

**PHYSICAL AND FINANCIAL BREAK-UP OF SCHEME SPREADING OVER
TWO YEARS**

PHYSICAL (2015 – 2016)

CANAL WORK

S. No	Item No	Description	Unit	Quantity
1	1	Earth work excavation in irrigation channels, drains etc. dressed to section grades and profiles excavated material disposed off and dressed within 50 ft lead.		
		(a) Ordinary soil	Per Cft	28851023.2
2	2	Extra for wet earth work 100%	Per Cft	28851023.2
3	3	Re-handling of earth work		
		(b) Lead up to 100 ft	Per Cft	28851023.2
4	4	Formation dressing and preparing sub grade		
		(a) In bed	Per Sft	28851023.2
5	5	Gravel bedding		20025565.1
		(a) In bed	Per Cft	
		(b) On slope	Per Cft	16470679.0
6	6	Course filter Material	Per Cft	798426.2
7	7	Rolling with Power roller over stone metal to complete as (per modified ASSH O specification in bed only)	Per Cft	16798292.3
8	8	Dressing and leveling of each work to designed section etc. complete		15165583.9
		(c) Gravel work soft rock. (in slope)	Per Cft	
9	9	Providing and lying uPVC pipes of class C fixing in trench i/c cutting and jointing	Per Rft	143103.7
10	11	Pressure Relieve Valve		1480.2
11	12	Plain Cement concrete lining ratio 1:2:4		
		a) In Bed	Per Cft	3963180.2
		b) In slope	Per Cft	1807115.7
12	13	Reinforcement		
		(a) In Bed	Per Ton	518.5
		(b) In Slope	Per Ton	282.9
13	14	Water stopper in horizontal concrete joints	Per Rft	167022.1
14	15	Pre-molded joint filter (Mastic/poly sulfide sealant or equivalent)	Per gallon	24768.2

15	16	Chemical Polymer for crack control and water proofing	Per Kg	394728.8
16	17	Cut-off wall		
		a) RCC 1:2:4	Per Cft	5384.2
		b) Reinforcement	Per Ton	15.1
17	18	Pipe Conduit		
		(a) RCC 1:2:4	Per Cft	6918.2
		(b) Reinforcement	Per Ton	18.3
18	24	Rehabilitation and Refurbishment of D/S protection works of Sakrand and Kumblima Regulators	LS	0
19	25	Re construction of Direct out lets in the Project reach sides	LS	5
20	26	Dewatering 5% of Contract Cost (Detailed Attached)		
21	27	Lining of Khadhar Minor		

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FINANCIAL (2015 – 2016)

CANAL WORK

S. No	Item No	Description	Unit	Amount (Rs)
1	1	Earth work excavation in irrigation channels, drains etc. dressed to section grades and profiles excavated material disposed off and dressed within 50 ft lead.	Per Cft	69,819,476.14
		(a) Ordinary soil		
2	2	Extra for wet earth work 100%	Per Cft	30,582,084.59
3	3	Re-handling of earth work	Per Cft	61,164,169.18
		(b) Lead up to 100 ft		
4	4	Formation dressing and preparing sub grade	Per Sft	14,495,670.36
		(a) In bed		
5	5	Gravel bedding	Per Cft	1,267,217,757
		(a) In bed		1,042,264,565
		(b) On slope	Per Cft	
6	6	Course filter Material	Per Cft	50,524,409.74
7	7	Rolling with Power roller over stone metal to complete as (per modified ASSH O specification in bed only)	Per Cft	121,586,039.9
8	8	Dressing and leveling of each work to designed section etc. complete	Per Cft	6,885,175.074
		(c) Gravel work soft rock. (in slope)		
9	9	Providing and lying uPVC pipes of class C fixing in trench i/c cutting and jointing	Per Rft	90,574,642.1
10	11	Pressure Relieve Valve		111,018,181.8
11	12	Plain Cement concrete lining ratio 1:2:4		860,438,126.2
		a) In Bed	Per Cft	
		b) In slope	Per Cft	400,267,084.6
12	13	Reinforcement		52,593,510.33
		(a) In Bed	Per Ton	
		(b) In Slope	Per Ton	28,697,288.83
13	14	Water stopper in horizontal concrete joints	Per Rft	14,363,902.42

14	15	Pre-molded joint filter (Mastic/poly sulfide sealant or equivalent)	Per gallon	34,675,539.39
15	16	Chemical Polymer for crack control and water proofing	Per Kg	34,675,539.39
16	17	Cut-off wall		
		a) RCC 1:2:4	Per Cft	1,168,945.657
		b) Reinforcement	Per Ton	1,527,612.333
17	18	Pipe Conduit		
		(a) RCC 1:2:4	Per Cft	1,501,995.908
		(b) Reinforcement	Per Ton	1,854,957.833
18	24	Rehabilitation and Refurbishment of D/S protection works of Sakrand and Kumblima Regulators	LS	90,000,000
19	25	Re construction of Direct out lets in the Project reach sides	LS	12,500,000
20	26	Dewatering 5% of Contract Cost (Detailed Attached)		266545574
21	27	Lining of Khadhar Minor		864799720

**PHYSICAL AND FINANCIAL BREAK-UP OF SCHEME SPREADING OVER
TWO YEARS**~~FINANCIAL~~ (2016 – 2017)
PHYSICAL**BANK AND ROAD WORKS**

S. No.	Item No	Description	Unit	Quantity
1.	10	18 Feet width TST road on IP side of Rohri Canal		
2.	19	Stone pitching (3" fine filter, 3" coarse filter and 9" boulder)	Per Cft	856114.8
3.	20	Borrow pit excavation undressed lead up to 100 ft (lead allowed 12 miles)	Per Cft	21315804.0
4.	21	Earth work compaction (soft, ordinary or hard soil)		
5.		a) Laying, earth in 6" layers leveling dressing and watering for compaction etc. complete	Per Cft	21315804.0
6.	22	Earth work compaction by sheep foot roller and power roller with optimum moisture content		
		(a) For 90% modified AASHO density	Per Cft	21315804.0
7.	23	Supply of Murum	Per Cft	2811037.4

**PHYSICAL AND FINANCIAL BREAK-UP OF SCHEME SPREADING OVER
TWO YEARS**

FINANCIAL (2016 – 2017)

BANK AND ROAD WORKS

S. No.	Item No	Description	Unit	Amount (Rs)
1.	10	18 Feet width TST road on IP side of Rohri Canal		76,822,000
2.	19	Stone pitching (3" fine filter, 3" coarse filter and 9" boulder	Per Cft	82,192,154.87
3.	20	Borrow pit excavation undressed lead up to 100 ft (lead allowed 12 miles)	Per Cft	251,270,697
4.	21	Earth work compaction (soft, ordinary or hard soil)		
5.		a) Laying, earth in 6" layers leveling dressing and watering for compaction etc. complete	Per Cft	7,545,794.6
6.	22	Earth work compaction by sheep foot roller and power roller with optimum moisture content		
		(a) For 90% modified AASHO density	Per Cft	56,486,880.48
7.	23	Supply of Murum	Per Cft	169,308,781.3

LINING OF ROHRI MAIN CANAL (RD 645+670 to RD 680+000)
Summary of Bill of Quantities

Section	Description of Works	Amount		Provisional Sums (Rs.)
		Schedule Item (Rs.)	Non Schedule Items (Rs.)	
Bill Nr. 1	General Items	-	-	
Bill Nr. 2	Dewatering and Care of Water	-	-	
Bill Nr. 3	Earth Works	183,183,323	-	
Bill Nr. 4	Fill Works	973,857,950	-	
Bill Nr. 5	Sub Surface Drainage Works	-	-	
Bill Nr. 6	Lining Works	819,527,930	-	
Bill Nr. 7	Bank Works	205,811,156	-	
Bill Nr. 8	Road Works	51,254,367	-	
Bill Nr. 9	Rehabilitation and refurbishment	52,795,596	-	
Bill Nr. 10	Provisional Sum	-	-	5,000,000
	Day Work	-	-	-
	TOTAL RS.	2,286,430,321	-	5,000,000
-	Amount of premium on schedule items _____ % Above / Below	-		
	TOTAL RS.		-	5,000,000
GRAND TOTAL AMOUNT RS =				

Sum

LINING OF ROHRI MAIN CANAL (RD 645+670 to RD 680+000)

BILL OF QUANTITIES

Bill Nr. 1 General Requirements

					Amount	
S.Nr.	Item Description	Unit	Quantity	Rate	Schedule Item	Non Schedule Items
1	Facilities for Employer & Engineer					
	Provide, service and Maintain Site Office, Complete in all respect, which shall include but not limited to all utility connections (electric, internet, gas, water supply, sewerage, etc), fittings, fixtures, furniture, cutlery & crockery items including consumable item etc and monthly payments for utility bills including mobile cards and oil for generator and as approved & directed by the Engineer.					
1.1	Employer and Engineer office as per drawing					
1.1.1	Employer office 2 container of size 10' x 20'	Months	26			0
1.1.2	Engineers site office 5 container of size 10' x 20'	Months	65			0
1.2	Operatives for offices					
1.2.1	Cook (2Nrs. for 13 months)	Man-Month	26			0
1.2.2	Office boys (4Nrs. for 13 months)	Man-Month	52			0
1.2.3	Helpers (2Nrs. for 13 months)	Man-Month	26			0
1.2.4	Sweeper/Cleaner (2Nrs. for 13 months)	Man-Month	26			0
1.3	Maintenance, utility bills and consumables for Engineer's office					
1.3.1	Maintenance of Engineer's Office	Months	13			0
1.3.2	Monthly Payment for utility bills and POL for generator	Months	13			0
1.3.3	Supply of consumables	Months	13			0
1.4	Accommodation for Engineer Staff					
1.4.1	Provide fully furnished accommodation with AC, TV, Generator, Geezer, Room Heater, etc. 8 rooms with attached baths.	Months	13			0
1.5	Operatives for accommodation					
1.5.1	Cook (2Nrs. For 13 months)	Man-Month	26			0
1.5.2	Helpers (2Nrs. for 13 months)	Man-Month	26			0
1.5.3	Sweeper/Cleaner (2Nrs. for 13 months)	Man-Month	26			0
1.5.4	Provide complete security for Employer and Engineer offices and Engineer Accommodation	Months	5			0
1.6	Provide maintain , POL reserving etc following vehicles with, drivers for the use of Employer and Engineer					
1.6.1	Employer Staff					
1.6.2	Double Cabin Pickup 4x4 SR 5 (Toyota Hilux or equivalent) 2 Nr. For 13 months	Veh-month	26			0
1.7	Engineer Staff					
1.7.1	Double Cabin Pickup 4x4 SR 5 (Toyota Hilux or equivalent) 2 Nr. For 13 months	Veh-month	26			0
1.7.2	Single Cabin Pickup 4x4 SR 5 (Toyota Hilux or equivalent) 2 Nr. For 13 months	Veh-month	20			0
1.7.3	Car 1300cc (Toyota or equivalent) 1 Nr. for 13 months	Veh-month	13			0
1.7.4	Provide & supply (including maintenance, replacement) of survey equipment and instruments for Engineer as per site requirement	Months	13			0
1.8	Establish and maintain site testing laboratory for all types of testing of the following material					
1.8.1	Concrete	Months	2			0
1.8.2	Gravel and other fills	Months	13			0
1.8.3	compaction	Months	13			0
1.8.4	Bank Works	Months	13			0
Total for Bill Nr. 1 Carried to Summary Bill of Quantities						
BOQ - 01						

LINING OF ROHRI MAIN CANAL (RD 645+670 to RD 680+000)
BILL OF QUANTITIES

Bill Nr. 2: Dewatering and Care of Water					Amount	
S.Nr.	Item Description	Unit	Quantity	Rate	Schedule Item	Non Schedule Items
2.1	Dewatering, handling and care of water	L.S		L.S	-	
2.2	Dewatering of standing water in the canal section during closure and control of seepage inflow from the groundwater zone around the canal section by:				-	
2.2.1	Installation of wells on both sides at 100 interval	L.S		L.S	-	
2.2.2	Excavation of trench on both sides of the canal away for the toe	L.S		L.S	-	
2.2.3	Pumping arrangements for dewatering and evacuation of seepage water	L.S		L.S	-	
2.2.4	Desilting, Clearing, Grubbing and Strapping canal section including both IP and NIP	L.S		L.S	-	
2.3	Provide soil for Ghanda Works includin placing compection and removing after completion of lining work (including all leads)	L.S		L.S	-	
Total for Bill Nr. 2 Carried to Summary Bill of Quantities						-

LINING OF ROHRI MAIN CANAL (RD 645+670 to RD 680+000)
BILL OF QUANTITIES

Bill Nr 3: Earth Works

					Amount	
S.Nr.	Item Description	Unit	Quantity	Rate	Schedule Item (Rs.)	Non Schedule Item (Rs.)
3	Earth work excavation in irrigation channels, drains etc. dressed to section grades and profiles, excavated material disposed off and dressed within 50ft lead. (P-I/I-5)					
3.1	Ordinary Soil.	cft	28,851,023	2.42	69,819,476	-
3.2	Extra for wet earth work 100%	cft	28,851,023	1.05875	30,546,021	-
3.3	Re-handling of earth work.					
3.3.1	Lead up to 100 ft.	cft	28,851,023	2.1175	61,092,041	-
3.4	Formation dressing and preparing sub grade.					
3.4.1	In Bed	sft	6,650,072	3.267	21,725,785	-
Total for Bill Nr. 3 Carried to Summary Bill of Quantities					183,183,323	-

LINING OF ROHRI MAIN CANAL (RD 645+670 to RD 680+000)
BILL OF QUANTITIES

Bill Nr. 4 Fill Works					Amount	
S.Nr.	Item Description	Unit	Quantity	Rate	Schedule Item (Rs.)	Non Schedule Item (Rs.)
4.1	Gravel bedding with composite filter					
4.1.1	In Bed	cft	22,900,565	19	435,110,735	-
4.1.2	On Slope	cft	18,393,279	19	349,472,301	-
4.2	Course Filter Material	cft	798,426	19	15,170,094	-
4.3	Rolling with power roller over stone metal to complete as per modified AASHTO specification (in bed only)	cft	22,900,565	7.2382	165,758,870	-
4.4	Dressing and leveling of earth work to designed section etc complete.					
4.4.1	Gravel work or soft rock.(in slope)	cft	18,393,279	0.45375	8,345,950	-
Total for Bill Nr. 4 Carried to Summary Bill of Quantities					973,857,950	-

LINING OF ROHRI MAIN CANAL (RD 645+670 to RD 680+000)

BILL OF QUANTITIES

Bill Nr. 5 Sub Surface Drainage Works					Amount	
S.Nr.	Item Description	Unit	Quantity	Rate	Schedule Item (Rs.)	Non Schedule Item (Rs.)
5.1	Providing and laying uPVC pipes (Perforated) corrugated	ft	143,104		-	0
5.2	Pressure Relieve Valve including placing and fitting	Nr	1,480		-	0
Total for Bill Nr. 5 Carried to Summary Bill of Quantities					-	-

LINING OF ROHRI MAIN CANAL (RD 645+670 to RD 680+000)
BILL OF QUANTITIES

Bill Nr. 6 Lining Works

					Amount	
S.Nr.	Item Description	Unit	Quantity	Rate	Schedule Item (Rs.)	Non Schedule Item (Rs.)
6.1	Plain Cement concrete lining ratio 1:2:4					
6.1.1	In Bed	cft	3,486,890.0	137.8932	480,818,420	-
6.1.2	In Slope	cft	1,680,915.0	142.2795	239,159,746	-
6.2	Reinforcement					
6.2.1	(a) In bed	Ton	518.0	100034	51,817,612	-
6.2.2	(b) in Slope	Ton	283.0	100034	28,309,622	-
6.3	Providing, supply & placement of Water stopper in horizontal concrete joints	ft	167,022.0	86	14,363,892	-
6.4	Providing, supply & placement of Pre-molded joint filler (Mastic/poly sulfide sealant or equivalent)	gallon	24,768.0		-	0
6.5	Providing, supply & placement of Chemical Polymer for crack control and water proofing	Kg	544,729.0		-	0
6.6	In situ construction of Cut-off wall					
6.6.1	RCC 1:2:4	cft	5,384.0	137.8932	742,417	-
6.6.2	Reinforcement	Ton	15.1	101434	1,531,653	-
6.7	In situ construction of Pipe Conduit					
6.7.1	RCC 1:2:4	Cft	6,918.0	137.8932	953,945	-
6.7.2	Reinforcement	Ton	18.3	100034	1,830,622	-
Total for Bill Nr. 6 Carried to Summary Bill of Quantities					819,527,930	-

LINING OF ROHRI MAIN CANAL (RD 645+670 to RD 680+000)
BILL OF QUANTITIES

Bill Nr. 7 Bank Works					Amount	
S.Nr.	Item Description	Unit	Quantity	Rate	Schedule Item (Rs.)	Non Schedule Item (Rs.)
7.1	Borrow pit excavation undressed lead up to 100 ft (lead allowed 12 miles)	cft	21,315,804	2.1175	45,136,215	-
7.2	Earth work compaction (soft, ordinary or hard soil)					
7.2.1	Laying earth in 6" layers leveling dressing, watering and compaction etc complete.	cft	21,315,804	0.354	7,545,795	-
7.3	Earth work compaction by sheep foot roller and power roller with optimum moisture content.					
7.3.1	For 90% modified AASHTO density	cft	21,315,804	2.65023	56,491,783	-
7.4	Stone Pitching (3" fine filter, 3" coarse filter & 9" stones)	cft	856,115	53.7763	46,038,697	-
7.5	Supply of Murum including placement and compection to required specification complete	cft	2,811,037	18	50,598,666	-
Total for Bill Nr. 7 Carried to Summary Bill of Quantities					205,811,156	

LINING OF ROHRI MAIN CANAL (RD 645+670 to RD 680+000)

BILL OF QUANTITIES

Bill Nr. 8 Road Works

S.Nr.	Item Description	Unit	Quantity	Rate in Figure	Amount	
					Schedule Item (Rs.)	Non Schedule Item (Rs.)
8.1	Preparing sub-base course by supplying and spreading stone metal 1" - 1 1/2" gauge of approved quality from approved quarry in required thickness to proper camber and grade including hand packing, filling voids with 20 cft pit/canal sand and having plasticity index not more than 6% suitable quality watering and compacting to achieve 98-100% density as per modified AASHO specification. rate included all cost of materials, T&P.	cft	308,709	43.5976	13,458,971	-
8.2	Preparing Base course by supplying and spreading stone metal of approved quality properly graded to maximum size 1 - 1/2" in required thickness to proper camber and grade including supplying and spreading 15 cft; screening & non plastic quarry fines filling depressions with stone metal after initial rolling including watering and compacting the same as to achieve 100% density as per modified AASHO specification. (Rate includes providing & using Templates, Screen, Forms as directed). (rates includes all cost of materials T&P .	cft	308,709	52.5241	16,214,662	-
8.3	Providing surface dressing 1st coat on new or existing surface with 25 lbs bitumen and 2.75 cft of bajri of required size including cleaning the road surface rolling etc, complete. (Rate includes all cost of materials T&P and carriage upto 3 chains)	sft	617,418	12.1154	7,480,266	-
8.4	Providing surface dressing 2nd coat on new or existing surface with 25 lbs bitumen and 3.5 cft of bajri of required size including cleaning the road surface rolling etc, complete. (Rate includes all cost of materials T&P and carriage upto 3 chains)	sft	617,418	12.3609	7,631,842	-
8.5	Providing surface dressing 3rd coat on new or existing surface with 14 lbs bitumen and 1.5 cft of bajri of required size including cleaning the road surface rolling etc, complete. (Rate includes all cost of materials T&P and carriage upto 3 chains)	sft	617,418	7.0487	4,351,994	-
8.6	Laying Brick on end Edging including Supplying 9" * 4.5" *3" first class bricks excavation for laying edging with small side parallel to the road (Rate including lead up to 3 chains)	Rft	69,000	24.8294	1,713,229	-
8.7	Applying Priming coat or tack coat with approved binder at the required rate including cleaning the road surface thoroughly heating to the required temperature and spraying the binder with pressure as directed etc. complete	Sft	621,000	0.6496	403,402	-
Total for Bill Nr. 8 Carried to Summary Bill of Quantities					51,254,367	-

LINING OF ROHRI MAIN CANAL (RD 645+670 to RD 680+000)
BILL OF QUANTITIES

Bill Nr. 9 Rehabilitation and refurbishment Regulators and other Structures					Amount	
S.Nr.	Item Description	Unit	Quantity	Rate	Schedule Item (Rs.)	Non Schedule Item (Rs.)
9.1	Borrow pit excavation undressed lead up to 100 ft (lead allowed 12 miles)	cft	6,685,500	2.1175	14,156,546	-
9.2	Earth work compaction (soft, ordinary or hard soil)					
9.2.1	Laying earth in 6" layers leveling dressing, watering and compaction etc complete.	cft	6,685,500	0.354	2,366,667	-
9.3	Earth work compaction by sheep foot roller and power roller with optimum moisture content.					
9.3.1	For 90% modified AASHTO density	cft	6,685,500	2.65023	17,718,113	-
9.4	Stone Pitching (3" fine filter, 3" coarse filter & 9" stones)	cft	88,875	53.7763	4,779,369	-
9.5	Re Construction of Direct out lets in the Project reach sides					
	In situ construction of Direct out lets					
9.5.1	RCC 1:2:4	cft	25,900	137.8932	3,571,434	-
9.5.2	Reinforcement	Ton	15	100034	1,500,510	-
9.6	Dismantling brick work in cement mortar	cft	16,500	13.00	214,500	-
9.7	Paca Brick Work in foundation and plinth in					
9.7.1	(c) cement sand mortar 1:4	cft	67900	125.0141	8,488,457	-
Total for Bill Nr. 9 Carried to Summary Bill of Quantities					52,795,596	

LINING OF ROHRI MAIN CANAL (RD 645+670 to RD 680+000)
BILL OF QUANTITIES

Bill Nr. 10: Purchase of Vehicles for the Irrigation Department

S.Nr.	Item Description	Unit	Quantity	Provisional Sums (Rs.)
10.1	Purchase of Vehicles for the Irrigation Department	P.Sum		5,000,000
Total for Bill Nr. 10 Carried to Summary Bill of Quantities				5,000,000