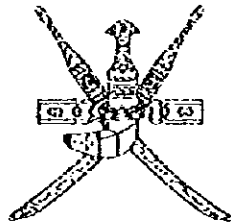


SULTANATE OF OMAN

MINISTRY OF COMMUNICATIONS
DIRECTORATE GENERAL OF ROADS



CONSTRUCTION OF
PEDESTRIAN UNDERPASS
AT
LIWA
BATINAH HIGHWAY
TENDER DOCUMENTS

VOLUME 1

SPECIFICATION
AND
BILL OF QUANTITIES

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THE
FEDERAL BUREAU OF INVESTIGATION
UNITED STATES DEPARTMENT OF JUSTICE

WASHINGTON, D. C.

February 1, 1964

TO : DIRECTOR, FBI (100-388610)

FROM :

SAC, NEW YORK (100-100000)

SUBJECT: [REDACTED]

RE: [REDACTED]

NY 100-100000

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1138442 (7)

SPECIAL SPECIFICATION

The Special Specification stipulated in these Tender Documents defines, modifies, extends, substitutes or deletes the relevant portions of the Sultanate of Oman General Specification for Roads, April 1994 and Highway Design Manual February 1994, referred to in the Prime Document.

The General Specification and Special Specification constitute the applicable specification referred to in this Tender.

Section and clause numbers in the Special Specification are related to those stipulated in the General Specification for Roads.

BRIEF DESCRIPTION OF WORKS

To facilitate crossing the Batinah highway, a pedestrian underpass was constructed at Al Bidayah. In the same manner, the Project comprises of undertaking all works and services in connection with the Construction, Completion and Maintenance of Pedestrian Underpass at Liwa on the Batinah highway. The Contractor is required to carry out all works, including surveying, setting out, excavations, temporary works, permanent works, erections, finishing, installation of ancillary facilities and maintenance for one year from the date of issue of the Certificate of Completion.

The Project includes construction of pedestrian underpass box culverts and stairways approaching the underpass and canopies covering stairways and entrances, removal and relocation of the affected utilities, and some ancillary works.

The salient feature of this project is that the proposed facilities will be constructed under the existing highway. Special attentions, therefore, are required to minimize the interference to the operation of the highway and other human activities around the site. Contractor shall pay particular attentions to safety on site, such as traffic control or diversion, warnings during night work, and other traffic safety measures to avoid any accidental hazards as a result of the construction activities.

SECTION 100 GENERAL**104 ENGINEER'S OFFICE****104.1 ENGINEER'S OFFICE**Specification

This item shall consist of the provision, erection, furnishing, maintenance, including consumable items for prefabricated unit(s) or rented building for Engineer's Office as approved by the Engineer for the sole use of the Engineer and his staff together with the provision of installation and maintenance of services, including 2 local telephone lines and fax machine. It also includes replacement of any item provided in this section.

The Engineer's facilities shall consist of:

| | |
|-------------------------------------|-------|
| Engineer's office, 96 sq.m (Type A) | 1 No. |
| Store for Survey Equipment, 9 sq.m | 1 No. |
| Shaded Carport for 6 vehicles | 1 No. |
| Fire Extinguisher | 1 No. |

The prefabricated unit's or rented building, furniture, equipment and service shall be made available in full working order within the time period stipulated in 'Appendix to Form of Tender' and shall continue to be so available during the progress of the work until the Certificate of Completion for the whole of the works has been issued or as directed by the Engineer.

Description

The office shall be air conditioned, furnished and with all the necessary utilities, i.e. power, water, sewerage, lighting and gas and waste disposal facilities and completely maintained during the contract period as approved by the Engineer.

The Contractor shall provide office for occupancy before start of construction, for the sole use of the Engineer. The office will have a minimum of 5 rooms and store and a floor area of not less than 96 square metres. Typical plan is attached as Figure 1. The Contractor shall provide adequate office furniture including filing cabinets, storage cupboards, bookshelves, adequate supplies of pencils, pens, drawing paper, writing pads, stationery and similar expendable materials etc.

The Contractor shall provide office furnishings equipment at least equal to the following list and as per approval of the Engineer. All furnishings and equipment are for the exclusive use of the Engineer.

(i) Resident Engineer's Office

| | |
|--|--------|
| Desk 150 cm x 80 cm with swivel chair. | 1 Set. |
|--|--------|

| | |
|---|------------|
| Visitors chairs | 2 Nos. |
| Conference Table, 240 cm x 120 cm with 8 chairs | 1 Set. |
| Filing cabinet, 4 drawers | 1 No. |
| Bookcase with 4 shelves | 1 No. |
| Air Conditioner, 18000 B.T.U. | 1 No. |
| (ii) <u>Typist/Record Keeper</u> | |
| Ordinary Desk, 137 cm x 60 cm. | 2 No. |
| Chair | 2 Nos. |
| Filing Cabinets, 4 drawers | 1 No. |
| Bookcase with 4 shelves | 1 No. |
| Air conditioner, 18000 B.T.U. | 1 No. |
| (iii) <u>Supervisory Staff Office (3 rooms)</u> | |
| Engineer's Desk, 137 cm x 60 cm with chair | 1 set each |
| Utility tables, 100 cm x 150 cm | 1 set each |
| Visitors chair | 2 No. each |
| Filing cabinet, 4 drawers | 1 No. each |
| Plan file with 5 drawers | 1 No. each |
| Plan stick file | 1 No. each |
| Air Conditioner, 18000 B.T.U. | 1 No. each |
| Word Processor (Computer) | 1 No. |
| Printer | 1 No. |
| Scientific Calculators | 3 Nos. |
| A3 size paper copier | 1 No. |

The Contractor shall also provide kitchen/pantry and toilet facilities with Engineer's office, for the sole use of the Engineer's Staff, the following:

| | |
|-------------------------------------|--------------|
| (i) <u>Kitchen/Pantry Utilities</u> | |
| Refrigerator, 350 litres. | 1 No. |
| Utility table, 100 cm x 150 cm. | 1 No. |
| Cupboards | 1 No. |
| Electric Kettle | 1 No. |
| Drinking Water | as required. |
| Cups, Saucers, Tea Spoons (12 pcs.) | 1 set. |
| Cutlery (12 pcs). | 1 set. |
| Drinking glasses (12 PCs). | 1 No. |
| Chair/stall | 1 No. |
| Exhaust Fan | 1 No. |
| Air Conditioner, 12000 B.T.U. | 1 No. |
| Sink with hot and cold water supply | 1 No. |
| Tea Towels | 10 Nos. |
| Waste Baskets | 2 Nos. |

| | |
|---|-------|
| Exhaust Fan | 1 No. |
| (ii) Toilet Facilities (Type A) | |
| European WC Suite | 1 No. |
| Wash basin with cold and hot water supply | 1 No. |
| Roller Towel Fitting | 1 No. |
| Toilet paper roller fitting | 1 No. |
| Mirror | 1 No. |
| Exhaust fan | 1 No. |

In addition, the following manuals (latest edition) are to be supplied.

- ASTM Volume relevant to the project.
- AASHTO volumes relevant to the project.
- ACI volumes relevant to the project.
- BS Specification relevant to the project.
- Standard documents for Building and Civil Engineering Works, third edition July 1981, prepared by the Ministry of Finance and Economy, Financial Affairs, Sultanate of Oman.

Upon completion of project, the above documents/standard specification shall revert to the Contractor.

Plans, Specification and Availability of Office

In case of prefabricated unit(s), it shall be constructed of such materials and furnishings which shall be approved by the Engineer. The foundation shall be taken down to solid bottom and the finished floor level shall be at least 60 cms. above natural ground level. All floors shall have PVC tiles laid wall to wall as approved by the Engineer.

The Contractor shall furnish his plans and specification for these prefabricated units not later than (one) 1 week after the signing of the Contract and shall complete and make ready for occupation all these structures within (three) 3 weeks after receipt of Engineer's written acceptance of such plans and specification. If the completion is not effected within the specified time, the Contractor shall provide at his own expense adequate accommodation as approved by the Engineer until occupancy is possible.

No separate payment will be made for providing the Engineer and his staff with temporary offices as specified above, the cost of which will be deemed to be included in the items of mobilisation.

The Contractor shall provide adequate vehicular access to the offices.

Upon completion of the contract or at such time as the Engineer deems that it is no longer required the ownership of the prefabricated unit(s), furnishings and equipment shall return to the Contractor whose responsibility will be to remove them from the site in accordance with Clause 33 of Conditions of Contract.

104.3 SURVEYING INSTRUMENTS

The surveying instruments to be supplied and maintained for the use of the Engineer include the following:

| Sr. No. | | Quantity |
|------------|---|----------|
| 1 | Suitable Theodolite centesimal system, with 4 decimal partition complete with adequate tripod | 1 |
| 2 | Suitable high precision automatic level complete with tripod | 1 |
| 3 | EDM measuring equipment, 2000 m minimum systems, complete with battery, battery charger, cabling, three (3) reflectors, related tripods and accessories to the satisfaction of the Engineer | 1 |
| 4 | Levelling staves 4 m with levelling plates, levelling bubbles | 2 |
| 5 | Fiber tapes 30 m in case | 2 |
| 6 | 50 m steel tape | 2 |
| 7 | Steel pocket tapes, 5 m long | 4 |
| 8 | Surveying umbrella | 1 |
| 9 | Ranging rods, 2.5 m long | 4 |
| 10 | Printed level books | 10 |
| 11 | Field books | 5 |
| 12 | Water Cooler jug | 1 |
| 13 | String lines, 50 m long | 2 |

104.5 ENGINEER'S ACCOMMODATION**Specification**

This item shall consist of the provision, erection, furnishing and maintenance, including consumable items for prefabricated unit(s) or rented building for housing accommodation as approved by the Engineer for the sole use of the Engineer and his staff together with the provision of installation and maintenance of services. It also includes replacement of any item provided in this section.

The Engineer's accommodation shall consist of:

| | |
|--|-------|
| 2 Bedroom unit, each 96 sq.m. (Type B) | 2 No. |
| Fire Extinguisher for each type provided | 1 No. |

The prefabricated unit(s) or rented building, furniture, equipment and services shall be made available in full working order within the time periods stipulated herein, and shall continue to be so available during the progress of the work until the Certificate of Completion for the whole of the works has been issued or as directed by the Engineer.

The Contractor shall be responsible for the security of the buildings and its contents at all times.

Description

The accommodation shall be air conditioned, furnished with all the necessary utilities, i.e. power, water, sewerage, lighting and gas and waste disposal facilities, completed and maintained all as approved by the Engineer, of the types as follows:

a) Two Bedroom Unit Type "B"

Unit type B shall consist of 2 bedrooms, a sitting and dining room, a bathroom, a kitchen and having 96 sq.m. minimum overall floors space. See typical plan attached as figure 2.

All plans of standard fixtures and furniture shall be approved by the Engineer. No supply of standard fixtures and furniture shall be made without the Engineer's prior approval in writing. Each of these units shall be provided with single shaded carport.

The Contractor shall provide all furnishings and equipment at least equal to the following list and as per approval of the Engineer in the two bedroom unit.

| | |
|--|--------------|
| Dressing table | 1 No. |
| Twin bed with side table | 1 No. |
| Single bed with side table | 2 Nos. |
| Chair straight back | 4 Nos. |
| Almirah cum wardrobe | 2 Nos. |
| Cupboard for dining room | 1 set |
| Shelving and tables for kitchen | as required. |
| Air conditioners (24000 B.T.U.) | 2 Nos. |
| Air conditioners (18000 B.T.U.) | 1 No. |
| Refrigerator 350-400 litres | 1 No. |
| 4 plates cooking range | 1 No. |
| Dining Table with six chairs | 1 set |
| 5 piece sofa set with central table set | 1 set |
| Pressure cooker | 1 No. |
| Kettle (coffee/tea) | 1 No. |
| Set of pans (4 pans) | 1 set |
| Set of kitchen knives and cooking spoons | 1 set |
| Dinner set including tea set for eight persons | 1 set |

| | |
|-------------------------|---------|
| Cutlery for 6 persons | 1 set |
| Mattresses | 3 set |
| Bed sheets | 6 Nos. |
| Electric Toaster | 1 No. |
| Electric Kitchen set | 1 set |
| Pillows | 6 Nos. |
| Pillows covers | 12 Nos. |
| Center table set | 1 set |
| Blankets | 3 Nos. |
| Portable vacuum cleaner | 1 No. |
| Washing machines | 1 No. |
| Electric iron | 1 No. |
| Curtains for windows | 4 Nos. |
| Table lamps | 4 Nos. |
| Water set, 13 pieces | 1 set |

104.9 Sampling and Testing

Sampling and Testing

It shall be the responsibility of the Contractor to perform sampling and testing under the direct supervision of the Engineer, as and when required. The samples shall be collected/transported to the laboratory by the Contractor at his own cost.

106 CONTRACTOR'S COMPOUND

106.1 Mobilisation and Demobilisation

The Contractor shall mobilise all the necessary equipment, plant, material and personnel to the location approved by the Engineer to be used as the Contractor's site compound and shall substantially complete the construction of the site offices, stores, sheds, workshops, accommodation etc. by the end of the specified mobilisation period.

At the end of the construction period, the Contractor shall, with the agreement of the Engineer, remove all equipment, plant, site camp surplus material and personnel off the site compound, clean and restore the ground to its original character all to the satisfaction of the Engineer and the Employer. Unless otherwise stipulated any permanent buildings that the Contractor may build for his camp(s) on government land shall if desired by the Engineer and upon the completion of the works, become the property of the employer and shall be handed over in good condition unfurnished with all utility installations complete in place.

CONTRACTOR'S CAMP FACILITIES

The Contractor shall provide a temporary, weather tight site office for his own use complete with facilities for filing, drawings, specification, correspondence etc. and other appurtenances necessary for proper execution of the work. He shall also make his own provision for

suitable accommodation and transportation of his personnel his workshop and all other elements of his camp(s) and shall provide all necessary power, water, sewerage, lighting and all other facilities necessary for his personnel, equipment, material and all other operations of his camp(s).

The Contractor's camp shall include an air conditioned clinic adequately furnished (including a refrigerator), provided with first aid and other medicines normally required on camp sites and operated by a qualified person approved by the Ministry of Health and the Engineer.

The location of the Contractor's camp(s) shall be at location(s) designated and approved by the Engineer. The Contractor shall be responsible for making all arrangements and payments in respect of any land required for the sitting of his camp(s).

The Contractor shall be paid a monthly payment for his camp as quoted by him for the corresponding rate in the Bill of Quantities (item 106.2, Maintenance of Contractor's compound) till the completion of whole of the works inclusive of works instructed as variation order and Additional works, if any. This payment shall be deemed to cover all costs related to the provision, running and maintenance of the Contractor's camp.

107 MAINTENANCE AND PROTECTION OF TRAFFIC

Considering importance of maintaining the traffic on the Batinah Highway, temporally carriageway during construction works for public use shall be maintained properly.

The Contractor shall prepare a plan for the maintenance and protection of traffic in accordance with the Standards and regulations of Royal Oman Police (ROP), concerned authorities (if required) and Ministry of Communications, showing details of detours, locations of different types of signs and flashing signals, lights by night, flagmen, barricades, torches etc. and get the plan approved from the R.O.P. and concerned authorities (if required) and shall provide, erect and maintain all the facilities in accordance with the approved plan. He will remove all the above facilities after they are no longer required subject to the approval from the Engineer, R.O.P. and the concerned authorities at no additional cost.

The payment shall be full compensation for detours, handling of traffic during construction, for the provision and maintenance of barricades, signs, flares, torches, flagman, flashing signals and all other items necessary for proper completion of the works to the satisfaction of the concerned authorities. This item shall be paid as lump sum against BOQ item 107.1 over the construction period.

108 PROGRESS PHOTOGRAPHS

The Contractor shall supply colour photographs of size 15 cm x 10 cm, glued on an A-4 size paper with its corresponding caption, 6 photographs per set, complete with negative, for each month throughout the Contract period. These shall record the progress of the work during the month.

The name of the Project
Chainage or other location data
Type of work
Serial number of the photographs
Date of photography

109 SIGN BOARDS

Further to the General Specification, the Contractor shall provide Two (2) wooden sign boards, details of Contract Sign - Boards are included in Figure - 3, Page 15.

113 AS BUILT DRAWINGS

Further to Clause 113.1 of the General Specification, the Contractor shall keep accurate records of executed work during the Contract period. The Engineer shall, at any time during the Contract, have the right to inspect these records and check that they are correct and up to date. Service drawings shall be colour coded.

The Contractor shall produce a sample of a finished drawings for the approval of the Engineer, and the approved drawings will be submitted with the Final Accounts within three(3) months from the last date of the construction period.

No separate payment shall be made for preparation and producing "As Built Drawings". The cost shall be considered subsidiary to other items of B.O.Q.

SECTION 500 CONCRETE AND CONCRETE STRUCTURE**508 PEDESTRIAN UNDERPASSES****508.1 Water Stops**

Adequate water stops of rubber shall be placed at joints of box culverts as shown on the plans. Where movement at the joint is provided for, the water stops shall be of type permitting such movement without injury. They shall be spliced to form continuous watertight joints.

The rubber water stops shall be formed from synthetic rubber made exclusively from neoprene, reinforcing carbon black, zinc oxide, polymerization agent and softeners. This compound shall contain not less than 70 percent by volume of neoprene. The tensile strength shall not be less than 190 kg/cm² with an elongation at breaking of 600 percent. The Short Durometer indication (hardness) shall be between 50 and 60. After 7 days in air at 69(± 1) centigrade or after 4 days in oxygen at 69(± 1) centigrade and 21 kg/cm² pressure, the tensile strength shall not be less than 65 percent of the original.

The water stops shall be formed with an integral cross section in suitable molds, so as to produce a uniform section with a permissible variation in dimension of 0.8 mm plus or minus. No splices will be permitted in straight strips. Strips and special connection pieces shall be well cured in a manner such that any cross section shall be dense, homogeneous and free from all porosity. Junctions in the special connection pieces shall be full molded. During the vulcanizing period, the joints shall be securely held by suitable clamps. The material at the splices shall be dense and homogeneous throughout the cross section.

The water stops shall be of the size and shape shown on the plans. They shall be dense, homogeneous, and without holes or other defects.

The manufacturer shall be responsible for the testing, either in his own or in a recognized commercial laboratory, and shall submit three test certified copies of test results for the approval of the Engineer.

SECTION 1700 UTILITIES**1701 UTILITIES**

In addition to clauses of the General Specification for Roads, Sultanate of Oman April 1994, the Contractor shall locate, protect, uphold, temporarily divert if necessary, and maintain all pipes, ducts, drains, sewers, service mains, overhead or underground electrical/telephone cables, etc., during execution of the works. The Contractor shall make good any damage to existing service and/or property, and to reinstate the same at his own expense to the satisfaction of the Engineer.

Existing services may not be fully shown on the drawing and the Contractor shall liaise with the relevant authorities to determine the exact nature and full extent to such services which require protection and maintenance.

Approval shall be obtained a minimum of two weeks in advance of any planned interruption of service.

Ministry of Electricity & Water and GTO regulations require certain works to be carried out by specialist Contractors approved by them and it is the responsibility of Contractor to establish the extent of such work. Contractor will be deemed to have allowed in their rates against the various items of work for employing with MEW and GTO regulations and where necessary, for employing MEW and GTO approved Contractors for such specialist works.

NOTE :

1. THIS SKETCH IS INDICATIVE ARRANGEMENT, ONLY
DETAIL DRAWINGS TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO ORDERING OF UNITS.
2. ALL DOORS (D) AND WINDOWS (W) SHALL BE OF SIZES APPROVED BY THE ENGINEER.

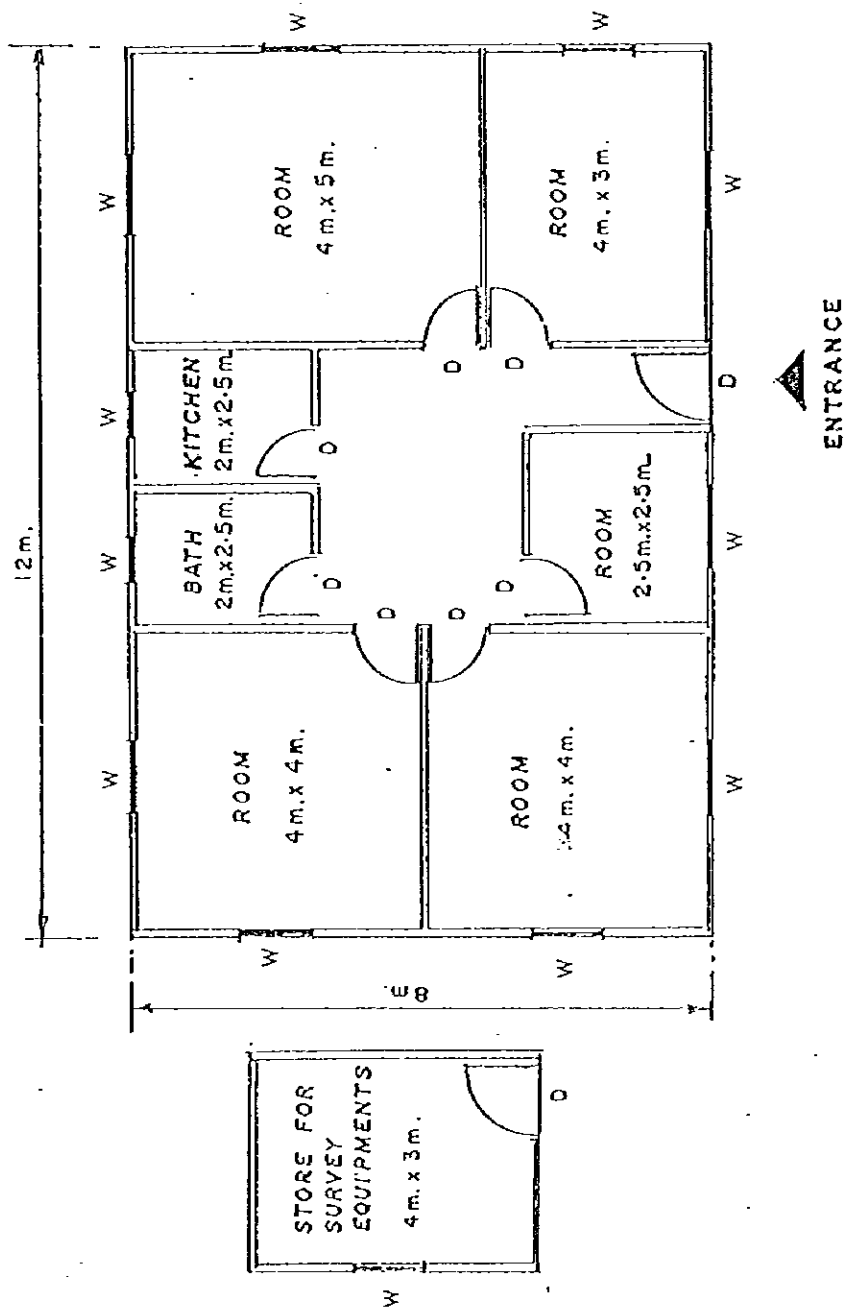
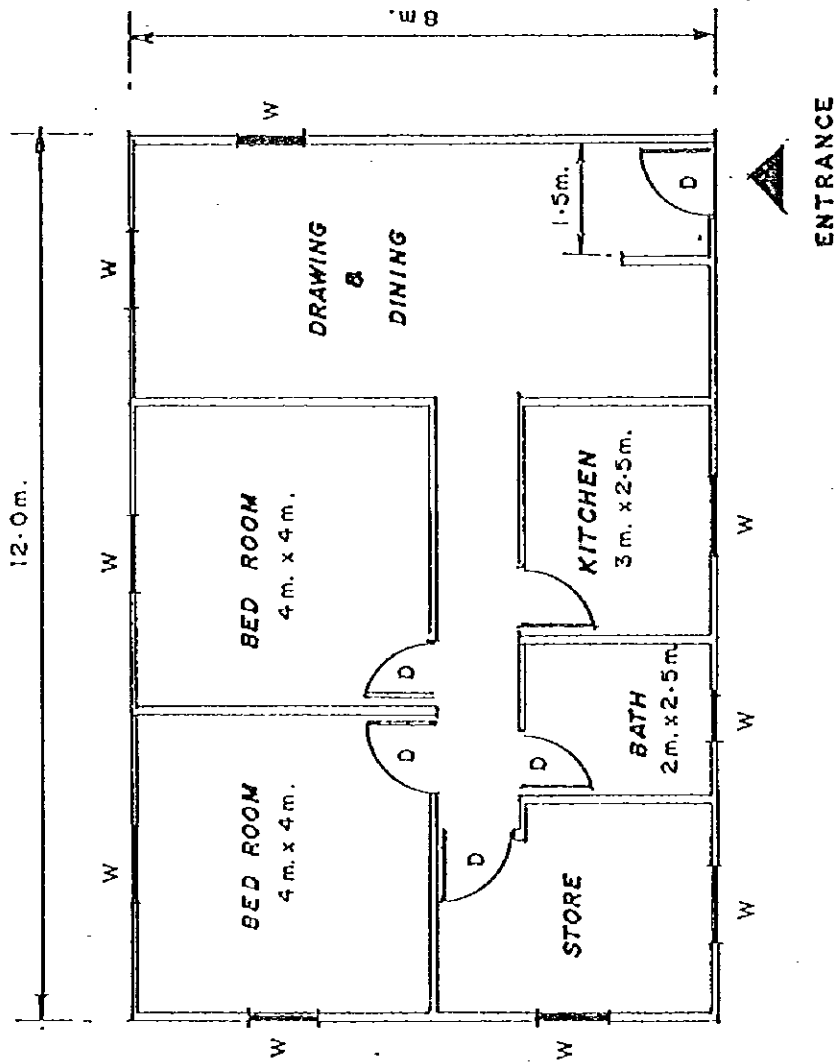


Figure 1

Typical Plan Engineer's Office (Type A)

NOTE:

1. THIS SKETCH IS INDICATIVE ARRANGEMENT, ONLY
DETAIL DRAWINGS TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO ORDERING OF UNITS.
2. ALL DOORS (D) AND WINDOWS (W) SHALL BE OF SIZES APPROVED BY THE ENGINEER.



Total Covered Area 96 sq.m.

Figure 2

Two Bed Room Unit (Type B) for Engineer's Accommodation

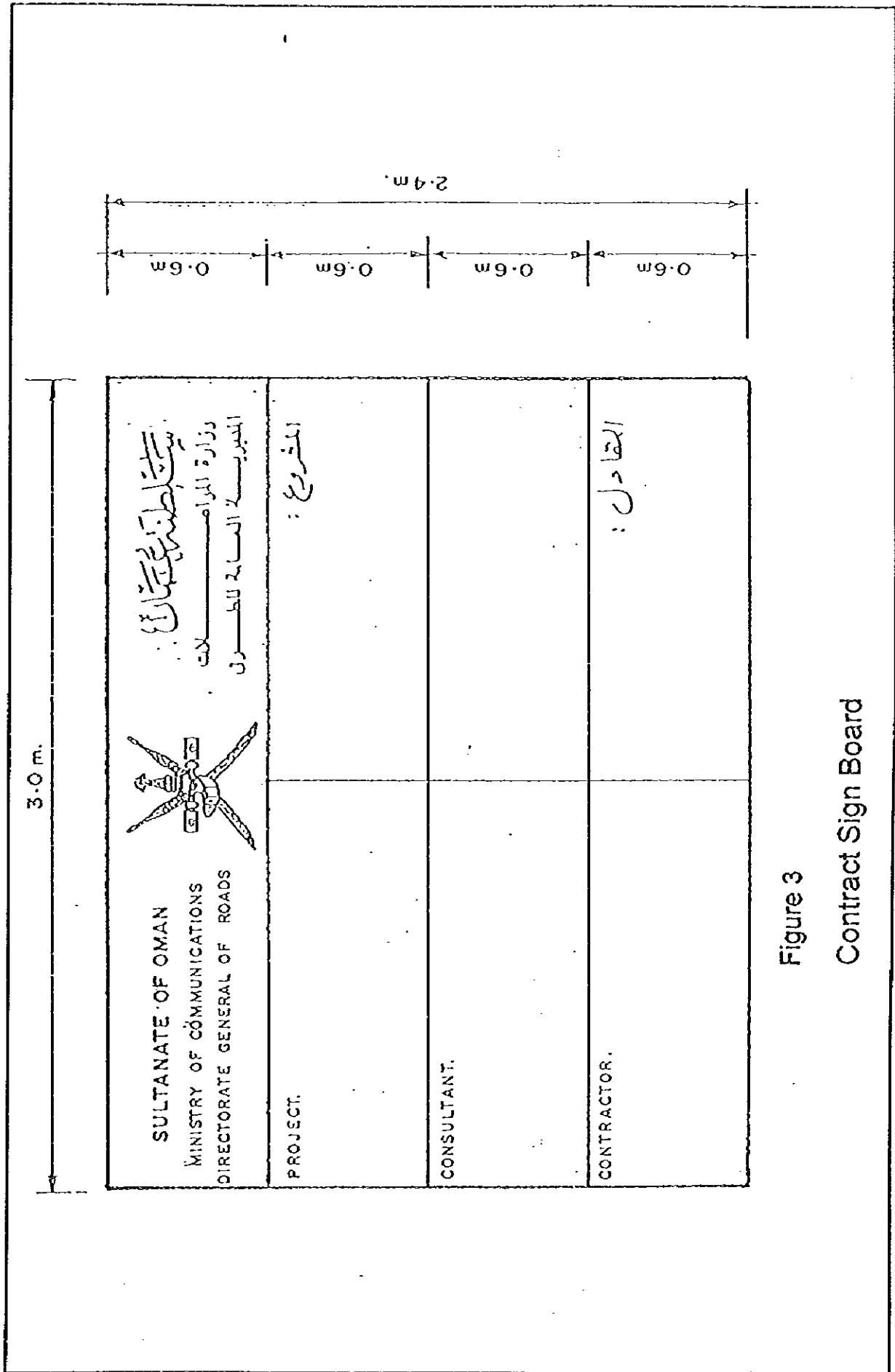


Figure 3
Contract Sign Board

PREAMBLE TO THE BILL OF QUANTITIES

1. General directions and descriptions of items of work given elsewhere in the Tender Documents are not generally repeated in the Bill of Quantities. Reference must be made to the Drawings, Specification and Conditions of Contract for this information.
2. The items of work given in the Bill of Quantities shall comply with the relevant sections of the Specification and with the instructions of the Engineer.
3. The initial part of the item numbers used in the Bill of Quantities correspond to the clause numbers used in the Specification, and the second part is consecutive within each clause reference.
4. In the Preliminaries Bill the Tenderer shall insert a lump sum or rate to each item which he considers has a financial value. Where the Tenderer considers that an item has no financial value he shall insert 'nil'. Lump sums shall not be inserted covering more than one item.
5. The value of services and obligations involved in the Preliminaries shall not be included in rates in other parts of the Bill of Quantities but shall be completely priced against the particular item in the Preliminaries.
6. Quantities of work and materials in the Bill of Quantities are estimated only and are not to be considered as limiting or extending the amount of work to be done and material to be supplied by the Contractor. The Contractor shall not use the quantities as an ordering schedule.
7. Each item in the Bill of Quantities shall be priced as indicated. No Tender will be considered complete unless this requirement has been fulfilled.
8. Unit rates shall be written in ink in the space specified in the Bill of Quantities.
9. The unit rate entered by the Tenderer in the Bill of Quantities for any item of work shall apply to completed work conforming to the Contract Documents covering all expenses of labour, materials and equipment required for executing that item of work as well as covering the share of that item for the other general expenses to be incurred by the Contractor during the execution of the Works. These general expenses shall include but are not restricted to, the following, unless entered as a separate pay item in the Bill of Quantities.
 - i) Preparation and submission of bids including the Site Inspection.
 - ii) Employment and accommodation of the Contractor's staff - local and expatriate - including official holidays, annual leave, sick leave, compensation, bonuses, insurances etc.
 - iii) Costs related to the Contractor's site Camp(s) including the provision of all utility

facilities..

- iv) Provision for wastage of materials and for consumable materials.
- v) Costs of laboratory testing, survey work and assistance to the Engineer as required in the Contract.
- vi) For electrical installation, costs shall also include providing, testing and commissioning of the complete installation.
- vii) Royalties, duties, customs, taxes, insurance and all other related costs.
- viii) Cost of bank guarantees.
- ix) Costs for permission to use private or public land.
- x) Cost of temporary works.
- xi) Cost of work items for which there are no direct payments and which are considered in the Specification and other Contract Documents as subsidiary to other items in the Bill of Quantities.
- xii) Overheads and Profit.
- xiii) All other expenses the Contractor may encounter in the proper execution of the Contract.

Compliance with the Tender Documents

- 10. The Tenderer/Contractor shall allow in the Bill of Quantities a lump sum for complying with the conditions and requirements stipulated in the Tender Documents and which are not covered separately in the various pay items of the Bill of Quantities.
- 11. The tendered lump sum for this item is deemed to cover the whole of the Contract period. Monthly payments against this item shall be made in instalments proportional to the time for completion as stated under Item 5 in the Appendix to the Form of Tender.

CONSTRUCTION OF PEDESTRIAN UNDERPASS AT

LIWA

BILL OF QUANTITIES BILL 1 - PRELIMINARIES

| Item No | Description | Unit | Estimated Quantity | Unit Rate | | Amount | |
|---------|--|----------|--------------------|-----------|----|--------|----|
| | | | | R.O. | Bz | R.O. | Bz |
| | SECTION 100 PRELIMINARIES | | | | | | |
| | 101 Bonds and Insurance | | | | | | |
| 101.1 | Performance Bond (Clause 10 of Standard Conditions of Contract) | lump sum | | | | | |
| 101.2 | Insurance of the Works (Clause 21 of Standard Conditions of Contract) | lump sum | | | | | |
| 101.3 | Damage to Persons and Property (Clause 22 of Standard Condition of Contract) | lump sum | | | | | |
| 101.4 | Third Party Insurance (Clause 23 of Standard Conditions of Contract) | lump sum | | | | | |
| 101.5 | Accident or injury to Workmen (Clause 24 of Standard Condition of Contract) | lump sum | | | | | |

1-1

Carried to summary

| CONSTRUCTION OF PEDESTRIAN UNDERPASS AT LIWA BILL OF QUANTITIES BILL 1 - PRELIMINARIES | | | | | |
|---|--|-------|--------------------|--------------------|--------|
| Item No | Description | Unit | Estimated Quantity | Unit Rate | |
| | | | | R.O. Bz | Amount |
| | 104 Facilities for the Engineer | | | | |
| 104.1 | Provision of Engineer's office (Type A, 1 unit x 7) | month | 7 | | |
| 104.2 | Maintenance of Engineer's office (Type A, 1 unit x 7) | month | 7 | | |
| 104.3 | Provision of surveying instruments | month | 7 | | |
| 104.4 | Maintenance of surveying instruments | month | 7 | | |
| 104.5 | Provision of Engineer's accommodation | | | | |
| | (i) Resident Engineer's accommodation (Type B, 2 unit x 7) | month | 14 | | |
| | (ii) Engineer's accommodation (Type C, 1 units x 8) | month | N/A | | |
| | (iii) Engineer's accommodation (Type B, 1 unit x 8) | month | N/A | | |
| | (iv) Dining/Kitchen (Type D, 1 unit x 8) | month | N/A | | |
| 1-2 | | | | Carried to summary | |

| CONSTRUCTION OF PEDESTRIAN UNDERPASS AT LIWA | | | | | |
|---|--|-----------|--------------------|----------------------|-------------------|
| BILL OF QUANTITIES BILL 1 - PRELIMINARIES | | | | | |
| Item No | Description | Unit | Estimated Quantity | Unit Rate R.O. Bz | Amount R.O. Bz |
| 104.6 | Maintenance of Engineer's accommodation | | | | |
| | (i) Resident Engineer's accommodation (Type B, 2 unit x 8) | month | 16 | | |
| | (ii) Engineer's accommodation (Type C, 1 unit x 8) | month | N/A | | |
| | (iii) Engineer's accommodation (Type B, 1 unit x 8) | month | N/A | | |
| | (iv) Dining/Kitchen (Type D, 1 unit x 8) | month | N/A | | |
| 104.9 | Sampling and Testing where no site laboratory is provided | month | 7 | | |
| 104.10 | In situ soil bearing capacity tests | n.r. | 3 | | |
| 104.11 | Sub-soil investigation by specialist Contractor | prov. sum | | | |
| 1-3 | | | | Carried to summary | |

CONSTRUCTION OF PEDESTRIAN UNDERPASS AT

LIWA

BILL OF QUANTITIES

BILL 1 - PRELIMINARIES

| Item No | Description | Unit | Estimated Quantity | Unit Rate | | Amount | |
|---------|--|-----------|--------------------|-----------|----|--------|----|
| | | | | R.O. | Bz | R.O. | Bz |
| 105 | 105 Assistance for Engineer | | | | | | |
| 105.1 | Laborers to assist the Engineer (no x months) | man month | N/A | | | | |
| 106 | 106 Contractor's Compound | | | | | | |
| 106.1 | Mobilization and demobilization of Contractor's facility | lump sum | | | | | |
| 106.2 | Maintenance of Contractor's facility | month | 7 | | | | |
| 107 | 107 Maintenance and Protection of Traffic | | | | | | |
| 107.1 | Maintenance and protection of traffic | lump sum | 8 month | | | | |
| 107.2 | Extra over item 107.1 for supply and compaction of subbase on diversions where ordered by the Engineer (10 cm. thick) | cu. m. | rate only | | | | |
| 107.3 | Extra over item 107.1 for supply and compaction of bituminous basecourse on diversions where ordered by the Engineer (3 cm. thick) | cu. m. | rate only | | | | |

Carried to summary

1-4

**CONSTRUCTION OF PEDESTRIAN UNDERPASS AT
LIWA
BILL OF QUANTITIES
BILL 1 - PRELIMINARIES**

| Item No | Description | Unit | Estimated Quantity | Unit Rate | |
|---------|---|----------|--------------------|--------------------|--------|
| | | | | R.O. Bz | Amount |
| | 108 Progress Photographs | | | | |
| 108.1 | Provision of negatives and 5 sets of photographs (14 photos max.) (Mountable-Size 100 x 150 mm.) | month | 7 | | |
| | 109 Sign Boards | | | | |
| 109.1 | Provision, erection, moving and maintenance of signboard (Wooden Type) | n.r. | N/A | | |
| | 110 Commemoration Plaque and Opening Ceremony | | | | |
| 110.1 | Supply and erection of commemoration plaque (Optional) | n.r. | N/A | | |
| 110.2 | Opening ceremony (Optional) | lump sum | | | |
| 1-5 | | | | Carried to summary | |

CONSTRUCTION OF PEDESTRIAN UNDERPASS AT

LIWA

BILL OF QUANTITIES

BILL 1 - PRELIMINARIES

| Item No | Description | Unit | Estimated Quantity | Unit Rate | | Amount | |
|---------|--|----------|--------------------|-----------|----|--------|----|
| | | | | R.O. | Bz | R.O. | Bz |
| 115.1 | 115 Compliance with the Tender Documents Allow for all costs and expense for complying with all the conditions and requirements stipulated in the Tender Documents, including all Clause of the Standard Conditions of Contract, which the Tenderer considers have financial implications on his tender and which are not covered separately in the various pay items of the Bill of Quantities | | | | | | |
| | Clause No | lump sum | | | | | |
| | Clause No | lump sum | | | | | |
| | Clause No | lump sum | | | | | |
| | Clause No | lump sum | | | | | |
| | Clause No | lump sum | | | | | |
| | Clause No | lump sum | | | | | |
| | Clause No | lump sum | | | | | |
| | Clause No | lump sum | | | | | |
| | Clause No | lump sum | | | | | |

1-6 Carried to summary

LIWA

BILL OF QUANTITIES
BILL 1 - PRELIMINARIES

**Pacific Consultants International
Fukuyama Consultants International**

CONSTRUCTION OF PEDESTRIAN UNDERPASS AT

LIWA

BILL OF QUANTITIES

BILL 2 - EARTHWORKS

| Item No | Description | Unit | Estimated Quantity | Unit Rate | | Amount | |
|---------|---|--------|--------------------|-----------|----|--------|----|
| | | | | R.O. | Bz | R.O. | Bz |
| 202.1 | 202 Removal of Structures and Obstructions Removal of Pavement (t=10 cm) | cu.m | 85 | | | | |
| 202.2 | Removal of Existing Guardrail | m | 22 | | | | |
| 202.3 | Removal of Curv Stone | m | 20 | | | | |
| 206.1 | 206 Excavation and Backfilling for Structures Structure excavation in soils to a depth of 2m | cu. m. | 1533 | | | | |
| 206.2 | Structure excavation in soils to a depth more than 2m | cu. m. | 1022 | | | | |
| 206.3 | Structural excavation in rock to a depth of 2m | cu. m. | rate only | | | | |
| 206.4 | Structural excavation in rock to a depth more than 2m | cu. m. | rate only | | | | |
| 206.5 | Extra over 206.1,2,3,4 for excavation under water | cu. m. | rate only | | | | |

2-1 Carried to summary

CONSTRUCTION OF PEDESTRIAN UNDERPASS AT

LIWA

BILL OF QUANTITIES

BILL 2 - EARTHWORKS

| Item No | Description | Unit | Estimated Quantity | Unit Rate | | Amount | |
|---------|---------------------|------|--------------------|-----------|------------------|--------|----|
| | | | | R.O. | Bz | R.O. | Bz |
| | SUMMARY Page 2-1 | | | | | | |
| | | | | 2-2 | To Grand Summary | | |

CONSTRUCTION OF PEDESTRIAN UNDERPASS AT

LIWA

BILL OF QUANTITIES

BILL 3 - GRANULAR AND STABILIZED SUBBASE, BASE COURSE, STABILIZED SUBGRADE

| Item No | Description | Unit | Estimated Quantity | Unit Rate | | Amount | |
|---------|---|--------|--------------------|-----------|--------------------|--------|----|
| | | | | R.O. | Bz | R.O. | Bz |
| | 300 GRANULAR AND STABILIZED SUBBASE, BASECOURSE AND STABILIZED SUBGRADE | | | | | | |
| | 302 Granular Subbase | | | | | | |
| 302.1 | Granular subbase (class B) (150 mm thick) | cu. m. | 49 | | | | |
| | 303 Aggregate Basecourse | | | | | | |
| 303.1 | Aggregate basecourse (class B) (200 mm thick) | cu.m | 65 | | | | |
| | | | | 3-1 | Carried to summary | | |

| CONSTRUCTION OF PEDESTRIAN UNDERPASS AT LIWA | | | | | | |
|--|-------------|------|-----------------------|-----------|----|--------|
| BILL OF QUANTITIES | | | | | | |
| BILL 3 - GRANULAR AND STABILIZED SUBBASE, BASE COURSE, STABILIZED SUBGRADE | | | | | | |
| Item No | Description | Unit | Estimated Quantity | Unit Rate | | Amount |
| | | | | R.O. | Bz | R.O. |
| | SUMMARY | | | | | |
| | Page 3-1 | | | | | |
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CONSTRUCTION OF PEDESTRIAN UNDERPASS AT

LIWA

BILL OF QUANTITIES

BILL 4 - BITUMINOUS PAVEMENT

| Item No | Description | Unit | Estimated Quantity | Unit Rate | | Amount | |
|---------|--|--------|--------------------|-----------|--------------------|--------|----|
| | | | | R.O. | Bz | R.O. | Bz |
| | 400 BITUMINOUS PAVEMENT | | | | | | |
| | 401 Bituminous Prime Coat and Tack Coat | | | | | | |
| 401.1 | Bituminous prime coat (MC 70) | kg | 400 | | | | |
| 401.2 | Bituminous tack coat (RC 250) | kg | 100 | | | | |
| | 402 Bituminous Basecourse | | | | | | |
| 402.1 | Bituminous basecourse (class B) 80 mm.thick | cu.m | 26 | | | | |
| 402.4 | Increase or decrease in bituminous content from nominal rate | kg | rate only | | | | |
| | 405 Bituminous Wearing Course | | | | | | |
| 405.1 | Bituminous wearing course (class B) (T=4 cm) | cu. m. | 13 | | | | |
| 405.2 | Increase or decrease in bitumen content from nominal rate | kg | rate only | | | | |
| | | | | 4.1 | Carried to summary | | |

| CONSTRUCTION OF PEDESTRIAN UNDERPASS AT LIWA BILL OF QUANTITIES BILL 4 - BITUMINOUS PAVEMENT | | | | | |
|---|-------------|------|-----------------------|--------------------|-------------------|
| Item No | Description | Unit | Estimated Quantity | Unit Rate | |
| | | | | R.O. Bz | Amount R.O. Bz |
| | SUMMARY | | | | |
| | Page 4-1 | | | | |
| 4-2 | | | | Carried to summary | |

| CONSTRUCTION OF PEDESTRIAN UNDERPASS AT LIWA BILL OF QUANTITIES BILL 5 - CONCRETE AND CONCRETE STRUCTURE | | | | | |
|---|--|--------|--------------------|-----------|----|
| Item No | Description | Unit | Estimated Quantity | Unit Rate | |
| | | | | R.O. | Bz |
| | 500 CONCRETE AND CONCRETE STRUCTURE | | | | |
| | 504 Concrete for Structure | | | | |
| 504.1 | Concrete Class 16/20 (OPC cement) Blinding | cu. m. | 49 | | |
| 504.2 | Concrete Class A 24/20 for pedestrian underpass, canopy and stairs (including all formwork, falsework and finish | cu.m | 531 | | |
| | 508 Pedestrian Underpass | | | | |
| 508.1 | Water Stop | m | 74 | | |
| 5-1 | | | Carried to summary | | |

CONSTRUCTION OF PEDESTRIAN UNDERPASS AT

LIWA

BILL OF QUANTITIES

BILL 5 - CONCRETE AND CONCRETE STRUCTURE

| Item No | Description | Unit | Estimated Quantity | Unit Rate | | Amount | |
|---------|---|------|--------------------|-----------|--------------------|--------|----|
| | | | | R.O. | Bz | R.O. | Bz |
| 509.1 | 509 Reinforcing Steel High yield steel bar reinforcement of any diameter | tone | 49 | | | | |
| | | | | 5-2 | Carried to summary | | |

BILL OF QUANTITIES
BILL 5 - CONCRETE AND CONCRETE STRUCTURE

| Item No | Description | Unit | Estimated Quantity | Unit Rate | | Amount | |
|---------|-------------|------|--------------------|-----------|--------------------|--------|----|
| | | | | R.O. | Bz | R.O. | Bz |
| | SUMMARY | | | | | | |
| | Page 5-1 | | | | | | |
| | Page 5-2 | | | | | | |
| | | | | 5-3 | Carried to summary | | |

| CONSTRUCTION OF PEDESTRIAN UNDERPASS AT LIWA BILL OF QUANTITIES BILL 6 - STRUCTURAL STEEL AND OTHER METALWORK | | | | | |
|--|---|------|-----------------------|-----------|--------------------|
| Item No | Description | Unit | Estimated Quantity | Unit Rate | |
| | | | | R.O. Bz | Amount |
| | 600 STRUCTURAL STEEL AND OTHER METALWORK | | | | |
| | 604 Handrail | | | | |
| 604.1 | Pedestrian Underpass Handrails (Mild Steel) (D=50 mm) | m | 46 | | |
| 604.2 | Galvanized Steel Bar for canopy (D=50 mm) | m | 59 | | |
| | | | | 6-1 | Carried to summary |

LIWA

BILL OF QUANTITIES

BILL 6 - STRUCTURAL STEEL AND OTHER METALWORK

| Item No | Description | Unit | Estimated Quantity | Unit Rate | | Amount | |
|---------|-------------|------|--------------------|-----------|--------------------|--------|----|
| | | | | R.O. | Bz | R.O. | Bz |
| | SUMMARY | | | | | | |
| | Page 6-1 | | | | | | |
| | | | | 6-2 | Carried to summary | | |

**CONSTRUCTION OF PEDESTRIAN UNDERPASS AT
LIWA**

BILL OF QUANTITIES

BILL 8 - DRAINAGE AND SERVICE DUCTS

| Item No | Description | Unit | Estimated Quantity | Unit Rate | |
|---------|----------------------------------|-------|-----------------------|-----------|--------------------|
| | | | | R.O. Bz | Amount R.O. Bz |
| | 805 Water proofing for structure | | | | |
| 805.1 | Waterproofing membrane | sq.m. | N/A | | |
| 805.2 | Mastic asphalt waterproofing | sq.m. | 519 | | |
| 805.3 | Bituminous paint | sq.m. | 519 | | |
| | | | | 8-1 | Carried to summary |

LIWA

BILL 8 - DRAINAGE AND SERVICE DUCTS

| Item No | Description | Unit | Estimated Quantity | Unit Rate | | Amount | |
|---------|-------------|------|--------------------|-----------|----|--------------------|----|
| | | | | R.O. | Bz | R.O. | Bz |
| | SUMMARY | | | | | | |
| | Page 8-1 | | | | | | |
| | | | | 8-2 | | Carried to summary | |

| CONSTRUCTION OF PEDESTRIAN UNDERPASS AT LIWA BILL OF QUANTITIES BILL 14 - HIGHWAY SIGNS AND ROAD MARKING | | | | | |
|---|---------------------------------------|------|-----------------------|--------------------|-------------------|
| Item No | Description | Unit | Estimated Quantity | Unit Rate | |
| | | | | R.O. Bz | Amount R.O. Bz |
| | 1400 HIGHWAY SIGNS AND ROAD MARKING | | | | |
| | 1401 Highway Signs | | | | |
| 1401.1 | Highway sign for pedestrian underpass | n.r. | 2 | | |
| 14-1 | | | | Carried to summary | |

LIWA

BILL OF QUANTITIES

BILL 14 - HIGHWAY SIGNS AND ROAD MARKING

| Item No | Description | Unit | Estimated Quantity | Unit Rate | | Amount | |
|---------|-------------|------|--------------------|-----------|----|--------|----|
| | | | | R.O. | Bz | R.O. | Bz |
| | SUMMARY | | | | | | |
| | Page 14-1 | | | | | | |
| | | 14-2 | To Grand Summary | | | | |

| CONSTRUCTION OF PEDESTRIAN UNDERPASS AT LIWA BILL OF QUANTITIES BILL 17 - UTILITIES | | | | | |
|--|--|----------|-----------------------|--------------------|--------|
| Item No | Description | Unit | Estimated Quantity | Unit Rate | |
| | | | | R.O. Bz | Amount |
| | 1700 UTILITIES | | | | |
| | 1701 Utilities | | | | |
| 1701.1 | Remove carefully and relocate low voltage electric poles, telephone poles, including removal of lines, excavation, backfilling and other related works as directed by the Engineer Protect of existing utilities crossing the roadway as shown in Drawing, or as directed by the Engineer | prov sum | | | |
| 17-1 | | | | Carried to summary | |

LIWA

BILL OF QUANTITIES
BILL 17 - UTULITIES

| Item No | Description | Unit | Estimated Quantity | Unit Rate | | Amount | |
|---------|-------------|------|--------------------|-----------|----|--------|----|
| | | | | R.O. | Bz | R.O. | Bz |
| | SUMMARY | | | | | | |
| | Page 17-1 | | | | | | |
| | | 17-2 | To Grand Summary | | | | |

CONSTRUCTION OF PEDESTRIAN UNDERPASS AT

LIWA

BILL OF QUANTITIES BILL 19 - DAYWORKS

| Item No | Description | Unit | Estimated Quantity | Unit Rate | | Amount | |
|----------|--|------|--------------------|-----------|----|--------|----|
| | | | | R.O. | Bz | R.O. | Bz |
| A. WAGES | | | | | | | |
| | These include proper wages, all used allowance, medical expense and all other charges provided for by local laws | | | | | | |
| A.1 | Supervisor | hour | 10 | | | | |
| A.2 | Site Surveyor | hour | 100 | | | | |
| A.3 | Foreman | hour | 48 | | | | |
| A.4 | 1st Class Operator | hour | 48 | | | | |
| A.5 | 2nd Class Operator | hour | 10 | | | | |
| A.6 | Mechanic | hour | 19 | | | | |
| A.7 | Driver | hour | 48 | | | | |
| A.8 | Skilled Labour | hour | 100 | | | | |
| A.9 | Semi Skilled Labour | hour | 100 | | | | |
| 19-1 | | | Carried to Summary | | | | |

CONSTRUCTION OF PEDESTRIAN UNDERPASS AT

LIWA

BILL OF QUANTITIES BILL 19 - DAYWORKS

| Item No | Description | Unit | Estimated Quantity | Unit Rate | | Amount | |
|---------|-----------------|------|--------------------|-----------|----|--------|----|
| | | | | R.O. | Bz | R.O. | Bz |
| A.10 | Ordinary Labour | hour | 100 | | | | |
| A.11 | Mason | hour | 100 | | | | |
| A.12 | Painter | hour | 100 | | | | |
| A.13 | Carpenter | hour | 100 | | | | |
| A.14 | Steel Fitter | hour | 100 | | | | |
| A.15 | Electrician | hour | 2 | | | | |
| | | 19-2 | Carried to Summary | | | | |

**CONSTRUCTION OF PEDESTRIAN UNDERPASS AT
LIWA
BILL OF QUANTITIES
BILL 19 - DAYWORKS**

| Item No | Description | Unit | Estimated Quantity | Unit Rate | |
|---------|--|------|--------------------|-----------|--------|
| | | | | R.O. Bz | Amount |
| | B. OPERATING EQUIPMENT ON SITE | | | | |
| | These rate include : fuel and lubricants cost, charges for depreciation interest, repairs, maintenance, spare parts, tyres, insurance, etc. Payment will not be made for mechanics or maintenance time which shall be include in and spread over the rates. | | | | |
| B.1 | Motorgrader from 100 hp up to 120 hp | hour | 5 | | |
| B.2 | Motorgrader from 120 hp up to 150 hp | hour | N/A | | |
| B.3 | Tractor from 60 to 100 hp | hour | N/A | | |
| B.4 | Bulldozer with ripper from 100 hp to 150 hp | hour | 5 | | |
| B.5 | Bulldozer with ripper from 150 hp to 200 hp | hour | N/A | | |
| B.6 | Bulldozer with ripper from 200 hp to 250 hp | hour | N/A | | |
| B.7 | Bulldozer with ripper from 250 hp to 300 hp | hour | N/A | | |
| B.8 | Wheel tractor up to 50 hp | hour | 10 | | |

19-3 Carried to Summary

CONSTRUCTION OF PEDESTRIAN UNDERPASS AT

LIWA

BILL OF QUANTITIES

BILL 19 - DAYWORKS

| Item No | Description | Unit | Estimated Quantity | Unit Rate | |
|---------|---|------|--------------------|-----------|--------|
| | | | | R.O. Bz | Amount |
| B.9 | Wheel tractor over 50 hp | hour | N/A | | |
| B.10 | Motor scraper capacity up to 18 cu.m. | hour | N/A | | |
| B.11 | Motor scraper capacity from 18 to 24 cu.m. | hour | N/A | | |
| B.12 | Sheeps foot roller, from 5 tonnes to 10 tonnes | hour | N/A | | |
| B.13 | Grid roller | hour | N/A | | |
| B.14 | Vibratory compactor with prime mover up to 5 tonnes | hour | 4 | | |
| B.15 | Vibratory compactor with prime mover from 5 to 10 tonnes | hour | 4 | | |
| B.16 | Pneumatic compactor with prime mover from 30 to 50 tonnes | hour | N/A | | |
| B.17 | Pneumatic self-propelled rollers from 15 to 20 tonnes | hour | N/A | | |
| B.18 | Tandem roller up to 8 tonnes | hour | 24 | | |
| B.19 | Tandem roller from 8 to 12 tonnes | hour | N/A | | |

19-4 Carried to Summary

**CONSTRUCTION OF PEDESTRIAN UNDERPASS AT
LIWA**

**BILL OF QUANTITIES
BILL 19 - DAYWORKS**

| Item No | Description | Unit | Estimated Quantity | Unit Rate | | Amount | |
|---------|---|------|--------------------|-----------|----|--------|----|
| | | | | R.O. | Bz | R.O. | Bz |
| B.20 | Triaxle roller from 10 to 15 tonnes | hour | N/A | | | | |
| B.21 | Light frog-rammer 0.1 tonne | hour | N/A | | | | |
| B.22 | Heavy frog-rammer 0.5 tonne | hour | 20 | | | | |
| B.23 | Wheel loader 1.2 to 1.6 cu.m. | hour | 20 | | | | |
| B.24 | Wheel loader 1.6 to 2.0 cu.m. | hour | N/A | | | | |
| B.25 | Wheel loader 2.0 to 2.5 cu.m. | hour | N/A | | | | |
| B.26 | Excavator up to 0.8 cu.m. | hour | 15 | | | | |
| B.27 | Excavator from 0.8 to 1.2 cu.m. | hour | N/A | | | | |
| B.28 | Bituminous mixing plant with batching apparatus up to 80 t/h. | hour | N/A | | | | |
| B.29 | Bituminous mixing plant with batching apparatus from 80 to 150 t/h. | hour | N/A | | | | |
| B.30 | Finisher up to 80 t/h. | hour | 10 | | | | |
| | | 19-5 | Carried to Summary | | | | |

CONSTRUCTION OF PEDESTRIAN UNDERPASS AT

LIWA

BILL OF QUANTITIES

BILL 19 - DAYWORKS

| Item No | Description | Unit | Estimated Quantity | Unit Rate | | Amount | |
|---------|---|------|--------------------|-----------|----|--------|----|
| | | | | R.O. | Bz | R.O. | Bz |
| B.31 | Finisher from 80 t/h to 120 t/h. | hour | N/A | | | | |
| B.32 | Bitumen sprayer up to 6 tonnes | hour | 10 | | | | |
| B.33 | Tanker truck up to 6 cu.m. | hour | 15 | | | | |
| B.34 | Dump truck up to 10 tonnes | hour | 17 | | | | |
| B.35 | Dump truck from 10 to 15 tonnes | hour | N/A | | | | |
| B.36 | Screening plant from 80 to 100 t/h. | hour | N/A | | | | |
| B.37 | Crushing plant from 40 to 60 t/h. | hour | N/A | | | | |
| B.38 | Crushing plant with primary and secondary from 60 to 100 t/h. | hour | N/A | | | | |
| B.39 | Air compressor up to 6000 l/m. | hour | 15 | | | | |
| B.40 | Air compressor over 6000 l/m. | hour | 15 | | | | |
| B.41 | Mechanical broom | hour | N/A | | | | |

19-6 Carried to Summary

CONSTRUCTION OF PEDESTRIAN UNDERPASS AT

LIWA

BILL OF QUANTITIES

BILL 19 - DAYWORKS

| Item No | Description | Unit | Estimated Quantity | Unit Rate | | Amount | |
|---------|--|------|--------------------|-----------|----|--------|----|
| | | | | R.O. | Bz | R.O. | Bz |
| B.42 | Power water pump | hour | N/A | | | | |
| B.43 | Steel cutting machine | hour | 5 | | | | |
| B.44 | Steel bending machine | hour | N/A | | | | |
| B.45 | Belt conveyor | hour | N/A | | | | |
| B.46 | Concrete mixer up to 0.5 cu.m. | hour | 10 | | | | |
| B.47 | Concrete mixer over 0.5 cu.m. | hour | N/A | | | | |
| B.48 | Automatic concrete batch plant without mixing drum | hour | N/A | | | | |
| B.49 | Transmixer up to 5 cu.m. | hour | N/A | | | | |
| B.50 | Concrete vibrators | hour | 59 | | | | |
| B.51 | Crane up to 5 tonnes. | hour | N/A | | | | |
| B.52 | Crane with broom and jib 5 to 10 tonnes | hour | N/A | | | | |
| | | 19-7 | Carried to Summary | | | | |

CONSTRUCTION OF PEDESTRIAN UNDERPASS AT

LIWA

BILL OF QUANTITIES BILL 19 - DAYWORKS

| Item No | Description | Unit | Estimated Quantity | Unit Rate | | Amount | |
|---------|--|------|--------------------|-----------|----|--------|----|
| | | | | R.O. | Bz | R.O. | Bz |
| B.53 | Crane with boom and jib over 10 tonnes | hour | N/A | | | | |
| B.54 | Generator 60 kw | hour | 5 | | | | |
| B.55 | Generator 75 kw | hour | N/A | | | | |
| B.56 | Drilling equipment | hour | N/A | | | | |
| B.57 | Generator 100 kw | hour | N/A | | | | |
| B.58 | Generator 150 kw | hour | N/A | | | | |
| B.59 | Generator 200 kw | hour | N/A | | | | |
| B.60 | Gravel strewer | hour | N/A | | | | |

19-8 Carried to Summary

CONSTRUCTION OF PEDESTRIAN UNDERPASS AT

LIWA

BILL OF QUANTITIES BILL 19 - DAYWORKS

| Item No | Description | Unit | Estimated Quantity | Unit Rate | | Amount | |
|--------------|--|-------|--------------------|-----------|--------------------|--------|----|
| | | | | R.O. | Bz | R.O. | Bz |
| C. MATERIALS | | | | | | | |
| | These rates include all the charges for the supply of the materials, loading, transport to site, unloading and stores as well as all the charges provided for in the General and Special Specifications and in the Contract. | | | | | | |
| C.1 | Aggregate for granular sub-base course in accordance with the General and Special Specifications, in place as specified. | cu.m. | 5 | | | | |
| C.2 | Aggregate for granular aggregate base course in accordance with the General and Special Specifications, in place as specified. | cu.m. | 3 | | | | |
| C.3 | Aggregate for bituminous base course in accordance with the General and Special Specifications, near the asphalt plant, in bulk | cu.m. | 5 | | | | |
| C.4 | Fine aggregate for concrete, in accordance with the General and Special Specifications, in place, in bulk | cu.m. | 3 | | | | |
| C.5 | Coarse aggregates for concrete, in accordance with the General and Special specifications, in place, in bulk | cu.m. | 5 | | | | |
| | | | | 19-9 | Carried to Summary | | |

CONSTRUCTION OF PEDESTRIAN UNDERPASS AT

LIWA

BILL OF QUANTITIES

BILL 19 - DAYWORKS

| Item No | Description | Unit | Estimated Quantity | Unit Rate | | Amount | |
|---------|--|-------|--------------------|--------------------|----|--------|----|
| | | | | R.O. | Bz | R.O. | Bz |
| C.6 | Stone for drainage, masonry and slope protection, in accordance with the General and Special Specifications in place | cu.m. | 3 | | | | |
| C.7 | Asphalt cement, grade 60-70 on site | ton | 0.1 | | | | |
| C.8 | Asphalt cement, grade 50-60 on site | ton | 0.1 | | | | |
| C.9 | Emulsified asphalt, grade RS-1 on site | ton | 0.1 | | | | |
| C.10 | Cutback asphalt, MC and RC type on site | ton | 0.1 | | | | |
| C.11 | Portland cement on site | ton | 0.1 | | | | |
| C.12 | Deformed billet steel bars, AASHTO M 31 grade 60 (High Yield) of any diameter | ton | 0.1 | | | | |
| C.13 | Deformed billet steel bars AASHTO M 31 grade 40 (Mild) of any diameter | ton | 0.1 | | | | |
| C.14 | Highway signs | sq.m. | 3 | | | | |
| C.15 | Highway sign supports - 1 post | nr. | 4 | | | | |
| 19-10 | | | | Carried to Summary | | | |

CONSTRUCTION OF PEDESTRIAN UNDERPASS AT

LIWA

BILL OF QUANTITIES

BILL 19 - DAYWORKS

| Item No | Description | Unit | Estimated Quantity | Unit Rate | | Amount | |
|---------|--------------------------------|-------|--------------------|-----------|----|--------|----|
| | | | | R.O. | Bz | R.O. | Bz |
| C.16 | Highway sign supports - 2 post | nr. | 2 | | | | |
| C.17 | Timber plank, on site | cu.m. | 1 | | | | |
| C.18 | Timber props, on site | cu.m. | 1 | | | | |
| C.19 | Wire mesh gabgions, on site | ton | 0.5 | | | | |
| C.20 | Explosive, on site | kg. | N/A | | | | |
| C.21 | Gas oil, on site | litre | 50 | | | | |
| C.22 | Gasoline, on site | litre | 250 | | | | |
| C.23 | Lubricant | kg. | 3 | | | | |

19-11

Carried to Summary

CONSTRUCTION OF PEDESTRIAN UNDERPASS AT

LIWA

BILL OF QUANTITIES BILL 19 - DAYWORKS

| Item No | Description | Unit | Estimated Quantity | Unit Rate | | Amount | |
|---------|-------------|-------|--------------------|-----------|----|--------|----|
| | | | | R.O. | Bz | R.O. | Bz |
| | SUMMARY | | | | | | |
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| | | 19-12 | To Grand Summary | | | | |

BILL OF QUANTITIES**GRAND SUMMARY**

| Bill No | Description | Amount |
|---------|---|--------|
| | | R.O. |
| 1 | Preliminaries | |
| 2 | Earthworks | |
| 3 | Granular and stabilized subbase, basecourse and stabilized subgrade | |
| 4 | Bituminous Pavement | |
| 5 | Concrete and concrete structure | |
| 6 | Structural steel and other metal work | |
| 7 | Paint | N/A |
| 8 | Drainage and service ducts | |
| 9 | Slope protection and stabilization | N/A |
| 10 | Piling | N/A |
| 11 | Bridge bearing, expansion joints, joint seals and filters | N/A |
| 12 | Sidewalks, paved areas and kerbs | N/A |
| 13 | Safety barriers, delineators and fences | N/A |
| 14 | Highway signs and road marking | |
| 15 | Electrical installations | N/A |
| 16 | Landscape and irrigation | N/A |
| 17 | Utilities | |
| 18 | Plant and Equipment | N/A |
| 19 | Dayworks | |
| | Sub-total | |
| | Contingencies (10%) | |
| | TOTAL CONTRACT VALUE (R.O) | |

(IN WORDS, THE TOTAL TENDER VALUE IS RIAL OMANI)

NAME OF TENDERER

DATE

SIGNATURE OF TENDERER

