

VYAS MUNICIPALITY OFFICE

DAMAULI, TANAHUN

**DETAILED SURVEY, DESIGN & COST ESTIMATE REPORT
ON
CHUNDER WATER SUPPLY PROJECT
VYAS-6 CHUDERTOLE, TANAHUN**

**PREPARED BY
(SED ENGINEERING CONSULTANTS)**

VYAS-2 DAMAULI, TANAHUN

Phone no: 966-560750

1. Introduction

This Detailed survey,design & cost estimate is The outcome of the field survey and study of chunder water supply project(chudertole,vyas-6)carried out to ascertain the need and technical viability of drinking water supply and sanitation system for the purposed project area.The study team consists of an engineer and a WSST They visited the project site and collected the relavant data. The investigation and survey was carried out following standard guidelines used for social formats adopted by DWSS . The detailed survey was conducted with active participation of water user and committee members detailed survey was carried out at 2069 ashad.

2 Location and Accessibility

The proposed project area is situated at vyas - mu.-6 of tanahun district it is surrounded by bhangeri jungle in the north ,barbotte ranitari tole in the south, yamdi chapter tole in the east and syamgha vdc in the west. The nearest road head is damauli bazaar which is 8 km far from the project.

3 Demographic and social Characteristics

The proposed project covers 378 present peoples of 63 HH of vyas -6 . all the residents are magars,chhetri Brahmin an other communities . total beneficiaries of this project is 524 in design year(2089).

4 Social system

The social system is based in tradition with payments in cash and all kinds of public services perma' practiced in agriculture activities.

5 ECONOMIC CHARACTERISTICS

Most of the people in the project are poor .Agriculture is the mai occupation.besides agriculture,people are involved in the services and the wage labour including seasonal migration for employment to supplement

the household income. Nowdays mostly young people have gone abroad for employment. major types of livestocks are buffaloes, cows, goats and chicken.

6 Existing water supply and Sanitation situation

Majority of water sources in this vdc are kuwa stream and spring scarcity of drinking water is high in the village there is no any gravity system source. people need 1 and half hour to carry the water from kuwa.

Proposed source and intake

Padher khola stream is the source for this project.

8 Water Quality

The water appereance of the proposed source is clear without any visible turbidity. the taste is unobjectional but chemical contamination is unknown.

8 Water demand

As per DWSS guidline 20 year design period is taken to calculate the design demand at the rate of 60 LPCD . The growth rate is 1.67 taken.

8 project component

a) Intake

Scheme -1 pumping is pumping system

b) Reservoir

One ferrocement reservoir of 20m³ is proposed.

10 Transmission line & distribution line

Transmission line is one km and distribution line is 3.75km

11 Community contribution

The community contributes 40% of the total estimate cost and municipality and other contribute 60% of the total estimated cost.

12 Potential Impacts on the Socio-Economic Status

The following are the likely impacts on the social, cultural and economic resources of the system area. These impacts may be adverse or beneficial depending upon the management of the system in terms of distribution of benefits and opportunities within the system area and of course the people too.

- Change of demographic structure due to population influx
- Increase of women's responsibility
- Saving of time and its impact on the community, especially female counterparts
- Impacts on settlements and their health status
- Local employment opportunities
- Impacts on economic activities and income status

Project Chunder AVS Project

Municipality : Ayes

District : Tananun

S.N.	Particular	Unit	Scheme No.
A General			
1	Scheme Name		Chunder w/s Project
2	Village/Areas		vyas-6 chundergaun daphthumpki chhertigaun,tallogaun
3	Wards Served		6
4	Scheme Type		Pumping
B Population			
1	Household (Survey year) 2069	No	63
2	Population (Survey year) 2069	No	378
3	Household (Base year) 2069	No	378
6	Population (Design year) 2089	No	524
7	Design Period	Year	20
8	Annual growth rate	%	1.67
C Source Information			
1	No. of sources	No	1
2	Type of source (Sp/S)		S(Stream)padher kola
3	Total Taped discharge	LPS	1.5
4	Approximate distance from project	Km	1
5	Water Quality of source		
D Water provision & demand			
1	Provision for domestic use	LPCD	60
2	Provision for institutional use	LPCD	10
3	Total water demand (Design year)	LPCD	32440
E Project Component			
1	Total Transmission main	m	1000
2	Total Distribution main	m	3788
3	No. of Tapstands public	No	17
4	No. of BPC/IC/CC/DC	No	
5	No. of AV/WO/VC	No	
6	Reservior capacity / No.	m ³ /No	20/2
7	Institutional latrine	No	
8	Stream crossing	No	
F Project Cost Data			
1	Total Estimated Cost	Rs	5906391.98
2	Average per capita cost (Base year)	Rs	15625.38
3	Average per capita cost (Design year)	Rs	11271.74
4	Nepal Government Contribution(MUNICIPALITY)	Rs	3543835.19
5	Nepal Government Contribution(MUNICIPALITY)	%	60.00
6	Community Contribution	Rs	2362556.79
7	Community Contribution	%	40.00
8	Others		

Summary of Project Cost:

Project Name under N.G Project

VDC Jamune

S.N.	Description of works	Unit	Unit Rate Rs.	Scheme I		Total Scheme II	
				Qty.	Amount (Rs.)	Qty.	Amount (Rs.)
A Community Education & Awareness Program							
1	Pre-construction Training	No.	18000.00	1.00	18000.00	1.00	18000.00
2	Appraisal	No.	7000.00	1.00	7000.00	1.00	7000.00
3	VMSW Training	No.	6000.00	1.00	6000.00	1.00	6000.00
4	Pre-handover training	No.	9000.00	1.00	9000.00	1.00	9000.00
Sub Total (A)			40000.00		40000.00		40000.00
B Water Supply & Sanitation							
B1 Civil Works							
1	Detailed survey & design works & report	No.			70000.00		70000.00
2	Stream Intake(Small Span)	No.	62847.33	1.00	62847.33	1.00	62847.33
3	Sump well cum collection	No.	266226.10	1.00	266226.10	1.00	266226.10
4	Pump House	No.	302287.98	1.00	302287.98	1.00	302287.98
5	Electro Mechanical works	Job	801023.00	1.00	801023.00	1.00	801023.00
7	Valve Chamber	No.	20720.73	2.00	41441.45	2.00	41441.45
8	Air Valve Chamber	No.	20720.73		0.00		0.00
9	Washout Chamber	No.	20720.73	1.00	20720.73	1.00	20720.73
10	Reservoir	No.					0.00
a	20 cu.m.Ferrocement	No.	266226.10	1.00	266226.10	1.00	266226.10
11	Transmission pipe laying(E/W) with Pipe laying & Jointing	km.		1.00	218876.42	1.00	218876.42
12	Distribution pipe laying(E/W)	km.		3.75	1763206.21	3.75	1763206.21
13	Public Tapstand	No.	14385.87	17.00	244559.81	17.00	244559.81
14	Material Transportation	%		1.00	27438.98	1.00	27438.98
15	Pipe protection work	%		1.00	61753.86	1.00	61753.86
Sub Total (B1)					4146607.96		4146607.96
B2 Material & Equipment							
1	Pipe	Km		3.90	1136272.72	3.90	1136272.72
2	Fittings	%			227254.54		227254.54
3	Tools & Plants	%			25000.00		25000.00
Sub Total (B2)					1388527.26		1388527.26
Sub Total (B1+B2)					5535135.22		5535135.22
C Sanitation promotion, Contingencies & Overhead							
1	Sanitation promotion(SLTS)				50000.00		50000.00
	Sub Total(A+B+C)				5625135.22		5625135.22
D Contingencies							
	Contingencies Minor expenses				281256.76		281256.76
	Cost Variation Contingencies						
	Sub Total (C)				281256.76		281256.76
	Grand Total				5906391.98		5906391.98

Bharat Gas Supply (P) Ltd.

Quantity & Cost Estimate

Ferrocement Tank

(20 m³)

Ref.No.: QTY FER-ST-20

Drawing No.:-

S.No.	Description	No.	Radius	Length	Breadth	Height	Quantity	Unit	Rate	Amount
1	Site Clearance (Excavation) (Q=1/2*L*B*H), Assuming Slop = 5°	1		8.6	8.6	0.75	27.74	m ³	ls	1050.00
2	Earthwork excavation for foundation in boulder mixed soil for : Valve Chamber Storage Tank (Q=PI*r ² *h, r=d/2+0.05+0.75, d = 1.5 m)	1	1.7		1.5	1.3	3.32			
		1	2.6			1	24.63			
		1		10	0.6	0.9	5.4			
							33.35	m ³	492.14	16412.02
	Refilling of trench with soil including water sprinkling and ramming [Q=PI*(R ² -r ²)*h, R=d/2+0.05+0.75, r=d/2+0.05]			11.43		0.8	9.14	m ³	3.848.61	35188.69
4	Boulder Soling with Sand, for Valve Chamber Storage Tank (Q=PI*r ² *h, r=d/2+0.05+0.3)	1	1.7		1.5	0.15	0.38			
		1	2.35			0.2	3.47			
	Deduction for valve chamber portion	1	1.7		0.4	0.2	-0.14			
							3.72	m ³	3,786.46	14073.66
5	Stone masonry in mud mortar for Valve Chamber	1		5	0.35	1.15	2.01	m ³	2,453.21	4937.09
6	Plain cement concrete 1:2:4 for, Cover slab of valve chamber Deduction for manhole opening (Q=PI*r ² *h, r=0.6/2=0.3)	1	1.7		1.5	0.1	0.255			
		1	0.3			0.1	-0.028			
		2	0.3			0.05	0.028			
		2		1	0.35	0.2	0.14			
							0.395	m ³	8,706.10	3438.91
7	Plain cement concrete 1:1.5:3 for tank base (Q=PI*r ² *h, r=d/2+0.05+0.1)	1	2.15			0.13	1.888	m ³	10,769.38	20333.73
8	Steel work for Valve Chamber, 6 mm dia. bar @10 cm c/c both ways.	18		1.5	0.22	kg/m	5.94			
		16		1.7	0.22	kg/m	5.98			
	Deduction for manhole opening	12		0.45	0.22	kg/m	-1.19			
							10.736	Kg	97.89	1050.95
9	Centering & Shuttering work for Cover slab Bottom	1		1	0.8		0.8			
		1		6.4		0.1	0.64			
	Deduction for manhole opening	1	0.3				-0.28			
							1.16	m ²	566.13	655.14
10	3 mm thick Punning in 1:1 for Floor portion of storage tank (Q=PI*r ² , r=d/2)	1	2				12.57			
		1								
	Wall portion of storage tank inside	1	2		1.8	11.31				
							23.88	m ²	161.95	3867.24
11	12.5 mm thick plaster in 1:2 for ferrocement (4 layers)	4	2.025		1.8	91.62				
	Wall portion of tank	4								
	Roof portion of [Q=4*2*PI*R*h R=(D ² +4h ²)/8h D=d+0.05, h=d/5-0.05/2]	4	3.03		0.675	51.46				
	Deduction manhole opening	4	0.3				-1.13			

Standard Water Supply Project

Quantity & Cost Estimate

Ferrocement Tank

13	20 mm thick plaster in 1:4 for Floor of valve chamber	1	1	0.8	1	0.8			
----	--	---	---	-----	---	-----	--	--	--

20 m³ Contd.....

No.	Description	No.	Radius	Length	Breadth	Height	Quantity	Unit	Rate	Amount
	Wall of valve chamber	1		3.6		1.15	4.14			
							4.94	m ²	287.97	1422.57
14	Bitumen paint on the buried surface of tank (Q=2*PI*r*h, r=d/2+0.05)	1	2.05			0.8	10.31	m ²	181.46	1870.08
15	Showcem paint on the exposed surface of tank Wall (Q=2*PI*r*h, r=d/2+0.05) Roof [Q=2*PI*R*h, R=(D2+4h2)/8h, D=d+0.1, h=d/5]	1	2.05			1	12.88			
		1	3.03			0.7	13.31			
							26.20	m ²	85.85	2248.88
16	Installation of pipe & fittings						1	L.S.	2500	2500.00
17	Polythene sheet 500 gauge for tank (Q=PI*r ² , r=d/2+0.05+0.1)	1	2.15				14.52	m ²	50.00	726.19
18	Formswork for tank, for Wall	1	2.025			1.8	22.91			
	Roof	1	3.03			0.65	12.39			
	Deduction for manhole opening	1	0.3				-0.28			
							35.01	m ²	566.13	19820.92
19	Reinforcement for tank, including chicken wire mesh, MS Rods, GI Wire etc for Wall	1	2.025			1.8	22.91			
	Roof	1	3.03			0.675	12.87			
	Deduction for manhole opening	1	0.3				-0.28			
							35.49	m ²	932.86	33105.10
20	Barbed wire fencing with masonry wall (Type-A) [Q=2*((d+3)+(d+4.5))]						31	m	1,622.70	50303.70
21	Entrance gate in barbed wire fencing	1					1	No.	16505.50	16505.50
22	600 mm circular metal manhole cover for ferrocement tank	2					2	Set	1625.00	3250.00
								Total		266226.10

Chunder Water Supply Project
Quantity & Cost Estimate

INTAKE

(For Small Discharge)

Description	Quantity	Unit	Rate	Amount	Remarks
1 Earthwork in excavation					
Dam	1.08				
Catchment Portion	1.80				
Gabion Box Upstream	1.80				
Gabion Mattress	0.00				
	4.68	m ³	492.14	2,303.22	
2 PCC in 1:2.4					
Catchment	0.69				
	0.60				
	1.29	m ³	8,627.00	11,128.83	
3 mm thick 1:3 plaster	6.00	m ²	216.58	1,299.48	
4 MS Bar for RCC					
12 mm dia. Vertical bar 2 way	17.355				
10 mm dia. hor.bar	21.7				
10 mm dia. for mat	34.1				
	32.24				
	105.395	Kg	97.89	10,317.12	
5 Form work for RCC					
Dam	6				
Catchment	0.3				
	0.4				
	14.9	m ²	566.13	8,435.34	
6 Dry Stone Filling					
	1.80				
	0.00				
	1.80	m ³	3,786.46	6,815.63	
7 Gabion Box (3 m*1 m*1 m size)	3.00	m ³	5,940.85	17,822.55	
8 Installation of pipe & fittings	1	L.S	1299.5	1,299.50	
9 Water Diversion Work					
Earthwork for canal excavation	3.00	m ³	492.14	1,476.42	
10 Dewatering	1	L.S	1949.25	1,949.25	
		Total		62,847.33	

Srinivas Netaji Supply Works

Quantity & Cost Estimate

Public Standpost

Type III

Ref. No: QNT-PSP-III

Drawing No: G-22

No.	Description	Quantity	Unit	Rate	Amount	Remarks
1	Site Clearance	4.00	m ³	77.32	309.28	
	12 = $\frac{1}{2} \times 3 \times 2 \times 0.26$ Assuming Slope = 5°					
	Earthwork Excavation in boulder mixed soil					
	Pillar	0.24				
	Platform Portion	0.53				
	Drain(avg. height)	0.68				
		1.44	m ³	492.14	706.84	
3	Dry Boulder soling	0.32				
		0.32	m ²	3,786.46	1,192.73	
4	Plain Cement Concrete in (1:2:4)					
	Pillar	0.03				
	Platform	0.21				
	Platform border	0.04				
		0.02				
	Top of Wing Wall	0.02				
	Top of Pillar	0.03				
		0.32	m ³	8,627.00	2,767.11	
5	Stone masonry in (1:6) cement mortar					
	Standpost wall	0.47				
	Standpost	0.08				
		0.55	m ³	5,822.65	3,214.83	
	3 mm thick cement plaster in (1:4) cement mortar					
	Platform	1.88				
	Platform Boarder	1.00				
	Front of Wingwall	0.83				
	Top of Wingwall	0.40				
	Back of wing wall	0.83				
	Pillar	1.26				
	Wingwall side	0.39				
		6.57	m ²	287.97	1,892.68	
7	3 mm thick cement punning (1:1) cement mortar					
	Platform	1.88				
	Platform Boarder	1.00				
	Front of Wingwall	0.83				
	Top of Wingwall	0.40				
	Back of wing wall	0.83				
	Pillar	1.26				
	Wingwall side	0.39				
		6.57	m ²	161.95	1,064.42	
	Centering & Shuttering work for PCC					
	Pillar	0.17				
	Platform	0.43				
	Platform border	0.50				
		0.30				
	Top of Wing Wall	0.12				
	Top of Pillar	0.35				
		1.86	m ²	566.13	1,053.00	
9	Drain Pipe (63/4 HDPE Pipe)	5.00	m	129.35	646.80	
10	L-shaped 8 mm ø MS Rod, 250 mm	0.39	kg	97.89	38.18	
11	Installation of pipes & fittings	1.00	Job	1500	1,500.00	
				Total	14,385.87	

Chunder Water Supply Project
Quantity & Cost Estimate
Pipe Laying

Chunder w/s project

S.No	Description	Quantity	Unit	Rate	Amount	Remarks
Main Line						
1	Earth work excavation in boulder mixed soil for foundation					
	Main Line GI Pipe	0.00	m ³	744.87	0.00	
2	Earth work in back filling					
	Main Line	0.00	m ³	117.12	0.00	
						Pipe Laying Cost of Main Line
						0.00
Distribution Line						
	Earth work excavation in boulder					
	foundation					
	Distribution Line HDPE Pipe	2045.52				
	HDPE Pipe	0.00				
		2045.52	m ³	744.87	1523640.15	
4	Earth work in back filling					
	Distribution Line	2045.52				
		0.00				
		2045.52	m ³	117.12	239566.06	
						Pipe Laying Cost of Distribution Line
						1763206.21
5	Pipe Laying & Jointing					
	HDPE Pipe					
1	63mm dia HDPE pipe	150	m			
2	50mm dia HDPE pipe	50	m			
3	40 mm dia. HDPE pipe	50	m	3.36	168.14	
4	32 mm dia. HDPE pipe	1023	m	2.72	2784.72	
5	25 mm dia HDPE pipe	1715	m			
6	16mm dia HDPE pipe	800	m	2.24	1793.82	
	Pipe Laying & Jointing	1000		214.13	214129.75	
						Total Pipe Laying & Jointing Cost
						218876.42
						Pipe Laying Grand Total
						1982082.62

Chunder Water Supply Project
Quantity & Cost Estimate

GI Pipe Anchor Block(Pipe Line Sch.1) For one Unit Total 50 Blocks

S.N.	Description	Quantity	Unit	Rate	Amount	Remarks
1	Site Clearance	1	Job	129.95	129.95	
2	Earthwork in excavation in foundation	0.027	m ³	492.14	13.29	
3	M.C.C (1:2:4) cement mortar for Block	0.027				
	Foundation	0.027				
	Surround	0.0405				
		0.0675	m ³	8627.00	582.32	
4	Form Work	0.9				
		0.9	m ²	566.13	509.52	
				Total	1235.08	
				Total for 50 Blocks	61753.86	

Chunder Water Supply Project
Quantity & Cost Estimate
Procurement of Pipes

Chunder w/s work

Description	Quantity	Unit	Rate	Amount	Remarks
HDPE Pipe					
20 mm dia. 10 kg/cm ²	800.00	m	25.46	20368.00	
25 mm dia. 10 kg/cm ²	1715.00	m	42.94	73642.10	
32 mm dia. 10 kg/cm ²	1023.00	m	63.46	64919.58	
40 mm dia. 10kg/cm ²	50.00	m	66.50	3325.00	
50 MM Dia 10kg/cm ²	50.00	m	151.24	7562.00	
63mm dia 10kg/cm ²	150.00	m	241.11	36166.50	
Total	3788.00			205983.18	
			Transportation Upto Office @ 3%	6179.50	
				212162.68	
			VAT @13%	27581.15	
			Total of HDPE Pipe	239743.82	
B GI Pipe					
1 2" mm dia. Medium class	1000	m	770.28	770280.00	
Total	1000			770280.00	
			Transportation Upto Office @ 3%	23108.4	
				793388.40	
			VAT @13%	103140.492	
			Total of GI Pipe	896528.89	
			Total of HDPE Pipe & GI Pipe	1136272.72	

Chunder Water Supply Project
Quantity & Cost Estimate
Pipe Transportation

chunder w/s project

S.No	Description	Quantity	Unit	Rate	Amount	Remarks
1	Pipe Transportation From WSSDO Damauli To Site					
	HDPE Pipe	1084.12	Kg	3.92	4247.58	
	GI Pipe	5280.00	Kg	4.39	23191.40	
			Total Amount		27438.98	

Chunder Water Supply Project

Quantity & Cost Estimate

Electro-Mechanical Works

S.N.	Description	Quantity	Unit	Rate	Amount	Remarks
A	Electrical Goods					
1	Electrical pole 9 m(Steel Tubular) bottom part galvanised	14	No	15500	217000	
2	Electrical pole 8 m(wooden)	2	No	4830	9660	
3	Dis insulator	7	set	1490	10430	
4	Pin insulator	20	set	610	12200	
5	Shackle insulator 500v+D iron	5	set	167	835	
6	Insulator	20	set	150	3000	
7		12	set	1194	14328	
8		100	kg	115	11500	
9	Channel 1400mm	0	No	3500	0	
10	Channel 600mm	2	No	100	200	
11	T-Channel 1400mm	10	No	2500	25000	
12	Channel 2390mm	2	No	3200	6400	
13	Bracing	10	No	250	2500	
14	Pole Clamp	20	No	300	6000	
15	Nut Bolts(6", 7")	10	kg	195	1950	
16	Nut Bolts(2", 3")	10	kg	195	1950	
17	Transformer(25KVA Neek)	1	No	190000	190000	
18	Lightening Arrester	1	set	11500	11500	
19	Drop out fuse set(Voltage 11kv)	1	set	14950	14950	
20	Conducter wire 0.03sq.in.(ACSR)	0.8	km	33500	26800	
	Conducter wire 0.05sq.mm size					
	Line cable	10	m	610	6100	
	Feeding wire	2	kg	95	190	
	Earthing set copper	2	set	10000	20000	
	Cable sockets(95mm ²)	10	No	178	1780	
	Metal box	1	No	7600	7600	
	MCCB(75Ampere)	1	No	12000	12000	
	Sub Total				613873	
B	Labour charge					
1	Poling works of 9m steel tublar pole with PCC work	14	No	2500	35000	
2	Poling works of 9m wooden pole	2	No	1200	2400	
3	Stringing works of wires 0.03 ACSR conducter wire HT	750	m	15	11250	
4	Stay Installation	10	set	600	6000	
5	Installation of Transformer	1	set	10000	10000	
	Line Material Transportation (such as polr, Transformer, channel,conducter, disc insulator, pin insulator etc)	1	job	15000	15000	
	Sub Total				79650	
C	Mechanical Works					
1	Submersible pump with assesories	1	set	11000	11000	
2	Panel board	1	set	30000	30000	
3	Casing pipe 8" dia.MS	1	nos	15000	15000	
4	Surface Discharge Plate	1	nos	14000	14000	
5	Cast Steel NR Valve	1	nos	14000	14000	
6	Cast Steel G...	1	nos	12500	12500	

Chunder Water Supply Project
Quantity & Cost Estimate
VALVE CHAMBER

Ref No.: QNT-VAL-CHAB

Drawing No. G-25

S.N.	Description	Quantity	Unit	Rate	Amount	Remarks
1	Earthwork in excavation in boulder mif foundation	2.87	m ³	492.14	1413.92	
2	Boulder soling with sand	0.33	m ³	3786.46	1255.21	
3	Stone work in (1:6) cement mortar					
	Long wall	0.51				
		0.36				
	Short wall	0.18				
		0.13				
		1.18	m ³	5822.65	6843.36	
	Brick work in 1:6 mortar					
	Long wall	0.65				
	Short wall	0.23				
		0.89	m ³	5822.65	5155.96	
5	PCC (1:2:4) for RCC components					
	Cover slab	0.18				
	Deduction for manhole	-0.02				
	Manhole cover	0.01				
		0.17	m ³	8627.00	1452.05	
6	Steel reinforcement					
	6 mm ø at 100 mm spacing bothways					
	Longer span					
	Shorter span					
	Deduct for manhole opening					
		9.20	kg	97.89	900.20	
	Shuttering & Shuttering work for RCC					
	Cover slab	0.60				
	Sides	0.48				
	Deduction for manhole	-0.28				
		0.80	m ²	566.13	451.29	
8	Installation of pipes & fittings	1.00	L.S.	1299.5	1299.50	
9	Standard manhole cover 600 mm ø w	1.00	No.	1949.25	1949.25	
				Total of VC	20720.73	

Chunder Water Supply Project
Quantity & Cost Estimate
Pump House

S.N.	Description	Quantity	Unit	Rate	Amount	Remarks
1	Site Clearance	1	Job	1949.25	1949.25	
2	E/W in excavation					
	Wall	3.96				
		2.34				
		6.3	m3	492.14	3100.48	
	Stone work in (1:6) cement mortar					
	Foundation	3.63				
		2.145				
	Plinth					
		2.322				
		1.458				
	Super Structure	7.203				
		4.802				
	Appron					
		1.422				
	Steps					
	1st step	0.45				
	2nd step	0.6				
	3rd step	0.45				
		24.482				
	Deduction					
	Door	0.58				
	Window	0.38				
	Ventilation	0.19				
		0.38				
		1.52				
	Net after Deduction	22.96	m3	5,822.65	133691.25	
4	PCC (1:2:4)					
	DPC long wall	0.39				
	DPC short wall	0.24				
	Lintel	0.38				
	Slab	2.24				
	Floor	0.49				
		3.74	m3	8,627.00	32282.23	
5	20mm thick cement sand plaster(1:4)					
	Up to plinth outside wall	9.48				
	outside wall	37.73				
	inside wall	30.87				
	Floor & ceiling	19.6				
	Appron	9.48				
	Steps	2.25				
		0.45				
		109.86				
	Deduction					
	Door	1.65				
	Window	1.08				
	Ventilation	0.54				
		3.27				
	Net after Deduction	106.59	m2	287.97	30695.59	
6	Boulder soling with Sand					
	Floor	2.94	m3	3,786.46	11132.19	
7	Soil W					

Chunder Water Supply Project
Quantity & Cost Estimate
Pump House

Description	Quantity	Unit	Rate	Amount	Remarks
3 Sal Wood work for Pannel Shuttres					
Door	1.65				
Window	1.08				
Ventilation	0.54				
	3.27	m2	7,082.34	23138.00	
9 Snowcem paint 2 coat	106.59	m2	85.85	9151.01	
10 Reinforcement work					
Lintel					
10mm dia main bar	13.39				
6mm dia stirrups	5.54				
Slab					
12 mm dia main bar	160.56				
10mm dia dist. Bar	113.83				
	293.32	kg	97.89	28713.49	
concrete work					
PC	2.8				
Lintel	5.4				
Slab Bottom	9.8				
	7.74				
Slab sides	1.72				
	27.46	m2	566.13	15545.93	
Total				302287.98	

Chunder Water Supply Project
Quantity & Cost Estimate

Design of Pump Capacity			
Data:			
1 Lift			
2 Length			
3 Discharge			
Determine size of Pipeline			
Taking flow velocity			
Q/V			
Provide pipe size dia.			
Velocity			
Q(1.5 l/sec)			
A=pi/4*d ²			
V=Q/A			
Pump Capacity			
h1			
h2=v ² /2g			
h3=4fv ² /2gd			
h4			
H			
WQH/75J			
Say	10 HP		
Provide pump capacity	10 HP		

Chunder Water Supply Project
Quantity & Cost Estimate
Entrance Gate (Type A)

Description	Quantity	Unit	Rate	Amount	Remarks
1 Distance	1	Job	129.95	129.95	
2 Work in excavation in foundation	0.432	m ³	492.14	212.60	
3 Boulder masonry in (1:6) cement mortar for Pillar					
In foundation	0.432				
Above Ground	0.648				
	1.08	m ³	5822.65	6288.46	
4 20 mm thick Cement palster in (1:4) f	5.76				
On top	0.405				
Deduct two sides	-0.54				
	5.625	m ²	287.97	1619.83	
5 25 x 25 x 3 m Size Mild Steel angle frames gate with Iron					
Grill shutter (0.95 x 1.5 m size) all complete including					
S. no.	1	No.	3248.75	3248.75	
Painting for Gate	1.425	m ²	181.46	258.58	
		Total		11758.18	

Chunder Water Supply Project
Quantity & Cost Estimate

Barbed Wire Fencing (Type A)

(Total Fencing Length 24 m)

Ref. No.: QNT-BWFA

Drawing No. G-24

S.N.	Description	Quantity	Unit	Rate	Amount	Remarks
1	Site Clearance	1	L.S.	649.75	649.75	
2	Earthwork in excavation	1.176	m ³	492.14	578.76	
3	Dry stone soling with sand	0.196	m ³	3786.46	742.15	
	PCC (1:2:4) for anchor blocks	0.98	m ³	8627.00	8454.46	
	Stone masonry (1:6) cement mortar	0.98	m ³	5822.65	5706.20	
	Barbed wire fencing (16+1: one more lengths of barbed wire anchored on entrance gate)	178.5				
	Cost Barbed Wire [L = (1.5 ² + 1.5 ²)]	72.08				
		250.58	m			
		25.058	Kg	1622.70	40661.62	
7	6 mm ø mild steel rod for hooks, 650	5.148	kg	97.89	503.94	
8	M.S. 40 x 40 x 6 angle bar, 2.5 m long	117.6	kg	97.89	11511.86	
				Rate for 24m	68808.73	
				Rate for 1m	2867.03	

RATE ANALYSIS (068/69)

(Var on material)

Municipality: VYAS

Project: For the use of different Municipal Projects

Code:

2.21	1	Dry foundation excavation in hard gravel mixed soil with disposal up to 10m lead and 1.5m lift	Unit Cum
<i>Manpower</i>			
Unskilled m-day 1.36 350.00 476.00			
<i>Materials</i>			
3% of machine tools 16.14 492.14 Per Cu.ft 492.14 13.95			
11.17	2	One layer flat dry brick laying for soiling	Unit 10 Sqm
<i>Manpower</i>			
Skilled m-day 0.5 500.00 250.00			
Unskilled m-day 1 350.00 350.00			
<i>Materials</i>			
Brick Nos 420 7.00 3322.20			
Sand Cum 0.71 1330.00 1067.06 4989.26 Per Unit (Average grain sized sand) 498.93 Per sq.ft 46.38			
11.18	3	Dry stone (Roughly broken) laying	Unit 1 Cum
<i>Manpower</i>			
Skilled m-day 1 500.00 500.00			
Unskilled m-day 3.5 350.00 1225.00			
<i>Materials</i>			
Stone Cum 1.1 850.00 1056.55			
Sand Cum 0.71 1330.00 1067.06 3848.61 Per Unit (Average grain sized sand) 3848.61 Per Cu.ft 109.06			
11.18	3	Dry stone (Round) laying with sand	Unit 1 Cum
<i>Manpower</i>			
Skilled m-day 1 500.00 500.00			
Unskilled m-day 3.5 350.00 1225.00			
<i>Materials</i>			
Stone Cum 1.1 800.00 994.40			
Sand Cum 0.71 1330.00 1067.06 3786.46 Per Unit (Average grain sized sand) 3786.46 Per Cu.ft 107.30			
7.1(a)	4	PCC 1:3:6 (Using river aggregate)	Unit Cum
<i>Manpower</i>			
Skilled m-day 1 500.00 500.00			
Unskilled m-day 4 350.00 1400.00			
<i>Materials</i>			
Cement(Indian 53 Grade) MT 0.22 12800.00 3182.08			
Boulder Cum 0.65 1430.00 1050.34			
Agg 20mm Cum 0.24 1480.00 401.38			
Course Sand Cum 0.47 1380.00 732.92 7266.71 Per Unit 7266.71 Per Cu.ft 205.93			
lao loi buoc c PCC 1:2:4 (Using river aggregate)			
<i>Manpower</i>			
Skilled m-day 1 500.00 500.00			
Unskilled m-day 4 350.00 1400.00			
<i>Materials</i>			
Cement(Indian 53 Grade) MT 0.32 12800.00 4628.48			
Boulder Cum 0.52 1430.00 840.27			
Agg 20mm Cum 0.22 1480.00 367.93			
Agg 10mm Cum 0.11 1580.00 196.39			
Course Sand Cum 0.445 1380.00 693.93 8627.00 Per Unit 8627.00 Per Cu.ft 244.48			

6.1@	6 Stone masonry works incl. Supply of hard stone blocks in 1.6 cm					Unit Cum
<i>Manpower</i>						
Skilled	m-day	5	500.00	750.00		
Unskilled	m-day	5	350.00	1750.00		
<i>Materials</i>						
Cement(Indian 53 Grade)	MT	0.106	12800.00	1533.18		
Block stone (Broken)	Cum	1	850.00	960.50		
Bond stone (Broken)	Cum	0.1	850.00	96.05		
Sand (Coarse)	Cum	0.47	1380.00	732.92		
				5822.65	Per Unit	5822.65
					Per Cu.ft	165.01
7.4(a) 8 PCC 1:2:4 for RCC (Using river aggregate)						Unit Cum
<i>Manpower</i>						
Skilled	m-day	0.8	500.00	400.00		
Unskilled	m-day	7	350.00	2450.00		
<i>Materials</i>						
Cement(Indian 53 Grade)	MT	0.32	12800.00	4628.48		
Agg 40mm	Cum	0.52	1430.00	840.27		
Agg 20mm	Cum	0.22	1480.00	367.93		
Agg 10mm	Cum	0.11	1580.00	196.39		
Course Sand	Cum	0.445	1380.00	693.93		
				9577.00	Per Unit	9577.00
					Per Cu.ft	271.40
1.5 9 Reinforcement works all complete						Unit Kg
<i>Manpower</i>						
Skilled	m-day	12	500.00	6000.00		
Unskilled	m-day	12	350.00	4200.00		
<i>Materials</i>						
Ton steel bar	MT	1.05	73000.00	86614.5		
Binding wire	Kg	10	95.00	1073.50		
				97888.0	Per Unit	97.89
11.20(a) 10 Sand filling works in flooring						Unit 10 Cum
<i>Manpower</i>						
Skilled	m-day	6.5	500.00	3250.00		
<i>Materials</i>						
Sand (Average grain sized)	Cum	11	1330.00	16531.90		
				19781.90	Per Unit	1978.19
					Per Cu.ft	56.06
11.20(a) 11 Earth filling with ordinary soil and hand compaction with water sprinkiling						Unit Cum
<i>Manpower</i>						
Unskilled	m-day	0.5	350.00	175.00		
<i>Tools & equipment @ of 3% of labour amount</i>						
				5.93		
				180.93	Per Unit	180.93
					Per Cu.ft	5.13
12.1 (c) 12 12.5mm cement sand plaster in 1:4						Unit 100 Sqm
<i>Manpower</i>						
Skilled	m-day	12	500.00	6000.00		
Unskilled	m-day	16	350.00	5600.00		
<i>Materials</i>						
Cement(Indian 53 Grade)	MT	0.538	12800.00	7781.63		
Course Sand	Cum	1.46	1380.00	2276.72		
				21858.36	Per Unit	216.58
					Per sq.ft	20.12

8.2 (a) 14 form work(wood repetition 6 times)					Unit 10 Sqm
<i>Manpower</i>					
Skilled m-day					
	1.72	500.00	860.00		
Unskilled m-day	2.57	350.00	899.50		
<i>Materials</i>					
Local wood Cum	0.088	35280.00	3494.95		
Nails Kg	2.5	144.00	406.80		
		5661.25	Per Unit	566.13	
			Per sq.ft	52.62	
8.2 (a) 14 form work(wood repetition 10 times)					Unit 10 Sqm
<i>Manpower</i>					
Skilled m-day	1.72	500.00	860.00		
Unskilled m-day	2.57	350.00	899.50		
<i>Materials</i>					
Local wood Cum	0.053	35280.00	2096.97		
Nails Kg	2.5	115.00	324.88		
		4181.35	Per Unit	418.13	
			Per sq.ft	38.87	
12.4 (a) 15 20mm cement sand plaster in 1:3 with water proofing component					Unit 100 Sqm
<i>Manpower</i>					
Skilled m-day	14	500.00	7000.00		
Unskilled m-day	19	350.00	6650.00		
<i>Materials</i>					
Cement(Indian 53 Grade) MT	0.96	12800.00	13885.44		
Water proofing compound litre	19.2	60.00	1301.76		
Coarse Sand Cum	1.95	1380.00	3040.83		
		31878.03	Per Unit	318.78	
			Per sq.ft	29.63	
12.4 (b) 15 20mm cement sand plaster in 1:4					Unit 100 Sqm
<i>Manpower</i>					
Skilled m-day	14	500.00	7000.00		
Unskilled m-day	19	350.00	6650.00		
<i>Materials</i>					
Cement(HTD) MT	0.81	12800.00	11715.84		
Coarse Sand Cum	2.2	1380.00	3430.68		
		28796.52	Per Unit	287.97	
			Per sq.ft	26.77	
11.20 16 3mm thk cement punning in floors and steps					Unit 10 Sqm
<i>Manpower</i>					
Skilled m-day	1	500.00	500.00		
Unskilled m-day	1	350.00	350.00		
<i>Materials</i>					
Cement(Indian 53 Grade) MT	0.0532	12800.00	769.48		
		1619.48	Per Unit	161.95	
			Per sq.ft	15.05	
13.4(b) 17 Two coat water proof cement paint with one coat primer paint					Unit 100 Sqm
<i>Manpower</i>					
Skilled m-day	5.8	500.00	2900.00		
Unskilled m-day	5.7	350.00	1995.00		
<i>Materials</i>					
White lime Kg	12	20.00	271.20		
Gum Kg	0.48	240.00	130.18		
WP cement Paint Kg	48.5	60.00	3288.30		
		8584.68	Per Unit	85.85	
			Per sq.ft	7.98	

10.1	13 Making, supply and fixing seasoned Salwood 4" x 3" frame					Unit Cum
	<i>Manpower</i>					
	Skilled	m-day	24	500.00	12000.00	
	Unskilled	m-day	3.4	350.00	1190.00	
	<i>Materials</i>					
	Salwood	Cum	1.1	91728.00	114017.90	
	Hold fast	No	.92	15.00	1559.40	
	Screws	No	184	0.90	187.13	
				133954.43	Per Unit	133954.43
					Per Cu.ft	3796.08
13.49(b)	20 Two coat water proof cement paint with one coat of approved primer paint paint for ceiling					Unit 100 Sqm
	<i>Manpower</i>					
	Skilled	m-day	7.25	500.00	3625.00	25% additional
	Unskilled	m-day	7.13	350.00	2495.50	25% additional
	<i>Materials</i>					
	White lime	Kg	12	20.00	271.20	
	Gum	Kg	0.48	240.00	130.18	
	WP cement Paint	Kg	48.5	60.00	3288.30	
				9810.18	Per Unit	98.10
					Per sq.ft	9.12
13.7	21 Making and fixing 38 mm thick door frame with 25 mm salwood plank shutter for each for 1.07 x 1.982 sqm)					Unit sq.m.
	<i>Manpower</i>					
	Skilled	m-day	10.00	500.00	5000.00	
	Unskilled	m-day	1	350.00	350.00	
	<i>Materials</i>					
	Salwood	Cum	0.084	91728.00	8706.82	
	4" Hinges	No	6	50.00	339.00	
	Handels (simple)	No	2	48.00	108.48	
	Tower bolt(6inc)	Nos	2	85.00	192.10	
	Locking set (8")	Nos.	1	225.00	254.25	
	Nails	Kg	0.2	144.00	32.54	
	Screws	No	36	0.90	36.61	
				15019.81	Per Unit	7082.34
					Per sq.ft	658.31
13.2	Prepared Enamel paint application with one coat primer and 2 coats with enamel paints all complete					Unit : -100 sq.m
	<i>Manpower</i>					
	Skilled	m-day	12	500.00	6000.00	
	Unskilled	m-day	8.00	350.00	2800.00	
	<i>Materials</i>					
	primer	ltr	8.1	310.00	2837.43	
	enamel paint	ltr	16	360.00	6508.80	
	Total				18146.23	Per Unit
						Per sq.ft
						181.46
						16.87

7.1(b)	5 PCC 1:2:4 Manpower	(Using broken stones)		Unit Cum
	Skilled	m-day	500.00	500.00
	Unskilled	m-day	350.00	1400.00
	Materials			
	Cement(Indian 53 Grade)	MT	0.32	12800.00 4628.48
	Boulder	Cum	0.52	1480.00 869.65
	Agg 20mm	Cum	0.22	1580.00 392.79
	Agg 10mm	Cum	0.11	1780.00 221.25
	Course Sand	Cum	0.445	1380.00 693.93
				8706.10 Per Unit
				Per Cu.ft 8706.10
				246.72
6.1(c)	6 Stone masonry works incl. Supply of hard stone blocks in 1:6 c/m with well finished stone.			Unit Cum
	Manpower			
	Skilled	m-day	1.5	500.00 750.00
	Unskilled	m-day	5	350.00 1750.00
	Materials			
	Cement(Indian 53 Grade)	MT	0.106	12800.00 1533.18
	Block stone (Well finished)	Cum	1	1200.00 1356.00
	Bond stone (Well finished)	Cum	0.1	1200.00 135.60
	Sand (Coarse)	Cum	0.47	1380.00 732.92
				6257.70 Per Unit
				Per Cu.ft 6257.70
				177.33
6.1(c)	6 Stone masonry works incl. Supply of hard stone blocks in 1:6 c/m with round stone			Unit Cum
	Manpower			
	Skilled	m-day	1.5	500.00 750.00
	Unskilled	m-day	5	350.00 1750.00
	Materials			
	Cement(Indian 53 Grade)	MT	0.106	12800.00 1533.18
	Block stone (Broken)	Cum	1	800.00 904.00
	Bond stone (Broken)	Cum	0.1	800.00 90.40
	Sand (Coarse)	Cum	0.47	1380.00 732.92
				5760.50 Per Unit
				Per Cu.ft 5760.50
				163.24
7.1(a)	4 PCC 1:3:6 (Using crushed aggregate)			Unit Cum
	Manpower			
	Skilled	m-day	1	500.00 500.00
	Unskilled	m-day	4	350.00 1400.00
	Materials			
	Cement(Indian 53 Grade)	MT	0.22	12800.00 3182.08
	Boulder	Cum	0.65	1480.00 1087.06
	Agg 10mm	Cum	0.2	1780.00 402.28
	Course Sand	Cum	0.47	1380.00 732.92
				7304.34 Per Unit
				Per Cu.ft 7304.34
				206.99
7.4(a)	8 PCC 1:2:4 for RCC (Using crushed aggregate)			Unit Cum
	Manpower			
	Skilled	m-day	0.8	500.00 400.00
	Unskilled	m-day	7	350.00 2450.00
	Materials			
	Cement(Indian 53 Grade)	MT	0.32	12800.00 4628.48
	Agg 40mm	Cum	0.52	1480.00 869.65
	Agg 20mm	Cum	0.22	1580.00 392.79
	Agg 10mm	Cum	0.11	1780.00 221.25
	Course Sand	Cum	0.445	1380.00 693.93
				9656.10 Per Unit
				Per Cu.ft 9656.10
				273.64

12	Flush pointing on stone wall in 1:2 c/m						Unit 100 Sqm
<i>Manpower</i>							
Skilled	m-day	10	500.00	5000.00			
Unskilled	m-day	14	350.00	4900.00			
<i>Materials</i>							
Cement(Indian 53 Grade)	MT	0.408	12800.00	5901.31			
Course Sand	Cum	0.57	1380.00	888.86			
				16690.17	Per Unit	166.90	
					Per sq.ft	15.51	
12.1 (c)	12 Flush pointing on stone wall in 1:3 c/m						Unit 100 Sqm
<i>Manpower</i>							
Skilled	m-day	10	500.00	5000.00			
Unskilled	m-day	14	350.00	4900.00			
<i>Materials</i>							
Cement(Indian 53 Grade)	MT	0.306	12800.00	4425.98			
Course Sand	Cum	0.63	1380.00	982.42			
				15308.41	Per Unit	153.08	
					Per sq.ft	14.23	
1(b)	7 CGI Sheet roofing 26 guage with bamboo purlin held in position by brick parapet						Unit 10 sqm
<i>Manpower</i>							
Skilled	m-day	1.1	500.00	550.00			
Unskilled	m-day	1.25	350.00	437.50			
<i>Materials</i>							
CGI sheet 26 guage	sqm	12	418.44	5674.05			
Bamboo	Ghana	2	216.00	488.16			
				7149.71	Per Unit	714.97	
					Per sq.ft	66.46	
CGI Sheet roofing 26 guage with all requirements							
<i>Manpower</i>							
Skilled	m-day	1.1	500.00	550.00			
Unskilled	m-day	1.25	350.00	437.50			
<i>Materials</i>							
CGI sheet 26 guage	sqm	12	418.44	5674.05			
J-hooks	No	25	6.00	169.50			
Bitumen washer	No	55	1.00	62.15			
Bolt/Nut 8 mm	No	30	5.00	169.50			
				7062.70	Per Unit	706.27	
					Per sq.ft	65.65	
28 guage GI plane sheet roofing (for ridge) with all requirements							
<i>Manpower</i>							
Skilled	m-day	2	500.00	1000.00			
Unskilled	m-day	3	350.00	1050.00			
<i>Materials</i>							
28 guage GI plane sheet	sqm	12	353.29	4790.61			
Bolt/Nut 8 mm	No	24	5.00	135.60			
				6976.21	Per Unit	697.62	
					Per sq.ft	64.84	
Prime coat over base coarse							
<i>Manpower</i>							
Skilled							
Unskilled	m-day	0.20	350.00	70.00			
<i>Materials</i>							
Bitumen	Kg	9.75	86.19	949.60			
Cutter (Kerosene)	Ltr	3.00	75.00	254.25			
Wood	Kg	16.00	8.00	144.64			
<i>Equipments</i>							
Boiler/Sprayer	hr	0.04	180.00	8.14			
				1426.62	Per Unit	142.66	
					Per sq.ft	13.26	
Tack coat over the prime coat							
<i>Manpower</i>							
Skilled							
Unskilled	m-day	0.20	350.00	70.00			
<i>Materials</i>							
Bitumin	Kg	12.20	86.19	1188.22			
Cutter (Kerosene)	Ltr	3.50	75.00	296.63			
Wood	Kg	20.20	8.00	161.60			
				1426.62	Per Unit	142.66	
					Per sq.ft	13.26	

<i>Manpower</i>					
Skilled					
Unskilled	m-day	0.90	350.00	315.00	
<i>Materials</i>					
Bitumin	Kg	15.40	86.19	1499.88	
Cutter (Kerosene)	Ltr	0.75	75.00	63.56	
Wood	Kg	24.00	8.00	216.96	
Screenings	m ³	0.19	1580.00	339.23	
<i>Equipments</i>					
Roller	hr	0.10	500.00	56.50	
Boiler/Sprayer	hr	0.10	180.00	20.34	
				2511.47	Per Unit
					Per sq.ft
					251.15
					23.34

					Unit : 10 sqm
	Tack coat over the premix carpet				
	<i>Manpower</i>				
	Skilled				
	Unskilled	m-day	0.20	350.00	70.00
	<i>Materials</i>				
	Bitumin	Kg	7.30	86.19	710.98
	Cutter (Kerosene)	Ltr	1.25	75.00	105.94
	Wood	Kg	12.00	8.00	108.48
	<i>Equipments</i>				
	Boiler/Sprayer	hr	0.04	180.00	8.14
				1003.53	Per Unit
				9.33	Per sq.ft
				100.35	
				9.33	
					Unit : 10 sqm
	Sand sealing with compaction				
	<i>Manpower</i>				
	Skilled				
	Unskilled	m-day	0.45	350.00	157.50
	<i>Materials</i>				
	Bitumin	Kg	9.60	86.19	934.99
	Cutter (Kerosene)	Ltr	1.50	75.00	127.13
	Coarse sand	m³	0.07	1380.00	109.16
	Wood	Kg	16.00	8.00	144.64
	<i>Equipments</i>				
	Boiler/Sprayer	hr	0.04	180.00	8.14
				1481.55	Per Unit
				13.77	Per sq.ft
				148.15	
				13.77	
					Unit : Cum
6.1⑥	6 Stone masonry works (dry) incl. Supply of hard stone blocks				
	<i>Manpower</i>				
	Skilled	m-day	1	500.00	500.00
	Unskilled	m-day	2	350.00	700.00
	<i>Materials</i>				
	Block stone (Broken)	Cum	1	850.00	960.50
	Bond stone (Broken)	Cum	0.1	850.00	96.05
				2256.55	Per Unit
				63.95	Per Cu.ft
				2256.55	
				63.95	
	23 Furniture works				Unit : -100 sq.m
					Unit : -100 sq.m
	<i>Manpower</i>				
	Skilled	m-day	34	500.00	17000.00
	Unskilled	m-day	3.40	350.00	1190.00
	<i>Materials</i>				
	Wood	Cum	1.1	91728.00	114017.90
	Nails	Kg	0.53	144.00	86.73
	Total			132294.63	Per Unit
				12296.87	Per sq.ft
				132294.63	
				12296.87	
	E/W in excavation in soft soil (silty and clayey)				Unit : -Cu.m
	<i>Manpower</i>				
	Skilled	m-day			
	Unskilled	m-day	0.70	350.00	245.00
	<i>Materials</i>				
	Equipment (3% of labour cost)			7.35	
	Total			252.35	Per Unit
				252.35	Per Cu.ft
				7.15	
	Dry stone (Round) laying without sand				Unit : 1 Cum
	<i>Manpower</i>				
	Skilled	m-day	1	500.00	500.00
	Unskilled	m-day	3.5	350.00	1225.00
	<i>Materials</i>				
	Stone	Cum	1.1	800.00	994.40
				2719.40	Per Unit
				77.06	Per Cu.ft
				2719.40	
				77.06	
6.1⑦	6 Stone masonry works in mud mortar incl. Supply of hard stone blocks				Unit : Cum
	<i>Manpower</i>				
	Skilled	m-day	1.00	500.00	500.00
	Unskilled	m-day	2.25	350.00	787.50
	<i>Materials</i>				
	Block stone (Broken)	Cum	1	850.00	960.50

Supplying and fixing chainlink mesh of 8 gauge (50x50)						Unit sqm
<i>Materials</i>						
8 gauge (50x50) medium chainlink mesh	sqm	1.00	225.00	247.50		
<i>Labour</i>			37.13			
Approx. 15% of the material cost			284.63	Per Unit	284.63	Unit Kg
			26.46	Per sqft	26.46	
6.1© 6 Supplying and fixing 40x40x5 MS angle section on each pier for fencing						
<i>Materials</i>						
Ready made (as per requirement) MS angle section (40x40x5)	Kg	1	95.00	104.50		
<i>Man power</i>			15.68			
Approx. 15% of material cost			120.18	Per unit	120.18	
1.1 Earth filling with ordinary soil with proper compaction						Unit Cum
<i>Manpower</i>						
Unskilled	m-day	0.5	350.00	175.00		
<i>Materials</i>						
Mud	cum	1.1	230.00	285.89		
Tools & equipment @ of 3% of labour amount			5.93			
			466.82	Per Unit	466.82	Per Cu.ft
				Per sqm	13.23	
Two coat (Both first coat and second coat) snowcem paint on plastered surface						Unit 100 sqm
<i>Manpower</i>						
Skilled	m-day	6.5	500.00	3250.00		
Unskilled	m-day	6.5	350.00	2275.00		
<i>Materials</i>						
Snowcem paint	Kg	50	55.00	3107.50		
			5382.50	Per Unit	5382.50	
				Per sqm	53.83	
				Per sqft	5.00	
CGI Sheet roofing 28 guage (colored) with all requirements						Unit 10 sqm
<i>Manpower</i>						
Skilled	m-day	1.1	500.00	550.00		
Unskilled	m-day	1.25	350.00	437.50		
<i>Materials</i>						
CGI sheet 26 guage	sqm	12	448.93	5087.49		
J-hooks	No	25	6.00	169.50		
Bitumen washer	No	55	1.00	62.15		
Bolt/Nut 8 mm	No	30	5.00	169.50		
			7476.14	Per Unit	747.61	
				Per sq ft	69.49	
Single coat primer painting						Unit 10 sqm
<i>Manpower</i>						
Skilled	m-day	0.3	500.00	150.00		
Unskilled	m-day	0.3	350.00	105.00		
<i>Materials</i>						
Primer paint	Ltr	0.81	310.00	283.74		
			538.74	Per Unit	53.87	
				Per sq ft	5.01	
Making, supply and fixing seasoned sailah/sisau frame						Unit Cum
<i>Manpower</i>						
Skilled	m-day	34	500.00	17000.00		
Unskilled	m-day	3.4	350.00	1190.00		
<i>Materials</i>						
Salwood	Cum	1.1	35280.00	43853.04		
Hold fast	No	92	15.00	1559.40		
Screws (3/4")	No	184	0.90	187.13		

10.4	15.00mm glazed shutter incl. 4mm glass supply, making and fitting all complete for a shutter size per unit area as per HMG/N Norms (1.329 x 1.22 sqm)				Unit Cost
	<i>Manpower</i>				
	Skilled	m-day	9.00	500.00	4500.00
	Unskilled	m-day	0.9	350.00	315.00
	<i>Materials</i>				
	Sallah/Sisau wood	Cum	0.049	35280.00	1953.45
	3" Hinges	No	8	38.00	343.52
	Handels (best)	No	2	105.00	237.30
	Tower bolt(4inc)	Nos	4	50.00	226.00
	glass	Sq.m	1.085	559.52	686.00
	Nails	Kg	0.2	144.00	32.54
	Screws (3/4")	No	24	0.90	24.41
				8318.23	Per Unit Per sq.ft
					3727.84 346.50
	Two coat (Both first coat and second coat) snowcem paint on plastered surface of ceiling				Unit 100 sqm
	<i>Manpower</i>				
	Skilled	m-day	8.13	500.00	4062.50
	Unskilled	m-day	8.13	350.00	2843.75
	<i>Materials</i>				
	Snowcem paint	Kg	50	55.00	3107.50
				5951.25	Per Unit Per sqm Per sqft
					5951.25 59.51 5.53
	Dry stone laying without sand				Unit 1 Cum
	<i>Manpower</i>				
	Skilled	m-day	1	500.00	500.00
	Unskilled	m-day	3.5	350.00	1225.00
	<i>Materials</i>				
	Stone	Cum	1.1	800.00	994.40
				2719.40	Per Unit Per Cu.ft
					2719.40 77.06
	PCC 1:1.5:3 (Using river aggregate)				Unit Cum
	<i>Manpower</i>				
	Skilled	m-day	0.8	500.00	400.00
	Unskilled	m-day	7	350.00	2450.00
	<i>Materials</i>				
	Cement(Indian 53 Grade)	MT	0.4	12800.00	5785.60
	Agg 20mm	Cum	0.57	1480.00	953.27
	Agg 10mm	Cum	0.29	1580.00	517.77
	Course Sand	Cum	0.425	1380.00	662.75
				10769.38	Per Unit Per Cu.ft
					10769.38 305.19

Dry foundation excavation in soft soil with disposal to 10 to 15m lead
and 1 Sm lift

Manpower

Skilled

Unskilled

Materials

3% of machine tools

m-day

m-day

1.00

350.00

350.00

Unit Cum

11.87

361.87

361.87

10.25

11.18 3 Dry stone (Round) laying without sand

Manpower

Skilled

Unskilled

Materials

Stone

m-day

m-day

Cum

1.1

800.00

994.40

2719.40 Per Unit

Per Cu.ft

Unit 1 Cum

10.25

16.10, 16.8, 16.11 3 Making gabion of Rectangular mesh size (150x150) Box size 3x1x1

Manpower

Skilled

Unskilled

Materials

GI wire (Commercial)

Selvage wire

m-day

m-day

Kg

Kg

0.44

0.18

17.80

4.10

500.00

350.00

85.00

85.00

220.00

63.00

1709.69

393.81

2386.50 Per no

Unit 1 no

Making gabion of Rectangular mesh size (150x150) Box size 3x1x1 with Rubble Packing

Manpower

Skilled

Unskilled

Materials

GI wire (Commercial)

Selvage wire

Binding wire

Stone

m-day

m-day

Kg

Kg

Kg

Cum

0.44

2.28

17.80

4.10

1.00

3.00

500.00

350.00

85.00

85.00

798.00

1709.69

393.81

2210.85

5940.85 Per no

Unit 1 no

5940.85

Unit 100 m

24.6 Fixing GI barbed wire concrete pole

Manpower

Skilled

Unskilled

Material

GI barbed wire (12 guage)

Pack

m-day

m-day

Kg

L.S

1.08

5.38

15.71

90.00

500.00

350.00

1883.00

1598.14

120.00

4139.1429 Per m

Per ft

41.39

12.62

Unit 100 m

Fixing GI barbed wire MS section

Manpower

Skilled

Unskilled

Material

GI barbed wire (12 guage)

GI wire

m-day

m-day

Kg

L.S

1.08

5.38

15.71

90.00

500.00

350.00

1883.00

1598.14

20.00

4039.1429 Per m

Per ft

41.39

12.62

Unit 100 m

24.6 MS angle work

Manpower

Skilled

Unskilled

Material

MS angle

m-day

m-day

Kg

L.S

0.05

220.00

11.00

95.00

108.42

119.42 Per Kg

40.39

12.31

Unit 1 Kg

Making, supply and fixing seasoned sisau wood planks

Manpower

Skilled

Unskilled

Materials

Sisau wood

Screws

m-day

m-day

Cum

L.S

25.4

8.44

1.1

70560.00

87706.08

50.00

103410.08

Unit Cum

119.42

Manpower					
Skilled	m-day		500.00	2000.00	
Unskilled	m-day		250.00	4000.00	
Materials					
Steel members	MT	1.00	95000.00	107350.00	15973.4
Primer (white)	Litre	5.00	310.00	1751.50	17513.3
Enamel paint	Litre	10.00	360.00	4068.00	
			120069.50	Per Kg	120.07
10(22)	Making wooden plank of 25 mm thick and fixing as per specification				
10(26)	Manpower			Unit	1 Sqm
	Skilled	m-day	0.635	500.00	317.5
	Unskilled	m-day	0.211	350.00	73.85
Materials					
Timber	m ³	3.028	91728.00	2902.2739	
Nail, bolts etc.	nos	L.S		20.00	
			3313.6239	Per unit	3313.624
Porcelain glazed tiles in 1:4 c/m					
Manpower				Unit	10 sq m
Skilled	m-day	13	500.00	6500.00	
Unskilled	m-day	4.5	350.00	1575.00	
Materials					
Porcelain glazed tiles	Sq m	11.00	581.31	7225.68	
Cement	MT	0.056	12800.00	809.98	
Sand	Cum	0.152	1380.00	237.03	
White cement	Kg	3.228	23.00	83.90	
			16431.59	Per Sqm	1643.16
				Per sqft	152.73
Making door shutter by fixing 26 gauge GI plain sheet on 38 mm thick sal wood frame					
Manpower				Unit	2.245 Sq m
Skilled	m-day	7	500.00	3500.00	
Unskilled	m-day	0.7	350.00	245.00	
Materials					
Sal wood	Cum	0.0346	91728.00	3586.38	
28 gauge GI plain sheet	Sq m	4.650	353.29	1856.36	
3" hinge	no	3.000	38.00	128.82	
4" tower bolt	no	2.000	50.00	113.00	
Handle	no	1.000	48.00	54.24	
Nails and screws	L.S			25.00	
			9508.80	Per Sqm	4235.55
				Per sqft	393.70
Making door shutter by fixing 3 mm thick ply wood on 38 mm thick sal wood frame					
Manpower				Unit	2.245 Sq m
Skilled	m-day	7	500.00	3500.00	
Unskilled	m-day	0.7	350.00	245.00	
Materials					
Sal wood	Cum	0.0346	91728.00	3586.38	
3 mm thick ply wood	Sq m	4.650	225.96	1187.31	
4" hinge	no	3.000	50.00	169.50	
4" tower bolt	no	2.000	50.00	113.00	
Handle (Fine)	no	1.000	105.00	118.65	
Nails and screws	L.S			25.00	
			8944.84	Per Sqm	3984.34
				Per sqft	370.35
CGI Sheet roofing 28 gauge with bamboo purin held in position by brick parapet					
Manpower				Unit	10 sqm
Skilled	m-day	1.1	500.00	550.00	
Unskilled	m-day	1.25	350.00	437.50	
Materials					
CGI sheet 28 gauge	sqm	12	303.07	4109.63	
Bamboo	Ghana	2	216.00	488.16	
			5585.29	Per Unit	558.53
				Per sqft	51.92

11.1(b)	38 mm. thick concrete flooring with cement running					Unit 100 Sqm
<i>Manpower</i>						
	Skilled	m-day	0.25	350.00	87.50	
	Unskilled	m-day	2	350.00	700.00	
<i>Materials</i>						
	Cement(Indian 53 Grade)	MT	0.13	12800.00	1880.32	
	Course Sand	Cum	0.18	1380.00	280.69	
	Fine Sand	Cum	0.36	1330.00	541.04	
				4027.06	Per Unit	402.71
					Per Sq.ft	11.41
11.1(b)	GI Barbed wire fencing work					Unit 100 m
<i>Manpower</i>						
	Unskilled	m-day	5.38	350.00	1883.00	
<i>Materials</i>						
	Barbed wire	m	110	14.79	1838.40	
				3721.40	Per Unit	37.21
					Per ft	3.46
2.25kha	Earth filling with ordinary soil and hand compaction without water sprinkiling					Unit Cum
<i>Manpower</i>						
	Unskilled	m-day	0.25	350.00	87.50	
	Tools & equipment @ of 3% of labour amount				2.97	
				90.47	Per Unit	90.47
					Per Cu.ft	2.56
3	Making gabion of hexagonal mesh size (100x120), transporting, placing in position and					
stone filling all completeBox size 2x1x1-						
<i>Manpower</i>						
	Skilled	m-day	0.45	500.00	225.00	
	Unskilled	m-day	1.60	350.00	560.00	
<i>Materials</i>						
	GI wire (Commercial)	Kg	24.15	85.00	2319.61	
	Selwage wire	Kg	3.15	85.00	302.56	
	Binding wire	Kg	0.75	85.00	72.04	
	Stone	Cum	2.00	800.00	1808.00	
				5287.20	Per no	5287.20
16.5,	3 Making gabion of hexagonal mesh size (100x120), transporting, placing in position and					
16.8,						
16.11	stone filling all completeBox size 3x1x1					Unit 1 no
<i>Manpower</i>						
	Skilled	m-day	0.63	500.00	315.00	
	Unskilled	m-day	2.38	350.00	833.00	
<i>Materials</i>						
	GI wire (Coimmercial)	Kg	35.10	85.00	3371.36	
	Selwage wire	Kg	4.10	85.00	393.81	
	Binding wire	Kg	1.00	85.00	96.05	
	Stone	Cum	3.00	800.00	2712.00	
				7721.21	Per no	7721.21
11.1(b)	25 mm. thick flat stone paving with cement mortar 1:4 ratio					Unit 10 Sqm
<i>Manpower</i>						
	Skilled	m-day	1.5	440.00	660.00	
	Unskilled	m-day	4.5	300.00	1350.00	
<i>Materials</i>						
	Cement(Indian 53 Grade)	MT	0.056	12800.00	809.98	
	Fine Sand	Cum	0.152	1231.67	211.55	
				3031.54	Per Unit	303.15
					Per Sq.ft	8.59
11.1(b)	False ceiling with bamboo mat (Chitra)					Unit 35.68 Sqm
<i>Manpower</i>						
	Skilled	m-day	23	440.00	10120.00	
	Unskilled	m-day	2.3	300.00	690.00	
<i>Materials</i>						
	Wood	Cum	0.45	91728.00	46643.69	
	Chitra	Sqm	37.5	145.91	6182.75	
	Listi	LS			1000.00	
	Nails and screws	LS			500.00	
				65136.44	Per Unit	1825.57
					Per Sq.ft	169.69

HDPE Pipe Weight & Rate Chart

Based on Rs.228/00 Per Kg Rate

Description	No.	Length	wt./m	Rate	Remarks
1 HDPE Pipe	150				
2 16 mm dia. 10 kg/cm ²	1	1	0.092	17.48	
3 20 mm dia. 10 kg/cm ²	1	1	0.134	25.46	
4 25 mm dia. 10 kg/cm ²	1	1	0.202	38.38	39.5314
5 32 mm dia. 6 kg/cm ²	1	1	0.226	42.94	44.2282
6 32 mm dia. 10 kg/cm ²	1	1	0.334	63.46	
7 40 mm dia. 10 kg/cm ²	1	1	0.514	97.66	
8 50 mm dia. 4 kg/cm ²	1	1	0.378	71.82	
9 50 mm dia. 6 kg/cm ²	1	1	0.542	102.98	
10 50 mm dia. 10 kg/cm ²	1	1	0.796	151.24	
11 63 mm dia. 4 kg/cm ²	1	1	0.585	111.15	114.4845
12 63 mm dia. 6 kg/cm ²	1	1	0.85	161.5	
13 63 mm dia. 10 kg/cm ²	1	1	1.269	241.11	
14 75 mm dia. 4 kg/cm ²	1	1	0.846	160.74	165.5622
15 75 mm dia. 6 kg/cm ²	1	1	1.191	226.29	
16 75 mm dia. 10 kg/cm ²	1	1	1.782	338.58	
17 90 mm dia. 4 kg/cm ²	1	1	1.22	231.8	
18 90 mm dia. 6 kg/cm ²	1	1	1.715	325.85	
19 90 mm dia. 10 kg/cm ²	1	1	2.568	487.92	
20 110 mm dia. 2.5 kg/cm ²			1.186	225.34	
21 110 mm dia. 4 kg/cm ²	1	1	1.703	323.57	
22 110 mm dia. 6 kg/cm ²	1	1	2.545	483.55	
23 110 mm dia. 10 kg/cm ²	1	1	3.801	722.19	
24 125 mm dia. 4 kg/cm ²	1	1	2.289	434.91	
25 125 mm dia. 6 kg/cm ²	1	1	3.293	625.67	
26 125 mm dia. 10 kg/cm ²	1	1	4.962	942.78	
27 140 mm dia. 4 kg/cm ²	1	1	2.902	551.38	
28 140 mm dia. 6 kg/cm ²	1	1		0	
29 140 mm dia. 10 kg/cm ²	1	1		0	
30 160 mm dia. 4 kg/cm ²	1	1	3.796	721.24	
31 160 mm dia. 6 kg/cm ²	1	1		0	
32 160 mm dia. 10 kg/cm ²	1	1		0	

GI Pipe	No.	Length	wt./m	Rate	Remarks
1 15 mm dia. Medium class	1	1	1.28	128.1667	
2 20 mm dia. Medium class	1	1	1.65	165	
3 25 mm dia. Medium class	1	1	2.54	249	
4 32 mm dia. Medium class	1	1	3.27	309.5	
5 40 mm dia. Medium class	1	1	3.77	354.6667	
6 50 mm dia. Medium class	1	1	5.32	496	
7 65 mm dia. Medium class	1	1	6.82	633.6667	
8 80 mm dia. Medium class	1	1	8.87	798	
9 100 mm dia. Medium clas	1	1	12.69	1181.333	
10 125 mm dia. Medium clas	1	1	15	1614.667	

Vyas Municipality, Tanahun

Project: Chunder Water Supply Work
 Place: Vyas-6, Chunder Tole, Tanahun

Date: 2069.3.7

Levelling Sheet

St ati on	Chaina ge	Distance	BS	IS	FS	Hi	RL	Remarks
	0+000						100.000	RL Of Pro.ferrocement tank (Assumed)
		2.760				102.760	100	
1	0+18.5	18.50		0.945			101.815	Intake sampwell
		2.295				104.110		
2		12.50		0.31			103.800	
		2.700				106.500		
3		13.00		0.36			106.140	
		2.615				108.755		
4		17.50		0.4			108.355	
		2.240				110.595		
5		35.00		0.53			110.065	
		3.795				113.860		
6		26.5		0.34			113.520	
		3.345				116.865		
7		14.00		0.405			116.460	
		3.195				119.655		
8		11.50		0.04			119.615	
		3.510				123.125		
9		11.00		0.3			122.825	
		3.485				126.310		
10		7.00		0.23			126.080	
		3.640				129.720		
11		9.00		0.36			129.360	
		3.760				133.120		
12		10.00		0.24			132.880	
		3.700				136.580		
13		8.00		0.24			136.340	
		3.925				140.265		
14		9.50		0.3			139.965	
		3.600				143.565		
15		8.00		0.26			143.305	
		3.670				146.975		
16		8.50		0.175			146.800	
		3.895				150.695		
17		9.50		0.27			150.425	
		3.730				154.155		
18		10.00		0.15			154.005	
		3.885				157.890		
19		11.00		0.12			157.770	
		3.590				161.360		
20		9.70		0.165			161.195	
		2.475				163.670		

2	10.00	0.27	163.400	
	3.700		167.160	
	10.00	0.14	167.020	
23	3.975		170.995	
	19.50	0.04	170.955	
24	3.660		174.615	
	30.00	0.17	174.445	
25	3.890		178.335	
	21.00	0.04	178.295	
	3.680		181.975	
0+367.				
26	21.00	0.03	181.945	khulal danda
	3.500		185.445	
27	29.00	0.06	185.385	
	3.510		188.895	
28	17.00	0.41	188.485	
	2.930		191.415	
29	10.00	0.46	190.955	
	3.170		194.125	
30	19.00	0.09	194.035	
	3.270		197.305	
31	33.00	0.205	197.100	
	3.680		200.780	
32	52.40	0.205	200.575	
	3.050		203.625	
33	0+617.6	90.00	1	plain land makai bari
	4.000		202.625	
34	40.00	0.09	206.535	
	3.550		210.085	
35	5.50	0.26	209.825	
	3.500		213.325	
36	33.20	0.045	213.280	
	3.095		216.375	
37	0+739.5	43.00	0.99	215.385 sidurki kholsi
	3.390		218.775	
38	22.00	0.01	218.765	
	3.350		222.115	
39	14.00	0.235	221.880	
	2.950		224.830	
40	24.00	0.185	224.645	
	2.590		227.235	
41	45.20	0.39	226.845	
	3.910		230.755	
42	15.00	0.37	230.385	
	3.790		234.175	
43	12.40	0.37	233.805	
	3.890		237.695	
44	16.50	0.09	237.605	
	3.525		241.130	
45	16.40	0.055	241.075	
	3.750		244.825	
46	15.00	0.23	244.595	
	3.840		248.435	
	14.00	0.185	248.250	

		3.360		252.1101	
48	10.50	0.29		251.820	
49	13.00	0.23	255.790		
50	19.00	0.29	259.500		
51	18.00	0.48	262.770		
52	18.70	0.14	266.090		
53	11.00	0.25	269.373		
	3.830		272.953		
54	0+1060 .6	36.60	0.23	272.723	school chautara
55	21.00	0.12	275.528		
56	19.00	0.44	278.228		
57	17.00	0.36	280.938		
58	12.00	0.18	283.578		
59	10.00	0.285	286.868		
60	11.00	0.49	290.123		
61	15.00	0.44	293.243		
62	15.00	0.07	296.363		
63	18.00	0.49	299.803		
64	12.00	0.185	303.183		
65	21.00	0.43	306.273		
66	3.520	0.1	309.873		
67	39.70	0.9	309.583		
68	79.00	1.03	311.543		
69	15.00	0.35	312.993		
	1.800		312.662		RL At Proposed RVT
Total:-	1396.30	233.048	20.386		
	METRE			Difference between first and last RL=	
CHECK:-SUM OF (BS -FS)=212.662				(101.815-312.662)=210.84	

Vyas Municipality

Project: chunder w/s work
Project: Vyas Municipality-6 chudergaun

Population Forecast, Water Demand And Tap Flow Calculation Table

Description of Tap												Remarks		
Present Year:-	2069 BS	Base Year:-	2069 BS	Design Year:-	2069 BS	Tap Open Per HH:-	6.00	Growth Rate:-	1.67	No. Of Tapstand	17.00			
Greater Name Or Quantity	No. of HH	Present pop.(n)	Design Rate(%)	Design pop.(Pn)	Total Demand (LPCD)	No. Of Domestic pupil in school	Total Demand (LPCD)	Total Water Demand (LPCD)	Average Tap Flow(LS)	Peak Demand (LPCD)	Peak Flow (LS)	Coef. of Peak Flow (LS)		
Chunder Ghati	19.00	114.00	20.00	1.67	158.00	50.00	9,480.00	0.00	10.00	9,480.00	0.11	3.00	0.31	
Chunder Ghati (Resi)	10.00	60.00	20.00	1.67	83.00	60.00	4,980.00	0.00	10.00	5.00	4,980.00	0.06	3.00	0.17
School														
Nelabari	6.00	36.00	20.00	1.67	50.00	60.00	3,000.00	0.00	10.00	3,000.00	0.03	3.00	0.10	
Dhang Thumpki	16.00	96.00	20.00	1.67	133.00	60.00	7,980.00	0.00	10.00	7,980.00	0.09	3.00	0.28	
Chhetrigaun	6.00	36.00	20.00	1.67	50.00	60.00	3,000.00	0.00	10.00	3,000.00	0.03	3.00	0.10	
Nelabaria	6.00	36.00	20.00	1.67	50.00	60.00	3,000.00	0.00	10.00	3,000.00	0.03	3.00	0.10	
Chhetrigaun	6.00	36.00	20.00	1.67	50.00	60.00	3,000.00	0.00	10.00	3,000.00	0.03	3.00	0.10	
Total	63.00	378.00			524.00		31,440.00			1,000.00	32,440.00			16