

ADDITIONAL 65MGD 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 , SMALL CONDUIT, LARGE CONDUIT & CANAL 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	JUNGLE CLEARANCE Jungle clearance and removing within 100 feet (30.5 metres).					
1.1	For Conduit & Structural Works, Canal Works	1	138,775.00	Sq.m		
2	EXCAVATION 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	In Ordinary Soil					
2.1.1	From ± (0.00) to (1.5m) For Intake Structure , Small Conduit (100 R.M), Large Conduit (4842 R.M), Transition Chamber b/w Canal & Conduit, Penstock Chamber @ Interconnection Point, Over flow Conduit, Over flow Chamber	1	38,025.00	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 structure.					
2.1.2	From (1.5m) to (2.5m) For Intake Structure , Small Conduit (100 R.M), Large Conduit (4842 R.M), Transition Chamber b/w Canal & Conduit, Penstock Chamber @ Interconnection Point, Over flow Conduit, Over flow Chamber	1	24,901.00	Cu.m		
2.1.3	From (2.5m) to (3.5m) For Intake Structure , Small Conduit (100 R.M), Large Conduit (4842 R.M), Transition Chamber b/w Canal & Conduit, Over flow Conduit, Over flow Chamber	1	22,914.00	Cu.m		
2.1.4	From (3.5m) to (4.5m)					
	For Intake Structure , Small Conduit (100 R.M), Large Conduit (4842 R.M), Over flow Chamber	1	10,332.00	Cu.m		

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2.1.5	From (4.5m) to (5.5m) Large Conduit (4842 R.M)	1	5,638.00	Cu.m		
2.1.6	From (5.5m) to (6.5m) Large Conduit (4842 R.M)	1	4,170.00	Cu.m		
2.1.7	From (6.5m) to (7.5m) Large Conduit (4842 R.M)	1	2,599.00	Cu.m		
2.1.8	From (7.5m) to (8.5m) Large Conduit (4842 R.M)	1	1,185.00	Cu.m		
2.1.9	From (8.5m) to (9.5m) Large Conduit (4842 R.M)	1	525.00	Cu.m		
2.1.10	From (9.5m) to (10.5m) Large Conduit (4842 R.M)	1	264.00	Cu.m		
2.2	In Hard Soil or soft Murum					
2.2.1	From ± (0.00) to (1.5m) For Intake Structure , Small Conduit (100 R.M), Large Conduit (4842 R.M), Transition Chamber b/w Canal & Conduit, Penstock Chamber @ Interconnection Point, Over flow Conduit, Over flow Chamber	1	4,228.00	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 Intake Structure , Small Conduit (100 R.M), Large Conduit (4842 R.M), Transition Chamber b/w Canal & Conduit, Penstock Chamber @ Interconnection Point, Over flow Conduit, Over flow Chamber	1	2,769.00	Cu.m		
2.2.3	From (2.5m) to (3.5m) For Intake Structure , Small Conduit (100 R.M), Large Conduit (4842 R.M), Transition Chamber b/w Canal & Conduit, Over flow Conduit, Over flow Chamber	1	2,553.00	Cu.m		
2.2.4	From (3.5m) to (4.5m) For Intake Structure , Small Conduit (100 R.M), Large Conduit (4842 R.M), Over flow Chamber	1	1,150.00	Cu.m		
2.2.5	From (4.5m) to (5.5m) Large Conduit (4842 R.M)	1	627.00	Cu.m		
2.2.6	From (5.5m) to (6.5m) Large Conduit (4842 R.M)	1	464.00	Cu.m		
2.2.7	From (6.5m) to (7.5m) Large Conduit (4842 R.M)	1	289.00	Cu.m		
2.2.8	From (7.5m) to (8.5m) Large Conduit (4842 R.M)	1	132.00	Cu.m		
2.2.9	From (8.5m) to (9.5m) Large Conduit (4842 R.M)	1	59.00	Cu.m		

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2.2.10	From (9.5m) to (10.5m) Large Conduit (4842 R.M)	1	30.00	Cu.m		
2.3	EXCAVATION FOR CANAL (ORDINARY SOIL) Earth work excavation ordinary soil in irrigation channels, drains etc, dressed to designed section grades and profiles excavated section grades and profiles .excavated material disposed off and dressed within 15m lead.					
2.3.1	From ± (0.00) to (1.5m) For Canal Works	1	91,983.00	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					
2.3.2	From (1.5m) to (2.5m) For Canal Works	1	25,726.00	Cu.m		
2.3.3	From (2.5m) to (3.5m) For Canal Works	1	5,423.00	Cu.m		
2.3.4	From (3.5m) to (4.5m) For Canal Works	1	869.00	Cu.m		
2.4	EXCAVATION FOR CANAL (HARD SOIL) Earth work excavation Hard soil in irrigation channels, drains etc, dressed to designed section grades and profiles excavated section grades and profiles, excavated material disposed off and dressed within 15m lead.					
2.4.1	From ± (0.00) to (1.5m) For Canal Works	1	45,992.00	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.					
2.4.2	From (1.5m) to (2.5m) For Canal Works	1	12,863.00	Cu.m		
2.4.3	From (2.5m) to (3.5m) For Canal Works	1	2,712.00	Cu.m		
2.4.4	From (3.5m) to (4.5m) For Canal Works	1	435.00	Cu.m		
2.4	MEDIUM HARD ROCK Excavation in rock, dressed to designed , grades and profile executed material disposed off . Complete in all respect as per instruction of Engineer incharge. B) Medium hard rock requiring occasional blasting	1	19,234.25	Cu.m		

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4	<u>EARTHFILL (BORROW MATERIAL)</u> Supplying and filling watering and ramming earth under floor with new earth excavated from outside) lead upto one chain and lift upto 5 feet. laying earth in 6" layers leveling dressing and watering for compaction by rolling to obtain 95% modified AASHTO density. Complete including all lead & lifts etc. complete in all respects as per standard specification, drawing and entire satisfaction of the Engineer.					
4.1	Canal /Channel	1	1,644.69	Cu.m		
5	<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. For Intake Structure , Small Conduit (100 R.M), Large Conduit (4842 R.M), Canal, Over flow Conduit, Over flow Chamber, Box Culvert at road Crossing, Penstock Chamber @ Interconnection Point, Transition Chamber b/w Canal & Conduit					
5.1		1	25,232.00	Cu.m		
6	<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. For Intake Structure , Small Conduit (100 R.M), Large Conduit (4842 R.M), Transition Chamber b/w Canal & Conduit, Penstock Chamber @ Interconnection Point, Over flow Conduit, Over flow Chamber, Box Culvert at road Crossing					
6.1		1	1,125.00	Sqm.		
7	<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.					

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7.1	For Intake Structure , Small Conduit (100 R.M), Large Conduit (4842 R.M), Transition Chamber b/w Canal & Conduit, Penstock Chamber @ Interconnection Point, Over flow Conduit, Over flow Chamber, Box Culvert at road Crossing, (5.8 Mpa 850Psi) (Ratio 1:4:8)	1	1,919.00	Cu.m		
7.2	For Transition Chamber Benching (Ratio 1:2:4)	1	7.00	Cu.m		
8	REINFORCED CEMENT CONCRETE 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.					
8.1	Base Slab, Walls & Top Slab (1:1-1/2:3) 4000psi					
8.1.1	For Intake Structure , Small Conduit (100 R.M), Canal, Over flow Conduit, Over flow Chamber, Penstock Chamber @ Interconnection Point, Large Conduit (4842 R.M), Box Culvert at road Crossing, Transition Chamber b/w Canal & Conduit	1	31,590.00	Cu.m		
9	PRECAST R.C.C (1:2:4)					
9.1	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. For Intake Structure, Over Flow Chamber , Transition Chamber b/w Canal & Conduit	1	13.00	Cu.m		

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10	<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> For Intake Structure , Small Conduit (100 R.M), Canal, Over flow Conduit, Over flow Chamber, Penstock Chamber @ Interconnection Point, Large Conduit (4842 R.M), Box Culvert at road Crossing, Transition Chamber b/w Canal & Conduit					
10.1		1	3,058.20	Ton		
11	<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. For Intake Structure , Small Conduit (100 R.M), Over flow Conduit, Over flow Chamber, Penstock Chamber @ Interconnection Point, Large Conduit (4842 R.M), Box Culvert at road Crossing, Transition Chamber b/w Canal & Conduit					
11.1		1	46,333.00	Sq.m		
12	<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.e soldering and cost of the material and labor etc. complete in all respects as per standard specification, drawing and entire satisfaction of the Engineer. Small Conduit (100 R.M), Over flow Conduit, Over flow Chamber, Penstock Chamber @ Interconnection Point, Large Conduit (4842 R.M), Box Culvert at road Crossing, Transition Chamber b/w Canal & Conduit					
12.1		1	21,643.00	R.m		
13	<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. For Intake Structure , Penstock Chamber @ Interconnection Point					
13.1		1	2.00	Cu.m		

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14	<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.)					
14.1	M.S Platform, stair and Railing For Intake Structure , Penstock Chamber @ Interconnection Point	1	6,707.00	Kg		
14.2	M.Screen /Grating with frame For Intake Structure , Transition Chamber b/w Canal & Conduit	1	2,377.00	Kg		
15	<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.					
15.1	Paint on M.S Platform, Stair and Railing Priming coat	1	55.00	Sq.m		
	Each subsequent coat of paint (1st coat to 3rd coat)	1	55.00	Sq.m		
15.2	Paint on M.S Screen /Grating with frame Priming coat	1	64.28	Sq.m		
	Each subsequent coat of paint (1st coat to 3rd coat)	1	64.28	Sq.m		
16	<u>COFFER DAM</u> Temporary construction of coffer dam used of synthetic bags new / 1st bharti 4 to 5 capacity with sand or earth ewing lying in position under water .	1	15,453.00	P.Bag		
SUB TOTAL AMOUNT PART - (A) (Rs)						

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PART-B						
17	<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	3,150.00	Sqm		
SUB TOTAL AMOUNT PART-B (Rs)						

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PART-C						
18	<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.					
18.1	For Intake Structure , Transition Chamber b/w Canal & Conduit, Large Conduit (4842 R.M), Over flow Chamber	1	202.00	Each		
19	<u>EXPANSION JOINT</u> Providing, making, fixing and filling Premould joint filler 12mm thick in lined canal as shown in drawings /detail with bitumastic joint seal of approved manufacture etc, complete in all respects as per drawing, standard , specifications and directed by the Engineer.					
19.1	For Propopsed of Canal	1	325.00	Sq.m		
	<u>THRUST BORING</u> Making, providing, applying and installing in position thrust Boring for pipe line across the roads / existing pipe line horizontally, vertically and inclined operated by manually/automatically at required depth complete arrangement for protection and supporting of pipe sleeves, damages and disposal of excavated/boring debris out side the construction limit area i/c sleeves etc. Proper arrangement for protection of existing utilities. complete in all respect as per drawing and specification and as directed by the Engineer.					
	2100 mm I.D	1	420.00	R.m		

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20	<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.					
20.1	Penstock Chamber (1.4 x 2.1)m		3.00	Nos		
Sub Total Amount Part-C Rs.						
Total of Part - (A+B+C) Carried to Summary Rs.						