.12	
	b) Overhead charges @ 10% on (a)				6.91	
	Rate per metre = a+b				76.03	
					Say 76.00	
Note	1. The excavation of earth, dismantling of stone masonry work in head walls and protection works is not included which is to be measured and paid separately.					
	2. Credit for retrieved stone from masonry work may be taken as per actual availability.					
27	Dismantling of Bituminous courses of flexible pavements and disposal of dismantled materials up to a lead of 1000 metres, stacking serviceable and unserviceable materials separately					
	Unit = cum					
	Taking output = 1 cum					
	a) Labour					
	Mate	day	0.060	65.00	3.90	
	Mulia unskilled for dismantling, loading and unloading	day	1.500	55.00	82.50	
					86.40	
	b) Machinery					
	Tractor-trolley	hour	0.380	231.00	87.78	
					87.78	
	c) Overhead charges @ 10% on (a+b)				17.42	
	Rate per cum = a+b+c				191.60	
28	Dismantling of Granular courses of flexible pavements and disposal of dismantled materials up to a lead of 1000 metres, stacking serviceable and unserviceable materials separately					
	Unit = cum					
	Taking output = 1 cum					

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7
	a) Labour					
	Mate	day	0.040	65.00	2.60	
	Mulia unskilled for dismantling, loading and unloading.	day	1.000	55.00	55.00	
					57.60	
	b) Machinery					
	Tractor-trolley	hour	0.330	231.00	76.23	
					76.23	
	c) Overhead charges @ 10% on (a+b)				13.38	
	Rate per cum = a+b+c				147.21	
				Say	147.20	
29	Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled materials up to a lead of 1000 metres, stacking serviceable and unserviceable materials separately					
	Unit = cum					
	Taking output = 1 cum					
	a) Labour					
	Mate	day	0.040	65.00	2.60	
	Mulia Semi skilled for operating pneumatic tools	day	0.500	65.00	32.50	
	Mulia unskilled as helpers including loading and unloading	day	0.500	55.00	27.50	
					62.60	
	b) Machinery					
	Air compressor 250 cfm with two leads for pneumatic cutters/ hammers @ 1 cum per hour	hour	1.000	206.00	206.00	
	Tractor-trolley	hour	0.400	231.00	92.40	
	Joint Cutting Machine with 2-3 blades	hour	1.000	300.00	300.00	
					598.40	
	c) Overhead charges @ 10% on (a+b)				66.10	
	Rate per cum = a+b+c				727.10	
Note	The above analysis is for removal of complete pavement. In case full depth repair work is required to be done after dismantling, provision of a concrete cutting and sawing machine may be added for 0.25 hours.					
30	Dismantling guard rails by manual means and disposal of dismantled material with all lifts and up to a lead of 1000 metres, stacking serviceable materials and unserviceable materials separately.					
	Unit = running metre					
	Taking output = 1 metre					
	a) Labour					
	Mate	day	0.006	65.00	0.39	
	Mulia unskilled including loading and unloading	day	0.150	55.00	8.25	
					8.64	
	b) Machinery					
	Tractor-trolley	hour	0.050	231.00	11.55	
					11.55	
	c) Overhead charges @ 10% on (a+b)				2.02	
	Rate per metre = a+b+c				22.21	
				Say	22.20	
31	Dismantling kerb stone by manual means and disposal of dismantled material with all lifts and up to a lead of 1000 metre					
	Unit = running metre					

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks	
1	2	3	4	5	6	7	
	Taking output = 10 metre						
	a) Labour						
	Mate	day	0.006	65.00	0.39		
	Mulia unskilled including loading and unloading	day	0.150	55.00	8.25		
					8.64		
	b) Machinery						
	Tractor-trolley	hour	0.200	231.00	46.20		
					46.20		
	c) Overhead charges @ 10% on (a+b)						
	Cost for 10 m = a+b+c					60.32	
	Rate per metre = (a+b+c)/10					6.03	
				Say	6.00		
32	Dismantling kerb stone channel by manual means and disposal of dismantled material with all lifts and up to a lead of 1000 metre						
	Unit = running metre						
	Taking output = 10 metre						
	a) Labour						
	Mate	day	0.009	65.00	0.59		
	Mulia unskilled including loading and unloading	day	0.225	55.00	12.38		
					12.97		
	b) Machinery						
	Tractor-trolley	hour	0.300	231.00	69.30		
					69.30		
	c) Overhead charges @ 10% on (a+b)						
	Cost for 10 m = a+b+c					90.50	
	Rate per metre = (a+b+c)/10					9.05	
				Say	9.10		
33	Dismantling of kilometre stone including cutting of earth, foundation and disposal of dismantled material with all lifts and lead upto 1000 m and back filling of pit.						
	Unit = Each						
	Taking output = one KM stone						
(i)	5th KM stone						
	Quantity of cement concrete = 0.392 cum						
	a) Labour						
	Mate	day	0.030	65.00	1.95		
	Mulia unskilled	day	0.750	55.00	41.25		
					43.20		
	b) Machinery						
	Tractor-trolley	hour	0.150	231.00	34.65		
					34.65		
	c) Overhead charges @ 10% on (a+b)						
	Rate for one 5th KM stone = a+b+c					85.64	
				Say	85.60		
(ii)	Ordinary KM Stone						
	Quantity of cement concrete = 0.269 cum						
	a) Labour						
	Mate	day	0.020	65.00	1.30		
	Mulia unskilled	day	0.500	55.00	27.50		
					28.80		
	b) Machinery						
	Tractor-trolley	hour	0.100	231.00	23.10		
					23.10		
	c) Overhead charges @ 10% on (a+b)						
	Rate for one ordinary KM stone = a+b+c					57.09	
				Say	57.10		
(iii)	Hectometre Stone						
	Quantity of cement concrete = 0.048 cum						

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7
	a) Labour					
	Mate	day	0.004	65.00	0.26	
	Mulia unskilled	day	0.100	55.00	5.50	
					<u>5.76</u>	
	b) Machinery					
	Tractor-trolley	hour	0.020	231.00	4.62	
					<u>4.62</u>	
	c) Overhead charges @ 10% on (a+b)				1.04	
	Rate for one Hectometre stone = a+b+c				11.42	
				Say	11.40	
34	Dismantling of barbed wire fencing/ wire mesh fencing including posts, foundation concrete, back filling of pit by manual means including disposal of dismantled material with all lifts and up to a lead of 1000 metres, stacking serviceable material and unserviceable material separately.					
	Unit = running metre					
	Taking output = 30 metres					
	a) Labour					
	Mate	day	0.150	65.00	9.75	
	Mulia unskilled including loading and unloading	day	3.000	55.00	165.00	
	Blacksmith 2nd class	day	0.750	75.00	56.25	
					<u>231.00</u>	
	b) Machinery					
	Tractor-trolley	hour	0.150	231.00	34.65	
					<u>34.65</u>	
	c) Overhead charges @ 10% on (a+b)				26.57	
	Cost for 30 metres = a+b+c				292.22	
	Rate per metre = (a+b+c)/30				9.74	
				Say	9.70	
35	Dismantling of CI water pipe line 600 mm dia including disposal with all lifts and lead upto 1000 metres and stacking of serviceable material and unserviceable material separately under supervision of concerned department					
	Unit = running metre					
	Taking output = 10 metres					
	a) Labour					
	Mate	day	0.090	65.00	5.85	
	Mulia unskilled	day	2.000	55.00	110.00	
	Plumber 2nd class	day	0.250	75.00	18.75	
					<u>134.60</u>	
	b) Machinery					
	Truck 10 tonne capacity	hour	0.250	506.00	126.50	
	Light Crane 3 tonne capacity	hour	0.500	230.00	115.00	
					<u>241.50</u>	
	c) Overhead charges @ 10% on (a+b)				37.61	
	Cost for 30 metres = a+b+c				413.71	
	Rate per metre = (a+b+c)/10				41.37	
				Say	41.40	

Note The rate analysis does not include any excavation in earth or dismantling of masonry works which are to be measured and paid separately.

- 36** Removal of cement concrete pipe of sewer gutter 1500 mm dia under the supervision of concerned department including disposal with all lifts and up to a lead of 1000 metres and stacking of serviceable and unserviceable material separately but excluding earth excavation and dismantling of masonry works.

Unit = running metre

Sl. No.	Description	Unit	Quantity	Rate Rs. P	Cost Rs. P	Remarks
1	2	3	4	5	6	7

Taking output = 10 metres

a) Labour

Mate	day	0.100	65.00	6.50
Mulia unskilled	day	2.500	55.00	137.50
				144.00

b) Machinery

Crane 5 tonne capacity	hour	0.300	230.00	69.00
Truck flat body 10 tonne	hour	1.000	506.00	506.00
				575.00

c) Overhead charges @ 10% on (a+b)

Cost for 10 metres = a+b+c 790.90

Rate per metre = (a+b+c)/10 79.09

Say 79.10

Note The rate analysis does not include any excavation in earth or dismantling of masonry works which are to be measured and paid separately.

37 Removal of telephone / Electric poles including excavation and dismantling of foundation concrete and lines under the supervision of concerned department, disposal with all lifts and up to a lead of 1000 metres and stacking the serviceable and unserviceable material separately

Unit = each

Taking output = 30 Nos

a) Labour

Mate	day	0.480	65.00	31.20
Mulia unskilled	day	10.000	55.00	550.00
Electrician/Lineman 2nd class	day	2.000	75.00	150.00
				731.20

b) Machinery

Tractor-trolley	hour	1.500	231.00	346.50
				346.50

c) Overhead charges @ 10% on (a+b)

Cost for 30 poles = a+b+c 1185.47

Rate per pole = (a+b+c)/30 39.52

Say 39.50

Note: 1, For dismantling works, pre-measurement should be recorded before commencement of the work
2, 10% excess on the above rate will be allowed for the works being executed inside jail premises,

XV PILE FOUNDATION

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

1 Single under reamed pile foundation with RCC M20 using 12mm size black hard granite (Crusher broken) stone chips including cost of boring but excluding cost of M.S./Tor steel and labour charges for cutting, bending and binding of steel.

Single under ream pile

a) 375 mm dia and 6.0 metre long

Per 1 pile

Excavation of bore hole (assuming two pits can be constructed per day)

Boring Mistry(Special)	2 Nos	Each	80.00	160.00
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150 winch operator	0.5 Nos	Each	110.00	55.00
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Hire & running charges of Tripod	1/2 Day	per day	450.00	225.00
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Bentonite power	2.5 Bag	eachBag	103.00	257.50
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Overhead Charges 10% on material, labour & machinaries.				69.75
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Total

767.25

R.C.C. M20

$$\text{Volume of concrete} = \frac{3.14 d^2 \times L}{4} + 4.13 d^3 =$$

$$= \frac{3.14 \times (.375)^2 \times 6 + 4.13(.375)^3}{4}$$

$$= 0.66 + 0.22 = 0.88 \text{ Cum}$$

(Rate as per 4 of R.C.C.)	0.88 cum	1 Cum	2231.30	1963.54
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Add- Cost of 10% extra cement	0.284 qntl.	1 qntl	341.00	96.84
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Total **2827.64**

Say Rs. 2827.60

(i) For each additional depth of 0.5m beyond initial depth of 6.0 m add extra to the rate

Per 1 Pile

Excavation of bore hole - Take 6% of item 1(a)

R.C.C.M20				46.04
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(Rate same as item No.4 of R.C.C.)	0.055 cum	1 cum	2231.30	122.72
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Add- Cost of 10% extra cement	0.0178 cum	1 qntl	341	6.07
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Total **174.83**

say Rs. 174.80 / Each

(ii) For each less depth of 0.5m from the initial depth of 6.0m deduct from the rate

Per 1 Pile

Rate same as item NO.1(a) (i)	-	-	-	174.80
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Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

b) 300mm dia and 6.0m long

Per 1 Pile

Excavation of bore hole- Take 90% of the rate in item No.1(a) 690.53

R.C.C. M20

Volume of concrete = $\frac{3.14 d^2 \times L}{4} + 4.13 d^3$

$$= \frac{3.14 \times (0.30)^2 \times 6 + 4.13(0.30)^3}{4}$$

$$= 0.424 + 0.111 = 0.535 \text{ Cum}$$

(Rate same as item No.1 of R.C.C.)

0.535 cum 1 cum 2231.30 1193.75

Add-Cost of 10% extra) cement 0.17288 qntl. 1 qntl 341 58.95

Total = **1943.22**

Say Rs. 1943.20 / Each

(i) For each additional depth of 0.5m beyond initial depth of 6.0m add extra to the rate.

Per 1 Pile

Excavation of bore hole- Take 6% of the rate in item 1(a) 46.04

R.C.C.M20

(Rate same as item No.1 of R.C.C.) 0.035 cum 1 cum 2231.30 78.10

Add- Cost of 10% extra) cement 0.0113 qntl. 1 qntl 341 3.85

Total = **127.98**

Say Rs. 128.00 / Each

(ii) For each less depth of 0.5m from the initial depth of 6.0m deduct from the rate

Per 1 Pile

Rate same as item No. 1b (i) - - 128.00

c) 250mm dia and 6.0m long

Per 1 Pile

Excavation of bore hole- Take 83% of the rate in item 1(a) 636.82

R.C.C.M20

Volume of concrete = $\frac{3.14 \times (0.25)^2 \times 6 + 4.13(0.25)^3}{4}$

$$= 0.294 + 0.065 = 0.359 \text{ Cum}$$

(Rate same as item No.1 of R.C.C.)

0.359 cum 1 cum 2231.30 801.04

Add- Cost of 10% extra) cement 0.1159 qntl. 1qntl 341 39.52

Total = 1477.38

Say Rs. **1477.40** / Each

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

(i) For each additional depth of 0.5m beyond initial depth of 6.0m add extra to the rate. Per 1 Pile Excavation of bore hole- Take 6% of the rate in item 1(a) R.C.C.M20 (Rate same as item No.4 of R.C.C.) Add- Cost of 10% extra) cement		0.0245 cum 0.0079 qntl.	1 cum 1 qntl	2231.30 341	54.67 2.69	46.035
				Total		103.40
				Say Rs.		103.40 / Each
(ii) For each less depth of 0.5m from the initial depth of 6.0m deduct from the rate Per 1 Pile Rate same as item No. 1(c)(i)		-	-	-	-	103.40
2 Double under reamed pile foundation with R.C.C. M20 using 12mm size black hard granite (crusher broken)stone chips including cost of boreholes but excluding cost of M.S. rod/Tor steel and labour chrages for cutting, bending and binding of steel. a) 375 mm dia and 6.0 m long Per 1 pile Excavation of bore hole- cost sam as item no. 1(a) Add- 25% extra for double under ream- Volume of concrete = $\frac{3.14 \times (.375)^2 \times 6 + 8.26(.375)^3}{4}$ = 0.66 + 0.44 = (Rate same as item No.4 of R.C.C.) Add- Cost of 10% extra cement		- - - $\frac{3.14 \times (.375)^2 \times 6 + 8.26(.375)^3}{4}$ = 0.66 + 0.44 = 1.1 cum 0.3553 qntl.	- - - 1 cum 1 qntl	- - - 2231.30 341	767.25 191.81 - 2454.43 121.16	
				Total		3534.65
				Say Rs.		3534.60 / Each
(i) For each additional depth of 0.5m beyond initial depth of 6.0m deduct from the rate Per 1 Pile Rate same as item No.1a(i)		-	-	-	-	174.80 / Each
(ii) For each less depth of 0.5m from the initial depth of 6.0m deduct from the rate Per 1 Pile Rate same as item No.1a(ii)		-	-	-	-	174.80 / Each
b) 300mm dia and 6.0m long Per 1 Pile Excavation of bore hole- Take 90% of the rate in item 2(a) R.C.C.M20 Volume of concrete = $\frac{3.14 \times (0.30)^2 \times 6 + 8.26(0.3)^3}{4}$ = 0.424 + 0.223 =						863.16
						0.65 Cum

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

(Rate same as item No.4 of R.C.C.)	0.647 cum	1 cum	2231.30	1443.65	
Add- Cost of 10% extra) cement	0.209 qntl.	1 qntl	341	71.27	

Total = **2378.08**

Say Rs. 2378.10 / Each

(i) For each additional depth of 0.5m beyond initial depth of 6.0m add extra to the rates

Per 1 Pile

Rate same as item No.1b(i) - - - 128.00 / Each

(ii) For each less depth of 0.5m from the initial depth of 6.0m deduct from the rate

Per 1 Pile

Rate same as item No.1b(ii) - - - 128.00 / Each

c) 250mm dia and 6.0m long

Per 1 Pile

Excavation of bore hole- Take 83% of the rate in item 2(a) 796.02

R.C.C. M20

$$\text{Volume of concrete} = \frac{3.14 \times (0.25)^2 \times 6 + 8.26(0.25)^3}{4}$$

$$= 0.294 + 0.129 = 0.423 \text{ Cum}$$

(Rate same as item No.4 of R.C.C.)	0.423 cum	1 cum	2231.30	943.84	
Add- Cost of 10% extra) cement	0.1366 qntl.	1 qntl	341	46.58	

Total = **1786.44**

Say Rs. 1786.40 / Each

(i) For each additional depth of 0.5m beyond initial depth of 6.0m add extra to the rates

Per 1 Pile

Rate same as item No.1c(i) - - - 103.40 / Each

(ii) For each less depth of 0.5m from the initial depth of 6.0m deduct from the rate

Per 1 Pile

Rate same as item No.1c(ii) - - - 103.40 / Each

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

d) 450mm dia and 6.0m long
Per 1 Pile
Excavation of bore hole- cost same as item No. 2(a) 959.06
Add 55% extra R.C.C. M20 - - - 527.48

$$\text{Volume of concrete} = \frac{3.14 \times (0.45)^2 \times 6 + 8.26(0.45)^3}{4}$$

$$= 0.954 + 0.752 = 1.706 \text{ Cum}$$

(Rate same as item No.4 of R.C.C.) 1.706 cum 1 cum 2231.30 3806.60
Add- Cost of 10% extra) cement 0.551 qntl. 1 qntl 341 187.89

Total = **5481.04** /Each
Say Rs. 5481.00 / Each

(i) For each additional depth of 0.5 m beyond initial depth of 6.0 m add extra to the rate.

Per 1 Pile
Excavation of the bore hole - Take 5% of item (a) 74.33
RCC M20
Rate as per item No. 4 of R.C.C. 0.0795 cum 1 cum 2231.30 177.39
Add-cost of 10% extra cement 0.0257 qntl 1 qntl 341 8.76
Total 260.48
Or Say **260.50**

(ii) For each less depth of from the initial depth of 6 m deduct from the rate

Per 1 Pile
Rate same as item d(I) **260.50** /Each

Note :

- (I) Rate of RCC items have been arrived on crusher broken chips. If hand broken chips are to be used, the difference in cost is to be subtracted to arrive at the finished rate.
- (ii) 10 percent excess on the above rates will be allowed for the works being executed inside the jail premises.

XVI. DISMANTLING

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1		2	3	4	5	6

1 Dismantling brick or stone masonry in clay under 3m. height including stacking the useful materials for reuse and removing the debris within 50m. Lead per 1 cum
Data for 2.83 cum

a) Labour

Man Mulia	1.25 Nos	Each	55.00	68.75
Woman Mulia	3.50 Nos	Each	55.00	192.50

b) Overhead Charges @ 10% on (a) - - 26.13

c) 2% Sundries T & P etc. on (a) - - 5.23

Total (a+b+c) 292.61

Rate per 1 cum = $\frac{292.61}{2.83} = 103.39 / \text{cum}$

Say Rs. **103.40 / cum**

2 Dismantling brick or stone masonry in clay above 3m. height including stacking the useful materials for reuse and removing the debris within 50m. Lead per 1 cum
Data for 2.83 cum

a) Labour

Man Mulia	1.50 Nos	Each	55.00	82.50
Woman Mulia	3.50 Nos	Each	55.00	192.50

b) Overhead Charges @ 10% on (a) - - 27.50

c) 2% Sundries T & P etc. on (a) - - 5.50

Total (a+b+c) 308.00

Rate per 1 cum = $\frac{308.00}{2.83} = 108.83 / \text{cum}$

Say Rs. **108.80 / cum**

3 Dismantling brick or stone masonry in lime or cement mortar under 3m. height including stacking the useful materials for reuse and removing the debris within 50m. Lead per 1 cum
Data for 2.83 cum

a) Labour

Man Mulia	4.00 Nos	Each	55.00	220.00
Woman Mulia	4.50 Nos	Each	55.00	247.50

b) Overhead Charges @ 10% on (a) - - 46.75

c) 2% Sundries T & P etc. on (a) - - 9.35

Total (a+b+c) 523.60

Rate per 1 cum = $\frac{523.60}{2.83} = 185.02 / \text{cum}$

Say Rs. **185.00 / cum**

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1		2	3	4	5	6

4 Dismantling brick or stone masonry in lime or cement mortar above 3m. height including stacking the useful materials for reuse and removing the debris within 50m. Lead

per 1 cum

Data for 2.83 cum

a) Labour

Man Mulia 4.50 Nos Each 55.00 247.50

Woman Mulia 4.50 Nos Each 55.00 247.50

b) Overhead Charges @ 10% on (a) - - 49.50

c) 2% Sundries T & P etc. on (a) - - 9.90

Total (a+b+c) 554.40

$$\text{Rate per 1 cum} = \frac{554.40}{2.83} = 195.90 / \text{cum}$$

Say Rs. **195.90** / cum

5 Removing thatched roof including tying of useful thatches to small bundles and stacking them carefully for reuse and removing the debris within 50m. Lead

per 1 sqm

Data for 9.30 Sqm

a) Labour

Man Mulia 0.50 No Each 55.00 27.50

Woman Mulia 1.75 Nos Each 55.00 96.25

b) Overhead Charges @ 10% on (a) - - 12.38

c) 2% Sundries T & P etc. on (a) - - 2.48

Total (a+b+c) 138.61

$$\text{Rate per 1 sqm} = \frac{138.61}{9.30} = 14.90 / \text{sqm}$$

Say Rs. **14.90** / sqm

6 Dismantling roof timbers of thatched roof including stacking the useful materials for reuse and removing the debris within 50m. Lead

per 1 sqm

Data for 9.30 Sqm

a) Labour

Man Mulia 0.30 No Each 55.00 16.50

Woman Mulia 0.25 No Each 55.00 13.75

b) Overhead Charges @ 10% on (a) - - 3.03

c) 2% Sundries T & P etc. on (a) - - 0.61

Total (a+b+c) 33.89

$$\text{Rate per 1 sqm} = \frac{33.89}{9.30} = 3.64 / \text{sqm}$$

Say Rs. **3.60** / sqm

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1		2	3	4	5	6

7 Dismantling pan or single Nuria or Mangalore tileroofing (Tiles only) including stacking the useful materials for reuse and removing the debris within 50m. Lead per 1 sqm
Data for 9.30 sqm

a) Labour

Man Mulia	1.00	No	Each	55.00	55.00
Woman Mulia	1.75	Nos	Each	55.00	96.25

b) Overhead Charges @ 10% on (a) - - 15.13

c) 2% Sundries T & P etc. on (a) - - 3.03

Total (a+b+c) 169.41

$$\text{Rate per 1 sqm} = \frac{169.41}{9.30} = 18.22 / \text{sqm}$$

Say Rs. **18.20** / sqm

8 Dismantling double Nuria tileroofing (Tiles only) including stacking the useful materials for reuse and removing the debris within 50m. Lead per 1 sqm
Data for 9.30 sqm

a) Labour

Man Mulia	1.25	Nos	Each	55.00	68.75
Woman Mulia	3.00	Nos	Each	55.00	165.00

b) Overhead Charges @ 10% on (a) - - 23.38

c) 2% Sundries T & P etc. on (a) - - 4.68

Total (a+b+c) 261.81

$$\text{Rate per 1 sqm} = \frac{261.81}{9.30} = 28.15 / \text{sqm}$$

Say Rs. **28.20** / sqm

9 Dismantling flat & pan tiled roofing (Tiles only) including stacking the useful materials for reuse and removing the debris within 50m. Lead per 1 sqm
Data for 9.30 sqm

a) Labour

Man Mulia	1.25	Nos	Each	55.00	68.75
Woman Mulia	4.00	Nos	Each	55.00	220.00

b) Overhead Charges @ 10% on (a) 28.88

c) 2% Sundries T & P etc. on (a) - - 5.78

Total (a+b+c) 323.41

$$\text{Rate per 1 sqm} = \frac{323.41}{9.30} = 34.77 / \text{sqm}$$

Say Rs. **34.80** / sqm

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1		2	3	4	5	6

10 Dismantling reepers under tiled roof (pan, flat or nuria tiles) after careful removal of nails including stacking the useful materials for reuse and removing the debris within 50m.

Lead

per 1 sqm

Data for 9.30 sqm

a) Labour

Carenter(2nd Class)

0.33 No

Each

75.00

24.75

Man Mulia

1.25 Nos

Each

55.00

68.75

b) Overhead Charges @ 10% on (a) -

-

9.35

c) 2% Sundries T & P etc. on (a) -

-

1.87

Total (a+b+c)

104.72

Rate per 1 sqm = $\frac{104.72}{9.30} = 11.26 / \text{sqm}$

Say Rs. **11.30 / sqm**

11 Dismantling and removing lime concrete flooring 7.5 cm to 10 cm thick including stacking the useful materials for reuse and removing the debris within 50m lead

per 1 sqm

Data for 9.30 sqm

a) Labour

Carenter(2nd Class)

0.75 No

Each

55.00

41.25

Man Mulia

2.00 Nos

Each

55.00

110.00

b) Overhead Charges @ 10% on (a) -

-

15.13

c) 2% Sundries T & P etc. on (a) -

-

3.03

Total (a+b+c)

169.41

Rate per 1 sqm = $\frac{169.41}{9.30} = 18.22 / \text{sqm}$

Say Rs. **18.20 / sqm**

12 Dismantling and removing 2.5 cm. thick artificial stone flooring including stacking the useful materials for reuse and removing the debris within 50m lead

per 1 sqm

Data for 9.30 sqm

a) Labour

Man Mulia

0.75 Nos

Each

55.00

41.25

Woman Mulia

1.25 Nos

Each

55.00

68.75

b) Overhead Charges @ 10% on (a) -

-

11.00

c) 2% Sundries T & P etc. on (a) -

-

2.20

Total (a+b+c)

123.20

Rate per 1 sqm = $\frac{123.20}{9.30} = 13.25 / \text{sqm}$

Say Rs. **13.20 / sqm**

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1		2	3	4	5	6

13 Removing old lime or cement plaster from walls including raking out joints 12 mm deep and removing the debris within 50m lead
per 1 sqm
Data for 9.30 sqm

a) Labour

Man Mulia	1.00	No	Each	55.00	55.00
b) Overhead Charges @ 10% on (a)	-		-	-	5.50
c) 2% Sundries T & P etc. on (a)	-		-	-	1.10
Total (a+b+c)					61.60

$$\text{Rate per 1 sqm} = \frac{61.60}{9.30} = 6.62 / \text{sqm}$$

Say Rs. **6.60** / sqm

14 Dismantling flag stone flooring including stacking the useful stones for reuse and removing the debris within 50m lead
per 1 sqm
Data for 9.30 sqm

a) Labour

Man Mulia	0.50	Nos	Each	55.00	27.50
Woman Mulia	1.00	No	Each	55.00	55.00
b) Overhead Charges @ 10% on (a)	-		-	-	8.25
c) 2% Sundries T & P etc. on (a)	-		-	-	1.65
Total (a+b+c)					92.40

$$\text{Rate per 1 sqm} = \frac{92.40}{9.30} = 9.94 / \text{sqm}$$

Say Rs. **9.90** / sqm

15 Dismantling terraced roof (Madras or Orissa) including stacking the useful materials for reuse and removing the debris within 50m lead
per 1 sqm
Data for 9.30 sqm

a) Labour

Man Mulia	2.35	Nos	Each	55.00	129.25
Woman Mulia	4.00	Nos	Each	55.00	220.00
b) Overhead Charges @ 10% on (a)	-		-	-	34.93
c) 2% Sundries T & P etc. on (a)	-		-	-	6.99
Total (a+b+c)					391.17

$$\text{Rate per 1 sqm} = \frac{391.17}{9.30} = 42.06 / \text{sqm}$$

Say Rs. **42.10** / sqm

16 Dismantling G.C.I. or A.C. sheet roofing after carefully removing the bolts and nuts including stacking of the materials for reuse and removing the debris within 50m lead

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1		2	3	4	5	6

per 1 sqm

Data for 9.30 sqm

a) Labour

Fitter (2nd Class) 0.25 Nos Each 75.00 18.75

Man Mulia 0.50 Nos Each 55.00 27.50

Woman Mulia 1.00 No Each 55.00 55.00

b) Overhead Charges @ 10% on (a) - - 10.13

c) 2% Kerosine Oil, Sundries T & P etc. on (a) - - 2.03

Total (a+b+c) 113.41

$$\text{Rate per 1 sqm} = \frac{113.41}{9.30} = 12.19 / \text{sqm}$$

Say Rs. **12.20** / sqm

17 Dismantling wrought and framed timber in roof frame work of floors after careful removal of nail, bolts etc. and stacking of the materials for reuse and removing the debris within 50m lead

per 1 cum

Data for 0.0283 sqm

a) Labour

Carpenter (2nd class) 0.03 Nos Each 75.00 2.25

Man Mulia 0.04 Nos Each 55.00 2.20

b) Overhead Charges @ 10% on(a) - - 0.45

c) 2% Sundries T & P etc. on (a) - - 0.09

Total (a+b+c) 4.99

$$\text{Rate per 1 cum} = \frac{4.99}{0.0283} = 176.33 / \text{cum}$$

Say Rs. **176.30** / cum

18 Dismantling and removing doors, windows and ventilators including removal of frame, hinges, fastening and stacking the same for reuse and removing the debris within 50m lead

per 1 sqm

Consider a door of (1.22 M×2.13 M=2.60sqm)

a) Labour

Carpenter (2nd class) 0.50 Nos Each 75.00 37.50

Man Mulia 0.60 Nos Each 55.00 33.00

Woman Mulia 1.00 No Each 55.00 55.00

b) Overhead Charges @ 10% on(a) - - 12.55

c) 2% Sundries T & P etc. on (a) - - 2.51

Total (a+b+c) Total = 140.56

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1		2	3	4	5	6

$$\text{Rate per 1 sqm} = \frac{140.56}{2.60} = 54.06 / \text{sqm}$$

Say Rs. **54.10** / sqm

19 Dismantling dry or grouted rough stone revetments of aprons or retaining walls and stacking the stones for reuse and removing the debris within 50m lead per 1 cum

Data for 2.83 sqm

a) Labour

Man Mulia	1.00	No	Each	55.00	55.00
Woman Mulia	3.50	Nos	Each	55.00	192.50

b) Overhead Charges @ 10% on(a) - - 24.75

c) 2% Sundries T & P etc. on (a) - - 4.95

Total (a+b+c) 277.20

$$\text{Rate per 1 cum} = \frac{277.20}{2.83} = 97.95 / \text{cum}$$

Say Rs. **98.00** / cum

20 Dismantling and removing 2.5 cm thick grading concrete from roof slab cleaning the surface lowering and removing the debris within 50m lead

per 1 sqm

Data for 9.30 sqm

a) Labour

Man Mulia	0.75	Nos	Each	55.00	41.25
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Woman Mulia	1.25	Nos	Each	55.00	68.75
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Woman Mulia for lifting the debries	0.25	Nos	Each	55.00	13.75
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b) Overhead Charges @ 10% on(a) - - 12.38

c) 2% Sundries T & P etc. on (a) - - 2.48

Total (a+b+c) Total = 138.61

$$\text{Rate per 1 sqm} = \frac{138.61}{9.30} = 14.90 / \text{sqm}$$

Say Rs. **14.90** / sqm

21 Removing old grading plaster from roof slab, cleaning the surface, lowering and removing the debris within 50m lead

per 1 sqm

Data for 9.30 sqm

a) Labour

Man Mulia	1.40	Nos	Each	55.00	77.00
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Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1		2	3	4	5	6

Woman Mulia	0.15 Nos	Each	55.00	8.25	
b) Overhead Charges @ 10% on(a)	-	-	-	8.53	
c) 2% Sundries T & P etc. on (a)	-	-	-	1.71	
Total (a+b+c)			Total =	95.49	
	Rate per 1 sqm =	$\frac{95.49}{9.30}$	=	10.27 / sqm	
	Say Rs.			10.30 / sqm	

22 Removing old tarfelt from roof slab,
cleaning the surface, lowering and
removing the debris within 50m
lead

per 1 sqm

Data for 9.30 sqm

a) Labour

Man Mulia 1.75 Nos Each 55.00 96.25

b) Overhead Charges @ 10% on(a) - - 9.63

c) 2% Sundries T & P etc. on (a) - - 1.93

Total (a+b+c) 107.81

Rate per 1 sqm = $\frac{107.81}{9.30}$ = 11.59 / sqm

Say Rs. **11.60** / sqm

23 Dismantling and removing cement
concrete including stacking the
useful materials for reuse and
removing the debris within 50m
lead

per 1 cum

a) Labour

Man Mulia 1.50 Nos Each 55.00 82.50

Woman Mulia 0.10 Nos Each 55.00 5.50

b) Overhead Charges @ 10% on(a) - - 8.80

c) 2% Sundries T & P etc. on (a) - - 1.76

Total (a+b+c) 98.56

Say Rs. **98.60** / cum

24 Dismantling and removing R.C.C.
columns beams slab staircase
landing lintels including stacking
the useful materials for reuse and
removing the debris within 50m
lead

per 1 cum

a) Labour

Semiskilled Mulia 1.50 Nos Each 65.00 97.50

Man Mulia 1.50 Nos Each 55.00 82.50

b) Overhead Charges @ 10% on(a) - - 18.00

c) 2% Sundries T & P etc. on (a) - - 3.60

Total (a+b+c) 201.60

Say Rs. **201.60** / cum

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1		2	3	4	5	6

25 Dismantling and removing R.C.C.

Chajja, Shelves, fins and parapet including stacking the useful materials for reuse and removing the debris within 50m lead

per 1 sqm

Data for 9.30 sqm

a) Labour

Man Mulia 3.50 Nos Each 55.00 192.50

b) Overhead Charges @ 10% on(a) - - 19.25

c) 2% Sundries T & P etc. on (a) - - 3.85

Total (a+b+c) 215.60

$$\text{Rate per 1 sqm} = \frac{215.60}{9.30} = 23.18 / \text{sqm}$$

Say Rs. **23.20** / sqm

26 Dismantling and removing marble

chips flooring including stacking the useful materials for reuse and removing the debris within 50m lead

per 1 sqm

Data for 9.30 sqm

a) Labour

Man Mulia 0.85 Nos Each 55.00 46.75

Woman Mulia 1.40 Nos Each 55.00 77.00

b) Overhead Charges @ 10% on(a) - - 12.38

c) 2% Sundries T & P etc. on (a) - - 2.48

Total (a+b+c) 138.61

$$\text{Rate per 1 sqm} = \frac{138.61}{9.30} = 14.90 / \text{sqm}$$

Say Rs. **14.90** / sqm

27 Dismantling and removing marbel

chips dados & skirting from walls including rackingout joints 12mm. Deepstacking the useful materials for reuse and removing the debris within 50m lead

per 1 sqm

Data for 9.30 sqm

a) Labour

Man Mulia 1.10 Nos Each 55.00 60.50

b) Overhead Charges @ 10% on(a) - - 6.05

c) 2% Sundries T & P etc. on (a) - - 1.21

Total (a+b+c) 67.76

$$\text{Rate per 1 sqm} = \frac{67.76}{9.30} = 7.29 / \text{sqm}$$

Say Rs. **7.30** / sqm

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1		2	3	4	5	6

28 Dismantling and removing old tiled flooring including removing the base coarse and stacking the useful materials for reuse and removing the debris within 50m lead

per 1 sqm

Data for 9.30 sqm

a) Labour

Man Mulia 1.00 No Each 55.00 55.00

Woman Mulia 1.50 Nos Each 55.00 82.50

b) Overhead Charges @ 10% on(a) - - 13.75

c) 2% Sundries T & P etc. on (a) - - 2.75

Total (a+b+c) 154.00

Rate per 1 sqm = $\frac{154.00}{9.30}$ = 16.56 / sqm

Say Rs. **16.60** / sqm

29 Dismantling and removing old tiled cladding from walls including racking out joints 12mm deep stacking the useful materials for reuse and removing the debris within 50m lead

per 1 sqm

Data for 9.30 sqm

a) Labour

Man Mulia 1.30 Nos Each 55.00 71.50

b) Overhead Charges @ 10% on(a) - - 7.15

c) 2% Sundries T & P etc. on (a) - - 1.43

Total (a+b+c) 80.08

Rate per 1 sqm = $\frac{80.08}{9.30}$ = 8.61 / sqm

Say Rs. **8.60** / sqm

Note :

- 1 For dismantling work in 1st floor or any additional floor add 5% extra labour over & above the rate of next lower floor for lowering the dismantled materials.
- 2 10% excess on the above rate will be allowed for the works being executed inside jail premises.

XVII. IRON WORK

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

1 Hoisting joists and trusses and placing in position (labour only)

Per 1 Qntl.

Data for 0.508 Qntl.

a) Labour

Sangi Mulia for conveying joist from outside to the buildings.

0.25 no Each 65.00 16.25

Sangi Mulia for lifting joists up to top of the walls with ropes, etc..

0.75 no Each 65.00 48.75

Man Mulia for placing joists in position

0.17 no Each 55.00 9.35

b) Overhead Charges @ 10% on (a)

- - - 7.44

c) 2% Scaffolding ropes, Sundries, T&P etc. on (a)

- - - 1.49

Total (a+b+c)

83.28

Rate per 1 Qntl. = $\frac{83.28}{0.508}$ = 163.94 / Qntl

Say Rs. **163.90** / Qntl

2 Iron work wrought and put up in window grating including drilling holes in choukathas (labour only)

per 1 Qntl.

Data for 0.508 Qntl.

a) Labour

Carpenter (2nd Class)

0.75 no Each 75.00 56.25

Semi-skilled mulia

0.75 no Each 65.00 48.75

b) Overhead Charges @ 10% on (a)

- - - 10.50

c) 2% Sundries T & P etc.on (a)

- - - 2.10

Total (a+b+c)

117.60

Rate per 1 cum = $\frac{117.60}{0.508}$ = 231.50 / Qntl

Say Rs. **231.50** / Qntl

3 Iron work wrought and put up in trusses and record racks(labour only) per 1 Qntl.

Data for 0.508 Qntl.

a) Labour

Black smith (2nd Class)

1.25 nos Each 75.00 93.75

Fitter (2nd Class)

1.00 no Each 75.00 75.00

Helper

1.00 no Each 65.00 65.00

Man Mulia

2.50 nos Each 55.00 137.50

b) Overhead Charges @ 10% on (a)

- - - 37.13

c) 2% Sundries T & P etc.on (a)

- - - 7.43

Total (a+b+c)

415.81

Rate per 1 cum = $\frac{415.81}{0.508}$ = 818.52 / Qntl

Say Rs. **818.50** / Qntl

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

4 Iron work wrought and put up in grated doors, windows and cage latrines (labour only)
per 1 Qntl.

Data for 0.508 Qntl.

a) Labour

Black smith (Special)	0.75	no	Each	85.00	63.75
Black smith (2nd Class)	1.00	no	Each	75.00	75.00
Filter (Special)	1.00	no	Each	85.00	85.00
Fitter (2nd Class)	1.00	no	Each	75.00	75.00
Helper to Black smith	1.00	no	Each	65.00	65.00
Man Mulia	3.25	nos	Each	55.00	178.75

b) Overhead Charges @ 10% on (a)

- - - 54.25

c) 2% Sundries T & P etc.on (a)

- - - 10.85

Total (a+b+c)

607.60

Rate per 1 cum = $\frac{607.60}{0.508} = 1196.06$ / Qntl

Say Rs. **1196.10** / Qntl

5 Iron work wrought and put up in bolts of over 15 cm in length (labour only)
per 1 Qntl.

Data for 0.508 Qntl.

a) Labour

Black smith (Special)	1.00	nos	Each	85.00	85.00
Black smith (2nd Class)	1.50	nos	Each	75.00	112.50
Fitter (Special)	1.00	no	Each	85.00	85.00
Fitter (2nd Class)	1.00	no	Each	75.00	75.00
Helper to Black smith	2.00	nos	Each	65.00	130.00
Man Mulia	3.00	nos	Each	55.00	165.00

b) Overhead Charges @ 10% on (a)

- - - 65.25

c) 2% Sundries T & P etc.on (a)

- - - 13.05

Total (a+b+c)

730.80

Rate per 1 cum = $\frac{730.80}{0.508} = 1438.58$ / Qntl

Say Rs. **1438.60** / Qntl

6 Iron work wrought and put up in bolts less than 15 cm in length (labour only)
per 1 Qntl.

Data for 0.508 Qntl.

a) Labour

Black smith (Special)	1.00	no	Each	85.00	85.00
Black smith (2nd Class)	1.80	nos	Each	75.00	135.00
Fitter (Special)	1.25	nos	Each	85.00	106.25
Fitter (2nd Class)	1.00	no	Each	75.00	75.00
Hamer Man	2.00	nos	Each	65.00	130.00
Man Mulia	3.00	nos	Each	55.00	165.00

b) Overhead Charges @ 10% on (a)

- - - 69.63

c) 2% Sundries T & P etc.on (a)

- - - 13.93

Total (a+b+c)

779.81

Rate per 1 cum = $\frac{779.81}{0.508} = 1535.06$ / Qntl

Say Rs. **1535.10** / Qntl

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

7 Drilling holes 6mm to 12mm dia in iron flats, angles, tees etc. of 6mm to 10mm thick with hand drill(labour only) Per each
Data for 36 Nos. of holes

a) Labour

Fitter (2nd Class)	1.00	no	Each	75.00	75.00
Man Mulia	1.00	no	Each	55.00	55.00

b) Overhead Charges @ 10% on (a)	-	-	-	-	13.00
c) 2% Sundries T & P etc.on (a)	-	-	-	-	2.60

Total (a+b+c)				Total=	145.60
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Rate per 1 cum = $\frac{145.60}{36.00}$ = 4.04 / each

Say Rs. **4.00** / each

8 Drilling holes 12mm to 25mm dia in iron flats, angles, tees etc. of 6mm to 10mm thick with hand drill(labour only) Per each
Data for 27 Nos. of holes

a) Labour

Fitter (2nd Class)	1.00	no	Each	75.00	75.00
Man Mulia	1.00	no	Each	55.00	55.00

b) Overhead Charges @ 10% on (a)	-	-	-	-	13.00
c) 2% Sundries T & P etc.on (a)	-	-	-	-	2.60

Total (a+b+c)					145.60
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Rate per 1 cum = $\frac{145.60}{27.00}$ = 5.39 / each

Say Rs. **5.40** / each

9 Drilling holes 6mm to 12mm dia in iron flats, angles, tees etc. above 10mm thick & upto 16mm thick with hand drill(labour only) Per each
Data for 27 Nos. of holes

a) Labour

Fitter (2nd Class)	1.00	no	Each	75.00	75.00
Man Mulia	1.00	no	Each	55.00	55.00

b) Overhead Charges @ 10% on (a)	-	-	-	-	13.00
c) 2% Sundries T & P etc.on (a)	-	-	-	-	2.60

Total (a+b+c)					145.60
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Rate per 1 cum = $\frac{145.60}{27.00}$ = 5.39 / each

Say Rs. **5.40** / each

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

10 Drilling holes 12mm to 25mm dia in iron flats, angles, tees etc. above 10mm thick & upto 16mm thick with hand drill(labour only) Per each

Data for 18 Nos. of holes

a) Labour

Fitter (2nd Class) 1.00 no Each 75.00 75.00

Man Mulia 1.00 no Each 55.00 55.00

b) Overhead Charges @ 10% on (a) - - - 13.00

c) 2% Sundries T & P etc.on (a) - - - 2.60

Total (a+b+c) 145.60

Rate per 1 No. = $\frac{145.60}{18.00}$ = 8.09 / each

Say Rs. **8.10** / each

Note :

1 10% excess on the above rate will be allowed for the works being executed inside jail premises.

XVIII. WELL SINKING

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7
1	Sinking 90 Cm dia well in ordinary soil including supply of earthen rings depth not exceeding 4.55m including filling sides with puddle clay per 1 Metre Data for 0.3048 M					
	a) Labour					
	Well sinker	0.5	Each	65.00	32.50	
	Man Mulia	1	Each	55.00	55.00	
	Filling the space with stiff clay & watering	-	- -		10.47	
	Earthen ring over 90 cm. Dia	2.5	Each	30.00	75.00	
	Earthen ring over 10.05 m	2.50%	Each	32.00	80.00	
	b) Overhead Charges @10% on (a)	-	- -		25.30	
	Total (a+b) =				278.27	
	Rate per 1 M (278.27 / 0.3048) =				912.95	
				Say	912.90 / RM	
2	Sinking 90 Cm dia well in ordinary soil including supply of earthen rings depth from 4.80m to 9.10 m deep. per 1 Metre Data for 0.3048 M					
	Rate as per item No.1	-	- -		278.27	
	Add extra labour				20.68	
	Total=				298.95	
	Rate per 1 M (298.95 / 0.3048) =				980.80	
				Say	980.80 / RM	
3	Sinking 90 Cm dia well in ordinary soil including supply of earthen rings depth from 9.90m to 13.70 m deep. per 1 Metre Data for 0.3048 M					
	Rate as per item No.1	-	- -		278.27	
	Add extra labour				35.84	
	Total=				314.11	
	Rate per 1 M (314.11 / 0.3048) =				1030.53	
				Say	1030.50 / RM	
4	Sinking 90 Cm dia well in hard soil not exceeding 4.55m deep. per 1 Metre Data for 0.3048 M					
	Rate as per item No.1	-	- -		278.27	
	Add extra labour				20.68	
	Total=				298.95	
	Rate per 1 M 298.95 / 0.3048 =				980.80	
				Say	980.80 / RM	

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

5	Sinking 90 Cm dia well in hard soil including supply of earthen ring depth from 4.80m to 9.10m deep. per 1 Metre Data for 0.3048 M Rate as per item No.4 Add extra labour	-	--		298.95 28.30	
	Total=				327.25	
	Rate per 1 M	327.25	/ 0.3048 =		1073.65	
			Say		1073.60 / RM	
6	Sinking 90 Cm dia well in hard soil including supply of earthen ring depth from 9.90m to 13.70m deep. per 1 Metre Data for 0.3048 M Rate as per item No.3 Add extra labour	-	--		314.11 28.30	
	Total=				342.41	
	Rate per 1 M	342.41	/ 0.3048 =		1123.38	
			Say		1123.40 / RM	
7	Sinking masonry well 1.50 M dia in ordinary soil upto 4.55M deep (Labour only) per 1 Metre Data for 0.3048 M					
	a) Labour					
	Well sinker(Open well)	0.5	Each	65.00	32.50	
	Man Mulia to dig trenches	2.5	Each	55.00	137.50	
	b) Overhead Charges @ 10% on (a)	-	--		17.00	
	c) 2% Sundries T & P etc. on (a)	-	--		3.40	
	Total (a+b+c)=				190.40	
	Rate per 1 M	190.40	/ 0.3048 =		624.67	
			Say		624.70 / RM	
8	Sinking 1.50 M dia masonry well in hard soil upto 4.55m deep (Labour). per 1 Metre Data for 0.3048 M Rate as per item No.7 Add extra labour for hard soil	-	--		190.40 21.21	
	Total=				211.61	
	Rate per 1 M	211.61	/ 0.3048 =		694.26	
			Say		694.30 / RM	

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

9 Sinking masonry well 1.50 M dia in ordinary soil from 4.80M to 9.10 m (Labour only)
per 1 Metre
Data for 0.3048 M

a) Labour

Well sinker	0.75	Each	65.00	48.75
Man Mulia to dig trenches and remove earth	3.5	Each	55.00	192.50
b) Overhead Charges @ 10% on (a)	-	- -		24.13
c) 2% Sundries T & P etc. on (a)	-	- -		4.83
Total (a+b+c)=				270.20
Rate per 1 M	270.20	/ 0.3048 =		886.48
		Say	886.50 / RM	

10 Sinking masonry well 1.50 M dia in hard soil from 4.80m to 9.10m deep (Labour only).
per 1 Metre
Data for 0.3048 M

Rate as per item No.9	-	- -		270.20
Add extra labour for hard soil				30.19
Total=				300.39
Rate per 1 M	300.39	/ 0.3048 =		985.53
		Say	985.50 / RM	

11 Sinking masonry well 1.50 M dia in ordinary soil from 9.90M to 13.70 m (Labour only)
per 1 Metre
Data for 0.3048 M

a) Labour

Well sinker	1	Each	65.00	65.00
Man Mulia to dig and remove earth	4.75	Each	55.00	261.25
b) Overhead Charges @ 10% on (a)	-	- -		32.63
c) 2% Sundries T & P etc. on (a)	-	- -		6.53
Total (a+b+c)=				365.40
Rate per 1 M	365.40	/ 0.3048 =		1198.82
		Say	1198.80 / RM	

12 Sinking masonry well 1.50 M dia in hard soil from 9.90m to 13.70m deep (Labour only).
per 1 Metre
Data for 0.3048 M

Rate as per item No.11	-	- -		365.40
Add extra labour for hard soil	-	- -		37.74
Total=				403.14
Rate per 1 M	403.14	/ 0.3048 =		1322.64
		Say	1322.60 / RM	

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

13 Construction of 6m. Dia R.C.C. well sinking in soft rock to lines levels and plumb by scooping out from inside and below the steining including cost of hire and running charges of tools and plants and supplying & working of pumps bailing out of water and removal of all material and obstacle from inside the well by divers etc. including precaution against shifting and tilting disposal of the soil with all leads and lift etc. complete as directed by the Engineer-in charges (Labour only)
Per 1 meter
Soft Rock

0.52M. Depth

Sinker Special	48	Nos		
Helper	18	Nos		
Unskilled labour	72	Nos		

1.11M. Depth

Sinker Special	72	Nos		
Helper	27	Nos		
Unskilled labour	108	Nos		

0.500M. Depth

Sinker Special	48	Nos		
Helper	18	Nos		
Unskilled labour	72	Nos		

Total for 2.13 M depth

Sinker Special (48+72+48) =	168	Nos		
Helper (18+27+18) =	63	Nos		
Unskilled labour (72+108+72) =	252	Nos		
Sinker Special	168	Nos	170.00	28560.00
Helper	63	Nos	80.00	5040.00
Unskilled labour	252	Nos	55.00	13860.00

2.13 M depth Amount

For 1.00 M average 47460.00 / 2.13 = 22281.69

Say 22281.70

Machineries

Air compressor 8 hour per day

6days×8=48 hours @Rs.206/h 48 hour 206.00 9888.00

Diesel 6×40=240 ltrs, @Rs.34/lit 240 lit 34.00 8160.00

Mobil 6×1=6litrs@Rs.90/litr 6 lit 90.00 540.00

Jack hammer6×8=48 Hour @Rs15/litrs/hour 48 hour 15.00 720.00

Ropes, Sundries, Tools & Plants 6×30.00 180.00

Total 19488.00

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7
	Air compressor 8 hour per day					
	9×8=72 hours @Rs.206/hour	72	hour	206.00	14832.00	
	Diesel 9×40=360 ltrs, @Rs.34/lit	360	lit	34.00	12240.00	
	Mobil 9×1=9litrs@Rs.90/litr	9	lit	90.00	810.00	
	Jack hammer9×8=72 Hour @Rs15/litrs/hour	72	hour	15.00	1080.00	
	Ropes, Sundries, Tools & Plants 9×30.00				270.00	
				Total	29232.00	
	Air compressor 8 hour per day					
	6×8=48 hours @Rs.206/h	48	hour	206.00	9888.00	
	Diesel 6×40=240 ltrs, @Rs.34/lit	240	lit	34.00	8160.00	
	Mobil 6×1=6litrs@Rs.90/litr	6	lit	90.00	540.00	
	Jack hammer6×8=48 Hour @Rs15/litrs/hour	48	hour	15.00	720.00	
	Ropes, Sundries, Tools & Plants 6×30.00				180.00	
				Total	19488.00	
	0.52M Depth				19488.00	
	1.11M Depth				29232.00	
	0.50 M depth				19488.00	
	2.13 M depth			Total	68208.00	
	2.13M depth of sinking amounts				68208.00	
	1 m ave = 68208 / 2.13			=	32022.54	
	or say				32022.50	
	Labour				22281.70	
	Machineries				32022.50	
				Total	54304.20	

14 Construction of 6m. Dia R.C.C. well sinking in hard rock to lines levels and lumb by scooping out from inside and below the steining including cost of hire and running charges of tools and plants and supplying & working of pumps bailing out of water and removal of all material and obstacle from inside the well by divers etc. including precaution against shifting and tilting disposal of the soil with all leads and lift etc. complete as directed by the Engineer-in charges (Labour only)

Per 1 Metre

Sinker Special 8×7=	56	Nos	for
Helper 3×7=	21	Nos	0.40m
Labour 12×7=	84	Nos	depth
Sinker Special 8×8=	64	Nos	for
Helper 3×8=	24	Nos	0.36m
Labour 12×8=	96	Nos	depth
Sinker Special 8×5=	40	Nos	for
Helper 3×5=	15	Nos	0.27m
Labour 12×5=	60	Nos	depth
Total			1.03 m

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

ABSTRACT

Sinker Special	160	Nos	170.00	27200.00
Heler	60	Nos	80.00	4800.00
Labour	240	Nos	55.00	13200.00
			Total	45200.00

for total 1.03 M. sinking 45200.00
for 1.00 M. depth sinking 45200.00 / 1.03 = 43883.50

Or Say 43883.50 / RM

Machineries

Well 0.40 M. depth

Air compressor 8 hour per day				
8×7 days=56 hours @206.00/h	56	hr	206.00	11536.00
Diesel 7×40=280 ltrs, @Rs.34.00/lit	280	lit	34.00	9520.00
Mobil 7×1=7litrs@Rs.90/litr	7	lit	90.00	630.00
Jack hammer7×8=56 Hour @Rs15/litrs/hour	56	hr	15.00	840.00
Ropes, Sundries, Tools & lant 7×40.00				280.00
		Total		22806.00
Explosive 10 holes /day @30×7×10				2100.00
			Total =	24906.00

Well 0.36 M. depth

Air compressor 8 hour per day				
8×7 days=64 hours @206.00/h	64	hr	206.00	13184.00
Diesel 8×40=320 ltrs, @Rs.34.00/lit	320	lit	34.00	10880.00
Mobil 8×1=8litrs@Rs.90/litr	8	lit	90.00	720.00
Jack hammer8×8=64 Hour @Rs15/litrs/hour	64	hr	15.00	960.00
Ropes, Sundries, Tools & lant 8×40.00				320.00
		Total		26064.00
Explosive 10 holes /day @30×8×10				2400.00
			Total =	28464.00

Well 0.27 M. depth

Air compressor 8 hour per day				
8×5 days=40 hours @206.00/h	40	hr	206.00	8240.00
Diesel 5×40=200 ltrs, @Rs.34.00/lit	200	lit	34.00	6800.00
Mobil 5×1=5litrs@Rs.90/litr	5	lit	90.00	450.00
Jack hammer8×8=64 Hour @Rs15/litrs/hour	64	hr	15.00	960.00
Ropes, Sundries, Tools & lant 5×40.00				200.00
Explosive 10 holes /day @30×5×10				1500.00
			Total =	18150.00

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

ABSTRACT

Well 0.40 M. depth	=	24906.00	
Well 0.36 M. depth	=	28464.00	
Well 0.27 M. depth	=	18150.00	
For 1.03 M. sinking	=	71520.00	
Hence 1.00 M. sinking	=	69436.89	
or say total cost =		69436.90	
Labour	=	43883.50	
Machienries	=	69436.90	
Total =		113320.40	/ RM

XIX.OTHER BUILDING ITEMS.

SI No	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	
1	Supplying, fitting and fixing vetrified tile in floors of size 600mm x 600mm of approved make with application of polymer modified cement based water resistant adhesive bed of required thickness of 10mm and filling joints with epoxy grout of approved qualiy including cost of all materials, labour T&P etc required for the work.					
	Data for 10 Sqm					
a)	Material					
	Cost of tile	10.00	Sqm	Each Sqm	805.00	8050.00
	Cost of polymer modified adhessive.	90.00	Kg.	Each Kg.	20.00	1800.00
	Epoxy Grout	L.S	-	-	-	322.80
b)	Labour					
	Mason Spl	2.16	Nos.	Each	85.00	183.60
	S.S Mulia	5.50	Nos.	Each	65.00	357.50
	Mulia	2.16	Nos.	Each	55.00	118.80
c)	O.H.C @ 10% on (a+b)					1083.27
	Total (a+b+c)					11915.97
	Rate per Sqm	<u>11915.97</u>				1191.60
		10		Or say	Rs.	1191.60

SI No	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P
2	Finishing wall surface of walls with Acrylic wall putty (Water based) of approved make and finished smooth and even surface to receive painting including cost of scaffolding staging charges with cost of all materials taxes, labour T&P etc complete.				
	Data for 10 Sqm				
a)	Material				
	Synthetic putty	8.00 Kg.	Each Kg.	50.68	405.44
	Painter 2nd class	0.50 Nos.	Each	75.00	37.50
b)	Labour				
	Mulia	0.50 Nos.	Each	55.00	27.50
	Mulia for preparation of surface	0.07 Nos.	Each	55.00	3.85
c)	O.H.C @ 10% on (a+b)				47.43
	Total (a+b+c)				521.72
	Rate per Sqm	<u>521.72</u>			52.17
		10	Or say	Rs.	52.20

SI No	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P
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3 Providing fitting and fixing of false ceiling with Aluminium anodised T Section No. 3215 with 2'-0" center to center, L section No. 1705 upto 15 micron on 4 walls to be fixed by means of steel screw and P.V.C plug and the Aluminium grid 2'-0"x2'-0" suspended from ceiling etc complete

Data for 14'-6" x 14'-6" = 210.25Sft or 19.53 Sqm

a) Materials

Aluminium anodised T Section No. 3215	22.66	Kg.	Each Kg.	190.00	4305.40
Perimeter Angle Section No. 1705	3.62	Kg.	Each Kg.	190.00	687.80
P.V.C rawl plug	42	Nos.	Each	7.00	294.00
9" connecting hooks with nuts and washer	42	Nos.	Each	5.50	231.00
G I wire	2.00	Kg.	Each Kg.	40.00	80.00
12mm thick Prelaminated Novapan board including wastage	21.48	Sqm	Each Sqm	543.00	11663.64
65mm PVC Plug	50	Nos.	Each	0.60	30.00
Screws 50 mm x 8mm	50	Nos.	Each	0.63	31.50
Hire charges of drills machine	1.5	day	Each	100.00	150.00

b) Labour

Carpenter 1st class	28	Nos.	Each	85.00	2380.00
Mulia	28	Nos.	Each	55.00	1540.00

c) O.H.C @ 10% on (a+b)

Total (a+b+c)					2139.33
Total (a+b+c)					23532.67
Rate per Sqm	<u>23532.67</u>				1204.95
	19.53	Or say	Rs.		1205.00

SI No	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P
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4 Providing and laying water proofs with polymeric bituminous membrane (Plastic felt) of 2.25Kg/Sqm and 1.5mm thickness consisting of layers having center core of 20 microns thermoplastic high molecular high density polyethylene H.M.H.D.P.E. film of grade 2504 including priming the surface with bituminous primer @ 0.3 Kg/Sqm providing a coat of hot blown bitumen of 1.32 kg / Sqm, applying and laying plastic felt membrane with 10 c.m overlap adhered to blown bitumen of 85/25 or 90/15 grade and covered with a layer of hot blown bitumen @ 1.2Kg/Sqm etc complete.

a) Materials

Bitumen	2.7	Kg.	Each Kg.	20.00	54.00
Fire wood	0.015	Qntl	Each Qntl	320.00	4.80
Const. of 1.5 mm plastic felt	1	Sqm	Each Sqm	72.00	72.00

b) Labour

Semi skilled labour	0.025	Nos.	Each	65.00	1.63
High skilled labour	0.10	Nos.	Each	85.00	8.50
Skilled labour	0.028	Sqm	Each Sqm	75.00	2.10

c) O.H.C @ 10% on (a+b)

Total (a+b+c)					157.33
Rate per Sqm			Or say		157.30

5 Providing and laying water proofs with polymeric bituminous membrane (Plastic felt) of 2.25Kg/Sqm and 2mm thickness consisting of layers having center core of 20 microns thermoplastic high molecular high density polyethylene H.M.H.D.P.E. film of grade 2504 including priming the surface with bituminous primer @ 0.3 Kg/Sqm providing a coat of hot blown bitumen of 1.32 kg / Sqm, applying and laying plastic felt membrane with 10 c.m overlap adhered to blown bitumen of 85/25 or 90/15 grade and covered with a layer of hot blown bitumen @ 1.2Kg/Sqm etc complete.

a) Materials

Bitumen	2.7	Kg.	Each Kg.	20.00	54.00
Fire wood	0.015	Qntl	Each Qntl	320.00	4.80
Const. of 2 mm plastic felt	1	Sqm	Each Sqm	84.00	84.00

b) Labour

Semi skilled labour	0.025	Nos.	Each	65.00	1.63
High skilled labour	0.10	Nos.	Each	85.00	8.50
Skilled labour	0.028	Sqm	Each Sqm	75.00	2.10

c) O.H.C @ 10% on (a+b)

Total (a+b+c)					157.53
Rate per Sqm			Or say	Rs.	170.50

SI No	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P
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6 Providing fitting and fixing up partition walling OEL aluminum anodized section No.9210 and 9207 as single groove and double groove respectively as horizontal and vertical member and OEL section 4660 as Tapered clip for fixing up 12mm thick pre laminated board (Nova pan Make) and jointing angle No. 1855 etc.
Data for 6'-10" x 7'-6" = 51.22Sft or 4.76 Sqm

a) Materials

Al. Section No 9210 8.74 m @ 1.377Kg/M = 12.03

Al. Section No 9207 4.37 m @ 1.424Kg/M = 6.22

Tappered Clip Sec. No 9207 34.94m@0.169Kg/M=5.90

Al. angle Sec. No 1855 4.88m@0.518Kg/M= 2.53

	26.68	Kg	Each Kg.	190.00	5069.20
U Rubber beads	34.94	M	Each Mtr	22.00	768.68
12mm thick Novapan prelaminated bead	4.76	Sqm			
Westage 10%	<u>0.48</u>	Sqm			
	5.24	Sqm	Each Sqm	543.00	2845.32
PVC Rawl plug	10	Nos.	Each	7.00	70.00
3"Screws	10	Nos.	Each	2.00	20.00
Screws 50 mm x 8mm	15	Nos.	Each	0.63	9.45
Hire charges of drills machine	2	day	Each	100.00	200.00

b) Labour

Carpenter 1st class 17 Nos. Each 85.00 1445.00

Mulia 17 Nos. Each 65.00 1105.00

c) O.H.C @ 10% on (a+b)

Total (a+b+c) 12685.92

Rate per Sqm 12685.92 2665.11

4.76 **Or say Rs. 2665.10**

SI No	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P
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8 Supplying fitting, fixing fully glazed aluminum framed openable windows using 15 micron anodized OEL aluminum section 2082 as out section, 9139 as mullion section, 4124 as a shutter section frame with tapered clip of section 4125, aluminum angle , rubber beading, friction stay and handle etc. with 5mm black glass.

Data for 6'-0" x 4'-0" = 24 Sft or 2.23 Sqm

a) Materials

Outer Al. Section No 2082	6.09 m @ 0.594Kg/M =			3.62	
Mullion Sec.No 9139	2.44 m @ 0.890Kg/M =			2.17	
Shutter Sec.No 4124	7.31 m @ 0.520Kg/M =			3.80	
Tappered clip Al. Sec. No 4125	10.97 m @ 0.197Kg/M =			2.16	
Al. angle Section No 1855	0.91 m @ 0.518Kg/M =			<u>0.47</u>	
				12.22 Kg	
	Westage 10%			<u>1.22</u> Kg	
				13.44 Kg	
		13.44 Kg	Each Kg	190.00	2553.60
U rubber beading		10.97 Mtr	Each Mtr	7.00	76.79
Handle		2 Nos.	Each	40.00	80.00
Friction stay		4 Nos.	Each	122.00	488.00
5mm thick black glass	2.23				
Westage 10%	<u>0.22</u>				
	2.45 Sqm	2.45 Sqm	Each Sqm	456.00	1117.20
PVC Rawl plug		15 Nos.	Each	7.00	105.00
Al. Screws of diff. Sizes		LS			50.00
Hire charges of drills machine		1 day	Each	100.00	100.00
b) Labour					
Carpenter 1st class		8 Nos.	Each	85.00	680.00
Mulia		8 Nos.	Each	65.00	520.00
c) O.H.C @ 10% on (a+b)					577.06
Total (a+b+c)					6347.65
Rate per Sqm		<u>6347.65</u>			2846.48
		2.23	Or say	Rs.	2846.50

SI No	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P
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9 Providing fitting, fixing of Al. door with OEL anodized Al. door section of 9202 as vertical member, 9201 as top member and 9200 as bottom and middle member and 12mm thick pre-laminated board fixed on door frame by means of tapered clip No. 4660 and the frame to be completed by means of jointing angle No. 1855 including all cost of labour, T&P , hire charges of drilling machine, labour charges etc. complete.

Data for 3'-6" x 6'-8" = 23.31 Sft or 2.16 Sqm

a) Materials

Al. Section No 9202	4.06 m @ 1.202Kg/M =			4.88	
Al. Section No 9201	1.07 m @ 1.299Kg/M =			1.39	
Al. Section No 9200	2.13 m @ 1.974Kg/M =			4.20	
Al. Section No 4660	16.65 m @ 0.169Kg/M =			2.81	
Al. Ang. Sec. No 1855	2.44 m @ 0.518Kg/M =			<u>1.26</u>	
				14.54 Kg	
	Westage 10%			<u>1.45</u> Kg	
				15.99 Kg	
		15.99 Kg	Each Kg	190.00	3038.10
12mm thick Prelaminated Novapan Board -	2.16				
Westage 10%	<u>0.22</u>				
	2.38 Sqm	2.38 Sqm	Each Sqm	543.00	1292.34
4" Anodised Al. Hinges	4 Nos.	4 Nos.	Each	38.00	152.00
U rubber beading	18.29 Mtr	18.29 Mtr	Each Mtr	7.00	128.03
Door Stopper	1 day	1 day	Each	25.00	25.00
Handle	2 Nos.	2 Nos.	Each	62.50	125.00
6 Level mortice lock	1 Nos.	1 Nos.	Each	400.00	400.00
Automatic door closure	1 Nos.	1 Nos.	Each	600.00	600.00
Hire charges of drilling machine	1.5 Day	1.5 Day	Each	100.00	150.00
Aluminium Screws adhesive	LS				50.00
b) Labour					
High skilled labour	6.22 Nos.	6.22 Nos.	Each	85.00	528.70
Semi skilled labour	6.22 Nos.	6.22 Nos.	Each	65.00	404.30
c) O.H.C @ 10% on (a+b)					689.35
Total (a+b+c)					7582.82
Rate per Sqm		<u>7582.82</u>			3510.56
		2.16	Or say	Rs.	3510.60

SI No	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P
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10 Providing fitting, fixing of Al. door with OEL anodized Al. door section of 9202 as vertical member, 9201 as top member and 9200 as bottom and middle member and 6mm plain glass in top portion with 12mm thick pre-laminated board in bottom portion fixed on door frame by means of tapered clip No. 4660 and the frame to be completed by means of jointing angle No. 1855 including all cost of labour, T&P, hire charges of drilling machine, labour charges etc. complete.

Data for 3'-0" x 6'-6" = 19.50 Sft or 1.81 Sqm

a) Materials

Al. Section No 9202	3.96 m @ 1.202Kg/M =			4.76	
Al. Section No 9201	0.91 m @ 1.299Kg/M =			1.18	
Al. Section No 9200	1.83 m @ 1.974Kg/M =			3.61	
Al. Section No 4660	15.24 m @ 0.169Kg/M =			2.57	
Al. Ang. Sec. No 1855	2.44 m @ 0.518Kg/M =			<u>1.26</u>	
				13.38 Kg	
	Westage 10%			<u>1.34</u> Kg	
				14.72 Kg	
		14.72 Kg	Each Kg	190.00	2796.80
12mm thick Prelaminated Novapan Board -					
1x3'-6"x3'-0" =	10.50				
Westage 10%	<u>1.05</u>				
	11.55 Sft or 1.07				
		1.07 Sft	Each Sft	543.00	581.01
6mm black glass 1x3'-0"x3'-0" 9.00					
Westage 10%	<u>0.90</u>				
	9.90 Sft or 0.92				
		0.92 Sft	Each Sft	577.00	530.84
4" Al. Hinges.	4 Nos.		Each	38.00	152.00
U rubber beading	18.29 Mtr		Each Mtr	7.00	128.03
Door Stopper	1 day		Each	25.00	25.00
Handle	2 Nos.		Each	62.50	125.00
6 Level mortice lock	1 Nos.		Each	400.00	400.00
Automatic door closure	1 Nos.		Each	600.00	600.00
Hire charges of drilling machine	1.5 Day		Each	100.00	150.00
Aluminium Screws adaessive	LS				50.00

b) Labour

High skilled labour	6.22 Nos.		Each	85.00	528.70
Semi skilled labour	6.22 Nos.		Each	65.00	404.30

c) O.H.C @ 10% on (a+b)

Total (a+b+c)					7118.85
Rate per Sqm	<u>7118.85</u>				3933.07
	1.81	Or say	Rs.		3933.10

SI No	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P
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11 Supplying, fitting and fixing of Stainless steel of 304 grade in hand railing using 50mm dia of 2mm thick circular pipe with Balustrade of size 32mm x 32mm x 2mm @ 0.90mtr. C/C and stainless square pipe bracing of size 32mm x 32mm x 2mm in 3 rows in stair case as per approved design and specification, buffing, polishing etc with cost, conveyance, taxes of all materials, labour, T&P etc. required for the complete in all respect.

Data for 3.26 Rmt.

a) Materials

Railing- 50mm outer dia of 2mm thick 3.26 rmt. @ 3.50kg/mtr.	11.41 Kg	Each Kg	240.24	2741.14
Balustrade of size 32mmx32mmx2mm (4x0.90m = 3.60mtr. @ 1.70kg/mtr.	6.12 Kg	Each Kg	256.62	1570.51
Stainless steel square pipe bracing of size 32mmx32mmx2mm in 3 rows (3x3.26m = 9.78mtr. @ 1.70kg/mtr.	16.63 Kg	Each Kg	256.62	4267.59

Fabrication	34.16 Kg	Each Kg	10.00	341.60
Buffing, polishing etc. 2%				171.58

b) Labour

High skilled labour	0.89 Nos.	Each	85.00	75.65
Semi skilled labour	0.89 Nos.	Each	65.00	57.85

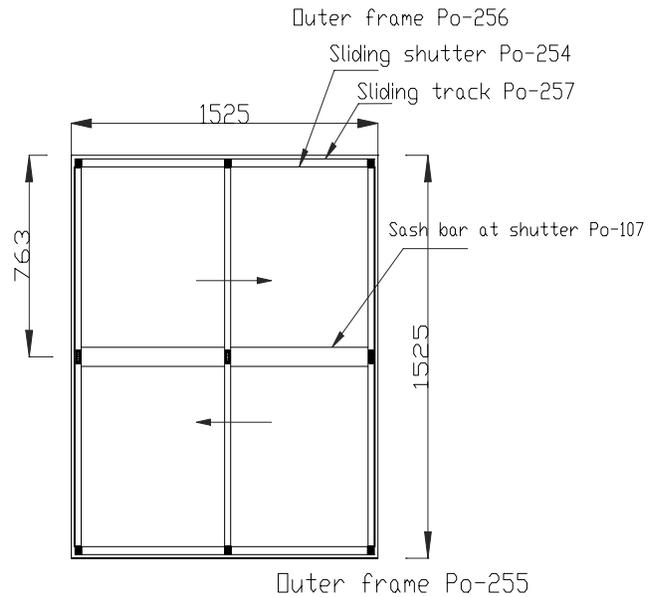
c) Over head charges @ 10% on (a+b)

Total (a+b+c)				10148.51
Rate per 1 Rmt.	<u>10148.51</u>			3113.04
	3.26	Or say	Rs.	3113.00

12. Specification for Double shutter Sliding window

Providing and fixing of **Sliding windows of approved make** to be fabricated from roll formed sections made of pre-painted steel (*base steel as per IS-513 of 0.6 mm thick "D" quality, galvanized as per IS-277 with zinc of 120 Gm/Sq.mtr*) with total coated thickness of 0.55 mm. Slide guide section should be made of 0.5 mm stainless steel of 430 grade. with paint specification being with primer of 5-7 microns thick and finished paint with polyester paint (**Black /Pearl white/ Chocolate Brown**) of 12-16 microns along with the alkyd backer at the back of 5-7 microns and the Sections for external frame bottom and top should be of 79 x 45 mm. external frame sides should be of 69 x 24 mm, guide for top and bottom should be of 69 x 26 mm (Stainless Steel). Section for shutter should be of 26 x 30 mm, Sash bar should be of 23 x 57mm. Accessories / gaskets are to be used as per the manufacturer's supply and specification like gasket will be made of EPDM. All corner brackets for internal and external are to be made of glass filled nylon. The sections are to be cut to length , joined and assembled by means of corner bracket and frames are fixed to the concrete/masonry walls by means of self expanding screws and **glass to be used of 5 mm reflective** with all taxes complete.

Typical drawing

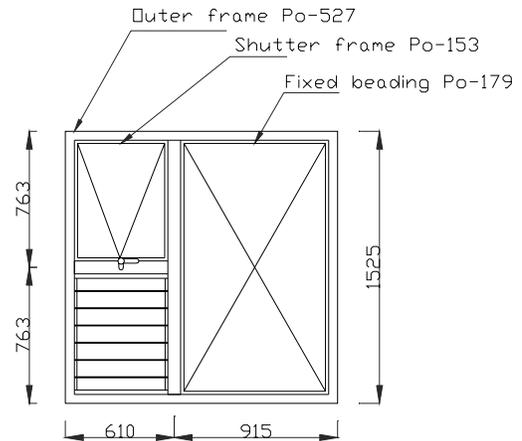


SI	Description	Quantity Required	Unit	Rate Rs.	P	Amount Rs.	P	Remark
	Data for 2.32 Sqm.							
	Material							
A	Profile							
1	Outer frames(side/top) Po-255	4.575	mtr	154.22		705.55		
2	Outer frames(bottom) Po-256	1.525	mtr	102.82		156.80		
3	Sliding shutter Po-254	9.15	mtr	123.7		1131.86		
4	Sliding track(SS) Po-257	3.05	mtr	401.62		1224.94		
5	Sash bar at shutter Po-107	1.525	mtr	205.63		313.59		
	total					3532.74		
B	Accessories							
1	Sliding outer frame assembly/pc	1	nos	198.75		198.75		
2	Sliding shutter/pc	2	nos	242.19		484.38		
3	Sash bar	2	nos	13.16		26.32		
4	Wall fixing with polymide anchor at every 600mm c/c. of outer frame	10	nos	19.74		197.40		
	total					906.85		
C	Gasket							
	For shutter	9.15	mtr	37.22		340.56		
D	Glass							
	cost of 5mm reflective glass	2.32	Smtr	784.31		1819.60		
	Total (A+B+C+D)					6599.75		
E	Labour							
	Labour for fixing of 2.32Smtr.							
	High skilled	2.49	no.	85.00		211.65		
	Semi skilled	2.49	no.	65.00		161.85		
	Total labour (E)					373.50		
F	Total (A+B+C+D+E)					6973.25		
G	Over head charges @ 10% on(F)				10%	697.33		
	Total(F+G)					7670.58		
	Rate / sqmtr = 7670.58/2.32					3306.28		
	Rate per sqm		Say	Rs.		3306.30		

13. Partly fixed partly top hung and louvered window

Typical drawing

Providing and fixing of **Partly fixed, partly top hung and partly louvered windows of approved make** to be fabricated from roll formed sections made of pre-painted steel (*base steel as per IS-513 of 0.6 mm thick "D" quality, galvanized as per IS-277 with zinc of 120 Gm/Sq.mtr*) with paint specification being with primer of 5-7 microns and finished paint with polyester paint (**Black /Pearl white/ Chocolate Brown**) of 12-16 microns alongwith the alkyd backer at the back of 5-7 microns and the sizes of outer frame being of 46x52 mm and with all vertical and horizontal mullions are of 46x70 mm and fixed beadings are of 18x25 mm. Section for internal top and bottom frames in the louvered areas should be 18 x 40 mm. Top hung shutter should be of 46 x 46 mm. Accessories / gaskets are to be used as per the manufacturer's supply and specification like handle being made of high grade aluminium powder coated and with nylon receiver and gasket will be made of EPDM. All corner brackets are to be made of CRCA with zinc phosphating. The mullion caps and louvered-clips should be of glass filled nylon. The sections are to be cut to length ,mitre joined with corner bracket and frames are fixed to the concrete/masonry walls by means of self expanding screws and **glass to be used of 5 mm reflective** with all taxes complete.

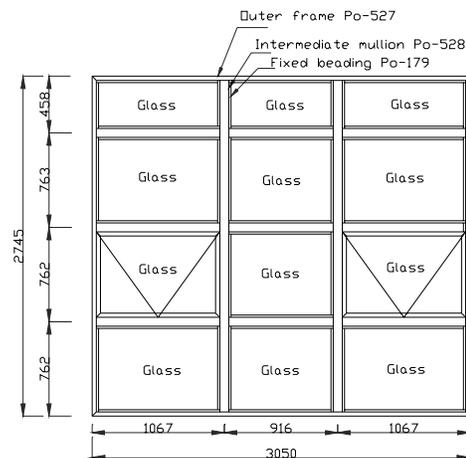


SI	Description	Quantity Required	Unit	Rate Rs. P	Amount Rs. P	Remark
Data for 2.32 Sqm. Material						
A Profile						
1	Outer frames Po-527	6.100	mtr	244.19	1489.56	
2	Intermediate mullion Po-528	2.135	mtr	273.10	583.07	
3	Shutter Frame Po-153	2.745	mtr	202.42	555.64	
4	Fixed beading Po-179	6.407	mtr	101.21	648.45	
5	Louvered horizontal(top/bottom)Po-193A	1.22	mtr	102.82	125.44	
	total				3402.16	
B Accessories						
1	Outer frame corner	4	nos	30.27	121.08	
2	Top hung shutter/pc	1	no	264.56	264.56	
3	Fixed mullion	2	nos	39.49	78.98	
4	Fixed glazing	1	no	77.66	77.66	
5	Louvered blade	12	nos	19.74	236.88	
6	Wall fixing with polymide anchor at every 600mm c/c of outer frame	10	nos	19.74	197.40	
	total				976.56	
C Gasket						
1	For shutter	2.745	mtrs	28.95	79.47	
2	For beading	6.407	mtrs	37.22	238.47	
	total				317.94	
	Total (A+B+C)				4696.66	
D Glass						
	cost of 5mm reflective glass	2.32	Smtr	784.31	1819.60	
	Total (A+B+C+D)				6516.26	
E Labour						
	Labour for fixing for 2.32Smtr.					
	High skilled	2.49	no.	85.00	211.65	
	Semi skilled	2.49	no,	65.00	161.85	
	Total labour (E)				373.50	
F	Total (A+B+C+D+E)				6889.76	
G	Over head charges @ 10% on (F)			10%	688.98	
	Total(F+G)				7578.74	
	Rate / sqmtr = 7578.74/2.32 =				3266.70	
	Rate per sqm	Say		Rs.	3266.70	

14. Fixed Glazing with part top hung

Typical drawing

Providing and fixing of **Fixed Glazing with part Top hung** of approved make to be fabricated from roll formed sections made of pre-painted steel (*base steel as per IS-513 of 0.6 mm thick "D" quality, galvanized as per IS-277 with zinc of 120 Gm/Sq.mtr*) with paint specification being with primer of 5-7 microns and finished paint with polyester paint (**Black /Pearl white/ Chocolate Brown**) of 12-16 microns alongwith the alkyd backer at the back of 5-7 microns and the sizes of outer frame being of 46x52 mm and with all vertical and horizontal mullions are of 46x70 mm and fixed beadings are of 18x25 mm. Top hung shutter should be of 46 x 46 mm. Accessories / gaskets are to be used as per the manufacturer's supply and specification like handle being made of high grade aluminium powder coated and with nylon receiver and gasket will be made of EPDM. All corner brackets are to be made of CRCA with zinc phosphating. The mullion caps and louvered-clips should be of glass filled nylon. The sections are to be cut to length ,mitre joined with corner bracket and frames are fixed to the concrete/masonry walls by means of self expanding screws and **glass to be used of 5 mm reflective** with all taxes complete.

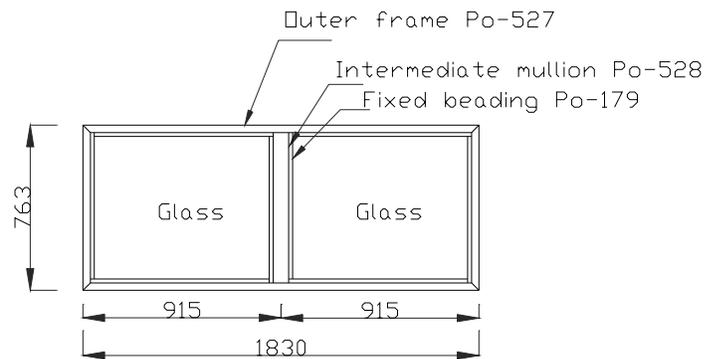


SI	Description	Quantity Required	Unit	Rate Rs. P	Amount Rs. P	Remark
Data for 8.37 Sqm.						
Material				Rate/Unit		
A	Profile					
1	Outer frames Po-527	11.5	mtr	244.19	2808.18	
2	Intermediate mullion Po-528	14.6	mtr	273.1	3987.26	
3	Shutter Frame Po-153	7.3	mtr	202.42	1477.67	
4	Fixed beading Po-179	33.5	mtr	101.21	3390.54	
5	33x57 Box section	6.1	mtr	244.19	1489.56	
		total			13153.21	
B	Accessories					
1	Outer frame corner	4	nos	30.27	121.08	
2	Top hung shutter/pc	2	nos	264.56	529.12	
3	Fixed mullion	11	nos	39.49	434.39	
4	Fixed glazing	10	nos	77.66	776.60	
6	Wall fixing with polymide anchor at every 600mm c/c. of outer frame	18	nos	19.74	355.32	
		total			2216.51	
C	Gasket					
1	For shutter Po-153	7.32	mtr	28.95	211.91	
2	For beading Po-179	33.55	mtr	37.22	1248.73	
		total			1460.64	
	Total(A+B+C)				16830.36	
D	Glass					
	cost of 5mm reflective glass	8.37	Smtr	784.31	6564.67	
	Total (A+B+C+D)				23395.03	
E	Labour					
	Labour for fixing for 8.37Smtr.					
	High skilled	8.98	no.	85.00	763.30	
	Semi skilled	8.98	no.	65.00	583.70	
	Total labour charge				1347.00	
F	Total(A+B+C+D+E)				24742.03	
G	Over head charges @ 10% on (F)			10%	2474.20	
	Total(F+G)				27216.23	
	Rate / sqmtr =27216.23/8.37 =				3251.64	
	Rate per sqm	Say		Rs.	3251.60	

15. Fixed Ventilators.

Providing and fixing of **Fixed Ventilators of approved make** to be fabricated from roll formed sections made of pre-painted steel (*base steel as per IS-513 of 0.6 mm thick "D" quality, galvanized as per IS-277 with zinc of 120 Gm/Sq.mtr*) with paint specification being with primer of 5-7 microns and finished paint with polyester paint (**Black /Pearl white/ Chocolate Brown**) of 12-16 microns alongwith the alkyd backer at the back of 5-7 microns and the sizes of outer frame being of 46x52 mm and with all vertical and horizontal mullions are of 46x70 mm and fixed beadings are of 18x25 mm. Accessories / gaskets are to be used as per the manufacturer's supply and specification like handle being made of high grade aluminium powder coated and with nylon receiver and gasket will be made of EPDM. All corner brackets are to be made of CRCA with zinc phosphating. The mullion caps and louvered-clips should be of glass filled nylon. The sections are to be cut to length ,mitre joined with corner bracket and frames are fixed to the concrete/masonry walls by means of self expanding screws and **glass to be used of 5 mm reflective** with all taxes complete.

Typical drawing

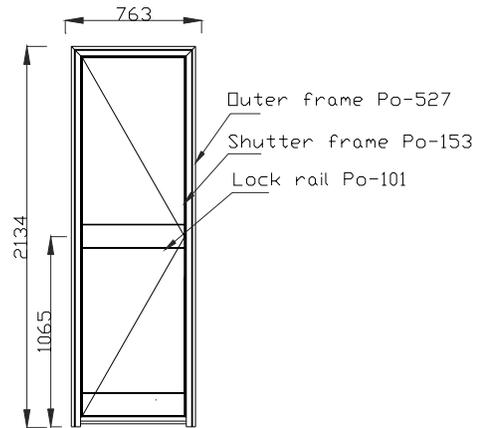


SI	Description	Quantity Required	Unit	Rate		Amount		Remark	
				Rs.	P	Rs.	P		
	Data for 1.40 Sqm.								
	Material								
A	Profile								
1	Outer frames Po-527		5.1 mtr	244.19		1245.37			
2	Intermediate mullion Po-528		1.5 mtr	273.10		409.65			
4	Fixed beading Po-179		8.2 mtr	101.21		829.92			
		total				2484.94			
B	Accessories								
1	Outer frame corner		4 nos	30.27		121.08			
3	Fixed mullion		2 nos	39.49		78.98			
4	Fixed glazing		3 nos	77.66		232.98			
6	Wall fixing with polymide anchor at every 600mm c/c. of outer frame		5 nos	19.74		98.70			
		total				531.74			
C	Gasket								
2	For beading Po-179		8.2 mtr	37.22		305.20			
		total				305.20			
	Total(A+B+C)						3321.88		
D	Glass								
	cost of 5mm reflective glass		1.4 Smtr	784.31		1098.03			
	Total (A+B+C+D)						4419.91		
E	Labour								
	Labour for fixing for 1.4Smtr.								
			1.18 no.	85.00		100.30			
			1.18 no.	65.00		76.70			
		Total labour (E)				177.00			
F	Total (A+B+C+D+E)						4596.91		
G	Over head charges @ 10% on (F)				10%		459.69		
	Total(F+G)						5056.60		
	Rate / sqmtr = 5056.60/1.4 =						3611.86		
	Rate per sqm		Say		Rs.	3611.90			

16. Side hung Door.

Providing and fixing of **Side hung Door of approved make** to be fabricated from roll formed sections made of pre-painted steel (*base steel as per IS-513 of 0.6 mm thick "D" quality, galvanized as per IS-277 with zinc of 120 Gm/Sq.mtr*) with paint specification being with primer of 5-7 microns and finished paint with polyester paint (**Black /Pearl white/ Chocolate Brown**) of 12-16 microns alongwith the alkyd backer at the back of 5-7 microns and the sizes of outer frame being of 46x52 mm and shutter being of 46 x 46 mm and lock rail and bottom rail should be of 23 x 130mm. Accessories / gaskets are to be used as per the manufacturer's supply and specification like handle and lock of approved quality. Hinges made up of 2.5mm thick. Gasket will be made of EPDM. All corner brackets are to be made of CRCA with zinc phosphating. The sections are to be cut to length ,mitre joined with corner bracket and frames are fixed to the concrete/masonry walls by means of self expanding screws and **board to be of 9mm pre-laminated** with all taxes complete.

Typical drawing

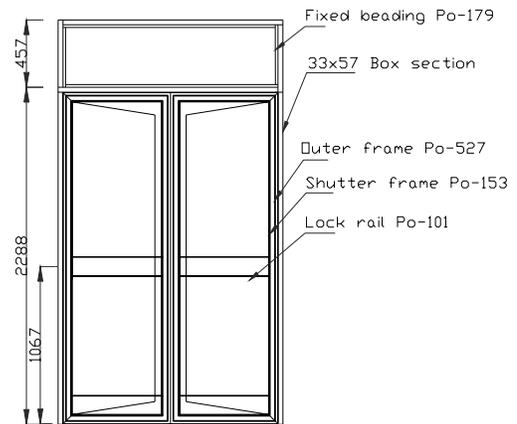


SI	Description	Quantity Required	Unit	Rate Rs. P	Amount Rs. P	Remark
	Data for 1.74 Sqm. Material					
A	Profile					
1	Outer frames Po-527	5.339	mtr	244.19	1303.73	
4	Sashbar Po-101	1.525	mtr	379.13	578.17	
5	Shutter Frame Po-153	6.102	mtr	202.42	1235.17	
		total			3117.07	
B	Accessories					
1	Outer frame corner	2	nos	30.27	60.54	
2	Side hung door/pc	1	nos	302.74	302.74	
3	Door lock/pc	1	nos	272.46	272.46	
4	Sashbar/pc	2	nos	13.16	26.32	
6	Wall fixing with polymide anchor at every 600mm c/c. of outer frame	7	nos	19.74	138.18	
		total			800.24	
C	Gasket					
1	For Sashbar Po- 101	1.525	mtr	82.72	126.15	
2	For shutter Po-153	6.102	mtr	28.95	176.65	
		total			302.80	
	Total (A+B+C)				4220.11	
D	Board					
	Cost of 9mm Prelaminated board	1.74	Smtr	479	833.46	
	Total (A+B+C+D)				5053.57	
E	Labour					
	Labour for fixing for 1.74Smtr.					
	High skilled	1.87	No.	85	158.95	
	Semi skilled	1.87	No.	65	121.55	
		Total labour (E)			280.50	
F	Total (A+B+C+D+E)				5334.07	
G	Over head charges @ 10% on (F)				533.41	
	Total (F+G)				5867.48	
	Rate per sqm = 5867.48/ 1.74 =				3372.11	
	Rate per sqm	Say		Rs.	3372.10	

17. swing Door.

Providing and fixing of **Swing Door of approved make** to be fabricated from roll formed sections made of pre-painted steel (*base steel as per IS-513 of 0.6 mm thick "D" quality, galvanized as per IS-277 with zinc of 120 Gm/Sq.mtr*) with paint specification being with primer of 5-7 microns and finished paint with polyester paint (**Black /Pearl white/ Chocolate Brown**) of 12-16 microns alongwith the alkyd backer at the back of 5-7 microns and the sizes of outer frame being of 33 x 57 mm and shutter being of 46 x 52 mm and 46 x 46 mm and lock rail should be of 23 x 130mm. Accessories / gaskets are to be used as per the manufacturer's supply and specification like handle, lock and floor spring of approved quality. Gasket will be made of EPDM. All corner brackets are to be made of CRCA with zinc phosphating. The sections are to be cut to length ,mitre joined with corner bracket and frames are fixed to the concrete/masonry walls by means of self expanding screws and **glass to be used of 6 mm clear** with all taxes complete.

Typical drawing



SI	Description	Quantity Required	Unit	Rate Rs. P	Amount Rs. P	Remark
	Data for 4.18 Sqm.					
	Material					
A	Profile					
1	Outer frames Po-527	12.2	mtr	244.19	2979.12	
2	Shutter Frame Po-153	12.2	mtr	202.42	2469.52	
3	33 x 57 Box section	8.5	mtr	247.40	2102.90	
4	Fixed beading Po-179	7.9	mtr	101.21	799.56	
5	Sash Bar Po-101	3.0	mtr	379.13	1137.39	
	3*					
		total			9488.49	
B	Accessories					
1	Outer frame corner	2	nos	30.27	60.54	
2	Swing Door shutter/pc	2	nos	151.37	302.74	
3	Door lock/pc	2	nos	272.46	544.92	
4	Sashbar/pc	4	nos	13.16	52.64	
5	Wall fixing with polymide anchor at every 600mm c/c. of outer frame	8	nos	19.74	157.92	
6	Fixed glazing	1	nos	77.66	77.66	
7	Cost of floor Spring (Godrej Make) with all taxes	2	nos.	2250	4500.00	
					5696.42	
C	Gasket					
1	For Sashbar Po- 101	3.0	mtr	82.72	248.16	
2	For shutter Po-153	12.0	mtr	28.95	347.40	
3	Fixed beading Po-179	7.9	mtr	37.22	294.04	
		total			889.60	
	Total (A+B+C)				16074.51	
D	Glass					
	cost of 6mm Clear glass	4.18	Smtr	455.00	1901.90	
	Total (A+B+C+D)				17976.41	
E	Labour					
	High skilled	4.48	no.	85	380.80	
	Semi skilled	4.48	no.	65	291.20	
	Total labour (E)				672.00	
F	Total (A+B+C+D+E)				18648.41	
G	Over head charges @ 10% on (F)				1864.94	
	Total (F+G)				20513.35	
	Rate / sqm = 20513.35/4.18 =				4907.50	
	Rate per sqm	Say		Rs.	4907.50	

Note :

- (i) If any item is not available in Analysis of Rate the analysis of Data Book will be referred with 10 % overhead charges and omitting contractor's profit.

- (ii) Sinking of well of other diameter will be proportionately increased as per dredged volume.

XXII. Bridge Work

	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks
1	Plain Cement Concrete in Open Foundation complete as per Drawing and Technical Specifications.					
A	PCC Grade M15					
	<i>Unit = cum</i>					
	<i>Taking output = 15 cum</i>					
	a) Material					
	Cement	MT	4.13	3410.00	14083.30	
	Coarse sand	cum	6.75	29.00	195.75	
	40 mm Aggregate	cum	8.10	464.00	3758.40	
	20 mm Aggregate	cum	4.05	638.00	2583.90	
	10 mm Aggregate	cum	1.35	671.00	905.85	
	b) Labour					
	Mate	day	0.86	65.00	55.90	
	Mason 2nd Class	day	1.50	75.00	112.50	
	Mulia unskilled	day	20.00	55.00	1100.00	
	c) Machinery					
	Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	161.00	966.00	
	Generator 33 KVA	hour	6.00	240.00	1440.00	
	d) Overhead charges @ 10% on (a+b+c)				2520.16	
	Cost for 15 cum = a+b+c+d				27721.76	
	Rate per cum = (a+b+c+d)/15				1848.12	
					<i>say</i>	
					<u>1848.10</u>	<i>/ cum</i>
Note	Needle Vibrator is an item of minor T & P which is already included in overhead charges. Hence not added in rate analysis of cement concrete works.					
B	PCC Grade M20					
	<i>Unit : cum</i>					
	<i>Taking output = 15 cum</i>					
	a) Material					
	Cement	MT	5.16	3410.00	17595.60	
	Coarse sand	cum	6.75	29.00	195.75	
	40 mm Aggregate	cum	5.40	464.00	2505.60	
	20 mm Aggregate	cum	5.40	638.00	3445.20	
	10 mm Aggregate	cum	2.70	671.00	1811.70	
	b) Labour					
	Mate	day	0.86	65.00	55.90	
	Mason 2nd Class	day	1.50	75.00	112.50	
	Mulia unskilled	day	20.00	55.00	1100.00	
	c) Machinery					
	Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	161.00	966.00	
	Generator 33 KVA	hour	6.00	240.00	1440.00	
	d) Overhead charges @ 10% on (a+b+c)				2922.83	
	Cost for 15 cum = a+b+c+d				32151.08	
	Rate per cum = (a+b+c+d)/15				2143.41	
					<i>say</i>	
					<u>2143.40</u>	<i>/ cum</i>

	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks
C	PCC Grade M25					
	Case I:- Using Concrete Mixer					
	<i>Unit = cum</i>					
	<i>Taking output = 15 cum</i>					
	a) Material					
	Cement	MT	5.99	3410.00	20425.90	
	Coarse sand	cum	6.75	29.00	195.75	
	40 mm Aggregate	cum	5.40	464.00	2505.60	
	20 mm Aggregate	cum	5.40	638.00	3445.20	
	10 mm Aggregate	cum	2.70	671.00	1811.70	
	b) Labour					
	Mate	day	0.86	65.00	55.90	
	Mason 2nd Class	day	1.50	75.00	112.50	
	Mulia unskilled	day	20.00	55.00	1100.00	
	c) Machinery					
	Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	161.00	966.00	
	Generator 33 KVA	hour	6.00	240.00	1440.00	
	d) Overhead charges @ 10% on (a+b+c)				3205.86	
	Cost for 15 cum = a+b+c+d				35264.41	
	Rate per cum = (a+b+c+d)/15				2350.96	
						<i>say</i> <u>2351.00</u> / cum
	Case II:- With Batching Plant, Transit Mixer and Concrete Pump					
	<i>Unit : cum</i>					
	<i>Taking Output = 120 cum</i>					
	a) Material					
	Cement	MT	47.95	3410.00	163509.50	
	Coarse sand	cum	54.00	29.00	1566.00	
	40 mm Aggregate	cum	43.20	464.00	20044.80	
	20 mm Aggregate	cum	43.20	638.00	27561.60	
	10 mm Aggregate	cum	21.60	671.00	14493.60	
	b) Labour					
	Mate	day	0.84	65.00	54.60	
	Mason 2nd Class	day	3.00	75.00	225.00	
	Mulia unskilled	day	18.00	55.00	990.00	
	c) Machinery					
	Batching Plant @ 20 cum/hour	hour	6.00	1440.00	8640.00	
	Generator 100 KVA	hour	6.00	450.00	2700.00	
	Loader 1 cum capacity	hour	6.00	520.00	3120.00	
	Transit Mixer 4 cum capacity for lead upto 1km.	hour	15.00	600.00	9000.00	
	Lead beyond 1 km, L - lead in km	t - km	300L			
	Concrete Pump	hour	6.00	165.00	990.00	
	d) Overhead charges @ 10% on (a+b+c)				25289.51	
	cost of 120 cum = a+b+c+d				278184.61	
	Rate per cum = (a+b+c+d)/120				2318.21	
						<i>say</i> <u>2318.20</u> / cum

Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks
D PCC Grade M30					
Case I:- Using Concrete Mixer					
<i>Unit = cum</i>					
<i>Taking output = 15 cum</i>					
a) Material					
Cement	MT	6.08	3410.00	20732.80	
Coarse sand	cum	6.75	29.00	195.75	
40 mm Aggregate	cum	5.40	464.00	2505.60	
20 mm Aggregate	cum	5.40	638.00	3445.20	
10 mm Aggregate	cum	2.70	671.00	1811.70	
b) Labour					
Mate	day	0.86	65.00	55.90	
Mason 2nd class	day	1.50	75.00	112.50	
Mulia unskilled	day	20.00	55.00	1100.00	
c) Machinery					
Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	161.00	966.00	
Generator 33 KVA	hour	6.00	240.00	1440.00	
d) Overhead charges @ 10% on (a+b+c)				3236.55	
cost of 15 cum = a+b+c+d				35602.00	
Rate per cum (a+b+c+d)/15				2373.47	
				<i>say</i> <u>2373.50</u>	<i>/ cum</i>
Case II:-Using Batching Plant, Transit Mixer and Concrete Pump					
<i>Unit : cum</i>					
<i>Taking Output = 120 cum</i>					
a) Material					
Cement	MT	48.60	3410.00	165726.00	
Coarse sand	cum	54.00	29.00	1566.00	
40 mm Aggregate	cum	43.20	464.00	20044.80	
20 mm Aggregate	cum	43.20	638.00	27561.60	
10 mm Aggregate	cum	21.60	671.00	14493.60	
b) Labour					
Mate	day	0.84	65.00	54.60	
Mason 2nd class	day	3.00	75.00	225.00	
Mulia unskilled	day	18.00	55.00	990.00	
c) Machinery					
Batching Plant @ 20 cum/hour	hour	6.00	1440.00	8640.00	
Generator 100 KVA	hour	6.00	450.00	2700.00	
Loader 1 cum capacity	hour	6.00	520.00	3120.00	
Transit Mixer 4 cum capacity for lead upto 1km.	hour	15.00	600.00	9000.00	
Lead beyond 1 km, L - lead in km	t - km	300L			
Concrete Pump	hour	6.00	165.00	990.00	
d) Overhead charges @ 10% on (a+b+c)				25511.16	
cost of 120 cum = a+b+c+d				280622.76	
Rate per cum (a+b+c+d)/120				2338.52	
				<i>say</i> <u>2338.50</u>	<i>/ cum</i>

	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks
2	WELL FOUNDATION					
	Providing and Constructing Temporary Island 16 m diameter for Construction of Well Foundation for 8m dia. Well.					
A	Assuming depth of water 1.0 m and height of island to be 1.25 m.					
	<i>Unit = 1 No</i>					
	<i>Taking output = 1 No.</i>					
	a) Material					
	Earth (compacted)	cum	251.20	45.45	11417.04	
	Sand bags	each	750.00	4.55	3412.50	
	b) Labour					
	Mate	day	0.40	65.00	26.00	
	Mulia unskilled for filling sand bags, stitching and placing	day	15.00	55.00	825.00	
	c) Machinery					
	Crane with grab 1 cum capacity	hour	20.00	550.00	11000.00	
	Consumables @ 2.5 per cent of (c) above				275.00	
	d) Overhead charges @ 10% on (a+b+c)				2668.05	
	Rate per No. (a+b+c)				29623.59	
					<i>say</i>	<u>29623.60</u>

Note It is assumed that earth will be available within the working space of crane with grab bucket.

B	Assuming depth of water 4.0 m and height of island 4.5 m.					
	<i>Unit = 1No</i>					
	<i>Taking output = 1 No</i>					
	a) Material					
	Earth (compacted)	cum	904.32	45.45	41101.34	
	Sand bags	each	6000.00	4.55	27300.00	
	Wooden ballies 8" Dia and 9 m long (95 Nos including wastage of 1 m)	metre	950.00	76.00	72200.00	
	Wooden ballies 2" Dia for bracing	metre	190.00	33.00	6270.00	
	b) Labour					
	Mate	day	5.60	65.00	364.00	
	Mazdoor for piling 8" dia ballies for piling 8" dia ballies	day	18.00	55.00	990.00	
	Mulia unskilled for bracing with 2" dia ballies	day	12.00	55.00	660.00	
	Mulia unskilled for filling sand bags, stitching and placing	day	110.00	55.00	6050.00	
	c) Machinery					
	Crane with grab 1 cum capacity	hour	50.00	550.00	27500.00	
	Consumables and other arrangements for piling ballies @ 2.5 per cent of (a+b+c).				4560.88	
	d) Overhead charges @ 10% on (a+b+c)				18243.53	
	Rate per No. (a+b+c+d)				205239.76	
					<i>say</i>	<u>205239.80</u>

Note For other well diameters rate can be worked out on the basis of cross-sectional area of well. The diameter of the island shall be in the conformity with clause 1203.2 of MoRTH specifications.

Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks
C. Providing and constructing one span service road to reach island location from one pier location to another pier location					
Assuming span length 30 m, width of service road 10m and depth of water 1m					
<i>Unit = 1 meter</i>					
<i>Taking output = 30 metre</i>					
a) Material					
Earth	cum	450.00	10.00	4500.00	
Sand bags	each	300.00	4.55	1365.00	
b) Labour					
Mate	day	0.24	65.00	15.60	
Mulia unskilled for filling sand bags, stitching and placing	day	6.00	55.00	330.00	
c) Machinery					
Front end Loader 1 cum capacity	hour	27.00	520.00	14040.00	
Tipper 5.5 cum capacity	hour	28.00	506.00	14168.00	
d) Overhead charges @ 10% on (a+b+c)				3441.86	
Cost for 30 m (a+b+c+d)				37860.46	
Rate per m (a+b+c+d)/30				1262.02	
					<i>say</i> <u>1262.00</u>
3 Providing and Laying Cutting Edge of Mild Steel weighing 40 kg per metre for Well Foundation complete as per Drawing and Technical Specification.					
<i>Unit = 1 MT</i>					
<i>Taking output = 1 MT</i>					
a) Material					
Structural steel in plates, angles, etc including 5 per cent wastage	MT	1.05	28817.00	30257.85	
Nuts & bolts	Kg	20.00	49.00	980.00	
b) Labour					
(for cutting, bending, making holes, joining, welding and erecting in position)					
Mate	day	1.32	65.00	85.80	
Fitter 2nd class	day	5.50	75.00	412.50	
Blacksmith Special	day	5.50	85.00	467.50	
Welder Special	day	5.50	85.00	467.50	
Mulia unskilled	day	16.50	55.00	907.50	
Electrodes, cutting gas and other consumables @ 10 per cent of cost of (a) above				3123.79	
c) Overhead charges @ 10% on (a+b)				3357.87	
Rate per MT (a+b+c)				40060.30	
					<i>say</i> <u>40060.30</u>

	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks
4	Providing Steel Liner 10 mm thick for Curbs and 6 mm thick for Steining of Wells including Fabricating and Setting out as per Detailed Drawing.					
	<i>Unit = 1 MT</i>					
	<i>Taking output = 1 MT</i>					
	a) Material					
	i) Structural steel including 5 per cent wastage	MT	1.05	28580.00	30009.00	
	b) Labour					
	Mate	day	1.24	65.00	80.60	
	Fitter 2nd class	day	6.00	75.00	450.00	
	Blacksmith Special	day	5.00	85.00	425.00	
	Welder Special	day	5.00	85.00	425.00	
	Mulia unskilled	day	10.00	55.00	550.00	
	Electrodes, cutting gas and other consumables @ 5 per cent on cost (a) above.				1500.45	
	c) Overhead charges @ 10% on (a+b)				3193.96	
	Rate for per MT (a+b+c)				36634.01	
					<i>say</i>	<u>36634.00</u>
5	Levelling Course for Pile cap					
	Providing and laying of PCC M15 levelling course 100mm thick below the pile cap.					
	<i>Unit = cum</i>					
	<i>Taking output = 15 cum</i>					
	a) Material					
	Cement	MT	4.13	3410.00	14083.30	
	Coarse sand	cum	6.75	29.00	195.75	
	40 mm aggregate	cum	8.10	464.00	3758.40	
	20 mm Aggregate	cum	4.05	638.00	2583.90	
	10 mm Aggregate	cum	1.35	671.00	905.85	
	b) Labour					
	Mate	day	0.86	65.00	55.90	
	Mason 2nd class	day	1.50	75.00	112.50	
	Mulia unskilled	day	20.00	55.00	1100.00	
	c) Machinery					
	Concrete mixer (cap. 0.40/0.28 cum)	hour	6.00	161.00	966.00	
	Generator 33 KVA	hour	6.00	240.00	1440.00	
	d) Overhead charges @ 10% on (a+b+c)				2520.16	
	Cost for 15 cum = a+b+c+d				27721.76	
	Rate per cum (a+b+c+d)/15				1848.12	
					<i>say</i>	<u>1848.10</u>

Note:

- 1) 10 percent excess on the above rates will be allowed in the works being executed inside jail premises.

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

6 **Cement Mortar 1:3 (1 cement : 3 sand)**

Unit = 1 cum

Taking output = 1 cum

a) Materials

Cement	MT	0.51	3410.00	1739.10
Sand	cum	1.05	29.00	30.45

b) Labour

Mate	day	0.04	65.00	2.60
Mazdoor	day	0.90	55.00	49.50

Total Material and Labour = (a+b) 1821.65

say **1821.70**

7 **Providing weep holes in Brick masonry/Plain/ Reinforced concrete abutment, wing wall/ return wall with 100 mm dia AC pipe, extending through the full width of the structure with slope of 1V :20H towards drawing face. Complete as per drawing and Technical**

Unit = Metre

Taking output = 30 Metre

a) Material

AC pipe 100 mm dia. (including wastage @ 5 per cent)	metre	31.50	60.00	1890.00
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Assuming weep holes of 30 Nos of average length one metre is taken for the purpose of estimating.

MS clamp	each.	30.00	10.00	300.00
collar for AC pipe (average) taking 10% of above pipe rate	each.	10.00	6.00	60.00

Cement mortar 1:3 (Rate as in Item 2 of Foundation)	cum	0.05	1821.70	91.09
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b) Labour

Mate	day	0.03	65.00	1.95
Mason 2nd class	day	0.50	75.00	37.50
Mulia unskilled	day	0.25	55.00	13.75

c) Overhead charges @ 10% on (a+b) 239.43

Cost for 30 Metres = a+b+c 2633.72

Rate per Metre (a+b+c)/30 87.79

say **87.80**

1. In case of stone masonry, the size of the weep hole shall be 150 mm x 80 mm or circular

2. For structure in stone masonry, the weep holes shall be deemed to be included in the item of stone masonry work and shall not be paid separately.

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

8 Back filling behind abutment, wing wall and return wall complete as per drawing and Technical Specification

Unit = cum

Taking output = 10 cum

A Granular material

a) Labour

Mate	day	0.28	65.00	18.20
Mulia unskilled	day	7.00	55.00	385.00

b) Material

Granular material	cum	12.00	45.00	540.00
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c) Machinery

Plate compactor/power rammer	hour	2.50	100.00	250.00
Water Tanker	hour	0.05	506.00	25.30

d) Overhead charges @ 10% on (a+b+c) 121.85

Cost for 10 cum of granular backfill = a+b+c+d 1340.35

Rate per cum = (a+b+c+d)/10 134.04

say **134.00**

B Sandy material

a) Labour

Mate	day	0.28	65.00	18.20
Mulia unskilled for filling, watering, ramming etc.	day	7.00	55.00	385.00

b) Material

Sand	cum	12.00	25.00	300.00
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c) Machinery

Plate compactor/power rammer	hour	2.50	100.00	250.00
Water Tanker	hour	0.06	506.00	30.36

d) Overhead charges @ 10% on (a+b+c) 98.36

Cost for 10 cum of sandy backfill = a+b+c+d 1081.92

Rate per cum = (a+b+c+d)/10 108.19

say **108.20**

Sl. No.	Description	Quantity required	Unit	Rate Rs. P	Amount Rs. P	Remarks
1	2	3	4	5	6	7

9 Providing and laying of Filter media with stone crushed aggregates of 45 mm size satisfying the requirements laid down in clause 2504.2.2. of MoRTH specifications to a thickness of not less than 600 mm with smaller size towards the soil and bigger size towards the wall and provided over the entire surface behind abutment , wing wall and return wall to the full height compacted to a firm condition complete as per drawing and Technical Specification.

Unit = cum

Taking output = 10 cum.

a) Labour

Mate	day	0.32	65.00	20.80
Mulia unskilled for filling, watering, ramming etc.	day	7.00	55.00	385.00
Mulia skilled	day	1.00	75.00	75.00

b) Material

Filter media of stone aggregate conforming to clause 2504.2.2. of MoRTH specifications.	cum	12.00	445.00	5340.00
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c) Machinery

Water Tanker of 6 KL capacity	hour	0.06	506.00	30.36
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d) Overhead charges @ 10% on (a+b+c)

585.12

cost for 10 cum of Fiter Media = a+b+c+d

6436.28

Rate per cum = (a+b+c+d)/10

643.63

say **643.60**

	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks
10	Construction of precast RCC railing of M30 Grade, aggregate size not exceeding 12 mm, true to line and grade, tolerance of vertical RCC post not to exceed 1 in 500, centre to centre spacing between vertical post not to exceed 2000 mm, leaving adequate space between vertical post for expansion, complete as per approved drawings and technical specifications.					

Unit = 1 RM

Taking output = 2 x 24 m span = 48 m

a) Material

Cement concrete M30 Grade Refer relevant item of RCC in Item- 6, excluding formwork i.e. per cum basic cost (a+b+c)	cum	4.092	2230.82	9128.53	
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No. of vertical posts = $(12 + 2)2 = 28$ Nos., External area of vertical post $0.25 \times 0.275 = 0.069$ sqm, Concrete in Vertical posts = $0.069 \times 28 = 1.932$ cum, Hand rail in 3 tiers = $3 \times 24 = 72$ m, External area = $0.170 \times 0.175 = 0.03$ sqm, Concrete in hand rails = $0.03 \times 72 = 2.16$ cum, Total Concrete = $1.932 + 2.16 = 4.092$ cum. (Refer MoRTH SD / 202).

Add 5 per cent of above cost for form work for casting in casting yard.					456.43
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HYSB bar reinforcement Rate as per item No 9(A) of RCC.	tonne	0.87	31293.45	27068.83	
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Refer MoRTH SD / 202.

Add 5 per cent of (a) for handling and fixing of precast panels in position					1832.69
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b) Overhead charges @ 10% on (a)					3665.38
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Rate for 48 m (a+b+c)					42151.85
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Rate per metre (a+b+c)/48					878.16
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say **878.20**

Note 1. Quantities of material have been adopted from standard plans of MoRTH vide drawing no. SD/202.
2.48 m length is the total linear length adding both sides of 24 m span.

- 11 Construction of RCC railing of M30 Grade in-situ with 20 mm nominal size aggregate, true to line and grade, tolerance of vertical RCC post not to exceed 1 in 500, centre to centre spacing between vertical post not to exceed 2000 mm, leaving adequate space between vertical post for expansion, complete as per approved drawings and technical specifications.

Unit = 1 RM

Taking output = 2 x 24 m span = 48 m.

a) Material

Cement concrete M30 Grade Refer relevant item of RCC in Item- 6 , excluding formwork i.e. per cum basic cost (a+b+c)	cum	4.092	2230.82	9128.53
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No. of vertical posts = $(12 + 2) \times 2 = 28$ Nos., External area of vertical post $0.25 \times 0.275 = 0.069 \text{sqm}$, Concrete in vehicle posts = $0.069 \times 28 = 1.932$ cum, Hand rail in 3 tiers = $3 \times 24 = 72$ m, External area = $0.170 \times 0.175 = 0.03 \text{sqm}$, Concrete in hand rails = $0.03 \times 72 = 2.16$ cum, Total Concrete = $1.932 + 2.16 = 4.092$ cum. (Refer MoRTH SD / 202).

Add 12 per cent of above cost for form work.				1095.42
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HYSD bar reinforcement Rate as per item No- 2 refer MoRTH SD / 202.	tonne	0.87	31293.45	27068.83
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b) Overhead charges @ 10% on (a) 3729.28

Rate for 48 m (a+b+c) 41022.06

Rate per metre (a+b+c)/48 854.63

say **854.60**

- Note**
1. Quantities of material have been adopted from standard plans of MoRTH vide drawing no. SD/202.
 2. 48 m length is the total linear length adding both sides of 24 m span.

12	Painting on concrete surface				
	Providing and applying 2 coats of water based cement paint to unplastered concrete surface after cleaning the surface of dirt, dust, oil, grease, efflorescence and applying paint @ of 1 litre for 2 sqm.				
	<i>Unit = sqm</i>				
	<i>Taking output = 10 sqm</i>				
	a) Labour				
	Mate	day	0.01	65.00	0.65
	Painter special	day	0.25	85.00	21.25
	Mazdoor (Skilled)	day	0.25	75.00	18.75
	b) Material				
	Water based paint of approved quality for cement concrete surface	Litres	5.00	50.00	250.00
	c) Overhead charges @ 10% on (a+b)				29.07
	Cost for 10 sqm (a+b+c+d)				319.72
	Rate per sqm (a+b+c+d)/10				31.97
				<i>say</i>	<u>32.00</u>
13	Providing, fitting and fixing Angle Iron Expansion joints with M.S Angle of size 75mm x 75mm x 6mm and 6mm thick M.S plate and 12mm dia HYSD bars				
	Unit = 1 RM				
	Taking output = 1 m				
	a) Material				
	i) M.S Angle 75mm x 75mm x 6mm 2 x 1.00m=2.00m@8.90kg per mtr= 17.80kg	kg	17.80	30.64	545.39
	ii) M.S Plate 6mm thick 1x1.00mx0.150m=0.150sqm @47.10kg /sqm=7.065kg	kg	7.065	30.64	216.47
	iii) HYSD Bars 12mm dia 7nos @ 15cm C/C of 0.65m long 2x7x0.65m =9.10m @0.89kg /mtr = 8.099kg	kg	8.099	28.817	233.39
	iv) Cost of welding rod 1/2 packet required for fabrication	pkt.	0.50	300.00	150.00
	v) Cost of 12mm dia bolt	nos	4.00	15.00	60.00
	b) Labour				
	Labour for fabriaction	kg	32.964	2.708	89.27
	Labour for fixing and transportation to site and painting of exposed iron with anti corrosive paints			L.S.	100.00
	c) Overhead charges @ 10% on (a+b)				139.45
	Rate per metre = a+b+c				1533.97
				<i>say</i>	<u>1534.00</u>