



REPUBLIC OF LEBANON
COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION

**Damaged Roads Clearing and Restoration in South
Lebanon
Nabatiyeh Caza**

Tender Documents

Volume 3

BILLS OF QUANTITIES

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المكتب الهندسي الاستشاري - آيس ش بيروت
ASSOCIATED CONSULTING ENGINEERS S A L BEIRUT

Damaged Roads Clearing and Restoration In South Lebanon

BILL OF QUANTITIES FOR NABATIYEH CAZA

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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 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.
4. 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.
5. 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.
6. 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.
7. 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.

8. 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.
9. 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.
10. 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.
11. 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.
12. 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.
13. 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.

14. The Contractor should read carefully the Environment and Social Management Plan (ESMP Checklist) and the Occupational Health and Safety (OHS) Management Plan requirements and take all details into consideration while pricing. The cost of implementing of the ESMP & OHS requirements and the Traffic Management Plan should be included in the Contractors rates.
15. The traffic control plans (TCPs) with its temporary safety devices and movable sign boards related to the activities to be carried out within the scope of works 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.
16. The contractor should provide all general and specialized staff, equipment, tools and materials to carry out the required works.
17. **The locations of the roads shall be identified and specified by the Council for Development and Reconstruction (CDR), in coordination with the Ministry of Public Works and Transport (MoPWT), the concerned municipalities, and other relevant project stakeholders, in accordance with the mechanism and security protocol established by the Lebanese Army, as detailed in the Environmental and Social Management Plan (ESMP). Prior to the commencement of the Works, the Contractor shall carry out his own site survey in coordination with local authorities to ascertain the exact extents and types of the required restoration works. In addition, the Contractor shall prepare the necessary shop drawings showing the precise locations and types of restoration works, all in accordance with the Contract requirements. Such shop drawings shall be submitted to the Engineer for approval within thirty (30) days from the date of the Notice of Commencement of the relevant activity, and no Works shall commence until such approval is obtained.**
18. (i) **The Contractor remains responsible for accuracy and completeness of surveys, shop drawings, and as-built documentation. Errors or omissions shall be rectified at the Contractor's cost without entitlement to additional time or payment, unless directed by the Engineer as a Variation.**

(ii) **Prior to commencing any Works, the Contractor shall, at its own cost, carry out a comprehensive site survey and verification in coordination with the relevant authorities to determine the exact extents, quantities, and types of restoration works required. The Contractor shall bear all risk associated with any discrepancies between indicative drawings and actual site conditions except where the Engineer issues a Variation pursuant to the Contract.**

19. The following notations are used in the Bill of Quantities:

Linear Meter	lm
Square Meter	m ²
Cubic Meter	m ³
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.

****END OF PREAMBLE****

I. BILL OF QUANTITIES FOR NABATIYEH CAZA

Council for Development and Reconstruction
Beirut - Lebanon

Damaged Roads Clearing and Restoration in South Lebanon
(Nabatiyeh Caza)
Bill of Quantities - General Requirements

A - GENERAL CONTRACT REQUIREMENTS

Item	Relevant Spec. Measurement Items	Description	Unit	Quantities	Unit Rate USD	Amount (USD)
		The cost of fulfilling all the requirements of the Contract Documents included in volume 1 – Conditions of Contract, volume 2 Technical Specifications, volume 3 Bill Of Quantities, volume 4 Drawings and any addenda (if applicable) issued during tendering period, and which are not otherwise itemized separately and accounted for in the Bill Of Quantities shall be deemed to be included in other work items.				
A.1	Div.01	<u>MOBILIZATION & DEMOBILIZATION</u> The rate shall include the cost of all necessary mobilization and demobilization for the works. The rate shall be a lump sum paid on equal monthly installments over the contract period. Unit Rate in letters..... USD	Item	1.00		
A.2	Div.01	<u>INSURANCE</u> The rate shall include the cost of providing all required insurances in accordance with the Contract Documents in general, and in volume 1- Conditions of Contract particularly. Payment for this item shall be made in distributed stages according to an approved breakdown. Unit Rate in letters..... USD	Item	1.00		
A.3	Div.01	<u>TEMPORARY FACILITIES AND SERVICES FOR THE ENGINEER</u> The rate shall include the cost of all necessary “Temporary Facilities For the Engineer and/or Employer” specified in section 1.03.05-Division 01-General Requirements of the Technical Specifications. Unit Rate in letters..... USD	Monthly	6.00		

Council for Development and Reconstruction Beirut - Lebanon		Damaged Roads Clearing and Restoration in South Lebanon (Nabatiyeh Caza) Bill of Quantities - General Requirements				
Item	Relevant Spec. Measurement Items	Description	Unit	Quantities	Unit Rate USD	Amount (USD)
A.4	Div.01	<u>TEMPORARY SIGN BOARD</u> The price shall include the cost of manufacturing, supplying and erecting “Temporary Sign Boards”, each size 2000mm wide 3250mm high, including all required foundations, fixing accessories, required pole with breakaway connection, painting and marking, complete as specified to the approval of the Engineer. Unit Rate in letters..... USD	Nr	2.00		
A.5	Div.01	<u>SITE SURVEY AND QUANTITIES RE-ASSESSMENT FOR WAR-DAMAGED ROADS</u> Prior to the commencement of the Works, the Contractor shall carry out his own detailed survey for all damaged roads within the Scope of Works, in coordination with the relevant local authorities, in order to ascertain the exact extents and types of the required restoration works. Based on the results of this survey, the Contractor shall prepare and submit a re-measured Bill of Quantities for all Works to be executed in fulfillment of his obligations under the Contract. The re-measured Bill of Quantities shall be submitted to the Engineer for review and approval within twenty (20) days from the date of the Notice of Commencement of the relevant activity. No extension of time shall be claimed as a result of the re-measured Bill of Quantities or any changes in the extents of the Works that could reasonably have been identified through the Contractor’s survey. Payment for this item shall be made only after submission and approval of the re-measured Bill of Quantities. Unit Rate in letters..... USD	Item	1.00		

Council for Development and Reconstruction Beirut - Lebanon		Damaged Roads Clearing and Restoration in South Lebanon (Nabatiyeh Caza) Bill of Quantities - General Requirements				
Item	Relevant Spec. Measurement Items	Description	Unit	Quantities	Unit Rate USD	Amount (USD)
A.6	Div.01	<u>EXECUTION AND SHOP DRAWINGS</u> The price shall include all necessary works, labor, and materials for the preparation, coordination, and submission to the Engineer for approval of all execution and shop drawings related to temporary works under this contract. The works shall include, but are not limited to: -Preparation of all design calculations, working drawings, and technical details. -Complete information on construction methods, erection procedures, and sequencing of works. -Planning and program of work, taking into account safety requirements and ensuring non-stop traffic along the existing roads. -Preparation and submission of construction documents in complete submittal packages showing accurate locations and types of proposed works, and all relevant details, to the Engineer for approval. Execution Condition: Construction of any works shall not commence prior to the Engineer's approval of the relevant Construction Documents. Unit Rate in letters..... USD	Item	1.00		
A.7	Div.01	<u>AS-BUILT DRAWINGS</u> The rate shall include the following works: -Verification of revised tender and approved shop drawings. -Implementation of changes incurred on approved shop drawings due to site condition as consented and instructed by the Engineer. -Preparation and submittal of the aforesaid in one original and three copies completed within a period of 4 weeks following the completion date. The rate shall be a lump sum value payable upon approval of submittal. Unit Rate in letters..... USD	Item	1.00		
Subtotal Bill A: General Requirements						

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

B - REMOVAL OF DEBRIS AND CLEARING WORKS

Item	Relevant Spec. Measurement Items	Description	Unit	Quantities	Unit Rate USD	Amount (USD)
B.1	2.01.03	Removal of Debris and Clearing Remove all materials and obstructions within the limits of the working area and the road right-of-way, all war-related debris, including damaged pavement materials, rubble, demolished structural elements, surface debris, scattered stones and rocks, and any other obstructions resulting from war damage; demolition,load, transport and dispose of the resulting materials at approved dumping areas, all in accordance with the Specifications and as directed by the Engineer, complete and accepted.and dispose of resulting materials to approved dumping areas, all as specified and directed and to the Engineer’s satisfaction,ensuring safety and minimal disruption to surrounding areas. Unit Rate in letters..... USD	m³	31,600		
B.2	2.02.04	Cleaning of existing waterways, drainage pipes, or box culverts crossing roads under the scope of works, consisting of the removal of silt, debris, vegetation, and any accumulated materials from provided they are in good condition; ensuring free flow of water, proper functioning, and restoring the structures to their original Hydraulic capacity, all as specified and to the Engineer’s approval. Unit Rate in letters..... USD	m³	390		
Subtotal Bill B: REMOVAL OF DEBRIS AND CLEARING WORKS						

Only in letters.....

.....United States Dollars

C - EARTH WORKS

Item	Relevant Spec. Measurement Items	Description	Unit	Quantities	Unit Rate USD	Amount (USD)
C.1	2.03.05	Unclassified Excavation for Gravel Road Construction – War-Damaged Roads, consisting of the excavation, loading, hauling, and disposal or stockpiling of all materials (including soil, sand, gravel, and rocks) without classification, from existing road alignments affected by war damage;include removal of soil within the limits of the working area and road right-of-way; shaping and leveling of the subgrade to the specified line, level, and cross-fall; disposal of unsuitable or excess materials to approved dumping areas, all as specified and to the Engineer’s approval. Unit Rate in letters.....USD	m³	45,700		
C.2	2.04.04	Borrow Material , Supply, hauling, placement, spreading, and compaction of approved borrow material for backfilling or subgrade soil improvement, including excavation from approved borrow areas. The works shall be carried out in layers to the specified thickness, with proper moisture control, trimming, and leveling. The item shall also include disposal of unsuitable or excess materials, all in accordance with the Contract Specifications and to the Engineer’s approval. Unit Rate in letters.....USD	m³	4,570		
C.3	2.08.04	Permeable Backing behind storm water pipes/ box culverts, completed all as specified, and to the Engineer’s approval. Thickness 40cm. Unit Rate in letters.....USD	m³	235		
C.4	2.09.03	Trench Excavation for Storm Water Pipes culverts, completed all as specified and to the Engineer’s approval. Unit Rate in letters.....USD	m³	1,165		
Subtotal Bill C: EARTH WORKS						

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

D - SUB-BASE AND BASE COURSE

Item	Relevant Spec. Measurement Items	Description	Unit	Quantities	Unit Rate USD	Amount (USD)
D.1	2.06.04	Subgrade Preparation, for the construction of pavement in damaged sections, including trimming, scarifying, moisture conditioning, and compaction as required, to achieve the specified density and the required elevations, lines, and grades, all in accordance with the Contract Specifications and to the Engineer’s approval. Unit Rate in letters..... USD	m ²	200,000		
D.2	3.02.08	Granular Sub-base Course, including supply, spreading, and compaction of approved granular material in layers of specified thickness, with proper grading, moisture conditioning, and compaction to achieve the required density, completed as specified in the Contract specifications and drawings, and to the Engineer’s satisfaction. All works shall include trimming, leveling, and disposal of unsuitable or excess material as directed by the Engineer.. Unit Rate in letters..... USD	m ³	30,000		
D.3	3.03.08	Aggregate Base Course, including supply, spreading, and compaction of approved aggregate material in layers of specified thickness, with proper grading, moisture conditioning, and compaction to achieve the required density, completed as specified in the Contract specifications and drawings, and to the Engineer’s satisfaction. All works shall include trimming, leveling, and disposal of unsuitable or excess material as directed by the Engineer. Unit Rate in letters..... USD	m ³	30,000		
Subtotal Bill D: SUB-BASE AND BASE COURSE						

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

E - BITUMINOUS CONSTRUCTION

Item	Relevant Spec. Measurement Items	Description	Unit	Quantities	Unit Rate USD	Amount (USD)
E.1	4.02.06	Bituminous Prime Coat completed all as specified and to the Engineer's satisfaction. Unit Rate in letters..... USD	m ²	200,000		
E.2	4.02.06	Bituminous Tack Coat completed all as specified and to the Engineer's satisfaction. Unit Rate in letters..... USD	m ²	4,700		
E.3	4.04.12	Bituminous Base Course as specified and to the Engineer's satisfaction. Unit Rate in letters..... USD	m ³	10,000		
E.4	4.05.03	Milling (up to 4cm) of the Existing Asphalt including removal and disposal of the milled materials to an approved site and as specified and to the Engineer's satisfaction. Unit Rate in letters..... USD	m ²	4,700		
Subtotal Bill E: BITUMINOUS CONSTRUCTION						

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

F - CROSSING DRAINAGE STRUCTURES WORKS

Item	Relevant Spec. Measurement Items	Description	Unit	Quantities	Unit Rate USD	Amount (USD)
		<u>RECONSTRUCTION OF WAR-DAMAGED CROSSING DRAINAGE STRUCTURES – REINFORCED CONCRETE PIPE CULVERTS</u> Full reconstruction of existing road crossing drainage structures damaged by war, using reinforced concrete pipe culverts. The works shall include: -Demolition and removal of damaged or collapsed pipes, headwalls, wing walls, aprons, and associated debris, and disposal to approved locations. -Supply and installation of precast or cast-in-situ reinforced concrete pipes of the specified size and class. -Laying, jointing, and bedding of pipes on prepared subgrade. -Backfilling and compaction around the pipes in layers, including provision of suitable bedding material. -Ensuring correct alignment, slope, and hydraulic performance of the culvert. All works shall include traffic management, safety measures, and temporary works necessary to maintain non-stop traffic along existing roads.				
F.1	5.08.04	Reinforced Concrete Pipe : 1200 mm diameter single pipe culvert. Unit Rate in letters..... USD	m	130		
F.2	5.08.04	Reinforced Concrete Pipe800mm diameter single pipe culvert. Unit Rate in letters..... USD	m	130		

Council for Development and Reconstruction Beirut - Lebanon			Damaged Roads Clearing and Restoration in South Lebanon (Nabatiyeh Caza) Bill of Quantities - Crossing Drainage Structures works			
Item	Relevant Spec. Measurement Items	Description	Unit	Quantities	Unit Rate USD	Amount (USD)
F.3	5.01.08	Cast in situ Reinforced concrete, Class 250/20(B25) for box culverts, headwalls and wingwalls including steel reinforcement, completed as specified and to the Engineer’s satisfaction. Unit Rate in letters..... USD	m³	105		
F.4	5.01.08	Cast in situ Reinforced concrete, Class 250/20(B25) for pipes encasement completed as specified,and to the Engineer’s satisfaction. Unit Rate in letters..... USD	m³	125		
F.5	-	Perforated pipe underdrains Type 1 (250mm pipe diametre) , completed as specified and to the Engineer’s approval. Unit Rate in letters..... USD	lm	80		
Subtotal Bill F: CROSSING DRAINAGE STRUCTURES WORKS						
Only in letters..... United States Dollars						

G - ROAD SAFETY WORKS

Item	Relevant Spec. Measurement Items	Description	Unit	Quantities	Unit Rate USD	Amount (USD)
G.1		<u>Temporary Signing</u> Supply Install and reinstall the following temporary signs complete all as directed by the Engineer:				
G.1a	6.01	Barricade with flashers type k5c. Unit Rate in letters..... USD	Nr	100		
G.1b	6.01	Rectangular sign type KCI Unit Rate in letters..... USD	Nr	25		
G.1c	6.01	Sign, size greater than or equal to one square meter including posts, supports, foundations and all related works, type K2 Unit Rate in letters..... USD	Nr	15		
G.1d	6.01	Sign, size greater than on square meter but less than or equal to two square meters including posts, supports, foundations and all related works. Unit Rate in letters..... USD	Nr	15		

Council for Development and Reconstruction Beirut - Lebanon		Damaged Roads Clearing and Restoration in South Lebanon (Nabatiyeh Caza) Bill of Quantities - Road Safety works				
Item	Relevant Spec. Measurement Items	Description	Unit	Quantities	Unit Rate USD	Amount (USD)
G.2		<u>Temporary Channelizing Devices</u> Supply, Install and reinstall the following channelizing devices complete all as directed by the Engineer:				
G.2a	6.01	Plastic Barrier, 145 cms long and 40 cms wide, type K16 Unit Rate in letters..... USD	Nr	600		
G.3		<u>Traffic Control Devices</u> Supply and Install the Following Signs, Signs supports, Pavement Marking, and Traffic Devices, completed all as specified and to the Engineer’s satisfaction.				
G.3a	6.02.04	Small Signs (not exceeding 1 m2 area). Unit Rate in letters..... USD	Nr	20		
G.3b	6.02.04	Large Ground Mounted Signs (exceeding 1m2 area, type D43). Unit Rate in letters..... USD	Nr	10		
G.3c	6.02.04	Single Post with Breakaway Sign Supports. Unit Rate in letters..... USD	Nr	20		
G.3d	6.02.04	Double Posts with Breakaway Sign Supports Assemblies. Unit Rate in letters..... USD	Nr	10		

Item	Relevant Spec. Measurement Items	Description	Unit	Quantities	Unit Rate USD	Amount (USD)
G.4		<u>Delinators and Makers Posts</u>				
G.4a	6.04	Type J3 Unit Rate in letters.....USD	Nr	200		
G.4b	6.04	Type J4 Unit Rate in letters.....USD	Nr	100		
G.4c	6.04	Type J5 Unit Rate in letters.....USD	Nr	5		
G.5		<u>Guardrail and Safety Barriers (include terminal and transition sections)</u>				
G.5a	6.03.05	Galvanized Steel Guardrail completed all as specified and shown on drawings and to the Engineer’s approval. Unit Rate in letters.....USD	m	130		
G.6		<u>Gabions Walls</u>				
G.6.a	6.25.04	Supply and install of Gabions Walls completed all as specified and shown on drawings and to the Engineer’s approval. Unit Rate in letters.....USD	m³	235		
Subtotal Bill G: ROAD SAFETY WORKS						

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

II. TOTAL SUMMARY

NABATIYEH CAZA

Damaged Roads Clearing and Restoration in South Lebanon
Nabatiyeh Caza

SUMMARY BILL OF QUANTITIES

BILL No	DESCRIPTION	AMOUNT IN USD
A	GENERAL CONTRACT REQUIREMENTS SUBTOTAL A:	
B	REMOVAL OF DEBRIS AND CLEARING WORKS SUBTOTAL B:	
C	EARTH WORKS SUBTOTAL C:	
D	SUB-BASE AND BASE COURSE SUBTOTAL D:	
E	BITUMINOUS CONSTRUCTION SUBTOTAL E:	
F	CROSSING DRAINAGE STRUCTURES WORKS SUBTOTAL F:	
G	ROAD SAFETY WORKS SUBTOTAL G:	
(1) TOTAL AMOUNT BILL OF QUANTITIES BEFORE DEDUCTION (US \$)		
(2) DEDUCTION BY BIDDERS IF ANY (US \$)		
(4) PROVISIONAL SUM FOR NABATIYEH CAZA (US \$)		\$100,000
(4)= (1)-(2)+(4) :TOTAL AMOUNT OF BILL OF QUANTITIES AFTER DEDUCTION (US \$)		
TOTAL AMOUNT OF NABATIYEH CAZA AFTER DEDUCTION IN LETTERS		