

دائرة النقل
DEPARTMENT OF TRANSPORT



STANDARD BILL OF QUANTITIES

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STANDARD BILL OF QUANTITIES MANUAL FOR ROAD PROJECTS

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FIRST EDITION

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FOREWORD

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1 INTRODUCTION

1.1 Overview

In 2010, the Abu Dhabi Department of Transport commenced with the “Unifying and Standardizing of Road Engineering Practices” Project. The objective of the project was to enhance the management, planning, design, construction, maintenance and operation of all roads in the Abu Dhabi Emirate and ensure a safe and uniform operational and structural capacity throughout the road network.

To achieve this objective, a set of documents was developed in consultation with all relevant authorities in the Abu Dhabi Emirate. Standard Bill of Quantities is one of the document developed as part of this project.

It is recognized that various authorities involved in the management, planning, design, construction, maintenance and operation of any roads in the Abu Dhabi Emirate have published Standard Bill of Quantities with similar objectives in the past. Such documents are being superseded by the publication of the new Standard Bill of Quantities by Department of Transport.

1.2 Purpose and Scope

Standard Bill of Quantities Manual (SBOQM) is a tool for itemizing and describing the scope of work in sufficient detail to permit the preparation of cost estimates with an increased degree of precision and to enable the tenderers to price the tenders adequately and uniformly. Also the Standard BOQ Manual provides a rate schedule from tenderers that can assess variations at the post-contract stage, new works and for further cost

The approach of this manual is consistent with DOT's objective of implementing an Emirate wide Unification and Standardization of Roads Engineering Practices. Standard Bill of Quantities is based on internationally recognized Standard Method of Measurement guidelines. This keeps the BOQ to a structure that is familiar to most Contractors and Engineers, allowing for a high degree of consistency and precision to help keep preparation of estimates and tender pricing in a consistent and uniform way.

1.2.1 The Importance of Standard Bill of Quantities Manual

This Standard Bill of Quantities Manual is intended to provide sufficient information on the quantities of Works to be performed to enable the tenderers to prepare their tenders efficiently and accurately. The Standard Bill of Quantities Manual will facilitate the comparison of rates and prices between the Tenders.

Using the Standard Bill of Quantities will permit the DoT to pre-determine with a high degree of accuracy the costs of contracts and the impact of possible variation to the works.

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During the post-contract stage, the Standard Bill of Quantities will provide a priced Bill for use in the periodic valuation of works executed. Standard BOQ also provides rates and prices which can be used in the valuation of additional works instruction by the Client.

1.2.2 Organization of this Manual

DOT Standard BOQ Manual is prepared based on Civil Engineering Standard Method of Measurements (CESMM4), (4th Edition-2012), by Institute of Civil Engineers, United Kingdom.

The Standard BOQ Manual is divided into five different chapters:

1. Introduction
2. General Principles
3. Preparation of Bill of Quantities
4. Explanation of CESMM4 Sections
5. Work Classification Sections

The major focus of the Standard BOQ Manual is on Chapter 5, Work Classification Sections. Chapter 5 is divided into six sub-sections and those are as follows:

Section A	-	List of Principle Quantities
Section B	-	Preamble
Section C	-	Day work Schedule
Section D	-	Work Items
Section E	-	Grand Summary
Section F	-	Schedule of Rate Breakdown for Work Items

This Manual should be read in conjunction with applicable Conditions of Contract, Standard Specifications and the Civil Engineering Standard Method of Measurements (CESMM4), (4th Edition-2012), by Institute of Civil Engineers, United Kingdom. The method of measurements which are not covered or differ from CESMM4 due to local conditions are detailed in the Preamble to the Bill of Quantities.

1.2.3 How to Use this Manual

The Engineers and Contractors using this Manual should follow the guidelines included in Chapter 2, 3, 4, and 5 of this Manual for preparing the cost estimate (by the Engineers) and for the tender pricing (by the Contractors).

Chapter 2 of the Manual presents the General Principles of the BOQ, Chapter 3 describes the preparation of Bill of Quantities and chapter 4 presents the explanation of CESMM4 Sections.

Chapter 5 includes the work classification sections which are divided into six sub-sections:

Section (A) - List of Principle Quantities

A list of principle components of the works with their estimated quantities shall be provided to assist the tenderers for a quick assessment of the work.

Section (B) - Preamble

The Preamble shall indicate the inclusiveness of the unit prices and shall state the method of measurement that has been adopted in the preparation of the Bill of Quantities.

Section (C) - Day work Schedule

A Day work Schedule shall be included if the probability of unforeseen work, outside the items included in the Bill of Quantities, is relatively high.

Section (D) - Work Items

The items in the Bill of Quantities shall be grouped into sections to distinguish between those parts of the Work that by nature, locations, access, timing or any other special characteristics may give rise to different method of construction, phasing of the Works, or consideration of cost.

Section (E) - Grand Summary

The Grand summary shall contain a tabulation of the parts of the Bill of Quantities with provision for insertion of the total of the amounts brought forward from the Part summaries.

Section (F) - Schedule of Rate Breakdown for Work Items

The schedule shall show factors of labour, materials, equipment (plant), overheads and profit contained in each rate of work item.

General items common to all parts of the Work shall be grouped as a separate section in the Bill of Quantities.

Not defined?

The Engineers and Contractors can use the Standard Bill of quantities for preparing the periodic valuations for the project and can use for pricing the variations in the project.

At several places, CESMM4 refers to individual Clauses of the ICE Conditions of Contract. Wherever CESMM4 refers to the Conditions of Contract, applicable Conditions of the particular project shall be applicable.

Descriptions in the schedule of quantities are abbreviated and the schedule has been drawn up in accordance with Civil Engineering Standard Method of Measurement (CESMM4), (4th Edition-2012), by Institute of civil Engineers, United Kingdom.

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2 GENERAL PRINCIPLES

2.1 Title Application and Extent

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The title of this document is Standard Bill of Quantities Manual, which is abbreviated to SBOQM. The SBOQM is intended to use in conjunction with the Civil Engineering Standard Method of Measurement (CESMM4), (4th Edition 2012), by Institute of Civil Engineers, United Kingdom; applicable Conditions of Contract; and the applicable Standard Specifications in connection with all highway engineering works.

CESMM4 References are mentioned in the BOQ for each item of work. Where such references are not available or modified, the method of measurement for such items is included in the Preamble to the Bill of Quantities.

2.2 Objectives of Standard Bill of Quantities Manual

The object of Standard Bill of Quantities Manual is to set forth a tool for itemizing and describing the scope of work in sufficient details that permits the preparation of a cost estimate with an increased degree of precision and to enable the bidders to price the tender adequately and uniformly.

2.3 Objectives of Bill of Quantities

The objectives of Bill of Quantities are to:

- a) Provide sufficient information on the quantities of Works to be performed to enable bids to be prepared efficiently and accurately.
- b) Facilitate the comparison of rates and prices between bidders.
- c) Provide priced Bill of quantities for use in the periodic variation of Works executed.
- d) Provide rates and prices which can be used in the variation of additional works instructed by the Clients.
- e) Enable the Clients to assemble actual tendered rates and prices to prepare for future estimating and budgeting.

In order to attain these objectives, the work has been itemized in the Bill of Quantities in sufficient detail for it to be possible to distinguish between the different classes of work, and between work of the same nature carried out in different locations or in any other circumstances which may give rise to different considerations for cost. Consistent with these requirements, the layout and content of the Bill of Quantities are as simple and as brief as possible.

All work items expressly required should be covered in the Bill of Quantities.

The Standard BOQ Manual seeks to attain these objectives principally by the use of Works classification. This defines:

- a) How work is to be divided into separate items in the Bill of Quantities
- b) The information to be given in item descriptions.
- c) The units in which the quantities against each item are to be expressed.
- d) How the work is to be measured for the purpose of calculating quantities.

The advantages of having a Bill of Quantities based on Standard Method of Measurement are many. Foremost, international Contractors are conversant with the Standard Method of Measurements and therefore are likely to be comfortable with the methodology for a more competitive pricing for the tenders. Also, the Standard Method of Measurement provides detailed guidelines for the measurement of works. This reduces the possibility of measurement related disputes at the post-construction stage. The Standard methods of measurement also contains an exhaustive list of work items. This provided uniformity among the tenders and also reduces the pricing risks for the bidders and consequently more competitive tenders can be expected.

3 PREPARATION OF THE BILL OF QUANTITIES

3.1 The Standard Bill of Quantity

"Quantity" or "Quantities"?

The Standard Bill of Quantities is prepared in accordance with the Civil Engineering Standard Method of Measurements (CESMM4), (4th Edition-2012), by the Institute of Civil Engineers, United Kingdom.

Refer Section 3 of CESMM4 for the details of preparation of the Bill of Quantities.

3.2 How to prepare the project Specific Bill of Quantity

The Standard Bill of Quantities has been developed to provide all possible items that could be required in a project. However, project specific BOQ shall consist of items necessary for the execution of the particular project. The Consultants must customize SBOQM to be project specific by deleting the unused items (including only the items required for the project) and adding new items relevant to the particular project.

Preamble shall be modified to include any new items which are non-standard to CESMM4 and deleting the unused items.

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3.2.1 Numbering and Referring System

Each item has an item number as well as specific CESMM4 coding and numbering and that CESMM4 coding and numbering can be used in various parts of the proposed BOQ structure.

While modifying the BOQ for any specific projects, the BOQ item reference remains constant. That is, the item numbering shall not be changed even if there is discontinuity of the items due to omission of the some items from SBOQM and addition of new items relevant to the particular project.

In order to have control on items, a serial number for the items used must be provided by the Consultant while preparing project specific BOQ. A column has been provided in the SBOQM for serial number so that continuity of the items in any BOQ section can be assured.

3.2.2 Addition of New Items

New items are inserted in relevant part of SBOQM in the place in a sequential order as per the CESMM4 coding number.

Space

Measurement/coverage rules for standard items shall be as per CESMM4, but measurement/coverage rules of non-standard items shall be as per the Preamble to the Bill of Quantities.

3.2.3 Addition of New Work Sections

If may be required to create a new section for any particular project depending on the scope of the project. This shall be included with new part number in the BOQ. Items in the new part shall be as per CESMM4 and for any non-standard items, Preamble shall be provided.

With introduction of new part number, sections such as Index, Principle Quantities, Grand Summary, Schedule of Rate Breakdown shall be modified accordingly.

4 EXPLANATION OF CESSM4 SECTIONS

The guidance on application of work classification, coding and numbering of items, guidance on compiling and pricing of Bill of Quantities and a detailed narrative on Method - related charges is provided under following sections of CESMM4.

Application of the Work Classification - Section 3 of CESMM4

Coding and Numbering of Items - Section 4 of CESMM4

Completion, Pricing and use of the Bill of Quantities - Section 6 of CESMM4

Method – related charges - Section 7 of CESMM4

It is highly recommended that the compiler of a new Bill of Quantities (BOQ) must have a copy of CESMM4 to refer the guidance on all above sections to ensure that BOQ is compiled strictly in line with these guidelines.

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BILL OF QUANTITIES

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CHAPTER – 5

WORK CLASSIFICATION SECTIONS

CHAPTER 5 - WORK CLASSIFICATION SECTIONS

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Section (C)	- Daywork Schedule	C	8
Section (D)	- Work Items	D	
Part 1	- General Items	D1	21
Part 2	- Ground Investigation	D2	5
Part 3	- Demolition and Site Clearance	D3	8
Part 4	- Earthworks	D4	6
Part 5	- Roads and Pavings	D5	19
Part 6	- Bridge Works	D6	46
Part 7	- Tunnel / Underpass Works	D7	70
Part 8	- Retaining Structures	D8	21
Part 9	- Storm Water Drainage Network	D9	31
Part 10	- Sanitary Sewer Network	D10	5
Part 11	- Potable Water Network	D11	7
Part 12	- Irrigation Network	D12	12
Part 13	- Electrical Network	D13	16
Part 14	- Street Lighting Works	D14	12
Part 15	- Duct Network for Telecommunication Cables	D15	10
Part 16	- Traffic Signal Control and Intellegent Transportation System	D16	19
Part 17	- Culverts	D17	11
Part 18	- Building Works	D18	14
Part 19	- Gas Network	D19	4
Part 20	- District Cooling Network	D20	4
Part 21	- Non Disruptive Road Crossing Works	D21	3
Part 22	- Landscaping Works	D22	25
Part 23	- Concrete Pedestrian Bridge Works	D23	6
Part 24	- Steel Pedestrian Bridge Works	D24	6
Part 25	- Provisional Sum	D25	2
Section (E)	- Grand Summary	E	1
Section (F)	- Schedule of Rate Breakdown for Work Items	F	84

Standard Bill of Quantities Manual

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Section (A) List of Principal Quantities

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PROJECT :-		BILL SECTION - A	PAGE 1 of 12
ITEM	DESCRIPTION	QUANTITY	UNIT
	<p><i>The following is a general list of the approximate quantities of major work items within the scheme. This list is provided solely to assist the Tenderers in making a general assessment and gauge the size and scope of works. The same not to be used as a basis for the pricing of the works.</i></p> <p>Section (A) - List of Principal Quantities</p> <p><u>Part 2 - Ground Investigation</u></p> <p>Trial Pits</p> <p>Depth of Excavation for Trial Pits</p> <p>Depth Supported</p> <p>Depth Backfilled</p> <p>Rotary Drilled Boreholes</p> <p>Laboratory Test</p> <p><u>Part 3 - Demolition and Site Clearance</u></p> <p>General Clearance</p> <p>Removal of Trees</p> <p>Removal of Existing Kerb</p> <p>Removal of Existing Sidewalk</p> <p>Removal of Existing Concrete Barrier</p> <p>Removal of Existing Metal Beam Guard Rail</p> <p>Removal of Existing Chain Link Fence</p> <p>Removal of Existing Warning and Regulatory Signs, Street Name Signs and Guide Signs</p> <p>Removal of Rock and Obstructions</p> <p>Removal of RCC or other Concrete Structures.</p>		<p>nr</p> <p>m</p> <p>m</p> <p>m</p> <p>nr</p> <p>nr</p> <p>ha</p> <p>nr</p> <p>m</p> <p>m²</p> <p>m</p> <p>m</p> <p>m</p> <p>nr</p> <p>m³</p> <p>sum</p>

What is "nr" number? then what is "no." --- also used in this document?

nr

PROJECT :-		BILL SECTION - A	PAGE 2 of 12
ITEM	DESCRIPTION	QUANTITY	UNIT
	<u>Section (A) - List of Principal Quantities (Cont'd)</u>		
	<u>Part 4 - Earthworks</u>		
	Excavation for Cutting		m ³
	Excavation for Cutting - Rock		m ³
	Excavation of Reinforced Concrete		m ³
	Preparation of Excavated Surfaces		m ³
	Filling Embankments		m ³
	Filling from Imported Material		m ³
	Filling General		m ³
	Preparation of Filled Surfaces		m ²
	<u>Part 5 - Roads and Pavings</u>		
	Geotextile Fabric		m ²
	Aggregate Base Course		m ²
	Aggregate Subbase Course		m ²
	Pervious Backfill		m ²
	Wet mix Macadam		m ²
	Asphaltic Concrete Base Course; Type I		m ²
	Asphaltic Concrete Wearing Course; Type II		m ²
	Kerb		m
	Traffic Signs		nr
	Guide Sign Panel		m ²
	Structure Post & Foundation		nr
	Steel Guard Rail		m
	Concrete Barrier		m

PROJECT :-		BILL SECTION - A	PAGE 3 of 12
ITEM	DESCRIPTION	QUANTITY	UNIT
	Section (A) - List of Principal Quantities (Cont'd)		
	Part 6 - Bridge Works		
	Part 6.1 - Post-Tensioned Box Girder		
	Excavation		m ³
	Filling		m ³
	Reinforced Concrete		m ³
	Prestressed Post Tensioned Concrete		m ³
	Reinforcement		t
	Bridge Bearing		nr
	Piles 600mm		nr
	Piles 800mm		nr
	Piles 1000mm		nr
	Piles 1200mm		nr
	Asphalt Wearing Course		m ²
	Bridge Barrier		m
	Under Bridge Lighting		m
	Part 6.2 - Pre-Tensioned Precast I-Girder		
	Excavation		m ³
	Filling		m ³
	Reinforced Concrete		m ³
	Reinforcement		t
	Precast I-Girder		m ³
	Bridge Bearing		nr
	Piles 600mm		nr
	Piles 800mm		nr
	Piles 1000mm		nr
	Piles 1200mm		nr
	Asphalt Wearing Course		m ²
	Bridge Barrier		m
	Under Bridge Lighting		m

PROJECT :-		BILL SECTION - A	PAGE 4 of 12
ITEM	DESCRIPTION	QUANTITY	UNIT
	<u>Section (A) - List of Principal Quantities (Cont'd)</u>		
	<u>Part 7 - Tunnel / Underpass Works</u>		
	Part 7.1 - Tunnel / Underpass Works		
	Excavation		m ³
	Filling		m ³
	Reinforced Concrete		m ³
	Precast Prestressed I-Girder		m ³
	Reinforcement		t
	Piles 600mm		nr
	Piles 800mm		nr
	Piles 1000mm		nr
	Asphalt Wearing Course		m ²
	Barrier		m
	Tunnel Lighting		m
	Telephone Sets		nr
	Loud Speakers		nr
	Radio Antenna Cables		m
	Tunnel Monitoring Cameras		nr
	SCADA System		nr
	Fire Alarm System		nr
	Lane Use Signal		nr
	Fire Protection - Pipe		m
	Fire Protection - Fittings and Valves		nr
	Tunnel Ventilation Equipment		nr

PROJECT :-		BILL SECTION - A	PAGE 5 of 12
ITEM	DESCRIPTION	QUANTITY	UNIT
	<u>Section (A) - List of Principal Quantities (Cont'd)</u>		
	<u>Part 7 - Tunnel / Underpass Works (Cont'd)</u>		
	Lift Station, Stormwater Reservoir, Generator Room & Utility Room		
	Excavation for Structures		m ³
	Filling		m ³
	Reinforced Concrete		m ³
	Reinforcement		t
	Chambers		nr
	Blockwork and Masonry		m ²
	Surface Finishes		m ²
	Windows & Doors		nr
	<u>Part 8 - Retaining Structures</u>		
	Excavation		m ³
	Filling		m ³
	Reinforced Concrete		m ³
	Reinforcement		t
	Piles 600mm		nr
	Piles 800mm		nr
	Piles 1000mm		nr
	Slope Protection		m ²
	Kerbs		m
	Reinforced earth fill material		m ³
	MSE Wall		m ²

PROJECT :-		BILL SECTION - A	PAGE 6 of 12
ITEM	DESCRIPTION	QUANTITY	UNIT
	<u>Section (A) - List of Principal Quantities (Cont'd)</u>		
	<u>Part 9 - Stormwater Drainage Network</u>		
	uPVC Pipes		m
	GRP Pipes		m
	RCP Pipes		m
	DI Pipes		m
	uPVC Perforated pipe		m
	Manholes		nr
	Storm Water Inlets (SWI)		nr
	Storm Drainage Inlets (SDI)		nr
	Discharge & Connection Chamber		nr
	Outfall Structure		m
	<u>Part 10 - Sanitary Sewer Network</u>		
	Precast Concrete Protection Slab		m
	In-situ Concrete Protection Slab		m
	Ducts		m
	<u>Part 11 - Potable Water Network</u>		
	Precast Concrete Protection Slab		m
	In-situ Concrete Protection Slab		m
	GRP Pipe Sleeves		m
	uPVC Ducts		m

PROJECT :-		BILL SECTION - A	PAGE 7 of 12
ITEM	DESCRIPTION	QUANTITY	UNIT
	<u>Section (A) - List of Principal Quantities (Cont'd)</u>		
	<u>Part 12 - Irrigation Network</u>		
	Precast Concrete Protection Slab		m
	In-situ Concrete Protection Slab		m
	uPVC Pipe		m
	Valve Chambers		nr
	GRP Pipe Sleeves		m
	PVC Ducts		m
	<u>Part 13 - Electrical Works</u>		
	Protection Slab		nr
	PVC Ducts		m
	LV Cables		m
	11kV Cables		m
	33kV Cables		m
	Fibre Optic Cable		m
	Trench Excavation		m

PROJECT :-		BILL SECTION - A	PAGE 8 of 12
ITEM	DESCRIPTION	QUANTITY	UNIT
	<u>Section (A) - List of Principal Quantities (Cont'd)</u>		
	<u>Part 14 - Street Lighting Works</u>		
	PVC Ducts		m
	8 to 12m High Light Pole		nr
	12 to 18m High Light Pole		nr
	30.5m High Light Pole		nr
	Lighting Control Cabinet		nr
	Feeder Pillar		nr
	Low Voltage Cable, 4C		m
	Foundation for Lighting Poles		nr
	Cable Protection Tiles		nr
	<u>Part 15 - Duct Networks for Telecommunication Cables</u>		
	Cable Protection Slab		nr
	2 Way Ducts, D54		m
	4 Way Ducts, D54		m
	6 Way Ducts, D54		m
	Non Disruptive Methods for Road Crossings		m
	Telephone Cabinets		nr

PROJECT :-		BILL SECTION - A	PAGE 9 of 12
ITEM	DESCRIPTION	QUANTITY	UNIT
	Section (A) - List of Principal Quantities (Cont'd)		
	<u>Part 16 - Traffic Signal Control and Intellegent Transportation System</u>		
	Pull Box Type I		nr
	Pull Box Type IV		nr
	2 Way Ducts		m
	4 Way Ducts		m
	Foundation for Signal Pole		nr
	Traffic Signal Pole with 2 Mast Arm		nr
	Traffic Signal Pole with single Mast Arm		nr
	Traffic Signal Pole; 3.2m High		nr
	Traffic Signal Head		nr
	Traffic Signal Controllers		nr
	14 Core Signal Cables		m
	Fiber Optic Cables (F.O.C.)		m
	Transportation Management System - General and Common Requirements		Item
	Traveller Information System		nr
	Network Management System		Item
	Field Communication System		nr
	Vehicle Detection System		nr
	Digital Video Management System (DVMS)		Item
	Digital Video Storage System (DVSS)		Item
	Overheight Vehicle Detector System (OHVD)		Item
	Roadway Weather and Air Information System (RWIS)		Item
	Solar Power System		Item
	Foundation for ITS Poles		nr
	Foundation for Gantry		nr

PROJECT :-		BILL SECTION - A	PAGE 10 of 12
ITEM	DESCRIPTION	QUANTITY	UNIT
	<u>Section (A) - List of Principal Quantities (Cont'd)</u>		
	<u>Part 17 - Culvert</u>		
	Excavation		m ³
	Filling		m ³
	Reinforced Concrete		m ³
	Reinforcement		t
	Kerb		m
	Concrete Barrier		m
	<u>Part 18 - Building Works</u>		
	Excavation		m ³
	Filling		m ³
	Reinforced Concrete		m ³
	Reinforcement		t
	Blockwork		m ²
	Windows & Doors		nr
	Electrical Cables		m
	Fire Alarm System		nr
	<u>Part 19 - Gas Network</u>		
	Precast Concrete Protection Slab		m
	GRP Pipe Sleeves		m
	PVC Ducts		m
	<u>Part 20 - District Cooling Network</u>		
	Precast Concrete Protection Slab		m
	GRP Pipe Sleeves		m
	PVC Ducts		m

PROJECT :-		BILL SECTION - A	PAGE 11 of 12
ITEM	DESCRIPTION	QUANTITY	UNIT
	<u>Section (A) - List of Principal Quantities (Cont'd)</u>		
	<u>Part 21- Non Disruptive Road Crossing Works</u>		
	Non disruptive special pipe laying using thrust boring methods for installing sleeves		m
	Non disruptive special pipe laying using micro tunneling methods for installing sleeves		m
	<u>Part 22- Landscaping Works</u>		
	Hard Landscaping works		m ²
	Soft Landscaping works		nr
	Automatic Irrigation Works		m
	<u>Part 23- Concrete Pedestrian Bridge Works</u>		
	Excavation		m ³
	Filling		m ³
	Reinforced Concrete		m ³
	Prestressed Concrete		m ³
	Reinforcement		t
	Bridge Bearing		nr
	Piles 1200mm		m
	Block masonry		m ²
	Waterproofing		m ²
	Pedestrian Handrail		m
	Electrical Works		sum
	Lighting Works		sum

PROJECT :-		BILL SECTION - A	PAGE 12 of 12
ITEM	DESCRIPTION	QUANTITY	UNIT
	<u>Section (A) - List of Principal Quantities (Cont'd)</u>		
	<u>Part 24- Steel Pedestrian Bridge Works</u>		
	Excavation		m ³
	Filling		m ³
	Reinforced Concrete		m ³
	Reinforcement		t
	Steel Staircase and landing		t
	Steel Pier		t
	Steel Bridge Deck		t
	Steel Cladding		m ²
	Bridge Bearing		nr
	Piles 800mm		m
	Block Masonry		m ²
	Waterproofing		m ²
	Pedestrian Handrail		m
	Electrical Works		sum
	Lighting Works		sum



Section (B) Preamble

PROJECT :-		PREAMBLE	BILL SECTION-B	PAGE 1 of 47
ITEM	ITEM DESCRIPTION			
	<u>General</u>			
B.1.01	The quantities identified in the Bill of Quantities for the works to be carried out under this contract have been measured based on the Tender Drawings. The Bill of Quantities herein, including all notes and instructions, form an integral part of the Tender Documents. However, the descriptions contained in the Bill of Quantities for each item are not necessarily complete. The Contractor is referred to the Conditions of the Contract and other Documents, Specifications, and Drawings as well as relevant Standards and Codes of Practice for further information as no claim or variation will be considered on account of the Contractor's failure to do so.			
B.1.02	The Tenderer is cautioned to familiarize himself with the full content of other Tender Documents including the Instructions to Tenderers, Letter of Tender, General Conditions, Particular Conditions, Tender Drawings and Specifications or any other information that can be reasonably inferred from any of them and all obligations contained in the documents shall be included in the item rates and prices.			
B.1.03	The whole of the quantities shall be treated as approximate only and are given to provide common basis for tendering which shall be subject to re-measurement. The basis of payment will be the actual quantities of work ordered and carried out, as measured by the Engineer or his Representative and valued at the rates or prices quoted in the Bill of Quantities, with the application of the Adjustment item if applicable.			
B.1.04	Drawings, Specifications and Bill of Quantities and all other documents are complementary and if any item is included in any of them, it shall be deemed included in all.			
B.1.05	The Tenderer's bid for the entire work shall provide for supervision of any or all trades that are not intended to be performed with his own forces. No extra compensation for services as a General Contractor will be paid.			
B.1.06	Amendment shall not be made to this Bill of Quantities without the authority, in writing, of the Engineer. Any insertion of additional items or changes in description and quantity will not be accepted. Tenderer is only allowed to insert items for Method Related Charges in accordance with CESMM4.			
B.1.07	Section (F) has been used for Schedule of Rate Breakdown of Work items.			
B.1.08	The Contractor shall not use the Bill of Quantities as the basis for a construction program or for the purpose of ordering materials or arranging sub-contracts. The references for these activities shall be the drawings, specifications and instructions issued by the Engineer.			

PROJECT :-	PREAMBLE	BILL SECTION-B	PAGE 2 of 47																														
ITEM	ITEM DESCRIPTION																																
B.1.09	<p><u>Units of Measurement</u></p> <p>The following units of measurement and abbreviations have been used.</p> <table border="0"> <thead> <tr> <th data-bbox="311 488 368 517"><u>Unit</u></th> <th data-bbox="1034 488 1198 517"><u>Abbreviation</u></th> </tr> </thead> <tbody> <tr> <td data-bbox="311 548 459 577">Cubic meter</td> <td data-bbox="1034 548 1217 577">m³, m3 or cu.m</td> </tr> <tr> <td data-bbox="311 582 373 611">Days</td> <td data-bbox="1034 582 1082 611">Day</td> </tr> <tr> <td data-bbox="311 616 408 645">Hectare</td> <td data-bbox="1034 616 1066 645">ha</td> </tr> <tr> <td data-bbox="311 649 373 678">Hour</td> <td data-bbox="1034 649 1050 678">h</td> </tr> <tr> <td data-bbox="311 683 419 712">Kilogram</td> <td data-bbox="1034 683 1066 712">kg</td> </tr> <tr> <td data-bbox="311 716 427 745">Kilometer</td> <td data-bbox="1034 716 1066 745">km</td> </tr> <tr> <td data-bbox="311 750 443 779">Lump Sum</td> <td data-bbox="1034 750 1082 779">L.S.</td> </tr> <tr> <td data-bbox="311 784 379 813">Meter</td> <td data-bbox="1034 784 1050 813">m</td> </tr> <tr> <td data-bbox="311 817 427 846">Millimeter</td> <td data-bbox="1034 817 1082 846">mm</td> </tr> <tr> <td data-bbox="311 851 408 880">Number</td> <td data-bbox="1034 851 1114 880">Nr., nr</td> </tr> <tr> <td data-bbox="311 884 475 913">Square meter</td> <td data-bbox="1034 884 1217 913">m², m2 or sq.m</td> </tr> <tr> <td data-bbox="311 918 368 947">Sum</td> <td data-bbox="1034 918 1082 947">sum</td> </tr> <tr> <td data-bbox="311 952 389 981">Tonne</td> <td data-bbox="1034 952 1050 981">t</td> </tr> <tr> <td data-bbox="311 985 384 1014">Week</td> <td data-bbox="1034 985 1121 1014">Wk.,wk</td> </tr> </tbody> </table> <p><i>Handwritten notes in red:</i></p> <ul style="list-style-type: none"> is there a reason for not using only one? (with arrow pointing to m³, m3 or cu.m) some places 'no.' is used? (with arrow pointing to Nr., nr) 			<u>Unit</u>	<u>Abbreviation</u>	Cubic meter	m ³ , m3 or cu.m	Days	Day	Hectare	ha	Hour	h	Kilogram	kg	Kilometer	km	Lump Sum	L.S.	Meter	m	Millimeter	mm	Number	Nr., nr	Square meter	m ² , m2 or sq.m	Sum	sum	Tonne	t	Week	Wk.,wk
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PROJECT :-	PREAMBLE	BILL SECTION-B	PAGE 3 of 47																																																																																				
ITEM	ITEM DESCRIPTION																																																																																						
B.1.10	<p>Abbreviation</p> <p>The following abbreviations have been used.</p> <table border="0"> <tr> <td>Al Ain Distribution Company</td> <td>AADC</td> </tr> <tr> <td>Al Ain Municipality</td> <td>AAM</td> </tr> <tr> <td>Abu Dhabi Distribution Company</td> <td>ADDC</td> </tr> <tr> <td>Abu Dhabi Municipality</td> <td>ADM</td> </tr> <tr> <td>Abu Dhabi Municipality Road Lighting</td> <td>ADMRL</td> </tr> <tr> <td>Abu Dhabi Sewerage Services Company</td> <td>ADSSC</td> </tr> <tr> <td>Abu Dhabi Water & Electricity Authority</td> <td>ADWEA</td> </tr> <tr> <td>British Standards</td> <td>BS</td> </tr> <tr> <td>California Bearing Ratio</td> <td>CBR</td> </tr> <tr> <td>Civil Engineering Standard Method of Measurement- Fourth Edition</td> <td>CESMM4</td> </tr> <tr> <td>Continued</td> <td>Cont'd</td> </tr> <tr> <td>Department</td> <td>DEPT, Dept.</td> </tr> <tr> <td>Department of Transport</td> <td>DOT</td> </tr> <tr> <td>Diameter</td> <td>dia</td> </tr> <tr> <td>Drawing</td> <td>Drg., Dwg.</td> </tr> <tr> <td>Ductile Iron</td> <td>DI</td> </tr> <tr> <td>Emirates Telecommunication Corporation</td> <td>Etisalat, ETC</td> </tr> <tr> <td>Equal or greater than</td> <td>≥</td> </tr> <tr> <td>Equal or less than</td> <td>≤</td> </tr> <tr> <td>Extra Over</td> <td>E.O.</td> </tr> <tr> <td>Fiber Cement</td> <td>F.C.</td> </tr> <tr> <td>Glass Fiber Reinforced Plastic</td> <td>GRP</td> </tr> <tr> <td>Kilovolt</td> <td>kV</td> </tr> <tr> <td>Kilowatt</td> <td>kW</td> </tr> <tr> <td>Kilowatt per hour</td> <td>kW/h</td> </tr> <tr> <td>Liter</td> <td>l</td> </tr> <tr> <td>Local Area Network</td> <td>LAN</td> </tr> <tr> <td>Less than</td> <td><</td> </tr> <tr> <td>Low Voltage</td> <td>LV</td> </tr> <tr> <td>Man x Number of Days</td> <td>man-day</td> </tr> <tr> <td>Maximum Dry Density</td> <td>MDD</td> </tr> <tr> <td>Medium Density Polyethylene</td> <td>MDPE</td> </tr> <tr> <td>Minimum</td> <td>Min., min.</td> </tr> <tr> <td>Moderate Sulphate Resisting Cement</td> <td>MSRC</td> </tr> <tr> <td>Nominal Bore</td> <td>NB</td> </tr> <tr> <td>Nominal Diameter</td> <td>DN</td> </tr> <tr> <td>Not Applicable</td> <td>N/A, n/a</td> </tr> <tr> <td>Nothing</td> <td>NIL</td> </tr> <tr> <td>Ordinary Portand Cement</td> <td>OPC</td> </tr> <tr> <td>Outside Diameter</td> <td>OD, od</td> </tr> <tr> <td>Polyvinyl Chloride</td> <td>PVC</td> </tr> <tr> <td>Polyethylene</td> <td>PE</td> </tr> </table>			Al Ain Distribution Company	AADC	Al Ain Municipality	AAM	Abu Dhabi Distribution Company	ADDC	Abu Dhabi Municipality	ADM	Abu Dhabi Municipality Road Lighting	ADMRL	Abu Dhabi Sewerage Services Company	ADSSC	Abu Dhabi Water & Electricity Authority	ADWEA	British Standards	BS	California Bearing Ratio	CBR	Civil Engineering Standard Method of Measurement- Fourth Edition	CESMM4	Continued	Cont'd	Department	DEPT, Dept.	Department of Transport	DOT	Diameter	dia	Drawing	Drg., Dwg.	Ductile Iron	DI	Emirates Telecommunication Corporation	Etisalat, ETC	Equal or greater than	≥	Equal or less than	≤	Extra Over	E.O.	Fiber Cement	F.C.	Glass Fiber Reinforced Plastic	GRP	Kilovolt	kV	Kilowatt	kW	Kilowatt per hour	kW/h	Liter	l	Local Area Network	LAN	Less than	<	Low Voltage	LV	Man x Number of Days	man-day	Maximum Dry Density	MDD	Medium Density Polyethylene	MDPE	Minimum	Min., min.	Moderate Sulphate Resisting Cement	MSRC	Nominal Bore	NB	Nominal Diameter	DN	Not Applicable	N/A, n/a	Nothing	NIL	Ordinary Portand Cement	OPC	Outside Diameter	OD, od	Polyvinyl Chloride	PVC	Polyethylene	PE
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Abu Dhabi City Municipality

What about Western Region Municipality?

One line? and where is "du"

FIDIC?

PROJECT :-	PREAMBLE	BILL SECTION-B	PAGE 4 of 47																												
ITEM	ITEM DESCRIPTION																														
	<p><u>Abbreviation (Cont'd)</u></p> <table border="0"> <tr><td>Provisional Quantity</td><td>P.Q.</td></tr> <tr><td>Quantity</td><td>Qty.</td></tr> <tr><td>Reference</td><td>Ref.</td></tr> <tr><td>Site Acceptance Test</td><td>SAT</td></tr> <tr><td>Stainless Steel</td><td>SS</td></tr> <tr><td>Specifications</td><td>Spec.</td></tr> <tr><td>Sulfate Resisting Cement</td><td>SRC</td></tr> <tr><td>Thickness</td><td>thk</td></tr> <tr><td>To be Finalized</td><td>TBF</td></tr> <tr><td>United Arab Emirates Dirhams</td><td>DHS, Dhs., AED</td></tr> <tr><td>Unplasticised Polyvinyl Chloride</td><td>uPVC</td></tr> <tr><td>Vehicle x Number of Days</td><td>veh-day</td></tr> <tr><td>Wide Area Network</td><td>WAN</td></tr> <tr><td>Width</td><td>W, w</td></tr> </table>			Provisional Quantity	P.Q.	Quantity	Qty.	Reference	Ref.	Site Acceptance Test	SAT	Stainless Steel	SS	Specifications	Spec.	Sulfate Resisting Cement	SRC	Thickness	thk	To be Finalized	TBF	United Arab Emirates Dirhams	DHS, Dhs., AED	Unplasticised Polyvinyl Chloride	uPVC	Vehicle x Number of Days	veh-day	Wide Area Network	WAN	Width	W, w
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B.1.11	<p><u>Method of Measurement</u> ← some underlined others not?</p>																														
	<p>The Bill of Quantities have been measured Rules of the Civil Engineering Standard Method of Measurement Fourth Edition (CESMM4) approved and sponsored by the Institution of Civil Engineers 1-7, Great George Street, SW1P 3AA, England, amended to suit to local conditions and practices. Where applicable, in any particular case in the Bill of Quantities, where the method of measurement for certain items is modified, it is stated in this Preamble section. The Modified Method of Measurement expressed for those items shall form an integral part of the Bill of Quantities.</p>																														
	<p>This method of measurement shall be used as a basis for any payment, variations (additions or omissions) where required.</p>																														
B.1.12	<p>The Preamble items in Section of these Bill of Quantities are deemed to qualify and to form part of every description of measured work to which they refer including composite description.</p>																														
B.1.13	<p>All measurements are net and the rates shall include for all laps, waste, working space and trade or traditional allowances.</p>																														
B 1.14	<p>Item reference numbers shown in column 3 for the Class of works according to CESMM4 generally follow convention used by CESMM4. Any deviation in the convention used shall not be the basis of a claim.</p>																														
B.1.15	<p>References to British Standards in CESMM4 are applicable unless otherwise stated in the Contract Specifications in which case the specified reference standard shall apply.</p>																														

PROJECT :-	PREAMBLE	BILL SECTION-B	PAGE 5 of 47
ITEM	ITEM DESCRIPTION		
	<p>Conditions of Contract</p>		
B.1.16	<p>The Conditions of Contract applicable to this Contract are the General Condition of Construction Contract (Modified FIDIC) approved by the Abu Dhabi Executive Council and included in all DOT Contracts. References to Clause numbers in CESMM4 shall be replaced by the corresponding applicable Clause numbers in the General Conditions of Construction Contract.</p>		
B.1.17	<p>Rates and prices shall be in AED. (United Arab Emirates dirham)</p> <p>Prices and Rates ← some underlined others not?</p>		
B.1.18	<p>The prices and rates shall be comprehensive and must include for complying in all respects with the Bill of Quantities, Instruction to Tenderers, General Conditions of Contract, Particular Conditions of Contract, Specifications and Drawings and for all matters and things necessary for the proper construction, completion, and maintenance of the whole of the Works. No claims for additional payment will be allowed for any error or misunderstanding by the Contractor of the work involved.</p>		
B.1.19	<p>The pricing of the Bill of Quantities shall be executed in such a way to enable reproduction by photocopying to be carried out if required.</p>		
B.1.20	<p>In case of discrepancies between the prices or rates quoted and total amount for any item in the Bill of Quantities, the unit rate or price shall be binding.</p>		
B.1.21	<p>Lump sums shall not be given where unit rates are applicable.</p>		
B.1.22	<p>Where the word “allow” is used, the cost of the item shall be the responsibility of the Contractor.</p>		
B.1.23	<p>The Tenderer is to ensure that identical items occurring in separate bills are not priced at different rates unless this is the Tenderer's deliberate intention.</p>		
B.1.24	<p>The prices and rates entered by the Tenderer's against items in the Bill of Quantities shall apply throughout the duration of the contract to the execution of these items in any location.</p>		
B.1.25	<p>A price or rate is to be entered against each item in the Bill of Quantities and the Daywork Schedule and any item left unpriced shall be deemed to have been included for elsewhere in the Bill of Quantities and hence the rate for the item shall be taken as “NIL” (even if not so noted).</p>		
B.1.26	<p>Where fix or install only items are specified, the rate shall be deemed to include for taking delivery, storing and installation of goods or materials in works where appropriate.</p>		
B.1.27	<p>The rates and sums inserted in the Bill of Quantities are deemed to include for the following:</p>		

PROJECT :-	PREAMBLE	BILL SECTION-B	PAGE 6 of 47
ITEM	ITEM DESCRIPTION		
	<p>(i) Labour and all costs in connection herewith</p> <p>(ii) Materials, goods and all costs in connection therewith (e.g. carriage freightage delivery, unloading, storing, returning, packing, handling, hoisting or lowering, replacing work, goods or materials damaged, broken, lost or stolen until the issue of a Certificate of Completion).</p> <p>(iii) Fittings and fixing materials or goods in position.</p> <p>(iv) Plant.</p> <p>(v) Waste, bulking, shrinkage and overlaps.</p> <p>(vi) Land required for tips and stockpiles including all costs for obtaining any necessary licenses and approvals.</p> <p>(vii) Allowance for phasing requirements of works, effect on programming of the works of all traffic diversions and construction activity associated with diversion or installation of services.</p> <p>(viii) For taking measures for the support and full protection of pipes, cables and other apparatus required during the progress of the Works as required by Service Authority or the Engineer.</p> <p>(ix) Dewatering as required, unless separately inserted and priced by the Tenderer under method related charges.</p> <p>(x) Provide requisite measures to ensure that the project area is free from any ponding during the period of rains.</p> <p>(xi) For working along side and liaising with other Contractors working on the same site.</p> <p>(xii) Preparation and supply of shop drawings.</p> <p>(xiii) Overhead charges and profit. Overhead shall include for all costs in connection with Letter of Credit, bank charges, interest charges and insurance after the material come under the control of the Contractor.</p> <p>(xiv) The Tenderer is to allow in his rates for the production of all shop drawings, working drawings, as built drawings and operations and maintenance instructions called for in the Specifications.</p> <p>These shall include but not be limited to the following:</p> <ol style="list-style-type: none"> a. The surveyed location of all existing services. b. A Combined Services Drawing including all surveyed existing and proposed services showing manholes, drawpits, joint boxes, inspection chambers, lighting column bases, traffic signal bars, concrete surrounds, pipe diameters, etc. to scale, plus any other possible obstructions. c. A Combined Services Working drawings, original and new. d. Separate sets of Working drawings for each individual service showing proposed locations for submission to the service authorities. e. Existing ground levels. f. Earthwork cross sections. g. Temporary traffic diversions on detour roads. 		

PROJECT :-	PREAMBLE	BILL SECTION-B	PAGE 7 of 47
ITEM	ITEM DESCRIPTION		
B.1.28	<p>h Proposed traffic diversions on detour roads.</p> <p>i Mechanical, electrical and other services drawings, diagrams and instructions as required in the project and directed by the Engineer.</p> <p>j Temporary works drawings where requested by the Engineer.</p> <p>The tenderer shall submit the analysis of "Tender Sum" with a full and detailed rate breakdown of all BOQ items including spare parts items, together with their tender submission. The breakdown is to show the actual calculations of the General Items, Labour, Plant and Material Cost for the works, the build-up of measured rates with on-costs and overheads and any other allowance use to arrive at the Tender Price. In addition, the tenderer/Contractor will be required to provide the Engineer within 48 hours with a full and detailed breakdown/any other information if required.</p> <p>The rates inserted in the Schedule of Day works shall be deemed to be the rates used by the Contractor in making up rates for work items in all parts of the Bill of Quantities.</p>		
B.1.29	<p>Precast Concrete Elements</p> <p>Rate for all precast concrete element shall include formwork, concrete, reinforcements and all other associated works required for casting of precast elements, supply and fixing.</p>		
B.1.30	<p>Removal of Existing Concrete Protection Slab for Existing Utility Lines</p> <p>Rate for Removal of Temporary or Permanent Concrete Protection Slab for existing utility lines shall include all dewatering if required, excavation, breaking, removal, disposal, backfilling, restoration of existing utilities, structures or other works disturbed by the removal of concrete slab protection to the original location.</p>		
B.1.31	<p>Removal of Utility Structures</p> <p>Rate for Removal of existing Utility structures shall include all dewatering if required, excavation, breaking, removal, disposal, removal of cover and frame, set aside in the Contractor's store for reuse or delivery to Department store, backfilling of voids, reinstatement of existing surface, temporary protection of existing utility lines and all other required works as described in the specification.</p>		
B.1.32	<p>Testing & Commissioning</p> <p>Rate shall include the cost for performing the test and commissioning as described in the specification and as shown on the drawings.</p>		

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PROJECT :-		PREAMBLE	BILL SECTION-B	PAGE 8 of 47
ITEM	ITEM DESCRIPTION			
	<u>Part - 1 General items</u>			
B.1.33	Payment for items which are lump sum (fixed costs) will be made only after completion and acceptance by the Employer.			
B.1.34	Payment for items which are time related will be paid in monthly installments commencing from the completion and acceptance of the related lump sum (fixed cost) items.			
B.1.35	Payment for 'removal of items' will be by lumpsum which will be made only will after the completion of their removal.			
B.1.36	Rates for vehicles and equipment shall include for driver/operator, fuel, maintenance and consumables. Payment shall commence from the time that the specified requirements are provided and accepted.			
B.1.37	All materials supplied by the Contractor for temporary works shall remain the property of the Contractor and their removal from site is deemed included in the lump sums.			
B.1.38	All the costs incurred in the provision and removal of protection works to existing known utilities are deemed to be included in the sums for temporary works.			
B.1.39	The Contractor is required to provide all Insurances as required by the Contract. All insurance are only be affected with Government of Abu Dhabi approved companies.			
B.1.40	Rates and Sums for the testing of materials and works shall cover the costs of obtaining samples by collection, digging, coring and cutting out including making good and for the costs of materials submitted as samples.			
B.1.41	The lump sum for testing of materials as specified and which are to be carried out in accordance with the specifications shall include for the costs of all tests that are required to be carried out or repeated for the approval of sources of materials and for the routine testing of all proposed samples, collected/stockpiled materials proposed to be used, and the materials that have been used for the works.			
B.1.42	Payment for the testing of works measured as a lump sum shall be made in installments, pro-rata to work done relevant to the appropriate work section in a manner to be agreed between the Contractor and the Engineer, or decided by the Engineer i.e. total quantum in general (measured by the length, area or volume as the case may be) of a particular work section carried out up to a particular month divided by the total quantity required by the Contract, multiplied by the relevant sum for the testing item. Methods of testing and particulars of samples may not be given in the item description but are described in the specifications and/or drawings.			

PROJECT :-	PREAMBLE	BILL SECTION-B	PAGE 9 of 47
ITEM	ITEM DESCRIPTION		
B.1.43	<p>Payment for testing of materials shall be made in installments pro-rata to the work done against the sums inserted under the relevant pay items for testing of materials either within or outside the U.A.E. The Contractor will be responsible for paying Client Laboratory (or any authorized outside laboratory) for all tests performed on this Contract.</p>		
B.1.44	<p>Payment for testing of works shall be made in installments pro-rata to work done relevant to appropriate work section, i.e. length of pipe work, cables, etc., laid in the particular month divided by the total length of pipe work, cables etc., required by the Contractor multiplied by the relevant testing item sum. Methods of testing and particulars of samples to be as contained in the Specifications and/or drawings, or any other relevant document.</p>		
B.1.45	<p>Payment for testing of materials shall be made upon approval of all relevant documents by the Engineer.</p> <p>The traffic diversion and traffic management items are not measured, but are priced as lump sums. Payments for traffic diversion and traffic management will be in monthly installments in a manner to be agreed between the Contractor and the Engineer. The sums are deemed to cover the costs of the required traffic diversions and traffic management planned and phased by the Contractor to complete the permanent works within the contract period/ revised contract period in accordance with Contract Documents.</p>		
B.1.46	<p>The amount of traffic diversion shall include furnishing, installing, moving, maintaining, and removing all temporary traffic control devices (detour safety items) with all accessories and hardware as necessary for each stage of construction and the requirements of traffic control and detour schemes as detailed in the specification.</p>		
B.1.47	<p>The maintenance of traffic diversions will be paid on a daily basis. The removal of the traffic diversion will be priced as lump sums and payments will be based on the installments agreed between the Contractor and the Engineer.</p>		
B.1.48	<p>Method Related Charges</p> <p>(i) The Contractor may insert items of Method-related Charges under Part-1-General Items in the Bill of Quantities.</p> <p>(ii) Method-Related Charges shall be certified and paid pursuant to Section of this Manual.</p> <p>(iii) Method-Related Charges shall not be subject to re-measurement. The Contractor shall distinguish between "Time-Related Charges" and "Fixed Charges".</p> <p>(iv) Payment of establishment costs relevant to these items will be lump sum which will be made only after completion and acceptance of all facilities.</p> <p>(v) Payment for maintenance/time related costs will be a monthly installments commencing from when the facilities are made available and accepted by the Engineer.</p> <p>(vi) Payments can be suspended, reduced or deleted from any Contract Payment, if in the opinion of the Engineer, the Contractor is not fulfilling his obligations.</p>		

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ITEM	ITEM DESCRIPTION		
	<p><u>Part 2: Ground Investigation</u></p>		
B.1.49	<p>Items for ground investigation shall be deemed to include preparation and submission of records and results.</p>		
B.1.50	<p>All trial trenches shall be backfilled and reinstated to original site conditions, with finishes (if any)</p>		
B.1.51	<p>The items for trial trenches and pits shall be executed in accordance with the Engineer's instruction.</p>		
	<p><u>Part 3: Demolition and Site Clearance</u></p>		
B.1.52	<p>Items for Demolition and Site Clearance shall also include disposal of the materials arising except as otherwise directed by the Engineer. Site clearance shall include clearance of small plants, bushes, other vegetations and debris.</p>		
B.1.53	<p>The Contractor shall ensure to take the instruction from the Engineer for limits of general clearance work. Payment will be made for approved areas only.</p>		
B.1.54	<p>The quantity of existing buildings/structures are indicative only and the Contractor is responsible for visiting the site and assessing the extend of scope involved.</p>		
B.1.55	<p>The rates for demolition and removal shall include the cost for backfilling of voids in the ground and reinstatement, if any, caused due to such demolition and removal.</p>		
B.1.56	<p>Rates for items to be reused or returned to the Department store shall include the cost of cleaning.</p>		
B.1.57	<p>Salvageable items arising from the demolitions under this section or any other section of BOQ shall be recovered and delivered to the owner after cleaning and packing well as the case may be.</p>		
	<p><u>Removal of Existing Sidewalk</u></p>		
B.1.58	<p>The rate for removal of existing interlocking pedestrian pavers, vehicular pavers and block paving tiles shall include their careful removal, palletting and storing on the site in an approved manner, set aside in the Contractor's store for reuse or delivery to Department store, removal of sand bed and base materials, excavation, backfill of voids and carting to tip to the approved dumpsite as directed by the Engineer.</p>		
B.1.59	<p>The rate for breaking out and removal of existing interlocking pedestrian pavers, vehicular pavers and block paving tiles shall include their breaking and removal including removal of sand bed and base materials, excavation and backfill of voids and carting to tip to the approved dumpsite as directed by the Engineer.</p>		

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ITEM	ITEM DESCRIPTION		
B.1.60	<p>Removal of Existing Curbs</p> <p>The rate for removal of existing precast curbs shall include the careful removal, set aside in the Contractor's store for reuse or delivery to Department store, removal of concrete base and haunching, excavation, backfill of voids and carting to tip to the approved dumpsite as directed by the Engineer.</p>		
B.1.61	<p>The rate for breaking out and removal of existing curbs of any specified type shall include the breaking and removal, removal of concrete base and haunching, excavation, backfill of voids and carting to tip to the approved dumpsite as directed by the Engineer.</p>		
B.1.62	<p>Removal of Existing Precast Concrete Barriers</p> <p>The rate for removal of existing precast concrete barriers shall include the careful removal set aside in the Contractor's store for reuse or delivery to Department store, removal of concrete foundation and haunching, excavation, backfill of voids and carting to tip to the approved dumpsite as directed by the Engineer.</p>		
B.1.63	<p>Removal of Existing Cast in situ Concrete Barriers</p> <p>The rate for breaking out and removal of existing concrete barriers of any specified type shall include the breaking and removal, removal of concrete, foundation and haunching, excavation, backfill of voids and carting to tip to the approved dumpsite as directed by the Engineer.</p>		
B.1.64	<p>Removal of Existing Metal Beam Guard Rail</p> <p>The rate for removal of existing metal beam guard rail of single rail and double rail shall include their careful removal, removal of posts and plates, set aside in the Contractor's store for reuse or delivery to Department store, removal of concrete foundation, excavation, backfill of voids and carting to tip to the approved dumpsite as directed by the Engineer.</p>		
B.1.65	<p>Removal of Existing Chain Link Fence and Gates</p> <p>The rate for removal of existing chain link fence and gates shall include the careful removal, removal of posts, set aside in the Contractor's store for reuse or delivery to Department store, removal of concrete foundation, excavation, backfill of voids and carting to tip to the approved dump site as directed by the Engineer.</p>		
B.1.66	<p>Removal of Existing Warning and Regulatory Signs, Street Name Signs and Guide Signs</p> <p>The rate for removal of existing warning and regulatory signs, street name signs and guide signs including gantry sign structures and cantilever sign structures of any type of sign panel shall include their careful removal and dismantling including removal of posts, sign panels, set aside in the Contractor's store for reuse or delivery to Department store, removal of concrete foundation, excavation, backfill of voids and carting to tip to the approved dump site as directed by the Engineer.</p>		

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ITEM	ITEM DESCRIPTION		
B.1.67	<p>Removal of Obstruction</p> <p>The rate for removal of rock and obstructions shall include excavations, removal of rocks and any other obstructions to be removed in the area of construction, backfill of voids and carting to tip to the approved dump site as directed by the Engineer.</p>		
B.1.68	<p><u>Part 4: Earthworks</u></p> <p>The earthwork quantities have been calculated in accordance with CESMM4 (net using dimensions from the Drawings with no allowance for bulking, shrinkage, waste or working space).</p>		
B.1.69	<p>No separate item is included for preparation of the existing ground in respect of fill areas for embankments. The embankments fill rate shall include for all preparation works such as scarifying, mixing, adding water and compaction and any other works as required by the Specification.</p>		
B.1.70	<p>Suitable excavated material from any section of the work shall be utilized in the other sections of the work within the project limits. The rate for filling with suitable excavated material is deemed to include for any haulage within the project limits.</p>		
B.1.71	<p>Suitable surplus excavated material generated from general and structural excavation shall remain the property of the Employer.</p>		
B.1.72	<p>The rates for excavation are deemed to include upholding the sides of excavation and the removal of dead services unless measured separately.</p>		
B.1.73	<p>The quantity inserted under item for double handling of excavated material is provisional and will only be utilized after the prior written approval of the Engineer.</p>		
B.1.74	<p>The rates for excavation of material below the final surface and replacement with stabilizing crushed material shall include the disposal of the excavated material to an approved dump site as instructed by the Engineer.</p>		
B.1.75	<p>The rate for imported fill material shall include borrow pit excavation, handling, placement and compaction in specified layers.</p>		
B.1.76	<p>The rates shall include for all the necessary trials as specified in the specification.</p>		
B.1.77	<p>Slope protection</p> <p>Slope protection shall include compacting the slope surface, excavating and backfill for the foundation, preparing the foundation, applying materials to protect slope in accordance with drawings and requirements of specification.</p>		
B.1.77	<p>Rate for Loose Rip-rap shall include excavation, backfill and preparing foundation for rip-rap, preparing slope surface to be protected, supply and laying of geotextile fabric (geo synthetics) if required, protecting the fabric during the placement of rock by a layer of bedding material, compaction of bedding, supply and placing large stones, filling the voids with the finer materials, all complete as specified in specification and shown on drawings.</p>		

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ITEM	ITEM DESCRIPTION		
B.1.78	<p>Rate for Hand-placed rip-rap shall include excavation, backfill and preparing foundation for rip-rap, preparing slope surface to be protected, supply and laying of geotextile fabric (geo synthetics) if required, protecting the fabric during the placement of rock by a layer of bedding material, compaction of bedding, digging trench, supply and placing large stones, all complete as specified in specification and shown on drawings.</p>		
B.1.79	<p>Rate for Keyed Rip-rap shall include excavation, backfill and preparing foundation for rip-rap, preparing slope surface to be protected, supply and laying of geotextile fabric (geo synthetics) if required, protecting the fabric during the placement of rock by a layer of bedding material, compaction of bedding, supply and placing large rock on prepared slope surface, setting the rip-rap into place by exerting impact pressure, leveling, all complete as specified in specification and shown on drawings.</p>		
B.1.80	<p>Rate for Sack rip-rap shall include excavation, backfill and preparing foundation for rip-rap, preparing slope surface to be protected, supply and laying of geotextile fabric (geo synthetics) if required, protecting the fabric during the placement of sack rip-rap by a layer of bedding material, compaction of bedding, digging trench, supply and placing concrete in sack, all complete as specified in specification and shown on drawings.</p>		
B.1.81	<p>Rate for Slope protection with Quarry spalls shall include preparing slope surface to be protected, supply and laying of geotextile fabric (geo synthetics) if required, protecting the fabric during the placement of quarry spalls by a layer of bedding material, compaction of bedding, supply and placing quarry spalls in slope surface, compacting the quarry spalls, all complete as specified in specification and shown on drawings.</p>		
B.1.82	<p>Rate for Slope protection with filter blanket shall include preparing slope surface to be protected, supply and laying of geotextile fabric (geo synthetics) if required, protecting the fabric during the placement of quarry spalls by a layer of bedding material, compaction of bedding, supply and placing filter blanket in slope surface, all complete as specified in specification and shown on drawings.</p>		
B.1.83	<p>Rate for Grouted Rip-rap shall include excavation, backfill and preparing foundation for rip-rap, preparing slope surface to be protected, supply and laying of geotextile fabric (geo synthetics) if required, protecting the fabric during the placement of rock by a layer of bedding material, compaction of bedding, supply and placing large rock, filling voids with grout, curing the grout, providing weep holes in grouted rip-rap, all complete as specified in specification and shown on drawings.</p>		
B.1.84	<p>Rate for Coarse aggregate shall include preparing the surface, supply and laying, shaping to finished grade all complete as specified in specification and shown on drawings.</p>		

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ITEM	ITEM DESCRIPTION		
	<u>Part 5: Roads and Paving</u>		
B.1.85	The rates for cold planning (milling) also includes sweeping and cleaning of the final surface prior to receiving tack coat.		
B.1.86	The rates for cold planning (milling) shall be based on the nominal milling depth stated in the item description, plus or minus 10mm. The milled material arising shall be transported to the designated area as directed by the Engineer.		
B.1.87	The Contractor is to allow in his rates for applying tack coat that may be required between layers within a course of materials. The Bill of Quantities allows for tack coat between courses only. (e.g. between wearing course and base course but not between layers of two layer works)		
B.1.88	Rate for Asphaltic Concrete Speed Hump shall include surface preparation, asphaltic concrete mixes, placement, and speed hump marking and other work required for the complete installation of speed humps as detailed on the Drawings and as directed by the Engineer as detailed in the specification and drawing.		
B.1.89	Rate of Relay set aside Curb shall include the laying the set aside Curb, excavation, preparing the surface, compaction, preparation of foundation and haunching , backfilling, disposal of loose material as directed by the Engineer, as detailed in the specification and as shown in drawing.		
B.1.90	Rate of Relay set aside Interlocking Pedestrian Paver shall include the laying the set aside Interlocking Pedestrian Paver, preparing the surface, compaction, supply and laying of sand as directed by the Engineer, as detailed in the specification and as shown in drawing.		
B.1.91	The rates for in-situ concrete barriers, complete in place, shall include the PVC pipe as specified in drawings.		
B.1.92	Expansion Joints for concrete barriers are deemed to be included in the rate of barriers.		
B.1.93	The rates for the installation of galvanized metal beam guard rail shall include for treating the posts with bituminous paint for the length as stated in the specification.		
B.1.94	Rate for chain link fence shall include all excavation and backfilling or grading required, posts, concrete footing for the posts, setting posts, braces, tension wires, furnishing and installing chain link fencing materials, and all hardware and fittings, and all other work incidental to and in connection with the construction of the completed chain link fences as specified in specification and drawing.		
B.1.95	Rate for chain link fence gate shall include furnishing and installing chain link fence gate, and all hardware and fittings, and all other work incidental to and in connection with the construction of the completed chain link fences gate as specified in specification and drawing.		

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ITEM	ITEM DESCRIPTION		
	<p align="center">Supply and Install Posts and Foundation for Ground Mounted Guide Sign</p>		
B.1.96	<p>Rate for Supply and install Posts and Foundation for ground mounted guide signs of any type shall include excavation, compaction, backfilling and disposal of surplus excavated material to spoil heaps on designated area, concrete works for the foundation, formworks, reinforcement, post, clip and bolt assembly, all in accordance with specification and drawings.</p>		
B.1.97	<p>Supply and Install Posts and Foundation for Cantilever and Gantry Guide Sign</p>		
B.1.98	<p>Rate for Supply and install Posts and Foundation for cantilever and gantry guide signs of any type shall include excavation, compaction, backfilling and disposal of surplus excavated material to spoil heaps on designated area, all works required for the Cast in Drilled Hole (C.I.D.H) foundation, reinforcement, posts, clip and bolt assembly, walkway brackets, collapsible safety railing all in accordance with specification and drawings.</p>		
	<p>Tying to Existing Pavement</p>		
B.1.99	<p>Rate for Tying of new pavement with existing pavement (existing and new pavement of any thickness), transverse or longitudinal joints as per drawing shall include saw cutting and breakout existing pavement, vertical tack coat, milling and all other necessary preparation works.</p>		
	<p>Painting Curbs</p>		
B.1.100	<p>The rate for painting curb shall include preparation of the surface, supply of the paint of specified colour and material and application in two coats on exposed faces of concrete curb of any type as detailed in the Specification and shown on the drawing.</p>		
	<p>Bituminous Pavement Repairs</p>		
B.1.101	<p>Rate for repair of pothole shall include saw cutting the failed pavement, removing and disposing the cut pavement and loose unsuitable materials, excavation of base material if required, preparation of sub grade, filling the excavation with sand-gravel, compaction, applying bituminous emulsion coat, wearing course, leveling the patch and making corrections and other works as mentioned in specification.</p>		
B.1.102	<p>Rate for Repair of Failed pavement shall include saw cutting the failed pavement, removing and disposing the cut pavement and loose unsuitable materials, excavating the underlying soil, preparation of sub grade, filling the excavation with sand-gravel , compaction, applying bituminous emulsion coat, wearing course, leveling the patch and making corrections and other works as mentioned in specification.</p>		
B.1.103	<p>Rate for repair of depressed pavement shall include milling the depressed area, disposing the milling, cleaning the surface, applying bituminous emulsion, wearing course, leveling the patch and making corrections and other works as mentioned in specification.</p>		

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ITEM	ITEM DESCRIPTION		
B.1.104	Rate for Repair of Utility Cut shall include saw cutting the failed pavement, removing and disposing the cut pavement and loose unsuitable materials, excavating the underlying soil if required and filling with sand gravel, preparation of sub grade, compaction, cleaning the surface, applying bituminous emulsion coat, wearing course, leveling the patch and making corrections and other works as mentioned in specification.		
B.1.105	Rate for sealing cracks in asphaltic concrete pavement shall include cleaning the surface, compressed air cleaning, filling cracks with dry coarse sand and pouring diluted emulsion or bituminous emulsion over the sand, scraping off the excess asphalt, sprinkling sand over the sealed crack and other works as mentioned in specification.		
B.1.106	Rate for Repairing existing Kerbs and Barriers shall include chipping or breaking the area to be repaired, cleaning the surface, repairing the curb with cement mortar, complete to the approval of engineer and as specified in specification.		
B.1.107	Rate for adjust existing drainage structures and service facilities to new pavement elevations shall include adjustment of any existing drainage structures, utility or service vaults, valve boxes, joining boxes and the like to the new finished grade or level in roadway pavement or in sidewalk areas including removal of frames and covers, placing or removal of minor amounts of concrete and reinforcement as necessary to raise or lower the structures to match new pavement levels and slope, refixing the frame and covers and all associated works as specified in the specification and shown on drawings and as directed by the Engineer or as required by the respective Utility Agency.		
B.1.108	Rate for removal of existing asphalt pavement shall include breaking out asphalt, disposal of removed asphalt to designate stock pile area and other materials cart to tip.		
B.1.109	Rate for saw cutting shall include saw cutting of existing asphalt, removal of asphalt material, cart away to tip and all other incidental works required to complete the work as detailed in the specification and drawing and as directed by the Engineer.		
B.1.110	The rate for removal of existing pavement markings and markers shall include removal of pavement markings of any size or dimensions and markers of any type and carting to tip to the approved dump site as directed by the Engineer.		
<u>Part 6: Bridge Works & Part 8: Retaining Wall</u>			
B.1.111	The rates for concrete shall include: formwork, quality control, test cubes, forming concrete to slopes and falls, additional concrete used in excess of net requirements, forming construction joints and associated water stops, injection hoses, protection and curing of the concrete.		
B.1.112	The rate for expansion and contraction joints shall include for the necessary formwork and for the supply and fixing of all necessary material to form the joints as shown on the drawings.		

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ITEM	ITEM DESCRIPTION			
B.1.113	The rates for reinforcement shall include for epoxy coating (if specified) and all necessary supports, laps and spacers. The weights of reinforcing bars include for all hooked or bent ends.			
B.1.114	Bar reinforcement will be measured from approved as-built bending schedule.			
B.1.115	The rate for bearings shall include the cost of all equipment, material and labor required for the complete installation of the bearings.			
B.1.116	The rate for prestressing tendons shall include the cost of the prestressing strands, steel ducts, anchorage system, grouting vents, local zone reinforcement and all other accessories necessary for the complete installation of the prestressing tendons. The rates shall also include for all labour and tools required for the works. As detailed design for prestressing tendons are not available at the tender stage, payments shall be made pro-rata to the weight of prestressing strands, for relevant items for prestressing, required as per the design.			
B.1.117	The payment for the number of jacking of prestressing tendons shall be deemed as full compensation for the prestressing operation regardless to the actual post tensioning force, or number of strands.			
B.1.118	The rates for coating system to exposed concrete surfaces shall include for the cost of painting the piers in two different colours.			
B.1.119	The rates for coating system to concrete surfaces shall include for all the preparatory works prior to application of the coating system. The rate for coating system to the surfaces inside the box girders shall also include for in-situ finishing of the top surface of bottom slab concrete.			
B.1.120	Blinding concrete incorporating structures shall be Sulphate Resisting Cement (SRC) type only.			
B.1.121	The rates for bored cast-in-place pile shall include for boring in any material and all necessary operations for working below the water table for the support of the bore. Irrespective of the method of casting, the commencing surface of the depth bored shall be taken as the cut off level, expressly required. Any additional depth bored shall be considered to be attributable to the Contractor's working method and shall not be payable. Also, the rate of depth bores shall be deemed to include the cost of formwork and any other work associated with casting a part of the pile as freestanding column.			
B.1.122	The rates shall include for the use of temporary casings for the pile and the oversized hole according to the approved method statement.			
B.1.123	The rates for boring shall, unless otherwise stated, include for disposal of water and bentonite suspension as displaced by concrete.			
B.1.124	The commencing surface level to be agreed with Engineer on site for each location.			
B.1.125	The rates for cutting off surplus length also includes disposal of material arising to tip.			

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ITEM	ITEM DESCRIPTION		
B.1.126	The rates for concreted length of pile shall be measured from the cut off level, expressly required, to the toe level expressly required, along the axes.		
B.1.127	The rates of vertical pile load test for non-working piles shall include for the cost of pile and all related works.		
B.1.128	<p>Bearing Cover Plate</p> <p>Rate for Bearing cover plate shall include supply and installation of 3mm powder coated aluminum ring cover plate 0.4 - 0.6m wide including stainless steel fixing plates, hinges and bolts as shown in drawing and as described in the specification.</p>		
B.1.129	<p>Subsoil Drainage</p> <p>Rate for Course aggregate/crushed stone deposit shall include Course aggregate/ crushed stone deposit ,maximum 1.0m³ per meter surrounded by Geotextile Fabric behind abutments and wing walls including cast in place PVC weep holes or drain not exceeding 50mm dia. as shown on the drawings and as described in the specification.</p>		
B.1.130	<p>Under Bridge Lighting / Culvert Lighting</p> <p>Junction Box</p> <p>Rate for metallic junction box shall include furnish and install junction box of various size and type, weather proof recessed in concrete including circuit breakers, combed bus bars, earth leakage relay, locknuts, bushings, screws, terminal boards and provision for properly terminating the wiring cable inside the box as indicated on the drawing and as described in the specification.</p>		
B.1.131	<p>PVC Conduits</p> <p>Rate for PVC conduits shall include furnish and install conduit of various sizes including clamps, fittings, boxes and similar items as indicated on the drawing and as described in the specification.</p>		
B.1.132	<p>PVC Cable</p> <p>Rate for 2.5mm², 2 core and earth, PVC cable shall include furnish and install flexible, flat or round, 2 core and earth, minimum 2.5 mm² conductor size, PVC insulated and PVC sheathed heat resistant power cable from junction box to luminaire, as indicated on the drawing and as described in the specification.</p>		
B.1.133	<p>PVC Wiring Cables</p> <p>Rate for PVC wiring cable shall include furnish and install Low Voltage (LV) PVC wiring cable of various size as indicated on the drawing and as described in the specification.</p>		
B.1.134	<p>Low Voltage Cable</p> <p>Rate for Low Voltage cable shall include furnish and install Low Voltage (LV) - PVC, XLPE armored cable of various size and type with various core as indicated on the drawing and as described in the specification.</p>		

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ITEM	ITEM DESCRIPTION			
	LED Luminaires			
B.1.135	Rate for LED luminaires shall include furnish and install LED luminaires of the type including lantern housing, optical assembly, ballast assembly, wiring, all fixing arrangements and all accessories as required to make LED luminaire functional as shown on the drawing and as described in the specification.			
	LED Decorative Bollard			
B.1.136	Rate for LED Decorative bollard shall include furnish and install LED decorative bollard of the type including lantern housing, optical assembly, ballast assembly, wiring, all fixing arrangements and all accessories as required to make LED decorative bollard functional, as indicated in the drawing and as described in the specification.			
	<u>Part 7: Tunnel/Underpass Works & Part 17: Culverts</u>			
B.1.137	Construction joints and associated water stops and formwork are not measured separately and are deemed to be included in the rates for insitu concrete works.			
B.1.138	Contrary to CESMM4, expansion joints of the underpass works are measured in linear metres. The rates for expansion joints are deemed to include the cost of associated formwork to stop ends.			
B.1.139	Reinforcement will be measured from approved shop drawings for reinforcement.			
B.1.140	The rates for concrete shall include: formwork, quality control, test cubes, forming concrete to slopes and falls, additional concrete used in excess of net requirements, forming construction joints and associated water stops, injection hoses, protection and curing of the concrete.			
B.1.141	Blinding concrete incorporating structures shall be Sulphate Resisting Cement (SRC) type only.			
B.1.142	The rates for bored cast-in-place pile shall include for boring in any material and all necessary operations for working below the water table for the support of the bore. Irrespective of the method of casting, the commencing surface of the depth bored shall be taken as the cut off level, expressly required. Any additional depth bored shall be considered to be attributable to the Contractor's working method and shall not be payable. Also, the rate of depth bores shall be deemed to include the cost of formwork and any other work associated with casting a part of the pile as freestanding column.			
B.1.143	The rates shall be for the use of temporary casings for the pile and the oversized hole according to the approved method statement.			
B.1.144	The rates for boring shall, unless otherwise stated, include for disposal of water and bentonite suspension as displaced by concrete.			
B.1.145	The commencing surface level to be agreed with Engineer on site for each location.			
B.1.146	The rates for cutting off surplus length also includes disposal of material arising to tip.			

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ITEM	ITEM DESCRIPTION		
B.1.147	The rate for concreted length of pile shall be measured from the cut off level, expressly required, to the toe level expressly required, along the axes.		
B.1.148	The rates for vertical pile load test for non-working piles shall include for the cost of pile and all related works.		
B.1.149	The rates for grouted stone pitching (rip-rap) shall include for supply and placing of mass concrete, expansion joints and curing, cement sand mortar, its curing, cutting wastage of stone etc. complete in all respect as per drawings or as directed by the Engineer.		
	<p>The rates for the supply of ceramic tiles shall include but not limited to the following:</p> <ul style="list-style-type: none"> a) Preparation of detailed shop drawings for the approval of the Engineer. b) Storage, transportation cost and protection involved in site locations. c) Special plant and tools, factory cuttings etc. d) Wastage surplus cut tiles etc. relating to supply of ceramic tiles. e) Any other costs to comply with the specifications to complete the works relevant to supply of ceramic tiles. <p>The rates for fixing of ceramic tiles shall include but not limited to the following:</p> <ul style="list-style-type: none"> a) Preparation of detailed shop drawings for the approval of the Engineer. b) Sample installations. c) Provision of all materials required to install the ceramic tiles such as adhesive, grout, spacers, etc. d) Any other costs to comply with the specifications to complete the works relevant to fixing of ceramic tiles. e) Wastage, surplus cut tiles etc. relating to fixing of ceramic tiles at site. 		
B.1.150	The area measured for payments of BOQ item, "supply of ceramic tiles" shall be the area measured for "fixing of ceramic tiles" as per CESMM4.		
B.1.151	The rate for supply of spare tiles to the Department store shall include for all related costs involved in this regard.		
B.1.152	Lanterns and fixing accessories for the Tunnel/Underpass lighting works shall be re-measured in accordance with the approved design.		
B.1.153	Rate for waterproofing application in Tunnel/Underpass shall include all cost required for applying waterproofing in the concrete.		
B.1.154	<p>Fire Resistant Low Smoke and Fume LV Cable</p> <p>Rate for fire resistant low smoke and fume LV cable shall include furnish and install Low Voltage (LV) - Fire resistant, low smoke and fume , modular, XLPE armored cable of various size and core as indicated on the drawing and as described in the specification.</p>		
B.1.155	<p>Fire Resistant LV Cable</p> <p>Rate for fire resistant low voltage cable shall include furnish and install Low Voltage (LV) - fire resistant, XLPE armored cable of various size and core, as indicated on the drawing and as described in the specification.</p>		

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ITEM	ITEM DESCRIPTION		
B.1.156	<p>Joint Box for Fire Resistant LV Cable</p> <p>Rate for Joint Box shall include furnish and install Joint box of the type specified including corrosion resistant casing, overall sealing, armor clamps, earth and armor continuity bonding, connecting ferrules, core insulation tubing and performing all tests as described in the specification and as shown in the drawings.</p>		
B.1.157	<p>Cable Tray</p> <p>Rate for Cable Tray shall include furnish and install stainless steel heavy duty cable tray including supports and bonding of tray system to the main earthing system, as indicated on the drawing and as described in the specification.</p>		
B.1.158	<p>Cable Trunking</p> <p>Rate for Cable Trunking shall include furnish and install stainless steel cable trunking including removable access plate, draw wires, fit pin racks, retaining straps ,supports and all accessories, as indicated on the drawing and as described in the specification.</p>		
B.1.159	<p>Switches, Socket Outlets, Isolator and Push button</p> <p>Rate for Switches, Socket Outlets, Isolator and Push button shall include furnish and install Switches, Socket Outlets, Isolator and Push button of various types and size specified in the Bill of Quantities with all necessary fittings required for fixing, as indicated on the drawing and as described in the specification.</p>		
B.1.160	<p>Tunnel Luminaires</p> <p>Rate for Tunnel luminaires shall include furnish and install luminaires of various type and size at the locations specified including lantern housing, optical assembly, ballast assembly, ignitors, capacitors, wiring, all fixing arrangements and all accessories as required to make tunnel luminaire functional, as shown in the drawing and as described in the specification.</p>		
B.1.161	<p>Tunnel Lightmeter</p> <p>Rate for Tunnel Lightmeter shall include furnish and install tunnel lightmeter including photocell, astronomical Time Clock and all mounting accessories, as shown on the drawing and as described in the specification.</p>		
B.1.162	<p>Lighting Control Unit</p> <p>Rate for Lighting Control Unit shall include furnish and install Lighting Control Unit including PVC conduits, junction boxes and accessories, wiring cables, waterproof enclosures and all other accessories used for the control and power wiring for control system equipments, as indicated on the drawing and as described in the specification.</p>		

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ITEM	ITEM DESCRIPTION			
B.1.163	<p>Distribution Board/Power Controllers for Tunnel lighting</p> <p>Rate for Distribution board/Power Controllers shall include furnish and install Distribution board/Power Controllers of various type complete with all accessories, circuit breakers, voltage regulators, cable terminations, enclosures and all associated works required to provide the unit complete and functional as indicated on the drawing and as described in the specification.</p>			
B.1.164	<p>Sub Main Distribution Board</p> <p>Rate for Sub Main Distribution Board shall include furnish and install Sub Main Distribution Board of various type, complete with all accessories, circuit breakers, cable terminations, enclosures and all associated works required to provide the unit complete and functional as indicated on the drawing and as described in the specification.</p>			
B.1.165	<p>Main Distribution Board</p> <p>Rate for Main Distribution Board shall include furnish and install Main Distribution board of various type complete with all accessories, air circuit breaker, bus bar system, circuit and connections, current transformers, measuring instruments, moulded case circuit breakers, central monitoring unit, cable terminations, energy meter, enclosures and all associated works required to provide the unit complete and functional as indicated on the drawing and as described in the specification.</p>			
B.1.166	<p>Final Distribution Board</p> <p>Rate for Final Distribution Board shall include furnish and install Final Distribution Board of various type complete with all accessories, MCB distribution board type, circuit breakers, earth leakage relays, bus bar system, circuit and connections, enclosures and all associated works required to provide the unit complete and functional as indicated on the drawing and as described in the specification</p>			
B.1.167	<p>Auto Transfer Switch Panel</p> <p>Rate for Auto transfer switch panel shall include furnish and install automatic transformer switch panel of type and size including free standing enclosure, bus bar system, switching devices such as ACB/MCCB, metering equipments, all necessary current transformers, thermostatically controlled panel heater, all items complete with all accessories and all materials and works for the complete installation and energizing of the respective units as indicated on the drawing and as specified in the specification.</p>			
B.1.168	<p>Power Distribution Transformer</p> <p>Rate for Power Distribution Transformer shall include furnish and install Power Distribution Transformer of various type complete with all accessories and any other charges to be paid to ADWEA for commissioning of distribution transformers and performing all work for the complete supply, installation, testing and commissioning as required to provide the specified system functional as indicated in the drawing and as described in the specification.</p>			

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ITEM	ITEM DESCRIPTION			
B.1.169	<p>Transformer Ring Main (TRM)</p> <p>Rate for TRM shall include furnish and install TRM of the type as specified including battery and charger, Distribution Management System (DMS) cubicle complete with all accessories, testing, any coordination work for DMS interface requirements and commissioning as required to provide the specified system functional, as indicated in the drawing and as described in the specification.</p>			
B.1.170	<p>11 KV Switch Gear</p> <p>Rate for 11 KV Switch Gear shall include supply and install 11 KV Switch Gear of the type as specified including battery and charger, DMS cubicle complete with all accessories, testing, any coordination work for DMS interface requirements and commissioning as required to provide the specified system functional, as indicated in the drawing and as described in the specification.</p>			
B.1.171	<p>Diesel Generator Set</p> <p>Rate for Diesel Generator Set shall include supply and install Diesel Generator Set of the size and type, including diesel engine, generator, battery, battery charger, day fuel tank, exhaust system, control panel with necessary circuit breaker, wiring, complete and testing and commissioning as required to provide the specified system functional, as indicated in the drawing and as described in the specification.</p>			
B.1.172	<p>Earthing System for Transformers, LV Panels, HV Panels and External Earthing System for Substations</p> <p>Rate for Earthing System shall include earth bars and earthing equipment for the grounding system, main earth electrodes, grounding leads, natural earth connections, all connections to the ground tape, joints, insulated conductor complete and provision for bonding all the conducting parts to the grounding system, as indicated in the drawing and as described in the specification.</p>			
B.1.173	<p>Capacitor Bank</p> <p>Rate for Capacitor Bank Panel shall include furnish and install Capacitor Bank Panel of the type complete with all accessories, cable terminations, instrumentation, mounting facilities and all associated works as indicated in the drawing and as described in the specification and as required by ADDC, to provide the unit complete and functional.</p>			
B.1.174	<p>Uninterruptible Power Supply</p> <p>Rate for Uninterruptible Power Supply shall include supply and install Uninterruptible Power Supply of the type complete including maintenance free, sealed, lead acid battery, automatic battery charger, electronic controls, meter panel, DC to AC power inverter, solid state driven transfer switch, power-module-electronic cabinet, circuit breaker compartment containing input and output breakers and all accessories or devices as necessary for completion and proper operation of the system as indicated in the drawing and as described in the specification.</p>			

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ITEM	ITEM DESCRIPTION		
B.1.175	<p>Pre - Commissioning Tests for</p> <p>Rate for Pre - Commissioning Tests for all Equipments in 11KV Ring Main Substations shall include cost of performing the Pre - Commissioning Tests for all Equipments in 11KV Ring Main Substations as described in the specification and as regulated by ADDC.</p>		
B.1.176	<p>Fire Alarm System</p> <p>Fire Alarm System shall include all hardware and software, power supplies, cables, conduit, ducting, concrete surround, cable trays, identification, cable terminations and incidental work, in compliance with local regulations, testing and commissioning and complete as specified in the specifications and as shown on the drawings.</p>		
B.1.177	<p>Items of Fire Alarm System</p> <p>Rate for various items of Fire Alarm System shall include supply and installation of the various items of Fire Alarm System of the type, size and at the location as specified in Bill of Quantity including all associated incidental work, complete as required to provide a functional fire alarm as shown on the drawings and as described in the specification.</p>		
B.1.178	<p>Spare Parts of Fire Alarm</p> <p>Rate for spare parts of Fire Alarm System shall include furnishing spare parts of Fire Alarm System of the type including the performance of all the work required to fabricate, finish, protect and place in storage all spare units as specified and described in the specification and as shown on the drawings.</p>		
B.1.179	<p>Telephone System</p> <p>Telephone system shall include conduit, wiring, terminal boards and accessories, testing and commissioning as specified and detailed on the drawing, and as per ETISALAT regulation.</p>		
B.1.180	<p>Telephone Sets</p> <p>Rate for items of Telephone sets shall include supply and installation of items of Telephone sets complete specified in the Bill of Quantity and as shown on the drawings and as described in the specification.</p>		
B.1.181	<p>Cable Works for Telephone System</p> <p>Rate for Cable works for telephone system shall include supply and installation of conduit, wires/cables, including supports, fixing, tee-connection, joint-boxes, as required and all accessories complete as shown on the drawings and as described in the specification.</p>		
B.1.182	<p>Conduit and Accessories</p> <p>Rate for Conduit and accessories shall include supply and installation of conduit including supports, fixing, tee-connection, joint-boxes, as required and all accessories complete as shown on the drawings and as described in the specification.</p>		

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ITEM	ITEM DESCRIPTION			
B.1.183	<p>PABX</p> <p>Rate for items of PABX shall include supply and installation of PABX complete as described in the specification and as shown on drawings.</p>			
B.1.184	<p>Telephone Terminal Board, Distribution Frame and Distribution Board</p> <p>Rate for Telephone terminal board, Distribution frame and Distribution board shall include supply and installation of Telephone terminal board, Distribution frame of the type and Distribution board complete as described in the specification and as shown on the drawings.</p>			
B.1.185	<p>Etisalat Service Connection Charges</p> <p>Rate for Etisalat Service Connection Charges shall include payment of all charges to Etisalat for effecting the Telephone service connection including the cost of instruments and all costs required for the service connection works and as described in the specification.</p>			
B.1.186	<p>Public Address System</p> <p>Public Address System shall include speakers, master console, amplifiers, cables, etc. all testing and commissioning as shown on the drawing and as described in the specification.</p>			
B.1.187	<p>Loud Speaker</p> <p>Rate for items of loud speaker shall include supply and installation of loud speaker of the type including tapped transformers and volume control for installation, complete as shown on drawings and as described in the specification.</p>			
B.1.188	<p>Cable Works for Public Address System</p> <p>Rate for Cable works for Public Address System shall include supply and installation of conduit, wires/cables, including supports, fixing, tee-connection, joint-boxes, as required and all accessories complete as shown on drawings and as described in the specification.</p>			
B.1.189	<p>Radio Antenna System</p> <p>Collect from Etisalat and lay (according to Etisalat requirements and specification) telephone and antenna cables (by Etisalat approved Contractor) in underground trench, in concrete trench or through conduit in walls including all protection and support works, trays, etc. as required and as directed by the Engineer, to the approval of Etisalat, as shown on drawings.</p>			
B.1.190	<p>Telephone and Feeder Cable</p> <p>Rate for Telephone and Feeder cable shall include supply and installation of Telephone and feeder cable of the type and at the location as specified complete as shown on the drawings and as described in the specification.</p>			

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ITEM	ITEM DESCRIPTION		
B.1.191	<p>Power Distribution Board</p> <p>Rate for Power Distribution board shall include supply, install, testing and commissioning Power Distribution Board for Etisalat RBS Base Station complete as shown on the drawings and as described in the specification.</p>		
B.1.192	<p>Installation of Free Issue RBS</p> <p>Rate for Installation of free issue RBS equipment and Power Distribution Board shall include the installation at the location specified and as shown on the drawings and as described in the specification.</p>		
B.1.193	<p>Power Supply to RBS</p> <p>Rate for Power supply to RBS equipment shall include power supply connection from the station DB to RBS equipment including cable works and terminations complete as shown on the drawings and as described in the specification.</p>		
B.1.194	<p>Earthing to RBS Equipment</p> <p>Rate for Earthing to RBS equipment shall include earthing connection of the size from the station earth bar to RBS equipment complete as shown on the drawings and as described in the specification.</p>		
B.1.195	<p>Splitters, SS316L Supports, Spacers, SS316L Junction Boxes, Repeaters, End Resistors, Cable Glands and all Accessories</p> <p>Rate shall include the supply and install Splitters, SS316L supports, spacers, SS316L Junction Boxes, repeaters, end resistors, cable glands and all accessories complete as required to make the Tetra System fully functional as shown on the drawings and as described in the specification.</p>		
B.1.196	<p>Spare Parts of Radio Antenna System</p> <p>Rate for spare parts of Radio Antenna System shall include furnishing spare parts of Radio Antenna System including the performance of all the work required to fabricate, finish, protect and place in storage all spare units as described in the specification and as shown on the drawings.</p>		
B.1.197	<p>10M High Free Standing Structure</p> <p>Rate for 10m high free standing structure shall include furnish and install 10m high free standing structure for Radio (Tetra) system antenna complete as per specification and drawings.</p>		
B.1.198	<p>Primary Elements Instrumentation</p> <p>Instrumentation and Auxiliary Equipment</p> <p>Rate for Instrumentation and Auxiliary equipment shall include supply and installation of the instrumentation and auxiliary equipment of the type specified including concrete bases, pipe tappings and fixtures, support posts, all fixing materials, power supply, cabling and termination and all associated incidental work, complete and as shown on the drawings and described in the specification including 90 days performance verification tests.</p>		

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ITEM	ITEM DESCRIPTION		
B.1.199	<p>Spare Parts of CCTV, Access Control and CO Monitoring System</p> <p>Rate for spare parts of CCTV, Access Control and CO Monitoring System shall include furnishing spare parts of CCTV, Access Control and CO Monitoring System including the performance of all the work required to fabricate, finish, protect and place in storage all spare units as specified and as described in the specification and as shown on the drawings.</p>		
B.1.200	<p>Lane Use Signal and VMS system</p> <p>Lane Use Signal and VMS system shall include supply and installation of all Hardware and Software, power supplies, cables, conduit, ducting, concrete surround, cable trays, identification, cable terminations, 90 days operation and incidental work, in compliance with local regulations complete as specified in the specification and as shown on the drawing.</p>		
B.1.201	<p>Variable Message Sign Boards</p> <p>Rate for Variable Message Sign Boards shall include supply and installation of Variable Message Sign Boards of the type with controllers, dimming systems, photo sensors, and associated enclosures (Controller enclosure SS316L), Fiber optic Transceivers, Fiber optic and Power cables, communication modules, SS316L conduits, etc. complete as specified in the specification and as shown on the drawings.</p>		
B.1.202	<p>Full Matrix LED Type Fixed Message "Tunnel Closed/Open" Signs</p> <p>Rate for Full Matrix LED type fixed message "Tunnel Closed/Open" signs shall include supply and installation of Full Matrix LED type fixed message "Tunnel Closed/Open" signs with all associated duct work and cabling, support posts, concrete foundations, etc. complete as shown on the drawings and as described in the specification.</p>		
B.1.203	<p>Full Matrix LED Based Lane Use Signals</p> <p>Rate for Full Matrix LED Based Lane use signals shall include supply and installation of Full Matrix LED Based Lane use signals of the type complete with controller, Power and Fiber Optic cables, Transceivers, SS316L Enclosures, SS316L conduits, including bi-directional LUS showing multicolor (Red Cross, Green Arrow, Yellow Diagonal Arrows) displays etc. complete as described in the specification and as shown on the drawings.</p>		
B.1.204	<p>Spare Parts of VMS and LUS Systems</p> <p>Rate for spare parts of VMS and LUS Systems shall include furnishing spare parts of VMS and LUS Systems including the performance of all the work required to fabricate, finish, protect and place in storage all spare units as specified, as described in the specification and as shown on drawings.</p>		

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ITEM	ITEM DESCRIPTION		
B.1.205	<p>Provision of items for the Telephone Works, Public Address System, Radio Antenna System and Surveillance and Controls</p> <p>Rate for Provision of items for the Telephone works, Public Address system, Radio Antenna system and Surveillance and Controls shall include furnish, install, prepare the items for the Telephone works, Public Address system, Radio Antenna system and Surveillance and Controls of the type specified in Bill of Quantity complete as described in the specification and as shown on the drawings.</p>		
B.1.206	<p>Fire Protection Equipment</p> <p>Rate for various items of Fire Protection Equipment shall include supply and installation of the items specified including support framework, spare parts, tools, plant, etc. including the manufacturer's commissioning and one year after sale guarantee service all complete as per NFPA regulations as described in the specification and as shown on the drawings.</p>		
B.1.207	<p>Tunnel Ventilation Equipment</p> <p>Rate for various items of Tunnel Ventilation Equipment shall include supply and installation of the items specified including support framework, spare parts, tools, plant, etc. including the manufacturer's commissioning and one year after sale guarantee service all complete as described in the specification and as shown on drawings.</p>		
B.1.208	<p>Provision of items for Fire Protection Equipment, Tunnel Ventilation</p> <p>Rate for Provision of items for the Fire Protection Equipment, Tunnel Ventilation Equipment shall include furnish, install, prepare the items for the Fire Protection Equipment, Tunnel Ventilation Equipment of the type specified in Bill of Quantity complete as described in the specification and as shown in the drawings.</p>		
B.1.209	<p>Lift Station Cover and Frame</p> <p>Rate for Cover and frame shall include supply and installation of cover and frame of the type and size specified as described in the specification and as shown on the drawings.</p>		
B.1.210	<p>Safety Handrail</p> <p>Rate for Safety Handrail shall include supply and installation of Safety Handrail of the type at the location as specified, as described in the specification and as shown on the drawings.</p>		
B.1.211	<p>Utility Room Precast Concrete Parapet</p> <p>Rate for precast concrete parapet shall include formwork, concrete, reinforcements and all other associated works required for casting of precast elements, supply and fixing.</p>		

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ITEM	ITEM DESCRIPTION		
B.1.212	<p>Aluminium Chequered Plates</p> <p>Rate for Aluminium chequered plate shall include supply and installation of removable cover, aluminium chequered plate including all assemblies complete as described in the specification and as shown on the drawing.</p>		
B.1.213	<p>Allow for Electrical and Mechanical works</p> <p>Rate shall include all works necessary to complete the Mechanical and Electrical works for Lift Station, Storm Water Reservoir, Generator Room and Utility Rooms including interface works and associated works, in accordance with the specifications and drawings.</p>		
B.1.214	<p><u>Part 8: Retaining Structures</u></p> <p>Mechanically Stabilized Earth Wall</p> <p>Rate for Mechanically Stabilized Earth (MSE) wall shall include furnish and install Mechanically Stabilized Earth (MSE) wall panels including geo synthetic reinforcement with continuous mechanical connectors, tie bars, joint filler and sealant, painting and all necessary works to complete, as per the specification and as shown on the drawings.</p>		
B.1.215	<p><u>Part 9: Stormwater Drainage Network</u></p> <p>Rate for Removal of existing storm water drainage structures shall include all dewatering if required, excavation, breaking, removal, disposal, backfilling of voids and restoration back to existing, removal of existing cover and frame, cleaning and salvage to store, temporary protection of existing utility lines as detailed in Specification and as directed by the Engineer.</p>		
B.1.216	<p>Rate for Removal of cover and frame of existing storm water drainage structures for the replacement of new cover and frame shall include breaking out concrete, removal of existing cover and frame, cleaning and salvage to store, disposal of loose material, as detailed in specification and as directed by the Engineer. New cover and frame shall be paid separately.</p>		
B.1.217	<p>Rate for new cover and frame of storm water drainage structures for the replacement of existing shall include supply and install cover and frame for the type of structure specified, breaking out concrete, disposal of loose material, repairing the concrete as detailed in specification and as directed by the Engineer.</p>		
B.1.218	<p>Outfallstructure</p> <p>Rate shall include excavation; dewatering as required, surface preparation, formwork, concrete and reinforcement, backfilling, stone pitching, concrete blinding, grating / duck bill check valve, waterproofing, protective coating, GRP Ladder and lining, all metal works, Chain link fence and gates, Pumps, Motors, Piping and Controls, Flapgates, associated equipments and accessories, all mechanical works, and all other related works required for the construction of Outfallstructure.</p>		

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ITEM	ITEM DESCRIPTION		
B.1.219	<p>Pumpstructure</p> <p>Rate shall include excavation, dewatering as required, surfaces preparation, formwork, concrete and reinforcement, backfilling, concrete blinding, waterproofing, protective coating, GRP Ladder and lining, all metal works, Trash racks, Pumps, Motors, Piping and Controls associated equipments and accessories, all mechanical works , electrical room and foundation, all elctrical and ligting works, external wiring between structure and electrical room, connection to ADWEA power supply and all other related works for the construction of pump structure.</p>		
B.1.220	<p>Headwallstructure</p> <p>Rate shall include excavation, dewatering as required, surfaces preparation, formwork, concrete and reinforcement, backfilling, stone pitching, concrete blinding, waterproofing, protective coating, GRP Ladder and lining, all metal works, Chain link fence and gates, Pumps, Motors, Piping and Controls, Flapgates, associated equipments and accessories, all mechanical works , and all other related works for the construction of Headwall structure.</p>		
B.1.221	<p><u>Part 13: Electrical Works, Part: 14 Street Lighting Works</u></p> <p>Removal of Existing Electrical Cables</p> <p>Rate for Removal of existing electrical cables shall include carefully remove existing Cables and Surrounds and dispose to tip as required ,deliver to designated area including excavation, breaking out cable protection, backfilling and reinstatement of existing surfaces.</p>		
B.1.222	<p>Removal of Existing Cable Covering Tiles</p> <p>Rate for Removal of existing cable covering tiles shall include carefully Remove and Salvage existing cable covering tiles and deliver to designated area including excavation, backfilling and reinstatement of existing surfaces.</p>		
B.1.223	<p>Supply and Install Cable</p> <p>Rate for Supply and install cable shall include supply, transport and lay cables of the type and size as specified in the Bill of Quantity including all connections and accessories: draw through road crossing ducts / substation entry ducts / service entry ducts as applicable; supports; as described in the specification and as shown on the drawings.</p>		
B.1.224	<p>Supply and Install Cable Joint</p> <p>Rate for Supply and install cable joints shall include supply and install cable joints for the cables of the type and size as specified in the Bill of Quantity including corrosion resistant casing, overall sealing, armor clamps, earth and armor continuity bonding, connecting ferrules, core insulation tubing and for performing all the tests as described in the specification and shown on the drawings.</p>		

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ITEM	ITEM DESCRIPTION			
B.1.225	<p>Supply and Install Cable Termination</p> <p>Rate for Supply and install cable termination shall include supply and install cable termination for the cables of the type and size as specified in the Bill of Quantity including lugs, stress control tubing, anti-tracking tube, cable break out, sealing boot ,earthing and miscellaneous sundry items such as binding wire, earthing braids, soldering wire, solder ,sealant, adhesive tape, sealing tapes, cleaning pad and all other necessary accessories required to complete the termination as described in the specification and as shown on the drawings.</p>			
B.1.226	<p>Trench Excavation and Backfill for Laying Cables</p> <p>Rate for Trench excavation and backfill shall include excavate trench to the depth and width as specified in Bill of Quantity, backfill with selected excavated material, disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department.</p>			
B.1.227	<p>Radial/Loop pit</p> <p>Rate for Radial/Loop pit shall include excavate for pit to the size and depth specified, backfill with selected / excavated material; disposal of surplus excavated material to spoil heaps on designated areas including warning tape, concrete tiles, polyurethane plastic sheet, and cable route marker as shown on the drawing and as described on the specification.</p>			
B.1.228	<p>FOC Jointing Chamber</p> <p>Rate for FOC Jointing Chamber shall include excavation, formwork, reinforcement, concreting for the construction of chamber of the size specified, heavy duty ductile iron cover and frame, jointing box, cable rack, blinding concrete, bitumen paint, backfilling disposal of surplus excavated material to spoil heaps on designated areas and all other works as per the specification and as shown on the drawing.</p>			
B.1.229	<p>Ancillaries</p> <p>Rate for ancillaries shall include supply and install ancillaries of the items specified including all necessary work required to complete the work as per the specification and as shown on the drawing.</p>			
B.1.230	<p>Electrical Service Chamber</p> <p>Rate for Electrical Service Chamber shall include excavation, formwork, reinforcement, concreting for the construction of chamber of the size specified, heavy duty ductile iron cover and frame, jointing box, cable rack, blinding concrete, bitumen paint, backfilling, disposal of surplus excavated material to spoil heaps on designated areas and all other works as per the specification and as shown on the drawing.</p>			

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ITEM	ITEM DESCRIPTION		
B.1.231	<p>Removal of Street Lighting Pole</p> <p>Rate for Removal of street lighting pole shall include carefully remove existing lighting column, light fittings, foundations, dismantle completely and set aside in Contractor's enclosed store for reuse/return, including disposal of foundations to approved tip, cable disconnections and backfilling and as described in the specification and as shown on the drawing.</p>		
B.1.232	<p>Supply and Install Foundation for Street Lighting Pole, Lighting Control Cabinet, Feeder Pillar, Service Turret and Metering Cabinet</p> <p>Rate for foundation for Street Lighting Pole, Lighting Control Cabinet, Feeder Pillar, Service Turret and Metering Cabinet shall include excavation, backfilling, compaction, formwork, reinforcement, concrete, holding down bolts with 12mm rebar link, protection of holding down bolts, nuts and washers with denso tape, (before casting and after erection), greased filled PVC caps for 25m mast, bitumen paint etc. and all other necessary work to complete the foundation as described in specification and as detailed on the drawing.</p>		
B.1.233	<p>Supply and Install Street Lighting Pole</p> <p>Rate for Street lighting pole shall include supply and install Street lighting pole of the height with lantern of the type specified complete including light pole shaft, base plate, lantern, ballast, removable enclosure plate, earthing, painting and numbering, appurtenances and all accessories and incidentals for the complete installation and energizing the light pole and as described in the specification and as detailed on the drawing.</p>		
B.1.234	<p>Supply and Install Low Voltage Feeder Pillar, Service Turret</p> <p>Rate for Low Voltage Feeder Pillar and Service Turret shall include supply and install LV Feeder Pillar and Service Turret of the type specified complete with cable terminations, appurtenances and all accessories and incidentals for the complete installation and energizing the Feeder Pillar and Service Turret and as described in the specification and as detailed on the drawing.</p>		
B.1.235	<p>Supply and Install Lighting Control Cabinet</p> <p>Rate for Lighting Control Cabinet shall include supply and install Lighting Control Cabinet complete with all testing, appurtenances and all accessories and incidentals for the complete installation and energizing the Lighting Control Cabinet and as described in the specification and as detailed on the drawing.</p>		
B.1.236	<p>Supply and Install Warning Tape</p> <p>Rate for Warning tape shall include supply and install Warning tape of width specified and as described in the specification and as shown on the drawing.</p>		

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B.1.237	<p>Supply and Install Route Marker</p> <p>Rate for Route Marker shall include supply and install Route Marker as described in specification and as shown on the drawing.</p>		
B.1.238	<p>Earthing System for Electrical and Street Lighting Works</p> <p>Rate for Earthing System shall include earth bars and earthing equipment for the grounding system, main earth electrodes, grounding leads natural earth connections and provision for bonding all the conducting parts to the grounding system and all connections to the ground tape, joints, insulated conductor complete and as shown on the drawing and as described in the specification.</p>		
B.1.239	<p><u>Part 15: Duct Network for Telecommunication Cable</u></p> <p>Adjust Cover Level</p> <p>Rate for adjusting cover level of existing Telephone Manholes and the chambers shall include adjustment of manholes and chambers to the new finished grade or level, maximum level adjustment upto 0.5m, cutting and removing the concrete, cart away and dispose, position the frame at the proper elevation, reinforcement and concreting, painting the exposed concrete surface with bituminous emulsion, clean inside the manhole and chamber, complete and as described in specification and as shown on the drawing.</p>		
B.1.240	<p>Foundation for Telephone Cabinet</p> <p>Rate for Foundation for Telephone cabinet shall include excavation, reinforcement, formwork concreting, water proofing, backfill and other fixing accessories etc. complete as per Etisalat requirements as described in the specification and as shown on the drawing.</p>		
B.1.241	<p><u>Part 16: Traffic Signal System</u></p> <p>Foundation for the Traffic Signal Controller</p> <p>Rate for Reinforced concrete foundation for the various items specified shall include excavation, backfilling, compaction, formwork, reinforcement, concrete, uPVC conduit, rebars, holding down bolts, protection of holding down bolts, nuts and washers with denso tape, rubber spacers, bitumen paint etc.</p>		
B.1.242	<p>Traffic Signal Pole with Mast Arm</p> <p>Rate for Traffic Signal Pole with mast arm shall include supply and install traffic signal pole with mast arm assembly of the type specified including clamp connection, base plate, etc. complete with all accessories as shown on the drawings and as per the specifications.</p>		
B.1.243	<p>Pedestrian Signal Pole</p> <p>Rate for Pedestrian Signal Pole shall include supply and install Pedestrian Signal Pole of the type specified including clamp connection, base plate, etc. complete with all accessories as shown on the drawings and as per the specifications.</p>		

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B.1.244	<p>Pedestrian Push Button</p> <p>Rate for pedestrian push button shall include supply, install, cable termination and testing of the complete push button, complete with all accessories as shown on the drawings and as per the specifications.</p>			
B.1.245	<p>Traffic Signal Heads</p> <p>Rate for Traffic signal heads shall include supply and install Traffic signal heads and pedestrian signal head of the type specified including bracket and lamps, cables up to termination box, complete with all accessories as shown on the drawings and as per the specifications.</p>			
B.1.246	<p>Traffic Signal Controller</p> <p>Rate for supply and install Traffic signal controller shall include softwares, hard wares, appurtenance and accessories, cables, and testing to confirm functionality complete with all associated works and as shown on the drawings and as per the specifications.</p>			
B.1.247	<p>Traffic Engineering Works</p> <p>Rate for Traffic Engineering works shall include planning, design and generation of signal plans for the complete installation, and testing the signal plans in the test controller to confirm the functionality.</p>			
B.1.248	<p>Change Over Switch</p> <p>Rate for supply and install change over switch shall include electromechanical components, appurtenance and accessories, cables, complete with all associated works and as shown on the drawings and as per the specifications.</p>			
B.1.249	<p>Cables for the Traffic Signal Control System</p> <p>Rate for Traffic Signal cable shall include supply, transport and lay cables of the type specified in the Bill of Quantity including cable joints and terminations, all connections and accessories, supports, as described in the specification and as shown on the drawings.</p>			
B.1.250	<p>Cutting and Sealing with Nitoseal for Loop Detector Cable</p> <p>Rate shall include cutting and sealing with nitoseal for loop detector cable including installation of loop detector and connection to lead-in detection cable and encapsulation joint, all as detailed on the drawing and as described in the specification.</p>			
B.1.251	<p>Lead-in Detector Cable</p> <p>Rate for Lead-in detector cable shall include supply and install Lead-in detector cable as detailed on the drawing and as described in the specification.</p>			

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B.1.252	<p><u>Intelligent Transportation System</u></p> <p>System Design Document (SDD) and Integration Staging Plan</p> <p>Rate shall include developing System Design Document with all of the revisions and details pertinent to the actual development and implementation of the systems, including a revised Requirements Compliance Matrix, co-ordination, integration, and development of the ITS Subsystems, and integration with the central computer systems.</p>		
B.1.253	<p>Factory Acceptance Test</p> <p>The rate for Factory Acceptance Test shall include all expenses related to the Factory Acceptance Testing including All travel, lodging, living, local transportation and miscellaneous expenses, as directed by the Engineer, for a period up to two weeks each incurred by the representatives (up to four representatives of the Department and up to two representatives of the Engineer, in connection with such inspection at the Contractor's or Subcontractor's home plant.</p>		
B.1.254	<p>Independent Testing Supervision and Verification</p> <p>The Rate shall include the cost of engaging an independent entity and services to perform all testing activities including certifying test results and approving any test procedures and plans as required for the Factory Acceptance Test.</p>		
B.1.255	<p>Site Acceptance Test</p> <p>The rate shall include production and submission of Site Acceptance Test Plans to the Engineer for review and approval, inspection and testing all of the components of the Intelligent Transportation System such as Video Surveillance System, Traveller Information Systems, Vehicle Detection System, Communications System, Local Area Network, Integrated Communications Technology System, and Central Computer System integration and interfaces, as directed by the Engineer.</p>		
B.1.256	<p>Reliability Test</p> <p>The rate shall include cost of 60-day Reliability Test upon successful completion of the Site Acceptance Test and commissioning; on all components, systems, and functions affected, changed or installed, including all of the components of the Intelligent Transportation System such as Video Surveillance System, Traveller Information Systems, Vehicle Detection System, Communications System, Local Area Network, Integrated Communications Technology System, and the central computer system, as directed by the Engineer, and Commissioning of Head-End Subsystem Equipment and any relevant Integration and Reliability tests verifying the correctness of the Head-End Subsystem IDD, Functional verification for one field installation of each Subsystem Field equipment type installed.</p>		

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B.1.257	<p>Training</p> <p>Rate shall include the cost of training courses for Management, Operators, Supervisors and Maintenance personnel; providing full set of Training documents and materials for all installed equipment and subsystems. Training shall cover all systems, software, HMI and components installed under this project.</p>		
B.1.258	<p>Spare Parts and Tools - ITS systems</p> <p>Rate shall include stocking the minimum quantity of consumable materials, spare parts and tools specified in the approved list of spare parts and tools, and in the Specifications to maintain a fully operational system. Storage of the consumable materials, spare parts, and tools, shall be considered as a subsidiary obligation to the items in the Bill of Quantities.</p>		
B.1.259	<p>Dianamic Message Sign (DMS)/Lane Control and Speed Control Sign (LCSC) gratry</p> <p>Rate for Sign gantry shall include Sign gantry of the type indicated in the Bill of Quantities, as detailed in the drawings, sign mounting structures on the gantry, all metal works, necessary fixings for attaching the solar panel, downlights, and the ITS devices indicated on"the Drawings, cabling, internal wiring, installation, and appurtenances required for the provision of Smart Gantries as mentioned in the Specifications.</p>		
B.1.260	<p>Dynamic Message Sign</p> <p>Rate for Dynamic Message Sign of the type indicated in the Bill of Quantities, as detailed in the drawings, and as approved by the Engineer; shall include DMS Signs with LED display, an automatic luminance control system, sign enclosure, provision of any necessary stabilization and surge protection equipment to support DMS operations, hardware needed to attach the DMS signs to the structure, all internal wiring, cables, mounting, and all other appurtenances required to undertake the works.</p>		
B.1.261	<p>Travel Time Sign</p> <p>Rate for Travel Time Signs shall include Traffic Signs with LED display, an automatic luminance control system, sign enclosure, sign mounting structures on the gantry, hardware needed to attach the Travel signs to the structure, all internal wiring, cables, mounting, and all other appurtenances required to undertake the works.</p>		

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B.1.262	<p>Portable Variable Message Sign (PVMS)</p> <p>Rate shall include components of the PVMS Subsystem, electro-hydraulic raising /lowering mechanism and all other appurtenances completely furnished, installed, tested, accepted, operated and maintained for a period as specified in specification all technical detail work, accessories and incidentals required for the PVMS for totally operational control and surveillance and maintenance, PVMS power supply with internal sensing capability, warning light system, GPS system, complete remote control system including, but not limited to, laptop, all required operation and maintenance manuals and software, as well as hands-on training for the operator.</p>		
B.1.263	<p>Lane Control and Speed Control Signs</p> <p>Rate for Lane Control and Speed Control Signs (LCSC) shall include LCSC Signs with LED display, an automatic luminance control system, sign enclosure, provision of any necessary stabilization and surge protection equipment to support LCSC operations, sign mounting structures on the gantry, hardware needed to attach the LCSC signs to the structure, all internal wiring, cables, mounting, and all other appurtenances required to undertake the works.</p>		
B.1.264	<p>Network Management System</p> <p>Rate shall include furnish, install, configure, integrate, and test the Network Management System for the ITS Network. Hardware, Software, Reduntant NMS server(backup system),Human Machine Interface (HMI) for local operation</p>		
B.1.265	<p>Access Field Switch (AFS)</p> <p>Rate shall be considered as full compensation, and shall include, but not be limited to, SFP fibre uplink modules, system integration, configuration, software, hardware, fibre modules, cabling, wiring, tools, and appurtenances required to fully supply and commission the Access Field Switch of any type as mentioned in the specification.</p>		
B.1.266	<p>Ethernet Fibre Transceiver</p> <p>Rate shall be considered as full compensation, and shall include, but not be limited to, system integration, configuration, software, hardware, power supply adapter, cabling,wiring, tools, and appurtenances required to fully supply and commission the Outdoor Single Mode Ethernet Fibre Transceiver.</p>		
B.1.267	<p>Wireless Ethernet Bridge</p> <p>"Rate shall include transmitter, receiver, indoor unit, outdoor unit, microwave antenna, RF cable, " and network management tools Complete; system interfacing and configuration, Installation, software and hardware, cabling, wiring, testing and commissioning.</p>		

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B.1.268	<p>STP Cat-6 Patch Panel</p> <p>Rate shall include furnish, install, STP Cat-6 Patch Panel of the type as indicated in the Bill of Quantity including all required patch cords, pigtails, connectors, racks, mounting accessories as an integrated part of the panel, splicing, and other miscellaneous items required for the provision of STP Cat-6 Patch Panel as mentioned in the specification.</p>			
B.1.269	<p>Fibre Optic Patch Panel</p> <p>Rate shall include furnish, install, Fibre Optic Patch Panel of the type as indicated in the Bill of Quantity including all required patch cords, pigtails, connectors, racks, mounting accessories as an integrated part of the panel, splicing, and other miscellaneous items required for the provision of Fibre Optic Patch Panel as mentioned in the specification.</p>			
B.1.270	<p>Fibre Patch Cords</p> <p>Rate shall include supply and install rugged fibre patch cord, flexible conduits and other miscellaneous costs required for the provision of this item as described in the specifications.</p>			
B.1.271	<p>Outdoor Splice Enclosure</p> <p>Rate shall include splice enclosure of the type as indicated in the drawing splice trays, all cabling, cable tags, internal wiring, splicing, installation, and appurtenances required to undertake the works.</p>			
B.1.272	<p>Vehicle Detection System</p> <p>Rate of vehicle detection system shall include server, hardware, software, configuration and licenses, including head-end and IDD for integration with the Central computer System, connections to backbone, communications network, utility power connections, attachments to structures etc.</p>			
B.1.273	<p>Radar/Microwave Vehicle Detector</p> <p>Rate for Radar/Microwave Vehicle Detector shall include supply and install Radar/Microwave Vehicle Detector mounted on cantilever arm mast or post, including controller, bracket, cables up to control panel and all accessories as shown on the drawing and as per the specification.</p>			
B.1.274	<p>Digital Video Management System (DVMS)</p> <p>Rate shall include furnish, install, and configure Digital Video Management System, server, hardware, software and licenses, including head-end and IDD for integration with the Central Control System.</p>			

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B.1.275	<p>Digital Video Storage System (DVSS)</p> <p>Rate shall include furnish, install, and configure a Digital Video Storage System, server, (DVSS) solution "hardware, software, and licenses including head-end and IDD for integration with the Central Control System.</p>		
B.1.276	<p>Video Surveillance Camera</p> <p>Rate for Surveillance Camera shall include supply, install wire, cable, configure and integrate with Video Management System, Surveillance Camera, complete with all accessories and necessary transceivers and media converters if required, as per manufacturer's requirements and as described in the specification and as shown on the drawing.</p>		
B.1.277	<p>Overheight Vehicle Detector System (OHVD)</p> <p>Rate shall include furnish, install, and configure a Overheight Vehicle Detector System (OHVD) OHVD VMS, OHVD sensor, Warning / Direction Signs, Alarm Bell with Parabolic Shield, "Secondary Protection Devices, appurtenances, and other miscellaneous items required for the provision of system.</p>		
B.1.278	<p>Roadway Weather Information System (RWIS)</p> <p>Rate shall include furnish and install Roadway Weather Information System including system Components such as RWIS Weather Stations, RWIS Low Visibility Warning System, RWIS server, all RWIS equipments with grounding and lightning Protection, cabinets RWIS video surveillance camera, local fence and equipment enclosure, local data logger for data storage, and the "necessary site hardware and software, all the sensors and associated cabling to the data logger for a fully operational system that provides continuous monitoring and measurement of the weather and air quality parameters specified herein.</p>		
B.1.279	<p>RWIS Tower</p> <p>Rate for RWIS Tower shall include tower structure, mounting space for weather sensor, supporting fascility for weather station equipment, all hardwares and other civil works required to complete the construction of RWIS Tower.</p>		
B.1.280	<p>Solar Power System</p> <p>Rate shall include furnish and install Solar Power System including power storage system, solar panel, power conversion equipment , appropriate support and mounting hardwares, wiring, and safety disconnects the design of the proposed system, solar panel attachments to the structure, battery cabinet and associated cabling and civil works.</p>		

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B.1.281	<p>ITS Electrical and Control Cable</p> <p>Rates shall include cabling, equipment, and other miscellaneous and subsidiary costs required for the provision of ITS electrical and control cables as mentioned in the Specifications.</p>			
B.1.282	<p>Foundation for DMS/LCSC Gantry, Pole, Cabinet, Support Structure, RWIS Tower, Wireless Mast</p> <p>Rate for Reinforced concrete foundation for the various Gantry and Pole of the type specified, Cabinet, Support structure, RWIS Tower, Wireless Mast shall include excavation, backfilling, compaction, formwork, reinforcement, concrete, uPVC conduit, rebars, holding down bolts protection of holding down bolts, nuts and washers with denso tape, rubber spacers, bitumen paint etc.</p>			
B.1.283	<p>ITS poles</p> <p>Rate shall include furnish and install poles of the type including wiring, cabling, labeling, terminations, grounding, sealing, certificating, and all other works required for the provision of ITS Poles.</p>			
B.1.284	<p><u>Part 18: Building Works</u></p> <p>Windows and doors' sub frames, frames or lining sets glazing and associated ironmongery are included in items for Z3.</p>			
B.1.285	<p><u>Part 21: Non Disruptive Road Crossing works</u></p> <p>Rate for Non Disruptive Road Crossing works using Thurst Boring methods and Micro Tunneling methods for installing sleeves shall include soil investigation and testing for NDRC pit support system and for equipment selection and calibration, allow for all preparatory works for pipe installation, design of NDRC pits support systems and method statement for complete NDRC works, fencing of work area around pit locations, supply and installation of pipes, concrete surrounded caissons with sufficient clearance to the inner ducts, provision and removal of Access and Receiving pits, control and diversion of existing flows in pipes by blocking, plugging or over pumping and reinstatement of existing ground, removal and disposal of excess soil and all other necessary works required to complete the work as in specification and drawing.</p>			

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	<u>Part 22: Soft and hard Landscape</u>		
B.1.286	The rates for trees / shrubs / ground covers / succulent shall include for supply, plant, transport to site, stored at nursery, double handling and compost fertilizer.		
B.1.287	Pay item for paving blocks rest in sand bed material shall be in square meter and the rates shall includes for supply, install, transport to site, double handling, cutting, bedding and jointing.		
B.1.288	Pay item for paving blocks rest in concrete bed shall be in square meter and the rates shall includes for supply, install, transport to site, double handling, cutting, jointing, mortar, reinforcement, concrete foundation, formworks and other incidental works required as per specifications.		
B.1.289	The rates for heel kerbs shall includes for supply, install, transport to site, double handling, cutting, jointing, mortar, concrete haunch, formworks and other incidental works required as per specifications.		
B.1.290	Granular sub base for all paving shall be measured separately and these shall include for supply, lay, compact to required density, subgrade preparation, transport to site and double handling.		
B.1.291	The rates for extension of existing paving blocks shall include for supply, install, transport to site, double handling, sand bedding, concrete haunch and other associated works to match existing.		
B.1.292	The rates for precast concrete steps thread shall includes for supply, install, transport to site, double handling, cutting, jointing, mortar, reinforcement, concrete foundation, formworks, waterproofing, excavation, backfilling, disposal of surplus material to approved tip and other incidental works required as per specifications.		
B.1.293	The rates for precast concrete steps riser shall includes for supply, install, transport to site, double handling, cutting, jointing and mortar.		
B.1.294	The rates for play equipment shall include for supply, install, transport to site and fix as per manufacturer's requirements. The rate also includes foundation as required with necessary excavation, backfilling, waterproofing, disposal of surplus material to approved tip and other incidental works as per the specifications.		
B.1.295	The rates for street furniture shall include for supply, install, transport to site and fix as per manufacturer's requirements. The rate also includes foundation as required with necessary excavation, backfilling, waterproofing, disposal of surplus material to approved tip and other incidental works as per the specifications.		

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B.1.296	<p>The rates for sports equipment shall include for supply, install, transport to site and fix as per manufacturer's requirements. The rate also includes foundation as required with necessary excavation, backfilling, waterproofing, disposal of surplus material to approved tip and other incidental works as per the specifications.</p>		
B.1.297	<p>The rates for chain link fence shall include for supply, install, transport to site and fix as per manufacturer's requirements. The rate also includes gates, foundation with necessary excavation, backfilling, waterproofing, disposal of surplus material and other incidental works as per the specifications.</p>		
B.1.298	<p>The pay item for landscape structure such as planter box and feature walls shall include supply, install, excavation, backfilling, waterproofing, expansion joints, concreting, reinforcements, formworks, disposal of surplus material to approved tip and other associated works to complete as per specifications.</p>		
B.1.299	<p>The rates for shade structure shall include for supply, install, transport to site and fix as per manufacturer's requirements. The rate also includes foundation with necessary excavation, backfilling, waterproofing, disposal of surplus material to approved tip and other incidental works to complete as per the specifications.</p>		
B.1.300	<p>The pay item for structures such as, pergola, gazebo and BBQ unit shall be in number. The rates shall include for supply, install, transport to site, finishes, foundation with necessary excavation, backfilling, waterproofing, disposal of surplus material to approved tip and other incidental works to complete as shown on the drawings and as per the specifications.</p>		
B.1.301	<p>Design and Build of Pump Room, Toilet Block and Water Feature</p> <p>The price to include for furnishing of all labour, equipment and incidentals required to design, supply, install, place in operation, testing and commissioning and maintenance, approvals from concern authorities and pay all fees as necessary. The rates also shall include for supplied with all necessary services, equipment and ancillaries whether specifically mentioned in the specification or not as required for the specified performance and incorporating the highest standards for this type of work. The design specification and shop drawings to be submitted for approval along with samples, catalogues, warranties/certification etc. The work includes all civil, mechanical, electrical, plumbing, finishes and are to be fit for use and all the service connections to the relevant existing services as required.</p>		
B.1.302	<p>Landscape Lighting</p> <p>The rates for lighting fixtures includes supply, installation, testing and commissioning, complete with fixture, lamp, reflectors, control gear, transformer, wirings, boxes, fittings, all associated accessories, excavation, backfilling, support concreting and incidental work complete as specified per specifications.</p>		

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B.1.303	<p>The rates for control cabinet shall include for supply, installation, testing and commissioning, complete with breakers, contactors, ELCB, manual over ride switch, photocel, timer, reinforced concrete base, earthing system, cable termination, excavation, backfilling, disposal of surplus material to approved tip, all associated accessories to complete in accordance with the drawings and specifications.</p>		
B.1.304	<p>The pay item for cables shall be in linear meter and this include for supply, laying, testing, commissioning, excavation, backfilling, surround, warning tape, tiles and marker.</p>		
	<p>Irrigation Works</p>		
B.1.305	<p>The rates for central control system shall include for all supply, install, testing, commissioning, all necessary programming to enable full and complete operation of the control system, furniture, cables, fuses / switches, cable trays, fittings, ducting, power supply and all other associated works to complete as per specifications. Shop drawings to be submitted for approval along with samples, catalogues, warranties/certification etc. Approvals from concerned Authorities if required and all fees as necessary.</p>		
B.1.306	<p>General-All Services</p> <p>This Part provides for the works to be carried out in connection with utilities which are not being applied to a specific utility.</p> <p>Unless otherwise specified, the rates for ducts and pipes shall include for excavation; timbering; shaping; backfilling; compaction; disposal of surplus excavated material; providing and laying pipes; provision of draw cords; end plugs; markers and cleaning.</p> <p>The rates for services work are deemed to include for the provision and installation of detectable warning tapes as per the specification for all newly installed and existing services, which are adjusted in line and/or level.</p> <p>The Tenderer shall allow in his rates for transporting of any pipes, fittings or materials to the site, unloading and complete installation. The Tenderer's rates shall also include for all crossings to existing and/or new services. No separate payment will be made for service crossings.</p> <p>The commencing surface for excavating for pipelines shall be the original ground level or, if in cutting, the excavated final surface of the cutting.</p> <p>Lengths of the ducts shown in the quantities are based on actual crossing lengths. The length of duct, number of draw-cords, etc required for the crossing are based on multiplying the crossing length by the number of ducts in the crossing. For example, if a quantity of 20m is indicated for a 4-way duct, then 80m of duct will be needed for that crossing (4 ducts x 20m).</p>		

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B.1.307	<p>BOQ items for surrounds includes the preparation of the bottom level of the trench where pipes are to be laid by compacting the area prior to laying the pipes, unless separate items have been included for bedding pipes in which case such preparation works are to be included in the bedding item.</p> <p>The rates shall include the costs associated with all necessary liaisons with the Service Authorities, and providing attendance to specialist approved sub-contractors where applicable. This includes preparation of method statement and obtaining approval to work.</p> <p>Trial Pits and Tranches to locate existing services as instructed by the Engineer will be measured and paid for actual quantity of the work carried out. The rate shall include the costs of dewatering, if required, and reinstatement.</p> <p>Items for Trial Pits and Trenches shall be deemed to include preparation and submission of records and results. All such information shall be forwarded to the Department in digital format and hard copies.</p> <p>The rates for breaking out and/or removal of any existing redundant manholes, ducts, pipes and cables shall unless otherwise stated include for excavation, backfilling, dewatering, temporary supports, reinstatement, compaction and disposal to tip of non-salvageable material etc.</p> <p>The rates for pipelines shall include final cleaning and sterilization as specified.</p> <p>The rates for reinstatement of existing pavements shall include for saw cutting of the existing pavement, temporary and permanent reinstatements in accordance with the specifications and disposal of excavated material to approved dumpsite. Payment shall be made only for the minimum width of asphalt cutting required for the pipe, duct or cable crossings considering standard trench sections.</p> <p>The rates for connection of existing pipe is deemed to be included for the charges payable to relevant authorities in respect of the water loss during shut down operations.</p> <p>Variations</p> <p>The rates inserted in the Bill of Quantities with the application of adjustment item will be used to value any variations to the Work, whether omissions or additions. The Contractor shall not be entitled to payment for profit and overheads on the value of Work omitted.</p>		

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B.1.308	<p>Adjustment Item</p> <p>The adjustment item, if any, addition or deduction, shall apply to all Bill items, excluding provisional sum unless clearly indicated otherwise. The adjustment item shall not be a lump sum, but a percentage of the total tendered sum excluding provisional sum or a percentage of the total for the items indicated. The adjustment item shall be applied to all applicable item rates and sums entered in the Bill of Quantities (including any addenda). The adjusted rates and sums shall be applied during re-measurement and for the valuation of Variations.</p> <p>CESMM4 sections 6.3, 6.4 and 6.5 are not applicable.</p>		
B.1.309	<p>Provisional Items</p> <p>The Provisional Items identified in the Bill of Quantities may be expended totally, in part or not at all, as directed by the Engineer. Provisional items shall only be executed up on the approval of the Engineer / Employer.</p>		
B.1.310	<p>Day works</p> <p>General</p> <p>The Daily Works Schedule shall be administered strictly in accordance with the Conditions of Contract.</p> <p>The Daily Works Schedule shall only be for labour, materials, and plant outside of or in addition to the scope of the Works as required or reasonably implied by all Contract Documents and will be as approved by the Department and the Engineer.</p> <p>The Contractor will be paid for Daily Works Schedule Items carried out during the course of the Contract at the rates tendered in this Schedule. Profit and overheads are not to be included in the actual rates but stated as a percentage to be added at the end of the Labour, Materials, and Plant Sections of this Schedule of Rates.</p> <p>The time engaged in the authorized works will be certified and paid. In the event of labour or plant having to be brought to the Site specially for an item of the Daily Works Schedule, then a reasonable allowance will be made for travelling time. The allowance for travelling time is to be agreed before the Daily Works Schedule Item is executed.</p> <p>Daily Works Schedule Rates tendered by the Contractor will be carefully taken into account at the time Tenders are being considered.</p>		

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	<p>Rates of Labour</p> <p>The Daily Works Schedule Rates tendered for Labour shall be the NET rates payable, including, but not by way of limitation, the furnishing and use of hand tools and of all ordinary non-mechanical plant, staging, scaffolding, tarpaulins, use of electric light and water for the Works, etc., and all special inducements. The cost of all supervisory staff (including engineers, superintendents, and foreman), instruments, home office and site overheads, clerks, storemen, watchmen, timekeepers, or any similar Contractor's employees shall be included in the percentage addition for profit and overheads. The percentage shall also deem to include the extra cost of public holidays, other holidays with pay and working outside of normal working hours.</p> <p>The NET rates for labour shall be the rates for persons directly engaged in the work on the Site or in the Contractor's workshops located in Abu Dhabi.</p> <p>Rates for Materials</p> <p>Materials used as Items of the Daily Works Schedule shall be as specified for the Works. The rates shall include delivery to the Site. In the event any materials are required for use as Items of the Daily Works Schedule which are not included in the Schedule, the current NET market price shall apply, plus a percentage for Profit and Overhead, which shall include all costs for collecting from the site store yard, loading, transporting, and unloading at the Works.</p> <p>The NET unit cost of materials shall be the actual cost of materials purchased specifically for the Works, or materials used from the Contractor's stock charged at current market prices plus a reasonable allowance for delivery to the Site.</p> <p>Rates for Plant Hire</p> <p>The definition of hire terms are as follows:</p> <p>a) Hourly hire - any hour of any period less than eight hours.</p> <p>Daily hire - an eight-hour day. In the event that more than eight hours in less than twenty-four hours are worked consecutively (excluding normal breaks, etc.), the excess hours will be paid for as a direct proportion of daily hire rates.</p> <p>b)</p> <p>Plant (other than small tools and workshop equipment and operatives) used in the Daily Works Schedule shall be paid for at rates included in the Daily Works Schedule or at the rates approved in writing by the Engineer prior to the execution of the Work. The Contractor shall present to the Engineer his proposed rates for plant or equipment not included in the Daily Works Schedule as soon as possible after he becomes aware of the requirement to utilize such plant.</p>		

PROJECT :-	PREAMBLE	BILL SECTION-B	PAGE 47 of 47
ITEM	ITEM DESCRIPTION		
B.1.311	<p>Plant hire rates shall include all costs for drivers, attendants, and operators, maintenance to keep the plant in proper working order at all times, attendance in starting up and shutting down, refueling, all fuel and/or electric power, oils, greases, cleaning materials, replacement and/or sharpening of tools including provision of the tools, and all other ancillary items including consumable spares.</p> <p>Payment will not be made by the Department for mechanics or maintenance time which shall be included in, and spread over, the rates included in the Schedules.</p> <p>Provisional Sums</p> <p>Provisional Sums are included in a separate Bill Section and not under "General Items".</p> <p>Provisional Sums may only be expended upon the instructions of the Employer or Engineer. The work will be valued in accordance with Conditions of Contract.</p> <p>The Provisional Sums given in the Bill of Quantities may be used in whole or part, or not at all, on the instruction of the Engineer.</p> <p>Percentage of adjustment of Provisional Sums as provided in the Conditions of Contract shall be applicable to any work carried out by other Contractors or Service Authorities employed directly by the Employer. Payment to such Contractors and Service Authorities shall be made directly by the Employer.</p> <p>The Contractor shall coordinate with the Service Authorities and provide all necessary facilities as may be required and as foreseeable by an experienced Contractor. The cost of such coordination and facilities are deemed to be included in the respective items of the Bill of Quantities.</p>		
B.1.312	<p>Prime Cost Items</p> <p>Section 5.16 and 5.17 of CESMM4 are not applicable. The cost of work to be carried by Nominated Contractor and Sub-contractor are dealt by Provisional sums as per the Conditions of Contract.</p>		
B.1.313	<p>Preamble for Utility Relocation Works</p> <p>The relocation works shall be measured using the Preamble and BOQ prepared by the Designated Consultants. The Preamble of SBOQM is not applicable for the utility relocation works for which there is a separate package prepared by the designated Consultants.</p>		

Section (C) Daywork Schedule

PROJECT :-		BILL SECTION - C			PAGE 1 of 8
ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT (AED)
<u>SECTION (C) - DAYWORK SCHEDULE</u>					
<u>Schedule 1: Labour</u>					
C.1.01	Labourer	h			
C.1.02	Banksman / Greaser	h			
C.1.03	Carpenter	h			
C.1.04	Mason / Concrete Finisher	h			
C.1.05	Driver: Heavy Duty	h			
C.1.06	Driver: Light Duty	h			
C.1.07	Pipe fitter	h			
C.1.08	Plant operator: Heavy	h			
C.1.09	Plant operator: Light	h			
C.1.10	Steel fixer / Bar bender	h			
C.1.11	Welder	h			
C.1.12	Jointer	h			
C.1.13	Painter	h			
C.1.14	Electrician	h			
C.1.15	Mechanical Fitter	h			
C.1.16	Instrumentation Fitter	h			
C.1.17	Plumber	h			
C.1.18	Chainman	h			
Carried to Part Summary				Dhs.	

PROJECT :-		BILL SECTION - C			PAGE 2 of 8
ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT (AED)
<u>SECTION (C) - DAYWORK SCHEDULE (Cont'd)</u>					
<u>Schedule 2: Materials</u>					
C.2.01	Concrete Grade K140 SRC	m ³			
C.2.02	Concrete Grade K215 SRC	m ³			
C.2.03	Concrete Grade K255 SRC	m ³			
C.2.04	Concrete Grade K350 SRC	m ³			
C.2.05	Concrete Grade K415 SRC	m ³			
C.2.06	110mm uPVC Pipe	m			
C.2.07	160mm uPVC Pipe	m			
C.2.08	225mm uPVC Pipe	m			
C.2.09	315mm uPVC Pipe	m			
C.2.10	400mm GRP Pipe	m			
C.2.11	450mm GRP Pipe	m			
C.2.12	500mm GRP Pipe	m			
C.2.13	600mm RCP Pipe	m			
C.2.14	700mm RCP Pipe	m			
C.2.15	900mm RCP Pipe	m			
C.2.16	1000mm RCP Pipe	m			
C.2.17	Hardwood	m ³			
C.2.18	Softwood, Treated	m ³			
C.2.19	Bitumen 60/70	t			
C.2.20	Bitumen 40/50	t			
C.2.21	Fresh Water	Imp. gals			
C.2.22	Sea Water	Imp. gals			
C.2.23	Subbase Material	m ³			
Carried to Part Summary				Dhs.	

PROJECT :-		BILL SECTION - C			PAGE 3 of 8
ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT (AED)
<u>SECTION (C) - DAYWORK SCHEDULE (Cont'd)</u>					
<u>Schedule 2: Materials (Cont'd)</u>					
C.2.24	Wet mix Macadam	m ³			
C.2.25	Aggregate Base Course Material	m ³			
C.2.26	O.P. Cement	t			
C.2.27	M.S.R. Cement	t			
C.2.28	S.R. Cement	t			
C.2.29	Coarse Aggregate (dry)	t			
C.2.30	Fine Aggregates (dry)	t			
C.2.31	200mm thick hollow blocks	nr			
C.2.32	100mm thick hollow blocks	nr			
C.2.33	200mm thick solid blocks	nr			
C.2.34	100mm thick solid blocks	nr			
C.2.35	Asphalt Concrete Base Course	t			
C.2.36	Bituminous Asphaltic Concrete Wearing Course	t			
C.2.37	Bituminous Asphaltic Concrete Base Course	t			
C.2.38	Interlocking Paving Blocks 60mm thick	m ²			
C.2.39	Interlocking Paving Blocks 80mm thick	m ²			
C.2.40	Precast Concrete Kerbs - Type - A1	m			
C.2.41	Precast Concrete Kerbs - Type - C1	m			
C.2.42	Precast Concrete Kerbs - Type - E1	m			
C.2.43	Cast-in-situ Concrete Kerbs - Type - G	m			
C.2.44	Cast-in-situ Concrete Kerbs - Type - F	m			
Carried to Part Summary				Dhs.	

PROJECT :-		BILL SECTION - C			PAGE 4 of 8
ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT (AED)
<u>SECTION (C) - DAYWORK SCHEDULE (Cont'd)</u>					
<u>Schedule 2: Materials (Cont'd)</u>					
C.2.45	Standard Grade Plywood thickness 12mm	m ²			
C.2.46	Standard Grade Plywood thickness 20mm	m ²			
C.2.47	Marine Grade Plywood thickness 12mm	m ²			
C.2.48	Marine Grade Plywood thickness 20mm	m ²			
C.2.49	Mild Steel Reinforcement, Epoxy Coated	t			
C.2.50	High Tensile Steel Reinforcement, Epoxy Coated	t			
C.2.51	Granular Material	m ³			
C.2.52	Stone Material for Land Drains (max. size 100mm)	m ³			
C.2.53	Borrow Material	m ³			
Carried to Part Summary				Dhs.	

PROJECT :-		BILL SECTION - C			PAGE 5 of 8
ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT (AED)
<u>SECTION (C) - DAYWORK SCHEDULE (Cont'd)</u>					
<u>Schedule 3: Plant & Equipment</u>					
C.3.01	Bulldozer up to 100 HP	h			
C.3.02	Bulldozer from 100 to 200 HP	h			
C.3.03	Bulldozer over 200 HP	h			
C.3.04	Grader up to 140 HP	h			
C.3.05	Grader over 140 HP	h			
C.3.06	Motor scraper up to 10m ³	h			
C.3.07	Motor scraper over 10m ³	h			
C.3.08	Vibratory roller up to 3 tons	h			
C.3.09	Vibratory roller over 3 tons	h			
C.3.10	Tandem roller up to 10 tons	h			
C.3.11	Tandem roller over 10 tons	h			
C.3.12	Pneumatic roller over 10 tons	h			
C.3.13	Bucket loader up to 3m ³	h			
C.3.14	Bucket loader over 3m ³	h			
C.3.15	Dump truck up to 5 tons	h			
C.3.16	Dump truck from 5 tons to 10 tons	h			
C.3.17	Dump truck over 10 tons	h			
C.3.18	Generator up to 200kVA	h			
C.3.19	Compressor 5000-6000 litres capacity with small tools	h			
C.3.20	Excavator up to 1m ³	h			
Carried to Part Summary				Dhs.	

PROJECT :-		BILL SECTION - C			PAGE 6 of 8
ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT (AED)
<u>SECTION (C) - DAYWORK SCHEDULE (Cont'd)</u>					
<u>Schedule 3: Plant & Equipment (Cont'd)</u>					
C.3.21	Excavator over 1m ³	h			
C.3.22	Water tanker, minimum 10,000 litres	h			
C.3.23	Concrete vibrator (poker/screed) up to dia 50mm	h			
C.3.24	Welding plant	h			
C.3.25	Sand blasting unit (with operator)	h			
C.3.26	Bob cat, capacity < 1m ³	h			
C.3.27	Fork lift, capacity < 5t	h			
C.3.28	Hiab truck, 6 tonne or greater capacity with lifting arm	h			
C.3.29	Concrete mixer, 6m ³	h			
C.3.30	Concrete mixer, 9m ³	h			
C.3.31	Concrete distribution truck 6m ³	h			
C.3.32	Concrete pump, 50m ³ /hr	h			
C.3.33	Concrete pump, 70m ³ /hr	h			
C.3.34	Plate compactor	h			
C.3.35	Water pump 2 inch	h			
C.3.36	Water pump 3 inch	h			
C.3.37	Dumper up to 1m ³	h			
C.3.38	Asphalt paver	h			
C.3.39	Lorry mounted crane up to 25 tons	h			
C.3.40	Pick up truck up to 2 tonnes	h			
C.3.41	Pick up truck over 3 tonnes capacity	h			
Carried to Part Summary				Dhs.	

PROJECT :-		BILL SECTION - C			PAGE 7 of 8
ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT (AED)
	<u>SECTION (C) - DAYWORK SCHEDULE (Cont'd)</u>				
	<u>Schedule 3: Plant & Equipment (Cont'd)</u>				
C.3.42	Asphalt coring machine (up to dia. 200mm)	h			
C.3.43	Mobile Crane 20T	h			
C.3.44	Mobile Crane 45T	h			
C.3.45	Spray tanker for tack or prime coat minimum 10,000 litres	h			
C.3.46	Milling machine width less than 1.0m	h			
C.3.47	Milling machine width 1.0 - 2.5m	h			
C.3.48	Milling machine width greater than 2.5m	h			
C.3.49	Welding Plant	h			
C.3.50	Sand blasting unit (with operator)	h			
C.3.51	Asphalt / concrete saw	h			
C.3.52	Pneumatic breaker	h			
C.3.53	Portable lighting set with generator	h			
C.3.54	Mechanical road broom	h			
C.3.55	Portable traffic signal set with generator	h			
C.3.56	Wheeled excavator with backhoe and shovel (JCB)	h			
C.3.57	Road marking machine	h			
Carried to Part Summary				Dhs.	

PROJECT :-		BILL SECTION - C	PAGE 8 of 8
ITEM	ITEM DESCRIPTION	AMOUNT (AED)	
	<u>SECTION (C) - DAYWORK SCHEDULE (Cont'd)</u>		
	<u>PART SUMMARY</u>	<u>AMOUNT (Dhs)</u>	
	<u>Schedule 1: Labour</u>		
	Page 1 of 8		
	Sub total for labour		
	Percentage addition for Profit and Overhead on Daywork Labour		
	Total for Labour		
	<u>Schedule 2: Material</u>		
	Page 2 of 8		
	Page 3 of 8		
	Page 4 of 8		
	Sub total for material		
	Percentage addition for Profit and Overhead on Daywork Material		
	Total for Material		
	<u>Schedule 3: Plant & Equipment</u>		
	Page 5 of 8		
	Page 6 of 8		
	Page 7 of 8		
	Sub total for plant & equipment		
	Percentage addition for Profit and Overhead on Daywork Plant & Equipment		
	Total for Plant & Equipment		
	TOTAL FOR SECTION C - DAYWORK SCHEDULE		
	CARRIED TO GRAND SUMMARY		Dhs.

Section (D)

Work Items



Part 1

General Items

PROJECT :-			BILL SECTION - D			PART - 1	PAGE 1 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 1 - GENERAL ITEMS</u>					
		<u>Contractual Requirements</u>					
	1.01	Performance Bond	A110	sum			
	1.02	Workmen Compensation Insurance	A120.1	sum			
	1.03	Contractor's Plant and Equipment Insurance	A120.2	sum			
	1.04	Contractor's All Risk Insurance	A120.3	sum			
	1.05	Third Party Insurance	A130	sum			
	1.06	Other Insurances required by Law and Local Practice. (The Tenderer shall separately list and price below.)	A190	sum			
		<u>Specified Requirements</u>					
		<u>Engineer's and Employer's Facilities</u>					
		The Contractor shall provide, establish, maintain and remove at completion of works as described in Specification					
		<u>Temporary Site Office for the Engineer's staff</u>					
	1.07	Establishment of Office for the Engineer's staff	A211.1	sum			
	1.08	Maintenance of Office for the Engineer's Staff	A211.2	Day			
	1.09	Removal of Engineer's Office	A211.3	sum			
		<u>Temporary Site Office for the Employer's staff</u>					
	1.10	Establishment of Office for the Employer's staff	A211.4	sum			
	1.11	Maintenance of Office for the Employer's Staff	A211.5	Day			
	1.12	Removal of Employer's Office	A211.6	sum			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 1	PAGE 2 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 1 - GENERAL ITEMS (Cont'd)</u> <u>Specified Requirements (Cont'd)</u>					
		<u>Material Testing Laboratory</u>					
1.13		Establishment of site material testing laboratory	A212.1	sum			
1.14		Maintenance of site material testing laboratory	A212.2	Day			
1.15		Removal of site material testing laboratory	A212.3	sum			
		<u>Services for the Engineer's staff</u>					
1.16		Supply, Maintenance of Vehicles supplied to Engineer's staff including fuel and driver	A221.1	Day			
1.17		Telephone and Telefax for office facilities	A222.1	Day			
1.18		Local Area Network with DSL internet connection (minimum 2mbps and router)	A229.1	Day			
1.19		Set of Progress Photographs (to cover all major activities) including supply of Cameras, lenses, prints etc. as in specification.	A229.2	nr			
1.20		Printing, Distribution and Preparation of Record Drawings	A229.3	sum			
		<u>Services for Employer's staff</u>					
1.21		Supply, Maintenance of Vehicles supplied to Employer's staff including fuel and driver	A221.2	Day			
1.22		Telephone and Telefax for office facilities	A222.2	Day			
1.23		Local Area Network with DSL internet connection (minimum 2mbps and router)	A229.4	Day			
		<u>Equipment for Use by the Engineer's Staff</u>					
		Office Equipment for the Engineer's Staff (Item 1.24 to 1.26)					
1.24		Establishment	A231.1	sum			
1.25		Maintenance	A231.2	Day			
1.26		Removal	A231.3	sum			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 1	PAGE 3 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 1 - GENERAL ITEMS (Cont'd)</u> <u>Specified Requirements (Cont'd)</u></p> <p><u>Equipment for Use by the Engineer's Staff (Cont'd)</u></p> <p>Survey equipments, facilities and associated works required as described in specification for the project duration. (Item 1.27 to 1.29)</p>					
	1.27	Establishment	A233.1	sum			
	1.28	Maintenance	A233.2	Day			
	1.29	Removal	A233.3	sum			
		Softwares, including technical supports as in specification. Item 1.30 to 1.32)					
	130	Establishment	A239.1	sum			
	1.31	Maintenance	A239.2	Day			
	1.32	Removal	A239.3	sum			
	(Nos.) Laptops and (Nos) Desktop computers with printers as per specifications, including the following services: Telecommunication infrastructure, Local Area Network hardware, Network/Server room, Cabling, Scanners, Photo Copying Machines for the project duration as in specification. (Item 1.33 to 1.35)					
	1.33	Establishment	A239.4	sum			
	1.34	Maintenance	A239.5	Day			
	1.35	Removal	A239.6	sum			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 1	PAGE 4 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 1 - GENERAL ITEMS (Cont'd)</u> <u>Specified Requirements (Cont'd)</u>					
		Kitchen Equipment - Cutlery etc., Kitchen and Sanitary supplies, Stationary supplies, Bottled water supplies and all other miscellaneous equipment supplies as described in specification. (Item 1.36 to 1.38)					
	1.36	Establishment	A239.7	sum			
	1.37	Maintenance	A239.8	Day			
	1.38	Removal	A239.9	sum			
		<u>Equipment for Use by Employer's Staff</u>					
		Office Equipment for the Employer's Staff (Item 1.39 to 1.41)					
	1.39	Establishment	A231.4	sum			
	1.40	Maintenance	A231.5	Day			
	1.41	Removal	A231.6	sum			
		<u>Attendance upon the Engineer's staff</u>					
	1.42	Chainmen	A242	Day			
	1.43	Office attendance	A249	Day			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 1	PAGE 5 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 1 - GENERAL ITEMS (Cont'd)</u>					
		<u>Testing of Materials</u>					
1.44		Specified tests for Bridge bearings	A250.1	sum			
1.45		Specified tests for prestressing tendons	A250.2	sum			
		<u>Allow for all specified testing to be carried out in accordance with specification</u>					
1.46		All testing relating to Bill Part 4 - Earthworks	A250.3	sum			
1.47		All testing relating to Bill Part 5 - Roads and Pavings	A250.4	sum			
1.48		All testing relating to Bill Part 6 - Bridge Works	A250.5	sum			
1.49		All testing relating to Bill Part 7 - Tunnel / Underpass Works	A250.6	sum			
1.50		All testing relating to Bill Part 8 - Retaining Structures	A250.7	sum			
1.51		All testing relating to Bill Part 9 - Storm Water Drainage Network	A250.8	sum			
1.52		All testing relating to Bill Part 10 - Sanitary Sewer Network	A250.9	sum			
1.53		All testing relating to Bill Part 11 - Potable Water Network	A250.10	sum			
1.54		All testing relating to Bill Part 12 - Irrigation Network	A250.11	sum			
1.55		All testing relating to Bill Part 13 - Electrical Network	A250.12	sum			
1.56		All testing relating to Bill Part 14 - Street Lighting Works	A250.13	sum			
1.57		All testing relating to Bill Part 15 - Duct Network for Telecommunication Cables	A250.14	sum			
1.58		All testing relating to Bill Part 16 - Traffic Signal Control System	A250.15	sum			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 1	PAGE 6 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 1 - GENERAL ITEMS (Cont'd)</u>					
		<u>Testing of Materials (Cont'd)</u>					
	1.59	All testing relating to Bill Part 17 - Culverts	A250.16	sum			
	1.60	All testing relating to Bill Part 18 - Building Works	A250.17	sum			
	1.61	Allow for any other testing required as per specifications not listed above (the Tenderer shall separately list and price below any other clause considered to have a monetary value)	A250.18	sum			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 1	PAGE 7 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF	UNIT	QUANTITY	RATE	AMOUNT AED
		<p>PART 1 - GENERAL ITEMS (Cont'd)</p> <p>Testing of Materials (Cont'd)</p> <p><u>Testing of materials; to be carried out within or outside U.A.E by independent Specialist Laboratories as required by relevant specifications.</u></p>					
	1.62	Allow for any other testing required as per specifications (the Tenderer shall separately list and price below)	A250.19	sum			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 1	PAGE 8 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF	UNIT	QUANTITY	RATE	AMOUNT AED
		PART 1 - GENERAL ITEMS (Cont'd)					
		Testing of Materials (Cont'd)					
		Testing of the Works; as specified, including tests at manufacturer's works					
1.63		All testing relating to Bill Part 4 - Earthworks	A260.1	sum			
1.64		All testing relating to Bill Part 5 - Roads and Pavings	A260.2	sum			
1.65		All testing relating to Bill Part 6 - Bridge Works	A260.3	sum			
1.66		All testing relating to Bill Part 7 - Tunnel / Underpass Works	A260.4	sum			
1.67		All testing relating to Bill Part 8 - Retaining Structures	A260.5	sum			
1.68		All testing relating to Bill Part 9 - Storm Water Drainage Network	A260.6	sum			
1.69		All testing relating to Bill Part 10 - Sanitary Sewer Network	A260.7	sum			
1.70		All testing relating to Bill Part 11 - Potable Water Network	A260.8	sum			
1.71		All testing relating to Bill Part 12 - Irrigation Network	A260.9	sum			
1.72		All testing relating to Bill Part 13 - Electrical Network	A260.10	sum			
1.73		All testing relating to Bill Part 14 - Street Lighting Works	A260.11	sum			
1.74		All testing relating to Bill Part 15 - Duct Network for Telecommunication Cables	A260.12	sum			
1.75		All testing relating to Bill Part 16 - Traffic Signal Control System	A260.13	sum			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 1	PAGE 9 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 1 - GENERAL ITEMS (Cont'd)</u>					
		<u>Testing of Materials (Cont'd)</u>					
		<u>Testing of the Works; as specified, including tests at manufacturer's works (Cont'd)</u>					
1.76		All testing relating to Bill Part 17 - Culverts	A260.14	sum			
1.77		All testing relating to Bill Part 18 - Building Works	A260.15	sum			
1.78		Allow for any other testing required as per specifications not listed above (the Tenderer shall separately list and price below any other clause considered to have a monetary value)	A260.16	sum			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 1	PAGE 10 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 1 - GENERAL ITEMS (Cont'd)</u>					
		<u>Specified Requirements (Cont'd)</u>					
		<u>Temporary Works</u>					
		Traffic Diversions as per Specification Clause_ (Item 1.79 to 1.81)					
	1.79	Establishment	A271.1	sum			
	1.80	Maintenance	A271.2	Day			
	1.81	Removal	A271.3	sum			
		Traffic Regulation (management), safety and control as per Specification Clause _ (Item 1.82 to 1.84)					
	1.82	Establishment	A272.1	sum			
	1.83	Maintenance	A272.2	Day			
	1.84	Removal	A272.3	sum			
	1.85	Site Screen Fencing including Relocation as in specification Clause _	A279.1	m			
	1.86	Extra over for Decorative paint for Sight Screen Fencing	A279.2	m ²			
	1.87	Protection and Upkeep of Site, adjacent areas and properties, as specification Clause _	A279.3	sum			
	1.88	Tidying and cleaning the site, as specification Clause _	A279.4	sum			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 1	PAGE 11 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 1 - GENERAL ITEMS (Cont'd)</u>					
		<u>Specified Requirements (Cont'd)</u>					
		<u>Temporary Works</u>					
1.89		Allow for Co-ordination with Service Authorities, Consultants, Subconsultants and provide all necessary facilities as required as Specification, Clause_	A279.5	sum			
1.90		Allow for Health and Safety requirements as Specification, Clause_	A279.6	sum			
1.91		Allow for compliance with the Construction Environment Management Plan (CEMP) as Specification, Clause_	A279.7	sum			
1.92		Allow for compliance with the Quality Assurance Standards as Specification, Clause_	A279.8	sum			
1.93		Allow for preparing Project Schedule, reports, manuals, submittals and other deliverables as Specification, Clause_	A279.9	sum			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 1	PAGE 12 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 1 - GENERAL ITEMS (Cont'd)</u> <u>Specified Requirements (Cont'd)</u> Project Sign Board as described in specification, Clause_ (Item 1.94 to 1.96)					
	1.94	Establishment	A279.10	nr			
	1.95	Maintenance	A279.11	Day			
	1.96	Removal	A279.12	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 1	PAGE 13 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 1 - GENERAL ITEMS (Cont'd)</u></p> <p><u>METHOD RELATED CHARGES</u></p> <p><i>This Section is to be inserted by the Contractor. The Contractor must list all the method related charges that are applicable to this project and distinguish between fixed charges and time - related charges. The Contractor should permit for his own Method related charges.</i></p> <p><i>The list given below is for reference only and may or may not be adopted by the Contractor. The list is not exhaustive and the Contractor shall provide a detailed breakdown of all Staff, Plant and Equipment and to be explicit in his description of Method related charges.</i></p>					
1.97		<p><u>Accommodation and buildings for the Contractor</u></p>	A31*				
Carried to Part Summary						Dhs.	

Note:
 The Tenderer shall specify "Fixed" or "Time Related" next to the item description of each Method Related Charge, inserted by him.

PROJECT :-			BILL SECTION - D			PART - 1	PAGE 14 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 1 - GENERAL ITEMS (Cont'd)</u> <u>METHOD RELATED CHARGES (Cont'd)</u> 1.98 <u>Services</u>	A32*				
Note: The Tenderer shall specify "Fixed" or "Time Related" next to the item description of each Method Related Charge, inserted by him.							
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 1	PAGE 15 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 1 - GENERAL ITEMS (Cont'd)</u>					
		<u>METHOD RELATED CHARGES (Cont'd)</u>					
	1.99	<u>Plant</u>	A33*				
		Note: The Tenderer shall specify "Fixed" or "Time Related" next to the item description of each Method Related Charge, inserted by him.					
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 1	PAGE 16 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 1 - GENERAL ITEMS (Cont'd)</u> <u>METHOD RELATED CHARGES (Cont'd)</u> 1.100 <u>Plant</u>	A34*				
Note: The Tenderer shall specify "Fixed" or "Time Related" next to the item description of each Method Related Charge, inserted by him.							
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 1	PAGE 17 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 1 - GENERAL ITEMS (Cont'd)</u> <u>METHOD RELATED CHARGES (Cont'd)</u> 1.101 <u>Temporary Works</u>	A35*				
Note: The Tenderer shall specify "Fixed" or "Time Related" next to the item description of each Method Related Charge, inserted by him.							
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 1	PAGE 18 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 1 - GENERAL ITEMS (Cont'd)</u> <u>METHOD RELATED CHARGES (Cont'd)</u> 1.102 <u>Temporary Works</u>	A36*				
Note: The Tenderer shall specify "Fixed" or "Time Related" next to the item description of each Method Related Charge, inserted by him.							
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 1	PAGE 19 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 1 - GENERAL ITEMS (Cont'd)</u> <u>METHOD RELATED CHARGES (Cont'd)</u> 1.103 <u>Supervision and Labour</u>	A37*				
						Note:	
						The Tenderer shall specify "Fixed" or "Time Related" next to the item description of each Method Related Charge, inserted by him.	
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 1	PAGE 20 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 1 - GENERAL ITEMS (Cont'd)</u></p> <p><u>METHOD RELATED CHARGES (Cont'd)</u></p> <p>1.104 Compliance with the Conditions of Contract, Specification (the Tenderer shall separately list and price any other clause considered to have a monetary value).</p>	A990				
		<p>Note: The Tenderer shall specify "Fixed" or "Time Related" next to the item description of each Method Related Charge, inserted by him.</p>					
Carried to Part Summary						Dhs.	

** additional sheets can be inserted if necessary*

PROJECT :-		BILL SECTION - D	PART - 1	PAGE 21 of 21
		DESCRIPTION	AMOUNT (AED)	
		<u>PART 1 - GENERAL ITEMS (Cont'd)</u>		
		<u>PART SUMMARY</u>		
		D1 - Page 1		
		D1 - Page 2		
		D1 - Page 3		
		D1 - Page 4		
		D1 - Page 5		
		D1 - Page 6		
		D1 - Page 7		
		D1 - Page 8		
		D1 - Page 9		
		D1 - Page 10		
		D1 - Page 11		
		D1 - Page 12		
		D1 - Page 13		
		D1 - Page 14		
		D1 - Page 15		
		D1 - Page 16		
		D1 - Page 17		
		D1 - Page 18		
		D1 - Page 19		
		D1 - Page 20		
		TOTAL FOR PART 1 - GENERAL ITEMS		
		CARRIED TO GRAND SUMMARY	Dhs.	

Part 2

Ground Investigation

PROJECT :-			BILL SECTION - D			PART - 2	PAGE 1 of 5
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 2 - GROUND INVESTIGATION</u>					
		<u>Trial Pits and Trenches</u>					
		<u>Trial trenches to locate the existing services by hand, in any kind of soil other than rocks including preparation and submission of records, results and recommendations all as per specifications, drawings, dewatering if required and to Engineer's approval.</u>					
		<u>Trial trenches to ascertain/verify/locate existing services : maximum length 3m, excavation by hand</u>					
		<u>Number in material other than rock</u>					
2.01		Depth not exceeding 1m	B111.1	nr			
2.02		Maximum depth 1 - 2m	B112.1	nr			
2.03		Maximum depth 2 - 3m	B113.1	nr			
2.04		Maximum depth 3 - 5m	B114	nr			
2.05		Depth in material other than rock	B130.1	m			
2.06		Depth supported	B150.1	m			
2.07		Depth backfilled with excavated material for reinstatement	B160.1	m			
		<u>Trial trenches to ascertain/verify/locate existing services : maximum length 3-6m, excavation by hand</u>					
		<u>Number in material other than rock</u>					
2.08		Depth not exceeding 1m	B111.2	nr			
2.09		Maximum depth 1 - 2m	B112.2	nr			
2.10		Maximum depth 2 - 3m	B113.2	nr			
2.11		Depth in material other than rock	B130.2	m			
2.12		Depth supported	B150.2	m			
2.13		Depth backfilled with excavated material for reinstatement	B160.2	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 2	PAGE 2 of 5
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 2 - GROUND INVESTIGATION (Cont'd)</u>					
		<u>Trial Pits and Trenches (Cont'd)</u>					
		Trial trenches to ascertain/verify/locate existing services : maximum length 6-12m, excavation by hand					
		<u>Number in material other than rock</u>					
	2.14	Depth not exceeding 1m	B111.3	nr			
	2.15	Maximum depth 1 - 2m	B112.3	nr			
	2.16	Maximum depth 2 - 3m	B113.3	nr			
	2.17	Depth in material other than rock	B130.3	m			
	2.18	Depth supported	B150.3	m			
	2.19	Depth backfilled with excavated material for reinstatement	B160.3	m			
		Trial trenches to ascertain/verify/locate existing services : maximum length 12-18m, excavation by hand					
		<u>Number in material other than rock</u>					
	2.20	Depth not exceeding 1m	B111.4	nr			
	2.21	Maximum depth 1 - 2m	B112.4	nr			
	2.22	Maximum depth 2 - 3m	B113.4	nr			
	2.23	Depth in material other than rock	B130.4	m			
	2.24	Depth supported	B150.4	m			
	2.25	Depth backfilled with excavated material for reinstatement	B160.4	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 2	PAGE 3 of 5
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 2 - GROUND INVESTIGATION (Cont'd)</u>					
		<u>Rotary drilled boreholes</u>					
		Nominal diameter at base 150mm					
2.26		Number of boreholes; sub-surface site investigation for overhead road signs, light poles, Tunnel structures and Bridges.	B310	nr			
2.27		Depth without core recovery in holes of maximum depth not exceeding 5m	B331	m			
2.28		Depth with core recovery in holes of maximum depth 5 - 10m	B342	m			
2.29		Depth with core recovery in holes of maximum depth 10 - 20m	B343	m			
2.30		Depth with core recovery in holes of maximum depth 20 - 30m	B344	m			
2.31		Depth backfill with excavated material	B360	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 2	PAGE 4 of 5
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 2 - GROUND INVESTIGATION (Cont'd)</u>					
		<u>Samples</u>					
	2.32	Disturbed sample of soft material from the surface; minimum 40kg.	B412	nr			
		<u>Site tests and Observations</u>					
	2.33	Site test for Ground water level; as directed by the Engineer.	B512	nr			
	2.34	Standard penetration for rotary drilled boreholes.	B513	nr			
		<u>Laboratory Tests</u>					
	2.35	Moisture content	B711	nr			
	2.36	Particle size analysis by sieve	B714	nr			
	2.37	Unconfined compressive strength of core sample 1 - 2m height.	B771	nr			
Carried to Part Summary						Dhs.	

PROJECT :-		BILL SECTION - D	PART - 2	PAGE 5 of 5
		DESCRIPTION	AMOUNT (AED)	
		<u>PART 2 - GROUND INVESTIGATION (Cont'd)</u> <u>PART SUMMARY</u> D2 - Page 1 D2 - Page 2 D2 - Page 3 D2 - Page 4		
		TOTAL FOR PART 2 - GROUND INVESTIGATION CARRIED TO GRAND SUMMARY		



Part 3

Demolition and Site Clearance

PROJECT :-			BILL SECTION - D			PART - 3	PAGE 1 of 8
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 3 - DEMOLITION & SITE CLEARANCE</u>					
		<u>General Clearance</u>					
	3.01	General clearance as per Standard Specification Section - 2 Clause 2.2	D100	ha			
		<u>Removal of Trees</u>					
	3.02	Carefully excavate, remove, protect, transport and handover trees other than palm trees (girth 0.5 to 1m) to designated location identified by the concerned authority.	D210.1	nr			
	3.03	Carefully excavate, remove, protect, transport and handover Palm trees (girth 0.5 to 1m) to designated location identified by the concerned authority.	D210.2	nr			
		<u>Removal of Existing Buildings</u>					
		Break out and remove existing concrete building as per the drawings & Specification including excavation and cart to tip of foundations, backfilling of voids.					
	3.04	Volume;not exceeding 50m ³	D421	sum			
	3.05	Volume; 50-100 m ³	D422	sum			
	3.06	Volume; 100-250 m ³	D423	sum			
	3.07	Volume; 250-500 m ³	D424	sum			
	3.08	Volume; 500-1000 m ³	D425	sum			
	3.09	Volume; 1000-2500 m ³	D426	sum			
	3.10	Volume; 2500-5000 m ³	D427	sum			
	3.11	Volume exceeding 5000 m ³	D428	sum			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 3	PAGE 2 of 8
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 3 - DEMOLITION & SITE CLEARANCE (Cont'd)</u>					
		<u>Removal of Existing Boundry wall and other Concrete Structures</u>					
		Break out and remove existing boundary wall and other concrete structures as per the drawings & Specification including excavation and cart to tip of foundations, backfilling of voids.					
	3.12	Volume;not exceeding 50m ³	D521	sum			
	3.13	Volume; 50-100 m ³	D522	sum			
	3.14	Volume; 100-250 m ³	D523	sum			
	3.15	Volume; 250-500 m ³	D524	sum			
	3.16	Volume; 500-1000 m ³	D525	sum			
		<u>Removal of Existing Kerb</u>					
	3.17	Break out and remove existing Kerb of any specified type, including concrete base, haunching and cart to tip to approved dump site as directed by the Engineer.	D900.1	m			
	3.18	Carefully remove existing precast concrete Kerb of any specified type, and set aside in contractor's store for reuse including concrete base, haunching and haul to approved dump site as directed by the Engineer.	D900.2	m			
		<u>Removal of Existing Sidewalk</u>					
	3.19	Carefully remove existing 60mm interlocking pedestrian pavers including under layers, tiles set aside for reuse, sand bed and subbase material haul up to approved dump site as directed by the Engineer.	D900.3	m ²			
	3.20	Carefully remove existing 60mm interlocking pedestrian pavers including under layers, tiles palette and deliver to stores, sand bed and subbase material haul up to approved dump site as directed by the Engineer.	D900.4	m ²			
	3.21	Breakout and remove existing 60mm interlocking pedestrian pavers including under layers and cart to tip to approved dump site as directed by the Engineer.	D900.5	m ²			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 3	PAGE 3 of 8
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 3 - DEMOLITION & SITE CLEARANCE (Cont'd)</u>					
		<u>Removal of Existing Sidewalk (Cont'd)</u>					
	3.22	Carefully remove existing 60mm thick block paving tiles, including under layers, tiles palette and deliver to stores, sand bed and subbase material haul up to approved dump site as directed by the Engineer.	D900.6	m ²			
	3.23	Breakout and remove existing 60mm thick block paving tiles, under layers and cart to tip to approved dump site as directed by the Engineer.	D900.7	m ²			
	3.24	Carefully remove existing 80mm thick interlocking vehicular pavers including under layers, tiles set aside for reuse, sand bed and subbase material haul up to approved dump site as directed by the Engineer.	D900.8	m ²			
	3.25	Breakout and remove existing 80mm thick interlocking vehicular pavers including under layers, and cart to tip to approved dump site as directed by the Engineer.	D900.9	m ²			
		<u>Removal of Existing Concrete Barrier</u>					
	3.26	Break out and remove existing concrete barrier of any specified type, including concrete foundation, cart to tip to approved dump site as directed by the Engineer.	D900.10	m			
	3.27	Carefully and remove existing precast concrete barrier of any specified type, set aside in Contractor's store for reuse, including foundation haul to approved dump site as directed by the Engineer.	D900.11	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 3	PAGE 4 of 8
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 3 - DEMOLITION & SITE CLEARANCE</u> <u>(Cont'd)</u>					
		<u>Removal of Existing Warning and Regulatory Signs, Street Name Signs and Guide Signs</u> <u>(Cont'd)</u>					
		Removal of Existing Metal Beam Guard Rail					
	3.28	Carefully remove existing metal beam guard rail of single rail, including posts, plates etc. and set aside in Contractor's store for reuse, including removal of foundation and cart to tip to approved dump site and backfill of voids.	D900.12	m			
	3.29	Carefully remove existing metal beam guard rail of single rail, including posts, plates etc. and deliver to Department stores, including removal of foundation and cart to tip to approved dump site and backfill of voids.	D900.13	m			
	3.30	Carefully remove existing metal beam guard rail of double rail, including posts, plates etc. and set aside in Contractor's store for reuse, including removal of foundation and cart to tip to approved dump site and backfill of voids.	D900.14	m			
	3.31	Carefully remove existing metal beam guard rail of double rail, including posts, plates etc. and deliver to Department stores, including removal of foundation and cart to tip to approved dump site and backfill of voids.	D900.15	m			
		<u>Removal of Existing Chain Link Fence</u>					
	3.32	Carefully remove existing chainlink fence and post, deliver to department stores including removal of foundation and cart to tip to the approved dump site and backfill of voids.	D900.16	m			
	3.33	Carefully remove existing chain link fence and post, set aside in Contractor's store for reuse, including removal of foundation and cart to tip to the approved dump site and backfill of voids.	D900.17	m			
	3.34	Carefully remove existing chain link fence Gate (single leaf / double leaf width ----- m) and set aside in Contractor's store for reuse or return to Department stores including excavation and backfill of voids.	D900.18	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 3	PAGE 5 of 8
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 3 - DEMOLITION & SITE CLEARANCE (Cont'd)</u>					
		<u>Removal of Existing Warning and Regulatory Signs, Street Name Signs and Guide Signs (Cont'd)</u>					
	3.35	Carefully remove existing warning and regulatory signs and posts, and deliver to department stores including removal of foundation cart to tip to the approved dump site and backfill of voids.	D900.19	nr			
	3.36	Carefully remove existing warning and regulatory signs and posts, set aside in Contractor's store for reuse including removal of foundation cart to tip to the approved dump site and backfill of voids.	D900.20	nr			
	3.37	Carefully remove existing street name signs and posts, and deliver to department stores including removal of foundation cart to tip to the approved dump site and backfill of voids.	D900.21	nr			
	3.38	Carefully remove existing street name signs and posts, set aside in Contractor's store for reuse including removal of foundation cart to tip to the approved dump site and backfill of voids.	D900.22	nr			
	3.39	Carefully dismantle and remove existing ground mounted guide sign structures and sign panels, and set aside in contractor's store for reuse; sign area less than 5-m ² , including removal of foundation cart to tip to the approved dump site and backfill of voids	D900.23	nr			
	3.40	Carefully dismantle and remove existing ground mounted guide sign structures and sign panels, and set aside in contractor's store for reuse; sign area 5-10m ² , including removal of foundation cart to tip to the approved dump site and backfill of voids	D900.24	nr			
	3.41	Carefully dismantle and remove existing ground mounted guide sign structures and sign panels, and set aside in contractor's store for reuse; sign area 10-15m ² , including removal of foundation cart to tip to the approved dump site and backfill of voids	D900.25	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 3	PAGE 6 of 8
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 3 - DEMOLITION & SITE CLEARANCE</u> <u>(Cont'd)</u> <u>Removal of Existing Warning and Regulatory Signs, Street Name Signs and Guide Signs</u> <u>(Cont'd)</u> Carefully dismantle and remove existing Cantilever sign structures and sign panels, and set aside in contractor's store for reuse, including removal of foundation cart to tip to the approved dump site and backfill of voids					
	3.42	Sign area less than 5m ²	D900.26	nr			
	3.43	Sign area 15 - 20m ²	D900.27	nr			
	3.44	Sign area 20 - 25m ²	D900.28	nr			
		Carefully dismantle and remove existing cantilever sign structures and sign panels, and set return to department stores, including removal of foundation cart to tip to the approved dump site and backfill of voids					
	3.45	Sign area less than 5m ²	D900.29	nr			
	3.46	Sign area 15 - 20m ²	D900.30	nr			
	3.47	Sign area 20 - 25m ²	D900.31	nr			
		Carefully dismantle and remove existing gantry sign structures and sign panels, and set aside in contractor's store for reuse, including removal of foundation cart to tip to the approved dump site and backfill of voids					
	3.48	Sign area less than 5m ²	D900.32	nr			
	3.49	Sign area 15 - 20m ²	D900.33	nr			
	3.50	Sign area 20 - 25m ²	D900.34	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 3	PAGE 7 of 8
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 3 - DEMOLITION & SITE CLEARANCE</u> <u>(Cont'd)</u> Carefully dismantle and remove existing gantry sign structures and sign panels, set aside in contractor's and later return to Department Stores, including removal of foundation cart to tip to the approved dump site and backfill of voids					
	3.51	Sign area less than 5m ²	D900.35	nr			
	3.52	Sign area 15 - 20m ²	D900.36	nr			
	3.53	Sign area 20 - 25m ²	D900.37	nr			
		<u>Removal of Obstructions</u>					
	3.54	Removal of Rock and Obstructions	D900.38	m ³			
Carried to Part Summary						Dhs.	

PROJECT :-		BILL SECTION - D	PART - 3	PAGE 8 of 8
		ITEM DESCRIPTION	AMOUNT (AED)	
		<u>PART 3 - DEMOLITION & SITE CLEARANCE (Cont'd)</u> <u>PART SUMMARY</u> D3 - Page 1 D3 - Page 2 D3 - Page 3 D3 - Page 4 D3 - Page 5 D3 - Page 6 D3 - Page 7		
		TOTAL FOR PART 3 - DEMOLITION & SITE CLEARANCE CARRIED TO GRAND SUMMARY		

Part 4

Earthworks

PROJECT :-			BILL SECTION - D			PART - 4	PAGE 1 of 6
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 4 - EARTHWORKS</u>					
		<u>4.1 - Excavation for Cuttings</u>					
		Excavation for cuttings: material other than top soil, rock or artificial hard material for attaining the proposed sub grade, haul up to stockpiles on designated area to be determined by the Department					
	4.1.01	Depth not exceeding 0.25m	E221	m ³			
	4.1.02	Depth 0.25 - 0.5m	E222	m ³			
	4.1.03	Depth 0.5 - 1m	E223	m ³			
	4.1.04	Depth 1 - 2m	E224	m ³			
	4.1.05	Depth 2 - 5m	E225	m ³			
	4.1.06	Depth 5 - 10m	E226	m ³			
	4.1.07	Depth 10 - 15m	E227	m ³			
	4.1.08	Depth exceeding 15m	E228	m ³			
	4.1.09	Excavation for cutting rock	E230	m ³			
	4.1.10	Excavation of reinforced concrete foundation; depth 1-2m.	E324	m ³			
	4.1.11	Excavation of reinforced concrete foundation; depth 2-5m.	E325	m ³			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 4	PAGE 2 of 6
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 4 - EARTHWORKS</u>					
		<u>4.2 - Excavation Ancillaries</u>					
	4.2.01	Trimming of excavated surfaces not to receive permanent works; material other than topsoil, rock or artificial hard material.	E512	m ²			
	4.2.02	Preparation of excavated surfaces to receive permanent works; material other than top soil, rock or artificial hard material.	E522	m ²			
	4.2.03	Preparation of excavated surfaces to receive permanent works; rock	E523	m ²			
	4.2.04	Disposal of excavated surplus material to spoil heaps on designated area to be determined by the Department.	E532	m ³			
	4.2.05	Disposal of excavated material, rock to tip.	E533.1	m ³			
	4.2.06	Disposal of excavated concrete or reinforced concrete	E533.2	m ³			
	4.2.07	Double-handling of excavated material.	E542	m ³			
	4.2.08	Excavation of material below the final surface and replacement with stabling crushed material, including disposal of excavated material to tip	E560	m ³			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 4	PAGE 3 of 6
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 4 - EARTHWORKS (Cont'd)</u>					
		<u>4.3 - Filling Embankments</u>					
		Filling to embankments, suitable excavated material other than top soil or rock					
4.3.01		Height not exceeding 0.5m	E624.1	m ³			
4.3.02		Height 0.5 - 1m	E624.2	m ³			
4.3.03		Height 1 - 1.5m	E624.3	m ³			
4.3.04		Height 1.5 - 2m	E624.4	m ³			
4.3.05		Height 2 - 2.5m	E624.5	m ³			
4.3.06		Height 2.5 - 5.0m	E624.6	m ³			
		Filling to embankments: imported material shall be collected from the designated borrow pit to be determined by the Department, other than top soil or rock					
4.3.07		Height not exceeding 0.5m	E625.1	m ³			
4.3.08		Height 0.5 - 1m	E625.2	m ³			
4.3.09		Height 1 - 1.5m	E625.3	m ³			
4.3.10		Height 1.5 - 2m	E625.4	m ³			
4.3.11		Height 2 - 2.5m	E625.5	m ³			
4.3.12		Height 2.5 - 5.0m	E625.6	m ³			
4.3.13		Filling below subgrade with imported natural material Improved Subgrade, material other than top soil or rock in areas where CBR is less than required than specified.	E625.7	m ³			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 4	PAGE 4 of 6
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 4 - EARTHWORKS (Cont'd)</u>					
		<u>4.4 - Filling General</u>					
		Excavated material shall be collected from the designated stock pile to be determined by the Department.					
	4.4.01	Height not exceeding 0.5m	E634.1	m ³			
	4.4.02	Height 0.5 - 1m	E634.1	m ³			
	4.4.03	Height 1 - 1.5m	E634.2	m ³			
	4.4.04	Height 1.5 - 2m	E634.3	m ³			
	4.4.05	Height 2 - 2.5m	E634.4	m ³			
	4.4.06	Height 2.5 - 5.0m	E634.5	m ³			
	4.4.07	Filling general, rock boulders, size approximately 150 - 300mm, dumped and rolled until area stabilized.	E637	m ³			
	4.4.08	Filling 50mm thick sand layer over geotextile.	E645	m ³			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 4	PAGE 5 of 6
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		PART 4 - EARTHWORKS (Cont'd)					
		4.5 - Filling Ancillaries					
	4.5.01	Trimming of filled surfaces not to receive permanent works; material other than topsoil, rock or artificial hard material.	E712	m ²			
	4.5.02	Preparation of filled surfaces to receive permanent works; material other than top soil, rock or artificial hard material.	E722.1	m ²			
	4.5.03	Preparation of filled surfaces to receive capping layer to protect slope.	E722.2	m ²			
	4.5.04	Preparation of existing ground to receive fill material.	E790	m ²			
		4.6 - Slope Protection					
		Slope protection including compacting the slope surface, excavating and backfill for the foundation, preparing the foundation, surnishing and applying materials to protect slope, supply and laying geotextile fabric and bedding materials, in accordance with drawings and requirements of specification.					
		Rip-rap slope protection					
	4.6.01	Stone Rip-rap; loose	X900.1	m ³			
	4.6.02	Stone Rip-rap; hand placed	X900.2	m ³			
	4.6.03	Stone Rip-rap; keyed	X900.3	m ³			
	4.6.04	Stone Rip-rap; grouted	X900.4	m ³			
	4.6.05	Sack rip - rap	X900.5	m ³			
	4.6.06	Slope protection with Quarry spalls	X900.6	m ³			
	4.6.07	Slope protection with Filter Blanket	X900.7	m ³			
	4.6.08	Coarse aggregate for surface covering including preparing surface, shaping to finished grade	X900.8	m ³			
Carried to Part Summary						Dhs.	

PROJECT :-		BILL SECTION - D	PART - 4	PAGE 6 of 6
		DESCRIPTION	AMOUNT (AED)	
		<p><u>PART 4 - EARTHWORKS</u></p> <p><u>PART SUMMARY</u></p> <p>D4 - Page 1</p> <p>D4 - Page 2</p> <p>D4 - Page 3</p> <p>D4 - Page 4</p> <p>D4 - Page 5</p>		
		<p>TOTAL FOR PART 4 - EARTHWORKS</p> <p>CARRIED TO GRAND SUMMARY</p>		Dhs.

Part 5

Roads and Pavings

PROJECT :-			BILL SECTION - D			PART - 5	PAGE 1 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 5 - ROADS AND PAVINGS</u>					
		<u>5.1 - Unbound Sub-base</u>					
	5.1.01	Geotextile Fabric	R160	m ²			
	5.1.02	Aggregate Base Course; depth 60-100mm; Gradation Type B	R193.1	m ²			
	5.1.03	Aggregate Base Course; depth 100-150mm; Gradation Type B	R194.1	m ²			
	5.1.04	Aggregate Base Course; depth 150-200mm; Gradation Type B	R195.1	m ²			
	5.1.05	Aggregate Base Course; depth 200-250mm; Gradation Type B	R196.1	m ²			
	5.1.06	Aggregate Base Course; depth 250-300mm; Gradation Type B	R197.1	m ²			
	5.1.07	Subbase/base Course; Sand Asphalt Type A; depth 100-150mm	R194.2	m ²			
	5.1.08	Subbase/base Course; Sand Asphalt Type A; depth 150-200mm	R195.2	m ²			
	5.1.09	Subbase/base Course; Sand Asphalt Type A; depth 200-250mm	R196.2	m ²			
	5.1.10	Subbase/base Course; Sand Asphalt Type A; depth 250-300mm	R197.2	m ²			
	5.1.11	Granular subbase; depth 100-150mm	R194.3	m ²			
	5.1.12	Granular sub base; depth 150-200mm; CBR > 30%	R195.3	m ²			
	5.1.13	Pervious backfill Type III; depth 30-60mm	R192.1	m ²			
	5.1.14	Pervious backfill Type III; depth 60-100mm	R193.2	m ²			
	5.1.15	Pervious backfill Type V; depth 100-150mm	R194.4	m ²			
	5.1.16	Pervious backfill Type V; depth 150-200mm	R195.5	m ²			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 5	PAGE 2 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 5 - ROADS AND PAVINGS (Cont'd)</u>					
		<u>5.2 - Cement or other hydraulically bound pavements</u>					
	5.2.01	Cement stabilized sub-base/base course; depth 100-150mm	R294.1	m ²			
	5.2.02	Cement stabilized sub-base/base course; depth 150-200mm	R295.1	m ²			
	5.2.03	Cement stabilized sub-base/base course; depth 200-250mm	R296.1	m ²			
	5.2.04	Cement stabilized sub-base/base course; depth 250-300mm	R297.1	m ²			
	5.2.05	Wet Mix Macadam; depth 100-150mm	R294.2	m ²			
	5.2.06	Wet Mix Macadam; depth 150-200mm	R295.2	m ²			
	5.2.07	Wet Mix Macadam; depth 200-250mm	R296.2	m ²			
	5.2.08	Wet Mix Macadam; depth 250-300mm	R297.2	m ²			
		<u>5.3 - Bituminous bound pavements</u>					
	5.3.01	Asphaltic Concrete Base Course; Type I, depth 60-100mm	R313	m ²			
	5.3.02	Asphaltic Concrete Base Course; Type I, depth 100-150mm	R314	m ²			
	5.3.03	Asphaltic Concrete Base Course; Type I, depth 150-200mm	R315	m ²			
	5.3.04	Asphaltic Concrete Base Course; Type I, depth 200-250mm	R316	m ²			
	5.3.05	Asphaltic Concrete Base Course; Type I, depth 250-300mm	R317	m ²			
	5.3.06	Asphaltic Concrete Binder Course; depth 60-100mm	R323	m ²			
	5.3.07	Asphaltic Concrete Binder Course; depth 100-150mm	R324	m ²			
	5.3.08	Asphaltic Concrete Binder Course; depth 150-200mm	R325	m ²			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 5	PAGE 3 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 5 - ROADS AND PAVINGS (Cont'd)</u>					
		<u>5.3 - Bituminous bound pavements (Cont'd)</u>					
	5.3.09	Asphaltic Concrete Binder Course; depth 200-250mm	R326	m ²			
	5.3.10	Asphaltic Concrete Binder Course; depth 250-300mm	R327	m ²			
	5.3.11	Asphaltic Concrete Wearing Course Type II; depth 30-60mm	R352	m ²			
	5.3.12	Asphaltic Concrete Wearing Course Type II; depth 60-100mm	R353	m ²			
	5.3.13	Asphaltic Concrete Wearing Course Type II; depth 100-150mm	R354	m ²			
	5.3.14	Prime Coat	R390.1	m ²			
	5.3.15	Tack Coat	R390.2	m ²			
	5.3.16	Cold planning (milling) and remove existing road surfaces up to 50mm depth; milled material to be removed to dump site.	R470.1	m ²			
	5.3.17	Cold planning (milling) and remove existing road surfaces up to 50 to 100mm depth; milled material to be removed to dump site.	R470.2	m ²			
	5.3.18	Asphaltic Concrete Speed Humps	R490	m ²			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 5	PAGE 4 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 5 - ROADS AND PAVINGS (Cont'd)</u>					
		<u>5.4 - Kerbs, Channels, Edgings, footways and paved areas</u>					
		Kerb, channels and edgings; straight or curved complete as shown in drawings & specification including transition, concrete hunching, foundation, formwork, earthworks, backfilling, disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department.					
	5.4.01	Precast Concrete Kerb (Type - A) (Size 440mm x 200mm)	R711.1	m			
	5.4.02	Precast Concrete Kerb (Type - C) (Size 540mm x 200mm)	R711.2	m			
	5.4.03	Precast Concrete Kerb (Type - E) (Size 400mm x 200mm)	R711.3	m			
	5.4.04	Precast Concrete Kerb (Type - A1) (Size 255mm x 125mm)	R711.4	m			
	5.4.05	Precast Concrete Kerb (Type - C1) (Size 305mm x 150mm)	R711.5	m			
	5.4.06	Precast Concrete Kerb (Type - E1) (Size 255mm x 125mm)	R711.6	m			
	5.4.07	Cast-in-situ Concrete Kerb (Type - D) (Size 400mm x 400mm)	R790.1	m			
	5.4.08	Cast-in-situ Concrete Ramp Kerb (Type - G) (Size 300mm - 560mm x 200mm)	R790.2	m			
	5.4.09	Cast-in-situ Concrete Kerb (Type - F) (Size 250mm x 100mm)	R790.3	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 5	PAGE 5 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 5 - ROADS AND PAVINGS (Cont'd)</u>					
		<u>5.4 - Kerbs, Channels, Edgings, footways and paved areas (Cont'd)</u>					
	5.4.10	Quarry Tiles; thickness 13mm and including 40mm thick Latex Mortar.	R750.1	m ²			
	5.4.11	Interlocking Pedestrian Pavers: thickness 60mm and including 50mm thick levelling course and sand fill material.	R750.2	m ²			
	5.4.12	Interlocking vehicular pavers: thickness 80mm and including 50mm thick levelling course and sand fill material.	R750.3	m ²			
	5.4.13	Interlocking vehicular pavers: thickness 80mm and including 50mm thick levelling course and sand fill material; at Raised Cosswalk	R750.4	m ²			
	5.4.14	Relay previously set aside Interlocking Pedestrian Pavers: thickness 60mm and including 50mm thick levelling course and sand fill material.	R790.1	m ²			
	5.4.15	Relay previously set aside Interlocking Pedestrian Pavers: thickness 80mm and including 50mm thick levelling course and sand fill material.	R790.2	m ²			
	5.4.16	Relay previously set aside precast curb: including excavation,foundaion,haunching,backfilling	R900.3	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 5	PAGE 6 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 5 - ROADS AND PAVINGS (Cont'd)</u>					
		<u>5.5 - Ancillaries</u>					
		<u>Non-illuminated Traffic Signs</u>					
		Warning and regulatory signs with posts and foundation including mounting, post clip and bolt assembly, pit excavation, compaction, backfilling and disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department.					
	5.5.01	Octagonal sign panel, 301(600)	R811.1	nr			
	5.5.02	Octagonal sign panel, 301(750)	R811.2	nr			
	5.5.03	Triangular sign panel, 302 (750)	R811.3	nr			
	5.5.04	Triangular sign panel, 302 (900)	R811.4	nr			
	5.5.05	Triangular and rectangular sign panel 303 (600) & (281x375)	R811.5	nr			
	5.5.06	Circular sign panel, 304 (600)	R811.6	nr			
	5.5.07	Circular sign panel, 304 (750)	R811.7	nr			
	5.5.08	Rectangular sign panel 305 (600x750)	R811.8	nr			
	5.5.09	Rectangular sign panel 306 (750x600)	R811.9	nr			
	5.5.10	Rectangular sign panel 307 (750x600)	R811.10	nr			
	5.5.11	Circular sign panel, 321 (600)	R811.11	nr			
	5.5.12	Circular sign panel, 322 (600)	R811.12	nr			
	5.5.13	Circular sign panel, 323 (600)	R811.13	nr			
	5.5.14	Circular sign panel, 324 (600)	R811.14	nr			
	5.5.15	Circular sign panel, 325 (600)	R811.15	nr			
	5.5.16	Circular sign panel, 326 (600)	R811.16	nr			
	5.5.17	Circular sign panel, 327 (600)	R811.17	nr			
	5.5.18	Circular sign panel, 328 (600)	R811.18	nr			
	5.5.19	Circular sign panel, 329 (600)	R811.19	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 5	PAGE 7 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 5 - ROADS AND PAVINGS (Cont'd)</u>					
		<u>5.5 - Ancillaries (Cont'd)</u>					
		<u>Non-illuminated Traffic Signs (Cont'd)</u>					
		Warning and regulatory signs with posts and foundation including mounting, post clip and bolt assembly, pit excavation, compaction, backfilling and disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department.					
	5.5.20	Circular sign panel, 330 (600)	R811.20	nr			
	5.5.21	Circular sign panel, 339 (600)	R811.21	nr			
	5.5.22	Circular sign panel, 340 (600)	R811.22	nr			
	5.5.23	Circular sign panel, 341 (600)	R811.23	nr			
	5.5.24	Circular sign panel, 342 (600)	R811.24	nr			
	5.5.25	Circular sign panel, 343 (600)	R811.25	nr			
	5.5.26	Circular sign panel, 344(600)	R811.26	nr			
	5.5.27	Circular sign panel, 346 (600)	R811.27	nr			
	5.5.28	Circular sign panel, 347 (600)	R811.28	nr			
	5.5.29	Circular sign panel, 348 (600)	R811.29	nr			
	5.5.30	Circular sign panel, 349 (600)	R811.30	nr			
	5.5.31	Circular sign panel, 350 (600)	R811.31	nr			
	5.5.32	Circular sign panel, 351 (600)	R811.32	nr			
	5.5.33	Circular sign panel, 352 (600)	R811.33	nr			
	5.5.34	Circular sign panel, 353 (600)	R811.34	nr			
	5.5.35	Circular sign panel, 354 (600)	R811.35	nr			
	5.5.36	Circular sign panel, 355 (600)	R811.36	nr			
	5.5.37	Circular sign panel, 370 (600)	R811.37	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 5	PAGE 8 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 5 - ROADS AND PAVINGS (Cont'd)</u>					
		<u>5.5 - Ancillaries (Cont'd)</u>					
		<u>Non-illuminated Traffic Signs (Cont'd)</u>					
		Warning and regulatory signs with posts and foundation including mounting, post clip and bolt assembly, pit excavation, compaction, backfilling and disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department.					
	5.5.38	Rectangular sign panel 371 (450x600)	R811.38	nr			
	5.5.39	Rectangular sign panel 372 (450x600)	R811.39	nr			
	5.5.40	Rectangular sign panel 373 (450x600)	R811.40	nr			
	5.5.41	Rectangular sign panel 374 (300x600)	R811.41	nr			
	5.5.42	Rectangular sign panel 375 (300x600)	R811.42	nr			
	5.5.43	Rectangular sign panel 376 (300x600)	R811.43	nr			
	5.5.44	Rectangular sign panel 377 (450x600)	R811.44	nr			
	5.5.45	Rectangular sign panel 378 (450x600)	R811.45	nr			
	5.5.46	Rectangular sign panel 379 (450x600)	R811.46	nr			
	5.5.47	Rectangular sign panel 380 (300x600)	R811.47	nr			
	5.5.48	Rectangular sign panel 381 (300x600)	R811.48	nr			
	5.5.49	Rectangular sign panel 382 (300x600)	R811.49	nr			
	5.5.50	Rectangular sign panel 383 (300x600)	R811.50	nr			
	5.5.51	Rectangular sign panel 384 (300x600)	R811.51	nr			
	5.5.52	Rectangular sign panel 385 (300x600)	R811.52	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 5	PAGE 9 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 5 - ROADS AND PAVINGS (Cont'd)</u>					
		<u>5.5 - Ancillaries (Cont'd)</u>					
		<u>Non-illuminated Traffic Signs (Cont'd)</u>					
		Warning and regulatory signs with posts and foundation including mounting, post clip and bolt assembly, pit excavation, compaction, backfilling and disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department.					
	5.5.53	Rectangular sign panel 386 (300x600)	R811.53	nr			
	5.5.54	Rectangular sign panel 387 (300x470)	R811.54	nr			
	5.5.55	Rectangular sign panel 388 (300x600)	R811.55	nr			
	5.5.56	Rectangular sign panel 389 (300x600)	R811.56	nr			
	5.5.57	Rectangular sign panel 390 (300x600)	R811.57	nr			
	5.5.58	Rectangular sign panel 391 (300x600)	R811.58	nr			
	5.5.59	Rectangular sign panel 398 (600x800)	R811.59	nr			
	5.5.60	Rectangular sign panel 399 (600x800)	R811.60	nr			
	5.5.61	Triangular sign panel, 401 (750)	R811.61	nr			
	5.5.62	Triangular sign panel, 402 (750)	R811.62	nr			
	5.5.63	Triangular sign panel, 403 (750)	R811.63	nr			
	5.5.64	Triangular sign panel, 404 (750)	R811.64	nr			
	5.5.65	Triangular sign panel, 405 (750)	R811.65	nr			
	5.5.66	Triangular sign panel, 406 (750)	R811.66	nr			
	5.5.67	Triangular sign panel, 407 (750)	R811.67	nr			
	5.5.68	Triangular sign panel, 408 (750)	R811.68	nr			
	5.5.69	Triangular sign panel, 409 (750)	R811.69	nr			
	5.5.70	Triangular sign panel, 410 (750)	R811.70	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 5	PAGE 10 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 5 - ROADS AND PAVINGS (Cont'd)</u>					
		<u>5.5 - Ancillaries (Cont'd)</u>					
		<u>Non-illuminated Traffic Signs (Cont'd)</u>					
		Warning and regulatory signs with posts and foundation including mounting, post clip and bolt assembly, pit excavation, compaction, backfilling and disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department.					
	5.5.71	Triangular sign panel, 411 (750)	R811.71	nr			
	5.5.72	Triangular sign panel, 412 (750)	R811.72	nr			
	5.5.73	Triangular sign panel, 413 (750)	R811.73	nr			
	5.5.74	Triangular sign panel, 414 (750)	R811.74	nr			
	5.5.75	Triangular sign panel, 415 (750)	R811.75	nr			
	5.5.76	Triangular sign panel, 416 (750)	R811.76	nr			
	5.5.77	Triangular sign panel, 417 (750)	R811.77	nr			
	5.5.78	Triangular sign panel, 418 (750)	R811.78	nr			
	5.5.79	Triangular sign panel, 419 (750)	R811.79	nr			
	5.5.80	Triangular sign panel, 420 (750)	R811.80	nr			
	5.5.81	Triangular sign panel, 421 (750)	R811.81	nr			
	5.5.82	Triangular sign panel, 422 (750)	R811.82	nr			
	5.5.83	Triangular sign panel, 423 (750)	R811.83	nr			
	5.5.84	Triangular sign panel, 424 (750)	R811.84	nr			
	5.5.85	Triangular sign panel, 425 (750)	R811.85	nr			
	5.5.86	Triangular sign panel, 426 (750)	R811.86	nr			
	5.5.87	Triangular sign panel, 427 (750)	R811.87	nr			
	5.5.88	Triangular sign panel, 428 (750)	R811.88	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 5	PAGE 11 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 5 - ROADS AND PAVINGS (Cont'd)</u>					
		<u>5.5 - Ancillaries (Cont'd)</u>					
		<u>Non-illuminated Traffic Signs (Cont'd)</u>					
		Warning and regulatory signs with posts and foundation including mounting, post clip and bolt assembly, pit excavation, compaction, backfilling and disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department.					
	5.5.89	Triangular sign panel, 429 (750)	R811.89	nr			
	5.5.90	Triangular sign panel, 430 (750)	R811.90	nr			
	5.5.91	Triangular sign panel, 431 (750)	R811.91	nr			
	5.5.92	Triangular sign panel, 432 (750)	R811.92	nr			
	5.5.93	Triangular sign panel, 433 (750)	R811.93	nr			
	5.5.94	Triangular sign panel, 434 (750)	R811.94	nr			
	5.5.95	Triangular sign panel, 435 (750)	R811.95	nr			
	5.5.96	Triangular sign panel, 436 (750)	R811.96	nr			
	5.5.97	Triangular sign panel, 437 (750)	R811.97	nr			
	5.5.98	Triangular sign panel, 438 (750)	R811.98	nr			
	5.5.99	Triangular sign panel, 450 (750)	R811.99	nr			
	5.5.100	Rectangular sign panel, 451 (150x600)	R811.100	nr			
	5.5.101	Rectangular sign panel, 452 (150x600)	R811.101	nr			
	5.5.102	Rectangular sign panel, 454 (400x400)	R811.102	nr			
	5.5.103	Rectangular sign panel, 455 (400x400)	R811.103	nr			
	5.5.104	Rectangular sign panel, 456 (1200x400)	R811.104	nr			
	5.5.105	Rectangular sign panel, 457 (1200x400)	R811.105	nr			
	5.5.106	Rectangular sign panel, 458 (2400x400)	R811.106	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 5	PAGE 12 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 5 - ROADS AND PAVINGS (Cont'd)</u>					
		<u>5.5 - Ancillaries (Cont'd)</u>					
		<u>Non-illuminated Traffic Signs (Cont'd)</u>					
		Warning and regulatory signs with posts and foundation including mounting, post clip and bolt assembly, pit excavation, compaction, backfilling and disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department.					
	5.5.107	Rectangular sign panel, 465, Lane drop right	R811.107	nr			
	5.5.108	Rectangular sign panel, 466, Lane drop left	R811.108	nr			
	5.5.109	Rectangular sign panel, 472, Beginning of median	R811.109	nr			
	5.5.110	Rectangular sign panel, 473, End of median	R811.110	nr			
	5.5.111	Rectangular sign panel, 480, Additional lane	R811.111	nr			
	5.5.112	Rectangular sign panel, 481, Additional lane	R811.112	nr			
	5.5.113	Rectangular sign panel, 482, Joining lane	R811.113	nr			
	5.5.114	Rectangular sign panel, 483, Joining lane	R811.114	nr			
	5.5.115	Rectangular sign panel, 484, Lane use control trucks and busses	R811.115	nr			
	5.5.116	Rectangular sign panel, 485, Lane use control trucks and busses	R811.116	nr			
	5.5.117	Rectangular sign panel, 486, Lane use control directional restriction	R811.117	nr			
	5.5.118	Rectangular sign panel, 490, Lanes merge	R811.118	nr			
	5.5.119	Rectangular sign panel, 365, Qualification plate	R811.119	nr			
	5.5.120	Rectangular sign panel, 389, Supplementary plate	R811.120	nr			
	5.5.121	Re erect set aside guide sign structure in new location including guide sign panels.	R811.121	nr			
	5.5.122	Re erect set aside gantry sign structure in new location including guide sign panels.	R811.122	nr			
	5.5.123	Re erect set aside cantilever sign structure in new location including guide sign panels.	R811.123	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 5	PAGE 13 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 5 - ROADS AND PAVINGS (Cont'd)</u></p> <p><u>5.5 - Ancillaries (Cont'd)</u></p> <p><u>Traffic Signs- illuminated</u></p> <p>Supply and install sign panel on Ground mounted sign, Cantilever sign & Gantry sign structures, all in accordance with specification and drawings.</p> <p>Sign Panel</p>					
	5.5.124	Ground Mounted Guide Sign Panel	R812.1	m ²			
	5.5.125	Cantilever Guide Sign Panel	R812.2	m ²			
	5.5.126	Gantry Guide Sign Panel	R812.3	m ²			
		<p>Supply and install Structure Posts and Foundation including mounting, post clip and bolt assembly, pit excavation, compaction, backfilling and disposal of surplus excavated material to spoil heaps on designated area, all in accordance with specification and drawings.</p> <p>Structure Post & Foundation</p>					
	5.5.127	Ground Mounted Guide Sign	M900.1	nr			
		<p>Supply and install Structure Posts and CIDH Foundation for Cantilever Guide Sign & Gantry Guide Sign structures including mounting, post clip and bolt assembly, walkway brackets, pit excavation, compaction, backfilling and disposal of surplus excavated material to spoil heaps on designated area, all in accordance with specification and drawings.</p>					
	5.5.128	Cantilever Guide Sign	M900.2	nr			
	5.5.129	Gantry Guide Sign	M900.3	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 5	PAGE 14 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 5 - ROADS AND PAVINGS (Cont'd)</u>					
		<u>5.5 - Ancillaries (Cont'd)</u>					
		<u>Surface marking; Thermo Plastic Marking as specified</u>					
	5.5.130	Non reflective raised pavement marker; Type NR	R821	nr			
	5.5.131	Reflective raised pavement marker;	R822.1	nr			
	5.5.132	Reflective raised pavement marker;LED Type	R822.2	nr			
	5.5.133	Pavement arrow; Type 614	R823.1	nr			
	5.5.134	Pavement arrow; Type 615	R823.2	nr			
	5.5.135	Pavement arrow, Type 616	R823.3	nr			
	5.5.136	Pavement arrow, Type 617	R823.4	nr			
	5.5.137	Pavement arrow, Type 618	R823.5	nr			
	5.5.138	Pavement arrow, Type 656	R823.6	nr			
	5.5.139	Pavement arrow; U Turn	R823.7	nr			
	5.5.140	White continuous lines; 300mm wide,Type 601	R824.1	m			
	5.5.141	Yellow continuous lines; 100mm wide, Type 611	R824.2	m			
	5.5.142	White / Yellow continuous lines; 100mm wide, Type 613	R824.3	m			
	5.5.143	Yellow continuous lines; 100mm wide,Type 613R	R824.4	m			
	5.5.144	White continuous lines; 100mm wide, Type 613R	R824.5	m			
	5.5.145	White Parking lines; 100mm wide; Type 621	R824.6	m			
	5.5.146	Pedestrian crossing 300mm wide, Type 603	R824.7	m			
	5.5.147	White intermittent lines; 100mm wide; Type 652	R825.1	m			
	5.5.148	Rumble Strips	R826	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 5	PAGE 15 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 5 - ROADS AND PAVINGS (Cont'd)</u>					
		<u>5.5 - Ancillaries (Cont'd)</u>					
		<u>Surface marking; Thermo Plastic Marking as specified (Cont'd)</u>					
	5.5.149	White dotted lines; 300mm wide; Type 602	R825.2	m			
	5.5.150	White intermittent lines; 100mm wide; Type 654 N/R	R825.3	m			
	5.5.151	White intermittent lines; 150mm wide; Type 654R	R825.4	m			
	5.5.152	White dashed lines; 100mm wide; Type 680	R825.5	m			
	5.5.153	White dashed lines; 150mm wide; Type 681	R825.6	m			
	5.5.154	White chevron and hatch marking	R829.1	m ²			
		<u>5.6 - PAINTING</u>					
		<u>Painting New Curb</u>					
	5.6.01	Painting new curbs; non-reflectorisied; including preparing the surface, painting of curb with specified color and material	R829.2	m ²			
		<u>Painting Existing Curbs</u>					
	5.6.02	Painting existing curbs; non-reflectorisied; including removing existing paint, preparing the surface, painting of curb with specified color and material	R829.3	m ²			
		<u>5.7 - MISCELLANEOUS WORK</u>					
		<u>Fences</u>					
	5.7.01	Galvanized mild steel guard rail single face, -----m spacing between posts including other associated works as specified and shown on drawings.	X171.1	m			
	5.7.02	Galvanized mild steel guard rail double face, -----m spacing between posts including other associated works as specified and shown on drawings.	X171.2	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION D			PART - 5	PAGE 16 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 5 - ROADS AND PAVINGS (Cont'd)</u>					
		<u>MISCELLANEOUS WORK (Cont'd)</u>					
		<u>Fences (Cont'd)</u>					
	5.7.03	Galvanized mild steel single face flared end terminal; 16m long complete works as specified and shown on drawings.	X171.3	m			
	5.7.04	Metal beam type guard rail -----m spacing between posts including other associated works as specified and shown on drawings.	X171.4	m			
	5.7.05	Precast Concrete Barrier complete including painting, foundation, dowels, joint filler, excavation and other associated works as specified and shown on drawings.	X192.1	m			
	5.7.06	Cast-in-place single face concrete barrier including painting, foundation, dowels, joint filler, excavation other associated works as specified and shown on drawings.	X192.2	m			
	5.7.07	Cast-in-place double face concrete barrier including painting, foundation, dowels, joint filler, excavation other associated works as specified and shown on drawings.	X192.3	m			
	5.7.08	Chain link fence including excavation,backfilling, concrete footing, posts, setting posts, braces, tension wires and all hardware and fittings as specified and shown on drawings.	X194	m			
	5.7.09	Chain link fence gate including supply and install gates, and all hardware and fittings as specified and shown on drawings.	X292	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION D			PART - 5	PAGE 17 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 5 - ROADS AND PAVINGS (Cont'd)</u>					
		<u>MISCELLANEOUS WORK (Cont'd)</u>					
		<u>Tying to Existing Pavement</u>					
		Tying to existing pavement as detailed on Dwg, including breakout existing pavement, saw cutting, vertical tack coat, milling (If required) and all necessary preparation works					
	5.7.10	New pavement with existing pavement; transverse joints	X900.1	m			
	5.7.11	New pavement with existing pavement; longitudinal joints	X900.2	m			
		<u>Bituminous Pavement Repairs</u>					
		Bituminous Pavement Repairs including saw cutting the failed pavement, removing and disposing the cut pavement and loose unsuitable materials, excavation of base material if required, preparation of sub grade, filling the excavation with sand-gravel, compaction, applying bituminous emulsion coat, wearing course, leveling the patch and making corrections and other works as mentioned in specification and shown in drawing.					
	5.7.12	Repair of pothole	X900.3	nr			
	5.7.13	Repair of failed pavement	X900.4	m ²			
	5.7.14	Repair of depressed pavement	X900.5	m ²			
	5.7.15	Repair of utility cut	X900.6	m ²			
	5.7.16	Sealing Cracks in pavement including cleaning the surface, filling cracks with dry coarse sand and pouring diluted emulsion or bituminous emulsion over the sand and all necessary preparation work works as mentioned in specification.	X900.7	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION D			PART - 5	PAGE 18 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 5 - ROADS AND PAVINGS (Cont'd)</u>					
		<u>5.8 - MISCELLANEOUS WORK (Cont'd)</u>					
		<u>Repairing existing Kerbs and Barriers</u>					
		Repairing existing Kerbs and Barriers including cleaning the area, chipping or breaking, repairing the curb with cement mortar					
	5.7.17	Repair of Kerbs	X900.8	m ²			
	5.7.18	Repair of Barrier	X900.9	m ²			
	5.7.19	Adjust Existing Drainage Structures and Service Facilities to New Pavement Elevations	X900.10	nr			
		<u>Removal of Existing Asphalt Pavement</u>					
	5.7.20	Breakout existing road; depth approximately ___ mm. Asphalt to be transported to designated stock pile area, other materials cart to tip	D900.1	m ²			
	5.7.21	Breakout existing road with saw cutting; depth approximately ___ mm. Asphalt to be transported to designated stock pile area, other materials cart to tip	D900.2	m			
		<u>Removal of Pavement Marking</u>					
	5.7.22	Carefully remove existing pavement marking and dispose to approved dump site as directed by the Engineer.	D900.3	m ²			
		<u>Removal of Pavement Markers</u>					
	5.7.23	Carefully remove existing pavement markers and dispose to approved dump site as directed by the Engineer.	D900.4	nr			
Carried to Part Summary						Dhs.	

PROJECT :-		BILL SECTION - D	PART - 5	PAGE 19 of 19
		DESCRIPTION	AMOUNT (AED)	
		<u>PART 5 - ROADS AND PAVINGS (Cont'd)</u> <u>PART SUMMARY</u> D5 - Page 1 D5 - Page 2 D5 - Page 3 D5 - Page 4 D5 - Page 5 D5 - Page 6 D5 - Page 7 D5 - Page 8 D5 - Page 9 D5 - Page 10 D5 - Page 11 D5 - Page 12 D5 - Page 13 D5 - Page 14 D5 - Page 15 D5 - Page 16 D5 - Page 17 D5 - Page 18 TOTAL FOR PART 5 - ROADS AND PAVINGS CARRIED TO GRAND SUMMARY		
			Dhs.	

Part 6

Bridge Works

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 1 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.1 - POST-TENSIONED BOX GIRDER</u>					
		<u>EARTHWORKS</u>					
		<u>Excavation</u>					
		Excavation for structures: material other than top soil, rock or artificial hard material for attaining the proposed sub grade, haul up to stockpiles on designated area to be determined by the Department.					
	6.1.01	Excavation for structures; max. depth; not exceeding 0.25m.	E321	m ³			
	6.1.02	Excavation for structures; depth 0.25 - 0.5m.	E322	m ³			
	6.1.03	Excavation for structures; depth 0.5 - 1m.	E323	m ³			
	6.1.04	Excavation for structures; depth 1 - 2m.	E324	m ³			
	6.1.05	Excavation for structures; depth 2 - 5m.	E325	m ³			
	6.1.06	Excavation for structures; depth 5 - 10m.	E326	m ³			
	6.1.07	Excavation for structures; depth 10 - 15m.	E327	m ³			
	6.1.08	Excavation for foundations rock; (maximum depth 5-10)	E336	m ³			
		<u>Excavation Ancillaries</u>					
	6.1.09	Preparation of excavated surface to receive permanent works.	E522	m ²			
	6.1.10	Allow for double handling of excavated material.	E542	m ³			
	6.1.11	Disposal of excavated Surplus material as directed by the Engineer	E532	m ³			
	6.1.12	Disposal of excavated material; rock	E533	m ³			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 2 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.1 - POST-TENSIONED BOX GIRDER (Cont'd)</u>					
		<u>EARTHWORKS (Cont'd)</u>					
		<u>Filling</u>					
	6.1.13	Filling to structure using suitable excavated materials.	E614	m ³			
	6.1.14	Filling to structure using suitable imported materials.	E615.1	m ³			
	6.1.15	Filling to structure using imported single size pervious structural backfill.	E615.2	m ³			
	6.1.16	Filling below approach slab using granular fill	E637	m ³			
		<u>Filling Ancillaries</u>					
	6.1.17	Trimming of filled surfaces not to receive permanent work.	E712	m ²			
	6.1.18	Preparation of filled surfaces to receive permanent work.	E722	m ²			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 3 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.1 - POST-TENSIONED BOX GIRDER (Cont'd)</u>					
		<u>INSITU CONCRETE</u>					
		<u>Provision of concrete - designed concrete</u>					
	6.1.19	Concrete Class C20/20;	F132	m ³			
	6.1.20	Concrete Class C30/20;	F152	m ³			
	6.1.21	Concrete Class C35/20;	F162	m ³			
	6.1.22	Concrete Class C40/20;	F182	m ³			
	6.1.23	Concrete Class C45/20;	F192.1	m ³			
	6.1.24	Concrete Class C50/20;	F192.2	m ³			
		<u>Placing of concrete</u>					
		<u>Mass concrete</u>					
	6.1.25	Blinding concrete;thickness not exceeding 150mm	F611	m ³			
	6.1.26	Concrete base below approach slab;thickness not exceeding 150mm	F621	m ³			
	6.1.27	Concrete for Side walks;thickness 150- 300mm	F622	m ³			
		<u>Reinforced concrete including formwork, stated surface features / chamfers, recess for any fittings as specified and shown on the drawings.</u>					
	6.1.28	Approach slabs;concrete class C40/20	F723	m ³			
	6.1.29	Pile caps at pier shaft; concrete class C40/20	F724.1	m ³			
	6.1.30	Pile caps of abutment and wing walls; concrete class C40/20	F724.2	m ³			
	6.1.31	Abutment and wing walls; concrete class C40/20	F744.1	m ³			
	6.1.32	Pier shaft; concrete class C40/20	F755	m ³			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 4 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u> <u>6.1 - POST-TENSIONED BOX GIRDER (Cont'd)</u> <u>Placing of concrete</u> Prestressed concrete, including formwork, stated surface features / chamfers, recess for any fittings as specified and shown on the drawings.					
	6.1.33	Prestressed post tensioned cast insitu box girder, including top slab, bottom slab, webs, diaphragm; concrete class C50/20	F834	m ³			
		<u>CONCRETE ANCILLARIES</u> <u>Reinforcement</u> Epoxy coated, deformed round bars.					
	6.1.34	Nominal diameter 12mm	G524.1	t			
	6.1.35	Nominal diameter 16mm	G525.1	t			
	6.1.36	Nominal diameter 18mm	G529.1	t			
	6.1.37	Nominal diameter 20mm	G526.1	t			
	6.1.38	Nominal diameter 25mm	G527.1	t			
	6.1.39	Nominal diameter 32mm	G528.1	t			
		Non-epoxy coated, deformed round bars.					
	6.1.40	Nominal diameter 12mm	G524.2	t			
	6.1.41	Nominal diameter 16mm	G525.2	t			
	6.1.42	Nominal diameter 18mm	G529.2	t			
	6.1.43	Nominal diameter 20mm	G526.2	t			
	6.1.44	Nominal diameter 25mm	G527.2	t			
	6.1.45	Nominal diameter 32mm	G528.2	t			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 5 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.1 - POST-TENSIONED BOX GIRDER (Cont'd)</u>					
		<u>Joints</u>					
		Expansion joints including joint filler, backer rod, joint sealant, steel plates / fixtures all complete as specified and shown on drawing.					
	6.1.46	Expansion joint in concrete bed at side walk	G690.1	m			
	6.1.47	Bridge expansion joint system complete in superstructure slab (Including sidewalk) at abutments and piers.	G690.2	m			
	6.1.48	Barrier expansion joints	G690.3	nr			
	6.1.49	Railing base expansion joints	G690.4	nr			
	6.1.50	Joint in approach slab; 15mm perforated joint filler including sealant as shown on drawing.	G690.5	m			
		<u>Polyethylene sheet</u>					
	6.1.51	Two layers of 1000 gram Polyethylene below concrete including 300 mm side laps	G690.6	m ²			
		<u>Post-tensioned prestressing</u>					
		<u>Prestressing steel</u>					
		Including ducts, grouting, anchor, couplers as necessary					
		15.2mm strand 7 wire super low relaxation ASTM A416 grade 1860MPA					
	6.1.52	Prestressing top slab tendons, inclined or vertical in insitu concrete according to cable profiles shown on drawings, length approx. -----m, size ----- strands 15.2mm diameter.	G728.1	nr			
	6.1.53	Jacking of prestressing top slab tendons to the force as shown on the drawings	G750.1	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 6 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.1 - POST-TENSIONED BOX GIRDER (Cont'd)</u>					
		<u>Post-tensioned prestressing (Cont'd)</u>					
		<u>Prestressing steel (Cont'd)</u>					
		Including ducts, grouting, anchor, couplers as necessary					
		15.2mm strand 7 wire super low relaxation ASTM A416 grade 1860MPA					
6.1.54		Prestressing bottom slab tendons, inclined or vertical in insitu concrete according to cable profiles shown on drawings, length approx. -----m, size ----- strands 15.2mm diameter.	G728.2	nr			
6.1.55		Jacking of prestressing bottom slab tendons to the force as shown on the drawings	G750.2	nr			
		<u>Concrete Accessories</u>					
6.1.56		Finishing to top surface; approach slab	G812.1	m ²			
6.1.57		Finishing to top surface; concrete barrier or parapet, wing walls and abutments	G812.2	m ²			
6.1.58		Finishing to top surface; pile cap	G813.1	m ²			
6.1.59		Finishing to top surface; deck slab	G813.2	m ²			
		<u>MISCELLANEOUS METALWORK</u>					
6.1.60		Supply and install pedestrian metal railing, with all necessary aluminum post, pipes, round bars, anchor bolts as shown on drawings	N140	m			
6.1.61		Access door; 800 x 800mm for bridge deck complete as shown on Dwg.	N190.1	nr			
6.1.62		Drainage sports with grating and all accessories, including stainless steel fixing plaws, connecting pipes to nearest drain	N190.2	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 7 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.1 - POST-TENSIONED BOX GIRDER (Cont'd)</u>					
		<u>MISCELLANEOUS METALWORK</u>					
		<u>Bridge Bearing</u>					
		Bearings with PTFE sliding surfaces, including all assemblies and Elastomeric disc washer in between the bearings, epoxy quartz sand grout pad, high tensile anchor bolts complete as specified and shown on drawings.					
		Fixed bearing;					
	6.1.63	a)max.ver capacity 2,500kN, max.hor. load 500kN	N269.1	nr			
	6.1.64	b)max.ver capacity 5,000kN, max.hor. load 1,000kN	N269.2	nr			
	6.1.65	c)max.ver capacity 7,500kN, max.hor. load 1,500kN	N269.3	nr			
	6.1.66	d)max.ver capacity 10,000kN, max.hor. load 2,000kN.	N269.4	nr			
		Guided expansion bearing;					
	6.1.67	a) maximum capacity 2,500kN	N269.5	nr			
	6.1.68	b) maximum capacity 5,000kN	N269.6	nr			
	6.1.69	c) maximum capacity 7,500kN	N269.7	nr			
	6.1.70	d) maximum capacity 10,000kN.	N269.8	nr			
		Free sliding expansion bearing;					
	6.1.71	a) maximum capacity 2,000kN	N269.9	nr			
	6.1.72	b) maximum capacity 4,000kN	N269.10	nr			
	6.1.73	c) maximum capacity 5,000kN	N269.11	nr			
		<u>Bearing Cover Plate</u>					
	6.1.74	3mm powder coated aluminum ring cover plate 0.4 to 0.6m wide, including stainless steel fixing plates, hinges and bolts all as shown on drawings.	N900.1	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 8 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.1 - POST-TENSIONED BOX GIRDER (Cont'd)</u>					
		<u>PILES</u>					
		<u>Bored-cast in place concrete pile using concrete Grade C40/20 as specified.</u>					
		Pile diameter 600mm					
6.1.75	Number of piles		P141	nr			
6.1.76	Concreted length		P142	m			
6.1.77	Depth bored to maximum depth 20m		P143	m			
		<u>PILING ANCILLARIES</u>					
		Pile diameter 600mm					
6.1.78	Permanent steel casing for 600mm diameter pile protected with anticorrosive coating; maximum length -----m as specified and shown on drawings		Q144	m			
6.1.79	Cutting off surplus lengths 600mm dia.piles		Q174	m			
6.1.80	Preparing pile head 600mm diameter		Q184	nr			
		Epoxy coated, deformed high yield bars					
6.1.81	Nominal size 25mm.		Q211.1	t			
6.1.82	Nominal size 32mm.		Q212.1	t			
		Epoxy coated, deformed high yield helical bars					
6.1.83	Nominal size 12mm.		Q213	t			
		Non-epoxy coated, deformed high yield bars					
6.1.84	Nominal size 25mm.		Q211.2	t			
6.1.85	Nominal size 32mm.		Q212.2	t			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 9 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.1 - POST-TENSIONED BOX GIRDER (Cont'd)</u>					
		<u>PILES</u>					
		<u>Pile tests</u>					
	6.1.86	Vertical pile test, load according to specifications for 600mm diameter pile - preliminary pile including installation. - Non working pile.	Q81*	nr			
	6.1.87	Vertical pile test load according to specifications for 600mm diameter pile - working pile.	Q81*	nr			
	6.1.88	Non-destructive test by ultrasonic method for 600mm diameter pile.	Q840.1	nr			
	6.1.89	Non-destructive test by cross hole sonic logging for 600mm diameter pile.	Q840.2	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 10 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.1 - POST-TENSIONED BOX GIRDER (Cont'd)</u>					
		<u>PILES</u>					
		<u>Bored-cast in place concrete pile using concrete Grade C40/20 as specified.</u>					
		Pile diameter 800mm					
	6.1.90	Number of piles	P191.1	nr			
	6.1.91	Concreted length	P192.2	m			
	6.1.92	Depth bored to maximum depth 20m	P193.3	m			
		<u>PILING ANCILLARIES</u>					
		Pile diameter 800mm					
	6.1.93	Permanent steel casing for 800mm diameter pile protected with anticorrosive coating; maximum length -----m as specified and shown on drawings	Q149.1	m			
	6.1.94	Cutting off surplus lengths 800mm dia.piles	Q179.1	m			
	6.1.95	Preparing pile head 800mm diameter	Q189.1	nr			
		Epoxy coated, deformed high yield bars					
	6.1.96	Nominal size 25mm.	Q211.1	t			
	6.1.97	Nominal size 32mm.	Q212.1	t			
		Epoxy coated, deformed high yield helical bars					
	6.1.98	Nominal size 12mm.	Q213	t			
		Non-epoxy coated, deformed high yield bars					
	6.1.99	Nominal size 25mm.	Q211.2	t			
	6.1.100	Nominal size 32mm.	Q212.2	t			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 11 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.1 - POST-TENSIONED BOX GIRDER (Cont'd)</u>					
		<u>PILES</u>					
		<u>Pile tests</u>					
6.1.101		Vertical pile test, load according to specifications for 800mm diameter pile - preliminary pile including installation.- Non working pile.	Q81*	nr			
6.1.102		Vertical pile test load according to specifications for 800mm diameter pile - working pile.	Q81*	nr			
6.1.103		Non-destructive test by ultrasonic method for 800mm diameter pile.	Q840.1	nr			
6.1.104		Non-destructive test by cross hole sonic logging for 800mm diameter pile.	Q840.2	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 12 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.1 - POST-TENSIONED BOX GIRDER (Cont'd)</u>					
		<u>PILES</u>					
		<u>Bored-cast in place concrete pile using concrete Grade C40/20 as specified.</u>					
		Pile diameter 1000mm					
	6.1.105	Number of piles	P191.2	nr			
	6.1.106	Concreted length	P192.2	m			
	6.1.107	Depth bored to maximum depth 20m	P193.2	m			
		Pile diameter 1000mm raked at inclination ratio 1:3					
	6.1.108	Number of piles	P191.3	nr			
	6.1.109	Concreted length	P192.3	m			
	6.1.110	Depth bored to maximum length 20m	P193.3	m			
		<u>PILING ANCILLARIES</u>					
		Pile diameter 1000mm					
	6.1.111	Permanent steel casing for 1000mm diameter pile protected with anticorrosive coating; maximum length -----m as specified and shown on drawings	Q149.2	m			
	6.1.112	Cutting off surplus lengths 1000mm dia.piles	Q179.2	m			
	6.1.113	Preparing pile head 1000mm diameter	Q189.2	nr			
		Epoxy coated, deformed high yield bars					
	6.1.114	Nominal size 32mm.	Q212.1	t			
		Epoxy coated, deformed high yield helical bars					
	6.1.115	Nominal size 12mm.	Q213	t			
		Non-epoxy coated, deformed high yield bars					
	6.1.116	Nominal size 32mm.	Q212.2	t			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 13 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.1 - POST-TENSIONED BOX GIRDER (Cont'd)</u>					
		<u>PILING ANCILLARIES (Cont'd)</u>					
		<u>Pile tests</u>					
6.1.117		Vertical pile test, load according to specifications for 1000mm diameter pile - preliminary pile including installation. - Non working pile.	Q81*	nr			
6.1.118		Vertical pile test load according to specifications for 1000mm diameter pile - working pile.	Q81*	nr			
6.1.119		Non-destructive test by ultrasonic method for 1000mm diameter pile.	Q840.1	nr			
6.1.120		Non-destructive test by cross hole sonic logging for 1000mm diameter pile.	Q840.2	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 14 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.1 - POST-TENSIONED BOX GIRDER (Cont'd)</u>					
		<u>PILES</u>					
		<u>Bored-cast in place concrete pile using concrete Grade C40/20 as specified.</u>					
		Pile diameter 1200mm					
6.1.121	Number of piles		P161.1	nr			
6.1.122	Concreted length		P162.1	m			
6.1.123	Depth bored to maximum depth 20m		P163.1	m			
		Pile diameter 1200mm raked at inclination ratio 1:3					
6.1.124	Number of piles		P161.2	nr			
6.1.125	Concreted length		P162.2	m			
6.1.126	Depth bored to maximum length 20m		P163.2	m			
		<u>PILING ANCILLARIES</u>					
		Pile diameter 1200mm					
6.1.127	Permanent steel casing for 1200mm diameter pile protected with anticorrosive coating; maximum length -----m as specified and shown on drawings		Q146	m			
6.1.128	Cutting off surplus lengths 1200mm dia.piles		Q176	m			
6.1.129	Preparing pile head 1200mm diameter		Q186	nr			
		Epoxy coated, deformed high yield bars					
6.1.130	Nominal size 32mm.		Q212.1	t			
		Epoxy coated, deformed high yield helical bars					
6.1.131	Nominal size 12mm.		Q213	t			
		Non-epoxy coated, deformed high yield bars					
6.1.132	Nominal size 32mm.		Q212.2	t			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 15 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.1 - POST-TENSIONED BOX GIRDER (Cont'd)</u>					
		<u>PILING ANCILLARIES (Cont'd)</u>					
		<u>Pile tests</u>					
6.1.133		Vertical pile test, load according to specifications for 1200mm diameter pile - preliminary pile including installation. - Non working pile.	Q81*	nr			
6.1.134		Vertical pile test load according to specifications for 1200mm diameter pile - working pile.	Q81*	nr			
6.1.135		Non-destructive test by ultrasonic method for 1200mm diameter pile.	Q840.1	nr			
6.1.136		Non-destructive test by cross hole sonic logging for 1200mm diameter pile.	Q840.2	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 16 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.1 - POST-TENSIONED BOX GIRDER (Cont'd)</u>					
		<u>PILES</u>					
		<u>Bored-cast in place concrete pile using concrete Grade C40/20 as specified.</u>					
		Pile diameter 1500mm					
6.1.137	Number of piles		P171.1	nr			
6.1.138	Concreted length		P172.1	m			
6.1.139	Depth bored to maximum depth 20m		P173.1	m			
		Pile diameter 1500mm raked at inclination ratio 1:3					
6.1.140	Number of piles		P171.2	nr			
6.1.141	Concreted length		P172.2	m			
6.1.142	Depth bored to maximum length 20m		P173.2	m			
		<u>PILING ANCILLARIES</u>					
		Pile diameter 1500mm					
6.1.143	Permanent steel casing for 1500mm diameter pile protected with anticorrosive coating; maximum length -----m as specified and shown on drawings		Q147	m			
6.1.144	Cutting off surplus lengths 1500mm dia.piles		Q177	m			
6.1.145	Preparing pile head 1500mm diameter		Q187	nr			
		Epoxy coated, deformed high yield bars					
6.1.146	Nominal size 32mm.		Q212.1	t			
		Epoxy coated, deformed high yield helical bars					
6.1.147	Nominal size 12mm.		Q213	t			
		Non-epoxy coated, deformed high yield bars					
6.1.148	Nominal size 32mm.		Q212.2	t			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 17 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.1 - POST-TENSIONED BOX GIRDER (Cont'd)</u>					
		<u>PILING ANCILLARIES (Cont'd)</u>					
		<u>Pile tests</u>					
6.1.149		Vertical pile test, load according to specifications for 1500mm diameter pile - preliminary pile including installation. - Non working pile.	Q81*	nr			
6.1.150		Vertical pile test load according to specifications for 1500mm diameter pile - working pile.	Q81*	nr			
6.1.151		Non-destructive test by ultrasonic method for 1500mm diameter pile.	Q840.1	nr			
6.1.152		Non-destructive test by cross hole sonic logging for 1500mm diameter pile.	Q840.2	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 18 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.1 - POST-TENSIONED BOX GIRDER (Cont'd)</u>					
		<u>PAVINGS</u>					
		<u>Road Base at Approach Slab</u>					
6.1.153		Aggregate base course;depth 100-150mm	R194	m ²			
		<u>Bridge deck wearing surface</u>					
6.1.154		Asphaltic concrete type II, wearing course 50mm thick including a regulating course to adjust the undulations at the top of deck slab.	R352	m ²			
6.1.155		Tack coat	R390	m ²			
		<u>Light duty pavement</u>					
6.1.156		Precast concrete up stand Kerb 150 x 200 with metal strap to hold back, as shown in drawing.	R711	m			
6.1.157		Precast concrete block paving tiles thickness 60mm on and including min. 20mm thick sand bed.	R750	m ²			
6.1.158		Cast-in situ concrete up stand Kerb 150 x 200 on concrete structure, as per shown in drawing.	R790	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 19 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 6 - BRIDGE WORKS</u></p> <p><u>6.1 - POST-TENSIONED BOX GIRDER (Cont'd)</u></p> <p><u>WATERPROOFING</u></p> <p>Waterproofing system as specified and shown on the drawings including membrane dressed up around the openings, 15mm preformed joint filler and all fixings where necessary.</p>					
	6.1.159	3mm thick spray applied to membrane to horizontal surfaces	W239.1	m ²			
	6.1.160	2mm thick spray applied to membrane to vertical surfaces	W239.2	m ²			
	6.1.161	12mm thick bitumen impregnated protection board	W429.3	m ²			
	6.1.162	50mm thick concrete protection	W441	m ²			
	6.1.163	Coating system to concrete surfaces of piers and abutment in contact with the soil above the footing using standard waterproofing system (incl. in waterproofing and protection boards).	W249	m ²			
		<p><u>PAINTING</u></p>					
	6.1.164	Coating system to concrete surfaces of piers, abutment, bridge parapet/barrier and deck slab above the final surface level using the epoxy painting system (inside surface of box girder measured separately).	V739.1	m ²			
	6.1.165	Coating system to exposed under and inside surfaces of the box girders and barriers.	V739.2	m ²			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 20 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.1 - POST-TENSIONED BOX GIRDER (Cont'd)</u>					
		<u>MISCELLANEOUS WORK</u>					
		<u>Sub soil drainage</u>					
	6.1.166	Course aggregate/crushed stone deposit maximum 1.0m ³ per meter surrounded by Geotextile Fabric behind abutments, wing walls including cast in place PVC weep holes or drain not exceeding 50mm dia as specified and shown on drawings. (perforated pipe drain measured separately)	X399.1	m ³			
	6.1.167	150mm dia perforated PVC pipe connected to the storm water drainage system	X399.2	m			
		<u>Fences</u>					
	6.1.168	Precast concrete bridge barrier complete including formworks and other associated works as specified and shown on drawing.	X190	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 21 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.1 - POST-TENSIONED BOX GIRDER (Cont'd)</u>					
		<u>MISCELLANEOUS WORK (Cont'd)</u>					
		<u>Under Bridge Lighting</u>					
		Supply and Install conduits, cables, terminations and mounting accessories, luminaires to make a functional lighting in all respect, as shown on the drawings.					
6.1.169		Metallic junction box weatherproof Type I; recessed in concrete; (size 450 x 300 x 200mm)	X900.1	nr			
6.1.170		Metallic junction box weatherproof Type II; recessed in concrete; (size 150 x 150 x 100mm)	X900.2	nr			
6.1.171		PVC conduit, 20mm diameter	X900.3	m			
6.1.172		PVC conduit, 32mm diameter	X900.4	m			
6.1.173		PVC conduit, 50mm diameter	X900.5	m			
6.1.174		2.5mm ² , 2 core and earth, Heat resistant PVC cable	X900.6	m			
6.1.175		2.5mm ² , PVC wiring cable	X900.7	m			
6.1.176		4mm ² , PVC wiring cable	X900.8	m			
6.1.177		6mm ² , PVC wiring cable	X900.9	m			
6.1.178		10mm ² , PVC wiring cable	X900.10	m			
6.1.179		LV, 4C - 16mm ² XLPE, Armored Cable	X900.11	m			
6.1.180		LV, 4C - 25mm ² XLPE, Armored Cable	X900.12	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 22 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u> <u>6.1 - POST-TENSIONED BOX GIRDER (Cont'd)</u> <u>MISCELLANEOUS WORK (Cont'd)</u> <u>Under Bridge Lighting</u> Supply and Install conduits, cables, terminations and mounting accessories, luminaires to make a functional lighting in all respect, as shown on the drawings.					
6.1.181		60 watts LED under bridge luminaires for asymmetrical light distribution	X900.13	nr			
6.1.182		60 watts LED under bridge luminaires for symmetrical light distribution	X900.14	nr			
6.1.183		LED decorative bollard for bridge barriers	X900.15	nr			
Carried to Part Summary						Dhs.	

PROJECT :-		BILL SECTION - D	PART - 6	PAGE 23 of 46
		ITEM DESCRIPTION	AMOUNT (AED)	
		<p><u>PART 6 - BRIDGE WORKS</u></p> <p><u>6.1 - POST-TENSIONED BOX GIRDER (Cont'd)</u></p> <p><u>PART SUMMARY</u></p> <p>D6.1 - Page 1</p> <p>D6.1 - Page 2</p> <p>D6.1 - Page 3</p> <p>D6.1 - Page 4</p> <p>D6.1 - Page 5</p> <p>D6.1 - Page 6</p> <p>D6.1 - Page 7</p> <p>D6.1 - Page 8</p> <p>D6.1 - Page 9</p> <p>D6.1 - Page 10</p> <p>D6.1 - Page 11</p> <p>D6.1 - Page 12</p> <p>D6.1 - Page 13</p> <p>D6.1 - Page 14</p> <p>D6.1 - Page 15</p> <p>D6.1 - Page 16</p> <p>D6.1 - Page 17</p> <p>D6.1 - Page 18</p> <p>D6.1 - Page 19</p> <p>D6.1 - Page 20</p> <p>D6.1 - Page 21</p> <p>D6.1 - Page 22</p> <p>TOTAL FOR PART 6.1 - BRIDGE WORKS (BOX GIRDER)</p>		
		CARRIED TO SUMMARY	Dhs.	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 24 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.2 - PRE-TENSIONED PRECAST I-GIRDER</u>					
		<u>EARTHWORKS</u>					
		<u>Excavation</u>					
		Excavation for structures: material other than top soil, rock or artificial hard material for attaining the proposed sub grade, haul up to stockpiles on designated area to be determined by the Department.					
	6.2.01	Excavation for structures; max. depth: not exceeding 0.25m.	E321	m ³			
	6.2.02	Excavation for structures; depth 0.25 - 0.5m.	E322	m ³			
	6.2.03	Excavation for structures; depth 0.5 - 1m.	E323	m ³			
	6.2.04	Excavation for structures; depth 1 - 2m.	E324	m ³			
	6.2.05	Excavation for structures; depth 2 - 5m.	E325	m ³			
	6.2.06	Excavation for structures; depth 5 - 10m.	E326	m ³			
	6.2.07	Excavation for structures; depth 10 - 15m.	E327	m ³			
	6.2.08	Excavation for foundations rock; (maximum depth 5-10)	E336	m ³			
		<u>Excavation Ancillaries</u>					
	6.2.09	Preparation of excavated surface to receive permanent works.	E522	m ²			
	6.2.10	Allow for double handling of excavated material	E542	m ³			
	6.2.11	Disposal of surplus excavated material as directed by the Engineer	E532	m ³			
	6.2.12	Disposal of excavated material; rock	E533	m ³			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 25 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.2 - PRE-TENSIONED PRECAST I-GIRDER (Cont'd.)</u>					
		<u>EARTHWORKS (Cont'd)</u>					
		<u>Filling</u>					
	6.2.13	Filling to structure using suitable excavated materials.	E614	m ³			
	6.2.14	Filling to structure using suitable imported materials from borrow pit.	E615.1	m ³			
	6.2.15	Filling to structure using imported single size pervious structural backfill	E615.2	m ³			
	6.2.16	Filling below approach slab using granular fill	E637	m ³			
		<u>Filling Ancillaries</u>					
	6.2.17	Preparation of filled surfaces not to receive permanent work.	E712	m ²			
	6.2.18	Preparation of filled surfaces to receive permanent work.	E722	m ²			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 26 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.2 - PRE-TENSIONED PRECAST I-GIRDER (Cont'd.)</u>					
		<u>INSITU CONCRETE</u>					
		<u>Provision of concrete - designed concrete</u>					
	6.2.19	Concrete Class C20/20;	F132	m ³			
	6.2.20	Concrete Class C30/20;	F152	m ³			
	6.2.21	Concrete Class C35/20;	F162	m ³			
	6.2.22	Concrete Class C40/20;	F182	m ³			
	6.2.23	Concrete Class C45/20;	F192.1	m ³			
	6.2.24	Concrete Class C50/20;	F192.2	m ³			
		Placing of concrete					
		Mass concrete					
	6.2.25	Blinding concrete;thickness not exceeding 150mm	F611	m ³			
	6.2.26	Concrete base below approach slab;thickness not exceeding 150mm	F621	m ³			
	6.2.27	Concrete for Side walks;thickness 150- 300mm	F622	m ³			
		Reinforced concrete including formwork, provision for drainage channels, stated surface features/chamfers, recess/dowels for any fittings as specified and shown on the drawings.					
	6.2.28	Approach slabs; concrete class C40/20	F723	m ³			
	6.2.29	Pile caps at pier shaft; concrete class C40/20	F724.1	m ³			
	6.2.30	Pile caps of abutment and wing walls; concrete class C40/20	F724.2	m ³			
	6.2.31	Deck slab; concrete class C40/20	F733	m ³			
	6.2.32	Diaphragms; concrete class C40/20	F744.1	m ³			
	6.2.33	Abutment and wing walls; concrete class C40/20	F744.2	m ³			
	6.2.34	Pier shaft; concrete class C40/20	F755	m ³			
	6.2.35	Fascia Beams; concrete class C40/20	F764	m ³			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 27 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.2 - PRE-TENSIONED PRECAST I-GIRDER (Cont'd.)</u>					
		<u>CONCRETE ANCILLARIES (Cont'd)</u>					
		<u>Reinforcement</u>					
		Epoxy coated, deformed round bars.					
	6.2.36	Nominal diameter 12mm	G524.1	t			
	6.2.37	Nominal diameter 16mm	G525.1	t			
	6.2.38	Nominal diameter 18mm	G529.1	t			
	6.2.39	Nominal diameter 20mm	G526.1	t			
	6.2.40	Nominal diameter 25mm	G527.1	t			
	6.2.41	Nominal diameter 32mm	G528.1	t			
		Non-epoxy coated, deformed round bars.					
	6.2.42	Nominal diameter 12mm	G524.2	t			
	6.2.43	Nominal diameter 16mm	G525.2	t			
	6.2.44	Nominal diameter 18mm	G529.2	t			
	6.2.45	Nominal diameter 20mm	G526.2	t			
	6.2.46	Nominal diameter 25mm	G527.2	t			
	6.2.47	Nominal diameter 32mm	G528.2	t			
		<u>Joints</u>					
		Expansion joints including joint filler, backer rod, joint sealant, steel plates/fixtures all complete as specified and shown on drawing.					
	6.2.48	Expansion joint in concrete bed at side walk	G690.1	m			
	6.2.49	Bridge expansion joint system complete in superstructure slab (Including sidewalk) at abutments and piers.	G690.2	m			
	6.2.50	Barrier expansion joints	G690.3	nr			
	6.2.51	Railing base expansion joints	G690.4	nr			
	6.2.52	Joint in approach slab; 15mm perforated joint filler including sealant as shown on drawing.	G690.5	m			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 28 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.2 - PRE-TENSIONED PRECAST I-GIRDER (Cont'd.)</u>					
		<u>CONCRETE ANCILLARIES (Cont'd)</u>					
		Polyethylene sheet					
	6.2.53	Two layers of 1000 gram Polyethylene below concrete including 300 mm side laps	G690.6	m ²			
		<u>Concrete Accessories</u>					
	6.2.54	Finishing to top surface; approach slab	G812.1	m ²			
	6.2.55	Finishing to top surface; concrete barrier or parapet, wing walls and abutments	G812.2	m ²			
	6.2.56	Finishing to top surface; pile cap	G813.1	m ²			
	6.2.57	Finishing to top surface; deck slab	G813.2	m ²			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 29 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 6 - BRIDGE WORKS</u></p> <p><u>6.2 - PRE-TENSIONED PRECAST I-GIRDER (Cont'd.)</u></p> <p><u>PRECAST CONCRETE</u></p> <p>Prestressed pre-tensioned beams (I-Girder)</p> <p>Supply and install precast prestressed beams C50 concrete including reinforcement, prestressing tendons / strands, anchoring, non-ferrous drain holes, 70mm dia anchor bolt sleeves, chamfers, filling void portions with polysterene and all necessary to complete, as per the specification and drawings.</p>					
	6.2.58	Precast I-Girder; maximum length 15.0m.	H245	nr			
	6.2.59	Precast I-Girder; maximum length 20.0m.	H256	nr			
	6.2.60	Precast I-Girder; maximum length 30.0m.	H267	nr			
	6.2.61	Precast I-Girder; exceeding length 30.0m.	H278	nr			
		<p><u>MISCELLANEOUS METALWORK</u></p>					
	6.2.62	Supply and install pedestrian metal railing, with all necessary aluminum post, pipes, round bars, anchor bolts as shown on drawings	N140	m			
	6.2.63	Drainage sports with grating and all accessories, including stainless steel fixing plaws, connecting pipes to nearest drain.	N190	nr			
		<p><u>Bridge Bearing</u></p>					
	6.2.64	Neoprene Elastomeric Bearings with (pad size -----) durometer 60.	N269	nr			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 30 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.2 - PRE-TENSIONED PRECAST I-GIRDER (Cont'd.)</u>					
		<u>PILES</u>					
		<u>Bored-cast in place concrete pile using concrete Grade C40/20 as specified.</u>					
		Pile diameter 600mm					
	6.2.65	Number of piles	P141	nr			
	6.2.66	Concreted length	P142	m			
	6.2.67	Depth bored to maximum depth 20m	P143	m			
		<u>PILING ANCILLARIES</u>					
		Pile diameter 600mm					
	6.2.68	Permanent steel casing for 600mm diameter pile protected with anticorrosive coating; maximum length -----m as specified and shown on drawings	Q144	m			
	6.2.69	Cutting off surplus lengths 600mm dia.piles	Q174	m			
	6.2.70	Preparing pile head 600mm diameter	Q184	nr			
		Epoxy coated, deformed high yield bars					
	6.2.71	Nominal size 25mm.	Q211.1	t			
	6.2.72	Nominal size 32mm.	Q212.1	t			
		Epoxy coated, deformed high yield helical bars					
	6.2.73	Nominal size 12mm.	Q213	t			
		Non-epoxy coated, deformed high yield bars					
	6.2.74	Nominal size 25mm.	Q211.2	t			
	6.2.75	Nominal size 32mm.	Q212.2	t			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 31 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.2 - PRE-TENSIONED PRECAST I-GIRDER (Cont'd.)</u>					
		<u>PILES (Cont'd)</u>					
		<u>Pile tests</u>					
	6.2.76	Vertical pile test, load according to specifications for 600mm diameter pile - preliminary pile including installation.- Non working pile.	Q81*	nr			
	6.2.77	Vertical pile test load according to specifications for 600mm diameter pile - working pile.	Q81*	nr			
	6.2.78	Non-destructive test by ultrasonic method for 600mm diameter pile.	Q840.1	nr			
	6.2.79	Non-destructive test by cross hole sonic logging for 600mm diameter pile.	Q840.2	nr			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 32 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.2 - PRE-TENSIONED PRECAST I-GIRDER (Cont'd.)</u>					
		<u>PILES</u>					
		<u>Bored-cast in place concrete pile using concrete Grade C40/20 as specified.</u>					
		Pile diameter 800mm					
	6.2.80	Number of piles	P191.1	nr			
	6.2.81	Concreted length	P192.1	m			
	6.2.82	Depth bored to maximum depth 20m	P193.1	m			
		<u>PILING ANCILLARIES</u>					
		Pile diameter 800mm					
	6.2.83	Permanent steel casing for 800mm diameter pile protected with anticorrosive coating; maximum length -----m as specified and shown on drawings	Q149.1	m			
	6.2.84	Cutting off surplus lengths 800mm dia.piles	Q179.1	m			
	6.2.85	Preparing pile head 800mm diameter	Q189.1	nr			
		Epoxy coated, deformed high yield bars					
	6.2.86	Nominal size 25mm.	Q211.1	t			
	6.2.87	Nominal size 32mm.	Q212.1	t			
		Epoxy coated, deformed high yield helical bars					
	6.2.88	Nominal size 12mm.	Q213	t			
		Non-epoxy coated, deformed high yield bars					
	6.2.89	Nominal size 25mm.	Q211.2	t			
	6.2.90	Nominal size 32mm.	Q212.2	t			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 33 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.2 - PRE-TENSIONED PRECAST I-GIRDER (Cont'd.)</u>					
		<u>PILES</u>					
		<u>Pile tests</u>					
	6.2.91	Vertical pile test, load according to specifications for 800mm diameter pile - preliminary pile including installation. - Non working pile.	Q81*	nr			
	6.2.92	Vertical pile test load according to specifications for 800mm diameter pile - working pile.	Q81*	nr			
	6.2.93	Non-destructive test by ultrasonic method for 800mm diameter pile.	Q840.1	nr			
	6.2.94	Non-destructive test by cross hole sonic logging for 800mm diameter pile.	Q840.2	nr			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 34 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.2 - PRE-TENSIONED PRECAST I-GIRDER (Cont'd.)</u>					
		<u>PILES</u>					
		<u>Bored-cast in place concrete pile using concrete Grade C40/20 as specified.</u>					
		Pile diameter 1000mm					
	6.2.95	Number of piles	P191.2	nr			
	6.2.96	Concreted length	P192.2	m			
	6.2.97	Depth bored to maximum depth 20m	P193.2	m			
		Pile diameter 1000mm raked at inclination ratio 1:3					
	6.2.98	Number of piles	P191.3	nr			
	6.2.99	Concreted length	P192.3	m			
	6.2.100	Depth bored to maximum length 20m	P193.3	m			
		<u>PILING ANCILLARIES</u>					
		Pile diameter 1000mm					
	6.2.101	Permanent steel casing for 1000mm diameter pile protected with anticorrosive coating; maximum length -----m as specified and shown on drawings	Q149.2	m			
	6.2.102	Cutting off surplus lengths 1000mm dia. piles	Q179.2	m			
	6.2.103	Preparing pile head 1000mm diameter	Q189.2	nr			
		Epoxy coated, deformed high yield bars					
	6.2.104	Nominal size 32mm.	Q212.1	t			
		Epoxy coated, deformed high yield helical bars					
	6.2.105	Nominal size 12mm.	Q213	t			
		Non-epoxy coated, deformed high yield bars					
	6.2.106	Nominal size 32mm.	Q212.2	t			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 35 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.2 - PRE-TENSIONED PRECAST I-GIRDER (Cont'd.)</u>					
		<u>PILES (Cont'd)</u>					
		<u>Pile tests</u>					
6.2.107		Vertical pile test, load according to specifications for 1000mm diameter pile - preliminary pile including installation. - Non working pile.	Q81*	nr			
6.2.108		Vertical pile test load according to specifications for 1000mm diameter pile - working pile.	Q81*	nr			
6.2.109		Non-destructive test by ultrasonic method for 1000mm diameter pile.	Q840.1	nr			
6.2.110		Non-destructive test by cross hole sonic logging for 1000mm diameter pile.	Q840.2	nr			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 36 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.2 - PRE-TENSIONED PRECAST I-GIRDER</u>					
		<u>(Cont'd.)</u>					
		<u>PILES</u>					
		<u>Bored-cast in place concrete pile using concrete</u>					
		<u>Grade C40/20 as specified.</u>					
		Pile diameter 1200mm					
6.2.111	Number of piles		P161.1	nr			
6.2.112	Concreted length		P162.1	m			
6.2.113	Depth bored to maximum depth 20m		P163.1	m			
		Pile diameter 1200mm raked at inclination					
		ratio 1:3					
6.2.114	Number of piles		P161.2	nr			
6.2.115	Concreted length		P162.2	m			
6.2.116	Depth bored to maximum length 20m		P163.2	m			
		<u>PILING ANCILLARIES</u>					
		Pile diameter 1200mm					
6.2.117	Permanent steel casing for 1200mm diameter pile protected with anticorrosive coating; maximum length -----m as specified and shown on drawings		Q146	m			
6.2.118	Cutting off surplus lengths 1200mm dia.piles		Q176	m			
6.2.119	Preparing pile head 1200mm diameter		Q186	nr			
		Epoxy coated, deformed high yield bars					
6.2.120	Nominal size 32mm.		Q212.1	t			
		Epoxy coated, deformed high yield helical bars					
6.2.121	Nominal size 12mm.		Q213	t			
		Non-epoxy coated, deformed high yield bars					
6.2.122	Nominal size 32mm.		Q212.2	t			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 37 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.2 - PRE-TENSIONED PRECAST I-GIRDER (Cont'd.)</u>					
		<u>PILING ANCILLARIES (Cont'd)</u>					
		<u>Pile tests</u>					
	6.2.123	Vertical pile test, load according to specifications for 1200mm diameter pile - preliminary pile including installation. - Non working pile.	Q81*	nr			
	6.2.124	Vertical pile test load according to specifications for 1200mm diameter pile - working pile.	Q81*	nr			
	6.2.125	Non-destructive test by ultrasonic method for 1200mm diameter pile.	Q840.1	nr			
	6.2.126	Non-destructive test by cross hole sonic logging for 1200mm diameter pile.	Q840.2	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 38 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.2 - PRE-TENSIONED PRECAST I-GIRDER (Cont'd.)</u>					
		<u>PILES</u>					
		<u>Bored-cast in place concrete pile using concrete Grade C40/20 as specified.</u>					
		Pile diameter 1500mm					
6.2.127	Number of piles		P171.1	nr			
6.2.128	Concreted length		P172.1	m			
6.2.129	Depth bored to maximum depth 20m		P173.1	m			
		Pile diameter 1500mm raked at inclination ratio 1:3					
6.2.130	Number of piles		P171.2	nr			
6.2.131	Concreted length		P172.2	m			
6.2.132	Depth bored to maximum length 20m		P173.2	m			
		<u>PILING ANCILLARIES</u>					
		Pile diameter 1500mm					
6.2.133	Permanent steel casing for 1500mm diameter pile protected with anticorrosive coating; maximum length -----m as specified and shown on drawings		Q147	m			
6.2.134	Cutting off surplus lengths 1500mm dia.piles		Q177	m			
6.2.135	Preparing pile head 1500mm diameter		Q187	nr			
		Epoxy coated, deformed high yield bars					
6.2.136	Nominal size 32mm.		Q212.1	t			
		Epoxy coated, deformed high yield helical bars					
6.2.137	Nominal size 12mm.		Q213	t			
		Non-epoxy coated, deformed high yield bars					
6.2.138	Nominal size 32mm.		Q212.2	t			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 39 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.2 - PRE-TENSIONED PRECAST I-GIRDER</u>					
		<u>PILING ANCILLARIES (Cont'd)</u>					
		<u>Pile tests</u>					
6.2.139		Vertical pile test, load according to specifications for 1500mm diameter pile - preliminary pile including installation. - Non working pile.	Q81*	nr			
6.2.140		Vertical pile test load according to specifications for 1500mm diameter pile - working pile.	Q81*	nr			
6.2.141		Non-destructive test by ultrasonic method for 1500mm diameter pile.	Q840.1	nr			
6.2.142		Non-destructive test by cross hole sonic logging for 1500mm diameter pile.	Q840.2	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 40 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.2 - PRE-TENSIONED PRECAST I-GIRDER (Cont'd.)</u>					
		<u>PAVINGS</u>					
		<u>Road Base at Approach Slab</u>					
6.2.143		Aggregate base course;depth 100-150mm	R194	m ²			
		<u>Bridge deck wearing surface</u>					
6.2.144		Asphaltic concrete type II, wearing course 50mm thick including a regulating course to adjust the undulations at the top of deck slab.	R352	m ²			
6.2.145		Tack coat	R390	m ²			
		<u>Light duty pavement</u>					
6.2.146		Precast concrete up stand Kerb 150 x 200 with metal strap to hold back, as on Dwg. No.	R711	m			
6.2.147		Precast concrete block paving tiles thickness 60mm on and including 20mm thick sand bed.	R750	m ²			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 41 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.2 - PRE-TENSIONED PRECAST I-GIRDER (Cont'd.)</u>					
		<u>WATERPROOFING</u>					
		Waterproofing system as specified and shown on the drawings including membrane dressed up around the openings, 15mm preformed joint filler and all fixings where necessary.					
	6.2.148	3mm thick spray applied to membrane to horizontal surfaces	W239.1	m ²			
	6.2.149	2mm thick spray applied to membrane to vertical surfaces	W239.2	m ²			
	6.2.150	12mm thick bitumen impregnated protection board	W429.3	m ²			
	6.2.151	50mm thick concrete protection	W441	m ²			
	6.2.152	Coating system to concrete surfaces of piers and abutment in contact with the soil above the footing using standard waterproofing system (incl. in waterproofing and protection boards).	W249	m ²			
		<u>PAINTING</u>					
	6.2.153	Coating system to concrete surfaces of piers, abutment, bridge parapet/barrier and deck slab above the final surface level using the epoxy painting system (inside surface of box girder measured separately).	V739.1	m ²			
	6.2.154	Coating system to exposed under and inside surfaces of the box girders and barriers.	V739.2	m ²			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 42 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 6 - BRIDGE WORKS</u></p> <p><u>6.2 - PRE-TENSIONED PRECAST I-GIRDER</u> <u>(Cont'd.)</u></p> <p><u>MISCELLANEOUS WORK</u></p> <p>Sub soil drainage</p>					
	6.2.155	Course aggregate/crushed stone deposit maximum 1.0m ³ per meter surrounded by Geotextile Fabric behind abutments, wing walls including cast in place PVC weep holes or drain not exceeding 50mm dia as specified and shown on drawings. (perforated pipe drain measured separately)	X399.1	m ³			
	6.2.156	150mm dia perforated PVC pipe connected to the storm water drainage system	X399.2	m			
		<u>Fences</u>					
	6.2.157	Reinforced concrete bridge barrier complete including formworks and other associated works as specified and shown on drawing.	X193	m			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 43 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u>					
		<u>6.2 - PRE-TENSIONED PRECAST I-GIRDER (Cont'd.)</u>					
		<u>MISCELLANEOUS WORK (Cont'd)</u>					
		<u>Under Bridge Lighting</u>					
		Supply and Install conduits, cables, terminations and mounting accessories, luminaires to make a functional lighting in all respect, as shown on the drawings.					
	6.2.158	Metallic junction box, weatherproof, recessed in concrete; (450 x 300 x 200mm)	X900.1	nr			
	6.2.159	Metallic junction box, weatherproof, recessed in concrete; (150 x 150 x 100mm)	X900.2	nr			
	6.2.160	PVC conduit, 20mm diameter	X900.3	m			
	6.2.161	PVC conduit, 32mm diameter	X900.4	m			
	6.2.162	PVC conduit, 50mm diameter	X900.5	m			
	6.2.163	2.5mm ² , 2 core and earth, heat resistant PVC cable	X900.6	m			
	6.2.164	2.5mm ² , PVC wiring cable	X900.7	m			
	6.2.165	4mm ² , PVC wiring cable	X900.8	m			
	6.2.166	6mm ² , PVC wiring cable	X900.9	m			
	6.2.167	10mm ² , PVC wiring cable	X900.10	m			
	6.2.168	LV, 4C - 16mm ² XLPE Armored Cable	X900.11	m			
	6.2.169	LV, 4C - 25mm ² XLPE Armored Cable	X900.12	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 6	PAGE 44 of 46
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 6 - BRIDGE WORKS</u> <u>6.2 - PRE-TENSIONED PRECAST I-GIRDER (Cont'd.)</u> <u>MISCELLANEOUS WORK (Cont'd)</u> <u>Under Bridge Lighting</u> Supply and Install conduits, cables, terminations and mounting accessories, luminaires to make a functional lighting in all respect, as shown on the drawings.					
6.2.170		60 watts LED under bridge luminaires for asymmetrical light distribution	X900.13	nr			
6.2.171		60 watts LED under bridge luminaires for symmetrical light distribution	X900.14	nr			
6.2.172		LED decorative bollard for bridge barriers.	X900.15	nr			
Carried to Part Summary						Dhs.	

PROJECT :-		BILL SECTION - D	PART - 6	PAGE 45 of 46
		DESCRIPTION	AMOUNT (AED)	
		<u>PART 6 - BRIDGE WORKS</u> <u>6.2 - PRE-TENSIONED PRECAST I-GIRDER (Cont'd.)</u> <u>PART SUMMARY</u> D6.2 - Page 24 D6.2 - Page 25 D6.2 - Page 26 D6.2 - Page 27 D6.2 - Page 28 D6.2 - Page 29 D6.2 - Page 30 D6.2 - Page 31 D6.2 - Page 32 D6.2 - Page 33 D6.2 - Page 34 D6.2 - Page 35 D6.2 - Page 36 D6.2 - Page 37 D6.2 - Page 38 D6.2 - Page 39 D6.2 - Page 40 D6.2 - Page 41 D6.2 - Page 42 D6.2 - Page 43 D6.2 - Page 44 TOTAL FOR PART 6.2 - BRIDGE WORKS (PRECAST I-GIRDER) CARRIED TO SUMMARY		
			Dhs.	

PROJECT :-		BILL SECTION - D	PART - 6	PAGE 46 of 46
		DESCRIPTION	AMOUNT (AED)	
		<u>PART 6 - BRIDGE WORKS</u> <u>SUMMARY</u> 6.1 - POST-TENSIONED BOX GIRDER Page 23 6.2 - PRE-TENSIONED PRECAST I-GIRDER Page 45		
		TOTAL FOR PART 6 - BRIDGE WORKS CARRIED TO GRAND SUMMARY	Dhs.	



Part 7

Tunnel / Underpass Works

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 1 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS</u>					
		<u>EARTHWORKS</u>					
		<u>Excavation</u>					
		Excavation for structures: material other than top soil, rock or artificial hard material for attaining the proposed sub grade, haul up to stockpiles on designated area to be determined by the Department.					
	7.1.01	Excavation for structures; max. depth: not exceeding 0.25m.	E321	m ³			
	7.1.02	Excavation for structures; depth 0.25 - 0.5m.	E322	m ³			
	7.1.03	Excavation for structures; depth 0.5 - 1m.	E323	m ³			
	7.1.04	Excavation for structures; depth 1 - 2m.	E324	m ³			
	7.1.05	Excavation for structures; depth 2 - 5m.	E325	m ³			
	7.1.06	Excavation for structures; depth 5 - 10m.	E326	m ³			
	7.1.07	Excavation for structures; depth 10 - 15m.	E327	m ³			
	7.1.08	Excavation for structures; depth exceeding 15m.	E328	m ³			
	7.1.09	Excavation for foundations rock; (maximum depth 5-10)	E336	m ³			
		<u>Excavation Ancillaries</u>					
	7.1.10	Preparation of excavated surface to receive permanent works.	E522	m ²			
	7.1.11	Allow for double handling of excavated material.	E542	m ³			
	7.1.12	Disposal of excavated Surplus material as directed by the Engineer	E532	m ³			
	7.1.13	Disposal of excavated material; rock	E533	m ³			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART 7	PAGE 2 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>EARTHWORKS</u>					
		<u>Filling</u>					
	7.1.14	Filling to structure using suitable excavated materials.	E614	m ³			
	7.1.15	Filling to structure using imported single size pervious structural backfill.	E615	m ³			
	7.1.16	Granular fill below base slab	E637	m ³			
		<u>Filling Ancillaries</u>					
	7.1.17	Preparation of filled surfaces not to receive permanent work.	E712	m ²			
	7.1.18	Preparation of filled surfaces to receive permanent work.	E722	m ²			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 3 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>INSITU CONCRETE</u>					
		<u>Provision of concrete - designed concrete</u>					
	7.1.19	Concrete Class C20/20;	F142	m ³			
	7.1.20	Concrete Class C30/20;	F152	m ³			
	7.1.21	Concrete Class C35/20;	F162	m ³			
	7.1.22	Concrete Class C40/20;	F182	m ³			
	7.1.23	Concrete Class C50/20;	F192	m ³			
		<u>Placing of Concrete</u>					
		Mass Concrete					
	7.1.24	Blinding concrete not exceeding 150mm thick.	F611	m ³			
	7.1.25	Concrete base below approach slab; thickness not exceeding 150mm	F621	m ³			
		Reinforced concrete including formwork, provision for drainage channels, stated surface features/chamfers, recess/dowels for any fittings as specified and shown on the drawings.					
	7.1.26	Approach Slab; concrete class C40/20	F723	m ³			
	7.1.27	Base Slab; concrete class C40/20	F724	m ³			
	7.1.28	Solid Slab; concrete class C40/20	F734	m ³			
	7.1.29	Parapet / Head Walls; concrete class C40/20	F743	m ³			
	7.1.30	Retaining / side walls; concrete class C40/20	F744	m ³			
	7.1.31	Bottom slab of box voided slab; concrete class C40/20	F789.1	m ³			
	7.1.32	Vertical web or diaphragms of box voided slab; concrete class C40/20	F789.2	m ³			
	7.1.33	Top slab of box voided slab; concrete class C40/20	F789.3	m ³			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 4 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>PRECAST CONCRETE</u>					
		Prestressed pre-tensioned beams (I-Girder)					
		Supply and install precast prestressed beams C50 concrete including reinforcement, prestressing tendons / strands, anchoring, non-ferrous drain holes, 70mm dia anchor bolt sleeves, chamfers, filling void portions with polystyrene and all necessary to complete, as per the specification and drawings.					
	7.1.34	Precast Prestressed I-Girder; length ----- m.	H268.1	nr			
	7.1.35	Precast Prestressed I-Girder; length ----- m.	H278.1	nr			
	7.1.36	Precast Prestressed T-Beams; length ----- m as per drawing.	H268.2	nr			
	7.1.37	Precast Prestressed T-Beams; length ----- m as per drawing.	H278.2	nr			
		<u>CONCRETE ANCILLARIES</u>					
		<u>Reinforcement</u>					
		Epoxy coated, deformed round bars					
	7.1.38	Nominal diameter 12mm	G524.1	t			
	7.1.39	Nominal diameter 16mm	G525.1	t			
	7.1.40	Nominal diameter 20mm	G526.1	t			
	7.1.41	Nominal diameter 25mm	G527.1	t			
	7.1.42	Nominal diameter 32mm	G528.1	t			
	7.1.43	Nominal diameter 36mm	G528.2	t			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 5 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>CONCRETE ANCILLARIES (Cont'd)</u>					
		Non-epoxy coated, deformed round bars					
	7.1.44	Nominal diameter 12mm	G524.2	t			
	7.1.45	Nominal diameter 16mm	G525.2	t			
	7.1.46	Nominal diameter 20mm	G526.2	t			
	7.1.47	Nominal diameter 25mm	G527.2	t			
	7.1.48	Nominal diameter 32mm	G528.3	t			
	7.1.49	Nominal diameter 36mm	G528.4	t			
		<u>Joints</u>					
		Expansion Joints					
		Including water stops, preformed joint filler, 2 Nos. injectable hose, 1 No. interceptor pipe complete as per the specification and drawings.					
	7.1.50	Expansion Joint Type I in base slab including galvanized steel edge pieces, water stops, elastomeric concrete, joint filler and joint sealant.	G690.1	m			
	7.1.51	Expansion Joint Type II in base slab including galvanized steel plate, water stops, screed filler, joint filler and joint sealant.	G690.2	m			
	7.1.52	Expansion Joint Type II in top solid slab including galvanized steel plate, water stops, screed filler, preformed joint filler and joint sealant.	G690.3	m			
	7.1.53	Expansion Joint to retaining walls and side walls including 2 No. water stops, 2 No. injectable hoses and preformed joint filler.	G690.4	m			
	7.1.54	Barrier expansion joints complete including steel plates, fittings, finishes at abutment and pier expansion as shown on drawing.	G690.5	nr			
	7.1.55	Expansion Joint in approach slab;15mm preformed joint filler including sealant as on drawing.	G690.6	m			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 6 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>CONCRETE ANCILLARIES (Cont'd)</u>					
		<u>Concrete Accessories</u>					
7.1.56		Finishing to top surface; approach slab	G812.1	m ²			
7.1.57		Finishing to top surface; retaining walls / head walls	G812.2	m ²			
7.1.58		Finishing to top surface; base slab	G812.3	m ²			
7.1.59		Finishing to top surface; roof slab	G812.4	m ²			
7.1.60		Coating system to exposed concrete surfaces including parapets as per specification.	G823.1	m ²			
7.1.61		50mm dia formed drain holes on retaining walls at 2.5m c/c with gravel or crushed stone deposit behind walls.	G832	nr			
		Ceramic tiles to straight or curved background including bedding, adhesives, jointing, expansion joints etc. complete as per drawing and specification.					
7.1.62		Supply of ceramic tiles	X900.1	m ²			
7.1.63		Fixing of ceramic tiles	G823.2	m ²			
7.1.64		Textured and form liner concrete finish for tunnel walls	G823.3	m ²			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION D			PART - 7	PAGE 7 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>MISCELLANEOUS METALWORK</u>					
	7.1.65	Stainless steel pipe railings	N164	m			
	7.1.66	Trench drain grating	N180	m ²			
	7.1.67	Access door size 600 x 600mm with all necessary steel plates, hinges, rivets, channels, angles, anchor bolts, GRP plates, complete as shown on drawing.	N190	nr			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 8 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>PILES</u>					
		<u>Bored-cast in place concrete pile using concrete Grade C40/20 as specified.</u>					
		Pile diameter 600mm					
	7.1.68	Number of piles	P141	nr			
	7.1.69	Concreted length	P142	m			
	7.1.70	Depth bored to maximum depth 20m	P143	m			
		<u>PILING ANCILLARIES</u>					
		Pile diameter 600mm					
	7.1.71	Permanent steel casing for 600mm diameter pile protected with anticorrosive coating; maximum length -----m as specified and shown on drawings	Q144	m			
	7.1.72	Cutting off surplus lengths 600mm dia.piles	Q174	m			
		Preparing pile head 600mm diameter	Q184	nr			
	7.1.73	Epoxy coated, deformed high yield bars					
	7.1.74	Nominal size 25mm.	Q211.1	t			
	7.1.75	Nominal size 32mm.	Q212.1	t			
		Epoxy coated, deformed high yield helical bars					
	7.1.76	Nominal size 12mm.	Q213	t			
		Non-epoxy coated, deformed high yield bars					
	7.1.77	Nominal size 25mm.	Q211.2	t			
	7.1.78	Nominal size 32mm.	Q212.2	t			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 9 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>PILES</u>					
		<u>Pile tests</u>					
	7.1.79	Vertical pile test, load according to specifications for 600mm diameter pile - preliminary pile including installation.- non working piles.	Q81*	nr			
	7.1.80	Vertical pile test load according to specifications for 600mm diameter pile - working pile.	Q81*	nr			
	7.1.81	Non-destructive test by ultrasonic method for 600mm diameter pile.	Q840.1	nr			
	7.1.82	Non-destructive test by cross hole sonic logging for 600mm diameter pile.	Q840.2	nr			
	7.1.83	Concrete pile foundation, pile load test, (Tension) 600mm diameter, 150% of working load.	Q842	nr			
	7.1.84	Concrete pile foundation, pile load test, (Tension) 600mm diameter, 200% of working load.	Q843	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 10 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>PILES</u>					
		<u>Bored-cast in place concrete pile using concrete Grade C40/20 as specified.</u>					
		Pile diameter 800mm					
	7.1.85	Number of piles	P191.1	nr			
	7.1.86	Concreted length	P192.1	m			
	7.1.87	Depth bored to maximum depth 20m	P193.1	m			
		<u>PILING ANCILLARIES</u>					
		Pile diameter 800mm					
	7.1.88	Permanent steel casing for 800mm diameter pile protected with anticorrosive coating; maximum length ----m as specified and shown on drawings	Q149.1	m			
	7.1.89	Cutting off surplus lengths 800mm dia.piles	Q179.1	m			
	7.1.90	Preparing pile head 800mm diameter	Q189.1	nr			
		Epoxy coated, deformed high yield bars					
	7.1.91	Nominal size 25mm.	Q211.1	t			
	7.1.92	Nominal size 32mm.	Q212.1	t			
		Epoxy coated, deformed high yield helical bars					
	7.1.93	Nominal size 12mm.	Q213	t			
		Non-epoxy coated, deformed high yield bars					
	7.1.94	Nominal size 25mm.	Q211.2	t			
	7.1.95	Nominal size 32mm.	Q212.2	t			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 11 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>PILES</u>					
		<u>Pile tests</u>					
	7.1.96	Vertical pile test, load according to specifications for 800mm diameter pile - preliminary pile including installation. - non working piles.	Q81*	nr			
	7.1.97	Vertical pile test load according to specifications for 800mm diameter pile - working pile.	Q81*	nr			
	7.1.98	Non-destructive test by ultrasonic method for 800mm diameter pile.	Q840.1	nr			
	7.1.99	Non-destructive test by cross hole sonic logging for 800mm diameter pile.	Q840.2	nr			
	7.1.100	Concrete pile foundation, pile load test, (Tension) 800mm diameter, 150% of working load.	Q842	nr			
	7.1.101	Concrete pile foundation, pile load test, (Tension) 800mm diameter, 200% of working load.	Q843	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 12 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>PILES</u>					
		<u>Bored-cast in place concrete pile using concrete Grade C40/20 as specified.</u>					
		Pile diameter 1000mm					
	7.1.102	Number of piles	P191.2	nr			
	7.1.103	Concreted length	P192.2	m			
	7.1.104	Depth bored to maximum depth 20m	P193.2	m			
		<u>PILING ANCILLARIES</u>					
		Pile diameter 1000mm					
	7.1.105	Permanent steel casing for 1000mm diameter pile protected with anticorrosive coating; maximum length -----m as specified and shown on drawings	Q149.2	m			
	7.1.106	Cutting off surplus lengths 1000mm dia.piles	Q179.2	m			
	7.1.107	Preparing pile head 1000mm diameter	Q189.2	nr			
		Epoxy coated, deformed high yield bars					
	7.1.108	Nominal size 32mm.	Q212.1	t			
		Epoxy coated, deformed high yield helical bars					
	7.1.109	Nominal size 12mm.	Q213	t			
		Non-epoxy coated, deformed high yield bars					
	7.1.110	Nominal size 32mm.	Q212.2	t			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 13 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS</u> <u>(Cont'd)</u>					
		<u>Pile tests</u>					
	7.1.111	Vertical pile test, load according to specifications for 1000mm diameter pile - preliminary pile including installation. - non working piles.	Q81*	nr			
	7.1.112	Vertical pile test load according to specifications for 1000mm diameter pile - working pile.	Q81*	nr			
	7.1.113	Non-destructive test by ultrasonic method for 1000mm diameter pile.	Q840.1	nr			
	7.1.114	Non-destructive test by cross hole sonic logging for 1000mm diameter pile.	Q840.2	nr			
	7.1.115	Concrete pile foundation, pile load test, (Tension) 1000mm diameter, 150% of working load.	Q842	nr			
	7.1.116	Concrete pile foundation, pile load test, (Tension) 1000mm diameter, 200% of working load.	Q843	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 14 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>PILES</u>					
		<u>Bored-cast in place concrete pile using concrete Grade C40/20 as specified.</u>					
		Pile diameter 1200mm					
	7.1.117	Number of piles	P161	nr			
	7.1.118	Concreted length	P162	m			
	7.1.119	Depth bored to maximum depth 20m	P163	m			
		<u>PILING ANCILLARIES</u>					
		Pile diameter 1200mm					
	7.1.120	Permanent steel casing for 1200mm diameter pile protected with anticorrosive coating; maximum length -----m as specified and shown on drawings	Q146	m			
	7.1.121	Cutting off surplus lengths 1200mm dia.piles	Q176	m			
	7.1.122	Preparing pile head 1200mm diameter	Q186	nr			
		Epoxy coated, deformed high yield bars					
	7.1.123	Nominal size 32mm.	Q212.1	t			
		Epoxy coated, deformed high yield helical bars					
	7.1.124	Nominal size 12mm.	Q213	t			
		Non-epoxy coated, deformed high yield bars					
	7.1.125	Nominal size 32mm.	Q212.2	t			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 15 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS</u> <u>(Cont'd)</u>					
		<u>Pile tests</u>					
	7.1.126	Vertical pile test, load according to specifications for 1200mm diameter pile - preliminary pile including installation. - non working piles.	Q81*	nr			
	7.1.127	Vertical pile test load according to specifications for 1200mm diameter pile - working pile.	Q81*	nr			
	7.1.128	Non-destructive test by ultrasonic method for 1200mm diameter pile.	Q840.1	nr			
	7.1.129	Non-destructive test by cross hole sonic logging for 1200mm diameter pile.	Q840.2	nr			
	7.1.130	Concrete pile foundation, pile load test, (Tension) 1200mm diameter, 150% of working load.	Q842	nr			
	7.1.131	Concrete pile foundation, pile load test, (Tension) 1200mm diameter, 200% of working load.	Q843	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 16 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>PILES</u>					
		<u>Bored-cast in place concrete pile using concrete Grade C40/20 as specified.</u>					
		Pile diameter 1500mm					
	7.1.132	Number of piles	P171	nr			
	7.1.133	Concreted length	P172	m			
	7.1.134	Depth bored to maximum depth 20m	P173	m			
		<u>PILING ANCILLARIES</u>					
		Pile diameter 1500mm					
	7.1.135	Permanent steel casing for 1500mm diameter pile protected with anticorrosive coating; maximum length -----m as specified and shown on drawings	Q147	m			
	7.1.136	Cutting off surplus lengths 1500mm dia.piles	Q177	m			
	7.1.137	Preparing pile head 1500mm diameter	Q187	nr			
		Epoxy coated, deformed high yield bars					
	7.1.138	Nominal size 32mm.	Q212.1	t			
		Epoxy coated, deformed high yield helical bars					
	7.1.139	Nominal size 12mm.	Q213	t			
		Non-epoxy coated, deformed high yield bars					
	7.1.140	Nominal size 32mm.	Q212.2	t			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 17 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS</u> <u>(Cont'd)</u>					
		<u>Pile tests</u>					
	7.1.141	Vertical pile test, load according to specifications for 1500mm diameter pile - preliminary pile including installation. - non working piles.	Q81*	nr			
	7.1.142	Vertical pile test load according to specifications for 1500mm diameter pile - working pile.	Q81*	nr			
	7.1.143	Non-destructive test by ultrasonic method for 1500mm diameter pile.	Q840.1	nr			
	7.1.144	Non-destructive test by cross hole sonic logging for 1500mm diameter pile.	Q840.2	nr			
	7.1.145	Concrete pile foundation, pile load test, (Tension) 1500mm diameter, 150% of working load.	Q842	nr			
	7.1.146	Concrete pile foundation, pile load test, (Tension) 1500mm diameter, 200% of working load.	Q843	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 18 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>PAVINGS</u>					
		<u>Road Base</u>					
	7.1.147	Aggregate base course;depth 100-150mm	R194	m ²			
	7.1.148	Asphaltic Concrete Base Course; Type I, depth 100-150mm	R314.1	m ²			
	7.1.149	Prime Coat	R390.1	m ²			
		<u>Tunnel base wearing surface</u>					
	7.1.150	Asphaltic Concrete Base Course on Tunnel; Type I; depth 100-150mm	R314.2	m ²			
	7.1.151	Asphaltic Concrete Wearing Course on Tunnel, Type II; depth 30-60mm	R352.1	m ²			
	7.1.152	Tack coat	R390.2	m ²			
		<u>Side walks</u>					
	7.1.153	Precast concrete up stand Kerb 150 x 200 with metal strap to hold back.	R711	m			
	7.1.154	Precast concrete block paving tiles; thickness 60mm on and including 50mm thick sand bed.	R750	m ²			
		<u>MASONRY</u>					
		<u>Slope or surface protection</u>					
		<u>Slope protection including grouting, leveling, all complete as specified and shown on drawings.</u>					
	7.1.155	To inclined or vertical surfaces (inclination not less than 15°)	U878.1	m ²			
	7.1.156	To horizontal surfaces or surface inclination less than 15°	U878.2	m ²			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 19 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS</u> (Cont'd)					
		<u>WATERPROOFING</u>					
		Waterproofing system as specified and shown on the drawings including membrane dressed up around the openings, 15mm preformed joint filler and all fixings where necessary.					
	7.1.157	3mm thick spray applied membrane to horizontal surfaces	W239	m ²			
	7.1.158	2mm thick spray applied membrane to vertical surfaces	W239	m ²			
	7.1.159	12mm thick bitumen impregnated protection board	W429	m ²			
	7.1.160	100mm thick concrete protection	W441	m ²			
		<u>MISCELLANEOUS WORK</u>					
		<u>Fences</u>					
	7.1.161	Reinforced concrete single face barrier over retaining wall complete including reinforcement formwork etc; as shown on Dwg.	X191	m			
		<u>Sub soil drainage</u>					
	7.1.162	Course aggregate/crushed stone deposit maximum 1.0m ³ per meter surrounded by Geotextile Fabric behind walls including cast in place PVC weep holes or drain not exceeding 50mm dia as specified and shown on drawings. (perforated pipe drain measured separately)	X399.1	m ³			
	7.1.163	150mm dia perforated PVC pipe connected to the storm water drainage system	X399.2	m			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 20 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>MISCELLANEOUS WORK (Cont'd)</u>					
		<u>Tunnel Lighting</u>					
	7.1.164	Supply and Install Fire Resistant Low Smoke and Fume Low Voltage, Modular Cable, 6mm ² 5 Core, XLPE Armored Cable.	X900.1	L.M.			
	7.1.165	Supply and Install Fire Resistant Low Smoke and Fume Low Voltage, Modular Cable, 10mm ² 5 Core, XLPE Armored Cable.	X900.2	L.M.			
	7.1.166	Supply and Install Fire Resistant Low Smoke and Fume Low Voltage, Modular Cable, 16mm ² 5 Core, XLPE Armored Cable.	X900.3	L.M.			
	7.1.167	Supply and Install Low Voltage, 10mm ² , Single Core, PVC, Cable	X900.4	L.M.			
	7.1.168	Supply and Install Low Voltage, 16mm ² , Single Core, PVC, Cable	X900.5	L.M.			
	7.1.169	Supply and Install Low Voltage, 25mm ² , Single Core, PVC, Cable	X900.6	L.M.			
	7.1.170	Supply and Install Low Voltage, 35mm ² , Single Core, PVC, Cable	X900.7	L.M.			
	7.1.171	Supply and Install Fire Resistant Low Voltage, 2.5mm ² , 2 Core XLPE Armored Cable	X900.8	L.M.			
	7.1.172	Supply and Install Fire Resistant Low Voltage, 4mm ² , 2 Core XLPE Armored Cable	X900.9	L.M.			
	7.1.173	Supply and Install Fire Resistant Low Voltage, 6mm ² , 2 Core XLPE Armored Cable	X900.10	L.M.			
	7.1.174	Supply and Install Fire Resistant Low Voltage, 2.5mm ² , 3 Core XLPE Armored Cable	X900.11	L.M.			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 21 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>MISCELLANEOUS WORK (Cont'd)</u>					
		<u>Tunnel Lighting (Cont'd)</u>					
7.1.175		Supply and Install Fire Resistant Low Voltage,4mm ² , 3 Core XLPE Armored Cable	X900.12	L.M.			
7.1.176		Supply and Install Fire Resistant Low Voltage,6mm ² , 3 Core XLPE Armored Cable	X900.13	L.M.			
7.1.177		Supply and Install Fire Resistant Low Voltage,2.5mm ² , 4 Core XLPE Armored Cable	X900.14	L.M.			
7.1.178		Supply and Install Fire Resistant Low Voltage,4mm ² , 4 Core XLPE Armored Cable	X900.15	L.M.			
7.1.179		Supply and Install Fire Resistant Low Voltage,6mm ² , 4 Core XLPE Armored Cable	X900.16	L.M.			
7.1.180		Supply and Install Joint Box for Fire Resistant Low Voltage,2.5mm ² 2 Core XLPE Armored Cable	X900.17	No.			
7.1.181		Supply and Install Joint Box for Fire Resistant Low Voltage,4mm ² 2 Core XLPE Armored Cable	X900.18	No.			
7.1.182		Supply and Install Joint Box for Fire Resistant Low Voltage,6mm ² 2 Core XLPE Armored Cable	X900.19	No.			
7.1.183		Supply and Install Joint Box for Fire Resistant Low Voltage,2.5mm ² 3 Core XLPE Armored Cable	X900.20	No.			
7.1.184		Supply and Install Joint Box for Fire Resistant Low Voltage,4mm ² 3 Core XLPE Armored Cable	X900.21	No.			
7.1.185		Supply and Install Joint Box for Fire Resistant Low Voltage,6mm ² 3 Core XLPE Armored Cable	X900.22	No.			
7.1.186		Supply and Install Joint Box for Fire Resistant Low Voltage,2.5mm ² 4 Core XLPE Armored Cable	X900.23	No.			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 22 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>MISCELLANEOUS WORK (Cont'd)</u>					
		<u>Tunnel Lighting (Cont'd)</u>					
	7.1.187	Supply and Install Joint Box for Fire Resistant Low Voltage,4mm ² 4 Core XLPE Armored Cable	X900.24	No.			
	7.1.188	Supply and Install Joint Box for Fire Resistant Low Voltage,6mm ² 4 Core XLPE Armored Cable	X900.25	No.			
	7.1.189	Stainless Steel Cable Tray	X900.26	S.M.			
	7.1.190	Stainless Steel Cable Trunking 100 X 50mm	X900.27	L.M			
	7.1.191	Stainless Steel Cable Trunking 50 X 50mm	X900.28	L.M			
	7.1.192	Dimmer Switch, Two Gang	X900.29	No.			
	7.1.193	Two way One Gang Switch	X900.30	No.			
	7.1.194	Two way Two Gang Switch	X900.31	No.			
	7.1.195	One Way One Gang Switch	X900.32	No.			
	7.1.196	One Way Two Gang Switch	X900.33	No.			
	7.1.197	One Way Three Gang Switch	X900.34	No.			
	7.1.198	20A DP Switch for Ex.Fan	X900.35	No.			
	7.1.199	13A Switched Socket Outlet (Single)	X900.36	No.			
	7.1.200	13A Switched Socket Outlet (Double)	X900.37	No.			
	7.1.201	13A W/P Switched Socket Outlet	X900.38	No.			
	7.1.202	15A Switched Socket for FCU's	X900.39	No.			
	7.1.203	20A SPN + E W/P Isolator IP65	X900.40	No.			
	7.1.204	30A SPN + E W/P Isolator IP65	X900.41	No.			
	7.1.205	Flex Outlet for A/C	X900.42	No.			
	7.1.206	40A TPN + E Isolator, IP65	X900.43	No.			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 23 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>MISCELLANEOUS WORK (Cont'd)</u>					
		<u>Tunnel Lighting (Cont'd)</u>					
7.1.207	63A TPN + E Isolator, IP65		X900.44	No.			
7.1.208	80A TPN + E Isolator, IP65		X900.45	No.			
7.1.209	125A TPN + E Isolator, IP65		X900.46	No.			
7.1.210	200A TPN + E Isolator, IP65		X900.47	No.			
7.1.211	400A TPN + E Isolator W/P, IP65		X900.48	No.			
7.1.212	630A TPN + E Isolator W/P, IP65		X900.49	No.			
7.1.213	1000A TPN + E Isolator, IP65		X900.50	No.			
7.1.214	1250A TPN + E Isolator, IP65		X900.51	No.			
7.1.215	Emergency Stop Lock Push Button		X900.52	No.			
7.1.216	Furnish and Install 2-28 Watt T5 Fluorescent IP65 Luminaires With Electronic Ballast		X900.53	No.			
7.1.217	Furnish and Install Recessed Compact Fluorescent, luminaire 2X40W TC-L, Digital Dimmable with Micro perforated Diffuser for Control Room.		X900.54	No.			
7.1.218	Furnish and Install Recessed Compact Fluorescent, luminaire 2X40W TC-L, Electronic Ballast With Micro perforated Diffuser		X900.55	No.			
7.1.219	8 Watt Fluorescent Exit - Sign Luminaires		X900.56	No.			
7.1.220	8 Watt Fluorescent Exit - Sign With Directive luminaires.		X900.57	No.			
7.1.221	Illuminated Signs (Various)		X900.58	No.			
7.1.222	8 Watt Emergency Light		X900.59	No.			
7.1.223	Furnish and Install 2X18 Watt Compact Fluorescent luminaires With Electronic Ballst for Stair Area		X900.60	No.			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 24 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>MISCELLANEOUS WORK (Cont'd)</u>					
		<u>Tunnel Lighting (Cont'd)</u>					
	7.1.224	Furnish and Install Tunnel luminaires, 400 Watt, High Pressure Sodium	X900.61	No.			
	7.1.225	Furnish and Install Tunnel Luminaire, 250 Watt, High Pressure Sodium	X900.62	No.			
	7.1.226	Furnish and Install Tunnel Luminaire, 150 Watt, High Pressure Sodium	X900.63	No.			
	7.1.227	Furnish and Install Tunnel Luminaire, 100 Watt, High Pressure Sodium	X900.64	No.			
	7.1.228	Furnish and Install Tunnel Luminaire, 60 Watt, LED	X900.65	No.			
	7.1.229	Tunnel Light Meter with Photocell and astronomical time clock.	X900.66	No.			
	7.1.230	Lighting Control Unit, Type 1	X900.67	No.			
	7.1.231	Lighting Control Unit, Type 2	X900.68	No.			
	7.1.232	3 Phase 10 KVA to 25 KVA (Including) Power Controllers for Tunnel Lighting with Sub PLC'S	X900.69	No.			
	7.1.233	3 Phase 26 KVA to 44 KVA (Including) Power Controllers for Tunnel Lighting with Sub PLC'S	X900.70	No.			
	7.1.234	3 Phase 45 KVA to 60 KVA (Including) Power Controllers for Tunnel Lighting with Sub PLC'S	X900.71	No.			
	7.1.235	3 Phase 61 KVA to 70 KVA (Including) Power Controllers for Tunnel Lighting with Sub PLC'S	X900.72	No.			
	7.1.236	3 Phase 71 KVA to 100 KVA (Including) Power Controllers for Tunnel Lighting with Sub PLC'S	X900.73	No.			
	7.1.237	Main Distribution Board, 10W, 1600A TP ACB as Incomer and MCCB Outgoings Complete With Accessories.	X900.74	No.			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 25 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>MISCELLANEOUS WORK (Cont'd)</u>					
		<u>Tunnel Lighting (Cont'd)</u>					
	7.1.238	Sub Main Distribution Board, 4W, 125 to 200A TP MCCB Main, MCCB Outgoings Complete with Accessories	X900.75	No.			
	7.1.239	Sub Main Distribution Board, 6W, 125 to 200A TP MCCB Main, MCCB Outgoings Complete with Accessories	X900.76	No.			
	7.1.240	Sub Main Distribution Board, 6W, 250 to 400A TP MCCB Main, MCCB Outgoings Complete with Accessories	X900.77	No.			
	7.1.241	Sub Main Distribution Board, 8W, 200 to 400A TP MCCB Main, MCCB Outgoings Complete with Accessories	X900.78	No.			
	7.1.242	Sub Main Distribution Board, 8W, 630A TP MCCB Main, MCCB Outgoings Complete with Accessories	X900.79	No.			
	7.1.243	Final Distribution Board, 4W, TPN MCB, 40A 4P Isolator as Main	X900.80	No.			
	7.1.244	Final Distribution Board, 6W, TPN MCB, 40A 4P Isolator as Main	X900.81	No.			
	7.1.245	Consumer Unit, 6W 40A, 2P Isolator as Main.	X900.82	No.			
	7.1.246	Final Distribution Board, 8W, TPN MCB, 40A 4P Isolator as Main	X900.83	No.			
	7.1.247	Final Distribution Board, 8W, TPN MCB, 63A 4P Isolator as Main	X900.84	No.			
	7.1.248	Final Distribution Board, 8W, TPN MCB, 80A 4P Isolator as Main	X900.85	No.			
	7.1.249	Final Distribution Board, 12W, TPN MCB, 63A 4P Isolator as Main	X900.86	No.			
	7.1.250	Final Distribution Board, 12W, TPN MCB Board 100A 4P Isolator as Main	X900.87	No.			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 26 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>MISCELLANEOUS WORK (Cont'd)</u>					
		<u>Tunnel Lighting (Cont'd)</u>					
7.1.251		1600 A 4P ACB Auto Transfer Switch Panel	X900.88	No.			
7.1.252		630 A 4P MCCB Auto Transfer Switch Panel	X900.89	No.			
7.1.253		Furnish and Install 1500 KVA, 11/0.433 KV Dry Type Transformer Complete with All Accessories	X900.90	No.			
7.1.254		Furnish and Install 1000 KVA, 11/0.433 KV Dry Type Transformer Complete with All Accessories	X900.91	No.			
7.1.255		Furnish and Install TRM, Battery and Charger, DMS Cubicle with All Accessories.	X900.92	No.			
7.1.256		Furnish and Install 4 Panel, 11KV, Switchgear, Battery and Charger, DMS Cubicle with All Accessories	X900.93	No.			
7.1.257		Furnish and Install Diesel Generator Set 706 KVA (Standby) 415V, 3 Phase 50Hz Complete with Accessories including Breaker and Electronic Control Panel	X900.94	No.			
7.1.258		Furnish and Install Diesel Generator Set 900 KVA (Standby) 415V, 3 Phase 50Hz Complete with Accessories including Breaker and Electronic Control Panel	X900.95	No.			
7.1.259		Supply and Install Earthing System for Transformers, LV Panels, HV Panels and External Earthing System for Substations	X900.96	sum			
7.1.260		Furnish and Install 310 - 350 KVR Capacitor Bank Panel	X900.97	No.			
7.1.261		Furnish and Install 360 - 400 KVR Capacitor Bank Panel	X900.98	No.			
7.1.262		Furnish and Install 410 - 450 KVR Capacitor Bank Panel	X900.99	No.			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 27 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>MISCELLANEOUS WORK (Cont'd)</u>					
		<u>Tunnel Lighting (Cont'd)</u>					
	7.1.263	Furnish and Install 100 to 160 KVA Uninterrupted Power Supply	X900.100	No.			
	7.1.264	Furnish and Install 200 KVA Uninterrupted Power Supply	X900.101	No.			
	7.1.265	Furnish and Install 250 to 300 KVA Uninterrupted Power Supply	X900.102	No.			
	7.1.266	Emergency Telephone and Telephone System Including Service Connection	X900.103	sum			
	7.1.267	Pre - Commissioning Tests for All Equipments in 11KV Ring Main Substations	X900.104	sum			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 28 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>MISCELLANEOUS WORK (Cont'd)</u>					
		<u>FIRE ALARM SYSTEM</u>					
		Supply, and installation, of Fire Alarm System including all Hardware and Software, power supplies, cables, conduit, ducting, concrete surround, cable trays, identification, cable terminations and incidental work, in compliance with local regulations and complete as specified and as shown on drawings & specification.					
	7.1.268	Fibre Optic Cable for Heat Detection in Tunnel	X900.1	L.M.			
	7.1.269	Smoke Detector	X900.2	No.			
	7.1.270	Heat Detector	X900.3	No.			
	7.1.271	Fire Alarm Bell	X900.4	No.			
	7.1.272	Fire Alarm Manual Pull Station	X900.5	No.			
	7.1.273	Remote Indicator	X900.6	No.			
	7.1.274	Analogue Addressable Main Fire Alarm Panel with Batteries & Charger	X900.7	No.			
	7.1.275	Analogue Addressable Sub Fire Alarm Panel with Batteries & Charger	X900.8	No.			
	7.1.276	Printer	X900.9	No.			
	7.1.277	Zone Isolator	X900.10	No.			
	7.1.278	Control Module	X900.11	No.			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 29 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>MISCELLANEOUS WORK (Cont'd)</u>					
		<u>FIRE ALARM SYSTEM (Cont'd)</u>					
	7.1.279	MICC Cable (1.5mm ²)	X900.12	L.M.			
	7.1.280	MICC Cable (2.5mm ²)	X900.13	L.M.			
	7.1.281	Fire Resistant Wiring Cable 1.5mm ²	X900.14	L.M.			
	7.1.282	Fire Resistant Wiring Cable 2.5mm ²	X900.15	L.M.			
	7.1.283	Spare parts for Fire Alarm Systems as specified (5% or minimum one complete unit of each type)	X900.16	sum			
	7.1.284	Spare parts for Fire Alarm System as recommended by Manufacturer for five years of trouble free operation.	X900.17	sum			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 30 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>MISCELLANEOUS WORKS (Cont'd)</u>					
		<u>TELEPHONE WORKS</u>					
		Supply, install, test & commission telephone system including conduit, wiring, terminal boards, and accessories as specified and detailed on drawing, and as per ETISALAT regulation.					
		<u>Telephone sets</u>					
	7.1.285	Weather-proof IP66 rugged automatic ring down sets with enclosure	X900.1	nr			
	7.1.286	Etisalat approved duplex socket outlet	X900.2	nr			
	7.1.287	Digital telephone line set for staff station	X900.3	nr			
		Cable works for telephone system installation including supply and installation of conduit, wires/cables, supports, fixing, tee-connection, joint-boxes, as required, including all accessories complete.					
	7.1.288	Cable works associated with telephone system	X900.4	nr			
	7.1.289	Conduits and accessories	X900.5	m			
		Supply, install, test & commission telephone system including all accessories as specified and detailed on drawing, and as per ETISALAT regulation.					
	7.1.290	Telephone PABX	X900.6	nr			
	7.1.291	Telephone terminal board and main distribution frame (MDF)	X900.7	nr			
	7.1.292	Telephone intermediate distribution frame (IDF)	X900.8	nr			
	7.1.293	Telephone Distribution Board (TDB)	X900.9	nr			
	7.1.294	Etisalat service connection charges	X900.10	sum			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 31 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 7 - TUNNEL / UNDERPASS WORKS</u></p> <p><u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u></p> <p><u>MISCELLANEOUS WORKS (Cont'd)</u></p> <p><u>PUBLIC ADDRESS SYSTEM</u></p> <p>Supply, install, test & commission Public Address System as specified and as shown on drawings complete with speakers, master console, amplifiers, cables, etc. complete</p> <p><u>Loud Speakers</u></p>					
	7.1.295	Wall mounted IP65 rated loud speakers with tapped transformers and volume control for installation at tunnel entrances.	X900.1	nr			
		<p>Cable works for Public Address System installation including supply and installation of conduit, wires/cables, supports, fixing, tee-connection, joint-boxes, as required, including all accessories complete.</p>					
	7.1.296	Cable works for Public Address System	X900.2	nr			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 32 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>MISCELLANEOUS WORKS (Cont'd)</u>					
		<u>RADIO ANTENNA SYSTEM</u>					
		Collect from Etisalat and lay (according to Etisalat requirements and specification) telephone and antenna cables (by Etisalat approved Contractor) in under ground trench, in concrete trench or through conduit in walls including all protection and support works, trays, etc. as required and as directed by the Engineer, to the approval of Etisalat, as shown on drawings					
	7.1.297	1x20 pair telephone cable between telephone DP and RBS equipment	X900.1	m			
	7.1.298	Antenna feeder cable between antenna and RBS equipment	X900.2	m			
	7.1.299	Supply, Install, test and commission Power Distribution Board for Etisalat RBS Base Station.	X900.3	nr			
	7.1.300	Installation of free issue RBS equipment and Power Distribution Board for Base stations recessed in tunnel walls at three locations as shown on drawings.	X900.4	sum			
		<u>Power supply and earthing to RBS equipment</u>					
	7.1.301	Power supply connection from the station DB to RBS equipment, including cable works and termination.	X900.5	nr			
	7.1.302	Earthing connection 70mm ² from station earth bar to RBS equipment	X900.6	nr			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 33 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 7 - TUNNEL / UNDERPASS WORKS</u></p> <p><u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u></p> <p><u>MISCELLANEOUS WORKS (Cont'd)</u></p> <p><u>RADIO ANTENNA SYSTEM (Cont'd)</u></p> <p>Collect from Etisalat and lay (according to Etisalat requirements and specification) telephone and antenna cables (by Etisalat approved Contractor) in under ground trench, in concrete trench or through conduit in walls including all protection and support works, trays, etc. as required and as directed by the Engineer. to the approval of Etisalat</p> <p><u>Design, supply, and install, the Tetra (RF radio antenna) system as per specification and drawings, complete with central equipment, outdoor radio mast and cabinets, coaxial and radio transmission leaky feeder two-wire conductor system, with required SS 316L supports, Repeaters, junction boxes End Resistors etc. complete.</u></p>					
	7.1.303	Leaky feeder cables co-axial & radio transmission (Fire Resistant), low smoke type installed at tunnel roof	X900.7	m			
	7.1.304	Feeder cables for connection from Tunnel entrance to Ancillary Bldg. No. 2	X900.8	m			
	7.1.305	Splitters, SS316L supports, spacers, SS316L Junction Boxes, repeaters, end resistors, cable glands and all accessories complete as required to make the Tetra System fully functional	X900.9	sum			
	7.1.306	Spare parts for Tetra (RF radio antenna) system as recommended by manufacturer for five years of trouble free operation.	X900.10	sum			
	7.1.307	10m high free standing structure for Radio (Tetra) system antenna as per specification and drawings.	X900.11	nr			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 34 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 7 - TUNNEL / UNDERPASS WORKS</u></p> <p><u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u></p> <p><u>MISCELLANEOUS WORKS (Cont'd)</u></p> <p><u>SURVEILLANCE AND CONTROLS</u></p> <p><u>INSTRUMENTATION, MONITORING AND CONTROLS</u></p> <p><u>PRIMARY ELEMENTS INSTRUMENTATION</u></p> <p>Supply, and installation, of the following instrumentation and auxiliary equipment including concrete bases, pipe tappings and fixtures, support posts, all fixing materials, power supply, cabling and termination and all associated incidental work, complete as specified and as shown on the drawings including 90 days performance verification tests.</p>					
	7.1.308	Fixed Focus Cameras for tunnel monitoring	X900.1	nr			
	7.1.309	PTZ Cameras	X900.2	nr			
	7.1.310	Dome Cameras	X900.3	nr			
	7.1.311	RVDS Sensors for Traffic Counting and Classification	X900.4	nr			
	7.1.312	Access Control System complete with card reader, interface module, controller, door lock, door contact and exit push button complete with all SCADA/Surveillance interfaces.	X900.5	nr			
	7.1.313	Door contact monitoring for fire extinguisher cabinets and FHC cabinets (2 contacts per FHC & 1 contacts per FEC)	X900.6	nr			
	7.1.314	CO Monitoring System Panels complete with SCADA/Surveillance interfaces and display for monitoring each channel & all alarms.	X900.7	nr			
	7.1.315	CO Detectors electro chemical type with IP68 degree of protection, complete with filter, Transmitter, supports, SS316L conduits, necessary cable junction box etc. complete	X900.8	nr			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 35 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>MISCELLANEOUS WORKS (Cont'd)</u>					
		<u>SURVEILLANCE AND CONTROLS (Cont'd)</u>					
		<u>INSTRUMENTATION, MONITORING AND CONTROLS (Cont'd)</u>					
	7.1.316	SS 316 L Enclosures for installation of CCTV Controllers, Fiber Optic Transceivers, Power supply modules, recessed in tunnel walls	X900.9	nr			
	7.1.317	Spare parts for CCTV, Access Control and CO monitoring Systems as specified-(5% or minimum one complete unit of each type)	X900.10	sum			
	7.1.318	Spare parts for CCTV, Access Control and CO Monitoring Systems as recommended by Manufacturer for five years of trouble free operation.	X900.11	sum			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 36 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 7 - TUNNEL / UNDERPASS WORKS</u></p> <p><u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u></p> <p><u>MISCELLANEOUS WORKS (Cont'd)</u></p> <p><u>LANE USE SIGNAL AND VMS SYSTEMS</u></p> <p>Supply, and installation, of lane use signal and VMS systems including all Hardware and Software, power supplies, cables, conduit, ducting, concrete surround, cable trays, identification, cable terminations, 90 days operation and incidental work, in compliance with local regulations complete as specified including 90 days performance verification tests</p> <p><u>Variable Message Sign Boards, complete with controllers, dimming systems, photo sensors, and associated enclosures (Controller enclosure SS316L), Fiber optic Transceivers, Fiber optic and Power cables, communication modules, SS316L conduits, etc. complete as specified and as shown on drawings.</u></p>					
	7.1.319	For span of 2 lanes	X900.1	nr			
	7.1.320	For span of 4 lanes	X900.2	nr			
	7.1.321	Full Matrix LED type fixed message "Tunnel Closed/Open" signs including all associated duct work and cabling, support posts, concrete foundations, etc. complete as specified & as shown on drawings and specification.	X900.3	nr			
		<p><u>Full Matrix LED Based Lane use signals complete with controller, Power and Fiber Optic cables, Transceivers, SS316L Enclosures, SS316L conduits, including bi-directional LUS showing multicolor (Red Cross, Green Arrow, Yellow Diagonal Arrows) displays</u></p>					
	7.1.322	LUS Units for 2 Lanes - each containing 4 Display boards	X900.4	nr			
	7.1.323	LUS Units for 4 Lanes - each containing 8 Display boards	X900.5	nr			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 37 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>MISCELLANEOUS WORKS (Cont'd)</u>					
		<u>LANE USE SIGNAL AND VMS SYSTEMS (Cont'd)</u>					
	7.1.324	Spare parts for VMS and LUS Systems as specified (5% or minimum one complete unit of each type)	X900.6	sum			
	7.1.325	Spare parts for VMS and LUS System as recommended by Manufacturer for five years of trouble free operation.	X900.7	sum			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 38 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>MISCELLANEOUS WORKS (Cont'd)</u>					
		PROVISION OF FOLLOWING FOR ALL THE TELEPHONE WORKS, PUBLIC ADDRESS SYSTEM, RADIO ANTENNA SYSTEM, SURVEILLANCE AND CONTROLS					
	7.1.326	Drawing, manuals, approvals and instruction books	X900.1	sum			
	7.1.327	Testing at factory and site and commissioning including supervision from manufacturer during installation, testing and commissioning	X900.2	sum			
	7.1.328	Labels, special tools etc	X900.3	sum			
	7.1.329	Protective and decorative painting	X900.4	sum			
	7.1.330	Specific builder's work associated with plant and equipment including bases, ducts, sleeves supports etc complete	X900.5	sum			
	7.1.331	General builders work including cutting, chasing making good etc, complete	X900.6	sum			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 39 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>PIPEWORKS</u>					
		<u>FIRE PROTECTION EQUIPMENT</u>					
		Supply, and installation, of following items, including stainless steel support framework, spare parts, tools, plant, etc. Rates shall include for the manufacturer's commissioning and one years after sale quarantee service all complete as per NFPA regulations, as specified and as shown in drawings					
7.1.332	All 200mm wet stand pipe	I 411.1	m				
7.1.333	All 100mm dia wet stand pipe	I 411.2	m				
7.1.334	65mm dia double flanged connection to fire hose cabinet	I 418.1	nr				
7.1.335	25mm dia pipe connection to fire hose cabinet including PRV & isolation valves	I 418.2	nr				
		<u>PIPEWORKS - FITTINGS AND VALVES</u>					
7.1.336	100mm dia bends	J311	nr				
7.1.337	100mm dia take off Tees to 200mm dia water main	J321.1	nr				
7.1.338	100mm x 100mm dia Tee pieces	J321.2	nr				
7.1.339	200mm x 200mm dia Tee pieces	J321.3	nr				
7.1.340	200mm non return valves TNRV1 - TNRV4	J831	nr				
7.1.341	200mm butterfly isolation valves TV1 - TV30	J841	nr				
7.1.342	100mm dia automatic air valve	J861.1	nr				
7.1.343	Twin 21/2" Civil Defense Siamese Connections	J991	nr				
7.1.344	Grooved fittings for straight through connection	J900	nr				
7.1.345	Air relief valves 100mm diameter	J861.2	nr				
7.1.346	Drain Valves 200mm diameter	J891	nr				
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 40 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>MISCELLANEOUS WORKS (Cont'd)</u>					
		<u>FIRE PROTECTION EQUIPMENT</u>					
		Supply, and installation, of following items, including support framework, spare parts, tools, plant, etc. Rates shall include for the manufacturer's commissioning and one years after sale quarantee service all complete as per NFPA regulations as specified and shown in drawings					
7.1.347	SS316L Fire hose cabinet FHC including all contents.		X900.1	nr			
7.1.348	SS316L Fire extinguisher cabinet, FEC including all contents.		X900.2	nr			
7.1.349	All fittings, unions, tees, anchors, sleeve connectors, etc to complete the whole system		J900.3	sum			
7.1.350	Any other item required by Civil Defence Authorities		X900.4	sum			
7.1.351	All Special tools		X900.5	sum			
7.1.352	Spare parts as specified (5% or minimum one complete unit of each type)		X900.6	sum			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 41 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>MISCELLANEOUS WORKS (Cont'd)</u>					
		<u>TUNNEL VENTILATION EQUIPMENT</u>					
		Supply, and installation, of following items, including support framework, etc. Rates shall include for the manufacturer's commissioning and one years after sale guarantee service all complete as specified and shown in drawings					
	7.1.353	Tunnel ventilation jet fans JF-1 to JF-12 as per equipment schedule, and at locations shown on Drawings	X900.1	nr			
	7.1.354	All Special tools	X900.2	sum			
	7.1.355	Spare parts for jet fans and all accessories such as Protections sensors and Monitoring units as specified (5% or minimum one complete unit of each type)	X900.3	sum			
	7.1.356	All other works to make mechanical works for Ventilation Fans complete.	X900.4	sum			
	7.1.357	Jet fan protection sensors & necessary monitoring units complete with remote display & control through motor protection relays. This shall include sensors, cables, electronic controllers, transmitters & their SS 316L enclosures for each Jet fans	X900.5	nr			
	7.1.358	SS 316 L supports for the Jet Fans including all necessary anchors, brackets, antivibration mounting pads etc. complete as specified and as shown on drawings.	X900.6	nr			
	7.1.359	Spare parts for jet fans as recommended by Manufacturer for satisfactory trouble free operation for five years	X900.7	sum			
	7.1.360	Charges for RTA and Engineer's visit to Manufacturer's factory for Factory Acceptance Testing of Jet fans - to be witnessed as specified	X900.8	sum			
	7.1.361	CFD analysis of Jet Fans as specified	X900.9	sum			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 42 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.1 - TUNNEL / UNDERPASS WORKS (Cont'd)</u>					
		<u>MISCELLANEOUS WORKS (Cont'd)</u>					
		<u>TUNNEL VENTILATION EQUIPMENT (Cont'd)</u>					
		PROVISION OF FOLLOWING FOR FIRE PROTECTION EQUIPMENT, TUNNEL VENTILATION EQUIPMENT					
	7.1.362	Drawing, manuals, approvals and instruction books	X900.10	sum			
	7.1.363	Testing at factory and site, including air velocity measurements, Vibration measurement tests, support anchor pull out tests and commissioning including supervision from manufacturer during installation, testing and commissioning as specified and as per NFPA 502 recommendations.	X900.11	sum			
	7.1.364	Labels, Name Plates, SS 316 Tags for each Equipment, special tools necessary for calibration and or maintenance as recommended by manufacturer for each equipment, etc	X900.12	sum			
	7.1.365	Protective and decorative painting	X900.13	sum			
	7.1.366	Specific builder's work associated with plant and equipment including bases, ducts, sleeves supports etc. complete	X900.14	sum			
	7.1.367	General builders work including cutting, chasing making good etc, complete	X900.15	sum			
Carried to Part Summary						Dhs	

PROJECT :-		BILL SECTION - D	PART - 7	PAGE 43 of 70
		ITEM DESCRIPTION	AMOUNT (AED)	
		<p><u>PART 7 - TUNNEL / UNDERPASS WORKS</u></p> <p><u>PART 7.1 - TUNNEL / UNDERPASS WORKS</u> <u>(Cont'd)</u></p> <p><u>PART SUMMARY</u></p> <p>D 7.1 - Page 1</p> <p>D 7.1 - Page 2</p> <p>D 7.1 - Page 3</p> <p>D 7.1 - Page 4</p> <p>D 7.1 - Page 5</p> <p>D 7.1 - Page 6</p> <p>D 7.1 - Page 7</p> <p>D 7.1 - Page 8</p> <p>D 7.1 - Page 9</p> <p>D 7.1 - Page 10</p> <p>D 7.1 - Page 11</p> <p>D 7.1 - Page 12</p> <p>D 7.1 - Page 13</p> <p>D 7.1 - Page 14</p> <p>D 7.1 - Page 15</p> <p>D 7.1 - Page 16</p> <p>D 7.1 - Page 17</p> <p>D 7.1 - Page 18</p> <p>D 7.1 - Page 19</p> <p>D 7.1 - Page 20</p> <p>D 7.1 - Page 21</p> <p>D 7.1 - Page 22</p> <p>SUB TOTAL FOR PART 7.1 - TUNNEL / UNDERPASS WORKS</p> <p>CARRIED TO SUMMARY</p>		
				Dhs.

PROJECT :-		BILL SECTION - D	PART - 7	PAGE 44 of 70
		ITEM DESCRIPTION	AMOUNT (AED)	
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u> <u>PART 7.1 - TUNNEL / UNDERPASS WORKS</u> <u>(Cont'd)</u> <u>PART SUMMARY (Cont'd)</u> D 7.1 - Page 23 D 7.1 - Page 24 D 7.1 - Page 25 D 7.1 - Page 26 D 7.1 - Page 27 D 7.1 - Page 28 D 7.1 - Page 29 D 7.1 - Page 30 D 7.1 - Page 31 D 7.1 - Page 32 D 7.1 - Page 33 D 7.1 - Page 34 D 7.1 - Page 35 D 7.1 - Page 36 D 7.1 - Page 37 D 7.1 - Page 38 D 7.1 - Page 39 D 7.1 - Page 40 D 7.1 - Page 41 D 7.1 - Page 42 SUB TOTAL FOR PART 7.1 - TUNNEL / UNDERPASS WORKS		
		CARRIED TO SUMMARY	Dhs.	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 45 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.2 - LIFT STATION</u>					
		<u>CIVIL WORKS</u>					
		<u>EARTHWORKS</u>					
		<u>Excavation</u>					
	7.2.01	Excavation for foundation	E328	m ³			
		<u>Excavation Ancillaries</u>					
	7.2.02	Preparation of excavated surfaces to receive permanent works	E522	m ²			
	7.2.03	Filling to structure using suitable imported materials.	E614	m ³			
		<u>INSITU CONCRETE</u>					
		<u>Provision of concrete - designed concrete</u>					
	7.2.04	Concrete Class C20/20	F132	m ³			
	7.2.05	Concrete Class C40/20	F182	m ³			
		<u>Placing concrete including formworks</u>					
	7.2.06	Blinding concrete; thickness not exceeding 150mm	F611	m ³			
	7.2.07	Concrete benching; thickness 300-500mm	F624	m ³			
	7.2.08	Base slab	F724	m ³			
	7.2.09	Walls	F744	m ³			
	7.2.10	Top slab	F734	m ³			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 46 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.2 - LIFT STATION (Cont'd.)</u>					
		<u>CIVIL WORKS (Cont'd.)</u>					
		<u>CONCRETE ANCILLARIES</u>					
		<u>Reinforcement</u>					
		Epoxy coated deformed round bars					
	7.2.11	Nominal diameter - 12mm	G524.1	t			
	7.2.12	Nominal diameter - 16mm	G525.1	t			
	7.2.13	Nominal diameter - 20mm	G526.1	t			
	7.2.14	Nominal diameter - 25mm	G527.1	t			
	7.2.15	Nominal diameter - 28mm	G529.1	t			
		Non-epoxy coated deformed round bars					
	7.2.16	Nominal diameter - 12mm	G524.2	t			
	7.2.17	Nominal diameter - 16mm	G525.2	t			
	7.2.18	Nominal diameter - 20mm	G526.2	t			
	7.2.19	Nominal diameter - 25mm	G527.2	t			
	7.2.20	Nominal diameter - 28mm	G529.2	t			
		Water stops					
	7.2.21	Water stops at walls (const. joint)	G654	m			
		<u>Concrete Accessories</u>					
	7.2.22	Finishing of base slab surface	G812.1	m ²			
	7.2.23	Finishing of top slab surface	G812.2	m ²			
		<u>Manholes and Pipe Work Ancillaries</u>					
	7.2.24	GRP access ladder with safety cage length not less than 5.0m	K890	nr			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 47 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.2 - LIFT STATION (Cont'd.)</u>					
		<u>CIVIL WORKS (Cont'd.)</u>					
		<u>MISCELLANEOUS METAL WORKS</u>					
	7.2.25	Heavy duty multipart cover and frame; 1300x3060mm complete (as shown on Dwg.)	N900.1	nr			
	7.2.26	Triangular DI cover and frame; 600x600mm complete as shown on Dwg.	N900.2	nr			
	7.2.27	Heavy Duty DI cover; 900x600mm complete as shown on Dwg.	N900.3	nr			
	7.2.28	Stainless steel safety handrail including all fixing arrangements complete as shown on dwg.	N900.4	m			
		<u>PAINTING</u>					
		Elastomeric cementitious coating, in white color, applied in two coats to a total of DFT of 2mm.					
	7.2.29	To top slab	V634	m ²			
	7.2.30	To base slab	V631	m ²			
	7.2.31	To walls	V633	m ²			
		<u>WATERPROOFING</u>					
		Waterproofing system as specified and shown on the drawings including membrane dressed up around the openings, 15mm preformed joint filler and all fixings where necessary.					
	7.2.32	3mm thick spray applied membrane to horizontal surfaces	W239	m ²			
	7.2.33	2mm thick spray applied membrane to vertical surfaces	W239	m ²			
	7.2.34	12mm thick bitumen impregnated protection board	W429	m ²			
	7.2.35	100mm thick concrete protection	W441	m ²			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 48 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.2 - LIFT STATION (Cont'd.)</u>					
		<u>Other Stated Chamber</u>					
		Reinforced concrete valve chamber complete as shown in the drawing.					
	7.2.36	Valve chamber size: 5200 x 3500mm depth to invert 2.5 - 3m	K234	nr			
	7.2.37	1000 x 800mm draw pits for cables including covers complete as per dwg.	K232	nr			
		<u>Lining to Chamber</u>					
	7.2.38	7mm thick GRP liner to inside surfaces of chamber.	Y331	m ²			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 49 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.2 - LIFT STATION (Cont'd.)</u>					
		<u>MISCELLANEOUS</u>					
	7.2.39	Testing & Commissioning as described in the Specifications	X900.1	sum			
	7.2.40	Allow for works necessary to complete the Mechanical and Electrical works for Lift Station including interface works and associated works, in accordance with the specifications and drawings.	X900.2	sum			
Carried to Part Summary						Dhs	

PROJECT :-		BILL SECTION - D	PART - 7	PAGE 50 of 70
		DESCRIPTION	AMOUNT (AED)	
		<p><u>PART 7 - TUNNEL / UNDERPASS WORKS</u></p> <p><u>PART 7.2 - LIFT STATION (Cont'd.)</u></p> <p><u>PART SUMMARY</u></p> <p>D7.2 - Page 46</p> <p>D7.2 - Page 47</p> <p>D7.2 - Page 48</p> <p>D7.2 - Page 49</p>		
		<p>TOTAL FOR PART 7.2 - LIFT STATION CARRIED TO COLLECTION SHEET</p>	Dhs.	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 51 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.3 - STORMWATER RESERVOIR</u>					
		<u>CIVIL WORKS (Cont'd.)</u>					
		<u>EARTHWORKS</u>					
		<u>Excavation</u>					
	7.3.01	Excavation for foundation; depth 0 - 2m, material other than top soil or rock.	E329	m ³			
	7.3.02	Excavation for foundation; depth 2 - 5m, material other than top soil or rock.	E329	m ³			
	7.3.03	Excavation for foundation; maximum depth 5 - 10m, material other than top soil or rock.	E326	m ³			
		<u>Excavation Ancillaries</u>					
	7.3.04	Preparation of excavated surfaces to receive permanent works	E522	m ²			
	7.3.05	Filling to structure using suitable imported materials.	E615	m ³			
		<u>INSITU CONCRETE</u>					
		<u>Provision of concrete - designed concrete</u>					
	7.3.06	Concrete Class C20/20	F132	m ³			
	7.3.07	Concrete Class C35/20	F162	m ³			
	7.3.08	Concrete Class C40/20	F182	m ³			
		<u>Placing concrete including formworks</u>					
	7.3.09	Blinding concrete; thickness not exceeding 150mm	F611	m ³			
	7.3.10	Concrete at sump; thickness not exceeding 150-300mm	F722	m ³			
	7.3.11	Base slab	F724	m ³			
	7.3.12	Walls	F744	m ³			
	7.3.13	Column	F754	m ³			
	7.3.14	Top slab	F732	m ³			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 52 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.3 - STORMWATER RESERVOIR (Cont'd)</u>					
		<u>CIVIL WORKS (Cont'd.)</u>					
		<u>CONCRETE ANCILLARIES</u>					
		<u>Reinforcement</u>					
		<u>Epoxy coated deformed round bars</u>					
	7.3.15	Nominal diameter - 10mm	G523.1	t			
	7.3.16	Nominal diameter - 12mm	G524.1	t			
	7.3.17	Nominal diameter - 16mm	G525.1	t			
	7.3.18	Nominal diameter - 25mm	G527.1	t			
	7.3.19	Nominal diameter - 28mm	G529.1	t			
	7.3.20	Nominal diameter - 32mm	G528.1	t			
		<u>Non-epoxy coated deformed round bars</u>					
	7.3.21	Nominal diameter - 10mm	G523.2	t			
	7.3.22	Nominal diameter - 12mm	G524.2	t			
	7.3.23	Nominal diameter - 16mm	G525.2	t			
	7.3.24	Nominal diameter - 25mm	G527.2	t			
	7.3.25	Nominal diameter - 28mm	G529.2	t			
	7.3.26	Nominal diameter - 32mm	G528.2	t			
		<u>Joints</u>					
	7.3.27	Expansion joint at base slab including all accessories	G694.1	m			
	7.3.28	Expansion joint at top slab including all accessories	G694.2	m			
	7.3.29	Expansion joint at walls including all accessories	G694.3	m			
	7.3.30	Compressible joint filler board with joint sealant	G621	m ²			
		<u>Concrete Accessories</u>					
	7.3.31	Finishing of base slab surface	G812.1	m ²			
	7.3.32	Finishing of top slab surface	G812.2	m ²			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 53 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.3 - STORMWATER RESERVOIR (Cont'd)</u>					
		<u>CIVIL WORKS (Cont'd.)</u>					
		<u>MISCELLANEOUS METAL WORKS</u>					
	7.3.33	Aluminium access frame and cover size 750 x 900 mm	N900.1	nr			
	7.3.34	Aluminium access frame and cover size 400 x 1200 mm	N900.2	nr			
	7.3.35	Aluminum access frame & cover 2000 x 2000mm	N900.3	nr			
	7.3.36	GRP access ladder height 6.2m including all accessories	N900.4	nr			
	7.3.37	Vent pipes including all accessories	N900.5	nr			
		<u>PAINTING</u>					
		Elastomeric cementitious coating, in white color, applied in two coats to a total of DFT of 2mm.					
	7.3.38	To base slab	V631	m ²			
	7.3.39	To top slab	V634	m ²			
	7.3.40	To walls	V633.1	m ²			
	7.3.41	To column	V633.2	m ²			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 54 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.3 - STORMWATER RESERVOIR (Cont'd)</u>					
		<u>CIVIL WORKS (Cont'd.)</u>					
		<u>WATERPROOFING</u>					
		Waterproofing system as specified and shown on the drawings including membrane dressed up around the openings, 15mm preformed joint filler and all fixings where necessary.					
	7.3.42	3mm thick spray applied membrane to horizontal surfaces	W239	m ²			
	7.3.43	2mm thick spray applied membrane to vertical surfaces	W239	m ²			
	7.3.44	12mm thick bitumen impregnated protection board	W429	m ²			
	7.3.45	100mm thick concrete protection	W441	m ²			
		<u>Protective Layers</u>					
	7.3.46	Sweet soil / sand filling 300mm thick for top slab	W431	m ²			
	7.3.47	Single size aggregate 300mm thickness for top slab	W491	m ³			
	7.3.48	Pre cast blocks 400 x 400 x 30mm for top slab	W451	m ²			
		<u>MISCELLANEOUS</u>					
	7.3.49	Testing & Commissioning as described in the Specifications	X900.1	sum			
	7.3.50	Allow for works necessary to complete the Mechanical and Electrical works for Storm Water Reservoir including interface works and associated works, in accordance with the specifications and drawings.	X900.2	sum			
Carried to Part Summary						Dhs	

PROJECT :-		BILL SECTION - D	PART - 7	PAGE 55 of 70
		DESCRIPTION	AMOUNT (AED)	
		<p><u>PART 7 - TUNNEL / UNDERPASS WORKS</u></p> <p><u>PART 7.3 - STORMWATER RESERVOIR (Cont'd)</u></p> <p><u>PART SUMMARY</u></p> <p>D 7.3 - Page 51</p> <p>D 7.3 - Page 52</p> <p>D 7.3 - Page 53</p> <p>D 7.3 - Page 54</p>		
		<p>TOTAL FOR PART 7.3 - STORMWATER RESERVOIR CARRIED TO COLLECTION SHEET</p>	Dhs.	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 56 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.4 - GENERATOR ROOM</u>					
		<u>CIVIL WORKS</u>					
		<u>EARTHWORKS</u>					
7.4.01		Excavation to floor slab	E321	m ³			
7.4.02		Excavation to foundation	E325	m ³			
7.4.03		Excavation to grade beams	E324	m ³			
7.4.04		Excavation to cable trench	E324	m ³			
		<u>Excavation Ancillaries</u>					
7.4.05		Preparation of excavated surface to received permanent works	E522	m ²			
7.4.06		Filling to structure using suitable imported materials.	E615	m ³			
		<u>INSITU CONCRETE</u>					
		<u>Provision of concrete - designed concrete</u>					
7.4.07		Concrete Class C20/20;	F132	m ³			
7.4.08		Concrete Class C35/20;	F162	m ³			
7.4.09		Concrete Class C40/20;	F182	m ³			
		<u>Placing concrete including formworks</u>					
7.4.10		Blinding	F611	m ³			
7.4.11		Floor slab	F722	m ³			
7.4.12		Footing	F723.1	m ³			
7.4.13		Cable trench	F723.2	m ³			
7.4.14		Roof slab	F732	m ³			
7.4.15		Column	F753	m ³			
7.4.16		Ground beams	F763	m ³			
7.4.17		Roof beams	F764	m ³			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 57 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.4 - GENERATOR ROOM (Cont'd)</u>					
		<u>CIVIL WORKS</u>					
		<u>CONCRETE ANCILLARIES</u>					
		<u>Reinforcements</u>					
		<u>Epoxy coated deformed round bars</u>					
	7.4.18	Nominal diameter - 10mm	G523.1	t			
	7.4.19	Nominal diameter - 12mm	G524.1	t			
	7.4.20	Nominal diameter - 16mm	G525.1	t			
	7.4.21	Nominal diameter - 20mm	G526.1	t			
	7.4.22	Nominal diameter - 25mm	G527.1	t			
	7.4.23	Nominal diameter - 28mm	G529.1	t			
	7.4.24	Nominal diameter - 32mm	G528.1	t			
		<u>Non-epoxy coated deformed round bars</u>					
	7.4.25	Nominal diameter - 10mm	G523.2	t			
	7.4.26	Nominal diameter - 12mm	G524.2	t			
	7.4.27	Nominal diameter - 16mm	G525.2	t			
	7.4.28	Nominal diameter - 20mm	G526.2	t			
	7.4.29	Nominal diameter - 25mm	G527.2	t			
	7.4.30	Nominal diameter - 28mm	G529.2	t			
	7.4.31	Nominal diameter - 32mm	G528.2	t			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 58 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>ITEM DESCRIPTION</u>					
		<u>PART 7.4 - GENERATOR ROOM (Cont'd)</u>					
		<u>CIVIL WORKS</u>					
		<u>CONCRETE ANCILLARIES</u>					
		<u>Joints</u>					
	7.4.32	Joint sealant	G670	m			
	7.4.33	Filler board	G622	m ²			
		<u>Concrete accessories</u>					
	7.4.34	Finishing of floor slab surface	G812.1	m ²			
	7.4.35	Finishing of roof slab	G812.2	m ²			
		<u>PRECAST CONCRETE</u>					
	7.4.36	Precast concrete parapet as shown in the drawing	H900	m			
		<u>MISCELLANEOUS METAL WORKS</u>					
	7.4.37	Removable cover aluminium checkered plates including all assemblies and attached pieces as shown in the drawing	N900	m ²			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 59 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.4 - GENERATOR ROOM (Cont'd)</u>					
		<u>CIVIL WORKS</u>					
		<u>BLOCKWORK AND MASONRY</u>					
	7.4.38	Concrete hollow block 200mm thick to walls, fair faced, flush pointed.	U521.1	m ²			
	7.4.39	Concrete hollow block 250mm thick to walls, fair faced, flush pointed.	U521.2	m ²			
		<u>WATERPROOFING</u>					
		Waterproofing system as specified and shown on the drawings including membrane dressed up around the openings, 15mm preformed joint filler and all fixings where necessary.					
	7.4.40	3mm thick spray applied membrane to horizontal surfaces	W239	m ²			
	7.4.41	2mm thick spray applied membrane to vertical surfaces	W239	m ²			
	7.4.42	12mm thick bitumen impregnated protection board	W429	m ²			
	7.4.43	100mm thick concrete protection	W441	m ²			
		<u>MISCELLANEOUS WORK</u>					
		<u>Drainage to structure above ground</u>					
	7.4.44	GRC rain scupper	X399	nr			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 60 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.4 - GENERATOR ROOM (Cont'd)</u>					
		<u>CIVIL WORKS</u>					
		<u>SIMPLE BUILDING WORKS INCIDENTAL TO CIVIL ENGINEERING WORKS</u>					
		<u>Surface finishes</u>					
	7.4.45	High impact resistant epoxy and sealer	Z491	m ²			
	7.4.46	Floor coating base, epoxy skirting 100mm high	Z495	m			
	7.4.47	Precast tiles 300x300x30 for roof slab including insulation and separation layer.	Z422	m ²			
	7.4.48	Glazed ceramic tiles for interior walls	Z423	m ²			
	7.4.49	High integral color plaster to external wall as specified.	Z412	m ²			
	7.4.50	High integral color plaster to parapet as shown in the drawing	Z419	m			
	7.4.51	Linear metal ceiling unit	Z459	m ²			
		<u>Windows, doors and glazing</u>					
		Windows and doors complete as per specification and drawing including frames, glazing and ironmongery etc.					
	7.4.52	Windows of size 400 x 2400mm	Z321.1	nr			
	7.4.53	Windows of size 650 x 1200mm	Z321.2	nr			
	7.4.54	Door size 900 x 2200mm	Z323.1	nr			
	7.4.55	Door size 1200 x 2200mm	Z323.2	nr			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 61 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.4 - GENERATOR ROOM (Cont'd)</u>					
		<u>MISCELLANEOUS</u>					
	7.4.56	Testing & Commissioning as described in the Specifications	X900.1	sum			
	7.4.57	Allow for works necessary to complete the Mechanical and Electrical works for Generator Room including interface works and associated works, in accordance with the specifications and drawings.	X900.2	sum			
Carried to Part Summary						Dhs	

PROJECT :-		BILL SECTION - D	PART - 7	PAGE 62 of 70
DESCRIPTION			AMOUNT (AED)	
<p><u>PART 7 - TUNNEL / UNDERPASS WORKS</u></p> <p><u>PART 7.4 - GENERATOR ROOM (Cont'd)</u></p> <p><u>PART SUMMARY</u></p> <p>D7.4 - Page 56</p> <p>D7.4 - Page 57</p> <p>D7.4 - Page 58</p> <p>D7.4 - Page 59</p> <p>D7.4 - Page 60</p> <p>D7.4 - Page 61</p>				
<p>TOTAL FOR PART 7.4 - GENERATOR ROOM</p> <p>CARRIED TO COLLECTION SHEET</p>			<p>Dhs.</p>	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 63 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.5 - UTILITY ROOM</u>					
		<u>CIVIL WORKS</u>					
		<u>EARTHWORKS</u>					
	7.5.01	Excavation to floor slab	E321	m ³			
	7.5.02	Excavation to foundation	E325	m ³			
	7.5.03	Excavation to grade beams	E324	m ³			
	7.5.04	Excavation to cable trench	E324	m ³			
		<u>Excavation Ancillaries</u>					
	7.5.05	Preparation of excavated surface to received permanent works	E522	m ²			
	7.5.06	Filling to structure using suitable imported materials.	E615	m ³			
		<u>INSITU CONCRETE</u>					
		<u>Provision to concrete; Design mix</u>					
	7.5.07	Concrete Class C20/20	F132	m ³			
	7.5.08	Concrete Class C35/20	F162	m ³			
	7.5.09	Concrete Class C40/20;	F182	m ³			
		<u>Placing concrete including formworks</u>					
	7.5.10	Blinding	F511	m ³			
	7.5.11	Floor slab	F722	m ³			
	7.5.12	Footing	F723.1	m ³			
	7.5.13	Cable trench	F723.2	m ³			
	7.5.14	Roof slab	F732	m ³			
	7.5.15	Column	F753	m ³			
	7.5.16	Ground beams	F763	m ³			
	7.5.17	Roof beams	F764	m ³			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 64 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.5 - UTILITY ROOM (Cont'd)</u>					
		<u>CIVIL WORKS</u>					
		<u>CONCRETE ANCILLARIES</u>					
		<u>Reinforcements</u>					
		<u>Epoxy coated deformed round bars</u>					
	7.5.18	Nominal diameter - 10mm	G523.1	t			
	7.5.19	Nominal diameter - 12mm	G524.1	t			
	7.5.20	Nominal diameter - 16mm	G525.1	t			
	7.5.21	Nominal diameter - 20mm	G526.1	t			
	7.5.22	Nominal diameter - 25mm	G527.1	t			
	7.5.23	Nominal diameter - 28mm	G529.1	t			
	7.5.24	Nominal diameter - 32mm	G528.1	t			
		<u>Non-epoxy coated deformed round bars</u>					
	7.5.25	Nominal diameter - 10mm	G523.2	t			
	7.5.26	Nominal diameter - 12mm	G524.2	t			
	7.5.27	Nominal diameter - 16mm	G525.2	t			
	7.5.28	Nominal diameter - 20mm	G526.2	t			
	7.5.29	Nominal diameter - 25mm	G527.2	t			
	7.5.30	Nominal diameter - 28mm	G529.2	t			
	7.5.31	Nominal diameter - 32mm	G528.2	t			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 65 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.5 - UTILITY ROOM (Cont'd)</u>					
		<u>CIVIL WORKS</u>					
		<u>CONCRETE ANCILLARIES</u>					
		<u>Joints</u>					
	7.5.32	Joint sealant	G670	m			
	7.5.33	Filler board	G622	m ²			
		<u>Concrete Accessories</u>					
	7.5.34	Finishing of floor slab surface	G812.1	m ²			
	7.5.35	Finishing of roof slab	G812.2	m ²			
		<u>PRECAST CONCRETE</u>					
	7.5.36	Precast concrete parapet as shown in the drawing	H900	m			
		<u>MISCELLANEOUS METAL WORKS</u>					
	7.5.37	Removable cover aluminium checkered plates including all assemblies and attached pieces as shown in the drawing	N900	m ²			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 66 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.5 - UTILITY ROOM (Cont'd)</u>					
		<u>CIVIL WORKS</u>					
		<u>BLOCKWORK AND MASONRY</u>					
	7.5.38	Concrete hollow block 200mm thick to walls, fair faced, flush pointed.	U521.1	m ²			
	7.5.39	Concrete hollow block 250mm thick to walls, fair faced, flush pointed.	U521.2	m ²			
		<u>WATERPROOFING</u>					
		Waterproofing system as specified and shown on the drawings including membrane dressed up around the openings, 15mm preformed joint filler and all fixings where necessary.					
	7.5.40	3mm thick spray applied membrane to horizontal surfaces	W239	m ²			
	7.5.41	2mm thick spray applied membrane to vertical surfaces	W239	m ²			
	7.5.42	12mm thick bitumen impregnated protection board	W429	m ²			
	7.5.43	100mm thick concrete protection	W441	m ²			
		<u>MISCELLANEOUS WORK</u>					
		<u>Drainage to structure above ground</u>					
	7.5.44	GRC rain scupper	X399	nr			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 67 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.5 - UTILITY ROOM (Cont'd)</u>					
		<u>CIVIL WORKS</u>					
		<u>SIMPLE BUILDING WORKS INCIDENTAL TO CIVIL ENGINEERING WORKS</u>					
		<u>Surface finishes</u>					
	7.5.45	High impact resistant epoxy and sealer	Z491	m ²			
	7.5.46	Floor coating base, epoxy skirting 100mm high	Z495	m			
	7.5.47	Precast tiles 300x300x30 for roof slab including insulation and separation layer.	Z422	m ²			
	7.5.48	Glazed ceramic tiles for interior walls	Z423	m ²			
	7.5.49	High integral color plaster to external wall as specified.	Z412	m ²			
	7.5.50	High integral color plaster to parapet as shown in the drawing	Z419	m			
	7.5.51	Linear metal ceiling unit	Z459	m ²			
		<u>Windows, doors and glazing</u>					
		Windows and doors complete as per specification and drawing including frames, glazing and ironmongery etc.					
	7.5.52	Windows of size 400 x 2400mm	Z321.1	nr			
	7.5.53	Windows of size 650 x 1200mm	Z321.2	nr			
	7.5.54	Door size 900 x 2200mm	Z323.1	nr			
	7.5.55	Door size 1200 x 2200mm	Z323.2	nr			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 7	PAGE 68 of 70
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>					
		<u>PART 7.5 - UTILITY ROOM (Cont'd)</u>					
		<u>MISCELLANEOUS</u>					
	7.5.56	Testing & Commissioning as described in the Specifications	X900.1	sum			
	7.5.57	Allow for works necessary to complete the Mechanical and Electrical works for Utility Rooms including interface works and associated works, in accordance with the specifications and drawings.	X900.2	sum			
Carried to Part Summary						Dhs	

PROJECT :-		BILL SECTION - D	PART - 7	PAGE 69 of 70
DESCRIPTION			AMOUNT (AED)	
<p><u>PART 7 - TUNNEL / UNDERPASS WORKS</u></p> <p><u>PART 7.5 - UTILITY ROOM (Cont'd)</u></p> <p><u>PART SUMMARY</u></p> <p>D7.5 - Page 63</p> <p>D7.5 - Page 64</p> <p>D7.5 - Page 65</p> <p>D7.5 - Page 66</p> <p>D7.5 - Page 67</p> <p>D7.5 - Page 68</p>				
<p>TOTAL FOR PART 7.5 - UTILITY ROOM</p> <p>CARRIED TO COLLECTION SHEET</p>			<p>Dhs.</p>	

PROJECT :-		BILL SECTION - D	PART - 7	PAGE 70 of 70
ITEM	ITEM DESCRIPTION	AMOUNT (AED)		
	<u>PART 7 - TUNNEL / UNDERPASS WORKS</u>			
	<u>SUMMARY</u>			
	PART 7.1 - TUNNEL / UNDERPASS WORKS	Page43		
	PART 7.1 - TUNNEL / UNDERPASS WORKS	Page44		
	PART 7.2 - LIFT STATION	Page 50		
	PART 7.3 - STORMWATER RESERVOIR	Page 55		
	PART 7.4 - GENERATOR ROOM	Page 62		
	PART 7.5 - UTILITY ROOM	Page 69		
	TOTAL FOR PART 7 - TUNNEL / UNDERPASS WORKS			
	CARRIED TO GRAND SUMMARY	Dhs.		

Part 8

Retaining Structures

PROJECT :-			BILL SECTION - D			PART - 8	PAGE 1 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 8 - RETAINING STRUCTURES</u>					
		<u>PART 8.1 - RETAINING WALL</u>					
		<u>EARTHWORKS</u>					
		<u>Excavation</u>					
		Excavation for structures: material other than top soil, rock or artificial hard material for attaining the proposed sub grade, haul up to stockpiles on designated area to be determined by the Department.					
	8.1.01	Excavation for structures; depth 0.25 - 0.5m.	E322	m ³			
	8.1.02	Excavation for structures; depth 0.5 - 1m.	E323	m ³			
	8.1.03	Excavation for structures; depth 1 - 2m.	E324	m ³			
	8.1.04	Excavation for structures; depth 2 - 5m.	E325	m ³			
	8.1.05	Excavation for structures; depth 5 - 10m.	E326	m ³			
	8.1.06	Excavation for foundations rock; (maximum depth 2-5)	E335	m ³			
		<u>Excavation Ancillaries</u>					
	8.1.07	Preparation of excavated surface to receive permanent works.	E522	m ²			
	8.1.08	Allow for double handling of excavated material.	E542	m ³			
	8.1.09	Disposal of excavated Surplus material as directed by the Engineer	E532	m ³			
	8.1.10	Disposal of excavated material; rock	E533	m ³			
		<u>Filling</u>					
	8.1.11	Filling to structure using suitable excavated materials	E614	m ³			
	8.1.12	Filling to structure using suitable imported materials.	E615	m ³			
		<u>Filling Ancillaries</u>					
	8.1.13	Preparation of filled surfaces to receive permanent work.	E722	m ²			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 8	PAGE 2 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 8 - RETAINING STRUCTURES</u>					
		<u>PART 8.1 - RETAINING WALL (Cont'd)</u>					
		<u>INSITU CONCRETE</u>					
		<u>Provision of concrete - designed concrete</u>					
	8.1.14	Concrete Class C20/20;	F132	m ³			
	8.1.15	Concrete Class C25/20;	F142	m ³			
	8.1.16	Concrete Class C35/20;	F162	m ³			
	8.1.17	Concrete Class C40/20;	F182	m ³			
		<u>CONCRETE ANCILLARIES</u>					
		<u>Placing of concrete</u>					
	8.1.18	Blinding concrete not exceeding 150mm thick. Reinforced concrete including formwork, provision for drainage channels, stated surface features / chamfers, recess / dowels for any fittings as specified and shown on the drawings.	F611	m ³			
	8.1.19	Footings; concrete class C40/20	F724	m ³			
	8.1.20	Retaining walls; concrete class C40/20	F744	m ³			
		<u>Reinforcement</u>					
		<u>Epoxy coated deformed round bars</u>					
	8.1.21	Nominal diameter 12mm	G524.1	t			
	8.1.22	Nominal diameter 16mm	G525.2	t			
	8.1.23	Nominal diameter 20mm	G526.1	t			
	8.1.24	Nominal diameter 25mm	G527.1	t			
	8.1.25	Nominal diameter 32mm	G528.1	t			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 8	PAGE 3 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 8 - RETAINING STRUCTURES</u>					
		<u>PART 8.1 - RETAINING WALL (Cont'd)</u>					
		<u>CONCRETE ANCILLARIES</u>					
		<u>Reinforcement</u>					
		Non-epoxy coated deformed round bars					
	8.1.26	Nominal diameter 12mm	G524.2	t			
	8.1.27	Nominal diameter 16mm	G525.2	t			
	8.1.28	Nominal diameter 20mm	G526.2	t			
	8.1.29	Nominal diameter 25mm	G527.2	t			
	8.1.30	Nominal diameter 32mm	G528.2	t			
		<u>Joints</u>					
		Expansion joints including joint filter, backer rod, joint sealant complete as specified and shown on drawing.					
	8.1.31	External waterstop at retaining wall	G690.1	m			
	8.1.32	Internal waterstop at retaining wall	G690.2	m			
	8.1.33	Footings expansion joint	G690.3	m			
	8.1.34	Retaining walls expansion joint	G690.4	m			
		<u>Concrete Accessories</u>					
	8.1.35	Finishing to top surface of base slab	G812	m ²			
	8.1.36	Coating system to exposed concrete surfaces of wall and barrier as per specification.	G823	m ²			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 8	PAGE 4 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 8 - RETAINING STRUCTURES</u></p> <p><u>PART 8.1 - RETAINING WALL (Cont'd)</u></p> <p><u>WATERPROOFING</u></p> <p>Waterproofing system as specified and shown on the drawings including membrane dressed up around the openings, 15mm preformed joint filler and all fixings where necessary.</p>					
	8.1.37	3mm thick spray applied membrane to horizontal surfaces	W239.1	m ²			
	8.1.38	2mm thick spray applied membrane to vertical surfaces	W239.2	m ²			
	8.1.39	12mm thick bitumen impregnated protection board	W429	m ²			
	8.1.40	50mm thick concrete protection	W441	m ²			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 8	PAGE 5 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 8 - RETAINING STRUCTURES</u>					
		<u>PART 8.1 - RETAINING WALL (Cont'd)</u>					
		<u>PILES</u>					
		<u>Bored-cast in place concrete pile using concrete Grade C40/20 as specified.</u>					
		Pile diameter 600mm					
	8.1.41	Number of piles	P141	nr			
	8.1.42	Concreted length	P142	m			
	8.1.43	Depth bored to maximum depth 20m	P143	m			
		<u>PILING ANCILLARIES</u>					
		Pile diameter 600mm					
	8.1.44	Permanent steel casing for 600mm diameter pile protected with anticorrosive coating; maximum length -----m as specified and shown on drawings	Q144	m			
	8.1.45	Cutting off surplus lengths 600mm dia.piles	Q174	m			
	8.1.46	Preparing pile head 600mm diameter	Q184	nr			
		Epoxy coated, deformed high yield bars					
	8.1.47	Nominal size 25mm.	Q211.1	t			
	8.1.48	Nominal size 32mm.	Q212.1	t			
		Epoxy coated, deformed high yield helical bars					
	8.1.49	Nominal size 12mm.	Q213	t			
		Non-epoxy coated, deformed high yield bars					
	8.1.50	Nominal size 25mm.	Q211.2	t			
	8.1.51	Nominal size 32mm.	Q212.2	t			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 8	PAGE 6 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 8 - RETAINING STRUCTURES</u>					
		<u>PART 8.1 - RETAINING WALL (Cont'd)</u>					
		<u>Pile tests</u>					
	8.1.52	Vertical pile test, load according to specifications for 600mm diameter pile - preliminary pile including installation.	Q81*	nr			
	8.1.53	Vertical pile test load according to specifications for 600mm diameter pile - working pile.	Q81*	nr			
	8.1.54	Non-destructive test by ultrasonic method for 600mm diameter pile.	Q840.1	nr			
	8.1.55	Non-destructive test by cross hole sonic logging for 600mm diameter pile.	Q840.2	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 8	PAGE 7 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 8 - RETAINING STRUCTURES</u>					
		<u>PART 8.1 - RETAINING WALL (Cont'd)</u>					
		<u>PILES (Cont'd)</u>					
		<u>Bored-cast in place concrete pile using concrete Grade C40/20 as specified.</u>					
		Pile diameter 800mm					
8.1.56	Number of piles		P191.1	nr			
8.1.57	Concreted length		P192.1	m			
8.1.58	Depth bored to maximum length 20m		P193.1	m			
		<u>PILING ANCILLARIES</u>					
		Pile diameter 800mm					
8.1.59	Permanent steel casing for 800mm diameter pile protected with anticorrosive coating; maximum length -----m as specified and shown on drawings		Q149.1	m			
8.1.60	Cutting off surplus lengths 800mm dia.piles.		Q179.1	m			
8.1.61	Preparing pile head 800mm diameter.		Q189.1	nr			
		<u>CONCRETE ANCILLARIES</u>					
		<u>Reinforcement</u>					
		Epoxy coated deformed round bars					
8.1.62	Nominal size 25mm.		Q211.1	t			
8.1.63	Nominal size 32mm.		Q212.1	t			
		Epoxy coated deformed high yield helical bars					
8.1.64	Nominal size 12mm.		Q213	t			
		Non-epoxy coated, deformed high yield bars					
8.1.65	Nominal size 25mm.		Q211.2	t			
8.1.66	Nominal size 32mm.		Q212.2	t			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 8	PAGE 8 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 8 - RETAINING STRUCTURES</u>					
		<u>PART 8.1 - RETAINING WALL (Cont'd)</u>					
		<u>Pile tests</u>					
	8.1.67	Vertical pile test, load according to specifications for 800mm diameter pile - preliminary pile including installation.	Q81*	nr			
	8.1.68	Vertical pile test load according to specifications for 800mm diameter pile - working pile.	Q81*	nr			
	8.1.69	Non-destructive test by ultrasonic method for 800mm diameter pile.	Q840.1	nr			
	8.1.70	Non-destructive test by cross hole sonic logging for 800mm diameter pile.	Q840.2	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 8	PAGE 9 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 8 - RETAINING STRUCTURES</u>					
		<u>PART 8.1 - RETAINING WALL (Cont'd)</u>					
		<u>PILES</u>					
		<u>Bored-cast in place concrete pile using concrete Grade C40/20 as specified.</u>					
		Pile diameter 1000mm					
8.1.71	Number of piles		P191.2	nr			
8.1.72	Concreted length		P192.2	m			
8.1.73	Depth bored to maximum length 20m		P193.2	m			
		<u>PILING ANCILLARIES</u>					
		Pile diameter 1000mm					
8.1.74	Permanent steel casing for 1000mm diameter pile protected with anticorrosive coating; maximum length -----m as specified and shown on drawings		Q149.2	m			
8.1.75	Cutting off surplus lengths 1000mm dia.piles.		Q179.2	m			
8.1.76	Preparing pile head 1000mm diameter.		Q189.2	nr			
		<u>CONCRETE ANCILLARIES</u>					
		<u>Reinforcement</u>					
		Epoxy coated deformed round bars					
8.1.77	Nominal size 25mm.		Q211.1	t			
8.1.78	Nominal size 32mm.		Q212.1	t			
		Epoxy coated deformed high yield helical bars					
8.1.79	Nominal size 12mm.		Q213	t			
		Non-epoxy coated, deformed high yield bars					
8.1.80	Nominal size 25mm.		Q211.2	t			
8.1.81	Nominal size 32mm.		Q212.2	t			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 8	PAGE 10 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 8 - RETAINING STRUCTURES</u>					
		<u>PART 8.1 - RETAINING WALL (Cont'd)</u>					
		<u>Pile tests</u>					
	8.1.82	Vertical pile test, load according to specifications for 1000mm diameter pile - preliminary pile including installation.	Q81*	nr			
	8.1.83	Vertical pile test load according to specifications for 1000mm diameter pile - working pile.	Q81*	nr			
	8.1.84	Non-destructive test by ultrasonic method for 1000mm diameter pile.	Q840.1	nr			
	8.1.85	Non-destructive test by cross hole sonic logging for 1000mm diameter pile.	Q840.2	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 8	PAGE 11 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 8 - RETAINING STRUCTURES</u>					
		<u>PART 8.1 - RETAINING WALL (Cont'd)</u>					
		<u>PILES</u>					
		<u>Bored-cast in place concrete pile using concrete Grade C40/20 as specified.</u>					
		Pile diameter 1200mm					
	8.1.86	Number of piles	P161	nr			
	8.1.87	Concreted length	P162	m			
	8.1.88	Depth bored to maximum length 20m	P163	m			
		<u>PILING ANCILLARIES</u>					
		Pile diameter 1200mm					
	8.1.89	Permanent steel casing for 1200mm diameter pile protected with anticorrosive coating; maximum length -----m as specified and shown on drawings	Q146	m			
	8.1.90	Cutting off surplus lengths 1200mm dia.piles.	Q176	m			
	8.1.91	Preparing pile head 1200mm diameter.	Q186	nr			
		<u>CONCRETE ANCILLARIES</u>					
		<u>Reinforcement</u>					
		Epoxy coated deformed round bars					
	8.1.92	Nominal size 25mm.	Q211.1	t			
	8.1.93	Nominal size 32mm.	Q212.1	t			
		Epoxy coated deformed high yield helical bars					
	8.1.94	Nominal size 12mm.	Q213	t			
		Non-epoxy coated, deformed high yield bars					
	8.1.95	Nominal size 25mm.	Q211.2	t			
	8.1.96	Nominal size 32mm.	Q212.2	t			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 8	PAGE 12 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 8 - RETAINING STRUCTURES</u>					
		<u>PART 8.1 - RETAINING WALL (Cont'd)</u>					
		<u>Pile tests</u>					
	8.1.97	Vertical pile test, load according to specifications for 1200mm diameter pile - preliminary pile including installation.	Q81*	nr			
	8.1.98	Vertical pile test load according to specifications for 1200mm diameter pile - working pile.	Q81*	nr			
	8.1.99	Non-destructive test by ultrasonic method for 1200mm diameter pile.	Q840.1	nr			
	8.1.100	Non-destructive test by cross hole sonic logging for 1200mm diameter pile.	Q840.2	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 8	PAGE 13 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 8 - RETAINING STRUCTURES</u>					
		<u>PART 8.1 - RETAINING WALL (Cont'd)</u>					
		<u>MASONRY</u>					
		Slope or surface protection					
		200mm thick Slope protection including grouting, leveling, all complete as specified and shown on drawings.					
	8.1.101	To inclined or vertical surfaces (inclination not less than 15°)	U878.1	m ²			
	8.1.102	To horizontal surfaces or surface inclination less than 15°	U878.2	m ²			
		Kerb straight or curved complete including transition, concrete hunching, foundation, formwork, earthworks, backfilling in accordance with specification and drawings.					
	8.1.103	Precast Concrete Kerb (Type - C1)	R711.1	m			
		<u>Side Walks</u>					
	8.1.104	Precast concrete upstand kerb 150 x 200 with metal strap to hold back.	R711.2	m			
	8.1.105	Precast concrete block paving tiles; thickness 60mm and including 50mm thick sand bed.	R750	m ²			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 8	PAGE 14 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 8 - RETAINING STRUCTURES</u>					
		<u>PART 8.1 - RETAINING WALL (Cont'd)</u>					
		<u>MASONRY</u>					
		Slope or surface protection					
		<u>MISCELLANEOUS WORK</u>					
		<u>Fence</u>					
	8.1.106	Precast concrete Barrier over retaining wall complete including reinforcement formwork etc; as shown on Dwg.	X190.1	m			
	8.1.107	Cast-in-place concrete barrier including painting, foundation, dowels, joint filler, other associated works as specified and shown on drawings.	X190.2	m			
		Sub soil drainage					
	8.1.108	Course aggregate/crushed stone deposit maximum 1.0m ³ per meter surrounded by Geotextile Fabric behind walls including cast in place PVC weep holes or drain not exceeding 50mm dia as specified and shown on drawings. (perforated pipe drain measured separately)	X399.1	m ³			
	8.1.109	150mm dia perforated PVC pipe connected to the storm water drainage system	X399.2	m			
Carried to Part Summary						Dhs.	

PROJECT :-		BILL SECTION - D	PART - 8	PAGE 15 of 21
		DESCRIPTION	AMOUNT (AED)	
		<p><u>PART 8 - RETAINING STRUCTURES</u></p> <p><u>PART 8.1 - RETAINING WALL (Cont'd)</u></p> <p><u>PART SUMMARY</u></p> <p>D8.1 - Page 1</p> <p>D8.1 - Page 2</p> <p>D8.1 - Page 3</p> <p>D8.1 - Page 4</p> <p>D8.1 - Page 5</p> <p>D8.1 - Page 6</p> <p>D8.1 - Page 7</p> <p>D8.1 - Page 8</p> <p>D8.1 - Page 9</p> <p>D8.1 - Page 10</p> <p>D8.1 - Page 11</p> <p>D8.1 - Page 12</p> <p>D8.1 - Page 13</p> <p>D8.1 - Page 14</p>		
		<p>TOTAL FOR PART 8.1 - RETAINING WALL</p> <p>CARRIED TO SUMMARY</p>		Dhs.

PROJECT :-			BILL SECTION - D			PART - 8	PAGE 16 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 8 - RETAINING STRUCTURES</u>					
		<u>PART 8.2 - MSE (MECHANICALLY STABILIZED EARTH) WALL</u>					
		<u>EARTHWORKS</u>					
		<u>Excavation</u>					
		Excavation for structures: material other than top soil, rock or artificial hard material for attaining the proposed sub grade, haul up to stockpiles on designated area to be determined by the Department.					
	8.2.01	Excavation for structures; depth 0.25 - 0.5m.	E322	m ³			
	8.2.02	Excavation for structures; depth 0.5 - 1m.	E323	m ³			
	8.2.03	Excavation for structures; depth 1 - 2m.	E324	m ³			
	8.2.04	Excavation for structures; depth 2 - 5m.	E325	m ³			
	8.2.05	Excavation for foundations rock; (maximum depth 2-5)	E335	m ³			
		<u>Excavation Ancillaries</u>					
	8.2.06	Preparation of excavated surface to receive permanent works.	E522	m ²			
	8.2.07	Allow for double handling of excavated material.	E542	m ³			
	8.2.08	Disposal of excavated Surplus material as directed by the Engineer	E532	m ³			
	8.2.09	Disposal of excavated material; rock	E533	m ³			
		<u>Filling</u>					
	8.2.10	Filling to structure using suitable excavated materials	E614	m ³			
	8.2.11	Filling to MSE wall using reinforced earth fill materials.	E615	m ³			
		<u>Filling Ancillaries</u>					
	8.2.12	Preparation of filled surfaces to receive permanent work.	E722	m ²			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 8	PAGE 17 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 8 - RETAINING STRUCTURES</u>					
		<u>PART 8.2 - MSE (MECHANICALLY STABILIZED EARTH) WALL(Cont'd)</u>					
		<u>INSITU CONCRETE</u>					
		<u>Provision of concrete designed mix</u>					
	8.2.13	Concrete Class C20/20;	F132	m ³			
	8.2.14	Concrete Class C25/20;	F142	m ³			
	8.2.15	Concrete Class C40/20;	F182	m ³			
		<u>CONCRETE ANCILLARIES</u>					
		<u>Placing of concrete</u>					
	8.2.16	Blinding concrete not exceeding 150mm thick.	F611	m ³			
		Reinforced concrete including formwork, provision for drainage channels, stated surface features/chamfers, recess/dowels for any fittings as specified and shown on the drawings.					
	8.2.17	Footings; concrete class C40/20	F724	m ³			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 8	PAGE 18 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 8 - RETAINING STRUCTURES</u>					
		<u>PART 8.2 - MSE (MECHANICALLY STABILIZED EARTH) WALL(Cont'd)</u>					
		<u>CONCRETE ANCILLARIES (Cont'd)</u>					
		<u>Reinforcement</u>					
		Epoxy coated deformed round bars					
	8.2.18	Nominal diameter 12mm	G524.1	t			
	8.2.19	Nominal diameter 16mm	G525.1	t			
	8.2.20	Nominal diameter 20mm	G526.1	t			
	8.2.21	Nominal diameter 25mm	G527.1	t			
		Non-epoxy coated deformed round bars					
	8.2.22	Nominal diameter 12mm	G524.2	t			
	8.2.23	Nominal diameter 16mm	G525.2	t			
	8.2.24	Nominal diameter 20mm	G526.2	t			
	8.2.25	Nominal diameter 25mm	G527.2	t			
		<u>Joints</u>					
		Expansion joints including joint filter, backer rod, joint sealant complete as specified and shown on drawing.					
	8.2.26	MSE wall expansion joint	G690	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 8	PAGE 19 of 21
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 8 - RETAINING STRUCTURES</u></p> <p><u>PART 8.2 - MSE (MECHANICALLY STABILIZED EARTH) WALL(Cont'd)</u></p> <p><u>PRECAST CONCRETE</u></p> <p>8.2.27 Supply and install Mechanically Stabilized Earth (MSE) wall including reinforcement, tie bars, soil stabilization, geotextile fabric, and all necessary to complete, as per the specification and drawings (the earth fill materials are measured separately)</p> <p><u>MISCELLANEOUS WORK</u></p> <p><u>Fences</u></p> <p>8.2.28 Precast concrete Barrier over MSE wall complete including reinforcement, formwork etc; as shown on Dwg.</p>	H900	m ²			
			X191	m			
Carried to Part Summary						Dhs.	

PROJECT :-		BILL SECTION - D	PART - 8	PAGE 20 of 21
		DESCRIPTION	AMOUNT (AED)	
		<p><u>PART 8 - RETAINING STRUCTURES</u></p> <p><u>PART 8.2 - MSE (MECHANICALLY STABILIZED EARTH) WALL(Cont'd)</u></p> <p><u>PART SUMMARY</u></p> <p>D8.2 - Page 16</p> <p>D8.2 - Page 17</p> <p>D8.2 - Page 18</p> <p>D8.2 - Page 19</p>		
		<p>TOTAL FOR PART 8.2 - MSE WALL CARRIED TO SUMMARY</p>		Dhs.

PROJECT :-		BILL SECTION - D	PART - 8	PAGE 21 of 21
		DESCRIPTION	AMOUNT (AED)	
		<p><u>PART 8 - RETAINING STRUCTURES</u></p> <p><u>SUMMARY</u></p> <p>PART 8.1 - RETAINING WALL Page 15</p> <p>PART 8.2 - MSE (MECHANICALLY STABILIZED EARTH) WALL Page 20</p>		
		<p>TOTAL FOR PART 8 - RETAINING STRUCTURES</p> <p>CARRIED TO GRAND SUMMARY</p>		Dhs.

Part 9

Storm Water Drainage

PROJECT :-			BILL SECTION - D			PART - 9	PAGE 1 of 31
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 9 - STORM WATER DRAINAGE NETWORK</u>					
		<u>9.1 - Removal of Existing Pipe</u>					
		Carefully excavate & remove existing pipes and fittings and dispose to approved tip as required including surrounds, breaking out pipe protection, cleaning, backfilling and reinstatement of existing surfaces.					
	9.1.01	160mm dia uPVC pipe	D610.1	m			
	9.1.02	200mm dia uPVC pipe	D610.2	m			
	9.1.03	300mm dia uPVC pipe	D610.3	m			
	9.1.04	400mm dia AC / GRP pipe	D620.1	m			
	9.1.05	500mm dia AC / GRP pipe	D620.2	m			
	9.1.06	Removal of pipeline and handover the material to the authorities or dispose at the designated location including liaison directed by the Engineer for the nominal bore 500mm and above.	D630	m			
		<u>Removal of Existing Gully, Inlet & Manhole</u>					
	9.1.07	Breakout and remove existing concrete precast gully and cart to tip including backfilling and reinstatement, removal and salvage of existing cover and frame to store	D900.1	nr			
	9.1.08	Breakout and remove existing concrete precast manhole and cart to tip including backfilling and reinstatement, removal and salvage of existing cover and frame to store	D900.2	nr			
		<u>Removal of Cover and Frame of Existing Drainage Structure</u>					
	9.1.09	Remove existing cover and frame including cleaning, salvage to store	D900.3	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 9	PAGE 2 of 31
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 9 - STORM WATER DRAINAGE NETWORK</u>					
		<u>9.2 - PRECAST CONCRETE</u>					
		Precast reinforced concrete protection slabs placed over existing pipe lines as detailed on drawing including excavation, back filling and bitumen paint.					
9.2.01	Protection Slab for Existing Pipe; X x Y x Z mm thick		H511	nr			
		<u>9.3 - PIPE WORK - PIPES</u>					
		Supply, lay and joint uPVC pipes in trenches as per specification including excavation, shoring, backfill with selected excavated material and disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department.					
		For 160mm dia. uPVC pipe					
9.3.01	Depth to invert not exceeding 1.5m		1912	m			
9.3.02	Depth to invert 1.5 - 2m		1913	m			
9.3.03	Depth to invert 2 - 2.5m		1914	m			
		For 200mm dia. uPVC pipe					
9.3.04	Depth to invert not exceeding 1.5m		1922.1	m			
9.3.05	Depth to invert 1.5 - 2m		1923.1	m			
9.3.06	Depth to invert 2 - 2.5m		1924.1	m			
		For 250mm dia. uPVC pipe					
9.3.07	Depth to invert not exceeding 1.5m		1922.2	m			
9.3.08	Depth to invert 1.5 - 2m		1923.2	m			
9.3.09	Depth to invert 2 - 2.5m		1924.2	m			
9.3.10	Depth to invert 2.5 - 3m		1925	m			
9.3.11	Depth to invert 3 - 3.5m		1926	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 9	PAGE 3 of 31
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 9 - STORM WATER DRAINAGE NETWORK (Cont'd)</u>					
		<u>9.3 - PIPE WORK - PIPES (Cont'd)</u>					
		Supply, lay and joint uPVC pipes in trenches as per specification including excavation, shoring, backfill with selected excavated material and disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department.					
		For 315mm dia. uPVC pipe					
	9.3.12	Depth to invert 1.5 - 2m	1933.1	m			
	9.3.13	Depth to invert 2 - 2.5m	1934.1	m			
	9.3.14	Depth to invert 2.5 - 3m	1935.1	m			
	9.3.15	Depth to invert 3 - 3.5m	1936.1	m			
	9.3.16	Depth to invert 3.5 - 4m	1937.1	m			
	9.3.17	Depth to invert 4 - 4.5m	1938.1	m			
		For 500mm dia. uPVC pipe					
	9.3.18	Depth to invert 1.5 - 2m	1933.2	m			
	9.3.19	Depth to invert 2 - 2.5m	1934.2	m			
	9.3.20	Depth to invert 2.5 - 3m	1935.2	m			
	9.3.21	Depth to invert 3 - 3.5m	1936.2	m			
	9.3.22	Depth to invert 3.5 - 4m	1937.2	m			
	9.3.23	Depth to invert 4 - 4.5m	1938.2	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 9	PAGE 4 of 31
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 9 - STORM WATER DRAINAGE NETWORK (Cont'd)</u>					
		<u>9.3 - PIPE WORK - PIPES (Cont'd)</u>					
		Supply, lay and joint GRP pipe in trenches as per specification including excavation, shoring, backfill with selected excavated material and disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department.					
		For 350mm DN GRP pipe					
	9.3.24	Depth to invert not exceeding 1.5m	1632.1	m			
	9.3.25	Depth to invert 1.5 - 2m	1633.1	m			
	9.3.26	Depth to invert 2 - 2.5m	1634.1	m			
	9.3.27	Depth to invert 2.5 - 3m	1635.1	m			
	9.3.28	Depth to invert 3 - 3.5m	1636.1	m			
	9.3.29	Depth to invert 3.5 - 4m	1637.1	m			
		For 400mm DN GRP pipe					
	9.3.30	Depth to invert 1.5 - 2m	1633.2	m			
	9.3.31	Depth to invert 2 - 2.5m	1634.2	m			
	9.3.32	Depth to invert 2.5 - 3m	1635.2	m			
	9.3.33	Depth to invert 3 - 3.5m	1636.2	m			
	9.3.34	Depth to invert 3.5 - 4m	1637.2	m			
		For 450mm DN GRP pipe					
	9.3.35	Depth to invert 1.5 - 2m	1633.3	m			
	9.3.36	Depth to invert 2 - 2.5m	1634.3	m			
	9.3.37	Depth to invert 2.5 - 3m	1635.3	m			
	9.3.38	Depth to invert 3 - 3.5m	1636.3	m			
	9.3.39	Depth to invert 3.5 - 4m	1637.3	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 9	PAGE 5 of 31
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 9 - STORM WATER DRAINAGE NETWORK (Cont'd)</u>					
		<u>9.3 - PIPE WORK - PIPES (Cont'd)</u>					
		Supply, lay and joint GRP pipe in trenches as per specification including excavation, shoring, backfill with selected excavated material and disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department.					
		For 500mm DN GRP pipe					
	9.3.40	Depth to invert 1.5 - 2m	1633.4	m			
	9.3.41	Depth to invert 2 - 2.5m	1634.4	m			
	9.3.42	Depth to invert 2.5 - 3m	1635.4	m			
	9.3.43	Depth to invert 3 - 3.5m	1636.4	m			
	9.3.44	Depth to invert 3.5 - 4m	1637.4	m			
	9.3.45	Depth to invert 4 - 4.5m	1638.1	m			
	9.3.46	Depth to invert 5 - 5.5m	1638.2	m			
	9.3.47	Depth to invert 5.5 - 6m	1638.3	m			
		For 600 mm DN GRP pipe					
	9.3.48	Depth to invert 2 - 2.5m	1634.5	m			
	9.3.49	Depth to invert 2.5 - 3m	1635.5	m			
	9.3.50	Depth to invert 3 - 3.5m	1636.5	m			
	9.3.51	Depth to invert 3.5 - 4m	1637.5	m			
	9.3.52	Depth to invert 4 - 4.5m	1638.4	m			
	9.3.53	Depth to invert 5 - 5.5m	1638.5	m			
	9.3.54	Depth to invert 5.5 - 6m	1638.6	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 9	PAGE 6 of 31
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		PART 9 - STORM WATER DRAINAGE NETWORK (Cont'd)					
		9.3 - PIPE WORK - PIPES (Cont'd)					
		Supply, lay and joint GRP pipe in trenches as per specification including excavation, shoring, backfill with selected excavated material and disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department.					
		For 700 mm DN GRP pipe					
	9.3.55	Depth to invert 2.5 - 3m	1645.1	m			
	9.3.56	Depth to invert 3 - 3.5m	1646.1	m			
	9.3.57	Depth to invert 3.5 - 4m	1647.1	m			
	9.3.58	Depth to invert 4 - 4.5m	1648.1	m			
	9.3.59	Depth to invert 4.5 - 5m	1648.2	m			
		For 800 mm DN GRP pipe					
	9.3.60	Depth to invert 2.5 - 3m	1645.2	m			
	9.3.61	Depth to invert 3 - 3.5m	1646.2	m			
	9.3.62	Depth to invert 3.5 - 4m	1647.2	m			
	9.3.63	Depth to invert 4 - 4.5m	1648.3	m			
	9.3.64	Depth to invert 4.5 - 5m	1648.4	m			
	9.3.65	Depth to invert 5 - 5.5m	1648.5	m			
		For 900 mm DN GRP pipe					
	9.3.66	Depth to invert 2 - 2.5m	1644	m			
	9.3.67	Depth to invert 3 - 3.5m	1646.3	m			
	9.3.68	Depth to invert 3.5 - 4m	1647.3	m			
	9.3.69	Depth to invert 4 - 4.5m	1648.6	m			
	9.3.70	Depth to invert 4.5 - 5m	1648.7	m			
	9.3.71	Depth to invert 5 - 5.5m	1648.8	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 9	PAGE 7 of 31
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		PART 9 - STORM WATER DRAINAGE NETWORK (Cont'd)					
		9.3 - PIPE WORK - PIPES (Cont'd)					
		Supply, lay and joint GRP pipe in trenches as per specification including excavation, shoring, backfill with selected excavated material and disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department.					
		For 1000 mm DN GRP pipe					
	9.3.72	Depth to invert 3 - 3.5m	l656.1	m			
	9.3.73	Depth to invert 3.5 - 4m	l657.1	m			
	9.3.74	Depth to invert 4 - 4.5m	l658.1	m			
	9.3.75	Depth to invert 4.5 - 5m	l658.2	m			
	9.3.76	Depth to invert 5 - 5.5m	l658.3	m			
		For 1200 mm DN GRP pipe					
	9.3.77	Depth to invert 3 - 3.5m	l656.2	m			
	9.3.78	Depth to invert 3.5 - 4m	l657.2	m			
	9.3.79	Depth to invert 4 - 4.5m	l658.4	m			
	9.3.80	Depth to invert 4.5 - 5m	l658.5	m			
	9.3.81	Depth to invert 5 - 5.5m	l658.6	m			
		For 1600 mm DN GRP pipe					
	9.3.82	Depth to invert 5 - 5.5m	l678.1	m			
	9.3.83	Depth to invert 5.5 - 6m	l678.2	m			
	9.3.84	Depth to invert 6 - 6.5m	l678.3	m			
	9.3.85	Depth to invert 6.5 - 7m	l678.4	m			
		Supply and lay GRP pressure pipes for pumping main with pressure PN16 or 10000N/mm² as specified.					
	9.3.86	Depth 2m - 2.5m; 900mm dia. Rising main.	l644	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 9	PAGE 8 of 31
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		PART 9 - STORM WATER DRAINAGE NETWORK (Cont'd)					
		9.3 - PIPE WORK - PIPES (Cont'd)					
		Supply, lay and joint RCP pipe in trenches as per specification including excavation, shoring, backfill with selected excavated material and disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department.					
		For 600 mm DN RCP pipe					
	9.3.87	Depth to invert 2 - 2.5m	I234	m			
	9.3.88	Depth to invert 2.5 - 3m	I235	m			
	9.3.89	Depth to invert 3 - 3.5m	I236	m			
	9.3.90	Depth to invert 3.5 - 4m	I237	m			
	9.3.91	Depth to invert 4 - 4.5m	I238	m			
		For 800 mm DN RCP pipe					
	9.3.92	Depth to invert 2.5 - 3m	I245	m			
	9.3.93	Depth to invert 3 - 3.5m	I246.1	m			
	9.3.94	Depth to invert 3.5 - 4m	I247.1	m			
	9.3.95	Depth to invert 4 - 4.5m	I248.1	m			
	9.3.96	Depth to invert 4.5 - 5m	I248.2	m			
	9.3.97	Depth to invert 5 - 5.5m	I248.3	m			
		For 900 mm DN RCP pipe					
	9.3.98	Depth to invert 2 - 2.5m	I244	m			
	9.3.99	Depth to invert 3 - 3.5m	I246.2	m			
	9.3.100	Depth to invert 3.5 - 4m	I247.2	m			
	9.3.101	Depth to invert 4 - 4.5m	I248.4	m			
	9.3.102	Depth to invert 4.5 - 5m	I248.5	m			
	9.3.103	Depth to invert 5 - 5.5m	I248.6	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 9	PAGE 9 of 31
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		PART 9 - STORM WATER DRAINAGE NETWORK (Cont'd)					
		9.3 - PIPE WORK - PIPES (Cont'd)					
		Supply, lay and joint RCP pipe in trenches as per specification including excavation, shoring, backfill with selected excavated material and disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department.					
		For 1000 mm DN RCP pipe					
	9.3.104	Depth to invert 3 - 3.5m	I256.1	m			
	9.3.105	Depth to invert 3.5 - 4m	I257.1	m			
	9.3.106	Depth to invert 4 - 4.5m	I258.1	m			
	9.3.107	Depth to invert 4.5 - 5m	I258.2	m			
	9.3.108	Depth to invert 5 - 5.5m	I258.3	m			
		For 1200 mm DN RCP pipe					
	9.3.109	Depth to invert 3 - 3.5m	I256.2	m			
	9.3.110	Depth to invert 3.5 - 4m	I257.2	m			
	9.3.111	Depth to invert 4 - 4.5m	I258.4	m			
	9.3.112	Depth to invert 4.5 - 5m	I258.5	m			
	9.3.113	Depth to invert 5 - 5.5m	I258.6	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 9	PAGE 10 of 31
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		PART 9 - STORM WATER DRAINAGE NETWORK (Cont'd)					
		9.3 - PIPE WORK - PIPES (Cont'd)					
		Supply, lay and joint DI pipe in trenches as per specification including excavation, shoring, backfill with selected excavated material and disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department.					
		For 500 mm DN DI pipe					
	9.3.114	Depth to invert 2.5 - 3m	I335.1	m			
	9.3.115	Depth to invert 3 - 3.5m	I336.1	m			
	9.3.116	Depth to invert 3.5 - 4m	I337.1	m			
	9.3.117	Depth to invert 4 - 4.5m	I338.1	m			
		For 600 mm DN DI pipe					
	9.3.118	Depth to invert 2.5 - 3m	I335.2	m			
	9.3.119	Depth to invert 3 - 3.5m	I336.2	m			
	9.3.120	Depth to invert 3.5 - 4m	I337.2	m			
	9.3.121	Depth to invert 4 - 4.5m	I338.2	m			
		For 700 mm DN DI pipe					
	9.3.122	Depth to invert 2.5 - 3m	I345	m			
	9.3.123	Depth to invert 3 - 3.5m	I346	m			
	9.3.124	Depth to invert 3.5 - 4m	I347	m			
	9.3.125	Depth to invert 4 - 4.5m	I338	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 9	PAGE 11 of 31
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		PART 9 - STORM WATER DRAINAGE NETWORK (Cont'd)					
		9.3 - PIPE WORK - PIPES (Cont'd)					
		Supply, lay and joint uPVC Perforated Pipes in trenches as per specification including excavation, shoring, backfill with selected excavated material and disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department.					
		For 160mm dia. uPVC Perforated pipe					
	9.3.126	Depth to invert not exceeding 1.5m	I912.1	m			
	9.3.127	Depth to invert 1.5 - 2m	I913.1	m			
	9.3.128	Depth to invert 2 - 2.5m	I914.1	m			
		For 200mm dia. uPVC Perforated pipe					
	9.3.129	Depth to invert not exceeding 1.5m	I912.2	m			
	9.3.130	Depth to invert 1.5 - 2m	I913.2	m			
	9.3.131	Depth to invert 2 - 2.5m	I914.2	m			
		For 250mm dia. uPVC Perforated pipe					
	9.3.132	Depth to invert not exceeding 1.5m	I922	m			
	9.3.133	Depth to invert 1.5 - 2m	I923	m			
	9.3.134	Depth to invert 2 - 2.5m	I924	m			
		For 315mm dia. uPVC Perforated pipe					
	9.3.135	Depth to invert not exceeding 1.5m	I932	m			
	9.3.136	Depth to invert 1.5 - 2m	I933	m			
	9.3.137	Depth to invert 2 - 2.5m	I934	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 9	PAGE 12 of 31
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 9 - STORM WATER DRAINAGE NETWORK (Cont'd)</u>					
		<u>9.4 - PIPE WORK - FITTINGS AND VALVES</u>					
		Supply, install and joint uPVC fittings in trench as per specification					
	9.4.01	End cap 160 mm DN uPVC	J491	nr			
	9.4.02	End cap 200 mm DN uPVC	J492.1	nr			
	9.4.03	End cap 250 mm DN uPVC	J492.2	nr			
	9.4.04	End cap 315 mm DN uPVC	J493.1	nr			
	9.4.05	End cap 500 mm DN uPVC	J493.2	nr			
	9.4.06	Y branch for gully pipe dia. 160mm / 200mm.	J421	nr			
		Supply, install and joint GRP fittings in trench as per specification					
	9.4.07	End cap 350 mm DN GRP	J593.1	nr			
	9.4.08	End cap 400 mm DN GRP	J593.2	nr			
	9.4.09	End cap 450 mm DN GRP	J593.3	nr			
	9.4.10	End cap 500 mm DN GRP	J593.4	nr			
	9.4.11	End cap 600 mm DN GRP	J593.5	nr			
	9.4.12	End cap 700 mm DN GRP	J594.1	nr			
	9.4.13	End cap 800 mm DN GRP	J594.2	nr			
	9.4.14	End cap 900 mm DN GRP	J595.1	nr			
	9.4.15	End cap 1000 mm DN GRP	J595.2	nr			
	9.4.16	End cap 1200 mm DN GRP	J595.3	nr			
	9.4.17	End cap 1600 mm DN GRP	J596	nr			
		Supply, install and fittings including flexible joints GRP pipe as per specification.					
	9.4.18	300mm dia. straight special 450mm long.	J982	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 9	PAGE 13 of 31
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		9.4 - PIPE WORK - FITTINGS AND VALVES					
		Supply, install and joint RCP fittings in trench as per specification					
	9.4.19	End cap 600 mm DN RCP	J294.1	nr			
	9.4.20	End cap 800 mm DN RCP	J294.2	nr			
	9.4.21	End cap 900 mm DN RCP	J294.3	nr			
	9.4.22	End cap 1000 mm DN RCP	J295	nr			
		Supply, install and joint DI fittings in trench as per specification					
	9.4.23	45 deg bend; 500mm DN DI	J313	nr			
	9.4.24	45 deg bend; 600mm DN DI	J314.1	nr			
	9.4.25	45 deg bend; 700mm DN DI	J314.2	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 9	PAGE 14 of 31
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 9 - STORM WATER DRAINAGE NETWORK (Cont'd)</u>					
		<u>9.5 - PIPE WORK - MANHOLES AND PIPE WORK ANCILLARIES</u>					
		<u>Manholes</u>					
		Reinforced precast concrete manhole, type ----- - complete including, but not limited to standard frame and cover, epoxy coating, waterproofing membrane with protection board and multiple pipe entries, excavation, shoring, backfilling, disposal etc and all other fittings as shown on Drawings.					
		Manholes on pipeline 160 to 315 mm diameter.					
	9.5.01	Depth to invert 1.5 - 2m	K152.1	nr			
	9.5.02	Depth to invert 2 - 2.5m	K153.1	nr			
	9.5.03	Depth to invert 2.5 - 3m	K154.1	nr			
	9.5.04	Depth to invert 3 - 3.5m	K155.1	nr			
	9.5.05	Depth to invert 3.5 - 4m	K156.1	nr			
	9.5.06	Depth to invert 4 - 4.5m	K157.1	nr			
	9.5.07	Depth to invert 4.5 - 5m	K157.2	nr			
	9.5.08	Depth to invert 5 - 5.5m	K157.3	nr			
	9.5.09	Depth to invert 5.5 - 6m	K157.4	nr			
	9.5.10	Depth to invert 6.5 - 7m	K157.5	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 9	PAGE 15 of 31
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 9 - STORM WATER DRAINAGE NETWORK (Cont'd)</u>					
		<u>9.5 - PIPE WORK - MANHOLES AND PIPE WORK ANCILLARIES (Cont'd)</u>					
		<u>Manholes</u>					
		Reinforced precast concrete manhole, type ----- - complete including, but not limited to standard frame and cover, epoxy coating, waterproofing membrane with protection board and multiple pipe entries, excavation, shoring, backfilling, disposal etc and all other fittings as shown on Drawings.					
		Manholes on pipeline 600 mm diameter and smaller					
	9.5.11	Depth to invert 1.5 - 2m	K152.2	nr			
	9.5.12	Depth to invert 2 - 2.5m	K153.2	nr			
	9.5.13	Depth to invert 2.5 - 3m	K154.2	nr			
	9.5.14	Depth to invert 3 - 3.5m	K155.2	nr			
	9.5.15	Depth to invert 3.5 - 4m	K156.2	nr			
	9.5.16	Depth to invert 4 - 4.5m	K157.6	nr			
	9.5.17	Depth to invert 4.5 - 5m	K157.7	nr			
	9.5.18	Depth to invert 5 - 5.5m	K157.8	nr			
	9.5.19	Depth to invert 5.5 - 6m	K157.9	nr			
	9.5.20	Depth to invert 6.5 - 7m	K157.10	nr			
	9.5.21	Depth to invert 7 - 7.5m	K157.11	nr			
	9.5.22	Depth to invert 7.5 - 8m	K157.12	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 9	PAGE 16 of 31
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 9 - STORM WATER DRAINAGE NETWORK (Cont'd)</u>					
		<u>9.5 - PIPE WORK - MANHOLES AND PIPE WORK ANCILLARIES (Cont'd)</u>					
		<u>Manholes (Cont'd)</u>					
		Reinforced precast concrete manhole, type ----- -- complete including, but not limited to standard frame and cover, epoxy coating, waterproofing membrane with protection board and multiple pipe entries, excavation, shoring, backfilling, disposal etc and all other fittings as shown on Drawings.					
		Manholes on pipeline 700 to 1200 mm diameter					
9.5.23	Depth to invert 2.5 - 3m		K154.3	nr			
9.5.24	Depth to invert 3 - 3.5m		K155.3	nr			
9.5.25	Depth to invert 3.5 - 4m		K156.3	nr			
9.5.26	Depth to invert 4 - 4.5m		K157.13	nr			
9.5.27	Depth to invert 4.5 - 5m		K157.14	nr			
9.5.28	Depth to invert 5 - 5.5m		K157.15	nr			
9.5.29	Depth to invert 5.5 - 6m		K157.16	nr			
9.5.30	Depth to invert 6 - 6.5m		K157.17	nr			
9.5.31	Depth to invert 6.5 - 7m		K157.18	nr			
9.5.32	Depth to invert 7 - 7.5m		K157.19	nr			
9.5.33	Depth to invert 7.5 - 8m		K157.20	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 9	PAGE 17 of 31
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 9 - STORM WATER DRAINAGE NETWORK (Cont'd)</u>					
		<u>9.5 - PIPE WORK - MANHOLES AND PIPE WORK ANCILLARIES (Cont'd)</u>					
		<u>Manholes (Cont'd)</u>					
		Reinforced precast concrete manhole, type ----- complete including, but not limited to standard frame and cover, epoxy coating, waterproofing membrane with protection board and multiple pipe entries, excavation, shoring, backfilling, disposal etc and all other fittings as shown on Drawings.					
		Manholes on pipeline 1300 mm diameter and higher					
9.5.34		Depth to invert 3 - 3.5m	K155.4	nr			
9.5.35		Depth to invert 3.5 - 4m	K156.4	nr			
9.5.36		Depth to invert 4 - 4.5m	K157.21	nr			
9.5.37		Depth to invert 4.5 - 5m	K157.22	nr			
9.5.38		Depth to invert 5 - 5.5m	K157.23	nr			
9.5.39		Depth to invert 5.5 - 6m	K157.24	nr			
9.5.40		Depth to invert 6 - 6.5m	K157.25	nr			
9.5.41		Depth to invert 6.5 - 7m	K157.26	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 9	PAGE 18 of 31
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 9 - STORM WATER DRAINAGE NETWORK (Cont'd)</u>					
		<u>9.5 - PIPE WORK - MANHOLES AND PIPE WORK ANCILLARIES (Cont'd)</u>					
		<u>Other stated Chambers</u>					
		Storm Water Inlet (SWI)					
		Reinforced concrete surface drainage Kerb Inlet, complete including , but not limited to ductile iron grating and frames, benching, epoxy coating, 375x375x200 mm deep sand trap, waterproofing membrane with protection board, sand/cement screed, blinding concrete, excavation, backfilling, disposal of surplus excavated material to spoil heaps on designated areas and all other works to complete as shown on drawing.					
	9.5.42	Depth to invert not exceeding 1.5m	K231.1	nr			
	9.5.43	Depth to invert 1.5 - 2m	K232.1	nr			
	9.5.44	Depth to invert 2 - 2.5m	K233.1	nr			
	9.5.45	Depth to invert 2.5 - 3m	K234.1	nr			
	9.5.46	Depth to invert 3 - 3.5m	K235.1	nr			
	9.5.47	Depth to invert 3.5 - 4m	K236.1	nr			
	9.5.48	Depth to invert 4 - 4.5m	K237.1	nr			
	9.5.49	Depth to invert 4.5 - 5m	K237.2	nr			
	9.5.50	Depth to invert 5 - 5.5m	K237.3	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 9	PAGE 19 of 31
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 9 - STORM WATER DRAINAGE NETWORK (Cont'd)</u>					
		<u>9.5 - PIPE WORK - MANHOLES AND PIPE WORK ANCILLARIES (Cont'd)</u>					
		<u>Other stated Chambers (Cont'd)</u>					
		Storm Drainage Inlet (SDI)					
		Reinforced concrete surface drainage Inlet, complete including , but not limited to ductile iron grating and frames, epoxy coating, waterproofing membrane with protection board, sand/cement screed, blinding concrete, excavation, backfilling, disposal of surplus excavated material to spoil heaps on designated areas and all other works to complete as shown on drawing.					
	9.5.51	Depth to invert 2 - 2.5m	K233.2	nr			
	9.5.52	Depth to invert 2.5 - 3m	K234.2	nr			
		<u>Discharge Chamber</u>					
		Reinforced concrete discharge chamber, complete including , but not limited to ductile iron grating and frames, GRP liner, HDPE elbow & bell mouth, GRP ladder, mass concrete benching, puddle flange, waterproofing membrane, excavation, backfilling, disposal of surplus excavated material to spoil heaps on designated areas and all other works to complete as shown on drawing.					
	9.5.53	Depth to invert 2.5 - 3m	K234.3	nr			
	9.5.54	Depth to invert 3 - 3.5m	K235.2	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 9	PAGE 20 of 31
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 9 - STORM WATER DRAINAGE NETWORK (Cont'd)</u> <u>9.5 - PIPE WORK - MANHOLES AND PIPE WORK ANCILLARIES (Cont'd)</u> <u>Other stated Chambers (Cont'd)</u> Connection Chamber (CC) Reinforced concrete connection chamber, complete including, but not limited to 850x850mm ductile iron grating and frames with 600mm dia removable hinged grating, waterproofing, sand/cement screed, blinding concrete, waterproofing membrane with protection board, excavation, backfilling, disposal of surplus excavated material to spoil heaps on designated areas and all other works to complete as shown on drawing.					
	9.5.55	Depth to invert 2 - 2.5m	K233.3	nr			
	9.5.56	Depth to invert 2.5 - 3m	K234.4	nr			
	9.5.57	Depth to invert 3.5 - 4m	K235.3	nr			
		Supply, install and fix pipeline marker post including all accessories, excavation backfilling and disposal of surplus excavated materials and all other works to complete as shown in the drawing and specification.					
	9.5.58	Marker post	K820	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 9	PAGE 21 of 31
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 9 - STORM WATER DRAINAGE NETWORK (Cont'd)</u></p> <p><u>9.5 - PIPE WORK - MANHOLES AND PIPE WORK ANCILLARIES (Cont'd)</u></p> <p>Allow for all necessary works to complete the Outfall structure including but not limited to, excavation; dewatering as required, surface preparation, formwork, concrete and reinforcement, backfilling, stone pitching, concrete blinding, grating / duck bill check valve, waterproofing, protective coating, GRP Ladder and lining, all metal works, Chain link fence and gates, Pumps, Motors, Piping and Controls, Flaggates, associated equipments and accessories, all mechanical works, and all other related works as shown on dwg. and specification.</p>					
	9.5.59	Outfall structure	K900.1	nr			
	9.5.60	<p>Allow for all necessary works to complete the Pumping Structure including but not limited to, excavation, dewatering as required, surfaces preparation, formwork, concrete and reinforcement, backfilling, concrete blinding, waterproofing, protective coating, GRP Ladder and lining, all metal works, Trash racks, Pumps, Motors, Piping and Controls associated equipments and accessories, all mechanical works , electrical room and foundation, all elctrical and ligting works, external wiring between structure and electrical room, connection to ADWEA power supply and all other related works as shown on dwg. and specification.</p> <p>Pumping structure</p>	K900.2	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 9	PAGE 22 of 31
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 9 - STORM WATER DRAINAGE NETWORK (Cont'd)</u>					
		<u>9.5 - PIPE WORK - MANHOLES AND PIPE WORK ANCILLARIES (Cont'd)</u>					
		Allow for all necessary works to complete the Headwall Structure including but not limited to, excavation, dewatering as required, surfaces preparation, formwork, concrete and reinforcement, backfilling, stone pitching, concrete blinding, waterproofing, protective coating, GRP Ladder and lining, all metal works, Chain link fence and gates, Pumps, Motors, Piping and Controls, Flapgates, associated equipments and accessories, all mechanical works , and all other related works as shown on dwg. and specification.					
	9.5.61	Headwall Structure, _____mm diameter	K900.3	nr			
		Connections to Pipes / Manholes					
	9.5.62	Connect new -----mm uPVC / GRP pipe to existing --- --mm dia. uPVC / GRP pipe in same direction including additional fittings excavation, backfill etc.	K860.1	nr			
	9.5.63	Connect new -----mm uPVC / GRP pipe to existing --- --mm dia. uPVC / GRP pipe not in same direction including additional fittings excavation, backfill etc.	K860.2	nr			
	9.5.64	Connect new -----mm uPVC / GRP pipe to existing manhole / chamber including additional fittings excavation, backfill etc.	K850	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 9	PAGE 23 of 31
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 9 - STORM WATER DRAINAGE NETWORK (Cont'd)</u>					
		<u>9.6 - PIPE WORK - SUPPORTS AND PROTECTION ANCILLARIES TO LAYING AND EXCAVATION</u>					
		<u>Beds and Surrounds</u>					
		Imported Granular material for beds and surround to pipe including marker tape.					
	9.6.01	For 160 mm DN uPVC	L531	m			
	9.6.02	For 200 mm DN uPVC	L532.1	m			
	9.6.03	For 250 mm DN uPVC	L532.2	m			
	9.6.04	For 315 mm DN uPVC	L533.1	m			
	9.6.05	For 500 mm DN uPVC	L533.2	m			
	9.6.06	For 350mm DN GRP pipe	L533.3	m			
	9.6.07	For 400mm DN GRP pipe	L533.4	m			
	9.6.08	For 450mm DN GRP pipe	L533.5	m			
	9.6.09	For 500mm DN GRP pipe	L533.6	m			
	9.6.10	For 600mm DN GRP pipe	L533.7	m			
	9.6.11	For 700mm DN GRP pipe	L534.1	m			
	9.6.12	For 800mm DN GRP pipe	L534.2	m			
	9.6.13	For 900mm DN GRP pipe	L534.3	m			
	9.6.14	For 1000mm DN GRP pipe	L535.1	m			
	9.6.15	For 1200mm DN GRP pipe	L535.2	m			
	9.6.16	For 1600mm DN GRP pipe	L536	m			
	9.6.17	For 500mm DN DI pipe	L533.8	m			
	9.6.18	For 600mm DN DI pipe	L533.9	m			
	9.6.19	For 700mm DN DI pipe	L534.4	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 9	PAGE 24 of 31
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 9 - STORM WATER DRAINAGE NETWORK (Cont'd)</u>					
		<u>9.6 - PIPE WORK - SUPPORTS AND PROTECTION ANCILLARIES TO LAYING AND EXCAVATION (Cont'd)</u>					
		<u>Beds and Surrounds (Cont'd)</u>					
		Imported Granular material for beds and surround to pipe including marker tape.					
	9.6.20	For 600mm DN RCP pipe	L533.10	m			
	9.6.21	For 800mm DN RCP pipe	L534.5	m			
	9.6.22	For 900mm DN RCP pipe	L534.6	m			
	9.6.23	For 1000mm DN RCP pipe	L535.3	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 9	PAGE 25 of 31
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 9 - STORM WATER DRAINAGE NETWORK (Cont'd)</u>					
		<u>9.6 - PIPE WORK - SUPPORTS AND PROTECTION ANCILLARIES TO LAYING AND EXCAVATION (Cont'd)</u>					
		<u>Beds and Surrounds (Cont'd)</u>					
		Mass concrete surround class C25/20 including polythene sheet, bitumen paint and warning tape as applicable.					
	9.6.24	For 160 mm DN uPVC	L541	m			
	9.6.25	For 200 mm DN uPVC	L542.1	m			
	9.6.26	For 250 mm DN uPVC	L542.2	m			
	9.6.27	For 315 mm DN uPVC	L543.1	m			
	9.6.28	For 500 mm DN uPVC	L543.2	m			
	9.6.29	For 350mm DN GRP pipe	L543.3	m			
	9.6.30	For 400mm DN GRP pipe	L543.4	m			
	9.6.31	For 450mm DN GRP pipe	L543.5	m			
	9.6.32	For 500mm DN GRP pipe	L543.6	m			
	9.6.33	For 600mm DN GRP pipe	L543.7	m			
	9.6.34	For 700mm DN GRP pipe	L544.1	m			
	9.6.35	For 800mm DN GRP pipe	L544.2	m			
	9.6.36	For 900mm DN GRP pipe	L544.3	m			
	9.6.37	For 1000mm DN GRP pipe	L545.1	m			
	9.6.38	For 1200mm DN GRP pipe	L545.2	m			
	9.6.39	For 1600mm DN GRP pipe	L546	m			
	9.6.40	For 500mm DN DI pipe	L543.8	m			
	9.6.41	For 600mm DN DI pipe	L543.9	m			
	9.6.42	For 700mm DN DI pipe	L544.4	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 9	PAGE 26 of 31
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 9 - STORM WATER DRAINAGE NETWORK (Cont'd)</u> <u>9.6 - PIPE WORK - SUPPORTS AND PROTECTION ANCILLARIES TO LAYING AND EXCAVATION (Cont'd)</u> <u>Beds and Surrounds - Concrete Cradle</u> Concrete cradle with (reinforcement as required) class C25/20 including concrete blinding, polythene sheet, bitumen paint, warning tape as per drawing and specification.					
	9.6.43	For 600mm DN RCP pipe	L553	m			
	9.6.44	For 800mm DN RCP pipe	L554.1	m			
	9.6.45	For 900mm DN RCP pipe	L554.2	m			
	9.6.46	For 1000mm DN RCP pipe	L555	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 9	PAGE 27 of 31
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 9 - STORM WATER DRAINAGE NETWORK (Cont'd)</u>					
		<u>9.6 - PIPE WORK - SUPPORTS AND PROTECTION ANCILLARIES TO LAYING AND EXCAVATION (Cont'd)</u>					
		Geotextile Filter Fabric membrane to granular bed and surround (bed and surround measured separately) as per specifications.					
	9.6.47	For 160 mm DN uPVC	L601	m			
	9.6.48	For 200 mm DN uPVC	L602.1	m			
	9.6.49	For 250 mm DN uPVC	L602.2	m			
	9.6.50	For 315 mm DN uPVC	L603.1	m			
	9.6.51	For 500 mm DN uPVC	L603.2	m			
	9.6.52	For 350mm DN GRP pipe	L603.3	m			
	9.6.53	For 400mm DN GRP pipe	L603.4	m			
	9.6.54	For 450mm DN GRP pipe	L603.5	m			
	9.6.55	For 500mm DN GRP pipe	L603.6	m			
	9.6.56	For 600mm DN GRP pipe	L603.7	m			
	9.6.57	For 700mm DN GRP pipe	L604.1	m			
	9.6.58	For 800mm DN GRP pipe	L604.2	m			
	9.6.59	For 900mm DN GRP pipe	L604.3	m			
	9.6.60	For 1000mm DN GRP pipe	L605.1	m			
	9.6.61	For 1200mm DN GRP pipe	L605.2	m			
	9.6.62	For 1600mm DN GRP pipe	L606.1	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 9	PAGE 28 of 31
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 9 - STORM WATER DRAINAGE NETWORK (Cont'd)</u>					
		<u>9.6 - PIPE WORK - SUPPORTS AND PROTECTION ANCILLARIES TO LAYING AND EXCAVATION (Cont'd)</u>					
		Geotextile Filter Fabric membrane to granular bed and surround (bed and surround measured separately) as per specifications.					
	9.6.63	For 600mm DN GRP pipe	L603.8	m			
	9.6.64	For 800mm DN GRP pipe	L604.4	m			
	9.6.65	For 900mm DN GRP pipe	L604.5	m			
	9.6.66	For 1000mm DN GRP pipe	L605.3	m			
	9.6.67	For 700mm DN DI pipe	L606.2	m			
		<u>9.7 - MISCELLANEOUS METAL WORK</u>					
		<u>Supply and Install Cover and Frame for the existing Drainage structure including breaking concrete, cleaning, disposal of loose material. repair the concrete.</u>					
	9.7.01	Supply and install new cover and frame for the Inlet	N900.1	nr			
	9.7.02	Supply and install new cover and frame for the Flush Inlet	N900.2	nr			
	9.7.03	Supply and install new cover and frame for the Catch Basin	N900.3	nr			
	9.7.04	Supply and install new cover and frame for the Manhole	N900.4	nr			
		<u>9.8 - MISCELLANEOUS WORK</u>					
		Supply and Install Grouted Stone Rip-Rap at Pipe inlet end on the side slope of Drainage Channel as detailed in the drawing.					
	9.8.01	Grouted stone pitching	X900	m ³			
Carried to Part Summary						Dhs.	

PROJECT :-		BILL SECTION - D	PART - 9	PAGE 29 of 31
		ITEM DESCRIPTION	AMOUNT (AED)	
		<p><u>PART 9 - STORM WATER DRAINAGE NETWORK (Cont'd)</u></p> <p><u>PART SUMMARY</u></p> <p>D9 : Page 1</p> <p>D9 : Page 2</p> <p>D9 : Page 3</p> <p>D9 : Page 4</p> <p>D9 : Page 5</p> <p>D9 : Page 6</p> <p>D9 : Page 7</p> <p>D9 : Page 8</p> <p>D9 : Page 9</p> <p>D9 : Page 10</p> <p>D9 : Page 11</p> <p>D9 : Page 12</p> <p>D9 : Page 13</p> <p>D9 : Page 14</p> <p>D9 : Page 15</p> <p>D9 : Page 16</p> <p>D9 : Page 17</p> <p>D9 : Page 18</p> <p>D9 : Page 19</p> <p>D9 : Page 20</p>		
		<p>SUB TOTAL FOR PART 9 - STORM WATER DRAINAGE NETWORK</p> <p>CARRIED TO SUMMARY</p>		Dhs.

PROJECT :-		BILL SECTION - D	PART - 9	PAGE 30 of 31
		ITEM DESCRIPTION	AMOUNT (AED)	
		<p><u>PART 9 - STORM WATER DRAINAGE NETWORK (Cont'd)</u></p> <p><u>PART SUMMARY (Cont'd)</u></p> <p>D9 : Page 21</p> <p>D9 : Page 22</p> <p>D9 : Page 23</p> <p>D9 : Page 24</p> <p>D9 : Page 25</p> <p>D9 : Page 26</p> <p>D9 : Page 27</p> <p>D9 : Page 28</p>		
		<p>SUB TOTAL FOR PART 9 - STORM WATER DRAINAGE NETWORK CARRIED TO SUMMARY</p>		Dhs.

PROJECT :-		BILL SECTION - D	PART - 9	PAGE 31 of 31
SL.NO.	ITEM	ITEM DESCRIPTION	AMOUNT (AED)	
		<u>PART 9 - STORM WATER DRAINAGE NETWORK (Cont'd)</u> <u>SUMMARY</u> D9 : Page 29 D9 : Page 30		
		TOTAL FOR PART 9 - STORM WATER DRAINAGE NETWORK CARRIED TO GRAND SUMMARY		Dhs.

Part 10

Sanitary Sewer Network

PROJECT :-			BILL SECTION - D			PART - 10	PAGE 1 of 5
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 10 - SANITARY SEWER NETWORK</u>					
		<u>10.1 - Removal of Protection Slab</u>					
	10.1.01	Removal of temporary concrete protection slab for existing sewers.	D900	nr			
		<u>10.2 - PRECAST CONCRETE</u>					
		Precast reinforced concrete protection slabs placed over existing pipe lines as detailed on drawing including excavation, backfilling 50mm polystyrene board and bitumen paint etc. complete.					
	10.2.01	Concrete slab protection for existing sewers; X x Y x Z mm thick.	H511	nr			
		<u>10.3 - IN SITU CONCRETE</u>					
		Reinforced in-situ concrete protection slabs placed over existing pipe lines as detailed on drawing including excavation, back filling 50mm polystyrene board and bitumen paint etc. complete.					
	10.3.01	Reinforced concrete protection slab for GRP sewerage pipes.	F721	m ³			
		<u>End Structure / Chamber</u>					
		Reinforced concrete chamber complete with GRP liner including but not limited to built in pieces, cover and frames, water proofing, blinding, excavation, backfilling and disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department.					
	10.3.02	Emergency sewer bypass end structure size 1.5 x 1.5 x 1.2m (single type)	K23*	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 10	PAGE 2 of 5
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 10 - SANITARY SEWER NETWORK (Cont'd)</u>					
		<u>10.4 - PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES</u>					
		<u>Ducts</u>					
		Supply, lay and joint uPVC / GRP pipe ducts in trenches beneath carriageway including duct marker, draw chord, end cap, excavation, backfilling disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department.					
	10.4.01	uPVC contingency duct for sewers, 225mm dia.;depth not exceeding 1.5m	K512.1	m			
	10.4.02	uPVC contingency duct for sewers, 315mm dia.;depth not exceeding 1.5m	K512.2	m			
	10.4.03	GRP contingency duct for sewers, 400mm dia.;depth1.5-2m	K513.1	m			
	10.4.04	GRP contingency duct for sewers, 500mm dia;depth1.5-2m.	K513.2	m			
	10.4.05	GRP contingency duct for sewers, 600mm dia;depth1.5-2m.	K513.3	m			
	10.4.06	GRP emergency bypass duct for sewers, 600mm dia.;depth1.5-2m	K513.4	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 10	PAGE 3 of 5
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 10 - SANITARY SEWER NETWORK (Cont'd)</u>					
		<u>10.5 - PIPEWORK - SUPPORTS & PROTECTION ANCILLARIES TO LAYING AND EXCAVATION</u>					
		<u>Beds and Surrounds</u>					
		Imported clear dune sand/granular material for bed and surround to uPVC / GRP pipes including marker tape as shown on the drawing.					
	10.5.01	uPVC contingency duct for sewers, 225mm dia.	L532	m			
	10.5.02	uPVC contingency duct for sewers, 315mm dia.	L533.1	m			
	10.5.03	GRP contingency duct for sewers, 400mm dia.	L533.2	m			
	10.5.04	GRP contingency duct for sewers, 500mm dia.	L533.3	m			
	10.5.05	GRP contingency duct for sewers, 600mm dia.	L534.1	m			
	10.5.06	GRP emergency bypass duct for sewers, 600mm dia.	L534.2	m			
		Mass SRC Concrete grade C25/20 surround to ducts including formwork.					
	10.5.07	uPVC contingency duct for sewers, 225mm dia.	L542	m			
	10.5.08	uPVC contingency duct for sewers, 315mm dia.	L543.1	m			
	10.5.09	GRP contingency duct for sewers, 400mm dia.	L543.2	m			
	10.5.10	GRP contingency duct for sewers, 500mm dia.	L543.3	m			
	10.5.11	GRP contingency duct for sewers, 600mm dia.	L544.1	m			
	10.5.12	GRP emergency bypass duct for sewers, 600mm dia.	L544.2	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 10	PAGE 4 of 5
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 10 - SANITARY SEWER NETWORK (Cont'd)</u>					
		10.6 - Sewerage Relocation Works					
	10.6.01	Total Amount Carried Forward for Sewerage Relocation Works as per Plans, Specifications and a Separate Bill of Quantities Prepared by the Designated Consultant and Obtained by the Contractor.		sum			
Carried to Part Summary						Dhs.	

PROJECT :-		BILL SECTION - D	PART - 10	PAGE 5 of 5
		ITEM DESCRIPTION	AMOUNT (AED)	
		<u>PART 10 - SANITARY SEWER NETWORK (Cont'd)</u> <u>PART SUMMARY</u> D10 : Page 1 D10 : Page 2 D10 : Page 3 D10 : Page 4		
		TOTAL FOR PART 10 - SANITARY SEWER NETWORK CARRIED TO GRAND SUMMARY		Dhs.

Part 11

Potable Water Network

PROJECT :-			BILL SECTION - D			PART - 11	PAGE 1 of 7
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 11 - POTABLE WATER NETWORK</u>					
		<u>11.1 - Removal of Protection Slab</u>					
	11.1.01	Removal of concrete protection slab for existing waterlines	D900	nr			
		<u>11.2 - PRECAST CONCRETE</u>					
		Precast reinforced concrete protection slabs placed over existing pipe lines as detailed on drawing including excavation, backfilling 50mm polystyrene board and bitumen paint etc. complete.					
	11.2.01	Concrete protection slab for existing water lines; X x Y x Z mm thick.	H511	nr			
		<u>11.3 - IN SITU CONCRETE</u>					
		Reinforced in-situ concrete protection slabs placed over water lines as detailed on drawing including excavation, back filling 50mm polystyrene board and bitumen paint etc. complete.					
	11.3.01	Reinforced Concrete Protection slab above the Contingency Ducts	F721.1	m ³			
	11.3.02	Reinforced Concrete Protection slab for Existing Water Lines	F721.2	m ³			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 11	PAGE 2 of 7
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		PART 11 - POTABLE WATER NETWORK (Cont'd)					
		11.4 - PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES					
		GRP Pipe Sleeves					
		Supply, lay and joint GRP pipe sleeves, crossing through Tunnel Structure, complete as per drawing and specification.					
11.4.01		GRP Sleeve 500mm Diameter for Waterline Crossing through the Tunnel Roof Structure	K511.1	m			
11.4.02		GRP Sleeve 600mm Diameter for Waterline Crossing through the Tunnel Roof Structure	K511.2	m			
11.4.03		GRP Sleeve 700mm Diameter for Waterline Crossing through the Tunnel Roof Structure	K511.3	m			
11.4.04		GRP Sleeve 900mm Diameter for Waterline Crossing through the Tunnel Roof Structure	K511.4	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 11	PAGE 3 of 7
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		PART 11 - POTABLE WATER NETWORK (Cont'd)					
		11.4 - PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES (Cont'd)					
		<u>Ducts</u>					
		Supply, lay and joint uPVC / GRP pipe ducts in trenches beneath carriageway including duct marker, draw chord, end cap, excavation, backfilling disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department.					
	11.4.05	uPVC contingency duct for waterlines, 160mm dia. Depth not exceeding 1.5m	K512.1	m			
	11.4.06	uPVC contingency duct for waterlines, 225mm dia. Depth not exceeding 1.5m	K512.2	m			
	11.4.07	uPVC contingency duct for waterlines, 315mm dia. Depth not exceeding 1.5m	K512.3	m			
	11.4.08	GRP contingency duct for waterlines, 400mm dia. Depth not exceeding 1.5m	K512.4	m			
	11.4.09	GRP contingency duct for waterlines, 500mm dia. Depth not exceeding 1.5m	K512.5	m			
	11.4.10	GRP contingency duct for waterlines, 600mm dia. Depth not exceeding 1.5m	K512.6	m			
	11.4.11	GRP emergency bypass duct for waterlines, 600mm dia. Depth not exceeding 1.5m	K512.7	m			
	11.4.12	GRP contingency duct for waterlines, 800mm dia. Depth not exceeding 1.5m	K512.8	m			
	11.4.13	GRP contingency duct for waterlines, 1000mm dia. Depth not exceeding 1.5m	K512.9	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 11	PAGE 4 of 7
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 11 - POTABLE WATER NETWORK (Cont'd)</u>					
		<u>11.5 - PIPEWORK - SUPPORTS & PROTECTION ANCILLARIES TO LAYING AND EXCAVATION</u>					
		<u>Beds and Surrounds</u>					
		Imported clear dune sand/granular material for bed and surround to uPVC / GRP pipes including marker tape as shown on the drawing.					
11.5.01		uPVC contingency duct for waterlines, 160mm dia. Depth not exceeding 1.5m	L531	m			
11.5.02		uPVC contingency duct for waterlines, 225mm dia. Depth not exceeding 1.5m	L532.1	m			
11.5.03		uPVC contingency duct for waterlines, 315mm dia. Depth not exceeding 1.5m	L533.1	m			
11.5.04		GRP contingency duct for waterlines, 400mm dia. Depth not exceeding 1.5m	L533.2	m			
11.5.05		GRP contingency duct for waterlines, 500mm dia. Depth not exceeding 1.5m	L533.3	m			
11.5.06		GRP contingency duct for waterlines, 600mm dia. Depth not exceeding 1.5m	L533.4	m			
11.5.07		GRP emergency bypass duct for waterlines, 600mm dia. Depth not exceeding 1.5m	L533.5	m			
11.5.08		GRP contingency duct for waterlines, 800mm dia. Depth not exceeding 1.5m	L534	m			
11.5.09		GRP contingency duct for waterlines, 1000mm dia. Depth not exceeding 1.5m	L535	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 11	PAGE 5 of 7
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 11 - POTABLE WATER NETWORK (Cont'd)</u>					
		<u>11.5 - PIPEWORK - SUPPORTS & PROTECTION ANCILLARIES TO LAYING AND EXCAVATION (Cont'd)</u>					
		<u>Beds and Surrounds (Cont'd)</u>					
		Mass SRC Concrete grade C25/20 surround to ducts including formwork.					
	11.5.10	uPVC contingency duct for waterlines, 160mm dia. Depth not exceeding 1.5m	L541	m			
	11.5.11	uPVC contingency duct for waterlines, 225mm dia. Depth not exceeding 1.5m	L542.1	m			
	11.5.12	uPVC contingency duct for waterlines, 315mm dia. Depth not exceeding 1.5m	L543.1	m			
	11.5.13	GRP contingency duct for waterlines, 400mm dia. Depth not exceeding 1.5m	L543.2	m			
	11.5.14	GRP contingency duct for waterlines, 500mm dia. Depth not exceeding 1.5m	L543.3	m			
	11.5.15	GRP contingency duct for waterlines, 600mm dia. Depth not exceeding 1.5m	L543.4	m			
	11.5.16	GRP emergency bypass duct for waterlines, 600mm dia. Depth not exceeding 1.5m	L543.5	m			
	11.5.17	GRP contingency duct for waterlines, 800mm dia. Depth not exceeding 1.5m	L544	m			
	11.5.18	GRP contingency duct for waterlines, 1000mm dia. Depth not exceeding 1.5m	L545	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 11	PAGE 6 of 7
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 11 - POTABLE WATER NETWORK (Cont'd)</u>					
		11.6 - Water Relocation Works					
11.6.01		Total Amount Carried Forward for Water Relocation Works as Per Plans, Specifications and a Separate Bill of Quantities Prepared by the Designated Consultant and Obtained by the Contractor.		sum			
		<u>Service Authority Works</u>					
		<u>Note: The Provisional Sums given in the Bill of Quantities may be used in whole or in part, or not at all, on the instruction of the Engineer</u>					
11.6.02		Provisional sum of Dhs. ----- for direct payment by the employer to ADWEA (WD) for diversions	A420	sum			
11.6.03		Percentage for Contractor's Overhead and Profit for Item 11.6.02		%			
Carried to Part Summary						Dhs.	

PROJECT :-		BILL SECTION - D	PART - 11	PAGE 7 of 7
		DESCRIPTION	AMOUNT (AED)	
		<u>PART 11- POTABLE WATER NETWORK (Cont'd)</u> <u>PART SUMMARY</u> D11 - Page 1 D11 - Page 2 D11 - Page 3 D11 - Page 4 D11 - Page 5 D11 - Page 6		
		TOTAL FOR PART 11 - POTABLE WATER NETWORK CARRIED TO GRAND SUMMARY		Dhs.

Part 12

Irrigation Network

PROJECT :-			BILL SECTION - D			PART - 12	PAGE 1 of 12
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 12 - IRRIGATION NETWORK</u>					
		<u>12.1 - Removal of Existing Pipe</u>					
		Carefully remove existing Irrigation pipes and fittings and dispose to tip as required including excavation, breaking out pipe protection, thrust blocks, backfilling and remove to tip and reinstatement of existing surfaces.					
12.1.01		75mm dia. PVC pipe	D610.1	m			
12.1.02		110mm dia. PVC pipe	D610.2	m			
12.1.03		160mm dia. PVC pipe	D610.3	m			
		Carefully remove existing valves assemblies and deliver to designated stores including excavation, breakout valve chambers, backfilling and reinstatement of existing surfaces.					
12.1.04		Valve chamber on 110mm dia pipe line	D900.1	nr			
12.1.05		Valve chamber on 160mm dia pipe line	D900.2	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 12	PAGE 2 of 12
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 12 - IRRIGATION NETWORK</u></p> <p><u>12.2 - PRECAST CONCRETE</u></p> <p>Precast reinforced concrete protection slabs placed over existing pipe lines as detailed on drawing including excavation, backfilling 50mm polystyrene board and bitumen paint etc. complete.</p>					
	12.2.01	Concrete slab protection for existing Irrigation lines; X x Y x Z mm thick.	H511	nr			
		<p><u>12.3 - IN SITU CONCRETE</u></p> <p>Reinforced in-situ concrete protection slabs placed over Irrigation lines as detailed on drawing including excavation, back filling 50mm polystyrene board and bitumen paint etc. complete.</p>					
	12.3.01	Reinforced Concrete Slab Protection above the Contingency Ducts	F721.1	m ³			
	12.3.02	Reinforced Concrete Slab Protection for Existing Irrigation lines	F721.2	m ³			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 12	PAGE 3 of 12
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 12 - IRRIGATION NETWORK</u>					
		<u>12.4 - PIPEWORK - PIPES</u>					
		Supply, lay and joint uPVC Irrigation pipe in trenches including excavation, backfill with selected excavated material, disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department.					
	12.4.01	For 110mm uPVC pipe Depth to invert not exceeding 1.5m	I512.1	m			
	12.4.02	For 160mm uPVC pipe Depth to invert not exceeding 1.5m	I512.2	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 12	PAGE 4 of 12
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 12 - IRRIGATION NETWORK (Cont'd)</u>					
		<u>12.5 - PIPEWORK - FITTINGS AND VALVES</u>					
		Supply, Install and joint uPVC fittings in trench / chambers as per specification					
12.5.01		Bend 45°, 110mm dia uPVC	J411.1	nr			
12.5.02		Bend 45°, 160mm dia uPVC	J411.2	nr			
12.5.03		Bend 90°, 110mm dia uPVC	J411.3	nr			
12.5.04		Bend 90°, 160mm dia uPVC	J411.4	nr			
12.5.05		Tee 110 x 80mm dia uPVC	J421.1	nr			
12.5.06		Tee 110 x 110mm dia uPVC	J421.2	nr			
12.5.07		Tee 160 x 80mm dia uPVC	J421.3	nr			
12.5.08		Tee 160 x 110mm dia uPVC	J421.4	nr			
12.5.09		Tee 160 x 160mm dia uPVC	J421.5	nr			
12.5.10		Reducer 160 x 110mm dia uPVC	J431	nr			
12.5.11		Puddle flange 110mm dia uPVC	J491.1	nr			
12.5.12		Puddle flange 160mm dia uPVC	J491.2	nr			
12.5.13		End cap 110mm dia uPVC	J491.3	nr			
12.5.14		End cap 160mm dia uPVC	J491.4	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 12	PAGE 5 of 12
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 12 - IRRIGATION NETWORK (Cont'd)</u>					
		<u>12.5 - PIPEWORK - FITTINGS AND VALVES</u>					
		Supply, install and joint DI fittings in trench / chambers as per specification					
12.5.15		Gate Valve 100mm dia DI	J811.1	nr			
12.5.16		Gate Valve 150mm dia DI	J811.2	nr			
		Supply and Install Air Release Valve					
12.5.17		Air Release Valve 50mm dia. Single orifice automatic	J861.1	nr			
12.5.18		Air Release Valve 80mm dia. Single orifice automatic	J861.2	nr			
12.5.19		Air Release Valve 100mm dia. Single orifice automatic	J861.3	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 12	PAGE 6 of 12
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 12 - IRRIGATION NETWORK (Cont'd)</u>					
		<u>12.6 - PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES</u>					
		<u>Other Stated Chambers (Cont'd)</u>					
		Gate valve chamber					
		Furnish and install the gate valve chambers including excavating and backfilling; all concrete and reinforcement; all temporary works and protection; and all other appurtenant work as indicated on the drawings, as specified and directed by the Engineer.					
12.6.01	Size 600x600mm, depth 1.5 - 2m		K232.1	nr			
12.6.02	Size 900x600mm, depth 1.5 - 2m		K232.2	nr			
		<u>Other Pipework Ancillaries</u>					
		Supply and install marker post / plate including concrete base and associated works to complete.					
12.6.03	Marker Post		K820.1	nr			
12.6.04	Marker Plates		K820.2	nr			
		Connections to Existing Pipe					
		Supply, lay and joint uPVC pipe (if necessary) and fittings in trenches including necessary excavation, backfill with selected excavated material, disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department.					
12.6.05	For 110mm dia pipe		K861.1	nr			
12.6.06	For 160mm dia pipe		K861.2	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 12	PAGE 7 of 12
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 12 - IRRIGATION NETWORK (Cont'd)</u>					
		<u>12.6 - PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES (Cont'd)</u>					
		<u>GRP Pipe Sleeves</u>					
		Supply, lay and joint GRP pipe sleeves, crossing through Tunnel Structure, complete as per drawing and specification.					
	12.6.07	GRP Sleeve 500mm Diameter for Irrigation line Crossing through the Tunnel Roof Structure	K511.1	m			
	12.6.08	GRP Sleeve 600mm Diameter for Irrigation line Crossing through the Tunnel Roof Structure	K511.2	m			
	12.6.09	GRP Sleeve 700mm Diameter for Irrigation line Crossing through the Tunnel Roof Structure	K511.3	m			
	12.6.10	GRP Sleeve 900mm Diameter for Irrigation line Crossing through the Tunnel Roof Structure	K511.4	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 12	PAGE 8 of 12
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 12 - IRRIGATION NETWORK (Cont'd)</u>					
		<u>12.6 - PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES (Cont'd)</u>					
		<u>Ducts</u>					
		Supply, lay and joint uPVC / GRP pipe for ducts in trench beneath carriageway including excavation, backfilling with suitable selected excavated material, end caps, warning tape, draw ropes, duct markers and disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department.					
	12.6.11	1 way 110mm dia uPVC duct; depth not exceeding 1.5m	K512.1	m			
	12.6.12	1 way 160mm dia uPVC duct; depth not exceeding 1.5m	K512.2	m			
	12.6.13	1 way 200mm dia GRP duct depth not exceeding 1.5m	K512.3	m			
	12.6.14	1 way 300mm dia GRP duct depth not exceeding 1.5m	K512.4	m			
	12.6.15	1 way 400mm dia GRP duct; depth not exceeding 1.5m	K512.5	m			
	12.6.16	1 way 500mm dia GRP duct; depth not exceeding 1.5m	K512.6	m			
	12.6.17	1 way 600mm dia GRP duct; depth not exceeding 1.5m	K512.7	m			
	12.6.18	1 way 700mm dia GRP duct; depth not exceeding 1.5m	K512.8	m			
	12.6.19	1 way 800mm dia GRP duct; depth not exceeding 1.5m	K512.9	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 12	PAGE 9 of 12
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 12 - IRRIGATION NETWORK (Cont'd)</u></p> <p><u>12.7 - PIPEWORK - SUPPORTS & PROTECTION ANCILLARIES TO LAYING AND EXCAVATION</u></p> <p><u>Beds and Surrounds</u></p> <p>Imported clear dune sand/granular material for bed and surround to uPVC / GRP pipes including marker tape as shown on the drawing.</p>					
	12.7.01	For 110mm dia uPVC duct;	L531.1	m			
	12.7.02	For 160mm dia uPVC duct;	L531.2	m			
	12.7.03	For 200mm dia GRP duct	L531.3	m			
	12.7.04	For 300mm dia GRP duct	L531.4	m			
	12.7.05	For 400mm dia GRP duct;	L531.5	m			
	12.7.06	For 500mm dia GRP duct;	L531.6	m			
	12.7.07	For 600mm dia GRP duct;	L531.7	m			
	12.7.08	For 700mm dia GRP duct;	L531.8	m			
	12.7.09	For 800mm dia GRP duct;	L531.9	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 12	PAGE 10 of 12
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 12 - IRRIGATION NETWORK (Cont'd)</u>					
		<u>12.7 - PIPEWORK - SUPPORTS & PROTECTION ANCILLARIES TO LAYING AND EXCAVATION</u>					
		<u>Beds and Surrounds (Cont'd)</u>					
		Mass SRC Concrete grade C25/20 surround to ducts including formwork.					
	12.7.10	For 110mm dia uPVC duct;	L541.1	m			
	12.7.11	For 160mm dia uPVC duct;	L541.2	m			
	12.7.12	For 200mm dia GRP duct	L541.3	m			
	12.7.13	For 300mm dia GRP duct	L541.4	m			
	12.7.14	For 400mm dia GRP duct;	L541.5	m			
	12.7.15	For 500mm dia GRP duct;	L541.6	m			
	12.7.16	For 600mm dia GRP duct;	L541.7	m			
	12.7.17	For 700mm dia GRP duct;	L541.8	m			
	12.7.18	For 800mm dia GRP duct;	L541.9	m			
		Split PVC Protection Duct					
	12.7.19	Supply and placing of 150mm thick mass concrete encasement to protection of existing irrigation pipe 200mm dia; including formwork and other associate works.	L541.10	m			
	12.7.20	Supply and placing of 150mm thick mass concrete encasement to protection of existing irrigation pipe 300mm dia; including formwork and other associate works.	L541.11	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 12	PAGE 11 of 12
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 12 - IRRIGATION NETWORK (Cont'd)</u></p> <p>12.8 - Irrigation Relocation Works</p> <p>12.8.01 Total Amount Carried Forward for Irrigation Relocation Works as Per Plans, Specifications and a Separate Bill of Quantities Prepared by the Designated Consultant and Obtained by the Contractor.</p>		sum			
Carried to Part Summary						Dhs.	

PROJECT :-		BILL SECTION - D	PART - 12	PAGE 12 of 12
		ITEM DESCRIPTION	AMOUNT (AED)	
		<p><u>PART 12 - IRRIGATION NETWORK (Cont'd)</u></p> <p><u>PART SUMMARY</u></p> <p>D12 - Page 1</p> <p>D12 - Page 2</p> <p>D12 - Page 3</p> <p>D12 - Page 4</p> <p>D12 - Page 5</p> <p>D12 - Page 6</p> <p>D12 - Page 7</p> <p>D12 - Page 8</p> <p>D12 - Page 9</p> <p>D12 - Page 10</p> <p>D12 - Page 11</p>		
		<p>TOTAL FOR PART 12 - IRRIGATION NETWORK CARRIED TO GRAND SUMMARY</p>		Dhs.



Part 13

Electrical Works

PROJECT :-			BILL SECTION - D			PART - 13	PAGE 1 of 16
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 13 - ELECTRICAL WORKS</u>					
		<u>13.1 - Removal of Existing Cable</u>					
		Carefully remove existing Cables and Surrounds and dispose to tip as required including excavation, breaking out cable protection, backfilling and remove to tip and reinstatement of existing surfaces.					
	13.1.01	Remove and salvage existing LV cable, 4C, 70mm ² / 120mm ²	D900.1	m			
	13.1.02	Remove and salvage existing LV cable, 4C, 185mm ² / 240mm ²	D900.2	m			
	13.1.03	Remove and salvage existing 11kV cable, 3C, 185mm ² / 240mm ²	D900.3	m			
	13.1.04	Remove and salvage existing 33kV cable, 3C, 185mm ² / 240mm ²	D900.4	m			
	13.1.05	Remove and salvage existing 33kV circuit with pilot cables	D900.5	m			
	13.1.06	Remove existing 132kV cable circuit	D900.6	m			
		Remove and Salvage existing cable covering tiles and deliver to designated area including excavation, backfilling and reinstatement of existing surfaces.					
	13.1.07	Cable protection tiles; size 500 x 250 x 50mm	D900.7	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 13	PAGE 2 of 16
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 13 - ELECTRICAL WORKS</u></p> <p><u>13.2 - PRECAST CONCRETE</u></p> <p>Precast reinforced concrete protection slabs placed over existing cables as detailed on drawing including excavation, back filling and bitumen paint.</p>					
	13.2.01	Concrete protection slab for existing Cables; X x Y x Z mm thick	H511	nr			
		<p><u>13.3 - IN SITU CONCRETE</u></p> <p>Reinforced in-situ concrete protection slabs placed over Cables as detailed on drawing including excavation, back filling 50mm polystyrene board and bitumen paint etc. complete.</p>					
	13.3.01	Reinforced Concrete Protection slab above the Cables	F721.1	m ³			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 13	PAGE 3 of 16
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 13 - ELECTRICAL WORKS</u>					
		<u>13.4 - PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES</u>					
		<u>Extension of Existing Ducts</u>					
		Extend existing PVC duct including supply, lay & joint with existing ducts in trench beneath carriageways, provide end caps, duct markers, draw ropes and warning tape etc.					
13.4.01		2 way, 150mm dia, depth not exceeding 1.5m	K522.1	m			
13.4.02		4 way, 150mm dia, depth not exceeding 1.5m	K542.1	m			
13.4.03		6 way, 150mm dia, depth not exceeding 1.5m	K542.2	m			
13.4.04		8 way, 150mm dia, depth not exceeding 1.5m	K542.3	m			
13.4.05		12 way, 150mm dia, depth not exceeding 1.5m	K542.4	m			
13.4.06		2x6 way, 150mm dia, depth not exceeding 1.5m	K542.5	m			
13.4.07		2 way, 200mm dia, depth not exceeding 1.5m	K522.2	m			
13.4.08		4 way, 200mm dia, depth not exceeding 1.5m	K542.6	m			
13.4.09		6 way, 200mm dia, depth not exceeding 1.5m	K542.7	m			
13.4.10		8 way, 200mm dia, depth not exceeding 1.5m	K542.8	m			
13.4.11		12 way, 200mm dia, depth not exceeding 1.5m	K542.9	m			
13.4.12		2x6 way, 200mm dia, depth not exceeding 1.5m	K542.10	m			
		<u>Reinstatement</u>					
13.4.13		Breaking of existing pavement of main roads and reinstate for duct laying, including saw cutting; 2 way - 6 way ducts.	K739	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 13	PAGE 4 of 16
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 13 - ELECTRICAL WORKS</u>					
		<u>13.4 - PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES (Cont'd)</u>					
		<u>Ducts</u>					
		Supply, lay and joint PVC cable ducts in trenches beneath carriageways including: excavation, backfilling, end caps; warning tape; draw ropes; markers; disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department.					
	13.4.14	2 way 150mm dia, depth not exceeding 1.5m	K522.3	m			
	13.4.15	4 way 150mm dia, depth not exceeding 1.5m	K542.11	m			
	13.4.16	6 way 150mm dia, depth not exceeding 1.5m	K542.12	m			
	13.4.17	8 way 150mm dia, depth not exceeding 1.5m	K542.13	m			
	13.4.18	10 way 150mm dia, depth not exceeding 1.5m	K542.14	m			
	13.4.19	2 way 200mm dia, depth not exceeding 1.5m	K522.4	m			
	13.4.20	4 way 200mm dia, depth not exceeding 1.5m	K542.15	m			
	13.4.21	6 way 200mm dia, depth not exceeding 1.5m	K542.16	m			
	13.4.22	8 way 200mm dia, depth not exceeding 1.5m	K542.17	m			
	13.4.23	10 way 200mm dia, depth not exceeding 1.5m	K542.18	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 13	PAGE 5 of 16
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 13 - ELECTRICAL WORKS (Cont'd)</u>					
		<u>13.5 - PIPEWORK - SUPPORTS AND PROTECTION ANCILLARIES TO LAYING AND EXCAVATION</u>					
		Imported sand bed & surround including warning tape as applicable					
13.5.01		Surround to 150mm dia 2 way duct	L511.1	m			
13.5.02		Surround to 150mm dia 4 way duct	L511.2	m			
13.5.03		Surround to 150mm dia 6 way duct	L511.3	m			
13.5.04		Surround to 150mm dia 8 way duct	L511.4	m			
13.5.05		Surround to 150mm dia 10 way duct	L511.5	m			
13.5.06		Surround to 200mm dia 2 way duct	L511.6	m			
13.5.07		Surround to 200mm dia 4 way duct	L511.7	m			
13.5.08		Surround to 200mm dia 6 way duct	L511.8	m			
13.5.09		Surround to 200mm dia 8 way duct	L511.9	m			
13.5.10		Surround to 200mm dia 10 way duct	L511.10	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 13	PAGE 6 of 16
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 13 - ELECTRICAL WORKS (Cont'd)</u>					
		<u>13.5 - PIPEWORK - SUPPORTS AND PROTECTION ANCILLARIES TO LAYING AND EXCAVATION (Cont'd)</u>					
		Selected excavated material bed & surround including warning tape as applicable					
	13.5.11	Surround to 150mm dia 2 way duct	L521.1	m			
	13.5.12	Surround to 150mm dia 4 way duct	L521.2	m			
	13.5.13	Surround to 150mm dia 6 way duct	L521.3	m			
	13.5.14	Surround to 150mm dia 8 way duct	L521.4	m			
	13.5.15	Surround to 150mm dia 10 way duct	L521.5	m			
	13.5.16	Surround to 200mm dia 2 way duct	L521.6	m			
	13.5.17	Surround to 200mm dia 4 way duct	L521.7	m			
	13.5.18	Surround to 200mm dia 6 way duct	L521.8	m			
	13.5.19	Surround to 200mm dia 8 way duct	L521.9	m			
	13.5.20	Surround to 200mm dia 10 way duct	L521.10	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 13	PAGE 7 of 16
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 13 - ELECTRICAL WORKS (Cont'd)</u>					
		<u>13.5 - PIPEWORK - SUPPORTS AND PROTECTION ANCILLARIES TO LAYING AND EXCAVATION (Cont'd)</u>					
		Mass SRC concrete Grade C25/20 surround to ducts including formwork, polythene sheet and bituminous paints					
	13.5.21	Surround to 150mm dia 2 way duct	L531.1	m			
	13.5.22	Surround to 150mm dia 4 way duct	L541.1	m			
	13.5.23	Surround to 150mm dia 6 way duct	L541.2	m			
	13.5.24	Surround to 150mm dia 8 way duct	L541.3	m			
	13.5.25	Surround to 150mm dia 10 way duct	L541.4	m			
	13.5.26	Surround to 200mm dia 2 way duct	L531.2	m			
	13.5.27	Surround to 200mm dia 4 way duct	L541.5	m			
	13.5.28	Surround to 200mm dia 6 way duct	L541.6	m			
	13.5.29	Surround to 200mm dia 8 way duct	L541.7	m			
	13.5.30	Surround to 200mm dia 10 way duct	L541.8	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 13	PAGE 8 of 16
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 13 - ELECTRICAL WORKS (Cont'd)</u>					
		<u>13.5 - MISCELLANEOUS WORK</u>					
		Cables, Joints & Terminations SUPPLY & INSTALL					
		Supply, transport and lay cables in trench including all connections and accessories: draw through road crossing ducts / substation entry ducts / service entry ducts as applicable; supports; (trench excavation and backfilling measured separately)					
		Cables					
13.5.31		LV, 4C - 50mm ² Cu, XLPE, Armored Cable	X900.1	m			
13.5.32		LV, 4C - 70mm ² Cu, XLPE, Armored Cable	X900.2	m			
13.5.33		LV, 4C - 95mm ² Cu, XLPE, Armored Cable	X900.3	m			
13.5.34		LV, 4C - 120mm ² Cu, XLPE, Armored Cable	X900.4	m			
13.5.35		LV, 4C - 240mm ² Cu, XLPE, Armored Cable	X900.5	m			
13.5.36		11kV, 3C - 185mm ² Cu, XLPE, Armored Cable	X900.6	m			
13.5.37		11kV, 3C - 240mm ² Cu, XLPE, Armored Cable	X900.7	m			
13.5.38		33kV, 3C - 240mm ² Cu, XLPE, Armored Cable + Pilot Cable	X900.8	m			
13.5.39		Fibre Optic Cable	X900.9	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 13	PAGE 9 of 16
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 13 - ELECTRICAL WORKS (Cont'd)</u>					
		<u>13.5 - PIPEWORK - SUPPORTS AND PROTECTION ANCILLARIES TO LAYING AND EXCAVATION</u>					
		<u>MISCELLANEOUS WORK (Cont'd)</u>					
		Cables, Joints & Terminations SUPPLY & INSTALL					
		Supply, transport and lay cables in trench including all connections and accessories: draw through road crossing ducts / substation entry ducts / service entry ducts as applicable; supports; (trench excavation and backfilling measured separately)					
		Cable Joints					
13.5.40		LV, 4C - 50mm ² Cu, XLPE, Armored Cable	X900.10	nr			
13.5.41		LV, 4C - 70mm ² Cu, XLPE, Armored Cable	X900.11	nr			
13.5.42		LV, 4C - 95mm ² Cu, XLPE, Armored Cable	X900.12	nr			
13.5.43		LV, 4C - 120mm ² Cu, XLPE, Armored Cable	X900.13	nr			
13.5.44		LV, 4C - 240mm ² Cu, XLPE, Armored Cable	X900.14	nr			
13.5.45		11kV, 3C - 185mm ² Cu, XLPE, Armored Cable	X900.15	nr			
13.5.46		11kV, 3C - 240mm ² Cu, XLPE, Armored Cable	X900.16	nr			
13.5.47		33kV, 3C - 240mm ² Cu, XLPE, Armored Cable + Pilot Cable	X900.17	nr			
		FOC Cable Joints					
13.5.48		Fibre Optic cable	X900.18	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 13	PAGE 10 of 16
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 13 - ELECTRICAL WORKS (Cont'd)</u>					
		<u>13.5 - PIPEWORK - SUPPORTS AND PROTECTION ANCILLARIES TO LAYING AND EXCAVATION</u>					
		<u>MISCELLANEOUS WORK (Cont'd)</u>					
		Cables, Joints & Terminations SUPPLY & INSTALL					
		Cable Terminations					
	13.5.49	LV, 4C - 50mm ² Cu, XLPE, Armored Cable	X900.19	nr			
	13.5.50	LV, 4C - 70mm ² Cu, XLPE, Armored Cable	X900.20	nr			
	13.5.51	LV, 4C - 95mm ² Cu, XLPE, Armored Cable	X900.21	nr			
	13.5.52	LV, 4C - 120mm ² Cu, XLPE, Armored Cable	X900.22	nr			
	13.5.53	LV, 4C - 240mm ² Cu, XLPE, Armored Cable	X900.23	nr			
	13.5.54	11kV, 3C - 185mm ² Cu, XLPE, Armored Cable	X900.24	nr			
	13.5.55	11kV, 3C - 240mm ² Cu, XLPE, Armored Cable	X900.25	nr			
	13.5.56	33kV, 3C - 240mm ² Cu, XLPE, Armored Cable + Pilot Cable	X900.26	nr			
	13.5.57	Fibre Optic cable	X900.27	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 13	PAGE 11 of 16
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 13 - ELECTRICAL WORKS (Cont'd)</u> <u>13.5 - PIPEWORK - SUPPORTS AND PROTECTION ANCILLARIES TO LAYING AND EXCAVATION</u> <u>MISCELLANEOUS WORK (Cont'd)</u> Trench Excavation Excavate trench as per Specification backfill with selected excavated material; disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department.					
13.5.58		Depth not exceeding 1m; minimum width 0.3m (1 cable)	X900.28	m			
13.5.59		Depth not exceeding 1m; minimum width 0.5m (1 cable)	X900.29	m			
13.5.60		Depth not exceeding 1m; minimum width 0.6m (2 cables in 1 layer)	X900.30	m			
13.5.61		Depth not exceeding 1m, minimum width 0.8m (2 cables in 1 layer)	X900.31	m			
13.5.62		Depth not exceeding 1m; minimum width 1m (3 cables in 1 layer)	X900.32	m			
13.5.63		Depth not exceeding 1m; minimum width 1.2m (4 cables in 1 layer)	X900.33	m			
13.5.64		Depth not exceeding 1m; minimum width 1.5m (5 cables in 1 layer)	X900.34	m			
13.5.65		Depth not exceeding 1m; minimum width 1.8m (6 cables in 1 layer)	X900.35	m			
13.5.66		Depth not exceeding 1m; minimum width 2.1m (7 cables in 1 layer)	X900.36	m			
13.5.67		Depth not exceeding 1m; minimum width 2.4m (8 cables in 1 layer)	X900.37	m			
13.5.68		Depth not exceeding 1m; minimum width 2.7m (9 cables in 1 layer)	X900.38	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 13	PAGE 12 of 16
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 13 - ELECTRICAL WORKS (Cont'd)</u></p> <p><u>13.5 - PIPEWORK - SUPPORTS AND PROTECTION ANCILLARIES TO LAYING AND EXCAVATION</u></p> <p><u>MISCELLANEOUS WORK (Cont'd)</u></p> <p>Trench Excavation (Cont'd)</p> <p>Excavate trench as per Specification backfill with selected excavated material; disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department.</p>					
13.5.69		Depth not exceeding 1m; minimum width 3m (10 cables in 1 layer)	X900.39	m			
13.5.70		Depth not exceeding 1m; minimum width 3.3m (11 cables in 1 layer)	X900.40	m			
13.5.71		Depth not exceeding 1m; minimum width 3.6m (12 cables in 1 layer)	X900.41	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 13	PAGE 13 of 16
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 13 - ELECTRICAL WORKS (Cont'd)</u></p> <p><u>13.5 - PIPEWORK - SUPPORTS AND PROTECTION ANCILLARIES TO LAYING AND EXCAVATION</u></p> <p><u>MISCELLANEOUS WORK (Cont'd)</u></p> <p><u>Radial / Loop Pit</u></p> <p>Excavate loop pit as per specification; backfill with selected / excavated material; disposal of surplus excavated material to spoil heaps on designated areas including warning tape, concrete tiles, polyurethane plastic sheet, cable route marker as shown on drawing no. ----</p>					
	13.5.72	Loop pit, Size X x Y m; depth not exceeding 1m.	X900.42	nr			
		<p><u>FOC Jointing Chamber</u></p> <p>Reinforced concrete Jointing Chamber X x Y x Z mm with heavy duty ductile iron cover and frame, jointing box, cable rack, blinding concrete, bitumen paint, excavation, backfilling disposal of surplus excavated material to spoil heaps on designated areas and all other works as per specification and shown on drawing no. --</p>					
	13.5.73	Jointing Chamber	X900.43	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 13	PAGE 14 of 16
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 13 - ELECTRICAL WORKS (Cont'd)</u>					
		<u>13.5 - PIPEWORK - SUPPORTS AND PROTECTION ANCILLARIES TO LAYING AND EXCAVATION</u>					
		<u>MISCELLANEOUS WORK (Cont'd)</u>					
		<u>Ancillaries: Supply and Install</u>					
13.5.74		Cable protection tiles 500 x 250 x 50mm	X900.44	nr			
13.5.75		Special fill material / sweet sand for cables; as per specification	X900.45	m ³			
13.5.76		Plastic warning tape 300mm width; as per specification	X900.46	m			
13.5.77		11kV Power Cable route markers for paved area; as per specification & drawings	X900.47	nr			
13.5.78		33kV Power Cable route markers for paved area; as per specification & drawings.	X900.48	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 13	PAGE 15 of 16
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 13 - ELECTRICAL WORKS (Cont'd)</u>					
		<u>13.5 - PIPEWORK - SUPPORTS AND PROTECTION ANCILLARIES TO LAYING AND EXCAVATION</u>					
		<u>MISCELLANEOUS WORK (Cont'd)</u>					
		<u>Electrical Service Chamber</u>					
		Reinforced concrete Service Chamber complete with ductile iron cover and frame, bituminous paint, excavation, backfilling disposal of surplus excavated material to spoil heaps on designated areas and all other works as per specification and drawings.					
13.5.79		Service Chamber; Size X x Y x Z mm.	X900.49	nr			
		<u>Earthing System</u>					
13.5.80		Supply and install complete earthing system including excavation, backfilling, compaction and handling as shown in drawings.	X900.50	nr			
13.5.81		Supply and install cable in trench 1C x 70mm ² earth cable for connection to earth pits.	X900.51	m			
		<u>Service Authority Works</u>					
		<u>Note: The Provisional Sums given in the Bill of Quantities may be used in whole or in part, or not at all, on the instruction of the Engineer</u>					
13.5.82		Provisional sum of Dhs. ----- for direct payment by the employer to ADWEA (ED) for diversions.	A420	sum			
13.5.83		Percentage for Contractor's Overhead and Profit for Item 13.5.82		%			
Carried to Part Summary						Dhs.	

PROJECT :-		BILL SECTION - D	PART - 13	PAGE 16 of 16
		DESCRIPTION	AMOUNT (AED)	
		<u>PART 13 - ELECTRICAL WORKS (Cont'd)</u> <u>PART SUMMARY</u> D13 - Page 1 D13 - Page 2 D13 - Page 3 D13 - Page 4 D13 - Page 5 D13 - Page 6 D13 - Page 7 D13 - Page 8 D13 - Page 9 D13 - Page 10 D13 - Page 11 D13 - Page 12 D13 - Page 13 D13 - Page 14 D13 - Page 15 TOTAL FOR PART 13 - ELECTRICAL WORKS CARRIED TO GRAND SUMMARY		
				Dhs.

Part 14

Street Lighting Works

PROJECT :-			BILL SECTION - D			PART - 14	PAGE 1 of 12
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 14 - STREET LIGHTING WORKS</u>					
		<u>14.1 - Removal of Street Lighting Pole</u>					
		Carefully remove existing lighting column, light fittings, foundations, dismantle completely and set aside in Contractor's enclosed store for reuse/return, including disposal of foundations to approved tip, cable disconnections and backfilling.					
14.1.01		4.6m pole with 1x100W HPS / MH luminaire and brackets	D900.1	nr			
14.1.02		4.6m pole with 1x150W HPS / MH luminaire and brackets	D900.2	nr			
14.1.03		8m pole with 1x150W HPS / MH luminaire and brackets	D900.3	nr			
14.1.04		8m pole with 1x250W HPS / MH luminaire and brackets	D900.4	nr			
14.1.05		10m pole with 1x250W HPS / MH luminaire and brackets	D900.5	nr			
14.1.06		10m pole with 1x400W HPS / MH luminaire and brackets	D900.6	nr			
14.1.07		12m pole with 1x250W HPS / MH luminaire and brackets	D900.7	nr			
14.1.08		12m pole with 1x400W HPS / MH luminaire and brackets	D900.8	nr			
14.1.09		14m pole with 1x400W HPS / MH luminaire and brackets	D900.9	nr			
14.1.10		14m pole with 1x1000W HPS / MH luminaire and brackets	D900.10	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 14	PAGE 2 of 12
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 14 - STREET LIGHTING WORKS</u>					
		<u>Removal of Existing Cable</u>					
		Carefully remove existing Cables and Surrounds and dispose to tip as required including excavation, breaking out cable protection, backfilling and remove to tip and reinstatement of existing surfaces.					
	14.1.11	Remove and salvage existing LV cable, 4C, 16mm ² / 25mm ²	D900.11	m			
	14.1.12	Remove and salvage existing LV cable, 4C, 50mm ² / 70mm ²	D900.12	m			
		Remove and Salvage existing cable covering tiles and deliver to designated area including excavation, backfilling and reinstatement of existing surfaces.					
	14.1.13	Cable protection tiles; size 500 x 200 x 50mm	D900.13	nr			
		<u>14.2 - PRECAST CONCRETE</u>					
		Precast reinforced concrete protection slabs placed over existing cables as detailed on drawing including excavation, back filling and bitumen paint.					
	14.2.01	Concrete protection slab for existing Cables; X x Y x Z mm thick	H511	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 14	PAGE 3 of 12
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 14 - STREET LIGHTING WORKS</u></p> <p><u>14.3- PIPE WORK - MANHOLES AND PIPE WORK ANCILLARIES</u></p> <p><u>Other stated chambers</u></p> <p>Reinforced concrete chambers complete including but not limited to built in pieces, ductile manhole covers, water proofing works, concrete support, indication plates, excavation, backfilling, disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department and all other fittings as shown on drawings.</p>					
14.3.01		Reinforced concrete pull box Type IV, depth not exceeding 1.5m	K231.1	nr			
		<p><u>Ducts</u></p> <p>Supply, lay and joint uPVC cable ducts in trenches beneath carriageway including excavation, backfilling, jointing, end caps, warning tape, draw ropes, markers, bends, tees etc.</p>					
14.3.02		1 way 100mm dia depth not exceeding 1.5m	K512	m			
14.3.03		2 way 100mm dia depth not exceeding 1.5m	K522	m			
14.3.04		4 way 100mm dia depth not exceeding 1.5m	K542.1	m			
14.3.05		6 way 100mm dia depth not exceeding 1.5m	K542.2	m			
		<p><u>Reinstatement</u></p>					
14.3.06		Breaking of existing main road pavement including saw cutting and reinstatement for laying ducts; 1 way to 4 way ducts	K731.1	m			
14.3.07		Breaking of existing sector road pavement including saw cutting and reinstatement for laying ducts; 4 way to 6 way ducts	K731.2	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 14	PAGE 4 of 12
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 14 - STREET LIGHTING WORKS (Cont'd)</u>					
		<u>14.4 - PIPE WORK - SUPPORTS AND PROTECTION ANCILLARIES TO LAYING AND EXCAVATION</u>					
		Imported sand bed & surround including warning tape as applicable					
14.4.01		Imported sand bed and surround to 1-way duct, 100mm dia	L511.1	m			
14.4.02		Imported sand bed and surround to 2-way duct, 100mm dia	L511.2	m			
14.4.03		Imported sand bed and surround to 4-way duct, 100mm dia	L511.3	m			
14.4.04		Imported sand bed and surround to 6-way duct, 100mm dia	L511.4	m			
		Selected excavated material bed & surround including warning tape as applicable					
14.4.05		Selected excavated material bed and surround to 1-way duct, 100mm dia	L521.1	m			
14.4.06		Selected excavated material bed and surround to 2-way duct, 100mm dia	L521.2	m			
14.4.07		Selected excavated material bed and surround to 4-way duct, 100mm dia	L521.3	m			
14.4.08		Selected excavated material bed and surround to 6-way duct, 100mm dia	L521.4	m			
		Mass SRC concrete Grade C25/20 surround to ducts including formwork, polythene sheet and bituminous paints					
14.4.09		Surround to 100mm dia 1 way duct	L541.1	m			
14.4.10		Surround to 100mm dia 2 way duct	L541.2	m			
14.4.11		Surround to 100mm dia 4 way duct	L541.3	m			
14.4.12		Surround to 100mm dia 6 way duct	L541.4	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 14	PAGE 5 of 12
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 14 - STREET LIGHTING WORKS</u> (Cont'd) <u>14.5 - MISCELLANEOUS WORK</u> Supply and Install - Foundations Mass concrete, high lighting column bases complete as detailed on the drawing including excavation, backfilling, compaction, formwork, concrete, holding down bolts with 12mm rebar link, protection of holding down bolts, nuts and washers with denso tape, (before casting and after erection), greased filled PVC caps for 25m mast, bitumen paint etc.					
	14.5.01	Foundation for 4.6m high light poles.	X900.1	nr			
	14.5.02	Foundation for 8m high light poles.	X900.2	nr			
	14.5.03	Foundation for 10m high light poles.	X900.3	nr			
	14.5.04	Foundation for 12m high light poles.	X900.4	nr			
	14.5.05	Foundation for 14m high light poles.	X900.5	nr			
	14.5.06	Foundation for 16m high light poles.	X900.6	nr			
	14.5.07	Foundation for 18m high light poles.	X900.7	nr			
	14.5.08	Foundation for 30.5m high light poles.	X900.8	nr			
	14.5.09	Foundation for Lighting Control Cabinets	X900.9	nr			
	14.5.10	Foundation for Feeder pillar	X900.10	nr			
	14.5.11	Foundation for Service Turret	X900.11	nr			
	14.5.12	Foundation for Metering Cabinet	X900.12	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 14	PAGE 6 of 12
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 14 - STREET LIGHTING WORKS</u> <u>(Cont'd)</u>					
		<u>14.5 - MISCELLANEOUS WORK (Cont'd)</u>					
		Supply and Install - Street Lighting					
14.5.13		4.6m high light pole with 1x100 Watt high pressure sodium lanterns	X900.13	nr			
14.5.14		4.6m high light pole with 2x100 Watt high pressure sodium lanterns	X900.14	nr			
14.5.15		8m high light pole with 1x150 Watt metal halide lanterns	X900.15	nr			
14.5.16		8m high light pole with 2x150 Watt metal halide lanterns	X900.16	nr			
14.5.17		8m high light pole with 1x250 Watt metal halide lanterns	X900.17	nr			
14.5.18		8m high light pole with 2x250 Watt metal halide lanterns	X900.18	nr			
14.5.19		10m high light pole with 1x250 Watt metal halide lanterns	X900.19	nr			
14.5.20		10m high light pole with 2x250 Watt metal halide lanterns	X900.20	nr			
14.5.21		10m high light pole with 1x250 Watt high pressure sodium lanterns	X900.21	nr			
14.5.22		10m high light pole with 2x250 Watt high pressure sodium lanterns	X900.22	nr			
14.5.23		10m high light pole with 1x400 Watt metal halide lanterns	X900.23	nr			
14.5.24		10m high light pole with 2x400 Watt metal halide lanterns	X900.24	nr			
14.5.25		10m high light pole with 1x400 Watt high pressure sodium lanterns	X900.25	nr			
14.5.26		10m high light pole with 2x400 Watt high pressure sodium lanterns	X900.26	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 14	PAGE 7 of 12
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 14 - STREET LIGHTING WORKS</u> <u>(Cont'd)</u>					
		<u>14.5 - MISCELLANEOUS WORK (Cont'd)</u>					
		Supply and Install - Street Lighting					
14.5.27	12m high light pole with 1x400 Watt high pressure sodium lanterns		X900.27	nr			
14.5.28	12m high light pole with 2x400 Watt high pressure sodium lanterns		X900.28	nr			
14.5.29	12m high light pole with 1x400 Watt metal halide lanterns		X900.29	nr			
14.5.30	12m high light pole with 2x400 Watt metal halide lanterns		X900.30	nr			
14.5.31	14m high light pole with 1x400 Watt high pressure sodium lanterns		X900.31	nr			
14.5.32	14m high light pole with 2x400 Watt high pressure sodium lanterns		X900.32	nr			
14.5.33	14m high light pole with 1x400 Watt metal halide lanterns		X900.33	nr			
14.5.34	14m high light pole with 2x400 Watt metal halide lanterns		X900.34	nr			
14.5.35	14m high light pole with 1x1000 Watt high pressure sodium lanterns		X900.35	nr			
14.5.36	14m high light pole with 2x1000 Watt high pressure sodium lanterns		X900.36	nr			
14.5.37	14m high light pole with 1x1000 Watt metal halide lanterns		X900.37	nr			
14.5.38	14m high light pole with 2x1000 Watt metal halide lanterns		X900.38	nr			
14.5.39	16m high light pole with 1x600 Watt high pressure sodium lanterns		X900.39	nr			
14.5.40	16m high light pole with 2x600 Watt high pressure sodium lanterns		X900.40	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 14	PAGE 8 of 12
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 14 - STREET LIGHTING WORKS</u> <u>(Cont'd)</u>					
		<u>14.5 - MISCELLANEOUS WORK (Cont'd)</u>					
		Supply and Install - Street Lighting					
14.5.41	18m high light pole with 1x600 Watt high pressure sodium lanterns		X900.41	nr			
14.5.42	18m high light pole with 2x600 Watt high pressure sodium lanterns		X900.42	nr			
14.5.43	30.5m high light pole with 4x1000 Watt high pressure sodium lanterns		X900.43	nr			
14.5.44	30.5m high light pole with 6x1000 Watt high pressure sodium lanterns		X900.44	nr			
		<u>Install Only</u>					
		<u>Low Voltage Feeder Pillar, Service Turrent & Lighting Control Cabinet</u>					
		Install LV Feeder Pillar complete with grounding, cable terminations, civil works and all other requirements as per Specifications and Drawings.					
14.5.45	Feeder Pillar, 6 Way		X900.45	nr			
14.5.46	Feeder Pillar, 8 Way		X900.46	nr			
14.5.47	Service Turrent, 4 Way		X900.47	nr			
14.5.48	Lighting Control Cabinet		X900.48	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 14	PAGE 9 of 12
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 14 - STREET LIGHTING WORKS</u> <u>(Cont'd)</u> <u>14.5 - MISCELLANEOUS WORK (Cont'd)</u> <u>Supply & Install</u> <u>Low Voltage Feeder Pillar, Service Turrent & Lighting Control Cabinet</u> Supply & Install LV Feeder Pillar complete with grounding, cable terminations, civil works and all other requirements as per Specifications and Drawings.					
14.5.49	Feeder Pillar, 6 Way		X900.49	nr			
14.5.50	Feeder Pillar, 8 Way		X900.50	nr			
14.5.51	Service Turrent, 4 Way		X900.51	nr			
14.5.52	Lighting Control Cabinet		X900.52	nr			
		<u>Excavate for cable trenches</u>					
14.5.53	Trench not exceeding 1.5m deep, for varying number of cables		X900.53	m			
		Supply and Install the following power supply cabling in trench as shown on the drawings including backfilling.					
14.5.54	4C x 16mm ² XLPE / SWA / PVC, Armored Cable		X900.54	m			
14.5.55	4C x 25mm ² XLPE / SWA / PVC, Armored Cable		X900.55	m			
14.5.56	4C x 35mm ² XLPE / SWA / PVC, Armored Cable		X900.56	m			
14.5.57	4C x 50mm ² XLPE / SWA / PVC, Armored Cable		X900.57	m			
14.5.58	4C x 70mm ² XLPE / SWA / PVC, Armored Cable		X900.58	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 14	PAGE 10 of 12
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 14 - STREET LIGHTING WORKS (Cont'd)</u>					
		<u>14.5 - MISCELLANEOUS WORK (Cont'd)</u>					
		Supply and Install Warning Tape					
14.5.59		Warning tape 250mm wide with English and Arabic written as approved by Department.	X900.59	m			
14.5.60		LV Cable route markers for paved / unpaved area; as per specification & drawings.	X900.60	m			
		SUPPLY & INSTALL Cables, Joints & Terminations					
		Supply, transport and lay cables in trench including all connections and accessories: draw through road crossing ducts / service entry ducts as applicable; supports.					
		Cable Joints					
14.5.61		4C x 50mm ² XLPE / SWA / PVC, Armored Cable	X900.61	nr			
14.5.62		4C x 70mm ² XLPE / SWA / PVC, Armored Cable	X900.62	nr			
		Cable Terminations					
14.5.63		4C x 50mm ² XLPE / SWA / PVC, Armored Cable	X900.63	nr			
14.5.64		4C x 70mm ² XLPE / SWA / PVC, Armored Cable	X900.64	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 14	PAGE 11 of 12
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 14 - STREET LIGHTING WORKS (Cont'd)</u>					
		<u>14.5 - MISCELLANEOUS WORK (Cont'd)</u>					
		Supply and Install the following power supply cable not in trench as shown on the drawings.					
14.5.65		4C x 16mm ² XLPE / SWA / PVC, Armored Cable	X900.65	m			
14.5.66		4C x 25mm ² XLPE / SWA / PVC, Armored Cable	X900.66	m			
14.5.67		4C x 35mm ² XLPE / SWA / PVC, Armored Cable	X900.67	m			
14.5.68		4C x 50mm ² XLPE / SWA / PVC, Armored Cable	X900.68	m			
14.5.69		4C x 70mm ² XLPE / SWA / PVC, Armored Cable	X900.69	m			
14.5.70		3C x 2.5mm ² Cu, PVC flexible rubber lantern cable	X900.70	m			
14.5.71		3C x 4mm ² Cu, PVC flexible rubber lantern cable	X900.71	m			
		<u>Earthing System</u>					
14.5.72		Supply and install complete earthing system including excavation, backfilling, compaction and handling as shown in drawings.	X900.72	nr			
14.5.73		Supply and install cable in trench 1C x 70mm ² earth cable for connection to earth pits.	X900.73	m			
Carried to Part Summary						Dhs.	

PROJECT :-		BILL SECTION - D	PART - 14	PAGE 12 of 12
		DESCRIPTION	AMOUNT (AED)	
		<u>PART 14 - STREET LIGHTING WORKS</u> <u>PART SUMMARY</u> D14 - Page 1 D14 - Page 2 D14 - Page 3 D14 - Page 4 D14 - Page 5 D14 - Page 6 D14 - Page 7 D14 - Page 8 D14 - Page 9 D14 - Page 10 D14 - Page 11		
		TOTAL FOR PART 14 - STREET LIGHTING WORKS CARRIED TO GRAND SUMMARY		Dhs.

Part 15

Duct Network for Telecommunication Cables

PROJECT :-			BILL SECTION - D			PART - 15	PAGE 1 of 9
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 15- DUCT NETWORK FOR TELECOMMUNICATION CABLES</u></p> <p><u>ETISALAT will provide all cable, ducts, end caps, draw ropers, spacers and furniture for chambers and joint boxes. The tenderer shall include in his rates for collection and storage of these materials at the Contractor's site store from ETISALAT stores in Abu Dhabi.</u></p> <p><u>15.1 - Removal of Existing Tele. Duct</u></p> <p>Removal of existing ducts, and deliver to designated area including backfilling and reinstatement of existing surfaces.</p>					
15.1.01		1 way D 54 ducts	D690.1	m			
15.1.02		2 way D 54 ducts	D690.2	m			
15.1.03		4 way D 54 ducts	D690.3	m			
15.1.04		6 way D 54 ducts	D690.4	m			
15.1.05		8 way D 54 ducts	D690.5	m			
		<p><u>15.2 - PRECAST CONCRETE</u></p> <p>Precast reinforced concrete protection slabs placed over existing cables as detailed on drawing including excavation, back filling and bitumen paint.</p>					
15.2.01		Concrete Protection slab; X x Y x Z mm thick	H511.1	nr			
		<p>Precast reinforced concrete protection slabs placed over new cables as detailed on drawing including excavation, back filling and bitumen paint.</p>					
15.2.02		Concrete Protection slab; X x Y x Z mm thick	H511.2	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 15	PAGE 2 of 9
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 15 - DUCT NETWORK FOR TELECOMMUNICATION CABLES (Cont'd)</u> <u>15.3 - PIPE WORK - MANHOLES AND PIPE WORK ANCILLARIES</u> <u>Other Chambers</u> Reinforced concrete joint boxes complete in accordance with drawings, specifications and requirements.					
	15.3.01	Type JRC ----	K231	nr			
		<u>Extension of Existing Ducts</u> Lay & joint with existing uPVC cable ducts (D54) 90mm dia. in trench including backfilling, end cap and all related works complete.					
	15.3.02	2-way, depth not exceeding 1.5m	K512	m			
	15.3.03	4-way, depth not exceeding 1.5m	K542.1	m			
	15.3.04	6-way, depth not exceeding 1.5m	K542.2	m			
		<u>Reinstatement</u>					
	15.3.05	Breaking of existing pavement of main roads including saw cutting and reinstatement for laying 4- way D54 ducts.	K739.1	m			
	15.3.06	Breaking of existing pavement of main roads including saw cutting and reinstatement for laying 6- way D54 ducts.	K739.2	m			
		<u>Connections to Manholes / Ducts</u>					
	15.3.07	Connect new 6-way D54 duct to existing 6-way D54 duct for extension including additional fittings, additional excavation and backfill etc.	K861	nr			
		<u>Other Pipe work Ancillaries</u> Supply and Install marker post including concrete base and associated works to complete.					
	15.3.08	Marker posts	K820	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 15	PAGE 3 of 9
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 15 - DUCT NETWORK FOR TELECOMMUNICATION CABLES (Cont'd)</u></p> <p><u>15.3 - PIPE WORK - MANHOLES AND PIPE WORK ANCILLARIES</u></p> <p><u>Duct</u></p> <p>Lay and joint 90mm internal diameter PVC pipe in trench beneath carriageways including excavation, backfilling, end caps; warning tape; draw ropes; markers; disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department.</p> <p>For Type D54 duct</p>					
15.3.09	1-way, depth not exceeding 1.5m		K512	m			
15.3.10	2-way, depth not exceeding 1.5m		K522	m			
15.3.11	4-way, depth not exceeding 1.5m		K542.1	m			
15.3.12	4-way, depth 1.5 - 2m		K543.1	m			
15.3.13	6-way, depth not exceeding 1.5m		K542.2	m			
15.3.14	6-way, depth 1.5 - 2m		K543.2	m			
15.3.15	9-way, depth not exceeding 1.5m		K542.3	m			
15.3.16	9-way, depth 1.5 - 2m		K543.3	m			
15.3.17	PVC sleeve 90mm diameter for telephone cable crossing in the tunnel roof structure; number of ways exceeding 3		K541	m			
15.3.18	uPVC Military Communication Conduit; 2- way, depth not exceeding 1.5m		K522	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 15	PAGE 4 of 9
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 15 - DUCT NETWORK FOR TELECOMMUNICATION CABLES (Cont'd)</u></p> <p><u>15.3 - PIPE WORK - MANHOLES AND PIPE WORK ANCILLARIES</u></p> <p>For Type D56 duct</p> <p>Lay and joint 50mm internal diameter PVC pipe in trench beneath carriageways including excavation, backfilling, end caps; warning tape; draw ropes; markers; disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department.</p>					
15.3.19	1-way, depth 1.5 - 2m		K513	m			
15.3.20	2-way, depth 1.5 - 2m		K523	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 15	PAGE 5 of 9
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 15 - DUCT NETWORK FOR TELECOMMUNICATION CABLES (Cont'd)</u>					
		<u>15.4 - PIPE WORK - SUPPORTS AND PROTECTION ANCILLARIES TO LAYING AND EXCAVATION</u>					
		Beds and Surrounds Imported material including warning tape					
15.4.01		Surround to D54, 1 way duct	L511.1	m			
15.4.02		Surround to D54, 2 way duct	L511.2	m			
15.4.03		Surround to D54, 4 way duct	L511.3	m			
15.4.04		Surround to D54, 6 way duct	L511.4	m			
15.4.05		Surround to D54, 9 way duct	L511.5	m			
		Beds and Surrounds selected excavated material including warning tape					
15.4.06		Surround to D54, 1 way duct	L521.1	m			
15.4.07		Surround to D54, 2 way duct	L521.2	m			
15.4.08		Surround to D54, 4 way duct	L521.3	m			
15.4.09		Surround to D54, 6 way duct	L521.4	m			
15.4.10		Surround to D54, 9 way duct	L521.5	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 15	PAGE 6 of 9
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 15 - DUCT NETWORK FOR TELECOMMUNICATION CABLES (Cont'd)</u> <u>15.4 - PIPE WORK - SUPPORTS AND PROTECTION ANCILLARIES TO LAYING AND EXCAVATION</u> Mass concrete surround to 90mm diameter PVC pipe including formwork, polythene sheet and bituminous paint.					
15.4.11		Surround to D54, 1 way duct	L541.1	m			
15.4.12		Surround to D54, 2 way duct	L541.2	m			
15.4.13		Surround to D54, 4 way duct	L541.3	m			
15.4.14		Surround to D54, 6 way duct	L541.4	m			
15.4.15		Surround to D54, 9 way duct	L541.5	m			
		Mass concrete surround to 50mm diameter PVC pipe including formwork, polythene sheet and bituminous paint					
15.4.16		Surround to D56, 1 way duct	L541.6	m			
15.4.17		Surround to D56, 2 way duct	L541.7	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 15	PAGE 7 of 9
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 15 - DUCT NETWORK FOR TELECOMMUNICATION CABLES (Cont'd)</u></p> <p><u>15.5 - MISCELLANEOUS WORK</u></p>					
15.5.01		Adjust cover levels of existing manholes to suit proposed levels, maximum level adjustment 0.5m	X900.1	nr			
15.5.02		Adjust cover levels of existing chambers to suit proposed levels, maximum level adjustment 0.5m	X900.2	nr			
		<p><u>Telephone Cabinets</u></p> <p>Foundation for Telephone cabinet including excavation, backfill, water proofing, reinforcement, formwork and other fixing accessories etc. complete as per Etisalat requirements.</p>					
15.5.03		Foundation for Telephone cabinet	X900.3	nr			
		<p>Demolish existing manholes & chambers and deliver to designated area including backfilling and reinstatement of existing surfaces.</p>					
15.5.04		Type MR	Y710.1	nr			
15.5.05		Type JRC	Y710.2	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 15	PAGE 8 of 9
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 15 - DUCT NETWORK FOR TELECOMMUNICATION CABLES (Cont'd)</u>					
15.5.06		Total Amount Carried Forward for Telecommunication Works as per Drawings, Specifications and a Separate Bill of Quantities Prepared by ETISALAT and Obtained by the Contractor.		Sum			
		<u>Service Authority Works</u>					
		<u>Note: The Provisional Sums given in the Bill of Quantities may be used in whole or in part, or not at all, on the instruction of the Engineer</u>					
15.5.07		Provisional sum of Dhs. ----- for direct payment by the employer to Etisalat for diversions.	A420.1	sum			
15.5.08		Percentage for Contractor's Overhead and Profit for Item 15.5.07		%			
15.5.09		Provisional sum of Dhs. ----- for direct payment by the employer for Military communication cables diversions.	A420.2	sum			
15.5.10		Percentage for Contractor's Overhead and Profit for Item 15.5.09		%			
Carried to Part Summary						Dhs.	

PROJECT :-		BILL SECTION - D	PART - 15	PAGE 9 of 9
		DESCRIPTION	AMOUNT (AED)	
		<p><u>PART 15 - DUCT NETWORK FOR TELECOMMUNICATION CABLES (Cont'd)</u></p> <p><u>PART SUMMARY</u></p> <p>D15 - Page 1</p> <p>D15 - Page 2</p> <p>D15 - Page 3</p> <p>D15 - Page 4</p> <p>D15 - Page 5</p> <p>D15 - Page 6</p> <p>D15 - Page 7</p> <p>D15 - Page 8</p>		
		<p>TOTAL FOR PART 15 - DUCT NETWORKS FOR TELECOMMUNICATION CABLES</p>		
CARRIED TO GRAND SUMMARY			Dhs.	

Part 16
Traffic Signal Control System
and
Intellegent Transportation System

PROJECT :-			BILL SECTION - D			PART - 16	PAGE 1 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 16 - TRAFFIC SIGNAL CONTROL AND INTELLIGENT TRANSPORTATION SYSTEM</u></p> <p><u>PART 16.1 -TRAFFIC SIGNAL CONTROL SYSTEM</u></p> <p><u>PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES</u></p> <p><u>Other stated chambers</u></p> <p>Reinforced concrete chambers complete including but not limited to built in pieces, ductile manhole covers, water proofing works, concrete support, indication plates, excavation, backfilling, disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department and all other fittings as shown on drawings.</p>					
	16.1.01	Reinforced concrete pull box Type I, depth not exceeding 1.5m	K231.1	nr			
	16.1.02	Reinforced concrete pull box Type II, depth not exceeding 1.5m	K231.2	nr			
	16.1.03	Reinforced concrete pull box Type IV, depth not exceeding 1m	K231.3	nr			
		<p><u>Ducts</u></p> <p>Supply, lay and joint PVC cable ducts in trenches including excavation, backfilling, end caps, warning tape, draw ropes, markers, bends, tees etc. and disposal of surplus excavated material to spoil heaps on designated area to be determined by the Department and all other fittings as shown on drawings.</p>					
	16.1.04	1way 50mm dia.ducts; depth not exceeding 1.5m	K512.1	m			
	16.1.05	2way 50mm dia.ducts; depth not exceeding 1.5m	K522.1	m			
	16.1.06	1way 100mm dia.ducts; depth not exceeding 1.5m	K512.2	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 16	PAGE 2 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 16 - TRAFFIC SIGNAL CONTROL AND INTELLIGENT TRANSPORTATION SYSTEM</u>					
		<u>PART 16.1-TRAFFIC SIGNAL CONTROL SYSTEM (Cont'd)</u>					
		<u>PIPEWORK: SUPPORTS AND PROTECTION ANCILLARIES TO LAYING AND EXCAVATION Ducts (Cont'd)</u>					
16.1.07		2way 100mm dia.ducts; depth not exceeding 1.5m	K522.2	m			
16.1.08		4way 100mm dia.ducts; depth not exceeding 1.5m	K542.1	m			
16.1.09		6way 100mm dia.ducts; depth not exceeding 1.5m	K542.2	m			
16.1.10		8way 100mm dia.ducts; depth not exceeding 1.5m	K542.3	m			
		 Beds and Surrounds Imported material including warning tape					
16.1.11		Imported sand bed and surround to 1-way duct, 50mm dia	L511.1	m			
16.1.12		Imported sand bed and surround to 2-way duct, 50mm dia	L511.2	m			
16.1.13		Imported sand bed and surround to 1-way duct, 100mm dia	L511.3	m			
16.1.14		Imported sand bed and surround to 2-way duct, 100mm dia	L511.4	m			
16.1.15		Imported sand bed and surround to 4-way duct, 100mm dia	L511.5	m			
16.1.16		Imported sand bed and surround to 6-way duct, 100mm dia	L511.6	m			
16.1.17		Imported sand bed and surround to 8-way duct, 100mm dia	L511.7	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 16	PAGE 3 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 16 - TRAFFIC SIGNAL CONTROL AND INTELLIGENT TRANSPORTATION SYSTEM</u>					
		<u>PART 16.1-TRAFFIC SIGNAL CONTROL SYSTEM (Cont'd)</u>					
		<u>PIPEWORK: SUPPORTS AND PROTECTION ANCILLARIES TO LAYING AND EXCAVATION (Cont'd)</u>					
		Beds and Surrounds selected excavated material including warning tape					
16.1.18		Selected excavated material bed and surround to 1-way duct, 50mm dia	L521.1	m			
16.1.19		Selected excavated material bed and surround to 2-way duct, 50mm dia	L521.2	m			
16.1.20		Selected excavated material bed and surround to 1-way duct, 100mm dia	L521.3	m			
16.1.21		Selected excavated material bed and surround to 2-way duct, 100mm dia	L521.4	m			
16.1.22		Selected excavated material bed and surround to 4-way duct, 100mm dia	L521.5	m			
16.1.23		Selected excavated material bed and surround to 6-way duct, 100mm dia	L521.6	m			
16.1.24		Selected excavated material bed and surround to 8-way duct, 100mm dia	L521.7	m			
		Mass SRC concrete Grade C25/20 surround to ducts including formwork, polythene sheet and bituminous paints.					
16.1.25		Surround to 50mm dia 1 way duct	L541.1	m			
16.1.26		Surround to 50mm dia 1 way duct	L541.2	m			
16.1.27		Surround to 100mm dia 1 way duct	L541.3	m			
16.1.28		Surround to 100mm dia 2 way duct	L541.4	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 16	PAGE 4 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 16 - TRAFFIC SIGNAL CONTROL AND INTELLIGENT TRANSPORTATION SYSTEM</u>					
		<u>PART 16.1-TRAFFIC SIGNAL CONTROL SYSTEM (Cont'd)</u>					
		Mass SRC concrete Grade C25/20 surround to ducts including formwork, polythene sheet and bituminous paints.					
16.1.29		Surround to 100mm dia 4 way duct	L541.5	m			
16.1.30		Surround to 100mm dia 6 way duct	L541.6	m			
16.1.31		Surround to 100mm dia 8 way duct	L541.7	m			
		<u>16.1 - MISCELLANEOUS WORKS</u>					
		<u>Foundation</u>					
		Reinforced concrete foundation complete as detailed on drawings including excavation, backfilling, compaction, formwork, reinforcement, concrete, uPVC conduit, rebars, holding down bolts, protection of holding down bolts, nuts and washers with denso tape, rubber spacers, bitumen paint etc.					
16.1.32		Multi functional traffic pole with 2 mast arm (7 to 9m)	X900.1	nr			
16.1.33		Multi functional traffic pole with 2 mast arm (9 to 12m)	X900.2	nr			
16.1.34		Traffic signal pole with single mast arm (4 to 8m)	X900.3	nr			
16.1.35		Traffic signal pole with single mast arm (8 to 12m)	X900.4	nr			
16.1.36		Traffic signal pole; 3.2m high	X900.5	nr			
16.1.37		Free Right Turn signal pole	X900.6	nr			
16.1.38		Traffic Signal Controller (TSC)	X900.7	nr			
16.1.39		Changeover Switch	X900.8	nr			
16.1.40		Uninterrupted Power Supply (UPS)	X900.9	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 16	PAGE 5 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 16 - TRAFFIC SIGNAL CONTROL AND INTELLIGENT TRANSPORTATION SYSTEM</u>					
		<u>PART 16.1-TRAFFIC SIGNAL CONTROL SYSTEM (Cont'd)</u>					
		<u>MISCELLANEOUS WORK (Cont'd)</u>					
		<u>Foundation (Cont'd)</u>					
16.1.41		Field Equipment Cabinet Foundation □	X900.10	nr			
16.1.42		Surveillance Camera Pole Foundation	X900.11	nr			
16.1.43		Traffic Red Light Violation Camera Foundation	X900.12	nr			
		<u>Traffic Signal Pole with Mast arm</u>					
		Supply and Install 6.0m high traffic signal pole with mast arm assembly including clamp connection, base plate, etc. complete with all accessories as shown on the drawings and as per specifications.					
16.1.44		Traffic signal pole with 4m length mast arm	X900.13	nr			
16.1.45		Traffic signal pole with 5m length mast arm	X900.14	nr			
16.1.46		Traffic signal pole with 6m length mast arm	X900.15	nr			
16.1.47		Traffic signal pole with 7m length mast arm	X900.16	nr			
16.1.48		Traffic signal pole with 8m length mast arm	X900.17	nr			
16.1.49		Traffic signal pole with 9m length mast arm	X900.18	nr			
16.1.50		Traffic signal pole with 10m length mast arm	X900.19	nr			
16.1.51		Traffic signal pole with 11m length mast arm	X900.20	nr			
16.1.52		Traffic signal pole with 12m length mast arm	X900.21	nr			
16.1.53		Multi functional traffic signal pole with 2 mast arm 7m & 9m length.	X900.22	nr			
16.1.54		Multi functional traffic signal pole with 2 mast arm 8m & 9m length.	X900.23	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 16	PAGE 6 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 16 - TRAFFIC SIGNAL CONTROL AND INTELLIGENT TRANSPORTATION SYSTEM</u>					
		<u>PART 16.1-TRAFFIC SIGNAL CONTROL SYSTEM (Cont'd)</u>					
		<u>MISCELLANEOUS WORK (Cont'd)</u>					
		<u>Traffic Signal Pole with Mast arm (Cont'd)</u>					
	16.1.55	Multi functional traffic signal pole with 2 mast arm 8m & 10m length.	X900.24	nr			
	16.1.56	Multi functional traffic signal pole with 2 mast arm 7m & 12m length.	X900.25	nr			
	16.1.57	Multi functional traffic signal pole with 2 mast arm 11m & 12m length.	X900.26	nr			
		<u>Pedestrian Signal Pole</u>					
		Supply and Install 3.2m high pedestrian signal pole including base plate complete with all accessories as shown on the drawings and as per specifications.					
	16.1.58	Pedestrian signal pole; 3.2m high	X900.27	nr			
		<u>Traffic Signal Heads</u>					
		Supply and Install Traffic signal heads including bracket and lamps, cables up to termination box, complete with all accessories as shown on the drawings and as per specifications.					
		<u>Mounted on 3.2m high Traffic Signal Pole</u>					
	16.1.59	LED Animated 2 aspect 300mm Pedestrian signal head with countdown timer	X900.28	nr			
	16.1.60	Cyclist signal head	X900.29	nr			
	16.1.61	LED 1 aspect 300mm flasher Signal head	X900.30	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 16	PAGE 7 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 16 - TRAFFIC SIGNAL CONTROL AND INTELLIGENT TRANSPORTATION SYSTEM</u>					
		<u>PART 16.1-TRAFFIC SIGNAL CONTROL SYSTEM (Cont'd)</u>					
		<u>MISCELLANEOUS WORK (Cont'd)</u>					
		<u>Traffic Signal Heads (Cont'd)</u>					
		<u>Mounted on 6m high Traffic Signal Pole</u>					
16.1.62		LED Animated Pedestrian signal head with countdown timer	X900.31	nr			
16.1.63		LED Left turn 3 aspect 300mm vehicular signal heads	X900.32	nr			
16.1.64		LED 3 aspect 300mm vehicular signal head	X900.33	nr			
		<u>Mounted on Cantilever Mast Arm</u>					
16.1.65		LED 3 aspect 300mm vehicular signal head	X900.34	nr			
16.1.66		LED 3 aspect 300mm Left turn vehicular signal head	X900.35	nr			
		<u>Accessories</u>					
16.1.67		Pedestrian pushbutton,complete	X900.36	nr			
16.1.68		Signal head backplate	X900.37	nr			
		<u>Traffic Signal Controls</u>					
		Supply and Install Traffic signal controller, changeover switch, surveillance system cabinet,hardware,softwares, cables, complete with all associated works as shown on the drawings and as per specifications.					
16.1.69		Traffic Signal Controller (TSC) complete with Cabinet and Communications Module.	X900.38	nr			
16.1.70		Changeover Switch complete with Cabinet and Switchgear.	X900.39	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 16	PAGE 8 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 16 - TRAFFIC SIGNAL CONTROL AND INTELLIGENT TRANSPORTATION SYSTEM</u>					
		<u>PART 16.1-TRAFFIC SIGNAL CONTROL SYSTEM (Cont'd)</u>					
		<u>MISCELLANEOUS WORK (Cont'd)</u>					
	16.1.71	Field Equipment Cabinet	X900.40	nr			
	16.1.72	Traffic Engineering Works:Signal plan generation and testing in test controller	X900.41	Item			
	16.1.73	Uninterruptible Power Supply (UPS)	X900.42	nr			
		<u>Cables</u>					
		Supply and Install cables including joints, termination, etc. complete with all accessories as per specification.					
	16.1.74	Traffic Signal Cables (7 core)	X900.43	m			
	16.1.75	Traffic Signal Cables (14 core)	X900.44	m			
	16.1.76	Electrical cable joints	X900.45	nr			
	16.1.77	Communications and Audio Transmission (Telephone) Cable	X900.46	m			
	16.1.78	Groove cutting and sealing with nitoseal for loop detector cable all as detailed on Dwgs & specification (including installation of loop detector)	X900.47	nr			
	16.1.79	Supply and Install lead-in detector cable, all as detailed on drawings & specification.	X900.49	m			
		<u>Testing & Commissioning</u>					
	16.1.80	Testing & Commissioning as described in the Specifications.	X900.50	sum			
	16.1.81	Factory Acceptance Test for Traffic Signal Control System	X900.51	Item			
Carried to Part Summary						Dhs.	

PROJECT :-		BILL SECTION - D	PART - 16	PAGE 9 of 19
		DESCRIPTION	AMOUNT (AED)	
		<p><u>PART 16 - TRAFFIC SIGNAL CONTROL AND INTELLIGENT TRANSPORTATION SYSTEM</u></p> <p><u>PART 16.1-TRAFFIC SIGNAL CONTROL SYSTEM (Cont'd)</u></p> <p><u>PART SUMMARY</u></p> <p>D16.1 - Page 1</p> <p>D16.1 - Page 2</p> <p>D16.1 - Page 3</p> <p>D16.1 - Page 4</p> <p>D16.1 - Page 5</p> <p>D16.1 - Page 6</p> <p>D16.1 - Page 7</p> <p>D16.1 - Page 8</p> <p>TOTAL FOR PART 16.1 - TRAFFIC SIGNAL CONTROL SYSTEM</p>		
		CARRIED TO GRAND SUMMARY		Dhs.

PROJECT :-			BILL SECTION - D			PART - 16	PAGE 10 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 16 - TRAFFIC SIGNAL CONTROL AND INTELLIGENT TRANSPORTATION SYSTEM</u>					
		<u>PART 16.2-INTELLIGENT TRANSPORTATION SYSTEM (ITS)</u>					
		<u>Transportation Management System - General and Common Requirements</u>					
16.2.01		System Design Document (SDD) and Integration Staging Plan	X900.1	Item			
16.2.02		Factory Acceptance Test for Central Computer System	X900.2	Item			
16.2.03		Factory Acceptance Test for Digital Video Management System (DVMS)	X900.3	Item			
16.2.04		Factory Acceptance Test for Dynamic Message Sign (DMS) / Lane Control and Speed Control Signs (LCSC)	X900.4	Item			
16.2.05		Post Installation / Site Acceptance Testing and Commissioning (ITS Equipments)	X900.5	Item			
16.2.06		Independent Testing Supervision and Verification	X900.6	Item			
16.2.07		Reliability Testing	X900.7	Item			
16.2.08		Operation and Maintenance	X900.8	Item			
16.2.09		Operation and Maintenance Manual	X900.9	Item			
16.2.10		Management Training (ITS)	X900.10	Item			
16.2.11		Operator Training (ITS)	X900.11	Item			
16.2.12		Supervisor Training (ITS)	X900.12	Item			
16.2.13		Maintenance Training (ITS)	X900.13	Item			
16.2.14		Spare Parts and Tools - ITS systems	X900.14	Item			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 16	PAGE 11 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 16 - TRAFFIC SIGNAL CONTROL AND INTELLIGENT TRANSPORTATION SYSTEM</u></p> <p><u>PART 16.2 - INTELLIGENT TRANSPORTATION SYSTEM (ITS) (Cont'd)</u></p> <p><u>Traveller Information System</u></p> <p><u>Supply, install, configure and test Traveller Information System including hardware, software, equipment, cables, wiring and connection to power and communications complete with all associated works as shown on the drawings and as per specifications.</u></p>					
	16.2.15	Dynamic Message Sign Gantry Type A1 (6 lanes) with Cladding	X900.14	nr			
	16.2.16	Dynamic Message Sign Gantry, Type A2 (4 lanes) with Cladding	X900.15	nr			
	16.2.17	Dynamic Message Sign Gantry, Type A1 (6 Lanes) - Standard Truss Type	X900.16	nr			
	16.2.18	Dynamic Message Sign Gantry, Type A2 (4 Lanes) - Standard Truss Type	X900.17	nr			
	16.2.19	Dynamic Message Sign Gantry, Type A1 (6 Lanes) - Standard Monotube Type	X900.18	nr			
	16.2.20	Dynamic Message Sign Gantry, Type A2 (4 Lanes) - Standard Monotube Type	X900.19	nr			
	16.2.21	Lane Control and Speed Control Signs Gantry (LCSC) (6 lanes) with Cladding	X900.20	nr			
	16.2.22	Lane Control and Speed Control Signs Gantry (LCSC) (4 lanes) with Cladding	X900.21	nr			
	16.2.23	Lane Control and Speed Control Signs Gantry (LCSC) (6 lanes), Standard Truss Type	X900.22	nr			
	16.2.24	Lane Control and Speed Control Signs Gantry (LCSC) (4 lanes), Standard Truss Type	X900.23	nr			
	16.2.25	Lane Control and Speed Control Signs Gantry (LCSC) (6 lanes), Standard Monotube Type	X900.24	nr			
	16.2.26	Lane Control and Speed Control Signs Gantry (LCSC) (4 lanes), Standard Monotube Type	X900.25	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 16	PAGE 12 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 16 - TRAFFIC SIGNAL CONTROL AND INTELLIGENT TRANSPORTATION SYSTEM</u>					
		<u>PART 16.2 - INTELLIGENT TRANSPORTATION SYSTEM (ITS) (Cont'd)</u>					
		<u>Traveller Information System (Cont'd)</u>					
16.2.27		Dynamic Message Sign, Type A1 (9m x 3m)	X900.26	nr			
16.2.28		Dynamic Message Sign, Type A2 (6m x 2m)	X900.27	nr			
16.2.29		Dynamic Message Sign - Queue/Warning/Travel Time, Type A3 (2m x 2m)	X900.28	nr			
16.2.30		Travel Time Sign	X900.29	nr			
16.2.31		Lane Control and Speed Control Signs	X900.30	nr			
16.2.32		DMS/LCSC Server	X900.31	Item			
16.2.33		Portable Variable Message Sign (PVMS)	X900.32	nr			
		<u>Network Management System</u>					
		<u>Supply, install, configure and test Network Management System including hardware, software, equipment, cables, wiring and connection to power and communications complete with all associated works as shown on the drawings and as per specifications.</u>					
16.2.34		Network Management System	X900.33	Item			
		<u>Field Communication System</u>					
		<u>Supply, install, configure and test Field Communication System including hardware, software, equipment, cables, wiring and connection to power and communications complete with all associated works as shown on the drawings and as per specifications.</u>					
16.2.35		Access Field Switch(AFS)		nr			
16.2.36		Ethernet Fibre Transceiver		nr			
16.2.37		Wireless Ethernet Bridge		nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 16	PAGE 13 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 16 - TRAFFIC SIGNAL CONTROL AND INTELLIGENT TRANSPORTATION SYSTEM</u>					
		<u>PART 16.2 - INTELLIGENT TRANSPORTATION SYSTEM (ITS) (Cont'd)</u>					
		<u>Field Communication System (Cont'd)</u>					
16.2.38		96 S.M Fibre Optic Cable (24 Tubes)	X900.34	m			
16.2.39		48 S.M Fibre Optic Cable (12 Tubes)	X900.35	m			
16.2.40		24 S.M Fibre Optic Cable (6 Tubes)	X900.36	m			
16.2.41		12 S.M Fibre Optic Cable (3 Tubes)	X900.37	m			
16.2.42		6 S.M Fibre Optic Cable (1 Tube)	X900.38	m			
16.2.43		Fibre Optic Patch Panel (24-Ports)	X900.39	nr			
16.2.44		Fibre Optic Patch Panel (12-Ports)	X900.40	nr			
16.2.45		Fibre-Optic Patch Cords	X900.41	nr			
16.2.46		Outdoor Fiber Optic Splice Enclosure	X900.42	nr			
16.2.47		STP cat-6 Cable	X900.43	m			
16.2.48		STP Cat-6 Patch Panel	X900.44	nr			
		<u>Vehicle Detection System</u>					
		<u>Supply, install, configure and test Vehicle Detection System including hardware, software, equipment, cables, wiring and connection to power and communications complete with all associated works as shown on the drawings and as per specifications.</u>					
16.2.49		Vehicle Detection System	X900.45	Item			
16.2.50		Microwave/Radar Vehicle Detector on RVD Pole	X900.46	nr			
16.2.51		Microwave/Radar Vehicle Detector on CCTV Pole	X900.47	nr			
16.2.52		Microwave/Radar Vehicle Detector on DMS/LCSC Gantry	X900.48	nr			
16.2.53		Vehicle Detector Pole	X900.49	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 16	PAGE 14 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 16 - TRAFFIC SIGNAL CONTROL AND INTELLIGENT TRANSPORTATION SYSTEM</u></p> <p><u>PART 16.2 - INTELLIGENT TRANSPORTATION SYSTEM (ITS) (Cont'd)</u></p> <p><u>Video Surveillance System</u></p> <p><u>Supply, install, configure and test Video Surveillance System including hardware, software, equipment, cables, wiring and connection to power and communications, complete with all associated works as shown on the drawings and as per specifications.</u></p>					
16.2.54	Digital Video Management System (DVMS)		X900.50	Item			
16.2.55	Digital Video Storage System (DVSS)		X900.51	Item			
16.2.56	Sureillance Camera - Network PTZ Camera Assembly; Type-I (Dome)		X900.52	nr			
16.2.57	Sureillance Camera - Network PTZ Camera Assembly; Type-I (Dome) - Solar Powered		X900.53	nr			
16.2.58	Sureillance Camera - Network PTZ Camera Assembly; Type-II (PTZ with Camera Housing- Non Dome)		X900.54	nr			
16.2.59	Video surveillance Camera Power Cable		X900.55	m			
16.2.60	Camera Control Cable.		X900.56	m			
16.2.61	Camera Coaxial Cable		X900.57	m			
16.2.62	Camera Hybrid Cable.		X900.58	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 16	PAGE 15 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 16 - TRAFFIC SIGNAL CONTROL AND INTELLIGENT TRANSPORTATION SYSTEM</u></p> <p><u>PART 16.2 - INTELLIGENT TRANSPORTATION SYSTEM (ITS) (Cont'd)</u></p> <p><u>Overheight Vehicle Detector System</u></p> <p><u>Supply, install, configure and test Overheight Vehicle Detector System including hardware, software, equipment and cables complete with all associated works as shown on the drawings and as per specifications.</u></p>					
	16.2.63	Overheight Vehicle Detector System (OHVD)	X900.59	Item			
	16.2.64	Overheight Vehicle Detector Dynamic Message Sign - Type A4 (4m x 2m)	X900.60	nr			
	16.2.65	Overheight Vehicle Detector (OHVD) Sensor Pole	X900.61	nr			
	16.2.66	Overheight Vehicle Detector (OHVD) Maximum Height Limit Sign Pole	X900.62	nr			
	16.2.67	Overheight Vehicle Detector (OHVD) High Vehicle Exit Sign Pole	X900.63	nr			
	16.2.68	Overheight Vehicle Detector (OHVD) VMS Gantry	X900.64	nr			
		<p><u>Roadway Weather Information System (RWIS)</u></p> <p><u>Supply, install, configure and test Roadway Weather Information System including hardware, software, equipment and cables complete with all associated works as shown on the drawings and as per specifications.</u></p>					
	16.2.69	Roadway Weather Information System (RWIS)	X900.65	Item			
	16.2.70	RWIS Tower	X900.66	nr			
	16.2.71	<p><u>Solar Power System</u></p> <p><u>Supply, install, configure and test Solar Power System including hardware, software, equipment and cables complete with all associated works as shown on the drawings and as per specifications.</u></p>					
	16.2.72	Solar Power System	X900.67	Item			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 16	PAGE 16 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 16 - TRAFFIC SIGNAL CONTROL AND INTELLIGENT TRANSPORTATION SYSTEM</u>					
		<u>PART 16.2 - INTELLIGENT TRANSPORTATION SYSTEM (ITS) (Cont'd)</u>					
		<u>Civil and Electrical works</u>					
16.2.73		Dynamic Message Sign - Type A2 Gantry Foundation (both sides of the Gantry) (6-Lane)	X900.68	nr			
16.2.74		Dynamic Message Sign - Type A1 Gantry Foundation (both sides of the Gantry) (4-Lane)	X900.69	nr			
16.2.75		Dynamic Message Sign, Type A2 Gantry Foundation (Both sides of the Gantry) (6 Lanes) Standard Truss Type	X900.70	nr			
16.2.76		Dynamic Message Sign, Type A1 Gantry Foundation (Both sides of the Gantry) (4 Lanes) Standard Truss Type	X900.71	nr			
16.2.77		Dynamic Message Sign - Type A2 Gantry Foundation (both sides of the Gantry) (6-Lane) Standard Monotube Type	X900.72	nr			
16.2.78		Dynamic Message Sign - Type A1 Gantry Foundation (both sides of the Gantry) (4-Lane) Standard Monotube Type	X900.73	nr			
16.2.79		Lane Control and Speed Control Signs Gantry Foundation (both sides of the Gantry) - (6 lanes)	X900.74	nr			
16.2.80		Lane Control and Speed Control Signs Gantry Foundation - (both sides of the Gantry) - (4 lanes)	X900.75	nr			
16.2.81		Lane Control and Speed Control Signs Gantry Foundation (Both sides of the Gantry) (6 Lanes) Standard Truss Type	X900.76	nr			
16.2.82		Lane Control and Speed Control Signs Gantry Foundation (Both sides of the Gantry) (4 Lanes) Standard Truss Type	X900.77	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 16	PAGE 17 of 19
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 16 - TRAFFIC SIGNAL CONTROL AND INTELLIGENT TRANSPORTATION SYSTEM</u>					
		<u>PART 16.2 - INTELLIGENT TRANSPORTATION SYSTEM (ITS) (Cont'd)</u>					
		<u>Civil and Electrical works</u>					
16.2.83		Lane Control and Speed Control Signs Gantry Foundation (Both sides of the Gantry) (6 Lanes) Standard Monotube Type	X900.78	nr			
16.2.84		Lane Control and Speed Control Signs Gantry Foundation (Both sides of the Gantry) (4 Lanes) Standard Monotube Type	X900.79	nr			
16.2.85		Vehicle Detector Pole Foundation	X900.80	nr			
16.2.86		Overheight Vehicle Detector (OHVD) Sensor Pole Foundation	X900.81	nr			
16.2.87		Overheight Vehicle Detector (OHVD) Maximum Height Limit Sign Pole Foundation	X900.82	nr			
16.2.88		Overheight Vehicle Detector (OHVD) High Vehicle Exit Sign Pole Foundation	X900.83	nr			
16.2.89		OHVD VMS Gantry Foundation	X900.84	nr			
16.2.90		RWIS Tower Foundation	X900.85	nr			
16.2.91		Solar Panel Battery Cabinet Foundation	X900.86	nr			
16.2.92		ITS Electrical Cable	X900.87	m			
16.2.93		ITS Control Cable	X900.88	m			
Carried to Part Summary						Dhs.	

PROJECT :-		BILL SECTION - D	PART - 16	PAGE 18 of 19
		DESCRIPTION	AMOUNT (AED)	
		<p><u>PART 16 - TRAFFIC SIGNAL CONTROL AND INTELLIGENT TRANSPORTATION SYSTEM</u></p> <p><u>PART 16.2 - INTELLIGENT TRANSPORTATION SYSTEM (ITS) (Cont'd)</u></p> <p><u>PART SUMMARY</u></p> <p>D16.2 - Page 10</p> <p>D16.2 - Page 11</p> <p>D16.2 - Page 12</p> <p>D16.2 - Page 13</p> <p>D16.2 - Page 14</p> <p>D16.2 - Page 15</p> <p>D16.2 - Page 16</p> <p>D16.2 - Page 17</p>		
		<p>TOTAL FOR PART 16.2 - INTELLIGENT TRANSPORTATION SYSTEM</p> <p>CARRIED TO GRAND SUMMARY</p>		Dhs.

PROJECT :-		BILL SECTION - D	PART - 16	PAGE 19 of 19
		DESCRIPTION	AMOUNT (AED)	
		<p><u>PART 16 - TRAFFIC SIGNAL CONTROL AND INTELLIGENT TRANSPORTATION SYSTEM</u></p> <p><u>SUMMARY</u></p> <p>PART 16.1-TRAFFIC SIGNAL CONTROL SYSTEM Page 9</p> <p>PART 16.2 - INTELLIGENT TRANSPORTATION SYSTEM (ITS) Page 18</p>		
		<p>TOTAL FOR PART 16 - TRAFFIC SIGNAL CONTROL AND INTELLIGENT TRANSPORTATION SYSTEM</p> <p>CARRIED TO GRAND SUMMARY</p>		Dhs.

Part 17

Culverts

PROJECT :-			BILL SECTION - D			PART - 17	PAGE 1 of 11
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 17: CULVERT</u>					
		<u>17.1 - EARTHWORKS</u>					
		<u>Excavation</u>					
		Excavation for structures: material other than top soil, rock or artificial hard material for attaining the proposed sub grade, haul up to stockpiles on designated area to be determined by the Department.					
	17.1.01	Excavation for structures; max. depth: not exceeding 0.25m.	E321	m ³			
	17.1.02	Excavation for structures; depth 0.25 - 0.5m.	E322	m ³			
	17.1.03	Excavation for structures; depth 0.5 - 1m.	E323	m ³			
	17.1.04	Excavation for structures; depth 1 - 2m.	E324	m ³			
	17.1.05	Excavation for structures; depth 2 - 5m.	E325	m ³			
	17.1.06	Excavation for structures; depth 5 - 10m.	E326	m ³			
	17.1.07	Excavation for structures; depth 10 - 15m.	E327	m ³			
	17.1.08	Excavation for structures; depth exceeding 15m.	E328	m ³			
	17.1.09	Excavation for foundations rock; (maximum depth 5-10)	E336	m ³			
		<u>Excavation Ancillaries</u>					
	17.1.10	Preparation of excavated surface to receive permanent works.	E522	m ²			
	17.1.11	Allow for double handling of excavated material.	E542	m ³			
	17.1.12	Disposal of excavated Surplus material as directed by the Engineer	E532	m ³			
	17.1.13	Disposal of excavated material; rock	E533	m ³			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 17	PAGE 2 of 11
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 17: CULVERT (Cont'd)</u>					
		<u>17.1 - EARTHWORKS</u>					
		<u>Filling</u>					
	17.1.14	Filling to structure using suitable excavated materials.	E614	m ³			
	17.1.15	Filling to structure using suitable imported materials from borrow pit.	E615.1	m ³			
	17.1.16	Filling to structure using imported single size pervious structural backfill.	E615.2	m ³			
		<u>Filling Ancillaries</u>					
	17.1.17	Preparation of filled surfaces not to receive permanent work.	E712	m ²			
	17.1.18	Preparation of filled surfaces to receive permanent work.	E722	m ²			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 17	PAGE 3 of 11
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 17: CULVERT (Cont'd)</u>					
		<u>17.2 - INSITU CONCRETE</u>					
		<u>Provision of concrete designed mix</u>					
17.2.01		Concrete Class C20/20;	F132	m ³			
17.2.02		Concrete Class C25/20;	F142	m ³			
17.2.03		Concrete Class C35/20;	F162	m ³			
17.2.04		Concrete Class C40/20;	F182	m ³			
		<u>Placing of concrete</u>					
		Mass concrete					
17.2.05		Blinding concrete not exceeding 150mm thick.	F611	m ³			
17.2.06		Mass concrete above the base slab thickness exceeding 500mm.	F624	m ³			
17.2.07		Concrete for Side walks;thickness 150- 300mm	F622	m ³			
		Reinforced concrete including formwork, provision for drainage channels, stated surface features/chamfers, recess/dowels for any fittings as specified and shown on the drawings.					
17.2.08		Approach Slab; thickness 300 - 500mm	F723	m ³			
17.2.09		Base Slab; thickness exceeding 500mm.	F724	m ³			
17.2.10		Retaining walls; thickness exceeding 500mm.	F744	m ³			
17.2.11		Cast in-situ deck slab; 1200mm thick.	F734	m ³			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 17	PAGE 4 of 11
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 17: CULVERT (Cont'd)</u>					
		<u>17.3 - CONCRETE ANCILLARIES</u>					
		<u>Reinforcement</u>					
		Epoxy coated, deformed round bars					
17.3.01		Nominal diameter 12mm	G524.1	t			
17.3.02		Nominal diameter 16mm	G525.1	t			
17.3.03		Nominal diameter 20mm	G526.1	t			
17.3.04		Nominal diameter 25mm	G527.1	t			
17.3.05		Nominal diameter 28mm	G529.1	t			
17.3.06		Nominal diameter 32mm	G528.1	t			
		Non-epoxy coated, deformed round bars					
17.3.07		Nominal diameter 12mm	G524.2	t			
17.3.08		Nominal diameter 16mm	G525.2	t			
17.3.09		Nominal diameter 20mm	G526.2	t			
17.3.10		Nominal diameter 25mm	G527.2	t			
17.3.11		Nominal diameter 28mm	G529.2	t			
17.3.12		Nominal diameter 32mm	G528.2	t			
		<u>Joints</u>					
17.3.13		Sawed groove in approach slab; as per specification	G670	m			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 17	PAGE 5 of 11
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 17: CULVERT (Cont'd)</u>					
		<u>17.3 - CONCRETE ANCILLARIES (Cont'd)</u>					
		<u>Concrete Accessories</u>					
	17.3.14	Finishing of top surface of base slab and approach slab	G813.1	m ²			
	17.3.15	Finishing to top surface; retaining walls	G813.2	m ²			
	17.3.16	Finishing of mass concrete above the base slab	G813.3	m ²			
	17.3.17	Finishing to top surface; roof slab	G813.4	m ²			
	17.3.18	Finishing top of blinding to receive waterproofing membrane	G813.5	m ²			
	17.3.19	Coating system to exposed concrete surfaces including parapets	G823	m ²			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 17	PAGE 6 of 11
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 17: CULVERT (Cont'd)</u>					
		<u>17.4 - PAVINGS</u>					
		<u>Culvert base slab wearing surface</u>					
	17.4.01	Aggregate base course;depth 100-150mm	R194	m ²			
	17.4.02	Asphaltic concrete wearing course 50mm thick.	R352	m ²			
	17.4.03	Tack coat	R390	m ²			
		<u>Light duty pavement</u>					
	17.4.04	High containment precast concrete kerb as shown on dwg.	R711.1	m			
	17.4.05	Precast concrete block paving tiles; thickness 60mm on and including 50mm thick sand bed.	R750	m ²			
		<u>17.5 - MASONRY</u>					
		<u>Slope or surface protection</u>					
		<u>200mm thick slope protection including grouting, leveling, all complete as specified and shown on drawings</u>					
	17.5.01	To inclined or vertical surfaces (inclination not less than 15°)	U878.1	m ²			
	17.5.02	To horizontal surfaces or surface inclination less than 15°	U878.2	m ²			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 17	PAGE 7 of 11
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 17: CULVERT (Cont'd)</u>					
		<u>17.6 - WATERPROOFING</u>					
		Waterproofing system as specified and shown on the drawings including membrane dressed up around the openings, 15mm preformed joint filler and all fixings where necessary.					
17.6.01		Tanking self adhesive waterproofing membrane to buried concrete	W239	m ²			
17.6.02		2 coats of rubberized bitumen emulsion paint on concrete surface to receives mass concrete as shown on drawing.	W249	m ²			
17.6.03		2 layers of polythene; 150 microns thick	W299	m ²			
17.6.04		12mm thick bitumen impregnated protection board	W429	m ²			
17.6.05		25mm thick cement mortar screed below approach slab as shown on drawing	W449.1	m ²			
17.6.06		50mm thick cement mortar screed protection to waterproof membrane over blinding concrete as shown on drawing.	W449.2	m ²			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 17	PAGE 8 of 11
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 17: CULVERT (Cont'd)</u>					
		<u>MISCELLANEOUS WORK</u>					
		<u>17.7 - Fences</u>					
	17.7.01	Reinforced concrete single face barrier inside box culvert complete including reinforcement formwork; as shown on drawing.	X191.1	m			
	17.7.02	Reinforced concrete parapet / barrier culvert roof slab complete including reinforcement formwork; as shown on dwg.	X191.2	m			
	17.7.03	Aluminum parapets with Galvanized steel mesh infill by varley and Gulliver; as shown on dwg.	X191.3	m			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 17	PAGE 9 of 11
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 17: CULVERT (Cont'd)</u>					
		<u>MISCELLANEOUS WORK (Cont'd)</u>					
		<u>7.8 - Culvert Lighting</u>					
		Supply and Install conduits, cables, terminations and mounting accessories, lighting units to make a functional lighting in all respect, as shown on the drawings.					
17.8.01		Metallic junction box weatherproof Type I; recessed in concrete; (size 450 x 300 x 200mm)	X900.1	nr			
17.8.02		Metallic junction box weatherproof Type II; recessed in concrete; (size 150 x 150 x 100mm)	X900.2	nr			
17.8.03		PVC conduit, 20mm diameter	X900.3	m			
17.8.04		PVC conduit, 32mm diameter	X900.4	m			
17.8.05		PVC conduit, 50mm diameter	X900.5	m			
17.8.06		2.5mm ² , 2 core and earth, PVC cable	X900.6	m			
17.8.07		2.5mm ² , PVC wiring cable	X900.7	m			
17.8.08		4mm ² , PVC wiring cable	X900.8	m			
17.8.09		6mm ² , PVC wiring cable	X900.9	m			
17.8.10		10mm ² , PVC wiring cable	X900.10	m			
17.8.11		LV, 4C - 16mm ² XLPE Armored Cable	X900.11	m			
17.8.12		LV, 4C - 25mm ² XLPE Armored Cable	X900.12	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 17	PAGE 10 of 11
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 17: CULVERT (Cont'd)</u>					
		<u>MISCELLANEOUS WORK (Cont'd)</u>					
		<u>Culvert Lighting</u>					
		Supply and Install conduits, cables, terminations and mounting accessories, lighting units to make a functional lighting in all respect, as shown on the drawings.					
	17.8.13	60 watts LED culvert lighting fittings for asymmetrical light distribution	X900.13	nr			
	17.8.14	60 watts LED culvert lighting fittings for symmetrical light distribution	X900.14	nr			
	17.8.15	LED decorative bollard for culvert barriers.	X900.15	nr			
Carried to Part Summary						Dhs.	

PROJECT :-		BILL SECTION - D	PART - 17	PAGE 11 of 11
		ITEM DESCRIPTION	AMOUNT (AED)	
		<p><u>PART 17: CULVERT (Cont'd)</u></p> <p><u>PART SUMMARY</u></p> <p>D 17 - Page 1</p> <p>D 17 - Page 2</p> <p>D 17 - Page 3</p> <p>D 17 - Page 4</p> <p>D 17 - Page 5</p> <p>D 17 - Page 6</p> <p>D 17 - Page 7</p> <p>D 17 - Page 8</p> <p>D 17 - Page 9</p> <p>D 17 - Page 10</p>		
		<p>TOTAL FOR PART 17: CULVERTS</p> <p>CARRIED TO SUMMARY</p>		Dhs.

Part 18

Building Works

PROJECT :-			BILL SECTION - D			PART - 18	PAGE 1 of 14
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 18 - BUILDING WORKS</u>					
		<u>PART 18.1 - CIVIL WORKS</u>					
		<u>Excavation for Foundations</u>					
	18.1.01	Excavation for floor slab; depth not exceeding 0.25m	E321	m ³			
	18.1.02	Excavation of grade beam size 250x500mm; depth 0.5 - 1m	E323	m ³			
	18.1.03	Excavation for foundations; depth 1 - 2m	E324	m ³			
	18.1.04	Excavation for foundations; depth 2 - 5m	E325	m ³			
	18.1.05	Excavation for cable trench	E324	m ³			
		<u>Excavation Ancillaries</u>					
	18.1.06	Preparation of excavated surfaces to receive permanent works.	E522	m ²			
	18.1.07	Disposal of excavated Surplus material as directed by the Engineer	E532	m ³			
	18.1.08	Disposal of surplus excavated material	E532	m ³			
	18.1.09	Allow for double handling of excavated material.	E542	m ³			
		<u>Filling</u>					
	18.1.10	Filling to structure using suitable excavated material	E614	m ³			
	18.1.11	Filling to structure using suitable imported materials from borrow pit.	E615.1	m ³			
	18.1.12	Filling to structure using imported single size pervious structural backfill.	E615.2	m ³			
		<u>Filling Ancillaries</u>					
	18.1.13	Preparation of filled surfaces not to receive permanent work.	E712	m ²			
	18.1.14	Preparation of filled surfaces to receive permanent work.	E722	m ²			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 18	PAGE 2 of 14
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 18 - BUILDING WORKS (Cont'd)</u>					
		<u>PART 18.1 - CIVIL WORKS (Cont'd)</u>					
		<u>INSITU CONCRETE</u>					
		<u>Provision of concrete - Designed concrete</u>					
18.1.15		Concrete Grade C20/20;	F132	m ³			
18.1.16		Concrete Grade C35/20;	F162	m ³			
18.1.17		Concrete Grade C40/20;	F182	m ³			
		<u>Placing of Concrete</u>					
18.1.18		Blinding concrete, class C20/20, not exceeding 150mm thick	F611	m ³			
		<u>Placing Concrete including formwork.</u>					
18.1.19		Floor Slab	F721	m ³			
18.1.20		Footings	F722	m ³			
18.1.21		Roof Slab	F732	m ³			
18.1.22		Parapet Walls	F743	m ³			
18.1.23		Columns	F753	m ³			
18.1.24		Beams (Ground)	F763	m ³			
18.1.25		Beams (Roof)	F762	m ³			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 18	PAGE 3 of 14
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 18 - BUILDING WORKS (Cont'd)</u>					
		<u>PART 18.1 - CIVIL WORKS (Cont'd)</u>					
		<u>CONCRETE ANCILLARIES</u>					
		<u>Reinforcement</u>					
		Epoxy coated, Deformed Round bars.					
18.1.26		Nominal diameter - 10mm	G523.1	t			
18.1.27		Nominal diameter - 12mm	G524.1	t			
18.1.28		Nominal diameter - 16mm	G525.1	t			
18.1.29		Nominal diameter - 18mm	G529.1	t			
18.1.30		Nominal diameter - 20mm	G526.1	t			
		Non-epoxy coated, Deformed Round bars.					
18.1.31		Nominal diameter - 10mm	G523.2	t			
18.1.32		Nominal diameter - 12mm	G524.2	t			
18.1.33		Nominal diameter - 16mm	G525.2	t			
18.1.34		Nominal diameter - 18mm	G529.2	t			
18.1.35		Nominal diameter - 20mm	G526.2	t			
		<u>Joints</u>					
18.1.36		Joint sealant; as specified in drawings	G670	m			
18.1.37		Filler board; as specified in drawings	G622	m ²			
		<u>Concrete Accessories</u>					
		Finishing of Top Surfaces					
18.1.38		Base Slab	G 812.1	m ²			
18.1.39		Roof Slab	G 812.2	m ²			
18.1.40		Roof slab soffit	G 812.3	m ²			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 18	PAGE 4 of 14
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 18 - BUILDING WORKS (Cont'd)</u>					
		<u>PART 18.1 - CIVIL WORKS (Cont'd)</u>					
		<u>BRICKWORK, BLOCKWORK AND MASONRY</u>					
		Concrete masonry units bedded in mortar flush pointed including reinforcement or reinforcing mesh and anchoring where necessary as per specification and drawing					
18.1.41	200mm thick solid blockwork		U521	m ²			
		<u>PAINTING</u>					
		In accordance with specifications and finishing schedules					
18.1.42	Ceiling		V631	m ²			
18.1.43	Walls - Interior;		V669.1	m ²			
		<u>WATERPROOFING</u>					
		Water proofing to vertical or horizontal surfaces as specified and shown on the drawings including membrane dressed up around the openings, and all fixings where necessary.					
18.1.44	Waterproofing to base and floor slab		W241	m ²			
18.1.45	Waterproofing roof slab		W343	m ²			
18.1.46	Waterproofing to grade beams, column and walls		W243	m ²			
		<u>Protective Layers</u>					
		Polythene sheet 1000 gauge					
18.1.47	Base slab		W421.1	m ²			
18.1.48	Ground beam		W421.2	m ²			
18.1.49	Footings		W421.3	m ²			
18.1.50	Roof slab		W421.4	m ²			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 18	PAGE 5 of 14
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 18 - BUILDING WORKS (Cont'd)</u>					
		<u>PART 18.1 - CIVIL WORKS (Cont'd)</u>					
		<u>SIMPLE BUILDING WORKS INCIDENTAL TO CIVIL ENGINEERING WORKS</u>					
		<u>Surface Finishes</u>					
		Flooring					
18.1.51	Floor tiles; type -----		Z421.1	m ²			
		Roofing					
18.1.52	300x300x30mm precast concrete slab on roof		Z421.2	m ²			
		Cement plaster to walls structure / blockwork including preparation of concrete surfaces, metal plaster stop, and angle bead exponent or equal where necessary as per the specification and drawings.					
18.1.53	Internal walls		Z413.1	m ²			
		Cement plaster 20mm thick textured pigmented mineral based decorative plaster with an uneven vary finish to match the appearance of traditional Arabic building					
18.1.54	External walls		Z413.2	m ²			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 18	PAGE 6 of 14
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 18 - BUILDING WORKS (Cont'd)</u>					
		<u>PART 18.1 - CIVIL WORKS (Cont'd)</u>					
		<u>SIMPLE BUILDING WORKS INCIDENTAL TO CIVIL ENGINEERING WORKS (Cont'd)</u>					
		<u>Windows, doors and glazing</u>					
		Doors and windows complete, in accordance with specification and drawings including frames, glazing, ironmongery etc.					
	18.1.55	Aluminum window size 650 x 400mm	Z390.1	nr			
	18.1.56	Aluminum door size 1200 x 2800mm	Z390.2	nr			
	18.1.57	Aluminum door size 1000 x 2200mm	Z390.3	nr			
Carried to Part Summary						Dhs	

PROJECT :-		BILL SECTION - D	PART - 18	PAGE 7 of 14
		ITEM DESCRIPTION	AMOUNT (AED)	
		<p><u>PART 18 - BUILDING WORKS (Cont'd)</u></p> <p><u>PART 18.1 - CIVIL WORKS - PART SUMMARY</u></p> <p>D 18.1 - Page 1</p> <p>D 18.1 - Page 2</p> <p>D 18.1 - Page 3</p> <p>D 18.1 - Page 4</p> <p>D 18.1 - Page 5</p> <p>D 18.1 - Page 6</p>		
		<p>TOTAL FOR PART 18.1 - CIVIL WORKS</p> <p>CARRIED TO COLLECTION SHEET</p>		Dhs.

PROJECT :-			BILL SECTION - D			PART - 18	PAGE 8 of 14
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 18 - BUILDING WORKS (Cont'd)</u>					
		<u>PART 18.2 - MECHANICAL WORKS</u>					
		Supply, install, testing and commissioning of the following items, including fittings, tools, plant, complete all as generally indicated on drawings and as specified in specifications.					
		Storage Tanks					
	18.2.01	Water storage tank, GRP, ----- capacity, including all accessories complete	Z524.1	nr			
		Dosing Unit					
	18.2.02	Dosing pumps (1 duty, 1 stand by)	Z529	nr			
	18.2.03	Fill station, including quick coupling, supports, complete.	Z524.2	nr			
		Safety Equipment					
	18.2.04	Eye wash and safety shower, water connection, shower tray, drain connection, complete	Z520.1	nr			
		Pipes & Specials					
		Supply & install, test and commissioning of pipework, including pipe, fittings, connections, joints, fabricated and concrete pipe supports, complete all as generally indicated on drawings and as specified.					
	18.2.05	Interconnecting pipework 25mm dia uPVC fittings, joints, valves, support, complete	Z511	m			
		<u>Air conditioning</u>					
	18.2.06	Split type air conditioning unit, including condensing unit, fan coil unit, refrigerant piping, condensate piping, electrical connections and controls Capacity 3.0 T.	Z520.2	nr			
		<u>Fire protection</u>					
	18.2.07	Supply and install 6kg CO ² fire extinguisher	Z520.3	nr			
Carried to Part Summary						Dhs	

PROJECT :-		BILL SECTION - D	PART - 18	PAGE 9 of 14
		ITEM DESCRIPTION	AMOUNT (AED)	
		<p><u>PART 18 - BUILDING WORKS (Cont'd)</u></p> <p><u>PART 18.2 - MECHANICAL WORKS - PART SUMMARY</u></p> <p>D 18.2 - Page 8</p>		
		<p>TOTAL FOR PART 18.2 - MECHANICAL WORKS</p> <p>CARRIED TO COLLECTION SHEET</p>		Dhs.

PROJECT :-			BILL SECTION - D			PART - 18	PAGE 10 of 14
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		PART 18 - BUILDING WORKS (Cont'd)					
		PART 18.3 - ELECTRICAL WORKS					
		Electrical Cable Works					
		Supply, install and connect complete electrical installations required in accordance with the drawings and specifications including all wiring, cables, conduit, ducting, grounding, all associated accessories and incidental work complete as specified.					
18.3.01		4C x 16mm ² Cu XLPE/PVC/SWA/PVC	Z711.1	m			
18.3.02		4C x 10mm ² Cu XLPE/PVC/SWA/PVC	Z711.2	m			
18.3.03		3C x 4mm ² Cu XLPE/PVC/SWA/PVC	Z711.3	m			
18.3.04		2C x 4mm ² Cu XLPE/PVC/SWA/PVC	Z711.4	m			
		Earth Continuity Cables					
18.3.05		1C x 16mm ² Cu PVC ECC	Z711.5	m			
18.3.06		1C x 10mm ² Cu PVC ECC	Z711.6	m			
18.3.07		1C x 4mm ² Cu PVC ECC	Z711.7	m			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 18	PAGE 11 of 14
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 18 - BUILDING WORKS (Cont'd)</u>					
		<u>PART 18.3 - ELECTRICAL WORKS (Cont'd)</u>					
		Cable Trays					
		Supply and install GRP cable tray, supports, including bends, reducers, tees, cross, couplers, covers, and other accessories to complete the cable tray installation as shown on the drawing.					
18.3.08		300mm wide x 100mm deep.	Z750	m			
		Lighting and Small Power					
18.3.09		DB for Lighting and Small Power	Z772.1	nr			
18.3.10		Lighting and Small Power system to include cable works, lighting fixtures, socket outlets, switches, etc necessary to successful completion.	Z772.2	sum			
		Grounding System					
18.3.11		Grounding system including earth pits, earth conductors, accessories to complete an earthing system for the Building	Z760.1	sum			
18.3.12		Grounding and bonding of all mechanical equipment as required	Z760.2	sum			
Carried to Part Summary						Dhs	

PROJECT :-			BILL SECTION - D			PART - 18	PAGE 12 of 14
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 18 - BUILDING WORKS (Cont'd)</u>					
		<u>PART 18.3 - ELECTRICAL WORKS (Cont'd)</u>					
		Lightning Protection System					
18.3.13		Lightning protection system including earth pits, air terminals, grounding rods, conductors, accessories, etc.	Z780	sum			
		Telephone System					
18.3.14		Etisalat-approved Cat. 6 Cable with conduit	Z772	m			
18.3.15		Etisalat-approved RJ 45 data outlet with telephone set	Z784	nr			
		Fire Alarm System					
18.3.16		Addressable Manual pull stations	Z781.1	nr			
18.3.17		Intelligent, addressable optical smoke detectors	Z781.2	nr			
18.3.18		Fire alarm siren	Z781.3	nr			
Carried to Part Summary						Dhs.	

PROJECT :-		BILL SECTION - D	PART - 18	PAGE 13 of 14
		ITEM DESCRIPTION	AMOUNT (AED)	
		<p><u>PART 18 - BUILDING WORKS (Cont'd)</u></p> <p><u>PART 18.3 - ELECTRICAL WORKS - PART SUMMARY</u></p> <p>D 18.3 - Page 10</p> <p>D 18.3 - Page 11</p> <p>D 18.3 - Page 12</p>		
		<p>TOTAL FOR PART 18.3 - ELECTRICAL WORKS</p> <p>CARRIED TO COLLECTION SHEET</p>		Dhs.

PROJECT :-		BILL SECTION - D	PART - 18	PAGE 14 of 14
		DESCRIPTION	AMOUNT (AED)	
		<u>PART 18 - BUILDING WORKS (Cont'd)</u>		
		<u>SUMMARY</u>		
		PART 18.1 - CIVIL WORKS	Page 7	
		PART 18.2 - MECHANICAL WORKS	Page 9	
		PART 18.3 - ELECTRICAL WORKS	Page 13	
		TOTAL FOR PART 18 - BUILDING WORKS		
		CARRIED TO GRAND SUMMARY	Dhs.	

Part 19

Gas Network

PROJECT :-			BILL SECTION - D			PART - 19	PAGE 1 of 4
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 19 - GAS NETWORKS</u>					
		<u>19.1 - Removal of Protection Slab</u>					
19.1.01		Removal of temporary concrete protection slab for existing Gas pipe lines	D900	nr			
		<u>19.2 - PRECAST CONCRETE</u>					
		Precast reinforced concrete protection slabs placed over existing pipe lines as detailed on drawing including excavation, backfilling 50mm polystyrene board and bitumen paint etc. complete.					
19.2.01		Concrete protection slab for existing Gas pipes; X x Y x Z mm thick.	H511.1	nr			
		<u>19.3 - PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES</u>					
		<u>Ducts</u>					
		Supply, lay & joint GRP duct in trench including excavation, backfilling, endcap, disposal and all related work complete.					
19.3.01		300mm dia. 1 way GRP contingency duct; depth not exceeding 1.5m	K512.1	m			
19.3.02		500mm dia. 1 way GRP contingency duct; depth not exceeding 1.5m	K512.2	m			
19.3.03		600mm dia. 1 way GRP contingency duct; depth not exceeding 1.5m	K512.3	m			
19.3.04		1000mm dia. 1 way GRP contingency duct; depth 1.5-2.0m	K513	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 19	PAGE 2 of 4
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 19 - GAS NETWORK (Cont'd)</u>					
		<u>19.3 - PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES (Cont'd)</u>					
		<u>Pipe Sleeves</u>					
		Supply, lay and joint GRP / PVC pipe sleeves, crossing through Tunnel Structure, complete as per drawing and specification.					
	19.3.05	Sleeve 300mm Diameter for Gas line Crossing through the Tunnel Roof Structure	K511.1	m			
	19.3.06	Sleeve 500mm Diameter for Gas line Crossing through the Tunnel Roof Structure	K511.2	m			
	19.3.07	Sleeve 600mm Diameter for Gas line Crossing through the Tunnel Roof Structure	K511.3	m			
	19.3.08	Sleeve 1000mm Diameter for Gas line Crossing through the Tunnel Roof Structure	K511.4	m			
		<u>19.4 - PIPEWORK - SUPPORTS & PROTECTION ANCILLARIES TO LAYING AND EXCAVATION</u>					
		<u>Surrounds</u>					
		Mass SRC Concrete grade C25/20 surround to ducts including formwork.					
	19.4.01	For 300mm dia. 1 way GRP duct	L541	m			
	19.4.02	For 500mm dia. 1 way GRP duct	L542	m			
	19.4.03	For 600mm dia. 1 way GRP duct	L543.1	m			
	19.4.04	For 1000mm dia. 1 way GRP duct	L543.2	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 19	PAGE 3 of 4
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 19 - GAS NETWORK (Cont'd)</u>					
		19.5 - Gas Pipeline Relocation Works					
	19.5.01	Total Amount Carried Forward for Gas Pipe line Relocation Works as per Drawings, Specifications and a Separate Bill of Quantities Prepared by the Designated Consultant and Obtained by the Contractor.		sum			
		<u>Service Authority Works</u>					
		<u>Note: The Provisional Sums given in the Bill of Quantities may be used in whole or in part, or not at all, on the instruction of the Engineer</u>					
	19.5.02	Provisional sum of Dhs. ----- for Gas line diversions.	A420	sum			
	19.5.03	Percentage for Contractor's Overhead and Profit for Item 19.5.02		%			
Carried to Part Summary						Dhs.	

PROJECT :-		BILL SECTION - D	PART - 19	PAGE 4 of 4
		ITEM DESCRIPTION	AMOUNT (AED)	
		<p><u>PART 19 - GAS NETWORK (Cont'd)</u></p> <p><u>PART SUMMARY</u></p> <p>D19 - Page 1</p> <p>D19 - Page 2</p> <p>D19 - Page 3</p>		
		<p>TOTAL FOR PART 19 - GAS NETWORK CARRIED TO GRAND SUMMARY</p>		Dhs.

Part 20

District Cooling Network

PROJECT :-			BILL SECTION - D			PART - 20	PAGE 1 of 4
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 20 - DISTRICT COOLING NETWORK</u>					
		<u>20.1 - Removal of Protection Slab</u>					
	20.1.01	Removal of temporary concrete protection slab for existing District cooling network	D900	nr			
		<u>20.2 - PRECAST CONCRETE</u>					
		Precast reinforced concrete protection slabs placed over existing pipe lines as detailed on drawing including excavation, backfilling 50mm polystyrene board and bitumen paint etc. complete.					
	20.2.01	Concrete slab protection for existing District cooling; size X x Y x Z mm thick.	H511	nr			
		<u>20.3 - PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES</u>					
		<u>Ducts</u>					
		Supply, lay & joint PVC duct in trench including excavation, backfilling, endcap, disposal and all related work complete.					
	20.3.01	300mm dia. 1 way PVC duct	K512	m			
	20.3.02	400mm dia. 1 way PVC duct	K513.1	m			
	20.3.03	500mm dia. 1 way PVC duct	K513.2	m			
	20.3.04	600mm dia. 1 way PVC duct	K513.3	m			
	20.3.05	800mm dia. 1 way PVC duct	K513.4	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 20	PAGE 2 of 4
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 20 - DISTRICT COOLING NETWORK (Cont'd)</u>					
		<u>20.3 - PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES (Cont'd)</u>					
		<u>Pipe Sleeves</u>					
		Supply, lay and joint GRP / PVC pipe sleeves, crossing through Tunnel Structure, complete as per drawing and specification.					
	20.3.06	Sleeve 300mm Diameter for District cooling pipe crossing through the Tunnel Roof Structure	K511.1	m			
	20.3.07	Sleeve 400mm Diameter for District cooling pipe crossing through the Tunnel Roof Structure	K511.2	m			
	20.3.08	Sleeve 500mm Diameter for District cooling pipe crossing through the Tunnel Roof Structure	K511.3	m			
	20.3.09	Sleeve 600mm Diameter for District cooling pipe crossing through the Tunnel Roof Structure	K511.4	m			
	20.3.10	Sleeve 800mm Diameter for District cooling pipe crossing through the Tunnel Roof Structure	K511.5	m			
		<u>20.4 - PIPEWORK - SUPPORTS & PROTECTION ANCILLARIES TO LAYING AND EXCAVATION</u>					
		<u>Surrounds</u>					
		Mass SRC Concrete grade C25/20 surround to ducts including formwork.					
	20.4.01	For 300mm dia. 1 way PVC duct	L541	m			
	20.4.02	For 400mm dia. 1 way PVC duct	L542	m			
	20.4.03	For 500mm dia. 1 way PVC duct	L543.1	m			
	20.4.04	For 600mm dia. 1 way PVC duct	L543.2	m			
	20.4.05	For 800mm dia. 1 way PVC duct	L543.3	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 20	PAGE 3 of 4
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 20 - DISTRICT COOLING NETWORK (Cont'd)</u>					
		20.5 - District Cooling Relocation Works					
	20.5.01	Total Amount Carried Forward for District Cooling Relocation Works as per Drawings, Specifications and a Separate Bill of Quantities Prepared by the Designated Consultant and Obtained by the Contractor.		sum			
Carried to Part Summary						Dhs.	

PROJECT :-		BILL SECTION - D	PART - 20	PAGE 4 of 4
		ITEM DESCRIPTION	AMOUNT (AED)	
		<p><u>PART 20 - DISTRICT COOLING NETWORK (Cont'd)</u></p> <p><u>PART SUMMARY</u></p> <p>D20 : Page 1</p> <p>D20 : Page 2</p> <p>D20 : Page 3</p>		
		<p>TOTAL FOR PART 20 - DISTRICT COOLING NETWORKS CARRIED TO GRAND SUMMARY</p>		Dhs.

Part 21

Non Disruptive Road Crossing Works

PROJECT :-			BILL SECTION - D			PART - 21	PAGE 1 of 3
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 21 - NON DISRUPTIVE ROAD CROSSING WORKS</u></p> <p><u>PIPE WORK - SUPPORTS AND PROTECTION ANCILLARIES TO LAYING AND EXCAVATION</u></p> <p>Non disruptive special pipe laying using Thrust Boring methods for installing sleeves. The rate shall include for all pipes, concrete surrounded caissons with sufficient clearance to the inner ducts, service diversions, control and diversion of the existing services, control and diversion of existing flows in pipes by blocking, plugging or over pumping including provision and removal of Access and Receiving pits</p>					
21.01		Supply and install pipe; Nominal bore not exceeding 200mm	L221	m			
21.02		Supply and install pipe; Nominal bore 200 - 300mm	L222	m			
21.03		Supply and install pipe; Nominal bore 300 - 600mm	L223	m			
21.04		Supply and install pipe; Nominal bore 600 - 900mm	L224	m			
21.05		Supply and install pipe; Nominal bore 900 -1200mm	L225	m			
21.06		Supply and install pipe; Nominal bore 1200-1500mm	L226	m			
21.07		Supply and install pipe; Nominal bore 1500-1800mm	L227	m			
21.08		Supply and install pipe; Nominal bore exceeding 1800mm	L228	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 21	PAGE 2 of 3
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 21 - NON DISRUPTIVE ROAD CROSSING WORKS (Cont'd)</u></p> <p><u>PIPE WORK - SUPPORTS AND PROTECTION ANCILLARIES TO LAYING AND EXCAVATION (Cont'd)</u></p> <p>Non disruptive special pipe laying using Micro Tunneling methods for installing sleeves. The rate shall include for all pipes, concrete surrounded caissons with sufficient clearance to the inner ducts, service diversions, control and diversion of the existing services, control and diversion of existing flows in pipes by blocking, plugging or over pumping including provision and removal of Access and Receiving pits</p>					
	21.09	Supply and install pipe; Nominal bore not exceeding 200mm	L291	m			
	21.10	Supply and install pipe; Nominal bore 200 - 300mm	L292	m			
	21.11	Supply and install pipe; Nominal bore 300 - 600mm	L293	m			
	21.12	Supply and install pipe; Nominal bore 600 - 900mm	L294	m			
	21.13	Supply and install pipe; Nominal bore 900 -1200mm	L295	m			
	21.14	Supply and install pipe; Nominal bore 1200 - 1500mm	L296	m			
	21.15	Supply and install pipe; Nominal bore 1500 - 1800mm	L297	m			
	21.16	Supply and install pipe; Nominal bore exceeding 1800mm	L298	m			
Carried to Part Summary						Dhs.	

PROJECT :-		BILL SECTION - D	PART - 21	PAGE 3 of 3
		ITEM DESCRIPTION	AMOUNT (AED)	
		<p><u>PART 21 - NON DISRUPTIVE ROAD CROSSING WORKS (Cont'd)</u></p> <p><u>PART SUMMARY</u></p> <p>D21 : Page 1</p> <p>D21 : Page 2</p>		
		<p>TOTAL FOR PART 21 - NON DISRUPTIVE ROAD CROSSING WORKS</p>		
		CARRIED TO GRAND SUMMARY		Dhs.

Part 22

Landscape Works

PROJECT :-			BILL SECTION - D			PART - 22	PAGE 1 of 25
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 22- LANDSCAPING WORKS</u>					
		22.1 - HARD LANDSCAPING WORKS					
		<u>Sub-bases, flexible road bases and surfacing</u>					
	22.1.01	Granular sub base; 30% CBR; depth 150mm	R194	m ²			
	22.1.02	Wet mix macadam road base; depth 150mm, CBR > 80%	R294	m ²			
		<u>Concrete Kerbs, complete including earthworks,</u>					
	22.1.03	Precast concrete road kerb (bull nose) 915x305x150mm; colour dark brown, factory finish; along service roads	R711.1	m			
	22.1.04	Precast concrete heel kerb 600x305x150mm; colour dark brown, factory finish; along buffer strip between road and parking	R711.2	m			
	22.1.05	Precast concrete road hump, size 200x200x200mm, colour charcoal; at pedestrian crossover detail	R711.3	m			
	22.1.06	Precast concrete flat kerb, half battered, size 200x200x127mm, colour dark brown; factory finish, along buffer strip between road and parking	R711.4	m			
	22.1.07	Precast concrete edging heel kerb, size 600x200x75mm, colour dark brown, factory finish; along jogging track	R711.5	m			
		<u>Supply and install granite/limestone paving stones including concrete base with mortar bedding, as per drawings and specifications (Subbase measured seperately)</u>					
	22.1.08	Granite stone, size 500x500x35mm, flamed finish, colour gray sardo, for infill at interface of plot edge	R750.1	m ²			
	22.1.09	Granite stone, size 600x600x35mm, flamed finish, colour gray sardo, at secondary plaza area	R 750.2	m ²			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 22	PAGE 2 of 25
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 22- LANDSCAPING WORKS (Cont'd)</u>					
		<u>22.1 - HARD LANDSCAPING WORKS (Cont'd)</u>					
		<u>Supply and install granite/limestone paving stones including concrete base with mortar bedding, as per drawings and specifications (Subbase measured seperately)</u>					
	22.1.10	Granite stone, size 200x500x60mm, polished finish, colour black absolute, as border for accent piece for typical boulevard paving	R 750.3	m ²			
	22.1.11	Granite stone, size 200x900x35mm, polished finish, colour black absolute, as accent connectors	R 750.4	m ²			
	22.1.12	Granite stone, size 500x500x35mm, flamed finish, colour black absolute, as accent infill	R 750.5	m ²			
	22.1.13	Granite stone, size 500x500x35mm, flamed finish, colour ruby red, water feature at primary plaza	R 750.6	m ²			
	22.1.14	Granite stone, size 250x250x35mm, flamed finish, colour black absolute	R 750.7	m ²			
	22.1.15	Granite stone, size 250x250x35mm, polished finish, colour black absolute	R 750.8	m ²			
	22.1.16	Granite stone, size 900x300x35mm, flamed finish, red multi colour for infill between accents upto planting	R 750.9	m ²			
	22.1.17	Granite stone, size 500x500x60mm, flamed finish, red multi colour for infill in line with planting strips	R 750.10	m ²			
	22.1.18	Limestone paving, random size of 100x100mm, 100x200mm and 200x200mm, solnhofen natural colour, honed finish at tertiary (transit) plaza	R 750.11	m ²			
	22.1.19	Brazilian quartzite stone paving, greyish green colour, honed/natural finish at secondary plaza	R 750.12	m ²			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 22	PAGE 3 of 25
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 22- LANDSCAPING WORKS (Cont'd)</u>					
		<u>22.1 - HARD LANDSCAPING WORKS (Cont'd)</u>					
		<u>Light duty pavement</u>					
		<u>Supply and install precast concrete block paving tiles including 50 mm thick sand bedding, as per drawings and specifications (Subbase and wetmix measured seperately)</u>					
	22.1.20	Precast concrete block paving tiles; 200x200x60mm; tan clour with shot blast finish	R750.13	m ²			
		<u>Road pavement</u>					
		<u>Supply and install precast concrete block paving tiles/Limestone cobbles including 50 mm thick sand bedding, as per drawings and specifications (Subbase and wetmix measured seperately)</u>					
	22.1.21	Precast concrete block paving tiles; 100x200x80mm; charcoal grey colour, factory finish	R750.14	m ²			
	22.1.22	Precast concrete block paving tiles; 160x120x80mm; tan colour, shot blast with tumbled edges for service road	R750.15	m ²			
	22.1.23	Precast concrete block paving tiles; 160x160x80mm; median tan colour, shot blast with tumbled edges for service road	R750.16	m ²			
	22.1.24	Precast concrete block paving tiles; 160x240x80mm; dark tan colour, shot blast with tumbled edges for service road	R750.17	m ²			
	22.1.25	Limestone cobbles at buffer area infill and banks across road; size 100x100x100mm - colour kota green, honed finsih	R750.18	m ²			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 22	PAGE 4 of 25
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 22- LANDSCAPING WORKS (Cont'd)</u>					
		<u>22.1 - HARD LANDSCAPING WORKS (Cont'd)</u>					
		<u>Jogging Track</u>					
	22.1.26	Aggregate Road base; depth 150mm	R194	m ²			
	22.1.27	Subkha;CBR 30% @ 95% MDD; depth 200mm	R195	m ²			
	22.1.28	Bituminous Asphaltic concrete base course depth 40mm with 18mm down aggregate	R312	m ²			
	22.1.29	Bituminous Asphaltic concrete wearing course depth 25mm with 10mm down aggregate	R351	m ²			
		<u>Special Finishes for Jogging Tack</u>					
	22.1.30	1-4mm Red SBR rubber + Mdi based moisture curing binder (approx. 13mm thick)	X900.1	m ²			
	22.1.31	1.0-2.0mm EPDepartment rubber - Mdi based moisture curing 1012 binder (approx. 5mm thick,colour to approval)	X900.2	m ²			
	22.1.32	Sealer coats 2 layer (binder + red EPDepartment rubber dust, colour to approval)	X900.3	m ²			
	22.1.33	2 coat of hardwearing U.V. Resistant Aliphatic Finish with non slip and matt additives	X900.4	m ²			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 22	PAGE 5 of 25
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 22- LANDSCAPING WORKS (Cont'd)</u> <u>22.1 - HARD LANDSCAPING WORKS (Cont'd)</u> <u>Lighting Fixtures</u> <u>Supply and install lighting fixtures at locations including foundations, electrical wires, ducts, lamps, connections to feeder pillar, testing, etc. complete as per drawing and specification.</u>					
	22.1.34	One sided light fixture with Heavy duty cast aluminium post for urban boulevard and service road	X900.5	nr			
	22.1.35	Reinforced cast stone light fixture, methacrylate diffuser 70W halogen, for lighting along jogging track	X900.6	nr			
	22.1.36	Stainless steel front rim with die cast aluminum housing tree uplighter	X900.7	nr			
	22.1.37	Die cast aluminum housing with high corrosion resistance recessed lighting for walls and planters with TC-D 18W lamp complete	X900.8	nr			
	22.1.38	Recessed lighting fixture, aluminium body and installation housing, stainless steel front rim along water features at primary plaza, complete	X900.9	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 22	PAGE 6 of 25
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 22- LANDSCAPING WORKS (Cont'd)</u>					
		<u>22.1 - HARD LANDSCAPING WORKS (Cont'd)</u>					
		<u>Supply and fix Street Furnitures or Exercise Units at locations shown on drawings and as per material schedule and specifications including excavation, foundation, backfilling, waterproofing etc. complete</u>					
	22.1.39	Supply and fix trellis at secondary plaza area; including foundations, complete (seats measured seperately)	X900.10	nr			
	22.1.40	Supply and fix shade structure at secondary plaza area; including foundations, complete (seats measured seperately)	X900.11	nr			
	22.1.41	Supply and fix steel trellis shade structure at jogging track seating area; including foundations, complete (seats measured seperately)	X900.12	nr			
	22.1.42	Supply and fix bench type 1, reinforced cast stone, granite beige, at secondary plaza complete	X900.13	nr			
	22.1.43	Supply and fix bench type 2, reinforced cast stone, granite grey, acid etched and waterproofed	X900.14	nr			
	22.1.44	Supply and fix L-shaped bench type 3, cast insitu wall (3.0m + 3.0m long) with stonecrete finish, seat in reinforced cast stone acid etched and waterproofed	X900.15	nr			
	22.1.45	Supply and fix bench type 4, reinforced cast stone, granite beige at secondary plaza under shade structure (shade structure measured seperately)	X900.16	nr			
	22.1.46	Granite spherical bollards, 700mm diameter, at water feature	X900.17	nr			
	22.1.47	Collapsible & static stainless steel bollards including excavation, foundation concrete, backfilling etc. complete.	X900.18	nr			
	22.1.48	Cast Iron bollard including LED modules complete	X900.19	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 22	PAGE 7 of 25
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		PART 22- LANDSCAPING WORKS (Cont'd)					
		22.1 - HARD LANDSCAPING WORKS (Cont'd)					
		Supply and fix Street Furnitures or Exercise Units at locations shown on drawings and as per material schedule and specifications including excavation, foundation, backfilling, waterproofing etc. complete (Cont'd..)					
	22.1.49	Litter bins with ashtray; hot galvanized steel with aluminum base, complete	X900.20	nr			
	22.1.50	Planter, reinforced cast stone, size 2000x2000x1250mm, granite beige colour in LRT pod plaza, complete	X900.21	nr			
	22.1.51	Planter, reinforced cast stone, size 2000x2000x1200mm, granite beige colour, along jogging track, complete	X900.22	nr			
	22.1.52	Chin up exercise unit, 2.5m + 2.0m height with 50mm dia. galvanized steel pipe fixed on 250mm dia. Wooden poles, including foundation, fixtures etc. complete	X900.23	nr			
	22.1.53	Push up exercise unit including foundation, fixtures etc. complete	X900.24	nr			
	22.1.54	Leg stretch exercise unit, including foundation, fixtures etc. complete	X900.25	nr			
	22.1.55	Knee Lift exercise unit, including foundation, fixtures etc. complete	X900.26	nr			
	22.1.56	Log hop exercise unit, including foundation, fixtures etc. complete	X900.27	nr			
	22.1.57	Achilles stretch exercise unit, including foundation, fixtures etc. complete	X900.28	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 22	PAGE 8 of 25
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 22- LANDSCAPING WORKS (Cont'd)</u></p> <p><u>22.1 - HARD LANDSCAPING WORKS (Cont'd)</u></p> <p><u>Supply and fix Street Furnitures or Exercise Units at locations shown on drawings and as per material schedule and specifications including excavation, foundation, backfilling, waterproofing etc. complete (Cont'd..)</u></p>					
	22.1.58	Water feature, size ___m x ___m, including excavation, formwork, steel, concrete, tiles, electro-mechanical items, lighting, waterproofing, finishes complete (Bollards measured seperately)	X900.29	Sum			
	22.1.59	Construction of underground pump rooms including excavation, formwork, steel, concrete, water proofing, drains, filtration chambers etc. complete	X900.30	Sum			
Carried to Part Summary						Dhs.	

PROJECT :-		BILL SECTION - D	PART - 22	PAGE 9 of 25
		ITEM DESCRIPTION	AMOUNT (AED)	
		<p><u>PART 22 - LANDSCAPE WORKS (Cont'd)</u></p> <p><u>22.1 - HARD LANDSCAPING WORKS (Cont'd)</u> </p> <p><u>PART SUMMARY</u></p> <p>D22.1 : Page 1</p> <p>D22.1 : Page 2</p> <p>D22.1 : Page 3</p> <p>D22.1 : Page 4</p> <p>D22.1 : Page 5</p> <p>D22.1 : Page 6</p> <p>D22.1 : Page 7</p> <p>D22.1 : Page 8</p>		
		<p>TOTAL FOR PART 22.1 - HARD LANDSCAPE WORKS</p> <p>CARRIED TO SUMMARY</p>		Dhs.

PROJECT :-			BILL SECTION - D			PART - 22	PAGE 10 of 25
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 22- LANDSCAPING WORKS</u>					
		<u>22.2 - SOFT LANDSCAPING WORKS</u>					
		<u>EARTH WORKS</u>					
		<u>Excavation</u>					
22.2.01		Excavation for cuttings in material other than top soil, rock or artificial hard material, for grass, ground cover and seasonal flower areas to receive sweet soil	E220	m ³			
22.2.02		Excavation for planting shrubs	E323	m ³			
22.2.03		Excavation for palm pits	E324.1	m ³			
22.2.04		Excavation for tree pits	E324.2	m ³			
22.2.05		Disposal of excess soil in Department designated area or as directed by engineer.	E532	m ³			
		<u>Excavation ancillaries</u>					
22.2.06		Trimming of excavated surfaces not to receive permanent works.	E512.1	m ²			
22.2.07		Trimming of excavated surfaces to receive sweet soil.	E512.2	m ²			
22.2.08		Preparation of excavated surface to receive permanent works.	E522.1	m ²			
		<u>Filling</u>					
22.2.09		Filling for make up levels to receive sweet soil using excavated materials.	E634	m ³			
22.2.10		Filling for make up levels to receive sweet soil using imported materials.	E635.1	m ³			
22.2.11		Sweet soil filling general - for landscaping ingrade and slopes for grass, ground cover and seasonal flower areas	E635.2	m ³			
22.2.12		Sweet soil filling for palm pits	E635.3	m ³			
22.2.13		Sweet soil filling in tree pits	E635.4	m ³			
22.2.14		Sweet soil filling in shrub pits	E635.5	m ³			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 22	PAGE 11 of 25
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 22- LANDSCAPING WORKS (Cont'd)</u>					
		<u>22.2 - SOFT LANDSCAPING WORKS (Cont'd)</u>					
		<u>EARTH WORKS (Cont'd)</u>					
		<u>Filling ancillaries</u>					
	22.2.15	Trimming of filled surfaces not to receive permanent works.	E712	m ²			
	22.2.16	Preparation of filled surfaces to receive permanent works.	E722.1	m ²			
	22.2.17	Preparation of existing ground to receive fill material	E722.2	m ²			
		Supply and plant palms including excavation, fertilization, staking, wrapping, tying, attendance and watering, etc.as specified in specification and drawing.					
		<u>Palms</u>					
	22.2.18	Phoenix dactylifera	X900.1	nr			
	22.2.19	Roystonea regia	X900.2	nr			
	22.2.20	Sabal palmetto	X900.3	nr			
		Supply and plant trees including excavation, fertilization, staking, wrapping, tying, attendance and watering, etc.as specified in specification and drawing.					
		<u>Trees</u>					
	22.2.21	Cordia sebestena	X900.4	nr			
	22.2.22	Tabebuia argenta	X900.5	nr			
	22.2.23	Tabebuia rosea	X900.6	nr			
	22.2.24	Cupressus semipervirence	X900.7	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 22	PAGE 12 of 25
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 22- LANDSCAPING WORKS (Cont'd)</u>					
		<u>22.2 - SOFT LANDSCAPING WORKS (Cont'd)</u>					
		Supply and plant shrubs including excavation, fertilization, staking, wrapping, tying, attendance and watering, etc.as specified in specification and drawing.					
		<u>Shrubs</u>					
	22.2.25	Cleodendron inerme	X900.1	nr			
	22.2.26	Cryptostegia grandiflora	X900.2	nr			
	22.2.27	Leucophyllum frutescens	X900.3	nr			
	22.2.28	Pennisetum setaceum	X900.4	nr			
	22.2.29	Tabermontana corymbosa	X900.5	nr			
	22.2.30	Tecomaria carpendis	X900.6	nr			
	22.2.31	Zamia furfuracea	X900.7	nr			
		Supply and plant ground cover including excavation, fertilization, staking, wrapping, tying, attendance and watering, etc.as specified in specification and drawing.					
		<u>Ground Cover</u>					
	22.2.32	Atriplex semibacata	X900.8	nr			
	22.2.33	Equisetum hyemale	X900.9	nr			
	22.2.34	Hymenocallis littoralis	X900.10	nr			
	22.2.35	Iresine lindenii	X900.11	nr			
	22.2.36	Lantana dwarf yellow	X900.12	nr			
	22.2.37	Setcreasea purpurea	X900.13	nr			
	22.2.38	Carissa grandiflora	X900.14	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 22	PAGE 13 of 25
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<p><u>PART 22- LANDSCAPING WORKS (Cont'd)</u></p> <p><u>22.2 - SOFT LANDSCAPING WORKS (Cont'd)</u></p> <p>Supply and plant seasonal flowers including excavation, fertilization, staking, wrapping, tying, attendance and watering, etc.as specified in specification and drawing.</p> <p><u>Seasonal flowers</u></p>					
	22.2.39	Seasonal Flowers - Various species	X900.15	m ²			
		<p>Supply and plant grass including excavation, fertilization, staking, wrapping, tying, attendance and watering, etc.as specified in specification and drawing.</p> <p><u>Grass</u></p>					
	22.2.40	Paspalum saltine	X900.16	m ²			
Carried to Part Summary						Dhs.	

PROJECT :-		BILL SECTION - D	PART - 22	PAGE 14 of 25
		ITEM DESCRIPTION	AMOUNT (AED)	
		<p><u>PART 22- LANDSCAPING WORKS (Cont'd)</u></p> <p><u>22.2 - SOFT LANDSCAPING WORKS (Cont'd)</u></p> <p><u>PART SUMMARY</u></p> <p>D22.2 : Page 10</p> <p>D22.2 : Page 11</p> <p>D22.2 : Page 12</p> <p>D22.2 : Page 13</p>		
		<p>TOTAL FOR PART 22.2 - SOFT LANDSCAPE WORKS</p> <p>CARRIED TO SUMMARY</p>		Dhs.

PROJECT :-			BILL SECTION - D			PART - 22	PAGE 15 of 25
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 22- LANDSCAPING WORKS</u>					
		<u>22.3 - AUTOMATIC IRRIGATION WORKS</u>					
		<u>REMOVAL OF EXISTING AUTOMATIC IRRIGATION PIPE</u>					
		<u>Carefully remove existing pipe, fittings and store temporarily in contractor's stores and later deliver to Department stores or dispose to tip as required including excavation, break out pipe protection and thrust blocks, backfilling and remove to tip and reinstatement of existing surfaces</u>					
22.3.01	6 " diameter uPVC pipe		D900.1	m			
22.3.02	4 " diameter uPVC pipe		D900.2	m			
		<u>REMOVAL OF EXISTING AUTOMATIC IRRIGATION CHAMBERS</u>					
		<u>Demolitions</u>					
		<u>Carefully remove existing valve assemblies and deliver to Department stores including excavation, breakout valve chambers, backfilling and remove to tip and reinstatement of existing surfaces</u>					
22.3.03	Filtration chamber		D900.3	nr			
22.3.04	Isolation valve - 6" diameter		D900.4	nr			
22.3.05	Solenoid valves up to 2" dia.		D900.5	nr			
22.3.06	Solenoid valves above 2" dia.		D900.6	nr			
22.3.07	Pull Box		D900.7	nr			
		<u>Break out and remove existing buildings or sheds, set aside salvage item to return back to Department stores ; including excavation and cart to tip of foundations, backfilling of voids etc.</u>					
22.3.08	Irrigation Control station		D599	Sum			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 22	PAGE 16 of 25
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 22- LANDSCAPING WORKS (Cont'd)</u>					
		<u>22.3-AUTOMATIC IRRIGATION WORKS (Cont'd)</u>					
		<u>PIPE WORK - PIPES & DISTRIBUTION</u>					
		<u>uPVC pipe laid in trenches, depth not exceeding 1.5m including all fittings, as per Department standard etc. all as detailed in particular specification and shown on drawings.</u>					
	22.3.09	1 " diameter pipe class "E"	I512.1	m			
	22.3.10	1 1/2 " diameter pipe class "D"	I512.2	m			
	22.3.11	2 " diameter pipe class "D"	I512.3	m			
	22.3.12	3 " diameter pipe class "D"	I512.4	m			
		<u>uPVC pipe laid in trenches, depth not exceeding 1.5m as per Department standard etc. all as detailed in particular specification and shown on drawings. (Fittings measured separately)</u>					
	22.3.13	4 " diameter pipe class "D"	I512.5	m			
	22.3.14	6 " diameter pipe class "D"	I512.6	m			
	22.3.15	8 " diameter pipe class "D"	I512.7	m			
		<u>Supply, lay and joint uPVC pipe fittings in trench in accordance with specification.</u>					
	22.3.16	4" diameter uPVC 45 degree bend	J411.1	nr			
	22.3.17	4" diameter uPVC 90 degree bend	J411.2	nr			
	22.3.18	6" diameter uPVC 11.25 degree bend	J411.3	nr			
	22.3.19	6" diameter uPVC 22.5 degree bend	J411.4	nr			
	22.3.20	6" diameter uPVC 45 degree bend	J411.5	nr			
	22.3.21	6" diameter uPVC 90 degree bend	J411.6	nr			
	22.3.22	8" diameter uPVC 45 degree bend	J411.7	nr			
	22.3.23	8" diameter uPVC 90 degree bend	J411.8	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 22	PAGE 17 of 25
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 22- LANDSCAPING WORKS (Cont'd)</u>					
		<u>22.3-AUTOMATIC IRRIGATION WORKS (Cont'd)</u>					
		<u>PIPE WORK : PIPES & DISTRIBUTION (Cont'd....)</u>					
		<u>PIPEWORK - FITTINGS</u>					
		<u>Supply, lay and joint uPVC pipe fittings in trench in accordance with specification.</u>					
	22.3.24	4"x4"x4" diameter tee	J421.1	nr			
	22.3.25	6"x6"x4" diameter tee	J421.2	nr			
	22.3.26	6"x6"x6" diameter tee	J421.3	nr			
	22.3.27	8"x6" reducer	J431.1	nr			
		<u>DUCTS</u>					
		<u>Supply and lay in trench Asbestos Cement pressure pipes Class 18 ducts with Reka couplings including painting with bituminous paints, end caps, draw ropes and duct markers</u>					
	22.3.28	1-way, 300mm dia Depth not exceeding 1.5m	K512.1	m			
	22.3.29	2-way, 150mm dia Depth not exceeding 1.5m	K522.1	m			
		<u>Supply lay & joint uPVC cable ducts in trench beneath carriageways including end caps, duct markers and draw ropes</u>					
	22.3.30	1-way, 100mm dia, depth not exceeding 1.5m	K512.2	m			
	22.3.31	2-way, 100mm dia, depth not exceeding 1.5m	K522.2	m			
	22.3.32	3-way, 100mm dia, depth not exceeding 1.5m	K532	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 22	PAGE 18 of 25
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 22- LANDSCAPING WORKS (Cont'd)</u>					
		<u>22.3-AUTOMATIC IRRIGATION WORKS (Cont'd)</u>					
		<u>PIPE WORK : PIPES & DISTRIBUTION (Cont'd....)</u>					
		<u>Beds and surrounds including polythene sheet, bitumen paint and warning tape as applicable</u>					
	22.3.33	Imported sand bed and surround to 1 way 100mm dia uPVC duct	L511.1	m			
	22.3.34	Imported sand bed and surround to 2 way 100mm dia uPVC duct	L511.2	m			
	22.3.35	Imported sand bed and surround to 3 way 100mm dia uPVC duct	L511.3	m			
	22.3.36	Imported sand bed and surround to 2 way 150mm dia AC duct	L511.4	m			
	22.3.37	Imported sand bed and surround to 1 way 300mm dia AC duct	L512	m			
		<u>Drip Irrigation System</u>					
		<u>16 mm dia (O.D.) linear low density polyethylene tubing (As per specification including in line P.C. emitters, accessories, stakes, takeoff / risers connections from laterals, as specified & as detailed on Dwgs.)</u>					
	22.3.38	Dripper line for ground cover	I912.1	m			
	22.3.39	Dripper line for seasonal flowers	I912.2	m			
	22.3.40	Dripper line for shrubs (shrub spacing ≤ 1.5 m)	I912.3	m			
	22.3.41	Dripper line for shrubs (shrub spacing more than 1.5 m)	I912.4	m			
	22.3.42	Dripper line loop for trees in gravel area	I912.5	nr			
	22.3.43	Dripper line loop for trees in plant/grass area	I912.6	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 22	PAGE 19 of 25
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 22- LANDSCAPING WORKS (Cont'd)</u>					
		<u>22.3-AUTOMATIC IRRIGATION WORKS (Cont'd)</u>					
		<u>FITTINGS AND VALVES</u>					
		<u>CONTROL VALVES (Refer to particular specifications)</u>					
		<u>Automatic remote control solenoid valve assemblies (including all fittings) and brass gate valves as shown on drawings.</u>					
		<u>Solenoid Valves</u>					
22.3.44		Solenoid valve - 25mm dia (1")	J891.1	nr			
22.3.45		Solenoid valve - 38mm dia (1.5")	J891.2	nr			
22.3.46		Solenoid valve - 50mm dia (2")	J891.3	nr			
22.3.47		Solenoid valve - 75mm dia (3")	J891.4	nr			
		<u>Isolation valves / gate valves</u>					
22.3.48		6" dia. Isolation/gate valve with all fittings as shown on drawing	J891.5	nr			
		<u>Air Release valve</u>					
22.3.49		2" dia. air valve with all fittings as shown on drawing	J861	nr			
		<u>Irrigation Heads</u>					
22.3.50		Complete assembly of 2 nr bubblers for Palm tree including all fittings, risers, connection to laterals, excavation, backfilling etc. as detailed on drawing & Specification	J891.6	nr			
		<u>Pop up assembly complete including all fittings, nozzles, riser, connection to lateral pipe, excavation, backfilling etc., as detailed on drawing and Specification</u>					
22.3.51		Pop-up Sprayers	J891.7	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 22	PAGE 20 of 25
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 22- LANDSCAPING WORKS (Cont'd)</u>					
		<u>22.3-AUTOMATIC IRRIGATION WORKS (Cont'd)</u>					
		<u>Chambers / Valve boxes</u>					
		<u>Chamber for solenoid valve / including block work, gravel, excavation, backfilling etc. all fittings, pipe fittings etc as shown on drawing (valves measured separately) depth not exceeding 1.5m</u>					
	22.3.52	For solenoid valve up to 2" (50mm)	K291.1	nr			
	22.3.53	For solenoid valve above 2" (50mm)	K291.2	nr			
	22.3.54	Chamber for air release valve including valve box, gravel mulch, blockwork, pipe pieces, concrete supports, M.S. pipe with denso tape etc. as shown on Drwg. (valves are measured separately) depth not exceeding 1.5m.	K291.3	nr			
	22.3.55	Pull box in planted area including block work, gravel mulch, excavation, backfilling, tags and all other fittings as shown on drawing	K291.4	nr			
	22.3.56	Pull box in paved area including block work, ductile iron cover, gravel mulch, excavation, backfilling, tags and all other fittings as shown on drawing	K291.5	nr			
		<u>Reinforced concrete chamber for isolation valve / gate valve including engineering bricks, heavy duty manhole cover, pipe pieces, adaptors, concrete support, excavation, backfilling etc. and all other fittings as shown on drawings (valve are measured seperately)</u>					
	22.3.57	Isolation / gate valve 6" diameter in a chamber	K291.6	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 22	PAGE 21 of 25
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 22- LANDSCAPING WORKS (Cont'd)</u>					
		<u>22.3-AUTOMATIC IRRIGATION WORKS (Cont'd)</u>					
		<u>PIPEWORK - SUPPORTS AND PROTECTION, ANCILLARY TO LAYING AND EXCAVATION</u>					
		<u>Concrete Thrust Blocks</u>					
	22.3.58	Volume not exceeding 0.10m ³ ; concrete class 30/20; pipe dia not exceeding 6".	L711				
	22.3.59	Volume 0.10m ³ to 0.20m ³ ; concrete class 30/20; pipe dia not exceeding 8".	L721				
		<u>MISCELLANEOUS WORKS</u>					
		<u>Filtration Chamber</u>					
		<u>All civil works for the irrigation filtration chamber including insitu reinforced concrete, blinding, water proofing excavation, backfill, dewatering, concrete protection, aluminum ladder frame and cover, vent pipes, pavers, pipe supports, painting, etc., including disposal of excess material from the site as per specifications and drwg.</u>					
	22.3.60	For 6" Filtration Chamber	X900.1				
		<u>All electro-mechanical works for the irrigation filtration chamber including supply and installation of all equipments (main electric control panel mounted over filtration chamber in a GRP kiosk, low meters displays, irrigation control system, sump pump control system power supply to filter controller, exhaust fan control gear, butterfly valve control gears, lighting system, fertiliser injection unit control system, decoders, earthing and all other electrical components, etc.) and accessories, cables, cable trays connections, manifolds, fittings, complete all as shown on the drawing including interface with the Department computer system as per specifications and drwg.</u>					
	22.3.61	For 6" Filtration Chamber	X900.2				
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 22	PAGE 22 of 25
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 22- LANDSCAPING WORKS (Cont'd)</u>					
		<u>22.3-AUTOMATIC IRRIGATION WORKS (Cont'd)</u>					
		<u>Connection to pipes / manholes</u>					
22.3.62		Connect new 150 mm dia uPVC pipe line to existing 100 mm dia.uPVC pipe line not in same direction	K862.1	nr			
22.3.63		Connect new 150 mm dia uPVC pipe line to existing 150 mm dia.uPVC pipe line not in same direction	K862.2	nr			
		<u>CONTROL SYSTEM</u>					
		<u>Solid state Irrigation controllers, as detailed in particular specifications</u>					
22.3.64		24 Station Controller with stainless steel pedestal and GRP enclosure	X900.1	nr			
		<u>Armoured power supply cable from main control panel to field controllers.</u>					
22.3.65		6 mm ² x 4C x XLPE x SWA x PVC	X900.2	m			
22.3.66		10 mm ² x 4C x XLPE x SWA x PVC	X900.3	m			
		<u>Control cable from irrigation controller to solenoid valve in conduit pipes including common wire and spare wires rate to include for all terminals etc. (conduit pipes measured separately)</u>					
22.3.67		12 AWG common wire	X900.4	m			
22.3.68		14 AWG control wire	X900.5	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 22	PAGE 23 of 25
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 22- LANDSCAPING WORKS (Cont'd)</u>					
		<u>22.3-AUTOMATIC IRRIGATION WORKS (Cont'd)</u>					
		<u>Conduits for control cables</u>					
22.3.69		1" diameter	X900.6	m			
22.3.70		1½" diameter	X900.7	m			
22.3.71		2" diameter	X900.8	m			
22.3.72		3" diameter	X900.9	m			
22.3.73		4" diameter	X900.10	m			
		<u>Power supply cable to Irrigation controller</u>					
22.3.74		Power supply to proposed Irrigation controller from the existing electric panel including excavations, backfilling, warning tape, cables tiles, including termination and liason with Department	X900.11	sum			
Carried to Part Summary						Dhs.	

PROJECT :-		BILL SECTION - D	PART - 22	PAGE 24 of 25
		ITEM DESCRIPTION	AMOUNT (AED)	
		<p><u>PART 22- LANDSCAPING WORKS (Cont'd)</u></p> <p><u>22.3-AUTOMATIC IRRIGATION WORKS (Cont'd)</u></p> <p><u>PART SUMMARY</u></p> <p>D22.3 : Page 15</p> <p>D22.3 : Page 16</p> <p>D22.3 : Page 17</p> <p>D22.3 : Page 18</p> <p>D22.3 : Page 19</p> <p>D22.3 : Page 20</p> <p>D22.3 : Page 21</p> <p>D22.3 : Page 22</p> <p>D22.3 : Page 23</p> <p>TOTAL FOR PART 22.3 - AUTOMATIC IRRIGATION WORKS</p>		
		CARRIED TO SUMMARY		Dhs.

PROJECT :-		BILL SECTION - D	PART - 22	PAGE 25 of 25
		ITEM DESCRIPTION	AMOUNT (AED)	
		<u>PART 22- LANDSCAPING WORKS (Cont'd)</u>		
		<u>SUMMARY</u>		
		22.1 - HARD LANDSCAPING WORKS	Page 9	
		22.2 - SOFT LANDSCAPING WORKS	Page 14	
		22.3 - AUTOMATIC IRRIGATION WORKS	Page 24	
		TOTAL FOR PART 22 - LANDSCAPE WORKS		
		CARRIED TO GRAND SUMMARY	Dhs.	

Part 23

Concrete Pedestrian Bridge Works



PROJECT :-			BILL SECTION - D			PART - 23	PAGE 1 of 6
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 23 - CONCRETE PEDESTRIAN BRIDGE WORKS</u>					
		<u>EARTHWORKS</u>					
		<u>Excavation</u>					
23.01		Excavation for foundations; maximum depth 2-5m, material other than top soil or rock	E325	m ³			
		<u>Excavation ancillaries</u>					
23.02		Preparation of excavated surface to receive permanent works	E522	m ²			
23.03		Double handle excavated material and dispose off to fill area	E542	m ³			
		<u>Filling</u>					
23.04		Filling to structure using suitable excavated material	E614	m ³			
		<u>Filling Ancillaries</u>					
23.05		Trimming of filled surfaces not to receive permanent work	E712	m ²			
23.06		Preparation of filled surfaces to receive permanent work	E722	m ²			
		<u>INSITU CONCRETE</u>					
		<u>Provision of concrete - designed concrete</u>					
23.07		Concrete Sulphate resisting Class 30/20	F152	m ³			
23.08		Concrete Class 40/20	F182	m ³			
23.09		Concrete Class 45/20	F192	m ³			
		<u>Placing of concrete</u>					
		<u>Mass concrete</u>					
23.10		Blinding concrete (SRC) not exceeding 150mm	F611	m ³			
Carried to Part Summary						Dhs.	



PROJECT :-			BILL SECTION - D			PART - 23	PAGE 2 of 6
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 23 - CONCRETE PEDESTRIAN BRIDGE WORKS (Cont'd...)</u>					
		<u>Reinforced concrete</u>					
	23.11	Footing, Staircase and Tower (Concrete class 40/20)	F724	m ³			
	23.12	Circular columns (concrete class 40/20)	F754	m ³			
		<u>Prestress Concrete</u>					
	23.13	Prestressed Post tensioned Cast insitu box girder deck thickness exceeding 500mm	F834	m ³			
		<u>CONCRETE ANCILLARIES</u>					
		<u>Formwork</u>					
	23.14	Edges of bridge deck; thickness 0.2 - 0.4m	G243.1	m ²			
	23.15	Curved surfaces of piers	G260.1	m ²			
	23.16	Curved and sloping soffit of bridge deck	G269.1	m ²			
	23.17	Edges of staircase and landing	G260.2	m ²			
	23.18	Curved and sloping soffit of staircase	G269.2	m ²			
	23.19	Elevator shaft formwork	G243.2	m ²			
	23.20	Vertical sides of wall	G245	m ²			
	23.21	Vertical sides of footing, foundation and walls	G345	m ²			
	23.22	Void in bridge deck max. 1000 x 900 mm; varies cross section as drawing	G384	m			
		<u>Reinforcement</u>					
		<u>Deformed high yield steel bars to BS 4449 G460</u>					
	23.23	Nominal diameter 12mm or greater	G524	t			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 23	PAGE 3 of 6
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 23 - CONCRETE PEDESTRIAN BRIDGE WORKS (Cont'd...)</u>					
		<u>Surface features</u>					
	23.24	Striated Feature to piers and elevator shaft columns	G460	m ²			
		<u>Joints</u>					
	23.25	Bridge expansion joints	G690	m			
		<u>15.2mm strand 7 wire super low relaxation grade 270</u>					
	23.26	Prestressing tendons, inclined or vertical in insitu concrete according to cable profiles, length approx. 58m size 22 strands 15.2 diameter	G728	nr			
		<u>Concrete Accessories</u>					
	23.27	Finishing of top surface of foundation	G813.1	m ²			
	23.28	Finishing of top of deck slab, pier and stairs	G813.2	m ²			
	23.29	Anti Skid paint on top of Deck and stairs	G815	m ²			
	23.30	Coating system to exposed concrete surfaces including bridge parapets, piers, stairs and towers	G823.1	m ²			
	23.31	Coating system to concrete surfaces inside the concrete box girders	G823.2	m ²			
		<u>MISCELLANEOUS METAL WORKS</u>					
		<u>Bridge Bearing</u>					
	23.32	Elastomeric laminated rubber bridge bearing	N269.1	nr			
		<u>Bearing Cover Plate</u>					
	23.33	3mm powder coated aluminium cover plate including stainless steel fixing plates hinges & bolts.	N900	m			
Carried to Part Summary						Dhs.	



PROJECT :-			BILL SECTION - D			PART - 23	PAGE 4 of 6
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 23 - CONCRETE PEDESTRIAN BRIDGE WORKS (Cont'd...)</u>					
		<u>PILES</u>					
		<u>Bored-cast in place concrete pile using concrete Grade 40/20 ordinary Portland Cement</u>					
		<u>Pile diameter 1200mm</u>					
	23.34	Number of piles	P161	nr			
	23.35	Concreted length	P162	m			
	23.36	Depth bored to maximum length 12m	P163	m			
		<u>PILING ANCILLARIES</u>					
		<u>Cast in place concrete piles</u>					
	23.37	Cutting off surplus lengths 1200mm diameter	Q176	m			
	23.38	Preparing piles head 1200mm diameter	Q186	nr			
		<u>Reinforcement</u>					
		<u>Deformed high yield steel bars to BS 4449</u>					
	23.39	Nominal size 32mm	Q212	t			
		<u>Plain round steel helical bars to BS 4449</u>					
	23.40	Nominal size 12mm	Q213	t			
		<u>Pile tests</u>					
	23.41	Vertical pile load test for working piles for 1200mm diameter pile	Q813	nr			
	23.42	Vertical pile load test for non-working piles for 1200mm diameter pile (The rate shall include for construction of pile, cutting of surplus length, preparing heads etc. complete for testing the non-working pile)	Q815	nr			
	23.43	Non-destructive test by ultrasonic method for 1200mm dia. Pile	Q840	nr			
Carried to Part Summary						Dhs.	



PROJECT :-			BILL SECTION - D			PART - 23	PAGE 5 of 6
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 23 - CONCRETE PEDESTRIAN BRIDGE WORKS (Cont'd...)</u>					
		<u>BLOCK MASONRY</u>					
	23.44	Architectural block masonry of thickness 200mm ; complete	U921	m ²			
		<u>WATERPROOFING</u>					
		<u>Self adhesive rubber / bitumen 1.5mm thickness</u>					
	23.45	Tanking self adhesive waterproofing membrane to buried concrete	W239	m ²			
	23.46	Protection to waterproofing membrane not less than 6mm thick	W429	m ²			
		<u>MISCELLANEOUS WORK</u>					
	23.47	Removable aluminium cover	X900.1	m ²			
		<u>Fences</u>					
	23.48	Aluminium pedestrian handrail,1.0m high complete with shade frame	X900.2	m			
	23.49	Aluminium pedestrian handrail, 0.4m high complete for staircase	X900.3	m			
	23.50	Aluminium pedestrian handrail, 1.0m high complete for staircase	X900.4	m			
		<u>SIMPLE BUILDING WORKS INCIDENTAL TO CIVIL ENGINEERING WORKS</u>					
	23.51	Electrical Power Connection for Bridge Elevator including Cabling works	Z900.1	sum			
	23.52	Lighting works inside bridge including light fixtures and cabling works	Z900.2	sum			
Carried to Part Summary						Dhs.	

PROJECT :-		BILL SECTION - D	PART - 23	PAGE 6 of 6
		ITEM DESCRIPTION	AMOUNT (AED)	
		<p><u>PART 23 - CONCRETE PEDESTRIAN BRIDGE WORKS (Cont'd...)</u></p> <p><u>PART SUMMARY</u></p> <p>D23 : Page 1</p> <p>D23 : Page 2</p> <p>D23 : Page 3</p> <p>D23 : Page 4</p> <p>D23 : Page 5</p>		
		<p>TOTAL FOR PART 23 - CONCRETE PEDESTRIAN BRIDGE WORKS</p> <p>CARRIED TO GRAND SUMMARY</p>	Dhs.	

Part 24

Steel Pedestrian Bridge Works

PROJECT :-			BILL SECTION - D			PART - 24	PAGE 1 of 6
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 24 - STEEL PEDESTRIAN BRIDGE WORKS</u>					
		<u>EARTHWORKS</u>					
		<u>Excavation</u>					
24.01		Excavation for foundations; maximum depth 2-5m, material other than top soil or rock	E325	m ³			
		<u>Excavation ancillaries</u>					
24.02		Preparation of excavated surface to receive permanent works	E522	m ²			
24.03		Double handle excavated material and dispose off to fill area	E542	m ³			
		<u>Filling</u>					
24.04		Filling to structure using suitable excavated material	E614	m ³			
		<u>Filling Ancillaries</u>					
24.05		Trimming of filled surfaces not to receive permanent work	E712	m ²			
24.06		Preparation of filled surfaces to receive permanent work	E722	m ²			
		<u>INSITU CONCRETE</u>					
		<u>Provision of concrete - designed concrete</u>					
24.07		Concrete Sulphate resisting Class 30/20	F152	m ³			
24.08		Concrete Class 40/20	F182	m ³			
24.09		Concrete Class 45/20	F192	m ³			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 24	PAGE 2 of 6
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 24 - STEEL PEDESTRIAN BRIDGE WORKS (Cont'd...)</u>					
		<u>Placing of concrete</u>					
		<u>Mass concrete</u>					
	24.10	Blinding concrete (SRC) not exceeding 150mm thick	F611	m ³			
		<u>Reinforced concrete</u>					
	24.11	Footing, Elevator Room (Concrete class 40/20)	F724	m ³			
	24.12	Concrete Bridge Deck Slab (Concrete class 50/20)	F734	m ³			
		<u>CONCRETE ANCILLARIES</u>					
		<u>Formwork</u>					
	24.13	Elevator shaft formwork	G243	m ²			
	24.14	Vertical sides of wall; width 0.4 - 1.22 m	G244	m ²			
	24.15	Vertical sides of wall; width exceeding 1.22 m	G245	m ²			
	24.16	Vertical sides of footing, foundation	G345	m ²			
		<u>Reinforcement</u>					
		<u>Deformed high yield steel bars to BS 4449 G460</u>					
	24.17	Nominal diameter 12mm or greater	G524	t			
		<u>Surface features</u>					
	24.18	Striated Feature to elevator shaft columns	G460	m ²			
		<u>Concrete Accessories</u>					
	24.19	Finishing of top surface of foundation	G813.1	m ²			
	24.20	Finishing of top of deck slab	G813.2	m ²			
	24.21	Anti Skid paint on top of Deck and stairs	G815	m ²			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 24	PAGE 3 of 6
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 24 - STEEL PEDESTRIAN BRIDGE WORKS</u> <u>(Cont'd...)</u>					
		<u>MISCELLANEOUS METAL WORKS</u>					
		<u>Staircase</u>					
	24.22	Steel stairwase and landings	N110	t			
	24.23	Supply, fabricate and Install steel pier, including supports and fixtures	N190.1	t			
	24.24	Supply, fabricate and Install steel bridge deck, including supports and fixtures	N190.2	t			
		<u>Steel Cladding</u>					
	24.25	Stainless steel cladding including supports and fixtures	N210.1	m ²			
	24.26	Welded wire mesh for the deck slab	N220	m ²			
		<u>Bridge Bearing</u>					
	24.27	Elastomeric laminated rubber bridge bearing	N269.1	nr			
		<u>Bearing Cover Plate</u>					
	24.28	3mm powder coated aluminium cover plate	N900.1	m			
		<u>PILES</u>					
		<u>Bored-cast in place concrete pile using concrete Grade 40/20 ordinary Portland Cement</u>					
		<u>Pile diameter 800mm</u>					
	24.29	Number of piles	P191	nr			
	24.30	Concreted length	P192	m			
	24.31	Depth bored to maximum length 12m	P193	m			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 24	PAGE 4 of 6
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 24 - STEEL PEDESTRIAN BRIDGE WORKS</u> <u>(Cont'd...)</u>					
		<u>PILING ANCILLARIES</u>					
		<u>Cast in place concrete piles</u>					
	24.32	Cutting off surplus lengths 800mm diameter	Q179	m			
	24.33	Preparing piles head 800mm diameter	Q189	nr			
		<u>Reinforcement</u>					
		<u>Deformed high yield steel bars to BS 4449</u>					
	24.34	Nominal size 32mm	Q212	t			
		<u>Plain round steel helical bars to BS 4449</u>					
	24.35	Nominal size 12mm	Q213	t			
		<u>File tests</u>					
	24.36	Vertical pile load test for working piles for 800mm diameter pile	Q813	nr			
	24.37	Vertical pile load test for non-working piles for 800mm diameter pile (The rate shall include for construction of pile, cutting of surplus length, preparing heads etc. complete for testing the non-working pile)	Q815	nr			
	24.38	Non-destructive test by ultrasonic method for 800mm dia. Pile	Q840	nr			
Carried to Part Summary						Dhs.	

PROJECT :-			BILL SECTION - D			PART - 24	PAGE 5 of 6
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 24 - STEEL PEDESTRIAN BRIDGE WORKS</u> <u>(Cont'd...)</u>					
		<u>BLOCK MASONARY</u>					
	24.39	Architectural block masonry of thickness 200mm ; complete	U921	m ²			
	24.40	Painting of Steel Bridge	V470.1	m ²			
	24.41	Painting of Staircase and landing	V470.2	m ²			
		<u>WATERPROOFING</u>					
		<u>Self adhesive rubber / bitumen 1.5mm thickness</u>					
	24.42	Tanking self adhesive waterproofing membrane to buried concrete	W239	m ²			
	24.43	Protection to waterproofing membrane not less than 6mm thick	W429	m ²			
		<u>MISCELLANEOUS WORK</u>					
	24.44	Removable aluminium cover	X900.1	m ²			
		<u>Fences</u>					
	24.45	Aluminium pedestrian handrail,1.0m high complete with shade frame	X900.2	m			
	24.46	Aluminium pedestrian handrail, 0.4m high complete for staircase	X900.3	m			
	24.47	Aluminium pedestrian handrail, 1.0m high complete for staircase	X900.4	m			
		<u>SIMPLE BUILDING WORKS INCIDENTAL TO CIVIL ENGINEERING WORKS</u>					
	24.48	Electrical Power Connection for Bridge Elevator including Cabling works	Z900.1	sum			
	24.49	Lighting works inside bridge including light fixtures and cabling works	Z900.2	sum			
Carried to Part Summary						Dhs.	

PROJECT :-		BILL SECTION - D	PART - 24	PAGE 6 of 6
		ITEM DESCRIPTION	AMOUNT (AED)	
		<p><u>PART 24 - STEEL PEDESTRIAN BRIDGE WORKS</u> (Cont'd...)</p> <p><u>PART SUMMARY</u></p> <p>D24 : Page 1</p> <p>D24 : Page 2</p> <p>D24 : Page 3</p> <p>D24: Page 4</p> <p>D24 : Page 5</p>		
		<p>TOTAL FOR PART 24 - STEEL PEDESTRIAN BRIDGE WORKS</p>		
CARRIED TO GRAND SUMMARY			Dhs.	

Part 25

Provisional Sum

PROJECT :-			BILL SECTION - D			PART - 25	PAGE 1 of 2
SL.NO.	ITEM	ITEM DESCRIPTION	CESMM4 REF.	UNIT	QUANTITY	RATE	AMOUNT AED
		<u>PART 25 - PROVISIONAL SUM</u>					
		<u>Service Authority Works</u>					
		<u>Note: The Provisional Sums given in the Bill of Quantities may be used in whole or in part, or not at all, on the instruction of the Engineer</u>					
25.01		Provisional sum of Dhs. ----- for direct payment by the employer to various authorities for final connections.	A420.1	sum			
25.02		Percentage for Contractor's Overhead and Profit for Item 25.01		%			
		<u>Contingencies</u>					
25.03		Provisional sum of Dhs. ----- for contingencies to be expended in full or part or not at all at the discretion of the employer.	A420.2	sum			
25.04		Percentage for Contractor's Overhead and Profit for Item 25.03		%			
Carried to Part Summary						Dhs.	

PROJECT :-		BILL SECTION - D	PART - 25	PAGE 2 of 2
SL.NO.	ITEM	ITEM DESCRIPTION	AMOUNT (AED)	
		<p><u>PART 25 - PROVISIONAL SUM (Cont'd...)</u></p> <p><u>PART SUMMARY</u></p> <p>D 25 - Page 1</p>		
		<p>TOTAL FOR PART 25 - PROVISIONAL SUM CARRIED TO GRAND SUMMARY</p>	Dhs.	

Section (E)

Grand Summary

PROJECT :-		BILL SECTION - E	PAGE 1 of 1
		REF.	AMOUNT (AED)
<u>SECTION (E) - GRAND SUMMARY</u>			
Part 1	General Items	D1	
Part 2	Ground Investigation	D2	
Part 3	Demolition and Site Clearance	D3	
Part 4	Earthworks	D4	
Part 5	Roads and Pavings	D5	
Part 6	Bridge Works	D6	
Part 7	Tunnel / Underpass Works	D7	
Part 8	Retaining Structures	D8	
Part 9	Storm Water Drainage Network	D9	
Part 10	Sanitary Sewer Network	D10	
Part 11	Potable Water Network	D11	
Part 12	Irrigation Network	D12	
Part 13	Electrical Network	D13	
Part 14	Street Lighting Works	D14	
Part 15	Duct Network for Telecommunication Cables	D15	
Part 16	Traffic Signal Control and Intellegent Transportation System	D16	
Part 17	Culverts	D17	
Part 18	Building Works	D18	
Part 19	Gas Network	D19	
Part 20	District Cooling Network	D20	
Part 21	Non Disruptive Road Crossing Works	D21	
Part 22	Landscaping Works	D22	
Part 23	Concrete Pedestrian Bridge Works	D23	
Part 24	Steel Pedestrian Bridge Works	D24	
Sub total			
Adjustment Item (.....%) Add */ Delete */			
Sub total			
Part 25	Provisional Sum	D25	
Section C	Daywork Schedule	C	
Total			
Total Amount to Form of Tender			
* Delete as necessary			

Section (F)

Schedule of Rate Breakdown for Work Items

PROJECT :-		SCHEDULE OF RATE BREAKDOWN FOR WORK ITEMS			BILL SECTION F	PAGE 1 of 84
Item Nr.	Labour (%)	Plant (%)	Material (%)	Overhead (%)	Profit (%)	Total (%)
PART - 1						
1.01						
1.02						
1.03						
1.04						
1.05						
1.06						
1.07						
1.08						
1.09						
1.10						
1.11						
1.12						
1.13						
1.14						
1.15						
1.16						
1.17						
1.18						
1.19						
1.20						
1.21						
1.22						
1.23						
1.24						
1.25						
1.26						
1.27						
1.28						
1.29						
1.30						
1.31						
1.32						
1.33						
1.34						

PROJECT :-		SCHEDULE OF RATE BREAKDOWN FOR WORK ITEMS			BILL SECTION F	PAGE 2 of 84
Item Nr.	Labour (%)	Plant (%)	Material (%)	Overhead (%)	Profit (%)	Total (%)
1.35						
1.36						
1.37						
1.38						
1.39						
1.40						
1.41						
1.42						
1.43						
1.44						
1.45						
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1.49						
1.50						
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1.58						
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1.60						
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1.62						
1.63						
1.64						
1.65						
1.66						
1.67						
1.68						
1.69						

PROJECT :-		SCHEDULE OF RATE BREAKDOWN FOR WORK ITEMS			BILL SECTION F	PAGE 3 of 84
Item Nr.	Labour (%)	Plant (%)	Material (%)	Overhead (%)	Profit (%)	Total (%)
1.70						
1.71						
1.72						
1.73						
1.74						
1.75						
1.76						
1.77						
1.78						
1.79						
1.80						
1.81						
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1.95						
1.96						
1.97						
1.98						
1.99						
1.100						
1.101						
1.102						
1.103						
1.104						

PROJECT :-		SCHEDULE OF RATE BREAKDOWN FOR WORK ITEMS			BILL SECTION F	PAGE 4 of 84
Item Nr.	Labour (%)	Plant (%)	Material (%)	Overhead (%)	Profit (%)	Total (%)
PART - 2						
2.01						
2.02						
2.03						
2.04						
2.05						
2.06						
2.07						
2.08						
2.09						
2.10						
2.11						
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2.33						

