

SCHEDULE OF QUANTITY						Estimated Cost:- Rs.	
Name of work:-Stock storage (SH:- C/O Complaint Room at village Pairi in GP Behal in Tehsil Balh Distt Mandi HP),						Earnest Money:- Rs. 3700/-	
						Time Limit:- Three Months.	
S.No	Items of work	Qty		Rate		Unit	Amount
				InFig	In Words		
1	Excavation in foundation and trenches etc. in earth work in all kind of soils such as pick work jumper work,saturated soil including bailing or pumping out water, blasting soft/hard rock, chiseling soft/hard rock where blasting is prohibited, in all lifts including trimming and dressing of sides, levelling of bed, stacking the excavated soil clear from the edge of excavation and then returning the excavated soil in 15cm layers when required into plinths,side of foundations etc including consolidating each deposited layer by ramming , watering and then disposing of all surplus excavated soil as directed in all leads/lifts and shoring strutting, timbering and dewatering where ever required as per the direction and satisfaction of the Engineer-in-charge.	0.67	Cum			Per Cum	
2	Providing and laying cement concrete 1:4:8(1cement:4sand:8 graded stone aggregate 40mm nominal size) and curing complete excluding the cost of form work in foundation and plinth complete in all respect within all leads and lifts as per direction and satisfaction of Engineer-in-charge.	0.19	Cum			Per Cum	
3	Random rubble masonry (uncoursed /brought to courses) with hard stones of approved quality in foundation and plinth including levelling up with cement concrete 1:6:12 (1cement :6sand:12graded Crushed stone 20mm nominal size) at plinth level in cement mortar 1:6 (1cement:6sand) complete in all respect within all leads and lifts as per direction and satisfaction of Engineer-in-charge.	0.6	Cum			Per Cum	
4	Brick work using common burnt clay building bricks (2nd class) in super structure in cement mortar 1:6(1cement:6sand) complete in all respect within all leads and lifts as per direction and best satisfaction of Engineer-in-charge.	10.17	Cum			Per Cum	
5	Providing form work with steel plates 3.15mm thick welded with angle iron frame 30x30x5mm so as to give a fair final including centring shuttering shutting and propping etc with wooden battens and bailies height of propping and centring below supporting floor to ceiling not exceeding 4mtr and removal of the same for insitu reinforced concrete and plain concrete work in:-						
a	Flat surfaces such as soffits of suspended floor, roofs landings and the like floors etc upto 200mm thickness.	30.4	Sqm			Per Sqm	
b	Side and soffits of beams, beam hunchings contilevers girders breasumers and lintels exceeding complete in all respect including the cost of binding wire, in all leads and lifts as per the direction and satisfaction of Engineer-in-charge.	12.53	Rmt			Per Rmt	
6	Providing and laying cement concrete 1:2:4(1cement:2sand:4 graded Curshed stone aggregate 20mm nominal size) and curing complete excluding cost of form work and reinforcement for reinforced work in:-						
a	Suspended floor,roofs, landings, shelves and their support balconies, beams, girders ,bressumers and cantilivers etc. complete in all respect as per the direction and best satisfaction of Engineer-in-charge.	4.85	Cum			Per Cum	
7	Providing Tor steel reinforcement for reinforced cement concrete work including bending, binding and placing in position, complete in all respect including the cost of binding wire, in all leads and lifts as per the direction and satisfaction of Engineer-in-charge.	436.50	Kg			Per Kg	
8	Providing wood work in frames of doors, window clerestory windows and other frames wrought framed & fixed in position complet 2nd class deodar wood in all respect with in all leads and lifts as per direction and best satisfaction of Engineer-in-charge.	0.46	Cum			Per Cum	
9	Providing 40x3mm iron hold fast 40cm long including fixing to frme with 10cm dia bolts, nuts and wooden plugs and embending in CC block 30*10(15 cm 1:3:6 (1cement: 3sand:6graded stone aggregate 20mm nominal size	18	Nos			Each	

10	Providing and fixing Panneled glazed or Panelled and glazed shutters for doors windows and clerestory windows, including black enamelled iron butt hinges with necessary screws, complete in all respect with in all leads and lifts as per direction and best satisfaction of Engineer-in-charge. 45mm thick 2nd class deodar wood	9.19	Sqm			Per Sqm	
11	Providing and fixing wire gauge shutters using galvanised MS wire gauge of 15 gauge designation 85G with wire of dia 0.56mm for doors windows and cleastorey windows including height finished black enamelled iron hinges with necessary screws 40mm thick 2nd class dodar wood complete in all respect with in all leads and lifts as per direction and best satisfaction of Engineer-in-charge	9.19	Sqm			Per Sqm	
12	6mm cement plaster to ceiling in Cement mortar 1:3(1cement:3sand) complete in all respect within all leads and lifts as per direction and best satisfaction of Engineer-in-charge.	25.76	Sqm			Per Sqm	
13	15mm cement plaster in single coat on rough side of brick/stone masonry for interior plastering upto floor two level including arises, internal rounded angles, chamfers and/or rounded angles not exceeding 80mm in girth and finished even and smooth in cement mortar 1:6(1cement:6sand) complete in all respect with in all leads and lifts as per direction and best satisfaction of Engineer-in-charge.	88.5	Sqm			Per Sqm	
14	Cement concrete flooring 1:2:4(1cement:2sand:4 graded stone aggregate 20mm nominal size) laid in one layer and finished with a floating coat of neat cement, complete in all respect within all leads and lifts as per direction and best satisfaction of Engineer-in-charge. 40mm thick	16.66	Sqm			Per Sqm	
15	Distempering (Two coats) with oil bound washable distemper of approved brand and manufacture and of required shade on undecorated wall surface 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 droppings and other foreign matter and also including preparing the surface even and sand papered smooth priming coat with distemper primer.complete in all respect with in all leads and lifts as per direction and best satisfaction of Engineer-in-charge.	114.26	Sqm			Per Sqm	
16	Applying priming coat over new wood and wood based surfaces after and including preparing the surface by thoroughly cleaning oil,grease, dirt and foreign Matter,sand papering and knotting ready mixed paint brushing wood primer pink complete including the cost of binding wire in all leads and lifts..	18.37	Sqm			Per Sqm	
17	Painting two coats (excluding priming coat) on new wood and wood based surface with enamel paint to give an even shade including cleaning the surface of dirt, dust and other foreign matter , sand papering and stopping with enamel paint other than white complete including the cost of binding wire in all leads and lifts.	18.37	Sqm			Per Sqm	
18	Providing and fixing anodised aluminium sliding door bolt anodised colour and shade with bolts and nuts , screws etc. complete.300 x 16 mm	2	Nos			Each	
19	Providing and fixing aluminium tower bolts (barrel type) anodised transparent or dyed to required shade and colour with screws etc. complete.						
a	250x10mm	4	Nos			Each	
b	150x10mm	28	Nos			Each	
20	Providing and fixing anodised aluminium handles with necessary screws etc complete 125mm dia	20	Nos			Each	

Term and conditions:

- 1 The cement will be issued @ Rs.225 per bag and tor steel @ Rs.4700/-Qtl , on proper indents from
- 2 The concrete should be volume batched,mechanically mixed & vibrated for which nothing shall be paid.
- 3 The work should be executed as per HP.PWD specifications.
- 4 The rates are inclusive of carriage of materials in all leads and lifts to the site of work.
- 5 The contractor will be responsible for watch and ward of material issued to him and in the event of
- 6 10% payment shall be with held by the Department for testing of pump house and the same shall be
- 7 1% Labour cess will be deducted on gross amount from each bill besides other deductions such as income Tax, Surcharge on Income Tax **GST as applicable.**

Executive
IPH Division Baggi.

SCHEDULE OF QUANTITY

Name of work:- CAD of LIS Jallah in G.P. Lohara in Tehsil Balh District Mandi(HP) (SH:- Replacement of existing pumping machinery)

**Estimated Cost:-
Earnest Money:-
Time Limit:- Three**

S. No.	Items of work	Quantity	Rates		Unit	Amount
			In Figures	In words		
1	2	3	4	5	6	7
1	Supply of submersible water pumping set of reputed make such as KSB / Kirloskar / CALAMA / Johnston / BS/ SABAR make conforming to latest relevant BIS code. The pump should be fitted with free flow impellers of suitable alloy as per BIS 8034-1976 latest suitable for clear cold water 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 Kirloskar/NGEF/Jyoti/Crompton make conforming to relevant BIS code latest with up to date amendments 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 withstand 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 erection clamps, cable clips & depth gauge etc. & suitable for operation on data given below:-	1 set			Per set	
A)	SITE CONDITIONS					
i)	Location of site :- The site is located at a distance of 5km from Nerchowk by road and 0.500km by head lead.					
ii)	The altitude of place in which the motor is intended to work in ordinary service if it exceeds 1000 meter:- 800 meter					
iii)	Humidity : Weather generally remains humid during monsoon season					
iv)	Nature of atmosphere : As normally encountered in Shivalik Range.					
v)	Detail of quality of water:- Raw water.					
vi)	Water free from sand or not :- Yes					
vii)	Water corrosive or not :- No					
viii)	Turbidity (if any) :- Upto 0.50 NTU					
ix)	NPSH available: NA					
x)	Any other information or requirement:-					
B)	OPERATING CONDITIONS					
i)	Type of current:- AC Three/Single phase					
ii)	Operating 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 latest with upto date amendments					
v)	No. of working hours per day:- 8 hours					
vi)	Speed of revolution in RPM:- To be quoted by tenderer					
vii)	Direction of rotation :- To be quoted by tenderer					
viii)	The max. Temp. of cooling air & water in the place in which the pumpset is intended to work in ordinary service:- 25 degree centigrade.					
C)	MOTOR					
i)	Ref to BIS code:-BIS 325-1978 read with BIS 900-1992 (latest) with up to date amendments.					
ii)	Type of enclosure of motor :- SPDP (As per BIS 4691-1985, latest).					
iii)	Type of duty:- Continuous					
iv)	Mechanical out put in KW :- Suitable for driving submersible pumps required for duties specified against pumps. To avoid overloading of motor a margin of about 15-20% may be kept in the rated out put of prime mover.					
v)	Class of insulation:- Class -B/class-F					
vi)	Max. permissible temp. rise of motor reqd. if different from that given in B (viii) above:- To be specified by the tenderer					
vii)	Particulars of test reqd. & where they are to be conducted:- As per terms & conditions attached					
viii)	Particulars as to whether voltage limiting device will be employed:- ATS / Star Delta starter oil immersed, fully automatic to be installed between bus bar chamber & motor. Shunt capacitor is also proposed to be installed for improving the power factor at site. NOTE:- Star delta starter upto 37.5 KW & ATS for 37.5 KW to 50 KW & stator rotor starter with slip ring motor beyond 50 KW.					
ix)	Motor whether squirrel cage or slipring:- Squirrel cage. Note: Squirrel cage up to 65 HP & slipring above 65 HP					
x)	Details of shaft extension required. :- Just sufficient to provide direct drive by flexible coupling to pump.					
xi)	Type of slipring gear whether continuously rated or for starting purposes only and whether to be fitted with brush lifting or short circuiting arrangements or both if interlocks are required. :- Continuously rated for squirrel cage/ slipring motor.					

xii)	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.				
xiii)	Nature of load & any information regarding the driven machine which has a bearing upon the torque reqd. during the accelerated period, the kinetic energy of the moving parts to be accelerated & No.of starts during a specified period. :-To work the pump offered				
xiv)	Where possible fault capacity of the system to which the motor is connected. :- The motor should be able to withstand initial current of 2.5 times the rated current for two minutes without suffering damages or permanent deformations.				
D)	PUMPS: BIS: 1520-1980, read with BIS 9137-1978 both latest with up to date amendments.				
a)	Nos of pumps reqd:- 1 No. pump				
b)	Spare parts required :- For two years normal maintenance as recommended by manufacturer.				
c)	Optional fittings reqd. :- Air cock for exhausting air from each stage.				
E)	PUMP OPERATING CONDITIONS				
i)	Capacity :- 24.55 LPS/ set				
ii)	Total head in meter :- 69.53 meter				
	(If total head is not known then following details be provided) :-				
	i) Static head ----- meter				
	ii) Minimum depth of water ----- Mtrs.				
	iii) Variation in water level ----- Mtrs.				
	iv) Ground level to max. water level ----- Mtrs.				
	v) Ground level to delivery point :- 831.05Mtrs.				
	vi) Pressure in the suction tank ----- Kg/cm ²				
	vii) Pressure in the delivery tank ----- Kg/cm ²				
iii)	Length of R/Main :- 735 meter (Column pipe + Rising Main)				
iv)	Dia of R/Main 150 mm Dia				
v)	Drive arrangement: Direct through flexible coupling on a common base plate.				
vi)	Drive type :- Electric driven				
vii)	NPSH required :- To be quoted by contractor.				
viii)	Limits of total head in which the pump is reqd. to operate.:- (-) 15% to (+) 10% of total head.				
ix)	Suction/delivery size of pump :- To be specified by the tenderer				
x)	Efficiency of pump at :- To be specified by the tenderer				
	a) Duty head				
	b) (+) 10 % head				
	c) (-) 15 % head				
xi)	Material of construction :- To be specified by the tenderer (Manufacturer's certificate to be appended)				

General Terms and Conditions:-

- 1 The work should be executed as per HPPWD specifications and as per relevant codes.
- 2 The contractor will be responsible for watch and ward of all materials issued to him by department.
- 3 Nothing will be paid for sub-standard work/maetrials.
- 4 The work should be executed in accordance to the the relevant codes and specifications.
- 5 All the rates should be quoted inclusive of carriage of materials to site of work in all leads and lifts.
- 6 Security as applicable and 1% Labour cess will be deducted on gross amount from each bill of besides other deductions such as income tax, surcharge on income tax and **GST as applicable.**

Other terms and Conditions are attached as per annexure -A

Total:-

Executive
Engineer,
IPH Division Baggi.

Annexure-A

**TERMS & CONDITIONS
Pumping Machinery**

1. The firm shall forward a copy of supply order/indent placed by it for the supply of pumps and motors on the
2. The firm shall arrange dispatch of offered pumps and motors to the consignee direct from the manufacturer/their
3. The Shop Test for the pumps and motors shall be carried out at manufacturer's works in the presence of
4. The firm shall supply the recommended list of spares and quantities required for normal working; of pumping
5. The firm shall supply the manufacturer's manuals 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
7. The characteristic curves in original of the pumping equipment shall be supplied with the offer otherwise the
8. The firm shall supply layout drawing in respect of various components, such as suction pipes, valves, cable
9. The wiring and installation of electric equipment shall be as per HPSEB rules and regulations & subjected to the
10. The sizes/capacities/pressure ratings of all the electrical and mechanical equipment and cables etc. shall be given
11. The temporary electrical connection, if required during installation shall be arranged by the firm at its own cost
12. 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
13. The rates shall be quoted only on the format of schedule of quantities.
14. The rates offered for the specified makes in the schedule of quantities only shall be considered. Rates quoted for
15. All the equipment/materials shall conform to the relevant BIS specifications wherever applicable and in its absence
16. The general specifications of work shall conform to Punjab PWD/HPPWD/IPH specifications or as per relevant
17. All Mechanical/electrical equipment shall be guaranteed against any manufacturing defect including metallurgy
18. The installed pumping machinery and other allied accessories shall be tested daily for stipulated pumping hours in
19. Only Advani make welding rods shall be used for welding as per IS-814.
20. The firm shall install all the pump sets and make arrangement to connect delivery mains with rising main, so that
21. The firm shall submit layout drawings of pump set installation within a week time of in case of award letter and
22. Necessary Test Certificate from the manufacturer for all the items of schedule of quantity be supplied/produced by
23. Suction pipe, delivery pipe and pipe for common header and all valves, specials and joints etc. shall be of same

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IPH Division Baggi.

SCHEDULE OF QUANTITY							
Name of work : - Restoration of rain damages of Balh Valley (Right Bank) Medium Irrigation Project Zone No. 7 Distt. Mandi (H.P.) (SH:- C/O Retaining wall to protect the kulh at village Tamroh Chauotra & C/O Pucca field channel at RD 630 to 640m).						Estimated Cost : Rs.	
						Earnest money : Rs. 2290/-	
						Time limit : Three	
S.No.	DESCRIPTION OF ITEMS	Qty.	UNIT	RATE		AMOUNT	
				In fig.	In words		
1	Excavation in foundation and trenches up to all depths and in all classification of earth work such as pick work, jumper work, saturated soil including bailing or pumping out of water, blasting soft or hard rock or chiselling or wedging out of soft/hard rock , where blasting is prohibited, in all lifts including trimming and dressing of sides, levelling of beds to correct grade including shoring, strutting , planking, timbering and dewatering where ever required. Stacking usable and unusable material/soil seperately and after laying, jointing and testing of pipes, returning the usable soil in 15cm layers by ramming and watering and then disposing of all surplus excavated soil/ unusable material as directed within all leads/ lifts including restoration of unmetalled surfaces to its original condition and including cost of diversion for traffic, night signal boards, fixing caution boards, crossing over trenches for access to houses, fencing etc. complete in all respects within all leads and lifts as per direction of the Engineer-in-charge.	8.125	Cum	Per Cum			
2	Providing form work with steel plates 3.15mm thick welded with angle iron in frame 30x30x5mm so as to give a fairfinish I/c centring , shuttering , strutting and proping etc.with wooden battens and ballies, height of propping and centring below supporting floor to ceiling not exceeding 4m and removal of the same for insitu-reinforced concrete & plain concrete work in :-						
a	Vertical surfaces such as walls (any thickness), partitions and the like including attached pillars, buttress,plinthand string courses and the like in all leads and lifts as per the direction of Engineer-in-charge.	65.55	Sqm.	Per Sqm.			
3	Providing and laying cement concrete 1:5:10 (1 cement:5 sand:10 graded stone aggregate 40mm nominal size) with 15% plum and curing complete excuding cost of form work in retaining wall/ breast wall the size of plums shall be usually be 150mm 300mm as per the best satisfaction of Engineer-in-charge.	27.75	Cum	Per Cum			
4	Boulder filling behind the retaining wall/ breast wall in all leads and lifts and as per the direction of Engineer-in-charge.	1.8	Cum	Per Cum			
5	Dressing of bed and preparation of sub grade for linning in all classification of earth work in all leads and lifts and as per the direction of Engineer-in-charge.	3.75	Sqm.	Per Sqm.			
6	Dressing of side slopes and preparation of sub grade for linning in all classification of earth work in all leads and lifts and as per the direction of Engineer-in-charge.	11.60	Sqm.	Per Sqm.			
7	Cement concrete lining 15cm thick or less for irrigation channel using cement in create cement concrete 1:3:6 (1 cement:3 sand:6 graded stone aggregate 20mm nominal size) and curing complete excuding cost of form work and reinforcement concrete work in foundation and plinth.						
i	Hand mixed cement concrete lining in bed:	0.309	Cum	Per cum			
ii	Hand mixed cement concrete lining in side slopes:	0.75	cum	Per cum			
8	Extra allowances for form work in concrete linning in sides/ side slopes as per the direction of Engineer-in-charge.	0.75	cum	Per cum			

Term and conditions:

- 1 The cement will be issued @ Rs.225 per bag on proper indent on recoverable basis from Divisional store Baggi.
- 2 The concrete will be volume batched , mechanically mixed and vibrated for which nothing extra shall be paid.
- 3 Only mechanically crushed stone aggregate will be used in concrete work.
- 4 The work should be executed as per IPH/HPPWD specifications and as per relevant IS codes.
- 5 The rates should be inclusive of carriage of materials in all leads and lifts to the site of work.
- 6 The contractor will be responsible for watch and ward of material issued to him and in the event of any theft or
- 7 Security as applicable and 1% Labour cess will be deducted on gross amount from each bill besides other

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