

Schedule of Quantity

Name of work:- Providing Irrigation facility to both sides of Bakhli Khad from Janjehli to Lamba Thach Tehsil Thunag Distt. Mandi (HP). **Estimated Cost Rs:- 448183.00**
SH:-Laying,Jointing and testing of G.I pipes in Gravity main from RD 0 to 1840m) **PHASE-II** **Earnest Money Rs:- 8970.00**
Time:- Three months.

S. N.	Sub Head & Item of Work	Quantity	Rate	Unit	Amount
1.0	Excavation in foundation and trenches etc. (including pipes and pits upto all depths) in all kinds of soil such as pick work, jumper work, blasting and chiselling soft or hard rock where blasting is prohibited in all leads and lifts including trimming and dressing of sides, levelling of bed to correct grade stacking the excavated soil clear from the edge of excavation and returning the excavated soil after laying, jointing and testing of GI pipes in trenches in 15cm layers including consolidating each deposited layers by ramming and watering and then disposing of all surplus excavated soil as directed in all leads and lifts and soring strutting and trimming dressing where ever required including restoration of un-metalled surface to its original condition including cost of diversion for traffic night signals fixing caution board, crossing over trenches for access to houses and fencing etc. complete in all respect.	1366.23	cum	Per cum	
2.0	Laying,fixing and jointing (by way of circumfrential butt welded joints in three layer by electrical arc welding) and testing of GMS pipe of following diameter confirming to BIS 1239 (part 1) of following grade and having wall thickness as specified below with plain end and capable of withstanding required test pressure in rrandom length of 4 to 7 meters, including specials, short pieces, bends, reducers, tees etc. made from parent tube,etc. as per site requirement . The laying of pipe will include all operation such as cutting, welding, jointing, fabrication of bends, tees etc. including lowering and laying in excavated trenches to ensure required level including flushing, cleaning and hydraulic testing complete in all respects to the satisfaction of the Engineer in charge. The fabricated bends shall have three or four cuts having its radius not less than five times the dia of pipe and the damaged portion of the pipes and specials made form the parent tube shall be provided anticorrosive treatment by applying two coats of anticorrosive bituminous paint over a priming coat as per AWWA specifications C-203-1978. The welding electrodes shall be as per IS 814 of Advani Oerlikon/ L&T or ISI marked make. The rates also includes entire carriage of material, flushing, cleaning & hydraulic testing complete to the best satisfaction & direction of Engineer in charge with in all leads and lifts. (Earth work in trenches will be measured and paid for separately).				
2.01	GI pipe 100mm dia (MG)	1840.00	Rmt	Per Rmt.	
3.0	Providing and fixing Flange (in pairs) for Joints of G.I. Pipes mentioned as below and same shall conform to IS:1239:1990 (Part II) (Latest with upto date amendments) Including the cost of nuts and bolts of required sizes 3 mm thick compressed asbestos fiber/synthetic rubber gaskets conforming to relevant IS standard. The rates also includes entire carriage of flange and welding of one flange in three layers other flange consider in but welding testing, complete to the best satisfaction & direction of Engineer in charge .				
3.01	GI pipe 100mm dia (MG) Table-5	18.00	Pair	Pair	

Terms and conditions:-

- 1 The work shall be executed as per HPPWD/IPH specifications and to the entire satisfaction of the Engineer-in-charge.
- 2 The GI pipe shall be issued by the department from IPH store at Thunag for free of cost.
- 3 The contractor shall be fully responsible for watch and ward of the material at site of work.
- 4 Nothing shall be paid for rejected material/work.
- 5 GST and labour welfare cess shall be deducted from each bill of the contractor as applicable.
- 6 The contractor shall be responsible for any accident caused during the construction of the work and the loss if any will be born by the contractor.

Executive Engineer
I&PH Division,Thunag.

Schedule of quantity

Name of work:- Improvement of WSS Bharari, galu, Ratti, Shikawari in GP Thunag and Shikawari Tehsil Thunag Distt. Mandi (HP)

(SH: - barbed wire fencing around treatment unit of phase-I,II & III and intake)

Estimated cost Rs. 2,25,418/-

Earnest money Rs. 4510/-

Time: Three months

Sr.No.	Description of item	Qty.	Rate	Unit	Amount
1	Excavation in foundation and trenches etc. in earth work in all kinds of soil such as pick work, jumper work, blasting soft or hard rock or by chiselling soft or hard rock where blasting is prohibited in all leads and lifts including trimming / dressing of sidesand bed stacking the excavated soil clear from the edge of excavation and returning the excavated soil after completion of work in 15cm layers when required into plinth , sides of foundation etc. consolidating each deposited layers by ramming and watering and then disposing of all surplus excavated soil complete in all respect as per the direction and to the entire satisfaction of the Engineer-in-charge.	21.14		cum	Per cum
2	Providing and laying cement concrete 1:2:4 (1cement:4sand: 8graded stone aggregate 40 mm nominal size) and curing complete excluding the cost of form work in foundation and plinth in all leads and lifts.	4.32		cum	Per cum
3	Providing and laying cement concrete 1:3:6 (1cement:3sand: 6graded stone aggregate 40 mm nominal size) and curing complete excluding the cost of form work in foundation and plinth in all leads and lifts.	20.25		cum	Per cum
4	Providing and laying tor steel reinforcement for RCC work including bending, binding and placing in position complete upto floor two level including the cost of binding wire complete in all leads and lifts.	302.00		kg	Per kg
5	Fixing of angle iron fencing post size 50x50x6mm in 2.50mtr. long with 9 Nos. cut to fix the GI barbed wire complete including braket etc. (earth work to be measured and paid for separately) complete in all respect and to the entire satisfaction of the Engineer-in-charge.	118		Nos.	each
6	1.80 meter high fencing with 2.50 mtrs. angle iron posts 2.50 meters center to center with nine horizontal lines and two diagonals of galvanised steel barbed wire (IS: 278-1962 type-I) weighting 9.38 kg/per 100 meter (minimum) strained fixed to posts cost of angle iron post paid for separately) in all leads and lifts.	286.8		Rmt	Per Rmt
7	Steel work in welded built up section including, cutting, hoisting and fixing in position and applying a priming coat of red lead paint in gratuing framed guard bar ladders, railing brakcet and similar work complete as per direction of the Engineer-in-charge in all leads and lifts.	2.344		Qtl	Per Qtl
8	Providing and fixing MS pressed parliamentary hinges with necessary screws etc. complete (125x125x27x2.80mm)	12		Nos.	each
9	Providing and fixing anodized MS sliding door bolts with nuts and nuts screw etc. complete in all leads and lifts.				
	250x16mm	6		Nos	each
					Total:-

Terms and conditions

- (I) The work shall be executed as per HPPWD/IPH specifications and to the entire satisfaction of the Engineer-in-charge.
- (ii) The cement & steel shall be issued by the department from IPH Store Thunag i.e. Cement @ Rs.289/-per bag, Tor steel @ 5000/per Qtl , GI pipe and fencing post free of cost.
- (iii) The contractor shall be fully responsible for watch and ward of the material at site of work.
- (iv) Nothing shall be paid for rejected material.
- (v) Income Tax/Sale Tax, GST & labour cess will be deducted from the bill of the contractor as applicable.
- (vi)The contractor shall be responsible for any accident caused during the construction of the work and the loss if any will be born by the contractor.

Executive Engineer
I&PH Division, Thunag

Schedule of quantity

Name of work:- Providing LIS Latogli in GP Saroa Tehsil Chachiot, Distt. Mandi(H.P.)
(SH:- C/O R/Wall RD 0 to 15 mtr.& Breast wall RD 0 to 15 mtr.at Pump House)

Estimated cost Rs. 297568.00

Earnest money Rs. 950.00

Time:- Three months.

Sr. No.	Description	Qty.	Rate	Unit	Amount
1	Excavation in foundation and trenches etc. in earth work in all kinds of soil such as pick work, jumper work, blasting soft orhard rock by chiselling soft/hard rock where blasting is prohibited in all leads and lifts including trimming/dressing of sides and beds stacking the excavated soil clear from the edge of excavation and then returning the excavated soil after completion of work in 15cm layers when required into plinths, sides of foundation etc. consolidating each deposited layers by ramming and watering and then disposing of all surplus excavated soil complete in all respect as per direction and to the entire satisfaction of the Engineer-in-charge.	30.30		cum	Per cum
2	Providing form work with steel plates 3.15mm thick welded with angle iron 30x30x5mm so as to give a fair finish including centering shuttering strutting and propping etc. height of propping and centering below supporting floor to ceiling not exceeding 4mtrs. and removal of the same for in-situ reinforced concrete and plain concrete work including all leads and lifts. (a) Vertical surface such as walls(any thickness) partitions and the like including attached pillasters buttresses, plinth and string courses and the like	120.48		sqm	per sqm
3	Providing and laying cement concrete 1:5:10 (1 cement: 5 sand: 10 graded stone aggregate 40mm nominal size) and curing complete excluding the cost of form work in retaining wall/ breast wall complete in all respect and as per direction and to the entire satisfaction of the Engineer-in-charge.	86.62		cum	per cum
4	Boulder filling behinde the retaining wall complete in all leads and lifts	12.30		cum	per cum

Terms and conditions :-

- i. The work shall be executed as per HPPWD/IPH specification and to the entire satisfaction of the Engineer-in-charge.
- ii. Cement shall be issued by the department cement @ Rs. 289/- per bag, from IPH Store Thunag
- iii. The contractor shall be fully responsible for watch and ward of the material at site of work.
- iv. Nothing shall be paid for rejected material/work.
- v. GST and labour welfare cess shall be deducted from the bill of the contractor as applicable.

Executive Engineer
I&PH Division
Thunag

Schedule of Quantity

Name Of Work :- Providing LWSS Chhari Khad To Tandri In Tehsil Thunag Distt. Mandi (H.P.)
Sub Head :- Providing Suppling And Fixing Of Sanitary Items For Inspection Hut At Tandri.

Estimated Cost Rs. 2,40,788/-
Earnest Money Rs. 4,820/-
Time : - Three Months

S. No.	Description Of Items	Qty.	Rate	Unit	Amount
1	Providing Suppling And Fixing Of Wall Tile 12"X18" Cera	73.32 Sqm.		Per Sqm.	
2	Providing and laying duro stone vitrified tile (300x300mmx8mm) in grey/coloured or of approved shade in flooring, treads of steps and landing laid on a bed of 12mmthick cement mortar 1:3 (1cement:3sand) laid over and jointed with neat cement slurry finished with flush pointing in white cement mixed with pigment of required shade to match the shade of tiles compete in all leads and lifts.	8.62 Sqm.		Per Sqm.	
3	Providing Suppling And Fixing Of EWC 200mm Cera	2 No.		Each	
4	Providing Suppling And Fixing Of Wash Basin With Pedestal	2 No.		Each	
5	Providing Suppling And Fixing Of CP Waste Cuppling Cera	2 No.		Each	
6	Providing Suppling And Fixing Of Angle Cock Titanium Cera	14 No.		Each	
7	Providing Suppling And Fixing Of Waste Pipe Heavy	3 No.		Each	
8	Providing Suppling And Fixing Of Center Hole Mixer Titanium	2 No.		Each	
9	Providing Suppling And Fixing Of Royle Kastner	10 No.		Each	
10	Providing Suppling And Fixing Of Washer Big Size For Kastner	10 No.		Each	
11	Providing Suppling And Fixing Of Bib Cock Titanium	2 No.		Each	
12	Providing Suppling And Fixing Of Consild Stop Cock	2 Set		Per Set	
13	Providing Suppling And Fixing Of Exposed Part For Consild	2 No.		Each	
14	Providing Suppling And Fixing Of Divertoe High Flow Single Lever	2 No.		Each	
15	Providing Suppling And Fixing Of Exposed Part Of High Flow Divertoe	2 No.		Each	
16	Providing Suppling And Fixing Of C.P. Jet Pressure	2 No.		Each	
17	Providing Suppling And Fixing Of Heat Faucet ABS Body	2 No.		Each	
18	Providing Suppling And Fixing Of Cisten Conventional	2 No.		Each	
19	Providing Suppling And Fixing Of Cisten Fittings	2 No.		Each	
20	Providing Suppling And Fixing Of C.P. Short Bend 1-1/4"	2 No.		Each	

21	Providing Suppling And Fixing Of Steel Sink 18X24X8"	1 No.		Each	
22	Providing Suppling And Fixing Of Sink Mixure Titanium	1 No.		Each	
23	Providing Suppling And Fixing Of Soap Dish	6 No.		Each	
24	Providing Suppling And Fixing Of Towel Ring (Montana)	3 No.		Each	
25	Providing Suppling And Fixing Of Glass Self (S.S.) 18"	3 No.		Each	
26	Providing Suppling And Fixing Of Center Hole Mixer (Ocean)	3 No.		Each	
27	Providing Suppling And Fixing Of Towel Rod 24" Montana	3 No.		Each	
28	Providing Suppling And Fixing Of Towel Rod 18" Montana	3 No.		Each	
29	Providing Suppling And Fixing Of Corner Set	3 No.		Each	
30	Providing Suppling And Fixing Of Bib Cock Long Nose(Ocean)	2 No.		Each	
31	Providing Suppling And Fixing Of Bib Cock Short Body(Ocean)	3 No.		Each	
32	Providing Suppling And Fixing Of Angle Cock (Ocean)	6 No.		Each	
33	Providing Suppling And Fixing Of Over Head Shower	3 No.		Each	
34	Providing Suppling And Fixing Of Bath Spout (Gale)	3 No.		Each	
35	Providing Suppling And Fixing Of PVC Sleeve 35mm	1 No.		Each	
36	Providing Suppling And Fixing Of Looking Mirror 18"X24"	2 No.		Each	
37	Providing Suppling And Fixing Of Looking Mirror 18"X12"	1 No.		Each	
38	Providing Suppling And Fixing Of PVC Connection 18"	12 No.		Each	
39	Providing Suppling And Fixing Of C.P. Extion Nipple 1"X15"	24 No.		Each	
40	Providing Suppling And Fixing Of Wall Hanger	3 No.		Each	
41	Providing Suppling And Fixing Of CPVC BRASS ELBO 3/4"	30 PCS		Each	
42	Providing Suppling And Fixing Of CPVC ELBO 3/4"	40 PCS		Each	
43	Providing Suppling And Fixing Of CPVC BRASS TEE 3/4"	15 PCS		Each	
44	Providing Suppling And Fixing Of CPVC TEE 3/4"	20 PCS		Each	

45	Providing Suppling And Fixing Of PIPE HOOK	30 No.		Each	
46	Providing Suppling And Fixing Of CPVC CLAMP 3/4"	15 PCS		Each	
47	Providing Suppling And Fixing Of CPVC PIPE 3MTR. 3/4" (SDR-11)	45 PCS		Each	
48	Providing Suppling And Fixing Of CPVC COUPLER 3/4"	10 PCS		Each	
49	Providing Suppling And Fixing Of CPVC MT ADOBTER 1/2"X3/4"	12 PCS		Each	
50	Providing Suppling And Fixing Of CPVC PIPE 25MM of 3meter	25 PCS		Each	
51	Providing Suppling And Fixing Of CPVC SOCKET 25MM	5 PCS		Each	
52	Providing Suppling And Fixing Of CPVC ELBO 25MM	6 PCS		Each	
53	Providing Suppling And Fixing Of CPVC REDUCER 20MMX25MM	4 PCS		Each	
54	Providing Suppling And Fixing Of CPVC RED BUSH 20MM X 25MM	2 PCS		Each	
55	Providing Suppling And Fixing Of CPVC BALL VALVE 20MM	3 PCS		Each	
56	Providing Suppling And Fixing Of CPVC BALL VALVE 25MM	1 PCS		Each	
57	Providing Suppling And Fixing Of CPVC UNION 25MM	1 PCS		Each	
58	Providing Suppling And Fixing Of CPVC UNION 20MM 3/4"	4 PCS		Each	
59	Providing Suppling And Fixing Of CPVC TANK CONNECTOR 25MM	1 PCS		Each	
60	Providing Suppling And Fixing Of CPVC FEMALE ADAPTER (BRASS THREADS) 1" 25MM	2 PCS		Each	
61	Providing and placing water tank of mark sintex having of capacity of 2000 ltr. With necessary fitting including over flow pipe score pipe etc. and ball valve with cover and locking arrangement including pads of required size for inlet and outlet and inside painting of approved quality complete including hoisting complete in all respect.	1 No.		Each	
62	Providing Suppling And Fixing Of Water Geaser Of 25 Ltr. Capacity Of Mark Hindware	2 No.		Each	

Terms and conditions

- 1 The work should be executed as per HPPWD/IPH specification and to the entire satisfaction of Engineer-In-Charge.
- 2 Nothing shall be paid for sub standard work/ material at site work.
- 3 The contractor will be fully responsible to watch and ward of material at site of work.
- 4 GST & 1% labour cess will be deducted from each bill of the contractor as applicable.
- 5 The cement shall be issued by the department from IPH store Thunag @ 289/- Per bag.
- 6 The contractor shall be responsible for any accident caused during the construction of the work and the loss if any will be born by the contractor.

Executive Engineer,
IPH Division, Thunag

Schedule of Quantity

Name of work: A/R & M/O Water testing laboratory at I&PH Division Thunag

Estimated cost Rs. 478000/-

(S.H:- Running operation and maintenance of water testing lab at Thunag for One year)

Eanrest money Rs.9560/-

Time:- One Year

Sr. No.	Description of Item	Qty.	Rate	Unit	Amount
1	Operation Running and maintenance of Divisional Water sample testing laboratory at Thunag for one year by providing skilled /unskilled operating staff and good quality materials such as chemicals regents etc. as required for testing of water sample for Physical chemical and bacteriological tests complete process in all respect i.e uploading of test results on web site regularly as per the direction and to the entire satisfaction of engineer in charge.				
a	Physical and chemical test for all 17 parameter (1000 samples per year)the tests are (i) Temperature (ii)Colour (iii) Odour (iv) Taste (v) Turbidity (vi) PH (vii) TDS/Elect Conductivity (viii)Total Alkalinity (ix) Chloride (x) fluoride (xi) Nitrate (xii) iron (xiii) Sulphate (ivx) Total Hardness (xv) free residual chlorine (xvi)Manganese (xvii) Total arsenic Note 250 tests fluoride, Nitrate, Sulphate and iron tests are to be done with Merck colorimeter -Model no Spectroquant move 100 chemicals for which are also to be provided by the contractor/Firm	1000 Tests of Sample		Per Test	
b	Bacteriological Tests (2000 samples per year)- (1) Total coliforms (2) E.Coli/Thermo tolerant Coliforms Test if total Coliforms are present	2000 Tests of Sample		Per Test	

Total

Special Terms and Condition

- 1 In order to give true picture of water tests and considering the importance of drinking water quality the contractor/Firms is expected to do entire job very carefully.
- 2 The contractor/Firms bidding for the job should preferably have the previous experience of opretion and maintenance of the water testing laboratory.
- 3 The contractor/Firms shall have to employ qualified and well experienced chemist/Assistant Chemist. The desirable qualification for the laboratory staff shall be as per Uniform Drinking water Quality Monitoring Product 2013 i.e. Assistant Chemist Graduation in science with Chemistry ,Lab Assistant +2 science/Diploma in laboratory and data entry operator +2 with knowledge Application and internet.
- 4 Income Tax, GST, 1% labour cess and other taxes levied by Govt. from time to time shall be deducted as per rules.
- 5 Work shall be done as per specification and to the entire satisfaction of the Engineer-in-charge.
- 6 Period of contract agreement shall be one Year at first instant and can be extended further.
- 7 Unserviceable material received after repair shall be handed over to the Engineer-in-charge.
- 8 The firm/contractor shall engage all skilled/unskilled labour for the smooth running of the Lab.
- 9 The contractor shall hand over the lab with all equipments to the department after expiry of contract period in good condition.
- 10 Security and all other deductions shall be made as per rule of the department.

Executive Engineer
I&PH Division Thunag

Schedule of Quantity

Name of work:- Providing Irrigation facility to both sides of Bakhli Khad from Janjehli to Lamba Thach Tehsil Thunag Distt. Mandi (HP).

Estimated Cost Rs:- 438633.00

SH:-Laying,Jointing and testing of G.I pipes in Gravity main) **PHASE-I**

Earnest Money Rs:- 8800.00

Time:- Three months.

S.N.	Sub Head & Item of Work	Quantity	Rate	Unit	Amount
1.0	Excavation in foundation and trenches etc. (including pipes and pits upto all depths) in all kinds of soil such as pick work, jumper work, blasting and chiselling soft or hard rock where blasting is prohibited in all leads and lifts including trimming and dressing of sides, levelling of bed to correct grade stacking the excavated soil clear from the edge of excavation and returning the excavated soil after laying, jointing and testing of GI pipes in trenches in 15cm layers including consolidating each deposited layers by ramming and watering and then disposing of all surplus excavated soil as directed in all leads and lifts and soring strutting and trimming dressing where ever required including restoration of un-metalled surface to its original condition including cost of diversion for traffic night signals fixing caution board, crossing over trenches for access to houses and fencing etc. complete in all respect.	1385.00		cum	Per cum
2.0	Laying,fixing and jointing (by way of circumfrential butt welded joints in three layer by electrical arc welding) and testing of GMS pipe of following diameter confirming to BIS 1239 (part 1) of following grade and having wall thickness as specified below with plain end and capable of withstanding required test pressure in rrandom length of 4 to 7 meters, including specials, short pieces, bends, reducers, tees etc. made from parent tube,etc. as per site requirement . The laying of pipe will include all operation such as cutting, welding, jointing, fabrication of bends, tees etc. including lowering and laying in excavated trenches to ensure required level including flushing, cleaning and hydraulic testing complete in all respects to the satisfaction of the Engineer in charge. The fabricated bends shall have three or four cuts having its radius not less than five times the dia of pipe and the damaged portion of the pipes and specials made form the parent tube shall be provided anticorrosive treatment by applying two coats of anticorrosive bituminous paint over a priming coat as per AWWA specifications C-203-1978. The welding electrodes shall be as per IS 814 of Advani Oerlikon/ L&T or ISI marked make. The rates also includes entire carriage of material, flushing, cleaning & hydraulic testing complete to the best satisfaction & direction of Engineer in charge with in all leads and lifts. (Earth work in trenches will be measured and paid for separately).				
2.01	GI pipe 125mm dia (MG)	525.00		Rmt	Per Rmt.
2.02	GI pipe 100mm dia (MG)	170.00		Rmt	Per Rmt.
2.03	GI pipe 80mm dia (MG)	1170.00		Rmt	Per Rmt.
3.0	Providing and fixing Flange (in pairs) for Joints of G.I. Pipes mentioned as below and same shall conform to IS:1239:1990 (Part II) (Latest with upto date amendments) Including the cost of nuts and bolts of required sizes 3 mm thick compressed asbestos fiber/synthetic rubber gaskets conforming to relevant IS standard. The rates also includes entire carriage of flange and welding of one flange in three layers other flange consider in but welding testing, complete to the best satisfaction & direction of Engineer in charge .				
3.01	GI pipe 125mm dia (MG) Table-5	5.00		Pair	Pair
3.02	GI pipe 100mm dia (MG) Table-5	1.00		Pair	Pair
3.03	GI pipe 80mm dia (MG) Table -5	12.00		Pair	Pair

Terms and conditions:-

- The work shall be executed as per HPPWD/IPH specifications and to the entire satisfaction of the Engineer-in-charge.
- The GI pipe shall be issued by the department from IPH store at Thunag for free of cost.
- The contractor shall be fully responsible for watch and ward of the material at site of work.
- Nothing shall be paid for rejected material/work.
- GST and labour welfare cess shall be deducted from each bill of the contractor as applicable.
- The contractor shall be responsible for any accident caused during the construction of the work and the loss if any will be born by the contractor.

**Executive Engineer
I&PH Division,Thunag.**

Schedule of Quantity

Name of work :- Improvement of WSS Bharari Galu Retti Shikawari in GP Shikawari & Thunag **Estimated cost Rs.3,56,786/-**
Tehsil Thunag Distt. Mandi (HP)
(SH:- Laying, jointing and testing of GI pipe from pt. A-B from RD 4500 to 9200Rmt)

Earnest money Rs.7150/-
Time: Three months.

Sr.No.	Description of item	Qty.	Rate	Unit	Amount
1	Excavation in foundation and trenches etc. (including pipes and pits upto all depths) in all kinds of soil such as pick work, jumper work, blasting and chiselling soft or hard rock where blasting is prohibited in all leads and lifts including trimming and dressing of sides, levelling of bed to correct grade stacking the excavated soil clear from the edge of excavation and returning the excavated soil after laying, jointing and testing of GI pipes in trenches in 15cm layers including consolidating each deposited layers by ramming and watering and then disposing of all surplus excavated soil as directed in all leads and lifts and soring strutting and trimming dressing where ever required including restoration of un-metalled surface to its original condition including cost of diversion for traffic night signals fixing caution board, crossing over trenches for access to houses and fencing etc. complete in all respect.	1809.50		cum	per cum
2	Laying, jointing and testing of GMS tube in trenches (light grade) of following dia meter including providing and fixing tube fitting such as bends, tees, air valves, unions and collars etc. including carriage of GI pipes as per direction and to the entire satisfaction of the Engineer-in-charge (earth work in trenches to be measured and paid for separately) in all leads and lifts.				
	(i) 32mm dia	4700		Rmt	Per Rmt

Terms and conditions

- i. The work shall be executed as per HPPWD/IPH specification and to the entire satisfaction of the Engineer-in-charge.
- ii. The contractor shall be fully responsible for watch and ward of the material at site of work.
- iii. The GI fittings shall be provided by the contractor at their own cost.
- iv. Nothing shall be paid for rejected material/work.
- v. The GI pipes shall be supplied by the department free of cost from IPH store Thunag
- vi. Income Tax/Sale Tax, labour welfare cess and GST shall be deducted from the bill of the contractor as applicable.
- vii. The contractor shall be responsible for any accident caused during the construction of the work and the loss if any will be born by the contractor

Executive Engineer
I&PH Division
Thunag

Schedule of Quantity

Name of work:- Providing Irrigation facility to both sides of Bakhli Khad from Janjehli to Lamba Thach Tehsil thunag Distt. Mandi (HP).

Estimated Cost Rs:- 276793.00

SH:-C/O of Head Weir) PHASE I

Earnest Money Rs:- 5540.00

Time:- Three months.

Sr. No.	Sub Head & Item of Work	Quantity	Rate	Unit	Amount
1	Excavation in foundation and trenches etc. in earth work in all kinds of soil such as pick work, jumper work, blasting soft or hard rock or by chiselling soft or hard rock where blasting is prohibited in all leads and lifts including trimming / dressing of sidesand bed stacking the excavated soil clear from the edge of excavation and returning the excavated soil after completion of work in 15cm layers when required into plinth , sides of foundation etc. consolidating each deposited layers by ramming and watering and then disposing of all surplus excavated soil complete in all respect as per the direction and to the entire satisfaction of the Engineer-in-charge.	19.84	cum	Per cum	
2	Providing and laying cement concrete 1:4:8 (1cement:4sand: 8graded stone aggregate 40 mm nominal size) and curing complete excluding the cost of form work in foundation and plinth in all leads and lifts.	37.96	cum	per cum	
3	Providing and laying cement concrete 1:11/2 :3 (1cement: 1 1/2 sand: 3graded stone aggregate 20 mm nominal size)and curing complete excluding the cost of form work and reinforcement in:-				
3.1	Foundation and plinth.	7.33	Cum	Per cum	
4	Providing form work with steel plates 3.15mm thick welded with angle iron 30x30x5mm so as to give a fair finish including centering shuttering strutting and propping etc. height of propping and centering below supporting floor to ceiling not exceeding 4mtrs. and removal of the same for in-situ reinforced concrete and plain concrete work in all leads and lifts.				
4.1	Vertical surface such as walls(any thickness) partitions and the like including attached pillasters buttresses, plinth and string courses and the like	63.00	sqm	per sqm	
5	Providing and laying tor steel reinforcement for RCC work including bending, binding and placing in position complete upto floor two level in all leads and lifts.	293.26	kg	Per kg	

Terms and conditions

- 1 The work shall be executed as per HPPWD/IPH specifications and to the entire satisfaction of the Engineer-in-charge.
- 2 The cement and steel shall be issued by the department from IPH Thunag i.e. Cement @ Rs. 289/-per bag, steel @ Rs.5700/-per qtl.
- 3 The contractor shall be fully responsible for watch and ward of the material at site of work.
- 4 Nothing shall be paid for rejected material.
- 5 GST and labour welfare cess shall be deducted from the each bill of the contractor as applicable
- 6 Crushed stone aggregate shall be used in all concrete work.
- 7 The contractor shall be responsible for any accident caused during the construction of the work and the loss if any will be born by the contractor.

Executive Engineer
I&PH Division, Thunag.

Schedule of Quantity

Estimated cost Rs. 491251.00
 Earnest money Rs. 9825.00
 Time :- Six Months

Name of Work :- Providing LWSS Shillibaggi in GP Shillibaggi Tehsil Thunag Distt. Mandi (H.P) (SH:- Providing and Fixing Zinc Alume storage tank 26,900 ltrs. Cap.)

Sr. No.	Description	Qty.	Rate	Unit	Amount.
1	Excavation in foundation trenches etc. in earth work lift up to 1.5 mtrs. Stacking the excavated soil not more than 3 metres away from the edge of excavation and then returning the stacked soil in 15 cm layers when required in to plinth and sides of foundations, consolidating each deposited layer by ramming , watering and then disposing of all surplus excavated earth as directed with in a lead of 20 metres in pick jumper work.	16.02 Cum		Per Cum	
2	Providing & laying cement concrete 1:3:6 (1cement :3sand : 6graded stone aggregate 40 mm nominal size) and curing complete excluding cost of form work in foundation and plinth in all leads and lifts.	5.34 Cum		Per Cum	
3	Providing and laying cement concrete 1:1½:3 (1 cement: 1½ sand: 3 graded stone aggregate 20mm nominal size) and curing complete excluding cost of form work and reinforcement for reinforced concrete work in Foundation and Plinth.	7.21 Cum		Per Cum	
4	Providing form work with steel plates 3.15mm thick welded with angle iron in frame 30x30x5mm, so as to give a fair finish including centring shuttering ,strutting and propping etc.with wooden battens and ballies,height of propping and centring below supporting floor to ceiling not exceeding 4 mtrs. and removal of the same for in situ reinforced concrete and plain concrete work in:-				
	a) Edges of slab and breaks in floors and walls under 20 cm wide.	5.21 Rmt		Per Rmt	
5	Providing tor steel reinforcement for RCC work including bending, binding and placing in position complete up to floor two level.	782.10 Kg		Per Kg	

Sr. No.	Description	Qty.	Rate	Unit	Amount.
6	Providing and Fixing Zinc Aluminum steel storage tank rising capacity 26900 ltrs. HDG Dome structure supporting dome roof of Zinc Aluminum including all fittings including 1 No. linear, heavy duty cage ladder GI, 1 No. Nylon rope and aluminum step ladder, access hatch on roof, inlet, out let and over flow nozzles, level indicator of material approved by STAC and warranty of 10 years including fixing of three taps under the roof on out let pipe of 25mm dia complete in all respect.	1 No.		Each	

Total	
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Terms and conditions

- 1 The work shall be executed as per HPPWD/IPH specifications and to the entire satisfaction of the Engineer-in-charge.
- 2 The cement, steel and GI pipes shall be issued by the department from IPH Store Thunag i.e. Cement @ Rs. 289/-per bag, steel @ Rs. 5700/- per qtl. and GI pipes free of cost.
- 3 The contractor shall be fully responsible for watch and ward of the material at site of work.
- 4 Nothing shall be paid for rejected material.
- 5 Crushed stone aggregate shall be used at site of work.
- 6 G.S.T. and labour welfare cess shall be deducted from the bill of the contractor as applicable.
- 7 The contractor shall be responsible for any accident caused during the construction of the work and the loss if any will be born by the contractor.

Schedule of Quantity

Name of work:- Providing Irrigation facility to both sides of Bakhli Khad from Janjehli to Lamba Thach Tehsil Thunag Distt. Mandi (HP).

Estimated Cost Rs:- 276793.00

SH:-C/O of Head Weir) PHASE III

Earnest Money Rs:- 5540.00

Time:- Three months.

Sr. No.	Sub Head & Item of Work	Quantity	Rate	Unit	Amount
1	Excavation in foundation and trenches etc. in earth work in all kinds of soil such as pick work, jumper work, blasting soft or hard rock or by chiselling soft or hard rock where blasting is prohibited in all leads and lifts including trimming / dressing of sides and bed stacking the excavated soil clear from the edge of excavation and returning the excavated soil after completion of work in 15cm layers when required into plinth , sides of foundation etc. consolidating each deposited layers by ramming and watering and then disposing of all surplus excavated soil complete in all respect as per the direction and to the entire satisfaction of the Engineer-in-charge.	19.84		cum	
2	Providing and laying cement concrete 1:4:8 (1cement:4sand: 8graded stone aggregate 40 mm nominal size) and curing complete excluding the cost of form work in foundation and plinth in all leads and lifts.	37.96		cum	
3	Providing and laying cement concrete 1:11/2 :3 (1cement: 1 1/2 sand: 3graded stone aggregate 20 mm nominal size)and curing complete excluding the cost of form work and reinforcement in:-				
3.1	Foundation and plinth.	7.33		Cum	
4	Providing form work with steel plates 3.15mm thick welded with angle iron 30x30x5mm so as to give a fair finish including centering shuttering strutting and propping etc. height of propping and centering below supporting floor to ceiling not exceeding 4mtrs. and removal of the same for in-situ reinforced concrete and plain concrete work in all leads and lifts.				
4.1	Vertical surface such as walls(any thickness) partitions and the like including attached pillasters buttresses, plinth and string courses and the like	63.00		sqm	
5	Providing and laying tor steel reinforcement for RCC work including bending, binding and placing in position complete upto floor two level in all leads and lifts.	293.26		kg	

Terms and conditions

- 1 The work shall be executed as per HPPWD/IPH specifications and to the entire satisfaction of the Engineer-in-charge.
- 2 The cement and steel shall be issued by the department from IPH Thunag i.e. Cement @ Rs. 289/-per bag, steel @ Rs.5700/-per qtl.
- 3 The contractor shall be fully responsible for watch and ward of the material at site of work.
- 4 Nothing shall be paid for rejected material.
- 5 GST and labour welfare cess shall be deducted from the each bill of the contractor as applicable
- 6 Crushed stone aggregate shall be used in all concrete work.
- 7 The contractor shall be responsible for any accident caused during the construction of the work and the loss if any will be born by the contractor.

Executive Engineer
I&PH Division, Thunag.

Schedule of quantity

Name of Work :- Providing LWSS to GP Bassi & Dharot Tehsil Chachyot Distt. Mandi (HP)

(SH:- Supply and erection of pumping machinery, laying jointing and testing of GI pipe in Rising Main)

Estimated cost Rs.	386122.00
Earnest money Rs.	7872.00
Time:-	Six months

S.No	Sub Head and Items of work	Quantity	Rate	Units	Amount.	
RAW WATER STAGE						
1	Supply of submersible raw water pumping set of reputed make such as KSB/CALAMA/ BS /SABAR JOHNSTON make conforming to latest relevant BIS code. The pump should be fitted with free flow impellers of bronze/suitable alloy as per BIS 5659-1970 latest suitable for raw water 900 PPM having greased packer bearing and shaft with bound stator on motor side & with shaft protection sleeve on pump side ensuring better life for shaft conforming to BIS specifications. The pump shall be directly coupled to a submersible squirrel cage electric induction motor of Kirloskar/NGEF/Jyoti/Crompton make conforming to relevant BIS code latest with upto date ammendments totally dust & water proof for submersible duty isolated from the pump by intermediate casing with double mechanical seal in oil chamber & grease packed lubricated bearing & provided with stainless steel thrust bearing plate to withstand non vertical loads with minimum wear & tear. It should also be fitted with a device to take up expansion of water with heating of motor. The pump set should include water level guard errection clamps, cable clips & depth gauge etc. & suitable for operation on data given below:-	1		set of 1HP	Per set	0.00
(A)SITE CONDITIONS						
	(I) Location of site					Dawada Nallah
	(ii) The altidue of place which the motor is intended to work in ordinary service if it exceeds 1000 mt.					900 mtr.
	(iii) Humidity					Whether generally remains humid during monsoon season
	(iv)Nature atmosaphere					As normally encountered in Shivalik Range
	(v)Detail of quality of water					Raw water
	(vi)Water free from sand or not					Free from sand
	(vii) water corrosive or not					Not corrosive
	(viii) Turbidity (if any)					Upto 900 PPM
	(ix) Type of well					Jack well
	(x) Inside size					___ mtrs.
	(xi) Depth of water during HFL in the well					___ mtrs.
	(xii) Maximum drawn down					___ mtrs.
	(xiii) Depth of well					___ mtrs.
	(xiv) Any other information or requirement					
(B) OPERATING CONDITIONS						
	(I) Type of current					AC three/single phase
	(ii) Operating frequency					50 HZ
	(iii) Rated voltage					400(+)- 10% volts.

S.No	Sub Head and Items of work		Quantity	Rate	Units	Amount.
	(iv) System of earthing if any to be adopted	Double loop earthing as per BIS 3043-1987 latest with upto date ammenmdments				
	(v) No. of working hours per day	8 Hours				
	(vi) Speed of revolution in RPM	To be quoted by tenderer				
	(vii) Direction of rotation	To be quoted by tenderer				
	(viii) The max. temp of cooling air & water in the place in which the motor is intened to work in ordinary service	35 Degree Centigrade				
C	MOTOR					
	(I) Ref to BIS code	BIS 325-1978 read with BIS 900-1992(latest) with upto date ammendments.				
	(ii) Type of enclosure of motor	SPDP(As per BIS 4691-1985 (latest)				
	(iii) Type of duty	Continuous				
	(iv) Mechanical out put in KW	Suitable for driving centrifugal/ reciprocating pumps required for duties specified against pumps. To avoid overloading of motor a margin of about 15-20% may be kept in the rated out put of primer mover				
	(v) Class of insulation	Class- B/Class "F"				
	(vi) Max. permissible temp. rise of motor reqd. if different from given in B (viii) above.	-				
	(vii) Particulars of test reqd. & where they are to be conducted	As per terms and conditions.				
	(viii) Particulars as to whether voltage limiting device will be employed.	ATS/Star delta starter /Stator Rotor starter oil immersed, fully automatic to be installed between bus bar chamber and motor shunt capacitor is also proposed to be installed for improving the power factor at site.				
		Note:- Star delta starter upto 37.5 KW ATS between 37.5KW to 50 KW & Stator rotor starter with slip ring motor beyond 50 KW				
	(ix) Motor whether squirrel cage or splipring	Submersible				
	(x) Details of shaft extension reqd.	Just sufficient to provide direct drive by flexible coupling to pump.				
	(xi) Type of slip ring gear whether continously rated or for starting purposoes only & whether to be fitted with brush lifting or short circuiting arrangements or both if interlocks are required.	Continuously rated for Squirrel cage/Slipring motor				
	(xii) Breakway torque in terms of rated load torque & the corresponding breakway starting current which may be taken from the supply with the starting apparatus in circuit	Breakway torque to be given by the tenderer but the starting current should not exceed 2.5 times of the full load current.				

S.No	Sub Head and Items of work		Quantity	Rate	Units	Amount.
	(xiii) Nature of load & any information regarding the driven machine which has a bearing upon the torque reqd. during the accelerated period, the kinetic energy of the moving parts to be accelerated & No. of starts during a specified period.	To work the pump offered.				
	(xiv) Where possible fault capacity of the system to which the motor is connected	The motor should be able to withstand initial current of 2.5 time the rated current for two minutes without suffering damages or permanent deformations.				
D	PUMP BIS 1520-1980) Read with BIS 9137-1978 both latest with upto date ammendments					
	(a) Nos. of pumps required	1 No. pump				
	(b) Spare parts required	For Two years normal maintenance as recommended by manufacturer.				
	(c) Optional fittings reqd.	Air cock for exhausting air from each stage				
E	PUMP OPERATING CONDITIONS					
(i)	Capacity	1.51 LPS Per set				
(ii)	Total head in Mts.	16.09 mtrs.				
	If total head is not known then following details be provided					
	(i) Static head					
	(ii) Minimum depth of water					
	(iii) Variation in water level					
	(iv) Ground level to max. water level					
	(v) Ground level to delivery point					
	(vi) Pressure in the suction tank	_____ kg/cm2				
	(vii) Pressure in the delivery tank	_____ kg/cm2				
(iii)	Length of R/Main	30 Rmt				
iv)	Dia of rising main	50 mm				
(v)	Drive arrangement	Direct through flexible coupling on a common base plate.				
(vi)	Drive type	Electric driven				
(vii)	NPSH reqd.	To be quoted by tenderer				
(viii)	Limits of total head in which the pump is reqd. to operate	(-) 15% to (+) 10% of total head.				
(ix)	Suction/delivery size of pump	To be specified by the tenderer.				
(x)	Efficiency of pump at	To be specified by the tenderer.				
	(a) Duty head					
	(b) (+) 10% head					
	(c) (-) 15% head					
(xi)	Material of construction	To be specified by the tenderer.				
		(Manufacturers certificate to be appended)				
2	Supply of suitable oil immersed star delta starter/ATS/Staror rotor starter of standard make such as MEI/Kilburn/Jyoti/Siemens conforming to BIS-8544-1979 latest with upto date ammendments for squirrel cage/slipring motor (make to be specified by the tenderers) mounted on panel board with magnetic type over load release & dashpot, time lag, under voltage release with initial oil filling.		1 No.		Each	

S.No	Sub Head and Items of work	Quantity	Rate	Units	Amount.
	Note:- Star delta starter upto 37.5 KW, ATS between 37.5 KW to 50 KW and starter rotor starter with slipring motor beyond 50 KW.				
3	Providing MS sheet 16 SWG steel fabricated floor mounted closed almirah type switch board including angle iron post of suitable height and size ISA 40x40x6mm duly painted comprising and capable of mounting the following accessories with all internal electric connections. The drawing of panel board shall be subject to approval of Engineer-in-charge.	1 No.		Each	
	(a) Ammeter AC supply 100mm circular dial Auto electric/AE/IMP/Havells make of suitable range for above motor with selector switches conforming to BIS 1248-1983 latest with upto date ammendments.	1 No.		Each	
	(b) Voltmeter AC supply 100mm circular dial Auto electric/AE/IMP/Havells make of suitable range for above motor with selector switches conforming to BIS 4064-1978 latest with upto date ammendments.	1 No.		Each	
	(c) ICTP switches with HRC fuses Kilburn/Larsen & Turbo/Standard/Siemens make and having capacity 30% extra of the operational rating of motor as per BIS- 4064-1978 with upto date ammendments immediately after the power meter of HPSEB	1 set		per set	
	(d) Busbar chamber having 3 copper bars of suitable rating for full length equal to width of board of 3 live phases and one copper bar of half rating of full length for neutral conforming to BIS 8084-1976 and 11353-1985 read with 5578-1985 all latest with upto date ammendments.	1 No.		Each	
	(e) MCB/Oil circuit breaker of suitable capacity of Kilburn/LT/LK/MEI/Standard make on in common feeder for motors offered by the tendere conforming to BIS 2516-1985 latest with upto date ammendments with neutral linked under voltage release.	1 No.		Each	
	(f) 3 phase indicating lamps complete with toggle switches for individual motors conforming to BIS-3452 part-I & II latest with upto date ammendments.	1 No.		Each	
	(g) Earth leakage circuit breaker of recommended (Kilburn/L&T/MET/GEC as per BIS- 2516-1977 with upto date ammendments and of suitable range which should have control box, operating handle and trip/reset bush button on/off indicators, re-indicating off spring condition of the circuit breaker for over current protection. The circuit should be equipped with magnet thermal release with metallic tap CTS. It should also be fitted earth fault for tripping of breaker on occurance of earth fault on/off breaker load side.	1 No.		Each	
	(h) Hour run meter of reputed make of four digit capacity conforming to BIS-722 (latest edition) recommendations.	1 NO.		Each	
	(l) Suitable three phase voltage monitor relay with all protections & usual indicators with electrical sirens against single phasing no voltage, high voltage & over loading & phase voltage differenece.	1 No.		Each	
	(j) Change over switch of reputed make and suitable capacity	1 No.		Each	
	(k) Single phase preventor of reputed make & suitable capacity	2 No.		Each	
4(a)	Supply of Kirloskar/Kilburn/IVC/Fouress/Gled/BHEL/Leader/Kartar of reputed make of suitable size cast iron/ Class PN-1 double flanged sluice valve having size one step higher to delivery of pump and capable of withstanding nominal seat pressure of 10 kg/cm ²	1 No.		Each	

S.No	Sub Head and Items of work	Quantity	Rate	Units	Amount.
	Note:- The sluice valve shall conform to BIS 780-1984 latest with upto date ammendments. However if the seat pressure exceeds the limits prescribed in BIS 780 then the sluice valves shall be of cast steel conforming to class 150 ASA (Seat pressure 21kg/cm²) or class 300 ASA (Seat pressure 52 kg/cm²) as per BS 1414 (API 600) class 600 ASA (Seat pressure 120kg/cm²) Kartar make is only for Cast Iron valves)				
(b)	Supply of Kirloskar/Kilburn/IVC/Fourcess/Gled/BHEL/Leader/Kartar make of suitable size cast iron class PN-1 double flanged swing check type reflux valve having bye pass arrangement & size one step higher to delivery of pump for withstanding nominal seat pressure 10 kg./cm ² .	1	No.	Each	
	Note:- The sluice valve shall conform to BIS 5312-1984 latest with upto date ammendments. However if the seat pressure exceeds the limits prescribed in BIS 5312 then the sluice valves shall be of cast steel conforming to class 150 ASA (Seat pressure 21kg/cm²) or class 300 ASA (Seat pressure 52 kg/cm²) or class 600 ASA (Seat pressure 104 kg/cm²) as per BS 1414 (API 600)				
(c)	Supply of Kirloskar/Kilburn/IVC/Fourcess/Gled/BHEL/Leader/Kartar of suitable size cast iron class PN-1 double flanged swing check type reflux valve having bye pass arrangement & size one step higher to dia of R/Main 150mm dia for withstanding nominal seat pressure of 10kg/cm ²	1	No.	Each	
	Note:- The sluice valve shall conform to BIS 780-1984 latest with upto date ammendments. However if the seat pressure exceeds the limits prescribed in BIS 780 then the sluice valves shall be of cast steel conforming to class 150 ASA (Seat pressure 21kg/cm²) or class 300 ASA (Seat pressure 52 kg/cm²) or class 600 ASA (Seat pressure 104 kg/cm²) as per BS 1414 (API 600)				
5(a)	P/L suitable size copper PVC insulated armoured power 3.1/2 core cable conforming to BIS 1554 (part I) 1988 or latest with upto date ammendments Siemen/Gloster/ICC finolux/havells make from meter of HPSEB to OCB & from OCB to Busbar switch & starter (one cable carrying all three phases) including all other electrical equipment/accessories such as thimbles, flexible pipe, solder, nuts and bolts, cable glands etc. laid in pipes or trenches under floor. The type, size & make will be subject to approval of HPSEB authorities. In case of non acceptance by HPSEB authorities it shall have to be replaced by the tenderer free of cost.	50	Rmt	Per Rmt	
(b)	P/L double loop earthing with GI plate 600x600x3mm thick electrode complete with material such as charcoal, common salt, GI pipes, thimbles, nuts & bolts, digging of pits, GI wiring & 25x5mm GI strips of required capacity conforming to BIS 3043-1987 latest with upto date ammendments for above motors & other electrical equipment.	1	Job.	L.S	
(c)	Supply & erection of floor/wall mounted power factor shunt capacitor conforming to BIS 2834- 1986 latest with upto date ammendments BHEL/GEC/Machneil/Mager/Bajaj make to raise the prevailing power factor at site to 0.95 for direct connection to induction motor individually of required KVAR according to HP of motor offered including cable Siemens/Gloster/ICC make from busbar chamber to capacitor & also including LT/LK/Kilburn make ICTP switches conforming to BIS 4064-1978 or latest with HRC fuses (Range to be specified by the tenderer.	1	No.	Each	
6	Supply of standard make 100mm dia circular dial pressure gauge of suitable range Fiebeg/Bourden/Precision make with all accessories such as stop cock, copper tubing etc. conforming to BIS-3624-1987 latest with upto date ammendments	1	No.	Each	
7	P/L delivery pipe considering site requirements, NPSH required and available & common header having area equal to two times the area of delivery branch of pump including tappers, flanges, rubber gaskets, 3mm thick as per BIS-2712-1978 nuts and bolts as per 1364-1983 & special upto 5 mtrs. away from the outer wall of pump house as per layour drawings approved by the Engineer-in-charge. The pipes shall be capable of withstanding 1.5 times the total pressure indicated in item No. 1 e(ii)	1	Job	Per Rmt	
	Note:- Actual laying to be done as per final drawings to be approved by the Engineer-in-charge.				

S.No	Sub Head and Items of work	Quantity	Rate	Units	Amount.
8	Errection of all equipments from Sr. No.1 to 4, & 6 including cost of tees, bends, tapers & any other fittings required as per site conditions & as per direction of Engineer-in-charge.	1	Job	L.S.	
	Main stage:-				
9	Supply of horizontal spindle, vertical split casing single/Multistage centrifugal pumps of standard make such as KSB/Mather and Platt/Jyoti /Kirloskar /Best & crompton//Lubbi/ Grundfos conforming to BIS 5120-1980/ appropriate IS code (latest with upto date ammendments) read with BIS 9137-1978 or latest to handle clear water having turbidity up to 50 ppm. with bornze impelleres, casing ring and shaft sleeves of bronze, shaft of steel with cast iron casing of suitable capacity coupled directly through a flexible coupling on a common base plate to Kirloskar/NGEF /Crompton /Siemen/Jyoti/ABB/Marathon squirrel cage screen protected drip proof induction electric motor suitable for operation on the data given below:-	2	sets of 12 HP	per set	
A)	SITE CONDITIONS				
	(I) Location of site		Dawada Nallah		
	(ii) The altidue of place which the motor is intended to work in ordinary service if it exceeds 1000 mt.		900 mtrs.		
	(iii) Humidity		Whether generally remains humid during monsoon season		
	(iv) Nature atmosaphere		As normally encountered in Shivalik Range		
	(v) Detail of quality of water		Clear water		
	(vi) Water free from sand or not		Yes		
	(vii) water corosive or not		Not		
	(viii) Turbidity (if any)		Upto 50 PPM		
	(ix) NPSH available		+tive suction		
	x) Any other information or requirement				
(B)	OPERATING CONDITIONS				
	(I) Type of current		AC three/single phase		
	(ii) Operating frequency		50 HZ		
	(iii) Rated voltage		400(+)- 10% volts.		
	(iv) System of earthing if any to be adopted		Double loop earthing as per BIS 3043-1987 latest with upto date ammenmdments		
	(v) No. of working hours per day		8 Hours		
	(vi) Speed of revolution in RPM		To be quoted by tenderer		
	(vii) Direction of rotation		To be quoted by tenderer		
	(viii) The max. temp of cooling air & water in the		35 Degree Centigrade		
C	MOTOR				
	(I) Ref to BIS code		BIS 325-1978 read with BIS 900-1992(latest) with upto date ammendments.		
	(ii) Type of enclosure of motor		SPDP(As per BIS 4691-1985 (latest)		
	(iii) Type of duty		Continuous		

S.No	Sub Head and Items of work		Quantity	Rate	Units	Amount.
	(iv) Mechanical out put in KW	Suitable for driving centrifugal/ reciprocating pumps required for duties specified against pumps. To avoid overloading of motor a margin of about 15-20% may be kept in the rated out put of primer mover				
	(v) Class of insulation	Class- B/Class "F"				
	(vi) Max. permissible temp. rise of motor reqd. if	-				
	(vii) Particulars of test reqd. & where they are to	As per terms and conditions.				
	(viii) Particulars as to whether voltage limiting device will be employed.	ATS/Star delta starter /Stator Rotor starter oil immersed, fully automatic to be installed between bus bar chamber and motor shunt capacitor is also proposed to be installed for improving the power factor at site.				
		Note:- Star delta starter upto 37.5 KW ATS between 37.5KW to 50 KW & Stator rotor starter with slip ring motor beyond 50 KW				
	(ix) Motor whether squirrel cage or splirng	Squirrel cage				
	(x) Details of shaft extension reqd.	Just sufficient to provide direct drive by flexible coupling to pump.				
	(xi) Type of slip ring gear whether continously rated or for starting purposoes only & whether to be fitted with brush lifting or short circuiting arrangements or both if interlocks are required.	Continuously rated for Squirrel cage/Slipring motor				
	(xii) Breakway torque in terms of rated load torque & the corresponding breakway starting current which may be taken from the supply with the starting apparatus in circuit	Breakway torque to be given by the tenderer but the starting current should not exceed 2.5 times of the full load current.				
	(xiii) Nature of load & any information regarding	To work the pump offered.				
	(xiv) Where possible fault capacity of the system to which the motor is connected	The motor should be able to withstand initial current of 2.5 time the rated current for two minutes without suffering damages or permanent deformations.				
D	PUMP BIS 1520-1980) Read with BIS 9137-1978 both latest with upto date ammendments					
	(a) Nos. of pumps required	2 No. pump				
	(b) Spare parts required	For Two years normal maintenance as recommended by				
	(c) Optional fittings reqd.	Air cock for exhausting air from each stage				
E	PUMP OPERATING CONDITIONS					
(I)	Capacity	1.51 LPS each pump				
(ii)	Total head in Mts.	310.89 mtrs.				
	If total head is not known then following details be					
	(I) Static head		280.55			
	(ii) Minimum depth of water	+tive suction				
	(iii) Variation in water level	----- mtrs.				
	(iv) Ground level to max. water level	1337.00 mtrs.				

S.No	Sub Head and Items of work	Quantity	Rate	Units	Amount.
	(v) Ground level to delivery point	1618 mtrs			
	(vi) Pressure in the suction tank	_____ kg/cm2			
	(vii) Pressure in the delivery tank	_____ kg/cm2			
(iii)	Length of R/Main	930 Rmt			
iv)	Dia of rising main	50mm			
(v)	Drive arrangement	Direct through flexible coupling on a common base plate.			
(vi)	Drive type	Electric driven			
(vii)	NPSH reqd.	To be quoted by tenderer			
(viii)	Limits of total head in which the pump is reqd. to	(-) 15% to (+) 10% of total head.			
(ix)	Suction/delivery size of pump	To be specified by the tenderer.			
(x)	Efficiency of pump at	To be specified by the tenderer.			
	(a) Duty head				
	(b) (+) 10% head				
	(c) (-) 15% head				
(xi)	Material of construction	To be specified by the tenderer.			
		(Manufacturers certificate to be appended)			
10	Supply of suitable oil immersed star delta starter/ATS/Staror rotor starter of standard make such as MEI/Kilburn/Jyoti/Siemens conforming to BIS-8544-1979 latest with upto date ammendments for 12 HP squirrel cage/slipring motor (make to be specified by the tenderers) mounted on panel board with magnetic type over load release & dashpot, time lag, under voltage release with initial oil filling.	2 No.		Each	
	Note:- Star delta starter upto 37.5 KW, ATS between 37.5 KW to 50 KW and starter rotor starter with slipring motor beyond 50 KW.				
11	Providing MS sheet 16 SWG steel fabricated floor mounted closed almirah type switch board including angle iron post of suitable height and size ISA 40x40x6mm duly painted comprising and capable of mounting the following accessories with all internal electric connections. The drawing of panel board shall be subject to approval of Engineer-in-charge.	1 No.		Each	
	(a) Ammeter AC supply 100mm circular dial Auto electric/AE/IMP/Havells make of suitable range for above motor with selector switches conforming to BIS 1248-1983 latest with upto date ammendments.	2 No.		Each	
	(b) Voltmeter AC supply 100mm circular dial Auto electric/AE/IMP/Havells make of suitable range for above motor with selector switches conforming to BIS 4064-1978 latest with upto date ammendments.	1 No.		Each	
	(c) ICTP switches with HRC fuses Kilburn/Larsen & Turbo/Standard/Siemens make and having capacity 30% extra of the operational rating of motor as per BIS- 4064-1978 with upto date ammendments immediately after the power meter of HPSEB	1 Set		per set	
	(d) Busbar chamber having 3 copper bars of suitable rating for full length equal to width of board of 3 live phases and one copper bar of half rating of full length for neutral conforming to BIS 8084-1976 and 11353-1985 read with 5578-1985 all latest with upto date ammendments.	1 Set		per set	
	(e) Oil circuit breaker/MCCB of suitable capacity of Kilburn/LT/LK/MEI/Standard make on in common feeder for motors offered by the tendere conforming to BIS 2516-1985 latest with upto date ammendments with neutral linked under voltage release.	1 No.		Each	
	(f) 3 phase indicating lamps complete with toggle switches for individual motors conforming to BIS-3452 part-I & II latest with upto date ammendments.	1 Set		per set	

S.No	Sub Head and Items of work	Quantity	Rate	Units	Amount.
	(g) Earth leakage circuit breaker of recommended (Kilburn/L&T/MET/GEC as per BIS- 2516-1977 with upto date ammendments and of suitable range which should have control box, operating handle and trip/reset bush button on/off indicators, re-indicating off spring condition of the circuit breaker for over current protection. The circuit should be equipped with magnet thermal release with metallic tap CTS. It should also be fitted earth fault for tripping of breaker on occurrence of earth fault on/off breaker load side.	1 No.		Each	
	(h) Hour run meter of reputed make of four digit capacity conforming to BIS-722 (latest edition) recommendations.	2 No.		Each	
	(l) Suitable three phase voltage monitor relay with all protections & usual indicators with electrical sirens against single phasing no voltage, high voltage & over loading & phase voltage differenece.	1 No.		Each	
	(j) Change over switch of reputed make and suitable capacity	1 No.		Each	
	(k) Single phase preventor of reputed make & suitable capacity	2 No.		Each	
12	Supply of Kirloskar/Kilburn/IVC/Fouress/Gled/BHEL/Leader/Pelican of reputed make of cast steel Class ASA-300 double flanged sluice valve having size one step higher to delivery of pump and capable of withstanding nominal seat pressure of 52kg/cm ² conforming to BS 1414 (API 600)	2 No.		Each	
	Note:- The sluice valve shall conform to BIS 780-1984 latest with upto date ammendments. However if the seat pressure exceeds the limits prescribed in BIS 780 then the sluice valves shall be of cast steel conforming to class 150 ASA (Seat pressure 21kg/cm²) or class 300 ASA (Seat pressure 52 kg/cm²) as per BS 1414 (API 600) class 600 ASA (Seat pressure 120kg/cm²) Kartar make is only for Cast Iron valves)				
(b)	Supply of Kirloskar/Kilburn/IVC/Fourcess/Gled/BHEL/Leader/Pelican of cast steel class ASA-300 double flanged swing check type reflux valve having bye pass arrangement & size one step higher to delivery of pump for withstanding nominal seat pressure 52 kg./cm ² . conforming to BS: 1868-API 600	1 No.		Each	
	Note:- The sluice valve shall conform to BIS 5312-1984 latest with upto date ammendments. However if the seat pressure exceeds the limits prescribed in BIS 5312 then the sluice valves shall be of cast steel conforming to class 150 ASA (Seat pressure 21kg/cm²) or class 300 ASA (Seat pressure 52 kg/cm²) or class 600 ASA (Seat pressure 104 kg/cm²) as per BS 1868 (API 600)				
(c)	Supply of Kirloskar/Kilburn/IVC/Fourcess/Gled/BHEEL/Leader make of cast steel class ASA-300 double flanged swing check type reflux valve having bye pass arrangement & size equal to dia of R/Main i.e. 50mm dia for withstanding nominal seat pressure of 52kg/cm ² conforming to BS: 1868-API 600	1 No.		Each	
	Note:- The sluice valve shall conform to BIS 780-1984 latest with upto date ammendments. However if the seat pressure exceeds the limits prescribed in BIS 780 then the sluice valves shall be of cast steel conforming to class 150 ASA (Seat pressure 21kg/cm²) or class 300 ASA (Seat pressure 52 kg/cm²) or class 600 ASA (Seat pressure 104 kg/cm²) as per BS 1868 (API 600)				
(d)	Supply of Kirloskar/Jyoti/IVC/Fourcess/Gled/Leader/Kartar make of cast iron double flanged sluice valve having size equal to size of suction of pump and capable of withstanding nominal seat pressure of of suitable 10kg/cm ²	2 Nos.		Each	

S.No	Sub Head and Items of work	Quantity	Rate	Units	Amount.
13	P/L suitable size copper PVC insulated armoured power 3.1/2 core cable conforming to BIS 1554 (part I) 1988 or latest with upto date ammendments Siemen/Gloster/ICC/Havells/Finolex/Standard make from meter of HPSEB to OCB & from OCB to Busbar switch & starter (one cable carrying all three phases) including all other electrical equipment/accessories such as thimbles, flexible pipe, solder, nuts and bolts, cable glands etc. laid in pipes or trenches under floor. The type, size & make will be subject to approval of HPSEB authorities. In case of non acceptance by HPSEB authorities it shall have to be replaced by the tenderer free of cost.	1	Job	Per Job	
(b)	Providing and laying 3.00sqm mm core water proof cable as per BIS 694-1990(latest with upto date ammendments) suitable for the pump set offered from OCB to motor, motor to starter including all other electircal equipments such as Thimbles, flexible pipes, solder, nuts & bolts cable glands etc. laid in pipes or trenches. The type, size & make will be subject to approval of HPSEB authorities. In case of non-acceptance by HPSEB authorities it shall have to be replaced by the tenderer free of cost.	1	job	Per Job	
(c)	P/L double loop earthing with GI plate 600x600x3mm thick electrode complete with material such as charcoal, common salt, GI pipes, thimbles, nuts & bolts, digging of pits, GI wiring & 25x5mm GI strips of required capacity conforming to BIS 3043-1987 latest with upto date ammendments for above motors & other electrical equipment.	1	Job.	LS.	
(d)	Supply & erection of floor/wall mounted power factor shunt capacitor conforming to BIS 2834- 1986 latest with upto date ammendments BHEL/GEC/Machneil/Mager/Bajaj make to raise the prevailing power factor at site to 0.95 for direct connection to induction motor individually of required KVAR according to HP of motor offered including cable Siemens/Gloster/ICC make from busbar chamber to capacitor & also including LT/LK/Kilburn make ICTP switches conforming to BIS 4064-1978 or latest with HRC fuses (Range to be specified by the tenderer.	2	Nos.	Each	
14	Supply of standard make 100mm dia circular dial pressure gauge of suitable range Fiebeg/Bourden/Precision make with all accessories such as stop cock, copper tubing etc. conforming to BIS-3624-1987 latest with upto date ammendments	2	Nos.	Each	
15	P/L delivery pipe and suction pipe considering site requirements, NPSH required and available & common header having area equal to two times the area of delivery branch of pump including tappers, flanges, rubber gaskets, 3mm thick as per BIS-2712-1978 nuts and bolts as per 1364-1983 & special upto 5 mtrs. away from the outer wall of pump house as per layour drawings approved by the Engineer-in-charge. The pipes shall be capable of withstanding 1.5 times the total pressure indicated in item No. 1 E(ii)	1	Job.	L.S	
	Note:- Actual laying to be done as per final drawings to be approved by the Engineer-in-charge.				
16	Errection of all equipments from Sr. No.9 to 12 & 14 including cost of tees, bends, tapers & any other fittings required as per site conditions & as per direction of Engineer-in-charge.	1	Job	L.S.	
17	Excavation in foundation and trenches etc. (for pipes and pits upto all depths) in all classification of earth work such as pick work, jumper work saturated soil including bailing out water, blasting soft/hard rock or chiseling soft/hard rock where blasting is prohibited in all lifts including trimming and dewatering where ever required stacking the unserviceable/serviceable material/soil separately and after laying, jointing and testing of GI pipes returning the useable soil in trenches in 15cm layers including consolidating each deposited layer by ramming and watering and then disposing of all surplus excavated soil as directed within all leads/lifts including restoration of unmetalled surfaces to its original condition and including cost of diversion for traffic, night signals, fixing caution boards, crossing over trenches for access to houses fencing etc. complete in all respect with leads/lifts as per direction and to entire satisfaction of the Engineer-in-charge.	518.40	Cum	Per cubic metre	

S.No	Sub Head and Items of work	Quantity	Rate	Units	Amount.
18	Laying, jointing and testing in trenches to be levelled to grades, IS marked GI flanged pipes of following diameters confirming to IS: 1239-1990 (Part-I) (latest with upto date ammendments) having minimum wall thickness as for class of pipe specified below with providing and fixing flanges conforming to tables as specified below of BIS 6392-1971 (latest with upto date ammendments) welded at both ends in minimum three layers (one inner side and two layer outer side) of pipe to make the joint leak proof according to relevant BIS standards and detailed specifications, providing and fixing with nuts & bolts of required number and sizes, providing and fixing 3mm thick compressed asbestos fiber gasket of synthetic rubber gasket confirming to relevant BIS codes including all kinds of flanged short pieces, bends, tees and other specials etc. made from parent tubes and welded with flanges of tables as applicable for the particular reach & of technical specifications as per site conditions including flushing cleaning & hydraulic testing as per direction of the Engineer-in-charge.				
	Raw water stage:-				
	G.I. pipe 50mm dia (M) Table 17	30	Rmt	Per Rmt.	
	Main Stage:-				
	G.I. pipe 50mm dia (H) Table 28 (RD 0 to 48)	48	Rmt	Per Rmt.	
19	Laying,jointing (by way of circumfrential butt welded joints by electrical arc welding) and testing of Galvanised mild steel tubes (GI Pipes) of following dia meters confirming to BIS 1239-2001 (latest with upto date amendments) having wall thickness as per code with bevelled / plain ends in a random length of 4 to 7 meters, including manufacturing reducers/ tapers , all short pieces, bends etc. as per site requirement made from parent tubes . The laying of pipe will include all operation such as cutting, welding, jointing, fabrication of bends, tees etc. including lowering and laying in excavated trenches to ensure required level including flushing, cleaning and hydraulic testing complete in all respects to the satisfaction of the Engineer in charge. The fabricated bends shall have three or four cuts having its radius not less than five times the dia of pipe. The damaged portion of the pipes and specials made form the parent tube during welding or otherwise shall be provided anticorrosive treatment by applying two coats of anticorrosive bituminous paint over a priming coat as per AWWA specifications C-203-1978. The welding electrodes shall be as per IS 814 of Advani Oerlikon/ L&T or ISI marked make. The rates also includes entire carriage of material, flushing, cleaning & hydraulic testing complete to the best satisfaction & direction of Engineer in charge with in all leads and lifts. (Earth work in trenches will be measured and paid for separately).				
	G.I pipe 50mm dia (m) RD 48 to 930	882	Rmt	Per Rmt	

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S.No	Sub Head and Items of work	Quantity	Rate	Units	Amount.
TERMS AND CONDITIONS:-					
1	The firm shall forward a copy of supply order/indent placed by it for the supply of pumps and motors on the manufactures/ authorized dealers of the pumps and motors to the consignee within 30 days after issue of the letter of intent/ award by the Engineer-in-Charge.				
2	The firm shall arrange dispatch of offered pumps and motors to the consignee direct from the manufacturers/ their authorized dealer of the pumping machinery for which the supply order/ indent has been placed by the firm. The packing slip should indicate the details of materials in the package and material of construction of pumps and motors.				
3	The shop test for the pumps and motors shall be carried out at manufactures works in the presence of representative of the department as per IS: 325-1978. The test performance certificate of the pumping machinery shall be arranged by the firm from the manufactures and get it approved from the Engineer-in-Charge before actual dispatch of the pumping machinery.				
4	The firm shall supply the recommended list of spares and quantities required for normal working of pumping machinery (2 years) from the manufactures of the aforesaid equipment at the time of quoting rates and shall quote item rates for the same also.				
5	The firm shall supply the manufactures manuscripts for the operation and maintenance of the pumping equipment.				
6	The firm shall arrange operation and maintenance training to the operating staff for the pumping machinery without extra cost for a period of 7 days i.e. during the testing period.				
7	The Characteristic curves of the pumping equipment shall be supplied with the offer other wise the tender shall be rejected.				
8	The firm shall supply layout drawing in respect of various components, such as suction pipes, valves, cable, trenches, control panel etc. from the foot valve location to the common header, which shall extend up to 5 meter from the outer wall of the pimp house towards rising main. The details of foundations required for various components shall also be supplied by the firm within 30 days of the letter of intent/ award.				
9	The installation of pumping machinery above 100 HP shall be inspected by the technical representative of the manufacturers of rank not less than that of a services Engineer, at the work site and inspection certificate shall be supplied to the Engineer-in-Charge. This inspection shall be in addition to the test report and nothing extra shall be paid on this account.				
10	All the civil work shall be constructed by the department.				
11	The wiring and installation of electric equipment shall be as per HPSEB rules and regulations & subjected to the approval of the Chief Electrical Inspector and or his authorized officer. Any defect pointed out shall be rectified by the firm without any extra cost. The wiring and installation of all electric equipment shall be done by a licensed contractor of approved class of HPSEB and test report shall be got accepted from the HPSEB authorities on their approved format (form D) for release of power connection by the firm without extra cost.				
12	The temporary electrical connection. If required during installation shall be arranged by the firm at its own cost and energy charges shall also be paid directly by the firm to the HPSEB.				
13	The offer shall be accepted only from manufactures/other authorized dealers/sub dealers who have already executed similar works.				
14	Prices of all the items shall be FOR site of work inclusive of all leads and lifts and shall be inclusive of all charges of transportation insurance, packing, taxes and duties such as sales tax excise duty and local taxes etc.				
15	The rates shall be quoted only on the format of schedule of quantities, which is attached with the tender document giving all specified data so desired therein.				
16	The rates offered for the specified makes in the schedule of quantities only shall be considered. Rates quoted for part and or non-specified makes shall lead to rejection of the tender.				
17	The firm/contractor shall visit the site and work out filed detail for supply and erection of pumping machinery as per site conditions and should quote their rates accordingly.				
18	All the equipment material shall conform to the relevant BIS specifications wherever applicable and in its absence to any accepted National/ International standards.				
19	The general specifications of work shall conform to Punjab PWD/HPPWD specifications as per direction of the Engineer-in-charge.				
20	The validity of the tender shall be not less than 120 days otherwise the tender shall be summarily rejected.				

S.No	Sub Head and Items of work	Quantity	Rate	Units	Amount.
21	All the equipments shall be guaranteed against any manufacturing defect including metallurgy and its performance for a period of 12 (twelve) months from the date of commissioning/ 15 (fifteen) months from the date of supply which ever is later. Any defect, if noticed within the stipulated period shall be rectified by the firm at its own cost within 15 days of bringing the same to its notice. The guarantee clause shall be substantiated by a guarantee bond of a Nationalized Bank for an amount equal to the cost of pumping and electric equipment (accessories included) pledged in the name of the Executive Engineer-in-charge at the time of applying for refund of security deposits. The guarantee bound shall be released after the expiry of the guarantee period.				
22	The installed pumping machinery and other allied accessories shall be tested daily for 16 hours for a period of seven days without extra cost. However the cost of electricity and water shall be borne by the department.				
23	During the guarantee period efficiency of the pumping and the electric equipment should not vary beyond the range of (+/-) 2.5% if during guarantee period, the efficiency falls beyond 2.5% to a maximum of 5%, 1% cost of the pump set for 1% fall of the efficiency shall be deducted in case of fall of efficiency beyond 5% the pump set shall be rejected and cost of the effected pump set recovered from the pledged Bank guarantee & or from the security deposit as the case may be.				
24	80% (Eighty percent) payment of the cost of pumping machinery and equipment less 10% security and other statutory recovery shall be made after receipt of complete pumping machinery i.e. pump and motor along with accessories received together at site of work in good condition. The balance 20% cost after deduction of the security and other recoveries shall be released after successful and satisfactory installation, testing of the entire equipment. Ten percent security deposit shall be released as stipulated in the agreement.				
25	90% (Ninety percent) installation charges shall be released after satisfactory installation of all the pumping and electrical equipment. Remaining 10% of installation charges shall be released after testing of the entire equipment.				
26	The work shall be executed as per HPPWD/IPH specifications and to the entire satisfaction of the Engineer-in-charge.				
27	Taxes such as GST, income tax , labour cess etc shall be deducted as per norms.				
28	The contractor shall be responsible for watch and ward of all material issued to him and in case of any theft or loss , the recovery shall be made at the double cost of store issue rates.				
29	The rates should be inclusive of carriage of materials in all leads and lifts to the site of work.				
30	Crushed stone aggregate shall be used in all concrete work.				
31	Concrete work shall be done by using vibrator and concrete mixing plant.				
32	Nothing shall be paid for sub standard/ rejected work.				
33	The GI Pipes shall be issued by the department free of cost at IPH Store Thunag				
34	GI fitting shall be provided by the contractor at their own cost.				

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Draft Notice Inviting Tender

Name of work:- Providing LWSS to PC habitation of CV Bajhal, Jhamach, Shiva, Chhodhar and Dhawas in GP Thana and Baggachanogi Tehsil Thunag Distt. Mandi (HP).				Estimated cost Rs:-		475264.00
(SH:-C/O Filter bed of 51 sqm in three units)				Earnest Money Rs:-		9510.00
				Time:-		3 Months.
Sr. No.	Sub Head & Item of Work	Quantity	Rate	Unit	Amount	
1	Excavation in foundation and trenches etc. in earth work in all kinds of soil such as pick work, jumper work, blasting soft or hard rock or by chiselling soft or hard rock where blasting is prohibited in all leads and lifts including trimming / dressing of sidesand bed stacking the excavated soil clear from the edge of excavation and returning the excavated soil after completion of work in 15cm layers when required into plinth , sides of foundation etc. consolidating each deposited layers by ramming and watering and then disposing of all surplus excavated soil complete in all respect as per the direction and to the entire satisfaction of the Engineer-in-charge.	172.43		cum	Per cum	
2	Providing and laying cement concrete 1:3:6 (1cement:34sand: 6graded stone aggregate 40 mm nominal size) and curing complete excluding the cost of form work in foundation and plinth in all leads and lifts.	22.19		cum	per cum	
3	Providing and laying cement concrete 1:11/2 :3 (1cement: 1 1/2 sand: 3graded stone aggregate 20 mm nominal size)and curing complete excluding the cost of form work and reinforcement in:-					
3.1	Foundation, footings base of columns and the like mass concrete.	27.74		Cum	Per cum	
3.2	Walls any thickness but not less than 0.1 mtr. thickness attached pillasters, buttresses plinth and string courses etc. from top of foundation level upto floor two level	27.62		cum	per cum	
4	Providing and laying cement concrete 1:2:4 (1cement:2sand : 4graded stone aggregate 20mm nominal size)and curing complete excluding cost of form work and re-inforcement for reinforced concrete work in:-					
4.1	suspended floors, roofs,landings and shelves and their supports, balconies, beams, girders, bressumers and cantilivers up to floor two level.	0.98		Cum	Per cum	

Sr. No.	Sub Head & Item of Work	Quantity		Rate	Unit	Amount
5	Providing form work with steel plates 3.15mm thick welded with angle iron 30x30x5mm so as to give a fair finish including centering shuttering strutting and propping etc. height of propping and centering below supporting floor to ceiling not exceeding 4mtrs. and removal of the same for in-situ reinforced concrete and plain concrete work in all leads and lifts.					
5.1	Vertical surface such as walls(any thickness) partitions and the like including attached pillars buttresses, plinth and string courses and the like	312.14	sqm		per sqm	
5.2	Flat surface such as soffits of suspended floors, roofs, landing and the like floor etc. upto 200mm in thickness as per direction and to the entire satisfaction of the Engineer-in-charge.	6.90	sqm		Per sqm	
6	Laying of tor steel reinforcement for RCC work including bending, binding and placing in position complete upto floor two level including the cost of binding wire complete in all leads and lifts. (Labour Rate)	3943.71	kg		per kg	
7	Providing and fixing steel fibre reinforcement concrete (SFRC) manhole cover 500mm dia medium duty with frame conforming to IS: 12539 part 1998 with latest ammendments with in all leads and lifts and to the entire satisfaction of engineer incharge.	3.00	Nos.		Each	
8	Fixing GI pipe for inlet, outlet and over flow in all leads and lifts complete in all respect					
8.1	80mm dia.	30.00	Rmt		Per rmt	
8.2	65 mm dia	24.00	Rmt		Per Rmt	
9	Providing and placing in horizontal layers filtering media duly graded screened washed and cleaned as specified by the Engineer-in-charge including all leads and lifts.					
10	Cement concrete flooring 1:2:4 (1cement:2sand: 4 graded crushed stone aggregate 20mm nominal size) laid in one layer finished with a floating coat of neat cement in all leads and lifts. (a) 40mm thick	56.47	sqm		per sqm	

Sr. No.	Sub Head & Item of Work	Quantity	Rate	Unit	Amount
11	Providing and fixing cast iron spun spigot and socket soil ventilating pipe lead cauled joints to be measured and paid for separately 100mm dia	2.00	Rmt	Per Rmt	
12	Providing and fixing CI Cowl 100mmdia complete in all respect	2.00	Nos.	Each	
13	Providing and fixing Gun Metal wheel valve with wheel of following dia meter complete in all respect in all leads and lifts.				
13.1	80mm dia.	6.00	Nos.	Each	
13.2	65mm dia.	3.00	Nos.	Each	
				Total:-	

Terms and conditions:-

- 1 The work shall be executed as per HPPWD/IPH specifications and to the entire satisfaction of the Engineer-in-charge.
- 2 The cement, steel and GI pipe shall be issued by the department from IPH store Thunag i.e. Cement @ Rs. 289/-per bag, steel and G.I. pipe free of cost.
- 3 The contractor shall be fully responsible for watch and ward of the material at site of work.
- 4 Nothing shall be paid for rejected material.
- 5 GST and labour welfare cess shall be deducted from the bill of the contractor as applicable.
- 6 GI fitting shall be provided by the contractor at their own cost.
- 7 Crushed stone aggregate shall be used in all concrete work.
- 8 The contractor shall be responsible for any accident caused during the construction of the work and the loss if any will be born by the contractor.
- 9 The rates should be inclusive of GST and carriage of all material to the site of work in all leads and lifts.

Executive Engineer
IPH Division Thunag