

SCHEDULE OF QUANTITY

Estimated cost:- 142637

Earnest money:- 2900

Name of work:- R/M of various LWSS/GWSS under IPH Section Jaunaji

(SH:- Cleaning of 90 No. storage tanks of different capacities).

Time:- One month

Sr. No.	Description of items.	Qty	Rate		Unit	Amount
			In fig	In words		
1	Mechanical cleaning and disinfection of overhead and under ground water storage tanks, mechanical dewatering of storage tanks, removing of sludge, high pressure cleaning and UV radiation of tank complete in all respect including entire carriage of material upto all leads and lifts	6201.60			P/Kilo litre	

Total	
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TERMS AND CONDITIONS

- 1 The undersigned reserves the right to accept or reject any or all the tenders without assigning any reason thereof.
- 2 The work should be done as per IPH specification and direction of Engineer-in-Charge.
- 3 Security, GST and other statutory deductions will be made as applicable.
- 4 Work shall be started within 15 days after the date of award and completed in stipulated period.
- 5 The cleaning of storage tanks should be done twice in a year i.e. pre monsoon and post monsoon.

Executive Engineer
IPH Division Solan

SCHEDULE OF QUANTITY

Name of work:- R/M of LWSS Dhar Ki Ber in G.P. Anji Matla Tehsil Kasauli Distt. Solan (SH:- Repair of pump house, sump well & Sedimentation Tank).

Estimated Cost Rs:- 103385/-

Earnest Money Rs:- 2100/-

Time Period:- 15 days

<u>S.No</u>	<u>Description of item</u>	<u>Qty</u>	<u>Rate</u>		<u>Unit</u>	<u>Amount</u>
			<u>In Fig.</u>	<u>In Words</u>		
1	20mm cement plaster in single coat on rough side of masonry for interior plastering upto floor two level including arrises,internal rounded angles,chamfers and/or rounded angles not exceeding 80mm in girth and finished even and smooth with cement mortar 1:3(1cement:3 sand) including entire carriage of material upto all leads and lifts.	211.1			Sqm	
2	6mm thick cement plaster in ceiling in cement mortar 1:3(1cement:3sand) as per direction of Engineer-in-charge including entire carriage of material upto all leads and lifts.	33.11			Sqm	
3	Finishing wall with water proofing cement paint of approved brand and manufacture and of required shade on undecorated wall surfaces (two coats) to give an even shade after thoroughly brushing the surface to remove all dirt and remains of loose powdered materials.	244.9			Sqm	
4	Providing plinth protection 50mm thick in cement concrete 1:3:6 (1cement:3snd:6graded stone agg. 20mm nominal size) including entire carriage of material upto all leads and lifts.	26.8			Sqm	
5	Providing wood work in frames of doors, windows, clerestory windows and other frames wrought, framed and fixed in position(a) 2nd class deodar wood.including entire carriage of material upto all leads and lifts.	0.354			Cum	
6	Providing fixing paneled and glazed shutters for doors, windows & clerestory window including black enamelled iron butt hinges with necessary screws 40mm thick 2nd class deodar wood including entire carriage of material upto all leads and lifts.	9.84			Sqm	
7	applying priming coat over new wood & wood based surfaces after & incuding preparing the surface by throughly cleaning oil, grease, dirt and other foreign matter with ready mixed paint brushing wood primer pink. Including entire carriage of matterial upto all leads & lifts.	19.68			Sqm	
8	Painting two coat excluding priming coat on new wood & wood surfaces with enamel paint to give an even shade including cleaning the surface of dirt, dust & other foreign matter sand preparing & stoping. Incuding entire carriage of material upto all leads & lifts.	19.68			Sqm	
9	40mm thick cement concrete flooring with 25mm under layer of cement concrete 1:3:6 (1cement : 3sand : 6stone aggregate of size 12.5mm & below) & 15mm weaking layer in cement concrete 1:2 to 3 (1cement :2to3 stone aggregate of size 4.75mm.	52.94			Sqm	
10	P/F 40x3mm flat iron hold fast 40cm long.	24			Each	
11	Providing fixing M.S. tower bolts barrel type anodized transparent or dyed to required shade &	18			Each	

12	Providing fixing M.S. sliding door bolts anodized transparent or dyed to required shade & colour with 300 X 16mm based surfaces after & including preparing the screws etc. complete the surface by throughly cleaning oil, grease, dirt & other foreign matter with ready mixed paint brushing wood primer pink including entire carriage of material upto all leads & lifts 150 X 10mm.	2	Each
13	Providing fixing M.S. handle anodized transparent or dyed to required shade & colour.	11	Each
14	Dismantelling of plaster 20mm thick.	211.1	Sqm
15	Providing form work with steel plates 3.15mm thick welded with angle iron in frame 30 X 30 X 5mm so as to give a fair finish including centring & shuttering and propping etc. with wooden batten and ballies, height of propping and centring below supporting loor to ceiling not exceeding 4 mtrs removal of the same for in situ RCC and PCC work in flat surfaces such as soffits, suspended floors, roofs, landing and the like floors etc. 200mm thickness. Including entire carriage of material upto all leads and lifts.	15.91	Sqm
16	Providing & laying RCC work 1:2:4 (1 cement :2 sand :4 graded stone aggregate 20mm nominal size and curing complete excluding cost of form work & reinforcement for RCC work in suspended floors, roofs landings shelve & their supports balconies girders bresumers and cantilevers upto floor two level i/c entire carriage of material upto all leads & lifts.	2.29	Cum
17	Providing tor steel reinforcement for RCC work including bending, winding & placing in position complete upto floor two level. Including entire carriage of material upto all leads lifts.	206.1	Kg

TERMS AND CONDITIONS:-

- 1 The undersigned reserves the right to accept or reject any or all the tenders without assigning any reason thereof
- 2 The work will be got executed as per IPH/PWD specification.
- 3 Security, GST will be deducted as applicable
- 4 Nothing will be paid for sub-standard work/material.
- 5 Work shall be started within 15 days after the date of award and completed in stipulated period.
- 6 Stone aggregate/sand shall be used of approved quarry.
- 7 The quoted rates should include all taxes and carriage charges etc. and nothing extra will be paid on this
- 8 Useable material found at site while execution will be stacked properly and the same will be the property of the department.
- 9 Cement @ 275/-per bag & steel @ 4700/-per qtl. will be issued from the IPH Store Solan
- 10 Empty bag required to be handed over to the depts otherwise the recovery @ Rs. 5/-per bag will be made.
- 11 Royalty for the material i.e. Sand, aggregate & stone shall be deducted from the bills as applicable

**Executive Engineer
IPH Division Solan**

SCHEDULE OF QUANTITY

Name of work:- Extention of LWSS Hurang-Kotla in G.P. Hurang Tehsil Kasauli Distt. Solan (HP).
(SH:- C/O RCC Raw water Tank for 8800 litres capacity, C/O Main Storage Tank 10000 litres capacity,
 C/O Main Storage tank 53000 litres capacity, Laying & jointinting & testing GI pipes in R/main 32 mm

Estimated Cost Rs:- 996622/-
 Earnest Money Rs:- 19900/-
 Time Period:- 6 Months

S.No	Description of item	Qty	Rate		Unit	Amount
			In Fig.	In Words		
1	Excavation in foundation and trenches etc. in earth work , lift upto 1.50 mtrs. stacking the excavated soil not	51.70			Cum	
2	Excavation in drains and channel etc in earth work in all kinds of soil such as kankar, moorum shingles	737.30			Cum	
3	Providing and laying cement concrete 1:4:8(1cement:4approved sand:8app.graded stone aggregate 40mm	8.70			Cum	
4	Providing and laying cement concrete 1:1.5:3(1cement:1.5approved sand:3approved graded stone aggregate					
a)	Wall (any thickness but not less than 0.1m thickness) attached pillars,buttresses plinth and string courses	12.48			Cum	
b)	Foundation and plinth including entire carriage of material upto all leads and lifts.	4.40			Cum	
5	Providing and laying cement concrete 1:2:4(1cement:2approved sand:4app.graded stone aggregate 20mm	3.22			Cum	
6	Providing Tor steel reinforcement for RCC work including bending binding and placing in position complete	2178			Kg	
7	Providing form work with steel plates 3.15mm thick welded with angle iron in frame 30x30x5mm so as to					
a)	Vertical surface such as wall of (any thickness) partition and the like including attached pillar butresses	231.23			Sqm	
b)	Flat surfaces such as soffits suspended floors roofs, landings and the like floors etc upto 200mm in	27.41			Sqm	
c)	Edges	33.03			Sqm	
8	Providing & fixing manhole cover with frame 50mm dia (medium duty) Total weight of frame & cover	3			Nos.	
9	Providing and fixing C.I. sluice valve 250mm dia of Kirloskar/Kartar make as per IS 780 class including	3			Nos.	
10	Providing and laying cement concrete 1:5:10(1cement:5sand:10graded stone aggregate 40mm nominal size)	26.22			Cum	
11	Manufacturing M.S. Shed for pannel board pumping machinery 1.5x1.50 metre Size duly welded with angle	24			Rmt	
12	Providing & fixing CGI sheet Top & side with Jhook nut & bolt etc. complete in all respect.	11.25			Sqm	
	<u>Rising Main:-</u>					
13	Laying, testing & commissioning at site in trenches plain ended flanged G.M.S. pipe of 32 mm (H) 32mm	450			Rmt	
14	Providing, welding and fixing M.S. flanges of 32 mm dia (nominal bore) of following flange table confirming					
	RD from to Flange Table Dia mm Length					
	1st stage					
	0-300 17 300	4			Pair	
	300-450 5 150	2			Pair	
15	P/F double flanged swing type cast steel reflux valve of kartar leader, BHEL kilosker/ kilbar/ GLED/ kartar	2			Nos.	
16	P/F double flanged swing type cast steel sluice valve of kartar leader, BHEL kilosker/ kilbar/ GLED/ kartar	2			Nos.	
	<u>PUMPING MACHINERY</u>					

17	<p>Providing horizontal spindle, horizontal/ radial spilt casing/ end sunction (backpull out arrangement), single/ double/ multi stage Centrifugal pump or combination of pumps, in series/ parallel of recommended make such as Mathar & Platt/ KSB/ Beacon weir/ Kirloskar/ BE/ Jyoti as per BIS IS: 1520: 1980 with up to date ammendments, read with IS 9137:1978 or latest edition suitable for lifting water for under mentioned characteristic with Bronze impellers/ priming funnels, casing ring and shaft sleeves of Bronze, shaft of stainless steel with cast iron casing, coupled directly through a flexible coupling on a common cast iron/ cast steel base plate (base plate to be framed from the manufactures of the pumping unit only) to slip ring/ squirrel cage screen protected drip proof induction motor/ motors of standard make such as Kirloskar/ BHEL/ cromption/ NGEF/ GEC/ Seimens/ Jyoti and suitable for operation on 415 (+/- 15%) volts, 50 Cycles/ Sec., 3 Phase AC electric supply. The power of electric motor/ motors should be at least + 10% in excess of the maximum power required by the pump/ pumps in the operation range of (+ 10%) and (-25%) of the duty point head. The motor/ motors as per IS 325: 1978, with up to date ammendments read with IS 900: 1972. It should include cost of Bearing, Nuts, Bolts and Painting etc. and should meet the following requirements.</p>	<p>a) Pumps: Specificati ons: i) Make ii) Model iii) No. of stages iv) Manufactu re's certificate to be attached Performan ce i) Discharge ii) Head iii) B.H.P. iv) Efficiency v) NPSHR vi) Performan ce Curve to be attached b) Motors: Specificati ons: i) Make ii) Model iii) Rating iv) Speed v) Insulation</p>	2 Set of 25 HP			Per/ HP	
	<p>i) Discharge, (Q) 2.37 LPS. ii) Total Head (H) 412.30 Mtrs. a) LWL in Sump Well 3mtr. b) R.L. of shaft -----mtr. c) R.L. of discharge Pt. -----mtr. d) Sunction lift -----mtr. e) Discharge Head -----mtr. f) Static Head -----mtr. iii) Rising Main 1980 mtr. Length 50mm Diameter Class ----- iv) Pumping Hours 8 hrs. v) Altitude of installations above M.S.L. ---mtr. vi) Characteristic of water a) Temperature -----Deg. Cel. b) Turbidity -----JTU c) Alkanity -----mg/l Ca Co3 d) Size of Solids -----mm e) Others</p>					Each Each	
18	<p>Providing ICTP Main Switch with HRC fuses of Kilburn/ L&T/ Havells make and having capacity extra of the operational rating as per IS: 4864: 1978 with upto date ammendments, immediately after the Energy meter of the HPSEB.</p>	<p>ICTP Switch: i) Make ii) Type iii) Capacity</p>	2 Nos			Each	

19	Providing M.S. Sheet , steel febricated floor mounted closed (Almirah type) switch board i/c angle iron post of suitable height and size ISA 40x40x6 mm, duly painted with steel sheet of 16 Gauge comprising and capable of monting the following accessories with all internal connections.	Panel/Switch Board i) Drawing ii) Layout Plan	2 Nos			Each	
(a) i)	ACB/OCB of Kilburn/L&T/MEI make and 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.	ACB/OCB i) Make ii) Type iii) Range iv) Capacity	2 Nos			Each	
ii)	ELCB of recommended make Kilburn/L&T/MEI as per IS: 2516-1985 with upto date ammendments, and of suitable range which should have control box, operating handle and trip/ reset bush button on/ off of indicators, reindicating off spring condition of the circuit breaker for over current protection. The circuit should be equiped with magnet thermal release with metallic tape CTS. It should also be filled with earth fault for tipping of breaker on occurence of Earth fault.	ELCB i) Make ii) Type iii) Range	2 Nos			Each	
iii)	The voltage monitor Relay 3 Phase with all protection and usual indicator and electric siren against single phasing, low voltage difference as per IS: 3842 (Latest Edition).	Voltage Monitor Relay i) Make ii)Type iii) Range	2 Nos			Each	
b)	A.C. supply, voltmeter of recommended make IMP/ Havells of suitable range with selector switches as per IS: 1248-1983 with latest ammendments.	Voltmeter i)Make ii) Type iii) Range	2 Nos			Each	
c)	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.	Bus Bar Chamber i) Type ii) Make iii) Rating	2 Nos			Each	

d)	ICTP switches with HRC fuses of Kilburn/L&T/Havells make and of suitable capacity as per IS: 4064-1978 with upto date ammendments. Three phase indicator lamps complete with toggle switches for individual motors as per IS: 3452 (P-I&II) with upto date ammendments.	ICTP Switch: i) Make ii) Type iii) Capacity 3- Phase indicators i) Type ii) Make iii) Capacity	2 Nos			Each	
e)	AC Supply Ammeter of IMP/Havells make of suitable range with selector switches and CIS operated as per IS: 1248 (P-I&II)-1983 with upto date ammendments.	Ammeter i) Type ii) Make iii) Range	2 Nos			Each	
f)	Capacitor of 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 of induction motor individually of required KVA rating according to H.P. offered i/c cables as per relevant ISI code (of Seimens/ Clocter/IEC make) from bus bar chamber to capacitor as per IS: 4064-1978 with upto date ammendments. Rating of capacitor will be approved by HPSEB.	Capacitor i) Type ii) Make iii) Range	2 Nos			Each	
20	Providing suitable oil immersed starter, Star Delta/ Direct on line/ Auto- transformer/ Stator rotor starter of MEI/Kilburn/L&T make as per IS: 8544-1979 with upto date ammendments for Squirrel cage/ Slip ring motor mounted on panel 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.	Starter i) Type ii) Make Single phase Preventor i) Type ii) Make	2 Nos			Each	
21	Providing cast iron flanged/ Screw type Foot Valve with strainer as per IS: 4038-1986 with upto date ammendments of Kirloskar/ Leader make For Sunction pipe of pump 50 mm dia	Foot valve i) Make ii) Class iii) Test working head iv) Material	2 Nos			Each	

22	<p>Providing double flanged cast iron/ cast steel sluice valve of Leader/ Kirloskar make for the delivery line of pump and capable of withstanding the normal seat pressure and as per IS: 780-1984 (Cast Iron) or as per BS 1414/API 600 (Cast Steel), as the case may be with latest ammendments.</p> <p>For Delivery pipe of pump 50 mm dia</p>	<p>Sluice valve i) Make ii) Class iii) Seat pressure (MPa) iv) Material</p>	2 Nos			Each	
23	<p>Providing double flanged swing type Cast iron / Cast steel Reflux Valve of leader/ Kirloskar make, having bye pass arrangement on the delivery line of the pump and capable of withstanding normal seat pressure as per IS: 5312-1984 (P-I) (Cast Iron) or as per BS 1868/API-6D (Cast Steel), as the case may be with latest ammendments</p> <p>For Delivery pipe of pump 50 mm dia</p>	<p>Reflux valve i) Make ii) Class iii) Seat pressure (MPa) iv) Material</p>	1 No.			Each	
24	<p>Providing double flanged swing type Cast iron / Cast steel Reflux Valve of leader/ Kirloskar make, having bye pass arrangement on the delivery line of the pump and capable of withstanding normal seat pressure as per IS: 5312-1984 (P-I) (Cast Iron) or as per BS 1868/API-6D (Cast Steel), as the case may be with latest ammendments</p> <p>For Rising Main 40 mm dia</p>	<p>Reflux valve i) Make ii) Class iii) Seat pressure (MPa) iv) Material</p>	1 No.			Each	
25	<p>Supply of submersible pumping set of reputed make such as KSB/ Calama/ SU/ BS/ Jhonston, confirming to latest relevent BIS code. The pump should be fitted with free fine impellers of suitable alloys as per BIS: 5659-1978 with upto date ammendments, suitable for raw/ clear water having greased packed bearing and shell with wound startor on motor side and with shaft protection on pump side ensuring better life for shaft confirming to BIS specifications. The pump shall be directly coupled to submersible squirrel cage electric induction motor of Kirloskar/ NGEF/ Jyoti/ cromption make confirming to BIS: 9283-1979 with upto date ammendments, totally dust and water proof for submersible pump, duly isolated from the pump by intermediate casing with double mechanical seal in oil chamber and grease packed, lubricated bearing and 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 make up expansion of water with heating of motor. The pump set should include water level guard i/c cable, erection clamps, cable clips and depth gauge etc. and suitable for operation on date given below:</p>	<p>(A) Pumps: Specifications: i) Make ii) Model iii) No. of stages iv) Manufacture's Certificate to be attached Performance</p>	2 Set of 3 HP			Each	

<p>i) Discharge (Q) 0.64 LPS. ii) Total Head (H) 153.60 Mtrs. a) SWL in Tubewell -----mtr. b.g.l. b) R.L. of pump house ---mtr. c) R.L. of point of discharge ----mtr. d) Seasonal Fluctuation + draught condition + Bowl Assembly -----mtr. e) Drawdown in tubewell ----mtr. f) R.L. of lowest point of pump set installation ----mtr. g) Static Head iii) Rising Main Column Pipe Length 450 mtr. Length----mtr Diameter 32 mm Dia ----- mm Class--- Class ---- iv) Pumping hours -----hrs. v) Altitude of installations above M.S.L. ----mtr vi) Characteristics of water a) Temperature -----Deg. Cel. b) Turbidity -----JTU c) Alkanity -----mg/l Ca Co3 d) Size of solids -----mm e) Others vii) Depth of Tube well -----mtr. viii) Dia of Tube well assembly ----mm ix) Length of Assembly Pipe -----mtr. x) Dia of Housing Pipe -----mm xi) Length of Housing Pipe ----mtr.</p>	<p>Performance Curve i) Discharge ii) Head iii) Efficiency of pump a) Duty Head b) (+) 10% Duty Head c) (-) 25% Duty Head iv) Performance Curve to be attached (B) Motors: Specifications i) Make ii) Model iii) B.H.P</p>					
<p>OPERATING CONDITIONS:- i) Type of Current: A.C. Three Phase ii) Frequency: 50 Cycles/ Sec. iii) Rated voltage: 415+/- 15% Volts iv) System of earthing: Double loop earthing as per BIS: 3843-1987- Latest v) Speed of Revolution: -----RPM</p>						
<p>MOTOR:- i) Ref. to BIS code: BIS: 9283-1979 with upto date ammendments. ii) Type of enclosure of motor: As per BIS: 4691-1985 (Latest). iii) Mechanical output in H.P.: -----H.P. iv) Class of Insulation: Class- B The motor should be able to withstand initial current of 2.5 times the rated current for two minutes without suffering damages of permanent deformations.</p>						
<p>PUMP:- i) Ref. to BIS Code: BIS: 5659-1978 with upto date ammendments. ii) Drive Type: Electric Driven iii) Operating Range: -25% to + 10% of Total head at duty point iv) Delivery Size of Pump: -----mm (To be quoted by Tenderer)</p>						

26	Providing ICTP Main Switch with HRC fuses of Kilburn/ L&T/ Havells make and having capacity extra of the operational rating as per IS: 4864:1978 with upto date ammendments.	ICTP Switch: i) Make ii) Type iii) Capacity	1 NO.			Each	
27	Providing MS Sheet, steel febricated floor monted closed (Almirah type) switch board i/c angle iron post of suitable height and size ISA 40x40x6 mm, duly painted with steel sheet of 16 Gauge comprising and capable of mounting the following accessories with all interanal connections.	Panel/ Switch Board i) Drawing ii) Layout Plan	1 NO.			Each	
a) (i)	ACB/OCB of Kilburn/ L&T/ MEI make and of suitable capacity on incoming feeder with or without initial oil filling as the case may be with neutral linked under volatage releases as per IS: 2516-1985 with upto date ammendments.	ACB/ OCB i) Make ii) Range iii) Type iv) Capacity	1 NO.			Each	
(ii)	ELCB of recommended make Kilburn/ L&T/ MEI as per IS: 2516-1985 with upto date ammendments, and of suitable range which should have control box, operating handle and trip/ reset bush button on/ off of indicators, reindicating off spring condition of the circuit breaker of over current protection. The circuit should be equiped with magnet thermal release with metallic tape CTS. It should also be fitted with earth fault of tripping of breaker on occurence of Earth fault.	ELCB i) Make ii) Range iii) Type	1 NO.			Each	
(iii)	The voltage monitor Relay 3 Phase with all protection and usual indicator and electric siren against single phasing, low voltage, high voltage, reserve phasing, overloading and phase voltage difference as per IS: 3842 (Latest Edition).	Voltage Monitor Relay i) Make ii) Range iii) Type	1 NO.			Each	
b)	A.C. supply, voltmeter of recommended make IMP/ Havell of suitable range with selector switches as per IS: 1248-1983 with latest ammendments.	Voltmeter i) Make ii) Range iii) Type	1 NO.			Each	
c)	A.C. Supply Ammeter of IMP/ Havells make of suitable range with selector switches and CIS operated as per IS: 1248 (P-I&II) -1983 with upto date ammendments.	Ammeter i) Make ii) Type	1 NO.			Each	

d)	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 including.	Bus Bar Chamber i) Make ii) Type iii) Rating	1 NO.			Each	
	Three phase indicator lamps complete with toggle switches for individual motors as per IS: 3452 (P-I&II) upto date ammendments.	3- Phase Indicator s	1 Set			Each	
e)	Capacitor of 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 of induction motor individually of required KVA rating according to H.P. offered i/c cables as per relevent ISI code (of seimens/ Clocter/ IEC make) from bus bar chamber to capacitor as IS: 4064-1978 with upto date ammendments. Rating of capacitor will be approved by HPSEB.	Capacitor i) Make ii) Range iii) Type	1 NO.			Each	
28	Providing suitable oil immersed starter, star Delta/ Direct on line/ Auto- transformer/ starter rotor starter of MEI/ Kilburn/ L&T make as per IS: 8544-1979 with upto date ammendments for squirrel cage/ slip ring motor mounted on panel board with megnetic type overload release and dashpot, time lag, under vottage 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.	Starter i) Make ii) Type Single Phase Preventor i) Type ii) Make	2 NO.			Each	
29	Providing double flanged cast iron/ cast steel sluice valve of Leader/ Kirloskar make for the delivery line of pump and capable of withstanding the normal seat pressure and as per IS: 780-1984 (Cast Iron) or as per BS 1414/ API 600 (Cast Steel), as the case may be with latest ammendments. For Column Pipe 32 mm Dia.	Sluice Valve i) Make ii) Class iii) Seat pressure (Mpa) iv) Material	1 NO.			Each	
30	Providing double flanged swing type cast iron/ cast steel Reflux valve of Leader/ Kirloskar make, having Bye pass arrangement on the delivery line of the pump and capable of withstanding normal seat pressure as per IS: 5312-1984 (P-I) (Cast Iron) or as per BS 1868/ API-6D (Cast Steel), as the case may be with latest ammendments. For Rising Main 32 mm Dia.	Reflux Valve i) Make ii) Class iii) Seat pressure (Mpa) iv) Material	1 NO.			Each	
31	Providing pressure gauge of Prega/ Precision make complete with all accessories such as stop cock, copper tubing as per IS: 3624-1987 with upto date ammendments.	Pressure Gauge i) Make ii) Range	1 NO.			Each	

32	Supply of PVC jointless, flat water proof cable as per BIS 694-1998 latest with upto date ammendments, suitable for the pumpset offered from OCB to motor including all other electrical equipments/ accessories such as thimble, flexible pipe, solder, nuts & bolts, cable glands, clips etc. laid in pipes of trenches under floor. The type, size and make shall be subjected to approval of HPSEB authorities.	Submersible Cable i) Make ii) Size				Mtr	
33	Providing and lowering MS Column pipe assembly-32--mm dia including MS flanges of Table - 5 & 17 as per IS: 6392-1971 with upto date ammendments, rubber/ aesbestos gasket of min. 3mm thickness as per IS: 2712-1979 and reqd. no. of Nuts & Bolts as per IS: 1364-1983. The column pipe shall be as per relevent IS code and to withstand 1.5 times total head stipulated under item No. 1. The column pipe should be extended upto 5 mtr. beyond the outer wall of the pump house in the direction of rising main. The column should be properly jointed with the rising main including all necessary accessories like increaser/ reducer, flanges, bends etc. i/c supporting clamps (2Nos) at the top of tubewell assembly, and as per direction of Engineer-in-charge.	Column Pipe i) Size 32mm ii) Class GMS (H) iii) Length 450 mtrs	10 Mtrs			Mtr	
34	Providing & laying copper PVC insulated armoured power cable (one cable carrying all the three phases) of suitable size & capacity to motors and all other electric equipments as per IS: 1554 (P-D) 1988 or latest with upto date ammendments of seimen/ Gloster/ IEC/ ICC/ EICO/ National/ Grandlay make i/c all other accessories such as thimble, flexible pipes, solder, nuts & bolts, cable glands etc. laid in pipes or trenches under floor.	Armoured Power Cable (A) Motor Side (From Switch to Starter) i) Size ii) Make iii) Type iv) Capacity v) Core (B) Supply Side (From meter of HPSEB to Bus Bar & Switch) i) Size ii) Make iii) Type iv) Capacity	1 NO.			Job	

35	Providing & fixing double loop earthing with copper plate 600x600x3 mm thick electrode complete with material such as thimble, Nuts & bolts, charcol, salt, 25x5 mm copper strip as per IS: 3043-1987 with upto date ammendments for motors and other electrical equipments and digging of pits etc. complete in all respect as per the direction of Engineer-in-charge.		1 NO.			Job	
Total Rs:-							

TERMS AND CONDITIONS:-

- 1 The undersigned reserves the right to accept or reject any or all the tenders without assigning any reason .
- 2 The work will be got executed as per IPH/PWD specification.
- 3 Security, GST, will be deducted as applicable.
- 4 Nothing will be paid for sub-standard work/material.
- 5 Work shall be started within 15 days after the date of award and completed in stipulated period.

- 6 Stone aggregate/sand shall be used of approved quarry (crushed)
- 7 The quoted rates should include all taxes and carriage charges etc. and nothing extra will be paid on this
- 8 Useable material found at site while execution will be stacked properly and the same will be the property of the department.
- 9 Cement @ 275/-per bag & steel 4700/-per qtl. will be issued from the IPH Store Solan.
- 10 Empty bag required to be handed over to the depts otherwise the recovery @ Rs. 5/-per bag will be made.
- 11 Royalty for the material i.e. Sand, aggregate & stone shall be deducted from the bill @ Rs. 32/cum, Rs. 45/cum & Rs. 56/cum respectively.
- 12 G.I. pipes will be issued to the contractor free of cost on proper indent at IPH Store Solan. Further carriage and watch and
- 13 Test certificate of manufactures should be supplied for MSERW pipe before any payment is claimed.
- 14 20% amount will be with held for want of testing, The contractor shall be responsible for all leakage in jointing system.
- 15 Welding of flanges to the pipes, bends tees etc. shall be carried out strictly in accordance with relevant codes.
- 16 The Pipe line shall be laid as per prevalent water supply manual and relevant I.S. code of specification.
- 17 MSERW pipe shall be got inspected ex-works through RITES, DGS, D&D-Variats firms and the entire cost shall be borne by the contractor.
- 18 The firm shall forward a copy of supply order/indent placed by it for the supply of pumps and motors on the manufacturers/authorized dealers of the pumps
- 19 The firm shall arrange dispatch of offered pumps and motors to the consignee direct from the manufacturer/their authorized dealer of the pumping
- 20 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 IS: 325-
- 21 The firm shall supply the recommended list of spares and quantities required for normal working; of pumping machinery (2 years) from the manufacturers
- 22 The firm shall supply the manufacturer's manuals for the operation and maintenance of the pumping equipment.
- 23 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.
- 24 The characteristic curves in original of the pumping equipment shall be supplied with the offer otherwise the tender shall be rejected.
- 25 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
- 26 The wiring and installation of electric equipment shall be as per HPSEB rules and regulations & subjected to the approval of the Chief Electrical Inspector
- 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
- 28 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,
- 29 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 there
- 30 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
- 31 All the equipment/materials shall conform to the relevant BIS specifications wherever applicable and in its absence to any accepted National/International
- 32 The general specifications of work shall conform to Punjab PWD/HPPWDI&PH specifications and as per direction of the Engineer in charge.
- 33 The validity of the tender shall be not less than 120 days otherwise the tender shall be summarily rejected.
- 34 All the equipment shall be guaranteed against any manufacturing defect including metallurgy and its performance for a period of 12(twelve) months from
- 35 The installed pumping machinery and other allied accessories shall be tested daily for stipulated pumping hours in the NIT for a period of 7days without
- 36 80% (eighty percent) payment of the cost of pumping machinery and equipment less 10% security and other statutory recovery shall be made after receipt
- 37 80%(Ninety percent) installation charges shall be released after satisfactory installation of all the pumping and electrical equipment. Remaining 20% of
- 38 Only Advani make welding rods shall be used for welding as per IS-814
- 39 The installation of pumping machinery shall be inspected by the Technical representative of manufacture of rank not less than that of service Engineer at
- 40 The firm shall install all the pump sets and make arrangement to connect delivery mains with rising main, so that pumps function and deliver the required
- 41 The firm shall submit layout drawings of pump set installation within a week time of incase of award letter and arrange the approval from the department.
- 42 Necessary Test Certificate from the manufacturer for all the items of schedule of quantity be supplied/produced by the firm before claiming any payment.
- 43 Suction pipe, delivery pipe and pipe for common header shall be of same specification as of rising main.
- 44 Power capacitor shall be of the specification capable to improve a power factor up to 0.95 and as per HPSEB requirements.
- 45 All the items of panel board shall be capable to with stand the load of the pumping machinery of item No.1 and conforming to HPSEB specification.
- 46 Structural design & Drawing of Storage tank/sump well shall be got approved from circle office before executive work of site.

**Executive Engineer
I&PH Division Solan**