

Schedule of quantity.

Name of work:- C/O Lift irrigation scheme to Village Jarad GP Bashona in Tehsil Bhuntar Distt. Kullu HP.(SH:- C/O Pump House,Laying and jointing of rising main and supplying and erection of pumping machinery)

Estimated Cost 255259
Earnest Money 5105
Time 6 months

S.No.	Description of items.	Quantity	Unit	Rate	Amount
1	Excavation in foundation trenches etc. in earth work lift upto 1.5 mtrs.stacking the excavatted soil not more than 3 mtrs.clear for the edge of excavation and then disposing the st acked soil in 15cm layers when required into plinths sides of foundation and consolidation of each deposited layer by ramming and watering and then disposing of all surplus excavated earth as directed within a lead of 20 mtrs in pick work,jumper work.	5.72	Cum		
2	P/L CC 1:6:12 (1 cement:6 sand:12 graded stone agg.40mm nominal size) and curing complete excluding the cost of form work in foundation and plinth	0.95	Cum		
3	Random rubble masonry/ polygonal rubble masonry (uncoursed/ brought to courses) with hard of approved quality in foundation and plinth including levelling up with CC 1:6:12 (1cement:6sand:12 graded stone aggregate 20mm nominal size) at plinth level in:-cement mortar 1:6 (1 cement : 6 sand) including all leads, lifts and carriage of material at site and to the entire satisfaction of Engineer Incharge.	12.08	Cum		
4	Stone soling under floors.	1.88	Cum		
5	Brick work using common burnt clay building bricks in super structure above plinth level up to floor two level in cement mortar 1:6 (1 cement: 6 sand), 1st class bricks	8.73	Cum		
6	Providing form work with steel plates 3.15mm thick welded with angle iron 30x30x5mm so as to give a fair finish including centring shutting strutting and propping etc. with wooden battens and ballies height of propping and centring below supporting floor to ceiling not exceeding 4 mtrs. and removal of the same for insitu reinforced and plain concrete work in:				
	b) Flat surfaces such as soffits of suspended floors roofs landings and the like floors etc upto 200mm in thickness.	9.63	Sqm		
7	Providing and laying CC 1:2:4 (1 cement:2 sand:4 graded stone agg.20mm nominal size) and curing complete exlcuidntg the cost of form work and reinforcement in:-				
	i) Suspended floors, roofs, landings and shelves and their suport balconies, beams,girders bressumers and cantilivers upto floor two level.	1.16	Cum		
8	Providing tor steel reinforcement for RCC work including bending, binding and placing in position complete upto floor two level.	104.40	kg		
9	P/F angle iron door, window,clerestory window frame manufactured from steel iron section of 40x40x6mm, thickness including hinges jamb, lock jamb,beed and if rerquired angle threshold of mild steel angle 50x25mm welded or rigidly fixed by mechanical means, lugs with split end tails to each jamb including butt hinges 2.50mmthick with provision for locking arrangement and shock as specified and applying a coat of approved steel primer after pretreatment of the surface as directed by the Engineer-in-charge.	6.45	Rmtr.		
10	Providing and fixing panelled glazed or panelled and glazed shutters for doors, windows and clerestory windows, including black enamelled iron butt hinges with necessary screws 40 mm thick 2nd class deodar wood.	0.675	Sqm		
11	6mm cement plaster to ceiling in CM 1:3(1 cement:3 sand) with in all leads and lifts to the entire satisfaction of the Engineer-in-charge.	15.875	Sqm		
12	15mm cement plaster in single coat on rough side of brick/concrete stone walls for interior plastering upto floor two levels inclduing arrises internal rounded angles, chamfers end/or rounded angles not exceeding 80mm in girth and finished even and smooth in cement mortar 1:6 (1 cement: 6 sand)	51.645	sqm		

13	cement concrete flooring 1:2:4(1 cement: 2 sand: 4graded stone agg. 20mm nominal size) laid in one layer finished with a floating of neat cement 40mm thick.	6.25	Sqm		
14	White wasing with lime on decorated wall surfaces two coats to give an even shade including thoroughly brooming the surface to remove all dirt, dust and other foreign matters.	67.52	sqm		
15	Applying priming coat on new wood and wood based surfaces after and including papering the surface by thoroughly cleaning oil, grease, dirt and other foreign matters, sand papering and knotting, readymixed paint brushing wood primer pink.	1.35	sqm		
16	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 dirt, dust and other foreign matters sand papering and stoping with enamel paint other than white.	1.35	sqm		
17	Providing and fixing anodized MS handles with necessary screws etc. complete 125mm	3	Each		
18	Providing and fixing anodized MS tower bolts (Barrel type) with screws etc complete 150x10mm	3	Each		
19	Providing and fixing anodized MS sliding door bolts with bolts and nuts screws etc. complete 250x16mm	1	Each		
Pumping Machinery					
1	Providing and fixing of submersible water pumping set for(Dug well) of reputed make such as KSB / Kirloskar / CALAMA/Johnston / Oswal/BS/ SABAR make confirming to latest relevent BIS code.The pump should be fitted with free flow impellers of suitable alloy as per BIS 5659-1970 latest suitable for clear cold water with turbidity up to 50 PPM having greased packer bearings & shaft with bound stator on motor side & with shaft protection sleeve on pump side ensuring better life for shaft confirming to BIS specifications. The pump shall be directly coupled to a submersible squirrel cage electric induction motor of same make confirming to relevent BIS code latest with up to date ammendments totally dust & water proof for submersible duty isolated from the pump by intermediate casing with double mechanical seal in oil chamber & grease packed lubricated bearings & provided with stainless steel thrust bearing plate to with stand non vertical loads with minimum wear & tear.It should also be fitted with a device to take up expansion of water with heating of motor. The pump set should include water level guard errection clamps,cable clips & depth gauge etc. The pump should be suitable for operation on data given below:- Revised duties	10	BHP		
i)	Discharge:- 1.80 LPS				
ii)	Total Head:- 185.28 meters				
iii)	Length of R/Main - 800 mtr				
IV)	Dia - 50 mm				
v)	Limits of total head in which the pump/ motor is reqd. to operate. (+)10% & (-) 15%				

1(a)	Providing and fixing of submersible water pumping set for(Dug well) of reputed make such as KSB / Kirloskar / CALAMA/Johnston / Oswal/BS/ SABAR make conforming to latest relevent BIS code.The pump should be fitted with free flow impellers of suitable alloy as per BIS 5659-1970 latest suitable for clear cold water with turbidity up to 50 PPM having greased packer bearings & shaft with bound stator on motor side & with shaft protection sleeve on pump side ensuring better life for shaft conforming to BIS specifications. The pump shall be directly coupled to a submersible squirrel cage electric induction motor of same make conforming to relevent BIS code latest with up to date ammendments totally dust & water proof for submersible duty isolated from the pump by intermediate casing with double mechanical seal in oil chamber & grease packed lubricated bearings & provided with stainless steel thrust bearing plate to with stand non vertical loads with minimum wear & tear.It should also be fitted with a device to take up expansion of water with heating of motor. The pump set should include water level guard errection clamps,cable clips & depth gauge etc. The pump should be suitable for operation on data given below:- Revised duties	2	BHP		
i)	Discharge:- 1.20 LPS				
ii)	Total Head:- 52.428 meters				
iii)	Length of R/Main - 500 mtr				
IV)	Dia - 50 mm				
v)	Limits of total head in which the pump/ motor is reqd. to operate. (+)10% & (-) 15%				
2	Supply of suitable oil immersed star delta starter/ATS/star rotor starter of standarad make such as MEI/Kilburn/Jyoti/ Siemens conforming to BIS-8544-1979 latest with up to date ammendments for squirrel cage/slipring motor (make to be specified by the tenderers) mounted on panel board with magnetic type over load release & dashpot,time lag,under voltage release with initial oil filling .	2	each		
3	Providing M S sheet 16 SWG steel fabricated floor mounted closed almirah type switch board including angle iron post of suitable height and size ISA 40x40x6mm duly painted comprising and capable of mounting the following accessaries with all internal electric connections. The drawing of panel board shall be subject to approval of Engineer in charge.	2	each		
a)	Ammeter AC supply,100 mm circular dial Auto electric/AE/IMP/Havells make of suitable range for above motor with selector switches conforming to BIS 1248-1983 latest with up to date ammendments.	2	each		
b)	Voltmeter AC supply,100 mm circular dial Auto electric/AE/IMP/Havells make of suitable range for above motor with selector switches conforming to BIS 4064-1978 with up to date ammendments.	2	each		
c)	ICTP switches with HRC fuses Kilburn/Larsen & turbo/Standard/Siemen make and having capacity 30% extra of the operational rating of motor as per BIS 4064-1978 with upto date ammendments immediatly after the power meter of HPSEB.	2	each		
d)	Busbar chamber having 3 copper bars of suitable rating for full length equal to width of board of 3 live phases and one copper bar of half reating of full length for neutral conforming to BIS 8084-1976 and 11353-1985 read with 5578-1985 all latest with upto date ammendments.	2	each		
e)	MCB/Oil circuit breaker of suitable capacity of Kilburn/LT/LK/MEI/Standard make on in coming feeder for motors offered by the tenderer conforming to BIS 2516-1985 latest with upto date ammendments with neutral linked under voltage release.	2	each		
f)	3 phase indicating lamps complete with toggle switches for individual motors conforming to BIS 3452 part I & II latest with up to date ammendments.	2	each		

g)	Earth leakage circuit breaker of recommended (Kilburn/L&T/MEI/GEC as per BIS-2516-1977 with upto date ammendments 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 circut breaker for over current protection. The circuit should be equipped with magnet thermal release with metallic tap CTS. It should also be fitted with earth fault for tripping of breaker on occurrence of earth fault on/ off breaker load side.	2	each		
h)	Hour run meter of reputed make of four digit capacity conforming to BIS-722(latest edition) recommendations.	2	each		
i)	Suitable three phase voltage monitor relay with all protections & usual indicators with electrical sirens against single phasing, no voltage, high voltage & overloading & phase voltage difference.	2	each		
j)	Single phase preventor of reputed make & suitable capacity	2	each		
4 (a)	Supply of Kirloskar/ Kilburn/IVC/ Fouress/ Gled/ BHEL/ Leader/ Kartar of approved make of suitable size Cast iron double flanged sluice valve having size one step higher to delivery of pump and capable of withstanding nominal seat pressure as per BIS.	2	each		
4(b)	Supply of Kirloskar/Kilburn/IVC/Fouress/Gled/BHEEL/Leader Cast iron double flanged swing check type reflux valve having bye pass arrangement & size one step higher to dia of rising main for withstanding nominal seat pressure as per BIS.	2	each		
5(a)	Providing and Laying suitable size copper PVC insulated armoured power 3.1/2 core cable confirming to BIS 1554 (Part I) -1988 or latest with up to date ammendments Siemen/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 pipe,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 acceptance by HPSEB authorities it shall have to be replaced by the tenderer free of cost.	30	Rmtr.		
5(b)	Providing and Laying PVC jointless flat water proof cable as per BIS 694-1990 (latest with up to date ammendments) suitable for the pump sets 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.	40	Rmtr.		
5(c)	Supply & errection of floor/wall mounted power factor shunt capacitor conforming to BIS 2834-1986 latest with upto date ammendments BHEL/GEC/Machneil/ Mager/Bajaj make to raise the prevailing power factor at site to 0.95 for direct connection to induction motor individually,of required KVAR according to HP of motor offered including cable Siemens/ Gloster/ICC make from busbar chamber to capacitor & also including LT/LK/Kilburn make ICTP switches conforming to BIS 4064-1978 or latest with HRC fuses (Range to be specified by the tenderer.	2	each		
6	Supply of standarad make 100 mm dia circular dial pressure gauge of suitable range Fiebeg/Bourden/ Precision make with all accessories such as stop cock,copper tubing etc. conforming to BIS 3624-1987 latest with up to date ammendments.	2	each		
7	Providing and Laying Column pipe/ Delivery pipe considering site requirements,NPSH required & available having area equal to two times the area of delivery branch of pump including tapers,flanges,rubber gaskets 3mm thick as per BIS-2712-1978 , nuts & bolts as per 1364-1983 & special from pump set to ground level and up to 5 mtrs. away from the outer wall of pump house as per layout drawings approved by Engineer-in-Charge The pipes shall be capable of withstanding 1.5 times the total presure indicated in item no. 1e(ii). NOTE:- Actual laying to be done as per final drawings to be approved by the Engineer in charge.	50	Rmtr.		

Rising Main					
1	Providing, Laying, jointing (by way of circumferential butt welded joints by electrical arc welding) and testing of Galvanised mild steel tubes (GI Pipes) of following dia meters conforming to BIS 1239-2001 (latest with upto date amendments) having wall thickness as per code with bevelled / plain ends in a random length of 4 to 7 meters, including manufacturing reducers/ tapers , all short pieces, bends etc. as per site requirement made from parent tubes . The laying of pipe will include all operation such as cutting, welding, jointing, fabrication of bends, tees etc. including lowering and laying in excavated trenches to ensure required level including flushing, cleaning and hydraulic testing complete in all respects to the satisfaction of the Engineer in charge. The fabricated bends shall have three or four cuts having its radius not less than five times the dia of pipe. The damaged portion of the pipes and specials made form the parent tube during welding or otherwise shall be provided anticorrosive treatment by applying two coats of anticorrosive bituminous paint over a priming coat as per AWWA specifications C-203-1978. The welding electrodes shall be as per IS 814 of Advani Oerlikon/ L&T or ISI marked make. The rates also includes entire carriage of material, flushing, cleaning & hydraulic testing complete to the best satisfaction & direction of Engineer in charge with in all leads and lifts. (Earth work in trenches will be measured and paid for separately).				
	Phase I& II 50 mm dia (medium grade)	1170	Rmtr.		
2	Providing, laying, jointing and testing in trenches to be levelled to grades, GI flanged pipes of following diameter confirming to IS:1239-1990(Part-II) having minimum wall thickness as per IS code and class of pipes specified below, provided and jointed with flanges conforming to tables as specified below of BIS 6392-1971 welded at both ends according to relevant BIS standards and detailed specifications and provided with nut & bolts of required sizes, 3mm thick compressed asbestos fiber jointing gasket / synthetic rubber gasket confirming to relevant BIS codes including all kinds of flanged short pieces, bends, tees & other specials etc made from parent tubes & welded with flanges of tables as applicable for the particular reach as per site conditions including flushing, cleaning & hydraulic testing as per directions of Engineer-in-charge.				
	Phase I& II 50 mm dia Table-5 (medium grade)	130	Rmtr.		

TERMS AND CONDITIONS : attached

Executive Engineer,
IPH Division No. II
Kullu at Bhunter.