

SCHEDULE OF QTY

Name of Work:- PROVIDING SEPARATE WSS TO VILL. BADMANA IN TEHSIL AMB DISTT. UNA
(S.H:-S/E centrifugal pumping sets with allied accessories).

Job No. 5
Estimated cost:- 106671.00
Earnest money:- 2133.00
Time limit:- 3 months

S. No.	Item of work	Specification offered	Qty.	Rate	Unit	Amount
1	2	3	4	5	6	7
1.	<p>Providing horizontal spindle ,horizontal / radial split casing / end 'suction (back pull out arrangement). Single / double / multi stage 'centrifugal pump or combination ' of pumps ,in series/parallel of recommended make 'such as Mather and Platt/ 'KSB/Beacon weir / Kirloskar/BE/Jyoti as per BIS 1520- 1980 with upto date ammendments, read with IS: or 'latest adition suitable for lifting water for under mentioned characteristic with Bronzeimpellers /' priming 'funnels, casing ring and shaft sleeves of Bronze,"shaft of stainless steel grade-----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 manufacturers of the pumping unit only) to slipring/Squirrel cage 'screen protected drip " proof induction motor/ ,motors of standard make such as 'Kirloskar/ BHEL/.Cromprton / GEC / NGEF/ Seimens /Jyoti / and suitable for 'operation on '415 (+/-5%)' 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 upto 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>i) Discharge (Q) 4.044Lps. ii) Total head 267.72 mtr. a)LWL In collection tank 813.31 mtr b) Shaft level 813.31 mtrs. c)Level at discharge Pt. 1030.90 mtrs. d)Suction lift. mtrs. e)Discgharge Head mtrs. f) Static Head 217.59 mtrs.</p> <p>iii) Rising main. Length 2490 mtrs. Diameter 80 mm Class GMS.</p> <p>iv) Pumping hours. 16hours. v) Altitude of installations above M.S.L 400mtrs. vi) Characteristic of Water a)Temperature _____OC b) Ambient temp. _____OC b)Turbidity _____JTU c)AlKalanity _____ mg/1 ca Co3 d)Size of solids _____ mm e) Others.</p>	<p>(a)Pumps: Specifications: i)Make: Set ii)Model: iii)No.of stages: iv)Material(manufactures certificate to be attached. Performance i)Discharge: ii)Head: iii)B.H.P absorbed. iv)Efficiency(n) v)NPSH</p> <p>b)Motors Specifications. i)Make : ii)Model iii) Motor rating(kw) iv)Speed. v)Insulation.</p> <p>(C) Coupling: (D) Base Plate.</p>	2.00		Per HP	
2.	Providing ICTP Main Switch with HRC fuses of Kilburn/L&T/Siemens/Standard/ Havells	ICTP Switch:	1No.		Each	

make and having capacity 30% extra of the operational rating as per IS-4064 -1978 with upto date amendments, immediately after the Energy meter of the HPSEB.

3. Providing MS Sheet, steel fabricated floor mounted switch board i/c angle iron post of suitable height and size ISA 40x40x6mm duly painted with steel sheet of 16 Gauge comprising and capable of mounting the following accessories with all internal connections.
- a) i) MCB of Kilburn/ L&T/MEI/GEC 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 amendments with.
- ii) ELCB of recommended make Kilburn/L&T/MEI/GEC as per IS: 2516-1977 with upto date amendments, and of suitable range which should have control box, operating handle and trip/reset button on/off of 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 load side and,
- a) The voltage monitor Relay 3 phase with all protection and usual indicator and electric siren against single phasing, low voltage, high voltage reverse phasing, overloading and phase voltage difference as per IS: 3842 (Latest Edition).
- b) 100 mm diameter circular A.C. supply, voltmeter of recommended make IMP/ Havells /AE/Havells of suitable range with selector switches as per IS:4064-1978 with upto date amendments.
- c) Power factor meter of standard make as per relevant IS Code with upto date amendments.
- d) Frequency meter of standard make as per relevant IS Code with upto date amendments.
- 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 amendments.
- f) ICTP switches with HRC fuses of Kilburn/L&T/Siemens/Standard/ Havells make and of suitable capacity as per IS: 4064-1978 with upto date amendments.

Three phase indicator lamps complete with toggle switches for individual motors as per IS: 3452 (P-I&II) with upto date amendments.

- g) 100 mm dia circular dial AC supply Ammeter of AE/IMP Havells make of suitable range

i) Make		
ii) Type:		
iii) Capacity: 63 amp		
<u>Panel /switch Board</u>	1 No.	Each.
i) Drawing		
ii) Layout Plan.		
<u>MCB</u>	1 No.	Each.
i) Make		
ii) Type		
iii) Range		
iv) Capacity. 63Amp.		
<u>ELCB</u>	1 No.	Each.
i) Make		
ii) Type		
iii) Range 63 amp.		
<u>Voltage Monitor Relay:</u>	1 No.	Each.
i) Make		
ii) Type		
iii) Range		
<u>Voltmeter</u>	1 No.	Each.
i) Make		
ii) Type		
iii) Range.0-500		
<u>Power factor Meter</u>	1 No.	Each.
i) Type.		
ii) Make.		
<u>Frequency Meter</u>	1 No.	Each.
i) Make		
ii) Type		
<u>Bus Bar Chamber</u>	1 No.	Each.
i) Type		
ii) Make		
iii) Rating		
<u>ICTP Switches</u>	2 Nos.	Each.
i) Type		
ii) Make		
iii) Capacity 63amp.		
<u>3-Phase indicators</u>	1 set	Each.
i) Type		
ii) Make		
iii) Capacity		
<u>Ammeter</u>	2 Nos.	Each.

	with selector switches and CTS operated as per IS: 1248 (P-I&II)-1983 with upto date ammendments.			
h)	Capacitor of Mecheil/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 and also including ICTP switches of appropriate rang as per IS: 4064-1978 with upto date ammendments,			
4	Providing suitable oil immersed star delta starter of MEI/Kilburn/ Jyoti/L&T/Siemens make as per IS 8544-1979 with upto date ammendments for squirrel cage/slipring 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.			
5	Providing double flanged Cast steel Sluice valve of Leader/BHEL/Kirloskar/GLED/ Kilburn/Fouress make and of 80 mm dia for the delivery line of pump and capable of with standing the normal Seat Pressure as per BIS 780-1984 with up to date ammendements. For delivery pipe of pump.			
6	Providing double flanged swing type cast steel Reflux valve of Leader/ BHEL/Kirloskar/ Kilburn/GLED/Fouress make, and of 80 mm dia for the delivery line of the Pump and capable of with standing normal Seat Pressure with latest ammendments.			
7	Providing double flanged swing type cast steel Reflux valve of Leader/ BHEL/Kirloskar/ Kilburn/GLED/Fouress make, and of 80 mm dia for the delivery line of the Pump and capable of with standing normal Seat Pressure with latest ammendments.			
8	Providing 100 mm dia circular dial pressure gauge of Fiebig/Bourden/Prega/Precision make complete wioth all accessories such as stop cock, Copper tubing as per IS: 3624-1987 with upto date ammendments.			
10	Installation of all items appearing at S.No.1 to 9as per the systematic drawing attached with the tender documents .			
11	Providing and fixing double flanged MS/GI piping work(layout to be approved by Engineer-in-Charge) for suction and delivery pipes suitable to pump(s) offered and common header as per the rising main respectively complete with all specials such as bends, Tees, Reducers Inceasers with compnanion flanges matching with the relevant specifications of the accessories as			
		i)Type ii)Make iii)Range.		
		Capacitor	2 Nos.	Each.
		i)Type ii)Make iii)Range 7KVAR		
		Starter DOL	60	HP
		i)Type ii)Make		
		Single phase Preventor	2 Nos.	Each.
		i)Type ii)Make		
		Sluice Valve	2.00	Each.
		i)Make ii)Class cast.steel iii)Seat pressure PN1.0 iv)Material	Nos.	
		Reflux valve	2.00	Each.
		i)Make ii)Class cast.steel iii)Seat pressure PN1.0 iv)Material	Nos.	
		Reflux valve	2.00	Each.
		i)Make ii)Class cast.steel iii)Seat pressure PN1.0 iv)Material	Nos.	
		Pressure Gauge	2.00	Each
		i)Make ii)Range.	Nos.	
			Job	Job
		Suction Pipe:	Job	Job
		i) Material G.I. pipe 80mm ii) Class medium iii) Thickness iv)Pressure rating		

indicated in the Drawing i/c rubber/ asbestos gasket of 3 mm thickness as per IS : 2712-1979 and required numbers of nuts and bolts as per IS;1364-1983. The pipes shall be as per relevant IS code and to with-stand 1.5 times total Head stipulated under item No.I.

The size of various components to be as under:

- i) Suction Pipe 65 mm dia.
- ii) Delivery Pipe 50 mm dia.
- iii) Common Head 80 mm dia.

and will extend upto 5 metres from the outer wall of the pump house in the direction of Rising main of 80mm dia to be joined.

12 Providing and laying copper PVC Insulated armoured power cable(One cable carrying all the three phases) of suitable size and capacity to motors and all other electrical equipments as per IS: 1554(P-I)1988 or latest with upto date amendments of Seimen/Gloster/IEC/ICC/National/Grandlay make including all other accessories such as thimble, flexible pipes, solder, nuts & bolts, cable glands etc. laid in pipes or trenches under floor.

13 Providing and fixing double earthing with G.I.wire/ flat of suitable thickness electrode as mentioned below complete with material such as thimble, nuts and bolts, charcoal, salt, as per IS ; 3043-1987 with upto date amendments for motors and other electrical equipments and digging of pits etc. complete in all respect as per the direction of the Engineer - in - Charge.

- i) G.I. wire 6SWG upto 15H.P
- ii) G.I.flat 25x3mm15 to 50HP
- iii) G.I.flat 32x6mm above 50HP

Delivery Pipe and Common Header

- i) Material
- ii) Grade.
- iii) Thickness
- iv) Pressure rating

Armoured Power Cable Job

(A) Motor side :
(From Switch to Starter & Starter to motor)

- i) Size: 6mm²
- ii) Make
- iii) Type
- iv) Capacity
- v) Core

(B) Supply Side
(From meter of HPSEB to Bus Bar & Switch)

- i) Size: 10mm²
- ii) Make
- iii) Type
- iv) Capacity
- v) Core

Job

Each

Total

Each

Executive Engineer,
IPH Division No.II Una