

* SCHEDULE OF QUANTITY *

Estimated Rs. 987581.00

Name of work :- Providing water supply scheme to PC habitation census village Bhadreina under water supply scheme Bheth Jhikli village Ghorphith under WSS Bheth Jhikli village Nanin under WSS Kandwari in Tehsil Baijnath District Kangra (HP).

Earnest money:- Rs. 19760.00

(SH)Laying and jointing of galvansed iron pipe of various dia.

Time Three months

Sr. No.	Description of items.	Qty.	Rate in		Unit	Amount
			Figures	Words		
1	Excavation in foundation trenches etc.in earth work in all kinds of soil such as pick work,jumper work,blasting in soft and hard rock and chiselling work including saturated soil slushy soil and under floor upto all depth and stacking the excavated soil not more than 3 metre clear from the edge of excavation and then returning the stacked soil in 15 centimetre (Fifteen centimetre)layer when required into plinth sides of foundation etc.consolidating each deposited layer by ramming and watering and then disposing of all surplus excavated earth as directed by the Engineer-in-charge within all leads and lifts.	3348.33			Per cubic metre	
2	Laying and jointing in trenches galvanised mild steel tubes,tube fitting (Light/Medium grade) of various dia. (Earth work in trenches to be measured and paid for separately) within all leads and lifts as per the direction of Engineer-in-charge.					
	a) 65 milimetre dia.	1690.00			Per running metre	
	b) 40 milimetre dia.	360.00			Per running metre	
	c) 32 milimetre dia.	6300.00			Per running metre	
	d) 25 milimetre dia.	390.00			Per running metre	
	e) 20 milimetre dia.	1140.00			Per running metre	
	f) 15 milimetre dia.	180.00			Per running metre	
3	Dismantling of existing pipe line of following dia. (Earth work in trenches to be measured and paid for separately) within all leads and lifts as per the direction of Engineer-in-charge.					
	a) 20 milimetre dia.	240.00			Per running metre	
	b) 32 milimetre dia.	300.00			Per running metre	
4	Relaying and jointing in trenches galvanised mild steel tubes,tube fitting (Light grade) of various dia. (Earth work in trenches to be measured and paid for separately) within all leads and lifts as per the direction of Engineer-in-charge.					
	a) 20 milimetre dia.	120.00			Per running metre	
	b) 32 milimetre dia.	150.00			Per running metre	
5	Providing and fixing galvanised iron brass full way peet valve of the following dia duly ISI marked within all leads and lifts as per the direction of Engineer-in-charge.					
	a) 65 milimetre dia.	1			Each Number	
	b) 40 milimetre dia.	1			Each Number	
	c) 32 milimetre dia.	5			Each Number	

d) 25 milimetre dia.

Number

Each

1

Number

Each

2

Number

Each

1

Number

e) 20 milimetre dia.

f) 15 milimetre dia.

Terms and conditions:-

- a) G.I.pipes will be issued free of cost to the contractor from Divisional store Differpat on proper indents.
- b) Nothing shall be paid for the rejected work/material.
- c) The work shall be completed within stipulated period.
- d) The work should be executed as per IPH specification/ as per recommendation of CPHEEO manual of water supply latest edition.
- e) The contractor shall be responsible for watch and ward of material issued to him and in case of any theft or loss. The recovery shall be made @ double cost of store issue rates.
- f) Statement of length where pipe is not buried under ground due to rocky strata shall be attached with every bill for the inspect of Engineer-in-Charge.

* SCHEDULE OF QUANTITY *

Estimated Rs. 392872.00
cost:-

Name of work:- Providing water supply scheme to PC habitation CV Bhadreina under water supply scheme Bheth Jhikli village Ghorpith under WSS Bheth Jhikli vilge Nain under WSS Kandwari in Tehsil Bajinath District Kangra(HP).

Earnest money:- Rs. 7860.00

Time Three months
:-

(SH)Construction of reinforcement cement concrete intake chamber, construction of under ground sector storage tank node no. 2 and 23 of 15000 litres capacity, construction of under ground sector storage tank node no. 51 of 20000 lites capacity.

Sr. No.	Description of items.	Qty.	Rate in		Unit	Amount.
			Figure	Words.		
1	Excavation in foundation trenches etc. in earth work in all kinds of soil such as pick work,jumper work,blasting in soft and hard rock and chiselling work including saturated soil slushy soil and under floor upto all depth and stacking the excavated soil not more than 3 metre clear from the edge of excavation and then returning the stacked soil in 15 centimetre (Fifteen centimetre)layer when required into plinth sides of foundation etc.consolidating each deposited layer by ramming and watering and then disposing of all surplus excavated earth as directed by the Engineer-in-charge within all leads and lifts.	105.00 cubic metre			Per cubic metre	
2	Providing and laying cement concrete 1:3:6 (One cement is to three sand is to six graded stone aggregate 40 milimetre nominal size) and curing complete excluding the cost of form work in foundation and plinth with in all leads and lifts as per the direction of Engineer-in-charge.	7.43 cubic metre.			Per cubic metre	
3	Providing and laying cement concrete 1:4:8 (One cement is to four sand is to eight graded stone aggregate 40 milimetre nominal size) and curing complete excluding the cost of form work in foundation and plinth with in all leads and lifts as per the direction of Engineer-in-charge.	0.384 cubic metre.			Per cubic metre	
4	Providing form work with steel plates 3.15 milimetre thick welded with angle iron in frame 30x30x5 milimetre so as to give a fair finish including centring,shuttering,strutting and propping etc.with wooden battens ballies,height of propping and centring below supporting floor two ceiling not exceeding 4 metre and removal of the same for in-situ reinforced concrete and plain concrete work in:-					
a)	Vertical surfaces such as walls(any thickness)partitions walls and the like including attached pillars,buttresses plinth string courses and the like within all leads and lifts as per the direction of Engineer-in-charge.	162.72 square metre			Per square metre	
b)	Flat surfaces such as soffits of suspended floors,roofs,landings and the like floors etc.upto 200 milimetre in thickness within all leads and lifts as per the direction of Engineer-in-charge.	25.21 square metre			Per square metre	
c)	Edges of slab and breaks in floor and walls under 20 centimetre in wide within all leads and lifts as per the direction of Engineer-in-charge.	34.58 running metre			Per running metre	
5	Providing and laying cement concrete 1:1:2:3(One cement is to one and half sand is to three graded stone aggregate 20 milimetre nominal size) and curing complete excluding the cost of form work and reinforcement for reinforced concrete work in:-					
(a)	Foundation,footings bases of column and the like mass concrete within all leads and lifts as per the direction of Engineer-in-charge.	5.77 cubic metre			Per cubic metre	
(b)	Walls (any thickness) butt not less then 0.10 metre thickness) attached pillars, buttresses, plinth and string courses etc. from top of foundation up to floor two level with in all leads and lifts as per the direction of Engineer-in-charge.	16.05 cubic metre			Per cubic metre	
6	Providing and laying cement concrete 1:2:4(One cement is to two sand is to four graded stone aggregate 20 milimetre nominal size and curing complete excluding the cost of form work and reinforcement for reinforced cement concrete in suspended floors,roofs landing shelves and their supports balconies beams,girders and other work in floor two level within all leads and lifts as per the direction of Engineer-in-charge.	3.11 cubic metre			Per cubic metre	
7	Providing and laying mild steel/tor steel reinforcement for reinforced cement concrete work including bending binding and placing in position complete upto floor two level within all leads and lifts as per the direction of Engineer-in-charge.	2692.02 Killo- gramme.			Per Killo- gramme	
8	Steel work welded in built up sections,trusses and framed work including cutting,hoisting and fixing in position and applying a priming coat of red lead paint in gratings,framed guard bars,ladders,railing,brackets and similar type of work within all leads and lifts as per the direction of Engineer-in-charge.	2.40 Quintal			Per Quantal	
9	Manufacturing, fabrication & fixing of M.S. man hole cover of 0.60x.60 m size made of M.S. Sheet 2.0 mm thick with M.S. angle 35x35x5mm thick with hinges one side and sliding door bolt for locking arrangement i/c cutting,	3 Number			Each	
10	Manufacturing, fabrication & fixing of mosquito proof ventilation 800 mm height and 300 mm dia cover with dome roofing of M.S. sheet 2 mm thick , G.I mesh along circumfrences and suported on 0.25x5 mm thick including	3 Number			Each	
11	Providing and fixing cast iron sluice valve (Scour valve) of Kirloskar make with hand wheel of following dia and flange table with flange as per IS-780 class upto 300 milimetre dia (including brass spindle) as per IS:2906 class-					
a)	65 milimetre dia.	6.00			Each	

	b) 80 milimetre dia.	number 3.00 number	Each
12	Laying and jointing in trenches galvanised mild steel tubes,tube fitting (Light grade) of various dia. (Earth work in trenches to be measured and paid for separately) within all leads and lifts as per the direction of Engineer-in-charge		
	a) 65 milimetre dia.(Inlet pipe and Outlet pipe)	36.00 running metre	Per running metre
	b) 80 milimetre dia. (Scour pipe)	18.00 running metre	Per running metre
13	Construction of chamber for sluice valve with C.I.surfaces bex 100 milimetre top dia 160 milimetre bottom diametre and 180 milimetre deep with chained lid and reinforcement cement concrete top slab 1:2:4(One cement is to two sand is to four graded stone aggregate 20 milimetre nominal size)120 milimetre thick foundation bes concrete 1:5:10(One cement is to five sand is to ten graded stone aggregate 40 milimetre nominal size)and in side cement plastering 1:3(One cement is to three sand)finished with a floating coat of neat cement including curing complete with 300 milimetre thick wall of squared rubble masonry with hard stone of approved quality in cement mortar 1:6(One cement is to six sand)as per the direction of Engineer-in-charge within all leads and lifts size 600x600x750 with 150 milimetre thick wall of reinforcement cement concrete 1:2:4.	3 Number	Each
14	1.80 metres high fencing (as per approved design) 1.80 metre reinforcement cement concrete posts 3 metre centre to centre and reinforcement cement concrete struts with 9 horizontal lines and two diagonal of galvanised steel barbed wire (IS-278-1962 type-I) weighting 9.38 kilogramme/100 metre (minimum) strained and fixing to posts by typing to 6 milimetre galvanised steel bar nails/clips with 1 binding wire (cost of reinforcement cement concrete struts and straininn bolts shall be measured and paid for separately)within all leads and lifts as per the direction of Engineer-in-charge	150.00 running metre	Per running metre
15	Finishing wall with water proofing cement paint of approved brand and manufacture and of required shade on undecorated wall surface(two coats)to give an even shade after thoroughly brushing the surface to remove all dirt and remains of loose powdered materials within all leads and lifts as per the direction of Engineer-in-charge.	151.00 square metre	Per square metre

Terms and conditions:-

- a) Cement will be issued @ Rs.303/-per bag from Divisional store Differpat.
- b) Steel will be issued @ Rs.4000/- per quintal to the contractor from Divisional store Differpat.
- c) G.I. pipe will be issued free of cost to the contractor from Divisional store Differpat.
- d) The work should be carried out as per specifications.
- e) Nothing shall be paid for the rejected work/material.
- f) Crushed stone aggregate shall be used.
- g) Concrete mixing shall be done with mechanical mixture.
- h) Vibrator shall be used at the time of concreting.
- i) The excavation shall cover all type of soil and rocks involved at site including cutting by chieselling where involved. No blasting will be permitted.
- j) The outlet pipe shall be placed 15 centimetre above the floor level to provide a space for sediments to settle. The outlet pipe shall be provided with a strainer of perforated cast iron.
- k) Royalty, sales tax,octrai etc. will be born by the contractor and proof there os shall have to be given without which no payment shall be done.
- l) The contractor shall be fully responsible for watch and ward of material at the site of work and in case of any theft or loss the recovery shall be made at the double cost of store issue rates.
- m) The rates are inclusive of carriage of all material to the site of work in all leads and lifts.
- n) The work shall be completed with in stipulated period.

* SCHEDULE OF QUANTITY *

Estimated Rs. 340977.00
cost:-

Name of work:-

Providing separate water supply scheme to schedule cast population Dhanag in Tehsil Baijnath District Kangra HP
(SH)Supply and erection of pumping machinery alongwith allied accessories for tube well and laying, jointing & testing of

Earnest money:- Rs. 6820.00

Time :- Six months

Sr. No.	Description of items.	Quantity	Rate in		Unit	Amount.
			Figure	Words.		
1	Supply of Submersible clear cold & fresh water pumping sets of reputed make such as KSB/B/s/Oswal/Calama/wrothington with bronze impeller conforming to latest relevant BIS code.The pump should be fitted with closed bronze impellers as per IS:8034-1976 latest suitable for clear cold water having greased packed bearings and shaft with wound stator on motor side and 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 induction motor of kirlosikar/NGEF/Jyoti/Crompton make conforming to BIS 9285-1979 latest with upto date ammendments. Totally dust and water proof for submersible duly isolated from the pump by intermediate casing with duple mechanical seal in oil chamber and grease packed lubricated bearings and provided with stainless steel thrust bearings plate to withstanding vertical loads with minium wear and tear. It should also be fitted with a device to take up expansion of water with the heating of motor. The pump set should include water level guards erection clamps,cable clips and depth gauge etc.and and suitable for operation on data given below :-	2 x 12.5 =25 horse power.			Per horse power	
	A) <u>SITE CONDITIONS :-</u>					
i)	Location of site		The site is located at a distance 2 KM from			
ii)	The altitude of place in which pumping set is intended to work in ordinary service if it exceeds 1000 mt.		Altitude of place is 990 metre above MSL			
iii)	Humidity		Whether generally remains humid during			
iv)	Nature of autmosphere		As normally encountered in Shivalik range .			
v)	Detail of quility of water		Clear water from Tube well			
vi)	Water free from sand or not		Free from sand			
vii)	Water corosive or not		Not Corosive			
viii)	Turbidity if any		<50 PPM			
ix)	Type of well		Tube well			
x)	Size of well					
xi)	Depth of water during HFL in the Pond.		metres.			
xii)	Maximum draw down.		55 metres. 83 metres.			
xiii)	Depth of well					
xiv)	Any other information or requirement		metres.			
	B) <u>OPERATING CONDITIONS :-</u>					
i)	Type of current		AC three / single phase.			
ii)	Operation 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 Latst With upto date ammendments.			
v)	Speed of revolution in RPM		To be quoted by the tenderer			
vi)	Direction of rotation		To be quoted by the tenderer			
vii)	No of working hours per day.		8 hours.			
viii)	The Max. Temp. of cooling air and water in the place in which the motor set is intended to work in ordinary service.		35 degree centigrade			
	C) <u>MOTOR</u>					
i)	Ref. to BIS code		BIS-9283-1979 with BIS 900-1992 up to date			
ii)	Type of enclosure of motor		SPD (As per BIS - 4691- 1985 (latest)			
iii)	Type of duty.		Contineou s.			
iv)	Mechanical output in K.W.		Suitable for driving submersible pumps, required for duties specified against pump to			
	D) <u>PUMP</u>					
a)	No of pumps required.		2 Number pumps (one will act as stand by).			
b)	Spare parts required		For two years normal maintenance as			

c)	Type of drive	Electric induction motor		
d)	Optional fittings reqd.	-----		
e)	Class of insulation-	Class B		
f)	Max. permissible temp.rise of motor reqd.is different from that given in B (viii) above.	To be specified by the tenderer		
g)	Particulars of test reqd. & where they are to be conducted	As per terms and conditions		
h)	Particulars as to whether voltage limiting device will be employed	Star delta starter Oil immersed fully automatic to be installed between bus bar and motor shunt capacitor is also proposed to be installed for increasing the service factor beyond 50Kw.		
ix)	Type of Motor	As per BIS 9283-1979 or latest		
x)	Details of shaft extension required	To work with the pump offered.		
xi)	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.		
xii)	Nature of load & any information regarding the driven machine which has a bearing up on the torque required during the accelerated period, the kinetic energy of the moving parts to be accelerated and No. of starts during a specified period.	To work the Pump offered.		
xiii)	Where possible fault capacity of the system to which the motor is connected	The motor should be able to with stand initial current for 2.5 times the rated currents		
E)	<u>PUMP OPERATING CONDITIONS :-</u>			
i)	Capacity	3.50 LPS for each pump		
ii)	Total head in metres	124.58 Meters		
	If total head is not known then following details be provided			
a)	Static Head	122.84 Metres		
b)	Minimum depth of water	~~		
c)	Variation in water level	~ Metres		
d)	Ground level to Maximum water level	---		
e)	Ground level to delivery points	~~ Metres		
f)	Pressure in the suction tank	~ Kg/cm2		
g)	Pressure in the delivery tank	~ Kg/cm2		
iii)	Length of Rising main	690 Metre including column assembly		
iv)	Dia of Rising main	80 mm dia G.I.pipe		
v)	Drive arrangement	<50 PPM		
vi)	Drive type	Electric driven.		
vi)	NPSH reqd.	To be quoted by the tenderer		
vii)	Limites of total head in which the pump is required to operate.	(-) 15% to (+) 10% of total head.		
viii)	Suction / delivery size of pump	To be specified by the tenderer.		
ix)	Efficiency of pump at	To be specified by the tenderer.		
x)	Discharge level of highest point.	1073.30 metre		
a)	Duty Head.			
b)	(+) 10% Head			
c)	(-) 25% Head.			
x)	Material of construction	To be specified by the tenderer (Manufacturers certificate to be appended.)		
2	Supply of suitable Oil immersed star delta starter/ direct on line/ ATS/ stator rotor starter of standard make such as MEI /Jyoti/Havels/Siemens confirming to BIS-8544-1979 latest with up to date amendments for squirrel cage/slipring motor (make to be specified by the tenderers) mounted on pannel board with magnetic type over load released and deshpot, time log, under voltage release with initial oil filling		2 Number	Each
3	NOTE :-Star delta starter upto 37.5KW & ATS for 37.5Kw to 50Kw.Staror rotor starter with slipring motor beyond 50Kw. Providing M.S sheet 16 SWG steel fabricated floor mounted closed almiraH type switch board including angle iron post of suitable height & size ISA 40 X40 X6 mm, duly painted comprising and capable of mounting the following accessories with all internal electric connections. The design of panel board shall be subject to approval of the Engineer in Charge.		2 Number	Each

	drawing or panel board shall be subject to approval of the Engineer-in-Charge.		
a)	Ammeter AC Supply, of 100 mm dia circular dial Auto electric of AE/ IMP/Havells make of suitable range for above motor with selector switches conforming to BIS 1248-1983 latest with upto date amendments.	2 Number	Each
b)	Voltmeter AC supply, 100 mm circular dial auto electric AE / IMP/ Havells make of suitable range for above motor with selector switch conforming to BIS 4064-1978 latest with upto date amendments.	1 Number	Each
c)	Providing ICTP main switch of ___ ampere with HRC fuses of Kilburn/L&T/Siemons/Standard/Havells make and having capacity 30% extra of the operational rating as per BIS:4064-1978 with upto date amendments, immediately after the power meter of the HPSEB.	2 Number	Each
d)	Bushbar chamber having 3 copper bars of suitable rating for full length equal to the width of the board for three live Phases and suitable for induced current, one copper bar of half rating of full length for neutral phase as per BIS 8084-1976 and BIS:11353-1985 read with BIS: 5578-1985	1 Number	Each
e)	Miniature circuit breaker/Oil circuit breaker of ___ ampere of Kilburn/L&T/MEI/GEC make and of suitable capacity on incoming feeder for motors offered by the tenderer conforming to BIS 2516-1985 latest with upto date amendments with neutral linked under voltage release.	1 Number	Each
f)	Three phases indicator lamps complete with toggle switches for individual motors conforming to BIS 3452 part I&II latest with up to date amendments.	2 set	Each
g)	Earth leakage circuit breaker of recommended make (Kilburn/L&T/MEI/GEC) as per IS:2516-1977 with upto date amendments and of suitable range with 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 tape CTS. It should also be fitted with earth fault for tripping of breaker on occurrence of earth fault on off breaker lead side.	1 Number	Each
h)	Providing Hour run meter of reputed make of four digit capacity conforming to BIS - 722 (latest edition). recommendations.	2 Number	Each
i)	Suitable three phase voltage Monitor relay with all protections and usual indicators with electrical siren against single phasing low voltage, high voltage & over loading and phase voltage difference as per IS:3842 (latest edition).	1 Number	Each
j)	Change over switch of reputed make & suitable capacity.	1 Number	Each
k)	Single phase preventor of reputed make & suitable capacity.	1 Number	Each
4 (a)	Supply of Kirloskar/Kilburn/ IVC/Fouress/Gled/BHEL/Leader make of suitable size cast iron double flanged sluice valve having size of 65 mm dia Class PN-1.6 equal to delivery of pump and capable of withstanding nominal seat pressure of 16kg/cm2 as per BIS-780-1984 (Latest addition).	2 Number	Each
	NOTE:- The cast iron Sluice valve shall conform to BIS-780-1984 for 50 mm to 300 mm dia and BIS:2906-1984 for 350 mm to 1200 mm dia (latest edition). However if seat pressure exceeds the limits prescribed in above mentioned BIS then it shall be of cast steel conforming to class ASA-150 for seat pressure up to 21 Kg./Cm2 & of class ASA-300 for seat pressure 52 Kg./Cm2 as per BS-1414 (API-600).		
b)	Supply of Kirloskar/Kilburn/ IVC/Fouress/Gled/BHEL/Leader/ of suitable size cast iron double flanged swing check type reflux valve having bye pass arrangement and size of 65 mm dia class PN-1.6 equal to delivery of pump for withstanding nominal seat pressure of 16 kg/cm2 As per BIS - 5312-1984 (part -1) latest with up to date amendments.	1 Number	Each
	NOTE:- The reflux valve shall conform to BIS-5312-1984 (part-I) latest with up to date amendments. However if seat pressure exceeds the limits prescribed in BIS 5312 then the reflux valves shall be of cast steel conforming to class ASA-150 for seat pressure up to 21 Kg./Cm2 & of class ASA-300 for seat pressure 52 Kg./Cm2 as per BS-1414 (API-600).		
c)	Supply of Kirloskar/Kilburn/ IVC/Fouress/Gled/BHEL/Leader/ of suitable size cast iron double flanged swing check type reflux valve 80 mm dia having bye pass arrangement class PN-1.6 equal to rising main for withstanding nominal seat pressure of 16 kg/cm2 As per BIS - 1414 API-600 latest with up to date amendments.	1 Number	Each
	NOTE:- The reflux valve shall conform to BIS-5312-1984 (part-I) latest with up to date amendments. However if seat pressure exceeds the limits prescribed in BIS 5312 then the reflux valves shall be of cast steel conforming to class ASA-150 for seat pressure up to 21 Kg./Cm2 & of class ASA-300 for seat pressure 52 Kg./Cm2 as per BS-1414 (API-600).		
5 (a)	Providing & laying suitable size copper PVC insulated armoured power 3-1/2 core cable conforming to BIS: 1554(P-1)1988 or latest with upto date amendments of Siemens Gloster /ICC 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, pipes, solder, nuts & 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 acceptancy by HPSEB authorities it shall have to be replaced by the tenderer free of cost		
	a. On supply side of 3:1/2 core (from HPSEB meter to switch & starter) = of size 4mm²	10 metre	Per metre
(b)	Providing & laying jointless flat water proof cable as per BIS 694-1990 (latest with upto date amendments) suitable for the pump set offered from OCB to motor, motor to starter including all other electrical 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.		
	a. 3.00 core 4mm² for switch board to motor.	75 metre	Per metre
6	Supply & erection of floor / wall mounted power factor Shunt Capacitor conforming to BIS 2834-1986 latest with up to date amendments BHEL,GEC,Machneil/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 and also including LT/ LK/ Kilburn make ICTP switches conforming to BIS 4064-1978 or latest with HRC fuses (Details to be specified by the tenderer).	2 x 4 KVAR	Per KVAR
7	Supply of standard make 100 mm dia circular dial pressure gauge of Fiebig/Bourden/PREGA/Precision make complete with all accessories such as stop cock copper tubing etc. conforming to Bis 3624-1987 latest with upto date amendments.	2 Number	Each

8	Providing and laying column assembly 65 mm with flange table-17 GI/MSERW pipes of suitable size (layout to be approved by the Engineer-In-charge) for suction delivery and common header considering site requirements and NPSH required/available. The pipe sizes for suction and delivery shall as per the requirement of offered pump and common header shall be equal to dia of rising main including tapers. flanges, bends, rubber gaskets, 3 mm thickness as per IS:2712-1979 and required number of nuts and bolts upto 5 metres from the outer wall of the pump house as per layout approved by the Engineer-In-charge as per IS:1364-1983 . The pipes material shall conform to relevant BIS codes and capable of with standing field test pressure equal to 1.5 times the operating pressure. The complete arrangement shall comprise of:-	43 Rmt	Per Rmt
9	Supply of antivibration pads under the pumps and motors of suitable size for the above pumping machinery as per IS:6337-1971.	2 Number	Each
10	Errction of all equipments from S.No. 1 to 4,6 & 8 including cost of tees, bends tapers & any other fittings required as per site conditions 7 as per direction of the Engineer-in-charge.	Job	Each
11	Excavation in foundation trenches etc.(for pipes & pits up to all depths) in all kind of soil such as pick work, jumper work,blasting and chiselling soft or hard rock where blasing 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 MSERW pipes in trenches in 15 centimeters 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 timbering and dressing where ever required restoration of un-metalled/ metelled/ paved surface to its original condition including cost of diversion for traffic night signals, fixing caution boards, crossing over trenches for access to Laying, jointing and testing in trenches (to level or grade) of pipes jointed with every joint flanged conforming to IS 1239-1990 (Part-I) with lates upto date amendments of grade and wall thickness as specified below, suitable to withstand required bydraulic test pressure in randum length 4mm-6mm with plain ends and jointed with MS flanges conforming to IS 6392-1971 (latest upto date amendments) and welding of flanges as per IS 816-1969 with electrodes as per IS 814-1991 including required number and size of MS nuts and bolts as per IS 1369-1967 and compressed asbestos fibre jointing gaskets sheet not less than 3.00 mm in thickness as per IS 2712-1998. The welding of flanges to be done on both faces in two layers to make the joints leak proof and to entire satisfaction of the Engineer-in-Charge. The laying of pipes conform to IS 5822-1994 and as per CPHEEO	248.40 cubic metre	Per cubic metre
12	From To Length Class of pipe Wall Thickness Flange Table Dia of pipe	208.00 running metre	Per runningm etre
	42 250 208 GMS(M) 4.80 17 80 mm dia	482.00 running metre	Per runningm etre
	250 732 482 GMS(M) 4.80 5 80 mm dia		
13	Manufacturing and fixing of 80 mm nominal dia bends of various required and old degree as per site requirement of parental GMS pipe of the following thickness with required test pressure at of bends and thrust. The bends shall be as per IS spcification. The fabrication process with be involve cutting forming, shaping etc. The flanges should conform to IS:6392-1971 with required number and size of nuts and bolts as per relevant IS including entire carriage of material up to all leads and lifts.		
	From To Length Class of pipe Wall Thickness Flange Table Dia of bends	3.00 number	Each
	42 250 208 GMS(M) 4.80 17 80 mm dia	7.00 number	Each
	250 732 482 GMS(M) 4.80 5 80 mm dia		

TERMS AND CONDITIONS (Puming Machinery)

- 1 The firm shall forward a copy of supply order/indent placed by it for the supply of pumps and mortors on the manufactures/ authorized dealers of the pumps and motors to the consignee within 30 days after the issue of the letter of intent/ award by the Engineer-in-Charge. The copy of the supply order/indent to the consignee should also accompany the dealership certificate of the dealer for the pumping machinery in case the pumps and mortors are arranged from the authorized dealers.
- 2 The firm shall arrange dispatch of offered pumps and motors to the consignee direct from the manufacturers/ their authorized dealers 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 the package and material of construction of pumps and motors.
- 3 The shop test for 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 fro 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 the pumping machinery (Two years) from the manufactures of the aforesaid equipment at the time of quoting rates and shall quote items rate for the same also.
- 5 The firm shall supply the manufacturer's manual 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 seven days i.e. during the testing period.
- 7 The characteristics curves of the pumping equipment shall be supplied with the offer, otherwise, 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 of the common header which shall extend up to 5 meters from the outer walls of the pump 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 avove 100 HP shall be inspected by the technical representative of the manufacturers, of rank not less than that of a service 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 works shall be constructed by the department.
- 11 The wiring and installation of electric equipment shall be as per HPSEB rules and regulations and 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 electrical equipment shall be done by a licensed contractor of approved class of HPSEB authorities on their approved format (Form D) for release of power connection by the firm without extra cost.

- 12 The temporary electric 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 Prices of all items shall be F.O.R. site of work inclusive of all leads and shall be inclusive of all charges of transportation, insurance, packing, taxes and duties such as sales tax, excise duty and local taxes etc.
- 14 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.
- 15 The rates offered for the specified marks in the schedule of quantities only shall be considered. Rates quoted for the part or non specified marks shall lead to rejection of the tender.
- 16 The location of site can be ascertained by the concerned Assistant Engineer & the rates quoted by the firm shall be inclusive of all mechanical and manual transport within all leads and lifts to the site of work.
- 17 All the equipment/material shall conform to the relevant BIS specifications wherever applicable and in its absence to any accepted National/International standards.
- 18 The general specifications of the work shall conform to HP. PWD/Punjab PWD specifications as per direction to the Engineer-in-charge.
- 19 The validity of the tender shall not be less than 120 days, otherwise, the tender shall be summarily rejected.
- 20 All the equipment shall be guaranteed against any manufacturing defect including metallurgy and its performance for a period 12 (twelve) months from the date of commissioning/ 15 (fifteen) months from the date of supply whichever ever is earlier. Any defect if noticed within the stipulated period shall be rectified by the firm at its own cost with 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 electrical 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 bond shall be released after the expiry of the guarantee period.
- 21 The installed pumping machinery and other allied accessories shall be tested daily for stipulated pumping hours in the N.I.T. for a period of seven days without extra cost. However, the cost of electricity and water shall be borne by the department. 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 and or from the security deposit as the case may be.
- 22 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 motors 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.
- 23 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.
- 24 In absence of performance curve, no offer will be entertained.
- 25 The firm agreed to complete the work within 6 months.
- 26 The firm agreed to supply a copy of order placed on the manufacturer to the divisional officer.
- 27 The Executive Engineer will satisfy himself regarding model/make and characteristics of pump set before releasing any payment. The firm shall submit a copy of test report along with supplies and Executive Engineer on scrutiny of test report only, shall
- 28 The pump set and all accessories shall carry a warranty of 12 months from date of successful commissioning.
- 29 The item of earthing includes all civil works required.
- 30 The firm agreed to pay all taxes applicable including GST (Goods Service Tax) and nothing shall be claimed extra.
The pumping machinery shall be maintained by the firm for 5 years from date of commissioning and rates shall be quoted separately for AMC. payment schedule/years should also be given in his offer.

Rising main

- 1 Conditional and telegraphic tenders are liable to be rejected.
- 2 All pages of the tender form must be signed before submitting the tender failing which the tender is liable to be treated as invalid.
- 3 The work will be executed as per HPPWD/HPIPH specifications, relevant IS codes and CPHEEO manual to the satisfaction of Engineer-in-charge.
- 4 G.I. pipes will be issued free of cost to the contractor from Divisional store Differpat.
- 5 The length of G.I. bends should not be less than 0.90 metre.
- 6 The work should be carried out as per specifications.
- 7 Nothing shall be paid for the rejected work/material.
- 8 The work shall be completed within stipulated period.
- 9 Material should be ISI marked.
- 10 The work should be executed as per recommendation of CPHEEO manual as water supply
- 11 Statement of length where pipe is not buried under ground due to rocky strata shall be attached with every bill for the inspect of Engineer-in-Charge.
- 12 10% security, 2% Income Tax and 2% Sale tax will be deducted from each running bill of the contractor.
- 13 All the necessary documents such as Income tax, clearance certificate, Sale tax No. and renewal of the registration should be shown to the undersigned at the time of purchase of schedule of quantity.
- 14 Contractor will be held responsible for watch and ward of his material during execution.
- 15 All the joints should be leak proof and final bill may not be released till the successful testing & running of the line.
- 16 The quantity can be increased or decreased as per site conditions and contractor will have to execute the work at his quoted rate.
- 17 Only those are allowed to purchase the tender documents who have best experience in for laying jointing of rising main and if required, undersigned can ask.
- 18 All machineries equipments required for laying of pipe line will be arranged by contractor/firm other structure during the execution of work by the firm will be restored to original conditions.
- 19 L-section/plan of the pipe line can be seen in the divisional officer at Palampur on any working day.
- 20 The firm shall be make all the arrangement for working night hour (if required) at its own cost.
- 21 Any damaged caused to metalled/macadam road, street/path and to other structure during the execution of work by the firm will be restored to original condition.
- 22 The rate of all items are inclusive of the carriage of all the material within all leads and lifts to the site of work.
- 23 The contractor shall be fully responsible for watch and ward of material at the site of work and in case of any theft or loss the recovery shall be made at the double cost of store issue rates.
- 24 Royalty, sales tax, octroi etc. will be born by the contractor and proof there of shall have to be given without which no payment shall be done.

- 25 Crushed stone aggregate shall be used at site of work.
26 The contractor shall use vibrator/concretermixer without any failure and in case of any inspection if it found that concreting is being done without vibrator the awarded rates in that particular item of work shall be reduced by 10%.
27 The contractor agree to provide MSRW pipe 300mm dia from the approved ISI manufacture.
28 The firm agreed to pay all taxes applicable including GST (Goods Service Tax) and nothing shall be claimed extra.
29 Cement will be issued @ Rs.275/-per bag from Divisional store Differpat.
30 Steel will be issued @ Rs.4000/- per quintal to the contractor from Divisional store Differpat.
31 Required No. of test cubes of cement concrete 1:5.5:3 from site shall be collected for random testing of their compressive strength at 28 days as per provision of BIS 456-2000 which shall be get tested from the lab of HPPWD of NIT Hamirpur.

TECHNICAL SPECIFICATIONS:-

- 1 All pipe lines shall be tested in suitable sanctions after laying. The pressure shall not be less than 1-1/2 times the working pressure at the lowest point or the static head pressure which ever is higher. The procedure for test shall be in accordance with the clause 10.2 of IS 5822.
- 2 **BENDS**
- a) Bends for pipes shall be fabricated from the parent tubes to be used in respective sections bends shall have three or more gussets with a bending radius of 5 times pipe dia to keep the frictional losses to a minimum & should be factory made.
- b) All cut ends of the pipes shall be bevelled properly prior to welding operation.
- 3 **WELDING**
- a) The electrodes to be used for welding shall conform to IS 814 and shall be overcracked type of Advani Overlaken make.
b) Seal welding shall be provided to all flanges with atleast 3 passes, using 3 mm electrodes.
- 4 **GASKETS**
- a) Compressed asbestos fibre (CAF) 3 mm thick shall conform to 2712, Hindustan Farodrom make and ISI marked or synthetic rubber, gaskets conform to BIS 838-1979 both latest with upto date amendments, suitable for working pressure of 25 Kg/Cm².

* SCHEDULE OF QUANTITY *

Estimated Rs. 122263.00
cost:-

Name of work:- Annual repair and maintenance of water supply scheme Ghar Bodhal in Tehsil Palampur District Kangra(HP).

Earnest Rs. 2500.00
money:-

(SH)Construction of Chowkidar quarter.

Time Three months
:-

Sr. No.	Description of items.	Qty.	Rate in		Unit	Amount.
			Figure	Words.		
1	Excavation in foundation trenches etc. in earth work in all kinds of soil such as pick work,jumper work,blasting in soft and hard rock and chiselling work including saturated soil slushy soil and under floor upto all depth and stacking the excavated soil not more than 3 metre clear from the edge of excavation and then returning the stacked soil in 15 centimetre (Fifteen centimetre)layer when required into plinth sides of foundation etc.consolidating each deposited layer by ramming and watering and then disposing of all surplus excavated earth as directed by the Engineer-in-charge within all leads and lifts.	10.69 cubic metre			Per cubic metre	
2	Providing and laying cement concrete 1:6:12 (One cement is to six sand is to twelve graded stone aggregate 40 milimetre nominal size) and curing complete excluding the cost of form work in foundation and plinth with in all leads and lifts as per the direction of Engineer-in-charge.	1.18 cubic metre.			Per cubic metre	
3	Random rubble masonry/polygonal rubble masonry (Uncoursed/brought to courses with hard stone of approved quality in foundation and plinth including levelling up with cement concrete 1:6:12)One cement is to six sand is to twelve graded stone aggregate 20 milimetre nominal size) in cement mortar 1:6 (One cement is to six sand) in breast wall/retaining walls within all leads and lifts as per the direction of Engineer-in-charge.	4.30 cubic metre			Per cubic metre	
4	Brick work using common burnt clay building brick in foundation and plinth level upto floor two level in cement mortar 1:6 (One cement is to six sand) second class bricks with in all leads and lifts as per the direction of Engineer-in-charge.	7.08 square metre			Per square metre	
5	Providing and fixing angle iron door, window, clearstory window frame manufacture from steel iron section of 40x40x6 milimetre thickness including hinges jamb lock jamb, beed and if required angle thrashold of mild, steel angle 50x25mm welded or rightly fixed by mechanical means, lugs with split end tails to each jamb including steel but things 2.5 mm thick with provision for locking arrangement and shock as specified and applying a coat of approved steel primer after pretreatment of the surfaces as directed by the Engineer-in-charge within all leads and lifts.	42.90 running metre			Per running metre	
6	Providing and laying cement concrete 1:2:4 (One cement is to two sand is to four graded stone aggregate 20 milimetre nominal size) and curing complete excluding the cost of form work and reinforcement for reinforced cement concrete in suspended floors,roofs landing shelves and their supports balconies beams,girders and cantilevers upto floor two level within all leads and lifts as per the direction of Engineer in charge.	1.80 cubic metre			Per cubic metre	
7	Providing form work with steel plates 3.15 milimetre thick welded with angle iron in frame 30x30x5 milimetre so as to give a fair finish including centring,shuttering,strutting and propping etc. with wooden battens ballies,height of propping and centring below supporting floor two ceiling not exceeding 4 metre and removal of the same for in-situ reinforced concrete and plain concrete work in:-					
a)	Edges of slab and breaks in floor and walls under 20 centimetre in wide within all leads and lifts as per the direction of Engieer-in-charge.	25.00 running metre			Per running metre	
b)	Flat surfaces such as soffits of suspended floors roofs landing and the like floor etc.upto 200 milimetre in thickness within all leads and lifts as per the direction of Engineer-in-charge.	17.94 square metre			Per square metre	
8	Boulder filling dry hand packed tightly under floor including carriage of material within all leads and lifts as per the direction of Engineer-in-charge.	1.29 cubic metre			Per cubic metre	
9	40 milimetre(Forty milimetre)thick cement concrete flooring 1:2:4(One cement is to two sand is to four graded stone aggregate 20 milimetre nominal size) laid in one layer and finished with a floating coat of neat cement within all leads and lifts as per the direction of Engineer-in-charge.	9.24 square metre			Per square metre	
10	15 milimetre(fifteen milimetre) thick cement plaster in single coat on rough side of brick/stone masonry for interior plastering upto floor two level including arrises internal rounded angles chamfers and/or rounded angles not exceeding 80 milimetre in girth and finished even and smooth in cement mortar 1:4 (One cement is to four sand) within all leads and lifts as per the direction of Engineer in charge.	73.05 square metre			Per square metre	
11	6 milimetre (Six milimetre) thick cement plaster to ceiling in cement mortar 1:3 (One cement is to three sand) within all leads and lifts as per the direction of Engineer-in-charge.	9.24 square metre			Per square metre	
12	Providing and laying mild steel/tor steel reinforcement for reinforced cement concrete work including bending binding and placing in position complete upto floor two level within all leads and lifts as per the direction of Engineer-in-charge.	180.00 Killo- gramme.			Per Killo- gramme	
13	Providing and fixing mild steel grills of required pattern in wooden frames of windows etc. mild steel flats square	126.00			Per	

or rounded bars with required bolts and nuts or by screws plain grill within all leads and lifts as per the direction of Engineer-in-charge. (Plain grill).	Killo-gramme	Killo gramme
14 Providing and fixing 40 milimetre thick panelled, glazed or pannelled and glazed shutters for doors, window and clearstory window including bright finished/black enamelled iron but hinges with necessary screws in 1st class deodar wood with in all leads and lifts as per the direction of Engineer in charge.	11.26 square metre.	Per square metre
15 White washing with lime on undecorated wall surfaces two coats to give and even shade including thoroughly/brooming the surface to remove all dirt dust mortar dirt and other foreign matter within all leads and lifts as per the direction of Engineer-in-charge.	9.24 square metre	Per square metre
16 Distemping two coats with oil bound washable distemper of approved brand and manufacture and of required shade on undecorated wall surfaces to give an even shade over and including a priming coat with distemper primer of approved brand and manufacture after thoroughly brushing the surface free from mortar dropping and other foreign matter and also including preparing the surface even and sand papered smooth with in all leads and lifts as per the direction of Engineer-in-charge	36.00 square metre	Per square metre
17 Finishing wall with water proofing cement paint of approved brand and manufacture and of required shade on undecorated wall surface (two coats) to give an even shade after thoroughly brushing the surface to remove all dirt and remains of loose powdered materials within all leads and lifts as per the direction of Engineer-in-charge.	56.83 square metre	Per square metre
18 Applying priming coat over new wood and wood based surfaces after and including preparing then surface by thoroughly cleaning oil grease,dirt and other foreign matter,sand papering and knotting with ready mixed paint brushing wood primer pink with in all leads and lifts as per the direction of Engineer-in charge.	11.26 square metre	Per square metre.
19 Painting two coats (excluding priming coat) on new wood and wood based surfaces with enamel paint to give an even shade including cleaning the surface of all dirt dust and other foreign matter sand papering and stopping with enamel paint other than white with in all leads and lifts as per the direction of Engineer in charge	11.26 square metre	Per square metre.
20 Providing and fixing anodized aluminium sliding door bolts with nuts and screwed complete with in all leads and lifts as per direction of Engineer in charge. a) 250x16 milimetre.	1 Number	Each
21 Providing and fixing 40 x 3 milimetre iron hold fast for door and window with in all leads and lifts as per the direction of Engineer-in-charge.	12.00 Number	Each
22 Providing and fixing aluminium tower bolts (barrel type bolts) with screws etc. complete with in all leads and lifts as per the direction of Engineer in charge. a) 150x10 milimetre.	14 Number	Each
23 Providing and fixing aluminium handles anodized to required colour of shade with necessary acrews etc. complete withy in all leads and lifts as per the direction of Engineer in charge. a) 100 milimetre.	8 Number	Each

Terms and conditions:-

- a) Cement will be issued @ Rs.275/-per bag from Divisional store Differpat.
- b) Crushed stone aggregate shall be used.
- c) Steel will be issued @ Rs.4000/-per quintal to the contractor from Divisional store Differpat.
- d) The work should be carried out as per specifications.
- e) Nothing shall be paid for the rejected work/material.
- f) Concrete mixing shall be done with mechanical mixture.
- g) Vibrator shall be used at the time of concreting.
- h) The work shall be completed with in stipulated period.