

**APPENDIX A BREAKDOWN OF CONSTRUCTION COST
OF LOT III WORK**

COST BREAKDOWN SHEET

A1. PRELIMINARY ITEM

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
/01 Guarantee Cost of Performance Bond The cost is estimated at about 1 % of the amount of Performance Bond, which is allowed at 20 % of total direct construction cost. - Total of direct construction cost in MRs. equivalent - Gurantee cost <p align="right">Total</p>				MRs. 123,601,000 123,601,000 x 0.2 x 0.01 =		MRs. 247,200 247,200	
/02 Cost for Insurance of Work The cost is estimated at about 1 % of total direct construction cost. - Total of direct construction cost in US \$ equivalent - Insurance of Works <p align="right">Total</p>				US \$ 9,022,000 US \$ 9,022,000 x 0.01 =		US \$ 90,100 90,100	
/03 Cost of Third Party Insurance The cost is estimated at about 0.2 % of total direct construction cost. - Total of direct construction cost in US \$ equivalent - Third Party Insurance <p align="right">Total</p>				US \$ 9,022,000 US \$ 9,022,000 x 0.002 =		US \$ 18,100 18,100	
/04 Insurance of Accident to Workmen The cost is estimated at about 0.5 % of total of the local currency portion of direct construction cost. - total of the local portion cost in MRs. equivalent - Insurance of Accident to Workmen <p align="right">Total</p>				MRs. 33,098,000 MRs. 33,098,000 x 0.005 =		MRs. 165,500 165,500	
/05 Guarantee Cost of Advance Payment The cost is estimated at about 1 % of the amount of Advance Payment Bond which is allowed at 10 % of total direct construction cost - total of direct construction cost in MRs. equivalent - Insurance of Accident to Workmen <p align="right">Total</p>				MRs. 123,601,000 MRs. 123,601,000 x 0.1 x 0.01 =		MRs. 123,600 123,600	

COST BREAKDOWN SHEET

A1. PRELIMINARY ITEM

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
/06 Costructor's Camps, Office and Other Facilities							
The cost is estimated at about 2.0 % of total direct construction cost.							
- Total of direct construction cost in MRs. equivalent			MRs. 123,601,000				
- The Cost			MRs. 123,601,000 x 0.02 =		MRs. 2,472,000		
Total					2,472,000		

COST BREAKDOWN SHEET

A2. GENERAL ITEM

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
/01							
1) Office for PMO/Engineer's Representative, including lighting, water supply facilities and sanitary facilities.	m2	85	300	25,500	2,400	204,000	
Subtotal				25,500		204,000	
2) Office equipment and furniture							
- Micro-computer	nr	1	9,200	9200	6,300	6,300	
- Printer	nr	1	3,700	3700	2,500	2,500	
- Blue copy machine	nr	1	3,800	3800	2,600	2,600	
- Photocopy machine	nr	1	4,700	4700	3,200	3,200	
- Stationary	sum			300		200	
- Desks and chairs	sum			-		108,600	
- Drawing table and machine set	set	2	2,100	4200	1,450	2,900	
- Metal filing cabinet	nr	2		-	2,800	5,600	
- Plan chest	nr	1		-	7,300	7,300	
- Tee squares	nr	1		-	11,000	11,000	
- Air-conditioner	nr	4	1,920	7680	1,310	5,240	
- Refrigerator	nr	1	1,180	1180	810	810	
- Facsimile	nr	1	1,600	1600	1,100	1,100	
- Telephone facilities	sum			550		8,000	
- Miscellaneous (10%)	sum			1,900		8,300	
Subtotal				38,800		173,700	
Total				64,300		377,700	
/03 Temporary Water Supply Facilities							
- Pipeline facilities	sum			785		3,000	
- Miscellaneous works(5%)	sum			415		-	
- Water charges	sum			-		168,000	
Total				1,200		171,000	
/04 Temporary Power Supply							
- Distribution line	nr			10,500		41,000	
- Diesel generator, 25 kVA				10,000		41,000	
- Diesel oil				2,600		2,000	
Total				23,100		84,000	

COST BREAKDOWN SHEET

B1. INTAKE

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
B1.1 Temporary Work							
/01 Temporary Cofferdam							
1) Labour							
- Foreman	m.d.	1.7	-	-	350.00	595	
- Skilful labour	m.d.	9.9	-	-	240.00	2,376	built-in and removal of sheet piles, and making, piling, removing sand bags
- Common labour	m.d.	38.6	-	-	170.00	6,562	
- Operator	m.d.	8.5	-	-	300.00	2,550	
- Asst. operator	m.d.	2.9	-	-	220.00	638	
Subtotal						12,721	
2) Equipment							
- Truck crane, 16 ton	hr	48.5	15.40	747	42.20	2,047	
Subtotal				747		2,047	
3) Materials							
- Sheet pile, 400x400x10.5	kg	15840	0.204	3,231	0.700	11,088	h=5.0m x 66 nr
- H-steel, 200x200x8x12 for wale and strut	kg	3400	0.124	422	0.424	1,442	5-time use
- Sand bags, 62 cm x 48 cm	nr.	446	-	-	4.20	1,873	5-time use
- Unwashed rock-sand	m3	9	10.42	94	95.20	857	
- Diesel oil	lit.	378	0.52	197	0.36	136	
- Engine oil	lit.	16.3	2.41	39	1.65	27	
Subtotal				3,983		15,423	
4) Miscellaneous (5% of 1 to 3)				236		1,510	
5) Overhead and profit (20% of 1 to 4)				993		6,340	
6) Total of 1 to 5				5,959		38,040	
7) Rock excavation for built-in of sheet pile, including backfilling after built-in (by man-power)	m3	16	11.65	186	169.78	2,716	
Total (6+7)				6,146		40,756	

COST BREAKDOWN SHEET

B1. INTAKE

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
/02 Temporary raw water intake pipelaying work							
1) Labour							
- Foreman	m.d.	0.20	-	-	350.00	70	
- Plumber	m.d.	2.60	-	-	240.00	624	
- Common labour	m.d.	3.60	-	-	170.00	612	
- Operator	m.d.	1.03	-	-	300.00	309	
- Asst. operator	m.d.	0.35	-	-	220.00	77	
Subtotal						1,692	
2) Equipment							
- Truck crane, 16 ton	hr	5.88	15.40	91	42.20	248	1.2 day @ 4.9 hr
Subtotal				91		248	
3) Materials							
- Steel pipes, DN450x18.1m and DN600x9.8m	kg	2084	0.680	1,417	2.780	5,794	3-time use
- Steel bends and flanges	kg	594	4.03	2,394	16.58	9,849	3-time use
- Fabrication in local factory (welding), DN450	nr.	6	-	-	1700.00	10,200	
- Fabrication in local factory (welding), DN600	nr.	4	-	-	2100.00	8,400	
- Diesel oil	lit.	45.86	0.52	24	0.36	17	
- Engine oil	lit.	1.97	2.41	5	1.65	3	
Subtotal				3,840		34,262	
4) Miscellaneous (5% of 1 to 3)				197		1,810	
5) Overhead and profit (20% of 1 to 4)				825		7,602	
Total (1 to 5)				4,952		45,614	
B1.4 Pipe Work							
/01 Sluice Gate							
- Sluice gate, DN 800 mm with headstock, type C	set	1	31220.00	31,220	42780.00	42,780	
- Bellmouth, DN 800 mm	kg	206	3.80	783	4.50	927	
- Miscellaneous (5%)				1,600		2,185	
- Overhead and profit (20%)				6,721		9,178	
Subtotal				40,324		55,071	
- Sluice gate installation, type C	nr	1	24.24	24	1400.53	1,401	
- Headstock installation, type C	nr	1	-	-	103.20	103	
Total				40,348		56,575	

COST BREAKDOWN SHEET

B1. INTAKE

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
B1.5 Metal Work							
/01 Bar Screen							
- Angle, L-75x75x6(t)	kg	481	0.582	280	8.372	4,027	Adding 100% of material cost as fabrication cost to local currency portion inclusive of painting, transporting and installing
- Round bar, 13 mm in dia.	kg	556	0.584	325	8.400	4,670	
- Guide channel, [-150x75 x6.5(t)	kg	222	0.675	150	9.710	2,156	
- Support channel, [-100x50 x5	kg	59	0.675	40	9.710	573	
- Support steel, L-150x150 x12	kg	93	0.582	54	8.372	779	
- Anchor bar, D13, deformed bar	kg	13	0.584	8	8.400	109	
Subtotal				856		12,314	
- Miscellaneous (5%)				43		616	
- Overhead and profit (20%)				180		2,586	
Total				1,079		15,515	

COST BREAKDOWN SHEET

B2. RAW WATER TRANSMISSION PIPELINE

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
B2.1 Earthwork							
/07 Protection fence for falling rocks							
(fence height of 3.0m, total length of 500m)							
1) Labour							
- Foreman	m.d.	5.5	-	-	350.00	1,925	
- Skilful labour	m.d.	19.4	-	-	240.00	4,656	
- Common labour	m.d.	38.7	-	-	170.00	6,579	
- Driver	m.d.	9.5	-	-	240.00	2,280	
Subtotal						15,440	
2) Equipment							
- Truck crane, 4.9 ton	hr	46	8.60	396	23.60	1,086	
Subtotal				396		1,086	
3) Material							
- H-steel 150x150x7/10x4000	nr	219	110.00	24,090	75.00	16,425	including U bolt and wire clamps
- Galvanised wire rope, 18dia	m	324	3.30	1,069	4.50	1,458	
- Galvanised wire mesh, 4dia x 50mm	m2	1503	10.00	15,030	13.70	20,591	
- Diesel oil	lit.	248	0.52	129	0.36	89	
- Engine oil	lit.	11	2.41	27	1.65	18	
Subtotal				40,345		38,582	
4) Miscellaneous (5% of 1 to 3)							
				2,037		2,755	
5) Overhead and profit (20% of 1 to 4)							
				8,555		11,572	
6) Total of 1 to 5							
				51,333		69,435	
7) Civil engineering works							
- Excavation, rock, backhoe	m3	79	4.22	333	25.15	1,987	
- Backfilling, man-power	m3	44	1.50	66	19.21	845	
- Concrete, class E	m3	35	105.22	3,683	990.67	34,673	
- Formwork, type F1	m2	350	6.30	2,205	344.00	120,400	
Subtotal				6,287		157,906	
Total (6 + 7)				57,620		227,341	

COST BREAKDOWN SHEET

B2. RAW WATER TRANSMISSION PIPELINE

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
B2.3 Pipe Work							
/01 Raw water pipelaying works							
1) Pipe material							
- Straight pipe, DN 800 mm x 5,500 long, DIP, Push in type	ton	479	1500.00	718,500	2100.00	1,005,900	
- DIP fittings, DN 800 mm	ton	17.4	3800.00	66,120	4500.00	78,300	
- Mechanical joint, DN 800 mm	set	32	221.80	7,098	303.87	9,724	
- Miscellaneous (5%)				39,586		54,696	
- Overhead and profit (20%)				166,261		229,724	
Subtotal				997,564		1,378,344	
2) Pipelaying work							
- Pipe installation, DN 800 mm including cutting, setting in trench and all works necessary for pipelaying	m	2,131	2.78	5,924	49.58	105,655	
Subtotal				5,924		105,655	
Total (per 2,131m)				1,003,488		1,483,999	
Per linear metre				470.90		696.39	
/02 Air valve installation							
- Air-release valve, quick exhaust type, DN 80 mm	nr	1	870	870	1,190	1,190	
- Miscellaneous (5%)				44		60	
- Overhead and profit (20%)				183		250	
Subtotal				1,096		1,499	
- Air valve installation	nr	1		-	146.16	146	
Total				1,096		1,646	

COST BREAKDOWN SHEET

B3. RIVER CROSSING

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
B3.1 Temporary Work							
/01 Temporary Coffering							
1) Labour							
- Common labour	m.d.	104.2		-	170.00	17,714	
Subtotal						17,714	
2) Equipment				-		-	
3) Material							
- Sand bags, 62cmx48cm	nr	2482		-	4.20	10,424	
- Unwashed rock sand	m3	50	10.42	521	95.20	4,760	
- Timber board t = 20	m3	0.13	243.21	32	13328.00	1,733	
Subtotal				553		16,917	
4) Miscellaneous (5% of 1+3)				28		1,732	
5) Overhead and profit (20% of 1+3+4)				116		7,273	
Total				696		43,635	

COST BREAKDOWN SHEET

B4. WASH-OUT PIPE

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
B4.2 Concrete Work							
/04 Drain-pit including grating cover							
- Reinforced concrete pipe ND 1050	m	1.5	-	-	3,021.00	4,531.50	
- Grating cover, D 1300	kg	29.0	0.58	16.88	8.38	243.02	
- Miscellaneous (5%)				0.84		239	
- Overhead and profit (20%)				3.54		1,003	
Subtotal				21.27		6,016	
- Rock embankment, manpower	m3	2.4	0.07	0.17	28.19	67.66	
Total				21.43		6,083.55	
B4.3 Pipe Work							
/01 Pipelaying work							
- Wash-out pipe, DN 150 mm	m	29	35.73	1,036.17	48.34	1,401.86	
- Fittings, DN 150 mm	kg	83	4.90	406.70	6.70	556.10	
- Miscellaneous (5%)				72		98	
- Overhead and profit (20%)				303		411	
Subtotal				1,818		2,467	
- Pipe installation work, DN 150 mm, DIP	m	29	-	-	31.19	904.51	
Total (per 29m)				1,818.02		3,371.54	
Per linear metre				62.69		116.26	
/02 Wash-out valve installation							
- Sluice valve, DN 150 mm	nr	1	840	840	1,150	1,150	
- Miscellaneous (5%)				42.00		57.50	
- Overhead and profit (20%)				176.40		241.50	
Subtotal				1,058.40		1,449.00	
- Valve installation, DN 150 mm	nr	1	-	-	544.45	544.45	
- Valve box, DN 150 mm	nr	1	31.92	31.92	1,376.80	1,376.80	
Total				1,090.32		3,370.25	

COST BREAKDOWN SHEET

C1. RECEIVING TANK

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
CL3 EQUIPMENT AND MATERIALS							
/01 Precast Concrete Cover							
- Concrete, class F	m ³	0.2	118.02	23.60	1,126.89	225.38	
- Formwork, finishing F1	m ²	1.6	6.30	10.08	344.00	550.40	
- Reinforcement	kg	62.3	0.7482	46.61	1.862	116.00	
- Handle	kg	9.4	0.584	5.49	0.400	3.76	
- Mortar plastering, 1:3	m ³	0.005	89.72	0.45	526.80	2.63	
- Sealant	m	11	3.85	42.35	5.27	57.97	
Total (per 4 pieces)				128.59		956.14	
Total (per 1 piece)				32.15		239.04	
CL4 PIPE WORK							
/01 DN 800 DIP							
- Straight pipe	kg	1,110	1.50	1,665.00	2.10	2,331.00	
- Special fittings	kg	1,560	3.80	5,928.00	4.50	7,020.00	
- Mechanical joint	set	2	221.80	443.60	303.87	607.74	
- Steel fittings	kg	200	12.10	2,420.00	16.58	3,316.00	
- Miscellaneous (5%)				522.83		663.74	
- Overhead and profit (20%)				2,195.89		2,787.70	
Subtotal (9m)				13,175.32		16,726.17	
- Per linear metre	m	1.0		1,463.92		1,858.46	
- Pipelaying work	m	1.0		2.78		49.58	
Total (per 1m)				1,466.70		1,908.04	
/02 DN 700 DIP							
- Straight pipe	kg	1,310	1.50	1,965.00	2.10	2,751.00	
- Special fittings	kg	180	3.80	684.00	4.50	810.00	
- Steel fittings	kg	169	12.10	2,044.90	16.58	2,802.02	
- Miscellaneous (5%)				234.70		318.15	
- Overhead and profit (20%)				985.72		1,336.23	
Subtotal (8m)				5,914.31		8,017.41	
- Per linear metre	m	1.0		739.29		1,002.18	
- Pipelaying work	m	1.0		2.6		45.78	
Total (per 1m)				741.89		1,047.96	
/03 DN 150 DIP							
- Special fittings	kg	20	4.90	98.00	6.70	134.00	
- Miscellaneous (5%)				4.90		6.70	
- Overhead and profit (20%)				20.58		28.14	
Subtotal				123.48		168.84	
- Per linear metre	m	1.0		123.48		168.84	
- Pipelaying work	m	1.0		-		31.19	
Total (per 1m)				123.48		200.03	

COST BREAKDOWN SHEET

C1. RECEIVING TANK

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
/04 DN 800 mm Valve							
- Butterfly valve w/ headstock, type B	nr	1	23,600	23,600	32,330	32,330	
- Miscellaneous (5%)				1,180.00		1,616.50	
- Overhead and profit (20%)				4,956.00		6,789.30	
Subtotal				29,736.00		40,735.80	
- Valve setting	nr	1	24.41	24.41	1,899.66	1,899.66	
- Headstock setting	nr	1	15.90	15.90	198.99	198.99	
Total				29,776		42,834	
/05 DN 700 mm Valve							
- Butterfly valve w/ headstock, type B	nr	1	17,890	17,890	24,510	24,510	
- Miscellaneous (5%)				894.50		1,225.50	
- Overhead and profit (20%)				3,756.90		5,147.10	
Subtotal				22,541.40		30,882.60	
- Valve setting	nr	1	23.56	23.56	1,718.58	1,718.58	
- Headstock setting	nr	1	15.90	15.90	199.00	199.00	
Total				22,580		32,800	
/06 DN 150 mm Valve							
- Sluice valve w/ headstock, type A	nr	1	2,440	2,440	3,340	3,340	
- Miscellaneous (5%)				122.00		167.00	
- Overhead and profit (20%)				512.40		701.40	
Subtotal				3,074.40		4,208.40	
- Valve setting	nr	1	-	-	544.45	544.45	
- Headstock setting	nr	1	-	-	103.32	103.32	
Total				3,074		4,856	

COST BREAKDOWN SHEET

C2. RAPID MIXING TANK

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
C2.3 EQUIPMENT AND MATERIALS							
/01 Precast Concrete Cover							Refer to C1. Receiving Tank C1.3 Equipment and Materials /01
per 1 piece				32.15		239.04	
C2.4 PIPE WORK							
/01 DN 800 DIP							
- Straight pipe	kg	740	1.50	1,110.00	2.10	1,554.00	
- Special fittings	kg	1,150	3.80	4,370.00	4.50	5,175.00	
- Mechanical joint	set	2	221.80	443.60	303.87	607.74	
- Steel fittings	kg	200	12.10	2,420.00	16.58	3,316.00	
- Miscellaneous (5%)				417.18		532.64	
- Oferhead and profit (20%)				1,752.16		2,237.08	
Subtotal (5m)				10,512.94		13,422.45	
- Per linear metre	m	1.0		2,102.59		2,684.49	
- Pipelaying work	m	1.0		2.78		49.58	
Total (per 1m)				2,105.37		2,734.07	
/02 DN 150 DIP							
- Special fittings	kg	20	4.90	98.00	6.70	134.00	
- Miscellaneous (5%)				4.90		6.70	
- Oferhead and profit (20%)				20.58		28.14	
Subtotal				123.48		168.84	
- Per linear metre	m	1.0		123.48		168.84	
- Pipelaying work	m	1.0		-		31.19	
Total (per 1m)				123.48		200.03	
/03 DN 800 mm Valve							
- Butterfly valve w/ headstock, type B	nr	1	23,600	23,600	32,330	32,330	
- Miscellaneous (5%)				1,180.00		1,616.50	
- Oferhead and profit (20%)				4,956.00		6,789.30	
Subtotal				29,736.00		40,735.80	
- Valve setting	nr	1	24.41	24.41	1,899.66	1,899.66	
- Headstock setting	nr	1	15.90	15.90	199.00	199.00	
Total				29,776		42,834	
/04 DN 150 mm Valve							
- Sluice valve w/ headstock, type A	nr	1	2,440	2,440	3,340	3,340	
- Miscellaneous (5%)				122.00		167.00	
- Oferhead and profit (20%)				512.40		701.40	
Subtotal				3,074.40		4,208.40	
- Valve setting	nr	1	-	-	544.45	544.45	
- Headstock setting	nr	1	-	-	103.32	103.32	
Total				3,074		4,856	

COST BREAKDOWN SHEET

C3. FLOCCULATION AND SEDIMENTATION TANK

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
C3.4 PIPE WORK							
/01 Desludging pipe, DN 300 DIP							
- Straight pipe *	kg	108	1.50	162.00	2.10	226.80	
- Fittings	kg	298	3.80	1,132.40	4.50	1,341.00	
- Mechanical joint	set	6	55.50	333.00	76.04	456.24	
- Miscellaneous (5%)				81.37		101.20	
- Overhead and profit (20%)				341.75		425.05	
Subtotal (4.2m)				2,050.52		2,550.29	
- Per linear metre	m	1.0		488.22		607.21	
- Pipelaying work	m	1.0		1.9		20.77	
Total (per 1m)				490.12		627.98	
/02 Scouring pipe, DN 200 DIP							
- Straight pipe	kg	944	1.50	1,416.00	2.10	1,982.40	
- Special fittings	kg	456	3.80	1,732.80	4.50	2,052.00	
- Mechanical joint	set	4	27.38	109.52	37.51	150.04	
- Miscellaneous (5%)				162.92		209.22	
- Overhead and profit (20%)				684.25		878.73	
Subtotal (35.4m)				4,105.48		5,272.39	
- Per linear metre	m	1.0		115.97		148.94	
- Pipelaying work	m	1.0		-		36.71	
Total (per 1m)				115.97		185.65	
/03 Flush Pipe							
- Pipelaying work with material GSP DN 100 mm	m	159	52.18	8296.62	89.53	14235.27	
- Pipelaying work with material GSP DN 65 mm	m	31	64.33	1994.23	112.26	3480.06	
Subtotal				10290.85		17715.33	
- 65mm dia. angle hose valve	nr	21.0	117.00	2457	160.30	3366.3	
- 100mm dia. gate valve	nr	3.0	226.6	679.8	310.44	931.32	
- Pipe support, L-65x65x6, U-bolt and anchor bolt	kg	142.0	0.582	82.644	8.37	1188.54	
- Miscellaneous (5%)				160.97		274.31	
- Overhead and profit (20%)				676.08		1,152.09	
Subtotal				4,056.50		6,912.56	
Total				14,347		24,627	

* Flanged spigot $\phi 300 \times 700 \times 3$, $w = (41.5 - 12.8) / 0.44 = 65.2$ kg/m, $(0.7 \times 65.2 + 12.8) \times 3 = 175$ kg $175 + 123 = 298$ kg
 Collar $\phi 300 \times 3$, $w = 41$ kg $\times 3 = 123$ kg
 Double spigot piece $\phi 300 \times 1,060 \times 2$, $w = 50.8$ kg/m $\times 1.06 \times 2 = 108$ kg

COST BREAKDOWN SHEET

C3. FLOCCULATION AND SEDIMENTATION TANK

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
/04 DN 300 mm Valve							
- Sluice valve w/ headstock, type A	nr	1	4,020	4,020	5,510	5,510	
- Miscellaneous (5%)				201.00		275.50	
- Overhead and profit (20%)				844.20		1,157.10	
Subtotal				5,065.20		6,942.60	
- Valve setting	nr	1	-	-	1,185.04	1,185.04	
- Headstock setting	nr	1	-	-	103.32	103.32	
Total				5,065		8,230	
/05 DN 200 mm Valve							
- Sluice valve w/ headstock, type A	nr	1	2,840	2,840	3,890	3,890	
- Miscellaneous (5%)				142.00		194.50	
- Overhead and profit (20%)				596.40		816.90	
Subtotal				3,578.40		4,901.40	
- Valve setting	nr	1	-	-	740.12	740.12	
- Headstock setting	nr	1	-	-	103.32	103.32	
Total				3,578		5,744	
/06 Inlet Gate 500 x 500 mm							
- Gate with headstock type C	nr	1	9,810	9,810	13,440	13,440	
- Miscellaneous (5%)				490.50		672.00	
- Overhead and profit (20%)				2,060.10		2,822.40	
Subtotal				12,360.60		16,934.40	
- Gate installation	nr	1	19.69	20	1,088.22	1,088.22	
- Headstock installation	nr	1	15.90	16	199.00	199.00	
Total				12,396		18,221	

COST BREAKDOWN SHEET

C4. FILTER

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
C4.4 Pipe Work							
/01 Filter Outlet/Backwash Pipe DN 350 S							
- SP fittings	kg	5,286	12.10	63,960.60	16.58	87,641.88	
- Sleeve couplings	kg	1,577	12.10	19,081.70	16.58	26,146.66	
- Miscellaneous (5%)				4,152.12		5,689.43	
- Overhead and profit (20%)				17,438.88		23,895.59	
Subtotal (97.0m)				104,633.30		143,373.56	
- Per linear metre	m	1.0		1,078.69		1,478.08	
- Pipelaying work	m	1.0		-		96.82	
Total (per 1m)				1,078.00		1,574.00	
/02 Air Inlet Pipe DN 200 SP							
- SP fittings	kg	2,555	19.70	50,333.50	26.99	68,959.45	
- Sleeve couplings	kg	564	19.70	11,110.80	26.99	15,222.36	
- Miscellaneous (5%)				3,072.22		4,209.09	
- Overhead and profit (20%)				12,903.30		17,678.18	
Subtotal (78.4m)				77,419.82		106,069.08	
- Per linear metre	m	1.0		987.50		1,352.92	
- Pipelaying work	m	1.0		-		65.62	
Total (per 1m)				987.00		1,418.00	
/03 Drain Pipe DN 150 SP							
- SP fittings	kg	1,218	19.70	23,994.60	26.99	32,873.82	
- Sleeve couplings	kg	296	19.70	5,831.20	26.99	7,989.04	
- Miscellaneous (5%)				1,491.29		2,043.14	
- Overhead and profit (20%)				6,263.42		8,581.20	
Subtotal (47.1m)				37,580.51		51,487.20	
- Per linear metre	m	1.0		797.89		1,093.15	
- Pipelaying work	m	1.0		-		58.93	
Total (per 1m)				797.00		1,152.00	
/04 Plant Water Pipe DN 100,125 SP							
- SP fittings	kg	195	19.70	3,841.50	26.99	5,263.05	
- Sleeve couplings	kg	124	19.70	2,442.80	26.99	3,346.76	
- Miscellaneous (5%)				314.22		430.49	
- Overhead and profit (20%)				1,319.70		1,808.06	
Subtotal (10.4m)				7,918.22		10,848.36	
- Per linear metre	m	1.0		761.37		1,043.11	
- Pipelaying work	m	1.0		-		53.81	
Total (per 1m)				761.00		1,096.00	
/06 Filter Inlet Gate 350 x 350							
- Gate with headstock, type C	nr	1	7,690	7,690	10,540	10,540	
- Miscellaneous (5%)				384.50		527.00	
- Overhead and profit (20%)				1,614.90		2,213.40	
Subtotal				9,689.40		13,280.40	
- Gate installation	nr	1	17.42	17.42	899.58	899.58	
- Headstock installation	nr	1	15.90	15.90	199.00	199.00	
Total				9,722		14,378	

COST BREAKDOWN SHEET

C4. FILTER

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
/07 Wash Drain Gate 400 x 400							
- Gate with headstock, type C	nr	1	8,620	8,620	11,810	11,810	
- Miscellaneous (5%)				431.00		590.50	
- Overhead and profit (20%)				1,810.20		2,480.10	
Subtotal				10,861.20		14,880.60	
- Gate installation	nr	1	18.18	18.18	957.37	957.37	
- Headstock installation	nr	1	15.90	15.90	199.00	199.00	
Total				10,895		16,036	
/08 & /09 DN 350mm Valve							
- Butterfly valve w/ headstock, type B	nr	1	9,960	9,960	13,650	13,650	
- Miscellaneous (5%)				498.00		682.50	
- Overhead and profit (20%)				2,091.60		2,866.50	
Subtotal				12,549.60		17,199.00	
- Valve installation	nr	1	-	-	1,318.09	1,318.09	
- Headstock installation	nr	1	15.90	15.90	199.00	199.00	
Total				12,565		18,716	
/10 DN 350mm Valve							
- Butterfly valve with handwheel	nr	1	7,240	7,240	9,920	9,920	
- Miscellaneous (5%)				362.00		496.00	
- Overhead and profit (20%)				1,520.40		2,083.20	
Subtotal				9,122.40		12,499.20	
- Valve installation	nr	1	-	-	1,318.09	1,318.09	
Total				9,122		13,817	
/11 DN 200mm Valve							
- Sluice valve w/ headstock, type A	nr	1	2,840	2,840	3,890	3,890	
- Miscellaneous (5%)				142.00		194.50	
- Overhead and profit (20%)				596.40		816.90	
Subtotal				3,578.40		4,901.40	
- Valve installation	nr	1	-	-	740.12	740.12	
- Headstock installation	nr	1	-	-	103.32	103.32	
Total				3,578		5,744	
/12 DN 200mm Valve							
- Sluice valve w/ handwheel	nr	1	1,240	1,240	1,700	1,700	
- Miscellaneous (5%)				62.00		85.00	
- Overhead and profit (20%)				260.40		357.00	
Subtotal				1,562.40		2,142.00	
- Valve installation	nr	1	-	-	740.12	740.12	
Total				1,562		2,882	

COST BREAKDOWN SHEET

C4. FILTER

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
/13 DN 150mm Valve							
- Sluice valve w/ handwheel	nr	1	840	840	1,150	1,150	
- Miscellaneous (5%)				42.00		57.50	
- Overhead and profit (20%)				176.40		241.50	
Subtotal				1,058.40		1,449.00	
- Valve installation	nr	1	-	-	544.45	544.45	
Total				1,058		1,993	
/14 DN 150mm Valve							
Total				3,074		4,856	Refer to C1.4 /06

COST BREAKDOWN SHEET

C5. WASTEWATER AND SLUDGE PONDS

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
C5.3 EQUIPMENT AND MATERIALS							
/01 Stop-log for Inlet (per 1 set)							
1) Stop-log							
- Concrete, class F	m3	0.05	118.02	5.90	1,126.89	56.34	
- Formwork, finishing F2	m2	0.80	6.60	5.28	361.00	288.80	
- Reinforcement	kg	5.70	0.748	4.26	1.862	10.61	
Total of 1)				15.44		355.75	
2) Metal work							
- Guide channel t=10mm	kg	103.00	0.63	64.89	9.49	977.47	
- Baseplate t=12mm	kg	23.00	0.63	14.49	9.49	218.27	
- H beam, 200x200x8x12	ton	0.31	619.5	192.05	8911.5	2,762.57	
- Chain block, 0.5 ton	nr	1	277.0	277.00	379.5	379.50	
Subtotal				548.42		4337.80	
- Miscellaneous (5%)				27.42		216.89	
- Overhead and profit (20%)				115.17		910.94	
Total of 2)				691.01		5465.63	
Total of 1) + 2)				706.45		5821.38	
/02 Stop-log for Outlet (per 1 set)							
1) Stop-log							
- Concrete, class F	m3	0.11	118.02	12.98	1,126.89	123.96	
- Formwork, finishing F2	m2	2.44	6.60	16.10	361.00	880.84	
- Reinforcement	kg	13.30	0.748	9.95	1.862	24.76	
Total of 1)				39.03		1029.56	
2) Metal work							
- Guide channel t=10mm	kg	168.60	0.63	106.22	9.49	1,600.01	
- Baseplate t=12mm	kg	20.00	0.63	12.60	9.49	189.80	
- H beam, 200x200x8x12	ton	0.31	619.5	192.05	8,911.50	2,762.57	
- Chain block, 0.5 ton	nr	1	277.0	277.00	379.50	379.50	
Subtotal				587.86		4931.87	
- Miscellaneous (5%)				29.39		246.59	
- Overhead and profit (20%)				123.45		1035.69	
Total of 2)				740.70		6214.16	
Total of 1) + 2)				779.73		7243.72	

COST BREAKDOWN SHEET

C5. WASTEWATER AND SLUDGE PONDS

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
C5.4 PIPE WORK							
/01 Gate 300 x 300							
- Gate with headstock, type C	nr	1	6,930	6,930	9,500	9,500	
- Miscellaneous (5%)				347		475	
- Overhead and profit (20%)				1,455		1,995	
Subtotal				8,732		11,970	
- Gate installation	nr	1	16.82	16.82	884.29	884.29	
- Headstock installation	nr	1	15.90	15.90	199.00	199.00	
Total				8,764		13,053	

COST BREAKDOWN SHEET

C6. YARD PIPING

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
C6.1 Raw Water Pipe							
/01 Pipe Laying Work, DN800 DIP							
- Excavation, backhoe	m3	745.2	2.28	1,699.06	12.14	9,046.73	
- Surplus soil disposal, L=5.0km	m3	73.5	3.48	255.78	19.40	1,425.90	
- Backfilling, bulldozer	m3	671.7	1.50	1,007.55	20.04	13,460.87	
- Pipe laying work	m	132.6	2.78	368.63	49.58	6,574.31	
Subtotal				3,331.01		30,507.80	
- Straight pipe	ton	29.07	1,500.0	43,605.00	2,100.0	61,047.00	
- Fittings	ton	3.08	3,800.0	11,704.00	4,500.0	13,860.00	
- Miscellaneous (5%)				2,765.45		3,745.35	
- Overhead and profit (20%)				11,614.89		15,730.47	
Subtotal				69,689.34		94,382.82	
Total				73,020		124,890	
Per linear metre				550.68		941.86	
/02 Pipe Laying Work, DN700 DIP							
- Excavation, backhoe	m3	65.1	2.28	148.43	12.14	790.31	
- Surplus soil disposal, L=5.0km	m3	8.3	3.48	28.88	19.40	161.02	
- Backfilling, bulldozer	m3	56.8	1.50	85.20	20.04	1,138.27	
- Pipe laying work	m	18.7	2.60	48.62	45.78	856.09	
Subtotal				311.13		2,945.69	
- Straight pipe	ton	3.18	1,500.0	4,770.00	2,100.0	6,678.00	
- Fittings	ton	0.59	3,800.0	2,242.00	4,500.0	2,655.00	
- Miscellaneous (5%)				350.60		466.65	
- Overhead and profit (20%)				1,472.52		1,959.93	
Subtotal				8,835.12		11,759.58	
Total				9,146		14,705	
Per linear metre				489.09		786.36	
/03 Pipe Laying Work, DN200 DIP(Scouring)							
- Excavation, backhoe	m3	156.9	2.28	357.73	12.14	1,904.77	
- Backfilling, bulldozer	m3	156.9	1.50	235.35	20.04	3,144.28	
- Pipe laying work	m	71.8		-	36.71	2,635.78	
Subtotal				593.08		7,684.82	
- Straight pipe	ton	2.25	1,500.0	3,375.00	2,100.0	4,725.00	
- Fittings	ton	0.13	3,800.0	494.00	4,500.0	585.00	
- Miscellaneous (5%)				193.45		265.50	
- Overhead and profit (20%)				812.49		1,115.10	
Subtotal				4,874.94		6,690.60	
Total				5,468		14,375	
Per linear metre				76.16		200.21	

COST BREAKDOWN SHEET

C6. YARD PIPING

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
/04 Pipe Laying Work, DN40 PE Pipe (Sampling)							
- Excavation	m3	30.2	2.28	68.86	12.14	366.63	
- Backfill, excavated material	m3	30.2	1.50	45.30	20.04	605.21	
- Pipe laying w/ material	m	75.2	7.05	530.16	5.14	386.53	
Total				644		1,358	
Per linear metre				8.56		18.06	
C6.2 Filtered Water Pipe							
/01 Pipe Laying Work, DN900 DIP							
- Excavation, backhoe	m3	49.4	2.28	112.63	12.14	599.72	
- Surplus soil disposal,	m3	3.8	3.48	13.22	19.40	73.72	
- Backfilling, bulldozer	m3	45.6	1.50	68.40	20.04	913.82	
- Pipe laying work	m	5.4	2.95	15.93	59.05	318.87	
Subtotal				210.19		1,906.13	
- Straight pipe	ton	0		0		0	
- Fittings	ton	1.4	3,800.0	5,320.00	4,500.0	6,300.00	
- Miscellaneous (5%)				266.00		315.00	
- Overhead and profit (20%)				1,117.20		1,323.00	
Subtotal				6,703.20		7,938.00	
Total				6,913		9,844	
Per linear metre				1280.26		1822.99	
/02 Pipe Laying Work, DN800 DIP							
- Excavation, backhoe	m3	487.2	2.28	1,110.82	12.14	5,914.61	
- Surplus soil disposal, 5km	m3	40.5	3.48	140.94	19.40	785.70	
- Backfilling, bulldozer	m3	446.7	1.50	670.05	20.04	8,951.87	
- Pipe laying work	m	73.2	2.78	203.50	49.58	3,629.26	
Subtotal				2,125.30		19,281.43	
- Straight pipe	ton	15.65	1,500.0	23,475.00	2,100.0	32,865.00	
- Fittings	ton	4.41	3,800.0	16,758.00	4,500.0	19,845.00	
- Miscellaneous (5%)				2,011.65		2,635.50	
- Overhead and profit (20%)				8,448.93		11,069.10	
Subtotal				50,693.58		66,414.60	
Total				52,819		85,696	
Per linear metre				721.57		1170.71	
/03 Pipe Laying Work, DN600 DIP							
- Excavation	m3	527	2.28	1,201.56	12.14	6,397.78	
- Surplus soil disposal	m3	32	3.48	111.36	19.40	620.80	
- Backfilling	m3	495	1.50	742.50	20.04	9,919.80	
- Pipe laying work	m	92.6	2.45	226.87	39.54	3,661.40	
Subtotal				2,282.29		20,599.78	
- Straight pipe	ton	13.23	1,500.0	19,845.00	2,100.0	27,783.00	
- Fittings	ton	2.93	3,800.0	11,134.00	4,500.0	13,185.00	
- Miscellaneous (5%)				1,548.95		2,048.40	
- Overhead and profit (20%)				6,505.59		8,603.28	
Subtotal				39,033.54		51,619.68	
Total				41,316		72,219	
per linear metre				446.18		779.91	

COST BREAKDOWN SHEET

C6. YARD PIPING

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
/04 Removal of Pipe, DN600 DIP							
- Excavation (incl. DN 450 RCP)	m3	1,160	2.28	2,644.80	12.14	14,082.40	
- Surplus soil disposal (incl. DN 450 RCP)	m3	611	3.48	2,126.28	19.40	11,853.40	
- Backfilling	m3	549	1.50	823.50	20.04	11,001.96	
- Length of pipe	m	110.7	0.80	88.56	13.15	1,455.71	
Total				5,684		38,393	
Per linear metre				51.35		346.82	
/05 Flowmeter and Valve Chamber							
A. Earth Work							
- Excavation	m3	182	2.28	414.96	12.14	2,209.48	
- Backfilling	m3	103	3.48	358.44	19.40	1,998.20	
- Surplus soil disposal	m3	79	1.50	118.50	20.04	1,583.16	
Subtotal				892		5,791	
B. Concrete Work							
- Concrete, Class A	m3	30	114.74	3,442.20	1,095.98	32,879.40	
- Concrete, Class B	m3	0.3	111.46	33.44	1,065.74	319.72	
- Concrete, Class D	m3	1.6	104.22	166.75	981.85	1,570.96	
- Formwork, Type F1	m3	156	6.30	982.80	344.00	53,664.00	
- Reinforcing bars	ton	3.54	748.22	2,648.70	1,861.92	6,591.20	
Subtotal				7,274		95,025	
C. Equipment & Materials							
Precast concrete cover	nr	4	32.15	128.60	239.04	956.16	
- 300B x 1,690L x 100 T							
D. Pipe Work (DN 800 DIP)							
- Pipe laying work	m	5.58	2.78	15.51	49.58	276.66	
- Straight pipe	ton	0.26	1500.00	390.00	2100.00	546.00	
- Fittings	ton	1.35	3800.00	5,130.00	4500.00	6,075.00	
- Flange Adaptor	kg	200	12.10	2,420.00	16.58	3,316.00	
Subtotal				7,956		10,214	
E. Metal Work							
- Ladder, L=4.64 m x 1 nr	kg	110	0.9	99.00	14.89	1,637.90	
- Manhole cover, dia 600mm	nr	1	269.40	269.40	369.08	369.08	
Subtotal				368		2,007	
F. Overhead and Others for Items C, D and E							
- Miscellaneous (5%)				422.61		658.84	
- Overhead and profit (20%)				1,774.94		2,767.13	
Subtotal				2,197.55		3,425.97	
Total				18,815		117,419	

COST BREAKDOWN SHEET

C6. YARD PIPING

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
/06 Valve Chamber							
A. Earth Work							
- Excavation	m3	60	2.28	136.80	12.14	728.40	
- Backfilling	m3	41	1.50	61.50	20.04	821.64	
- Surplus soil disposal	m3	19	3.48	66.12	19.40	368.60	
Subtotal				264		1,919	
B. Concrete Work							
- Concrete, Class A	m3	9.3	114.74	1,067.08	1095.98	10,192.61	
- Concrete, Class B	m3	0.04	111.46	4.46	1065.74	42.63	
- Concrete, Class D	m3	0.5	104.22	52.11	981.85	490.93	
- Formwork, Type F1	m3	63	6.30	396.90	344.00	21,672.00	
- Reinforcing bars	ton	1.3	748.22	972.69	1861.92	2,420.50	
Subtotal				2,493		34,819	
C. Equipment & Materials							
- Precast concrete cover 300B x 1,690L x 100 T	nr	3	32.15	96.45	239.04	717.12	
D. Pipe Work (DN 600 DIP)							
- Pipe laying work	m	3.32	2.45	8.13	39.54	131.27	
- Straight pipe	ton	0.25	1,500.0	375.00	2,100.0	525.00	
- Fittings	ton	0.30	3,800.0	1,140.00	4,500.0	1,350.00	
- Flange adapter	kg	137	12.10	1,657.70	16.58	2,271.46	
Subtotal				3,181		4,278	
E. Metal Work							
- Ladder, L=3.6 m x 1 nr	kg	86	0.9	77.40	14.89	1,280.54	
- Manhole cover, ø600mm	nr	1	269.40	269.40	369.08	369.08	
Subtotal				346		1,650	
F. Overhead and Others for Items C, D and E							
- Miscellaneous (5%)				181.16		332.22	
- Overhead and profit (20%)				760.89		1,395.34	
Subtotal				942.05		1,727.56	
Total				7,323		45,109	
/07 DN 800 mm Valve							
- Butterfly valve with handwheel	nr	1	20,880	20,880	28,600	28,600	
- Miscellaneous (5%)				1,044.00		1,430.00	
- Overhead and profit (20%)				4,384.80		6,006.00	
Subtotal				26,308.80		36,036.00	
- Valve installation	nr	1	24.41	24.41	1899.66	1,899.66	
Total				26,333		37,936	

COST BREAKDOWN SHEET

C6. YARD PIPING

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
/08 DN 600 mm Valve							
- Butterfly valve with handwheel	nr	1	11,300	11,300	15,480	15,480	
- Miscellaneous (5%)				565.00		774.00	
- Overhead and profit (20%)				2,373.00		3,250.80	
Subtotal				14,238.00		19,504.80	
- Valve installation	nr	1	20.28	20.28	1562.14	1,562.14	
Total				14,258		21,067	
/09 Flowmeter (DN900) Replacement, per place							
A. Earth work							
- Excavation, common soil	m3	71	2.28	161.88	12.14	861.94	
- Backfilling	m3	71	1.50	106.50	20.04	1,422.84	
Total				268.38		2,284.78	
B. Removing and restoring access shaft and slab							
1) Labour							
- Driver	m.d.	0.387		-	240.00	92.88	0.86x0.45=0.387
- Common labour	m.d.	0.255		-	170.00	43.35	1x1/40x7+0.08=0.255
Subtotal				-		136.23	
2) Equipment							
- Truck crane	hr	0.45	8.60	3.87	32.60	14.67	0.09dx5.0hr
Subtotal				3.87		14.67	
3) Material							
- Diesel oil	lit	2.43	0.52	1.26	0.36	0.87	5.41 x 0.45
- Engine oil	lit	0.097	2.41	0.23	1.65	0.16	
- Sealant 20x20	lit	7	3.85	26.95	5.27	36.89	
- Bitumen	kg	15.4	0.73	11.24	0.50	7.70	
Subtotal				39.69		45.62	
4) Miscellaneous [5% of 1)+2)+3)]				2.18		9.83	
Total of 1) to 4)				45.74		206.35	
5) Overhead and profit (20%)				9.15		41.27	
Total of 1) to 5)				54.88		247.62	
C. Replacement of short pipe/orifice plate and installation of flow meter/ short pipe (DN 900 mm)							
1) Labour							
- Plumber *1	m.d.	0.935		-	240	224.40	*1
- Common labour *2	m.d.	0.967		-	170.00	164.39	0.059/mx0.85mx
- Driver *3	m.d.	0.186		-	240.00	44.64	(1+0.3)+0.29x3=0.935
Subtotal				-		433.43	
2) Equipment							
- Truck crane, 4.9t *4	hr	0.216	8.60	1.86	32.60	7.04	*2 0.088/mx0.85mx
Subtotal				1.86		7.04	(1+0.3)+0.29x3=

COST BREAKDOWN SHEET

C6. YARD PIPING

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
3) Material							0.967
- Double flanged short pipe SP, DN 900 x 850L *5	nr	1	859.00	859.00	7013.00	7,013.00	*3 0.86dx0.216=
Subtotal				859.00		7,013.00	0.186
4) Miscellaneous [5% of 1)+2)+3]]				43.04		372.67	*4 0.038dx5.0hr x0.85x1/3=0.054
Total of 1 to 4				903.90		7,826.15	0.038dx5.0hr x0.85=0.162
5) Overhead and profit (20%)				180.78		1,565.23	*5 423kg@US\$2.03 423kg@Rs16.58
Total of 1 to 5				1,084.68		9,391.37	
Total of A+B+C				1,407		11,923	
C6.3 Associated Pipe Work							
/01 Pipe Laying Work, DN350 DIP (Backwash Main)							
- Excavation,	m3	52	2.28	118.56	12.14	631.28	
- Backfill	m3	52	1.50	78.00	20.04	1,042.08	
- Pipelaying	m	77.1	2.03	156.51	23.69	1,826.50	
Subtotal				353.07		3,499.86	
- Straight pipes	ton	4.31	1,500.00	6,465.00	2,100.00	9,051.00	
- Fittings	ton	1.25	3,800.00	4,750.00	4,500.00	5,625.00	
- Miscellaneous (5%)				560.75		733.80	
- Overhead and profit (20%)				2,355.15		3,081.96	
Subtotal				14,130.90		18,491.76	
Total				14,484		21,992	
Per linear metre				187.86		285.24	
/02 Pipe Laying Work, DN125 DIP (Plant Water Inlet)							
- Pipe laying work	m	64.4		-	28.96	1,865.02	
Subtotal				-		1,865.02	
- Straight pipe	ton	1.15	1,500.00	1,725.00	2,100.00	2,415.00	
- Fittings	ton	0.28	4,900.00	1,372.00	6,700.00	1,876.00	
- Miscellaneous (5%)				154.85		214.55	
- Overhead and profit (20%)				650.37		901.11	
Subtotal				3,902.22		5,406.66	
Total				3,902		7,272	
Per linear metre				60.59		112.91	

COST BREAKDOWN SHEET

C6. YARD PIPING

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
/03 Pipe Laying Work, DN150 DIP (Water Supply)							
- Excavation,	m3	9	2.28	20.52	12.14	109.26	
- Backfill	m3	9	1.50	13.50	20.04	180.36	
- Pipelaying	m	14.5	31.50	456.75	31.19	452.26	
Subtotal				490.77		741.88	
- Straight pipes	ton	0.31	1,500.00	465.00	2,100.00	651.00	
- Fittings	ton	0.14	4,900.00	686.00	6,700.00	938.00	
- Miscellaneous (5%)				57.55		79.45	
- Overhead and profit (20%)				241.71		333.69	
Subtotal				1,450.26		2,002.14	
Total				1,941		2,744	
Per linear metre				133.86		189.24	
/04 Pipe Laying Work, DN110 PE Pipe (Water Supply)							
- Excavation	m3	59.7	2.28	136.12	12.14	724.76	
- Backfill, excavated material	m3	59.7	1.50	89.55	20.04	1,196.39	
- Pipe laying w/ material	m	131.0	25.32	3,316.92	32.88	4,307.28	
Total				3,543		6,228	
Per linear metre				27.04		47.55	
/05 Pipe Laying Work, DN63 PE Pipe (Water Supply)							
- Excavation	m3	58.6	2.28	133.61	12.14	711.40	
- Backfill, excavated material	m3	58.6	1.50	87.90	20.04	1,174.34	
- Pipe laying w/ material	m	139.0	14.11	1,961.29	18.28	2,540.92	
Total				2,183		4,427	
Per linear metre				15.70		31.85	
/06 Hydrant with Box							
- Excavation	m3	3.4	2.28	7.75	12.14	41.28	
- Surplus soil disposal,	m3	0.6	3.48	2.09	19.40	11.64	
- Backfill	m3	2.8	1.50	4.20	19.21	53.79	
- Concrete, Class A	m3	0.26	114.74	29.83	1095.98	284.95	
- Concrete, Class D	m3	0.07	104.22	7.30	981.85	68.73	
- Formwork, Type F1	m2	4.72	10.00	47.20	545.54	2,574.95	
- Reinforcing bars	m2	15.1	0.7482	11.30	0.1862	2.81	
- Sand fill	m3	0.18	13.85	2.49	138.61	24.95	
- Steel cover checkered 4.5t	kg	15.2	1.03	15.72	0.708	10.76	
- Angle hose valve ø50	nr	1	96.60	96.60	132.30	132.30	
Total				224		3,206	

COST BREAKDOWN SHEET

C6. YARD PIPING

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
C6.4 DRAIN PIPE							
/01 Pipe Laying Work, DN600 RCP							
- Open-cut excavation, backhoe, common soil	m3	2,110	2.28	4,810.80	12.14	25,615.40	
- Backfilling, bulldozer	m3	1955	1.50	2,932.50	20.04	39,178.20	
- Surplus soil disposal	m3	155	3.48	539.40	19.40	3,007.00	
- Bedding	m3	62	10.23	634.26	105.35	6,531.70	
- Pipelaying works	m	243	2.45	595.35	64.62	15,702.66	
Subtotal				9,512		90,035	
- Pipe material, DN600 RCP	m	243			1,166.62	283,488.66	
- Miscellaneous (5%)						14,174.43	
- Overhead and profit (20%)						59,532.62	
Subtotal						357,195.71	
Total(243m)				9,512		447,231	
Per linear metre	m	1		39.15		1840.46	
/02 Pipe Laying Work, DN450 RCP							
- Open-cut excavation, backhoe, common soil	m3	1,624	2.28	3,702.72	12.14	19,715.36	
- Backfilling, bulldozer	m3	1497	1.50	2,245.50	20.04	29,999.88	
- Surplus soil disposal	m3	127	3.48	441.96	19.40	2,463.80	
- Bedding	m3	64	10.23	654.72	105.35	6,742.40	
- Pipelaying works	m	284	2.18	619.12	51.65	14,668.60	
Subtotal				7,664		73,590	
- Pipe material, DN450 RCP	m	284			696.23	197,729.32	
- Miscellaneous (5%)						9,886.47	
- Overhead and profit (20%)						41,523.16	
Subtotal						249,138.94	
Total(284m)				7,664		322,729	
Per linear metre	m	1		26.99		1136.37	
/03 Pipe Laying Work, DN300 RCP							
- Open-cut excavation, backhoe, common soil	m3	1,016	2.28	2,316.48	12.14	12,334.24	
- Backfilling, bulldozer	m3	957	1.50	1,435.50	20.04	19,178.28	
- Surplus soil disposal	m3	59	3.48	205.32	19.40	1,144.60	
- Crashed stone bedding	m3	39	10.23	398.97	105.35	4,108.65	
- Pipelaying works	m	208	1.94	403.52	40.00	8,320.00	
Subtotal				4,760		45,086	
- Pipe material, DN300 RCP	m	208			368.26	76,598.08	
- Miscellaneous (5%)						3,829.90	
- Overhead and profit (20%)						16,085.60	
Subtotal						96,513.58	
Total(208m)				4,760		141,599	
Per linear metre	m	1		22.88		680.77	

COST BREAKDOWN SHEET

C6. YARD PIPING

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
/04 Pipe Laying Work, DN200 DIP							
- Pipelaying	m	5.1		-	36.71	187.22	
Subtotal				-		187.22	
- Straight pipe	kg	81.0	1.50	121.50	2.10	170.10	
- Fittings	kg	140.0	3.80	532.00	4.50	630.00	
- Miscellaneous (5%)				32.68		40.01	
- Overhead and profit (20%)				137.24		168.02	
Subtotal				823.41		1,008.13	
Total				823		1,195	
Per linear metre	m	1		161.45		234.38	
/05 Pipe Laying Work, DN225 uPVC							
- Excavation	m3	56.0	2.28	127.68	12.14	679.84	
- Surplus soil disposal,	m3	3.2	3.48	11.14	19.40	62.08	
- Backfill, sand	m3	2.5	13.85	34.63	138.61	346.53	
- Backfill, excavated material	m3	52.8	1.50	79.20	19.21	1,014.29	
- Pipe laying w/ material	m	18.3	35.60	651.48	48.13	880.78	
Total				904		2,983	
Per linear metre				49.40		163.01	
/06 Pipe Laying Work, DN160 uPVC							
- Excavation	m3	23.4	2.28	53.35	12.14	284.08	
- Surplus soil disposal,	m3	5.8	3.48	20.18	19.40	112.52	
- Backfill, sand	m3	4.9	13.85	67.87	138.61	679.19	
- Backfill, excavated material	m3	17.6	1.50	26.40	19.21	338.10	
- Pipe laying w/ material	m	43.1	22.10	952.51	32.34	1,393.85	
Total				1,120		2,807	
Per linear metre				25.99		65.13	

COST BREAKDOWN SHEET

C6. YARD PIPING

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
/09 Sluice Valve (ND 200mm) Installation, 1 set							
1) Labour							
- Plumber	m.d.	0.75	-	-	240.00	180.00	0.59+0.08x2
- Common labour	m.d.	1.70	-	-	170.00	289.00	1.54+0.08x2
Subtotal						469.00	
2) Equipment							
- Sluice vave, DN 200mm	nr	1		1,240.00		1,700.00	
- Valve box, 230mm(ID) hat type	nr	1		188.00		258.00	
Subtotal				1,428.00		1,958.00	
3) Material							
- Reinforced concrete pipe DN 225mm x 1,000L	nr	2		-	282.80	565.60	
Subtotal				-		565.60	
4) Miscellaneous (5% of 1+2+3)				71.40		149.63	
Total of 1) to 4)				1,499.40		3,142.23	
Overhead and profit (20%)				299.88		628.45	
Total				1,799.28		3,770.68	
/11 Manhole (for 21 manholes)							
A. Earth Work							
- Excavation, backhoe, common soil	m3	1394	2.28	3,178.32	12.14	16,923.16	
- Backfilling, manpower	m3	1219	1.50	1,828.50	20.04	24,428.76	
- Surplus soil disposal, 5km	m3	175	3.48	609.00	19.40	3,395.00	
- Bedding of crashed stone	m3	16	10.23	163.68	105.35	1,685.60	
Subtotal				5,780		46,433	
B. Concrete Work							
- Manhole base concrete, Class B, C 20/20	m3	42	111.46	4,681.32	1065.74	44,761.08	
- Blinding concrete, Class D, C15/40	m3	8	104.22	833.76	981.85	7,854.80	
- Invert Concrete, Class E, C15/20	m2	5	105.22	526.10	990.67	4,953.35	
- Formwork, Type F1	m3	258	6.30	1,625.40	344.00	88,752.00	
- Reinforcing bars	ton	4	748.22	2,992.88	1861.92	7,447.68	
- Mortar plastering (1:3)	m3	1.4	89.72	125.61	526.80	737.52	
Subtotal				10,785		154,506	
C. Manohole concrete block							
- Concrete block, Type A	nr	18	69.11	1,243.98	1945.00	35,010.00	
- Concrete block, Type B	nr	66	70.09	4,625.94	2101.62	138,706.92	
- Iron step, 300L x 22ø	nr	220.00	15.30	3,366.00	20.96	4,611.20	
Subtotal				9,236		178,328	

COST BREAKDOWN SHEET

C6. YARD PIPING

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
D. Labour							
- Foreman	md	0.76	-	-	350	266.00	
- Operator	md	3.83	-	-	300	1,149.00	
- Asst. operator	md	0.65	-	-	220	143.00	
- Driver	md	1.5	-	-	240	360.00	
- Skillful labour	md	5.44	-	-	240	1,305.60	
- Common labour	md	8.22	-	-	170	1,397.40	
Subtotal				0		4,621	
E. Equipment							
- Truck crane, 16 ton	hr	21.7	15.40	334.18	42.20	915.74	
- Truck, 6 ton	hr	8.8	4.2	36.96	11.4	100.32	
Subtotal				371		1,016	
F. Materials							
- Manhole cover (grey iron) 600 mm in dia., waterproof	nr	18	269.40	4,849.20	369.08	6,643.44	
- Diesel oil	lit	224.7	0.52	116.84	0.36	80.89	
- Engine oil	lit	9.7	2.41	23.38	1.65	16.01	
Subtotal				4,989		6,740	
G. Miscellaneous (5% of D, E, F)					268.03	618.87	
H. Overhead and profit (20%)					1,125.72	2,599.25	
Total of A to H					32,555	394,863	

COST BREAKDOWN SHEET

C7. SITEWORK

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
C7.2 Road Work							
- Road pavement	m2	1024	50.53	51,742.72	455.03	465,950.72	
- R.C. Kerb gutter	m	388	60.57	23,501.16	1,338.96	519,516.48	
Total per m2				75,244		985,467	
				73.48		962.37	
C7.4 R.C. L-Type Retaining Wall							
1) Earthwork							
- Open-cut excavation, manpower, common soil mixed basalt fragment	m3	278	-	-	89.96	25,008.88	
- Backfilling, manpower	m3	143	0.05	7.15	28.18	4,029.74	
- Surplus soil disposal, 5km	m3	135	3.48	469.80	19.40	2,619.00	
- Crashed stone bedding	m3	31	10.23	317.13	105.35	3,265.85	
Subtotal				794.08		34,923.47	
2) Concrete work							
- Reinforced concrete, class A	m3	191	114.74	21,915.34	1095.98	209,332.18	
- Formwork, Type F1	m2	258	6.30	1,625.40	344.00	88,752.00	
- Formwork, Type F3	m2	258	6.90	1,780.20	379.00	97,782.00	
- Reinforcing bars	ton	11.1	748.22	8,320.21	1861.92	20,704.55	
- Expansion joint, uPVC 300 x 7t	m	17	43.73	743.41	90.36	1,536.12	
Subtotal				34,384.56		418,106.85	
3) Guard-rail setting							
	m	72	61.99	4,463.28	121.34	8,736.48	
Total				39,641		461,766	

COST BREAKDOWN SHEET

C7. SITEWORK

Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
			Unit Price	Amount	Unit Price	Amount	
C7.5 Stone Masonry Retaining Wall							
1) Earthwork							
- Open-cut excavation, manpower, common soil mixed basalt fragment	m3	365	-	-	89.96	32,835.40	
- Backfilling, manpower	m3	85	0.05	4.25	28.18	2,395.30	
- Surplus soil disposal, 5km	m3	280	3.48	974.40	19.40	5,432.00	
- Crashed stone bedding	m3	30	10.23	306.90	105.35	3,160.50	
Subtotal				1,285.55		43,823.20	
2) Concrete work							
- Foudation concrete, class D	m3	19	104.22	1,980.18	981.85	18,655.15	
- Top concrete, class E	m3	19	105.22	1,999.18	990.67	18,822.73	
- Formwork, Type F1	m2	127	6.30	800.10	344.00	43,688.00	
Subtotal				4,779.46		81,165.88	
3) Stone masonry							
- Rubble stone masonry work	m2	419	7.58	3,176.02	214.16	89,733.04	
Subtotal				3,176.02		89,733.04	
Total				9,241		214,722	

APPENDIX B UNIT COST OF LOT III WORK

UNIT COSTS OF LOT III WORK

Description	Applied Unit	Unit Cost F/C (US\$)	Unit Cost L/C (MRs)
<u>Civil Engineering Works</u>			
1. Site cleaning	m ²	0.14	1.64
2. Open-cut excavation, bulldozer 21 ton, common soil including basalt fragment	m ³	2.12	11.47
3. Open-cut excavation, backhoe 0.6 m ³ , common soil	m ³	2.28	12.14
4. Open-cut excavation, rock, big-breaker	m ³	4.22	25.15
5. Open-cut excavation, manpower, common soil including basalt fragment	m ³	-	89.96
6. Open-cut excavation, rock, manpower	m ³	11.65	169.78
7. Embankment, bulldozer	m ³	2.82	26.32
8. Backfilling with selected material, manpower	m ³	1.50	20.04
9. Backfilling, trench, manpower	m ³	0.05	28.18
10. Backfilling with sand	m ³	13.85	138.61
11. Bedding of crushed stone	m ³	10.21	105.35
12. Surplus soil disposal, L=5km	m ³	3.48	19.40
13. Concrete work, class A, (C25/20)	m ³	114.79	1,096.02
14. Concrete work, class B, (C20/20)	m ³	111.52	1,065.78
15. Concrete work, class C, (C20/75)	m ³	107.54	1,012.14
16. Concrete work, class D, (C15/40)	m ³	104.27	981.90
17. Concrete work, class E, (C15/20)	m ³	105.28	990.72
18. Concrete work, class F, (C30/10)	m ³	118.07	1,126.26
19. Shotcrete work	m ²	12.23	58.40
20. Formwork, finishing type F1	m ²	6.30	344.00
21. Formwork, finishing type F2	m ²	6.60	361.00

Description	Applied Unit	Unit Cost F/C (US\$)	Unit Cost L/C (MRs)
22. Formwork, finishing type F3	m ²	6.90	379.00
23. Mortar plastering, (1:2)	m ³	99.74	585.60
24. Mortar plastering, (1:3)	m ³	89.72	526.80
25. Reinforcing bar work, cold twist bars	ton	748.22	1,861.92
26. Concrete block masonry work, 150 x 200 x 450	m ²	10.82	1,301.03
27. Expansion joint, uPVC, 300 mm x 7 mm t	m	43.73	90.36
28. Expansion joint (waterstop with protective cover)	m	26.88	56.34
29. Expansion joint (elastic filler, t = 10 mm)	m ²	13.86	33.60
30. Expansion joint (elastic filler, t = 20 mm)	m ²	27.72	58.86

Equipment and Materials

31. Stop-log, timber plank	m ³	31.22	1,510.52
32. Baffle plate, timber board	m ³	3,380.92	41,967.48
33. Effluent trough	nr	181.64	3,158.62
34. Filter sand, effective grain size of 1.0 mm and uniformity coefficient of 1.5 less	m ³	529.20	757.51
35. Filter gravel, effective grain size of 2.38 to 4.76 mm	m ³	507.78	739.25

Pipelaying Works

36. Pipelaying, DN 900 mm DIP	m	2.95	59.05
37. Pipelaying, DN 800 mm DIP	m	2.78	49.58
38. Pipelaying, DN 700 mm DIP	m	2.60	45.79
39. Pipelaying, DN 600 mm DIP	m	2.45	39.54
40. Pipelaying, DN 350 mm DIP	m	2.03	23.69
41. Pipelaying, DN 300 mm DIP	m	1.94	20.77
42. Pipelaying, DN 200 mm DIP	m	-	36.71
43. Pipelaying, DN 150 mm DIP	m	-	31.19
44. Pipelaying, DN 125 mm DIP	m	-	28.96
45. Pipelaying, DN 350 mm SP (in filter)	m	-	96.82
46. Pipelaying, DN 200 mm SP (in filter)	m	-	65.62
47. Pipelaying, DN 150 mm SP (in filter)	m	-	58.93

Description	Applied Unit	Unit Cost F/C (US\$)	Unit Cost L/C (MRs)
48. Pipelaying, DN 125 mm SP	m	-	53.81
49. Pipelaying, DN 100 mm SP	m	-	34.63
50. Pipelaying, DN 80 mm SP	m	-	30.72
51. Pipelaying, DN 65 mm SP	m	-	29.65
52. Pipelaying DN 225 mm uPVC (including pipe material)	m	35.59	48.13
53. Pipelaying DN 160 mm uPVC (including pipe material)	m	22.10	32.34
54. Pipelaying DN 110 mm uPVC (including pipe material)	m	11.11	20.69
55. Pipelaying DN 90 mm uPVC (including pipe material)	m	7.40	15.06
56. Pipelaying DN 63 mm uPVC (including pipe material)	m	3.58	12.41
57. Pipelaying DN 50 mm uPVC (including pipe material)	m	2.38	10.14
58. Pipelaying DN 110 mm PEP (including pipe material)	m	25.33	32.89
59. Pipelaying DN 63 mm PEP (including pipe material)	m	14.11	18.30
60. Pipelaying DN 40 mm PEP (including pipe material)	m	7.06	11.80
61. Filter inlet pipe installation, DN 350 mm stainless steel	nr	224.44	540.27
62. Flush pipelaying GSP DN 100 mm	m	52.18	89.53
63. Flush pipelaying GSP DN 65 mm	m	64.34	109.71
64. Valve installation, DN 800 mm	nr	24.41	1,899.66
65. Valve installation, DN 700 mm	nr	23.57	1,718.58
66. Valve installation, DN 600 mm	nr	20.29	1,562.14
67. Valve installation, DN 350 mm	nr	-	1,318.09
68. Valve installation, DN 300 mm	nr	-	1,185.04
69. Valve installation, DN 200 mm	nr	-	740.12
70. Valve installation, DN 150 mm	nr	-	544.45
71. Valve installation, DN 100 mm	nr	-	460.03

Description	Applied Unit	Unit Cost F/C (US\$)	Unit Cost L/C (MRs)
72. Valve installation, DN 75 mm	nr	-	438.86
73. Hose-valve installation, DN 63 mm	nr	-	341.59
74. Sluice valve with box installation, DN 200 mm (including valve)	set	1,799.28	3,770.68
75. Air-valve installation, DN 80 mm	nr	-	146.16
76. Air-valve box installation for DN 80 mm	nr	91.81	4,740.60
77. Air-valve installation, DN 25 mm (including air-valve)	nr	535.50	879.79
78. Valve box installation, DN 50 mm to DN 200 mm	nr	31.93	1,381.79
79. Gate installation, DN 800 mm	nr	24.24	1,400.53
80. Gate installation, 500 x 500 mm	nr	19.69	1,088.22
81. Gate installation, 400 x 400 mm	nr	18.18	957.37
82. Gate installation, 350 x 350 mm	nr	17.42	899.58
83. Gate installation, 300 x 300 mm	nr	16.82	884.29
84. Headstock installation, (type A)	nr	-	103.32
85. Headstock installation, (type B and C)	nr	15.90	199.00
86. Pipelaying, DN 600 mm, RCP	m	2.45	64.62
87. Pipelaying, DN 450 mm, RCP	m	2.18	51.65
88. Pipelaying, DN 300 mm, RCP	m	1.94	40.00
89. Manhole concrete block, type A	nr	69.13	1,945.01
90. Manhole concrete block, type B	nr	70.10	2,101.62

Metal Work

91. Handrail, steel pipe	m	12.91	138.44
92. Ladder installation	kg	0.90	14.89

Description	Applied Unit	Unit Cost F/C (US\$)	Unit Cost L/C (MRs)
93. Roof light installation	nr	434.29	1,291.88

Sitework

94. Subbase course, lower layer, t = 20 cm	m ²	17.20	157.20
95. Subbase course, upper layer, t = 5 cm	m ²	11.80	108.00
96. Levelling layer, t = 3 cm	m ²	7.80	71.20
97. Prime coat, 1.2 l/m ²	m ²	1.30	12.10
98. Asphalt pavement	m ²	10.30	94.80
99. Road pavement (asphalt, including subbase, prime coat, etc.)	m ²	50.53	455.03
100. Footpaths	m ²	22.51	566.28
101. Rubble work	m ²	7.58	214.16
102. Kerb gutter installation, L-type	m	60.57	1,338.96
103. Drain pit installation, 600 x 600 x 1,000 mm	nr	156.73	3,375.86
104. Fencing (removal and restoration)	m	28.05	720.03
105. Removing fence	m	1.60	97.93
106. Fencing	m	26.45	622.10
107. Removal of pipe, DN 600 mm, DIP	m	0.80	13.15
108. Removal of pipe, DN 450 mm, RCP	m	0.74	16.74
109. Guard-rail setting	m	61.99	121.34

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
1. SITE CLEANING per m2								
1) Labour								
	Foreman	m.d.	0.00034	-	-	350.000	0.12	
	Operator	m.d.	0.00167	-	-	300.000	0.50	
	Asst. operator	m.d.	0.00058	-	-	220.000	0.13	
	Common Labour	m.d.	0.00222	-	-	170.000	0.38	
	Sub-total						1.13	
2) Equipment								
	Bulldozer, 11 ton	hr	0.00253	14.300	0.04	49.100	0.12	
	Sub-total				0.04		0.12	
3) Materials								
	Diesel oil	lit	0.11341	0.520	0.06	0.360	0.04	
	Engine oil	lit	0.00454	2.410	0.01	1.650	0.01	
	Sub-total				0.07		0.05	
	Total of (1+2+3)				0.11		1.30	
4) Miscellaneous (5%)								
	Total of (1+2+3+4)				0.12		1.37	
	Overhead and profit (20%)				0.02		0.27	
	Total				0.14		1.64	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
2. OPEN-CUT EXCAVATION (BULLDOZER, 21t) per m3								
1) Labour								
	Foreman	m.d.	0.00148	-	-	350.000	0.52	
	Operator	m.d.	0.00762	-	-	300.000	2.29	
	Asst. operator	m.d.	0.00259	-	-	220.000	0.57	
	Driver	m.d.	0.00608	-	-	270.000	1.64	
	Sub-total						<u>5.02</u>	
2) Equipment								
	Bulldozer, 21t	hr	0.01425	27.900	0.40	95.400	1.36	
	Tractor shovel, 1.2 m3	hr	0.03636	11.900	0.43	40.700	1.48	
	Dumptruck, 8t	hr	0.03802	6.300	0.24	21.400	0.81	
	Sub-total				<u>1.07</u>		<u>3.65</u>	
3) Materials								
	Diesel oil	lit	0.99203	0.520	0.52	0.360	0.36	
	Engine oil	lit	0.03968	2.410	0.10	1.650	0.07	
	Sub-total	lit			<u>0.62</u>		<u>0.43</u>	
4) Miscellaneous (5% of 1+2+3)								
	Total of (1+2+3+4)				1.77		9.56	
	Overhead and profit (20%)				0.35		1.91	
	Total				<u>2.12</u>		<u>11.47</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
3. OPEN-CUT EXCAVATION, BACKHOE, per m3								
1) Labour								
	Foreman	m.d.	0.00094	-	-	350.000	0.33	
	Operator	m.d.	0.00471	-	-	300.000	1.41	
	Asst. operator	m.d.	0.00165	-	-	220.000	0.36	
	Driver	m.d.	0.01416	-	-	270.000	3.82	
	Sub-total						<u>5.92</u>	
2) Equipment								
	Backhoe, 0.6 m3	hr	0.02353	15.200	0.36	52.000	1.22	
	Dump truck, 8 ton	hr	0.08850	6.300	0.56	21.400	1.89	
	Sub-total				<u>0.92</u>		<u>3.11</u>	
3) Materials								
	Diesel oil	lit	1.43840	0.520	0.75	0.360	0.52	
	Engine oil	lit	0.05750	2.410	0.14	1.650	0.09	
	Sub-total				<u>0.89</u>		<u>0.61</u>	
4) Miscellaneous (5% of 1+2+3)								
	Total of (1+2+3+4)				1.90		10.12	
	Overhead and profit (20%)				0.38		2.02	
	Total				<u>2.28</u>		<u>12.14</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
4. OPEN-CUT EXCAVATION, ROCK, Per m³								
1) Labour								
	Foreman	m.d.	0.00328	-	-	350.000	1.15	
	Operator	m.d.	0.01639	-	-	300.000	4.92	
	Asst, operator	m.d.	0.00574	-	-	220.000	1.26	
	Driver	m.d.	0.01739	-	-	270.000	4.70	
	Sub-total						<u>12.03</u>	
2) Equipment								
	Backhoe, 0.6 m ³	hr	0.08200	15.200	1.25	52.000	4.26	
	Big breaker, 1,300 kg	hr	0.08200	7.400	0.61	9.500	0.78	
	Dump truck, 8t	hr	0.10870	6.300	0.68	21.400	2.33	
	Sub-total				<u>2.54</u>		<u>7.37</u>	
3) Materials								
	Diesal oil	lit	1.31150	0.520	0.68	0.360	0.47	
	Engine oil	lit	0.05250	2.410	0.13	1.650	0.09	
	Sub-total				<u>0.81</u>		<u>0.56</u>	
4) Miscellaneous (5% of 1+2+3)								
	Total of (1+2+3+4)				3.52		20.96	
	Overhead and profit (20%)				0.70		4.19	
	Total				<u>4.22</u>		<u>25.15</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
5. OPEN-CUT EXCAVATION, (COMMON SOIL), MANPOWER, per m3								
1) Labour								
	Common labour	m3	0.42000	-	-	170.000	71.40	
	Sub-total						<u>71.40</u>	
2) Equipment								
				-	-			
3) Materials								
				-	-			
4) Miscellaneous (5%)								
				-	-		3.57	
	Total of (1+4)			-	-		74.97	
	Overhead and profit (20%)						14.99	
	Total			-	-		<u>89.96</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
6. OPEN-CUT EXCAVATION, (ROCK BY LEG-HAMMER), per m3								
1) Labour								
	Skilful labour	m.d.	0.33000	-	-	240.000	79.20	
	Common labour	m.d.	0.17000	-	-	170.000	28.90	
	Sub-total						<u>108.10</u>	
2) Equipment								
	Leg-hammer, 30 kg	hr	0.30000	5.200	1.56	12.800	3.84	
	Air-compressor, 5.0 m3/min	hr	1.10000	5.800	6.38	19.900	21.89	
	Sub-total				<u>7.94</u>		<u>25.73</u>	
3) Material								
	Diesel oil	lit	2.13000	0.520	1.11	0.360	0.77	
	Engine oil	lit	0.08500	2.410	0.20	1.650	0.14	
	Sub-total				<u>1.31</u>		<u>0.91</u>	
4) Miscellaneous (5% of 1+2+3)								
	Total of (1+2+3+4)				9.71		141.48	
	Overhead and profit (20%)				1.94		28.30	
	Total				<u>11.65</u>		<u>169.78</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
7. EMBANKMENT, BULLDOZER, per m³								
1) Labour								
	Foreman	m.d.	0.00193	-	-	350.000	0.68	
	Operator	m.d.	0.01041	-	-	300.000	3.12	
	Asst. operator	m.d.	0.00339	-	-	220.000	0.75	
	Driver	m.d.	0.01416	-	-	270.000	3.82	
	Skilful labour	m.d.	0.02700	-	-	240.000	6.48	
	Common labour	m.d.	0.00241	-	-	170.000	0.41	
	Sub-total						<u>15.26</u>	
2) Equipment								
	Bulldozer, 21 ton	hr	0.01206	27.900	0.34	95.400	1.15	
	Dump truck, 11 ton	hr	0.08850	8.000	0.71	27.400	2.42	
	Tractor shovel, 1.2 m ³	hr	0.03636	11.900	0.43	40.700	1.48	
	Tamper 60 kg	hr	0.02700	0.500	0.01	1.700	0.05	
	Sub-total				<u>1.49</u>		<u>5.10</u>	
3) Materials								
	Diesel oil	lit	1.18196	0.520	0.61	0.360	0.43	
	Gasoline	lit	0.03780	0.910	0.03	0.620	0.02	
	Engine oil	lit	0.04728	2.410	0.11	1.650	0.08	
	Sub-total				<u>0.75</u>		<u>0.53</u>	
4) Miscellaneous (5% of 1+2+3)								
								1.04

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
	Total of (1+2+3+4)			2.35			21.93	
	Overhead and profit (20%)			0.47			4.39	
	Total			2.82			<u>26.32</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
8. BACKFILLING, WITH SELECTED MATERIAL, MANPOWER, per m3								
1) Labour								
	Foreman	m.d.	0.00185	-	-	350.000	0.65	
	Operator	m.d.	0.01018	-	-	300.000	3.05	
	Asst, operator	m.d.	0.00324	-	-	220.000	0.71	
	Driver	m.d.	0.00741	-	-	270.000	2.00	
	Skilful labour	m.d.	0.02700	-	-	240.000	6.48	
	Common labour	m.d.	0.00241	-	-	170.000	0.41	
	Sub-total						<u>13.30</u>	
2) Equipment								
	Tractor shovel, 0.6 m3	hr	0.04630	0.35	7.600	25.900	1.20	
	Dump truck, 8 ton	hr	0.04630	0.29	6.300	21.400	0.99	
	Tamper, 60 kg	hr	0.02700	0.01	0.500	1.700	0.05	
	Sub-total			<u>0.65</u>			<u>2.24</u>	
3) Materials								
	Diesel oil	lit	0.78704	0.41	0.520	0.360	0.28	
	Gasoline	lit	0.06481	0.06	0.910	0.620	0.04	
	Engine oil	lit	0.02703	0.07	2.410	1.650	0.04	
	Sub-total			<u>0.54</u>			<u>0.36</u>	
	4) Miscellaneous (5% of 1+2+3)			0.06			0.80	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
	Total of (1+2+3+4)			1.25			16.70	
	Overhead and profit (20%)			0.25			3.34	
	Total			<u>1.50</u>			<u>20.04</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
9. BACKFILLING, TRENCH, MANPOWER, per m3								
1) Labour								
	Skilful labour	m.d.	0.02700	-	-	240.000	6.48	
	Common labour	m.d.	0.09300	-	-	170.000	15.81	
	Sub-total						<u>22.29</u>	
2) Equipment								
	Tamper, 60 kg	hr	0.02700	0.500	0.01	1.700	0.05	
	Sub-total				<u>0.01</u>		<u>0.05</u>	
3) Materials								
	Gasoline	lit	0.03780	0.910	0.03	0.620	0.02	
	Engine oil	lit	0.00150	2.410	0.00	1.650	0.00	
	Sub-total				<u>0.03</u>		<u>0.02</u>	
4) Miscellaneous (5% of 1+2+3)								
	Total of (1+2+3+4)				0.04		23.48	
	Overhead and profit (20%)				0.01		4.70	
	Total				<u>0.05</u>		<u>28.18</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
10. BACKFILLING WITH SAND								
1) Labour								
	Skilful labour	m.d.	0.02700	-	-	240.000	6.48	
	Common labour	m.d.	0.03000	-	-	170.000	5.10	
	Driver	m.d.	0.00740	-	-	270.000	2.00	
	Sub-total						<u>13.58</u>	
2) Equipment								
	Dump truck, 8 ton	hr	0.04630	6.300	0.29	21.400	0.99	
	Tamper, 60 kg	hr	0.02700	0.500	0.01	1.700	0.05	
	Sub-total				<u>0.30</u>		<u>1.04</u>	
3) Material								
	Sand	m3	1.00000	10.420	10.42	95.200	95.20	
	Diesel oil	lit	0.43520	0.520	0.23	0.360	0.16	
	Engine oil	lit	0.01740	2.410	0.04	1.650	0.03	
	Sub-total				<u>10.69</u>		<u>95.39</u>	
4) Miscellaneous (5% of 1+2+3)								
	Total of (1+2+3+4)				11.54		115.51	
	Overhead and profit (20%)			2.31			23.10	
	Total				<u>13.85</u>		<u>138.61</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
11. BEDDING, CRUSHED STONE, per m3								
1) Labour								
	Skilful labour	m.d.	0.02700	-	-	240.000	6.48	
	Common labour	m.d.	0.03000	-	-	170.000	5.10	
	Driver	m.d.	0.00740	-	-	270.000	2.00	
	Sub-total						<u>13.58</u>	
2) Equipment								
	Dump truck, 8 ton	hr	0.04630	6.300	0.29	21.400	0.99	
	Tamper, 60 kg	hr	0.02700	0.500	0.01	1.700	0.05	
	Sub-total				<u>0.30</u>		<u>1.04</u>	
3) Materials								
	Crused stone	m3	1.00000	7.530	7.53	68.800	68.80	
	Diesel oil	lit	0.43520	0.520	0.23	0.360	0.16	
	Engine oil	lit	0.01740	2.410	0.04	1.650	0.03	
	Sub-total				<u>7.80</u>		<u>68.99</u>	
4) Miscellaneous (5% of 1+2+3)								
	Total of (1+2+3+4)				8.51		87.79	
	Overhead and profit (20%)				1.70		17.56	
	Total				<u>10.21</u>		<u>105.35</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
12. SURPLUS SOIL DISPOSAL, L=5.0 km per m³								
1) Labour								
	Foreman	m.d.	0.00193	-	-	350.000	0.68	
	Operator	m.d.	0.01041	-	-	300.000	3.12	
	Asst, operator	m.d.	0.00339	-	-	220.000	0.75	
	Driver	m.d.	0.01600	-	-	270.000	4.32	
	Common labour	m.d.	0.00200	-	-	170.000	0.34	
	Sub-total						<u>9.21</u>	
2) Equipment								
	Tractor shovel, 1.2 m ³	hr	0.03636	11.900	0.43	40.700	1.48	
	Dump truck, 11 ton	hr	0.10000	8.000	0.80	27.400	2.74	
	Bulldozer, 21 ton	hr	0.01206	27.900	0.34	95.400	1.15	
	Sub-total				<u>1.57</u>		<u>5.37</u>	
3) Material								
	Diesel oil	lit	1.91400	0.520	1.00	0.360	0.69	
	Engine oil	lit	0.07700	2.410	0.19	1.650	0.13	
	Sub-total				<u>1.19</u>		<u>0.82</u>	
4) Miscellaneous (5% of 1+2+3)								
					0.14		0.77	
	Total of (1+2+3+4)				2.90		16.17	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
	Overhead and profit (20%)			0.58		3.23		
	Total			<u>3.48</u>		<u>19.40</u>		

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
13. CONCRETE WORK, CLASS A, per m³								
1) Labour								
	Foreman	m.d.	0.02300	-	-	350.000	8.05	
	Skilful labour	m.d.	0.10000	-	-	240.000	24.00	
	Common labour	m.d.	0.10000	-	-	170.000	17.00	
	Operator	m.d.	0.01600	-	-	300.000	4.80	
	Asst.operator	m.d.	0.00600	-	-	220.000	1.32	
	Sub-total						<u>55.17</u>	
2) Equipment								
	Truck crane, 16 ton	hr	0.09300	15.400	1.43	42.200	3.92	
	Concrete bucket, 0.5 m ³	hr	0.09300	5.600	0.52	19.300	1.79	
	Vibrator	hr	0.09300	1.800	0.17	6.200	0.58	
	Sub-total				<u>2.12</u>		<u>6.29</u>	
3) Materials								
	Ready-mixed concrete, Class A, C25/20	m ³	1.00000	88.400	88.40	808.000	808.00	
	Diesel oil	lit	0.72500	0.520	0.38	0.360	0.26	
	Gasoline	lit	0.12100	0.910	0.11	0.620	0.08	
	Engine oil	lit	0.03600	2.410	0.09	1.650	0.06	
	Sub-total				<u>88.98</u>		<u>808.40</u>	
	4) Miscellaneous (5% of 1+2+3)				4.56		43.49	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
	Total of (1+2+3+4)			95.66		913.35		
	Overhead and profit (20%)			19.13		182.67		
	Total			<u>114.79</u>		<u>1,096.02</u>		

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
14. CONCRETE WORK, CLASS B, per m³								
1) Labour								
	Foreman	m.d.	0.02300	-	-	350.000	8.05	
	Skilful labour	m.d.	0.10000	-	-	240.000	24.00	
	Common labour	m.d.	0.10000	-	-	170.000	17.00	
	Operator	m.d.	0.01600	-	-	300.000	4.80	
	Asst. operator	m.d.	0.00600	-	-	220.000	1.32	
	Sub-total						<u>55.17</u>	
2) Equipment								
	Truck crane, 16 ton	hr	0.09300	15.400	1.43	42.200	3.92	
	Concrete bucket, 0.5 m ³	hr	0.09300	5.600	0.52	19.300	1.79	
	Vibrator	hr	0.09300	1.800	0.17	6.200	0.58	
	Sub-total				<u>2.12</u>		<u>6.29</u>	
3) Materials								
	Ready-mixed concrete, Class B, 20C/20	m ³	1.00000	85.800	85.80	784.000	784.00	
	Diesel oil	lit	0.72500	0.520	0.38	0.360	0.26	
	Gasoline	lit	0.12100	0.910	0.11	0.620	0.08	
	Engine oil	lit	0.03600	2.410	0.09	1.650	0.06	
	Sub-total				<u>86.38</u>		<u>784.40</u>	
	4) Miscellaneous (5% of 1+2+3)				4.43		42.29	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
	Total of (1+2+3+4)			92.93		888.15		
	Overhead and profit (20%)			18.59		177.63		
	Total			111.52		1,065.78		

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
15. CONCRETE WORK, CLASS C, per m³								
1) Labour								
	Foreman	m.d.	0.02300	-	-	350.000	8.05	
	Skilful labour	m.d.	0.07000	-	-	240.000	16.80	
	Common labour	m.d.	0.06000	-	-	170.000	10.20	
	Operator	m.d.	0.01600	-	-	300.000	4.80	
	Asst. operator	m.d.	0.00500	-	-	220.000	1.10	
	Sub-total						<u>40.95</u>	
2) Equipment								
	Truck crane, 16 ton	hr	0.08800	15.400	1.36	42.200	3.71	
	Concrete bucket, 0.5 m ³	hr	0.08800	5.600	0.49	19.300	1.70	
	Vibrator	hr	0.08800	1.800	0.16	6.200	0.55	
	Sub-total				<u>2.01</u>		<u>5.96</u>	
3) Materials								
	Ready-mixed concrete, Class C, 20C/75	m ³	1.00000	82.800	82.80	756.000	756.00	
	Diesel oil	lit	0.68600	0.520	0.36	0.360	0.25	
	Gasoline	lit	0.11400	0.910	0.10	0.620	0.07	
	Engine oil	lit	0.03400	2.410	0.08	1.650	0.06	
	Sub-total				<u>83.34</u>		<u>756.38</u>	
	4) Miscellaneous (5% of 1+2+3)				4.27		40.16	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
	Total of (1+2+3+4)			89.62		843.45		
	Overhead and profit (20%)			17.92		168.69		
	Total			<u>107.54</u>		<u>1,012.14</u>		

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
16. CONCRETE WORK, CLASS D, per m³								
1) Labour								
	Foreman	m.d.	0.02300	-	-	350.000	8.05	
	Skilful labour	m.d.	0.07000	-	-	240.000	16.80	
	Common labour	m.d.	0.06000	-	-	170.000	10.20	
	Operator	m.d.	0.01600	-	-	300.000	4.80	
	Asst. operator	m.d.	0.00500	-	-	220.000	1.10	
	Sub-total						<u>40.95</u>	
2) Equipment								
	Truck crane, 16 ton	hr	0.08800	15.400	1.36	42.200	3.71	
	Concrete bucket, 0.5 m ³	hr	0.08800	5.600	0.49	19.300	1.70	
	Vibrator	hr	0.08800	1.800	0.16	6.200	0.55	
	Sub-total				<u>2.01</u>		<u>5.96</u>	
3) Materials								
	Ready-mixed concrete,							
	Class D, 15C/40	m ³	1.00000	80.200	80.20	732.000	732.00	
	Diesel oil	lit	0.68600	0.520	0.36	0.360	0.25	
	Gasoline	lit	0.11400	0.910	0.10	0.620	0.07	
	Engine oil	lit	0.03400	2.410	0.08	1.650	0.06	
	Sub-total				<u>80.74</u>		<u>732.38</u>	
	4) Miscellaneous (5% of 1+2+3)				4.14		38.96	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
	Total of (1+2+3+4)			86.89		818.25		
	Overhead and profit (20%)			17.38		163.65		
	Total			<u>104.27</u>		<u>981.90</u>		

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
17. CONCRETE WORK, CLASS E, per m3								
1) Labour								
	Foreman	m.d.	0.02300	-	-	350.000	8.05	
	Skilful labour	m.d.	0.07000	-	-	240.000	16.80	
	Common labour	m.d.	0.06000	-	-	170.000	10.20	
	Operator	m.d.	0.01600	-	-	300.000	4.80	
	Asst. operator	m.d.	0.00500	-	-	220.000	1.10	
	Sub-total						<u>40.95</u>	
2) Equipment								
	Truck crane, 16 ton	hr	0.08800	15.400	1.36	42.200	3.71	
	Concrete bucket, 0.5 m3	hr	0.08800	5.600	0.49	19.300	1.70	
	Vibrator	hr	0.08800	1.800	0.16	6.200	0.55	
	Sub-total				<u>2.01</u>		<u>5.96</u>	
3) Materials								
	Ready-mixed concrete, Class E, 15C/20	m3	1.00000	81.000	81.00	739.000	739.00	
	Diesel oil	lit	0.68600	0.520	0.36	0.360	0.25	
	Gasoline	lit	0.11400	0.910	0.10	0.620	0.07	
	Engine oil	lit	0.03400	2.410	0.08	1.650	0.06	
	Sub-total				<u>81.54</u>		<u>739.38</u>	
	4) Miscellaneous (5% of 1+2+3)				4.18		39.31	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
	Total of (1+2+3+4)			87.73			825.60	
	Overhead and profit (20%)			17.55			165.12	
	Total			<u>105.28</u>			<u>990.72</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
18. CONCRETE WORK, CLASS F, per m³								
1) Labour								
	Foreman	m.d.	0.02300	-	-	350.000	8.05	
	Skilful labour	m.d.	0.10000	-	-	240.000	24.00	
	Common labour	m.d.	0.10000	-	-	170.000	17.00	
	Operator	m.d.	0.01600	-	-	300.000	4.80	
	Asst. operator	m.d.	0.00600	-	-	220.000	1.32	
	Sub-total						<u>55.17</u>	
2) Equipment								
	Truck crane, 16 ton	hr	0.09300	15.400	1.43	42.200	3.92	
	Concrete bucket, 0.5 m ³	hr	0.09300	5.600	0.52	19.300	1.79	
	Vibrator	hr	0.09300	1.800	0.17	6.200	0.58	
	Sub-total				<u>2.12</u>		<u>6.29</u>	
3) Materials								
	Ready-mixed concrete, Class F, 30C/10	m ³	1.00000	91.000	91.00	832.000	832.00	
	Diesel oil	lit	0.72500	0.520	0.38	0.360	0.26	
	Gasoline	lit	0.12100	0.910	0.11	0.620	0.08	
	Engine oil	lit	0.03600	2.410	0.09	1.650	0.06	
	Sub-total				<u>21.58</u>		<u>832.40</u>	
4) Miscellaneous (5% of 1+2+3)								
					4.69		44.69	
	Total of (1+2+3+4)				98.39		938.55	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
	Overhead and profit (20%)			19.68			187.71	
	Total			<u>118.07</u>			<u>1,126.26</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
19. SHOTCRETE WORK (T=5 cm), per m2								
1) Labour								
	Foreman	m.d.	0.01200	-	-	350.000	4.20	
	Skilful labour	m.d.	0.04900	-	-	240.000	11.76	
	Common labour	m.d.	0.02000	-	-	170.000	3.40	
	Sub-total						<u>19.36</u>	
2) Equipment								
	Air-compressor, 105 m3/min	hr	0.04690	44.800	2.10	153.400	7.19	
	Concrete spray gun, 0.8-1.2 m3/ft	hr	0.03350	4.800	0.16	16.300	0.55	
	Belt conveyor, 7m L	hr	0.10100	6.700	0.68	22.700	2.29	
	Diesel generator, 10 KVA	hr	0.05360	5.700	0.31	19.400	1.04	
	Submersible pump, 50 mm	hr	0.03350	2.500	0.08	8.600	0.29	
	Sub-total						<u>11.36</u>	
3) Material								
	Portland cement	kg	26.70000	0.112	2.99	0.077	2.06	
	Sand	m3	0.08000	16.640	1.33	152.000	12.16	
	Steel fabric mesh, 3x100x100	m2	1.00000	1.430	1.43	0.980	0.98	
	Diesel oil	lit	0.81600	0.520	0.42	0.360	0.29	
	Gasoline	lit	0.12100	0.910	0.11	0.620	0.08	
	Engine oil	lit	0.03800	2.410	0.09	1.650	0.06	
	Sub-total						<u>15.63</u>	
	4) Miscellaneous (5% of 1+2+3)						2.32	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
	Total of (1+2+3+4)			10.19		48.67		
	Overhead and profit (20%)			2.04		9.73		
	Total			<u>12.23</u>		<u>58.40</u>		

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
25. REINFORCING BAR WORK, per ton								
1) Labour								
	Foreman	m.d.	0.51360	-	-	350.000	179.76	
	Steel bar bender	m.d.	2.40000	-	-	220.000	528.00	
	Common labour	m.d.	1.90000	-	-	170.000	323.00	
	Operator	m.d.	0.06880	-	-	300.000	20.64	
	Asst. operator	m.d.	0.02320	-	-	220.000	5.10	
	Sub-total						<u>1,056.50</u>	
2) Equipment								
	Track crane, 16 ton	hr	0.45600	15.400	7.02	42.200	19.24	
	Sub-total				<u>7.02</u>		<u>19.24</u>	
3) Materials								
	Reinforcing bar, cold twist bars	ton	1.00000	584.620	584.62	400.460	400.46	
	Diesel oil	lit	3.55680	0.520	1.85	0.360	1.28	
	Engine oil	lit	0.14230	2.410	0.34	1.650	0.23	
	Sub-total				<u>586.81</u>		<u>401.97</u>	
4) Miscellaneous (5% of 1+2+3)								
	Total of (1+2+3+4)				29.69		73.89	
					623.52		1,551.60	
	Overhead and profit (20%)				124.70		310.32	
	Total (ton)				<u>748.22</u>		<u>1,861.92</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
26. CONCRETE BLOCK MASONRY								
1) Labour								
	Foreman	m.d.	0.04610	-	-	350.00	16.14	
	Block-mason	m.d.	0.13000	-	-	240.00	31.20	
	Common labour	m.d.	0.40760	-	-	170.00	69.29	
	Steel bar bender	m.d.	0.02930	-	-	220.00	6.45	
	Sub-total						<u>123.08</u>	
2) Equipment								
								-
3) Materials								
	Concrete block, 150x200x450	m ²	11.10000	-	-	7.34	81.47	
	Cement	kg	10.73000	0.112	1.20	76.50	820.85	
	Sand	m ³	0.01500	16.640	0.25	152.00	2.28	
	Reinforcing bar	kg	12.20000	0.585	7.14	0.40	4.88	
	Sub-total			<u>8.59</u>			<u>909.48</u>	
4) Miscellaneous (5% of 1+2+3)								
	Total of (1+2+3+4)			0.43	9.02		51.63	
							1,084.19	
	Overhead and profit (20%)			1.80			216.84	
	Total (m2)			<u>10.82</u>			<u>1,301.03</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
27. EXPANSION JOINT, t=20 mm, per m								
1) Labour								
	Skilful labour	m.d.	0.06500	-	-	240.00	15.60	
	Common labour	m.d.	0.13000	-	-	170.00	22.10	
	Sub-total						<u>37.70</u>	
2) Equipment								
								-
3) Materials								
	Water-stop, PVC 300x7t	m	1.00000	19.74	19.74	13.52	13.52	
	Joint sealant, 20x20x500 mm	m	2.00000	7.70	7.70	5.27	10.54	
	Elastic filler, t=20 mm	m2	0.33000	7.26	7.26	30.14	9.95	
	Sub-total			<u>34.70</u>			<u>34.01</u>	
4) Miscellaneous (5% of 1+2+3)								
				1.74			3.59	
	Total of (1+2+3+4)			36.44			75.30	
	Overhead and profit (20%)			7.29			15.06	
	Total			<u>43.73</u>			<u>90.36</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
28. EXPANSION JOINT (WATER-STOP WITH PROTECTIVE COVER), per m								
1) Labour								
	Foreman	m.d.	0.05000	-	-	240.00	12.00	
	Common labour	m.d.	0.10000	-	-	170.00	17.00	
	Sub-total						<u>29.00</u>	
2) Equipment								
				-	-			
3) Materials								
	Water-stop, PVC 300x7t	m	1.00000	19.740	19.74	13.52	13.52	
	Protective cover, 2 inc coated steel plate, t=0.5 mm	m2	0.30000	5.300	1.59	7.30	2.19	
	Sub-total				<u>21.33</u>		<u>15.71</u>	
4) Miscellaneous (5% of 1+3)								
	Total of (1+3+4)				22.40		46.95	
	Overhead and profit (20%)				4.48		9.39	
	Total				<u>26.88</u>		<u>56.34</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
29-EXPANSION JOINT (ELASTIC FILTER, t=10 mm) per m2								
1) Labour								
	Skilful labour	m.d.	0.02000	-	-	240.00	4.80	
	Common labour	m.d.	0.04000	-	-	170.00	6.80	
	Sub-total						<u>11.60</u>	
2) Equipment								
								-
3) Materials								
	Elastic filler, t=10 mm	m2	1.00000	11.00	11.000	15.07	15.07	
	Sub-total			<u>11.00</u>			<u>15.07</u>	
4) Miscellaneous (5% of 1+3)								
	Total of (1+3+4)			11.55			28.00	
	Overhead and profit (20%)			2.31			5.60	
	Total			<u>13.86</u>			<u>33.60</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
30. EXPANSION JOINT (ELASTIC FILTER, t=20 mm), per m²								
1) Labour								
	Skilful labour	m.d.	0.02860	-	-	240.00	6.86	
	Common labour	m.d.	0.05710	-	-	170.00	9.71	
	Sub-total						<u>16.57</u>	
2) Equipment								
3) Materials								
	Elastic filler, t=20 mm	m ²	1.00000	22.00	22.000	30.14	30.14	
	Sub-total			<u>22.00</u>			<u>30.14</u>	
4) Miscellaneous (5% of 1+3)								
	Total of (1+3+4)			1.10			2.34	
				23.10			49.05	
	Overhead and profit (20%)			4.62			9.81	
	Total			<u>27.72</u>			<u>58.86</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
31. STOP-LOG INSTALLATION, (HARD WOOD), per m³								
1) Labour								
	Foreman	m.d.	0.07700	-	-	350.00	26.95	
	Carpenter	m.d.	0.77200	-	-	220.00	169.84	
	Common labour	m.d.	1.00000	-	-	170.00	170.00	
	Sub-total						<u>366.79</u>	
2) Equipment								
				-	-			
3) Material								
	Timber plank, 1270x300x50x3nr	m ³	0.05720	13.65	238.690	13,080.00	748.18	
	Steel plate, t=3mm including fabrication and painting	kg	14.00000	11.13	0.795	5.99	83.86	
	Sub-total			<u>24.78</u>			<u>832.04</u>	
4) Miscellaneous (5% of 1+3)								
	Total of (1+3+4)			1.24			59.94	
				26.02			1,258.77	
	Overhead and profit (20%)			5.20			251.75	
	Total			<u>31.22</u>			<u>1,510.52</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
32. BUFFLE PLATE, w=900, per m3								
1) Labour								
	Foreman	m.d.	0.80	-	-	350.00	280.00	
	Carpenter	m.d.	3.40	-	-	220.00	748.00	
	Common labour	m.d.	4.15	-	-	170.00	705.50	
	Sub-total						<u>1,733.50</u>	
2) Equipment								
				-	-			
3) Materials								
	Timber board, t=20 mm	m3	1.00	243.21	243.21	13,328.00	13,328.00	
	Stainless steel edge, t= 0.3 mm	kg	16.50	7.600	125.40	57.27	944.96	
	Steel plate, t= 3 mm	kg	2886.00	0.795	2,294.37	5.99	17,287.14	
	Hook, R.B. 6 mm	kg	34.80	0.583	20.29	0.40	13.92	
	Sub-total			<u>2,683.27</u>			<u>31,574.02</u>	
4) Miscellaneous (5% of 1+3)								
				134.16			1,665.38	
	Total of (1+3+4)			2,817.43			34,972.90	
	Overhead and profit (20%)			563.49			6,994.58	
	Total			<u>3,380.92</u>			<u>41,967.48</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
33. EFFLUENT TROUGH INSTALLATION, per nr								
1) Labour								
	Foreman	m.d.	0.01700	-	-	350.00	5.95	
	Operator	m.d.	0.08600	-	-	300.00	25.80	
	Asst. operator	m.d.	0.02900	-	-	220.00	6.38	
	Skilful labour	m.d.	0.10000	-	-	240.00	24.00	
	Common labour	m.d.	0.10000	-	-	170.00	17.00	
	Sub-total						<u>79.13</u>	
2) Equipment								
	Truck crane, 16 ton	hr	0.57000	15.400	8.78	42.20	24.05	
	Sub-total				<u>8.78</u>		<u>24.05</u>	
3) Material								
	uPVC pipe, DN40 mm	m	3.50000	1.300	4.55	0.89	3.12	
	Anchor bolts, nuts, stainless steel	kg	1.30000	7.600	9.88	5.21	6.77	
	Diesel oil	lit	4.45000	0.520	2.31	0.36	1.60	
	Engine oil	lit	0.18000	2.410	0.43	1.65	0.30	
	Sub-total				<u>17.17</u>		<u>11.79</u>	
4) Miscellaneous (5% of 1+2+3)								
					1.30		5.75	
	Total of (1+2+3+4)				27.25		120.72	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
	Overhead and profit (20%)				5.45		24.14	
	Total				<u>32.70</u>		<u>144.86</u>	
	5) Works							
	Concrete work, class F	m3	0.41000	118.020	48.39	1,126.89	462.02	
	Formwork, Type F2	m2	7.00000	6.600	46.20	361.00	2,527.00	
	Reinforcing bar work	kg	70.00000	0.748	52.36	0.18620	13.03	
	Mortar plastering (1: 2)	m3	0.02000	99.740	1.99	585.60	11.71	
	Sub-total				<u>148.94</u>		<u>3,013.76</u>	
	Grand total				<u>181.64</u>		<u>3,158.62</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
34. FILTER SAND, per m3								
1) Labour								
	Skilful labour	m.d.	0.01000	-	-	240.00	2.40	
	Common labour	m.d.	0.14000	-	-	170.00	23.80	
	Sub-total						<u>26.20</u>	
2) Equipment								
								-
3) Materials								
	Filter sand, effective grain size 1.0 mm, uniformity 1.5 less	m3	1.00000	420.00	420.000	575.00	575.00	
	Sub-total						<u>575.00</u>	
4) Miscellaneous (5% of 1+3)								
				21.00			30.06	
	Total of (1+3+4)			441.00			631.26	
	Overhead and profit (20%)			88.20			126.25	
	Total			<u>529.20</u>			<u>757.51</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
35. FILTER GRAVEL, per m3								
1) Labour								
	Skilful labour	m.d.	0.01000	-	-	240.00	2.40	
	Common labour	m.d.	0.19000	-	-	170.00	32.30	
	Sub-total						<u>34.70</u>	
2) Equipment								
								-
3) Materials								
	Filter gravel, effective grain size of 2.38 mm to 4.76 mm	m3	1.00000	403.000	403.00	552.00	552.00	
	Sub-total				<u>403.00</u>		<u>552.00</u>	
4) Miscellaneous (5% of 1+3)								
				20.15			29.34	
	Total of (1+3+4)			423.15			616.04	
	Overhead and profit (20%)			84.63			123.21	
	Total			<u>507.78</u>			<u>739.25</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
36. PIPELAYING WORK, DN 900 mm DIP, per m								
1) Labour								
	Driver	m.d.	0.03010	-	-	240.00	7.22	
	Plumber	m.d.	0.07230	-	-	240.00	17.35	
	Common labour	m.d.	0.10130	-	-	170.00	17.22	
	Sub-total						<u>41.79</u>	
2) Equipment								
	Truck crane, 4.9 ton	hr	0.19600	1.69	1.69	23.60	4.63	
	Sub-total				<u>1.69</u>		<u>4.63</u>	
3) Materials								
	Diesel oil	lit	1.05800	0.55	0.55	0.36	0.38	
	Engine oil	lit	0.04200	0.10	0.10	1.65	0.07	
	Sub-total			<u>0.65</u>			<u>0.45</u>	
4) Miscellaneous (5% of 1+3)								
	Total of (1+3+4)			0.12	0.12		2.34	
				2.46	2.46		49.21	
	Overhead and profit (20%)			0.49	0.49		9.84	
	Total			<u>2.95</u>			<u>59.05</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
37. PIPELAYING WORK, DN 800mm DIP, per m								
1) Labour								
	Driver	m.d.	0.02840	-	-	240.00	6.82	
	Plumber	m.d.	0.05770	-	-	240.00	13.85	
	Common labour	m.d.	0.08170	-	-	170.00	13.89	
	Sub-total						<u>34.56</u>	
2) Equipment								
	Truck crane, 4.9 ton	hr	0.18480	8.600	1.59	23.60	4.36	
	Sub-total				<u>1.59</u>		<u>4.36</u>	
3) Material								
	Diesel oil	lit	1.00000	0.520	0.52	0.36	0.36	
	Engine oil	lit	0.04000	2.410	0.10	1.65	0.07	
	Sub-total				<u>0.62</u>		<u>0.43</u>	
4) Miscellaneous (5% of 1+2+3)								
	Total of (1+2+3+4)				2.32		41.32	
	Overhead and profit (20%)				0.46		8.26	
	Total				<u>2.78</u>		<u>49.58</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
38. PIPELAYING WORK, DN 700 mm DIP, per m								
1) Labour								
	Driver	m.d.	0.02670	-	-	240.00	6.41	
	Plumber	m.d.	0.05290	-	-	240.00	12.70	
	Common labour	m.d.	0.07490	-	-	170.00	12.73	
	Sub-total						<u>31.84</u>	
2) Equipment								
	Truck crane, 4.9 ton	hr	0.17360	8.600	1.49	23.60	4.10	
	Sub-total				<u>1.49</u>		<u>4.10</u>	
3) Materials								
	Diesel oil	lit	0.93700	0.520	0.49	0.36	0.34	
	Engine oil	lit	0.03700	2.410	0.09	1.65	0.06	
	Sub-total				<u>0.58</u>		<u>0.40</u>	
4) Miscellaneous (5% of 1+2+3)								
	Total of (1+2+3+4)				2.17		38.16	
	Overhead and profit (20%)				0.43		7.63	
	Total				<u>2.60</u>		<u>45.79</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
39. PIPELAYING WORK, DN 600 mm DIP, per m								
1) Labour								
	Driver	m.d.	0.02490	-	-	240.00	5.98	
	Plumber	m.d.	0.04380	-	-	240.00	10.51	
	Common labour	m.d.	0.06280	-	-	170.00	10.68	
	Sub-total						<u>27.17</u>	
2) Equipment								
	Truck crane, 4.9 ton	hr	0.16240	8.600	1.40	23.60	3.83	
	Sub-total				<u>1.40</u>		<u>3.83</u>	
3) Material								
	Diesel oil	lit	0.87700	0.520	0.46	0.36	0.32	
	Engine oil	lit	0.03500	2.410	0.08	1.65	0.06	
	Sub-total				<u>0.54</u>		<u>0.38</u>	
4) Miscellaneous (5% of 1+2+3)								
	Total of (1+2+3+4)				2.04		32.95	
	Overhead and profit (20%)				0.41		6.59	
	Total				<u>2.45</u>		<u>39.54</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
40. PIPELAYING WORK, DN 350 mm DIP, per m								
1) Labour								
	Driver	m.d.	0.02060	-	-	240.00	4.94	
	Plumber	m.d.	0.02200	-	-	240.00	5.28	
	Common labour	m.d.	0.03000	-	-	170.00	5.10	
	Sub-total						<u>15.32</u>	
2) Equipment								
	Truck crane, 4.9 ton	hr	0.13440	8.600	1.16	23.60	3.17	
	Sub-total				<u>1.16</u>		<u>3.17</u>	
3) Materials								
	Diesel oil	lit	0.72600	0.520	0.38	0.36	0.26	
	Engine oil	lit	0.02900	2.410	0.07	1.65	0.05	
	Sub-total				<u>0.45</u>		<u>0.31</u>	
4) Miscellaneous (5% of 1+2+3)								
	Total of (1+2+3+4)				1.69		19.74	
	Overhead and profit (20%)				0.34		3.95	
	Total				<u>2.03</u>		<u>23.69</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
41. PIPELAYING WORK, DN 300 mm DIP, per m								
1) Labour								
	Driver	m.d.	0.01980	-	-	240.00	4.75	
	Plumber	m.d.	0.01800	-	-	240.00	4.32	
	Common labour	m.d.	0.02400	-	-	170.00	4.08	
	Sub-total						<u>13.15</u>	
2) Equipment								
	Truck crane, 4.9 ton	hr	0.12880	8.600	1.11	23.60	3.04	
	Sub-total				<u>1.11</u>		<u>3.04</u>	
3) Materials								
	Diesel oil	lit	0.69600	0.520	0.36	0.36	0.25	
	Engine oil	lit	0.02800	2.410	0.07	1.65	0.05	
	Sub-total				<u>0.43</u>		<u>0.30</u>	
4) Miscellaneous (5% of 1+2+3)								
	Total of (1+2+3+4)				1.62		17.31	
	Overhead and profit (20%)				0.32		3.46	
	Total				<u>1.94</u>		<u>20.77</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
42. PIPELAYING WORK, DN 200 mm DIP, per m								
1) Labour								
	Plumber	m.d.	0.04700	-	-	240.00	11.28	
	Common labour	m.d.	0.10500	-	-	170.00	17.85	
	Sub-total			-	-		<u>29.13</u>	
2) Equipment								
				-	-			
3) Materials								
				-	-			
4) Miscellaneous (5% of 1)								
				-	-		1.46	
	Total of (1+4)			-	-		30.59	
	Overhead and profit (20%)			-	-		6.12	
	Total			-	-		<u>36.71</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
43. PIPELAYING WORK, DN 150 mm DIP, per m								
1) Labour								
	Plumber	m.d.	0.03300	-	-	240.00	7.92	
	Common labour	m.d.	0.09900	-	-	170.00	16.83	
	Sub-total			-	-		<u>24.75</u>	
2) Equipment								
				-	-			
3) Materials								
				-	-			
4) Miscellaneous (5% of 1)								
	Total of (1+4)			-	-		25.99	
	Overhead and profit (20%)			-	-		5.20	
	Total			-	-		<u>31.19</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
44. PIPELAYING WORK, DN 125 mm DIP, per m								
1) Labour								
	Plumber	m.d.	0.03200	-	-	240.00	7.68	
	Common labour	m.d.	0.09000	-	-	170.00	15.30	
	Sub-total			-	-		<u>22.98</u>	
2) Equipment								
				-	-		-	
3) Materials								
				-	-		-	
4) Miscellaneous (5% of 1)								
	Total of (1+4)			-	-		24.13	
	Overhead and profit (20%)			-	-		4.83	
	Total			-	-		<u>28.96</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
45. PIPELAYING WORK, 350 mm (S.P.-FILTER), per m								
1) Labour								
	Foreman	m.d.	0.04000	-	-	350.00	14.00	
	Plumber	m.d.	0.14950	-	-	240.00	35.88	
	Common labour	m.d.	0.15860	-	-	170.00	26.96	
	Sub-total			-	-		<u>76.84</u>	
2) Equipment								
				-	-		-	
3) Materials								
				-	-		-	
4) Miscellaneous (5% of 1)								
				-	-		3.84	
	Total of (1+4)			-	-		80.68	
	Overhead and profit (20%)			-	-		16.14	
	Total			-	-		<u>96.82</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
46. PIPELAYING WORK, 200 mm (S.P.-FILTER), per m								
1) Labour								
	Foreman	m.d.	0.02300	-	-	350.00	8.05	
	Plumber	m.d.	0.10470	-	-	240.00	25.13	
	Common labour	m.d.	0.11120	-	-	170.00	18.90	
	Sub-total			-	-		<u>52.08</u>	
2) Equipment								
				-	-		-	
3) Materials								
				-	-		-	
4) Miscellaneous (5% of 1)								
				-	-		2.60	
	Total of (1+4)			-	-		54.68	
	Overhead and profit (20%)			-	-		10.94	
	Total			-	-		<u>65.62</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
47. PIPELAYING WORK, DN 150 mm (S.P.-FILTER), per m								
1) Labour								
	Foreman	m.d.	0.02000	-	-	350.00	7.00	
	Plumber	m.d.	0.09430	-	-	240.00	22.63	
	Common labour	m.d.	0.10080	-	-	170.00	17.14	
	Sub-total			-	-		<u>46.77</u>	
2) Equipment								
				-	-		-	
3) Materials								
				-	-		-	
4) Miscellaneous (5% of 1)								
				-	-		2.34	
	Total of (1+4)			-	-		49.11	
	Overhead and profit (20%)			-	-		9.82	
	Total			-	-		<u>58.93</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
48. PIPELAYING WORK, DN 125 mm (SP, ELEVATED TANK), per m								
1) Labour								
	Foreman	m.d.	0.01600	-	-	350.00	5.60	
	Plumber	m.d.	0.08780	-	-	240.00	21.07	
	Common worker	m.d.	0.09430	-	-	170.00	16.03	
	Sub-total						<u>42.70</u>	
2) Equipment								
				-	-			
3) Materials								
				-	-			
4) Miscellaneous (5% of 1)								
				-	-		2.14	
	Total of (1+4)						44.84	
	Overhead and profit (20%)						8.97	
	Total						<u>53.81</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
49. PIPELAYING WORK, DN 100 mm (SP. IN STRUCTURE), per m								
1) Labour								
	Foreman	m.d.	0.01500	-	-	350.00	5.25	
	Plumber	m.d.	0.05190	-	-	240.00	12.46	
	Common labour	m.d.	0.05750	-	-	170.00	9.78	
	Sub-total			-	-		<u>27.49</u>	
2) Equipment								
				-	-			
3) Materials								
				-	-			
4) Miscellaneous (5% of 1)								
				-	-		1.37	
	Total of (1+4)			-	-		28.86	
	Overhead and profit (20%)			-	-		5.77	
	Total			-	-		<u>34.63</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
50. PIPELAYING WORK, DN 80 mm (SP. IN STRUCTURE), per m								
1) Labour								
	Foreman	m.d.	0.01300	-	-	350.00	4.55	
	Plumber	m.d.	0.04600	-	-	240.00	11.04	
	Common labour	m.d.	0.05170	-	-	170.00	8.79	
	Sub-total			-	-		<u>24.38</u>	
2) Equipment								
				-	-		-	
3) Materials								
				-	-		-	
4) Miscellaneous (5% of 1)								
				-	-		1.22	
	Total of (1+4)			-	-		25.60	
	Overhead and profit (20%)			-	-		5.12	
	Total			-	-		<u>30.72</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
51. PIPELAYING WORK, DN 65 mm (SP, in structure), per m								
1) Labour								
	Foreman	m.d.	0.01200	-	-	350.00	4.20	
	Plumber	m.d.	0.04470	-	-	240.00	10.73	
	Common labour	m.d.	0.05060	-	-	170.00	8.60	
	Sub-total			-	-		<u>23.53</u>	
2) Equipment								
				-	-		-	
3) Material								
				-	-		-	
4) Miscellaneous (5% of 1)								
				-	-		1.18	
	Total of (1+4)			-	-		24.71	
	Overhead and profit (20%)			-	-		4.94	
	Total			-	-		<u>29.65</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
52. PIPELAYING WORK, DN 225 mm (uPVC, IN TRENCH), per m								
1) Labour								
	Plumber	m.d.	0.04100	-	-	240.00	9.84	
	Common labour	m.d.	0.05300	-	-	170.00	9.01	
	Sub-total						<u>18.85</u>	
2) Equipment								
								-
3) Materials								
	uPVC pipe, DN 225 mm	m	1.00000	26.90	26.900	18.43	18.43	
	Flanged adaptor, and others	LS	1.00000	1.35	1.350	0.92	0.92	
	Sub-total			<u>28.25</u>			<u>19.35</u>	
4) Miscellaneous (5% of 1+3)								
	Total of (1+3+4)			1.41			1.91	
	Overhead and profit (20%)			29.66			40.11	
	Total			<u>35.59</u>			<u>48.13</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
53. PIPELAYING WORK, DN 160 mm (uPVC, IN TRENCH), per m								
1) Labour								
	Plumber	m.d.	0.03000	-	-	240.00	7.20	
	Common labour	m.d.	0.03800	-	-	170.00	6.46	
	Sub-total						<u>13.66</u>	
2) Equipment								
								-
3) Material								
	uPVC pipe, DN 160 mm	m	1.00000	16.70	16.700	11.44	11.44	
	Flanged adaptor and others	L.S	1.00000	0.84	0.840	0.57	0.57	
	Sub-total			<u>17.54</u>			<u>12.01</u>	
4) Miscellaneous (5% of 1+3)								
	Total of (1+3+4)			18.42			26.95	
	Overhead and profit (20%)			3.68			5.39	
	Total			<u>22.10</u>			<u>32.34</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
54. PIPELAYING WORK, DN 110 mm (uPVC, IN TRENCH), per m								
1) Labour								
	Plumber	m.d.	0.02200	-	-	240.00	5.28	
	Common Labour	m.d.	0.03000	-	-	170.00	5.10	
	Sub-total						<u>10.38</u>	
2) Equipment								
								-
3) Materials								
	uPVC pipe, DN 110 mm	m	1.00000	8.40	8.40	5.75	5.75	
	Flanged adaptor and others	L.S	1.00000	0.42	0.42	0.29	0.29	
	Sub-total			<u>8.82</u>			<u>6.04</u>	
4) Miscellaneous (5% of 1+3)								
				0.44	0.44		0.82	
	Total of (1+3+4)			9.26	9.26		17.24	
	Overhead and profit (20%)			1.85	1.85		3.45	
	Total			<u>11.11</u>			<u>20.69</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
55. PIPELAYING WORK, DN 90 mm (uPVC, IN TRENCH), per m								
1) Labour								
	Plumber	m.d.	0.01600	-	-	240.00	3.84	
	Common labour	m.d.	0.02400	-	-	170.00	4.08	
	Sub-total						<u>7.92</u>	
2) Equipment								
								-
3) Materials								
	uPVC pipe, DN 90 mm	m	1.00000	5.60	5.60	3.84	3.84	
	Flanged adaptor and others	L.S	1.00000	0.28	0.28	0.19	0.19	
	Sub-total			<u>5.88</u>			<u>4.03</u>	
4) Miscellaneous (5% of 1+3)								
				0.29	0.29		0.60	
	Total of (1+3+4)			6.17			12.55	
	Overhead and profit (20%)			1.23			2.51	
	Total			<u>7.40</u>			<u>15.06</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
56. PIPELAYING WORK, DN 63 mm (uPVC, IN TRENCH), per m								
1) Labour								
	Plumber	m.d.	0.01600	-	-	240.00	3.84	
	Common labour	m.d.	0.02400	-	-	170.00	4.08	
	Sub-total						<u>7.92</u>	
2) Equipment								
								-
3) Materials								
	uPVC pipe, DN 63 mm	m	1.00000	2.70	2.700	1.85	1.85	
	Flanged adaptor and others	L.S	1.00000	0.14	0.140	0.08	0.08	
	Sub-total			<u>2.84</u>			<u>1.93</u>	
4) Miscellaneous (5% of 1+3)								
				0.14			0.49	
	Total of (1+3+4)			2.98			10.34	
	Overhead and profit (20%)			0.60			2.07	
	Total			<u>3.58</u>			<u>12.41</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
57. PIPELAYING WORK, DN 50 mm (uPVC, IN TRENCH), per m								
1) Labour								
	Plumber	m.d.	0.01400	-	-	240.00	3.36	
	Common labour	m.d.	0.02000	-	-	170.00	3.40	
	Sub-total						<u>6.76</u>	
2) Equipment								
								-
3) Materials								
	uPVC pipe, DN 50 mm	m	1.00000	1.80	1.800	1.23	1.23	
	Flanged adaptor and others	sum	1.00000	0.09	0.090	0.06	0.06	
	Sub-total			<u>1.89</u>			<u>1.29</u>	
4) Miscellaneous (5% of 1+3)								
	Total of (1+3+4)			1.98			8.45	
	Overhead and profit (20%)			0.40			1.69	
	Total			<u>2.38</u>			<u>10.14</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
58. PIPELAYING WORKS, DN 110 mm PE Pipe in Trench, per m								
1) Labour								
	Plumber	m.d.	0.03000	-	-	240.00	7.20	
	Common labour	m.d.	0.03000	-	-	170.00	5.10	
	Sub-total						<u>12.30</u>	
2) Materials								
	PE pipe, DN 100 mm, working pressure 0.35 MPa pipe and socket	m	1.00000	19.000	19.00	13.00	13.00	
	Adaptor to connect with DIP or SP	sum			1.10		0.80	
	Sub-total				<u>20.10</u>		<u>13.80</u>	
3) Miscellaneous (5% of 1 to 2)								
	Total of (1+2+3)				21.11		27.41	
4) Overhead and profit (20% of 1 to 3)								
	Total				<u>25.33</u>		<u>32.89</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
59. PIPELAYING WORKS, DN 63 mm PE Pipe in Trench, per m								
1) Labour								
	Plumber	m.d.	0.01300	-	-	240.00	3.12	
	Common labour	m.d.	0.02200	-	-	170.00	3.74	
	Sub-total						<u>6.86</u>	
2) Materials								
	PE pipe, DN 63 mm, 0.73 MPa	m	1.00000	11.00	11.00	7.53	7.53	
	Adaptor to connect with DIP or SP	sum		0.20			0.13	
	Sub-total			<u>11.20</u>			<u>7.66</u>	
3) Miscellaneous (5% of 1 to 2)								
	Total of (1+2+3)			11.76			15.25	
4) Overhead and profit (20% of 1 to 3)								
	Total			<u>14.11</u>			<u>18.30</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
60. PIPELAYING WORKS, DN 40 mm PE Pipe in Trench, per m								
1) Labour								
	Plumber	m.d.	0.01100	-	-	240.00	2.64	
	Common labour	m.d.	0.01700	-	-	170.00	2.89	
	Sub-total						<u>5.53</u>	
2) Materials								
	PE pipe, DN 40 mm, 0.73 MPa	m	1.00000	4.90	4.90	3.35	3.35	
	Adaptor to connect with DIP or SP	sum		0.70	0.70		0.48	
	Sub-total				<u>5.60</u>		<u>3.83</u>	
3) Miscellaneous (5% of 1 to 2)								
	Total of (1+2+3)				5.88		9.83	
4) Overhead and profit (20% of 1 to 3)								
	Total				1.18		1.97	
	Total				<u>7.06</u>		<u>11.80</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
61. FILTER INLET PIPE (STAINLESS STEEL, ND 350 mm) per nr								
1) Labour								
	Plumber	m.d.	0.40500	-	-	240.00	97.20	
	Common labour	m.d.	0.45200	-	-	170.00	76.84	
	Sub-total						<u>174.04</u>	
2) Equipment								
								-
3) Material								
	Stainless steel pipe 350 mm inside diameter t=4 mm x 675 L	nr	1.00000	178.00	178.00	254.00	254.00	
	Sub-total						<u>254.00</u>	
4) Miscellaneous (5% of 1+3)								
				8.90			21.40	
	Total of (1+3+4)			186.90			449.44	
	Overhead and profit (20%)			37.38			89.89	
	Total			<u>224.28</u>			<u>539.33</u>	
5) Mortar plastering (1:2)								
		m3	0.00160	99.740	0.16	585.60	0.94	
	Grand total			<u>224.44</u>			<u>540.27</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
62. FLUSH PIPELAYING WORK (GSP, DN 100 mm)								
1) Pipe material								
/01	GSP DN 100 mm	m	159.00	18.800	2,989.20	12.88	2,047.92	
/02	Tee 100 x 100	nr	6.00	51.000	306.00	69.90	419.40	
/03	Tee 100 x 65	nr	21.00	51.000	1,071.00	69.90	1,467.90	
/04	Elbow 100	nr	11.00	36.100	397.10	49.50	544.50	
/05	Union 100	nr	15.00	106.200	1,593.00	145.50	2,182.50	
/06	Cap 100	nr	5.00	32.400	162.00	44.40	222.00	
/07	Sleeve pipe DN 150 mm x 300 L	nr	6.00	11.130	66.78	7.34	44.04	
/08	Miscellaneous (5% of 1 to 7)				329.25		346.41	
/09	Overhead and profit (20% of 1 to 8)				1,382.87		1,454.93	
	Sub-total				<u>8,297.20</u>		<u>8,729.60</u>	
2) Pipelaying work								
		m	159.00		-	34.63	5,506.17	
	Sub-total				-		<u>5,506.17</u>	
	Total (per 159 m)				<u>8,297.20</u>		<u>14,235.77</u>	
	Per linear metre	m			<u>52.18</u>		<u>89.53</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
63. FLUSH PIPELAYING WORK (GSP, DN 65 mm)								
1) Pipe material								
/01	GSP DN 65 mm	m	31.00	9.400	291.40	6.44	199.64	
/02	Elbow DN 65 mm	nr	21.00	14.500	304.50	19.90	417.90	
/03	Union DN 65 mm	nr	21.00	42.300	888.30	58.00	1,218.00	
/04	Sleeve pipe DN 100 x 250 L	nr	21.00	4.700	98.70	6.40	134.40	
/05	Miscellaneous (5% of 1 to 4)				79.15		98.50	
/06	Overhead and profit (20% of 1 to 5)				332.41		413.69	
	Sub-total				<u>1,994.46</u>		<u>2,482.13</u>	
2) Pipelaying work								
		m	31.00		-	29.64	918.84	
	Sub-total				-		<u>918.84</u>	
	Total (per 31 m)				<u>1,994.46</u>		<u>3,400.97</u>	
	Per linear metre	m			<u>64.34</u>		<u>109.71</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
64. VALVE INSTALLATION, DN 800 mm, per nr								
1) Labour								
	Foreman	m.d.	0.19600	-	-	350.00	68.60	
	Driver	m.d.	0.25000	-	-	240.00	60.00	
	Plumber	m.d.	2.44000	-	-	240.00	585.60	
	Common labour	m.d.	4.42000	-	-	170.00	751.40	
	Sub-total						<u>1,465.60</u>	
2) Equipment								
	Truck crane, 4.9 ton	hr	1.62400	8.600	13.97	23.60	38.33	
	Sub-total				<u>13.97</u>		<u>38.33</u>	
3) Materials								
	Diescl oil	lit	8.77000	0.520	4.56	0.36	3.16	
	Engine oil	lit	0.35000	2.410	0.84	1.65	0.58	
	Sub-total				<u>5.40</u>		<u>3.74</u>	
4) Miscellaneous (5% of 1+2+3)								
	Total of (1+2+3+4)				20.34		1,583.05	
	Overhead and profit (20%)				4.07		316.61	
	Total				<u>24.41</u>		<u>1,899.66</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
65. VALVE INSTALLATION, DN 700mm, per nr								
1) Labour								
	Foreman	m.d.	0.19000	-	-	350.00	66.50	
	Driver	m.d.	0.24100	-	-	240.00	57.84	
	Plumber	m.d.	2.29000	-	-	240.00	549.60	
	Common labour	m.d.	3.82000	-	-	170.00	649.40	
	Sub-total						<u>1,323.34</u>	
2) Equipment								
	Truck crane, 4.9 ton	hr	1.56800	8.600	13.48	23.60	37.00	
	Sub-total				<u>13.48</u>		<u>37.00</u>	
3) Material								
	Diesel oil	lit	8.46700	0.520	4.40	0.36	3.05	
	Engine oil	lit	0.33900	2.410	0.82	1.65	0.56	
	Sub-total				<u>5.22</u>		<u>3.61</u>	
4) Miscellaneous (5% of 1+2+3)								
	Total of (1+2+3+4)				19.64		1,432.15	
	Overhead and profit (20%)				3.93		286.43	
	Total				<u>23.57</u>		<u>1,718.58</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
66. VALVE INSTALLATION, DN 600 mm, per nr								
1) Labour								
	Foreman	m.d.	0.18700	-	-	350.00	65.45	
	Driver	m.d.	0.20700	-	-	240.00	49.68	
	Plumber	m.d.	2.21000	-	-	240.00	530.40	
	Common labour	m.d.	3.29000	-	-	170.00	559.30	
	Sub-total			-	-		1,204.83	
2) Equipment								
	Truck crane, 4.9 ton	hr	1.35000	8.600	11.61	23.60	31.86	
	Sub-total				11.61		31.86	
3) Materials								
	Diesel oil	lit	7.29000	0.520	3.79	0.36	2.62	
	Engine oil	lit	0.29000	2.410	0.70	1.65	0.48	
	Sub-total				4.49		3.10	
4) Miscellaneous (5% of 1+2+3)								
	Total of (1+2+3+4)				16.91		1,301.78	
	Overhead and profit (20%)				3.38		260.36	
	Total				20.29		1,562.14	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
67. VALVE INSTALLATION, DN 350 mm. (ON FILTER), per nr								
1) Labour								
	Foreman	m.d.	0.19800	-	-	350.00	69.30	
	Plumber	m.d.	2.20000	-	-	240.00	528.00	
	Common labour	m.d.	2.64000	-	-	170.00	448.80	
	Sub-total			-	-		<u>1,046.10</u>	
2) Equipment								
				-	-			
3) Materials								
				-	-			
4) Miscellaneous (5% of 1)								
				-	-		52.31	
	Total of (1+4)			-	-		1,098.41	
	Overhead and profit (20%)			-	-		219.68	
	Total			-	-		<u>1,318.09</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
68. VALVE INSTALLATION, DN 300 mm, per DF								
1) Labour								
	Foreman	m.d.	0.18000	-	-	350.00	63.00	
	Plumber	m.d.	2.02000	-	-	240.00	484.80	
	Common labour	m.d.	2.31000	-	-	170.00	392.70	
	Sub-total			-	-		<u>940.50</u>	
2) Equipment								
				-	-		-	
3) Materials								
				-	-		-	
4) Miscellaneous (5% of 1)								
				-	-		47.03	
	Total of (1+4)			-	-		987.53	
	Overhead and profit (20%)			-	-		197.51	
	Total			-	-		<u>1,185.04</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
69. VALVE INSTALLATION, DN 200 mm, per nr								
1) Labour								
	Foreman	m.d.	0.11000	-	-	350.00	38.50	
	Plumber	m.d.	1.26000	-	-	240.00	302.40	
	Common labour	m.d.	1.45000	-	-	170.00	246.50	
	Sub-total			-	-		<u>587.40</u>	
2) Equipment								
				-	-		-	
3) Materials								
				-	-		-	
4) Miscellaneous (5% of 1)								
				-	-		29.37	
	Total of (1+4)			-	-		616.77	
	Overhead and profit (20%)			-	-		123.35	
	Total			-	-		<u>740.12</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
70. VALVE INSTALLATION, DN 150 mm, per nr								
1) Labour								
	Foreman	m.d.	0.08000	-	-	350.00	28.00	
	Plumber	m.d.	0.94000	-	-	240.00	225.60	
	Common labour	m.d.	1.05000	-	-	170.00	178.50	
	Sub-total			-	-		<u>432.10</u>	
2) Equipment								
				-	-		-	
3) Materials								
				-	-		-	
4) Miscellaneous (5% of 1)								
				-	-		21.61	
	Total of (1+4)			-	-		453.71	
	Overhead and profit (20%)			-	-		90.74	
	Total			-	-		<u>544.45</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
71. VALVE INSTALLATION, DN 100 mm, per nr								
1) Labour								
	Plumber	m.d.	0.82000	-	-	240.000	196.80	
	Common labour	m.d.	0.99000	-	-	170.000	168.30	
	Sub-total			-	-		<u>365.10</u>	
2) Equipment								
				-	-			
3) Materials								
				-	-			
4) Miscellaneous (5% of 1)								
	Total of (1+4)			-	-		383.36	
	Overhead and profit (20%)			-	-		76.67	
	Total			-	-		<u>460.03</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
72. VALVE INSTALLATION, DN 75 mm, per m								
1) Labour								
	Plumber	m.d.	0.75000	-	-	240.000	180.00	
	Common labour	m.d.	0.99000	-	-	170.000	168.30	
	Sub-total			-	-		<u>348.30</u>	
2) Equipment								
				-	-		-	
3) Materials								
				-	-		-	
4) Miscellaneous (5% of 1)								
				-	-		17.42	
	Total of (1+4)			-	-		365.72	
	Overhead and profit (20%)			-	-		73.14	
	Total			-	-		<u>438.86</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
73. HOSE VALVE INSTALLATION								
1) Labour								
	Plumber	m.d.	0.57000	-	-	240.000	136.80	
	Common labour	m.d.	0.79000	-	-	170.000	134.30	
	Sub-total						271.10	
2) Equipment								
				-	-			
3) Materials								
				-	-			
4) Miscellaneous (5% of 1)								
	Total of (1+4)			-	-		284.66	
	Overhead and profit (20%)			-	-		56.93	
	Total			-	-		341.59	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
74. SLUICE VALVE (ND 200 mm) INSTALLATION, 1 set								
1) Labour								
	Plumber	m.d.	0.75000	-	-	240.000	180.00	
	Common labour	m.d.	1.70000	-	-	170.000	289.00	
	Sub-total						<u>469.00</u>	
2) Equipment								
	Sluice vave, DN 200 mm	nr	1.00000	1,240.00			1,700.00	
	Valve box, 230 mm (ID)	nr	1.00000	188.00			258.00	
	hat type							
	Sub-total			<u>1,428.00</u>			<u>1,958.00</u>	
3) Materials								
	Reinforced concrete pipe	nr	2.00000	-		282.800	565.60	
	DN 225 mm x 1,000 L							
	Sub-total						<u>565.60</u>	
4) Miscellaneous (5% of 1+2+3)								
	Total of (1+2+3+4)			71.40			149.63	
				1,499.40			3,142.23	
	Overhead and profit (20%)			299.88			628.45	
	Total			<u>1,799.28</u>			<u>3,770.68</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
75. AIR-VALVE INSTALLATION, (DN 80 mm) per nr								
1) Labour								
	Plumber	m.d.	0.20000	-	-	240.000	48.00	
	Common labour	m.d.	0.40000	-	-	170.000	68.00	
	Sub-total			-	-		<u>116.00</u>	
2) Equipment								
				-	-		-	
3) Materials								
				-	-		-	
4) Miscellaneous (5% of 1)								
				-	-		5.80	
	Total of (1+4)			-	-		121.80	
	Overhead and profit (20%)			-	-		24.36	
	Total			-	-		<u>146.16</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
76. AIR-VALVE BOX INSTALLATION, per nr								
1) Labour								
	Plumber	m.d.	0.04000	-	-	240.000	9.60	
	Common labour	m.d.	0.19600	-	-	170.000	33.32	
	Sub-total						<u>42.92</u>	
2) Equipment								
	Truck crane, 4.9 ton	hr	2.16000	8.600	18.58	23.600	50.98	
	Sub-total				<u>18.58</u>		<u>50.98</u>	
3) Material								
	Reinforced concrete pipe, DN 1,050 mm	nr	1.00000	-	-	3,021.000	3,021.00	
	Manhole cover, D 1,250 mm checkered plate, t=3.2 mm	kg	50.00000	0.880	44.00	12.000	600.00	
	Steel belt, 50B x 3.2 t	kg	5.00000	0.620	3.10	8.500	42.50	
	Diesel oil	lit	11.66000	0.520	6.06	0.360	4.20	
	Engine oil	lit	0.47000	2.410	1.13	1.650	0.78	
	Sub-total				<u>54.29</u>		<u>3,668.48</u>	
4) Miscellaneous (5% of 1+2+3)								
	Total of (1+2+3+4)				76.51		3,950.50	
	Overhead and profit (20%)				15.30		790.10	
	Total				<u>91.81</u>		<u>4,740.60</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
77. AIR-VALVE (25 mm SINGLE ORIFICE) INSTALLATION, per nr								
1) Labour								
	Plumber	m.d.	0.20	-	-	240.000	48.00	
	Common labour	m.d.	0.40	-	-	170.000	68.00	
	Sub-total						<u>116.00</u>	
2) Equipment								
	Air-valve, 25 mm single orifice	nr	1.00	425.000	425.00	582.250	582.25	
	Sub-total				<u>425.00</u>		<u>582.25</u>	
3) Materials								
					-		-	
4) Miscellaneous (5% of 1+2)								
	Total of (1+2+4)				446.25		733.16	
	Overhead and profit (20%)				89.25		146.63	
	Total				<u>535.50</u>		<u>879.79</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
78. VALVE BOX INSTALLATION (DN 150 mm, WASHOUT IN RAW WATER MAIN)								
1) Labour								
	Plumber	m.d.	0.03000	-	-	240.000	7.20	
	Common labour	m.d.	0.14700	-	-	170.000	24.99	
	Sub-total			-	-		<u>32.19</u>	
2) Equipment								
				-	-		-	
3) Material								
	Reinforced concrete pipe, DN 600 x 0.60 m	nr	1.00000	-	-	700.000	700.00	
	Manhole cover, D 800 mm checkered plate, t=3.2 mm	kg	21.20000	1.034	21.92	14.870	315.24	
	Steel belt and chain	kg	5.50000	0.622	3.42	8.950	49.23	
	Sub-total				<u>25.34</u>		<u>1,064.47</u>	
4) Miscellaneous (5% of 1+3)								
	Total of (1+3+4)				26.61		1,151.49	
	Overhead and profit (20%)				5.32		230.30	
	Total				<u>31.93</u>		<u>1,381.79</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
79. SLUICE GATE INSTALLATION, DN 800 mm, per hr								
1) Labour								
	Foreman	m.d.	0.02890	-	-	350.000	10.12	
	Operator	m.d.	0.14620	-	-	300.000	43.86	
	Asst. operator	m.d.	0.04930	-	-	220.000	10.85	
	Plumber	m.d.	1.72480	-	-	240.000	413.95	
	Common Labour	m.d.	3.46720	-	-	170.000	589.42	
	Sub-total						1,068.20	
2) Equipment								
	Truck crane, 16 ton	hr	0.95200	14.66	14.66	42.200	40.17	
	Sub-total				14.66		40.17	
3) Materials								
	Diesel oil	lit	7.42600	3.86	3.86	0.360	2.67	
	Engine oil	lit	0.29700	0.72	0.72	1.650	0.49	
	Sub-total			4.58			3.16	
4) Miscellaneous (5% of 1+2+3)								
	Total of (1+2+3+4)			20.20			1,167.11	
	Overhead and profit (20%)			4.04			233.42	
	Total			24.24			1,400.53	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
80. SLUICE GATE INSTALLATION, 500 x 500 mm, per nr								
1) Labour								
	Driver	m.d.	0.20120	-	-	240.000	48.29	
	Plumber	m.d.	1.61040	-	-	240.000	386.50	
	Common labour	m.d.	2.32320	-	-	170.000	394.94	
	Sub-total						<u>829.73</u>	
2) Equipment								
	Truck crane, 4.9 ton	hr	1.31000	8.600	11.27	23.600	30.92	
	Sub-total				<u>11.27</u>		<u>30.92</u>	
3) Materials								
	Diesel oil	lit	7.07400	0.520	3.68	0.360	2.55	5.4 l/h
	Engine oil	lit	0.28300	2.410	0.68	1.650	0.47	
	Sub-total				<u>4.36</u>		<u>3.02</u>	
4) Miscellaneous (5% of 1+2+3)								
	Total of (1+2+3+4)				16.41		906.85	
	Overhead and profit (20%)				3.28		181.37	
	Total				<u>19.69</u>		<u>1,088.22</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
81. SLUICE GATE INSTALLATION, 400 x 400 mm, per nr								
1) Labour								
	Driver	m.d.	0.18580	-	-	240.000	44.59	
	Plumber	m.d.	1.55760	-	-	240.000	373.82	
	Common labour	m.d.	1.76000	-	-	170.000	299.20	
	Sub-total						717.61	
2) Equipment								
	Truck crane, 4.9 ton	hr	1.20960	8.600	10.40	32.600	39.43	
	Sub-total				10.40		39.43	
3) Materials								
	Diesel oil	lit	6.53200	0.520	3.40	0.360	2.35	
	Engine oil	lit	0.26100	2.410	0.63	1.650	0.43	
	Sub-total				4.03		2.78	
4) Miscellaneous (5% of 1+2+3)								
	Total of (1+2+3+4)				15.15		797.81	
	Overhead and profit (20%)				3.03		159.56	
	Total				18.18		957.37	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
82. SLUICE GATE INSTALLATION, 350 x 350 mm, per nr								
1) Labour								
	Driver	m.d.	0.17800	-	-	240.000	42.72	
	Plumber	m.d.	1.53120	-	-	240.000	367.49	
	Common labour	m.d.	1.54880	-	-	170.000	263.30	
	Sub-total						<u>673.51</u>	
2) Equipment								
	Truck crane, 4.9 ton	hr	1.15900	8.600	9.97	32.600	37.78	
	Sub-total				<u>9.97</u>		<u>37.78</u>	
3) Materials								
	Diesel oil	lit	6.26000	0.520	3.26	0.360	2.25	
	Engine oil	lit	0.25000	2.410	0.60	1.650	0.41	
	Sub-total				<u>3.86</u>		<u>2.66</u>	
4) Miscellaneous (5% of 1+2+3)								
	Total of (1+2+3+4)				14.52		749.65	
	Overhead and profit (20%)				2.90		149.93	
	Total				<u>17.42</u>		<u>899.58</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
83. SLUICE GATE INSTALLATION, 300 x 300 mm, per m								
1) Labour								
	Driver	m.d.	0.17200	-	-	240.000	41.28	
	Plumber	m.d.	1.50480	-	-	240.000	361.15	
	Common labour	m.d.	1.53120	-	-	170.000	260.30	
	Sub-total						<u>662.73</u>	
2) Equipment								
	Truck crane, 4.9 ton	hr	1.12000	8.600	9.63	32.600	36.51	
	Sub-total				<u>9.63</u>		<u>36.51</u>	
3) Material								
	Diesel oil	lit	6.04800	0.520	3.14	0.360	2.18	
	Engine oil	lit	0.24200	2.410	0.58	1.650	0.40	
	Sub-total				<u>3.72</u>		<u>2.58</u>	
4) Miscellaneous (5% of 1+2+3)								
	Total of (1+2+3+4)				14.02		736.91	
	Overhead and profit (20%)				2.80		147.38	
	Total				<u>16.82</u>		<u>884.29</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
84. HEADSTOCK INSTALLATION, (TYPE A), per nr								
1) Labour								
	Plumber	m.d.	0.20000	-	-	240.000	48.00	
	Common labour	m.d.	0.20000	-	-	170.000	34.00	
	Sub-total						<u>82.00</u>	
2) Equipment								
				-	-		-	
3) Materials								
				-	-		-	
4) Miscellaneous (5% of 1)								
				-	-		4.10	
	Total of (1+4)			-	-		86.10	
	Overhead and profit (20%)			-	-		17.22	
	Total			-	-		<u>103.32</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
85. HEADSTOCK INSTALLATION (TYPE B AND C), per nr								
1) Labour								
	Driver	m.d.	0.16250	-	-	240.000	39.00	
	Plumber	m.d.	0.20000	-	-	240.000	48.00	
	Common labour	m.d.	0.20000	-	-	170.000	34.00	
	Sub-total						<u>121.00</u>	
2) Equipment								
	Truck crane, 4.9 ton	hr	1.05800	8.600	9.10	32.600	34.49	
	Sub-total				<u>9.10</u>		<u>34.49</u>	
3) Material								
	Diesel oil	lit	5.71300	0.520	2.97	0.360	2.06	
	Engine oil	lit	0.22900	2.410	0.55	1.650	0.38	
	Sub-total				<u>3.52</u>		<u>2.44</u>	
4) Miscellaneous (5% of 1+2+3)								
	Total of (1+2+3+4)				13.25		165.83	
	Overhead and profit (20%)				2.65		33.17	
	Total				<u>15.90</u>		<u>199.00</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
86. PIPELAYING WORK, (DN 600 mm, RCP) per m								
1) Labour								
	Driver	m.d.	0.02490	-	-	240.000	5.98	
	Plumber	m.d.	0.07480	-	-	240.000	17.95	
	Common labour	m.d.	0.12760	-	-	170.000	21.69	
	Sub-total						<u>45.62</u>	
2) Equipment								
	Truck crane, 4.9 ton	hr	0.16240	8.600	1.40	32.600	5.29	
	Sub-total				<u>1.40</u>		<u>5.29</u>	
3) Materials								
	Diesel oil	lit	0.87700	0.520	0.46	0.360	0.32	
	Engine oil	lit	0.03500	2.410	0.08	1.650	0.06	
	Sub-total				<u>0.54</u>		<u>0.38</u>	
4) Miscellaneous (5% of 1+2+3)								
	Total of (1+2+3+4)				2.04		53.85	
	Overhead and profit (20%)				0.41		10.77	
	Total				<u>2.45</u>		<u>64.62</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
87. PIPELAYING WORK, (DN 450 mm, RCP) per m								
1) Labour								
	Driver	m.d.	0.02240	-	-	240.000	5.38	
	Plumber	m.d.	0.05970	-	-	240.000	14.33	
	Common labour	m.d.	0.09530	-	-	170.000	16.20	
	Sub-total						<u>35.91</u>	
2) Equipment								
	Truck crane, 4.9 ton	hr	0.14560	8.600	1.25	32.600	4.75	
	Sub-total				<u>1.25</u>		<u>4.75</u>	
3) Materials								
	Diesel oil	lit	0.78600	0.520	0.41	0.360	0.28	
	Engine oil	lit	0.03100	2.410	0.07	1.650	0.05	
	Sub-total				<u>0.48</u>		<u>0.33</u>	
4) Miscellaneous (5% of 1+2+3)								
	Total of (1+2+3+4)				1.82		43.04	
	Overhead and profit (20%)				0.36		8.61	
	Total				<u>2.18</u>		<u>51.65</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
88. PIPELAYING WORK, (DN 300 mm, RCP) per m								
1) Labour								
	Driver	m.d.	0.01980	-	-	240.000	4.75	
	Plumber	m.d.	0.04560	-	-	240.000	10.94	
	Common labour	m.d.	0.06790	-	-	170.000	11.54	
	Sub-total						<u>27.23</u>	
2) Equipment								
	Truck crane, 4.9 ton	hr	0.12900	8.600	1.11	32.600	4.21	
	Sub-total				<u>1.11</u>		<u>4.21</u>	
3) Materials								
	Diesel oil	lit	0.69700	0.520	0.36	0.360	0.25	
	Engine oil	lit	0.02900	2.410	0.07	1.650	0.05	
	Sub-total				<u>0.43</u>		<u>0.30</u>	
4) Miscellaneous (5% of 1+2+3)								
	Total of (1+2+3+4)				1.62		33.33	
	Overhead and profit (20%)				0.32		6.67	
	Total				1.94		<u>40.00</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
89. MANHOLE CONCRETE BLOCK Type A (φ 600 x φ 1,200 x 600 H) per 1 nr								
	Concrete, class F, C30/10	m3	0.30000	118.020	35.41	1,126.890	338.07	
	Formwork, Type F2	m2	4.42000	6.600	29.17	361.000	1,595.62	
	Reinforcing bar	kg	6.08000	0.748	4.55	1.862	11.32	
	Total				69.13		1,945.01	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
90. MANHOLE CONCRETE BLOCK Type B (ϕ 1,200 x 600 HI)								
	Concrete, class F, C30/10	m3	0.27000	118.020	31.87	1,126.890	304.26	
	Formwork, Type F2	m2	4.94000	6.600	32.60	361.000	1,783.34	
	Reinforcing bar	kg	7.53000	0.748	5.63	1.862	14.02	
	Total				<u>70.10</u>		<u>2,101.62</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
21. HANDRAIL INSTALLATION, (DN 40, GSP), per m								
1) Labour								
	Skilful labour	m.d.	0.0672	-	-	240.000	16.13	
	Common labour	m.d.	0.0672	-	-	170.000	11.42	
	Sub-total						<u>27.55</u>	
2) Equipment								
								-
3) Materials								
	Steel pipe, DN 40	kg	12.0000	0.7960	9.55	5.990	71.88	
	Flat bar, 125 B x t = 9 mm	kg	0.9000	0.7800	0.70	11.600	10.44	
	Chain, dia 8 and dia 3	kg	0.0030	0.5850	0.00	4.410	0.01	
	Sub-total				<u>10.25</u>		<u>82.33</u>	
4) Miscellaneous (5% of 1+3)								
	Total of (1+3+4)				10.76		115.37	
	Overhead and profit (20%)				2.15		23.07	
	Total				<u>12.91</u>		<u>138.44</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
92. LADDER INSTALLATION, per kg								
1) Labour								
	Skilful labour	m.d.	0.2500	-	-	240.000	60.00	
	Common labour	m.d.	0.2500	-	-	170.000	42.50	
	Sub-total						<u>102.50</u>	
	per kg (Total 75.63 kg)						<u>1.36</u>	
2) Equipment								
								-
3) Material								
	Flat bar, 75 mm x 12 mm	kg	49.1000	0.7800	38.30	11.600	569.56	
	Angle, 75 mm x 75 mm x 12 mm	kg	2.0000	0.7400	1.48	10.500	21.00	
	Anchor bolts, nut, D13 x 180 L	kg	1.1300	0.2400	0.27	3.400	3.84	
	Round bar, D25	kg	23.4000	0.5800	13.57	8.400	196.56	
	Sub-total				<u>53.62</u>		<u>790.96</u>	
	per kg (Total 75.63 kg)				<u>0.71</u>		<u>10.46</u>	
4) Miscellaneous (5% of 1+3)								
					0.04		0.59	
	Total of (1+3+4)				0.75		12.41	
	Overhead and profit (20%)				0.15		2.48	
	Total				<u>0.90</u>		<u>14.89</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
93. ROOF RIGTH INSTALLATION, (600 mm x 600 mm), per nr								
1) Labour								
	Skilful labour	m.d.	0.2000	-	-	240.000	48.00	
	Common labour	m.d.	0.2010	-	-	170.000	34.17	
	Plasterer	m.d.	0.0015	-	-	220.000	0.33	
	Sub-total						<u>82.50</u>	
2) Equipment								
								-
3) Material								
	Prism glass block, 120x120x40	nr	16.0000	5.5300	88.48	15.150	242.40	
	Frame 600 x 600	nr	1.0000	253.8500	253.85	695.550	695.55	
	Portland cement	kg	17.5700	0.1120	1.97	0.077	1.35	
	Sand for mortar (1 : 2)	m3	0.0230	16.6400	0.38	152.000	3.50	
	Sub-total				<u>344.68</u>		<u>942.80</u>	
4) Miscellaneous (5% of 1+3)								
					17.23		51.27	
	Total of (1+3+4)				361.91		1,076.57	
	Overhead and profit (20%)				72.38		215.31	
	Total				<u>434.29</u>		<u>1,291.88</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
99. ROAD PAVEMENT, (ASPHALT) per m²								
1) Earthwork								
/01	Open-cut excavation, bulldozer	m ³	0.3800	2.1200	0.81	11.470	4.36	
/02	Surplus soil disposal, L=5km	m ³	0.3800	3.4800	1.32	19.400	7.37	
	Sub-total				<u>2.13</u>		<u>11.73</u>	
2) Subbase course work								
/01	Lower layer, coarse stone, t = 20 cm including subgrade preparation	m ²	1.0000	17.2000	17.20	157.200	157.20	
/02	Upper layer, crusher run, t = 5 cm	m ²	1.0000	11.8000	11.80	108.000	108.00	
/03	Levelling layer, t = 3 cm	m ²	1.0000	7.8000	7.80	71.200	71.20	
	Sub-total				<u>36.80</u>		<u>336.40</u>	
3) Asphalt pavement								
/01	Prime coat, 1.2 l/m ²	m ²	1.0000	1.3000	1.30	12.100	12.10	
/02	Asphalt pavement	m ²	1.0000	10.3000	10.30	94.800	94.80	
	Sub-total				<u>11.60</u>		<u>106.90</u>	
	Total				<u>50.53</u>		<u>455.03</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
100. FOOTPATHS, per m2								
1) Flag								
	1,200 L x 600 W x 60 t x 2	m						
	Concrete, class B	m3	0.0900	111.4600	10.03	1,065.740	95.92	
	Formwork, Type F1	m2	1.8700	6.3000	11.78	344.000	643.28	
	Reinforcing bar	kg	7.2000	0.7480	5.39	1.862	13.41	
	Sub-total				27.20		752.61	
	Excavation, common soil	m3	0.2300	-	-	89.960	20.69	
	Crashed stone bedding	m3	0.1400	10.2300	1.43	105.350	14.75	
	Sub-total				1.43		35.44	
	Total of Flag (per 1.44 m2)				28.63		788.05	
2) Installation								
/01 Labour								
	Skilful labour	m.d.	0.0480	-	-	240.000	11.52	
	Driver	m.d.	0.0217	-	-	170.000	3.69	
	Sub-total						15.21	
/02 Equipment								
	Truck crane, 4.9 ton	hr	0.2520	8.6000	2.17	23.600	5.95	
	Sub-total				2.17		5.95	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
/03 Materials								
	Diesel oil	lit	1.3600	0.5200	0.71	0.360	0.49	
	Engine oil	lit	0.0540	2.4100	0.13	1.650	0.09	
	Sub-total				<u>0.84</u>		<u>0.58</u>	
/04 Miscellaneous (5% of 01+02+03)								
	Overhead and profit (20%)				0.63		4.57	
	Total of 01+02+03+04				<u>3.79</u>		<u>27.40</u>	
	Total of (1+2) (per 1.44 m2)				<u>32.42</u>		<u>815.45</u>	
	per m2				<u>22.51</u>		<u>566.28</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
101. RUBBLE WORK, per m2								
1) Labour								
	Foreman	m.d.	0.0251	-	-	350.000	8.79	
	Operator	m.d.	0.0258	-	-	300.000	7.74	
	Asst. operator	m.d.	0.0087	-	-	220.000	1.91	
	Stonemason	m.d.	0.0700	-	-	240.000	16.80	
	Skilful labour	m.d.	0.0433	-	-	240.000	10.39	
	Common labour	m.d.	0.4322	-	-	170.000	73.47	
	Sub-total						<u>119.10</u>	
2) Equipment								
	Truck crane, 16 ton	hr	0.0300	15.4000	0.46	42.200	1.27	
	Sub-total				<u>0.46</u>		<u>1.27</u>	
3) Materials								
	Rubble stone	m3	0.3500	8.3200	2.91	76.000	26.60	
	Crushed stone	m3	0.3330	7.5300	2.51	68.800	22.91	
	Diesel oil	lit	0.2340	0.5200	0.12	0.360	0.08	
	Engine oil	lit	0.0090	2.4100	0.02	1.650	0.01	
	Sub-total				<u>5.56</u>		<u>49.60</u>	
	4) Miscellaneous (5% of 1+2+3)				0.30		8.50	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
	Total of (1+2+3+4)			6.32		178.47		
	Overhead and profit (20%)			1.26		35.69		
	Total			<u>7.58</u>		<u>214.16</u>		

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
102. KERB GUTTER (L-TYPE) INSTALLATION, per m								
1) Earthwork								
/01	Open-cut excavation, manpower	m3	0.1700	-	-	89.960	15.29	
/02	Backfilling	m3	0.0400	0.0500	-	28.180	1.13	
/03	Surplus soil excavation	m3	0.1300	3.4800	0.45	19.400	2.52	
/04	Crushed stone bedding	m3	0.0500	10.2300	0.51	105.350	5.27	
	Sub-total				<u>0.96</u>		<u>24.21</u>	
2) Concrete work								
/01	foundation concrete, class E	m3	0.0500	105.2200	5.26	990.670	49.53	
/02	Formwork, Type F2	m2	0.2000	6.3000	1.26	361.000	72.20	
/03	Mortar plastering, 1 : 3	m3	0.0100	89.7200	0.90	526.800	5.27	
	Sub-total				<u>7.42</u>		<u>127.00</u>	
3) Kerb-gutter, L-type								
/01	Concrete, class B	m3	0.3300	111.4600	36.78	1,065.740	351.69	
/02	Formwork, Type F2	m2	2.3100	6.3000	14.55	361.000	833.91	
/03	Reinforcing bar	kg	1.1550	0.7482	0.86	1.862	2.15	
	Sub-total				<u>52.19</u>		<u>1,187.75</u>	
	Total				<u>60.57</u>		<u>1,338.96</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
103. DRAIN PIT (600 B x 600 B x 1000 H), per nr								
1) Earthwork								
/01	Open-cut excavation, backhoe	m3	5.6400	2.2800	12.86	12.140	68.47	
/02	Backfilling, manpower	m3	4.3400	0.0500	0.22	28.180	122.30	
/03	Surplus soil disposal	m3	1.3000	3.4800	4.52	19.400	25.22	
/04	Crash stone bedding	m3	0.2400	10.2300	2.46	105.350	25.28	
	Sub-total				20.06		241.27	
2) Concrete work								
/01	Reinforced concrete, class B	m3	0.5700	111.4600	63.53	1,065.740	607.47	
	Blind concrete, class D	m3	0.1200	104.2200	12.51	981.850	117.82	
/02	Formwork, Type F2	m2	6.5400	6.3000	41.20	361.000	2,360.94	
/03	Reinforcing bar	kg	25.9700	0.7482	19.43	1.862	48.36	
	Sub-total				136.67		3,134.59	
	Total				156.73		3,375.86	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
104. FENCING WORK (REMOVAL AND RESTORATION), per m								
1) Fence posts and trust concrete (per 3.3 m x 4.5 = 14.9 m)								
	Fence post	nr	5.0000	22.0000	110.00	638.000	3,190.00	
	Straining post	nr	2.0000	16.0000	32.00	477.000	954.00	
	Strut concrete	nr	7.0000	19.0000	133.00	498.000	3,486.00	
	Total of 1				275.00		7,630.00	
	Per linear metre				<u>18.46</u>		<u>512.08</u>	
2) Removal of existing fence (per 14.9 m)								
/01 Earth work								
	Excavation, manpower	m3	5.7400		-	89.960	516.37	
	Backfilling, manpower	m3	5.7400		-	28.180	161.75	
	Sub-total				-		<u>678.12</u>	
/02 Labour								
	Skilful labour	m.d.	0.4600		-	240.000	110.40	
	Common labour	m.d.	0.4600		-	170.000	78.20	
	Driver	m.d.	1.6400		-	240.000	393.60	
	Sub-total				-		<u>582.20</u>	
/03 Equipment								
	Truck crane, 4.9 ton	hr	0.9100	8.6000	7.83	23.600	21.48	
	Truck, 6 ton	hr	1.0000	4.2000	4.20	11.400	11.40	
	Sub-total				<u>12.03</u>		<u>32.88</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
/04 Material								
	Diesel oil	lit	11.2100	0.5200	5.83	0.360	4.04	
	Engine oil	lit	0.4500	2.4100	1.08	1.650	0.74	
	Sub-total				<u>6.91</u>		<u>4.78</u>	
/05 Miscellaneous (5% of 02+03+04)								
					0.95		30.99	
/06 Overhead and profit (20% of 02 to 05)								
					3.98		130.17	
Total of 01+02+03+04+05+06					<u>23.87</u>		<u>1,459.14</u>	
Per linear metre (Removal)					<u>1.60</u>		<u>97.93</u>	
3) Installation of Fence (per 14.9 m)								
/01 Earth work								
	Excavation, manpower	m3	5.7400		-	89.960	516.37	
	Backfilling, manpower	m3	4.9000		-	28.180	138.08	
	Surplus soil disposal	m3	0.8400	3.4800	2.92	19.400	16.30	
	Sub-total				<u>2.92</u>		<u>670.75</u>	
/02 Labour								
	Skilful labour	m.d.	0.7000		-	240.000	168.00	
	Common labour	m.d.	0.7000		-	170.000	119.00	
	Driver	m.d.	1.6400		-	240.000	393.60	
	Sub-total				-		<u>680.60</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
/03 Equipment								
	Truck crane, 4.8 ton	hr	0.9100	8.6000	7.83	23.600	21.48	
	Truck, 6.0 t	hr	1.0000	4.2000	4.20	11.400	11.40	
	Sub-total				<u>12.03</u>		<u>32.88</u>	
/04 Material								
	Galvanised steel barbed wire, 12 gauge	m	60.0000	1.2200	73.20	0.840	50.40	
	Diesel oil	lit	11.2100	0.5200	5.83	0.360	4.04	
	Engine oil	lit	0.4500	2.4100	1.08	1.650	0.74	
	Sub-total				<u>80.11</u>		<u>55.18</u>	
/05 Miscellaneous (5% of 02+03+04)								
					4.61		38.43	
/06 Overhead and profit (20% of 02 to 05)								
					19.35		161.42	
	Total of (01+02+03+04+05+06)				<u>119.02</u>		<u>1,639.26</u>	
	Per linear metre (Installation)				<u>7.99</u>		<u>110.02</u>	
4) Fencing (Removal and Restriction) (Removal + Cost of posts + Installation)								
		m			<u>28.05</u>		<u>720.03</u>	
5) Removing Fence								
		m			<u>1.60</u>		<u>97.93</u>	
6) Fencing (Installation)								
		m			<u>26.45</u>		<u>622.10</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
107. REMOVAL OF DUCTILE IRON PIPE, (DN 600 mm), per m								
1) Labour								
	Driver	m.d.	0.0083	-	-	240.000	1.99	
	Plumber	m.d.	0.0146	-	-	240.000	3.50	
	Common	m.d.	0.0209	-	-	170.000	3.55	
	Sub-total						<u>9.04</u>	
2) Equipment								
	Truck crane, 4.9 ton	hr	0.0540	8.6000	0.46	23.600	1.27	
	Sub-total				<u>0.46</u>		<u>1.27</u>	
3) Materials								
	Diesel oil	lit	0.2920	0.5200	0.15	0.360	0.11	
	Engine oil	lit	0.0120	2.4100	0.03	1.650	0.02	
	Sub-total				<u>0.18</u>		<u>0.13</u>	
4) Miscellaneous (5% of 1+2+3)								
					0.03		0.52	
5) Total of (1+2+3+4)								
					0.67		10.96	
Overhead and profit (20%)								
					0.13		2.19	
6) Total								
					<u>0.80</u>		<u>13.15</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
108. REMOVAL OF CONCRETE PIPE, DN 450 mm, per m								
1) Labour								
	Driver	m.d.	0.0075	-	-	240.000	1.80	
	Plumber	m.d.	0.0200	-	-	240.000	4.80	
	Common labour	m.d.	0.0318	-	-	170.000	5.41	
	Sub-total						<u>12.01</u>	
2) Equipment								
	Truck crane, 4.9 ton	hr	0.0490	8.6000	0.42	23.600	1.16	
	Sub-total				<u>0.42</u>		<u>1.16</u>	
3) Material								
	Diesel oil	lit	0.2650	0.5200	0.14	0.360	0.10	
	Engine oil	lit	0.0110	2.4100	0.03	1.650	0.02	
	Sub-total				<u>0.17</u>		<u>0.12</u>	
4) Miscellaneous (5% of 1+2+3)								
	Total of (1+2+3+4)				0.62		13.95	
	Overhead and profit (20%)				0.12		2.79	
	Total				<u>0.74</u>		<u>16.74</u>	

UNIT COST ESTIMATES

Item No.	Description	Unit	Quantity	Foreign Currency (US\$)		Local Currency (Rs)		Remarks
				Unit Price	Amount	Unit Price	Amount	
109. GUARD-RAIL SETTING, per m								
1) Labour								
	Common labour	m.d.	0.1700	-	-	170.000	28.90	
	Sub-total			-	-		<u>28.90</u>	
2) Equipment								
				-	-		-	
3) Material								
	Guard-rail galvanised, 3.2 t x 350 W x 4,330 L (19.8 kg/m)	m	1.0000	49.2000	49.20	67.400	67.40	
	Sub-total				<u>49.20</u>		<u>67.40</u>	
4) Miscellaneous (5% of 1+3)								
	Total of 1+3+4				51.66		101.12	
5) Overhead and profit (20%)								
					10.33		20.22	
	Total				<u>61.99</u>		<u>121.34</u>	

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