

The International Committee of the Red Cross

WATER & HABITAT DEPARTMENT

Saddiyah / Irrigation Canal / Rehabilitation

Saddiyah / Khanaqin / Diyala

01.04.17

Saddiyah / Irrigation Canal / Rehabilitation Saddiyah / Khanaqin / Diyala

Item	Description	Unit	Qty	Unit Price (USD)	Total Price (USD)
1	Diyala River (Intake of the Canal in Jalawla)				
1.1	Providing of materials, labour & machine (Excavator, Shovel, Truck 16m ³ capacity,etc.), supply and transport Rocks from the produced factory in the north, from mountain source. The qualitative classification of supplied rocks is (each single rock weight should be 70kg, 100kg, 130kg,etc...) in order to avoid movement of the rocks due to speed flow rate of Diyala river and the work includes: Collect the rocks from trucks loader on the left bank of Diyala river in the opposite side of Shuhada WTP intake on the river, push the rocks by using shovel and excavator inside the river, making layers that raising the level of the river in the upstream of mentioned area and making balance in the rocks distribution to be able to decrease the pressure of water in the area downstream of the rocks intake inside the river and balance distribution water between Saddiyah canal with flow to Hamreen dam, laying rocks also on the river bank in upstream of the rocks area, as directed by ICRC engineer.	tons	2020		0
1.2	Providing of materials, manpower & equipment (excavator 12m arm length, shovel & small excavator or any kind of excavator chain type) for rehabilitation and cleaning-up, the area inside Diyala river close to Shuhada WTP intake average size (500 x 100 x 0.5 depth)m & variation of the size could be discovered in the site visit & Cleaning, removing boulders, gravels, vegetation, reeds, sludge, stone and rubbish, and levelling the way of excavator. The price includes move the shoulder to the area in between Saddiyah river and Hamreen river to be as wall partition, as directed by ICRC engineer.	CU.M	25000		0
1.3	Providing materials, manpower, equipment like (excavators chain type, shovel...any kind of machine needed.etc...),and excavation in all kind of materials inside Diyala river in varies depths, length & water levels & change the stream flow of the river divert the stream of the river away from the RC proposed retaining wall of the distribution water & water level control work tentatively, the price includes making any tentative road, yards inside the river to work properly and transfer all the unsuitable excavated materials, garbage, reeds & bolder by trucks away from the site to the located place, re-divert the river to the its direction after finishing concrete works & back filling all the needed area. All the works must be directed by the ICRC engineer & Irrigation board department.	LS	1		0
1.4	Prior to start retaining walls concrete works. Excavation inside the river vertically on the longitude by using excavator 12m arm length to open foundation trench size (4m Wide x 50m L x 1m Depth), transfer the trench materials away from the site in suitable location as directed by ICRC engineer.	M ³	200		0

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Item	Description	Unit	Qty	Unit Price (USD)	Total Price (USD)
1.5	<p>Providing of materials and manpower & Cast reinforced concrete (RC) by using SRC cement specified brand, steel bars 2 layers 16 mm for the concrete wall & 2 layers 12mm for the base with minimum compressive strength (210 Kg/cm²), for foundations and keys of the water level control and distribution RC irrigation (stream stabilization & retaining walls) , cement mortar ratio (1:1.5:3) & 50m length. the cross section of the cast is (4m wide X 50m length 0.4m thickness) then in the middle of the base construct wall concrete size (0.5m bed - 0.3m top thick. X 50m length X 1m height), the first point at bigining of the retaining wall should be one mete key concrete more indepth one meter more at wide.</p> <p>The concrete work includes supply of materials (cement, steel, sand, gravel, water, labour, shuttering, curing after casting, specified slump test. Where compression strength has been defined, Mix design for a class of concrete should be prepared) as directed by ICRC engineer.</p>	M ³	100		0
Total					0
2	Construction culvert, Rehabilitation and cleaning Saddiyah Canal				
2.1	<p>Providing of materials, manpower & equipment (excavator 12m arm length, shovel & small excavator chain type) for extending, rehabilitation and cleaning-up, the existing canal average cross section(4x1.5 depth)m to be average size (8m top, 4m bed, 2m depth) variation of the cross section size could be discovered in the site visit & removing gravels, vegetation, reeds, sludge, stone and rubbish, and levelling the way of excavator. The price includes remove the shoulder to the area in between Saddiyah canal and Hamreen river using transporter truck 8m3 capacity for transporting the removed materials to avoid leaving it on the channel's edge, as directed by ICRC engineer.</p>	ML	1500		0
2.2	<p><u>Demolition, earthworks and site preparation:</u> Furnishing all the workers, equipment (shovel ,rubber tired excavator, loader and truck), and remove the existing old culvert, RC concrete with its sub-based roadway embankments (L7*W4)m of jalawla, price includes making temporary water way to transfer the flow of the water away from the site of work and open it after finish the work. All garbage, unsuitable excavated materials will be disposed of from the area as directed by ICRC engineer.</p>	Ls	1		0
2.3	<p><u>Soil sub grade preparation:</u> Furnishing all labour, equipment (rubber-tired loader, truck, self-propelled dual tamping foot roller) and materials. Performing all operations for properly shaping and compacting of original ground surfaces mixed with brought limestone boulder Ø6" up to one meter depth size (10 x 10 x 0.5)m.</p>	M ³	50		0

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Item	Description	Unit	Qty	Unit Price (USD)	Total Price (USD)
2.4	Reinforced concrete bases: Supply material and labour for the construction of reinforced concrete bases fair faced (8m on the wide river section X 4m on the length river section X 3m height), making partition with wings on the river edges side and one partition should divide the culvert in order to allow water to pass, each wing should be 3m for the area upstream the culvert and 2m for the area downstream. Using two layers of 12mm steel bar for the wall & .16mm for the roof, for the structure passage on both sides, according to ICRC supervisor instruction. The concrete wing wall has to be even, perpendicular and exposed edges chamfered (1"*1").the work includes excavation ,laying compacted crushed stone or bolder	M³	35		0
2.5	Construction fair faced reinforced concrete slab (1:1.5:3)mix. Ratio min. (7m x 4m x 0.4m thickness) by using sulphate resistant cement & 2 layers16mm steel bar, the price includes fix all the slab on the concrete walls for both side of the canal ,using approved block mouldings. Casting each side of the culvert over the area of wings by plain concrete.	M³	15		0
2.6	Construction of the roadway on both sides of the culvert: Furnishing all labours ,equipment of (transporting vehicles ,loader ,sprinkling and compactor of smooth wheeled power vibratory roller) and materials ,performing the laying granular suitable materials (coarse and fine aggregate in accordance to R6/1 type B and C) of sub base courses from selected river granular soil on prepared sub grade .Compaction in layers 6" thick. with specified number of passes to achieve maximum specified density.	M³	30		0
2.7	Providing of materials, manpower & equipment (excavator 12m arm length, shovel & small excavator chain type) & making temporary water way to transfer the flow of the water away from the site of work of the syphon and open it after finish the work by the workers exist. All garbage, unsuitable excavated materials will be disposed of from the area as directed by ICRC engineer.	LS	1		0
Total					0
3	Saddiyah Canal (Mrjana --- Bani Wais)				
3.1	Providing of materials, manpower & equipment (excavator 12m arm length, shovel & small excavator chain type) for rehabilitation and cleaning-up, the existing canal to be average cross section (10m top X 4m Bed X 6m depth) variation of the cross section size could be discovered in the site visit & removing gravels, vegetation, reeds, sludge, stone and rubbish, and levelling the way of excavator. The price includes remove the shoulder to the 1m away from the ege using transporter truck 8m3 capacity for transporting the removed materials to avoid leaving it on the channel's edge, as directed by ICRC engineer.	ML	23000		0

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3.2	Providing of materials, manpower & equipment (Rocks machine broker 12 m arm length, excavator 12m arm length, shovel & small excavator chain type) for removing the area in the bed of the river which is prevent flow rate of the canal and work also includes. Rehabilitation and cleaning-up, the canal to be average cross section (10m top X 4m Bed X 6m depth) variation of the cross section size could be discovered in the site visit & removing gravels, vegetation, reeds, sludge, stone and rubbish, and levelling the way of excavator. The price includes remove the shoulder to the 1m away from the ege using transporter truck 8m3 capacity for transporting the removed materials to avoid leaving it on the channel's edge, as directed by ICRC engineer.	ML	1150		0
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Total					0
Grand Total					0

Estimated duration	n° of calendar days	
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