

SCHEDULE OF QUANTITY						
Replacement of old pumping machinery of LIS Sohal in G.P. Nehra Sub- tehsil Dhami Distt. Shimla(SH:- Supplying & Errection of Centrifugal pumping machinery).						Estimated Amount Rs. 360000/-
						Earnest Money Rs :- 7200/-
						Time Limit:-One Months
S.N	Description of items.	Quantity.	Unit	Rates.		Amount.
				In fig.	In Words.	
1	Providing horizontal spindle horizontal/radial split casing/end section (back pull out arragement) single/double/multistages centrifugal pump or combination of pumps, in series/parallel of recommended make such as Mather and Platt/KSB//Becon weir/Kirloskar/ BE/Jyoti WASP/ASPEE as per BIS-1520-1980 with upto date ammendments, read with IS -9137-1978 or latest edition suitable for lifting Clear water for under mentioned characterstics with bronze impellers/priming funnels casing ring and shaft sleeves of bronze, shaft of steel grade- with cast iron casing coupled directly through a flexible coupling on a common C.I/Cast steel base plate(base plate to be from the manufacturers of the pumping unit only) to Slip/Ring/ Squarrel cage screen protected drip proof induction motor of standard make such as Kirloksar/Crompton/Bhel/ NGEF/GEC/SIEMEN/ JAYOTI/ABB suitable for operation on 415(+/-)5% volts, 50 cycles/second, 3 phase AC electric supply. The power of electric motor should be atleast 10% in excess of the maximum power required by the pump in the opeation range of (+)10% and(-) 25 % of the duty point head. The motor should be as per IS: 325-1978 with upto date ammendments read with IS 900-1972. It should include cost of bearing nuts,bolts and pointing etc. and should meet the following requirements:- Scheme :-LIS Sohal <b>Discharge:- 9 LPS</b> (a) LWL in sump well(h) : - Meters. (d) Suction lift :- 3 Meters. (e) Residual head:- 03 Meters. (f) Static head:- 125 Meters. (iii) <b>Rising main</b> (a) Length. 600 (b) Dia :- 200 mm (iv) <b>Pumping hours.</b> 20 hours. (v) <b>Altitude of Installation above MSL - Meters.</b> (vi) <b>Characteristics of water</b> (a) Temperature oC (b) Abient Temperature oC © Turbidity <b>Clear water</b> JTU	1	set			
		1	Each.			

	(d) Alkalinity	Mg/CA CO3				
	(e) Size of the solids.	Mm.				
	(f) Other.					
2	Providing ICTP Main switch of Kilburn/L&T/Siemens/Crompton/Standard/Havells make and having Capacity 30% extra of the Operational rating as per IS:4064-1978 with upto date ammendments immediately after the power meter of HPSEB.		1No.	Each		
3	Providing MS .sheet,steel fabricated floor mounted closed(Almirah type) switch board including angle iron post of suitable height and size ISA 40x40x6mm,duly painted, with steel sheet of 16 gauge comprising, capable of mounting the following accessories with all internal connections:		1No.	Each.		
(a)(i)	A.C.B./Oil circuit breaker of Kilburn/L&T/MEI/GEC make & of suitable capacity on incoming feeder with or without initial oil filling as the case may be with neutral linked under voltage releases as per IS: 2516-1985 with upto date ammendments with.		1No.	Each		
(ii)	Earth leakage circuit breaker of recommended make (Kilburn/L&T/MEI/GEC) as per 2516-1977 with upto date ammendment 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 tape etc. It should also be fitted with earth fault for tripping of breaker on occurrence of earth fault on off breaker load side end.		1No.	Each		
(iii)	The voltage monitor relay three phase with all protection and usual indicator and electric siren against single phasing low voltage,high voltage reverse phasing,over loading and phase voltage difference as per IS:3842(latest edition).		1No.	Each		
(b)	100mm diameter circular dia A.C. Supply voltmeter of recommended make AE/IMP/ Havells of suitable range with selector switches as per IS:4064-1978 with upto date ammendments.		1No.	Each		
.©.	Power factor meter of standard make as per relevant IS code with upto date ammendments of suitable rating.		1No.	Each		
(d)	Frequency meter of standard make as per relevant IS code with upto date ammendments of suitable rating.		1No.	Each		
(e)	Bus bar chamber having three 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 the rating of full length for neutral phase as per IS:8084-1976 and IS:11353-1985 read with BIS 5578-1985 with upto date ammendments		1set	Set		
(f)	ICTP switches with HRC fuses of L&T/Crompton/Kilburn/Siemens/standard/Havells make and of suitable capacity as per IS 4064-1978 with upto date ammendments.		1 Set.	Set.		
(f)(l)	Three phase Indicator lamps complete with toggle switches for		1set	Set.		

	individual motors as per IS 3452(P-I&II) with upto date ammendments.				
(g)	100mm dia circular dial AC supply Ammeter of AE/IMP/Havells make of suitable range with selector switches and CTS operated as per IS:1248(P-II) 1983 with upto date ammendments...	1No.	Each		
(h)	Capacitor of Mechneil/Bhel/GEC/ L&T/ make as per IS:2834-1986 with upto date ammendments to raise the power factor at site to 0.95 for direct connections to induction motor individually of required KVA rating according to HP offered including cables chamber to capacitor and also including ICTP switches of appropriate range as per IS: 4064-1978 with upto date ammendments.	1No.	Each		
(l)	Providing suitable Oil immersed star delta/direct on line /auto -tran former/starter rotor starter of MEI/Kilburn/Jyoti/L&T/Siemens make as per IS 8544-1979 with upto date ammendments for squirrel cage/slip ring motor mounted on pannel board with magnetic type overload release and dashpot, time lag,under voltage release with or without initial oil filling as the case may be with single phase preventor as per IS 1248(P-V)- 1983 with upto date ammendments.	1No.	Each		
(j)	Providing Hour run meter of recommended make of suitable capacity as per IS:722(Latest edition).	1No.	Each		
4	Prov. Antivibration pads under the pumps and motors of suitable size for the above pumping machinery as per IS; 6337-1971	1No.	Each.		
5	Prov. Cast iron flanged/screw type foot valves with strainer as per IS: 4098-1986 with upto date ammendments of Kirloskar/ Mechneil/Kilburn/Leader/make 200 mm dia.	1No.	Each		
6	Providing double flanged Cast Iron sluice valve of leader / Bhel/ Kirloskar/Kilburn/GLED/Fouress/ make and of 200 mm dia. for the delievery line of pump and capable of with standing normal seat pressure as per IS-780-1984 with upto date ammendments	1No.	Each		
7	Providing double flanged Cast Iron sluice valve of leader / Bhel/ Kirloskar/Kilburn/GLED/Fouress/ make and of 200 mm dia. for the delievery line of pump and capable of with standing normal seat pressure as per BS-1414 with upto date ammendments	1No	Each		
8	Providing double flanged(Swing type) Cast steel Reflux valve of Leader/Bhel/Kirloskar/Kilburn/GLED/Fouress make and of...200 mm dia.. mm dia having bye pass arrangement on the delivery line of pump and capable of with standing normal seat pressure as per BS:1868 (P.I) with upto date ammendments	1No.	Each		
9	Providing double flanged Cast steel Reflux valve of Leader/Bhel/Kirloskar/Kilburn/GLED/Fouress make and of 200 mm dia. having bye pass arrangement for Rising Main and capable of with standing normal seat pressure as per BS:1868 (P.I) with upto date ammendments.	1No.	Each.		

10	Providing 50mm dia circular dia pressure gauge of Fiebing/Bourden Prega/precision make complete with all accessories such as stop cock, copper tubing etc. as per IS 3624-1987 with upto date ammendments.	1No.	Each			
11	Providing 100 mm dia circular dia vaccume gauge of Fiebing/ Bourden/Prega/ Precision make complete with all accessories such as stop cock,copper tubing etc. as per IS 3624-1987 with upto date ammendments	1No.	Each			
12	Prov.discharge meter standard make to be tiked on the rising main near the storage tank as per the directions of the Engineer-in-charge as per IS-2373-1981 with upto date ammendments.	1No.	Each.			
13	Installation of all the items appearing at Serial No. 1 to 12...as per the systematic	1 Job.	Job.			
14	Providing and fixing double flanged MS/GI piping work layout to be approved by the Engineer-in-Charge for suction and delivery pipes suitable to pump(s) offered and common header as per the the rising main respectively complete with all specials such as bends, tees reducers/increasers with companion flanges matching with the relevant specifications of the accessores as indicated in the drawing No 2 including rubber/asbestos gasket of minimum 3mm thickness as per IS 2712-1979 and required number of nuts and volts as per IS 1364-1983. The pipes shall be as per relevant IS code and to withstand 1.5 times total head stipulated under item No.1 The size of the various components to be as under:- (I) Suction pipe...100 mm dia. (ii)Delivery pipe...200 mm dia. (iii)Common Header 100 mm dia. and will extended upto 5 mtrs from the outer wall of the pump house in the direction to be jointed.	1Job.	Job.			
15	Providing and laying copper PVC insulated armoured power cable(one cable carrying all the three phases)of suitable size and capacity to and all other electrical equipments as per IS: 1554(P-I)1988 or latest with upto date ammendments of Siemens /Gloster/ JEC/ICC/EICO National/Grandlay make including all other accessores such as thimbles, flexible,pipes solder,nuts and bolts, cable glands etc. laid in pipes or trenches under floor.	1	Job.			
16	Providing and fixing double loop earthing and copper plate 600mmx600mmx3mm thick electrode complete with material such as thimbles, nuts and bolts,charcoal and common salt,25mmx3mm copper strips/as per IS: 3043-1987 with upto date ammendments for motors and other electrical equipments and digging of pits etc.,complete in all respect.	1Job	Job.			
<b>(Rs. .... only</b>						
<b>TERMS AND CONDITIONS.</b>						
1	The rates are inclusive of rebate on existing(old) pumps & motors to be replaced and the dismantled old pumps and motors shall be taken by the contractor/Firm.					

2	The work will be executed as per PWD/IPH specification and as per the direction of the Engineer-in-Charge.
3	10% Security will be deducted from each bill.
4	GST, & sale tax will be deducted as per relevent clause of NIT. .
5	Payment will be made after satisfaction of the Engineer-in-Charge as per the billing schedule attached and as per the relvent clause on receipt of
6	The material shall be issued for bonafied use at allotted to the contractor.
7	The site shall be inspected by the tenderer before his offer.
8	The offer shall be including all transportation charges upto site of work.
9	The offer shall comply with technical specification and shall conform to specified standard nominal bore outer diameter, wall thickness Wt.per Mtrs.
10	The hydraulic test pressure after laying shall not be less than 1.5 times the actual working pressure.
11	The entire pipe line before actual commissioning shall be thoroughly disinfected and flushed in accordance with standard practice.
12	The validity of the offer shall remain open for a period of 120 days from the opening date of tender.
13	5% payment ( amount) will be released after testing of Pumping Machinery .
14	The contractor / firm must have experience to execute the similar nature of work i.e P/L of R/Main & civil works & P/Machinery .
15	The firm shall forward a copy of supply order/indent placed by it for the supply of pumps and motors on the manufacturers/authorised dealer of the pumps and motors to the consignee within 30 days after issue of the letter of indent/award by the Engineer-in-charge. The copy of supply order/indent to the consignee should also accompany the dealership certificate of the dealer for the pumping machinery in case the pumps and motors are arranged from the authorised dealer
16	The firm shall arrange despatch of offered pumps and motors to the consignee direct from the manufacturers/ their authorised 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
17	The shop test for the pumps and motors shall be carried out at manufacturer's works in the presence of respresentative of the department as per IS:325-1978. The test performance certificate of the pumping machinery shall be arranged by the firm from the manufacturers and get it approved from the Engineer-in-charge before actual despatch for the pumpinmg machinery.
18	Those contractors/ firm who are exempted from depositing earnest money at the time of tendering shall have to deposit the same in prescribed shape with Executive Engineer concerned within seven days positively after the issue letter of intent indicating acceptance of tender falling which it shall be presumed that contractor/ firm is not interested in executing the work and the competent authority reserves the right to cancel the tender without serving any notice
19	The firm shall supply the recommended list of spares and quantities required for normal working of pumping machinery(2 years) from the manufacturers of the aforesaid equipment at the time of quoting rates and shall quote item rates for the same also.
20	The firm shall supply the manufacturer's manuals for the operation and maintenance of the pumping equipment.
21	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.
22	The characteristics curvces of the pumpijng eqipment shall be supplied with the offer otherwise the tendershall be rejected.
23	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 upto5 metre from the outer wall 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
24	The work pressure certificate and manufacturing certificate from the manufacturing will be supplied regarding MSERW pipe as per IS/1S0-3183--2007.
25	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 service engineer, at the work site and inspection certificate shall be supplied to the Engineer-in-charge. This inspection shall be in addition test report and nothing extra shall be paid on this account

26	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 authorised 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 of (form D) for release of power connection by the firm with extra cost.
27	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 by the firm. 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 extra.
28	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.
29	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.
30	All the the equipment/material shall confirm to the relevant IS specifications wherever applicable, and in its absence to any accepted National/Internationals standards.
31	The general specifications of work shall conform to Punjab P.W.D/HPPWD. Specifications per direction of the Engineer-in-charge.
32	All the equipment shall be guaranteed against any manufacturing defect including metallurgy and its performance for a period of 12(tweleve) months from the date of commissioning/15(Fifteen) months from the date of supply which ever is earlier. 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 gaurantee bond of a Nationalised Bank for an amount equal to the cost of .pumping and electric equipment (accessories included) pledged in the name of the Executive Engineer incharge at the time of applying for refund of security deposts. The guarantee bond shall be released after the expiry of the guarantee period.
33	The installed pumping machinery and other allied accessories shall be tested daily for stipuated pumping hours in the NIT for a period of seven days without extra cost. However the cost of the electricity and water shall be borne by the department.
34	During the guarantee period efficiency of the pumping and 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 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
35	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 mechnery i.e.Pump and Motor 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.

Executive Engineer  
Jal Shakti Division Suni  
Distt Shimla H.P.

SCHEDULE OF QUANTITY						
Replacement of old pumping machinery of LIS Lunsu in G.P. Chebri tehsil sunni( Distt. Shimla(SH:- Providing & erection						Estimated Amount Rs. 237942/-
						Earnest Money Rs :- 4800/-
						Time Limit:-One Month
S.No	Description of items.	Quantity.	Unit	Rates.		Amount.
				In fig.	In Words.	
1	Prov. 3 Phase Mono submersible pump set of reputed and approved make i.e. KSB model MR-3 confirming to latest BIS specifications i.e. 8304 . The pump set shall be fixed with free flow impellers of suitable allow as per BIS -8631-1976 with upto date amendments for lifting raw water lubricated bush bearings of suitable alloy and shaft protection sleeves the pump shall be fitted coupled to submersible required cage motor com-pump to BIS 9283-1995 with upto date amendments corresponding to pump, fitted with water lubricated bush bearing alloys and shaft protection sleeve arrangement to counter balance the thrust caused due to water column in rising main and having cooling arrangement. The pump set should include the water level guard, erection clamps , cable clips and capable of following performances.	1 Set	Set			
	Total head = 20 mtrs					
	Discharge = 25.50 LPS					
	Dia of Rising main = 150 mm					
	Suction in line booster					
	Pumping hours = 8					
2	P/F 3 core copper cable wire 25 mm Sqm (Flat Submersible Cable)	50	Rmt			
3	P/F control panel for 10 HP Three phase with Amp. Meter, volt meter, stater MCB water level gurd.	1	Set			
4	Installation of Pump Set i/c Cutting , welding , Jointing ,complete in all respect at site.	1	Job			
5	Carriage of Pump Set & Other accessories.	1	Job			
	(Rs. .... only)					
<b>TERMS AND CONDITIONS.</b>						
1	The rates are inclusive of rebate on existing(old) pumps & motors to be replaced and the dismantled old pumps and motors shall be taken by the					
2	The work will be executed as per PWD/IPH specification and as per the direction of the Engineer-in-Charge.					
3	10% Security will be deducted from each bill.					
4	GST, & sale tax will be deducted as per relevant clause of NIT. .					
5	Payment will be made after satisfaction of the Engineer-in-Charge as per the billing schedule attached and as per the relevant clause on receipt of					
6	The material shall be issued for bonafied use at allotted to the contractor.					
7	The site shall be inspected by the tenderer before his offer.					
8	The offer shall be including all transportation charges upto site of work.					
9	The offer shall comply with technical specification and shall conform to specified standard nominal bore outer diameter, wall thickness Wt.per Mtrs.					
10	The hydraulic test pressure after laying shall not be less than 1.5 times the actual working pressure.					

11	The entire pipe line before actual commissioning shall be thoroughly disinfected and flushed in accordance with standard practice.
12	The validity of the offer shall remain open for a period of 120 days from the opening date of tender.
13	5% payment ( amount) will be released after testing of Pumping Machinery .
14	The contractor / firm must have experience to execute the similar nature of work i.e P/L of R/Main & civil works & P/Machinery .
15	The firm shall forward a copy of supply order/indent placed by it for the supply of pumps and motors on the manufacturers/authorised dealer of the
16	The firm shall arrange despatch of offered pumps and motors to the consignee direct from the manufacturers/ their authorised dealer of the
17	The shop test for the pumps and motors shall be carried out at manufacturer's works in the presence of representative of the department as per
18	Those contractors/ firm who are exempted from depositing earnest money at the time of tendering shall have to deposit the same in prescribed
19	The firm shall supply the recommended list of spares and quantities required for normal working of pumping machinery(2 years) from the
20	The firm shall supply the manufacturer's manuals for the operation and maintenance of the pumping equipment.
21	The firm shall arrange operation and maintenance training to the operating staff for the pumping machinery without extra cost for a period of 7
22	The characteristics curves of the pumping equipment shall be supplied with the offer otherwise the tender shall be rejected.
23	The firm shall supply layout drawing in respect of various components, such as suction pipes, valves, cable trenches, control panel etc. from the
24	The work pressure certificate and manufacturing certificate from the manufacturing will be supplied regarding MSERW pipe as per IS/1S0-3183--
25	The installation of pumping machinery above 100 HP shall be inspected by the technical representative of the manufacturers, of rank not less than
26	The wiring and installation of electric equipment shall be as per HPSEB rules and regulations and subjected to the approval of the Chief Electrical
27	The temporary electrical connection, if required during installation shall be arranged by the firm at its own cost and energy charges shall also be
28	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
29	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
30	All the the equipment/material shall conform to the relevant IS specifications wherever applicable, and in its absence to any accepted
31	The general specifications of work shall conform to Punjab P.W.D/HPPWD. Specifications per direction of the Engineer-in-charge.
32	All the equipment shall be guaranteed against any manufacturing defect including metallurgy and its performance for a period of 12(tweleve)
33	The installed pumping machinery and other allied accessories shall be tested daily for stipuated pumping hours in the NIT for a period of seven
34	During the guarantee period efficiency of the pumping and electric equipment should not vary beyond the range of (+/-)2.5%. If during guarantee
35	80% ( Eighty percent) payment of the cost of pumping machinery and equipment less 10% security and other statutory recovery shall be made after

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