

ADDITIONAL 65MGD BULK WATER SUPPLY SCHEME FROM HALEJI TO PIPRI, KARACHI						
CONSTRUCTION OF R.C.C LINED CHANNEL & R.C.C CONDUIT FROM HALEJI LAKE TO GHARO PUMPING STATION						
INTAKE STRUCTURE , PIPE & CONDUIT WORKS						
BILL OF QUANTITIES (PACKAGE -1)						
S.No	DESCRIPTION	No	QTY	UNIT	RATES (Rs.)	AMOUNT
	All items under this head to be carried out as per specifications, Drawings, relevant BSI/ASTM Standards, complete in all respect to the entire satisfaction of the Employer, and following Sections of the Technical Specifications. Rates shall be applicable on all types of building/structures shown in the drawings under this contract.					
PART-A						
1	<u>JUNGLE CLEARANCE</u> Jungle clearance and removing within 100 feet (30.5 metres). For Pipe Works & Conduit Works	1	4,300.0	Sq.m		
2	<u>EXCAVATION</u> Excavation in foundation of building, bridges and other structures including dagbelling dressing refilling (Backfilling) around structure with (suitable) excavated earth watering, ramming lead upto 5'-0" ft. Complete and disposal of surplus excavated material to designated area i/c all lead & lift. etc. complete in all respects as per standard specification, drawing and entire satisfaction of the Engineer.					
2.1	<u>In Ordinary Soil</u> From \pm (0.00) to (1.5m) For Pipe Works, Intake Structure, Conduit Works & Penstock Chamber @ Interconnection Point	1	4,839.00	Cu.m		
	Add for additional lift of every three ft or part there of for excavation for building, bridges, pipelines & storage tanks tranches and pits and other structures.					
2.1.1	From (1.5m) to (2.5m) For Pipe Works, Intake Structure, Conduit Works & Penstock Chamber @ Interconnection Point	1	899.00	Cu.m		
2.1.2	From (2.5m) to (3.5m) For Pipe Works, Intake Structure & Conduit Works	1	30.00	Cu.m		

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2.2	<u>In Hard Soil or soft Murum</u> From \pm (0.00) to (1.5m) For Pipe Works, Intake Structure, Conduit Works & Penstock Chamber @ Interconnection Point	1	2,075.00	Cu.m		
	Add for additional lift of every three ft or part there of for excavation for building, bridges, pipelines & storage tanks tranches and pits and other structures.					
2.2.2	From (1.5m) to (2.5m) For Pipe Works, Intake Structure, Conduit Works & Penstock Chamber @ Interconnection Point	1	386.00	Cu.m		
2.2.3	From (2.5m) to (3.5m) For Pipe Works, Intake Structure & Conduit Works	1	13.00	Cu.m		
2.3	<u>SLUSHY OR DALDALLY</u> Excavation for tank and reservoir in slushy soil or daldally soils i/c trimming and dressing sides to true alignment & shape levelling of bedsof trenches to correct level and grade, cutting, joint holes and disposal of surplus earth within a one chain as directed by Engineer Incharge. providing fence guard, lights, flags and temporary crossings for non vehicular trffic where ever required lift upto 5 ft.(1.52 m) and lead upto one chain (30.5 m)					
2.3.1		1	2,060.50	Cu.m		
4	<u>STONE SOLING</u> Providing and laying dry rammed brick or stone ballast / soling 1-1/2" to 2" gauge from approved quarry including hand packing & filling voids with stone material, consolidating & compacting with power or hand roller,etc complete in all respects as per standard specification, drawing and entire satisfaction of the Engineer.					
4.1	Conduit Works	1	839.00	Cu.m		
4.2	Intake Structure& Penstock Chamber @ Interconnection Point	1	16.00	Cu.m		

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5	<u>WOODEN FORMWORKS/SHUTTERING FOR PLAIN CEMENT CONCRETE</u> Providing, fixing, erection and removal of centering for plain cement concrete works of partial wood (shuttering / formwork) of approved quality in horizontal / vertical surface etc. complete in all respects as per standard specification, drawing and entire satisfaction of the Engineer.					
5.1	Intake Structure, Conduit Works & Penstock Chamber @ Interconnection Point & For Concrete Encasement of Pipe	1	218.96	Sqm.		
6	<u>PLAIN CEMENT CONCRETE</u> Cement concrete plain including placing compacting, finishing and curing, complete (including screening and washing of stone aggregate without shuttering. complete in all respect, as per specifications & relevant drawings and all works to the entire satisfaction of the Engineer.					
6.1	Intake Structure, Conduit Works, Penstock Chamber @ Interconnection Point & (5.8 Mpa 850Psi) (Ratio 1:4:8)	1	342.00	Cu.m		
6.2	Concrete Encasement (1:2:4)	1	74.07	Cu.m		
7	<u>REINFORCED CEMENT CONCRETE</u> Reinforced cement concrete work including all labour and material except the cost of steel reinforcement and its labour for bending and binding which will be paid separately. This rate also includes steel formwork, moulds lifting shuttering curing rendering and finishing the exposed surface (including screening and washing of shingle) also i/c plasticizer /admixture for strength etc .RC work in roof slab, beams, columns, rafts, lintels and other structural members laid in situ or precast laid in position etc complete in all respect, as per specifications & relevant drawings and all works to the entire satisfaction of the Engineer.					
7.1	Base Slab, Top Slab & Walls (1:1-1/2:3) 4000psi					
7.2	For Intake Structure, Conduit Works & Penstock Chamber @ Interconnection Point	1	2,819.00	Cu.m		

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8	<u>PRECAST R.C.C (1:2:4)</u> Precast reinforced cement concrete in columns , beams lintels, stairs cases, shelves, plank and cover i/c lifting hook, erecting & fixing in position etc, lift upto 20ft .complete in all respect as per specifications & relevant drawings and all works to the entire satisfaction of the Engineer.					
8.1	For Intake Structure (Precast Plank)& Intake Structure Manhole Cover	1	2.00	Cu.m		
9	<u>STEEL REINFORCEMENT</u> Providing, supplying, cutting, fabrication of Tor / deformed steel reinforcement for cement concrete including cutting, bending, laying in position making joints and fastening including cost of binding wire (also includes removal of) etc. complete in all respects as per standard specification, drawing and entire satisfaction of the Engineer. <i>(Bars to be cut and placed in position at any level according to the Bar bending schedule prepared by the contractor and approved by the Engineer).</i>					
9.1	For Intake Structure, Conduit Works & Penstock Chamber @ Interconnection Point	1	338.00	Ton		
10	<u>BITUMEN COATING</u> Bitumen coating to plastered or cement concrete surface, complete in all respect, as per specifications & relevant drawings and all works to the entire satisfaction of the Engineer.					
10.1	For Intake Structure , Conduit Works & Penstock Chamber @ Interconnection Point	1	6,532.00	Sq.m		
11	<u>WATER STOPS</u> Providing and fixing expansion /construction joint in concrete work of 9" or 225mm wide corrugated PVC water stop (with bulb) i.c soldering and cost of the material and labor etc. complete in all respects as per standard specification, drawing and entire satisfaction of the Engineer.					
11.1	For Intake Structure , Conduit Works & Penstock Chamber @ Interconnection Point	1	3,113.00	R.m		

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12	<u>BLOCK MASONRY STEPS</u> Providing and laying 1:3:6 cement concrete solid block masonry wall /steps set in 1:6 cement mortar in plinth and foundation including raking out joints & curing etc., complete in all respects as per standard specification, drawing and entire satisfaction of the Engineer.					
12.1	Penstock Chamber @ Interconnection Point	1	1.00	Cu.m		
13	<u>STEEL STRUCTURE WORKS</u> Providing, supplying, cutting, fabricating, erecting, placing and installing, fixing in position having minimum yield strength of 36 ksi, all structural steel platform /stairs , base plate, MS sheets, stiffener plate, MS pipe, post, bar, anchors & rawal bolts, J bolts, nuts, washer, railing and chequered plate) or as required. and confirming to ASTM A36, jointing, welding confirming to AWS (American welding society) specification.complete in all respects as per drawing, standard , specifications and as directed by the Engineer. NOTE: (All structural elements except chequered plate, nuts & bolts shall be epoxy coated over primer coat of approved colors. and chequered plate painting with enamel paint over primer coat of approved colors. all nuts, bolts and washers shall be hot dipped galvanized.)					
13.1	MS.Platform, stair and Railing					
	For Intake Structure	1	3,046.00	Kg		
	Penstock Chamber @ Interconnection Point	1	1,683.00	Kg		
13.2	MS.Screen /Grating with frame					
	For Intake Structure	1	1,615.00	Kg		
	Penstock Chamber @ Interconnection Point	1	323.00	Kg		

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14	<u>PAINTING ON M.S WORKS</u> Providing and applying preparing the surface and painting on MS works guard bars, gates of iron bars, grating, railings (including standards braces) and similar open works 3 coats of Enamel paint of equivalent approved quality and shade including surface preparation, primer coat, filling, cutting etc. complete in all respects as per standard specification, drawing and entire satisfaction of the Engineer.					
14.1	Paint on M.S Platform, Stair and Railing					
	Priming coat	1	30.00	Sq.m		
	Each subsequent coat of paint (1st coat to 3rd coat)	1	30.00	Sq.m		
14.2	Paint on M.S Screen /Grating with frame					
	Priming coat	1	20.00	Sq.m		
	Each subsequent coat of paint (1st coat to 3rd coat)	1	20.00	Sq.m		
SUB TOTAL AMOUNT PART-A (Rs)						

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PART-B						
15	<u>REINSTATEMENT OF ROAD</u> Making, providing, laying, finishing and compacting, Reinstatements for works cross the road utilities of required depth, including disposal of excavated/boring stuff out side the construction area, reinstatement as per requirements and satisfaction of the client/engineer, etc complete in all respect, as per specifications & relevant drawings and all works to the entire satisfaction of the Engineer. (Provisional)	1	3000	Sqm		
PART-B (Rs)						

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PART-C						
16	<u>M.S LADDER /RUNGS</u> Providing fabricating and fixing M.S ladder /rungs as shown in drawing complete with all fixing arrangements (rawal bolt, etc.) as shown in drawing enamel painting with rust proof paint (at any height in any floor) etc., complete in all respects as per drawing, standard , specifications and directed by the Engineer.					
16.1	For Intake Structure	1	42.00	Nos		
17	<u>M.S RAILING</u> Providing, fabricating, welding & fixing in position MS railing for staircase or where required comprising of 2" dia MS pipe hand rail, 1-1/2" dia balustrade & 1/2" dia as intermediate rail (Thickness of MS pipe not less then 16 swg)as shown on drawing, including base plate & hold fast, 3/4" dia MS pipe for connecting 2" dia hand rail and all required hard wares etc., including providing & applying 2 coats of anti corrosion paint (Red Oxide) and 03 coats of approved color enamel paint (at any height in any floor) etc. complete in all respect as per drawing, standard , specifications and directed by the Engineer.					
17.1	For Intake Structure	1	7.00	R.m		

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18	<u>PIPE WORKS</u> Manufacturing, supplying, laying, jointing, testing, disinfection & commissioning of Black steel M.S Pipe made out of M.S sheet confirming to API 5L grade X 42 (Spirally Welded) with ERW & Externally asphalt coated with fiber glass 5mm thick & internally CC Lining 12mm thick as per American Water Works Association (AWWA) Specification i/c jointing with welding in trenches i/c cost of all fittings, bend, tee, yee of any degree & reducer (if required) and testing with water specified pressure for different dia of pipes as below complete in all respect as per drawings, specifications and as directed by the Engineer/Incharge.					
18.1	1500mm (60") I.D x 12mm WT	1	30.00	Rm		
19	<u>BUTTERFLY VALVE</u> Providing, Fixing, testing & commissioning of Ductile Iron Body Butterfly Valve with Flange End as per Design Standard BS 5155 in compliance with DIN 3202/API 594 having Nominal Pressure PN-16 Class 150 S.S Disc Gear operated & Galvanized Steel Bolts & Nuts including cost of Rubber Gas Kit/ Rubber packing & Labour complete in all respect as per specifications & as directed by the Engineer/Incharge.					
19.1	1500mm Dia	1	1.00	No		
20	<u>M.S FLANGE</u> Providing & Fxing M.S Flanges-EN 1092/BS4504 Raised face having Nominal Pressure PN-16 & Standard Thickness including the cost of fabrication, fixing, jointing, also including nuts, bolts, washers, rubber packing, etc complete in all respect as per specifications & all work to the entire satisfaction of the Engineer/Incharge.					
20.1	1500mm Dia	1	2.00	No		

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21	<u>PUDDLE FLANGE</u> Providing and fixing M.S puddle flange of the following diameters, complete in all respect as per drawing and as directed by the Engineer.					
21	1500 mm dia	1	2.00	No		
22	<u>PENSTOCK GATE</u> Providing, fixing and erection of Penstock Gate below given sizes etc. complete in all respect and all works to the entire satisfaction of the Engineer Incharge.					
22.1	Penstock gate at Inter connection Point Size of (1.9m x 2.75m)		2.00	No		
PART -C (Rs)						
TOTAL AMOUNT OF PART - (A+B+C) (Rs)						