



**REPUBLIC OF LEBANON**  
**COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION**

**Roads Routine Maintenance**  
**For Lot 18 - Zahle Caza**

**Tender Documents**

**Volume 3**  
**Bill of Quantities**

**Rev 1**  
**January 2024**

## **ROADS ROUTINE MAINTENANCE FOR LOT 18 - ZAHLE CAZA**

### **BILL OF QUANTITIES**

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<b>QC</b>	Ref: L2106D / 3816	
	Revision: 1	Date: January 2024
	<input type="checkbox"/> Draft	<input checked="" type="checkbox"/> Final
	Signature:	

## **PREAMBLE TO BILL OF QUANTITIES**

## **PREAMBLE**

1. The Bill of Quantities shall be priced in US Dollars. The rates inserted in the Bill of Quantities shall be in words (letters) and in figures. In the case of discrepancy between the two, the rates written in words shall govern.
2. The items in the Bill of Quantities do not necessarily contain full description of the required Works, and when pricing, the Contractor shall allow in his unit rates for all obligations, liabilities and services stipulated in the relevant sections of:  
Volume I: Bid Conditions and Procedures, Conditions of Contract;  
Volume II: Technical Specifications;  
Volume IV: Drawings/ Manual;  
and all other related Tender and Contract Documents.
3. The items in the Bill of Quantities covers mainly two types of works:
  - Road Routine Maintenance Works: That includes mainly clearing of roadway limits and drainage structures, pavement repair works, concrete repair for the existing walls and channels, and incidental maintenance works of road elements and structures.
  - Upgrade of Traffic Road Safety & Control Devices Works: That includes mainly the construction of new concrete safety barriers, application of roads marking and catseyes, installation of warning signs, roads delineator and speed calming measures.
4. The methods of measurement used and which will be used for re-measurement shall be in accordance with the Method of Measurement included in the Specifications and/or as noted in the Bill of Quantities with the item description. These methods of measurement shall be strictly adhered to notwithstanding any trade, general or local custom.
5. The Contractor shall, during his study of the Tender, address his queries, if any, to the Employer, who will study and clarify all such queries.  
  
Should the Contractor, during his study of the Tender Documents, consider that there is any shortage, error or inconsistency in the Contract Documents, which would affect the rates of his Tender, or the value of the works, the Contractor must have all such points clarified by the Employer before submitting his Tender.
6. The text of the Bill of Quantities shall not be altered or qualified in any way by the Tenderer. Any such alteration or qualification to the text shall be ignored and the text shall remain as printed; Moreover, such alteration or qualification is liable to result in a Tender, which is otherwise favorable, not being considered.
7. The rates inserted by the Contractor will be deemed to cover the full cost of the Works, including all direct and indirect expenses, overhead and profit. Any item, which is not priced, shall be deemed to have been included in other rates and prices and in the Contract Price.

8. The Contractor shall satisfy himself as to the meaning of every item in the Bill of Quantities. Unless otherwise described or measured separately, the rates and prices inserted by the Contractor shall be deemed to cover all costs, expenses, risks, liabilities, obligations and services described in the Conditions of Contract and General Requirements, and all other Contract Documents, and all matters for the proper execution and completion of the Works and remedying defects therein. These rates shall allow, but not by way of limitation, for complying with all Contract Documents; for all labour and material, including samples, sampling and testing; for all temporary work of every description required; for the provision and use of all equipment and plant of every kind, whether mechanical or manual, required for the expeditious carrying out of the Works in their proper sequence; for shifting, altering and adapting such temporary work and equipment as may be required during the progress of the Works and removing at completion and making good any surfaces disturbed; for executing the requirements of the CDR Health and Safety Manual, for full customs and other import duties; for cooperation and coordination of the Works, with other Contractors; for the guarantees and bonds required; for providing all insurances and the like; for all necessary temporary services associated with these Works; for establishing and furnishing the Engineer's site office and providing the required vehicles, driver fuel, lubricants and maintenance for the Engineer's representative transportation, as specified; for the work in connection with measurements and the final account; for profit and for all other establishment charges and all costs of whatever nature. No claim for additional payment will be considered for any error or misunderstanding by the Contractor in these respects.
9. **The BOQ is divided into fixed and optional bills with similar items. The Contractor shall adopt the same unit rate for the same item in different bills. In case of discrepancy, the lowest unit rate shall govern and the bid price adjusted accordingly. The unit rates and prices inserted by the Contractor shall apply throughout the Contract and to any additional work, which might be ordered by the Engineer.**
10. The Contractor is expected to take all necessary precautions to avoid damaging services and where they are interrupted to reconnect them immediately. No separate payment shall be made and the rates in the Bill of Quantities shall be deemed to cover adequately all costs. The Contractor's attention is drawn to the fact that the service authorities may impose, in addition to the cost of repair, statutory penalties. Details of these requirements may be obtained from the respective authorities.
11. The Contractor shall allow in his rates for protecting all Works against damage by whatever method deemed necessary and approved. Any work damaged before the Works are handed over is to be replaced or made good at the Contractor's expense and to the entire satisfaction of the Engineer.
12. The Quantities set-out in the Bill of Quantities are estimated quantities, and they are not to be taken as the actual and correct quantities of the Works to be executed by the Contractor in fulfillment of his obligations under the Contract.

Notwithstanding the quantities given, all Works itemized in the Bill of Quantities will be subject to re-measurement in the unit of measurement indicated, and payment made at the corresponding unit rates on the re-measured quantities.

13. Unless otherwise stated, all measurements shall be measured net and are applicable to finished work only as completed and no allowance shall be made for wastage, working spaces, bulking, shrinkage, overlaps and the like. Unless otherwise described, the unit of measurement for each item shall be as indicated in the Bill of Quantities. Measurement shall be rounded up or down to the nearest whole number and exact half units shall be rounded up. Any thickness, which is stated in this Document, shall be the finished and specified thickness.
14. When the expression "Ditto" appears under an item in the Bill of Quantities, it shall be deemed to mean that the said item shall include the whole relevant description of the preceding item together with any description written before and/or after the said expression.
15. Any item of work included in the Bill of Quantities, which is not carried out, shall be omitted from the interim and final statements. Any additional item of work carried out on the Engineer's instructions shall be subject of a variation order and comparison Table included in the relevant interim and final statements, after Employer's approval.
16. The Contractor should read carefully the Environment and Social Management Plan (ESMP) requirements and take all details into consideration while pricing. The cost of implementing of the ESMP requirements and the Traffic Management Plan should be included in the Contractors rates.
17. Contractor should maximize the use of Labor under each item of work under the project as this issue of an essence to the Road and Employment Project.
18. The Contractor should be responsible and should determine the skilled and/or semi-skilled labors to be carried out as the task may present, especially for items where labor content is obviously high.
19. The rates inserted by the Contractor will be deemed to cover **the traffic control plans (TCPs) with its temporary safety devices and movable sign board for each activity to be carried out within Primary/Secondary roads**. The temporary devices shall include but not limited to:
  - Temporary Warning and mandatory signs
  - Temporary Warning Sign, size greater than or equal to one square meter including posts, supports, foundations and all related works, type K2.
  - Plastic Barrier, 145 cm long and 40 cm wide, type K16.
  - Cones and flash lights.

The traffic control plans (TCPs) with its temporary safety devices and movable sign boards related to the activities to be carried out within the **Highway areas** shall be as shown in Volume-IV (Drawings/ Manual) and the method of measurement shall be as specified in the technical specifications (Volume2) and as indicated in the related BOQ Items (Items E.12 & E.13).

20. The Ministry of public works through their regional offices will coordinate with the relevant Municipalities to identify and prioritize the required works.

21. The contractor should provide all general and specialized staff, equipment, tools and materials to carry out the required works and the contractor must be fully equipped on each attendance call.
22. **The Employer shall have the right to modify the scope of work by eliminating or adding any part of it to suit his budget and interests. In this respect, the Employer shall have the right to modify, reduce/eliminate and/or add the quantity of any item in the Bill of Quantities. The new contract amount shall be calculated accordingly. The Contractor shall take this into consideration when filling the rates in the Bill of Quantities and therefore shall have no right to claim against these changes.**
23. The following notations are used in the Bill of Quantities:

Linear Meter	lm
Square Meter	m <sup>2</sup>
Cubic Meter	m <sup>3</sup>
Number	No.
Tonne	ton.
Kilogram	kg
Lump Sum	LS
Centimeter	cm
Millimeter	mm
Reinforced Concrete	RC
Drawing	Dwg

Description of work and materials in the specifications details and dimensions shown on the drawings are not necessarily repeated in the Bill of Quantities.

24. Dayworks & Materials

24.1 General

- Dayworks will be administered in accordance with of the Conditions of Contract.
- The signature of the Project Manager on Dayworks Records will be for record purposes only and the Project Manager reserves the right to measure and value any works for which Dayworks Records have been kept.
- Subject to the above, the Contractor will be paid for Dayworks carried out during the course of the Contract at the rates inserted by him in this Schedule.
- Rates quoted for Dayworks will be taken into consideration when the tenders are examined and evaluated. The rates quoted shall be reasonable and verifiable and they shall bear a reasonable relationship with the rates and prices inserted in the Bill of Quantities.

24.2 Labour Rates

- Rates quoted for labour shall be the net wages payable for labour engaged in the execution of work on daywork basis. The rates shall be inclusive of all costs and allowances, use and waste of hand tools, use of staging and scaffolding where these are not erected specially for the execution of daywork items, for supervision, overheads and profit.

- Non-productive time, idle time and travelling time will not be considered for payment. Productive time of labour on daywork basis will be the only time payable.

#### 24.3 Material Rates

- Materials used on Dayworks shall be as specified for the Works. The rates shall include for delivery to the immediate working areas and unloading. Should any materials be required for use on Dayworks which are not included in the Dayworks Schedule, the lowest current net market price shall apply, plus a reasonable allowance for collecting, loading and transporting to the immediate working areas.
- Profit and overheads shall be included in the material unit rates inserted in the Bill of Quantities.

**\*\*END OF PREAMBLE\*\***



## **I. BILL OF QUANTITIES FOR ZAHLE CAZA PART1 (FIXED)**

**BILL NO. I-A: GENERAL CONTRACT REQUIREMENTS FOR ZAHLE CAZA-PART 1 (FIXED)**

Item	Relevant Specifications Measurement Items	Description	Unit	Quantities	Unit Rate USD	Amount (USD)
I-A	Division-1	<p><b><u>GENERAL CONTRACT REQUIREMENTS</u></b> The rate shall be a lump sum paid on equal monthly installments over the contract period which includes but not limited to:</p> <p><b><u>- MOBILIZATION &amp; DEMOBILIZATION</u></b> The cost of all necessary mobilization and demobilization for the works.</p> <p><b><u>- INSURANCE</u></b> The cost of providing all required insurances in accordance with the Contract Documents in general, and in volume 1- Conditions of Contract particularly.</p> <p><b><u>- TEMPORARY FACILITIES AND SERVICES FOR THE ENGINEER</u></b> 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	4		
	<b>Subtotal Bill No. I-A: General Contract Requirements</b>					

Only in letters .....

.....United States Dollars

**BILL NO. I-B: INCIDENTAL REPAIR WORKS**

Item	Relevant Specifications Measurement Items	Description	Unit	Quantities	Unit Rate (USD)	Amount (USD)
I-B		<b><u>INCIDENTAL REPAIR WORKS</u></b> <i>(All Works shall be done complete as specified and shown on drawings and to the Engineer's satisfaction)</i>				
I-B.1	2.01.03.1	Clearing and Removal within the limits of working area all vegetation, surface debris, scattered stones and rocks etc. Unit Rate in letters ..... ..... USD	m <sup>2</sup>	15,000		
I-B.2	2.03.03.1	Repairing (including releveling) damaged concrete frame manhole. Unit Rate in letters ..... ..... USD	No.	30		
I-B.3		<b>Replace damaged manhole covers</b>				
I-B.3.a	2.03.03.2	Replace damaged manhole concrete frame and covers (Heavy duty) Type A, including all necessary materials and installation. The Class of concrete to be used for frame manholes shall be 450/20; including SBR additive, completed as specified, shown on drawings and to the Engineer's satisfaction. Unit Rate in letters ..... ..... USD	No.	50		

Item	Relevant Specifications Measurement Items	Description	Unit	Quantities	Unit Rate (USD)	Amount (USD)
I-B.3.b	2.03.03.3	<p>Replace damaged manhole covers (Heavy duty) Type B located within Highway areas, including temporary structural steel plate, fy= 250 MPa, anchored (1500x1500x20mm thick) and all necessary materials and installation. The Class of concrete to be used for frame manholes shall be cement based high strength fast hardening micro-concrete with a maximum aggregate size of 10mm (Sikacrete or equivalent) completed as specified, shown on drawings and to the Engineer's satisfaction.</p> <p>Unit Rate in letters .....</p> <p>..... USD</p>	No.	10		
I-B.4	2.01.03.2	<p>Cleaning waterways, hydraulic structures, pipes culverts , box culverts &amp; manholes.</p> <p>Unit Rate in letters .....</p> <p>..... USD</p>	m <sup>3</sup>	1,000		
I-B.5	2.01.03.3	<p>Cleaning of concrete channel.</p> <p>Unit Rate in letters .....</p> <p>..... USD</p>	m <sup>3</sup>	3,000		
I-B.6	2.02.04	<p>Cleaning of storm and sewer pipes by jetting machine including related manholes.</p> <p>Unit Rate in letters .....</p> <p>..... USD</p>	lm	1,000		
I-B.7	6.08.05	<p>Repairing stone masonry wall (with or without mortar).</p> <p>Unit Rate in letters .....</p> <p>..... USD</p>	m <sup>2</sup>	500		

Item	Relevant Specifications Measurement Items	Description	Unit	Quantities	Unit Rate (USD)	Amount (USD)
I-B.8	6.06.05.1	Dismantling damaged galvanized steel guardrail and replacing with new one including terminal units. Unit Rate in letters ..... ..... USD	lm	50		
I-B.9	6.01.04.6/7/8	Dismantling of damaged sidewalk tiles and replacing with new similar ones. Unit Rate in letters ..... ..... USD	m <sup>2</sup>	50		
I-B.10	6.01.04.1/2	Dismantling of damaged concrete curbstone and replacing with new similar ones. Unit Rate in letters ..... ..... USD	lm	20		
I-B.11	6.01.04.3/4	Dismantling of damaged concrete gutter and replacing with new similar ones. Unit Rate in letters ..... ..... USD	lm	20		
<b>Subtotal Bill No. I-B: Incidental Repair Works</b>						

Only in letters .....  
.....United States Dollars

**BILL NO. I-C: PAVEMENT REPAIR WORKS**

Item	Relevant Specifications Measurement Items	Description	Unit	Quantities	Unit Rate (USD)	Amount (USD)
I-C		<b><u>PAVEMENT REPAIR WORKS</u></b> <i>(All Works shall be done complete as shown on drawings, as specified and to the Engineer's approval)</i>				
C.1		<b>Patching Works</b>				
I-C.1a	4.08.14.1	<b>Surface Patching works</b> Surface patch including milling, applying tack coat and re-instating wearing asphalt course (5 cm)  Unit Rate in letters ..... ..... USD	m <sup>2</sup>	8,000		
I-C.1b	4.08.14.1	<b>Shallow Patching works</b> Full asphalt removal and repair with maintaining base course layer and applying prime coat, one layer of asphalt binder course (5 cm), tack coat and one layer of asphalt wearing course of (5 cm)  Unit Rate in letters ..... ..... USD	m <sup>2</sup>	2,000		
I-C.1c	4.08.14.1	<b>Deep Patching works</b> Including excavation, base course (30 cm), prime coat, asphalt binder course (one layer 5 cm), tack coat and asphalt wearing courses (one layer 5 cm)  Unit Rate in letters ..... ..... USD	m <sup>2</sup>	500		

Item	Relevant Specifications Measurement Items	Description	Unit	Quantities	Unit Rate (USD)	Amount (USD)
C.2		<b>Surface repairing Works</b>				
I-C.2a	4.08.14.2	<b>Crack sealing</b> Depending on crack width, the works shall include filling the cracks to the road surface level with - diluted emulsified bitumen or - with sand and saturated by diluted emulsified bitumen  Unit Rate in letters ..... ..... USD	lm	200		
C.3		<b>Trench Reinstatement</b>				
I-C.3a	4.08.14.3	<b>Stable but sunken trench</b> Works include milling & asphalt wearing course overlay (5cm) including tack coat (Trench width less than 1 m)  Unit Rate in letters ..... ..... USD	lm	1,500		
I-C.3b	4.08.14.4	<b>Damaged trench</b> Works include removing and reinstating, excavation, base course (30 cm), prime coat, asphalt binder course (one layer 5 cm), tack coat and asphalt wearing course (one layer 5 cm) (Trench width less than 1 m)  Unit Rate in letters ..... ..... USD	lm	1,000		
I-C.4	4.08.14.5	Cold ready mixed asphalt for permanent repair of potholes (5 cm)  Unit Rate in letters ..... ..... USD	m <sup>2</sup>	100		
<b>Subtotal Bill No. I-C: Pavement Repair Works</b>						

Only in letters .....

.....United States Dollars

**BILL NO. I-D: CONCRETE REPAIR WORKS**

Item	Relevant Specifications Measurement Items	Description	Unit	Quantities	Unit Rate USD	Amount (USD)
I-D		<b>CONCRETE REPAIR WORKS</b> <i>(All Works shall be done complete as shown on drawings, as specified and to the Engineer's approval)</i>				
I-D.1	5.06.04	Cast-in-situ Reinforced concrete, Class 250/20 (B25) for repair of box culverts, headwalls and wingwalls, concrete channels ,retaining walls, and concrete barriers (all types and shapes)  Unit Rate in letters ..... ..... USD	m <sup>3</sup>	150		
I-D.2	5.07.04	Structural Mortar for patching of deteriorated parts of channels, walls and safety barriers. thickness not more than 10cm and concrete compressive strength 40Mpa.  Unit Rate in letters ..... ..... USD	m <sup>2</sup>	50		
I-D.3	5.08.04	Cast-in-situ Reinforced concrete, Class 250/20 (B25) for channel's cover clear width not exceeding 80cm and including steel reinforcement.  Unit Rate in letters ..... ..... USD	lm	100		
I-D.4	5.03.04	High Tensile Steel bar reinforcement completed as specified and to the Engineer's satisfaction.  Unit Rate in letters ..... ..... USD	T	8		
		<b>Subtotal Bill No. I-D: Concrete Repair Works</b>				

Only in letters .....  
.....United States Dollars



**BILL NO. I-E: TRAFFIC CONTROL DEVICES & SAFETY BARRIERS**

Item	Relevant Specifications Measurement Items	Description	Unit	Quantities	Unit Rate USD	Amount (USD)
I-E		<b><u>TRAFFIC CONTROL DEVICES</u></b> <i>(All Works shall be done complete as shown on drawings, as specified and to the Engineer's approval)</i>				
I-E.1	6.03.08.1	Thermoplastic reflectorized Road Paint Lines width 20 cm (Thickness 3 mm) including surface preparation and removal of existing paint lines (where needed). Unit Rate in letters ..... ..... USD	m <sup>2</sup>	1,000		
I-E.2	6.03.08.2	Thermoplastic reflectorized Special Road Marking including speed limit marking (Thickness 3mm). Unit Rate in letters ..... ..... USD	m <sup>2</sup>	200		
I-E.3	6.03.08.4	Cat's eyes Pavement Studs (size10x10cm). Unit Rate in letters ..... ..... USD	Nr	250		
I-E.4	6.04.04.1	Bituminous speed humps. Unit Rate in letters ..... ..... USD	m <sup>2</sup>	150		
I-E.5	6.04.04.3	Rumble strips (TPR materials). Unit Rate in letters ..... ..... USD	lm	80		

Item	Relevant Specifications Measurement Items	Description	Unit	Quantities	Unit Rate USD	Amount (USD)
I-E.6	6.05.04	Delineators and Markers Posts Type J4 (Size less than 1m2). Unit Rate in letters ..... ..... USD	Nr	50		
I-E.7	6.02.04.1	Small Signs (not exceeding 1 m2 area) including post and foundations. Unit Rate in letters ..... ..... USD	Nr	100		
I-E.8	6.06.05.2	Concrete Single Face New Jersey Barrier free standing. Concrete class 360/20, including terminal unit completed all as specified and shown on drawings and to the Engineer' satisfaction. Unit Rate in letters ..... ..... USD	lm	100		
I-E.9	6.06.05.2	Concrete Single Face New Jersey Barrier on Top of Retaining Walls. Concrete class 360/20, including terminal unit completed all as specified and shown on drawings and to the Engineer's satisfaction. Unit Rate in letters ..... ..... USD	lm	80		
I-E.10	6.06.05.2	Reinforced concrete safety Barrier type SB1 (Candles Type), Concrete Class 360/20, including galvanized steel pipes, terminal unit completed all as specified and shown on drawings and to the Engineer's satisfaction. Unit Rate in letters ..... ..... USD	lm	50		

Item	Relevant Specifications Measurement Items	Description	Unit	Quantities	Unit Rate USD	Amount (USD)
I-E.11	6.06.05.2	Reinforced concrete safety Barrier type SB2, Concrete Class 360/20, including stone cladding, terminal unit completed all as specified and shown on drawings and to the Engineer's satisfaction.  Unit Rate in letters ..... ..... USD	lm	200		
		<b><u>Temporary Signing and Channelizing Devices for TCP on Highway</u></b>				
I-E.12		Supply of the following temporary signing and channelizing devices for the TCP <b><u>on highway</u></b> complete all in accordance with the related drawings and subject to the engineer's approval . The temporary devices shall include but not limited to:				
I-E.12.a	6.09.03.1.1	Temporary warning signs type KD/AK and mandatory signs type B including posts, supports, foundations and all related temporary fixation.  Unit Rate in letters ..... ..... USD	Nr	10		
I-E.12.b	6.09.03.1.1	Warning sign type KC, size greater than or equal to one square meter but less than or equal to two square meters including posts, supports, foundations and all related temporary fixation.  Unit Rate in letters ..... ..... USD	Nr	5		
I-E.12.c	6.09.03.2.1	Plastic Barrier, 145 cm long and 40 cm wide, type K16  Unit Rate in letters ..... ..... USD	Nr	200		

Item	Relevant Specifications Measurement Items	Description	Unit	Quantities	Unit Rate USD	Amount (USD)
I-E.12.d	6.09.03.3.3	Solar Flashing Beacons  Unit Rate in letters ..... ..... USD	Nr	20		
I-E.12.e	6.09.03.4.4	Flashing arrow boards (Truck Mounted).  Unit Rate in letters ..... ..... USD	Nr	2		
I-E.13		Daily mobilization of Temporary Traffic Safety devices on the Highway (Install, reinstall and dismantle as necessary the temporary signing and channelizing devices for the TCP on highway complete all in accordance with the related guidance drawings and in coordination with the concerned authorities and subject to the Engineer's approval.  Unit Rate in letters ..... ..... USD	Nr	15		
<b>Subtotal Bill No. I-E: Traffic Control Devices &amp; Safety Barriers</b>						

Only in letters .....  
.....United States Dollars

**BILL NO. I-F: DAYWORKS & MATERIALS**

Item	Relevant Specifications Measurement Items	Description	Unit	Quantities	Unit Rate USD	Amount (USD)
		<b><u>LABOUR SHCHEDULE</u></b>				
I-F-1		Labourer Unit Rate in letters ..... ..... USD	Day	50		
I-F-2		Semi-Skilled Labourer/Craftsman Unit Rate in letters ..... ..... USD	Day	50		
I-F-3		Trained Labourer/Craftsman Unit Rate in letters ..... ..... USD	Day	30		
I-F-4		Carpenter Unit Rate in letters ..... .....USD	Day	30		
I-F-5		Steel bar bender/fixer Unit Rate in letters ..... ..... USD	Day	30		
I-F-6		Mason Unit Rate in letters ..... ..... USD	Day	30		

Item	Relevant Specifications Measurement Items	Description	Unit	Quantities	Unit Rate USD	Amount (USD)
I-F-7		Concretor Unit Rate in letters ..... ..... USD	Day	30		
		<b><u>MATERIALS</u></b>				
I-F-8		Aggregate for sub-base Unit Rate in letters ..... ..... USD	m <sup>3</sup>	100		
I-F-9		Aggregate for base Unit Rate in letters ..... ..... USD	m <sup>3</sup>	100		
I-F-10		RC pipe Ø 300 mm Unit Rate in letters ..... ..... USD	lm	100		
I-F-11		RC pipe Ø 400 mm Unit Rate in letters ..... ..... USD	lm	50		
I-F-12		RC pipe Ø 500 mm Unit Rate in letters ..... ..... USD	lm	100		

Item	Relevant Specifications Measurement Items	Description	Unit	Quantities	Unit Rate USD	Amount (USD)
I-F-13		RC pipe Ø 600 mm Unit Rate in letters ..... ..... USD	lm	50		
I-F-14		RC pipe Ø 800 mm Unit Rate in letters ..... ..... USD	lm	50		
I-F-15		RC pipe Ø 1000 mm Unit Rate in letters ..... ..... USD	lm	50		
I-F-16		RC pipe Ø 1200 mm Unit Rate in letters ..... ..... USD	lm	50		
<b>Subtotal Bill No. I-F: DAYWORKS &amp; MATERIALS</b>						

Only in letters .....

.....United States Dollars

**SUMMARY  
OF BILL OF QUANTITIES FOR  
ZAHLE CAZA PART1 (FIXED)**



## Roads Routine Maintenance For Lot 18

### *BILL OF QUANTITIES*

#### **SUMMARY OF ZAHLE CAZA - PART 1 (FIXED)**

BILL NO	DESCRIPTION	AMOUNT IN USD
BILL I-A	GENERAL CONTRACT REQUIREMENTS	
BILL I-B	INCIDENTAL REPAIR WORKS	
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BILL I-E	TRAFFIC CONTROL DEVICES & SAFETY BARRIERS	
BILL I-F	DAYWORKS & MATERIALS	
TOTAL AMOUNT OF BILL OF QUANTITIES FOR PART 1 (FIXED) (US \$)		

## **II. BILL OF QUANTITIES FOR ZAHLE CAZA PART 2 (OPTIONAL)**

**BILL NO. I-A: GENERAL CONTRACT REQUIREMENTS FOR ZAHLE CAZA-PART 2 (OPTIONAL)**

Item	Relevant Specifications Measurement Items	Description	Unit	Quantities	Unit Rate USD	Amount (USD)
I-A	Division-1	<p><b><u>GENERAL CONTRACT REQUIREMENTS</u></b> The rate shall be a lump sum paid on equal monthly installments over the contract period which includes but not limited to:</p> <p><b><u>- MOBILIZATION &amp; DEMOBILIZATION</u></b> The cost of all necessary mobilization and demobilization for the works.</p> <p><b><u>- INSURANCE</u></b> The cost of providing all required insurances in accordance with the Contract Documents in general, and in volume 1- Conditions of Contract particularly.</p> <p><b><u>- TEMPORARY FACILITIES AND SERVICES FOR THE ENGINEER</u></b> 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	4		
	<b>Subtotal Bill No. I-A: General Contract Requirements</b>					

Only in letters .....  
.....United States Dollars

**BILL NO. I-B: INCIDENTAL REPAIR WORKS**

Item	Relevant Specifications Measurement Items	Description	Unit	Quantities	Unit Rate (USD)	Amount (USD)
I-B		<b><u>INCIDENTAL REPAIR WORKS</u></b> <i>(All Works shall be done complete as specified and shown on drawings and to the Engineer's satisfaction)</i>				
I-B.1	2.01.03.1	Clearing and Removal within the limits of working area all vegetation, surface debris, scattered stones and rocks etc.  Unit Rate in letters ..... ..... US	m <sup>2</sup>	10,000		
I-B.2	2.03.03.1	Repairing (including releveled) damaged concrete frame manhole.  Unit Rate in letters..... .....USD	No.	25		
I-B.3		<b>Replace damaged manhole covers</b>				
I-B.3.a	2.03.03.2	Replace damaged manhole concrete frame and covers (Heavy duty) Type A, including all necessary materials and installation. The Class of concrete to be used for frame manholes shall be 450/20; including SBR additive, completed as specified, shown on drawings and to the Engineer's satisfaction.  Unit Rate in letters ..... ..... USD	No.	40		
I-B.3.b	2.03.03.3	Replace damaged manhole covers (Heavy duty) Type B located within Highway areas, including temporary structural steel plate, fy= 250 MPa, anchored (1500x1500x20mm thick) and all necessary materials and installation. The Class of concrete to be used for frame manholes shall be cement based high strength fast hardening micro-concrete with a maximum aggregate size of 10mm (Sikacrete or equivalent) completed as specified, shown on drawings and to the Engineer's satisfaction.  Unit Rate in letters ..... ..... USD	No.	5		

Item	Relevant Specifications Measurement Items	Description	Unit	Quantities	Unit Rate (USD)	Amount (USD)
I-B.4	2.01.03.2	Cleaning waterways, hydraulic structures, pipes culverts , box culverts & manholes. Unit Rate in letters ..... ..... USD	m <sup>3</sup>	1,000		
I-B.5	2.01.03.3	Cleaning of concrete channel. Unit Rate in letters ..... ..... USD	m <sup>3</sup>	2,500		
I-B.6	2.02.04	Cleaning of storm and sewer pipes by jetting machine including related manholes. Unit Rate in letters ..... ..... USD	lm	1,000		
I-B.7	6.08.05	Repairing stone masonry wall (with our without mortar). Unit Rate in letters ..... ..... USD	m <sup>2</sup>	1,000		
I-B.8	6.06.05.1	Dismantling damaged galvanized steel guardrail and replacing with new one including terminal units. Unit Rate in letters ..... ..... USD	lm	50		
I-B.9	6.01.04.6/7/8	Dismantling of damaged sidewalk tiles and replacing with new similar ones. Unit Rate in letters ..... ..... USD	m <sup>2</sup>	50		

Item	Relevant Specifications Measurement Items	Description	Unit	Quantities	Unit Rate (USD)	Amount (USD)
I-B.10	6.01.04.1/2	Dismantling of damaged concrete curbstone and replacing with new similar ones. Unit Rate in letters ..... ..... USD	lm	20		
I-B.11	6.01.04.3/4	Dismantling of damaged concrete gutter and replacing with new similar ones. Unit Rate in letters ..... ..... USD	lm	20		
<b>Subtotal Bill No. I-B: Incidental Repair Works</b>						

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**BILL NO. I-C: PAVEMENT REPAIR WORKS**

Item	Relevant Specifications Measurement Items	Description	Unit	Quantities	Unit Rate (USD)	Amount (USD)
I-C		<b><u>PAVEMENT REPAIR WORKS</u></b> <i>(All Works shall be done complete as shown on drawings, as specified and to the Engineer's approval)</i>				
C.1		<b>Patching Works</b>				
I-C.1a	4.08.14.1	<b>Surface Patching works</b> Surface patch including milling, applying tack coat and re-instating wearing asphalt course (5 cm)  Unit Rate in letters ..... ..... USD	m <sup>2</sup>	4,500		
I-C.1b	4.08.14.1	<b>Shallow Patching works</b> Full asphalt removal and repair with maintaining base course layer and applying prime coat, one layer of asphalt binder course (5 cm), tack coat and one layer of asphalt wearing course of (5 cm)  Unit Rate in letters ..... ..... USD	m <sup>2</sup>	2,500		
I-C.1c	4.08.14.1	<b>Deep Patching works</b> Including excavation, base course (30 cm), prime coat, asphalt binder course (one layer 5 cm), tack coat and asphalt wearing courses (one layer 5 cm)  Unit Rate in letters ..... ..... USD	m <sup>2</sup>	800		

Item	Relevant Specifications Measurement Items	Description	Unit	Quantities	Unit Rate (USD)	Amount (USD)
<b>C.2</b>		<b>Surface repairing Works</b>				
I-C.2a	4.08.14.2	<b>Crack sealing</b> Depending on crack width, the works shall include filling the cracks to the road surface level with - diluted emulsified bitumen or - with sand and saturated by diluted emulsified bitumen  Unit Rate in letters ..... ..... USD	lm	200		
<b>C.3</b>		<b>Trench Reinstatement</b>				
I-C.3a	4.08.14.3	<b>Stable but sunken trench</b> Works include milling & asphalt wearing course overlay (5cm) including tack coat (Trench width less than 1 m)  Unit Rate in letters ..... ..... USD	lm	1,200		
I-C.3b	4.08.14.4	<b>Damaged trench</b> Works include removing and reinstating, excavation, base course (30 cm), prime coat, asphalt binder course (one layer 5 cm), tack coat and asphalt wearing course (one layer 5 cm) (Trench width less than 1 m)  Unit Rate in letters ..... ..... USD	lm	800		
I-C.4	4.08.14.5	Cold ready mixed asphalt for permanent repair of potholes (5 cm)  Unit Rate in letters ..... ..... USD	m <sup>2</sup>	100		
<b>Subtotal Bill No. I-C: Pavement Repair Works</b>						

Only in letters .....

.....United States Dollars



**BILL NO. I-D: CONCRETE REPAIR WORKS**

Item	Relevant Specifications Measurement Items	Description	Unit	Quantities	Unit Rate USD	Amount (USD)
I-D		<b>CONCRETE REPAIR WORKS</b> <i>(All Works shall be done complete as shown on drawings, as specified and to the Engineer's approval)</i>				
I-D.1	5.06.04	Cast-in-situ Reinforced concrete, Class 250/20 (B25) for repair of box culverts, headwalls and wingwalls, concrete channels ,retaining walls, and concrete barriers (all types and shapes)  Unit Rate in letters ..... ..... USD	m <sup>3</sup>	100		
I-D.2	5.07.04	Structural Mortar for patching of deteriorated parts of channels, walls and safety barriers. thickness not more than 10cm and concrete compressive strength 40Mpa.  Unit Rate in letters ..... ..... USD	m <sup>2</sup>	50		
I-D.3	5.08.04	Cast-in-situ Reinforced concrete, Class 250/20 (B25) for channel's cover clear width not exceeding 80cm and including steel reinforcement.  Unit Rate in letters ..... ..... USD	lm	200		
I-D.4	5.03.04	High Tensile Steel bar reinforcement completed as specified and to the Engineer's satisfaction.  Unit Rate in letters ..... ..... USD	T	8		
		<b>Subtotal Bill No. I-D: Concrete Repair Works</b>				

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**BILL NO. I-E: TRAFFIC CONTROL DEVICES & SAFETY BARRIERS**

Item	Relevant Specifications Measurement Items	Description	Unit	Quantities	Unit Rate USD	Amount (USD)
I-E		<b><u>TRAFFIC CONTROL DEVICES</u></b> <i>(All Works shall be done complete as shown on drawings, as specified and to the Engineer's approval)</i>				
I-E.1	6.03.08.1	Thermoplastic reflectorized Road Paint Lines width 20 cm (Thickness 3 mm) including surface preparation and removal of existing paint lines (where needed).  Unit Rate in letters ..... ..... USD	m <sup>2</sup>	2,000		
I-E.2	6.03.08.2	Thermoplastic reflectorized Special Road Marking including speed limit marking (Thickness 3mm).  Unit Rate in letters ..... ..... USD	m <sup>2</sup>	150		
I-E.3	6.03.08.4	Cat's eyes Pavement Studs (size10x10cm).  Unit Rate in letters ..... ..... USD	Nr	150		
I-E.4	6.04.04.1	Bituminous speed humps.  Unit Rate in letters ..... ..... USD	m <sup>2</sup>	200		
I-E.5	6.04.04.3	Rumble strips (TPR materials).  Unit Rate in letters ..... ..... USD	lm	80		

Item	Relevant Specifications Measurement Items	Description	Unit	Quantities	Unit Rate USD	Amount (USD)
I-E.6	6.05.04	Delineators and Markers Posts Type J4 (Size less than 1m2). Unit Rate in letters ..... ..... USD	Nr	50		
I-E.7	6.02.04.1	Small Signs (not exceeding 1 m2 area) including post and foundations. Unit Rate in letters ..... ..... USD	Nr	100		
I-E.8	6.06.05.2	Concrete Single Face New Jersey Barrier free standing. Concrete class 360/20, including terminal unit completed all as specified and shown on drawings and to the Engineer' satisfaction. Unit Rate in letters ..... ..... USD	lm	100		
I-E.9	6.06.05.2	Concrete Single Face New Jersey Barrier on Top of Retaining Walls. Concrete class 360/20, including terminal unit completed all as specified and shown on drawings and to the Engineer's satisfaction. Unit Rate in letters ..... ..... USD	lm	80		
I-E.10	6.06.05.2	Reinforced concrete safety Barrier type SB1 (Candles Type), Concrete Class 360/20, including galvanized steel pipes, terminal unit completed all as specified and shown on drawings and to the Engineer's satisfaction. Unit Rate in letters ..... ..... USD	lm	50		

Item	Relevant Specifications Measurement Items	Description	Unit	Quantities	Unit Rate USD	Amount (USD)
I-E.11	6.06.05.2	Reinforced concrete safety Barrier type SB2, Concrete Class 360/20, including stone cladding, terminal unit completed all as specified and shown on drawings and to the Engineer's satisfaction.  Unit Rate in letters ..... ..... USD	lm	200		
		<b><u>Temporary Signing and Channelizing Devices for TCP on Highway</u></b>				
I-E.12		Supply of the following temporary signing and channelizing devices for the TCP <b><u>on highway</u></b> complete all in accordance with the related drawings and subject to the engineer's approval . The temporary devices shall include but not limited to:				
I-E.12.a	6.09.03.1.1	Temporary warning signs type KD/AK and mandatory signs type B including posts, supports, foundations and all related temporary fixation.  Unit Rate in letters ..... ..... USD	Nr	10		
I-E.12.b	6.09.03.1.1	Warning sign type KC, size greater than or equal to one square meter but less than or equal to two square meters including posts, supports, foundations and all related temporary fixation.  Unit Rate in letters ..... ..... USD	Nr	5		
I-E.12.c	6.09.03.2.1	Plastic Barrier, 145 cm long and 40 cm wide, type K16  Unit Rate in letters ..... ..... USD	Nr	200		
I-E.12.d	6.09.03.3.3	Solar Flashing Beacons  Unit Rate in letters ..... ..... USD	Nr	20		

Item	Relevant Specifications Measurement Items	Description	Unit	Quantities	Unit Rate USD	Amount (USD)
I-E.12.e	6.09.03.4.4	Flashing arrow boards (Truck Mounted).  Unit Rate in letters ..... ..... USD	Nr	2		
I-E.13		Daily mobilization of Temporary Traffic Safety devices on the Highway (Install, reinstall and dismantle as necessary the temporary signing and channelizing devices for the TCP on highway complete all in accordance with the related guidance drawings and in coordination with the concerned authorities and subject to the Engineer's approval.  Unit Rate in letters ..... ..... USD	Nr	15		
<b>Subtotal Bill No. I-E: Traffic Control Devices &amp; Safety Barriers</b>						

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**BILL NO. I-F: DAYWORKS & MATERIALS**

Item	Relevant Specifications Measurement Items	Description	Unit	Quantities	Unit Rate USD	Amount (USD)
		<b><u>LABOUR SHCHEDULE</u></b>				
I-F-1		Labourer Unit Rate in letters ..... ..... USD	Day	50		
I-F-2		Semi-Skilled Labourer/Craftsman Unit Rate in letters ..... ..... USD	Day	50		
I-F-3		Trained Labourer/Craftsman Unit Rate in letters ..... ..... USD	Day	30		
I-F-4		Carpenter Unit Rate in letters ..... ..... USD	Day	30		
I-F-5		Steel bar bender/fixer Unit Rate in letters ..... ..... USD	Day	30		
I-F-6		Mason Unit Rate in letters ..... ..... USD	Day	30		

Item	Relevant Specifications Measurement Items	Description	Unit	Quantities	Unit Rate USD	Amount (USD)
I-F-7		Concretor Unit Rate in letters ..... ..... USD	Day	30		
		<b><u>MATERIALS</u></b>				
I-F-8		Aggregate for sub-base Unit Rate in letters ..... ..... USD	m <sup>3</sup>	100		
I-F-9		Aggregate for base Unit Rate in letters ..... ..... USD	m <sup>3</sup>	100		
I-F-10		RC pipe Ø 300 mm Unit Rate in letters ..... ..... USD	lm	100		
I-F-11		RC pipe Ø 400 mm Unit Rate in letters ..... ..... USD	lm	50		
I-F-12		RC pipe Ø 500 mm Unit Rate in letters ..... ..... USD	lm	100		

Item	Relevant Specifications Measurement Items	Description	Unit	Quantities	Unit Rate USD	Amount (USD)
I-F-13		RC pipe Ø 600 mm Unit Rate in letters ..... ..... USD	lm	50		
I-F-14		RC pipe Ø 800 mm Unit Rate in letters ..... ..... USD	lm	50		
I-F-15		RC pipe Ø 1000 mm Unit Rate in letters ..... ..... USD	lm	50		
I-F-16		RC pipe Ø 1200 mm Unit Rate in letters ..... ..... USD	lm	50		
<b>Subtotal Bill No. I-F: DAYWORKS &amp; MATERIALS</b>						

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**SUMMARY  
OF BILL OF QUANTITIES FOR  
ZAHLE CAZA PART2 (OPTIONAL)**

## Roads Routine Maintenance For Lot 18

### *BILL OF QUANTITIES*

#### **SUMMARY OF ZAHLE CAZA-PART 2 (OPTIONAL)**

BILL NO	DESCRIPTION	AMOUNT IN USD
BILL I-A	GENERAL CONTRACT REQUIREMENTS	
BILL I-B	INCIDENTAL REPAIR WORKS	
BILL I-C	PAVEMENT REPAIR WORKS	
BILL I-D	CONCRETE REPAIR WORKS	
BILL I-E	TRAFFIC CONTROL DEVICES & SAFETY BARRIERS	
BILL I-F	DAYWORKS & MATERIALS	
TOTAL AMOUNT OF BILL OF QUANTITIES FOR ZAHLE PART 2- OPTIONAL (US \$)		

**TOTAL SUMMARY FOR LOT 18  
ZAHLE CAZA**

**Roads Routine Maintenance  
For Lot 18 - Zahle Caza**

**BILL OF QUANTITIES**

**TOTAL SUMMARY FOR LOT 18**

	AMOUNT IN USD
TOTAL AMOUNT OF ZAHLE CAZA PART 1 (FIXED) BILL OF QUANTITIES (US \$)	
TOTAL AMOUNT OF ZAHLE CAZA PART 2 (OPTIONAL) BILL OF QUANTITIES (US \$)	
<b>(1) TOTAL AMOUNT OF LOT 18 BILL OF QUANTITIES BEFORE DEDUCTION (US \$)</b>	
<b>(2) DEDUCTION BY BIDDERS IF ANY (US \$)</b>	
<b>(3) PROVISIONAL SUM FOR ZAHLE CAZA PART 1 (FIXED) (US \$)</b>	<b>\$50,000.00</b>
<b>(4)= (1)-(2)+(3) :TOTAL AMOUNT OF LOT 18 BILL OF QUANTITIES AFTER DEDUCTION (US \$)</b>	
<b>TOTAL AMOUNT OF LOT 18 - ZAHLE CAZA AFTER DEDUCTION IN LETTERS</b>	