



REPUBLIC OF LEBANON
COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION

REHABILITATION OF REMAINING ROADS
FOR LOT 3
JEZZINE CAZA

JEZZINE ENTRANCE

FINAL TENDER DOCUMENTS

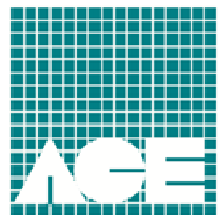
VOLUME III
BILLS OF QUANTITIES

APRIL 2024

(آيس) المكتب الهندسي الاستشاري
ص ب 11-3446 بيروت - لبنان

ASSOCIATED CONSULTING ENGINEERS

B.P. 11 - 3446 BEIRUT- LEBANON



REHABILITATION OF REMAINING ROADS FOR LOT 3 - JEZZINE CAZA

JEZZINE ENTRANCE

BILLS OF QUANTITIES

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REHABILITATION OF REMAINING ROADS FOR LOT 3 - JEZZINE CAZA			BILL No.1: GENERAL REQUIREMENTS		
JEZZINE ENTRANCE					
ITEM	DESCRIPTION	UNIT	ESTIMATED QUANTITY	RATE US \$	AMOUNT US \$
1.1	<p><u>GENERAL CONTRACT REQUIREMENTS</u> The rate shall be a lump sum paid on equal monthly installments over the Contract period which includes, but not limited to:</p> <p>- <u>MOBILIZATION & DEMOBILIZATION</u> The cost of all necessary mobilization and demobilization for the works.</p> <p>- <u>INSURANCE</u> The cost of providing all required insurances in accordance with the Contract Documents in general, and in Volume I - Conditions of Contract particularly</p> <p>- <u>TEMPORARY FACILITIES AND SERVICES FOR THE ENGINEER</u> The cost of all necessary "Temporary Facilities for the Engineer and/or Employer" specified in the Contract Documents.</p> <p>Unit Rate in letters.....</p> <p>.....USD</p>	Month	3.5		
1/ 1		CARRIED TO COLLECTION			



BILL No.1: GENERAL REQUIREMENTS	
COLLECTION	
PAGE No.	AMOUNT (US \$)
1/ 1	
TOTAL CARRIED TO GENERAL SUMMARY (US \$)	

REHABILITATION OF REMAINING ROADS FOR LOT 3 - JEZZINE CAZA				BILL No.4: EARTHWORKS		
JEZZINE ENTRANCE						
ITEM	Measurement & Payment Ref	DESCRIPTION	UNIT	ESTIMATED QUANTITY	RATE US \$	AMOUNT US \$
4.1	405.02	<u>EXCAVATION WORKS</u>				
4.1.1		Unclassified excavation in any type of soil including rock in Cut Sections, watercourses, ditches, wadi relocation etc., all as and where shown on the Drawings and/or directed; multiple hauling and stocking of suitable material in locations for use in road embankment and any other backfill, disposing of surplus and unsuitable material to approved dumping areas, all as specified. Unit Rate in Letters.....	m ³	1,000		
4.2		<u>SUBGRADE PREPARATION</u>				
4.2.1	405.07.1 &405.07.2	Subgrade preparation in Fill and Cut Sections, to proposed finished elevations, lines and grades, all as shown on the Drawings, specified and directed. Unit Rate in Letters.....	m ²	5,500		
4/ 1			CARRIED TO COLLECTION			

JEZZINE ENTRANCE

BILL No.4: EARTHWORKS

COLLECTION

PAGE No.

AMOUNT (US \$)

4/ 1

TOTAL CARRIED TO GENERAL SUMMARY (US \$)

4/ 2



REHABILITATION OF REMAINING ROADS FOR LOT 3 - JEZZINE CAZA				BILL No.5: SUB-BASE AND BASE COURSE		
JEZZINE ENTRANCE						
ITEM	Measurement & Payment Ref	DESCRIPTION	UNIT	ESTIMATED QUANTITY	RATE US \$	AMOUNT US \$
5		<u>SUB-BASE AND BASE COURSES FOR NEW PAVEMENT CONSTRUCTION, PAVEMENT REPAIRS, OVERLAY, DETOURS AND DIVERSIONS</u>				
		Supply, distribute, spread, level and compact aggregate base and sub-base courses, in layers not exceeding 200mm thick after compaction, all as specified and shown on drawings.				
5.1	503.04.1 & 503.04.2	Aggregate Base course Unit Rate in Letters.....	m ³	1,500		
5/ 1			CARRIED TO COLLECTION			



JEZZINE ENTRANCE

BILL No.5: SUB-BASE AND BASE COURSE

COLLECTION

PAGE No.

AMOUNT (US \$)

5/ 1

TOTAL CARRIED TO GENERAL SUMMARY (US \$)

5/ 2



REHABILITATION OF REMAINING ROADS FOR LOT 3 - JEZZINE CAZA				BILL No.6: ASPHALT WORKS AND ROAD WORKS		
JEZZINE ENTRANCE						
ITEM	Measurement & Payment Ref	DESCRIPTION	UNIT	ESTIMATED QUANTITY	RATE US \$	AMOUNT US \$
6.1		<u>BITUMINOUS PRIME AND TACK COATS FOR NEW PAVEMENT CONSTRUCTION, PAVEMENT REPAIRS, OVERLAY, DETOURS AND DIVERSIONS</u>				
6.1.1	6.02.06	Supply and spray cationic emulsified asphalt prime coat as specified. Unit Rate in Letters.....	m ²	5,500		
6.1.2	6.02.06	Supply and spray cationic emulsified asphalt tack coat as specified. Unit Rate in Letters.....	m ²	13,000		
6.2		<u>ASPHALT CONCRETE BINDER AND WEARING COURSES FOR NEW PAVEMENT CONSTRUCTION, PAVEMENT REPAIRS, OVERLAY, DETOURS AND DIVERSIONS</u>				
		Supply, distribute, spread and compact asphalt concrete binder and wearing courses to the thicknesses shown on the Drawings for new pavement construction, and as eventually required, for overlaying scraped asphalt concrete layers of existing pavement, all as shown on the drawings, specified and/or directed by the Engineer.				
6.2.1	6.04.12	Supply, distribute, spread and compact in layers asphalt binder course as specified. Unit Rate in Letters.....	m ³	600		
6.2.2	6.05.12	Supply, distribute, spread and compact in layers asphalt wearing course as specified. (Basaltic Wearing Course) Unit Rate in Letters.....	m ³	500		
6/ 1			CARRIED TO COLLECTION			



**REHABILITATION OF REMAINING ROADS
FOR LOT 3 - JEZZINE CAZA**

BILL No.6: ASPHALT WORKS AND ROAD WORKS

JEZZINE ENTRANCE

ITEM	Measurement & Payment Ref	DESCRIPTION	UNIT	ESTIMATED QUANTITY	RATE US \$	AMOUNT US \$
6.3	6.09.05	<p><u>PAVEMENT REPAIR</u></p> <p>These Works shall consist of, but not limited to, breaking -up, scraping-off and removing defective asphaltic concrete pavement, as the case may present, to approved thicknesses, grades, and levels needed and as eventually required, down to subgrade formation level, as specified and/or shown on the Drawings; cleaning relevant pavement surfaces of all loose, broken or shattered material; brooming free of dust and preparing said surfaces to <u>receive application of a tack or prime coat spray and an overlay of new asphalt binder, leveling and/or wearing course(s)</u>, earthworks and base course are measured separately elsewhere, all as specified, shown on drawings, and approved by the Engineer.</p>				
6.3.1		<p>Scraping-off and removing failed existing asphaltic concrete pavement, base course and/or sub-base coarse as the case may present, down to sub-grade level, compaction of sub-grade, base course and/or sub-base course as applicable, and preparation of surface of existing wearing or binder course layer to receive new overlay layer</p> <p>Unit Rate in Letters.....</p>	m ²	5,400		
6.3.2		<p>Milling asphaltic concrete pavement of existing road, up to 5 cm and disposal in approved dumping area.</p> <p>Unit Rate in Letters.....</p>	m ²	1,000		
6.3.3		<p>Supply, distribute, spread and compact in layers asphalt leveling course to existing surfaces, including scarifying, cleaning, crack sealing if needed and applying tack coat to the existing surface, complete as specified. (Basaltic Leveling Course)</p> <p>Unit Rate in Letters.....</p>	m ³	-		-
6/ 2			CARRIED TO COLLECTION			



JEZZINE ENTRANCE

ITEM	Measurement & Payment Ref	DESCRIPTION	UNIT	ESTIMATED QUANTITY	RATE US \$	AMOUNT US \$
6.4		<u>INCIDENTAL ROAD FURNISHINGS</u>				
6.4.1		<u>NEW JERSEY BARRIERS</u>				
	714.02.2.1 & 714.02.2.2	Cast in-situ or precast reinforced concrete (f'c = 250kg/cm ²), Ordinary Portland Cement New Jersey barriers, single or double face, fixed type or removable type, including formwork, steel reinforcement, joints, 2 x 100mm diameter ducts under new jersey if required, complete with their foundations, where applicable all as specified, directed and shown on the drawings.				
6.4.1.1		Single face New Jersey barriers 38cm width on walls Unit Rate in Letters.....	lm	300		
6.4.2		<u>SIDEWALK, KERBS, EDGES, AND THE LIKE</u>				
		Provide and install half battered, hydraulically pressed Precast Concrete sidewalk kerbs, edge kerbs, complete with doveled concrete backing, mortar and concrete blinding for foundation beds, all as shown on the drawings, specified and directed by the Engineer.				
6.4.2.1	705.03.3.1 & 705.03.3.2	Type T4, size 30 x 20 cm Unit Rate in Letters.....	lm	300		
6.4.2.2	705.03.3.1 & 705.03.3.2	Type CS4, size 30 x 16 cm Unit Rate in Letters.....	lm	-		-
6.4.2.3	705.03.3.1 & 705.03.3.2	Edge curb type BR1, size 20x10cm Unit Rate in Letters.....	lm	-		-
6.4.3		<u>PAVING TILES</u>				
	705.04.3.1 & 705.04.3.2	Provide, lay, tamp down and level sidewalk precast concrete paving tiles, complete with a sand bedding layer and a mortar bed over the approved substrata, all as specified, directed and shown on drawings.				
6.4.3.1		Interlock tiles Unit Rate in Letters.....	m ²	500		
6.4.4		<u>SPEED TABLE</u>				
6.4.4.1		Speed table complete as detailed on drawings. Unit Rate in Letters.....	No.	4		
6/ 3			CARRIED TO COLLECTION			



REHABILITATION OF REMAINING ROADS FOR LOT 3 - JEZZINE CAZA		BILL No.6: ASPHALT WORKS AND ROAD WORKS	
JEZZINE ENTRANCE			
<div>BILL No.6: ASPHALT WORKS AND ROAD WORKS</div> <div>COLLECTION</div>			
PAGE No.			AMOUNT (US \$)
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		TOTAL CARRIED TO GENERAL SUMMARY (US \$)	
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REHABILITATION OF REMAINING ROADS FOR LOT 3 - JEZZINE CAZA			BILL No.7: CONCRETE AND STRUCTURAL WORKS			
JEZZINE ENTRANCE						
ITEM	Measurement & Payment Ref	DESCRIPTION	UNIT	ESTIMATED QUANTITY	RATE US \$	AMOUNT US \$
7.1		<u>Concrete Piles</u> Reinforced Concrete bored cast-in-place piles including establishment of piling plant, drilling, moving piling plant, concrete class B28, reinforcement, test piles and testing, etc., complete all as specified.				
7.1.1	720.15.1 & 720.15.2	1000 mm diameter	lm	2,330		
		Unit Rate in Letters.....				
7/ 1			CARRIED TO COLLECTION			



REHABILITATION OF REMAINING ROADS FOR LOT 3 - JEZZINE CAZA			BILL No.7: CONCRETE AND STRUCTURAL WORKS			
JEZZINE ENTRANCE						
ITEM	Measurement & Payment Ref	DESCRIPTION	UNIT	ESTIMATED QUANTITY	RATE US \$	AMOUNT US \$
7.2		<u>REINFORCED CONCRETE RETAINING WALLS AND VARIOUS CONCRETE WORKS</u>				
7.2.1		<u>Excavation</u>				
7.2.1.1	407.06.1.1 & 407.06.1.2	Excavation for retaining walls in any type of soil including rock. The rate shall include for temporary upholding the excavation sides vertically at depressions to keep the road open to traffic during construction including all the necessary safety measures. The contractor shall submit his proposals to the Engineer for review and approval prior of any works. Unit Rate in Letters.....	m ³	300		
7.2.2		<u>Backfilling</u>				
7.2.2.1	407.06.3.1 & 407.06.3.2	Backfilling with suitable excavated materials from site of works Unit Rate in Letters.....	m ³	50		
7.2.2.2	407.06.4.1 & 407.06.4.2	Backfilling with imported suitable borrow fill material from sources outside site of works Unit Rate in Letters.....	m ³	-		-
7/ 2			CARRIED TO COLLECTION			



**REHABILITATION OF REMAINING ROADS
FOR LOT 3 - JEZZINE CAZA**

BILL No.7: CONCRETE AND STRUCTURAL WORKS

JEZZINE ENTRANCE

ITEM	Measurement & Payment Ref	DESCRIPTION	UNIT	ESTIMATED QUANTITY	RATE US \$	AMOUNT US \$
7.2		<u>REINFORCED CONCRETE RETAINING WALLS AND VARIOUS CONCRETE WORKS</u> <u>(Cont'd)</u>				
7.2.3		<u>Concrete Works</u>				
	704.07.1 & 704.07.2	Plain concrete blinding class B15 (f'c= 150 Kg/cm² Ordinary Portland Cement, complete as specified				
7.2.3.1		Blinding for retaining wall foundations Unit Rate in Letters.....	m ³	20		
	704.07.1 & 704.07.2	Cast in-situ reinforced concrete class B28 (f'c=280 Kg/cm²), Ordinary Portland Cement, complete including but not limited to formwork for any type (fair faced finish to all exposed concrete surfaces unless indicated otherwise) and any shape, expansion joints, construction joints, sealants, openings, sleeves to utility ducts of any diameter, weep pipes, and all other related works, all as specified and shown on drawings				
7.2.3.2		Reinforced concrete for pile cap Unit Rate in Letters.....	m ³	140		
7.2.3.3		Ditto for retaining walls (any height) Unit Rate in Letters.....	m ³	-		-
7.2.4		<u>Reinforcement</u>				
	704.02.8.1 & 704.02.8.2	Supply, test and fix in place Mild steel and High tensile steel bars reinforcement of any diameter size, hooked and spliced including fastening devices such as clips, tying wire, spacers, chairs and the like, complete all as specified, directed and/or shown on the drawings.				
7.2.4.1		High tensile steel bar reinforcement Unit Rate in Letters.....	ton.	10		
7/ 3			CARRIED TO COLLECTION			



**REHABILITATION OF REMAINING ROADS
FOR LOT 3 - JEZZINE CAZA**

BILL No.7: CONCRETE AND STRUCTURAL WORKS

JEZZINE ENTRANCE

ITEM	Measurement & Payment Ref	DESCRIPTION	UNIT	ESTIMATED QUANTITY	RATE US \$	AMOUNT US \$
7.2		<u>REINFORCED CONCRETE RETAINING WALLS AND VARIOUS CONCRETE WORKS (Cont'd)</u>				
7.2.5		<u>Protective Painting of Concrete</u>				
7.2.5.1	716.06.1 & 716.06.2	Furnish and apply two coats of tar or bituminous paint to concrete surfaces in contact with soil, complete all as specified and shown on drawings. Unit Rate in Letters.....	m ²	-		-
7.2.6		<u>Drainage of Retaining Walls</u>				
7.2.6.1	408.06.1 & 408.06.2	Provide and install vertical sheet drain to back of walls complete including, but not limited to, all the required attachments, tee and outlet connections, accessories and all other related works, all as per manufacturer's recommendations, specified and shown on drawings. Unit Rate in Letters.....	m ²	-		-
7.2.6.2	905.16.1 & 905.16.2	150mm diameter UPVC perforated drain pipe at the bottom of wall including but not limited to connections to drainage system, accessories and all other related works, all as specified & shown on dwgs. Unit Rate in Letters.....	lm	-		-
7/ 4			CARRIED TO COLLECTION			



**REHABILITATION OF REMAINING ROADS
FOR LOT 3 - JEZZINE CAZA**

BILL No.7: CONCRETE AND STRUCTURAL WORKS

JEZZINE ENTRANCE

ITEM	Measurement & Payment Ref	DESCRIPTION	UNIT	ESTIMATED QUANTITY	RATE US \$	AMOUNT US \$
7.3		<u>MISCELLANEOUS CONCRETE WORKS</u> Concrete works including but not limited to formwork, expansion joints, sleeves to utility ducts and all other related works, complete all as specified and directed				
7.3.1	724.03.1 & 724.03.2	Mass cyclopean concrete fill class B28, ordinary Portland cement, where directed Unit Rate in Letters.....	m ³	-		-
7.3.2	724.03.1 & 724.03.2	Mass concrete fill class B28, ordinary Portland cement, under structural foundations Unit Rate in Letters.....	m ³	-		-
7.3.3	704.02.8.1 & 704.02.8.2	High tensile steel bar reinforcement to mass concrete fill Unit Rate in Letters.....	ton.	-		-
7.3.4		Cyclopean wall, maximum height 4m, with 400mm thick filter gravel layer, weepholes spaced at 2500mm centers, all as directed Unit Rate in Letters.....	lm	-		-
7.3.5	727.02	Stone wall as detailed and directed Unit Rate in Letters.....	lm	-		-
7.3.6	728.06	3m high, block wall including all necessary as directed Unit Rate in Letters.....	lm	-		-
7.3.7		<u>French Drain</u> Excavate trench, supply washed cobbles up to 10cm including installation of perforated pipe, connection to nearest drainage manhole, laying of geotextile in addition to needed earthworks, all to the required level, as shown on drawing and to the satisfaction of the Engineer. Unit Rate in Letters.....	m ³	250		
7.3.8		<u>Re-instatement of existing stone wall</u> Dismantle with utmost care the existing natural stone wall and reinstall it to the required levels using the same dismantled stones. The Contractor should allow in his rate for the excavation, backfill and mortar and all necessary works to ensure the stability of the wall, all as shown on drawings and to the satisfaction of the Engineer. Unit Rate in Letters.....	m ²	1,100		
7/ 5			CARRIED TO COLLECTION			



REHABILITATION OF REMAINING ROADS FOR LOT 3 - JEZZINE CAZA		BILL No.7: CONCRETE AND STRUCTURAL WORKS	
JEZZINE ENTRANCE			
<u>BILL No.7: CONCRETE AND STRUCTURAL WORKS</u>			
<u>COLLECTION</u>			
<u>PAGE No.</u>		<u>AMOUNT (US \$)</u>	
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TOTAL CARRIED TO GENERAL SUMMARY (US \$)		
7/ 6			



REHABILITATION OF REMAINING ROADS FOR LOT 3 - JEZZINE CAZA				BILL No.9: STORMWATER NETWORK and WATER UTILITIES DIVERSIONS		
JEZZINE ENTRANCE						
ITEM	Measurement & Payment Ref	DESCRIPTION	UNIT	ESTIMATED QUANTITY	RATE US \$	AMOUNT US \$
9.1		<u>CHANNELS, DITCHES AND INTERCEPTORS</u> These Works comprise, but are not limited to, excavation in any type of soil including rock, bedding, backfilling with selected (excavated or imported borrow) materials and compacting, plain concrete, class B10, cast in-situ reinforced concrete, class B28, steel reinforcement, waterproofing with two cross coats (cold applied) rubber bitumen emulsion and all other related works, all as specified, directed and shown on the drawings.				
9.1.1	905.10.1 & 905.10.2	<u>RC Stormwater Channels</u>				
9.1.1.1		Reinforced concrete rectangular channel, 50 cm width, 50 cm height Unit Rate in Letters.....	lm	-		-
9.1.1.2		Reinforced concrete rectangular channel, 50 cm width, 50 cm height, with precast perforated cover Unit Rate in Letters.....	lm	-		-
9.1.1.3		Reinforced concrete rectangular channel, 50 cm width, variable height of maximum 100 cm, with precast perforated cover Unit Rate in Letters.....	lm	-		-
9.1.1.4		Trapezoidal channel, Type TC2 Unit Rate in Letters.....	lm	-		-
9.1.1.5		Interceptor width 50cm and depth 50cm with grill Unit Rate in Letters.....	lm	-		-
9.1.2		<u>Concrete Gutter Channels</u>				
9.1.2.1	905.10.1 & 905.10.2	Concrete Gutter channel, 40 cm width, 9 cm height Unit Rate in Letters.....	lm	-		-
9.1.2.2	905.10.1 & 905.10.2	V channels as shown on drawings. Unit Rate in Letters.....	lm	-		-
9.1.3		<u>Gullies</u>				
9.1.3.1		Gullies as detailed and shown on drawings Unit Rate in Letters.....	No.	14		
9/ 1			CARRIED TO COLLECTION			



**REHABILITATION OF REMAINING ROADS
FOR LOT 3 - JEZZINE CAZA**

**BILL No.9: STORMWATER NETWORK
and WATER UTILITIES DIVERSIONS**

JEZZINE ENTRANCE

ITEM	Measurement & Payment Ref	DESCRIPTION	UNIT	ESTIMATED QUANTITY	RATE US \$	AMOUNT US \$
9.2		<u>PIPE CULVERTS</u>				
9.2.1		<u>Earthworks (Excavation And Backfilling)</u>				
		Excavation and backfilling with selected (excavated or imported borrow) materials, complete all as specified				
9.2.1.1	405.02.1 & 405.02.2	General excavation for drainage grading, all as specified Unit Rate in Letters.....	m ³	-		-
		Trench work including all necessary excavation in any type of soil including rock, grading or leveling and compacting and trimming bottom of excavation, planking or strutting or trimming sides, dewatering excavation of all water sources, backfilling with suitable (excavated or imported borrow) materials and compacting in layers up to the formation level (including extra fill at ground level if required), removing and disposing of surplus materials to approved dumping area, complete all as specified and shown on drawings				
9.2.1.2	905.02	Trench for 1500 mm diameter pipe, average depth not exceeding 2 m Unit Rate in Letters.....	m ³	200		
9.2.1.3	905.02	Ditto, but average depth over 2 m and not exceeding 3 m Unit Rate in Letters.....	m ³	-		-
9.2.1.4	905.02	Ditto, but average depth over 3 m and not exceeding 4 m Unit Rate in Letters.....	m ³	-		-
9.2.2		<u>Pipelines</u>				
	905.04.1 & 905.04.1	Reinforced concrete pipes laid, jointed and tested complete including pipe materials, all necessary fittings, jointing materials and fixing accessories, all as specified, directed and shown on drawings				
9.2.2.1		1500 mm internal diameter pipes Unit Rate in Letters.....	lm	-		-
9.2.2.2		300mm UPVC pipes laid, jointed and tested complete including pipe materials, all necessary fittings, jointing materials and fixing accessories, all as specified, directed and shown on drawings Unit Rate in Letters.....	lm	300		
9/ 2			CARRIED TO COLLECTION			



REHABILITATION OF REMAINING ROADS FOR LOT 3 - JEZZINE CAZA				BILL No.9: STORMWATER NETWORK and WATER UTILITIES DIVERSIONS		
JEZZINE ENTRANCE						
ITEM	Measurement & Payment Ref	DESCRIPTION	UNIT	ESTIMATED QUANTITY	RATE US \$	AMOUNT US \$
9.2		<u>PIPE CULVERTS (Cont'd)</u>				
9.2.3		<u>Concrete Works</u>				
		Cast-in situ reinforced concrete, class B28, Ordinary Portland Cement, including reinforcement, formwork, expansion joints, in addition to a concrete blinding layer, all as specified and shown on drawings.				
9.2.3.1	905.04.3	Concrete encasement for 1500 mm diameter pipe Unit Rate in Letters.....	lm	-		-
9.2.3.2	905.04.3	Concrete encasement for 300 mm diameter pipe Unit Rate in Letters.....	lm	300		
9.2.3.2	704.07.1 & 704.07.2	Plain concrete blinding class B10, Ordinary Portland Cement, complete as directed. Blinding for pipe culverts inlets and outlets structures foundation beds Unit Rate in Letters.....	m ³	-		-
9.2.3.3	704.07.1 & 704.07.2	Cast-in situ reinforced concrete class B28, Ordinary Portland Cement, complete including but not limited to any type and shape of formwork (fair faced finish to all exposed concrete surfaces), expansion joints, openings and all related works, all as specified and shown on drawings Reinforced concrete for pipe culverts inlets and outlets structures Unit Rate in Letters.....	m ³	-		-
9/ 3			CARRIED TO COLLECTION			



ITEM	Measurement & Payment Ref	DESCRIPTION	UNIT	ESTIMATED QUANTITY	RATE US \$	AMOUNT US \$
9.2		<u>PIPE CULVERTS (Cont'd)</u>				
9.2.4		<u>Steel Reinforcement</u> Supply, test and fix in place High tensile steel bars reinforcement of any diameter size, hooked and spliced, including fastening devices such as clips, tying wire, spacers, chairs and the like, complete as shown on the Drawings and specified, and as directed.				
9.2.4.1	704.02.8.1 & 704.02.8.2	High tensile steel bar reinforcement for pipe culverts inlets and outlets structures Unit Rate in Letters.....	kg	-		-
9.2.5		<u>Protective Coating And Waterproofing (Cold Applied)</u> Furnish and apply two cross coats rubber waterproofing bitumen emulsion to concrete surfaces in contact with earth, all as specified and directed.				
9.2.5.1	715.06.1 & 715.06.2	Rubber waterproofing bitumen emulsion for pipe culverts inlets and outlets structures Unit Rate in Letters.....	m ²	-		-
9/ 4			CARRIED TO COLLECTION			



REHABILITATION OF REMAINING ROADS FOR LOT 3 - JEZZINE CAZA				BILL No.9: STORMWATER NETWORK and WATER UTILITIES DIVERSIONS		
JEZZINE ENTRANCE						
ITEM	Measurement & Payment Ref	DESCRIPTION	UNIT	ESTIMATED QUANTITY	RATE US \$	AMOUNT US \$
9.3		<u>REINFORCED CONCRETE BOX CULVERTS</u>				
9.3.1		<u>Earthworks</u>				
9.3.1.1	407.06.1.1 & 407.06.1.2	Excavation for culverts in any type of soil including rock. The rate shall include for temporary upholding the excavation sides vertically at depressions to keep the road open to traffic during construction including all the necessary safety measures. The contractor shall submit his proposals to the Engineer for review and approval prior of any works. Unit Rate in Letters.....	m ³	-		-
9/ 5			CARRIED TO COLLECTION			



REHABILITATION OF REMAINING ROADS FOR LOT 3 - JEZZINE CAZA				BILL No.9: STORMWATER NETWORK and WATER UTILITIES DIVERSIONS		
JEZZINE ENTRANCE						
ITEM	Measurement & Payment Ref	DESCRIPTION	UNIT	ESTIMATED QUANTITY	RATE US \$	AMOUNT US \$
9.3		<u>R.C BOX CULVERTS (Cont'd)</u>				
9.3.2		<u>Concrete Works</u>				
9.3.2.1	704.07.1 & 704.07.2	Plain concrete blinding class B15 (f'c= 150 Kg/cm ² Ordinary Portland Cement, complete as specified				
		Blinding for retaining wall foundations Unit Rate in Letters.....	m ³	-		-
9.3.2.2	704.07.1 & 704.07.2	Cast in-situ reinforced concrete class B28 (f'c=280 Kg/cm ²), Ordinary Portland Cement, complete including but not limited to formwork for any type (fair faced finish to all exposed concrete surfaces unless indicated otherwise) and any shape, expansion joints, construction joints, sealants, openings, sleeves to utility ducts of any diameter, weep pipes, and all other related works, all as specified and shown on drawings				
		Reinforced concrete for box culverts, inlet and outlet structures Unit Rate in Letters.....	m ³	-		-
9.3.3		<u>Steel Reinforcement</u>				
9.3.3.1	704.02.8.1 & 704.02.8.2	Supply, test and fix in place High tensile steel bars reinforcement of any diameter size, hooked and spliced including fastening devices such as clips, tying wire, spacers, chairs and the like, complete all as specified, directed and/or shown on the drawings.				
		High tensile steel bar reinforcement for box culverts Unit Rate in Letters.....	ton.	-		-
9.3.4		<u>Protective Coating</u>				
		Furnish and apply two cross coats of rubber waterproofing bitumen emulsion to concrete surfaces in contact with earth, all as specified and directed.				
9.3.4.1	716.06.01 & 716.06.02	Rubber waterproofing bitumen emulsion for box culverts Unit Rate in Letters.....	m ²	-		-
9/ 6			CARRIED TO COLLECTION			



REHABILITATION OF REMAINING ROADS FOR LOT 3 - JEZZINE CAZA				BILL No.9: STORMWATER NETWORK and WATER UTILITIES DIVERSIONS		
JEZZINE ENTRANCE						
ITEM	Measurement & Payment Ref	DESCRIPTION	UNIT	ESTIMATED QUANTITY	RATE US \$	AMOUNT US \$
9.4	905.18.1 & 905.18.2	<u>STORMWATER PIPELINES RELOCATION</u>				
9.4.1		<u>Demolition of stormwater culvert</u>				
		Demolishing abandoned pipelines as specified, and directed by the Engineer.				
9.4.1.1		Demolition of Stormwater culvert, 1.20m x 1.20m Unit Rate in Letters.....	lm	-		-
9.4.2		<u>Relocation of stormwater pipelines</u>				
9.4.2.1		Relocation of stormwater pipes, 300mm diameter Unit Rate in Letters.....	lm	-		-
9/ 7			CARRIED TO COLLECTION			



REHABILITATION OF REMAINING ROADS FOR LOT 3 - JEZZINE CAZA				BILL No.9: STORMWATER NETWORK and WATER UTILITIES DIVERSIONS		
JEZZINE ENTRANCE						
ITEM	Measurement & Payment Ref	DESCRIPTION	UNIT	ESTIMATED QUANTITY	RATE US \$	AMOUNT US \$
9.5		<u>SUNDRY WORKS</u>				
9.5.1	905.05.1 & 905.05.2	Lowering or raising of Ductile Iron cover and frame of any manhole type including reinforced concrete works, breaking and disposing of existing manhole walls and slab, etc,... Unit Rate in Letters.....	No.	5		
9.5.2	905.04.7	Cleaning existing culvert, 8.0mx5.5m Unit Rate in Letters.....	lm	-		-
9.5.3	905.04.7	Cleaning existing culvert, 0.6mx0.95m Unit Rate in Letters.....	lm	-		-
9.5.4	905.04.7	Cleaning existing culvert, 0.6mx1.1m Unit Rate in Letters.....	lm	50		
9.5.5	905.04.7	Cleaning existing culvert, 0.5mx0.4m Unit Rate in Letters.....	lm	-		-
9.5.6		Reinforced concrete cover, with openings, variable width as the case may present including steel reinforcement, as per the Engineer's instructions. Unit Rate in Letters.....	m ²	-		-
9.5.7		Demolition of existing concrete ditch, partially or totally, to the approval of the Engineer. Unit Rate in Letters.....	m ³	-		-
9.5.8		Inlet chambers as detailed on drawings Unit Rate in Letters.....	No.	-		-
9/ 8			CARRIED TO COLLECTION			



BILL No.9: STORMWATER NETWORK and WATER UTILITIES DIVERSIONS	
COLLECTION	
PAGE No.	AMOUNT (US \$)
9/ 1	
9/ 2	
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9/ 6	
9/ 7	
9/ 8	
TOTAL CARRIED TO GENERAL SUMMARY (US \$)	
9/ 9	

REHABILITATION OF REMAINING ROADS FOR LOT 3 - JEZZINE CAZA				BILL No.10:SAFETY BARRIERS, MONORAILS AND CHAIN LINK FENCES		
JEZZINE ENTRANCE						
ITEM	Measurement & Payment Ref	DESCRIPTION	UNIT	ESTIMATED QUANTITY	RATE US \$	AMOUNT US \$
10		<u>SAFETY BARRIERS, MONORAILS AND CHAIN LINK FENCES</u>				
10.1		<u>Concrete Parapet</u>				
10.1.1	714.02.2.1 & 714.02.2.2	Cast in-situ reinforced concrete (f'c = 250kg/cm ²), Ordinary Portland Cement concrete parapet, including formwork, steel reinforcement, joints, 2 x 100mm diameter ducts if required, complete with their foundations, where applicable all as specified, directed and shown on the drawings. Unit Rate in Letters.....	lm	300		
10.1.2		Stone Masonry Guardwall as shown on drawings and to the approval of the Engineer. Unit Rate in Letters.....	lm	-		-
10.1.3		Metallic guard rail as detailed on drawings Unit Rate in Letters.....	lm	100		
10/ 1			CARRIED TO COLLECTION			



BILL No.10:SAFETY BARRIERS, MONORAILS AND CHAIN LINK FENCES	
COLLECTION	
PAGE No.	AMOUNT (US \$)
10/ 1	
TOTAL CARRIED TO GENERAL SUMMARY (US \$)	

JEZZINE ENTRANCE

ITEM	Measurement & Payment Ref	DESCRIPTION	UNIT	ESTIMATED QUANTITY	RATE US \$	AMOUNT US \$
11.1	1100.08 1100.09	<u>PAVEMENT MARKINGS FOR TRAFFIC</u> Supply and install white and yellow Thermoplastic Reflectorized Paint (TRP) to mark pavement surfaces, complete including the application, as recommended by manufacturer, of a binder-sealer to the pavement surface prior to the application of the thermoplastic paint, all as specified and shown on drawings.				
		<u>Yellow Broken Lines</u>				
11.1.1		Broken lines - 120 mm wide Unit Rate in Letters.....	m ²	80		
11.1.2		Broken lines - 200 mm wide Unit Rate in Letters.....	m ²	-		-
11.1.3		Broken lines - 400 mm wide Unit Rate in Letters.....	m ²	-		-
		<u>Continuous white Lines</u>				
11.1.4		Solid white lines - 150 mm wide Unit Rate in Letters.....	m ²	-		-
11.1.5		Ditto, white but 200 mm wide Unit Rate in Letters.....	m ²	150		
11.1.6		Ditto, white but 400 mm wide Unit Rate in Letters.....	m ²	-		-
		<u>Continuous yellow lines</u>				
11.1.7		Solid yellow lines- 200mm wide Unit Rate in Letters.....	m ²	-		-
		<u>Miscellaneous Pavement Markings</u>				
11.1.8		Miscellaneous painted areas: arrows, pedestrian crossings, painted road signs, chevrons, etc. Unit Rate in Letters.....	m ²	25		
11/ 1			CARRIED TO COLLECTION			



REHABILITATION OF REMAINING ROADS FOR LOT 3 - JEZZINE CAZA			BILL No.11: ROAD MARKINGS AND TRAFFIC SIGNS			
JEZZINE ENTRANCE						
ITEM	Measurement & Payment Ref	DESCRIPTION	UNIT	ESTIMATED QUANTITY	RATE US \$	AMOUNT US \$
11.2		<u>TRAFFIC SIGNS</u> Supply and install regulatory and warning traffic signs & directional traffic sign panels with lettering, erected on post assemblies, including excavation, reinforced concrete foundations and backfilling, all as specified, shown on drawings and directed				
11.2.1	1101.16.1.1 & 1101.16.1.2	<u>Regulatory traffic and warning signs and associated posts</u>				
11.2.1.1		Triangular, 900 mm equal sides Unit Rate in Letters.....	No.	4		
11.2.1.2		Circular, 900 mm diameter Unit Rate in Letters.....	No.	10		
11.2.1.3		Octagonal, 900 mm overall Unit Rate in Letters.....	No.	-		-
11.2.1.4		Square, 600 mm overall Unit Rate in Letters.....	No.	4		
11/ 2			CARRIED TO COLLECTION			



**REHABILITATION OF REMAINING ROADS
FOR LOT 3 - JEZZINE CAZA**

BILL No.11: ROAD MARKINGS AND TRAFFIC SIGNS

JEZZINE ENTRANCE

ITEM	Measurement & Payment Ref	DESCRIPTION	UNIT	ESTIMATED QUANTITY	RATE US \$	AMOUNT US \$
11.2		<u>TRAFFIC SIGNS</u>				
11.2.2		<u>Temporary Signing and Channelizing Devices for Protection of Traffic</u>				
		<u>Temporary Signing</u>				
	1101.16.3.1 & 1101.16.3.2	Install and reinstall the following temporary signs complete all as directed by the Engineer:				
11.2.2.1		Barricade with flashers type K5c Unit Rate in Letters.....	No.	80		
11.2.2.2		Rectangular sign type KCI Unit Rate in Letters.....	No.	25		
11.2.2.3		Sign, size less than or equal to one square meter including posts, supports, foundations and all related works, type K2 Unit Rate in Letters.....	No.	20		
11.2.2.4		Sign, size greater than one square meter but less than or equal to two square meters including posts, supports, foundations and all related works. Unit Rate in Letters.....	No.	20		
		<u>Temporary Channelizing Devices</u>				
	1101.16.4.1 & 1101.16.4.2	Install and reinstall the following channelizing devices complete all as directed by the Engineer:				
11.2.2.5		Plastic Barrier, 145 cms long and 40cms wide, type K16. Unit Rate in Letters.....	No.	500		
11.2.2.6		Removable single face concrete safety barrier, 200 cms long and 38 cms wide. Unit Rate in Letters.....	No.	-		-
11.2.2.7		Removable double face concrete safety barrier, 200 cms long and 60 cms wide. Unit Rate in Letters.....	No.	50		
11/ 3			CARRIED TO COLLECTION			



JEZZINE ENTRANCE

ITEM	Measurement & Payment Ref	DESCRIPTION	UNIT	ESTIMATED QUANTITY	RATE US \$	AMOUNT US \$
11.3		<u>ROAD MARKERS</u>				
11.3.1		<u>Vertical Road Markers (Delineators)</u>				
	1100.10.9 & 1100.10.10	Reflective vertical road markers supplied, installed and erected on post assemblies, mounted on safety barriers, complete including structural excavation, reinforced concrete foundations, backfilling, all necessary fittings and other ancillary works, all as specified & shown on drawing.				
11.3.1.1		Bollard delineator on Islands Type J3 Unit Rate in Letters.....	No.	-		-
11.3.1.2		Post mounted sharp deviation sign type J4 Unit Rate in Letters.....	No.	-		-
11.3.2		<u>Pavement Markers (Studs)</u>				
	1100.10.9 & 1100.10.10	Reflective pavement markers supplied and installed including preparing road pavement, fixing and bedding pavement markers and reinstating road pavement as necessary on completion, complete all as specified & shown on drawings.				
11.3.2.1		Reflective pavement markers - single white Unit Rate in Letters.....	No.	75		
11.3.2.2		Reflective pavement markers - single yellow Unit Rate in Letters.....	No.	100		
11.3.2.3		Reflective pavement markers - single green Unit Rate in Letters.....	No.	-		-
11/ 4			CARRIED TO COLLECTION			



JEZZINE ENTRANCE

BILL No.11: ROAD MARKINGS AND TRAFFIC SIGNS

COLLECTION

PAGE No.

AMOUNT (US \$)

11/ 1

$$11/2$$

$$11/3$$

11/ 4

TOTAL CARRIED TO GENERAL SUMMARY (US \$)

11/ 5

**REHABILITATION OF REMAINING ROADS
FOR LOT 3 - JEZZINE CAZA**

BILL No.12: ELECTRICAL WORKS

JEZZINE ENTRANCE

ITEM	Measurement & Payment Ref	DESCRIPTION	UNIT	ESTIMATED QUANTITY	RATE US \$	AMOUNT US \$
12.1		<u>Relocation Works of Existing Electric Materials</u>				
	1212.16.1 & 1212.16.2	Dismantling and/or reinstallation of electrical material and cables along the road edge including, but not limited to, all related civil works (earth works, concrete work, etc...) cables, isolators designated location by the Engineer and all necessary earthwork or as directed. All works shall be coordinated and approved by EDL.				
12.1.1		Dismantling and reinstallation of electrical poles and associated conductors Unit Rate in Letters	No.	-		-
12.1.2		Reparation of existing and damaged electrical poles containing lighting brackets Unit Rate in Letters	No.	-		-
12.2		<u>Rehabilitaion works for Existing Telephone Poles</u>				
12.2.1	1212.15.1 & 1212.15.2	Dismantling and reinstatement of single telephone poles including all related civil works, realignment of cables and all necessary accessories. All works shall be carried out with close coordination and under supervision of local authorities. Unit Rate in Letters	No.	-		-
12/ 1			CARRIED TO COLLECTION			



REHABILITATION OF REMAINING ROADS FOR LOT 3 - JEZZINE CAZA		BILL No.12: ELECTRICAL WORKS
JEZZINE ENTRANCE		
<div><div><div>BILL No.12: ELECTRICAL WORKS</div><div>COLLECTION</div></div></div>		
<div>Page No.</div>		<div>AMOUNT (US \$)</div>
12/ 1		
TOTAL CARRIED TO GENERAL SUMMARY (US \$)		
12/ 2		



JEZZINE ENTRANCE

BILL No.13: GENERAL SUMMARY		
DESCRIPTION	PAGE	AMOUNT (US \$)
BILL No.1: GENERAL REQUIREMENTS	1/ 2	
BILL No.2: SUBSURFACE AND GEOTECHNICAL INVESTIGATIONS	Not Itemized	
BILL No.3: DEMOLITION WORKS	Not Itemized	
BILL No.4: EARTHWORKS	4/ 2	
BILL No.5: SUB-BASE AND BASE COURSE	5/ 2	
BILL No.6: ASPHALT WORKS AND ROAD WORKS	6/ 4	
BILL No.7: CONCRETE AND STRUCTURAL WORKS	7/ 5	
BILL No.8: STRUCTURAL STEEL WORKS	Not Itemized	
BILL No.9: STORMWATER NETWORK and WATER UTILITIES DIVERSIONS	9/ 9	
BILL No.10:SAFETY BARRIERS, MONORAILS AND CHAIN LINK FENCES	10/ 2	
BILL No.11: ROAD MARKINGS AND TRAFFIC SIGNS	11/ 5	
BILL No.12: ELECTRICAL WORKS	12/ 2	
* TOTAL AMOUNT OF BILL OF QUANTITIES.....(US \$)		
* DEDUCTION BY TENDERER.....(US \$)		
* TOTAL AMOUNT OF TENDER AFTER DEDUCTION.....(3)=(1)-(2).....(US \$)		
* TOTAL AMOUNT IN LETTERS		

