



**GOVERNMENT OF BIHAR**

**PUBLIC HEALTH ENGINEERING DEPARTMENT**

**MODEL ESTIMATES**

**FOR**

**CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME**

**UNDER MUKHYAMANTRI GRAMIN PEYJAL YOJNA**

**FOR**

**100, 150 AND 200 HOUSEHOLDS**

**WITH**

**DIFFERENT TYPES OF TUBEWELLS**

**AND**

**M.S.STAGING**

**FOR NON QUALITY AFFECTED & WITH IRP FOR QUALITY AFFECTED AREAS**

**FEBRUARY, 2017**

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3	100	125mm X 75mm dia & 90M deep T/W for rocky strata	14.204	25	-	36
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2	100	125mm X 75mm dia & 90M deep T/W for alluvial soil		-	
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**GOVERNMENT OF BIHAR**

**PUBLIC HEALTH ENGINEERING DEPARTMENT**

***MODEL ESTIMATE***

***FOR***

**CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME**

**FOR A WARD HAVING 100 HOUSE HOLDS**

**ESTIMATED COST-- Rs. 14.342 Lac**

**JANUARY, 2017**

**GOVERNMENT OF BIHAR**  
**Public Health Engineering Department**

**ABSTRACT OF COST**  
**NAME OF WORK:- CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME FOR WARD HAVING 100 HOUSE HOLDS**

S.N.	Description	Total Amount
1	Construction of 150mm X 90m deep Gravel packed T/W etc. all complete and as per direction of E/I. (As per sub Estimate no.- 1)	Rs.1,65,744.00
2	Constructing masonry Chamber 100x100x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for Tube Well, and RCC top slab 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size) , necessary excavation, foundation concrete 1:2:4(1 cement : 2 fine sand : 4 graded stone aggregate 20 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3coarse sand) 12 mm thick with 5% cico finished with a floating coat of neat cement, out side plastering with cement mortar 1:4 (1 cement : 4coarse sand) 12 mm thick complete as per standard specifications & direction of E/I. (As per sub Estimate no.- 2)	Rs.13,040.00
3	Providing and Laying Distribution network of High Density Polyethylene pipe (HDPE pipe) including 5000 liter PVC tank installed at 8M high MS staging etc all complete as per direction of E/I. (As per sub Estimate no.- 3)	Rs.3,84,422.69
4	Supply Installation, commissioning and testing of single phase 2 H.P. submersible pump set having discharging capacity 2 lps at a total head of 35 meter(approx) of KSB/ Kirloskar or equivalent make with all accessories & fittings etc including loading unloading and transportation of the pump set to the work site with all required labour, materials, tools and tackles installation, testing & commissioning as per standards specifications and direction of E/I. (As per sub Estimate no.- 4)	Rs.64,403.00
5	Providing house connection for each house hold including supplying all materials, labours, tools and making ferrule connection with 20 mm dia MDPE and 15mm CPVC Pipes with all fittings etc all complete. (As per sub Estimate no.- 5)	Rs.1,51,300.00
6	Providing and erecting 8M high staging with GI enclosure to house electric switch panel of suitably designed MS section of angle, channel, hollow section etc. as per drawing attached. (As per sub Estimate no.- 6)	Rs.6,41,100.00
<b>TOTAL</b>		Rs.14,20,009.69
Add 1% Contingency		Rs.14,200.10
<b>G. TOTAL</b>		Rs.14,34,209.79
		<b>Say</b> Rs.14,34,200.00

(Rs. Fourteen Lac Thirty four Thousand Two hundred) only

**note:**

- i) Road cutting cost may increase or decrease as per actuals.
- ii) Strongly advised that pipeline should be laid before construction of Naali-Gali.
- iii) This is a model estimate. Hence the quantity may increase or decrease based on actual site conditions.

**Variable inter alia includes**

- i) Hydro geomorphological condition.
- ii) Location of source vis-à-vis population/ house holds.
- iii) Quality of works and materials shall be maintained as per standard specifications and direction of E/I.

*Technically approved for Rs 14,34,200.00 (Fourteen lac thirty four thousand two hundred) only.*

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## (Sub Estimate - 1)

1 (A) Construction of 150mm X 90m deep Gravel packed T/W					
S. No.	Particulars	Quantity	Unit	Rate	Amount
1	Transportation of machine, equipments including all accessories etc.	1 No.	Each	Rs.1,010.00	Rs.1,010.00
2	Boring/drilling bore well of required dia for casing/strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer-in-charge, upto 90 metre depth below ground level. (All types of soil)				
	400mm dia bore from GL to 90.0M	90 Mtr.	P/M	Rs.529.30	Rs.47,637.00
3A	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC (UPVC) medium well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer-in-charge.				
	(a) 150 mm nominal size dia	59 M	P/M	Rs.615.30	Rs.36,302.70
3B	Supplying, assembling, lowering and fixing in vertical position in bore well unplasticized PVC (UPVC) medium well screen (RMS) pipes with ribs, conforming to IS: 12818, including hire & labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer-in-charge.				
	150 mm nominal size dia	30.0 M	P/M	Rs.554.30	Rs.16,629.00
4	Supplying fitting & fixing the following Fitting of approved make and specification at work site complete job.				
	(a) 150mm center guide Nos. in each T/W	9 Nos.	Each	Rs.150.00	Rs.1,350.00
	(b) 150 mm dia well plug	1 No	Each	Rs.205.10	Rs.205.10
	(b) 150 mm dia M.S. Clamp 1.6 M long (one Pair)	1 No	Each	Rs.1,031.10	Rs.1,031.10
5	Supplying 3mm to 6 mm Well washed assorted pea gravel and doing surrounding around the annular space between bore hole & 125mm pipe uniformity up to the depth 10 mtr. below G.L all work complete as per direction of E/I.	11 M <sup>3</sup>	P/M <sup>3</sup>	Rs.917.00	Rs.10,087.00
6	Carriage of Pea gravel from Dhalbhumigarh (taken av distance 400Km)	11 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,336.54	Rs.47,701.94
7	Supplying all materials labours and equipments to seal T/W up to the depth of 12 mtr below G.L. by Sticky clay to prevent contamination from surface from all complete job as per direction of E/I.	1 Item	Each	Rs.51.01	Rs.51.01
8	Supplying all materials labours and equipments including 150mm dia G.I. Cap /C.I. Cap over the casing of 150mm dia T/W properly all complete.	1 No.	Each	Rs.205.10	Rs.205.10
9	Carriage of necessary equipment & materials.	1 No.	Each	Rs.287.50	Rs.287.50
10	Supplying all tools equipments & labour for flushing washing and developing the T/W to give clean & clear water and all complete job as per direction of E/I.	5 H	P / H	Rs.649.40	Rs.3,247.00
TOTAL					Rs.1,65,744.45
Say					Rs.1,65,744.00



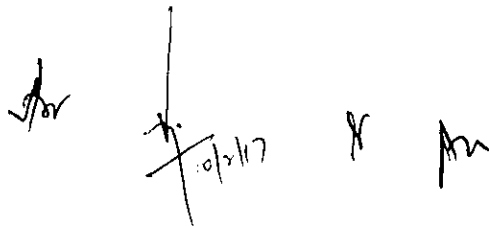

**Analysis of Chamber for TW**

Supplying materials, labours and constructing chamber of following dimension having 250mm thick wall in C.M. (1:4) in cluding 12mm C.P. (1:3) with punning inside, R.C.C. cover slab with C.I. Surface box , 20mm dia foot rest at 150mm interval 10mm dia lifting ring etc. all complete.

**SIZE**      **1.00 M**      x      **1.00 M**      x      **0.75 M deep**

<u>S.O.R. No.</u>	<u>Particulars</u>	<u>No.</u>	<u>L</u>	<u>W</u>	<u>H</u>	<u>Qty.</u>	<u>Unit</u>	<u>Rate</u>	<u>Amount</u>
1	Earth work in excavation	1	1.75	1.75	1.0	3.063 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.705.91
S.O.R. No. 2.8									
2	Sand filling	1	1.75	1.75	0.075	0.230 M <sup>3</sup>	P/M <sup>3</sup>	Rs.204.40	Rs.46.95
S.O.R. No. 2.28									
3	Brick flat soling	1	1.75	1.75		3.063 M <sup>2</sup>	P/M <sup>2</sup>	Rs.253.80	Rs.777.26
S.O.R. 11.72									
4	P.C.C. (1:2:4) in foundation	1	1.75	1.75	0.10	0.306 M <sup>3</sup>			
S.O.O. 4.1.3									
						0.306 M <sup>3</sup>	P/M <sup>3</sup>	Rs.3,323.10	Rs.1,017.70
5	B/Work in (1:4) C.M.	2	2.50	0.25	0.75	0.938 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,724.40	Rs.4,429.13
S.O.R. No. 6.1.12/1									
6	R.C.C. Cover slab(1:1.5:3)	1	1.50	1.50	0.15	0.338 M <sup>3</sup>	P/M <sup>3</sup>	Rs.5,139.70	Rs.1,734.65
S.O.R. No. 5.2.2 & 5.9.3									
	shuttering	2	1.50	1.50	0.15	3.15 M <sup>2</sup>	P/M <sup>2</sup>	Rs.291.00	Rs.916.65
7	C.P. (1:3) with 5% Cico & neat cement								
S.O.R. Internal face									
		2	1.00	1.00	1.00	4.00 M <sup>2</sup>			
No. 13.17.1									
	Bed surface	1	1.00	1.00		1.00 M <sup>2</sup>			
+13.36.1									
						5.00 M <sup>2</sup>	P/M <sup>2</sup>	Rs.166.30	Rs.831.50
8	C.P. (1:4) out side of wall	2	1.50	1.50	0.75	4.5 M <sup>2</sup>	P/M <sup>2</sup>	Rs.114.70	Rs.516.15
S.O.R. No. 13.11.2									
9	8mm dia T.S. Rod								
S.O.R. No. 5.22.7A									
			0.338 M <sup>3</sup> x	70 Kg/M3		23.625 Kg.	P/Kg	Rs.56.00	Rs.1,323.00
10	Lifting Ring of 10mm dia Rod					4 No.	Each	Rs.30.00	Rs.120.00
								Total	Rs.12,418.89
11	Carriage of materials 5%								Rs.620.94
									<u>Rs.13,039.83</u>

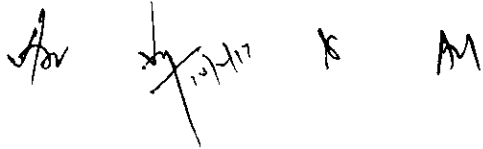
**Say Rs.13,040.00**


  
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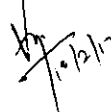

## Sub Est. No. 3

## WATER SUPPLY DISTRIBUTION SYSTEM

S.N.	Particulars	Quantity	Unit	Rate	Amount	
1A	Earthwork in excavation over areas (exceeding 30 cm in depth 1.5 in width as well as 10 sqm on plan) including disposal of excavated earth lead upto 50m and lift upto 1.5m, disposal earth to be levelled and neatly dressed.					
	75mm dia Pipe	150.00	0.30	1.10 =	49.50	
	63mm dia Pipe	150.00	0.30	1.10 =	49.50	
	50mm dia Pipe	300.00	0.30	1.10 =	99.00	
	40mm dia Pipe	400.00	0.30	1.10 =	132.00	
		330.00	M <sup>3</sup>			
	Add 5% extra for fittings =	16.50	M <sup>3</sup>			
		346.50	M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.79,868.25
1B	Provision for PCC road cutting and its restoration	11.25	M <sup>3</sup>	P/M <sup>3</sup>	Rs.3,901.40	Rs.43,890.75
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	339.57	M <sup>3</sup>	P/M <sup>3</sup>	Rs.74.50	Rs.25,297.97
3	Providing and laying High Density Polyethylene pipe (HDPE pipe) of 20 mm to 225 mm OD and pressure 6.0 Kg/cm <sup>2</sup> and 10 Kg/cm <sup>2</sup> suitable for water supply which is available in all standard, like ISI-4984/1995 and various grades like PE-80, PE-100 including required specials. Rates are inclusive of , all taxes and duties (Exise duty @12.50% &CST @2% against Form 'C'), labour cess, contractor profit and overhead charges all complete as per direction of Engineer-in-charge.					
3A	HDPE pipe of materials grade PE100- PN10 (dia in mm)					
	75mm dia Pipe from PVC Tank to Distribution main	10.00	M	P/M	Rs.239.81	Rs.2,398.10
	75mm dia Pipe	150.00	M	P/M	Rs.239.81	Rs.35,971.50
	63mm dia Pipe	150.00	M	P/M	Rs.168.77	Rs.25,315.50
3B	HDPE pipe of materials grade PE100- PN8 (dia in mm)					
	50mm dia Pipe	300.00	M	P/M	Rs.89.99	Rs.26,997.00
	40mm dia Pipe	400.00	M	P/M	Rs.59.78	Rs.23,912.00
	40mm dia Pipe from T/well to PVC Tank	12.00	M	P/M	Rs.59.78	Rs.717.36
4	Providing and fixing brass gate valve with C.I. wheel of approved quality (screwed end).					
	75mm dia Pipe	3 Nos.	Each	Rs.1,351.60	Rs.4,054.80	
	63mm dia Pipe	2 Nos.	Each	Rs.1,351.60	Rs.2,703.20	
	50mm dia Pipe	2 Nos.	Each	Rs.811.40	Rs.1,622.80	
	40mm dia Pipe	4 Nos.	Each	Rs.613.90	Rs.2,455.60	



S.N.	Particulars	Quantity	Unit	Rate	Amount
5 18.33	Constructing masonry Chamber 60x60x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size), necessary excavation, foundation concrete 1:5:10(1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard specifications & direction of E/I.	9 Nos.	Each	Rs. 5,807.50	Rs. 52,267.50
	Work for additional depth				
	Brick work (1:4) in foundation				
	2 1.10 0.25 0.35 0.193				
	2 0.60 0.25 0.35 0.105				
					0.298
	Plaster (1:3)	2.678	CuM CuM	Rs. 4,724.40	Rs. 12,649.58
	8 1.10 0.35 3.08	27.72	SqM SqM	Rs. 128.20	Rs. 3,553.70
6	Carriage 10% of item 5				Rs. 6,847.08
7 18.48	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, ISI : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	5000 Ltrs.	P/Ltr.	Rs. 6.60	Rs. 33,000.00
8	Providing and fixing PTMT extension nipple for water tank pipe, fittings of approved quality and colour.				
	40mm dia	2 Nos.	each	Rs. 250.00	Rs. 500.00
	75mm dia	1 No.	each	Rs. 400.00	Rs. 400.00
				<b>TOTAL</b>	<b>Rs. 3,84,422.69</b>

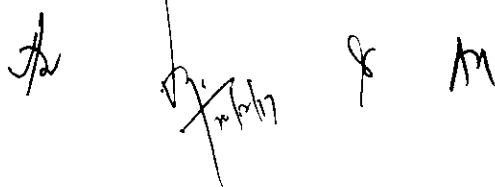





## Sub Est. No. 4

Model estimate for supply, installation & commissioning of single phase 2 H.P submersible motor pump set with all accessories including extension of L.T. line from nearest source up-to pumping

Sl. No.	Particulars	Quantity	Unit	Rate	Amount	
1	2	3	4	5	6	
[A]	<p>Supply Installation, commissioning and testing of single phase 2 H.P. submersible pump set having discharging capacity 2 lps at a total head of 35 meter(approx) of KSB/ Kirloskar or equivalent make with all accessories &amp; fittings etc including loading unloading and transportation of the pump set to the work site with all required labour, materials, tools and tackles installation, testing &amp; commissioning as per standards specifications and direction of E/I.</p> <p>(i) 40 mm dia x 3 mtrs long medium class G.I column pipe both end threaded and one end socketed- 6(six)nos</p> <p>(ii) 1x3x1.5 mm<sup>2</sup> flat copper conductor submersible cable -40 (forty) mtrs.</p> <p>(iii) 40 mm dia union socket- 1(one) no.</p> <p>(iv) 50 mm dia x 250 mm long G.I. nipple- 1 (one) no.</p> <p>(v) 40 mm dia G.I Elbow--1(One) no.</p> <p>(vi) 40 mm dia M.S. clamps--2(Two) Pairs.</p> <p>(vii) 40 mmx 250 mm long G.I nipple- 1(One) no.</p> <p>(viii) Tube well cap for 125 mm dia T/Well - 1(one) no.</p> <p>(ix) 40 mm dia x 50 mm dia reducer socket--1(one) no.</p>	1	(one) job	p/job	Rs.30,500.00	Rs.30,500.00

[B]	Supply Installation, commissioning and testing of floor mounted outdoor type L.T feeder pillar single phase starter controll panel operated on 220 V, 3 phase , 50 c/s for 2 HP Submersible pump set made of MS sheet (minimum 2 mm thick) duly spray power coated painting with following accessories made of M.S sheet ( minimum 2mm thick) duly spray powder coated painting with following accessories (i) 95-272 V range single phase 5 KVA automatic voltage stabilizer make-Sen & Pandit/ Vertex/ISI marked If any. 1 No. (ii) Suitable single phase starter control panel for above motor of BCH /L&Tmake - 1(one) no.	1 (one) job	p/job	Rs.28,500.00	Rs.28,500.00
[C]	Supplying & fitting 2.5 mm <sup>2</sup> copper service cable from power point from nearest source up-to pumping station..	20 mtrs	P/Mt	Rs.130.00	Rs.2,600.00
[D]	Providing all materials and labour required for doing earthing station with G.I earth pipe of 40 mm dia x 4.5 mtrs 20fts. long G.I pipe including accessories excavation of earth , providing masonry enclosure with cover plate having locking arrangement and watering pipe etc.with salt, charcoal,etc.as per IE & IS specification.	1 job	p/job	Rs.2,803.00	Rs.2,803.00
				<b>Total Rs.</b>	<b>Rs.64,403.00</b>



**Sub Est. No. 5**

<b>Estimate for the work - House service connection</b>									
<b>SUB-ESTIMATE</b>									
<b>S.No.</b>	<b>Description</b>	<b>Qty</b>	<b>Unit</b>	<b>Rate</b>	<b>Amount</b>				
1A	Providing and fixing MDPE (PE 80 GradeCompound) pipes PN-12.5 (12.5kg/Sqcm) as per ISO 4427 and specification for waterapplication rates are inclusive of , taxes and duties (Exise duty @12.50% &CST @2% against Form 'C'), labour cess, contractor profit and overhead charges all complete asper direction of Engineer-in-charge.complete.								
	MDPE Pipe 20mm dia nominal bore	6.00	PM	Rs.19.97	Rs.119.82				
1B	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall								
18.7.1	15 mm nomonal bore	1.0	PM	Rs.138.70	Rs.138.70				
2	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and amming of bottoms, lift upto 1.5 m . including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kinds of soil								
2.8.1		6.00	0.30	0.60	1.08	1.08	CuM	Rs.230.50	Rs.248.94
3 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not excceding 20 cm in depth: consolidating each deposited layer by ramming and watering lead					1.06	CuM	Rs.74.50	Rs.78.85
4	Providing and fixing brass ferrule with CI mouth cover incuding boring and tapping the main:								
18.20.1	15mm nominal bore	1	Each	Rs.254.10	Rs.254.10				
	Providing and fixing P.P. Black service Saddle (Brass threaded)	1	Each	Rs.400.00	Rs.400.00				
5	Providing and fixing brass bib cock of approved quality :								
18.15.1	15mm nominal bore	1	Each	Rs.273.00	Rs.273.00				
	Total				Rs.1,513.41				
	Say				Rs.1,513.00				

Total Nos. of House Holds=

100 Nos. @

Rs.1,513.00

Rs.1,51,300.00

sh

A-1-17

P

AM

Sub Est. No. 6

8 M HIGH STEEL STRUCTURE STAGING FOR 5000 LITER PVC TANK

S.N.	Particulars	Quantity	Unit	Rate	Amount
1 7.41	Providing and fixing structural steel frame (for dry cladding with 30 mm thick gang saw cut with machine cut edges sand stone) on walls at all heights using M.S. square / rectangular tube in the required pattern as per architectural drawing, including cost of cutting, bending, welding etc. The frame work shall be fixed to the wall with the help of MS brackets / lugs of angle iron / flats etc. which shall be welded to the frame and embedded in brick wall with cement concrete block 1:2:4 (1 cement : 2 coarse sand : 4 graded aggregate 20 mm nominal size) of size 300x230x300 mm, including cost of necessary centring and shuttering and with approved expansion hold fasteners on CC/RCC surface, including drilling necessary holes. Approved cramps / pins etc. shall be welded to the frame work to support stone cladding, the steel work will be given a priming coat of Zinc primer as approved by Engineer-in-Charge and painted two or more coats of epoxy paint (Shop drawings shall be submitted by the contractor to the Engineer-in-Charge for approval before execution). The frame work shall be fixed in true horizontal & vertical lines/planes. (Only structural steel frame work shall be measured for the purpose of payment, stainless steel cramps shall be paid for separately and nothing extra shall be paid.)				
	Providing MS Staging of 8M height with ladder as per drawing attached	4500 Kg	P/Kg	Rs.119.40	Rs.5,37,300.00
2 5.2.2	Reinforced cement concrete work in wall (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. upt floor five level excluding cost of centring, shuttering, finishing and reinforcement.				
	1:1.5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20mm nominal size)	6.1972 M <sup>3</sup>	P/M <sup>3</sup>	Rs.5,139.70	Rs.31,851.75
3- 5.22	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete.	495.776 Kg	Kg	Rs.56.00	Rs.27,763.46
4- 2.28	Supplying and filling in plinth with local sand and under floors including watering, ramming consolidating and dressing complete.	4.32 M <sup>3</sup>	P/M <sup>3</sup>	Rs.204.40	Rs.883.01
5- 11.72	Providing designation of 100A Brick flat Soling joints filled with local sand including cost of watering, taxes & royalty all complete as per specification & direction of E/I.	10.8 M <sup>2</sup>	P/M <sup>2</sup>	Rs.253.80	Rs.2,741.04
6 4.1.2	Providing and laying in position cement concrete of specified grade exluding the cost of centring and shuttering-all work upto plinth level.				
	1:1.5:3(1 Cement :1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)	1.62 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,373.20	Rs.7,084.58
7 2.8	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including ressing of sides and ramming of bottoms, lift upto 1.5 m including getting out the excavated soil and	18.66 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.4,301.13

S.N.	Particulars	Quantity	Unit	Rate	Amount
8 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead	9.33 M <sup>3</sup>	P/M <sup>3</sup>	Rs.74.50	Rs.695.09
9- 6.1.14	Brick work with bricks of class designation 100A in foundation and plinth in :				
A	Cement mortar 1:6 (1 Cement : 6 Sand)	1.2144 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,490.60	Rs.5,453.38
10 10.1	Providing and fixing anchor bolt of 28mm dia and 1 Mtr length embedded in R.C.C pedestal all complete as per direction of Engineer in charge. @4x4x5kg	80 Kg	P/kg	Rs.59.20	Rs.4,736.00
11 13.26	Neat cement punning	10.80 M <sup>2</sup>	P/M <sup>2</sup>	Rs.32.30	Rs.348.84
12	Carriage of the following materials from quarry to work site including loading, unloading and staking at work site as per specification & direction of E/I.				
	(a) Bricks ( 7 Km. Pucca & 1 Km. Kachha lead)	843 Nos.	%0 nos.	Rs.606.10	Rs.510.94
	(b) Coarse Sand (100 Km. lead)	3.810 M <sup>3</sup>	P/M <sup>3</sup>	Rs.1,221.09	Rs.4,652.35
	(c) Stone Chips (150 Km. lead)	6.780 M <sup>3</sup>	P/M <sup>3</sup>	Rs.1,746.29	Rs.11,839.85
	(d) Local Sand ( 2 Km. Pucca & 1 Km. Kachha lead)	4.480 M <sup>3</sup>	P/M <sup>3</sup>	Rs.217.23	Rs.973.19
				<b>TOTAL</b>	<b>Rs.6,41,134.61</b>
				<b>say</b>	<b>Rs.6,41,100.00</b>

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NAME OF WORK - CONSTRUCTION OF STEEL STAGING  
FOR HDPE WATER STORAGE TANK  
Measurement Sheet

S.No.	Particulars	No.	Length	Breath	Depth	Total	Total Qty
1 5.2.2	Reinforced cement concrete work in wall (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. upt floor five level excluding cost of centring, shuttering, finishin and reinforcement. 1:1.5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20mm nominal size)						
	base of footing	4	1.8	1.8	0.4	5.184	5.184
	Pedestal	4	0.4	0.04	1.6	0.1024	0.1024
	Plinth beam long side	2	3.6	0.23	0.3	0.4968	0.4968
	Plinth beam short side	2	3	0.23	0.3	0.414	0.414
							<b>6.1972</b>
	Providing & fixing in position steel bar reinforcement of various dia for RCC works taken 80kg/cum						<b>495.7760</b>
	<b>Item no. 2 :-</b>						
2- 2.28	Supplying and filling in plinth with local sand and under floors including watering, ramming consolidating and dressing complete. Long Wall						
		1	3.60	3.00	0.4	=	4.32
	<b>Item no. 3 :-</b>						
3- 11.72	Providing designation of 100A Brick flat Soling joints filled with local sand including cost of watering, taxes & royalty all complete as per specification & direction of E/I.						
		1	3.60	3.00		=	10.8
	<b>Item no. 4 :-</b>						
5- 6.1.1	Brick work with bricks of class designation 100A in foundation and plinth in :						
4 A	Cement mortar 1:6 (1 Cement : 6 Sand)						
		2	3.6	0.23	0.40	=	0.6624
		2	3	0.23	0.40	=	0.5520
							<b>1.2144</b>
6 2.8	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including ressing of sides and ramming of bottoms, lift upto 1.5 m . including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.						
		4	1.8	1.8	1.44	=	18.66
7 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of oundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead						
						=	9.33
8 4.1.2	Providing and laying in position cement concrete of specified grade exluding the cost of centring and shuttering-all work upto plinth level. 1:1.5:3(1 Cement :1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)						
		1	3.60	3.00	0.15	=	1.62
9 13.26	Neat cement punning						
		1	3.60	3.00		=	10.80



# GOVERNMENT OF BIHAR

PUBLIC HEALTH ENGINEERING DEPARTMENT

*MODEL ESTIMATE*

*FOR*

CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME

FOR A WARD HAVING 100 HOUSEHOLDS

ESTIMATED COST-- Rs. 13.791Lac

JANUARY, 2017

**GOVERNMENT OF BIHAR**  
**Public Health Engineering Department**

14

**ABSTRACT OF COST**

**NAME OF WORK:- CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME FOR WARD HAVING 100 HOUSE HOLDS**

S.N.	Description	Total Amount
1	Construction of 125mm X75mmx 90m deep T/W etc. all complete and as per direction of E/I. (As per sub Estimate no.- 1)	Rs.1,11,137.68
2	Constructing masonry Chamber 100x100x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for Tube Well, and RCC top slab 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size ) , necessary excavation, foundation concrete 1:2:4(1 cement : 2 fine sand : 4 graded stone aggregate 20 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3coarse sand) 12 mm thick with 5% cico fnished with a floating coat of neat cement, out side plastering with cement mortar 1:4 (1 cement : 4coarse sand) 12 mm thick complete as per standard specifications & direction of E/I. (As per sub Estimate no.- 2)	Rs.13,040.00
3	Providing and Laying Distribution network of High Density Polyethylene pipe (HDPE pipe) including 5000 liter PVC tank installed at 8M high MS staging etc all complete as per direction of E/I. (As per sub Estimate no.- 3)	Rs.3,84,422.69
4	Supply Installation, commissioning and testing of single phase 2 H.P. submersible pump set having discharging capacity 2 lps at a total head of 35 meter(approx) of KSB/ Kirloskar or equivalent make with all accessories & fittings etc including loading unloading and transportation of the pump set to the work site with all required labour, materials, tools and tackles installation, testing & commissioning as per standards specifications and direction of E/I. (As per sub Estimate no.- 4)	Rs.64,403.00
5	Providing house connection for each house hold including supplying all materials, labours, tools and making ferrule connection with 20 mm dia MDPE and 15mm CPVC Pipes with all fittings etc all complete. (As per sub Estimate no.- 5)	Rs.1,51,300.00
6	Providing and erecting 8M high staging with GI enclosure to house electric switch panel of suitably designed MS section of angle, channel, hollow section etc. as per drawing attached. (As per sub Estimate no.- 5)	Rs.6,41,100.00
<b>TOTAL</b>		Rs.13,65,403.37
Add 1% Contingency		Rs.13,654.03
<b>G. TOTAL</b>		Rs.13,79,057.41
<b>Say</b>		<b>Rs.13,79,100.00</b>

(Rs. Thirteen Lac Seventy nine Thousand One Hundred ) only

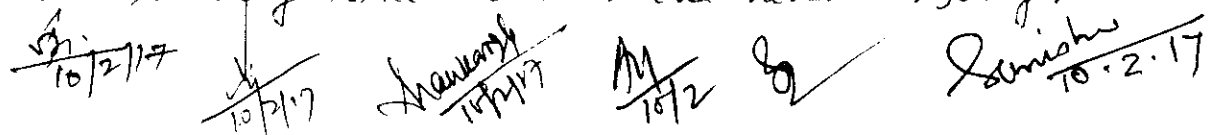
**note:**

- i) Road cutting cost may increase or decrease as per actuals.
- ii) Strongly advised that pipeline should be laid before construction of Naali-Gali.
- iii) This is a model estimate. Hence the quantity may increase or decrease based on actual site conditions.

**Variable inter alia includes**

- i) Hydro geomorphological condition.
- ii) Location of source vis-à-vis population/ house holds.
- iii) Quality of works and materials shall be maintained as per standard specifications and direction of E/I.

*Technically approved for Rs. 13,79,100.00 (Thirteen -  
Lakh seventy nine thousand one hundred) only.*



## CONSTRUCTION OF 125MM X 75MM DIA &amp; 90M DEEP TUBE WELL

S.No.	Description	Qty.	Unit	Rate	Amount
1	Boring/drilling bore well of required dia for casing/strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer -in-charge, upto 90 metre depth below ground level. (All types of soil)				
24.1.1.1	(a) 300mm dia bore from G.L. to 90.0M	90.0 M	P/M	Rs.378.00	Rs.34,020.00
2	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC (UPVC) medium well casing (CM) pipe of required dia, conforming to IS: 12818. including required hire and labour charges. fittings				
	(b) 125 mm nominal size dia	30.0 M	P/M	Rs.462.50	Rs.13,875.00
24.3.5	(b) 75 mm nominal size dia	34.0 M	P/M	Rs.328.50	Rs.11,169.00
24.4.5	(c) 75 mm dia U.P.V.C. strainer	21.0 M	P/M	Rs.420.30	Rs.8,826.30
3	Providing all materials, tools & labours and fixing the following fittings etc. all complete as per specification & direction of E/I.				
	(a) 125 mm dia P.V.C. well cap	1 No.	Each	Rs.166.60	Rs.166.60
	(b) 125 mm dia center guide	4 Nos.	Each	Rs.100.00	Rs.400.00
	(c) 75 mm dia center guide	6 Nos.	Each	Rs.75.00	Rs.450.00
	(d) 75 mm dia P.V.C. pipe shoe plug	1 No.	Each	Rs.185.00	Rs.185.00
	(e)125mm x 75 mm dia P.V.C. Reducer	1 No.	Each	Rs.475.00	Rs.475.00
	(d)125mm dia M.S.Clamp	1 No.	Each	Rs.974.60	Rs.974.60
4a	Providing all materials, labours, & equipments for fixing				
24.6	tubewell with peagravel of Dalbhumigarh to size 4mm to 8mm approx. as suitable for strata including carriage washing, placing and packing the same in position around the tubewell etc. all complete as per direction of E/I.	6.5 M <sup>3</sup>	P/M <sup>3</sup>	Rs.917.00	Rs.5,960.50
4b	Carriage of Pea Gravel from Dhalbhumigarh (taken av distance 400km.)	6.5 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,336.54	Rs.28,187.48
5	Development of tube well in accordance with IS : 2800				
24.12	(part I) and IS: 11189, to establish maximum rate of usable water yield without sand content (beyond permissible limit), with required capacity air compressor, running the compressor for required time till well is fully developed, measuring yield of well by "V" notch method or any other approved method, measuring static level & draw down etc. by step draw down method, collecting water sampl & getting tested in approved laboratory, disinfection of tubewell, all complete,including hire & labour charges of air compressor, tools & accessories etc., all as per requirement and direction of Engineer-in-charge.	3 Hrs.	Each	Rs.649.40	Rs.1,948.20
6	Supplying all materials and labours for arrangement for additional water required during the drilling period for 40 Hrs & site clearance & leveling etc. And providing the soap duster etc. to staff engaged in drilling etc. all complete work as per specification & direction of E.I..	1 No.	Each	Rs.4,500.00	Rs.4,500.00
<b>TOTAL</b>					<b>Rs.1,11,137.68</b>

(Sub Estimate - 2)

**Analysis of Chamber for TW**

Supplying materials, labours and constructing chamber of following dimension having 250mm thick wall in C.M. (1:4) including 12mm C.P. (1:3) with punning inside, R.C.C. cover slab with C.I. Surface box, 20mm dia foot rest at 150mm interval 10mm dia lifting ring etc. all complete.

SIZE                      1.00 M                      x                      1.00 M                      x                      0.75 M deep

S.O.R. No.	Particulars	No.	L	W	H	Qty.	Unit	Rate	Amount
1	Earth work in excavation	1	1.75	1.75	1.0	3.063 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.705.91
S.O.R. No. 2.8									
2	Sand filling	1	1.75	1.75	0.075	0.230 M <sup>3</sup>	P/M <sup>3</sup>	Rs.204.40	Rs.46.95
S.O.R. No. 2.28									
3	Brick flat soling	1	1.75	1.75		3.063 M <sup>2</sup>	P/M <sup>2</sup>	Rs.253.80	Rs.777.26
S.O.R. 11.72									
4	P.C.C. (1:2:4) in foundation	1	1.75	1.75	0.10	0.306 M <sup>3</sup>			
S.O.O. 4.1.3									
						0.306 M <sup>3</sup>	P/M <sup>3</sup>	Rs.3,323.10	Rs.1,017.70
5	B/Work in (1:4) C.M.	2	2.50	0.25	0.75	0.938 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,724.40	Rs.4,429.13
S.O.R. No. 6.1.12/1									
6	R.C.C. Cover slab(1:1.5:3)	1	1.50	1.50	0.15	0.338 M <sup>3</sup>	P/M <sup>3</sup>	Rs.5,139.70	Rs.1,734.65
S.O.R. No. 5.2.2 & 5.9.3									
	shuttering	2	1.50	1.50	0.15	3.15 M <sup>2</sup>	P/M <sup>2</sup>	Rs.291.00	Rs.916.65
7	C.P. (1:3) with 5% Cico & neat cement								
S.O.R. No. 13.17.1	Internal face	2	1.00	1.00	1.00	4.00 M <sup>2</sup>			
	Bed surface	1	1.00	1.00		1.00 M <sup>2</sup>			
+13.36.1						5.00 M <sup>2</sup>	P/M <sup>2</sup>	Rs.166.30	Rs.831.50
8	C.P. (1:4) out side of wall	2	1.50	1.50	0.75	4.5 M <sup>2</sup>	P/M <sup>2</sup>	Rs.114.70	Rs.516.15
S.O.R. No. 13.11.2									
9	8mm dia T.S. Rod								
S.O.R. No. 5.22.7A									
			0.338 M <sup>3</sup> x	70 Kg/ M3	23.625 Kg.		P/Kg	Rs.56.00	Rs.1,323.00
10	Lifting Ring of 10mm dia Rod					4 No.	Each	Rs.30.00	Rs.120.00
11	Carriage of materials 5%								
									Total Rs.12,418.89
									Rs.620.94
									<u>Rs.13,039.83</u>

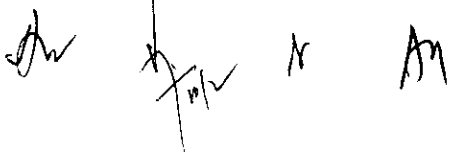
Say Rs.13,040.00

## Sub Est. No. 3

## WATER SUPPLY DISTRIBUTION SYSTEM

S.N.	Particulars	Quantity	Unit	Rate	Amount
1A	Earthwork in excavation over areas (exceeding 30 cm in depth 1.5 in width as well as 10 sqm on plan) including disposal of excavated earth lead upto 50m and lift upto 1.5m, disposal earth to be levelled and neatly dressed.				
	75mm dia Pipe	150.00	0.30	1.10 =	49.50
	63mm dia Pipe	150.00	0.30	1.10 =	49.50
	50mm dia Pipe	300.00	0.30	1.10 =	99.00
	40mm dia Pipe	400.00	0.30	1.10 =	132.00
					330.00 M <sup>3</sup>
	Add 5% extra for fittings =				16.50 M <sup>3</sup>
					346.50 M <sup>3</sup> P/M <sup>3</sup>
				Rs.230.50	Rs.79,868.25
1B	Provision for PCC road cutting and its restoration	11.25	M <sup>3</sup>	P/M <sup>3</sup>	Rs.3,901.40
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	339.57	M <sup>3</sup>	P/M <sup>3</sup>	Rs.74.50
					Rs.25,297.97
3	Providing and laying High Density Polyethylene pipe (HDPE pipe) of 20 mm to 225 mm OD and pressure 6.0 Kg/cm <sup>2</sup> and 10 Kg/cm <sup>2</sup> suitable for water supply which is available in all standard, like ISI-4984/1995 and various grades like PE-80, PE-100 including required specials. Rates are inclusive of , all taxes and duties (Exise duty @12.50% & CST @2% against Form 'C'), labour cess, contractor profit and overhead charges all complete as per direction of Engineer-in-charge.				
3A	HDPE pipe of materials grade PE100- PN10 (dia in mm)				
	75mm dia Pipe from PVC Tank to Distribution main	10.00	M	P/M	Rs.239.81
					Rs.2,398.10
	75mm dia Pipe	150.00	M	P/M	Rs.239.81
					Rs.35,971.50
	63mm dia Pipe	150.00	M	P/M	Rs.168.77
					Rs.25,315.50
3B	HDPE pipe of materials grade PE100- PN8 (dia in mm)				
	50mm dia Pipe	300.00	M	P/M	Rs.89.99
					Rs.26,997.00
	40mm dia Pipe	400.00	M	P/M	Rs.59.78
					Rs.23,912.00
	40mm dia Pipe from T/well to PVC Tank	12.00	M	P/M	Rs.59.78
					Rs.717.36
4	Providing and fixing brass gate valve with C.I. wheel of approved quality (screwed end).				
	75mm dia Pipe	3 Nos	Each	Rs.1,351.60	Rs.4,054.80
	63mm dia Pipe	2 Nos	Each	Rs.1,351.60	Rs.2,703.20
	50mm dia Pipe	2 Nos	Each	Rs.811.40	Rs.1,622.80
	40mm dia Pipe	4 Nos	Each	Rs.613.90	Rs.2,455.60

S.N.	Particulars	Quantity	Unit	Rate	Amount
5 18.33	Constructing masonry Chamber 60x60x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size), necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard specifications & direction of E/I. Work for additional depth	9 Nos	Each	Rs. 5,807.50	Rs. 52,267.50
	Brick work (1:4) in foundation				
	2 1.10 0.25 0.35 0.193				
	2 0.60 0.25 0.35 0.105				
		2.678	CuM CuM	Rs. 4,724.40	Rs. 12,649.58
	Plaster (1:3)				
	8 1.10 0.35 3.08	27.72	SqM SqM	Rs. 128.20	Rs. 3,553.70
6	Carriage 10% of item 5				Rs. 6,847.08
7 18.48	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, ISI : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	5000	LtrsP/Ltr.	Rs. 6.60	Rs. 33,000.00
8	Providing and fixing PTMT extension nipple for water tank pipe, fittings of approved quality and colour.				
	40mm dia	2	Nos each	Rs. 250.00	Rs. 500.00
	75mm dia	1	No. each	Rs. 400.00	Rs. 400.00
	<b>TOTAL</b>				<b>Rs. 3,84,422.69</b>



## Sub Est. No. 4

Model estimate for supply, installation & commissioning of single phase 2 H.P submersible motor pump set with all accessories including extension of L.T. line from nearest source up-to

Sl. No.	Particulars	Quantity	Unit	Rate	Amount	
1	2	3	4	5	6	
[A]	<p>Supply Installation, commissioning and testing of single phase 2 H.P. submersible pump set having discharging capacity 2 lps at a total head of 35 meter(approx) of KSB/ Kirloskar or equivalent make with all accessories &amp; fittings etc including loading unloading and transportation of the pump set to the work site with all required labour, materials, tools and tackles installation, testing &amp; commissioning as per standards specifications and direction of E/l.</p> <p>(i) 40 mm dia x 3 mtrs long medium class G.I column pipe both end threaded and one end socketed- 6(six)nos</p> <p>(ii) 1x3x1.5 mm<sup>2</sup> flat copper conductor submersible cable -40 (forty) mtrs.</p> <p>(iii) 40 mm dia union socket- 1(one) no.</p> <p>(iv) 50 mm dia x 250 mm long G.I. nipple- 1 (one) no.</p> <p>(v) 40 mm dia G.I Elbow—1(One) no.</p> <p>(vi) 40 mm dia M.S. clamps—2(Two) Pairs.</p> <p>(vii) 40 mmx 250 mm long G.I nipple- 1(One) no.</p> <p>(viii) Tube well cap for 125 mm dia T/Well – 1(one) no.</p> <p>(ix) 40 mm dia x 50 mm dia reducer socket –1(one) no.</p>	1	(one) job	p/job	Rs.30,500.00	Rs.30,500.00

*[Handwritten signatures and initials]*

[B]	Supply Installation, commissioning and testing of floor mounted outdoor type L.T feeder pillar single phase starter controll pannel operated on 220 V, 3 phase , 50 c/s for 2 HP Submersible pump set made of MS sheet (minimum 2 mm thick) duly spray power coated painting with following accessories made of M.S sheet ( minimum 2mm thick) duly spray powder coated painting with following accessories (i) 95-272 V range single phase 5 KVA automatic voltage stabilizer make-Sen & Pandit/ Vertex/ISI marked If any. 1 No. (ii) Suitable single phase starter control panel for above motor of BCH /L&Tmake - 1(one) no.	1 (one) job	p/job	Rs.28,500.00	Rs.28,500.00
[C]	Supplying & fitting 2.5 mm <sup>2</sup> copper service cable from power point from nearest source up-to pumping station..	20 mtrs	P/Mt	Rs.130.00	Rs.2,600.00
[D]	Providing all materials and labour required for doing earthing station with G.I earth pipe of 40 mm dia x 4.5 mtrs 20fts. long G.I pipe including accessories excavation of earth , providing masonry enclosure with cover plate having locking arrangement and watering pipe etc.with salt, charcoal,etc.as per IE & IS specification.	1 job	p/job	Rs.2,803.00	Rs.2,803.00
<b>Total Rs.</b>					<b>Rs.64,403.00</b>

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**Sub Est. No. 5**

<b>Estimate for the work - House service connection</b>					
<b>SUB-ESTIMATE</b>					
<b>S.No.</b>	<b>Description</b>	<b>Qty</b>	<b>Unit</b>	<b>Rate</b>	<b>Amount</b>
1A	Providing and fixing MDPE (PE 80 GradeCompound) pipes PN-12.5 (12.5kg/Sqcm) as per ISO 4427 and specification for waterapplication rates are inclusive of , taxes and duties (Exise duty @12.50% &CST @2% against Form 'C'), labour cess, contractor profit and overhead charges all complete asper direction of Engineer-in-charge.complete.				
	MDPE Pipe 20mm dia nominal bore	6.00	PM	Rs.19.97	Rs.119.82
1B	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall				
18.7.1	15 mm nomonal bore	1.0	PM	Rs.138.70	Rs.138.70
2	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and amming of bottoms, lift upto 1.5 m . including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kinds of soil				
2.8.1	6.00 0.30 0.60 1.08	1.08	CuM	Rs.230.50	Rs.248.94
3 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead	1.06	CuM	Rs.74.50	Rs.78.85
4	Providing and fixing brass ferrule with CI mouth cover incuding boring and tapping the main:				
18.20.1	15mm nominal bore	1	Each	Rs.254.10	Rs.254.10
	Providing and fixing P.P. Black service Saddle (Brass threaded)	1	Each	Rs.400.00	Rs.400.00
5	Providing and fixing brass bib cock of approved quality :				
18.15.1	15mm nominal bore	1	Each	Rs.273.00	Rs.273.00
	Total				Rs.1,513.41
	Say				Rs.1,513.00

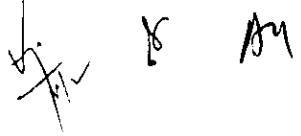
Total Nos. of House Holds=

100 Nos. @

Rs.1,513.00

Rs.1,51,300.00

✓



**Sub Est. No. 6**

**8 M HIGH STEEL STRUCTURE STAGING FOR 5000 LITER PVC TANK**

S.N.	Particulars	Quantity	Unit	Rate	Amount
1 7.41	Providing and fixing structural steel frame (for dry cladding with 30 mm thick gang saw cut with machine cut edges sand stone) on walls at all heights using M.S. square / rectangular tube in the required pattern as per architectural drawing, including cost of cutting, bending, welding etc. The frame work shall be fixed to the wall with the help of MS brackets / lugs of angle iron / flats etc. which shall be welded to the frame and embedded in brick wall with cement concrete block 1:2:4 (1 cement : 2 coarse sand : 4 graded aggregate 20 mm nominal size) of size 300x230x300 mm, including cost of necessary centring and shuttering and with approved expansion hold fasteners on CC/RCC surface, including drilling necessary holes. Approved cramps / pins etc. shall be welded to the frame work to support stone cladding, the steel work will be given a priming coat of Zinc primer as approved by Engineer-in-Charge and painted two or more coats of epoxy paint (Shop drawings shall be submitted by the contractor to the Engineer-in-Charge for approval before execution). The frame work shall be fixed in true horizontal & vertical lines/planes. (Only structural steel frame work shall be measured for the purpose of payment, stainless steel cramps shall be paid for separately and nothing extra shall be paid.)				
	Providing MS Staging of 8M height with ladder as per drawing attached	4500 Kg	P/Kg	Rs.119.40	Rs.5,37,300.00
2 5.2.2	Reinforced cement concrete work in wall (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. upt floor				
	five level excluding cost of centring, shuttering, finish and reinforcement.				
	1:1.5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20mm nominal size)	6.1972 M <sup>3</sup>	P/M <sup>3</sup>	Rs.5,139.70	Rs.31,851.75
3- 5.22	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete.	495.776 Kg	Kg	Rs.56.00	Rs.27,763.46
4- 2.28	Supplying and filling in plinth with local sand and under floors including watering, ramming consolidating and dressing complete.	4.32 M <sup>3</sup>	P/M <sup>3</sup>	Rs.204.40	Rs.883.01
5- 11.72	Providing designation of 100A Brick flat Soling joints filled with local sand including cost of watering, taxes & royalty all complete as per specification & direction of E/I.	10.8 M <sup>2</sup>	P/M <sup>2</sup>	Rs.253.80	Rs.2,741.04
6 4.1.2	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering-all work upto plinth level.				
	1:1.5:3(1 Cement :1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)	1.62 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,373.20	Rs.7,084.58
7 2.8	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including ressing of sides and ramming of bottoms, lift upto 1.5 m . including getting out the excavated soil and	18.66 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.4,301.13

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S.N.	Particulars	Quantity	Unit	Rate	Amount
8 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead	9.33 M <sup>3</sup>	P/M <sup>3</sup>	Rs.74.50	Rs.695.09
9- 6.1.14	Brick work with bricks of class designation 100A in foundation and plinth in :				
A	Cement mortar 1:6 (1 Cement : 6 Sand)	1.2144 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,490.60	Rs.5,453.38
10 10.1	Providing and fixing anchor bolt of 28mm dia and 1 Mtr length embedded in R.C.C pedestal all complete as per direction of Engineer in charge. @4x4x5kg	80 Kg	P/kg	Rs.59.20	Rs.4,736.00
11 13.26	Neat cement punning	10.80 M <sup>2</sup>	P/M <sup>2</sup>	Rs.32.30	Rs.348.84
12	Carriage of the following materials from quarry to work site including loading, unloading and staking at work site as per specification & direction of E/I.				
	(a) Bricks ( 7 Km. Pucca & 1 Km. Kachha lead)	843 Nos.	%0 nos.	Rs.606.10	Rs.510.94
	(b) Coarse Sand (100 Km. lead)	3.810 M <sup>3</sup>	P/M <sup>3</sup>	Rs.1,221.09	Rs.4,652.35
	(c) Stone Chips (150 Km. lead)	6.780 M <sup>3</sup>	P/M <sup>3</sup>	Rs.1,746.29	Rs.11,839.85
	(d) Local Sand ( 2 Km. Pucca & 1 Km. Kachha lead)	4.480 M <sup>3</sup>	P/M <sup>3</sup>	Rs.217.23	Rs.973.19
				<b>TOTAL</b>	<b>Rs.6,41,134.61</b>
				<b>say</b>	<b>Rs.6,41,100.00</b>

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**NAME OF WORK - CONSTRUCTION OF STEEL STAGING  
FOR HDPE WATER STORAGE TANK  
Measurement Sheet**

S.No.	Particulars	No.	Length	Breath	Depth	Total	Total Qty
1 5.2.2	Reinforced cement concrete work in wall (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. up to floor five level excluding cost of centring, shuttering, finishing and reinforcement. 1:1.5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20mm nominal size)						
	base of footing	4	1.8	1.8	0.4	5.184	5.184
	Pedestal	4	0.4	0.04	1.6	0.1024	0.1024
	Plinth beam long side	2	3.6	0.23	0.3	0.4968	0.4968
	Plinth beam short side	2	3	0.23	0.3	0.414	0.414
							<b>6.1972</b>
	Providing & fixing in position steel bar reinforcement of various dia for RCC works taken 80kg/cum						<b>495.7760</b>
	<b>Item no. 2 :-</b>						
2- 2.28	Supplying and filling in plinth with local sand and under floors including watering, ramming consolidating and dressing complete.						
	Long Wall	1	3.60	3.00	0.4	=	4.32
	<b>Item no. 3 :-</b>						
3- 11.72	Providing designation of 100A Brick flat Soling joints filled with local sand including cost of watering, taxes & royalty all complete as per specification & direction of E/I.						
		1	3.60	3.00		=	10.8
	<b>Item no. 4 :-</b>						
5- 6.1.1	Brick work with bricks of class designation 100A in foundation and plinth in :						
4 A	Cement mortar 1:6 (1 Cement : 6 Sand)	2	3.6	0.23	0.40	=	0.6624
		2	3	0.23	0.40	=	0.5520
							<b>1.2144</b>
6 2.8	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift upto 1.5 m including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.						
		4	1.8	1.8	1.44	=	18.66
7 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead						
						=	9.33
8 4.1.2	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering-all work upto plinth level. 1:1.5:3(1 Cement :1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)						
		1	3.60	3.00	0.15	=	1.62
9 13.26	Neat cement punning	1	3.60	3.00		=	10.80

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# GOVERNMENT OF BIHAR

PUBLIC HEALTH ENGINEERING DEPARTMENT

*MODEL ESTIMATE*

*FOR*

CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME

FOR A WARD HAVING 100 HOUSE HOLD S

ESTIMATED COST-- Rs. 14.204 Lac

JANUARY, 2017

**GOVERNMENT OF BIHAR**  
**Public Health Engineering Department**  
**ABSTRACT OF COST**

26

**NAME OF WORK:- CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME FOR WARD HAVING 100 HOUSE HOLDS**

S.N.	Description	Total Amount
1	Construction of 125mm X75mmx 90m deep T/W for rocky strata etc. all complete and as per direction of E/I. (As per sub Estimate no.- 1)	Rs.1,52,096.68
2	Constructing masonry Chamber 100x100x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for Tube Well, and RCC top slab 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size ) , necessary excavation, foundation concrete 1:2:4(1 cement : 2 fine sand : 4 graded stone aggregate 20 mm nominal size) and inside plastering with cement mortar 1.3 (1 cement : 3coarse sand) 12 mm thick with 5% cico fnished with a floating coat of neat cement, out side plastering with cement mortar 1:4 (1 cement : 4coarse sand) 12 mm thick complete as per standard specifications & direction of E/I. (As per sub Estimate no.- 2)	Rs.13,040.00
3	Providing and Laying Distribution network of High Density Polyethylene pipe (HDPE pipe) including 5000 liter PVC tank installed at 8M high MS staging etc all complete as per direction of E/I. (As per sub Estimate no.- 3)	Rs.3,84,422.69
4	Supply Installation, commissioning and testing of single phase 2 H.P. submersible pump set having discharging capacity 2 lps at a total head of 35 meter(approx) of KSB/ Kirloskar or equivalent make with all accessories & fittings etc including loading unloading and transportation of the pump set to the work site with all required labour, materials, tools and tackles installation, testing & commissioning as per standards specifications and direction of E/I. (As per sub Estimate no.- 4)	Rs.64,403.00
5	Providing house connection for each house hold including supplying all materials, labours, tools and making ferrule connection with 20 mm dia MDPE and 15mm CPVC Pipes with all fittings etc all complete. (As per sub Estimate no.- 5)	Rs.1,51,300.00
6	Providing and erecting 8M high staging with GI enclosure to house electric switch panel of suitably designed MS section of angle, channel, hollow section etc. as per drawing attached. (As per sub Estimate no.-6)	Rs.6,41,100.00
<b>TOTAL</b>		Rs.14,06,362.37
Add 1% Contingency		Rs.14,063.62
<b>G. TOTAL</b>		Rs.14,20,426.00
<b>Say</b>		<b>Rs.14,20,400.00</b>

(Rs. Fourteen Lac Twenty Thousand Four Hundred) only

**note:**

- i) Road cutting cost may increase or decrease as per actuals.
  - ii) Strongly advised that pipeline should be laid before construction of Naali-Gali.
  - iii) This is a model estimate. Hence the quantity may increase or decrease based on actual site
- Variable inter alia includes**
- i) Hydro geomorphological condition.
  - ii) Location of source vis-à-vis population/ house holds.
  - iii) Quality of works and materials shall be maintained as per standard specifications and direction of E/I.

14,20,400.00

Technically approved for Rs. fourteen lakh twenty thousand four hundred only.

Dr. 10/2/17

10/2/17

11/2/17

AM

10/2

10.2.17

**CONSTRUCTION OF 125MM X 75MM DIA & 90M DEEP TUBE WELL  
(For Rocky strata including Boulders)**

S.No.	Description	Qty.	Unit	Rate	Amount
1	Boring/drilling bore well of required dia for casing/strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer -in-charge, upto 90 metre depth below ground level. <b>(Rocky strata including Boulders)</b>				
24.1.1.1	(a) 300mm dia bore from G.L. to 90.0M	90.0 M	P/M	Rs.833.10	Rs.74,979.00
2	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC (UPVC) medium well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer -in-charge.				
	(b) 125 mm nominal size dia	30.0 M	P/M	Rs.462.50	Rs.13,875.00
24.3.5	(b) 75 mm nominal size dia	34.0 M	P/M	Rs.328.50	Rs.11,169.00
24.4.5	(c) 75 mm dia U.P.V.C. strainer	21.0 M	P/M	Rs.420.30	Rs.8,826.30
3	Providing all materials, tools & labours and fixing the following fittings etc. all complete as per specification & direction of E/I.				
	(a) 125 mm dia P.V.C. well cap	1 No.	Each	Rs.166.60	Rs.166.60
	(b) 125 mm dia center guide	4 Nos.	Each	Rs.100.00	Rs.400.00
	(c) 75 mm dia center guide	6 Nos.	Each	Rs.75.00	Rs.450.00
	(d) 75 mm dia P.V.C. pipe shoe plug	1 No.	Each	Rs.185.00	Rs.185.00
	(e)125mm x 75 mm dia P.V.C. Reducer	1 No.	Each	Rs.475.00	Rs.475.00
	(d)125 mm dia M.S.Clamp	1 No.	Each	Rs.974.60	Rs.974.60
4a 24.6	Providing all materials, labours, & equipments for fixing tubewell with peagravel of Dalbhumigarh to size 4mm to 8mm approx. as suitable for strata including carriage washing, placing and packing the same in position around the tubewell etc. all complete as per direction of E/I.	6.5 M <sup>3</sup>	P/M <sup>3</sup>	Rs.917.00	Rs.5,960.50
4b	Carriage of Pea Gravel from Dhalbhumigarh (taken av distance 400km.)	6.5 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,336.54	Rs.28,187.48
5 24.12	Development of tube well in accordance with IS : 2800 (part I) and IS: 11189, to establish maximum rate of usable water yield without sand content (beyond permissible limit), with required capacity air compressor, running the compressor for required time till well is fully developed, measuring yield of well by "V" notch method or any other approved method, measuring static level & draw down etc. by step draw down method, collecting water sampl & getting tested in approved laboratory, disinfection of tubewell, all complete,including hire & labour charges of air compressor, tools & accessories etc., all as per requirement and direction of Engineer-in-charge.	3 Hrs.	Each	Rs.649.40	Rs.1,948.20
6	Supplying all materials and labours for arrangement for additional water required during the drilling period for 40 Hrs & site clearance & leveling etc. And providing the soap cluster etc. to staff engaged in drilling etc. all complete work as per specification & direction of E.I..	1 No.	Each	Rs.4,500.00	Rs.4,500.00
		<b>TOTAL</b>			<b>Rs.1,52,096.68</b>

(Sub Estimate - 2)

**Analysis of Chamber for TW**

Supplying materials, labours and constructing chamber of following dimension having 250mm thick wall in C.M. (1:4) including 12mm C.P. (1:3) with punning inside, R.C.C. cover slab with C.I. Surface box, 20mm dia foot rest at 150mm interval 10mm dia lifting ring etc. all complete.

SIZE      1.00 M      x      1.00 M      x      0.75 M deep

S.O.R. No.	Particulars	No.	L	W	H	Qty.	Unit	Rate	Amount	
1	Earth work in excavation	1	1.75	1.75	1.0	3.063 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.705.91	
S.O.R. No. 2.8										
2	Sand filling	1	1.75	1.75	0.075	0.230 M <sup>3</sup>	P/M <sup>3</sup>	Rs.204.40	Rs.46.95	
S.O.R. No. 2.28										
3	Brick flat soling	1	1.75	1.75		3.063 M <sup>2</sup>	P/M <sup>2</sup>	Rs.253.80	Rs.777.26	
S.O.R. 11.72										
4	P.C.C. (1:2:4) in foundation	1	1.75	1.75	0.10	0.306 M <sup>3</sup>				
S.O.O. 4.1.3										
						0.306 M <sup>3</sup>	P/M <sup>3</sup>	Rs.3,323.10	Rs.1,017.70	
5	BWork in (1:4) C.M.	2	2.50	0.25	0.75	0.938 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,724.40	Rs.4,429.13	
S.O.R. No. 6.1.12/1										
6	R.C.C. Cover slab(1:1.5:3)	1	1.50	1.50	0.15	0.338 M <sup>3</sup>	P/M <sup>3</sup>	Rs.5,139.70	Rs.1,734.65	
S.O.R. No. 5.2.2 & 5.9.3										
	shuttering	2	1.50	1.50	0.15	3.15 M <sup>2</sup>	P/M <sup>2</sup>	Rs.291.00	Rs.916.65	
7	C.P. (1:3) with 5% Cico & neat cement									
S.O.R. No.	Internal face	2	1.00	1.00	1.00	4.00 M <sup>2</sup>				
13.17.1	Bed surface	1	1.00	1.00		1.00 M <sup>2</sup>				
+13.36.1						5.00 M <sup>2</sup>	P/M <sup>2</sup>	Rs.166.30	Rs.831.50	
8	C.P. (1:4) out side of wall	2	1.50	1.50	0.75	4.5 M <sup>2</sup>	P/M <sup>2</sup>	Rs.114.70	Rs.516.15	
S.O.R. No. 13.11.2										
9	8mm dia T.S. Rod									
S.O.R. No. 5.22.7A										
						0.338 M <sup>3</sup> x 70 Kg/M <sup>3</sup>	23.625 Kg.	P/Kg	Rs.56.00	Rs.1,323.00
10	Lifting Ring of 10mm dia Rod						4 No.	Each	Rs.30.00	Rs.120.00
11	Carriage of materials 5%									
								Total	Rs.12,418.89	Rs.620.94
									<u>Rs.13,039.83</u>	

Say Rs.13,040.00

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## Sub Est. No. 3

## WATER SUPPLY DISTRIBUTION SYSTEM

S.N.	Particulars	Quantity	Unit	Rate	Amount
1A	Earthwork in excavation over areas (exceeding 30 cm in depth 1.5 in width as well as 10 sqm on plan) including disposal of excavated earth lead upto 50m and lift upto 1.5m, disposal earth to be levelled and neatly dressed.				
	75mm dia Pipe	150.00	0.30	1.10 =	49.50
	63mm dia Pipe	150.00	0.30	1.10 =	49.50
	50mm dia Pipe	300.00	0.30	1.10 =	99.00
	40mm dia Pipe	400.00	0.30	1.10 =	132.00
				330.00 M <sup>3</sup>	
	Add 5% extra for fittings =			16.50 M <sup>3</sup>	
				346.50 M <sup>3</sup>	
				11.25 M <sup>3</sup>	
			P/M <sup>3</sup>	Rs.230.50	Rs.79,868.25
			P/M <sup>3</sup>	Rs.3,901.40	Rs.43,890.75
1B	Provision for PCC road cutting and its restoration				
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	339.57 M <sup>3</sup>	P/M <sup>3</sup>	Rs.74.50	Rs.25,297.97
3	Providing and laying High Density Polyethylene pipe (HDPE pipe) of 20 mm to 225 mm OD and pressure 6.0 Kg/cm <sup>2</sup> and 10 Kg/cm <sup>2</sup> suitable for water supply which is available in all standard, like ISI-4984/1995 and various grades like PE-80, PE-100 including required specials. Rates are inclusive of , all taxes and duties (Exise duty @12.50% & CST @2% against Form 'C'), labour cess, contractor profit and overhead charges all complete as per direction of Engineer-in-charge.				
3A	HDPE pipe of materials grade PE100- PN10 (dia in mm)				
	75mm dia Pipe from PVC Tank to Distribution main	10.00 M	P/M	Rs.239.81	Rs.2,398.10
	75mm dia Pipe	150.00 M	P/M	Rs.239.81	Rs.35,971.50
	63mm dia Pipe	150.00 M	P/M	Rs.168.77	Rs.25,315.50
3B	HDPE pipe of materials grade PE100- PN8 (dia in mm)				
	50mm dia Pipe	300.00 M	P/M	Rs.89.99	Rs.26,997.00
	40mm dia Pipe	400.00 M	P/M	Rs.59.78	Rs.23,912.00
	40mm dia Pipe from T/well to PVC Tank	12.00 M	P/M	Rs.59.78	Rs.717.36
4	Providing and fixing brass gate valve with C.I. wheel of approved quality (screwed end).				
	75mm dia Pipe	3 Nos.	Each	Rs.1,351.60	Rs.4,054.80
	63mm dia Pipe	2 Nos.	Each	Rs.1,351.60	Rs.2,703.20
	50mm dia Pipe	2 Nos.	Each	Rs.811.40	Rs.1,622.80
	40mm dia Pipe	4 Nos.	Each	Rs.613.90	Rs.2,455.60

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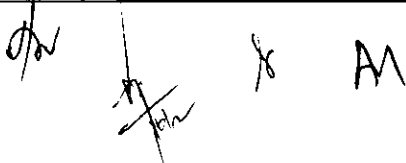
S.N.	Particulars	Quantity	Unit	Rate	Amount
5	Constructing masonry Chamber 60x60x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve,with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size ) , necessary excavation, foundation concrete 1:5:10(1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominalsize) and inside plastering with cement mortar 1:3 (1 cement : 3coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard specifications & direction of E/I. Work for additional depth	9 Nos.	Each	Rs.5,807.50	Rs.52,267.50
	Brick work (1:4) in foundation				
	2 1.10 0.25 0.35 0.193				
	2 0.60 0.25 0.35 0.105				
					0.298
		2.678	CuM CuM	Rs.4,724.40	Rs.12,649.58
	Plaster (1:3)				
	8 1.10 0.35 3.08	27.72	SqM SqM	Rs.128.20	Rs.3,553.70
6	Carriage 10% of item 5				Rs.6,847.08
7	Providing and placing on terrace (at all floor levels)				
18.48	polyethylene water storage tank, ISI : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	5000 Ltrs.	P/Ltr.	Rs.6.60	Rs.33,000.00
8	Providing and fixing PTMT extension nipple for water tank pipe, fittings of approved quality and colour.				
	40mm dia	2 Nos.	each	Rs.250.00	Rs.500.00
	75mm dia	1 No.	each	Rs.400.00	Rs.400.00
					<b>Rs.3,84,422.69</b>

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## Sub Est. No. 4

Model estimate for supply, installation & commissioning of single phase 2 H.P submersible motor pump set with all accessories including extension of L.T. line from nearest source up-to

Sl. No.	Particulars	Quantity	Unit	Rate	Amount	
1	2	3	4	5	6	
[A]	<p>Supply Installation, commissioning and testing of single phase 2 H.P. submersible pump set having discharging capacity 2 lps at a total head of 35 meter(approx) of KSB/ Kirloskar or equivalent make with all accessories &amp; fittings etc including loading unloading and transportation of the pump set to the work site with all required labour, materials, tools and tackles installation, testing &amp; commissioning as per standards specifications and direction of E/I.</p> <p>(i) 40 mm dia x 3 mtrs long medium class G.I column pipe both end threaded and one end socketed- 6(six)nos</p> <p>(ii) 1x3x1.5 mm<sup>2</sup> flat copper conductor submersible cable -40 (forty) mtrs.</p> <p>(iii) 40 mm dia union socket- 1(one) no.</p> <p>(iv) 50 mm dia x 250 mm long G.I. nipple- 1 (one) no.</p> <p>(v) 40 mm dia G.I Elbow—1(One) no.</p> <p>(vi) 40 mm dia M.S. clamps—2(Two) Pairs.</p> <p>(vii) 40 mmx 250 mm long G.I nipple- 1(One) no.</p> <p>(viii) Tube well cap for 125 mm dia T/Well – 1(one) no.</p> <p>(ix) 40 mm dia x 50 mm dia reducer socket –1(one) no.</p>	1	(one) job	p/job	Rs.30,500.00	Rs.30,500.00



[B]	Supply Installation, commissioning and testing of floor mounted outdoor type L.T feeder pillar single phase starter control panel operated on 220 V, 3 phase , 50 c/s for 2 HP Submersible pump set made of MS sheet (minimum 2 mm thick) duly spray power coated painting with following accessories made of M.S sheet ( minimum 2mm thick) duly spray powder coated painting with following accessories (i) 95-272 V range single phase 5 KVA automatic voltage stabilizer make- Sen & Pandit/ Vertex/ISI marked if any. 1 No. (ii) Suitable single phase starter control panel for above motor of BCH /L&Tmake - 1(one) no.	1 (one) job	p/job	Rs.28,500.00	Rs.28,500.00
[C]	Supplying & fitting 2.5 mm <sup>2</sup> copper service cable from power point from nearest source up-to pumping station..	20 mtrs	P/Mt	Rs.130.00	Rs.2,600.00
[D]	Providing all materials and labour required for doing earthing station with G.I earth pipe of 40 mm dia x 4.5 mtrs 20fts. long G.I pipe including accessories excavation of earth , providing masonry enclosure with cover plate having locking arrangement and watering pipe etc.with salt, charcoal,etc.as per IE & IS specification.	1 job	p/job	Rs.2,803.00	Rs.2,803.00
<b>Total Rs.</b>					<b>Rs.64,403.00</b>

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**Sub Est. No. 5**

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Estimate for the work - House service connection									
SUB-ESTIMATE									
S.No.	Description	Qty	Unit	Rate	Amount				
1A	Providing and fixing MDPE (PE 80 Grade Compound) pipes PN-12.5 (12.5kg/Sqcm) as per ISO 4427 and specification for water application rates are inclusive of, taxes and duties (Exise duty @12.50% & CST @2% against Form 'C'), labour cess, contractor profit and overhead charges all complete as per direction of Engineer-in-charge. complete.								
	MDPE Pipe 20mm dia nominal bore	6.00	PM	Rs.19.97	Rs.119.82				
1B	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall								
18.7.1	15 mm nominal bore	1.0	PM	Rs.138.70	Rs.138.70				
2	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and amming of bottoms, lift upto 1.5 m . including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kinds of soil								
2.8.1		6.00	0.30	0.60	1.08	1.08	CuM	Rs.230.50	Rs.248.94
3	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead								
2.26						1.06	CuM	Rs.74.50	Rs.78.85
4	Providing and fixing brass ferrule with CI mouth cover including boring and tapping the main:								
18.20.1	15mm nominal bore	1	Each	Rs.254.10	Rs.254.10				
	Providing and fixing P.P. Black service Saddle (Brass threaded)	1	Each	Rs.400.00	Rs.400.00				
5	Providing and fixing brass bib cock of approved quality :								
18.15.1	15mm nominal bore	1	Each	Rs.273.00	Rs.273.00				
	<b>Total</b>				Rs.1,513.41				
	<b>Say</b>				Rs.1,513.00				

**Total Nos. of House Holds= 100 Nos. @ Rs.1,513.00 Rs.1,51,300.00**

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## Sub Est. No. 6

## 8 M HIGH STEEL STRUCTURE STAGING FOR 5000 LITER PVC TANK

S.N.	Particulars	Quantity	Unit	Rate	Amount
1 7.41	Providing and fixing structural steel frame (for dry cladding with 30 mm thick gang saw cut with machine cut edges sand stone) on walls at all heights using M.S. square / rectangular tube in the required pattern as per architectural drawing, including cost of cutting, bending, welding etc. The frame work shall be fixed to the wall with the help of MS brackets / lugs of angle iron / flats etc. which shall be welded to the frame and embedded in brick wall with cement concrete block 1:2:4 (1 cement : 2 coarse sand : 4 graded aggregate 20 mm nominal size) of size 300x230x300 mm, including cost of necessary centring and shuttering and with approved expansion hold fasteners on CC/RCC surface, including drilling necessary holes. Approved cramps / pins etc. shall be welded to the frame work to support stone cladding, the steel work will be given a priming coat of Zinc primer as approved by Engineer-in-Charge and painted two or more coats of epoxy paint (Shop drawings shall be submitted by the contractor to the Engineer-in-Charge for approval before execution). The frame work shall be fixed in true horizontal & vertical lines/planes. (Only structural steel frame work shall be measured for the purpose of payment, stainless steel cramps shall be paid for separately and nothing extra shall be paid.) Providing MS Staging of 8M height with ladder as per drawing attached	4500 Kg	P/Kg	Rs.119.40	Rs.5,37,300.00
2 5.2.2	Reinforced cement concrete work in wall (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. upt floor five level excluding cost of centring, shuttering, finishin and reinforcement. 1:1:5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20mm nominal size)	6.1972 M <sup>3</sup>	P/M <sup>3</sup>	Rs.5,139.70	Rs.31,851.75
3- 5.22	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete.	495.776 Kg	Kg	Rs.56.00	Rs.27,763.46
4- 2.28	Supplying and filling in plinth with local sand and under floors including watering, ramming consolidating and dressing complete.	4.32 M <sup>3</sup>	P/M <sup>3</sup>	Rs.204.40	Rs.883.01
5- 11.72	Providing designation of 100A Brick flat Soling joints filled with local sand including cost of watering, taxes & royalty all complete as per specification & direction of E/I.	10.8 M <sup>2</sup>	P/M <sup>2</sup>	Rs.253.80	Rs.2,741.04
6 4.1.2	Providing and laying in position cement concrete of specified grade exluding the cost of centring and shuttering-all work upto plinth level. 1:1.5:3(1 Cement :1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)	1.62 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,373.20	Rs.7,084.58
7 2.8	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including  ressing of sides and ramming of bottoms, lift upto 1.5 m. including getting out the excavated soil and	18.66 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.4,301.13

S.N.	Particulars	Quantity	Unit	Rate	Amount
8 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead	9.33 M <sup>3</sup>	P/M <sup>3</sup>	Rs.74.50	Rs.695.09
9- 6.1.14	Brick work with bricks of class designation 100A in foundation and plinth in :				
A	Cement mortar 1:6 (1 Cement : 6 Sand)	1.2144 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,490.60	Rs.5,453.38
10 10.1	Providing and fixing anchor bolt of 28mm dia and 1 Mtr length embedded in R.C.C pedestal all complete as per direction of Engineer in charge. @4x4x5kg	80 Kg	P/kg	Rs.59.20	Rs.4,736.00
11 13.26	Neat cement punning	10.80 M <sup>2</sup>	P/M <sup>2</sup>	Rs.32.30	Rs.348.84
12	Carriage of the following materials from quarry to work site including loading, unloading and staking at work site as per specification & direction of E/I.				
	(a) Bricks ( 7 Km. Pucca & 1 Km. Kachha lead)	843 Nos.	%0 nos.	Rs.606.10	Rs.510.94
	(b) Coarse Sand (100 Km. lead)	3.810 M <sup>3</sup>	P/M <sup>3</sup>	Rs.1,221.09	Rs.4,652.35
	(c) Stone Chips (150 Km. lead)	6.780 M <sup>3</sup>	P/M <sup>3</sup>	Rs.1,746.29	Rs.11,839.85
	(d) Local Sand ( 2 Km. Pucca & 1 Km. Kachha lead)	4.480 M <sup>3</sup>	P/M <sup>3</sup>	Rs.217.23	Rs.973.19
				<b>TOTAL</b>	<b>Rs.6,41,134.61</b>
				<b>say</b>	<b>Rs.6,41,100.00</b>

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**NAME OF WORK - CONSTRUCTION OF STEEL STAGING  
FOR HDPE WATER STORAGE TANK**

**Measurement Sheet**

S.No.	Particulars	No.	Length	Breath	Depth	Total	Total Qty
1 5.2.2	Reinforced cement concrete work in wall (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. upt floor five level excluding cost of centring, shuttering, finishin and reinforcement. 1:1.5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20mm nominal size) base of footing	4	1.8	1.8	0.4	5.184	5.184
	Pedestal	4	0.4	0.04	1.6	0.1024	0.1024
	Plinth beam long side	2	3.6	0.23	0.3	0.4968	0.4968
	Plinth beam short side	2	3	0.23	0.3	0.414	0.414
							<b>6.1972</b>
	Providing & fixing in position steel bar reinforcement of various dia for RCC works taken 80kg/cum						<b>495.7760</b>
	<b>Item no. 2 :-</b>						
2- 2.28	Supplying and filling in plinth with local sand and under floors including watering, ramming consolidating and dressing complete. Long Wall	1	3.60	3.00	0.4	=	4.32
	<b>Item no. 3 :-</b>						
3- 11.72	Providing designation of 100A Brick flat Soling joints filled with local sand including cost of watering, taxes & royalty all complete as per specification & direction of E/I.	1	3.60	3.00		=	10.8
	<b>Item no. 4 :-</b>						
5- 6.1.1 4 A	Brick work with bricks of class designation 100A in foundation and plinth in : Cement mortar 1:6 (1 Cement : 6 Sand)	2 2	3.6 3	0.23 0.23	0.40 0.40	= =	0.6624 0.5520
							<b>1.2144</b>
6 2.8	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including ressing of sides and ramming of bottoms, lift upto 1.5 m . including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.	4	1.8	1.8	1.44	=	18.66
7 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of oundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead					=	9.33
8 4.1.2	Providing and laying in position cement concrete of specified grade exluding the cost of centring and shuttering-all work upto plinth level. 1:1.5:3(1 Cement :1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)	1	3.60	3.00	0.15	=	1.62
9 13.26	Neat cement punning	1	3.60	3.00		=	10.80

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# GOVERNMENT OF BIHAR

PUBLIC HEALTH ENGINEERING DEPARTMENT

*MODEL ESTIMATE*

*FOR*

CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME

FOR A WARD HAVING 100 HOUSE HOLD S

ESTIMATED COST-- Rs. 13.630 Lac

JANUARY, 2017

**GOVERNMENT OF BIHAR**  
**Public Health Engineering Department**

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**ABSTRACT OF COST**

**NAME OF WORK:- CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME FOR WARD HAVING 100 HOUSE HOLDS**

S.N.	Description	Total Amount
1	Construction of 200/165 mm dia. 90 Mtr deep Drilled High Yield Tubewell By DTH RIG Machine with Blue casing U.P.V.C. Pipe etc. all complete and as per direction of E/I. (As per sub Estimate no.- 1)	Rs.95,242.91
2	Constructing masonry Chamber 100x100x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for Tube Well, and RCC top slab 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size ) , necessary excavation, foundation concrete 1:2:4(1 cement : 2 fine sand : 4 graded stone aggregate 20 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3coarse sand) 12 mm thick with 5% cico finished with a floating coat of neat cement, out side plastering with cement mortar 1:4 (1 cement : 4coarse sand) 12 mm thick complete as per standard specifications & direction of E/I. (As per sub Estimate no.- 2)	Rs.13,040.00
3	Providing and Laying Distribution network of High Density Polyethylene pipe (HDPE pipe) including 5000 liter PVC tank installed at 8M high MS staging etc all complete as per direction of E/I. (As per sub Estimate no.- 3)	Rs.3,84,422.69
4	Supply Installation, commissioning and testing of single phase 2 H.P. submersible pump set having discharging capacity 2 lps at a total head of 35 meter(approx) of KSB/ Kirloskar or equivalent make with all accessories & fittings etc including loading unloading and transportation of the pump set to the work site with all required labour, materials, tools and tackles installation, testing & commissioning as per standards specifications and direction of E/I. (As per sub Estimate no.- 4)	Rs.64,403.00
5	Providing house connection for each house hold including supplying all materials, labours, tools and making ferrule connection with 20 mm dia MDPE and 15mm CPVC Pipes with all fittings etc all complete. (As per sub Estimate no.- 5)	Rs.1,51,300.00
6	Providing and erecting 8M high staging with GI enclosure to house electric switch panel of suitably designed MS section of angle, channel, hollow section etc. as per drawing attached. (As per sub Estimate no.- 6)	Rs.6,41,100.00
<b>TOTAL</b>		Rs.13,49,508.60
Add 1% Contingency		Rs.13,495.09
<b>G. TOTAL</b>		Rs.13,63,003.68
<b>Say</b>		<b>Rs.13,63,000.00</b>

(Rs. Thirteen Lac Sixty three Thousand ) only

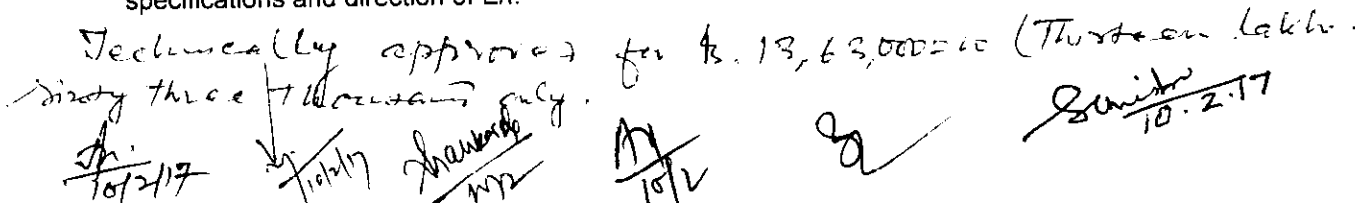
**note:**

- i) Road cutting cost may increase or decrease as per actuals.
- ii) Strongly advised that pipeline should be laid before construction of Naali-Gali.
- iii) This is a model estimate. Hence the quantity may increase or decrease based on actual site conditions.

**Variable inter alia includes**

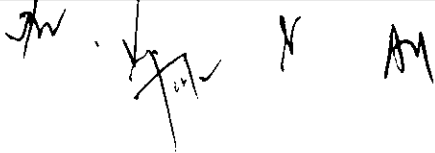
- i) Hydro geomorphological condition.
- ii) Location of source vis-à-vis population/ house holds.
- iii) Quality of works and materials shall be maintained as per standard specifications and direction of E/I.

Technically approved for Rs. 13,63,000.00 (Thirteen lac & sixty three thousand only.)



## Estimate no.- 1

MODEL ESTIMATE OF CONSTRUCTION OF 200/165 MM DIA. 90 MTR DEEP DRILLED HIGH YIELD TUBEWELL BY DTH RIG MACHINE WITH BLUE CASING U.P.V.C. PIPE					
S. NO.	Particulars	Quantity	unit	Rate	Amount
5	1(A) Drilling of 200mm x 165mm x 125 meter deep borewell in all kinds of soll and rock in rural area for installation of pump set with Hydaraulic DTH Rig machine, all complete including supplying all materials, tools, drilling rig, Air Compressor and equipments, as well as fuel, lubricants and cost of transportation of Rig machine and other vehicles up to the site etc all complete as per specification and direction of E/I.				
6	(i) Up to 50 mtrs depth below GL	50	P/M	Rs.729.52	Rs.36,476.00
7	(ii) Beyond 50 mtrs. Up to 90 Mtrs.	40	P/M	Rs.867.88	Rs.34,715.20
8	2 Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC (UPVC) medium well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer -in-charge. (200mm dia)	24	P/M	Rs.921.70	Rs.22,120.80
9	3 Supplying labour, cement and calcium chloride or betonites solution and equipments for grouting to casing pipe as per specification and direction of E/I.	1	Each	Rs.51.01	Rs.51.01
10	4 Supplying all tools labors and equipments and doing washing fiushing & developing of drilled tube well to give clean and clear water ( min. 2.50 Hours)all complete as per direction of E/I.	2.5	P/Hr	Rs.649.40	Rs.1,623.50
11	5 Supplying labors and equipments including 200 mm dia M.S. Cap & Fitting & Fixing over the tube well properly and taking out as per direction of E/I.	1	Each	Rs.256.40	Rs.256.40
12				<b>TOTAL</b>	<b>Rs.95,242.91</b>



(Sub Estimate - 2)  
**Analysis of Chamber for TW**

Supplying materials, labours and constructing chamber of following dimension having 250mm thick wall in C.M. (1:4) including 12mm C.P. (1:3) with punning inside, R.C.C. cover slab with C.I. Surface box, 20mm dia foot rest at 150mm interval 10mm dia lifting ring etc. all complete.

**SIZE**                      **1.00 M**                      x                      **1.00 M**                      x                      **0.75 M deep**

S.O.R. No.	Particulars	No.	L	W	H	Qty.	Unit	Rate	Amount
1	Earth work in excavation	1	1.75	1.75	1.0	3.063 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.705.91
S.O.R. No. 2.8									
2	Sand filling	1	1.75	1.75	0.075	0.230 M <sup>3</sup>	P/M <sup>3</sup>	Rs.204.40	Rs.46.95
S.O.R. No. 2.28									
3	Brick flat soling	1	1.75	1.75		3.063 M <sup>2</sup>	P/M <sup>2</sup>	Rs.253.80	Rs.777.26
S.O.R. 11.72									
4	P.C.C. (1:2:4) in foundation	1	1.75	1.75	0.10	0.306 M <sup>3</sup>			
S.O.O. 4.1.3									
						0.306 M <sup>3</sup>	P/M <sup>3</sup>	Rs.3,323.10	Rs.1,017.70
5	B/Work in (1:4) C.M.	2	2.50	0.25	0.75	0.938 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,724.40	Rs.4,429.13
S.O.R. No. 6.1.12/1									
6	R.C.C. Cover slab(1:1.5:3)	1	1.50	1.50	0.15	0.338 M <sup>3</sup>	P/M <sup>3</sup>	Rs.5,139.70	Rs.1,734.65
S.O.R. No. 5.2.2 & 5.9.3									
	shuttering	2	1.50	1.50	0.15	3.15 M <sup>2</sup>	P/M <sup>2</sup>	Rs.291.00	Rs.916.65
7	C.P. (1:3) with 5% Cico & neat cement								
S.O.R. Internal face		2	1.00	1.00	1.00	4.00 M <sup>2</sup>			
No. Bed surface		1	1.00	1.00		1.00 M <sup>2</sup>			
+13.36.1						5.00 M <sup>2</sup>	P/M <sup>2</sup>	Rs.166.30	Rs.831.50
8	C.P. (1:4) out side of wall	2	1.50	1.50	0.75	4.5 M <sup>2</sup>	P/M <sup>2</sup>	Rs.114.70	Rs.516.15
S.O.R. No. 13.11.2									
9	8mm dia T.S. Rod								
S.O.R. No. 5.22.7A									
			0.338 M <sup>3</sup> x	70	Kg/ M <sup>3</sup>	23.625 Kg.	P/Kg	Rs.56.00	Rs.1,323.00
10	Lifting Ring of 10mm dia Rod					4 No.	Each	Rs.30.00	Rs.120.00
11	Carriage of materials 5%								
								Total	Rs.12,418.89
									Rs.620.94
									<b>Rs.13,039.83</b>

Say **Rs.13,040.00**

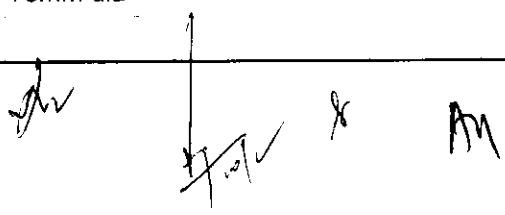
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## Sub Est. No. 3

## WATER SUPPLY DISTRIBUTION SYSTEM

S.N.	Particulars	Quantity	Unit	Rate	Amount
1A	Earthwork in excavation over areas (exceeding 30 cm in depth 1.5 in width as well as 10 sqm on plan) including disposal of excavated earth lead upto 50m and lift upto 1.5m, disposal earth to be levelled and neatly dressed.				
	75mm dia Pipe	150.00	0.30	1.10 =	49.50
	63mm dia Pipe	150.00	0.30	1.10 =	49.50
	50mm dia Pipe	300.00	0.30	1.10 =	99.00
	40mm dia Pipe	400.00	0.30	1.10 =	132.00
				330.00 M <sup>3</sup>	
	Add 5% extra for fittings =			16.50 M <sup>3</sup>	
				346.50 M <sup>3</sup>	
				11.25 M <sup>3</sup>	
1B	Provision for PCC road cutting and its restoration			P/M <sup>3</sup>	Rs.230.50
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.			P/M <sup>3</sup>	Rs.3,901.40
		339.57 M <sup>3</sup>	P/M <sup>3</sup>	Rs.74.50	Rs.25,297.97
3	Providing and laying High Density Polyethylene pipe (HDPE pipe) of 20 mm to 225 mm OD and pressure 6.0 Kg/cm <sup>2</sup> and 10 Kg/cm <sup>2</sup> suitable for water supply which is available in all standard, like ISI-4984/1995 and various grades like PE-80, PE-100 including required specials. Rates are inclusive of , all taxes and duties (Exise duty @12.50% &CST @2% against Form 'C'), labour cess, contractor profit and overhead charges all complete as per direction of Engineer-in-charge.				
3A	HDPE pipe of materials grade PE100- PN10 (dia in mm)				
	75mm dia Pipe from PVC Tank to Distribution main	10.00 M	P/M	Rs.239.81	Rs.2,398.10
	75mm dia Pipe	150.00 M	P/M	Rs.239.81	Rs.35,971.50
	63mm dia Pipe	150.00 M	P/M	Rs.168.77	Rs.25,315.50
3B	HDPE pipe of materials grade PE100- PN8 (dia in mm)				
	50mm dia Pipe	300.00 M	P/M	Rs.89.99	Rs.26,997.00
	40mm dia Pipe	400.00 M	P/M	Rs.59.78	Rs.23,912.00
	40mm dia Pipe from T/well to PVC Tank	12.00 M	P/M	Rs.59.78	Rs.717.36
4	Providing and fixing brass gate valve with C.I. wheel of approved quality (screwed end).				
	75mm dia Pipe	3 Nos.	Each	Rs.1,351.60	Rs.4,054.80
	63mm dia Pipe	2 Nos.	Each	Rs.1,351.60	Rs.2,703.20
	50mm dia Pipe	2 Nos.	Each	Rs.811.40	Rs.1,622.80
	40mm dia Pipe	4 Nos.	Each	Rs.613.90	Rs.2,455.60

S.N.	Particulars	Quantity	Unit	Rate	Amount
5	Constructing masonry Chamber 60x60x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) , necessary excavation, foundation concrete 1:5:10(1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard specifications & direction of E/I.	9 Nos.	Each	Rs.5,807.50	Rs.52,267.50
18.33	Work for additional depth				
	Brick work (1:4) in foundation				
	2 1.10 0.25 0.35 0.193				
	2 0.60 0.25 0.35 0.105				
				0.298	
	Plaster (1:3)	2.678	CuM CuM	Rs.4,724.40	Rs.12,649.58
	8 1.10 0.35 3.08	27.72	SqM SqM	Rs.128.20	Rs.3,553.70
6	Carriage 10% of item 5				Rs.6,847.08
7	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, ISI : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	5000 Ltrs.	P/Ltr.	Rs.6.60	Rs.33,000.00
18.48					
8	Providing and fixing PTMT extension nipple for water tank pipe, fittings of approved quality and colour.				
	40mm dia	2 Nos.	each	Rs.250.00	Rs.500.00
	75mm dia	1 No.	each	Rs.400.00	Rs.400.00
	<b>TOTAL</b>				<b>Rs.3,84,422.69</b>



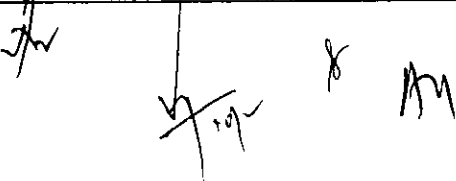
## Sub Est. No. 4

Model estimate for supply, installation & commissioning of single phase 2 H.P submersible motor pump set with all accessories including extension of L.T. line from nearest source up-to pumping

Sl. No.	Particulars	Quantity	Unit	Rate	Amount	
1	2	3	4	5	6	
[A]	<p>Supply Installation, commissioning and testing of single phase 2 H.P. submersible pump set having discharging capacity 2 lps at a total head of 35 meter(approx) of KSB/ Kirloskar or equivalent make with all accessories &amp; fittings etc including loading unloading and transportation of the pump set to the work site with all required labour, materials, tools and tackles installation, testing &amp; commissioning as per standards specifications and direction of E/I.</p> <p>(i) 40 mm dia x 3 mtrs long medium class G.I column pipe both end threaded and one end socketed- 6(six)nos</p> <p>(ii) 1x3x1.5 mm<sup>2</sup> flat copper conductor submersible cable -40 (forty) mtrs.</p> <p>(iii) 40 mm dia union socket- 1(one) no.</p> <p>(iv) 50 mm dia x 250 mm long G.I. nipple- 1 (one) no.</p> <p>(v) 40 mm dia G.I Elbow—1(One) no.</p> <p>(vi) 40 mm dia M.S. clamps—2(Two) Pairs.</p> <p>(vii) 40 mmx 250 mm long G.I nipple- 1(One) no.</p> <p>(viii) Tube well cap for 125 mm dia T/Well – 1(one) no.</p> <p>(ix) 40 mm dia x 50 mm dia reducer socket—1(one) no.</p>	1	(one) job	p/job	Rs.30,500.00	Rs.30,500.00

*[Handwritten signatures and initials]*

[B]	Supply Installation, commissioning and testing of floor mounted outdoor type L.T feeder pillar single phase starter control panel operated on 220 V, 3 phase , 50 c/s for 2 HP Submersible pump set made of MS sheet (minimum 2 mm thick) duly spray power coated painting with following accessories made of M.S sheet ( minimum 2mm thick) duly spray powder coated painting with following accessories (i) 95-272 V range single phase 5 KVA automatic voltage stabilizer make-Sen & Pandit/ Vertex/ISI marked If any. 1 No. (ii) Suitable single phase starter control panel for above motor of BCH /L&Tmake – 1(one) no.	1 (one) job	p/job	Rs.28,500.00	Rs.28,500.00
[C]	Supplying & fitting 2.5 mm <sup>2</sup> copper service cable from power point from nearest source up-to pumping station..	20 mtrs	P/Mt	Rs.130.00	Rs.2,600.00
[D]	Providing all materials and labour required for doing earthing station with G.I earth pipe of 40 mm dia x 4.5 mtrs 20fts. long G.I pipe including accessories excavation of earth , providing masonry enclosure with cover plate having locking arrangement and watering pipe etc.with salt, charcoal,etc.as per IE & IS specification.	1 job	p/job	Rs.2,803.00	Rs.2,803.00
				<b>Total Rs.</b>	<b>Rs.64,403.00</b>



**Sub Est. No. 5**

Estimate for the work - House service connection								
SUB-ESTIMATE								
S.No.	Description	Qty	Unit	Rate	Amount			
1A	Providing and fixing MDPE (PE 80 GradeCompound) pipes PN-12.5 (12.5kg/Sqcm) as per ISO 4427 and specification for waterapplication rates are inclusive of , taxes and duties (Exise duty @12.50% &CST @2% against Form 'C'), labour cess, contractor profit and overhead charges all complete asper direction of Engineer-in-charge.complete.							
	MDPE Pipe 20mm dia nominal bore	6.00	PM	Rs.19.97		Rs.119.82		
1B	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall							
18.7.1	15 mm nomonal bore	1.0	PM	Rs.138.70		Rs.138.70		
2	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and amming of bottoms, lift upto 1.5 m . including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kinds of soil							
2.8.1		6.00	0.30	0.60	1.08	CuM	Rs.230.50	Rs.248.94
3 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead				1.06	CuM	Rs.74.50	Rs.78.85
4	Providing and fixing brass ferrule with CI mouth cover incuding boring and tapping the main:							
18.20.1	15mm nominal bore	1	Each	Rs.254.10		Rs.254.10		
	Providing and fixing P.P. Black service Saddle (Brass threaded)	1	Each	Rs.400.00		Rs.400.00		
5	Providing and fixing brass bib cock of approved quality :							
18.15.1	15mm nominal bore	1	Each	Rs.273.00		Rs.273.00		
		Total					Rs.1,513.41	
		Say					Rs.1,513.00	

**Total Nos. of House Holds= 100 Nos. @ Rs.1,513.00 Rs.1,51,300.00**

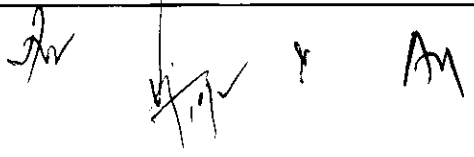
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**Sub Est. No. 6**

**8 M HIGH STEEL STRUCTURE STAGING FOR 5000 LITER PVC TANK**

S.N.	Particulars	Quantity	Unit	Rate	Amount
1 7.41	Providing and fixing structural steel frame (for dry cladding with 30 mm thick gang saw cut with machine cut edges sand stone) on walls at all heights using M.S. square / rectangular tube in the required pattern as per architectural drawing, including cost of cutting, bending, welding etc. The frame work shall be fixed to the wall with the help of MS brackets / lugs of angle iron / flats etc. which shall be welded to the frame and embedded in brick wall with cement concrete block 1:2:4 (1 cement : 2 coarse sand : 4 graded aggregate 20 mm nominal size) of size 300x230x300 mm, including cost of necessary centring and shuttering and with approved expansion hold fasteners on CC/RCC surface, including drilling necessary holes. Approved cramps / pins etc. shall be welded to the frame work to support stone cladding, the steel work will be given a priming coat of Zinc primer as approved by Engineer-in-Charge and painted two or more coats of epoxy paint (Shop drawings shall be submitted by the contractor to the Engineer-in-Charge for approval before execution). The frame work shall be fixed in true horizontal & vertical lines/planes. (Only structural steel frame work shall be measured for the purpose of payment, stainless steel cramps shall be paid for separately and nothing extra shall be paid.) Providing MS Staging of 8M height with ladder as per drawing attached	4500 Kg	P/Kg	Rs.119.40	Rs.5,37,300.00
2 5.2.2	Reinforced cement concrete work in wall (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. upt floor five level excluding cost of centring, shuttering, finishing and reinforcement. 1:1:5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20mm nominal size)	6.1972 M <sup>3</sup>	P/M <sup>3</sup>	Rs.5,139.70	Rs.31,851.75
3- 5.22	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete.	495.776 Kg	Kg	Rs.56.00	Rs.27,763.46
4- 2.28	Supplying and filling in plinth with local sand and under floors including watering, ramming consolidating and dressing complete.	4.32 M <sup>3</sup>	P/M <sup>3</sup>	Rs.204.40	Rs.883.01
5- 11.72	Providing designation of 100A Brick flat Soling joints filled with local sand including cost of watering, taxes & royalty all complete as per specification & direction of E/I.	10.8 M <sup>2</sup>	P/M <sup>2</sup>	Rs.253.80	Rs.2,741.04
6 4.1.2	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering-all work upto plinth level. 1:1.5:3(1 Cement :1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)	1.62 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,373.20	Rs.7,084.58

S.N.	Particulars	Quantity	Unit	Rate	Amount
7 2.8	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including ressing of sides and ramming of bottoms, lift upto 1.5 m . including getting out the excavated soil and	18.66 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.4,301.13
8 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of oundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead	9.33 M <sup>3</sup>	P/M <sup>3</sup>	Rs.74.50	Rs.695.09
9- 6.1.14	Brick work with bricks of class designation 100A in foundation and plinth in :				
A	Cement mortar 1:6 (1 Cement : 6 Sand)	1.2144 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,490.60	Rs.5,453.38
10 10.1	Providing and fixing anchor bolt of 28mm dia and 1 Mtr length embedded in R.C.C pedestal all complete as per direction of Engineer in charge. @4x4x5kg	80 Kg	P/kg	Rs.59.20	Rs.4,736.00
11 13.26	Neat cement punning	10.80 M <sup>2</sup>	P/M <sup>2</sup>	Rs.32.30	Rs.348.84
12	Carriage of the following materials from quarry to work site including loading, unloading and staking at work site as per specification & direction of E/I.				
	(a) Bricks ( 7 Km. Pucca & 1 Km. Kachha lead)	843 Nos.	%0 nos.	Rs.606.10	Rs.510.94
	(b) Coarse Sand (100 Km. lead)	3.810 M <sup>3</sup>	P/M <sup>3</sup>	Rs.1,221.09	Rs.4,652.35
	(c) Stone Chips (150 Km. lead)	6.780 M <sup>3</sup>	P/M <sup>3</sup>	Rs.1,746.29	Rs.11,839.85
	(d) Local Sand ( 2 Km. Pucca & 1 Km. Kachha lead)	4.480 M <sup>3</sup>	P/M <sup>3</sup>	Rs.217.23	Rs.973.19
				<b>TOTAL</b>	<b>Rs.6,41,134.61</b>
				<b>say</b>	<b>Rs.6,41,100.00</b>



**NAME OF WORK - CONSTRUCTION OF STEEL STAGING  
FOR HDPE WATER STORAGE TANK  
Measurement Sheet**

S.No.	Particulars	No.	Length	Breath	Depth	Total	Total Qty
1 5.2.2	Reinforced cement concrete work in wall (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. upt floor five level excluding cost of centring, shuttering, finishin and reinforcement. 1:1.5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20mm nominal size)						
	base of footing	4	1.8	1.8	0.4	5.184	5.184
	Pedestal	4	0.4	0.04	1.6	0.1024	0.1024
	Plinth beam long side	2	3.6	0.23	0.3	0.4968	0.4968
	Plinth beam short side	2	3	0.23	0.3	0.414	0.414
							<b>6.1972</b>
	Providing & fixing in position steel bar reinforcement of various dia for RCC works taken 80kg/cum						<b>495.7760</b>
	<b>Item no. 2 :-</b>						
2- 2.28	Supplying and filling in plinth with local sand and under floors including watering, ramming consolidating and dressing complete.						
	Long Wall	1	3.60	3.00	0.4	=	4.32
	<b>Item no. 3 :-</b>						
3- 11.72	Providing designation of 100A Brick flat Soling joints filled with local sand including cost of watering, taxes & royalty all complete as per specification & direction of E/I.	1	3.60	3.00		=	10.8
	<b>Item no. 4 :-</b>						
5- 6.1.1	Brick work with bricks of class designation 100A in foundation and plinth in :						
4 A	Cement mortar 1:6 (1 Cement : 6 Sand)	2	3.6	0.23	0.40	=	0.6624
		2	3	0.23	0.40	=	0.5520
							<b>1.2144</b>
6 2.8	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including ressing of sides and ramming of bottoms, lift upto 1.5 m . including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.	4	1.8	1.8	1.44	=	18.66
7 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of oundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead					=	9.33
8 4.1.2	Providing and laying in position cement concrete of specified grade exluding the cost of centring and shuttering-all work upto plinth level. 1:1.5:3(1 Cement :1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)	1	3.60	3.00	0.15	=	1.62
9 13.26	Neat cement punning	1	3.60	3.00		=	10.80

*[Handwritten signatures and initials]*



# GOVERNMENT OF BIHAR

PUBLIC HEALTH ENGINEERING DEPARTMENT

*MODEL ESTIMATE*

*FOR*

CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME

FOR A WARD HAVING 150 HOUSE HOLDS

ESTIMATED COST-- Rs. 16.542Lac

JANUARY, 2017

**GOVERNMENT OF BIHAR**  
**Public Health Engineering Department**  
**ABSTRACT OF COST**

50

**NAME OF WORK:- CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME FOR WARD HAVING 150 HOUSE HOLDS**

S.N.	Description	Total Amount
1	Construction of 150mm X 90m deep Gravel packed T/W etc. all complete and as per direction of E/I. (As per sub Estimate no.- 1)	Rs.1,65,744.00
2	Constructing masonry Chamber 100x100x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for Tube Well, and RCC top slab 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size) , necessary excavation, foundation concrete 1:2:4(1 cement : 2 fine sand : 4 graded stone aggregate 20 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3coarse sand) 12 mm thick with 5% cico fnished with a floating coat of neat cement, out side plastering with cement mortar 1:4 (1 cement : 4coarse sand) 12 mm thick complete as per standard specifications & direction of E/I. (As per sub Estimate no.- 2)	Rs.13,040.00
3	Providing and Laying Distrubtion network of High Density Polyethylene pipe (HDPE pipe) including 10000 liter PVC tank installed at 8M high MS staging etc all complete as per direction of E/I. (As per sub Estimate no.- 3)	Rs.4,97,337.35
4	Supply Installation, commissioning and testing of single phase 3 H.P. submersible pump set having discharging capacity 3 lps at a total head of 35 meter(approx) of KSB/ Kirloskar or equivalent make with all accessories & fittings etc including loading unloading and transportation of the pump set to the work site with all required labour, materials, tools and tackles installation, testing & commissioning as per standards specifications and direction of E/I. (As per sub Estimate no.- 4)	Rs.93,603.00
5	Providing house connection for each house hold including supplying all materials, labours, tools and making ferrule connection with 20 mm dia MDPE and 15mm CPVC Pipes with all fittings etc all complete. (As per sub Estimate no.- 5)	Rs.2,26,950.00
6	Providing and erecting 8M high staging with GI enclosure to house electric switch panel of suitably designed MS section of angle, channel, hollow section etc. as per drawing attached. (As per sub Estimate no.- 6)	Rs.6,41,100.00
<b>TOTAL</b>		<b>Rs.16,37,774.35</b>
Add 1% Contingency		Rs.16,377.74
<b>G. TOTAL</b>		<b>Rs.16,54,152.09</b>
<b>Say</b>		<b>Rs.16,54,200.00</b>

(Rs. Sixteen Lac Fifty four Thousand Two Hundred) only

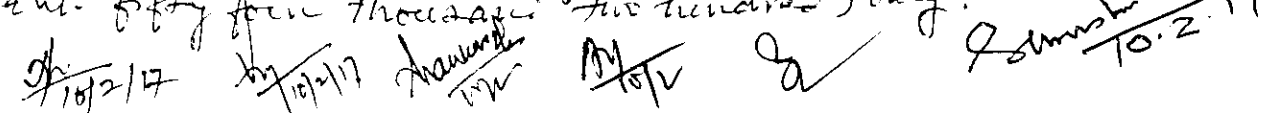
**note:**

- i) Road cutting cost may increase or decrease as per actuals.
- ii) Strongly advised that pipeline should be laid before construction of Naali-Gali.
- iii) This is a model estimate. Hence the quantity may increase or decrease based on actual site conditions.

**Variable inter alia includes**

- i) Hydro geomorphological condition.
- ii) Location of source vis-à-vis population/ house holds.
- iii) Quality of works and materials shall be maintained as per standard specifications and direction of E/I.

Technically approved for Rs. 16,54,200.00 (Rupees Sixteen  
Lac. fifty four thousand two hundred) only.



## (Sub Estimate - 1)

(A) Construction of 150mm X 90m deep Gravel packed T/W					
S. No.	Particulars	Quantity	Unit	Rate	Amount
1	Transportation of machine, equipments including all accessories etc.	1 No.	Each	Rs.1,010.00	Rs.1,010.00
2	Boring/drilling bore well of required dia for casing/strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer-in-charge, upto 90 metre depth below ground level. (All types of soil)				
	400mm dia bore from GL to 90.0M	90 Mtr.	P/M	Rs.529.30	Rs.47,637.00
3A	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC (UPVC) medium well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer-in-charge.				
	(a) 150 mm nominal size dia	59 M	P/M	Rs.615.30	Rs.36,302.70
3B	Supplying, assembling, lowering and fixing in vertical position in bore well unplasticized PVC (UPVC) medium well screen (RMS) pipes with ribs, conforming to IS: 12818, including hire & labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer-in-charge.				
	150 mm nominal size dia	30.0 M	P/M	Rs.554.30	Rs.16,629.00
4	Supplying fitting & fixing the following Fitting of approved make and specification at work site complete job.				
	(a) 150mm center guide Nos. in each T/W	9 Nos.	Each	Rs.150.00	Rs.1,350.00
	(b) 150 mm dia well plug	1 No	Each	Rs.205.10	Rs.205.10
	(b) 150 mm dia M.S. Clamp 1.6 M long (one Pair)	1 No	Each	Rs.1,031.10	Rs.1,031.10
5	Supplying 3mm to 6 mm Well washed assorted pea gravel and doing surrounding around the annular space between bore hole & 125mm pipe uniformly up to the depth 10 mtr. below G.L all work complete as per direction of E/I.	11 M <sup>3</sup>	P/M <sup>3</sup>	Rs.917.00	Rs.10,087.00
6	Carriage of Pea gravel from Dhalbhumigarh (taken av distance 400Km)	11 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,336.54	Rs.47,701.94
7	Supplying all materials laobours and equipments to seal T/W up to the depth of 12 mtr below G.L. by Sticky clay to prevent contamination from surface from all complete job as per direction of E/I.	1 Item	Each	Rs.51.01	Rs.51.01
8	Supplying all materials laobours and equipments including 150mm dia G.I. Cap /C.I. Cap over the casing of 150mm dia T/W properly all complete.	1 No.	Each	Rs.205.10	Rs.205.10
9	Carriage of necessary equipment & materials.	1 No.	Each	Rs.287.50	Rs.287.50
10	Supplying all tools equipments & labour for flushing washing and developing the T/W to give clean & clear water and all complete job as per direction of E/I.	5 H	P / H	Rs.649.40	Rs.3,247.00
<b>TOTAL</b>					<b>Rs.1,65,744.45</b>
<b>Say</b>					<b>Rs.1,65,744.00</b>

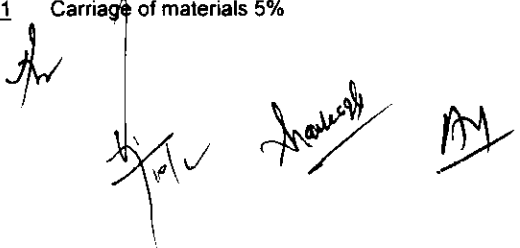
(Sub Estimate - 2)

**Analysis of Chamber for TW**

Supplying materials, labours and constructing chamber of following dimension having 250mm thick wall in C.M. (1:4) including 12mm C.P. (1:3) with punning inside, R.C.C. cover slab with C.I. Surface box, 20mm dia foot rest at 150mm interval 10mm dia lifting ring etc. all complete.

<b>SIZE</b>	<b>1.00 M</b>	<b>x</b>	<b>1.00 M</b>	<b>x</b>	<b>0.75 M deep</b>
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S.O.R. No.	Particulars	No.	L	W	H	Qty.	Unit	Rate	Amount
1	Earth work in excavation	1	1.75	1.75	1.0	3.063 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.705.91
S.O.R. No. 2.8									
2	Sand filling	1	1.75	1.75	0.075	0.230 M <sup>3</sup>	P/M <sup>3</sup>	Rs.204.40	Rs.46.95
S.O.R. No. 2.28									
3	Brick flat soling	1	1.75	1.75		3.063 M <sup>2</sup>	P/M <sup>2</sup>	Rs.253.80	Rs.777.26
S.O.R. 11.72									
4	P.C.C. (1:2:4) in foundation	1	1.75	1.75	0.10	0.306 M <sup>3</sup>			
S.O.O. 4.1.3									
5	B/Work in (1:4) C.M.	2	2.50	0.25	0.75	0.306 M <sup>3</sup>	P/M <sup>3</sup>	Rs.3,323.10	Rs.1,017.70
S.O.R. No. 6.1.12/1									
6	R.C.C. Cover slab(1:1.5:3)	1	1.50	1.50	0.15	0.338 M <sup>3</sup>	P/M <sup>3</sup>	Rs.5,139.70	Rs.1,734.65
S.O.R. No. 5.2.2 & 5.9.3									
	shuttering	2	1.50	1.50	0.15	3.15 M <sup>2</sup>	P/M <sup>2</sup>	Rs.291.00	Rs.916.65
7	C.P. (1:3) with 5% Cico & neat cement								
S.O.R. Internal face									
	Bed surface	1	1.00	1.00		1.00 M <sup>2</sup>			
+13.36.1									
						5.00 M <sup>2</sup>	P/M <sup>2</sup>	Rs.166.30	Rs.831.50
8	C.P. (1:4) out side of wall	2	1.50	1.50	0.75	4.5 M <sup>2</sup>	P/M <sup>2</sup>	Rs.114.70	Rs.516.15
S.O.R. No. 13.11.2									
9	8mm dia T.S. Rod								
S.O.R. No. 5.22.7A									
			0.338 M <sup>3</sup> x	70	Kg/ M <sup>3</sup>	23.625 Kg.	P/Kg	Rs.56.00	Rs.1,323.00
10	Lifting Ring of 10mm dia Rod					4 No.	Each	Rs.30.00	Rs.120.00
								Total	Rs.12,418.89
11	Carriage of materials 5%								Rs.620.94
									<u>Rs.13,039.83</u>
								Say	Rs.13,040.00



## Sub Est. No. 3

## WATER SUPPLY DISTRIBUTION SYSTEM

S.N.	Particulars	Quantity	Unit	Rate	Amount
1A	Earthwork in excavation over areas (exceeding 30 cm in depth 1.5 in width as well as 10 sqm on plan) including disposal of excavated earth lead upto 50m and lift upto 1.5m, disposal earth to be levelled and neatly dressed.				
	75mm dia Pipe	195.00 0.30 1.10 =			64.35
	63mm dia Pipe	195.00 0.30 1.10 =			64.35
	50mm dia Pipe	390.00 0.30 1.10 =			128.70
	40mm dia Pipe	520.00 0.30 1.10 =			171.60
					429.00 M <sup>3</sup>
	Add 5% extra for fittings =				21.45 M <sup>3</sup>
					450.45 M <sup>3</sup>
			P/M <sup>3</sup>	Rs.230.50	Rs.1,03,828.73
1B	Provision for PCC road cutting and its restoration	14.63 M <sup>3</sup>	P/M <sup>3</sup>	Rs.3,901.40	Rs.57,077.48
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	441.44 M <sup>3</sup>	P/M <sup>3</sup>	Rs.74.50	Rs.32,887.35
3	Providing and laying High Density Polyethylene pipe (HDPE pipe) of 20 mm to 225 mm OD and pressure 6.0 Kg/cm <sup>2</sup> and 10 Kg/cm <sup>2</sup> suitable for water supply which is available in all standard, like ISI-4984/1995 and various grades like PE-80, PE-100 including required specials. Rates are inclusive of , all taxes and duties (Exise duty @12.50% &CST @2% against Form 'C'), labour cess, contractor profit and overhead charges all complete as per direction of Engineer-in-charge.				
3A	HDPE pipe of materials grade PE100- PN10 (dia in mm)				
	75mm dia Pipe from PVC Tank to Distribution main	14.00 M	P/M	Rs.239.81	Rs.3,357.34
	75mm dia Pipe	195.00 M	P/M	Rs.239.81	Rs.46,762.95
	63mm dia Pipe	195.00 M	P/M	Rs.168.77	Rs.32,910.15
3B	HDPE pipe of materials grade PE100- PN8 (dia in mm)				
	50mm dia Pipe	390.00 M	P/M	Rs.89.99	Rs.35,096.10
	40mm dia Pipe	520.00 M	P/M	Rs.59.78	Rs.31,085.60
	50mm dia Pipe from T/well to PVC Tank	12.00 M	P/M	Rs.89.99	Rs.1,079.88
4	Providing and fixing brass gate valve with C.I. wheel of approved quality (screwed end).				
	75mm dia Pipe	3 Nos.	Each	Rs.1,351.60	Rs.4,054.80
	63mm dia Pipe	2 Nos.	Each	Rs.1,351.60	Rs.2,703.20
	50mm dia Pipe	3 Nos.	Each	Rs.811.40	Rs.2,434.20
	40mm dia Pipe	3 Nos.	Each	Rs.613.90	Rs.1,841.70

S.N.	Particulars	Quantity	Unit	Rate	Amount
5	Constructing masonry Chamber 60x60x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size), necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard specifications & direction of E/I.	9 Nos.	Each	Rs. 5,807.50	Rs. 52,267.50
18.33	Work for additional depth				
	Brick work (1:4) in foundation				
	2 1.10 0.25 0.35 0.193				
	2 0.60 0.25 0.35 0.105				
				2.678 CuM	CuM
				Rs. 4,724.40	Rs. 12,649.58
	Plaster (1:3)				
	8 1.10 0.35 3.08	27.72 SqM	SqM	Rs. 128.20	Rs. 3,553.70
6	Carriage 10% of item 5				Rs. 6,847.08
7	Providing and placing on terrace (at all floor levels)				
18.48	polyethylene water storage tank, ISI : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	10000 Ltrs.	P/Ltr.	Rs. 6.60	Rs. 66,000.00
8	Providing and fixing PTMT extension nipple for water tank pipe, fittings of approved quality and colour.				
	50mm dia	2 Nos.	each	Rs. 250.00	Rs. 500.00
	75mm dia	1 No.	each	Rs. 400.00	Rs. 400.00
				<b>TOTAL</b>	<b>Rs. 4,97,337.35</b>

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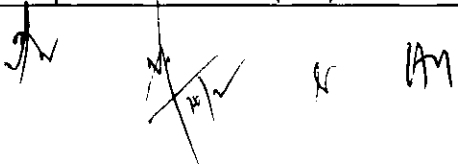
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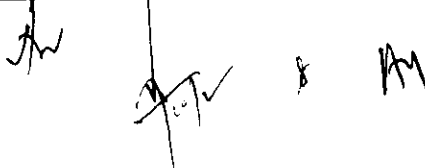
## Sub Est. No. 4

Model estimate for supply, installation & commissioning of single phase 3 H.P submersible motor pump set with all accessories including extension of L.T. line from nearest source up-to pumping station.

Sl. No.	Particulars	Quantity	Unit	Rate	Amount
1	2	3	4	5	6
[A.]	<p>Supply Installation, commissioning and testing of single phase 3 H.P. submersible pump set having discharging capacity 3 lps at a total head of 35 meter(approx) of KSB/ Kirloskar or equivalent make with all accessories &amp; fittings etc including loading unloading and transportation of the pump set to the work site with all required labour, materials, tools and tackles installation, testing &amp; commissioning as per standards specifications and direction of F/I.</p> <p>(i) 50 mm dia x 3 mtrs long medium class G.I column pipe both end thread and one end socketed- 6(six)nos</p> <p>(ii) 1x3x2.5 mm<sup>2</sup> flat copper conductor submersible cable -40 (forty) mtrs.</p> <p>(iii) 50 mm dia union socket- 1(one) no.</p> <p>(iv) 65 mm dia x 250 mm long G.I. nipple- 1 (one) no.</p> <p>(v) 50 mm dia G.I Elbow—1(One) no.</p> <p>(vi) 50 mm dia M.S. clamps—2(Two) Pairs.</p> <p>(vii) 50 mmx 250 mm long G.I nipple- 1(One) no.</p> <p>(viii) Tube well cap for T/Well – 1(one) no.</p> <p>(ix) 50 mm dia x 65 mm dia reducer socket –1(one) no.</p>	1 (one) job	p/job	Rs.42,700.00	Rs.42,700.00



[B]	Supply Installation, commissioning and testing of floor mounted outdoor type L.T feeder pillar single phase starter control panel operated on 220 V, 3 phase , 50 c/s for 3 HP Submersible pump set made of MS sheet (minimum 2 mm thick) duly spray power coated painting with following accessories made of M.S sheet ( minimum 2mm thick) duly spray powder coated painting with following accessories (i) 90-220 V range single phase 7.5 KVA automatic voltage stabilizer make- Sen & Pandit/ Vertex/ISI marked If any. 1 No.  (ii) Suitable single phase starter control panel for above motor of BCH /L&T make – 1(one) no.	1 (one) job	p/job	Rs.45,500.00	Rs.45,500.00
[C]	Supplying & fitting 2.5 mm <sup>2</sup> copper service cable from power point from nearest source up-to pumping station..	20 mtrs	P/Mt	Rs.130.00	Rs.2,600.00
[D]	Providing all materials and labour required for doing earthing station with G.I earth pipe of 40 mm dia x 4.5 mtrs 20fts. long G.I pipe including accessories excavation of earth , providing masonry enclosure with cover plate having locking arrangement and watering pipe etc.with salt, charcoal,etc.as per IE & IS specification.	1 job	p/job	Rs.2,803.00	Rs.2,803.00
<b>Total Rs.</b>					<b>Rs.93,603.00</b>



**Sub Est. No. 5**

<b>Estimate for the work - House service connection</b>								
<b>SUB-ESTIMATE</b>								
<b>S.No.</b>	<b>Description</b>	<b>Qty</b>	<b>Unit</b>	<b>Rate</b>	<b>Amount</b>			
1A	Providing and fixing MDPE (PE 80 GradeCompound) pipes PN-12.5 (12.5kg/Sqcm) as per ISO 4427 and specification for waterapplication rates are inclusive of , taxes and duties (Exise duty @12.50% &CST @2% against Form 'C'), labour cess, contractor profit and overhead charges all complete asper direction of Engineer-in-charge.complete.							
	MDPE Pipe 20mm dia nominal bore	6.00	PM	Rs.19.97		Rs.119.82		
1B	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall							
18.7.1	15 mm nomonal bore	1.0	PM	Rs.138.70		Rs.138.70		
2	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and amming of bottoms, lift upto 1.5 m . including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kinds of soil							
2.8.1		6.00	0.30	0.60	1.08	CuM	Rs.230.50	Rs.248.94
3 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead	1.06	CuM	Rs.74.50		Rs.78.85		
4	Providing and fixing brass ferrule with CI mouth cover incuding boring and tapping the main:							
18.20.1	15mm nominal bore	1	Each	Rs.254.10		Rs.254.10		
	Providing and fixing P.P. Black service Saddle (Brass threaded)	1	Each	Rs.400.00		Rs.400.00		
5	Providing and fixing brass bib cock of approved quality :							
18.15.1	15mm nominal bore	1	Each	Rs.273.00		Rs.273.00		
	Total						Rs.1,513.41	
	Say						Rs.1,513.00	

Total Nos. of House Holds=

150 Nos. @

Rs.1,513.00

Rs.2,26,950.00

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## Sub Est. No. 6

## 8 M HIGH STEEL STRUCTURE STAGING FOR 10000 LITER PVC TANK

S.N.	Particulars	Quantity	Unit	Rate	Amount
1 7.41	Providing and fixing structural steel frame (for dry cladding with 30 mm thick gang saw cut with machine cut edges sand stone) on walls at all heights using M.S. square / rectangular tube in the required pattern as per architectural drawing, including cost of cutting, bending, welding etc. The frame work shall be fixed to the wall with the help of MS brackets / lugs of angle iron / flats etc. which shall be welded to the frame and embedded in brick wall with cement concrete block 1:2:4 (1 cement : 2 coarse sand : 4 graded aggregate 20 mm nominal size) of size 300x230x300 mm, including cost of necessary centring and shuttering and with approved expansion hold fasteners on CC/RCC surface, including drilling necessary holes. Approved cramps / pins etc. shall be welded to the frame work to support stone cladding, the steel work will be given a priming coat of Zinc primer as approved by Engineer-in-Charge and painted two or more coats of epoxy paint (Shop drawings shall be submitted by the contractor to the Engineer-in-Charge for approval before execution). The frame work shall be fixed in true horizontal & vertical lines/planes. (Only structural steel frame work shall be measured for the purpose of payment, stainless steel cramps shall be paid for separately and nothing extra shall be paid.)				
2 5.2.2	Providing MS Staging of 8M height with ladder as per drawing attached	4500 Kg	P/Kg	Rs.119.40	Rs.5,37,300.00
3 5.2.2	Reinforced cement concrete work in wall (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. upt floor five level excluding cost of centring, shuttering, finish and reinforcement. 1:1.5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20mm nominal size)	6.1972 M <sup>3</sup>	P/M <sup>3</sup>	Rs.5,139.70	Rs.31,851.75
4 5.2.2	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete.	495.776 Kg	Kg	Rs.56.00	Rs.27,763.46
5 2.28	Supplying and filling in plinth with local sand and under floors including watering, ramming consolidating and dressing complete.	4.32 M <sup>3</sup>	P/M <sup>3</sup>	Rs.204.40	Rs.883.01
6 11.72	Providing designation of 100A Brick flat Soling joints filled with local sand including cost of watering, taxes & royalty all complete as per specification & direction of E/I.	10.8 M <sup>2</sup>	P/M <sup>2</sup>	Rs.253.80	Rs.2,741.04
7 4.1.2	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering-all work upto plinth level. 1:1.5:3(1 Cement :1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)	1.62 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,373.20	Rs.7,084.58
8 2.8	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including ressing of sides and ramming of bottoms, lift upto 1.5 m including getting out the excavated soil and	18.66 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.4,301.13

S.N.	Particulars	Quantity	Unit	Rate	Amount
8 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead	9.33 M <sup>3</sup>	P/M <sup>3</sup>	Rs.74.50	Rs.695.09
9- 6.1.14	Brick work with bricks of class designation 100A in foundation and plinth in :				
A	Cement mortar 1:6 (1 Cement : 6 Sand)	1.2144 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,490.60	Rs.5,453.38
10 10.1	Providing and fixing anchor bolt of 28mm dia and 1 Mtr length embedded in R.C.C pedestal all complete as per direction of Engineer in charge. @4x4x5kg	80 Kg	P/kg	Rs.59.20	Rs.4,736.00
11 13.26	Neat cement punning	10.80 M <sup>2</sup>	P/M <sup>2</sup>	Rs.32.30	Rs.348.84
12	Carriage of the following materials from quarry to work site including loading, unloading and staking at work site as per specification & direction of E/I.				
	(a) Bricks ( 7 Km. Pucca & 1 Km. Kachha lead)	843 Nos.	%0 nos.	Rs.606.10	Rs.510.94
	(b) Coarse Sand (100 Km. lead)	3.810 M <sup>3</sup>	P/M <sup>3</sup>	Rs.1,221.09	Rs.4,652.35
	(c) Stone Chips (150 Km. lead)	6.780 M <sup>3</sup>	P/M <sup>3</sup>	Rs.1,746.29	Rs.11,839.85
	(d) Local Sand ( 2 Km. Pucca & 1 Km. Kachha lead)	4.480 M <sup>3</sup>	P/M <sup>3</sup>	Rs.217.23	Rs.973.19
				<b>TOTAL</b>	<b>Rs.6,41,134.61</b>
				<b>say</b>	<b>Rs.6,41,100.00</b>

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**NAME OF WORK - CONSTRUCTION OF STEEL STAGING  
FOR HDPE WATER STORAGE TANK  
Measurement Sheet**

S.No.	Particulars	No.	Length	Breath	Depth	Total	Total Qty
1	Reinforced cement concrete work in wall (any						
5.2.2	thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. up to floor five level excluding cost of centring, shuttering, finishing and reinforcement. 1:1.5:3 (1 cement: 1.5 coarse sand: 3 graded stone aggregate 20mm nominal size)						
	base of footing	4	1.8	1.8	0.4	5.184	5.184
	Pedestal	4	0.4	0.04	1.6	0.1024	0.1024
	Plinth beam long side	2	3.6	0.23	0.3	0.4968	0.4968
	Plinth beam short side	2	3	0.23	0.3	0.414	0.414
							<b>6.1972</b>
	Providing & fixing in position steel bar reinforcement of various dia for RCC works taken 80kg/cum						<b>495.7760</b>
	<b>Item no. 2 :-</b>						
2-	Supplying and filling in plinth with local sand and under floors including watering, ramming consolidating and dressing complete.						
2.28	Long Wall	1	3.60	3.00	0.4	=	4.32
	<b>Item no. 3 :-</b>						
3-	Providing designation of 100A Brick flat Soling joints filled with local sand including cost of watering, taxes & royalty all complete as per specification & direction of E/I.						
11.72		1	3.60	3.00		=	10.8
	<b>Item no. 4 :-</b>						
5-	Brick work with bricks of class designation						
6.1.1	100A in foundation and plinth in :						
4 A	Cement mortar 1:6 (1 Cement : 6 Sand)	2	3.6	0.23	0.40	=	0.6624
		2	3	0.23	0.40	=	0.5520
							<b>1.2144</b>
6	Earth work in excavation in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including rassing of sides and ramming of bottoms, lift upto 1.5 m including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.						
2.8		4	1.8	1.8	1.44	=	18.66
7	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead						
2.26						=	9.33
8	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering-all work upto plinth level.						
4.1.2	1:1.5:3 (1 Cement : 1.5 coarse sand: 3 graded stone aggregate 20 mm nominal size)	1	3.60	3.00	0.15	=	1.62
9	Neat cement punning						
13.26		1	3.60	3.00		=	10.80

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# GOVERNMENT OF BIHAR

PUBLIC HEALTH ENGINEERING DEPARTMENT

*MODEL ESTIMATE*

*FOR*

CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME

FOR A WARD HAVING 150 HOUSE HOLDS

ESTIMATED COST-- Rs. 16.408 Lac

JANUARY, 2017

**GOVERNMENT OF BIHAR**  
**Public Health Engineering Department**  
**ABSTRACT OF COST**

62

**NAME OF WORK:- CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME FOR WARD HAVING 150 HOUSE HOLDS**

S.N.	Description	Total Amount
1	Construction of 125 mm x75mmX 125m deep T/W etc. all complete and as per direction of E/I. (As per sub Estimate no.- 1)	Rs.1,52,506.32
2	Constructing masonry Chamber 100x100x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for Tube Well, and RCC top slab 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size ) , necessary excavation, foundation concrete 1:2:4(1 cement : 2 fine sand : 4 graded stone aggregate 20 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3coarse sand) 12 mm thick with 5% cico fnished with a floating coat of neat cement, out side plastering with cement mortar 1:4 (1 cement : 4coarse sand) 12 mm thick complete as per standard specifications & direction of E/I. (As per sub Estimate no.- 2)	Rs.13,040.00
3	Providing and Laying Distrubtion network of High Density Polyethyene pipe (HDPE pipe) including 10000 liter PVC tank installed at 8M high MS staging etc all complete as per direction of E/I. (As per sub Estimate no.- 3)	Rs.4,97,337.35
4	Supply Installation, commissioning and testing of single phase 3 H.P. submersible pump set having discharging capacity 3 lps at a total head of 35 meter(approx) of KSB/ Kirloskar or equivalent make with all accessories & fittings etc including loading unloading and transportation of the pump set to the work site with all required labour, materials, tools and tackles installation, testing & commissioning as per standards specifications and direction of E/I. (As per sub Estimate no.- 4)	Rs.93,603.00
5	Providing house connection for each house hold including supplying all materials, labours, tools and making ferrule connection with 20 mm dia MDPE and 15mm CPVC Pipes with all fittings etc all complete. (As per sub Estimate no.- 5)	Rs.2,26,950.00
6	Providing and erecting 8M high staging with GI enclosure to house electric switch panel of suitably designed MS section of angle, channel, hollow section etc. as per drawing attached. (As per sub Estimate no.- 6)	Rs.6,41,100.00
<b>TOTAL</b>		Rs.16,24,536.67
Add 1% Contingency		Rs.16,245.37
<b>G. TOTAL</b>		Rs.16,40,782.04
<b>Say</b>		<b>Rs.16,40,800.00</b>

(Rs. Sixteen Lac Forty Thousand eight Hundred ) only

**note:**

- i) Road cutting cost may increase or decrease as per actuals.
- ii) Strongly advised that pipeline should be laid before construction of Naali-Gali.
- iii) This is a model estimate. Hence the quantity may increase or decrease based on actual site conditions.

**Variable inter alia includes**

- i) Hydro geomorphological condition.
- ii) Location of source vis-à-vis population/ house holds.
- iii) Quality of works and materials shall be maintained as per standard specifications and direction of E/I.

Technically approved for Rs. 16,40,800.00 (Rupees sixteen lakh forty thousand eight hundred) only.

*[Signatures and dates: 18/2/17, 10/2/17, 10/2/17, AM 10/2/17, 10/2/17]*

*[Handwritten note: Rs. 16,40,800.00 (Rupees sixteen lakh forty thousand eight hundred) only. 10.2.17]*

## CONSTRUCTION OF 125MM X 75MM DIA &amp; 125M DEEP TUBE WELL

S.No.	Description	Qty.	Unit	Rate	Amount
1	Boring/drilling bore well of required dia for casing/strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer -in-charge, upto 90 metre depth below ground level. (All types of soil)				
24.1.1.1	(a) 300mm dia bore from G.L. to 30.0M	30.0 M	P/M	Rs.378.00	Rs.11,340.00
	(b) 300mm dia bore from 30.0 m to 60.0M	30.0 M	P/M	Rs.378.00	Rs.11,340.00
	(c) 300mm dia bore from 60M to 90.0M	30.0 M	P/M	Rs.378.00	Rs.11,340.00
24.2.1.1	(d) 300mm dia bore from 90.0M to 150.0M	35.0 M	P/M	Rs.441.10	Rs.15,438.50
2	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC (UPVC) medium well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer -in-charge.				
	(b) 125 mm nominal size dia	30.0 M	P/M	Rs.462.50	Rs.13,875.00
24.3.5	(b) 75 mm nominal size dia	69.0 M	P/M	Rs.328.50	Rs.22,666.50
24.4.5	(c) 75 mm dia U.P.V.C. strainer	21.0 M	P/M	Rs.420.30	Rs.8,826.30
3	Providing all materials, tools & labours and fixing the following fittings etc. all complete as per specification & direction of E/I.				
	(a) 125 mm dia P.V.C. well cap	1 No.	Each	Rs.166.60	Rs.166.60
	(b) 125 mm dia center guide	4 Nos.	Each	Rs.100.00	Rs.400.00
	(c) 75 mm dia center guide	6 Nos.	Each	Rs.75.00	Rs.450.00
	(d) 75 mm dia P.V.C. pipe shoe plug	1 No.	Each	Rs.185.00	Rs.185.00
	(e) 125mm x 75 mm dia P.V.C. Reducer	1 No.	Each	Rs.475.00	Rs.475.00
	(d) 125mm dia M.S.Clamp	1 No.	Each	Rs.974.60	Rs.974.60
4a 24.6	Providing all materials, labours, & equipments for fixing tubewell with peagravel of Dalbhumigarh to size 4mm to 8mm approx. as suitable for strata including carriage washing, placing and packing the same in position around the tubewell etc. all complete as per direction of E/I.	9.0 M <sup>3</sup>	P/M <sup>3</sup>	Rs.917.00	Rs.8,253.00
4b	Carriage of Pea Gravel from Dhalbhumigarh (taken av distance 400km.)	9.0 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,336.54	Rs.39,028.82
5 24.12	Development of tube well in accordance with IS : 2800 (part I) and IS: 11189, to establish maximum rate of usable water yield without sand content (beyond permissible limit), with required capacity air compressor, running the compressor for required time till well is fully developed, measuring yield of well by "V" notch method or any other approved method, measuring static level & draw down etc. by step draw down method, collecting water sampl & getting tested in approved laboratory, disinfection of tubewell, all complete, including hire & labour charges of air compressor, tools & accessories etc., all as per requirement and direction of Engineer-in-charge.	5 Hrs.	Each	Rs.649.40	Rs.3,247.00
6	Supplying all materials and labours for arrangement for additional water required during the drilling period for 40 Hrs & site clearance & leveling etc. And providing the soap duster etc. to staff engaged in drilling etc. all complete work as per specification & direction of E.I..	1 No.	Each	Rs.4,500.00	Rs.4,500.00
<b>TOTAL</b>					<b>Rs.1,52,506.32</b>

(Sub Estimate - 2)

**Analysis of Chamber for TW**

Supplying materials, labours and constructing chamber of following dimension having 250mm thick wall in C.M. (1:4) including 12mm C.P. (1:3) with punning inside, R.C.C. cover slab with C.I. Surface box, 20mm dia foot rest at 150mm interval 10mm dia lifting ring etc. all complete.

<b>SIZE</b>	<b>1.00 M</b>	<b>x</b>	<b>1.00 M</b>	<b>x</b>	<b>0.75 M deep</b>
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<u>S.O.R. No.</u>	<u>Particulars</u>	<u>No.</u>	<u>L</u>	<u>W</u>	<u>H</u>	<u>Qty.</u>	<u>Unit</u>	<u>Rate</u>	<u>Amount</u>	
1	Earth work in excavation	1	1.75	1.75	1.0	3.063 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.705.91	
S.O.R. No. 2.8										
2	Sand filling	1	1.75	1.75	0.075	0.230 M <sup>3</sup>	P/M <sup>3</sup>	Rs.204.40	Rs.46.95	
S.O.R. No. 2.28										
3	Brick flat soling	1	1.75	1.75		3.063 M <sup>2</sup>	P/M <sup>2</sup>	Rs.253.80	Rs.777.26	
S.O.R. 11.72										
4	P.C.C. (1:2:4) in foundation	1	1.75	1.75	0.10	0.306 M <sup>3</sup>				
S.O.O. 4.1.3										
						0.306 M <sup>3</sup>	P/M <sup>3</sup>	Rs.3,323.10	Rs.1,017.70	
5	B/Work in (1:4) C.M.	2	2.50	0.25	0.75	0.938 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,724.40	Rs.4,429.13	
S.O.R. No. 6.1.12/1										
6	R.C.C. Cover slab(1:1.5:3)	1	1.50	1.50	0.15	0.338 M <sup>3</sup>	P/M <sup>3</sup>	Rs.5,139.70	Rs.1,734.65	
S.O.R. No. 5.2.2 & 5.9.3										
	shuttering	2	1.50	1.50	0.15	3.15 M <sup>2</sup>	P/M <sup>2</sup>	Rs.291.00	Rs.916.65	
7	C.P. (1:3) with 5% Cico & neat cement									
S.O.R. Internal face										
		2	1.00	1.00	1.00	4.00 M <sup>2</sup>				
No. 13.17.1										
	Bed surface	1	1.00	1.00		1.00 M <sup>2</sup>				
+13.36.1										
						5.00 M <sup>2</sup>	P/M <sup>2</sup>	Rs.166.30	Rs.831.50	
8	C.P. (1:4) out side of wall	2	1.50	1.50	0.75	4.5 M <sup>2</sup>	P/M <sup>2</sup>	Rs.114.70	Rs.516.15	
S.O.R. No. 13.11.2										
9	8mm dia T.S. Rod									
S.O.R. No. 5.22.7A										
			0.338 M <sup>3</sup> x	70	Kg/	23.625 Kg.	P/Kg	Rs.56.00	Rs.1,323.00	
				M3						
10	Lifting Ring of 10mm dia Rod					4 No.	Each	Rs.30.00	Rs.120.00	
									Total	
									Rs.12,418.89	
11	Carriage of materials 5%									Rs.620.94
									<b>Rs.13,039.83</b>	

Say Rs.13,040.00

*Handwritten signatures and initials:*  
 A large signature on the left, and initials '9' and 'IAM' on the right.

## Sub Est. No. 3

## WATER SUPPLY DISTRIBUTION SYSTEM

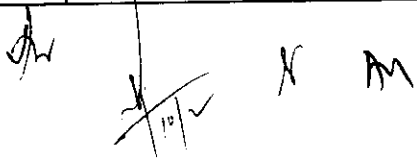
S.N.	Particulars	Quantity	Unit	Rate	Amount
1A	Earthwork in excavation over areas (exceeding 30 cm in depth 1.5 in width as well as 10 sqm on plan) including disposal of excavated earth lead upto 50m and lift upto 1.5m, disposal earth to be levelled and neatly dressed.				
	75mm dia Pipe	195.00	0.30	1.10 =	64.35
	63mm dia Pipe	195.00	0.30	1.10 =	64.35
	50mm dia Pipe	390.00	0.30	1.10 =	128.70
	40mm dia Pipe	520.00	0.30	1.10 =	171.60
				429.00 M <sup>3</sup>	
	Add 5% extra for fittings =			21.45 M <sup>3</sup>	
				450.45 M <sup>3</sup> P/M <sup>3</sup>	Rs.230.50
				14.63 M <sup>3</sup> P/M <sup>3</sup>	Rs.3,901.40
1B	Provision for PCC road cutting and its restoration				Rs.1,03,828.73
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	441.44	M <sup>3</sup>	P/M <sup>3</sup>	Rs.57,077.48
				Rs.74.50	Rs.32,887.35
3	Providing and laying High Density Polyethylene pipe (HDPE pipe) of 20 mm to 225 mm OD and pressure 6.0 Kg/cm <sup>2</sup> and 10 Kg/cm <sup>2</sup> suitable for water supply which is available in all standard, like ISI-4984/1995 and various grades like PE-80, PE-100 including required specials. Rates are inclusive of , all taxes and duties (Exise duty @12.50% & CST @2% against Form 'C'), labour cess, contractor profit and overhead charges all complete as per direction of Engineer-in-charge.				
3A	HDPE pipe of materials grade PE100- PN10 (dia in mm)				
	75mm dia Pipe from PVC Tank to Distribution main	14.00	M	P/M	Rs.3,357.34
	75mm dia Pipe	195.00	M	P/M	Rs.46,762.95
	63mm dia Pipe	195.00	M	P/M	Rs.32,910.15
3B	HDPE pipe of materials grade PE100- PN8 (dia in mm)				
	50mm dia Pipe	390.00	M	P/M	Rs.35,096.10
	40mm dia Pipe	520.00	M	P/M	Rs.31,085.60
	50mm dia Pipe from T/well to PVC Tank	12.00	M	P/M	Rs.1,079.88
4	Providing and fixing brass gate valve with C.I. wheel of approved quality (screwed end).				
	75mm dia Pipe	3	Nos	Each	Rs.4,054.80
	63mm dia Pipe	2	Nos	Each	Rs.2,703.20
	50mm dia Pipe	3	Nos	Each	Rs.2,434.20
	40mm dia Pipe	3	Nos	Each	Rs.1,841.70

S.N.	Particulars	Quantity	Unit	Rate	Amount
5 18.33	Constructing masonry Chamber 60x60x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size), necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard specifications & direction of E/I.	9	No:Each	Rs.5,807.50	Rs.52,267.50
	Work for additional depth				
	Brick work (1:4) in foundation				
	2 1.10 0.25 0.35 0.193				
	2 0.60 0.25 0.35 0.105				
		2.678	Cu <sup>l</sup> CuM	Rs.4,724.40	Rs.12,649.58
	Plaster (1:3)				
	8 1.10 0.35 3.08	27.72	Sq <sup>l</sup> SqM	Rs.128.20	Rs.3,553.70
6	Carriage 10% of item 5				Rs.6,847.08
7 18.48	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, ISI : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	10000	LtrsP/Ltr	Rs.6.60	Rs.66,000.00
8	Providing and fixing PTMT extension nipple for water tank pipe, fittings of approved quality and colour.				
	50mm dia	2	No:each	Rs.250.00	Rs.500.00
	75mm dia	1	No. each	Rs.400.00	Rs.400.00
	<b>TOTAL</b>				<b>Rs.4,97,337.35</b>

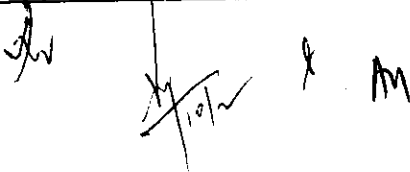
## Sub Est. No. 4

Model estimate for supply, installation & commissioning of single phase 3 H.P submersible motor pump set with all accessories including extension of L.T. line from nearest source up-to pumping station.

Sl. No.	Particulars	Quantity	Unit	Rate	Amount
1	2	3	4	5	6
[A.]	Supply Installation, commissioning and testing of single phase 3 H.P. submersible pump set having discharging capacity 3 lps at a total head of 35 meter(approx) of KSB/ Kirloskar or equivalent make with all accessories & fittings etc including loading unloading and transportation of the pump set to the work site with all required labour, materials, tools and tackles installation, testing & (i) 50 mm dia x 3 mtrs long medium class G.I column pipe both end thread and one end socketed- 6(six)nos (ii) 1x3x2.5 mm <sup>2</sup> flat copper conductor submersible cable -40 (forty) mtrs. (iii) 50 mm dia union socket- 1(one) no. (iv) 65 mm dia x 250 mm long G.I. nipple- 1 (one) no. (v) 50 mm dia G.I Elbow—1(One) no. (vi) 50 mm dia M.S. clamps—2(Two) Pairs. (vii) 50 mmx 250 mm long G.I nipple- 1(One) no. (viii) Tube well cap for T/Well – 1(one) no. (ix) 50 mm dia x 65 mm dia reducer socket –1(one) no.	1 (one) job	p/job	Rs.42,700.00	Rs.42,700.00



[B]	Supply Installation, commissioning and testing of floor mounted outdoor type L.T feeder pillar single phase starter controll pannel operated on 220 V, 3 phase , 50 c/s for 3 HP Submersible pump set made of MS sheet (minimum 2 mm thick) duly spray power coated painting with following accessories made of M.S sheet ( minimum 2mm thick) duly spray powder coated painting with following accessories (i) 90-220 V range single phase 7.5 KVA automatic voltage stabilizer make- Sen & Pandit/ Vertex/ISI marked If any. 1 No.  (ii) Suitable single phase starter control panel for above motor of BCH /L&Tmake – 1(one) no.	1 (one) job	p/job	Rs.45,500.00	Rs.45,500.00
[C]	Supplying & fitting 2.5 mm <sup>2</sup> copper service cable from power point from nearest source up-to pumping station..	20 mtrs	P/Mt	Rs.130.00	Rs.2,600.00
[D]	Providing all materials and labour required for doing earthing station with G.I earth pipe of 40 mm dia x 4.5 mtrs 20fts. long G.I pipe including accessories excavation of carth , providing masonry enclosure with cover plate having locking arrangement and watering pipe etc.with salt, charcoal,etc.as per IE & IS specification.	1 job	p/job	Rs.2,803.00	Rs.2,803.00
<b>Total Rs.</b>					<b>Rs.93,603.00</b>



**Sub Est. No. 5**

<b>Estimate for the work - House service connection</b>									
<b>SUB-ESTIMATE</b>									
<b>S.No.</b>	<b>Description</b>	<b>Qty</b>	<b>Unit</b>	<b>Rate</b>	<b>Amount</b>				
1A	Providing and fixing MDPE (PE 80 GradeCompound) pipes PN-12.5 (12.5kg/Sqcm) as per ISO 4427 and specification for waterapplication rates are inclusive of , taxes and duties (Exise duty @12.50% &CST @2% against Form 'C'), labour cess, contractor profit and overhead charges all complete asper direction of Engineer-in-charge.complete.								
	MDPE Pipe 20mm dia nominal bore	6.00	PM	Rs.19.97	Rs.119.82				
1B	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall								
18.7.1	15 mm nomonal bore	1.0	PM	Rs.138.70	Rs.138.70				
2	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and amming of bottoms, lift upto 1.5 m . including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kinds of soil								
2.8.1		6.00	0.30	0.60	1.08	1.08	CuM	Rs.230.50	Rs.248.94
3 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth; consolidating each deposited layer by ramming and watering lead							Rs.74.50	Rs.78.85
		1.06				1.06	CuM		
4	Providing and fixing brass ferrule with CI mouth cover incuding boring and tapping the main:								
18.20.1	15mm nominal bore	1	Each	Rs.254.10	Rs.254.10				
	Providing and fixing P.P. Black service Saddle (Brass threaded)	1	Each	Rs.400.00	Rs.400.00				
5	Providing and fixing brass bib cock of approved quality :								
18.15.1	15mm nominal bore	1	Each	Rs.273.00	Rs.273.00				
	<b>Total</b>				Rs.1,513.41				
	<b>Say</b>				Rs.1,513.00				

Total Nos. of House Holds=

150 Nos.

@

Rs.1,513.00

Rs.2,26,950.00

Sub Est. No. 6**8 M HIGH STEEL STRUCTURE STAGING FOR 10000 LITER PVC TANK**

S.N.	Particulars	Quantity	Unit	Rate	Amount
1 7.41	Providing and fixing structural steel frame (for dry cladding with 30 mm thick gang saw cut with machine cut edges sand stone) on walls at all heights using M.S. square / rectangular tube in the required pattern as per architectural drawing, including cost of cutting, bending, welding etc. The frame work shall be fixed to the wall with the help of MS brackets / lugs of angle iron / flats etc. which shall be welded to the frame and embedded in brick wall with cement concrete block 1:2:4 (1 cement : 2 coarse sand : 4 graded aggregate 20 mm nominal size) of size 300x230x300 mm, including cost of necessary centring and shuttering and with approved expansion hold fasteners on CC/RCC surface, including drilling necessary holes. Approved cramps / pins etc. shall be welded to the frame work to support stone cladding, the steel work will be given a priming coat of Zinc primer as approved by Engineer-in-Charge and painted two or more coats of epoxy paint (Shop drawings shall be submitted by the contractor to the Engineer-in-Charge for approval before execution). The frame work shall be fixed in true horizontal & vertical lines/planes. (Only structural steel frame work shall be measured for the purpose of payment, stainless steel cramps shall be paid for separately and nothing extra shall be paid.)				
	Providing MS Staging of 8M height with ladder as per drawing attached	4500 Kg	P/Kg	Rs.119.40	Rs.5,37,300.00
2 5.2.2	Reinforced cement concrete work in wall (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. upt floor				
	five level excluding cost of centring, shuttering, finishing and reinforcement.				
	1:1.5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20mm nominal size)	6.1972 M <sup>3</sup>	P/M <sup>3</sup>	Rs.5,139.70	Rs.31,851.75
3- 5.22	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete.	495.776 Kg	Kg	Rs.56.00	Rs.27,763.46
4- 2.28	Supplying and filling in plinth with local sand and under floors including watering, ramming consolidating and dressing complete.	4.32 M <sup>3</sup>	P/M <sup>3</sup>	Rs.204.40	Rs.883.01
5- 11.72	Providing designation of 100A Brick flat Soling joints filled with local sand including cost of watering, taxes & royalty all complete as per specification & direction of E/I.	10.8 M <sup>2</sup>	P/M <sup>2</sup>	Rs.253.80	Rs.2,741.04
6 4.1.2	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering-all work upto plinth level.				
	1:1.5:3(1 Cement :1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)	1.62 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,373.20	Rs.7,084.58

S.N.	Particulars	Quantity	Unit	Rate	Amount
7 2.8	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including ressing of sides and ramming of bottoms, lift upto 1.5 m . including getting out the excavated soil and	18.66 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.4,301.13
8 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of oundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead	9.33 M <sup>3</sup>	P/M <sup>3</sup>	Rs.74.50	Rs.695.09
9- 6.1.14	Brick work with bricks of class designation 100A in foundation and plinth in :				
A	Cement mortar 1:6 (1 Cement : 6 Sand)	1.2144 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,490.60	Rs.5,453.38
10 10.1	Providing and fixing anchor bolt of 28mm dia and 1 Mtr length embedded in R.C.C pedestal all complete as per direction of Engineer in charge. @4x4x5kg	80 Kg	P/kg	Rs.59.20	Rs.4,736.00
11 13.26	Neat cement punning	10.80 M <sup>2</sup>	P/M <sup>2</sup>	Rs.32.30	Rs.348.84
12	Carriage of the following materials from quarry to work site including loading, unloading and staking at work site as per specification & direction of E/I.				
	(a) Bricks ( 7 Km. Pucca & 1 Km. Kachha lead)	843 Nos.	%0 nos.	Rs.606.10	Rs.510.94
	(b) Coarse Sand (100 Km. lead)	3.810 M <sup>3</sup>	P/M <sup>3</sup>	Rs.1,221.09	Rs.4,652.35
	(c) Stone Chips (150 Km. lead)	6.780 M <sup>3</sup>	P/M <sup>3</sup>	Rs.1,746.29	Rs.11,839.85
	(d) Local Sand ( 2 Km. Pucca & 1 Km. Kachha lead)	4.480 M <sup>3</sup>	P/M <sup>3</sup>	Rs.217.23	Rs.973.19
				<b>TOTAL</b>	<b>Rs.6,41,134.61</b>
				<b>say</b>	<b>Rs.6,41,100.00</b>

Dr

Y M

**NAME OF WORK - CONSTRUCTION OF STEEL STAGING  
FOR HDPE WATER STORAGE TANK  
Measurement Sheet**

S.No.	Particulars	No.	Length	Breath	Depth	Total	Total Qty
1 5.2.2	Reinforced cement concrete work in wall (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. upt floor five level excluding cost of centring, shuttering, finishin and reinforcement. 1:1:5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20mm nominal size)						
	base of footing	4	1.8	1.8	0.4	5.184	5.184
	Pedestal	4	0.4	0.04	1.6	0.1024	0.1024
	Plinth beam long side	2	3.6	0.23	0.3	0.4968	0.4968
	Plinth beam short side	2	3	0.23	0.3	0.414	0.414
							<b>6.1972</b>
	Providing & fixing in position steel bar reinforcement of various dia for RCC works taken 80kg/cum						<b>495.7760</b>
	<b>Item no. 2 :-</b>						
2- 2.28	Supplying and filling in plinth with local sand and under floors including watering, ramming consolidating and dressing complete. Long Wall						
		1	3.60	3.00	0.4	=	4.32
	<b>Item no. 3 :-</b>						
3- 11.72	Providing designation of 100A Brick flat Soling joints filled with local sand including cost of watering, taxes & royalty all complete as per specification & direction of E/l.						
		1	3.60	3.00		=	10.8
	<b>Item no. 4 :-</b>						
5- 6.1.1	Brick work with bricks of class designation 100A in foundation and plinth in :						
4 A	Cement mortar 1:6 (1 Cement : 6 Sand)						
		2	3.6	0.23	0.40	=	0.6624
		2	3	0.23	0.40	=	0.5520
							<b>1.2144</b>
6 2.8	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including ressing of sides and ramming of bottoms, lift upto 1.5 m including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.						
		4	1.8	1.8	1.44	=	18.66
7 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of oundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead						
						=	9.33
8 4.1.2	Providing and laying in position cement concrete of specified grade exluding the cost of centring and shuttering-all work upto plinth level. 1:1.5:3(1 Cement :1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)						
		1	3.60	3.00	0.15	=	1.62
9 13.26	Neat cement punning						
		1	3.60	3.00		=	10.80

*[Handwritten signatures and initials]*



# GOVERNMENT OF BIHAR

PUBLIC HEALTH ENGINEERING DEPARTMENT

*MODEL ESTIMATE*

*FOR*

CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME

FOR A WARD HAVING 150 HOUSE HOLDS

ESTIMATED COST-- Rs. 16.977 Lac

JANUARY, 2017

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**GOVERNMENT OF BIHAR**  
**Public Health Engineering Department**

**ABSTRACT OF COST**

**NAME OF WORK:- CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME FOR WARD HAVING 150 HOUSE HOLDS**

S.N.	Description	Total Amount
1	Construction of 125 mm x75mmX 125m deep T/W for rocky strata etc. all complete and as per direction of E/I. (As per sub Estimate no.- 1)	Rs.2,08,868.82
2	Constructing masonry Chamber 100x100x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for Tube Well, and RCC top slab 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size ) , necessary excavation, foundation concrete 1:2:4(1 cement : 2 fine sand : 4 graded stone aggregate 20 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3coarse sand) 12 mm thick with 5% cico fnished with a floating coat of neat cement, out side plastering with cement mortar 1:4 (1 cement : 4coarse sand) 12 mm thick complete as per standard specifications & direction of E/I. (As per sub Estimate no.- 2)	Rs.13,040.00
3	Providing and Laying Distribution network of High Density Polyethylene pipe (HDPE pipe) including 10000 liter PVC tank installed at 8M high MS staging etc all complete as per direction of E/I. (As per sub Estimate no.- 3)	Rs.4,97,337.35
4	Supply Installation, commissioning and testing of single phase 3 H.P. submersible pump set having discharging capacity 3 lps at a total head of 35 meter(approx) of KSB/ Kirloskar or equivalent make with all accessories & fittings etc including loading unloading and transportation of the pump set to the work site with all required labour, materials, tools and tackles installation, testing & commissioning as per standards specifications and direction of E/I. (As per sub Estimate no.- 4)	Rs.93,603.00
5	Providing house connection for each house hold including supplying all materials, labours, tools and making ferrule connection with 20 mm dia MDPE and 15mm CPVC Pipes with all fittings etc all complete. (As per sub Estimate no.- 5)	Rs.2,26,950.00
6	Providing and erecting 8M high staging with GI enclosure to house electric switch panel of suitably designed MS section of angle, channel, hollow section etc. as per drawing attached. (As per sub Estimate no.- 6)	Rs.6,41,100.00
<b>TOTAL</b>		Rs.16,80,899.17
Add 1% Contingency		Rs.16,808.99
<b>G. TOTAL</b>		Rs.16,97,708.16
<b>Say</b>		<b>Rs.16,97,700.00</b>

(Rs. Sixteen Lac Ninety Seven Thousand Seven Hundred ) only

**note:**

- i) Road cutting cost may increase or decrease as per actuals.
- ii) Strongly advised that pipeline should be laid before construction of Naali-Gali.
- iii) This is a model estimate. Hence the quantity may increase or decrease based on actual site conditions.

**Variable inter alia includes**

- i) Hydro geomorphological condition.
- ii) Location of source vis-à-vis population/ house holds.
- iii) Quality of works and materials shall be maintained as per standard specifications and direction of E/I.

Technically approved for Rs. 16,97,700.00 (Rupees sixteen lakh ninety seven thousand seven hundred) only.

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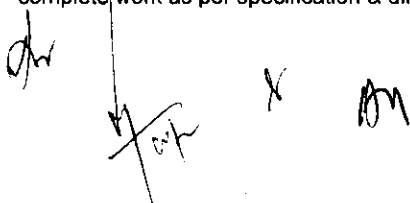
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**CONSTRUCTION OF 125 MM X 75MM DIA & 125M DEEP TUBE WELL  
(For Rocky strata including Boulders)**

S.No.	Description	Qty.	Unit	Rate	Amount
1	Boring/drilling bore well of required dia for casing/strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer -in-charge, upto 90 metre depth below ground level. <b>(Rocky strata including Boulders)</b>				
24.1.1.1	(a) 300mm dia bore from G.L. to 30.0M	30.0 M	P/M	Rs.833.10	Rs.24,993.00
	(b) 300mm dia bore from 30.0 m to 60.0M	30.0 M	P/M	Rs.833.10	Rs.24,993.00
	(c) 300mm dia bore from 60M to 90.0M	30.0 M	P/M	Rs.833.10	Rs.24,993.00
24.2.1.1	(d) 300mm dia bore from 90.0M to 150.0M	35.0 M	P/M	Rs.881.20	Rs.30,842.00
2	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC (UPVC) medium well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer -in-charge.				
	(b) 125 mm nominal size dia	30.0 M	P/M	Rs.462.50	Rs.13,875.00
24.3.5	(b) 75 mm nominal size dia	69.0 M	P/M	Rs.328.50	Rs.22,666.50
24.4.5	(c) 75 mm dia U.P.V.C. strainer	21.0 M	P/M	Rs.420.30	Rs.8,826.30
3	Providing all materials, tools & labours and fixing the following fittings etc. all complete as per specification & direction of E/I.				
	(a) 125 mm dia P.V.C. well cap	1 No.	Each	Rs.166.60	Rs.166.60
	(b) 125 mm dia center guide	4 Nos.	Each	Rs.100.00	Rs.400.00
	(c) 75 mm dia center guide	6 Nos.	Each	Rs.75.00	Rs.450.00
	(d) 75 mm dia P.V.C. pipe shoe plug	1 No.	Each	Rs.185.00	Rs.185.00
	(e)125mm x 75 mm dia P.V.C. Reducer	1 No.	Each	Rs.475.00	Rs.475.00
24.14.1	(d)125mm dia M.S.Clamp	1 No.	Each	Rs.974.60	Rs.974.60
4a	Providing all materials, labours, & equipments for fixing				
24.6	tubewell with peagravel of Dalbhumigarh to size 4mm to 8mm approx. as suitable for strata including carriage washing, placing and packing the same in position around the tubewell etc. all complete as per direction of E/I.	9.0 M <sup>3</sup>	P/M <sup>3</sup>	Rs.917.00	Rs.8,253.00
4b	Carriage of Pea Gravel from Dhalbhumigarh (taken av distance 400km.)	9.0 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,336.54	Rs.39,028.82
5	Development of tube well in accordance with IS : 2800 (part I) and IS: 11189, to establish maximum rate of usable water yield without sand content (beyond permissible limit), with required capacity air compressor, running the compressor for required time till well is fully developed, measuring yield of well by "V" notch method or any other approved method, measuring static level & draw down etc. by step draw down method, collecting water sampl & getting tested in approved laboratory, disinfection of tubewell, all complete, including hire & labour charges of air compressor, tools & accessories etc., all as per requirement and direction of Engineer-in-charge.	5 Hrs.	Each	Rs.649.40	Rs.3,247.00
6	Supplying all materials and labours for arrangement for additional water required during the drilling period for 40 Hrs & site clearance & leveling etc. And providing the soap duster etc. to staff engaged in drilling etc. all complete work as per specification & direction of E.I..	1 No.	Each	Rs.4,500.00	Rs.4,500.00
<b>TOTAL</b>					<b>Rs.2,08,868.82</b>

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(Sub Estimate - 2)

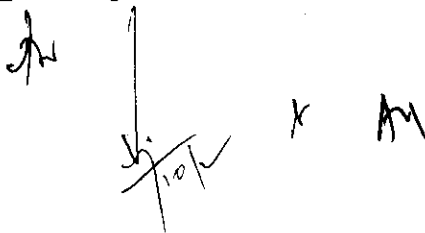
**Analysis of Chamber for TW**

Supplying materials, labours and constructing chamber of following dimension having 250mm thick wall in C.M. (1:4) including 12mm C.P. (1:3) with punning inside, R.C.C. cover slab with C.I. Surface box, 20mm dia foot rest at 150mm interval 10mm dia lifting ring etc. all complete.

<b>SIZE</b>	<b>1.00 M</b>	<b>x</b>	<b>1.00 M</b>	<b>x</b>	<b>0.75 M deep</b>
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S.O.R. No.	Particulars	No.	L	W	H	Qty.	Unit	Rate	Amount
1	Earth work in excavation	1	1.75	1.75	1.0	3.063 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.705.91
S.O.R. No. 2.8									
2	Sand filling	1	1.75	1.75	0.075	0.230 M <sup>3</sup>	P/M <sup>3</sup>	Rs.204.40	Rs.46.95
S.O.R. No. 2.28									
3	Brick flat soling	1	1.75	1.75		3.063 M <sup>2</sup>	P/M <sup>2</sup>	Rs.253.80	Rs.777.26
S.O.R. 11.72									
4	P.C.C. (1:2:4) in foundation	1	1.75	1.75	0.10	0.306 M <sup>3</sup>			
S.O.O. 4.1.3									
						0.306 M <sup>3</sup>	P/M <sup>3</sup>	Rs.3,323.10	Rs.1,017.70
5	B/Work in (1:4) C.M.	2	2.50	0.25	0.75	0.938 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,724.40	Rs.4,429.13
S.O.R. No. 6.1.12/1									
6	R.C.C. Cover slab(1:1.5:3)	1	1.50	1.50	0.15	0.338 M <sup>3</sup>	P/M <sup>3</sup>	Rs.5,139.70	Rs.1,734.65
S.O.R. No. 5.2.2 & 5.9.3									
	shuttering	2	1.50	1.50	0.15	3.15 M <sup>2</sup>	P/M <sup>2</sup>	Rs.291.00	Rs.916.65
7	C.P. (1:3) with 5% Cico & neat cement								
S.O.R. No.	Internal face	2	1.00	1.00	1.00	4.00 M <sup>2</sup>			
13.17.1	Bed surface	1	1.00	1.00		1.00 M <sup>2</sup>			
+13.36.1						5.00 M <sup>2</sup>	P/M <sup>2</sup>	Rs.166.30	Rs.831.50
8	C.P. (1:4) out side of wall	2	1.50	1.50	0.75	4.5 M <sup>2</sup>	P/M <sup>2</sup>	Rs.114.70	Rs.516.15
S.O.R. No. 13.11.2									
9	8mm dia T.S. Rod								
S.O.R. No. 5.22.7A									
		0.338 M <sup>3</sup> x		70	Kg/ M <sup>3</sup>	23.625 Kg.	P/Kg	Rs.56.00	Rs.1,323.00
10	Lifting Ring of 10mm dia Rod					4 No.	Each	Rs.30.00	Rs.120.00
11	Carriage of materials 5%								
								Total	Rs.12,418.89
									Rs.620.94
									<u>Rs.13,039.83</u>

Say Rs.13,040.00



**Sub Est. No. 3**

**WATER SUPPLY DISTRIBUTION SYSTEM**

S.N.	Particulars	Quantity	Unit	Rate	Amount
1A	Earthwork in excavation over areas (exceeding 30 cm in depth 1.5 in width as well as 10 sqm on plan) including disposal of excavated earth lead upto 50m and lift upto 1.5m, disposal earth to be levelled and neatly dressed.				
	75mm dia Pipe	195.00	0.30	1.10 =	64.35
	63mm dia Pipe	195.00	0.30	1.10 =	64.35
	50mm dia Pipe	390.00	0.30	1.10 =	128.70
	40mm dia Pipe	520.00	0.30	1.10 =	171.60
				429.00 M <sup>3</sup>	
	Add 5% extra for fittings =			21.45 M <sup>3</sup>	
		450.45 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.1,03,828.73
1B	Provision for PCC road cutting and its restoration	14.63 M <sup>3</sup>	P/M <sup>3</sup>	Rs.3,901.40	Rs.57,077.48
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	441.44 M <sup>3</sup>	P/M <sup>3</sup>	Rs.74.50	Rs.32,887.35
3	Providing and laying High Density Polyethylene pipe (HDPE pipe) of 20 mm to 225 mm OD and pressure 6.0 Kg/cm <sup>2</sup> and 10 Kg/cm <sup>2</sup> suitable for water supply which is available in all standard, like ISI-4984/1995 and various grades like PE-80, PE-100 including required specials. Rates are inclusive of , all taxes and duties (Exise duty @12.50% &CST @2% against Form 'C'), labour cess, contractor profit and overhead charges all complete as per direction of Engineer-in-charge.				
3A	HDPE pipe of materials grade PE100- PN10 (dia in mm)				
	75mm dia Pipe from PVC Tank to Distribution main	14.00 M	P/M	Rs.239.81	Rs.3,357.34
	75mm dia Pipe	195.00 M	P/M	Rs.239.81	Rs.46,762.95
	63mm dia Pipe	195.00 M	P/M	Rs.168.77	Rs.32,910.15
3B	HDPE pipe of materials grade PE100- PN8 (dia in mm)				
	50mm dia Pipe	390.00 M	P/M	Rs.89.99	Rs.35,096.10
	40mm dia Pipe	520.00 M	P/M	Rs.59.78	Rs.31,085.60
	50mm dia Pipe from T/well to PVC Tank	12.00 M	P/M	Rs.89.99	Rs.1,079.88
4	Providing and fixing brass gate valve with C.I. wheel of approved quality (screwed end).				
	75mm dia Pipe	3 Nos	Each	Rs.1,351.60	Rs.4,054.80
	63mm dia Pipe	2 Nos	Each	Rs.1,351.60	Rs.2,703.20
	50mm dia Pipe	3 Nos	Each	Rs.811.40	Rs.2,434.20
	40mm dia Pipe	3 Nos	Each	Rs.613.90	Rs.1,841.70

*[Handwritten signatures and initials]*

S.N.	Particulars	Quantity	Unit	Rate	Amount
5 18.33	Constructing masonry Chamber 60x60x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size ) , necessary excavation, foundation concrete 1:5:10(1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard specifications & direction of E/I.	9 Nos	Each	Rs.5,807.50	Rs.52,267.50
	Work for additional depth				
	Brick work (1:4) in foundation				
	2 1.10 0.25 0.35 0.193				
	2 0.60 0.25 0.35 0.105				
					0.298
		2.678	Cu <sup>3</sup> CuM	Rs.4,724.40	Rs.12,649.58
	Plaster (1:3)				
	8 1.10 0.35 3.08	27.72	Sq <sup>2</sup> SqM	Rs.128.20	Rs.3,553.70
6	Carriage 10% of item 5				Rs.6,847.08
7 18.48	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, ISI : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	10000	Ltrs P/Ltr.	Rs.6.60	Rs.66,000.00
8	Providing and fixing PTMT extension nipple for water tank pipe, fittings of approved quality and colour.				
	50mm dia	2 Nos	each	Rs.250.00	Rs.500.00
	75mm dia	1 No.	each	Rs.400.00	Rs.400.00
				<b>TOTAL</b>	<b>Rs.4,97,337.35</b>

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## Sub Est. No. 4

Model estimate for supply, installation & commissioning of single phase 3 H.P submersible motor pump set with all accessories including extension of L.T. line from nearest source up-to pumping station.

Sl. No.	Particulars	Quantity	Unit	Rate	Amount
1	2	3	4	5	6
[A.]	<p>Supply Installation, commissioning and testing of single phase 3 H.P. submersible pump set having discharging capacity 3 lps at a total head of 35 meter(approx) of KSB/ Kirloskar or equivalent make with all accessories &amp; fittings etc including loading unloading and transportation of the pump set to the work site with all required labour, materials, tools and tackles installation, testing &amp;</p> <p>(i) 50 mm dia x 3 mtrs long medium class G.I column pipe both end thread and one end socketed- 6(six)nos</p> <p>(ii) 1x3x2.5 mm<sup>2</sup> flat copper conductor submersible cable -40 (forty) mtrs.</p> <p>(iii) 50 mm dia union socket- 1(one) no.</p> <p>(iv) 65 mm dia x 250 mm long G.I. nipple- 1 (one) no.</p> <p>(v) 50 mm dia G.I Elbow—1(One) no.</p> <p>(vi) 50 mm dia M.S. clamps—2(Two) Pairs.</p> <p>(vii) 50 mmx 250 mm long G.I nipple- 1(One) no.</p> <p>(viii) Tube well cap for T/Well – 1(one) no.</p> <p>(ix) 50 mm dia x 65 mm dia reducer socket –1(one) no.</p>	1 (one) job	p/job	Rs.42,700.00	Rs.42,700.00

*[Handwritten signatures and initials]*

[B]	Supply Installation, commissioning and testing of floor mounted outdoor type L.T feeder pillar single phase starter control panel operated on 220 V, 3 phase, 50 c/s for 3 HP Submersible pump set made of MS sheet (minimum 2 mm thick) duly spray power coated painting with following accessories made of M.S sheet ( minimum 2mm thick) duly spray powder coated painting with following accessories (i) 90-220 V range single phase 7.5 KVA automatic voltage stabilizer make- Sen & Pandit/ Vertex/ISI marked If any. 1 No.  (ii) Suitable single phase starter control panel for above motor of BCH /L&T make – 1(one) no.	1 (one) job	p/job	Rs.45,500.00	Rs.45,500.00
[C]	Supplying & fitting 2.5 mm <sup>2</sup> copper service cable from power point from nearest source up-to pumping station..	20 mtrs	P/Mt	Rs.130.00	Rs.2,600.00
[D]	Providing all materials and labour required for doing earthing station with G.I earth pipe of 40 mm dia x 4.5 mtrs 20fts. long G.I pipe including accessories excavation of earth, providing masonry enclosure with cover plate having locking arrangement and watering pipe etc.with salt, charcoal,etc.as per IE & IS specification.	1 job	p/job	Rs.2,803.00	Rs.2,803.00
				<b>Total Rs.</b>	<b>Rs.93,603.00</b>

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**Sub Est. No. 5****Estimate for the work - House service connection**

SUB-ESTIMATE								
S.No.	Description	Qty	Unit	Rate	Amount			
1A	Providing and fixing MDPE (PE 80 GradeCompound) pipes PN-12.5 (12.5kg/Sqcm) as per ISO 4427 and specification for water application rates are inclusive of , taxes and duties (Exise duty @12.50% & CST @2% against Form 'C'), labour cess, contractor profit and overhead charges all complete as per direction of Engineer-in-charge.complete.							
	MDPE Pipe 20mm dia nominal bore	6.00	PM	Rs.19.97		Rs.119.82		
1B	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall							
18.7.1	15 mm nominal bore	1.0	PM	Rs.138.70		Rs.138.70		
2	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and amming of bottoms, lift upto 1.5 m . including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kinds of soil							
2.8.1		6.00	0.30	0.60	1.08	CuM	Rs.230.50	Rs.248.94
3	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead							
2.26					1.06	CuM	Rs.74.50	Rs.78.85
4	Providing and fixing brass ferrule with CI mouth cover including boring and tapping the main:							
18.20.1	15mm nominal bore	1	Each	Rs.254.10		Rs.254.10		
	Providing and fixing P.P. Black service Saddle (Brass threaded)	1	Each	Rs.400.00		Rs.400.00		
5	Providing and fixing brass bib cock of approved quality :							
18.15.1	15mm nominal bore	1	Each	Rs.273.00		Rs.273.00		
	Total					Rs.1,513.41		
	Say					Rs.1,513.00		

Total Nos. of House Holds=

150 Nos. @

Rs.1,513.00

Rs.2,26,950.00

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
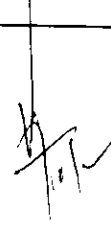


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## Sub Est. No. 6

## 8 M HIGH STEEL STRUCTURE STAGING FOR 10000 LITER PVC TANK

S.N.	Particulars	Quantity	Unit	Rate	Amount
1 7.41	Providing and fixing structural steel frame (for dry cladding with 30 mm thick gang saw cut with machine cut edges sand stone) on walls at all heights using M.S. square / rectangular tube in the required pattern as per architectural drawing, including cost of cutting, bending, welding etc. The frame work shall be fixed to the wall with the help of MS brackets / lugs of angle iron / flats etc. which shall be welded to the frame and embedded in brick wall with cement concrete block 1:2:4 (1 cement : 2 coarse sand : 4 graded aggregate 20 mm nominal size) of size 300x230x300 mm, including cost of necessary centring and shuttering and with approved expansion hold fasteners on CC/RCC surface, including drilling necessary holes. Approved cramps / pins etc. shall be welded to the frame work to support stone cladding, the steel work will be given a priming coat of Zinc primer as approved by Engineer-in-Charge and painted two or more coats of epoxy paint (Shop drawings shall be submitted by the contractor to the Engineer-in-Charge for approval before execution). The frame work shall be fixed in true horizontal & vertical lines/planes. (Only structural steel frame work shall be measured for the purpose of payment, stainless steel cramps shall be paid for separately and nothing extra shall be paid.)				
	Providing MS Staging of 8M height with ladder as per drawing attached	4500 Kg	P/Kg	Rs.119.40	Rs.5,37,300.00
2 5.2.2	Reinforced cement concrete work in wall (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. up to floor five level excluding cost of centring, shuttering, finishing and reinforcement. 1:1.5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20mm nominal size)	6.1972 M <sup>3</sup>	P/M <sup>3</sup>	Rs.5,139.70	Rs.31,851.75
3- 5.22	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete.	495.776 Kg	Kg	Rs.56.00	Rs.27,763.46
4- 2.28	Supplying and filling in plinth with local sand and under floors including watering, ramming consolidating and dressing complete.	4.32 M <sup>3</sup>	P/M <sup>3</sup>	Rs.204.40	Rs.883.01
5- 11.72	Providing designation of 100A Brick flat Soling joints filled with local sand including cost of watering, taxes & royalty all complete as per specification & direction of E/I.	10.8 M <sup>2</sup>	P/M <sup>2</sup>	Rs.253.80	Rs.2,741.04
6 4.1.2	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering-all work up to plinth level. 1:1.5:3(1 Cement :1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)	1.62 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,373.20	Rs.7,084.58

S.N.	Particulars	Quantity	Unit	Rate	Amount
7 2.8	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including ressing of sides and ramming of bottoms, lift upto 1.5 m . including getting out the excavated soil and	18.66 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.4,301.13
8 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of oundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead	9.33 M <sup>3</sup>	P/M <sup>3</sup>	Rs.74.50	Rs.695.09
9- 6.1.14	Brick work with bricks of class designation 100A in foundation and plinth in :				
A	Cement mortar 1:6 (1 Cement : 6 Sand)	1.2144 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,490.60	Rs.5,453.38
10 10.1	Providing and fixing anchor bolt of 28mm dia and 1 Mtr length embedded in R.C.C pedestal all complete as per direction of Engineer in charge. @4x4x5kg	80 Kg	P/kg	Rs.59.20	Rs.4,736.00
11 13.26	Neat cement punning	10.80 M <sup>2</sup>	P/M <sup>2</sup>	Rs.32.30	Rs.348.84
12	Carriage of the following materials from quarry to work site including loading, unloading and staking at work site as per specification & direction of E/I.				
	(a) Bricks ( 7 Km. Pucca & 1 Km. Kachha lead)	843 Nos.	%0 nos.	Rs.606.10	Rs.510.94
	(b) Coarse Sand (100 Km. lead)	3.810 M <sup>3</sup>	P/M <sup>3</sup>	Rs.1,221.09	Rs.4,652.35
	(c) Stone Chips (150 Km. lead)	6.780 M <sup>3</sup>	P/M <sup>3</sup>	Rs.1,746.29	Rs.11,839.85
	(d) Local Sand ( 2 Km. Pucca & 1 Km. Kachha lead)	4.480 M <sup>3</sup>	P/M <sup>3</sup>	Rs.217.23	Rs.973.19
				<b>TOTAL</b>	<b>Rs.6,41,134.61</b>
				<b>say</b>	<b>Rs.6,41,100.00</b>

**NAME OF WORK - CONSTRUCTION OF STEEL STAGING  
FOR HDPE WATER STORAGE TANK**

**Measurement Sheet**

S.No.	Particulars	No.	Length	Breath	Depth	Total	Total Qty
1	Reinforced cement concrete work in wall (any						
5.2.2	thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. upt floor five level excluding cost of centring, shuttering, finishin and reinforcement. 1:1:5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20mm nominal size)						
	base of footing	4	1.8	1.8	0.4	5.184	5.184
	Pedestal	4	0.4	0.04	1.6	0.1024	0.1024
	Plinth beam long side	2	3.6	0.23	0.3	0.4968	0.4968
	Plinth beam short side	2	3	0.23	0.3	0.414	0.414
							<b>6.1972</b>
	Providing & fixing in position steel bar reinforcement of various dia for RCC works taken 80kg/cum						<b>495.7760</b>
	<b>Item no. 2 :-</b>						
2-	Supplying and filling in plinth with local sand and under floors including watering, ramming consolidating and dressing complete.						
2.28	Long Wall						
		1	3.60	3.00	0.4	=	4.32
	<b>Item no. 3 :-</b>						
3-	Providing designation of 100A Brick flat Soling joints filled with local sand including cost of watering, taxes & royalty all complete as per specification & direction of E/I.						
11.72		1	3.60	3.00		=	10.8
	<b>Item no. 4 :-</b>						
5-	Brick work with bricks of class designation						
6.1.1	100A in foundation and plinth in :						
4 A	Cement mortar 1:6 (1 Cement : 6 Sand)						
		2	3.6	0.23	0.40	=	0.6624
		2	3	0.23	0.40	=	0.5520
							<b>1.2144</b>
6	Earth work in excavation in foundation trenches						
2.8	or drains(not exceeding 1.5 m in width or 10 sqm on plan) including ressing of sides and ramming of bottoms, lift upto 1.5 m . including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.						
		4	1.8	1.8	1.44	=	18.66
7	Filling available excavated earth (excluding						
2.26	rock) in trenches, plinth, sides of oundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming, and watering lead						
							<b>9.33</b>
8	Providing and laying in position cement						
4.1.2	concrete of specified grade exluding the cost of centring and shuttering-all work upto plinth level. 1:1.5:3(1 Cement :1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)						
		1	3.60	3.00	0.15	=	1.62
9	Neat cement punning						
13.26		1	3.60	3.00		=	10.80

*[Handwritten signatures and initials]*



# GOVERNMENT OF BIHAR

PUBLIC HEALTH ENGINEERING DEPARTMENT

*MODEL ESTIMATE*

*FOR*

CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME

FOR A WARD HAVING 150 HOUSE HOLDS

ESTIMATED COST-- Rs. 15.829 Lac

JANUARY, 2017

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**GOVERNMENT OF BIHAR**  
**Public Health Engineering Department**

**ABSTRACT OF COST**

**NAME OF WORK:- CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME FOR WARD HAVING 150 HOUSE HOLDS**

S.N.	Description	Total Amount
1	Construction of 200/165 mm dia. 90 Mtr deep Drilled High Yield Tubewell By DTH RIG Machine with Blue casing U.P.V.C. Pipe etc. all complete and as per direction of E/I. (As per sub Estimate no.- 1)	Rs.95,242.91
2	Constructing masonry Chamber 100x100x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for Tube Well, and RCC top slab 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size ) , necessary excavation, foundation concrete 1:2:4(1 cement : 2 fine sand : 4 graded stone aggregate 20 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3coarse sand) 12 mm thick with 5% cico finished with a floating coat of neat cement, out side plastering with cement mortar 1:4 (1 cement : 4coarse sand) 12 mm thick complete as per standard specifications & direction of E/I. (As per sub Estimate no.- 2)	Rs.13,040.00
3	Providing and Laying Distribution network of High Density Polyethylene pipe (HDPE pipe) including 10000 liter PVC tank installed at 8M high MS staging etc all complete as per direction of E/I. (As per sub Estimate no.- 3)	Rs.4,97,337.35
4	Supply Installation, commissioning and testing of single phase 3 H.P. submersible pump set having discharging capacity 3 lps at a total head of 35 meter(approx) of KSB/ Kirloskar or equivalent make with all accessories & fittings etc including loading unloading and transportation of the pump set to the work site with all required labour, materials, tools and tackles installation, testing & commissioning as per standards specifications and direction of E/I. (As per sub Estimate no.- 4)	Rs.93,603.00
5	Providing house connection for each house hold including supplying all materials, labours, tools and making ferrule connection with 20 mm dia MDPE and 15mm CPVC Pipes with all fittings etc all complete. (As per sub Estimate no.- 5)	Rs.2,26,950.00
6	Providing and erecting 8M high staging with GI enclosure to house electric switch panel of suitably designed MS section of angle, channel, hollow section etc. as per drawing attached. (As per sub Estimate no.- 6)	Rs.6,41,100.00
<b>TOTAL</b>		Rs.15,67,273.26
Add 1% Contingency		Rs.15,672.73
<b>G. TOTAL</b>		Rs.15,82,945.99
<b>Say</b>		<b>Rs.15,82,900.00</b>

(Rs. Fifteen Lac Eighty two Thousand nine Hundred) only

note:

- i) Road cutting cost may increase or decrease as per actuals.
- ii) Strongly advised that pipeline should be laid before construction of Naali-Gali.
- iii) This is a model estimate. Hence the quantity may increase or decrease based on actual site conditions.

**Variable inter alia includes**

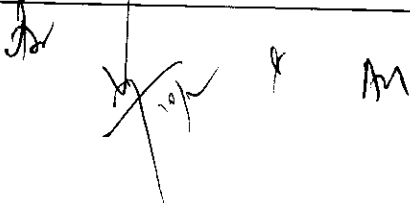
- i) Hydro geomorphological condition.
- ii) Location of source vis-à-vis population/ house holds.
- iii) Quality of works and materials shall be maintained as per standard specifications and direction of E/I.

Technically approved for Rs. 15,82,900.00 (Rupees fifteen lacs eighty two thousand nine hundred) only.

Sumish  
10.2.17

## Estimate no.- 1

MODEL ESTIMATE OF CONSTRUCTION OF 200/165 MM DIA. 90 MTR DEEP DRILLED HIGH YIELD TUBEWELL BY DTH RIG MACHINE WITH BLUE CASING U.P.V.C. PIPE					
S. NO.	Particulars	Quantity	unit	Rate	Amount
1(A)	Drilling of 200mm x 165mm x 125 meter deep borewell in all kinds of soil and rock in rural area for installation of pump set with Hydraulic DTH Rig machine, all complete including supplying all materials, tools, drilling rig, Air Compressor and equipments, as well as fuel, lubricants and cost of transportation of Rig machine and other vehicles up to the site etc all complete as per specification and direction of E/I.				
5					
6	(i) Up to 50 mtrs depth below GL	50	P/M	Rs.729.52	Rs.36,476.00
7	(ii) Beyond 50 mtrs. Up to 90 Mtrs.	40	P/M	Rs.867.88	Rs.34,715.20
8	2	24	P/M	Rs.921.70	Rs.22,120.80
9	3	1	Each	Rs.51.01	Rs.51.01
10	4	2.5	P/Hr	Rs.649.40	Rs.1,623.50
11	5	1	Each	Rs.256.40	Rs.256.40
12				<b>TOTAL</b>	<b>Rs.95,242.91</b>



(Sub Estimate - 2)

**Analysis of Chamber for TW**

Supplying materials, labours and constructing chamber of following dimension having 250mm thick wall in C.M. (1:4) including 12mm C.P. (1:3) with punning inside, R.C.C. cover slab with C.I. Surface box, 20mm dia foot rest at 150mm interval 10mm dia lifting ring etc. all complete.

SIZE                      1.00 M                      x                      1.00 M                      x                      0.75 M deep

S.O.R. No.	Particulars	No.	L	W	H	Qty.	Unit	Rate	Amount
1 S.O.R. No. 2.8	Earth work in excavation	1	1.75	1.75	1.0	3.063 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.705.91
2 S.O.R. No. 2.28	Sand filling	1	1.75	1.75	0.075	0.230 M <sup>3</sup>	P/M <sup>3</sup>	Rs.204.40	Rs.46.95
3 S.O.R. 11.72	Brick flat soling	1	1.75	1.75		3.063 M <sup>2</sup>	P/M <sup>2</sup>	Rs.253.80	Rs.777.26
4 S.O.O. 4.1.3	P.C.C. (1:2:4) in foundation	1	1.75	1.75	0.10	0.306 M <sup>3</sup>			
5 S.O.R. No. 6.1.12/1	B/Work in (1:4) C.M.	2	2.50	0.25	0.75	0.938 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,724.40	Rs.4,429.13
6 S.O.R. No. 5.2.2 & 5.9.3	R.C.C. Cover slab(1:1.5:3) shuttering	1	1.50	1.50	0.15	0.338 M <sup>3</sup>	P/M <sup>3</sup>	Rs.5,139.70	Rs.1,734.65
7 S.O.R. No. 13.17.1	C.P. (1:3) with 5% Cico & neat cement Internal face Bed surface	2 1	1.50 1.00	1.50 1.00	0.15 1.00	3.15 M <sup>2</sup> 4.00 M <sup>2</sup> 1.00 M <sup>2</sup>	P/M <sup>2</sup>	Rs.291.00	Rs.916.65
+13.36.1						5.00 M <sup>2</sup>	P/M <sup>2</sup>	Rs.166.30	Rs.831.50
8 S.O.R. No. 13.11.2	C.P. (1:4) out side of wall	2	1.50	1.50	0.75	4.5 M <sup>2</sup>	P/M <sup>2</sup>	Rs.114.70	Rs.516.15
9 S.O.R. No. 5.22.7A	8mm dia T.S. Rod					0.338 M <sup>3</sup> x 70 Kg/M <sup>3</sup>	P/Kg	Rs.56.00	Rs.1,323.00
10	Lifting Ring of 10mm dia Rod					4 No.	Each	Rs.30.00	Rs.120.00
11	Carriage of materials 5%						Total		Rs.12,418.89
									Rs.620.94
									<b>Rs.13,039.83</b>
									<b>Say Rs.13,040.00</b>

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**Sub Est. No. 3**

**WATER SUPPLY DISTRIBUTION SYSTEM**

S.N.	Particulars	Quantity	Unit	Rate	Amount
1A	Earthwork in excavation over areas (exceeding 30 cm in depth 1.5 in width as well as 10 sqm on plan) including disposal of excavated earth lead upto 50m and lift upto 1.5m, disposal earth to be levelled and neatly dressed.				
	75mm dia Pipe	195.00	0.30	1.10 =	64.35
	63mm dia Pipe	195.00	0.30	1.10 =	64.35
	50mm dia Pipe	390.00	0.30	1.10 =	128.70
	40mm dia Pipe	520.00	0.30	1.10 =	171.60
				429.00 M <sup>3</sup>	
	Add 5% extra for fittings =			21.45 M <sup>3</sup>	
				450.45 M <sup>3</sup> P/M <sup>3</sup>	Rs.230.50
				14.63 M <sup>3</sup> P/M <sup>3</sup>	Rs.3,901.40
1B	Provision for PCC road cutting and its restoration				Rs.1,03,828.73
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.				Rs.57,077.48
3	Providing and laying High Density Polyethylene pipe (HDPE pipe) of 20 mm to 225 mm OD and pressure 6.0 Kg/cm <sup>2</sup> and 10 Kg/cm <sup>2</sup> suitable for water supply which is available in all standard, like ISI-4984/1995 and various grades like PE-80, PE-100 including required specials. Rates are inclusive of , all taxes and duties (Exise duty @12.50% & CST @2% against Form 'C'), labour cess, contractor profit and overhead charges all complete as per direction of Engineer-in-charge.	441.44 M <sup>3</sup>	P/M <sup>3</sup>	Rs.74.50	Rs.32,887.35
3A	HDPE pipe of materials grade PE100- PN10 (dia in mm)				
	75mm dia Pipe from PVC Tank to Distribution main	14.00 M	P/M	Rs.239.81	Rs.3,357.34
	75mm dia Pipe	195.00 M	P/M	Rs.239.81	Rs.46,762.95
	63mm dia Pipe	195.00 M	P/M	Rs.168.77	Rs.32,910.15
3B	HDPE pipe of materials grade PE100- PN8 (dia in mm)				
	50mm dia Pipe	390.00 M	P/M	Rs.89.99	Rs.35,096.10
	40mm dia Pipe	520.00 M	P/M	Rs.59.78	Rs.31,085.60
	50mm dia Pipe from T/well to PVC Tank	12.00 M	P/M	Rs.89.99	Rs.1,079.88
4	Providing and fixing brass gate valve with C.I. wheel of approved quality (screwed end).				
	75mm dia Pipe	3 No: Each		Rs.1,351.60	Rs.4,054.80
	63mm dia Pipe	2 No: Each		Rs.1,351.60	Rs.2,703.20
	50mm dia Pipe	3 No: Each		Rs.811.40	Rs.2,434.20
	40mm dia Pipe	3 No: Each		Rs.613.90	Rs.1,841.70

*[Handwritten signatures and initials]*

S.N.	Particulars	Quantity	Unit	Rate	Amount	
5	Constructing masonry Chamber 60x60x75 cm inside, in					
18.33	brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) , necessary excavation, foundation concrete 1:5:10(1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard specifications & direction of E/I.					
	Work for additional depth	9 No:	Each	Rs. 5,807.50	Rs. 52,267.50	
	Brick work (1:4) in foundation					
		2	1.10	0.25	0.35	0.193
		2	0.60	0.25	0.35	0.105
					0.298	
	Plaster (1:3)	2.678	CuI CuM	Rs. 4,724.40	Rs. 12,649.58	
		8	1.10	0.35	3.08	27.72
			SqI SqM	Rs. 128.20	Rs. 3,553.70	
6	Carriage 10% of item 5				Rs. 6,847.08	
7	Providing and placing on terrace (at all floor levels)					
18.48	polyethylene water storage tank, ISI : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	10000	Ltrs P/Ltr.	Rs. 6.60	Rs. 66,000.00	
8	Providing and fixing PTMT extension nipple for water tank pipe, fittings of approved quality and colour.					
	50mm dia	2	No: each	Rs. 250.00	Rs. 500.00	
	75mm dia	1	No. each	Rs. 400.00	Rs. 400.00	
	<b>TOTAL</b>				<b>Rs. 4,97,337.35</b>	

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## Sub Est. No. 4

Model estimate for supply, installation & commissioning of single phase 3 H.P submersible motor pump set with all accessories including extension of L.T. line from nearest source up-to pumping station.

Sl. No.	Particulars	Quantity	Unit	Rate	Amount
1	2	3	4	5	6
[A.]	Supply Installation, commissioning and testing of single phase 3 H.P. submersible pump set having discharging capacity 3 lps at a total head of 35 meter(approx) of KSB/ Kirloskar or equivalent make with all accessories & fittings etc including loading unloading and transportation of the pump set to the work site with all required labour, materials, tools and tackles installation, testing & (i) 50 mm dia x 3 mtrs long medium class G.I column pipe both end thread and one end socketed- 6(six)nos (ii) 1x3x2.5 mm <sup>2</sup> flat copper conductor submersible cable -40 (forty) mtrs. (iii) 50 mm dia union socket- 1(one) no. (iv) 65 mm dia x 250 mm long G.I. nipple- 1 (one) no. (v) 50 mm dia G.I Elbow—1(One) no. (vi) 50 mm dia M.S. clamps—2(Two) Pairs. (vii) 50 mmx 250 mm long G.I nipple- 1(One) no. (viii) Tube well cap for T/Well - 1(one) no. (ix) 50 mm dia x 65 mm dia reducer socket -1(one) no.	1 (one) job	p/job	Rs.42,700.00	Rs.42,700.00

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[B]	Supply Installation, commissioning and testing of floor mounted outdoor type L.T feeder pillar single phase starter controll pannel operated on 220 V, 3 phase , 50 c/s for 3 HP Submersible pump set made of MS sheet (minimum 2 mm thick) duly spray power coated painting with following accessories made of M.S sheet ( minimum 2mm thick) duly spray powder coated painting with following accessories (i) 90-220 V range single phase 7.5 KVA automatic voltage stabilizer make- Sen & Pandit/ Vertex/ISI marked If any. 1 No.  (ii) Suitable single phase starter control panel for above motor of BCH /L&T make – 1(one) no.	1 (one) job	p/job	Rs.45,500.00	Rs.45,500.00
[C]	Supplying & fitting 2.5 mm <sup>2</sup> copper service cable from power point from nearest source up-to pumping station..	20 mtrs	P/Mt	Rs.130.00	Rs.2,600.00
[D]	Providing all materials and labour required for doing earthing station with G.I earth pipe of 40 mm dia x 4.5 mtrs 20fts. long G.I pipe including accessories excavation of earth , providing masonry enclosurc with cover plate having locking arrangement and watering pipe etc.with salt, charcoal,etc.as per IE & IS specification.	1 job	p/job	Rs.2,803.00	Rs.2,803.00
				<b>Total Rs.</b>	<b>Rs.93,603.00</b>

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## Sub Est. No. 5

## Estimate for the work - House service connection

## SUB-ESTIMATE

S.No.	Description	Qty	Unit	Rate	Amount			
1A	Providing and fixing MDPE (PE 80 GradeCompound) pipes PN-12.5 (12.5kg/Sqcm) as per ISO 4427 and specification for waterapplication rates are inclusive of , taxes and duties (Exise duty @12.50% &CST @2% against Form 'C'), labour cess, contractor profit and overhead charges all complete asper direction of Engineer-in-charge.complete.							
	MDPE Pipe 20mm dia nominal bore	6.00	PM	Rs.19.97	Rs.119.82			
1B	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall							
18.7.1	15 mm nomonal bore	1.0	PM	Rs.138.70	Rs.138.70			
2	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and amming of bottoms, lift upto 1.5 m . including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kinds of soil							
2.8.1	6.00	0.30	0.60	1.08	1.08	CuM	Rs.230.50	Rs.248.94
3	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead	1.06	CuM	Rs.74.50	Rs.78.85			
2.26								
4	Providing and fixing brass ferrule with CI mouth cover incuding boring and tapping the main:							
18.20.1	15mm nominal bore	1	Each	Rs.254.10	Rs.254.10			
	Providing and fixing P.P. Black service Saddle (Brass threaded)	1	Each	Rs.400.00	Rs.400.00			
5	Providing and fixing brass bib cock of approved quality :							
18.15.1	15mm nominal bore	1	Each	Rs.273.00	Rs.273.00			
	Total				Rs.1,513.41			
	Say				Rs.1,513.00			
	Total Nos. of House Holds=	150 Nos.	@	Rs.1,513.00	Rs.2,26,950.00			





**Sub Est. No. 6**

**8 M HIGH STEEL STRUCTURE STAGING FOR 10000 LITER PVC TANK**

S.N.	Particulars	Quantity	Unit	Rate	Amount
1 7.41	Providing and fixing structural steel frame (for dry cladding with 30 mm thick gang saw cut with machine cut edges sand stone) on walls at all heights using M.S. square / rectangular tube in the required pattern as per architectural drawing, including cost of cutting, bending, welding etc. The frame work shall be fixed to the wall with the help of MS brackets / lugs of angle iron / flats etc. which shall be welded to the frame and embedded in brick wall with cement concrete block 1:2:4 (1 cement : 2 coarse sand : 4 graded aggregate 20 mm nominal size) of size 300x230x300 mm, including cost of necessary centring and shuttering and with approved expansion hold fasteners on CC/RCC surface, including drilling necessary holes. Approved cramps / pins etc. shall be welded to the frame work to support stone cladding, the steel work will be given a priming coat of Zinc primer as approved by Engineer-in-Charge and painted two or more coats of epoxy paint (Shop drawings shall be submitted by the contractor to the Engineer-in-Charge for approval before execution). The frame work shall be fixed in true horizontal & vertical lines/planes. (Only structural steel frame work shall be measured for the purpose of payment, stainless steel cramps shall be paid for separately and nothing extra shall be paid.) Providing MS Staging of 8M height with ladder as per drawing attached	4500 Kg	P/Kg	Rs.119.40	Rs.5,37,300.00
2 5.2.2	Reinforced cement concrete work in wall (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. upt floor five level excluding cost of centring, shuttering, finishin and reinforcement. 1:1:5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20mm nominal size)	6.1972 M <sup>3</sup>	P/M <sup>3</sup>	Rs.5,139.70	Rs.31,851.75
3- 5.22	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete.	495.776 Kg	Kg	Rs.56.00	Rs.27,763.46
4- 2.28	Supplying and filling in plinth with local sand and under floors including watering, ramming consolidating and dressing complete.	4.32 M <sup>3</sup>	P/M <sup>3</sup>	Rs.204.40	Rs.883.01
5- 11.72	Providing designation of 100A Brick flat Soling joints filled with local sand including cost of watering, taxes & royalty all complete as per specification & direction of E/I.	10.8 M <sup>2</sup>	P/M <sup>2</sup>	Rs.253.80	Rs.2,741.04
6 4.1.2	Providing and laying in position cement concrete of specified grade exluding the cost of centring and shuttering-all work upto plinth level. 1:1.5:3(1 Cement :1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)	1.62 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,373.20	Rs.7,084.58
7 2.8	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including ressing)of sides and ramming of bottoms, lift upto 1.5 m . including getting out the excavated soil and	18.66 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.4,301.13

*[Handwritten signatures and initials]*

S.N.	Particulars	Quantity	Unit	Rate	Amount
8 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead	9.33 M <sup>3</sup>	P/M <sup>3</sup>	Rs.74.50	Rs.695.09
9- 6.1.14	Brick work with bricks of class designation 100A in foundation and plinth in :				
A	Cement mortar 1:6 (1 Cement : 6 Sand)	1.2144 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,490.60	Rs.5,453.38
10 10.1	Providing and fixing anchor bolt of 28mm dia and 1 Mtr length embedded in R.C.C pedestal all complete as per direction of Engineer in charge. @4x4x5kg	80 Kg	P/kg	Rs.59.20	Rs.4,736.00
11 13.26	Neat cement punning	10.80 M <sup>2</sup>	P/M <sup>2</sup>	Rs.32.30	Rs.348.84
12	Carriage of the following materials from quarry to work site including loading, unloading and staking at work site as per specification & direction of E/I.				
	(a) Bricks ( 7 Km. Pucca & 1 Km. Kachha lead)	843 Nos.	%0 nos.	Rs.606.10	Rs.510.94
	(b) Coarse Sand (100 Km. lead)	3.810 M <sup>3</sup>	P/M <sup>3</sup>	Rs.1,221.09	Rs.4,652.35
	(c) Stone Chips (150 Km. lead)	6.780 M <sup>3</sup>	P/M <sup>3</sup>	Rs.1,746.29	Rs.11,839.85
	(d) Local Sand ( 2 Km. Pucca & 1 Km. Kachha lead)	4.480 M <sup>3</sup>	P/M <sup>3</sup>	Rs.217.23	Rs.973.19
	<b>TOTAL</b>				<b>Rs.6,41,134.61</b>
	<b>say</b>				<b>Rs.6,41,100.00</b>

**NAME OF WORK - CONSTRUCTION OF STEEL STAGING  
FOR HDPE WATER STORAGE TANK  
Measurement Sheet**

S.No.	Particulars	No.	Length	Breath	Depth	Total	Total Qty
1	Reinforced cement concrete work in wall (any						
5.2.2	thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. up to floor five level excluding cost of centring, shuttering, finishing and reinforcement. 1:1.5:3 (1 cement: 1.5 coarse sand: 3 graded stone aggregate 20mm nominal size) base of footing	4	1.8	1.8	0.4	5.184	5.184
	Pedestal	4	0.4	0.04	1.6	0.1024	0.1024
	Plinth beam long side	2	3.6	0.23	0.3	0.4968	0.4968
	Plinth beam short side	2	3	0.23	0.3	0.414	0.414
							<b>6.1972</b>
	Providing & fixing in position steel bar reinforcement of various dia for RCC works taken 80kg/cum						<b>495.7760</b>
	<b>Item no. 2 :-</b>						
2-	Supplying and filling in plinth with local sand and under floors including watering, ramming consolidating and dressing complete.						
2.28	Long Wall	1	3.60	3.00	0.4	=	4.32
	<b>Item no. 3 :-</b>						
3-	Providing designation of 100A Brick flat Soling joints filled with local sand including cost of watering, taxes & royalty all complete as per specification & direction of E/I.	1	3.60	3.00		=	10.8
	<b>Item no. 4 :-</b>						
5-	Brick work with bricks of class designation						
6.1.1	100A in foundation and plinth in :						
4 A	Cement mortar 1:6 (1 Cement : 6 Sand)	2	3.6	0.23	0.40	=	0.6624
		2	3	0.23	0.40	=	0.5520
							<b>1.2144</b>
6	Earth work in excavation in foundation trenches						
2.8	or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift upto 1.5 m including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.	4	1.8	1.8	1.44	=	18.66
7	Filling available excavated earth (excluding						
2.26	rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead					=	9.33
8	Providing and laying in position cement						
4.1.2	concrete of specified grade excluding the cost of centring and shuttering-all work upto plinth level. 1:1.5:3 (1 Cement : 1.5 coarse sand: 3 graded stone aggregate 20 mm nominal size)	1	3.60	3.00	0.15	=	1.62
9	Neat cement punning	1	3.60	3.00		=	10.80
13.26							

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# GOVERNMENT OF BIHAR

PUBLIC HEALTH ENGINEERING DEPARTMENT

*MODEL ESTIMATE*

*FOR*

CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME

FOR A WARD HAVING 200 HOUSE HOLDS

ESTIMATED COST-- Rs. 17.850 Lac

JANUARY, 2017

**GOVERNMENT OF BIHAR**  
**Public Health Engineering Department**  
**ABSTRACT OF COST**

98

**NAME OF WORK:- CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME FOR WARD HAVING 200 HOUSE HOLDS**

S.N.	Description	Total Amount
1	Construction of 150mm X 90m deep Gravel packed T/W etc. all complete and as per direction of E/I. (As per sub Estimate no.- 1)	Rs.1,65,744.00
2	Constructing masonry Chamber 100x100x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for Tube Well, and RCC top slab 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size) , necessary excavation, foundation concrete 1:2:4(1 cement : 2 fine sand : 4 graded stone aggregate 20 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3coarse sand) 12 mm thick with 5% cico finished with a floating coat of neat cement, out side plastering with cement mortar 1:4 (1 cement : 4coarse sand) 12 mm thick complete as per standard specifications & direction of E/I. (As per sub Estimate no.- 2)	Rs.13,040.00
3	Providing and Laying Distribution network of High Density Polyethylene pipe (HDPE pipe) including 10000 liter PVC tank installed at 8M high MS staging etc all complete as per direction of E/I. (As per sub Estimate no.- 3)	Rs.5,51,285.54
4	Supply Installation, commissioning and testing of single phase 3 H.P. submersible pump set having discharging capacity 3.94 lps at a total head of 35 meter(approx) of KSB/ Kirloskar or equivalent make with all accessories & fittings etc including loading unloading and transportation of the pump set to the work site with all required labour, materials, tools and tackles installation, testing & commissioning as per standards specifications and direction of E/I. (As per sub Estimate no.- 4)	Rs.93,603.00
5	Providing house connection for each house hold including supplying all materials, labours, tools and making ferrule connection with 20 mm dia MDPE and 15mm CPVC Pipes with all fittings etc all complete. (As per sub Estimate no.- 5)	Rs.3,02,600.00
6	Providing and erecting 8M high staging with GI enclosure to house electric switch panel of suitably designed MS section of angle, channel, hollow section etc. as per drawing attached. (As per sub Estimate no.- 6)	Rs.6,41,100.00
<b>TOTAL</b>		Rs.17,67,372.54
Add 1% Contingency		Rs.17,673.73
<b>G. TOTAL</b>		Rs.17,85,046.26
<b>Say</b>		<b>Rs.17,85,000.00</b>

(Rs. Seventeen Lac Eighty five Thousand ) only

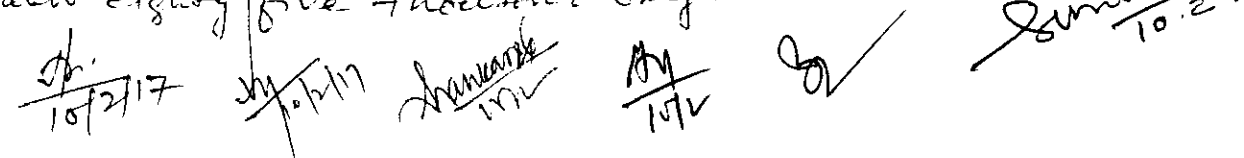
**note:**

- i) Road cutting cost may increase or decrease as per actuals.
- ii) Strongly advised that pipeline should be laid before construction of Naali-Gali.
- iii) This is a model estimate. Hence the quantity may increase or decrease based on actual site conditions.

**Variable inter alia includes**

- i) Hydro geomorphological condition.
- ii) Location of source vis-à-vis population/ house holds.
- iii) Quality of works and materials shall be maintained as per standard specifications and direction of E/I.

Technically approved for Rs. 17,85,000.00 (Seventeen  
Lakh eighty five thousand only.)



## (Sub Estimate - 1)

(A) Construction of 150mm X 90m deep Gravel packed T/W					
S. No.	Particulars	Quantity	Unit	Rate	Amount
1	Transportation of machine, equipments including all accessories etc.	1 No.	Each	Rs.1,010.00	Rs.1,010.00
2	Boring/drilling bore well of required dia for casing/strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer-in-charge, upto 90 metre depth below ground level. (All types of soil)				
	400mm dia bore from GL to 90.0M	90 Mtr.	P/M	Rs.529.30	Rs.47,637.00
3A	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC (UPVC) medium well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer-in-charge.				
	(a) 150 mm nominal size dia	59 M	P/M	Rs.615.30	Rs.36,302.70
3B	Supplying, assembling, lowering and fixing in vertical position in bore well unplasticized PVC (UPVC) medium well screen (RMS) pipes with ribs, conforming to IS: 12818, including hire & labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer-in-charge.				
	150 mm nominal size dia	30.0 M	P/M	Rs.554.30	Rs.16,629.00
4	Supplying fitting & fixing the following Fitting of approved make and specification at work site complete job.				
	(a) 150mm center guide Nos. in each T/W	9 Nos.	Each	Rs.150.00	Rs.1,350.00
	(b) 150 mm dia well plug	1 No	Each	Rs.205.10	Rs.205.10
	(b) 150 mm dia M.S. Clamp 1.6 M long (one Pair)	1 No	Each	Rs.1,031.10	Rs.1,031.10
5	Supplying 3mm to 6 mm Well washed assorted pea gravel and doing surrounding around the annular space between bore hole & 125mm pipe uniformity up to the depth 10 mtr. below G.L all work complete as per direction of E/I.	11 M <sup>3</sup>	P/M <sup>3</sup>	Rs.917.00	Rs.10,087.00
6	Carriage of Pea gravel from Dhalbhumigarh (taken av distance 400Km)	11 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,336.54	Rs.47,701.94
7	Supplying all materials laobours and equipments to seal T/W up to the depth of 12 mtr below G.L. by Sticky clay to prevent contamination from surface from all complete job as per direction of E/I.	1 Item	Each	Rs.51.01	Rs.51.01
8	Supplying all materials laobours and equipments including 150mm dia G.I. Cap /C.I. Cap over the casing of 150mm dia T/W properly all complete.	1 No.	Each	Rs.205.10	Rs.205.10
		1 No.	Each	Rs.287.50	Rs.287.50
9	Carriage of necessary equipment & materials.				
10	Supplying all tools equipments & labour for flushing washing and developing the T/W to give clean & clear water and all complete job as per direction of E/I.	5 H	P/H	Rs.649.40	Rs.3,247.00
				TOTAL	Rs.1,65,744.45
				Say	Rs.1,65,744.00



(Sub Estimate - 2)  
**Analysis of Chamber for TW**

Supplying materials, labours and constructing chamber of following dimension having 250mm thick wall in C.M. (1:4) including 12mm C.P. (1:3) with punning inside, R.C.C. cover slab with C.I. Surface box, 20mm dia foot rest at 150mm interval 10mm dia lifting ring etc. all complete.

<b>SIZE</b>	<b>1.00 M</b>	<b>x</b>	<b>1.00 M</b>	<b>x</b>	<b>0.75 M deep</b>
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S.O.R. No.	Particulars	No.	L	W	H	Qty.	Unit	Rate	Amount
1	Earth work in excavation	1	1.75	1.75	1.0	3.063 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.705.91
S.O.R. No. 2.8									
2	Sand filling	1	1.75	1.75	0.075	0.230 M <sup>3</sup>	P/M <sup>3</sup>	Rs.204.40	Rs.46.95
S.O.R. No. 2.28									
3	Brick flat soling	1	1.75	1.75		3.063 M <sup>2</sup>	P/M <sup>2</sup>	Rs.253.80	Rs.777.26
S.O.R. 11.72									
4	P.C.C. (1:2:4) in foundation	1	1.75	1.75	0.10	0.306 M <sup>3</sup>			
S.O.O. 4.1.3						0.306 M <sup>3</sup>	P/M <sup>3</sup>	Rs.3,323.10	Rs.1,017.70
5	B/Work in (1:4) C.M.	2	2.50	0.25	0.75	0.938 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,724.40	Rs.4,429.13
S.O.R. No. 6.1.12/1									
6	R.C.C. Cover slab(1:1.5:3)	1	1.50	1.50	0.15	0.338 M <sup>3</sup>	P/M <sup>3</sup>	Rs.5,139.70	Rs.1,734.65
S.O.R. No. 5.2.2 & 5.9.3									
7	C.P. (1:3) with 5% Cico & neat cement	2	1.50	1.50	0.15	3.15 M <sup>2</sup>	P/M <sup>2</sup>	Rs.291.00	Rs.916.65
S.O.R. No. 13.17.1	Internal face	2	1.00	1.00	1.00	4.00 M <sup>2</sup>			
+13.36.1	Bed surface	1	1.00	1.00		1.00 M <sup>2</sup>			
						5.00 M <sup>2</sup>	P/M <sup>2</sup>	Rs.166.30	Rs.831.50
8	C.P. (1:4) out side of wall	2	1.50	1.50	0.75	4.5 M <sup>2</sup>	P/M <sup>2</sup>	Rs.114.70	Rs.516.15
S.O.R. No. 13.11.2									
9	8mm dia T.S. Rod					0.338 M <sup>3</sup> x 70 Kg/ M3	P/Kg	Rs.56.00	Rs.1,323.00
S.O.R. No. 5.22.7A									
10	Lifting Ring of 10mm dia Rod					4 No.	Each	Rs.30.00	Rs.120.00
11	Carriage of materials 5%								Total Rs.12,418.89
									Rs.620.94
									<u>Rs.13,039.83</u>

Say Rs.13,040.00

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**Sub Est. No. 3**

**WATER SUPPLY DISTRIBUTION SYSTEM**

S.N.	Particulars	Quantity	Unit	Rate	Amount
1A	Earthwork in excavation over areas (exceeding 30 cm in depth 1.5 in width as well as 10 sqm on plan) including disposal of excavated earth lead upto 50m and lift upto 1.5m, disposal earth to be levelled and neatly dressed.				
	90mm dia Pipe	70.00	0.30	1.10 =	23.10
	75mm dia Pipe	140.00	0.30	1.10 =	46.20
	63mm dia Pipe	210.00	0.30	1.10 =	69.30
	50mm dia Pipe	420.00	0.30	1.10 =	138.60
	40mm dia Pipe	560.00	0.30	1.10 =	184.80
					<u>462.00 M<sup>3</sup></u>
	Add 5% extra for fittings =				<u>23.10 M<sup>3</sup></u>
					<u>485.10 M<sup>3</sup></u>
			P/M <sup>3</sup>	Rs.230.50	Rs.1,11,815.55
1B	Provision for PCC road cutting and its restoration	15.75	M <sup>3</sup>	P/M <sup>3</sup>	Rs.3,901.40
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	475.40	M <sup>3</sup>	P/M <sup>3</sup>	Rs.74.50
					Rs.35,417.15
3	Providing and laying High Density Polyethylene pipe (HDPE pipe) of 20 mm to 225 mm OD and pressure 6.0 Kg/cm <sup>2</sup> and 10 Kg/cm <sup>2</sup> suitable for water supply which is available in all standard, like ISI-4984/1995 and various grades like PE-80, PE-100 including required specials. Rates are inclusive of , all taxes and duties (Exise duty @12.50% &CST @2% against Form 'C'), labour cess, contractor profit and overhead charges all complete as per direction of Engineer-in-charge.				
3A	HDPE pipe of materials grade PE100- PN10 (dia in mm)				
	75mm dia Pipe from PVC Tank to Distribution main	14.00	M	P/M	Rs.239.81
					Rs.3,357.34
	90mm dia Pipe	70.00	M	P/M	Rs.340.84
					Rs.23,858.80
	75mm dia Pipe	140.00	M	P/M	Rs.239.81
					Rs.33,573.40
	63mm dia Pipe	210.00	M	P/M	Rs.168.77
					Rs.35,441.70
3B	HDPE pipe of materials grade PE100- PN8 (dia in mm)				
	50mm dia Pipe	420.00	M	P/M	Rs.89.99
					Rs.37,795.80
	40mm dia Pipe	560.00	M	P/M	Rs.59.78
					Rs.33,476.80
	50mm dia Pipe from T/well to PVC Tank	12.00	M	P/M	Rs.89.99
					Rs.1,079.88
4	Providing and fixing brass gate valve with C.I. wheel of approved quality (screwed end).				
	90mm dia Pipe	2 Nos.	Each	Rs.2,016.50	Rs.4,033.00
	75mm dia Pipe	3 Nos.	Each	Rs.1,351.60	Rs.4,054.80
	63mm dia Pipe	2 Nos.	Each	Rs.1,351.60	Rs.2,703.20
	50mm dia Pipe	3 Nos.	Each	Rs.811.40	Rs.2,434.20
	40mm dia Pipe	3 Nos.	Each	Rs.613.90	Rs.1,841.70

*[Handwritten signatures and marks at the bottom of the page]*

S.N.	Particulars	Quantity	Unit	Rate	Amount
5	Constructing masonry Chamber 60x60x75 cm inside, in 18.33 brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep ( inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size ) , necessary excavation, foundation concrete 1:5:10(1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard specifications & direction of E/I.	11 Nos.	Each	Rs.5,807.50	Rs.63,882.50
	Work for additional depth				
	Brick work (1:4) in foundation				
	2 1.10 0.25 0.35 0.193				
	2 0.60 0.25 0.35 0.105				
				0.298	
		3.273 CuM	CuM	Rs.4,724.40	Rs.15,460.60
	Plaster (1:3)				
	8 1.10 0.35 3.08	33.88 SqM	SqM	Rs.128.20	Rs.4,343.42
6	Carriage 10% of item 5				Rs.8,368.65
7	Providing and placing on terrace (at all floor levels)				
18.48	polyethylene water storage tank, ISI : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	10000 Ltrs.	P/Ltr.	Rs.6.60	Rs.66,000.00
8	Providing and fixing PTMT extension nipple for water tank pipe, fittings of approved quality and colour.				
	50mm dia	2 Nos.	each	Rs.250.00	Rs.500.00
	75mm dia	1 No.	each	Rs.400.00	Rs.400.00
				<b>TOTAL</b>	<b>Rs.5,51,285.54</b>

## Sub Est. No. 4

Model estimate for supply, installation & commissioning of single phase 3 H.P submersible motor pump set with all accessories including extension of L.T. line from nearest source up-to pumping station.

Sl. No.	Particulars	Quantity	Unit	Rate	Amount
1	2	3	4	5	6
[A.]	Supply Installation, commissioning and testing of single phase 3 H.P. submersible pump set having discharging capacity 3.94 lps at a total head of 35 meter(approx) of KSB/ Kirloskar or equivalent make with all accessories & fittings etc including loading unloading and transportation of the pump set to the work site with all required labour, materials, tools and tackles installation, testing & (i) 50 mm dia x 3 mtrs long medium class G.I column pipe both end thread and one end socketed- 6(six)nos (ii) 1x3x2.5 mm <sup>2</sup> flat copper conductor submersible cable -40 (forty) mtrs. (iii) 50 mm dia union socket- 1(one) no. (iv) 65 mm dia x 250 mm long G.I. nipple- 1 (one) no. (v) 50 mm dia G.I Elbow—1(One) no. (vi) 50 mm dia M.S. clamps—2(Two) Pairs. (vii) 50 mmx 250 mm long G.I nipple- 1(One) no. (viii) Tube well cap for T/Well - 1(one) no. (ix) 50 mm dia x 65 mm dia reducer socket -1(one) no.	1 (one) job	p/job	Rs.42,700.00	Rs.42,700.00

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[B]	Supply Installation, commissioning and testing of floor mounted outdoor type L.T feeder pillar single phase starter controll pannel operated on 220 V, 3 phase , 50 c/s for 3 HP Submersible pump set made of MS sheet (minimum 2 mm thick) duly spray power coated painting with following accessories made of M.S sheet ( minimum 2mm thick) duly spray powder coated painting with following accessories (i) 90-220 V range single phase 7.5 KVA automatic voltage stabilizer make- Sen & Pandit/ Vertex/ISI marked If any. 1 No.  (ii) Suitable single phase starter control panel for above motor of BCH /L&Tmake – 1(one) no.	1 (one) job	p/job	Rs.45,500.00	Rs.45,500.00
[C]	Supplying & fitting 2.5 mm <sup>2</sup> copper service cable from power point from nearest source up-to pumping station..	20 mtrs	P/Mt	Rs.130.00	Rs.2,600.00
[D]	Providing all materials and labour required for doing earthing station with G.I earth pipe of 40 mm dia x 4.5 mtrs 20fts. long G.I pipe including accessories excavation of earth , providing masonry enclosure with cover plate having locking arrangement and watering pipe etc.with salt, charcoal,etc.as per IE & IS specification.	1 job	p/job	Rs.2,803.00	Rs.2,803.00
				<b>Total Rs.</b>	<b>Rs.93,603.00</b>

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## Sub Est. No. 5

## Estimate for the work - House service connection




SUB-ESTIMATE									
S.No.	Description	Qty	Unit	Rate	Amount				
1A	Providing and fixing MDPE (PE 80 Grade Compound) pipes PN-12.5 (12.5kg/Sqcm) as per ISO 4427 and specification for water application rates are inclusive of, taxes and duties (Exise duty @12.50% & CST @2% against Form 'C'), labour cess, contractor profit and overhead charges all complete as per direction of Engineer-in-charge. complete.								
	MDPE Pipe 20mm dia nominal bore	6.00	PM	Rs.19.97	Rs.119.82				
1B	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall								
18.7.1	15 mm nominal bore	1.0	PM	Rs.138.70	Rs.138.70				
2	Earth work in excavation in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and amming of bottoms, lift upto 1.5 m. including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kinds of soil								
2.8.1		6.00	0.30	0.60	1.08	1.08	CuM	Rs.230.50	Rs.248.94
3	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead								
2.26						1.06	CuM	Rs.74.50	Rs.78.85
4	Providing and fixing brass ferrule with CI mouth cover including boring and tapping the main:								
18.20.1	15mm nominal bore	1	Each	Rs.254.10	Rs.254.10				
	Providing and fixing P.P. Black service Saddle (Brass threaded)	1	Each	Rs.400.00	Rs.400.00				
5	Providing and fixing brass bib cock of approved quality :								
18.15.1	15mm nominal bore	1	Each	Rs.273.00	Rs.273.00				
	Total				Rs.1,513.41				
	Say				Rs.1,513.00				

Total Nos. of House Holds=

200 Nos. @

Rs.1,513.00

Rs.3,02,600.00

  
 X 

Sub Est. No. 6

8 M HIGH STEEL STRUCTURE STAGING FOR 10000 LITER PVC TANK

S.N.	Particulars	Quantity	Unit	Rate	Amount
1 7.41	Providing and fixing structural steel frame (for dry cladding with 30 mm thick gang saw cut with machine cut edges sand stone) on walls at all heights using M.S. square / rectangular tube in the required pattern as per architectural drawing, including cost of cutting, bending, welding etc. The frame work shall be fixed to the wall with the help of MS brackets / lugs of angle iron / flats etc. which shall be welded to the frame and embedded in brick wall with cement concrete block 1:2:4 (1 cement : 2 coarse sand : 4 graded aggregate 20 mm nominal size) of size 300x230x300 mm, including cost of necessary centring and shuttering and with approved expansion hold fasteners on CC/RCC surface, including drilling necessary holes. Approved cramps / pins etc. shall be welded to the frame work to support stone cladding, the steel work will be given a priming coat of Zinc primer as approved by Engineer-in-Charge and painted two or more coats of epoxy paint (Shop drawings shall be submitted by the contractor to the Engineer-in-Charge for approval before execution). The frame work shall be fixed in true horizontal & vertical lines/planes. (Only structural steel frame work shall be measured for the purpose of payment, stainless steel cramps shall be paid for separately and nothing extra shall be paid.) Providing MS Staging of 8M height with ladder as per drawing attached	4500 Kg	P/Kg	Rs.119.40	Rs.5,37,300.00
2 5.2.2	Reinforced cement concrete work in wall (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. upt floor five level excluding cost of centring, shuttering, finishing and reinforcement. 1:1.5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20mm nominal size)	6.1972 M <sup>3</sup>	P/M <sup>3</sup>	Rs.5,139.70	Rs.31,851.75
3- 5.22	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete.	495.776 Kg	Kg	Rs.56.00	Rs.27,763.46
4- 2.28	Supplying and filling in plinth with local sand and under floors including watering, ramming consolidating and dressing complete.	4.32 M <sup>3</sup>	P/M <sup>3</sup>	Rs.204.40	Rs.883.01
5- 11.72	Providing designation of 100A Brick flat Soling joints filled with local sand including cost of watering, taxes & royalty all complete as per specification & direction of E/I.	10.8 M <sup>2</sup>	P/M <sup>2</sup>	Rs.253.80	Rs.2,741.04
6 4.1.2	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering-all work upto plinth level. 1:1.5:3(1 Cement :1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)	1.62 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,373.20	Rs.7,084.58

S.N.	Particulars	Quantity	Unit	Rate	Amount
7 2.8	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including rassing of sides and ramming of bottoms, lift upto 1.5 m . including getting out the excavated soil and	18.66 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.4,301.13
8 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of oundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead	9.33 M <sup>3</sup>	P/M <sup>3</sup>	Rs.74.50	Rs.695.09
9- 6.1.14	Brick work with bricks of class designation 100A in foundation and plinth in :				
A	Cement mortar 1:6 (1 Cement : 6 Sand)	1.2144 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,490.60	Rs.5,453.38
10 10.1	Providing and fixing anchor bolt of 28mm dia and 1 Mtr length embedded in R.C.C pedestal all complete as per direction of Engineer in charge. @4x4x5kg	80 Kg	P/kg	Rs.59.20	Rs.4,736.00
11 13.26	Neat cement punning	10.80 M <sup>2</sup>	P/M <sup>2</sup>	Rs.32.30	Rs.348.84
12	Carriage of the following materials from quarry to work site including loading, unloading and staking at work site as per specification & direction of E/I.				
	(a) Bricks ( 7 Km. Pucca & 1 Km. Kachha lead)	843 Nos.	%0 nos.	Rs.606.10	Rs.510.94
	(b) Coarse Sand (100 Km. lead)	3.810 M <sup>3</sup>	P/M <sup>3</sup>	Rs.1,221.09	Rs.4,652.35
	(c) Stone Chips (150 Km. lead)	6.780 M <sup>3</sup>	P/M <sup>3</sup>	Rs.1,746.29	Rs.11,839.85
	(d) Local Sand ( 2 Km. Pucca & 1 Km. Kachha lead)	4.480 M <sup>3</sup>	P/M <sup>3</sup>	Rs.217.23	Rs.973.19
				<b>TOTAL</b>	<b>Rs.6,41,134.61</b>
				<b>say</b>	<b>Rs.6,41,100.00</b>

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**NAME OF WORK - CONSTRUCTION OF STEEL STAGING  
FOR HDPE WATER STORAGE TANK  
Measurement Sheet**

S.No.	Particulars	No.	Length	Breath	Depth	Total	Total Qty
1	Reinforced cement concrete work in wall (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. upt floor five level excluding cost of centring, shuttering, finishin and reinforcement. 1:1.5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20mm nominal size)						
5.2.2	base of footing	4	1.8	1.8	0.4	5.184	5.184
	Pedestal	4	0.4	0.04	1.6	0.1024	0.1024
	Plinth beam long side	2	3.6	0.23	0.3	0.4968	0.4968
	Plinth beam short side	2	3	0.23	0.3	0.414	0.414
							<b>6.1972</b>
	Providing & fixing in position steel bar reinforcement of various dia for RCC works taken 80kg/cum						<b>495.7760</b>
	<b>Item no. 2 :-</b>						
2- 2.28	Supplying and filling in plinth with local sand and under floors including watering, ramming consolidating and dressing complete. Long Wall						
		1	3.60	3.00	0.4	=	4.32
	<b>Item no. 3 :-</b>						
3- 11.72	Providing designation of 100A Brick flat Soling joints filled with local sand including cost of watering, taxes & royalty all complete as per specification & direction of E/l.						
		1	3.60	3.00		=	10.8
	<b>Item no. 4 :-</b>						
5- 6.1.1	Brick work with bricks of class designation 100A in foundation and plinth in :						
4 A	Cement mortar 1:6 (1 Cement : 6 Sand)						
		2	3.6	0.23	0.40	=	0.6624
		2	3	0.23	0.40	=	0.5520
							<b>1.2144</b>
6 2.8	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including ressing of sides and ramming of bottoms, lift upto 1.5 m . including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.						
		4	1.8	1.8	1.44	=	18.66
7 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of oundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead						
						=	9.33
8 4.1.2	Providing and laying in position cement concrete of specified grade exluding the cost of centring and shuttering-all work upto plinth level. 1:1.5:3(1 Cement :1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)						
		1	3.60	3.00	0.15	=	1.62
9 13.26	Neat cement punning	1	3.60	3.00		=	10.80

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# GOVERNMENT OF BIHAR

PUBLIC HEALTH ENGINEERING DEPARTMENT

*MODEL ESTIMATE*

*FOR*

CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME

FOR A WARD HAVING 200 HOUSE HOLDS

ESTIMATED COST-- Rs. 18.115 Lac

JANUARY, 2017

**GOVERNMENT OF BIHAR**  
**Public Health Engineering Department**  
**ABSTRACT OF COST**

110

**NAME OF WORK:- CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME FOR WARD HAVING 200 HOUSE HOLDS**

S.N.	Description	Total Amount
1	Construction of 150mm x100mmx125m deep T/W etc. all complete and as per direction of E/I. (As per sub Estimate no.- 1)	Rs.1,91,907.72
2	Constructing masonry Chamber 100x100x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for Tube Well, and RCC top slab 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size ) , necessary excavation, foundation concrete 1:2:4(1 cement : 2 fine sand : 4 graded stone aggregate 20 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3coarse sand) 12 mm thick with 5% cico finished with a floating coat of neat cement, out side plastering with cement mortar 1:4 (1 cement : 4coarse sand) 12 mm thick complete as per standard specifications & direction of E/I. (As per sub Estimate no.- 2)	Rs.13,040.00
3	Providing and Laying Distrubtion network of High Density Polyethylene pipe (HDPE pipe) including 10000 liter PVC tank installed at 8M high MS staging etc all complete as per direction of E/I. (As per sub Estimate no.- 3)	Rs.5,51,285.54
4	Supply Installation, commissioning and testing of single phase 3 H.P. submersible pump set having discharging capacity 3.94 lps at a total head of 35 meter(approx) of KSB/ Kirloskar or equivalent make with all accessories & fittings etc including loading unloading and transportation of the pump set to the work site with all required labour, materials, tools and tackles installation, testing & commissioning as per standards specifications and direction of E/I. (As per sub Estimate no.- 4)	Rs.93,603.00
5	Providing house connection for each house hold including supplying all materials, labours, tools and making ferrule connection with 20 mm dia MDPE and 15mm CPVC Pipes with all fittings etc all complete. (As per sub Estimate no.- 5)	Rs.3,02,600.00
6	Providing and erecting 8M high staging with GI enclosure to house electric switch panel of suitably designed MS section of angle, channel, hollow section etc. as per drawing attached. (As per sub Estimate no.- 6)	Rs.6,41,100.00
<b>TOTAL</b>		Rs.17,93,536.26
Add 1% Contingency		Rs.17,935.36
<b>G. TOTAL</b>		Rs.18,11,471.62
<b>Say</b>		<b>Rs.18,11,500.00</b>

(Rs. Eighteen Lac Eleven Thousand five Hundred ) only

**note:**

- i) Road cutting cost may increase or decrease as per actuals.
- ii) Strongly advised that pipeline should be laid before construction of Naali-Gali.
- iii) This is a model estimate. Hence the quantity may increase or decrease based on actual site conditions.

**Variable inter alia includes**

- i) Hydro geomorphological condition.
- ii) Location of source vis-à-vis population/ house holds.
- iii) Quality of works and materials shall be maintained as per standard specifications and direction of E/I.

Technically approved for Rs. 18,11,500.00 (Rupees Eighteen lac eleven thousand five hundred) only.

Dr. 10/2/17

10/2/17

10/2

10/2

10/2

10.2.17

**Sub Estimate- 1**

111

**CONSTRUCTION OF 150MM X 100MM DIA & 125M DEEP TUBE WELL**

S.No.	Description	Qty.	Unit	Rate	Amount
1	Boring/drilling bore well of required dia for casing/strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer -in-charge, upto 90 metre depth below ground level. (All types of soil)				
24.1.1.2	(a) 350mm dia bore from G.L. to 30.0M	30.0 M	P/M	Rs.413.50	Rs.12,405.00
24.1.1.1	(b) 300mm dia bore from 30.0 m to 60.0M	30.0 M	P/M	Rs.378.00	Rs.11,340.00
	(c) 300mm dia bore from 60M to 90.0M	30.0 M	P/M	Rs.378.00	Rs.11,340.00
24.2.1	(d) 300mm dia bore from 90.0M to 150.0M	35.0 M	P/M	Rs.441.10	Rs.15,438.50
2A	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC (UPVC) medium well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer -in-charge.				
24.3.2	(a) 150 mm nominal size dia	30.0 M	P/M	Rs.615.30	Rs.18,459.00
24.3.1	(b) 100 mm nominal size dia	60.0 M	P/M	Rs.444.20	Rs.26,652.00
2B	Supplying, assembling, lowering and fixing in vertical position in bore well unplasticized PVC (UPVC) medium well screen (RMS) pipes with ribs, conforming to IS: 12818, including hire & labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer-in-charge.				
24.4.1	100 mm nominal size dia	30.0 M	P/M	Rs.468.80	Rs.14,064.00
3	Supplying the following fittings & fixing the same in position as per approved lowering assembly and strata chart including providing all equipments and welding the same on process of lowering the assay etc. all complete as per S/D of E/I.				
24.13.2	(a) 150 mm dia well cap	1 No.	Each	Rs.205.10	Rs.205.10
24.14.2	(b) 150 mm dia M.S. Clamp 1.6 M long (one Pair)	1 No.	Each	Rs.1,031.10	Rs.1,031.10
	(c) 150 mm dia center guide	4 Nos.	Each	Rs.150.00	Rs.600.00
	(d) 100 mm dia center guide	6 Nos.	Each	Rs.100.00	Rs.600.00
	(e) 150 mm x 100 mm dia 6mm wall thickness MS reducer	1 No.	Each	Rs.500.00	Rs.500.00
24.15.1	(f) 100mm dia & 6mm thick M.S. well shoe plug	1 No.	Each	Rs.205.60	Rs.205.60
4a	Providing all materials, labours, & equipments for fixing tube well with pea gravel of Dalbhumigarh to size 4mm to 8mm approx. as suitable for strata including carriage washing, placing and packing the same in position around the tube well etc. all complete as per direction of E/I.				
24.6	Carriage of Pea Gravel from Dhalbhumigarh (taken av distance 400km.)	9.0 M <sup>3</sup>	P/M <sup>3</sup>	Rs.917.00	Rs.8,253.00
4b	Development of tube well in accordance with IS : 2800 (part I) and IS: 11189, to establish maximum rate of usable water yield without sand content (beyond permissible limit), with required capacity air compressor, running the compressor for required time till well is fully developed, measuring yield of well by "V" notch method or any other approved method, measuring static level & draw down etc. by step draw down method, collecting water sample & getting tested in approved laboratory, disinfection of tubewell, all complete, including hire & labour charges of air compressor, tools & accessories etc., all as per requirement and direction of Engineer-in-charge.	24 Hrs.	Each	Rs.649.40	Rs.15,585.60
6	Transportation of drilling plants, developing equipments & all other required tools and M/c by and suitable mechanical means including all cost of loading, unloading, placing at work site and back after completion of work as per S/D of E/I	1 No.	Each	Rs.9,200.00	Rs.9,200.00

S.No.	Description	Qty.	Unit	Rate	Amount
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7 Supplying all materials and labours for arrangement for additional water required during the drilling period for 70 Hrs & site clearance & leveling etc. And providing the soap duster etc. to staff engaged in drilling etc. all complete work as per specification & direction of E.I.

1 No. Each Rs.7,000.00 Rs.7,000.00  
TOTAL Rs.1,91,907.72

*[Handwritten signatures and initials]*

(Sub Estimate - 2)

**Analysis of Chamber for TW**

Supplying materials, labours and constructing chamber of following dimension having 250mm thick wall in C.M. (1:4) including 12mm C.P. (1:3) with punning inside, R.C.C. cover slab with C.I. Surface box, 20mm dia foot rest at 150mm interval 10mm dia lifting ring etc. all complete.

<b>SIZE</b>	<b>1.00 M</b>	<b>x</b>	<b>1.00 M</b>	<b>x</b>	<b>0.75 M deep</b>
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<u>S.O.R. No.</u>	<u>Particulars</u>	<u>No.</u>	<u>L</u>	<u>W</u>	<u>H</u>	<u>Qty.</u>	<u>Unit</u>	<u>Rate</u>	<u>Amount</u>
<u>1</u>	Earth work in excavation	1	1.75	1.75	1.0	3.063 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.705.91
S.O.R. No. 2.8									
<u>2</u>	Sand filling	1	1.75	1.75	0.075	0.230 M <sup>3</sup>	P/M <sup>3</sup>	Rs.204.40	Rs.46.95
S.O.R. No. 2.28									
<u>3</u>	Brick flat soling	1	1.75	1.75		3.063 M <sup>2</sup>	P/M <sup>2</sup>	Rs.253.80	Rs.777.26
S.O.R. 11.72									
<u>4</u>	P.C.C. (1:2:4) in foundation	1	1.75	1.75	0.10	0.306 M <sup>3</sup>			
S.O.O. 4.1.3									
						0.306 M <sup>3</sup>	P/M <sup>3</sup>	Rs.3,323.10	Rs.1,017.70
<u>5</u>	B/Work in (1:4) C.M.	2	2.50	0.25	0.75	0.938 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,724.40	Rs.4,429.13
S.O.R. No. 6.1.12/1									
<u>6</u>	R.C.C. Cover slab(1:1.5:3)	1	1.50	1.50	0.15	0.338 M <sup>3</sup>	P/M <sup>3</sup>	Rs.5,139.70	Rs.1,734.65
S.O.R. No. 5.2.2 & 5.9.3									
	shuttering	2	1.50	1.50	0.15	3.15 M <sup>2</sup>	P/M <sup>2</sup>	Rs.291.00	Rs.916.65
<u>7</u>	C.P. (1:3) with 5% Cico & neat cement								
S.O.R. No. 13.17.1	Internal face	2	1.00	1.00	1.00	4.00 M <sup>2</sup>			
+13.36.1	Bed surface	1	1.00	1.00		1.00 M <sup>2</sup>			
						5.00 M <sup>2</sup>	P/M <sup>2</sup>	Rs.166.30	Rs.831.50
<u>8</u>	C.P. (1:4) out side of wall	2	1.50	1.50	0.75	4.5 M <sup>2</sup>	P/M <sup>2</sup>	Rs.114.70	Rs.516.15
S.O.R. No. 13.11.2									
<u>9</u>	8mm dia T.S. Rod								
S.O.R. No. 5.22.7A									
			0.338 M <sup>3</sup> x	70	Kg/M <sup>3</sup>	23.625 Kg.	P/Kg	Rs.56.00	Rs.1,323.00
<u>10</u>	Lifting Ring of 10mm dia Rod					4 No.	Each	Rs.30.00	Rs.120.00
<u>11</u>	Carriage of materials 5%								
								Total	Rs.12,418.89
									Rs.620.94
									<b>Rs.13,039.83</b>

Say Rs.13,040.00

*[Handwritten signatures and initials]*

**Sub Est. No. 3**

**WATER SUPPLY DISTRIBUTION SYSTEM**

S.N.	Particulars	Quantity	Unit	Rate	Amount	
1A	Earthwork in excavation over areas (exceeding 30 cm in depth 1.5 in width as well as 10 sqm on plan) including disposal of excavated earth lead upto 50m and lift upto 1.5m, disposal earth to be levelled and neatly dressed.					
	90mm dia Pipe	70.00	0.30	1.10 =	23.10	
	75mm dia Pipe	140.00	0.30	1.10 =	46.20	
	63mm dia Pipe	210.00	0.30	1.10 =	69.30	
	50mm dia Pipe	420.00	0.30	1.10 =	138.60	
	40mm dia Pipe	560.00	0.30	1.10 =	184.80	
		462.00	M <sup>3</sup>			
	Add 5% extra for fittings =	23.10	M <sup>3</sup>			
		485.10	M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.1,11,815.55
1B	Provision for PCC road cutting and its restoration	15.75	M <sup>3</sup>	P/M <sup>3</sup>	Rs.3,901.40	Rs.61,447.05
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	475.40	M <sup>3</sup>	P/M <sup>3</sup>	Rs.74.50	Rs.35,417.15
3	Providing and laying High Density Polyethylene pipe (HDPE pipe) of 20 mm to 225 mm OD and pressure 6.0 Kg/cm <sup>2</sup> and 10 Kg/cm <sup>2</sup> suitable for water supply which is available in all standard, like ISI-4984/1995 and various grades like PE-80, PE-100 including required specials. Rates are inclusive of , all taxes and duties (Exise duty @12.50% & CST @2% against Form 'C'), labour cess, contractor profit and overhead charges all complete as per direction of Engineer-in-charge.					
3A	HDPE pipe of materials grade PE100- PN10 (dia in mm)					
	75mm dia Pipe from PVC Tank to Distribution main	14.00	M	P/M	Rs.239.81	Rs.3,357.34
	90mm dia Pipe	70.00	M	P/M	Rs.340.84	Rs.23,858.80
	75mm dia Pipe	140.00	M	P/M	Rs.239.81	Rs.33,573.40
	63mm dia Pipe	210.00	M	P/M	Rs.168.77	Rs.35,441.70
3B	HDPE pipe of materials grade PE100- PN8 (dia in mm)					
	50mm dia Pipe	420.00	M	P/M	Rs.89.99	Rs.37,795.80
	40mm dia Pipe	560.00	M	P/M	Rs.59.78	Rs.33,476.80
	50mm dia Pipe from T/well to PVC Tank	12.00	M	P/M	Rs.89.99	Rs.1,079.88
4	Providing and fixing brass gate valve with C.I. wheel of approved quality (screwed end).					
	90mm dia Pipe	2	Nos	Each	Rs.2,016.50	Rs.4,033.00
	75mm dia Pipe	3	Nos	Each	Rs.1,351.60	Rs.4,054.80
	63mm dia Pipe	2	Nos	Each	Rs.1,351.60	Rs.2,703.20
	50mm dia Pipe	3	Nos	Each	Rs.811.40	Rs.2,434.20
	40mm dia Pipe	3	Nos	Each	Rs.613.90	Rs.1,841.70

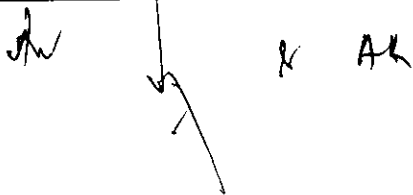
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S.N.	Particulars	Quantity	Unit	Rate	Amount
5 18.33	Constructing masonry Chamber 60x60x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size), necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard specifications & direction of E/I.	11 Nos	Each	Rs. 5,807.50	Rs. 63,882.50
	Work for additional depth				
	Brick work (1:4) in foundation				
	2 1.10 0.25 0.35 0.193				
	2 0.60 0.25 0.35 0.105				
		3.273	CuM	Rs. 4,724.40	Rs. 15,460.60
	Plaster (1:3)				
	8 1.10 0.35 3.08	33.88	SqM	Rs. 128.20	Rs. 4,343.42
6	Carriage 10% of item 5				Rs. 8,368.65
7 18.48	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, ISI : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	10000	LtrsP/Ltr.	Rs. 6.60	Rs. 66,000.00
8	Providing and fixing PTMT extension nipple for water tank pipe, fittings of approved quality and colour.				
	50mm dia	2	No each	Rs. 250.00	Rs. 500.00
	75mm dia	1	No. each	Rs. 400.00	Rs. 400.00
	<b>TOTAL</b>				<b>Rs. 5,51,285.54</b>

## Sub Est. No. 4

Model estimate for supply, installation & commissioning of single phase 3 H.P submersible motor pump set with all accessories including extension of L.T. line from nearest source up-to pumping station.

Sl. No.	Particulars	Quantity	Unit	Rate	Amount
1	2	3	4	5	6
[A.]	Supply Installation, commissioning and testing of single phase 3 H.P. submersible pump set having discharging capacity 3.94 lps at a total head of 35 meter(approx) of KSB/ Kirloskar or equivalent make with all accessories & fittings etc including loading unloading and transportation of the pump set to the work site with all required labour, materials, tools and tackles installation, testing & (i) 50 mm dia x 3 mtrs long medium class G.I column pipe both end thread and one end socketed- 6(six)nos (ii) 1x3x2.5 mm <sup>2</sup> flat copper conductor submersible cable -40 (forty) mtrs. (iii) 50 mm dia union socket- 1(one) no. (iv) 65 mm dia x 250 mm long G.I. nipple- 1 (one) no. (v) 50 mm dia G.I Elbow—1(One) no. (vi) 50 mm dia M.S. clamps—2(Two) Pairs. (vii) 50 mmx 250 mm long G.I nipple- 1(One) no. (viii) Tube well cap for T/Well – 1(one) no. (ix) 50-mm dia x 65 mm dia reducer socket –1(one) no.	1 (one) job	p/job	Rs.42,700.00	Rs.42,700.00



[B]	Supply Installation, commissioning and testing of floor mounted outdoor type L.T feeder pillar single phase starter controll pannel operated on 220 V, 3 phase , 50 c/s for 3 HP Submersible pump set made of MS sheet (minimum 2 mm thick) duly spray power coated painting with following accessories made of M.S sheet ( minimum 2mm thick) duly spray powder coated painting with following accessories (i) 90-220 V range single phase 7.5 KVA automatic voltage stabilizer make- Sen & Pandit/ Vertex/ISI marked If any. 1 No.  (ii) Suitable single phase starter control panel for above motor of BCH /L&Tmake – 1(one) no.	1 (one) job	p/job	Rs.45,500.00	Rs.45,500.00
[C]	Supplying & fitting 2.5 mm <sup>2</sup> copper service cable from power point from nearest source up-to pumping station..	20 mtrs	P/Mt	Rs.130.00	Rs.2,600.00
[D]	Providing all materials and labour required for doing earthing station with G.I earth pipe of 40 mm dia x 4.5 mtrs 20fts. long G.I pipe including accessories excavation of earth , providing masonry enclosure with cover plate having locking arrangement and watering pipe etc.with salt, charcoal,etc.as per IE & IS specification.	1 job	p/job	Rs.2,803.00	Rs.2,803.00
				<b>Total Rs.</b>	<b>Rs.93,603.00</b>

JA




**Sub Est. No. 5**

<b>Estimate for the work - House service connection</b>					
<b>SUB-ESTIMATE</b>					
<b>S.No.</b>	<b>Description</b>	<b>Qty</b>	<b>Unit</b>	<b>Rate</b>	<b>Amount</b>
1A	Providing and fixing MDPE (PE 80 GradeCompound) pipes PN-12.5 (12.5kg/Sqcm) as per ISO 4427 and specification for waterapplication rates are inclusive of , taxes and duties (Exise duty @12.50% &CST @2% against Form 'C'), labour cess, contractor profit and overhead charges all complete asper direction of Engineer-in-charge.complete.				
	MDPE Pipe 20mm dia nominal bore	6.00	PM	Rs.19.97	Rs.119.82
1B	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall				
18.7.1	15 mm nomonal bore	1.0	PM	Rs.138.70	Rs.138.70
2	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and amming of bottoms, lift upto 1.5 m . including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kinds of soil				
2.8.1	6.00    0.30    0.60    1.08	1.08	CuM	Rs.230.50	Rs.248.94
3 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead	1.06	CuM	Rs.74.50	Rs.78.85
4	Providing and fixing brass ferrule with CI mouth cover incuding boring and tapping the main:				
18.20.1	15mm nominal bore	1	Each	Rs.254.10	Rs.254.10
	Providing and fixing P.P. Black service Saddle (Brass threaded)	1	Each	Rs.400.00	Rs.400.00
5	Providing and fixing brass bib cock of approved quality :				
18.15.1	15mm nominal bore	1	Each	Rs.273.00	Rs.273.00
	Total				Rs.1,513.41
	Say				Rs.1,513.00

Total Nos. of House Holds=

200 Nos. @

Rs.1,513.00

Rs.3,02,600.00

A

K

S

M

**Sub Est. No. 6**

**8 M HIGH STEEL STRUCTURE STAGING FOR 10000 LITER PVC TANK**

S.N.	Particulars	Quantity	Unit	Rate	Amount
1 7.41	Providing and fixing structural steel frame (for dry cladding with 30 mm thick gang saw cut with machine cut edges sand stone) on walls at all heights using M.S. square / rectangular tube in the required pattern as per architectural drawing, including cost of cutting, bending, welding etc. The frame work shall be fixed to the wall with the help of MS brackets / lugs of angle iron / flats etc. which shall be welded to the frame and embedded in brick wall with cement concrete block 1:2:4 (1 cement : 2 coarse sand : 4 graded aggregate 20 mm nominal size) of size 300x230x300 mm, including cost of necessary centring and shuttering and with approved expansion hold fasteners on CC/RCC surface, including drilling necessary holes. Approved cramps / pins etc. shall be welded to the frame work to support stone cladding, the steel work will be given a priming coat of Zinc primer as approved by Engineer-in-Charge and painted two or more coats of epoxy paint (Shop drawings shall be submitted by the contractor to the Engineer-in-Charge for approval before execution). The frame work shall be fixed in true horizontal & vertical lines/planes. (Only structural steel frame work shall be measured for the purpose of payment, stainless steel cramps shall be paid for separately and nothing extra shall be paid.) Providing MS Staging of 8M height with ladder as per drawing attached	4500 Kg	P/Kg	Rs.119.40	Rs.5,37,300.00
2 5.2.2	Reinforced cement concrete work in wall (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. upt floor five level excluding cost of centring, shuttering, finishing and reinforcement. 1:1.5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20mm nominal size)	6.1972 M <sup>3</sup>	P/M <sup>3</sup>	Rs.5,139.70	Rs.31,851.75
3- 5.22	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete.	495.776 Kg	Kg	Rs.56.00	Rs.27,763.46
4- 2.28	Supplying and filling in plinth with local sand and under floors including watering, ramming consolidating and dressing complete.	4.32 M <sup>3</sup>	P/M <sup>3</sup>	Rs.204.40	Rs.883.01
5- 11.72	Providing designation of 100A Brick flat Soling joints filled with local sand including cost of watering, taxes & royalty all complete as per specification & direction of E/I.	10.8 M <sup>2</sup>	P/M <sup>2</sup>	Rs.253.80	Rs.2,741.04
6 4.1.2	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering-all work upto plinth level. 1:1.5:3(1 Cement :1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)	1.62 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,373.20	Rs.7,084.58

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S.N.	Particulars	Quantity	Unit	Rate	Amount
7 2.8	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including ressing of sides and ramming of bottoms, lift upto 1.5 m . including getting out the excavated soil and	18.66 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.4,301.13
8 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of oundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead	9.33 M <sup>3</sup>	P/M <sup>3</sup>	Rs.74.50	Rs.695.09
9- 6.1.14	Brick work with bricks of class designation 100A in foundation and plinth in :				
A	Cement mortar 1:6 (1 Cement : 6 Sand)	1.2144 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,490.60	Rs.5,453.38
10 10.1	Providing and fixing anchor bolt of 28mm dia and 1 Mtr length embedded in R.C.C pedestal all complete as per direction of Engineer in charge. @4x4x5kg	80 Kg	P/kg	Rs.59.20	Rs.4,736.00
11 13.26	Neat cement punning	10.80 M <sup>2</sup>	P/M <sup>2</sup>	Rs.32.30	Rs.348.84
12	Carriage of the following materials from quarry to work site including loading, unloading and staking at work site as per specification & direction of E/I.				
	(a) Bricks ( 7 Km. Pucca & 1 Km. Kachha lead)	843 Nos.	%0 nos.	Rs.606.10	Rs.510.94
	(b) Coarse Sand (100 Km. lead)	3.810 M <sup>3</sup>	P/M <sup>3</sup>	Rs.1,221.09	Rs.4,652.35
	(c) Stone Chips (150 Km. lead)	6.780 M <sup>3</sup>	P/M <sup>3</sup>	Rs.1,746.29	Rs.11,839.85
	(d) Local Sand ( 2 Km. Pucca & 1 Km. Kachha lead)	4.480 M <sup>3</sup>	P/M <sup>3</sup>	Rs.217.23	Rs.973.19
				<b>TOTAL</b>	<b>Rs.6,41,134.61</b>
				<b>say</b>	<b>Rs.6,41,100.00</b>

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**NAME OF WORK - CONSTRUCTION OF STEEL STAGING  
FOR HDPE WATER STORAGE TANK  
Measurement Sheet**

S.No.	Particulars	No.	Length	Breath	Depth	Total	Total Qty
1	Reinforced cement concrete work in wall (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. upt floor five level excluding cost of centring, shuttering, finishin and reinforcement. 1:1:5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20mm nominal size)						
5.2.2	base of footing	4	1.8	1.8	0.4	5.184	5.184
	Pedestal	4	0.4	0.04	1.6	0.1024	0.1024
	Plinth beam long side	2	3.6	0.23	0.3	0.4968	0.4968
	Plinth beam short side	2	3	0.23	0.3	0.414	0.414
							<b>6.1972</b>
	Providing & fixing in position steel bar reinforcement of various dia for RCC works taken 80kg/cum						<b>495.7760</b>
	<b>Item no. 2 :-</b>						
2- 2.28	Supplying and filling in plinth with local sand and under floors including watering, ramming consolidating and dressing complete. Long Wall						
		1	3.60	3.00	0.4		= 4.32
	<b>Item no. 3 :-</b>						
3- 11.72	Providing designation of 100A Brick flat Soling joints filled with local sand including cost of watering, taxes & royalty all complete as per specification & direction of E/I.						
		1	3.60	3.00			= 10.8
	<b>Item no. 4 :-</b>						
5- 6.1.1	Brick work with bricks of class designation 100A in foundation and plinth in :						
4 A	Cement mortar 1:6 (1 Cement : 6 Sand)						
		2	3.6	0.23	0.40		= 0.6624
		2	3	0.23	0.40		= 0.5520
							<b>1.2144</b>
6 2.8	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including ressing of sides and ramming of bottoms, lift upto 1.5 m . including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.						
		4	1.8	1.8	1.44		= 18.66
7 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of oundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead						
							= 9.33
8 4.1.2	Providing and laying in position cement concrete of specified grade exluding the cost of centring and shuttering-all work upto plinth level. 1:1.5:3(1 Cement :1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)						
		1	3.60	3.00	0.15		= 1.62
9 13.26	Neat cement punning	1	3.60	3.00			= 10.80

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# GOVERNMENT OF BIHAR

PUBLIC HEALTH ENGINEERING DEPARTMENT

*MODEL ESTIMATE*

*FOR*

CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME

FOR A WARD HAVING 200 HOUSE HOLDS

ESTIMATED COST-- Rs. 18.681 Lac

JANUARY, 2017

**GOVERNMENT OF BIHAR**  
**Public Health Engineering Department**  
**ABSTRACT OF COST**

**NAME OF WORK:- CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME FOR WARD HAVING 200 HOUSE HOLDS**

S.N.	Description	Total Amount
1	Construction of 150mm x100mmx125m deep T/W for rocky strata etc. all complete and as per direction of E/I. (As per sub Estimate no.- 1)	Rs.2,48,003.22
2	Constructing masonry Chamber 100x100x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for Tube Well, and RCC top slab 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size ) , necessary excavation, foundation concrete 1:2:4(1 cement : 2 fine sand : 4 graded stone aggregate 20 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3coarse sand) 12 mm thick with 5% cico fnished with a floating coat of neat cement, out side plastering with cement mortar 1:4 (1 cement : 4coarse sand) 12 mm thick complete as per standard specifications & direction of E/I. (As per sub Estimate no.- 2)	Rs.13,040.00
3	Providing and Laying Distribution network of High Density Polyethylene pipe (HDPE pipe) including 10000 liter PVC tank installed at 8M high MS staging etc all complete as per direction of E/I. (As per sub Estimate no.- 3)	Rs.5,51,285.54
4	Supply Installation, commissioning and testing of single phase 3 H.P. submersible pump set having discharging capacity 3.94 lps at a total head of 35 meter(approx) of KSB/ Kirloskar or equivalent make with all accessories & fittings etc including loading unloading and transportation of the pump set to the work site with all required labour, materials, tools and tackles installation, testing & commissioning as per standards specifications and direction of E/I. (As per sub Estimate no.- 4)	Rs.93,603.00
5	Providing house connection for each house hold including supplying all materials, labours, tools and making ferrule connection with 20 mm dia MDPE and 15mm CPVC Pipes with all fittings etc all complete. (As per sub Estimate no.- 5)	Rs.3,02,600.00
6	Providing and erecting 8M high staging with GI enclosure to house electric switch panel of suitably designed MS section of angle, channel, hollow section etc. as per drawing attached. (As per sub Estimate no.- 6)	Rs.6,41,100.00
<b>TOTAL</b>		Rs.18,49,631.76
Add 1% Contingency		Rs.18,496.32
<b>G. TOTAL</b>		Rs.18,68,128.08
<b>Say</b>		<b>Rs.18,68,100.00</b>

(Rs. Eighteen Lac Sixty eight Thousand One Hundred ) only

**note:**

- i) Road cutting cost may increase or decrease as per actuals.
- ii) Strongly advised that pipeline should be laid before construction of Naali-Gali.
- iii) This is a model estimate. Hence the quantity may increase or decrease based on actual site conditions.

**Variable inter alia includes**

- i) Hydro geomorphological condition.
- ii) Location of source vis-à-vis population/ house holds.
- iii) Quality of works and materials shall be maintained as per standard specifications and direction of E/I.

Technically approved for Rs. 18,68,100.00 (Eighteen lakhs sixty eight thousand one hundred) only.

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**CONSTRUCTION OF 150MM X 100MM DIA & 125M DEEP TUBE WELL  
(For Rocky strata including Boulders)**

S.No.	Description	Qty.	Unit	Rate	Amount
1	Boring/drilling bore well of required dia for casing/strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer -in-charge, upto 90 metre depth below ground level. <b>(Rocky strata including Boulders)</b>				
24.1.1.2	(a) 350mm dia bore from G.L. to 30.0M	30.0 M	P/M	Rs.859.70	Rs.25,791.00
24.1.1.1	(b) 300mm dia bore from 30.0 m to 60.0M	30.0 M	P/M	Rs.833.10	Rs.24,993.00
	(c) 300mm dia bore from 60M to 90.0M	30.0 M	P/M	Rs.833.10	Rs.24,993.00
24.2.1	(d) 300mm dia bore from 90.0M to 150.0M	35.0 M	P/M	Rs.881.20	Rs.30,842.00
2A	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC (UPVC) medium well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer -in-charge.				
24.3.2	(a) 150 mm nominal size dia	30.0 M	P/M	Rs.615.30	Rs.18,459.00
24.3.1	(b) 100 mm nominal size dia	60.0 M	P/M	Rs.444.20	Rs.26,652.00
2B	Supplying, assembling, lowering and fixing in vertical position in bore well unplasticized PVC (UPVC) medium well screen (RMS) pipes with ribs, conforming to IS: 12818, including hire & labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer-in-charge.				
24.4.1	100 mm nominal size dia	30.0 M	P/M	Rs.468.80	Rs.14,064.00
3	Supplying the following fittings & fixing the same in position as per approved lowering assembly and strata chart including providing all equipments and welding the same on process of lowering the assay etc. all complete as per S/D of E/I.				
24.13.2	(a) 150 mm dia well cap	1 No.	Each	Rs.205.10	Rs.205.10
24.14.2	(b) 150 mm dia M.S. Clamp 1.6 M long (one Pair)	1 No.	Each	Rs.1,031.10	Rs.1,031.10
	(c) 150 mm dia center guide	4 Nos.	Each	Rs.150.00	Rs.600.00
	(d) 100 mm dia center guide	6 Nos.	Each	Rs.100.00	Rs.600.00
	(e) 150 mm x 100 mm dia 6mm wall thickness MS reducer	1 No.	Each	Rs.500.00	Rs.500.00
24.15.1	(f) 100mm dia & 6mm thick M.S. well shoe plug	1 No.	Each	Rs.205.60	Rs.205.60
4a	Providing all materials, labours, & equipments for fixing tube well with pea gravel of Dalbhumigarh to size 4mm to 8mm approx. as suitable for strata including carriage washing, placing and packing the same in position around the tube well etc. all complete as per direction of E/I.	9.0 M <sup>3</sup>	P/M <sup>3</sup>	Rs.917.00	Rs.8,253.00
24.6	Carriage of Pea Gravel from Dhalbhumigarh (taken av distance 400km.)	9.0 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,336.54	Rs.39,028.82
5	Development of tube well in accordance with IS : 2800 (part I) and IS: 11189, to establish maximum rate of usable water yield without sand content (beyond permissible limit), with required capacity air compressor, running the compressor for required time till well is fully developed, measuring yield of well by "V" notch method or any other approved method, measuring static level & draw down etc. by step draw down method, collecting water sample & getting tested in approved laboratory, disinfection of tubewell, all complete, including hire & labour charges of air compressor, tools & accessories etc., all as per requirement and direction of Engineer-in-charge.	24 Hrs.	Each	Rs.649.40	Rs.15,585.60

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S.No.	Description	Qty.	Unit	Rate	Amount
6	Transportation of drilling plants, developing equipments & all other required tools and M/c by and suitable mechanical means including all cost of loading, unloading, placing at work site and back after completion of work as per S/D of E/I	1 No.	Each	Rs.9,200.00	Rs.9,200.00
7	Supplying all materials and labours for arrangement for additional water required during the drilling period for 70 Hrs & site clearance & leveling etc. And providing the soap duster etc. to staff engaged in drilling etc. all complete work as per specification & direction of E.I.	1 No.	Each	Rs.7,000.00	Rs.7,000.00
<b>TOTAL</b>					<u>Rs.2,48,003.22</u>

*[Handwritten signatures and initials]*

(Sub Estimate - 2)

**Analysis of Chamber for TW**

Supplying materials, labours and constructing chamber of following dimension having 250mm thick wall in C.M. (1:4) including 12mm C.P. (1:3) with punning inside, R.C.C. cover slab with C.I. Surface box, 20mm dia foot rest at 150mm interval 10mm dia lifting ring etc. all complete.

**SIZE**                      **1.00 M**      x      **1.00 M**      x      **0.75 M deep**

S.O.R. No.	Particulars	No.	L	W	H	Qty.	Unit	Rate	Amount
1	Earth work in excavation	1	1.75	1.75	1.0	3.063 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.705.91
S.O.R. No. 2.8									
2	Sand filling	1	1.75	1.75	0.075	0.230 M <sup>3</sup>	P/M <sup>3</sup>	Rs.204.40	Rs.46.95
S.O.R. No. 2.28									
3	Brick flat soling	1	1.75	1.75		3.063 M <sup>2</sup>	P/M <sup>2</sup>	Rs.253.80	Rs.777.26
S.O.R. 11.72									
4	P.C.C. (1:2:4) in foundation	1	1.75	1.75	0.10	0.306 M <sup>3</sup>			
S.O.O. 4.1.3									
						0.306 M <sup>3</sup>	P/M <sup>3</sup>	Rs.3,323.10	Rs.1,017.70
5	B/Work in (1:4) C.M.	2	2.50	0.25	0.75	0.938 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,724.40	Rs.4,429.13
S.O.R. No. 6.1.12/1									
6	R.C.C. Cover slab(1:1.5:3)	1	1.50	1.50	0.15	0.338 M <sup>3</sup>	P/M <sup>3</sup>	Rs.5,139.70	Rs.1,734.65
S.O.R. No. 5.2.2 & 5.9.3									
	shuttering	2	1.50	1.50	0.15	3.15 M <sup>2</sup>	P/M <sup>2</sup>	Rs.291.00	Rs.916.65
7	C.P. (1:3) with 5% Cico & neat cement								
S.O.R. Internal face		2	1.00	1.00	1.00	4.00 M <sup>2</sup>			
No. 13.17.1	Bed surface	1	1.00	1.00		1.00 M <sup>2</sup>			
+13.36.1						5.00 M <sup>2</sup>	P/M <sup>2</sup>	Rs.166.30	Rs.831.50
8	C.P. (1:4) out side of wall	2	1.50	1.50	0.75	4.5 M <sup>2</sup>	P/M <sup>2</sup>	Rs.114.70	Rs.516.15
S.O.R. No. 13.11.2									
9	8mm dia T.S. Rod								
S.O.R. No. 5.22.7A									
			0.338 M <sup>3</sup> x	70	Kg/M <sup>3</sup>	23.625 Kg.	P/Kg	Rs.56.00	Rs.1,323.00
10	Lifting Ring of 10mm dia Rod					4 No.	Each	Rs.30.00	Rs.120.00
								Total	Rs.12,418.89
11	Carriage of materials 5%								Rs.620.94
									<u>Rs.13,039.83</u>
								Say	<b>Rs.13,040.00</b>

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Sub Est. No. 3

WATER SUPPLY DISTRIBUTION SYSTEM

S.N.	Particulars	Quantity	Unit	Rate	Amount
1A	Earthwork in excavation over areas (exceeding 30 cm in depth 1.5 in width as well as 10 sqm on plan) including disposal of excavated earth lead upto 50m and lift upto 1.5m, disposal earth to be levelled and neatly dressed.				
	90mm dia Pipe	70.00	0.30	1.10 =	23.10
	75mm dia Pipe	140.00	0.30	1.10 =	46.20
	63mm dia Pipe	210.00	0.30	1.10 =	69.30
	50mm dia Pipe	420.00	0.30	1.10 =	138.60
	40mm dia Pipe	560.00	0.30	1.10 =	184.80
					<u>462.00 M<sup>3</sup></u>
	Add 5% extra for fittings =				<u>23.10 M<sup>3</sup></u>
					485.10 M <sup>3</sup>
					15.75 M <sup>3</sup>
			P/M <sup>3</sup>	Rs.230.50	Rs.1,11,815.55
			P/M <sup>3</sup>	Rs.3,901.40	Rs.61,447.05
1B	Provision for PCC road cutting and its restoration				
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.				
		475.40	M <sup>3</sup>	P/M <sup>3</sup>	Rs.74.50
					Rs.35,417.15
3	Providing and laying High Density Polyethylene pipe (HDPE pipe) of 20 mm to 225 mm OD and pressure 6.0 Kg/cm <sup>2</sup> and 10 Kg/cm <sup>2</sup> suitable for water supply which is available in all standard, like ISI-4984/1995 and various grades like PE-80, PE-100 including required specials. Rates are inclusive of , all taxes and duties (Exise duty @12.50% &CST @2% against Form 'C'), labour cess, contractor profit and overhead charges all complete as per direction of Engineer-in-charge.				
3A	HDPE pipe of materials grade PE100- PN10 (dia in mm)				
	75mm dia Pipe from PVC Tank to Distribution main	14.00	M	P/M	Rs.239.81
					Rs.3,357.34
	90mm dia Pipe	70.00	M	P/M	Rs.340.84
					Rs.23,858.80
	75mm dia Pipe	140.00	M	P/M	Rs.239.81
					Rs.33,573.40
	63mm dia Pipe	210.00	M	P/M	Rs.168.77
					Rs.35,441.70
3B	HDPE pipe of materials grade PE100- PN8 (dia in mm)				
	50mm dia Pipe	420.00	M	P/M	Rs.89.99
					Rs.37,795.80
	40mm dia Pipe	560.00	M	P/M	Rs.59.78
					Rs.33,476.80
	50mm dia Pipe from T/well to PVC Tank	12.00	M	P/M	Rs.89.99
					Rs.1,079.88
4	Providing and fixing brass gate valve with C.I. wheel of approved quality (screwed end).				
	90mm dia Pipe	2 Nos.	Each	Rs.2,016.50	Rs.4,033.00
	75mm dia Pipe	3 Nos.	Each	Rs.1,351.60	Rs.4,054.80
	63mm dia Pipe	2 Nos.	Each	Rs.1,351.60	Rs.2,703.20
	50mm dia Pipe	3 Nos.	Each	Rs.811.40	Rs.2,434.20
	40mm dia Pipe	3 Nos.	Each	Rs.613.90	Rs.1,841.70

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S.N.	Particulars	Quantity	Unit	Rate	Amount
5	Constructing masonry Chamber 60x60x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size), necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard specifications & direction of E/I.	11 Nos.	Each	Rs.5,807.50	Rs.63,882.50
18.33	Work for additional depth				
	Brick work (1:4) in foundation				
	2 1.10 0.25 0.35 0.193				
	2 0.60 0.25 0.35 0.105				
					0.298
	Plaster (1:3)	3.273	CuM CuM	Rs.4,724.40	Rs.15,460.60
	8 1.10 0.35 3.08	33.88	SqM SqM	Rs.128.20	Rs.4,343.42
6	Carriage 10% of item 5				Rs.8,368.65
7	Providing and placing on terrace (at all floor levels)				
18.48	polyethylene water storage tank, ISI : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	10000 Ltrs.	P/Ltr.	Rs.6.60	Rs.66,000.00
8	Providing and fixing PTMT extension nipple for water tank pipe, fittings of approved quality and colour.				
	50mm dia	2 Nos.	each	Rs.250.00	Rs.500.00
	75mm dia	1 No.	each	Rs.400.00	Rs.400.00
				<b>TOTAL</b>	<b>Rs.5,51,285.54</b>



## Sub Est. No. 4

Model estimate for supply, installation & commissioning of single phase 3 H.P submersible motor pump set with all accessories including extension of L.T. line from nearest source up-to pumping station.

Sl. No.	Particulars	Quantity	Unit	Rate	Amount
1	2	3	4	5	6
[A.]	Supply Installation, commissioning and testing of single phase 3 H.P. submersible pump set having discharging capacity 3.94 lps at a total head of 35 meter(approx) of KSB/ Kirloskar or equivalent make with all accessories & fittings etc including loading unloading and transportation of the pump set to the work site with all required labour, materials, tools and tackles installation, testing & (i) 50 mm dia x 3 mtrs long medium class G.I column pipe both end thread and one end socketed- 6(six)nos (ii) 1x3x2.5 mm <sup>2</sup> flat copper conductor submersible cable -40 (forty) mtrs. (iii) 50 mm dia union socket- 1(one) no. (iv) 65 mm dia x 250 mm long G.I. nipple- 1 (one) no. (v) 50 mm dia G.I Elbow—1(One) no. (vi) 50 mm dia M.S. clamps—2(Two) Pairs. (vii) 50 mmx 250 mm long G.I nipple- 1(One) no. (viii) Tube well cap for T/Well - 1(one) no. (ix) 50 mm dia x 65 mm dia reducer socket -1(one) no.	1 (one) job	p/job	Rs.42,700.00	Rs.42,700.00

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& A

[B]	Supply Installation, commissioning and testing of floor mounted outdoor type L.T feeder pillar single phase starter controll pannel operated on 220 V, 3 phase , 50 c/s for 3 HP Submersible pump set made of MS sheet (minimum 2 mm thick) duly spray power coated painting with following accessories made of M.S sheet ( minimum 2mm thick) duly spray powder coated painting with following accessories (i) 90-220 V range single phase 7.5 KVA automatic voltage stabilizer make- Sen & Pandit/ Vertex/ISI marked If any. 1 No.  (ii) Suitable single phase starter control panel for above motor of BCH /L&Tmake – 1(one) no.	1 (one) job	p/job	Rs.45,500.00	Rs.45,500.00
[C]	Supplying & fitting 2.5 mm <sup>2</sup> copper service cable from power point from nearest source up-to pumping station..	20 mtrs	P/Mt	Rs.130.00	Rs.2,600.00
[D]	Providing all materials and labour required for doing earthing station with G.I earth pipe of 40 mm dia x 4.5 mtrs 20fts. long G.I pipe including accessories excavation of earth , providing masonry enclosure with cover plate having locking arrangement and watering pipe etc.with salt, charcoal,etc.as per IE & IS specification.	1 job	p/job	Rs.2,803.00	Rs.2,803.00
<b>Total Rs.</b>					<b>Rs.93,603.00</b>

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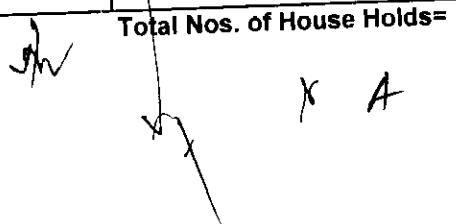
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**Sub Est. No. 5**

**Estimate for the work - House service connection**

**SUB-ESTIMATE**

S.No.	Description	Qty	Unit	Rate	Amount
1A	Providing and fixing MDPE (PE 80 GradeCompound) pipes PN-12.5 (12.5kg/Sqcm) as per ISO 4427 and specification for water application rates are inclusive of , taxes and duties (Exise duty @12.50% & CST @2% against Form 'C'), labour cess, contractor profit and overhead charges all complete as per direction of Engineer-in-charge.complete.				
	MDPE Pipe 20mm dia nominal bore	6.00	PM	Rs.19.97	Rs.119.82
1B	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall				
18.7.1	15 mm nominal bore	1.0	PM	Rs.138.70	Rs.138.70
2	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and amming of bottoms, lift upto 1.5 m . including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kinds of soil				
2.8.1	6.00    0.30    0.60    1.08	1.08	CuM	Rs.230.50	Rs.248.94
3 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead	1.06	CuM	Rs.74.50	Rs.78.85
4	Providing and fixing brass ferrule with CI mouth cover incuding boring and tapping the main:				
18.20.1	15mm nominal bore	1	Each	Rs.254.10	Rs.254.10
	Providing and fixing P.P. Black service Saddle (Brass threaded)	1	Each	Rs.400.00	Rs.400.00
5	Providing and fixing brass bib cock of approved quality :				
18.15.1	15mm nominal bore	1	Each	Rs.273.00	Rs.273.00
	<b>Total</b>				Rs.1,513.41
	<b>Say</b>				Rs.1,513.00
	<b>Total Nos. of House Holds=</b>	<b>200 Nos.</b>	<b>@</b>	<b>Rs.1,513.00</b>	<b>Rs.3,02,600.00</b>


  
 Total Nos. of House Holds= 200 Nos. @ Rs.1,513.00 Rs.3,02,600.00

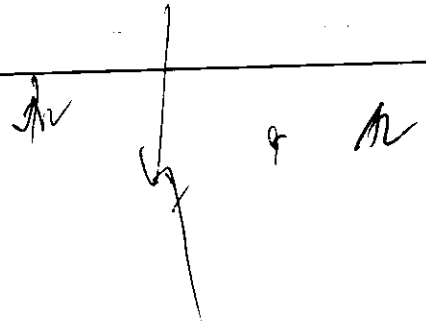
**Sub Est. No. 6**

**8 M HIGH STEEL STRUCTURE STAGING FOR 10000 LITER PVC TANK**

S.N.	Particulars	Quantity	Unit	Rate	Amount
1 7.41	Providing and fixing structural steel frame (for dry cladding with 30 mm thick gang saw cut with machine cut edges sand stone) on walls at all heights using M.S. square / rectangular tube in the required pattern as per architectural drawing, including cost of cutting, bending, welding etc. The frame work shall be fixed to the wall with the help of MS brackets / lugs of angle iron / flats etc. which shall be welded to the frame and embedded in brick wall with cement concrete block 1:2:4 (1 cement : 2 coarse sand : 4 graded aggregate 20 mm nominal size) of size 300x230x300 mm, including cost of necessary centring and shuttering and with approved expansion hold fasteners on CC/RCC surface, including drilling necessary holes. Approved cramps / pins etc. shall be welded to the frame work to support stone cladding, the steel work will be given a priming coat of Zinc primer as approved by Engineer-in-Charge and painted two or more coats of epoxy paint (Shop drawings shall be submitted by the contractor to the Engineer-in-Charge for approval before execution). The frame work shall be fixed in true horizontal & vertical lines/planes. (Only structural steel frame work shall be measured for the purpose of payment, stainless steel cramps shall be paid for separately and nothing extra shall be paid.) Providing MS Staging of 8M height with ladder as per drawing attached	4500 Kg	P/Kg	Rs.119.40	Rs.5,37,300.00
2 5.2.2	Reinforced cement concrete work in wall (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. upt floor five level excluding cost of centring, shuttering, finishing and reinforcement. 1:1:5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20mm nominal size)	6.1972 M <sup>3</sup>	P/M <sup>3</sup>	Rs.5,139.70	Rs.31,851.75
3- 5.22	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete.	495.776 Kg	Kg	Rs.56.00	Rs.27,763.46
4- 2.28	Supplying and filling in plinth with local sand and under floors including watering, ramming consolidating and dressing complete.	4.32 M <sup>3</sup>	P/M <sup>3</sup>	Rs.204.40	Rs.883.01
5- 11.72	Providing designation of 100A Brick flat Soling joints filled with local sand including cost of watering, taxes & royalty all complete as per specification & direction of E/I.	10.8 M <sup>2</sup>	P/M <sup>2</sup>	Rs.253.80	Rs.2,741.04
6 4.1.2	Providing and laying in position cement concrete of specified grade exluding the cost of centring and shuttering-all work upto plinth level. 1:1.5:3(1 Cement :1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)	1.62 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,373.20	Rs.7,084.58

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S.N.	Particulars	Quantity	Unit	Rate	Amount
7 2.8	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including ressing of sides and ramming of bottoms, lift upto 1.5 m . including getting out the excavated soil and	18.66 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.4,301.13
8 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of oundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead	9.33 M <sup>3</sup>	P/M <sup>3</sup>	Rs.74.50	Rs.695.09
9- 6.1.14	Brick work with bricks of class designation 100A in foundation and plinth in :				
A	Cement mortar 1:6 (1 Cement : 6 Sand)	1.2144 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,490.60	Rs.5,453.38
10 10.1	Providing and fixing anchor bolt of 28mm dia and 1 Mtr length embedded in R.C.C pedestal all complete as per direction of Engineer in charge. @4x4x5kg	80 Kg	P/kg	Rs.59.20	Rs.4,736.00
11 13.26	Neat cement punning	10.80 M <sup>2</sup>	P/M <sup>2</sup>	Rs.32.30	Rs.348.84
12	Carriage of the following materials from quarry to work site including loading, unloading and staking at work site: as per specification & direction of E/I.				
	(a) Bricks ( 7 Km. Pucca & 1 Km. Kachha lead)	843 Nos.	%0 nos.	Rs.606.10	Rs.510.94
	(b) Coarse Sand (100 Km. lead)	3.810 M <sup>3</sup>	P/M <sup>3</sup>	Rs.1,221.09	Rs.4,652.35
	(c) Stone Chips (150 Km. lead)	6.780 M <sup>3</sup>	P/M <sup>3</sup>	Rs.1,746.29	Rs.11,839.85
	(d) Local Sand ( 2 Km. Pucca & 1 Km. Kachha lead)	4.480 M <sup>3</sup>	P/M <sup>3</sup>	Rs.217.23	Rs.973.19
				<b>TOTAL</b>	<b>Rs.6,41,134.61</b>
				<b>say</b>	<b>Rs.6,41,100.00</b>



**NAME OF WORK - CONSTRUCTION OF STEEL STAGING  
FOR HDPE WATER STORAGE TANK  
Measurement Sheet**

S.No.	Particulars	No.	Length	Breath	Depth	Total	Total Qty
1	Reinforced cement concrete work in wall (any						
5.2.2	thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. upt floor five level excluding cost of centring, shuttering, finishin and reinforcement. 1:1:5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20mm nominal size)						
	base of footing	4	1.8	1.8	0.4	5.184	5.184
	Pedestal	4	0.4	0.04	1.6	0.1024	0.1024
	Plinth beam long side	2	3.6	0.23	0.3	0.4968	0.4968
	Plinth beam short side	2	3	0.23	0.3	0.414	0.414
							<b>6.1972</b>
	Providing & fixing in position steel bar reinforcement of various dia for RCC works taken 80kg/cum						<b>495.7760</b>
	<b>Item no. 2 :-</b>						
2-	Supplying and filling in plinth with local sand						
2.28	and under floors including watering, ramming consolidating and dressing complete.						
	Long Wall	1	3.60	3.00	0.4		= 4.32
	<b>Item no. 3 :-</b>						
3-	Providing designation of 100A Brick flat Soling						
11.72	joints filled with local sand including cost of watering, taxes & royalty all complete as per specification & direction of E/I.	1	3.60	3.00			= 10.8
	<b>Item no. 4 :-</b>						
5-	Brick work with bricks of class designation						
6.1.1	100A in foundation and plinth in :						
4 A	Cement mortar 1:6 (1 Cement : 6 Sand)	2	3.6	0.23	0.40		= 0.6624
		2	3	0.23	0.40		= 0.5520
							<b>1.2144</b>
6	Earth work in excavation in foundation trenches						
2.8	or drains(not exceeding 1.5 m in width or 10 sqm on plan) including ressing of sides and ramming of bottoms, lift upto 1.5 m . including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.	4	1.8	1.8	1.44		= 18.66
7	Filling available excavated earth (excluding						
2.26	rock) in trenches, plinth, sides of oundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead						= 9.33
8	Providing and laying in position cement						
4.1.2	concrete of specified grade exluding the cost of centring and shuttering-all work upto plinth level.						
	1:1.5:3(1 Cement :1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)	1	3.60	3.00	0.15		= 1.62
9	Neat cement punning	1	3.60	3.00			= 10.80
13.26							

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# GOVERNMENT OF BIHAR

PUBLIC HEALTH ENGINEERING DEPARTMENT

*MODEL ESTIMATE*

*FOR*

CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME

FOR A WARD HAVING 200 HOUSE HOLDS

ESTIMATED COST-- Rs. 17.138Lac

JANUARY, 2017

**GOVERNMENT OF BIHAR**  
**Public Health Engineering Department**  
**ABSTRACT OF COST**

136

**NAME OF WORK:- CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME FOR WARD HAVING 200 HOUSE HOLDS**

S.N.	Description	Total Amount
1	Construction of 200/165 mm dia. 90 Mtr deep Drilled High Yield Tubewell By DTH RIG Machine with Blue casing U.P.V.C. Pipe etc. all complete and as per direction of E/I. (As per sub Estimate no.- 1)	Rs.95,242.91
2	Constructing masonry Chamber 100x100x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for Tube Well, and RCC top slab 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size) , necessary excavation, foundation concrete 1:2:4(1 cement : 2 fine sand : 4 graded stone aggregate 20 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3coarse sand) 12 mm thick with 5% cico finished with a floating coat of neat cement, out side plastering with cement mortar 1:4 (1 cement : 4coarse sand) 12 mm thick complete as per standard specifications & direction of E/I. (As per sub Estimate no.- 2)	Rs.13,040.00
3	Providing and Laying Distribution network of High Density Polyethylene pipe (HDPE pipe) including 10000 liter PVC tank installed at 8M high MS staging etc all complete as per direction of E/I. (As per sub Estimate no.- 3)	Rs.5,51,285.54
4	Supply Installation, commissioning and testing of single phase 3 H.P. submersible pump set having discharging capacity 3.94 lps at a total head of 35 meter(approx) of KSB/ Kirloskar or equivalent make with all accessories & fittings etc including loading unloading and transportation of the pump set to the work site with all required labour, materials, tools and tackles installation, testing & commissioning as per standards specifications and direction of E/I. (As per sub Estimate no.- 4)	Rs.93,603.00
5	Providing house connection for each house hold including supplying all materials, labours, tools and making ferrule connection with 20 mm dia MDPE and 15mm CPVC Pipes with all fittings etc all complete. (As per sub Estimate no.- 5)	Rs.3,02,600.00
6	Providing and erecting 8M high staging with GI enclosure to house electric switch panel of suitably designed MS section of angle, channel, hollow section etc. as per drawing attached. (As per sub Estimate no.- 6)	Rs.6,41,100.00
<b>TOTAL</b>		Rs.16,96,871.45
Add 1% Contingency		Rs.16,968.71
<b>G. TOTAL</b>		Rs.17,13,840.16
<b>Say</b>		<b>Rs.17,13,800.00</b>

(Rs. Seventeen Lac Thirteen Thousand Eight Hundred) only

**note:**

- i) Road cutting cost may increase or decrease as per actuals.
- ii) Strongly advised that pipeline should be laid before construction of Naali-Gali.
- iii) This is a model estimate. Hence the quantity may increase or decrease based on actual site conditions.

**Variable inter alia includes**

- i) Hydro geomorphological condition.
- ii) Location of source vis-à-vis population/ house holds.
- iii) Quality of works and materials shall be maintained as per standard specifications and direction of E/I.

Technically approved for Rs. 17,13,800.00 (Rupees Seventeen Lac Thirteen Thousand Eight Hundred) only.

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


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## Estimate no.- 1

MODEL ESTIMATE OF CONSTRUCTION OF 200/165 MM DIA. 90 MTR DEEP DRILLED HIGH YIELD TUBEWELL BY DTH RIG MACHINE WITH BLUE CASING U.P.V.C. PIPE					
S. NO.	Particulars	Quantity	unit	Rate	Amount
5	1(A) Drilling of 200mm x 165mm x 125 meter deep borewell in all kinds of soil and rock in rural area for installation of pump set with Hydaraulic DTH Rig machine, all complete including supplying all materials, tools, drilling rig, Air Compressor and equipments, as well as fuel, lubricants and cost of transportation of Rig machine and other vehicles up to the site etc all complete as per specification and direction of E/l.				
6	(i) Up to 50 mtrs depth below GL	50	P/M	Rs.729.52	Rs.36,476.00
7	(ii) Beyond 50 mtrs. Up to 90 Mtrs.	40	P/M	Rs.867.88	Rs.34,715.20
8	2 Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC (UPVC) medium well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer -in-charge. (200mm dia)	24	P/M	Rs.921.70	Rs.22,120.80
9	3 Supplying labour, cement and calcium chloride or betonites solution and equipments for grouting to casing pipe as per specification and direction of E/l.	1	Each	Rs.51.01	Rs.51.01
10	4 Supplying all tools labors and equipments and doing washing fiushing & developing of drilled tube well to give clean and clear water ( min. 2.50 Hours)all complete as per direction of E/l.	2.5	P/Hr	Rs.649.40	Rs.1,623.50
11	5 Supplying labors and equipments including 200 mm dia M.S. Cap & Fitting & Fixing over the tube well properly and taking out as per direction of E/l.	1	Each	Rs.256.40	Rs.256.40
12				<b>TOTAL</b>	<b>Rs.95,242.91</b>

(Sub Estimate - 2)

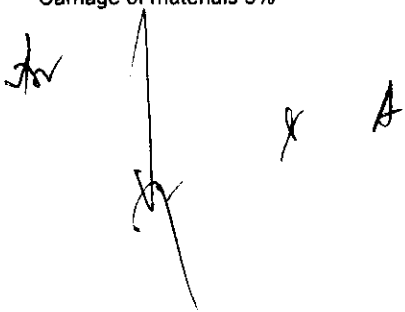
**Analysis of Chamber for TW**

Supplying materials, labours and constructing chamber of following dimension having 250mm thick wall in C.M. (1:4) including 12mm C.P. (1:3) with punning inside, R.C.C. cover slab with C.I. Surface box, 20mm dia foot rest at 150mm interval 10mm dia lifting ring etc. all complete.

<b>SIZE</b>	<b>1.00 M</b>	<b>x</b>	<b>1.00 M</b>	<b>x</b>	<b>0.75 M deep</b>
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<u>S.O.R. No.</u>	<u>Particulars</u>	<u>No.</u>	<u>L</u>	<u>W</u>	<u>H</u>	<u>Qty.</u>	<u>Unit</u>	<u>Rate</u>	<u>Amount</u>	
1	Earth work in excavation	1	1.75	1.75	1.0	3.063 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.705.91	
S.O.R. No. 2.8										
2	Sand filling	1	1.75	1.75	0.075	0.230 M <sup>3</sup>	P/M <sup>3</sup>	Rs.204.40	Rs.46.95	
S.O.R. No. 2.28										
3	Brick flat soling	1	1.75	1.75		3.063 M <sup>2</sup>	P/M <sup>2</sup>	Rs.253.80	Rs.777.26	
S.O.R. 11.72										
4	P.C.C. (1:2:4) in foundation	1	1.75	1.75	0.10	0.306 M <sup>3</sup>				
S.O.O. 4.1.3										
5	B/Work in (1:4) C.M.	2	2.50	0.25	0.75	0.306 M <sup>3</sup>	P/M <sup>3</sup>	Rs.3,323.10	Rs.1,017.70	
S.O.R. No. 6.1.12/1										
6	R.C.C. Cover slab(1:1.5:3)	1	1.50	1.50	0.15	0.338 M <sup>3</sup>	P/M <sup>3</sup>	Rs.5,139.70	Rs.1,734.65	
S.O.R. No. 5.2.2 & 5.9.3										
	shuttering	2	1.50	1.50	0.15	3.15 M <sup>2</sup>	P/M <sup>2</sup>	Rs.291.00	Rs.916.65	
7	C.P. (1:3) with 5% Cico & neat cement									
S.O.R. Internal face										
No.		2	1.00	1.00	1.00	4.00 M <sup>2</sup>				
13.17.1	Bed surface	1	1.00	1.00		1.00 M <sup>2</sup>				
+13.36.1										
						5.00 M <sup>2</sup>	P/M <sup>2</sup>	Rs.166.30	Rs.831.50	
8	C.P. (1:4) out side of wall	2	1.50	1.50	0.75	4.5 M <sup>2</sup>	P/M <sup>2</sup>	Rs.114.70	Rs.516.15	
S.O.R. No. 13.11.2										
9	8mm dia T.S. Rod									
S.O.R. No. 5.22.7A										
			0.338 M <sup>3</sup> x	70	Kg/ M3	23.625 Kg.	P/Kg	Rs.56.00	Rs.1,323.00	
10	Lifting Ring of 10mm dia Rod					4 No.	Each	Rs.30.00	Rs.120.00	
									Total	
									Rs.12,418.89	
11	Carriage of materials 5%								Rs.620.94	
									<b>Rs.13,039.83</b>	
								<b>Say</b>	<b>Rs.13,040.00</b>	

for



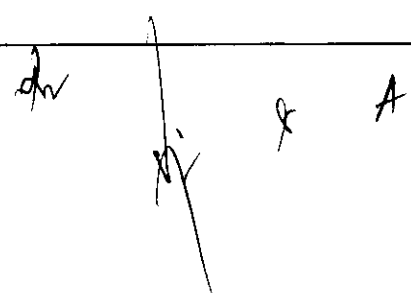
## Sub Est. No. 3

## WATER SUPPLY DISTRIBUTION SYSTEM

S.N.	Particulars	Quantity	Unit	Rate	Amount
1A	Earthwork in excavation over areas (exceeding 30 cm in depth 1.5 in width as well as 10 sqm on plan) including disposal of excavated earth lead upto 50m and lift upto 1.5m, disposal earth to be levelled and neatly dressed.				
	90mm dia Pipe	70.00	0.30	1.10 =	23.10
	75mm dia Pipe	140.00	0.30	1.10 =	46.20
	63mm dia Pipe	210.00	0.30	1.10 =	69.30
	50mm dia Pipe	420.00	0.30	1.10 =	138.60
	40mm dia Pipe	560.00	0.30	1.10 =	184.80
					462.00 M <sup>3</sup>
	Add 5% extra for fittings =				23.10 M <sup>3</sup>
					485.10 M <sup>3</sup>
					15.75 M <sup>3</sup>
1B	Provision for PCC road cutting and its restoration				
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	475.40 M <sup>3</sup>	P/M <sup>3</sup>	Rs.74.50	Rs.35,417.15
3	Providing and laying High Density Polyethylene pipe (HDPE pipe) of 20 mm to 225 mm OD and pressure 6.0 Kg/cm <sup>2</sup> and 10 Kg/cm <sup>2</sup> suitable for water supply which is available in all standard, like ISI-4984/1995 and various grades like PE-80, PE-100 including required specials. Rates are inclusive of , all taxes and duties (Exise duty @12.50% & CST @2% against Form 'C'), labour cess, contractor profit and overhead charges all complete as per direction of Engineer-in-charge.				
3A	HDPE pipe of materials grade PE100- PN10 (dia in mm)				
	75mm dia Pipe from PVC Tank to Distribution main	14.00 M	P/M	Rs.239.81	Rs.3,357.34
	90mm dia Pipe	70.00 M	P/M	Rs.340.84	Rs.23,858.80
	75mm dia Pipe	140.00 M	P/M	Rs.239.81	Rs.33,573.40
	63mm dia Pipe	210.00 M	P/M	Rs.168.77	Rs.35,441.70
3B	HDPE pipe of materials grade PE100- PN8 (dia in mm)				
	50mm dia Pipe	420.00 M	P/M	Rs.89.99	Rs.37,795.80
	40mm dia Pipe	560.00 M	P/M	Rs.59.78	Rs.33,476.80
	50mm dia Pipe from T/well to PVC Tank	12.00 M	P/M	Rs.89.99	Rs.1,079.88
4	Providing and fixing brass gate valve with C.I. wheel of approved quality (screwed end).				
	90mm dia Pipe	2 Nos.	Each	Rs.2,016.50	Rs.4,033.00
	75mm dia Pipe	3 Nos.	Each	Rs.1,351.60	Rs.4,054.80
	63mm dia Pipe	2 Nos.	Each	Rs.1,351.60	Rs.2,703.20
	50mm dia Pipe	3 Nos.	Each	Rs.811.40	Rs.2,434.20

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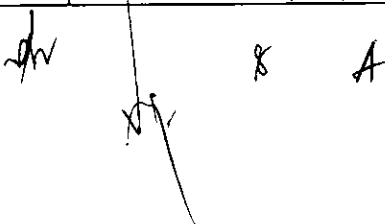
S.N.	Particulars	Quantity	Unit	Rate	Amount
	40mm dia Pipe	3 Nos.	Each	Rs.613.90	Rs.1,841.70
5 18.33	Constructing masonry Chamber 60x60x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve,with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size ) , necessary excavation, foundation concrete 1:5:10(1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominalsize) and inside plastering with cement mortar 1:3 (1 cement : 3coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard specifications & direction of E/I. Work for additional depth	11 Nos.	Each	Rs.5,807.50	Rs.63,882.50
	Brick work (1:4) in foundation				
	2 1.10 0.25 0.35 0.193				
	2 0.60 0.25 0.35 0.105				
					0.298
	Plaster (1:3)	3.273 CuM	CuM	Rs.4,724.40	Rs.15,460.60
	8 1.10 0.35 3.08	33.88 SqM	SqM	Rs.128.20	Rs.4,343.42
6	Carriage 10% of item 5				Rs.8,368.65
7 18.48	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, ISI : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	10000 Ltrs.	P/Ltr.	Rs.6.60	Rs.66,000.00
8	Providing and fixing PTMT extension nipple for water tank pipe, fittings of approved quality and colour.				
	50mm dia	2 Nos.	each	Rs.250.00	Rs.500.00
	75mm dia	1 No.	each	Rs.400.00	Rs.400.00
				<b>TOTAL</b>	<b>Rs.5,51,285.54</b>


  
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## Sub Est. No. 4

Model estimate for supply, installation & commissioning of single phase 3 H.P submersible motor pump set with all accessories including extension of L.T. line from nearest source up-to pumping station.

Sl. No.	Particulars	Quantity	Unit	Rate	Amount
1	2	3	4	5	6
[A.]	Supply Installation, commissioning and testing of single phase 3 H.P. submersible pump set having discharging capacity 3.94 lps at a total head of 35 meter(approx) of KSB/ Kirloskar or equivalent make with all accessories & fittings etc including loading unloading and transportation of the pump set to the work site with all required labour, materials, tools and tackles installation, testing & (i) 50 mm dia x 3 mtrs long medium class G.I column pipe both end thread and one end socketed- 6(six)nos (ii) 1x3x2.5 mm <sup>2</sup> flat copper conductor submersible cable -40 (forty) mtrs. (iii) 50 mm dia union socket- 1(one) no. (iv) 65 mm dia x 250 mm long G.I. nipple- 1 (one) no. (v) 50 mm dia G.I Elbow—1(One) no. (vi) 50 mm dia M.S. clamps—2(Two) Pairs. (vii) 50 mmx 250 mm long G.I nipple- 1(One) no. (viii) Tube well cap for T/Well – 1(one) no. (ix) 50 mm dia x 65 mm dia reducer socket –1(one) no.	1 (one) job	p/job	Rs.42,700.00	Rs.42,700.00



[B]	Supply Installation, commissioning and testing of floor mounted outdoor type L.T feeder pillar single phase starter controll pannel operated on 220 V, 3 phase , 50 c/s for 3 HP Submersible pump set made of MS sheet (minimum 2 mm thick) duly spray power coated painting with following accessories made of M.S sheet ( minimum 2mm thick) duly spray powder coated painting with following accessories (i) 90-220 V range single phase 7.5 KVA automatic voltage stabilizer make- Sen & Pandit/ Vertex/ISI marked If any. 1 No.  (ii) Suitable single phase starter control panel for above motor of BCH /L&Tmake – 1(one) no.	1 (one) job	p/job	Rs.45,500.00	Rs.45,500.00
[C]	Supplying & fitting 2.5 mm <sup>2</sup> copper service cable from power point from nearest source up-to pumping station..	20 mtrs	P/Mt	Rs.130.00	Rs.2,600.00
[D]	Providing all materials and labour required for doing earthing station with G.I earth pipe of 40 mm dia x 4.5 mtrs 20fts. long G.I pipe including accessories excavation of earth , providing masonry enclosure with cover plate having locking arrangement and watering pipe, etc.with salt, charcoal,etc.as per IE & IS specification.	1 job	p/job	Rs.2,803.00	Rs.2,803.00
				<b>Total Rs.</b>	<b>Rs.93,603.00</b>

## Sub Est. No. 5

Estimate for the work - House service connection					
SUB-ESTIMATE					
S.No.	Description	Qty	Unit	Rate	Amount
1A	Providing and fixing MDPE (PE 80 GradeCompound) pipes PN-12.5 (12.5kg/Sqcm) as per ISO 4427 and specification for waterapplication rates are inclusive of , taxes and duties (Exise duty @12.50% &CST @2% against Form 'C'), labour cess, contractor profit and overhead charges all complete asper direction of Engineer-in-charge.complete.				
	MDPE Pipe 20mm dia nominal bore	6.00	PM	Rs.19.97	Rs.119.82
1B	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall				
18.7.1	15 mm nomonal bore	1.0	PM	Rs.138.70	Rs.138.70
2	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and amming of bottoms, lift upto 1.5 m . including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kinds of soil				
2.8.1	6.00 0.30 0.60 1.08	1.08	CuM	Rs.230.50	Rs.248.94
3 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead	1.06	CuM	Rs.74.50	Rs.78.85
4	Providing and fixing brass ferrule with CI mouth cover incuding boring and tapping the main:				
18.20.1	15mm nominal bore	1	Each	Rs.254.10	Rs.254.10
	Providing and fixing P.P. Black service Saddle (Brass threaded)	1	Each	Rs.400.00	Rs.400.00
5	Providing and fixing brass bib cock of approved quality :				
18.15.1	15mm nominal bore	1	Each	Rs.273.00	Rs.273.00
	Total				Rs.1,513.41
	Say				Rs.1,513.00

Total Nos. of House Holds=

200 Nos. @

Rs.1,513.00

Rs.3,02,600.00





**Sub Est. No. 6**

**8 M HIGH STEEL STRUCTURE STAGING FOR 10000 LITER PVC TANK**

S.N.	Particulars	Quantity	Unit	Rate	Amount
1 7.41	Providing and fixing structural steel frame (for dry cladding with 30 mm thick gang saw cut with machine cut edges sand stone) on walls at all heights using M.S. square / rectangular tube in the required pattern as per architectural drawing, including cost of cutting, bending, welding etc. The frame work shall be fixed to the wall with the help of MS brackets / lugs of angle iron / flats etc. which shall be welded to the frame and embedded in brick wall with cement concrete block 1:2:4 (1 cement : 2 coarse sand : 4 graded aggregate 20 mm nominal size) of size 300x230x300 mm, including cost of necessary centring and shuttering and with approved expansion hold fasteners on CC/RCC surface, including drilling necessary holes. Approved cramps / pins etc. shall be welded to the frame work to support stone cladding, the steel work will be given a priming coat of Zinc primer as approved by Engineer-in-Charge and painted two or more coats of epoxy paint (Shop drawings shall be submitted by the contractor to the Engineer-in-Charge for approval before execution). The frame work shall be fixed in true horizontal & vertical lines/planes. (Only structural steel frame work shall be measured for the purpose of payment, stainless steel cramps shall be paid for separately and nothing extra shall be paid.) Providing MS Staging of 8M height with ladder as per drawing attached	4500 Kg	P/Kg	Rs.119.40	Rs.5,37,300.00
2 5.2.2	Reinforced cement concrete work in wall (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. upt floor  five level excluding cost of centring, shuttering, finishing and reinforcement. 1:1:5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20mm nominal size)	6.1972 M <sup>3</sup>	P/M <sup>3</sup>	Rs.5,139.70	Rs.31,851.75
3- 5.22	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete.	495.776 Kg	Kg	Rs.56.00	Rs.27,763.46
4- 2.28	Supplying and filling in plinth with local sand and under floors including watering, ramming consolidating and dressing complete.	4.32 M <sup>3</sup>	P/M <sup>3</sup>	Rs.204.40	Rs.883.01
5- 11.72	Providing designation of 100A Brick flat Soling joints filled with local sand including cost of watering, taxes & royalty all complete as per specification & direction of E/I.	10.8 M <sup>2</sup>	P/M <sup>2</sup>	Rs.253.80	Rs.2,741.04
6 4.1.2	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering-all work upto plinth level. 1:1.5:3(1 Cement :1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)	1.62 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,373.20	Rs.7,084.58

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S.N.	Particulars	Quantity	Unit	Rate	Amount
7 2.8	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including ressing of sides and ramming of bottoms, lift upto 1.5 m . including getting out the excavated soil and	18.66 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.4,301.13
8 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of oundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead	9.33 M <sup>3</sup>	P/M <sup>3</sup>	Rs.74.50	Rs.695.09
9- 6.1.14	Brick work with bricks of class designation 100A in foundation and plinth in :				
A	Cement mortar 1:6 (1 Cement : 6 Sand)	1.2144 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,490.60	Rs.5,453.38
10 10.1	Providing and fixing anchor bolt of 28mm dia and 1 Mtr length embedded in R.C.C pedestal all complete as per direction of Engineer in charge. @4x4x5kg	80 Kg	P/kg	Rs.59.20	Rs.4,736.00
11 13.26	Neat cement punning	10.80 M <sup>2</sup>	P/M <sup>2</sup>	Rs.32.30	Rs.348.84
12	Carriage of the following materials from quarry to work site including loading, unloading and staking at work site as per specification & direction of E/I.				
	(a) Bricks ( 7 Km. Pucca & 1 Km. Kachha lead)	843 Nos.	%0 nos.	Rs.606.10	Rs.510.94
	(b) Coarse Sand (100 Km. lead)	3.810 M <sup>3</sup>	P/M <sup>3</sup>	Rs.1,221.09	Rs.4,652.35
	(c) Stone Chips (150 Km. lead)	6.780 M <sup>3</sup>	P/M <sup>3</sup>	Rs.1,746.29	Rs.11,839.85
	(d) Local Sand ( 2 Km. Pucca & 1 Km. Kachha lead)	4.480 M <sup>3</sup>	P/M <sup>3</sup>	Rs.217.23	Rs.973.19
				<b>TOTAL</b>	<b>Rs.6,41,134.61</b>
				<b>say</b>	<b>Rs.6,41,100.00</b>

**NAME OF WORK - CONSTRUCTION OF STEEL STAGING  
FOR HDPE WATER STORAGE TANK  
Measurement Sheet**

S.No.	Particulars	No.	Length	Breath	Depth	Total	Total Qty
1 5.2.2	Reinforced cement concrete work in wall (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. upt floor five level excluding cost of centring, shuttering, finishin and reinforcement. 1:1.5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20mm nominal size)						
	base of footing	4	1.8	1.8	0.4	5.184	5.184
	Pedestal	4	0.4	0.04	1.6	0.1024	0.1024
	Plinth beam long side	2	3.6	0.23	0.3	0.4968	0.4968
	Plinth beam short side	2	3	0.23	0.3	0.414	0.414
							<b>6.1972</b>
	Providing & fixing in position steel bar reinforcement of various dia for RCC works taken 80kg/cum						<b>495.7760</b>
<b>Item no. 2 :-</b>							
2- 2.28	Supplying and filling in plinth with local sand and under floors including watering, ramming consolidating and dressing complete.						
	Long Wall	1	3.60	3.00	0.4	=	4.32
<b>Item no. 3 :-</b>							
3- 11.72	Providing designation of 100A Brick flat Soling joints filled with local sand including cost of watering, taxes & royalty all complete as per specification & direction of E/l.	1	3.60	3.00		=	10.8
<b>Item no. 4 :-</b>							
5- 6.1.1	Brick work with bricks of class designation 100A in foundation and plinth in :						
4 A	Cement mortar 1:6 (1 Cement : 6 Sand)	2	3.6	0.23	0.40	=	0.6624
		2	3	0.23	0.40	=	0.5520
							<b>1.2144</b>
6 2.8	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including ressing of sides and ramming of bottoms, lift upto 1.5 m . including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.	4	1.8	1.8	1.44	=	18.66
7 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of oundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead					=	9.33
8 4.1.2	Providing and laying in position cement concrete of specified grade exluding the cost of centring and shuttering-all work upto plinth level.						
	1:1.5:3(1 Cement :1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)	1	3.60	3.00	0.15	=	1.62
9 13.26	Neat cement punning	1	3.60	3.00		=	10.80

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# GOVERNMENT OF BIHAR

PUBLIC HEALTH ENGINEERING DEPARTMENT

*MODEL ESTIMATE*

*FOR*

CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME  
WITH IRON REMOVAL PLANT

FOR A WARD HAVING 100 HOUSE HOLDS

ESTIMATED COST-- Rs. 18.437 Lac

JANUARY, 2017

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**GOVERNMENT OF BIHAR**  
**Public Health Engineering Department**  
**ABSTRACT OF COST**

**NAME OF WORK:- CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME FOR WARD HAVING 100 HOUSE HOLDS**

S.N.	Description	Total Amount
1	Construction of 125mm X75mmx 90m deep T/W etc. all complete and as per direction of E/I. (As per sub Estimate no.- 1)	Rs.1,11,137.68
2	Constructing masonry Chamber 100x100x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for Tube Well, and RCC top slab 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size) , necessary excavation, foundation concrete 1:2:4(1 cement : 2 fine sand : 4 graded stone aggregate 20 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3coarse sand) 12 mm thick with 5% cico fnished with a floating coat of neat cement, out side plastering with cement mortar 1:4 (1 cement : 4coarse sand) 12 mm thick complete as per standard specifications & direction of E/I. (As per sub Estimate no.- 2)	Rs.13,040.00
3	Providing and Laying Distrbution network of High Density Polyethylene pipe (HDPE pipe) including 5000 liter PVC tank installed at 8M high MS staging etc all complete as per direction of E/I. (As per sub Estimate no.- 3)	Rs.3,84,422.69
4	Supply Installation, commissioning and testing of single phase 2 H.P. submersible pump set having discharging capacity 2 lps at a total head of 35 meter(approx) of KSB/ Kirloskar or equivalent make with all accessories & fittings etc including loading unloading and transportation of the pump set to the work site with all required labour, materials, tools and tackles installation, testing & commissioning as per standards specifications and direction of E/I. (As per sub Estimate no.- 4)	Rs.64,403.00
5	Providing house connection for each house hold including supplying all materials, labours, tools and making ferrule connection with 20 mm dia MDPE and 15mm CPVC Pipes with all fittings etc all complete. (As per sub Estimate no.- 5)	Rs.1,51,300.00
6	Design, supply, fabrication, installation of fully tested and successfully operated MS/FRP Iron Removal Plant to deliver treated water confirming to water quality standard as per IS:10500 for 8 KLPH capacity and raw water iron concentration of upto 10PPM all complete as per direction of the E/I. (As per sub Estimate no.- 6)	Rs.4,60,000.00
7	Providing and erecting 8M high staging with GI enclosure to house IRP and electric switch panel of suitably designed MS section of angle, channel, hollow section etc. as per drawing attached. (As per sub Estimate no.- 7)	Rs.6,41,100.00
<b>TOTAL</b>		Rs.18,25,403.37
Add 1% Contingency		Rs.18,254.03
<b>G. TOTAL</b>		Rs.18,43,657.41
<b>Say</b>		<b>Rs.18,43,700.00</b>

(Rs. Eighteen Lac Forty three Thousand seven Hundred ) only

**note:**

- i) Road cutting cost may increase or decrease as per actuals.
- ii) Strongly advised that pipeline should be laid before construction of Naali-Gali.
- iii) This is a model estimate. Hence the quantity may increase or decrease based on actual site conditions.

**Variable inter alia includes**

- i) Hydro geomorphological condition.
- ii) Location of source vis-à-vis population/ house holds.
- iii) Quality of works and materials shall be maintained as per standard specifications and direction of E/I.

Technically approved for Rs. 18,43,700.00 (Rupees Eighteen Lac forty three thousand seven hundred) only.  
10/2/17  
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## CONSTRUCTION OF 125MM X 75MM DIA &amp; 90M DEEP TUBE WELL

S.No.	Description	Qty.	Unit	Rate	Amount	
1	Boring/drilling bore well of required dia for casing/strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer -in-charge, upto 90 metre depth below ground level. (All types of soil)					
24.1.1.1	(a) 300mm dia bore from G.L. to 90.0M	90.0 M	P/M	Rs.378.00	Rs.34,020.00	
2	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC (UPVC) medium well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings					
	(b) 125 mm nominal size dia	30.0 M	P/M	Rs.462.50	Rs.13,875.00	
24.3.5	(b) 75 mm nominal size dia	34.0 M	P/M	Rs.328.50	Rs.11,169.00	
24.4.5	(c) 75 mm dia U.P.V.C. strainer	21.0 M	P/M	Rs.420.30	Rs.8,826.30	
3	Providing all materials, tools & labours and fixing the following fittings etc. all complete as per specification & direction of E/I.					
	(a) 125 mm dia P.V.C. well cap	1 No.	Each	Rs.166.60	Rs.166.60	
	(b) 125 mm dia center guide	4 Nos.	Each	Rs.100.00	Rs.400.00	
	(c) 75 mm dia center guide	6 Nos.	Each	Rs.75.00	Rs.450.00	
	(d) 75 mm dia P.V.C. pipe shoe plug	1 No.	Each	Rs.185.00	Rs.185.00	
	(e)125mm x 75 mm dia P.V.C. Reducer	1 No.	Each	Rs.475.00	Rs.475.00	
	(d)125mm dia M.S.Clamp	1 No.	Each	Rs.974.60	Rs.974.60	
4a	Providing all materials, labours. & equipments for fixing					
24.6	tubewell with peagravel of Dalbhumigarh to size 4mm to 8mm approx. as suitable for strata including carriage washing, placing and packing the same in position around the tubewell etc. all complete as per direction of E/I.	6.5 M <sup>3</sup>	P/M <sup>3</sup>	Rs.917.00	Rs.5,960.50	
4b	Carriage of Pea Gravel from Dhalbhumigarh (taken av distance 400km.)	6.5 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,336.54	Rs.28,187.48	
5	Development of tube well in accordance with IS : 2800 (part I) and IS: 11189, to establish maximum rate of usable water yield without sand content (beyond permissible limit), with required capacity air compressor, running the compressor for required time till well is fully developed, measuring yield of well by "V" notch method or any other approved method, measuring static level & draw down etc. by step draw down method, collecting water sampl & getting tested in approved laboratory, disinfection of tubewell, all complete, including hire & labour charges of air compressor, tools & accessories etc., all as per requirement and direction of Engineer-in-charge.	3 Hrs.	Each	Rs.649.40	Rs.1,948.20	
24.12	6	Supplying all materials and labours for arrangement for additional water required during the drilling period for 40 Hrs & site clearance & leveling etc. And providing the soap duster etc. to staff engaged in drilling etc. all complete work as per specification & direction of E.I..	1 No.	Each	Rs.4,500.00	Rs.4,500.00
<b>TOTAL</b>					<b>Rs.1,11,137.68</b>	



(Sub Estimate - 2)

**Analysis of Chamber for TW**

Supplying materials, labours and constructing chamber of following dimension having 250mm thick wall in C.M. (1:4) including 12mm C.P. (1:3) with punning inside, R.C.C. cover slab with C.I. Surface box, 20mm dia foot rest at 150mm interval 10mm dia lifting ring etc. all complete.

<b>SIZE</b>	<b>1.00 M</b>	<b>x</b>	<b>1.00 M</b>	<b>x</b>	<b>0.75 M deep</b>
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S.O.R. No.	Particulars	No.	L	W	H	Qty.	Unit	Rate	Amount
1	Earth work in excavation	1	1.75	1.75	1.0	3.063 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.705.91
S.O.R. No. 2.8									
2	Sand filling	1	1.75	1.75	0.075	0.230 M <sup>3</sup>	P/M <sup>3</sup>	Rs.204.40	Rs.46.95
S.O.R. No. 2.28									
3	Brick flat soling	1	1.75	1.75		3.063 M <sup>2</sup>	P/M <sup>2</sup>	Rs.253.80	Rs.777.26
S.O.R. 11.72									
4	P.C.C. (1:2:4) in foundation	1	1.75	1.75	0.10	0.306 M <sup>3</sup>			
S.O.O. 4.1.3									
5	B/Work in (1:4) C.M.	2	2.50	0.25	0.75	0.306 M <sup>3</sup>	P/M <sup>3</sup>	Rs.3,323.10	Rs.1,017.70
S.O.R. No. 6.1.12/1									
6	R.C.C. Cover slab(1:1.5:3)	1	1.50	1.50	0.15	0.338 M <sup>3</sup>	P/M <sup>3</sup>	Rs.5,139.70	Rs.1,734.65
S.O.R. No. 5.2.2 & 5.9.3									
7	shuttering C.P. (1:3) with 5% Cico & neat cement	2	1.50	1.50	0.15	3.15 M <sup>2</sup>	P/M <sup>2</sup>	Rs.291.00	Rs.916.65
S.O.R. No. 13.17.1									
13.17.1	Bed surface	1	1.00	1.00		1.00 M <sup>2</sup>			
						5.00 M <sup>2</sup>	P/M <sup>2</sup>	Rs.166.30	Rs.831.50
+13.36.1									
8	C.P. (1:4) out side of wall	2	1.50	1.50	0.75	4.5 M <sup>2</sup>	P/M <sup>2</sup>	Rs.114.70	Rs.516.15
S.O.R. No. 13.11.2									
9	8mm dia T.S. Rod								
S.O.R. No. 5.22.7A									
		0.338 M <sup>3</sup> x	70	Kg/ M <sup>3</sup>		23.625 Kg.	P/Kg	Rs.56.00	Rs.1,323.00
10	Lifting Ring of 10mm dia Rod					4 No.	Each	Rs.30.00	Rs.120.00
								Total	Rs.12,418.89
									Rs.620.94
									<u>Rs.13,039.83</u>

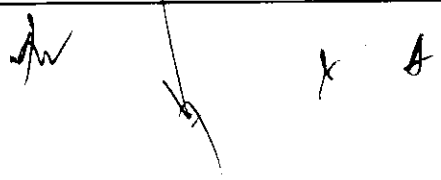
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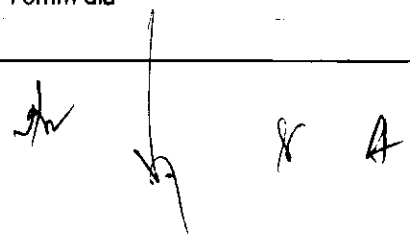
## Sub Est. No. 3

## WATER SUPPLY DISTRIBUTION SYSTEM

S.N.	Particulars	Quantity	Unit	Rate	Amount	
1A	Earthwork in excavation over areas (exceeding 30 cm in depth 1.5 in width as well as 10 sqm on plan) including disposal of excavated earth lead upto 50m and lift upto 1.5m, disposal earth to be levelled and neatly dressed.					
	75mm dia Pipe	150.00	0.30	1.10 =	49.50	
	63mm dia Pipe	150.00	0.30	1.10 =	49.50	
	50mm dia Pipe	300.00	0.30	1.10 =	99.00	
	40mm dia Pipe	400.00	0.30	1.10 =	132.00	
		330.00	M <sup>3</sup>			
	Add 5% extra for fittings =	16.50	M <sup>3</sup>			
		346.50	M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.79,868.25
1B	Provision for PCC road cutting and its restoration	11.25	M <sup>3</sup>	P/M <sup>3</sup>	Rs.3,901.40	Rs.43,890.75
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	339.57	M <sup>3</sup>	P/M <sup>3</sup>	Rs.74.50	Rs.25,297.97
3	Providing and laying High Density Polyethylene pipe (HDPE pipe) of 20 mm to 225 mm OD and pressure 6.0 Kg/cm <sup>2</sup> and 10 Kg/cm <sup>2</sup> suitable for water supply which is available in all standard, like ISI-4984/1995 and various grades like PE-80, PE-100 including required specials. Rates are inclusive of , all taxes and duties (Exise duty @12.50% & CST @2% against Form 'C'), labour cess, contractor profit and overhead charges all complete as per direction of Engineer-in-charge.					
3A	HDPE pipe of materials grade PE100- PN10 (dia in mm)					
	75mm dia Pipe from PVC Tank to Distribution main	10.00	M	P/M	Rs.239.81	Rs.2,398.10
	75mm dia Pipe	150.00	M	P/M	Rs.239.81	Rs.35,971.50
	63mm dia Pipe	150.00	M	P/M	Rs.168.77	Rs.25,315.50
3B	HDPE pipe of materials grade PE100- PN8 (dia in mm)					
	50mm dia Pipe	300.00	M	P/M	Rs.89.99	Rs.26,997.00
	40mm dia Pipe	400.00	M	P/M	Rs.59.78	Rs.23,912.00
	40mm dia Pipe from T/well to PVC Tank	12.00	M	P/M	Rs.59.78	Rs.717.36
4	Providing and fixing brass gate valve with C.I. wheel of approved quality (screwed end).					
	75mm dia Pipe	3 Nos.	Each	Rs.1,351.60	Rs.4,054.80	
	63mm dia Pipe	2 Nos.	Each	Rs.1,351.60	Rs.2,703.20	
	50mm dia Pipe	2 Nos.	Each	Rs.811.40	Rs.1,622.80	
	40mm dia Pipe	4 Nos.	Each	Rs.613.90	Rs.2,455.60	



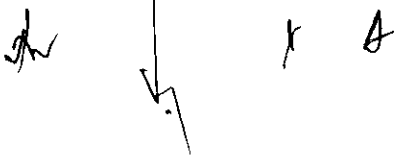
S.N.	Particulars	Quantity	Unit	Rate	Amount	
5 18.33	Constructing masonry Chamber 60x60x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size), necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard specifications & direction of E/I.	9 Nos.	Each	Rs.5,807.50	Rs.52,267.50	
	Work for additional depth					
	Brick work (1:4) in foundation					
	2 1.10 0.25 0.35 0.193					
	2 0.60 0.25 0.35 0.105					
		0.298	2.678 CuM	CuM	Rs.4,724.40	Rs.12,649.58
	Plaster (1:3)					
	8 1.10 0.35 3.08	27.72	SqM	SqM	Rs.128.20	Rs.3,553.70
6	Carriage 10% of item 5				Rs.6,847.08	
7 18.48	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, ISI : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	5000	Ltrs. P/Ltr.	Rs.6.60	Rs.33,000.00	
8	Providing and fixing PTMT extension nipple for water tank pipe, fittings of approved quality and colour.					
	40mm dia	2	Nos. each	Rs.250.00	Rs.500.00	
	75mm dia	1	No. each	Rs.400.00	Rs.400.00	
	<b>TOTAL</b>				<b>Rs.3,84,422.69</b>	



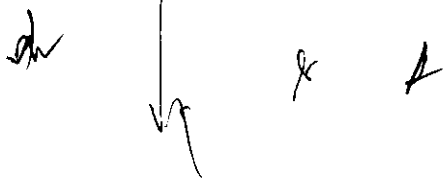
## Sub Est. No. 4

Model estimate for supply, installation & commissioning of single phase 2 H.P submersible motor pump set with all accessories including extension of L.T. line from nearest source up-to pumping

Sl. No.	Particulars	Quantity	Unit	Rate	Amount	
1	2	3	4	5	6	
[A]	<p>Supply Installation, commissioning and testing of single phase 2 H.P. submersible pump set having discharging capacity 2 lps at a total head of 35 meter(approx) of KSB/ Kirloskar or equivalent make with all accessories &amp; fittings etc including loading unloading and transportation of the pump set to the work site with all required labour, materials, tools and tackles installation, testing &amp; commissioning as per standards specifications and direction of E/I.</p> <p>(i) 40 mm dia x 3 mtrs long medium class G.I column pipe both end threaded and one end socketed- 6(six)nos</p> <p>(ii) 1x3x1.5 mm<sup>2</sup> flat copper conductor submersible cable -40 (forty) mtrs.</p> <p>(iii) 40 mm dia union socket- 1(one) no.</p> <p>(iv) 50 mm dia x 250 mm long G.I. nipple- 1 (one) no.</p> <p>(v) 40 mm dia G.I Elbow—1(One) no.</p> <p>(vi) 40 mm dia M.S. clamps—2(Two) Pairs.</p> <p>(vii) 40 mmx 250 mm long G.I nipple- 1(One) no.</p> <p>(viii) Tube well cap for 125 mm dia T/Well – 1(one) no.</p> <p>(ix) 40 mm dia x 50 mm dia reducer socket –1(one) no.</p>	1	(one) job	p/job	Rs.30,500.00	Rs.30,500.00



[B]	Supply Installation, commissioning and testing of floor mounted outdoor type L.T feeder pillar single phase starter controll pannel operated on 220 V, 3 phase , 50 c/s for 2 HP Submersible pump set made of MS sheet (minimum 2 mm thick) duly spray power coated painting with following accessories made of M.S sheet ( minimum 2mm thick) duly spray powder coated painting with following accessories (i) 95-272 V range single phase 5 KVA automatic voltage stabilizer make-Sen & Pandit/ Vertex/ISI marked If any. 1 No. (ii) Suitable single phase starter control panel for above motor of BCH /L&Tmake - 1(one) no.	1 (one) job	p/job	Rs.28,500.00	Rs.28,500.00
[C]	Supplying & fitting 2.5 mm <sup>2</sup> copper service cable from power point from nearest source up-to pumping station..	20 mtrs	P/Mt	Rs.130.00	Rs.2,600.00
[D]	Providing all materials and labour required for doing earthing station with G.I earth pipe of 40 mm dia x 4.5 mtrs 20fts. long G.I pipe including accessories excavation of earth , providing masonry enclosure with cover plate having locking arrangement and watering pipe etc.with salt, charcoal,etc.as per IE & IS specification.	1 job	p/job	Rs.2,803.00	Rs.2,803.00
<b>Total Rs.</b>					<b>Rs.64,403.00</b>







## Sub Est. No. 5

Estimate for the work - House service connection					
SUB-ESTIMATE					
S.No.	Description	Qty	Unit	Rate	Amount
1A	Providing and fixing MDPE (PE 80 GradeCompound) pipes PN-12.5 (12.5kg/Sqcm) as per ISO 4427 and specification for waterapplication rates are inclusive of , taxes and duties (Exise duty @12.50% &CST @2% against Form 'C'), labour cess, contractor profit and overhead charges all complete asper direction of Engineer-in-charge.complete.				
	MDPE Pipe 20mm dia nominal bore	6.00	PM	Rs.19.97	Rs.119.82
1B	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall				
18.7.1	15 mm nomonal bore	1.0	PM	Rs.138.70	Rs.138.70
2	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and amming of bottoms, lift upto 1.5 m . including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kinds of soil				
2.8.1	6.00 0.30 0.60 1.08	1.08	CuM	Rs.230.50	Rs.248.94
3 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead	1.06	CuM	Rs.74.50	Rs.78.85
4	Providing and fixing brass ferrule with CI mouth cover incuding boring and tapping the main:				
18.20.1	15mm nominal bore	1	Each	Rs.254.10	Rs.254.10
	Providing and fixing P.P. Black service Saddle (Brass threaded)	1	Each	Rs.400.00	Rs.400.00
5	Providing and fixing brass bib cock of approved quality :				
18.15.1	15mm nominal bore	1	Each	Rs.273.00	Rs.273.00
	Total				Rs.1,513.41
	Say				Rs.1,513.00

Total Nos. of House Holds=





100 Nos. @

Rs.1,513.00 Rs.1,51,300.00

SUB ESTIMATE NO - 6IRON REMOVAL PLANT

S.N.	Particulars	Quantity	Unit	Rate (In Rs.)	Amount (In Rs.)
1	Design, supply, erection, installation, testing and commissioning of Iron removal plant based on aeration/ filtration/ activated carbon treatemnt units or any other suitable treatmnet process of ISO 9001 certified reputed make housed in MS/FRP vessel suitable for required flow rate with iron concentration upto 10 ppm in raw water to deliver treated water quality confirming to IS 10500( latest revision) with provision of waste water disposal system, if required including all necessary works and accessories etc. all complete as per directions of Engineer-in-Charge.				
	8.0 KLPH Capacity	1 No.	Each	Rs. 4,60,000.00	Rs. 4,60,000.00
	<b>TOTAL :-</b>				<b>Rs.4,60,000.00</b>

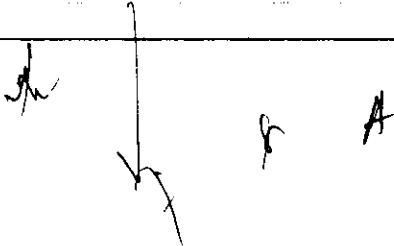
**Sub Est. No. 7**

**8 M HIGH STEEL STRUCTURE STAGING FOR 5000 LITER PVC TANK**

S.N.	Particulars	Quantity	Unit	Rate	Amount
1 7.41	Providing and fixing structural steel frame (for dry cladding with 30 mm thick gang saw cut with machine cut edges sand stone) on walls at all heights using M.S. square / rectangular tube in the required pattern as per architectural drawing, including cost of cutting, bending, welding etc. The frame work shall be fixed to the wall with the help of MS brackets / lugs of angle iron / flats etc. which shall be welded to the frame and embedded in brick wall with cement concrete block 1:2:4 (1 cement : 2 coarse sand : 4 graded aggregate 20 mm nominal size) of size 300x230x300 mm, including cost of necessary centring and shuttering and with approved expansion hold fasteners on CC/RCC surface, including drilling necessary holes. Approved cramps / pins etc. shall be welded to the frame work to support stone cladding, the steel work will be given a priming coat of Zinc primer as approved by Engineer-in-Charge and painted two or more coats of epoxy paint (Shop drawings shall be submitted by the contractor to the Engineer-in-Charge for approval before execution). The frame work shall be fixed in true horizontal & vertical lines/planes. (Only structural steel frame work shall be measured for the purpose of payment, stainless steel cramps shall be paid for separately and nothing extra shall be paid.) Providing MS Staging of 8M height with ladder as per drawing attached	4500 Kg	P/Kg	Rs.119.40	Rs.5,37,300.00
2 5.2.2	Reinforced cement concrete work in wall (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. upt floor five level excluding cost of centring, shuttering, finishin and reinforcement. 1:1:5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20mm nominal size)	6.1972 M <sup>3</sup>	P/M <sup>3</sup>	Rs.5,139.70	Rs.31,851.75
3- 5.22	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete.	495.776 Kg	Kg	Rs.56.00	Rs.27,763.46
4- 2.28	Supplying and filling in plinth with local sand and under floors including watering, ramming consolidating and dressing complete.	4.32 M <sup>3</sup>	P/M <sup>3</sup>	Rs.204.40	Rs.883.01
5- 11.72	Providing designation of 100A Brick flat Soling joints filled with local sand including cost of watering, taxes & royalty all complete as per specification & direction of E/I.	10.8 M <sup>2</sup>	P/M <sup>2</sup>	Rs.253.80	Rs.2,741.04
6 4.1.2	Providing and laying in position cement concrete of specified grade exluding the cost of centring and shuttering-all work upto plinth level. 1:1.5:3(1 Cement :1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)	1.62 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,373.20	Rs.7,084.58
7 2.8	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including tressing of sides and ramming of bottoms, lift upto 1.5 m. including getting out the excavated soil and	18.66 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.4,301.13

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S.N.	Particulars	Quantity	Unit	Rate	Amount
8 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead	9.33 M <sup>3</sup>	P/M <sup>3</sup>	Rs.74.50	Rs.695.09
9- 6.1.14	Brick work with bricks of class designation 100A in foundation and plinth in :				
A	Cement mortar 1:6 (1 Cement : 6 Sand)	1.2144 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,490.60	Rs.5,453.38
10 10.1	Providing and fixing anchor bolt of 28mm dia and 1 Mtr length embedded in R.C.C pedestal all complete as per direction of Engineer in charge. @4x4x5kg	80 Kg	P/kg	Rs.59.20	Rs.4,736.00
11 13.26	Neat cement punning	10.80 M <sup>2</sup>	P/M <sup>2</sup>	Rs.32.30	Rs.348.84
12	Carriage of the following materials from quarry to work site including loading, unloading and staking at work site as per specification & direction of E/I.				
	(a) Bricks ( 7 Km. Pucca & 1 Km. Kachha lead)	843 Nos.	%0 nos.	Rs.606.10	Rs.510.94
	(b) Coarse Sand (100 Km. lead)	3.810 M <sup>3</sup>	P/M <sup>3</sup>	Rs.1,221.09	Rs.4,652.35
	(c) Stone Chips (150 Km. lead)	6.780 M <sup>3</sup>	P/M <sup>3</sup>	Rs.1,746.29	Rs.11,839.85
	(d) Local Sand ( 2 Km. Pucca & 1 Km. Kachha lead)	4.480 M <sup>3</sup>	P/M <sup>3</sup>	Rs.217.23	Rs.973.19
				<b>TOTAL</b>	<b>Rs.6,41,134.61</b>
				<b>say</b>	<b>Rs.6,41,100.00</b>



**NAME OF WORK - CONSTRUCTION OF STEEL STAGING  
FOR HDPE WATER STORAGE TANK  
Measurement Sheet**

S.No.	Particulars	No.	Length	Breath	Depth	Total	Total Qty
1 5.2.2	Reinforced cement concrete work in wall (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. upt floor five level excluding cost of centring, shuttering, finishin and reinforcement. 1:1.5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20mm nominal size)						
	base of footing	4	1.8	1.8	0.4	5.184	5.184
	Pedestal	4	0.4	0.04	1.6	0.1024	0.1024
	Plinth beam long side	2	3.6	0.23	0.3	0.4968	0.4968
	Plinth beam short side	2	3	0.23	0.3	0.414	0.414
							<b>6.1972</b>
	Providing & fixing in position steel bar reinforcement of various dia for RCC works taken 80kg/cum						<b>495.7760</b>
<b>Item no. 2 :-</b>							
2- 2.28	Supplying and filling in plinth with local sand and under floors including watering, ramming consolidating and dressing complete. Long Wall						
		1	3.60	3.00	0.4		= 4.32
<b>Item no. 3 :-</b>							
3- 11.72	Providing designation of 100A Brick flat Soling joints filled with local sand including cost of watering, taxes & royalty all complete as per specification & direction of E/I.						
		1	3.60	3.00			= 10.8
<b>Item no. 4 :-</b>							
5- 6.1.1	Brick work with bricks of class designation 100A in foundation and plinth in :						
4 A	Cement mortar 1:6 (1 Cement : 6 Sand)	2	3.6	0.23	0.40		= 0.6624
		2	3	0.23	0.40		= 0.5520
							<b>1.2144</b>
6 2.8	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including ressing of sides and ramming of bottoms, lift upto 1.5 m including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.						
		4	1.8	1.8	1.44		= 18.66
7 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of oundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead						
							= 9.33
8 4.1.2	Providing and laying in position cement concrete of specified grade exluding the cost of centring and shuttering-all work upto plinth level. 1:1.5:3(1, Cement :1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)						
		1	3.60	3.00	0.15		= 1.62
9 13.26	Neat cement punning	1	3.60	3.00			= 10.80

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# GOVERNMENT OF BIHAR

PUBLIC HEALTH ENGINEERING DEPARTMENT

*MODEL ESTIMATE*

*FOR*

CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME

FOR A WARD HAVING 150 HOUSE HOLDS

ESTIMATED COST-- Rs. 23.060 Lac

JANUARY, 2017

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**GOVERNMENT OF BIHAR**  
**Public Health Engineering Department**  
**ABSTRACT OF COST**

**NAME OF WORK:- CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME FOR WARD HAVING 150 HOUSE HOLDS**

S.N.	Description	Total Amount
1	Construction of 125 mm x75mmX 90m deep T/W etc. all complete and as per direction of E/I. (As per sub Estimate no.- 1)	Rs.1,11,137.68
2	Constructing masonry Chamber 100x100x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for Tube Well, and RCC top slab 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size ) , necessary excavation, foundation concrete 1:2:4(1 cement : 2 fine sand : 4 graded stone aggregate 20 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3coarse sand) 12 mm thick with 5% cico frished with a floating coat of neat cement, out side plastering with cement mortar 1:4 (1 cement : 4coarse sand) 12 mm thick complete as per standard specifications & direction of E/I. (As per sub Estimate no.- 2)	Rs.13,040.00
3	Providing and Laying Distribution network of High Density Polyethylene pipe (HDPE pipe) including 10000 liter PVC tank installed at 8M high MS staging etc all complete as per direction of E/I. (As per sub Estimate no.- 3)	Rs.4,97,337.35
4	Supply Installation, commissioning and testing of single phase 3 H.P. submersible pump set having discharging capacity 3 lps at a total head of 35 meter(approx) of KSB/ Kirloskar or equivalent make with all accessories & fittings etc including loading unloading and transportation of the pump set to the work site with all required labour, materials, tools and tackles installation, testing & commissioning as per standards specifications and direction of E/I. (As per sub Estimate no.- 4)	Rs.93,603.00
5	Providing house connection for each house hold including supplying all materials, labours, tools and making ferrule connection with 20 mm dia MDPE and 15mm CPVC Pipes with all fittings etc all complete. (As per sub Estimate no.- 5)	Rs.2,26,950.00
6	Design, supply, fabrication, installation of fully tested and successfully operated MS/FRP Iron Removal Plant to deliver treated water conforming to water quality standard as per IS:10500 for 12 KLPH capacity and raw water iron concentration of upto 10PPM all complete as per direction of the E/I. (As per sub Estimate no.- 6)	Rs.7,00,000.00
7	Providing and erecting 8M high staging with GI enclosure to house IRP and electric switch panel of suitably designed MS section of angle, channel, hollow section etc. as per drawing attached. (As per sub Estimate no.- 7)	Rs.6,41,100.00
<b>TOTAL</b>		Rs.22,83,168.03
Add 1% Contingency		Rs.22,831.68
<b>G. TOTAL</b>		Rs.23,05,999.71
<b>Say</b>		<b>Rs.23,06,000.00</b>

(Rs. Twenty three Lac Six Thousand ) only

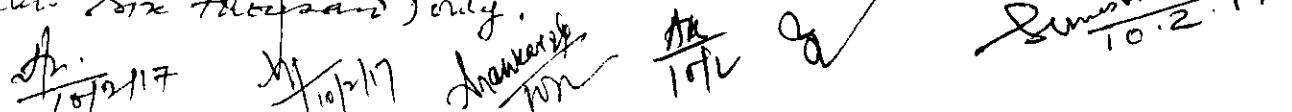
**note:**

- i) Road cutting cost may increase or decrease as per actuals.
- ii) Strongly advised that pipeline should be laid before construction of Naali-Gali.
- iii) This is a model estimate. Hence the quantity may increase or decrease based on actual site conditions.

**Variable inter alia includes**

- i) Hydro geomorphological condition.
- ii) Location of source vis-à-vis population/ house holds.
- iii) Quality of works and materials shall be maintained as per standard specifications and direction of E/I.

Technically approved for Rs. 23,06,000.00 (Rupees Twenty three Lakh Six thousand) only.


  
 10/2/17      10/2/17      10/2/17      10/2/17      10.2.17

## CONSTRUCTION OF 125MM X 75MM DIA &amp; 90M DEEP TUBE WELL

S.No.	Description	Qty.	Unit	Rate	Amount	
1	Boring/drilling bore well of required dia for casing/strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer -in-charge, upto 90 metre depth below ground level. (All types of soil)					
24.1.1.1	(a) 300mm dia bore from G.L. to 90.0M	90.0 M	P/M	Rs.378.00	Rs.34,020.00	
2	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC (UPVC) medium well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings					
24.3.5	(b) 125 mm nominal size dia	30.0 M	P/M	Rs.462.50	Rs.13,875.00	
24.4.5	(c) 75 mm nominal size dia	34.0 M	P/M	Rs.328.50	Rs.11,169.00	
24.4.5	(c) 75 mm dia U.P.V.C. strainer	21.0 M	P/M	Rs.420.30	Rs.8,826.30	
3	Providing all materials, tools & labours and fixing the following fittings etc. all complete as per specification & direction of E/I.					
	(a) 125 mm dia P.V.C. well cap	1 No.	Each	Rs.166.60	Rs.166.60	
	(b) 125 mm dia center guide	4 Nos.	Each	Rs.100.00	Rs.400.00	
	(c) 75 mm dia center guide	6 Nos.	Each	Rs.75.00	Rs.450.00	
	(d) 75 mm dia P.V.C. pipe shoe plug	1 No.	Each	Rs.185.00	Rs.185.00	
	(e) 125mm x 75 mm dia P.V.C. Reducer	1 No.	Each	Rs.475.00	Rs.475.00	
	(d) 125mm dia M.S.Clamp	1 No.	Each	Rs.974.60	Rs.974.60	
4a	Providing all materials, labours, & equipments for fixing tubewell with peagravel of Dalbhumigarh to size 4mm to 8mm approx. as suitable for strata including carriage washing, placing and packing the same in position around the tubewell etc. all complete as per direction of E/I.	6.5 M <sup>3</sup>	P/M <sup>3</sup>	Rs.917.00	Rs.5,960.50	
24.6	Carriage of Pea Gravel from Dhalbhumigarh (taken at distance 400km.)	6.5 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,336.54	Rs.28,187.48	
5	Development of tube well in accordance with IS : 2800 (part I) and IS: 11189, to establish maximum rate of usable water yield without sand content (beyond permissible limit), with required capacity air compressor, running the compressor for required time till well is fully developed, measuring yield of well by "V" notch method or any other approved method, measuring static level & draw down etc. by step draw down method, collecting water sample & getting tested in approved laboratory, disinfection of tubewell, all complete, including hire & labour charges of air compressor, tools & accessories etc., all as per requirement and direction of Engineer-in-charge.	3 Hrs.	Each	Rs.649.40	Rs.1,948.20	
24.12	6	Supplying all materials and labours for arrangement for additional water required during the drilling period for 40 Hrs & site clearance & leveling etc. And providing the soap duster etc. to staff engaged in drilling etc. all complete work as per specification & direction of E.I..	1 No.	Each	Rs.4,500.00	Rs.4,500.00
<b>TOTAL</b>					<b>Rs.1,11,137.68</b>	

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(Sub Estimate - 2)

**Analysis of Chamber for TW**

Supplying materials, labours and constructing chamber of following dimension having 250mm thick wall in C.M. (1:4) including 12mm C.P. (1:3) with punning inside, R.C.C. cover slab with C.I. Surface box, 20mm dia foot rest at 150mm interval 10mm dia lifting ring etc. all complete.

**SIZE**                      **1.00 M**    **x**    **1.00 M**    **x**    **0.75 M deep**

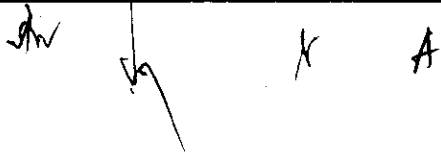
S.O.R. No.	Particulars	No.	L	W	H	Qty.	Unit	Rate	Amount
1	Earth work in excavation	1	1.75	1.75	1.0	3.063 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.705.91
S.O.R. No. 2.8									
2	Sand filling	1	1.75	1.75	0.075	0.230 M <sup>3</sup>	P/M <sup>3</sup>	Rs.204.40	Rs.46.95
S.O.R. No. 2.28									
3	Brick flat soling	1	1.75	1.75		3.063 M <sup>2</sup>	P/M <sup>2</sup>	Rs.253.80	Rs.777.26
S.O.R. 11.72									
4	P.C.C. (1:2:4) in foundation	1	1.75	1.75	0.10	0.306 M <sup>3</sup>			
S.O.O. 4.1.3									
						0.306 M <sup>3</sup>	P/M <sup>3</sup>	Rs.3,323.10	Rs.1,017.70
5	B/Work in (1:4) C.M	2	2.50	0.25	0.75	0.938 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,724.40	Rs.4,429.13
S.O.R. No. 6.1.12/1									
6	R.C.C. Cover slab(1:1.5:3)	1	1.50	1.50	0.15	0.338 M <sup>3</sup>	P/M <sup>3</sup>	Rs.5,139.70	Rs.1,734.65
S.O.R. No. 5.2.2 & 5.9.3									
	shuttering	2	1.50	1.50	0.15	3.15 M <sup>2</sup>	P/M <sup>2</sup>	Rs.291.00	Rs.916.65
7	C.P. (1:3) with 5% Cico & neat cement								
S.O.R. Internal face		2	1.00	1.00	1.00	4.00 M <sup>2</sup>			
No. Bed surface		1	1.00	1.00		1.00 M <sup>2</sup>			
+13.36.1						5.00 M <sup>2</sup>	P/M <sup>2</sup>	Rs.166.30	Rs.831.50
8	C.P. (1:4) out side of wall	2	1.50	1.50	0.75	4.5 M <sup>2</sup>	P/M <sup>2</sup>	Rs.114.70	Rs.516.15
S.O.R. No. 13.11.2									
9	8mm dia T.S. Rod								
S.O.R. No. 5.22.7A									
			0.338 M <sup>3</sup> x	70	Kg/M <sup>3</sup>	23.625 Kg.	P/Kg	Rs.56.00	Rs.1,323.00
10	Lifting Ring of 10mm dia Rod					4 No.	Each	Rs.30.00	Rs.120.00
11	Carriage of materials 5%								
								Total	Rs.12,418.89
									Rs.620.94
									<u>Rs.13,039.83</u>
								Say	Rs.13,040.00

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## Sub Est. No. 3

## WATER SUPPLY DISTRIBUTION SYSTEM

S.N.	Particulars	Quantity	Unit	Rate	Amount
1A	Earthwork in excavation over areas (exceeding 30 cm in depth 1.5 in width as well as 10 sqm on plan) including disposal of excavated earth lead upto 50m and lift upto 1.5m, disposal earth to be levelled and neatly dressed.				
	75mm dia Pipe	195.00	0.30	1.10 =	64.35
	63mm dia Pipe	195.00	0.30	1.10 =	64.35
	50mm dia Pipe	390.00	0.30	1.10 =	128.70
	40mm dia Pipe	520.00	0.30	1.10 =	171.60
					429.00 M <sup>3</sup>
	Add 5% extra for fittings =				21.45 M <sup>3</sup>
					450.45 M <sup>3</sup>
					14.63 M <sup>3</sup>
					P/M <sup>3</sup>
					Rs.230.50
					Rs.1,03,828.73
1B	Provision for PCC road cutting and its restoration				
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.				
		441.44	M <sup>3</sup>	P/M <sup>3</sup>	Rs.74.50
					Rs.32,887.35
3	Providing and laying High Density Polyethylene pipe (HDPE pipe) of 20 mm to 225 mm OD and pressure 6.0 Kg/cm <sup>2</sup> and 10 Kg/cm <sup>2</sup> suitable for water supply which is available in all standard, like ISI-4984/1995 and various grades like PE-80, PE-100 including required specials. Rates are inclusive of , all taxes and duties (Exise duty @12.50% &CST @2% against Form 'C'), labour cess, contractor profit and overhead charges all complete as per direction of Engineer-in-charge.				
3A	HDPE pipe of materials grade PE100- PN10 (dia in mm)				
	75mm dia Pipe from PVC Tank to Distribution main	14.00	M	P/M	Rs.239.81
					Rs.3,357.34
	75mm dia Pipe	195.00	M	P/M	Rs.239.81
					Rs.46,762.95
	63mm dia Pipe	195.00	M	P/M	Rs.168.77
					Rs.32,910.15
3B	HDPE pipe of materials grade PE100- PN8 (dia in mm)				
	50mm dia Pipe	390.00	M	P/M	Rs.89.99
					Rs.35,096.10
	40mm dia Pipe	520.00	M	P/M	Rs.59.78
					Rs.31,085.60
	50mm dia Pipe from T/well to PVC Tank	12.00	M	P/M	Rs.89.99
					Rs.1,079.88
4	Providing and fixing brass gate valve with C.I. wheel of approved quality (screwed end).				
	75mm dia Pipe	3 Nos.	Each	Rs.1,351.60	Rs.4,054.80
	63mm dia Pipe	2 Nos.	Each	Rs.1,351.60	Rs.2,703.20
	50mm dia Pipe	3 Nos.	Each	Rs.811.40	Rs.2,434.20
	40mm dia Pipe	3 Nos.	Each	Rs.613.90	Rs.1,841.70



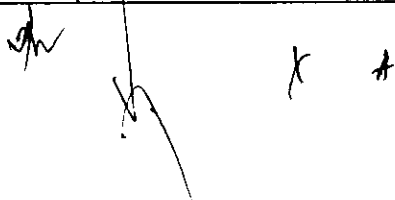
S.N.	Particulars	Quantity	Unit	Rate	Amount
5 18.33	Constructing masonry Chamber 60x60x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) , necessary excavation, foundation concrete 1:5:10(1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard specifications & direction of E/I.	9 Nos.	Each	Rs.5,807.50	Rs.52,267.50
	Work for additional depth				
	Brick work (1:4) in foundation				
	2 1.10 0.25 0.35 0.193				
	2 0.60 0.25 0.35 0.105				
					0.298
		2.678	CuM CuM	Rs.4,724.40	Rs.12,649.58
	Plaster (1:3)				
	8 1.10 0.35 3.08	27.72	SqM SqM	Rs.128.20	Rs.3,553.70
6	Carriage 10% of item 5				Rs.6,847.08
7	Providing and placing on terrace (at all floor levels)				
18.48	polyethylene water storage tank, ISI : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	10000	Ltrs. P/Ltr.	Rs.6.60	Rs.66,000.00
8	Providing and fixing PTMT extension nipple for water tank pipe, fittings of approved quality and colour.				
	50mm dia	2 Nos.	each	Rs.250.00	Rs.500.00
	75mm dia	1 No.	each	Rs.400.00	Rs.400.00
				<b>TOTAL</b>	<b>Rs.4,97,337.35</b>


  
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## Sub Est. No. 4

Model estimate for supply, installation & commissioning of single phase 3 H.P submersible motor pump set with all accessories including extension of L.T. line from nearest source up-to pumping station.

Sl. No.	Particulars	Quantity	Unit	Rate	Amount
1	2	3	4	5	6
[A.]	Supply Installation, commissioning and testing of single phase 3 H.P. submersible pump set having discharging capacity 3 lps at a total head of 35 meter(approx) of KSB/ Kirloskar or equivalent make with all accessories & fittings etc including loading unloading and transportation of the pump set to the work site with all required labour, materials, tools and tackles installation, testing & (i) 50 mm dia x 3 mtrs long medium class G.I column pipe both end thread and one end socketed- 6(six)nos (ii) 1x3x2.5 mm <sup>2</sup> flat copper conductor submersible cable -40 (forty) mtrs. (iii) 50 mm dia union socket- 1(one) no. (iv) 65 mm dia x 250 mm long G.I. nipple- 1 (one) no. (v) 50 mm dia G.I Elbow—1(One) no. (vi) 50 mm dia M.S. clamps—2(Two) Pairs. (vii) 50 mmx 250 mm long G.I nipple- 1(One) no. (viii) Tube well cap for T/Well – 1(one) no. (ix) 50 mm dia x 65 mm dia reducer socket –1(one) no.	1 (one) job	p/job	Rs.42,700.00	Rs.42,700.00



[B]	Supply Installation, commissioning and testing of floor mounted outdoor type L.T feeder pillar single phase starter controll pannel operated on 220 V, 3 phase , 50 c/s for 3 HP Submersible pump set made of MS sheet (minimum 2 mm thick) duly spray power coated painting with following accessories made of M.S sheet ( minimum 2mm thick) duly spray powder coated painting with following accessories (i) 90-220 V range single phase 7.5 KVA automatic voltage stabilizer make- Sen & Pandit/ Vertex/ISI marked If any. 1 No.  (ii) Suitable single phase starter control panel for above motor of BCH /L&Tmake – 1(one) no.	1 (one) job	p/job	Rs.45,500.00	Rs.45,500.00
[C]	Supplying & fitting 2.5 mm <sup>2</sup> copper service cable from power point from nearest source up-to pumping station..	20 mtrs	P/Mt	Rs.130.00	Rs.2,600.00
[D]	Providing all materials and labour required for doing earthing station with G.I earth pipe of 40 mm dia x 4.5 mtrs 20fts. long G.I pipe including accessories excavation of earth , providing masonry enclosure with cover plate having locking arrangement and watering pipe etc.with salt, charcoal,etc.as per IE & IS specification.	1 job	p/job	Rs.2,803.00	Rs.2,803.00
				<b>Total Rs.</b>	<b>Rs.93,603.00</b>

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## Sub Est. No. 5

Estimate for the work - House service connection					
SUB-ESTIMATE					
S.No.	Description	Qty	Unit	Rate	Amount
1A	Providing and fixing MDPE (PE 80 GradeCompound) pipes PN-12.5 (12.5kg/Sqcm) as per ISO 4427 and specification for waterapplication rates are inclusive of , taxes and duties (Exise duty @12.50% &CST @2% against Form 'C'), labour cess, contractor profit and overhead charges all complete asper direction of Engineer-in-charge.complete.				
	MDPE Pipe 20mm dia nominal bore	6.00	PM	Rs.19.97	Rs.119.82
1B	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall				
18.7.1	15 mm nomonal bore	1.0	PM	Rs.138.70	Rs.138.70
2	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and amming of bottoms, lift upto 1.5 m . including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kinds of soil				
2.8.1	6.00 0.30 0.60 1.08	1.08	CuM	Rs.230.50	Rs.248.94
3 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead	1.06	CuM	Rs.74.50	Rs.78.85
4	Providing and fixing brass ferrule with CI mouth cover incuding boring and tapping the main:				
18.20.1	15mm nominal bore	1	Each	Rs.254.10	Rs.254.10
	Providing and fixing P.P. Black service Saddle (Brass threaded)	1	Each	Rs.400.00	Rs.400.00
5	Providing and fixing brass bib cock of approved quality :				
18.15.1	15mm nominal bore	1	Each	Rs.273.00	Rs.273.00
	Total				Rs.1,513.41
	Say				Rs.1,513.00

Total Nos. of House Holds=

150 Nos. @

Rs.1,513.00

Rs.2,26,950.00






**SUB ESTIMATE NO - 6****IRON REMOVAL PLANT**

S.N.	Particulars	Quantity	Unit	Rate (In Rs.)	Amount (In Rs.)
1	Design, supply, erection, installation, testing and commissioning of Iron removal plant based on aeration/ filtration/ activated carbon treatemnt units or any other suitable treatmnet process of ISO 9001 certified reputed make housed in MS/FRP vessel suitable for required flow rate with iron concentration upto 10 ppm in raw water to deliver treated water quality confirming to IS 10500( latest revision) with provision of waste water disposal system, if required including all necessary works and accessories etc. all complete as per directions of Engineer-in-Charge.				
	12.0 KLPH Capacity	1 No.	Each	Rs. 7,00,000.00	Rs. 7,00,000.00
<b>TOTAL :-</b>					<b>Rs.7,00,000.00</b>

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Sub Est. No. 7**8 M HIGH STEEL STRUCTURE STAGING FOR 10000 LITER PVC TANK**

S.N.	Particulars	Quantity	Unit	Rate	Amount
1 7.41	Providing and fixing structural steel frame (for dry cladding with 30 mm thick gang saw cut with machine cut edges sand stone) on walls at all heights using M.S. square / rectangular tube in the required pattern as per architectural drawing, including cost of cutting, bending, welding etc. The frame work shall be fixed to the wall with the help of MS brackets / lugs of angle iron / flats etc. which shall be welded to the frame and embedded in brick wall with cement concrete block 1:2:4 (1 cement : 2 coarse sand : 4 graded aggregate 20 mm nominal size) of size 300x230x300 mm, including cost of necessary centring and shuttering and with approved expansion hold fasteners on CC/RCC surface, including drilling necessary holes. Approved cramps / pins etc. shall be welded to the frame work to support stone cladding, the steel work will be given a priming coat of Zinc primer as approved by Engineer-in-Charge and painted two or more coats of epoxy paint (Shop drawings shall be submitted by the contractor to the Engineer-in-Charge for approval before execution). The frame work shall be fixed in true horizontal & vertical lines/planes. (Only structural steel frame work shall be measured for the purpose of payment, stainless steel cramps shall be paid for separately and nothing extra shall be paid.) Providing MS Staging of 8M height with ladder as per drawing attached	4500 Kg	P/Kg	Rs.119.40	Rs.5,37,300.00
2 5.2.2	Reinforced cement concrete work in wall (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. upt floor five level excluding cost of centring, shuttering, finishin and reinforcement. 1:1.5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20mm nominal size)	6.1972 M <sup>3</sup>	P/M <sup>3</sup>	Rs.5,139.70	Rs.31,851.75
3- 5.22	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete.	495.776 Kg	Kg	Rs.56.00	Rs.27,763.46
4- 2.28	Supplying and filling in plinth with local sand and under floors including watering, ramming consolidating and dressing complete.	4.32 M <sup>3</sup>	P/M <sup>3</sup>	Rs.204.40	Rs.883.01
5- 11.72	Providing designation of 100A Brick flat Soling joints filled with local sand including cost of watering, taxes & royalty all complete as per specification & direction of E/I.	10.8 M <sup>2</sup>	P/M <sup>2</sup>	Rs.253.80	Rs.2,741.04
6 4.1.2	Providing and laying in position cement concrete of specified grade exluding the cost of centring and shuttering-all work upto plinth level. 1:1.5:3(1 Cement :1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)	1.62 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,373.20	Rs.7,084.58



S.N.	Particulars	Quantity	Unit	Rate	Amount
7	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including ressing of sides and ramming of bottoms, lift upto 1.5 m . including getting out the excavated soil and	18.66 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.4,301.13
2.8					
8	Filling available excavated earth (excluding rock) in trenches, plinth, sides of oundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead	9.33 M <sup>3</sup>	P/M <sup>3</sup>	Rs.74.50	Rs.695.09
2.26					
9-	Brick work with bricks of class designation 100A in foundation and plinth in :				
6.1.14					
A	Cement mortar 1:6 (1 Cement : 6 Sand)	1.2144 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,490.60	Rs.5,453.38
10	Providing and fixing anchor bolt of 28mm dia and 1 Mtr length embedded in R.C.C pedestal all complete as per direction of Engineer in charge. @4x4x5kg	80 Kg	P/kg	Rs.59.20	Rs.4,736.00
10.1					
11	Neat cement punning	10.80 M <sup>2</sup>	P/M <sup>2</sup>	Rs.32.30	Rs.348.84
13.26					
12	Carriage of the following materials from quarry to work site including loading, unloading and staking at work site as per specification & direction of E/I.				
	(a) Bricks ( 7 Km. Pucca & 1 Km. Kachha lead)	843 Nos.	%0 nos.	Rs.606.10	Rs.510.94
	(b) Coarse Sand (100 Km. lead)	3.810 M <sup>3</sup>	P/M <sup>3</sup>	Rs.1,221.09	Rs.4,652.35
	(c) Stone Chips (150 Km. lead)	6.780 M <sup>3</sup>	P/M <sup>3</sup>	Rs.1,746.29	Rs.11,839.85
	(d) Local Sand ( 2 Km. Pucca & 1 Km. Kachha lead)	4.480 M <sup>3</sup>	P/M <sup>3</sup>	Rs.217.23	Rs.973.19
				<b>TOTAL</b>	<b>Rs.6,41,134.61</b>
				<b>say</b>	<b>Rs.6,41,100.00</b>

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**NAME OF WORK - CONSTRUCTION OF STEEL STAGING  
FOR HDPE WATER STORAGE TANK  
Measurement Sheet**

S.No.	Particulars	No.	Length	Breath	Depth	Total	Total Qty
1 5.2.2	Reinforced cement concrete work in wall (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. upt floor five level excluding cost of centring, shuttering, finishin and reinforcement. 1:1:5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20mm nominal size)						
	base of footing	4	1.8	1.8	0.4	5.184	5.184
	Pedestal	4	0.4	0.04	1.6	0.1024	0.1024
	Plinth beam long side	2	3.6	0.23	0.3	0.4968	0.4968
	Plinth beam short side	2	3	0.23	0.3	0.414	0.414
							<b>6.1972</b>
	Providing & fixing in position steel bar reinforcement of various dia for RCC works taken 80kg/cum						<b>495.7760</b>
	<b>Item no. 2 :-</b>						
2- 2.28	Supplying and filling in plinth with local sand and under floors including watering, ramming consolidating and dressing complete. Long Wall						
		1	3.60	3.00	0.4	=	4.32
	<b>Item no. 3 :-</b>						
3- 11.72	Providing designation of 100A Brick flat Soling joints filled with local sand including cost of watering, taxes & royalty all complete as per specification & direction of E/I.						
		1	3.60	3.00		=	10.8
	<b>Item no. 4 :-</b>						
5- 6.1.1	Brick work with bricks of class designation 100A in foundation and plinth in :						
4 A	Cement mortar 1:6 (1 Cement : 6 Sand)						
		2	3.6	0.23	0.40	=	0.6624
		2	3	0.23	0.40	=	0.5520
							<b>1.2144</b>
6 2.8	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including ressing of sides and ramming of bottoms, lift upto 1.5 m : including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.						
		4	1.8	1.8	1.44	=	18.66
7 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of oundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead						
						=	9.33
8 4.1.2	Providing and laying in position cement concrete of specified grade exluding the cost of centring and shuttering-all work upto plinth level. 1:1.5:3(1 Cement :1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)						
		1	3.60	3.00	0.15	=	1.62
9 13.26	Neat cement punning	1	3.60	3.00		=	10.80

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# GOVERNMENT OF BIHAR

PUBLIC HEALTH ENGINEERING DEPARTMENT

*MODEL ESTIMATE*

*FOR*

CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME

FOR A WARD HAVING 200 HOUSE HOLDS

ESTIMATED COST-- Rs. 27.205Lac

JANUARY, 2017

**GOVERNMENT OF BIHAR**  
**Public Health Engineering Department**  
**ABSTRACT OF COST**

174

**NAME OF WORK:- CONSTRUCTION OF RURAL PIPED WATER SUPPLY SCHEME FOR WARD HAVING 200 HOUSE HOLDS**

S.N.	Description	Total Amount
1	Construction of 150mm x100mmx125m deep T/W etc. all complete and as per direction of E/I. (As per sub Estimate no.- 1)	Rs.1,91,907.72
2	Constructing masonry Chamber 100x100x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for Tube Well, and RCC top slab 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size) , necessary excavation, foundation concrete 1:2:4(1 cement : 2 fine sand : 4 graded stone aggregate 20 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3coarse sand) 12 mm thick with 5% cico frnished with a floating coat of neat cement, out side plastering with cement mortar 1:4 (1 cement : 4coarse sand) 12 mm thick complete as per standard specifications & direction of E/I. (As per sub Estimate no.- 2)	Rs.13,040.00
3	Providing and Laying Distribution network of High Density Polyethylene pipe (HDPE pipe) including 10000 liter PVC tank installed at 8M high MS staging etc all complete as per direction of E/I. (As per sub Estimate no.- 3)	Rs.5,51,285.54
4	Supply Installation, commissioning and testing of single phase 3 H.P. submersible pump set having discharging capacity 3.94 lps at a total head of 35 meter(approx) of KSB/ Kirloskar or equivalent make with all accessories & fittings etc including loading unloading and transportation of the pump set to the work site with all required labour, materials, tools and tackles installation, testing & commissioning as per standards specifications and direction of E/I. (As per sub Estimate no.- 4)	Rs.93,603.00
5	Providing house connection for each house hold including supplying all materials, labours, tools and making ferrule connection with 20 mm dia MDPE and 15mm CPVC Pipes with all fittings etc all complete. (As per sub Estimate no.- 5)	Rs.3,02,600.00
6	Design, supply, fabrication, installation of fully tested and successfully operated MS/FRP Iron Removal Plant to deliver treated water confirming to water quality standard as per IS:10500 for 16KLPH capacity and raw water iron concentration of upto 10PPM all complete as per direction of the E/I. (As per sub Estimate no.- 6)	Rs.9,00,000.00
7	Providing and erecting 8M high staging with GI enclosure to house IRP and electric switch panel of suitably designed MS section of angle, channel, hollow section etc. as per drawing attached. (As per sub Estimate no.- 7)	Rs.6,41,100.00
<b>TOTAL</b>		Rs.26,93,536.26
Add 1% Contingency		Rs.26,935.36
<b>G. TOTAL</b>		Rs.27,20,471.62
<b>Say</b>		<b>Rs.27,20,500.00</b>

(Rs. Twenty seven Lac Twenty Thousand five Hundred ) only

**note:**

- i) Road cutting cost may increase or decrease as per actuals.
- ii) Strongly advised that pipeline should be laid before construction of Naali-Gali.
- iii) This is a model estimate. Hence the quantity may increase or decrease based on actual site conditions.

**Variable inter alia includes**

- i) Hydro geomorphological condition.
- ii) Location of source vis-à-vis population/ house holds.
- iii) Quality of works and materials shall be maintained as per standard specifications and direction of E/I.

*Technically approved for Rs. 27,20,500.00 (Rupees Twenty seven lakh twenty thousand five hundred) only.*

*Dr. 10/2/17*

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*10/2*

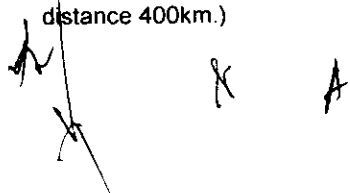
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*Jomishu 10.2.17*

## CONSTRUCTION OF 150MM X 100MM DIA &amp; 125M DEEP TUBE WELL

S.No.	Description	Qty.	Unit	Rate	Amount
1	Boring/drilling bore well of required dia for casing/strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer -in-charge, upto 90 metre depth below ground level. (All types of soil)				
24.1.1.2	(a) 350mm dia bore from G.L. to 30.0M	30.0 M	P/M	Rs.413.50	Rs.12,405.00
24.1.1.1	(b) 300mm dia bore from 30.0 m to 60.0M	30.0 M	P/M	Rs.378.00	Rs.11,340.00
	(c) 300mm dia bore from 60M to 90.0M	30.0 M	P/M	Rs.378.00	Rs.11,340.00
24.2.1	(d) 300mm dia bore from 90.0M to 150.0M	35.0 M	P/M	Rs.441.10	Rs.15,438.50
2A	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC (UPVC) medium well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer -in-charge.				
24.3.2	(a) 150 mm nominal size dia	30.0 M	P/M	Rs.615.30	Rs.18,459.00
24.3.1	(b) 100 mm nominal size dia	60.0 M	P/M	Rs.444.20	Rs.26,652.00
2B	Supplying, assembling, lowering and fixing in vertical position in bore well unplasticized PVC (UPVC) medium well screen (RMS) pipes with ribs, conforming to IS: 12818, including hire & labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer-in-charge.				
24.4.1	100 mm nominal size dia	30.0 M	P/M	Rs.468.80	Rs.14,064.00
3	Supplying the following fittings & fixing the same in position as per approved lowering assembly and strata chart including providing all equipments and welding the same on process of lowering the assay etc. all complete as per S/D of E/I.				
24.13.2	(a) 150 mm dia well cap	1 No.	Each	Rs.205.10	Rs.205.10
24.14.2	(b) 150 mm dia M.S. Clamp 1.6 M long (one Pair)	1 No.	Each	Rs.1,031.10	Rs.1,031.10
	(c) 150 mm dia center guide	4 Nos.	Each	Rs.150.00	Rs.600.00
	(d) 100 mm dia center guide	6 Nos.	Each	Rs.100.00	Rs.600.00
	(e) 150 mm x 100 mm dia 6mm wall thickness MS reducer	1 No.	Each	Rs.500.00	Rs.500.00
24.15.1	(f) 100mm dia & 6mm thick M.S. well shoe plug	1 No.	Each	Rs.205.60	Rs.205.60
4a	Providing all materials, labours, & equipments for fixing				
24.6	tube well with pea gravel of Dalbhumigarh to size 4mm to 8mm approx. as suitable for strata including carriage washing, placing and packing the same in position around the tube well etc. all complete as per direction of E/I.	9.0 M <sup>3</sup>	P/M <sup>3</sup>	Rs.917.00	Rs.8,253.00
4b	Carriage of Pea Gravel from Dhalbhumigarh (taken av distance 400km.)	9.0 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,336.54	Rs.39,028.82



S.No.	Description	Qty.	Unit	Rate	Amount
5 24.12	Development of tube well in accordance with IS : 2800 (part I) and IS: 11189, to establish maximum rate of usable water yield without sand content (beyond permissible limit), with required capacity air compressor, running the compressor for required time till well is fully developed, measuring yield of well by "V" notch method or any other approved method, measuring static level & draw down etc. by step draw down method, collecting water sample & getting tested in approved laboratory, disinfection of tubewell, all complete, including hire & labour charges of air compressor, tools & accessories etc., all as per requirement and direction of Engineer-in-charge.	24 Hrs.	Each	Rs.649.40	Rs.15,585.60
6	Transportation of drilling plants, developing equipments & all other required tools and M/c by and suitable mechanical means including all cost of loading, unloading, placing at work site and back after completion of work as per S/D of E/I	1 No.	Each	Rs.9,200.00	Rs.9,200.00
7	Supplying all materials and labours for arrangement for additional water required during the drilling period for 70 Hrs & site clearance & leveling etc. And providing the soap duster etc. to staff engaged in drilling etc. all complete work as per specification & direction of E.I.	1 No.	Each	Rs.7,000.00	Rs.7,000.00
				<b>TOTAL</b>	<u>Rs.1,91,907.72</u>

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(Sub Estimate - 2)

**Analysis of Chamber for TW**

Supplying materials, labours and constructing chamber of following dimension having 250mm thick wall in C.M. (1:4) including 12mm C.P. (1:3) with punning inside, R.C.C. cover slab with C.I. Surface box, 20mm dia foot rest at 150mm interval 10mm dia lifting ring etc. all complete.

**SIZE**                      **1.00 M**        **x**        **1.00 M**        **x**        **0.75 M deep**

<u>S.O.R. No.</u>	<u>Particulars</u>	<u>No.</u>	<u>L</u>	<u>W</u>	<u>H</u>	<u>Qty.</u>	<u>Unit</u>	<u>Rate</u>	<u>Amount</u>
<u>1</u>	Earth work in excavation	1	1.75	1.75	1.0	3.063 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.705.91
S.O.R. No. 2.8									
<u>2</u>	Sand filling	1	1.75	1.75	0.075	0.230 M <sup>3</sup>	P/M <sup>3</sup>	Rs.204.40	Rs.46.95
S.O.R. No. 2.28									
<u>3</u>	Brick flat soling	1	1.75	1.75		3.063 M <sup>2</sup>	P/M <sup>2</sup>	Rs.253.80	Rs.777.26
S.O.R. 11.72									
<u>4</u>	P.C.C. (1:2:4) in foundation	1	1.75	1.75	0.10	0.306 M <sup>3</sup>			
S.O.O. 4.1.3									
<u>5</u>	B/Work in (1:4) C.M.	2	2.50	0.25	0.75	0.306 M <sup>3</sup>	P/M <sup>3</sup>	Rs.3,323.10	Rs.1,017.70
S.O.R. No. 6.1.12/1									
<u>6</u>	R.C.C. Cover slab(1:1.5:3)	1	1.50	1.50	0.15	0.338 M <sup>3</sup>	P/M <sup>3</sup>	Rs.5,139.70	Rs.1,734.65
S.O.R. No. 5.2.2 & 5.9.3									
	shuttering	2	1.50	1.50	0.15	3.15 M <sup>2</sup>	P/M <sup>2</sup>	Rs.291.00	Rs.916.65
<u>7</u>	C.P. (1:3) with 5% Cico & neat cement								
S.O.R. Internal face									
No.	Bed surface	1	1.00	1.00		1.00 M <sup>2</sup>			
+13.36.1									
						5.00 M <sup>2</sup>	P/M <sup>2</sup>	Rs.166.30	Rs.831.50
<u>8</u>	C.P. (1:4) out side of wall	2	1.50	1.50	0.75	4.5 M <sup>2</sup>	P/M <sup>2</sup>	Rs.114.70	Rs.516.15
S.O.R. No. 13.11.2									
<u>9</u>	8mm dia T.S. Rod								
S.O.R. No. 5.22.7A									
			0.338 M <sup>3</sup> x	70 Kg/ M3		23.625 Kg.	P/Kg	Rs.56.00	Rs.1,323.00
<u>10</u>	Lifting Ring of 10mm dia Rod					4 No.	Each	Rs.30.00	Rs.120.00
									Total
									Rs.12,418.89
									Rs.620.94
									<b>Rs.13,039.83</b>




**Say Rs.13,040.00**

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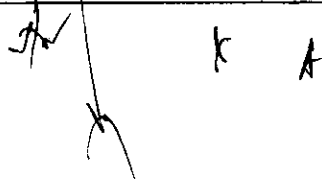
**Sub Est. No. 3**

**WATER SUPPLY DISTRIBUTION SYSTEM**

S.N.	Particulars	Quantity	Unit	Rate	Amount
1A	Earthwork in excavation over areas (exceeding 30 cm in depth 1.5 in width as well as 10 sqm on plan) including disposal of excavated earth lead upto 50m and lift upto 1.5m, disposal earth to be levelled and neatly dressed.				
	90mm dia Pipe	70.00	0.30	1.10 =	23.10
	75mm dia Pipe	140.00	0.30	1.10 =	46.20
	63mm dia Pipe	210.00	0.30	1.10 =	69.30
	50mm dia Pipe	420.00	0.30	1.10 =	138.60
	40mm dia Pipe	560.00	0.30	1.10 =	184.80
				462.00 M <sup>3</sup>	
	Add 5% extra for fittings =			23.10 M <sup>3</sup>	
				485.10 M <sup>3</sup>	
				15.75 M <sup>3</sup>	
1B	Provision for PCC road cutting and its restoration			P/M <sup>3</sup>	Rs.230.50
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.			P/M <sup>3</sup>	Rs.3,901.40
		475.40 M <sup>3</sup>	P/M <sup>3</sup>	Rs.74.50	Rs.35,417.15
3	Providing and laying High Density Polyethylene pipe (HDPE pipe) of 20 mm to 225 mm OD and pressure 6.0 Kg/cm <sup>2</sup> and 10 Kg/cm <sup>2</sup> suitable for water supply which is available in all standard, like ISI-4984/1995 and various grades like PE-80, PE-100 including required specials. Rates are inclusive of , all taxes and duties (Exise duty @12.50% &CST @2% against Form 'C'), labour cess, contractor profit and overhead charges all complete as per direction of Engineer-in-charge.				
3A	HDPE pipe of materials grade PE100- PN10 (dia in mm)				
	75mm dia Pipe from PVC Tank to Distribution main	14.00 M	P/M	Rs.239.81	Rs.3,357.34
	90mm dia Pipe	70.00 M	P/M	Rs.340.84	Rs.23,858.80
	75mm dia Pipe	140.00 M	P/M	Rs.239.81	Rs.33,573.40
	63mm dia Pipe	210.00 M	P/M	Rs.168.77	Rs.35,441.70
3B	HDPE pipe of materials grade PE100- PN8 (dia in mm)				
	50mm dia Pipe	420.00 M	P/M	Rs.89.99	Rs.37,795.80
	40mm dia Pipe	560.00 M	P/M	Rs.59.78	Rs.33,476.80
	50mm dia Pipe from T/well to PVC Tank	12.00 M	P/M	Rs.89.99	Rs.1,079.88
4	Providing and fixing brass gate valve with C.I. wheel of approved quality (screwed end).				
	90mm dia Pipe	2 Nos.	Each	Rs.2,016.50	Rs.4,033.00
	75mm dia Pipe	3 Nos.	Each	Rs.1,351.60	Rs.4,054.80
	63mm dia Pipe	2 Nos.	Each	Rs.1,351.60	Rs.2,703.20
	50mm dia Pipe	3 Nos.	Each	Rs.811.40	Rs.2,434.20
	40mm dia Pipe	3 Nos.	Each	Rs.613.90	Rs.1,841.70

*Handwritten signatures and initials:*  
  



S.N.	Particulars	Quantity	Unit	Rate	Amount
5	Constructing masonry Chamber 60x60x75 cm inside, in				
18.33	brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size), necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard specifications & direction of E/I.	11 Nos.	Each	Rs.5,807.50	Rs.63,882.50
	Work for additional depth				
	Brick work (1:4) in foundation				
	2 1.10 0.25 0.35 0.193				
	2 0.60 0.25 0.35 0.105				
					0.298
		3.273 CuM	CuM	Rs.4,724.40	Rs.15,460.60
	Plaster (1:3)				
	8 1.10 0.35 3.08	33.88 SqM	SqM	Rs.128.20	Rs.4,343.42
6	Carriage 10% of item 5				Rs.8,368.65
7	Providing and placing on terrace (at all floor levels)				
18.48	polyethylene water storage tank, ISI : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	10000 Ltrs.	P/Ltr.	Rs.6.60	Rs.66,000.00
8	Providing and fixing PTMT extension nipple for water tank pipe, fittings of approved quality and colour.				
	50mm dia	2 Nos.	each	Rs.250.00	Rs.500.00
	75mm dia	1 No.	each	Rs.400.00	Rs.400.00
				<b>TOTAL</b>	<b>Rs.5,51,285.54</b>







## Sub Est. No. 4

Model estimate for supply, installation & commissioning of single phase 3 H.P submersible motor pump set with all accessories including extension of L.T. line from nearest source up-to pumping station.

Sl. No.	Particulars	Quantity	Unit	Rate	Amount
1	2	3	4	5	6
[A.]	Supply Installation, commissioning and testing of single phase 3 H.P. submersible pump set having discharging capacity 3.94 lps at a total head of 35 meter(approx) of KSB/ Kirloskar or equivalent make with all accessories & fittings etc including loading unloading and transportation of the pump set to the work site with all required labour, materials, tools and tackles installation, testing & (i) 50 mm dia x 3 mtrs long medium class G.I column pipe both end thread and one end socketed- 6(six)nos (ii) 1x3x2.5 mm <sup>2</sup> flat copper conductor submersible cable -40 (forty) mtrs. (iii) 50 mm dia union socket- 1(one) no. (iv) 65 mm dia x 250 mm long G.I. nipple- 1 (one) no. (v) 50 mm dia G.I Elbow—1(One) no. (vi) 50 mm dia M.S. clamps—2(Two) Pairs. (vii) 50 mmx 250 mm long G.I nipple- 1(One) no. (viii) Tube well cap for T/Well – 1(one) no. (ix) 50 mm dia x 65 mm dia reducer socket –1(one) no.	1 (one) job	p/job	Rs.42,700.00	Rs.42,700.00

  
  
 K A

[B]	Supply Installation, commissioning and testing of floor mounted outdoor type L.T feeder pillar single phase starter control panel operated on 220 V, 3 phase , 50 c/s for 3 HP Submersible pump set made of MS sheet (minimum 2 mm thick) duly spray power coated painting with following accessories made of M.S sheet ( minimum 2mm thick) duly spray powder coated painting with following accessories (i) 90-220 V range single phase 7.5 KVA automatic voltage stabilizer make- Sen & Pandit/ Vertex/ISI marked If any. 1 No.  (ii) Suitable single phase starter control panel for above motor of BCH /L&Tmake – 1(one) no.	1 (one) job	p/job	Rs.45,500.00	Rs.45,500.00
[C]	Supplying & fitting 2.5 mm <sup>2</sup> copper service cable from power point from nearest source up-to pumping station..	20 mtrs	P/Mt	Rs.130.00	Rs.2,600.00
[D]	Providing all materials and labour required for doing earthing station with G.I earth pipe of 40 mm dia x 4.5 mtrs 20fts. long G.I pipe including accessories excavation of earth , providing masonry enclosure with cover plate having locking arrangement and watering pipe etc.with salt, charcoal,etc.as per IE & IS specification.	1 job	p/job	Rs.2,803.00	Rs.2,803.00
				<b>Total Rs.</b>	<b>Rs.93,603.00</b>

## Sub Est. No. 5

Estimate for the work - House service connection					
SUB-ESTIMATE					
S.No.	Description	Qty	Unit	Rate	Amount
1A	Providing and fixing MDPE (PE 80 GradeCompound) pipes PN-12.5 (12.5kg/Sqcm) as per ISO 4427 and specification for waterapplication rates are inclusive of , taxes and duties (Exise duty @12.50% &CST @2% against Form 'C'), labour cess, contractor profit and overhead charges all complete asper direction of Engineer-in-charge.complete.				
	MDPE Pipe 20mm dia nominal bore	6.00	PM	Rs.19.97	Rs.119.82
1B	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall				
18.7.1	15 mm nomonal bore	1.0	PM	Rs.138.70	Rs.138.70
2	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and amming of bottoms, lift upto 1.5 m . including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kinds of soil				
2.8.1	6.00 0.30 0.60 1.08	1.08	CuM	Rs.230.50	Rs.248.94
3 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead	1.06	CuM	Rs.74.50	Rs.78.85
4	Providing and fixing brass ferrule with CI mouth cover incuding boring and tapping the main:				
18.20.1	15mm nominal bore	1	Each	Rs.254.10	Rs.254.10
	Providing and fixing P.P. Black service Saddle (Brass threaded)	1	Each	Rs.400.00	Rs.400.00
5	Providing and fixing brass bib cock of approved quality :				
18.15.1	15mm nominal bore	1	Each	Rs.273.00	Rs.273.00
	Total				Rs.1,513.41
	Say				Rs.1,513.00

Total Nos. of House Holds=





200 Nos. @

Rs.1,513.00

Rs.3,02,600.00

**SUB ESTIMATE NO - 6****IRON REMOVAL PLANT**

S.N.	Particulars	Quantity	Unit	Rate (In Rs.)	Amount (In Rs.)
1	Design, supply, erection, installation, testing and commissioning of Iron removal plant based on aeration/ filtration/ activated carbon treatment units or any other suitable treatment process of ISO 9001 certified reputed make housed in MS/FRP vessel suitable for required flow rate with iron concentration upto 10 ppm in raw water to deliver treated water quality confirming to IS 10500( latest revision) with provision of waste water disposal system, if required including all necessary works and accessories etc. all complete as per directions of Engineer-in-Charge.				
	16.0KLPH Capacity	1 No.	Each	Rs. 9,00,000.00	Rs. 9,00,000.00
<b>TOTAL :-</b>					<b>Rs.9,00,000.00</b>

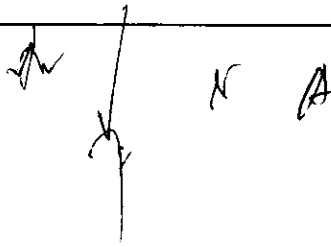
**Sub Est. No. 7**

**8 M HIGH STEEL STRUCTURE STAGING FOR 10000 LITER PVC TANK**

S.N.	Particulars	Quantity	Unit	Rate	Amount
1 7.41	Providing and fixing structural steel frame (for dry cladding with 30 mm thick gang saw cut with machine cut edges sand stone) on walls at all heights using M.S. square / rectangular tube in the required pattern as per architectural drawing, including cost of cutting, bending, welding etc. The frame work shall be fixed to the wall with the help of MS brackets / lugs of angle iron / flats etc. which shall be welded to the frame and embedded in brick wall with cement concrete block 1:2:4 (1 cement : 2 coarse sand : 4 graded aggregate 20 mm nominal size) of size 300x230x300 mm, including cost of necessary centring and shuttering and with approved expansion hold fasteners on CC/RCC surface, including drilling necessary holes. Approved cramps / pins etc. shall be welded to the frame work to support stone cladding, the steel work will be given a priming coat of Zinc primer as approved by Engineer-in-Charge and painted two or more coats of epoxy paint (Shop drawings shall be submitted by the contractor to the Engineer-in-Charge for approval before execution). The frame work shall be fixed in true horizontal & vertical lines/planes. (Only structural steel frame work shall be measured for the purpose of payment, stainless steel cramps shall be paid for separately and nothing extra shall be paid.)				
	Providing MS Staging of 8M height with ladder as per drawing attached	4500 Kg	P/Kg	Rs.119.40	Rs.5,37,300.00
2 5.2.2	Reinforced cement concrete work in wall (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. upt floor five level excluding cost of centring, shuttering, finishing and reinforcement. 1:1:5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20mm nominal size)	6.1972 M <sup>3</sup>	P/M <sup>3</sup>	Rs.5,139.70	Rs.31,851.75
3- 5.22	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete.	495.776 Kg	Kg	Rs.56.00	Rs.27,763.46
4- 2.28	Supplying and filling in plinth with local sand and under floors including watering, ramming consolidating and dressing complete.	4.32 M <sup>3</sup>	P/M <sup>3</sup>	Rs.204.40	Rs.883.01
5- 11.72	Providing designation of 100A Brick flat Soling joints filled with local sand including cost of watering, taxes & royalty all complete as per specification & direction of E/I.	10.8 M <sup>2</sup>	P/M <sup>2</sup>	Rs.253.80	Rs.2,741.04
6 4.1.2	Providing and laying in position cement concrete of specified grade exluding the cost of centring and shuttering-all work upto plinth level. 1:1.5:3(1 Cement :1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)	1.62 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,373.20	Rs.7,084.58
7 2.8	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including ressing of sides and ramming of bottoms, lift upto 1.5 m . including getting out the excavated soil and	18.66 M <sup>3</sup>	P/M <sup>3</sup>	Rs.230.50	Rs.4,301.13

*[Handwritten signatures and initials]*

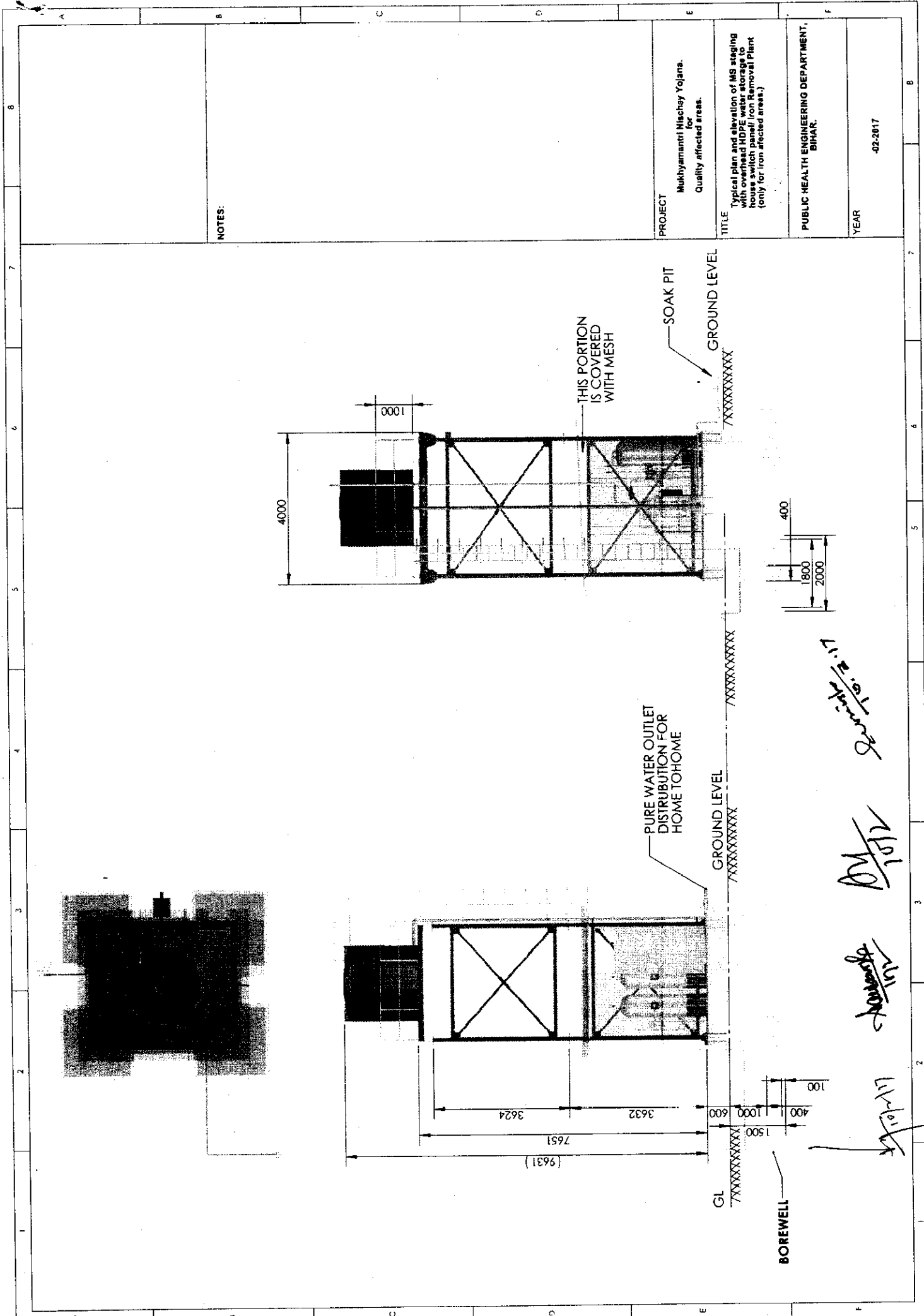
S.N.	Particulars	Quantity	Unit	Rate	Amount
8 2.26	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead	9.33 M <sup>3</sup>	P/M <sup>3</sup>	Rs.74.50	Rs.695.09
9- 6.1.14	Brick work with bricks of class designation 100A in foundation and plinth in :				
A	Cement mortar 1:6 (1 Cement : 6 Sand)	1.2144 M <sup>3</sup>	P/M <sup>3</sup>	Rs.4,490.60	Rs.5,453.38
10 10.1	Providing and fixing anchor bolt of 28mm dia and 1 Mtr length embedded in R.C.C pedestal all complete as per direction of Engineer in charge. @4x4x5kg	80 Kg	P/kg	Rs.59.20	Rs.4,736.00
11 13.26	Neat cement punning	10.80 M <sup>2</sup>	P/M <sup>2</sup>	Rs.32.30	Rs.348.84
12	Carriage of the following materials from quarry to work site including loading, unloading and staking at work site as per specification & direction of E/I.				
	(a) Bricks ( 7 Km. Pucca & 1 Km. Kachha lead)	843 Nos.	%0 nos.	Rs.606.10	Rs.510.94
	(b) Coarse Sand (100 Km. lead)	3.810 M <sup>3</sup>	P/M <sup>3</sup>	Rs.1,221.09	Rs.4,652.35
	(c) Stone Chips (150 Km. lead)	6.780 M <sup>3</sup>	P/M <sup>3</sup>	Rs.1,746.29	Rs.11,839.85
	(d) Local Sand ( 2 Km. Pucca & 1 Km. Kachha lead)	4.480 M <sup>3</sup>	P/M <sup>3</sup>	Rs.217.23	Rs.973.19
				<b>TOTAL</b>	<b>Rs.6,41,134.61</b>
				<b>say</b>	<b>Rs.6,41,100.00</b>



**NAME OF WORK - CONSTRUCTION OF STEEL STAGING  
FOR HDPE WATER STORAGE TANK  
Measurement Sheet**

S.No.	Particulars	No.	Length	Breath	Depth	Total	Total Qty
1	Reinforced cement concrete work in wall (any						
5.2.2	thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. upt floor five level excluding cost of centring, shuttering, finishin and reinforcement. 1:1.5:3(1 cement: 1.5 coarse sand:3 graded stone aggregate 20mm nominal size)						
	base of footing	4	1.8	1.8	0.4	5.184	5.184
	Pedestal	4	0.4	0.04	1.6	0.1024	0.1024
	Plinth beam long side	2	3.6	0.23	0.3	0.4968	0.4968
	Plinth beam short side	2	3	0.23	0.3	0.414	0.414
							<b>6.1972</b>
	Providing & fixing in position steel bar reinforcement of various dia for RCC works taken 80kg/cum						<b>495.7760</b>
	<b>Item no. 2 :-</b>						
2-	Supplying and filling in plinth with local sand and under floors including watering, ramming consolidating and dressing complete.						
2.28	Long Wall						
		1	3.60	3.00	0.4		= 4.32
	<b>Item no. 3 :-</b>						
3-	Providing designation of 100A Brick flat Soling joints filled with local sand including cost of watering, taxes & royalty all complete as per specification & direction of E/l.						
11.72		1	3.60	3.00			= 10.8
	<b>Item no. 4 :-</b>						
5-	Brick work with bricks of class designation						
6.1.1	100A in foundation and plinth in :						
4 A	Cement mortar 1:6 (1 Cement : 6 Sand)						
		2	3.6	0.23	0.40		= 0.6624
		2	3	0.23	0.40		= 0.5520
							<b>1.2144</b>
6	Earth work in excavation in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan) including ressing of sides and ramming of bottoms, lift upto 1.5 m including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.						
2.8		4	1.8	1.8	1.44		= 18.66
7	Filling available excavated earth (excluding rock) in trenches, plinth, sides of oundations etc. in layers not exceeding 20 cm in depth: consolidating each deposited layer by ramming and watering lead						= 9.33
2.26							
8	Providing and laying in position cement concrete of specified grade exluding the cost of centring and shuttering-all work upto plinth level.						
4.1.2	1:1.5:3(1 Cement :1.5 coarse sand:3 graded stone aggregate 20 mm nominal size)	1	3.60	3.00	0.15		= 1.62
9	Neat cement punning	1	3.60	3.00			= 10.80
13.26							

*Handwritten signatures and initials at the bottom of the page.*



NOTES:

PROJECT  
Mukhyamantri Nischay Yojana.  
for  
Quality affected areas.

TITLE  
Typical plan and elevation of MS staging  
with overhead HDPE water storage to  
house switch panel/ Iron Removal Plant  
(only for Iron affected areas.)

PUBLIC HEALTH ENGINEERING DEPARTMENT,  
BIHAR.

YEAR  
-02-2017

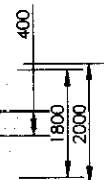
THIS PORTION  
IS COVERED  
WITH MESH

SOAK PIT

GROUND LEVEL

PURE WATER OUTLET  
DISTRIBUTION FOR  
HOME TO HOME

GROUND LEVEL



BOREWELL

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(9631)

PURE WATER TANK 5000 LTRS

RAILING

PURE WATER INLET 1 1/2"

PURE WATER OUTLET 3"

STRUCTURE COLOUMN

SUPER STRUCTURE

IRON REMOVAL PLANT

AUTOMATED MULTI PORT VALVE

FOUNDATION BOLTS

RCC PLINTH

RCC FOUNDATION

PURE WATER OUTLET DISTRIBUTION FOR HOME TO HOME

STRUCTURE COLOUMN

LADDER

ENCLOSURE (TRANSPARENT VIEW IS SHOWN JUST FOR VISIBILITY OF VIEW OTHERWISE IT IS OF CORRUGATED GI SHEET)

ENTRANCE DOOR

GL

BOREWELL

RCC FOUNDATION

STAIRS

ISOMETRIC VIEW  
10/10/17

10.2.17

SR NO	DESCRIPTION	LENGTH	QTY
1	SQUARE 11.5X11.5X4	2200	1
2	FLAT 300X300X20	NA	1
3	FLAT 300X150X20	NA	2
4	FLAT 300X300X12	NA	1
5	FLAT 400X200X12	NA	1
6	SQUARE 11.5X11.5X4	7000	1
7	FLAT 300X300X20	NA	1
8	FLAT 300X150X20	NA	2
9	FLAT 300X300X12	NA	2
10	FLAT 400X200X12	NA	1
11	SQUARE 11.5X11.5X4	7200	1
12	FLAT 300X300X20	NA	1
13	FLAT 300X150X20	NA	2
14	FLAT 300X300X12	NA	2
15	FLAT 400X200X12	NA	1
16	SQUARE 11.5X11.5X4	7200	1
17	FLAT 300X300X20	NA	1
18	FLAT 300X150X20	NA	2
19	FLAT 300X300X12	NA	2
20	FLAT 400X200X12	NA	1
21	SQUARE 11.5X11.5X4	7200	1
22	FLAT 300X300X20	NA	1
23	FLAT 300X150X20	NA	2
24	FLAT 300X300X12	NA	2
25	FLAT 400X200X12	NA	1
26	SQUARE 11.5X11.5X4	7200	1
27	FLAT 300X300X20	NA	1
28	FLAT 300X150X20	NA	2
29	FLAT 300X300X12	NA	2
30	FLAT 400X200X12	NA	1
31	SQUARE 11.5X11.5X4	7200	1
32	FLAT 300X300X20	NA	1
33	FLAT 300X150X20	NA	2
34	FLAT 300X300X12	NA	2
35	FLAT 400X200X12	NA	1
36	SQUARE 11.5X11.5X4	7200	1
37	FLAT 300X300X20	NA	1
38	FLAT 300X150X20	NA	2
39	FLAT 300X300X12	NA	2
40	FLAT 400X200X12	NA	1
41	SQUARE 11.5X11.5X4	7200	1
42	FLAT 300X300X20	NA	1
43	FLAT 300X150X20	NA	2
44	FLAT 300X300X12	NA	2
45	FLAT 400X200X12	NA	1
46	SQUARE 11.5X11.5X4	7200	1
47	FLAT 300X300X20	NA	1
48	FLAT 300X150X20	NA	2
49	FLAT 300X300X12	NA	2
50	FLAT 400X200X12	NA	1

NOTES:

PROJECT	Mukhyamantri Mischay Yojana. for Quality affected areas.
TITLE	Typical plan and elevation of MS staging with overhead HDPE water storage to house switch panel/ Iron Removal Plant (only for iron affected areas.)
YEAR	02-2017
PUBLIC HEALTH ENGINEERING DEPARTMENT, BHAR.	