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## **Introduction**

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# CHAPTER 1 INTRODUCTION

## 1.0 GENERAL

The Ministry of Public Works (herein referred to as MPW or the Ministry) supported by Kuwait Municipality Council intends to engage an International Consultant (the Consultant) to provide the following services for the Second Ring Road, Third Ring Road and Damascus Street:

Task No.1: Review the original design that was carried out under Agreement EF/R/117, and provide the revised design and tender documents for upgrading of Second Ring Road, Third Ring Road and Damascus Street.

Task No.2: Construction Supervision Services for the upgrade (Optional).

### **Background of Second Ring Road, Third Ring Road and Damascus Street Upgrade Project**

The design for upgrading the Second Ring Road, Third Ring Road and Damascus Street as **Motorway standard** was part of the previous Agreement EF/R/ 117 which covered these arterials along with Cairo Street. EF/R/117 proposed three work packages as listed below based on various criteria including volume of work per package and minimal impact to traffic during construction.

**Package 1: RA/200** – Cairo Street including the interchanges with Second Ring Road and Third Ring Road

**Package 2: RA/201** – Second Ring Road and Damascus Street

**Package 3: RA/202** – Third Ring Road

(Refer to Figure No. 1 & 2)

### **Current Status of EF/R/117 Packages:**

**Package 1: RA/ 200** is currently under tender, and construction is expected to commence during 2017.

For **Package 2: RA/ 201** and **Package 3: RA/202**, MPW requesting to revisit and revise the designs:

1) Taking into account changes in planning assumptions originally used, particularly the increase in horizon year population forecasts. It is expected that further enhancement of capacity may be necessary at several sections compared to the design upgrade proposed as part of EF/R/117.

2) As these roads run through residential districts and have many accesses; **therefore, the standards shall change from that for Motorway to Arterial Roads.**

3) Upgrade of the interchanges/junctions between Second and Third Ring Roads crossing Routes 40 and 50.

4) Provide and upgrade pedestrian bridges/tunnels along the project.

## 2.0 OBJECTIVES OF EF/R/278

The main objectives of EF/R/278 are as follows:

- (i) Review the planning assumptions, including the population forecasts used for traffic modeling and analysis during EF/R/117, obtain agreement from the relevant authorities on the changes to the planning data, incorporate changes into the latest traffic model and generate new traffic demand forecasts
- (ii) Review and revised the design upgrades for Second Ring Road, Third Ring and Cairo Street originally proposed under EF/R/117 in the light of the revised traffic demand forecasts.
- (iii) Identify the best possible alignment of the existing streets while ensuring adequate connectivity with adjacent areas.
- (iv) Carry out the engineering, traffic, safety, security, economic, environmental and other necessary studies for the proposed roads and interchanges.
- (v) Upgrade of the three major roads (Second Ring Road, Third Ring Road and Damascus Street).
- (vi) Design of the 10 identified interchanges. (Refer to Figure No. 5)
- (vii) Upgrade of existing intersections along Second Ring Road, Third Ring Road and Damascus Street.
- (viii) Upgrading of other existing streets related to above improvements as necessary.
- (ix) Investigate direct district connections along these major Corridors.
- (x) Maintain and improve pedestrian access throughout the Corridors.
- (xi) Enhance accesses along the Corridors.
- (xii) Redesign the Tie-ins with the upgraded roads and services in the other contracts. (Refer to Figure No. 5)
- (xiii) Provide the Pre-concept Study, the Conceptual Design and Detailed Design for roads, bridges, interchanges/intersections and any other elements as pedestrian bridges.
- (xiv) Prepare the Tender Documents to enable proceeding with construction contracts.
- (xv) Carry out the Contract Management and Construction Supervision Services of the contracts.

### 3.0 PROJECT DESCRIPTION

MPW has currently a vision to improve the existing infrastructure of Kuwait. Currently MPW is taking an initiative to focus improvements to the Strategic Road Network which includes Second Ring Road, Third Ring Road/Canada Dry Street and Damascus Street. The communities along these Corridors are growing and traffic demands are increasing proportionately. In addition, traffic diversion due to competitive routes also causes extensive delays during rush hours. As a result, the increased traffic demands are creating congestion and jeopardy pedestrians and vehicular safety. Improvements to the Corridors are vital to the continued economic development of the fast-growing areas on both sides of key Corridors.

The Scope of Works is shown for guidance only in Figure No. 5 – Location Plan of Second Ring Road, Third Ring Road and Damascus Street. Minimum Scope of Works is described below:

#### **Second Ring Road:**

As per Design Manual for Roads and Bridges, Second Ring Road comes under the category of Ring Road according to Kuwait Road Hierarchy. The Ring Road includes through traffic routes that are usually of a lower design standard than Expressways and Freeways routes. The approximate length of the Second Ring Road under study is 5.0 km. The cross section of Second Ring Road varies from dual 2-lane to dual 3-lane. The posted speed limit on this roadway is 80 km per hour.

The Upgrading of Second Ring Road begins at the limits of the completed design of Junction with Jahra Motorway (Contract RA/166) and extends easterly to tie-in with the completed design of Junction with Cairo Street (Contract RA/200).

The design shall upgrade Second Ring Road to three (3) basic lanes in each direction, including approx., three (3) new major interchanges (Second Ring Road with Maghreb Motorway – Rout 40, Second Ring Road with Damascus Street – Rout 45 and Second Ring Road with Riyadh Expressway – Rout 50), six (6) new or improved signalized intersections (Jassim Hamad Al Sager Street, Kifan Street, Mohamad Humoud Al Shaya Street, Al Zahra'a Street, Ibn Abbas Street, Abdul Aziz Mohamad Al Duajj Street), six (6) new or improved right-on/right-off connections, bus stops and pedestrian bridges.

(Refer to Figure No. 5)

### **Third Ring Road:**

Third Ring Road is also classified as a Ring Road type as per Kuwait Road Hierarchy. The study section of Third Ring Road is 9.00 km and passes through several important residential neighborhoods. Sections of the Third Ring Road in Shuwaikh Industrial Area consist of mostly dual 2-lanes, whereas the sections east of Airport Road are mostly dual 3-lanes. The posted speed limit on this roadway is 80 km per hour.

The Upgrading of Third Ring Road begins at the limits, and includes, the Junction with Mohammed Ibn Kassem Street and extends easterly to tie-in with the completed design of Junction with Cairo Street (Contract RA/200). Improvements at the Mohammed Ibn Kassem Intersection shall include all work on Mohammed Ibn Kassem Street from the junction with the completed design of Jamal Abdul Nasser Motorway (Contract RA/167) to the Fourth Ring Road.

The design shall upgrade Third Ring Road to three basic (3) lanes in each direction, including approx., six (6) new major interchanges (Third Ring Road with Maghreb Motorway – Rout 40, Third Ring Road with Damascus Street – Rout 45, Third Ring Road with Riyadh Expressway – Rout 50, Third Ring Road with Airport Road – Rout 55, Third Ring Road with Ghazali Expressway – Rout 60 and Third Ring Road with Mohammed Ibn Kassem Street – Rout 601), eight (8) new or improved signalized intersections (Street No.69/Street No.30, Street No.10/Street No.21, Street No. 9/Street No.19, Kifan Street/Abdullah Al Khalaf Al Saeed Street, Sultan Al Kulaib Street, Mushari Abdullah Al Rawdan Street, Badr Street and Musa Ibn Nussair Street), new or improved right-on/right-off connections, bus stops and pedestrian bridges. Any required modifications to the parking areas west of Mohammed Ibn Kassem Street to accommodate the new improvements shall also be included.

The Conceptual Design Report for this Roadway shall pay special attention to and comprehensively address the special frontage ingress/egress and off-street parking requirements in Shuwaikh Area between Airport Road – Rout 50 and Mohammed Ibn Kassem Street.  
(Refer to Figure No. 5)

### **Damascus Street:**

Damascus Street belongs to the Expressway/Freeway as per Kuwait's Road Hierarchy. Damascus Street is a radial road located between Second Ring Road and Fifth Ring Road. This roadway consists of dual 3 lanes with frequent U-turns and signalized junctions. The posted speed limit on this roadway is 80 km per hour. The approximate length of the Damascus Street under study is 2.7 km.

The Upgrading of Damascus Street begins at, and includes the intersection with Second Ring Road and extends southerly to tie-in with the completed design of interchange with Fifth Ring Road (Contract RA/257).

The design shall upgrade Damascus Street to ensure three (3) lanes in each direction, including approx., three (3) new major interchanges (at Second Ring Road, at Third Ring Road and at Fourth Ring Road), four (4) new or improved signalized intersections (Hamad Al Meshari Street/Abdulrahman Al Faris Street, Sami Ahmad Al Munayes Street/Essa Abdullatif Al Abdul Jaleel Street, Abu Ayyub Al Ansari Street and Tariq Bin Zeyad Street), approximately three (3) new or improved right-on/right-off connections, bus stops and pedestrian bridges.  
(Refer to Figure No. 5)

The works include proper matching to existing conditions, diversion (detours) and relocation of existing services and utilities, road and footpath surfacing, road fence and rail guards, road lighting, road signs, road markings, traffic signaling, surface water drainage and any associated road works.

## **4.0 INCEPTION REPORT**

This report has to include the following:

- 1) Confirm Client's needs, identify project's scope and organization, time line of project milestone,
- 2) Identify key staff, project output or delivery requirements,
- 3) Confirm in outline the options and budgets to be considered for the project and identify constrains,
- 4) Incorporate the needs of Operations and Maintenance Divisions,
- 5) Identify any strategic issues attached to the project,
- 6) Identify potential impact on operation and maintenance costs,
- 7) identify all relevant stakeholders and required approvals,
- 8) Identify quality plan.

## 5.0 QUALITY ASSURANCE

The Consultant shall have to ensure quality assurance in his work. All his work shall be checked by the Consultant's QA/QC Team and the complex structural works to be checked by a third party quality assurance team who was not part of the design team.

The Consultant shall submit the quality assurance plan and the team to the MPW Engineer for approval at the time of submission of inception report.

Any submittal to Ministry shall be assigned by QC team.

## 6.0 EVALUATION CRITERIA

The evaluation for the Technical and Financial Proposal of all required services are as follows:

The first phase -Technical proposal is (80%) of final score, divided as follows:

- |  |       |
|--|-------|
| ▪ Comprehension and quality of proposal      | (25%) |
| ▪ Work Program and Methodology               | (35%) |
| ▪ Man month input                            | (20%) |
| ▪ Curriculum vitae of key professional staff | (10%) |
| ▪ Firm Experience                            | (10%) |
| ▪  |       |

The proposals which has obtained evaluation score of 70% plus for Technical part will be entitled for the second phase of evaluation.

The second phase - Financial proposal is (20%) of final score.

The evaluation of the Financial Proposal for the technically qualified Consultants will be calculated based on the average price system according to Ministry rules.

1. The average of the financial cost for the qualified consultants will be calculated as:  
$$\text{Avg} = (\text{total amount of the financial cost for the qualified consultants} / \text{number of qualified consultants})$$
2. The Financial Proposal that is less than the average and the closest one to it, will be chosen as the basic price for comparison.
3. All the Financial Proposals less than the average will take the full Percentage (20).
4. The other financial proposals will be calculated according to the following Equation:
  - $\text{Percentage of the financial proposal} = (\text{basic price} / \text{financial proposal for each consultant}) \times \text{financial evaluation percentage (20\%)}$

## Construction Packaging

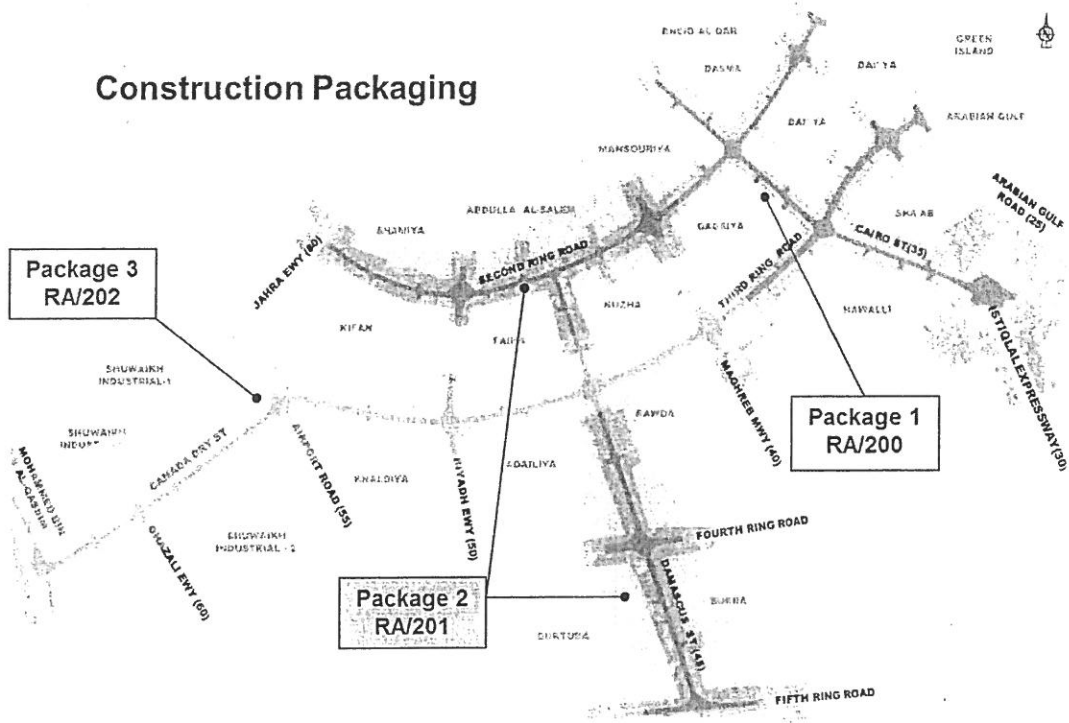


Figure No. 1

## Limited Land Availability



Figure No. 2

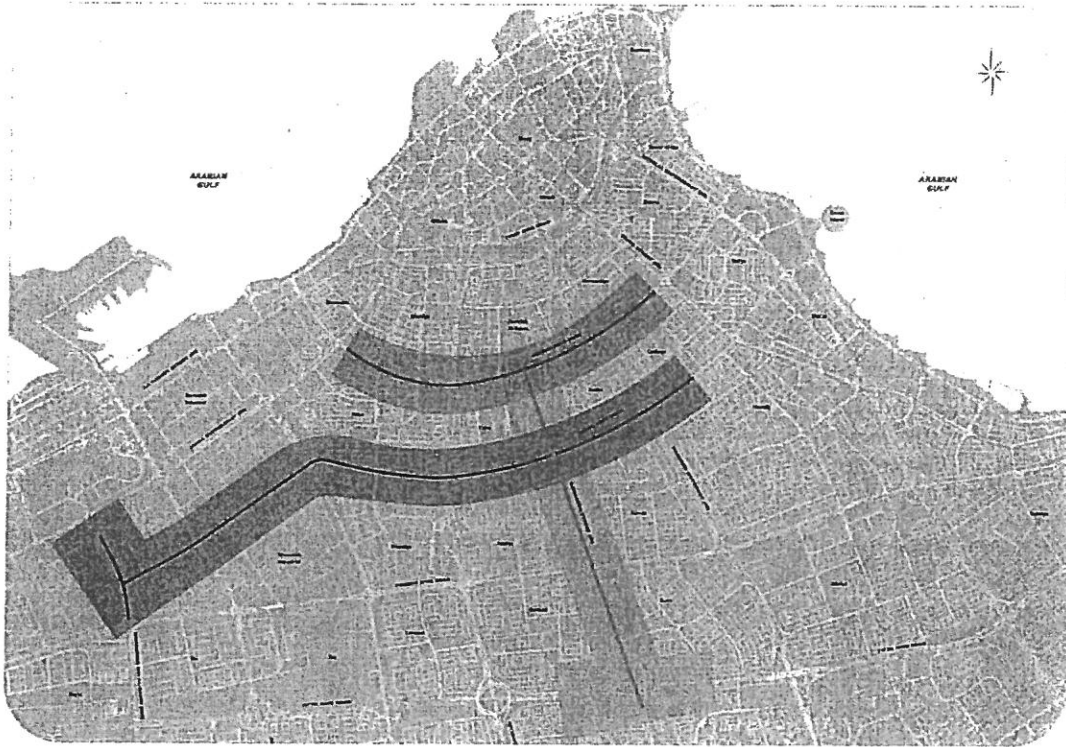


Figure No. 3



Figure No. 4

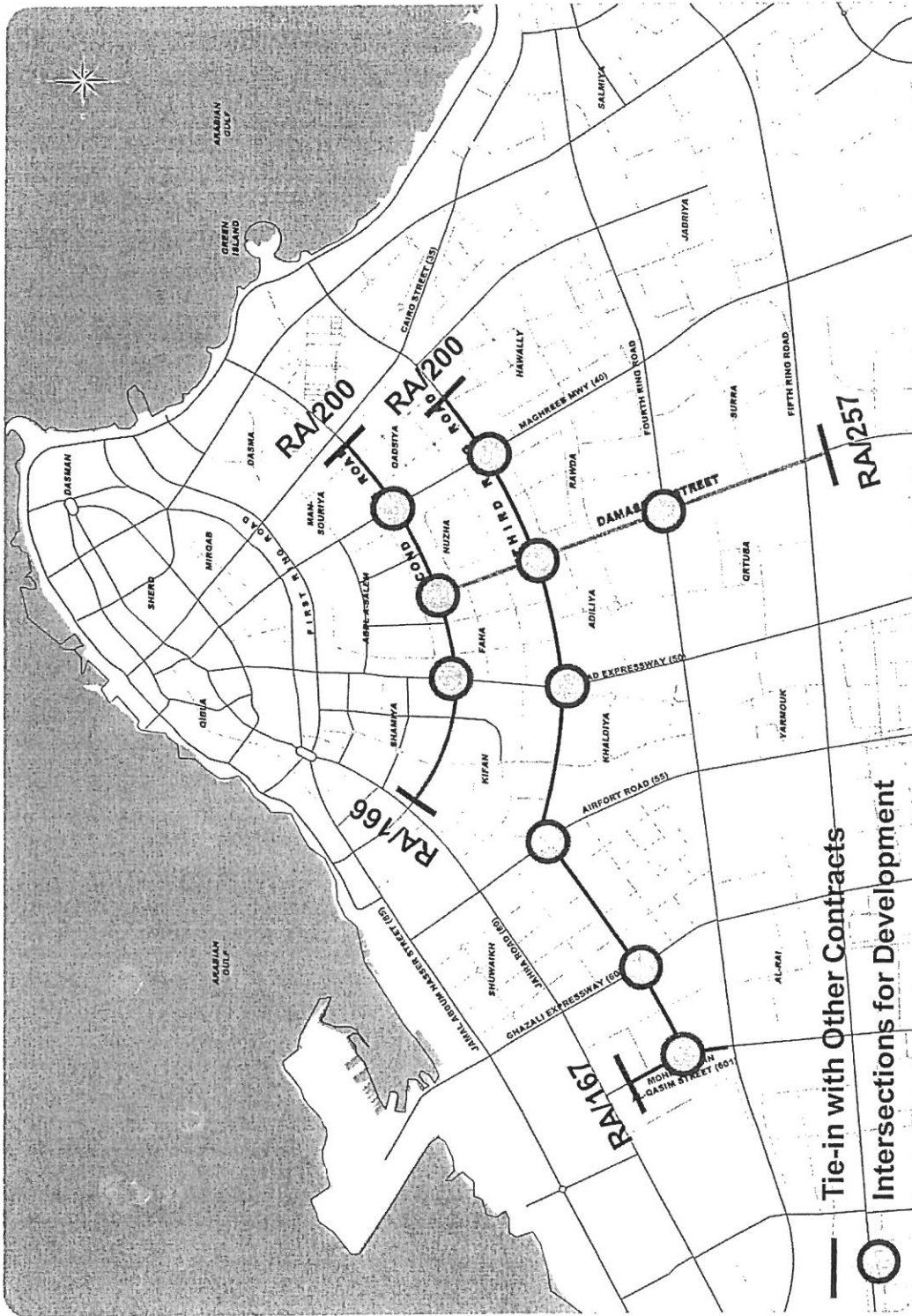


Figure No. 5

# ***VOLUME 1***

## ***CHAPTER 2***

### ***CONSULTANCY SERVICES FOR THE STUDY AND DESIGN***

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*MPW/Roads Engineering Sector  
EF/R/278  
TOR/November 2016*

Study, Design and Construction Supervision for the  
Construction and Maintenance for the Upgrading of  
Second Ring Road, Third Ring Road and Damascus  
Street

*Volume 1 - Page # 1*

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SECTION 2	General Requirements
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SECTION 4	Assistance to be provided by the Ministry

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# **CHAPTER 2 CONSULTANCY SERVICES FOR THE STUDY AND DESIGN**

## **SECTION 1 SCOPE OF CONSULTANCY SERVICES**

### **1) GENERAL**

The scope of the Consultancy Services is to carry out the Engineering Studies Design and Construction Supervision for the project described in Chapter 1 – Introduction, Section 3 – Project Description as follows:

#### **VOLUME 1**

**Stage 1** – The Consultancy Services for the Study and Design phases includes:

##### **PHASE I**

A - Pre-Concept Design

B–Development of Concept Design

**PHASE II** - Final Design and Tender Documents (Optional)

**PHASE III** - Tender Evaluation and Preparation of Contract Documents (Optional)

#### **VOLUME 2**

**Stage 2** - Construction Supervision Services (Optional)

### **2) DESIGN STANDARDS AND CODES**

The Consultant shall use the latest standards, guidelines and codes applicable to this project as per international best practices. Wherever applicable, the provisions of the MPW General Specifications for Kuwait Roads and Highways (Edition 2012) shall be followed.

All Design Criteria shall be clarified and confirmed with the MPW Roads Engineering Sector - Design Department, prior to the commencement of any analysis and computations.

#### **A) Roads**

Roads Design - *MPW's Design Manual for Roads & Bridges - Edition (2) January 2012 (DMRB) – Part 1 – Kuwait Highway Design Manual*. This standard was prepared base on AASHTO Design Standards and Guides.

Traffic Signage and Marking - *Kuwait Manual on Traffic Control Devices (KMTCD-2012)*

#### **B) Bridge and Highways Design Criteria**

Bridges and Highway related Structures - *MPW's Part 2 – Kuwait Bridges and Highway Structures Design Manual, AASHTO LRFD Bridge Design Specifications (Latest Editions)*

#### **D) Highway Drainage**

Included in *MPW's DMRB - Part 3 Kuwait Highway Drainage Design Manual*

#### **E) Typical Details**

Included in *DMRB – Part 4 – Standard Drawings*

#### **F) Design Standards for Utilities**

The Consultant shall coordinate and follow the standards, guidelines and codes used by the other concerned ministries for the design and relocation of their related services, as well as MPW Sanitary Engineering Sector.

Exceptions from above may be used only when approved by the Ministry. The consultant shall follow all the latest standards, design guidelines, specifications and standard drawings.

### 3) DESIGN CRITERIA REPORT

Based on the data collection and liaison with different Authorities the Consultant shall prepare particular criteria for the project.

The Consultant shall develop a comprehensive design criteria report for the project that shall be used as the base for design during all design stages.

The design criteria report shall cover the following design aspects:

- Roads Design
- Roads Classification
- Design Speed and posted speed
- Horizontal Alignment
- Vertical Alignment
- Cross Section Elements
- Traffic control devices
- Pavement design methodology
- Structures Design of Bridges and other Structures
- Utilities Design
- Utility Demand Estimation Criteria
- Hydraulic Design Criteria
- Design Flow Velocities
- Pressure Requirement
- Minimum and Maximum Sewage and Drainage Flow Velocities
- Network Material
- Network Depths
- Pipes, Cables, and Ducts Sizing
- Utility Crossings
- Stakeholder and Third Party Interface matrix
- Approval in principle report of each element

## 4) PHASE IA - PRE-CONCEPT DESIGN

### 4.1 Data Collection and Analysis

Upon project commencement and mobilization of the team, the Consultants shall make liaison with the different Authorities involved in the project including:

- Ministry of Public Works (MPW)
- Kuwait Municipality (KM)
- Ministry of Interior – General Traffic Department (MOI-GTD)
- Ministry of Awqaf& Islamic Affairs
- Ministry of Defense (MOD)
- Kuwait Oil Company (KOC)
- Ministry of Communication (MOC) – Cables and Transportation
- Ministry of Electricity and Water (MEW)
- Kuwait Public Transport Company and other relevant companies
- Kuwait Fire Brigade (KFB)
- Environmental Protection Authority (EPA)
- Public Authority for Agricultural & Fish Resources (PAAFR)
- Public Authority for Housing Welfare (PAHW)
- Public Authority for Industry (PIA)
- Kuwait Civil Aviation Authority
- Kuwait National Petroleum Company and other relevant companies regarding the location of petrol stations within the project study limits
- Kuwait Authority for Partnership Projects (KAPP)
- other concerned Authorities
- Any consultants working for the above Authorities or others
- Public Authority for Roads & Transportation

Available data relevant to the project in the possession of the above mentioned authorities shall be collected, reviewed, analyzed, judged for accuracy and evaluated for validity.

The collected data and reports include, but not limited to the following:

- Existing topographic survey maps, aerial photos
- Cadastral maps for right of way
- Property boundary and ownership
- Existing and future Utilities
- Existing Structures information

- Geotechnical, geological maps and soil types information
- Existing and Future planation, trees, hard landscape & irrigation network.
- Hydrological data
- Axle load information
- Existing/previous studies / reports for new developments in the study area
- Studies and designs of items that might affect the same general area of the project
- Existing/proposed planning studies in related to the project area
- Present and planned Land use Data in related areas
- Traffic studies, models and data

All data that have been collected shall be converted to digital format, by digitizing or scanning to help create a complete digital database with all data for easy reference.

#### 4.2 Site Reconnaissance

The project team shall carry out a site reconnaissance exercise for the project area to determine and understand its physical, topographical and environmental condition and involve but not limited to the following activities:

- Record the physical characteristics of roads and interchanges in terms of horizontal and vertical alignment and cross sections
- Identify traffic behavior, areas and causes of congestions
- Identify and record condition of existing bridges and structures
- Assess pedestrian routes and identify pedestrian crossing locations
- Identify environmental important features within the project area including residential, educational, religious, archaeological and historic sites
- Record existing land uses and available right of way
- Record existing utilities and other underground services
- Evaluate existing pavement
- Assess the ability of local roads to accommodate construction traffic and identify appropriate traffic diversion
- Determine suitably appropriate locations for geotechnical borings.
- Identify soft and hard landscape and irrigation network

The site reconnaissance study findings will be taken into consideration while developing the proposed alternatives for the road interchanges during the Pre-Concept Stage.

### 4.3 Topographic Survey

Topographic survey works shall be undertaken by qualified team/firm.

The survey work will include the following:

- Receive from Kuwait Municipality Survey Department a listing of established benchmarks and establishing base control points
- Receive from Kuwait Municipality and other sources topographic plans, aerial photography and digital maps
- Identifying locations and type of existing services including trial pits, and any sophisticated equipment to detect existing pipes, cables, etc.
- Provide invert elevations of existing sanitary, storm sewers and other utilities, including actual clearance of LT and HT overhead lines.
- Identification of property boundaries
- Developing spot levels provide further topographic details for roadways, intersections and interchanges locations
- Laying out core and bore locations for soils and subsurface investigation programs.
- All utilities and overhead apparatus to be surveyed and checked against utility mapping to
- Ensure overall degree of accuracy required for the design Phases.

Topographic survey plans for the project areas shall be produced with sufficient details to allow for the preparation of concept and detailed design for all intersections.

Additional topographic investigations will have to be determined, specified, procured and performed to support the preferred solution.

All field works shall be carried out using state of the art high precision surveying equipment and all office work should be performed using quality software that allows accurate computation.

Survey results shall be consolidated into computerized base, the digital survey shall be in 3D DWG (AutoCAD) format with layers system

compatible with GIS requirements, also legend and abbreviations for all site features and levels are to be introduced.

The submitted topographic survey report shall include maps produced to scale 1: 1000 (A1) and enlargements for critical places, and electric version.

#### **4.4 Traffic Survey**

A comprehensive data collection exercise will be carried out, as agreed with KM – Traffic Section of Master Plan Department and MOI-GTD and shall include the following surveys:

- Type Characteristics/ Approaches
- Automatic Traffic Recorder Counts (ATC) Traffic counts will be conducted throughout the day at all the approaches to the intersections within the study area.
- Turning Movement Counts (TMC)
- Different vehicle categories survey
- Manual Pedestrian count
- Speed and Delay Surveys
- Travel time
- Signal Timings
- Junction inventory
- Axle load survey

The data collected from the above mentioned surveys will be used for base year traffic analysis and strategic transport model (VISUM model) validation.

#### **4.5 Geotechnical Investigation**

Geotechnical Investigation works shall be performed by qualified team/firm.

##### **4.5.1 Soil Investigation**

The scope of work shall include and be not limited to the list below:

- Cased borings at locations of structures, depressed sections of roadway, areas identified as having poor sub-soil support capacity, and roadways on fills five meters or more in height.
- Auger borings in areas of roadway widening, roadways on fills less than five meters in height and temporary roadways.
- Observation and test wells at areas of roadway and structures excavation.
- Laboratory soil testing for gradation, corrosivity, abrasion, strength and compression and permeability.
- Laboratory water testing for acidity, aggressiveness, corrosiveness and hardness.
- Field soil testing for penetration resistance, CBR, permeability and stray currents.
- Field groundwater testing for drawdown, flow and effect of tides.
- Field Testing of existing pavements for strength and CBR.

Additional geotechnical investigations will have to be determined, specified, procured and performed to support the preferred solution.

#### **4.5.2 Soil Analysis**

The Consultant shall analyze the test results received from the approved soils investigation firm to determine soil stratification and characteristics in general, bearing capacity, strength, compressibility, permeability and to establish criteria for suitable designs.

#### **4.5.3 Soil Investigation Report**

The Consultant shall prepare a detailed soil investigation report. This report shall contain a summary of soil and water characteristics subsurface conditions and design criteria recommendations. This report shall be sufficiently comprehensive to form the basis for design of all required foundations, embankments and pavement structure.

#### **4.6 Pre-Concept Design Alternatives**

The Consultant shall study the possible improvement schemes for the upgrading of the existing intersections that are included in the project considering the following key elements:

- Available right of way
- Soil conditions along the corridor

- Existing pavement condition along the corridors
- Existing buildings, structures being in the project area that should not be affected by the design of project.
- Major utilities existing in the project area.
- Existing roads in the area.
- Future roads development projects.
- Other future development projects.

Based on the above information, three alternatives for combined schemes of roadway improvements, including upgrading of intersections shall be provided.

A conceptual horizontal and vertical alignment for each alternative will be prepared, considering impact on above mentioned key elements as well as construction methodology section as it is elaborated in item 4.12 (Selection of Preferred Alternative).

#### **4.7 Traffic Modeling and Analysis**

A comprehensive study methodology shall be developed with the following objectives. The Consultant shall obtain from Kuwait Municipality the latest version of Kuwait Traffic Model:

- Identify a wider area network including the junctions/ pedestrian movement areas for the traffic study in order to establish study influence area
- Develop a sub-area model for the study influence area
- Review existing junction arrangements and access requirements in wider area network;
- Review future roads and other development proposals and confirm that these are included in the sub-area traffic model as necessary;
- Carry out a detailed traffic survey and analysis (HCS, SYNCHRO, SIDRA etc.) at the base year;
- Calibrate and validate base year strategic transport model (VISUM Model);
- Confirm with Kuwait Municipality the planning data and other planning assumptions that shall be used in the traffic model for future year (2030) demand forecasting
- Develop travel demand estimates for 2030 and carry out a thorough analysis of the flow patterns

- Review the travel desire pattern and identify the accessibility requirements along the corridor, particularly at the proposed interchanges;
- Carry out capacity analysis for 2030 to establish the base 2030 conditions in order to identify the improvement/mitigation necessary
- Develop mitigation alternatives, Update the forecast year transport model and test different accessibility options at the interchanges;
- Assess the impact of interchanges proposals on traffic distribution, assignment, accessibility at local roads through VISUM model;
- Identify the preferred interchanges arrangements;
- Carry out detailed operational assessment (HCS, SYNCHRO, SIDRA etc.) and VISSIM modeling as necessary to identify the geometric solutions at the interchanges; this shall include operational analysis of signals and queuing analysis of critical sections.
- Investigate the impacts of proposed solutions on the wider road network and propose high-level recommendations to address them through future commissions
- Report and conduct presentation to the Client and Stakeholders.
- A methodology report will be submitted to Kuwait Municipality incorporating the following:
  - o Detailed Study Methodology;
  - o Traffic Data collection requirements – locations, duration etc.

Final Traffic Study Report will be prepared incorporating the Forecast year modeling, Interchange option testing, detailed operational assessment and phasing implementation plan.

#### **4.8 Environmental Impact Assessment Study**

The Environmental Impact Assessment (EIA) works shall be undertaken by a qualified or licensed Consultant registered by Kuwait Environmental Public Authority (KEPA) the following are to be considered:

- o Coordinate with KEPA regarding procedures required for EIA preparation.
- o Baseline Surveys and investigations
- o Technical Assessments of Air Quality, Noise, Marine, Waste, Geology, Soil and Groundwater, Socio-Economic, Terrestrial ecology, Landscape and Views, Archaeology and Culture, etc.

The study shall be prepared in association with latest EPA decision (42/2014) as attached. A report summarizing the assessments shall be provided.

#### 4.9 Highway Drainage

Main components of Pre-Concept Design should include but not be limited to:

- Design Criteria and methodology based on MPW's Design Manual for Roads and Bridges (Edition 2, January 2012 (DMRB) Part 3 – Kuwait Highway Drainage Design Manual.
- Plans with delineation of all contributing catchment areas based on contours.
- Parameters defining hydraulic behavior of contributing catchments area.
- General disposition of hydraulic structures (cross culverts, main trunk lines etc. including proposition of which existing structures will be retained (if any), which ones will be demolished (if any) and which will be added (new structures)
- General disposition of trough drainage requirements including sumps and pumps.
- All hydraulic modeling for any proposed storm water networks should be done by using INFO WORK Software

#### 4.10 Economic Design

The Consultant shall adopt a methodology that sets an optimal balance between the several factors that have an impact on the design from the standpoint of, includes but not limited to the following:

- Construction cost
- Construction schedule
- Network traffic efficiency
- Traffic safety
- Construction difficulties
- Environmental and social issues
- Visual impact and landscaping
- Impact on utility services

- Risk elements, in particular concerning nearby oil pipelines and installations

The above issues will need to be considered during several aspects and Phases of the Conceptual Design process.

#### **4.11 Road Safety Audit**

The aim of the Road Safety Audit process is to prevent adverse design features from being incorporated into highway schemes and to ensure that constructed schemes operate as safely as possible.

The Consultant shall make assessment of the potential road safety problems associated with the new highway construction or existing highway improvement and provide recommendation for the design.

Road Safety Audit shall be considered at all stages of the consultancy services including the Concept development stage.

The Consultant shall submit the Road Safety Audit Report identifying road safety problems with viable recommendations to address them.

#### **4.12 Selection of Preferred Alternative**

After finalizing the proposed alternatives, the Consultant shall undertake evaluation study for the purpose of comparing between the proposed alternatives.

To compare between the proposed alternatives, at least, the following minimum factors shall be considered while conducting the comparison between the proposed alternatives:

- Compliance with project design criteria
- Safety of pedestrians and vehicular users
- Traffic level of service
- Land acquisition
- Utilities relocation, protection and locations
- Complexity of construction and traffic diversion
- Construction cost and schedule

Each criterion will be compared against the others according to the established weight criteria.

The results of the evaluation will enable the Consultant to identify the recommended alternative and to be confirmed by the MPW, Kuwait Municipality and Ministry of Interior.

The Consultant shall incorporate all comments, if any, and provide final version of recommended option together with Pre-Concept Report.

The pre-concept layout of each option shall be evaluated based on weighting criteria for evaluation and comparison. The criteria shall be presented to and approved by the MPW.

#### **4.13 Value Engineering Workshop**

- The Consultant is required to contract with an independent Value Management Firm (VMF) to conduct a 5 days Value Engineering workshop during the Pre-Concept stage.
- The Consultant shall submit for MPW approval all relevant data about Value Management Firm (VMF) and the personnel performing the Workshop as part of his Technical Proposal
- A minimum of two weeks prior to the workshop start, the consultant have to send to the VMF all pertinent design documents and estimates.
- The VMF will submit the workshop agenda for MPW approval at least one week prior to the start of the workshop.
- During the 5-day workshop the VMF team shall develop alternate methods to reduce cost and/or increase efficiency, validate the findings to the maximum extent.
- The VMF shall present results on the fifth day at an oral presentation.

- Within two weeks after the conclusion of the Value Engineering Workshop, the VMF will issue a report presenting the results of their study.
- The VMF proposal accepted by the MPW shall be incorporated into the design by the consultant without any added fees.
- The VMF shall submit ten (10) nos. hard copies and ten (10) nos. CD formats of Value Engineering report.
- Key personnel from the Consultant team shall attend the workshop.

#### 4.14 Pre-Concept Design Report

The general format and key contents of the Pre-Concept Design Report(s) should be uniform for all project reports.

Nevertheless, areas of emphasis and style of presentation will vary according to each project's scope and complexity.

The Pre-Concept Design Report should generally be consistent with the following guidelines, and should encompass key components outlined below.

##### 1. Purpose

The report shall highlight three, separately developed, pre-concept design options. All of these options are developed in accordance with the findings and conclusions of the Data Collection and Analysis phase, and the comments made by the MPW Design Department.

##### 2. Format

- All pages, including graphs, charts, figures etc. must be sequentially numbered.
- Report must have a "table of contents" or "Index", and a list of references.
- Report should be clear, legible, presentable, and easy to follow.
- Report must be printed on standard size paper.

- All graphs, charts, figures, sketches, and tables must be adequately labeled.
- All maps and drawings must be scaled properly.
- All symbols and abbreviations must be adequately explained.
- Report must be dated.

### 3. Contents

To achieve the purpose and objectives of the Pre-Concept Design Report(s), there are a number of primary components that each report has to contain.

Consultant may present the three Concept Design Alternatives in different sequence and organization from one another. Supplemental information, graphs, tables, and charts may be organized, grouped and presented in various forms as well.

For a successful and comprehensive review by the MPW Design Department, Pre-Concept Design Report shall as a minimum include the following minimum key elements:

#### a. Introduction

- List of Design Consultants, Sub-consultants, Specialists, and their tasks.
- Article of the Agreement, Date of Signing, and Commencement of work.
- Conclusions and recommendations of the Data Collection and Analysis report.
- Goals and objectives of the Design Consultant for this phase.
- Updated work program and organizational plans.
- Design objectives and elements (engineering aesthetic, etc.).

#### b. Executive Summary

- Overview of the report's contents.
- Issues, risks and proposed mitigations for each alternative.
- Conclusions and recommendations.
- Comparative pre-Concept level construction cost estimates and construction duration for each alternative
- Lifecycle operation and maintenance costs.

c. Three Alternative Engineering Concepts

- Alternative site layouts and alternative site concepts. (Organization, circulation, forms etc.).
- Alternative conceptual roads layout plans.
- 
- Perspective sketches of alternative concepts with sections and elevations of alternative concepts .
- Relationship of existing buildings to new site conditions and to new layout plan.

d. Structural Design Concepts

- Foundation Systems (soil conditions, bearing capacity, types, earth works... etc.).
- Conceptual structures types (columns positions, beams locations, slab systems and locations etc.) and recommended appropriate system.
- Structural Materials (types of concrete, reinforcing steel).
- Codes and Regulations

e. Infrastructure Design Concepts

- Authorities Codes and Standards also, Storm-water Drainage System
- Basic utilities layout plan for potential diversions, protections for all existing utilities, future reservations.
- Street and Lighting System (design and illumination criteria, recommendations for light fixtures etc.).

f. Traffic Engineering Design Concepts (Traffic Study)

- Existing conditions.
- Base year data collection and analysis,
- Future year traffic forecast modeling
- Interchange option testing
- Phasing implementation plan

g. Cost Estimate and Construction Durations for each Concept Alternative

- Construction cost formats and basis
  - Construction schedule format
  - Alternatives cost comparison summary
  - Construction phasing and contract packaging
- h. Evaluation of Concept Design Alternatives and Recommendations
- Assessment and weighting criteria,
  - Proposed ranking system,
  - Concept Evaluation Matrix or Table.
  - Consultant Recommendation (reasons, justification etc.).
- i. Appendices
- Letters, Minutes of Meeting, Memos.
  - Reports
  - Drawings
  - Figures
  - Photos, images, renderings, animations

Following submission of the Pre-Concept Design report, the Design Consultant shall conduct a formal presentation to MPW Design Department design review team and higher authorities.

The presentation shall summarize the findings and recommendations of the Pre-Concept Design Alternatives phase.

#### **4.15 Field / Office Review**

The Consultant shall submit an interim report for the Pre-Concept (80 percent completion) and conduct field and office workshop review. Accordingly, all comments raised during the review period shall be implemented into the Pre-Concept Design Report and shall be submitted for approval.

The Consultant's schedule shall allow for (2) two weeks review period prior for both the field and office review.

#### 4.16 Pre-Concept Presentation

The Consultant shall perform presentation of the findings and recommendations at a workshop with the attendance of appropriate officials from MPW and other stakeholders.

Presentation of Pre-Concept Design to be held at the time of submission of the Pre-Concept Design Report and shall include the following (but not limited to):

- 3D layouts of interchanges
- Power Point slides

Ten (10) copies (A3 size hard copy and CDs) of the Pre-Concept Design Report will be submitted to the MPW for review within the time period that is indicated in the Section (2) item 3.

## 5) PHASE IB-DEVELOPMENT OF CONCEPT DESIGN

Upon receiving MPW approval on the selected alternative and Pre-Concept Design Report, the Consultant shall develop the Concept Design in sufficient details. The goal of the Concept Design Phase is to reach major decisions and fix certain aspects of the work related to the redesign of Second Ring Road, Third Ring Road and Damascus Street.

The Consultant shall include a separate cost for this task in the Financial Proposal Form (F-1, F-2 and F-3).

A detailed work program shall be submitted during the first week of this phase for approval. The following major activities shall be undertaken:

### 5.1 Roads Design

- Layout plans for the selected alternative
- Concept profiles for the roads and interchanges ramps
- Typical roads cross sections
- Right of way limits
- Typical pavement structure
- Traffic signage and markings
- Traffic management plans

### 5.2 Structures Design

- Structures aesthetical aspects
- Selection of a suitable structure
- Analysis
- Construction methodology
- Operational life
- Cost of construction

At the beginning of the study, the Consultant shall recommend the proposed forms and arrangements of the required structures, and shall obtain the Approval in Principal Document & Design Criteria.

### 5.3 Utilities Design

Develop concept designs for the utilities based on the collected and gathered background data for this project including but not limited to:

- Composite layout plan showing utilities corridors following liaison with relevant Authorities as mentioned in Chapter 2 Section 1 /Item 4.1.
- Protection and relocation of utilities affected by the construction.
- Civil work for the relocation and protection of utilities will normally be done by the roadway contractor, but the design and installation of the relevant Ministries utilities will be done by the respective service Ministries.
- Provisions for soft and hard landscape and irrigation related to removal or replant existing plants trees and pipes irrigation.
- Street lighting and traffic signals
- Provisions for ITS devices system
- The utilities plans shall be developed separately in accordance with the requirements of the service Ministries and other relevant Authorities and shall be reviewed and approved by them.

The final approvals shall be secured by the time the detail design is completed.

### 5.4 Conceptual Design Study Report

Conceptual Design Study Report shall be arranged in the form described in the previous stage of the project.

The report will detail the findings, conclusions and recommendations of the Conceptual Design Phase and shall include but not limited to the following:

#### Part 1 – Write Up

- List of collected and reviewed data
- Design Criteria
- Site reconnaissance findings and photos
- Soil investigation assessment and report
- Pavement evaluation and analysis
- Description of topographic survey works and report
- Results of traffic analysis and forecast

- Description of the various alternatives, advantages and disadvantages of each option and recommendations for preferred alternative
- Location of pedestrian crossing bridges/underpasses
- Public transportation needs
- Right of Way requirements
- Impact on adjacent services and facilities
- Concept drainage planning and criteria
- Loads, demands and assumptions calculated for all the utilities required for the road network.
- Utility protections, diversions and reservations, including PAAFA requirements.
- Approved in Principal Report for structures (vehicular and pedestrian bridges)
- Environmental assessment report,
- Provision for ITS, weight monitoring system
- Pedestrian crossings need
- Construction staging strategy describing the proposed phasing of construction, and proposed traffic diversion
- Conceptual estimates for construction cost and duration.
- Contract Packaging Strategy
- Project risk register, assessment and analysis.
- Checklist of compliance with requirements including records of all stakeholders, recommendations and approvals.

## Part 2 – Drawings

- Location plans for project intersections
- Roads and Interchanges layouts and dimension plans to proper scale
- Typical cross sections for all roads categories
- Concept pavement cross sections
- Concept Profiles for roads and Interchanges ramps
- Concept Signing and Marking drawings
- General structure arrangement drawings
- Approval in principle (AIP) of structure report
- Utilities corridor drawings, detailing the widths and location of services
- Concept Layouts for all the services
- Composite utilities layout

- Street lighting and LT, HT cables
- Maintenance and protection of traffic

### **5.5 Field / Office Review**

The Consultant shall submit an interim report for the Concept (80 percent completion) and conduct field and office workshop review. Accordingly, all comments raised during the review period shall be implemented into the Concept Design Report and shall be submitted for approval.

The Consultant's schedule shall allow for (2) two weeks review period prior for both the field and office review.

### **5.6 Concept Design Presentation**

The Consultant shall prepare and perform different types of presentations of the findings and recommendations at a workshops with the attendance of appropriate officials from MPW and other stakeholders.

Final Presentations to be held at the time of submission of the Concept Design Report and shall include the following:

- 3D layouts of interchanges
- Power Point slides
- Visual animation of whole concept

Ten (10) copies (A3 size hard copy and CDs) of the Conceptual Design Study Report will be submitted to the MPW for review within the time period that is indicated in the Section (2) item 3.

### **5.7 Scaled Model**

The Consultant shall prepare two Scaled Models (2 m x 1 m size) of the approved Concept clearly showing various components of the scheme. Details of all bridges and road arrangements shall be clearly depicted along with the topographical and land use features along the corridor.

## 6) PHASE II - FINAL DESIGN and TENDER DOCUMENTS (Optional)

Upon receiving the MPW approval on the Concept Design Report, notice to proceed, the Consultant shall develop the Final Design and Tender Documents with enough information suitable for construction. During the detail design phase the consultant shall prepare and submit (in conjunction with MPW) all applications, written descriptions, technical criteria, design data, drawings and plans as required by the regulatory and approval agencies. Obtain necessary permits and approvals.

A detailed work program shall be submitted in the first week of this phase for Client approval.

### 6.1 FINAL DESIGN

#### 6.1.1 Final Highway Design

The following activities shall be undertaken:

- Topographic survey benchmarks & control points coordinates.
- Roads layout showing earthwork limits for roads and Interchange ramps
- Centerline setting out data
- Setting out data for the roads features based on the typical cross section
- Longitudinal profiles for main alignment, ramps and slip roads
- Typical cross sections will be provided for all roads showing all the highway features
- Detailed cross sections of the interchanges
- Right of Way demarcation plans
- Construction details drawings for curbs, fences, guardrails and traffic barriers etc.
- Traffic control devices
- Pavement structure
- Construction phasing and the traffic diversions during the execution of the project.

#### 6.1.2 Final Storm water Drainage Design

The following activities shall be undertaken:

- Storm water Drainage Schedules and Details.
- All layout plans and profiles with final locations of all hydraulic elements in larger/required scale.
- Reassessment of all hydraulic elements as a result of review of the Concept Design
- Final hydraulic calculations and INFOWORK modeling.
- All details (typical and non-typical) of manholes and culverts
- Final checking and rectifying any services interference with final storm water lines
- Detailed Structural Design\_for non-typical features and storage tank
- Invert elevations, pipe sizes and slopes to be presented in tabulated form.
- Necessary details for specific elements such a culverts, inlets, manholes and headwalls, storage tanks
- Cross sections shall be prepared for each major drainage structure.

### - **6.1.3 Final Utilities Design**

The following describes the level of data that will be provided in the detailed design of the relocation, protection, and proposed utility network, not limited to as follows:

- Water supply (including FW & BW and irrigation)
  - Layout plans showing the coordinates of tie in points, location of the main and secondary lines, locations of air valves, washout valves, isolating and control valves.
  - Standard details and sections
  - Longitudinal profiles for main line
- Sewerage
  - Layout plans showing the coordinates for the tie in points, locations and label of all manholes and inspection chambers
  - Longitudinal profiles will be provided for main pipelines
  - Standard details and sections
- Fire Fighting
  - Layout plans showing the coordinates of tie in, position and size of pipes, locations of fire hydrants, washout valves, and air valves.

- Standard details and sections
- Power Supply
  - Layout plans showing the location, size, capacity and loading of distribution substations
  - Load schedules, power flow, voltage drop and short circuit calculations
  - Single line diagrams
  - Standard details and sections
- Telecommunication
  - Layout plans will be prepared based on the services provider design and requirements to include the exact location, type, size, and number of telecommunication ducts, manholes, junction boxes, distribution of fiber optic cabling
  - Hubs, pop exchange room, and connections to plots.
  - Standard details and sections
- Street Lighting
  - Layout drawings showing the exact location the street lighting poles, cable reticulation, feeder pillars distribution, and circuit referencing.
  - Single line diagrams will be provided for each feeder pillar.
  - Lighting calculations and voltage drop calculation.
  - Lighting fixture schedules
  - Standard details and sections
- **6.1.4 Final Structural Design**

The following activities shall be undertaken:

- Detailed analysis and design of the main structural elements of the proposed structures
- General arrangements
- Detailed drawings for superstructures, abutments and piers, etc.
- Submit the drawings and reports for approval.

- **6.1.5 Field / Office Review**

The Consultant shall submit a draft report for the field and office review when the Final Design Study is 80 percent completed. The Consultant's

schedule shall allow for (2) two weeks review period for both the field and office review. Accordingly all raised comments during review period shall be implemented in the Final Design Report and shall be submitted for approval.

Upon approval of the final design report the Consultant shall submit the final draft of the Tender Documents to the MPW for three weeks review prior to forwarding the plans for final printing. The review period shall include field and office review at the end of the second week, and third week shall be used for the other necessary revisions to the Documents.

#### - **6.1.6 Final Design Report**

Upon completion of the Design Phase, the Consultant shall submit fully detailed and comprehensive Final Design Report. This report shall cover all aspects considered in all stages of project design. The final phase report shall be arranged in format described for previous phases of the project.

The final design report shall include, but not limited to, the following:

- Part 1 – Write up
  - General description of the project and site constraints.
  - Design criteria for roads, structures, drainage and utilities
  - Description of the proposed design for interchanges and structures such as bridges, retaining walls, pedestrian crossings, drainage structures, etc.
  - Pavement design parameters and calculations
  - Geotechnical investigation, traffic and topographic survey, environmental assessment report and any other reports.
  - Summary of right-of-way requirements and status
  - Summary of services coordination and approvals.
  - Estimated construction schedule
  - Supplemental and particular specifications as modification to the General Specifications of MPW-Roads
  - Cost estimate and Bill of Quantities according to typical MPW construction specifications format (CSI)
  - The cost estimate unit price shall follow the current cost data of similar projects for development.
  - Check list of compliance with requirements including record of all stakeholders approvals

- Revised presentations, visual animations, images, etc.
  
- Part 2 – Final Design drawings
  - Final roads layouts (scale 1:1000 for A-1) showing dimensions, existing survey and proposed design
  - Final interchanges detail layout in suitable scales
  - Final setting out main road and ramps
  - Final Rights of Way layout
  - Final Longitudinal profiles for main roads and ramps
  - Typical cross sections for roads and ramps
  - Final roads construction details for curbs and traffic barriers
  - Signing and Roads Markings typical details
  - Pavement details
  - Final construction staging and traffic diversions
  - Final traffic control devices plans
  - Final drainage layout plans and hydraulic model results
  - Final services relocation and protection plans and details
  - Composite utilities plans including future reservations, existing utilities and proposed relocations
  - General structures arrangement
  - Structures reinforcement detail drawings and schedules
  - Pre-stressing concrete drawings (if required)
  - Standard details drawings (bearings, parapets, expansion joints, etc.)
  - All related calculations

The Final Design shall be approved by all stakeholders regarding drawings, standards, specifications and BOQ prior to obtaining MPW approval to proceed with Tender documents.

The consultant shall prepare complete documentation record with regard to coordination and approvals obtained from relevant Authorities during all stage of Agreement.

The Consultant is required to prepare a Pre-Tender Cost estimate based on the Final Design drawings. Data from the pre tender cost estimate shall be utilized by the Employer for budgeting purpose and also for information required as part of the services authorities process.

## - 6.2 TENDER DOCUMENTS

Upon completion and approval by the Ministry of the Final Design Phase, the Tender Documents shall be prepared concise summaries of design objectives and shall be prepared in close consultation with the MPW, Kuwait Municipality, Utilities Authorities and other involved stakeholders.

The Tender Documents shall be completed to facilitate a minimum of three bid packages and as approved by the Ministry

These shall be used as the basis for the Performance Specifications which shall also define the Quality Assurance to be provided by the Contractor.

Bills of Quantities shall be based on the detailed quantities take-off from the Drawings and Specifications. Bill of Quantities shall be prepared using the MPW standard Construction Specifications Format (CSI).

The Conditions of Contract shall be prepared following Client's standard conditions, including:

Document I:	Tendering Procedure
Document II:	Particular Conditions
Document III-1:	Supplemental Specifications
Document III-2:	Particular Specification
Document III-3:	Reduced ½ size Drawings
Document III-4:	Bill of Quantities
Document III-5:	Price Analysis
Document IV:	Soil Investigation Report

Other Technical requirements (cost estimates and estimated construction schedule)

The drawings and documents shall be coherent and consistent with each other and shall include all changes, revisions and addendums that will be issued during the tender period.

Upon completion of the Tender Documents, the final draft shall be submitted to the MPW for review immediately prior to forwarding the plans

for final printing. Following approval by the MPW, the required sets of Tender Documents shall be issued by the Consultant to the MPW for tendering to the successfully prequalified contractors.

The Consultant shall include a separate cost for this task in the Financial Proposal Form (F-1, F-2 and F-3).

## 7) PHASE III- TENDER EVALUATION and PREPARATION of CONTRACT DOCUMENTS

The Consultant shall perform the tenders' evaluation of each package and prepare the necessary documents for awarding contract under this Agreement and to be started upon receipt of the final approved Tender Documents from the CTC (Central Tendering Committee).

The Consultant shall submit the final report for the Tenders' Evaluation to MPW within seven (7) days from the date of receiving the tender, so the Technical committee can recommend the awarding during the due date for that.

After approval of Draft Final Contract Documents, it will be submitted in digital format on CD-ROM and the Consultant will supply ten (10) sets of Contract Documents to include:

Document 1	Tendering Procedure
Document 11-2	Particular Conditions
Document 111-1	Supplemental Specifications
Document 111-2	Particular Specifications
Document 111-3	Standard MPW (A1) and reduced A3 size Drawings
Document 111-4	Bill of Quantities
Document 111-5	Price Analyses
Document 111-6	Amendments and Addenda (if any)

The above documents are to be bound in sets and properly marked for distribution as directed by the MPW. The bounded documents shall be coherent and consistent with each other.

After the Contract has been awarded to the successful Contractor, the Consultant shall supply the following drawings and documents for each construction project (package):

- 3sets (A1) size drawings.
- 5sets of reduced A3 size drawings
- The original and two first run mother prints of each drawing.

- 10 copies of Digital Format on CD-ROM for the whole documents

The Consultant shall include a separate cost for this task in the Financial Proposal Form (F-1, F-2 and F-3).

Please note that the start date of Tender Evaluation is depend on the Authorities approvals.

## **8) MISCELLANEOUS TASKS (Optional)**

The Consultant is required during any Phase of the Design to perform one (or more) of the following services:

- 1. Value Engineering Workshop(s) (Optional)**
- 2. Quantitative Risk Assessment Study (Optional)**

The Consultant shall identify in the proposal as appropriate, for each consultancy services provided, the following:

1. Work Program and scope of service provided.
2. Staffing and Man-Month input Schedule
3. Consultant (or sub-consultant) relevant experience

### **8.1 Value Engineering Workshop (Optional)**

- The Consultant may be required to contract with an independent Value Management Firm (VMF) to conduct a 5 days Value Engineering Workshop
- The Consultant shall submit for MPW approval all relevant data about Value Management Firm (VMF) and the personnel performing the Workshop as part of his Technical Proposal and shall include separate cost for the task (optional) in the financial proposal (Form F-3)
- A minimum of two weeks prior to the workshop start, the consultant have to send to the VMF all pertinent design documents and estimates.  
The VMF will submit the workshop agenda for MPW approval at least one week prior to the start of the workshop.
- During the 5-day workshop the VMF team shall develop alternate methods to reduce cost and/or increase efficiency, validate the findings to the maximum extend.
- The VMF shall present result on the firth day at an oral presentation
- Within two weeks after the conclusion of the Value Engineering Workshop , the VMF will issue a report presenting the results of their study.
- The VMF proposal accepted by the MPW shall be incorporated into the design by the Consultant without any added fees.

The VMF shall submit ten (10) nos. hard copies and ten (10) nos. CD format of Value Engineering Report.

## **8.2 Quantitative Risk Assessment Study (Optional)**

The Consultant may be required to Contract with an independent specialized firm approved by Kuwait Oil Company (KOC) for performing the Quantitative Risk Assessment (QRA) Study to perform this task...

The Consultant shall submit for MPW approval all relevant data about the nominated firm and the personnel to be involved in the study as part of his technical proposal and shall include separate cost for this task (Optional) in the financial proposal Form F-3.

Prior to QRA Study, the Consultant shall provide MPW approval from KOC for his Sub-Consultant firm.

The Consultant shall provide to the QRA Study firm all the documentation regarding the actual concept of the route of the roads and existing utilities.

The QRA study firm shall submit approved by KOC the study process agenda for MPW approval at least one week prior to the start of the review.

The QRA Study shall provide details of the safety protection measures and/or relocation of any existing or passing oil lines that need to be addressed during the design in order to comply with the KOC safety requirements and other regulations.

The QRA Study firm shall issue a report presenting the results of their study, and provide the recommendation to reduce the hazard and the safety protection measurement that should be taken into consideration during design.

The accepted QRA Study report by KOC then by MPW shall be incorporated into the design by the Consultant without any added fees. The Risk Assessment Study firm shall submit ten (10) nos. hard copies and ten (10) nos. CD of the report.

The Consultant shall include a separate cost for this task in the Financial Proposal Form (F-1, F-2 and F-3).

## 9) REPORTING DELIVERY

The following table shows the different deliverables to be submitted during design phases:

Phase	DELIVERABLES				
	ITEM	Format	Size	No. of Copies	
				Hard	CD
Phase-I: Pre-Concept Design	Data Collection Analysis	Report	A3	5	5
	Draft Pre-concept Design Report	Report/Drawings	A3	3	3
	Pre-concept Design Report	Report/Drawings	A3	5	5
Phase-II: Concept Design	Draft Concept Design Report	Report/Drawings	A3	3	3
	Concept Design Report	Report/Drawings	A3	5	5
Phase-III: Final Design and Tender Documents	Draft Final Design Report	Report/Drawings	A3	3	3
	Final Design Report	Report/Drawings	A3	5	5
	Draft Tender Documents	Report/Drawings	A3/A4	5	5
	Tender Documents	Report/Drawings	A3/A4	5	25
Phase-IV Tender Evaluation and preparation of Contract Documents	Tender Analysis Report	Report	A4	5	5
	Contract Documents	Varies	Varies	10	10
Other	All other Reports as Geotechnical, Topographic, Traffic, Environmental	Report/Drawings	A3/A4	5	5
	Pavement Structure, AIP, Design Criteria, Value Engineering	Report	A4	5	3
	Monthly Progress Report	Report	A4	3	3

Note: All submittals shall be accompanied by necessary respective calculation sheets.

## **SECTION 2      GENERAL REQUIREMENTS**

### **1) FORM OF AGREEMENT**

A typical Form of Agreement to be executed by the MPW with the successful Consultant which provides further information on the administration of the Agreement, the nature of services required, and the General Conditions of the Agreement.

### **2) PERIOD OF AGREEMENT**

The total period of Agreement will be (24) (Twenty-Four) months, which includes the Pre-Concept Design, Conceptual Design, Final Design and Tender Documents and the Tenders' Evaluation Phase.

### **3) DESIGN COMPLETION SCHEDULE**

A schedule for the Design completion period is shown in Figure 1 enclosed. Time Schedule is indicative and for information and clarification only, MPW will not be liable for that.

#### **3.1 Conceptual Design (Phase I) - (14) months**

Within (14) fourteen months from the Date of Enterprise, the Consultant shall complete the conceptual design (both Pre-Concept Design and Development of Concept Design), prepare a report, obtain, incorporate the review comments and then get approvals.

The period shall include Value Engineering Workshop and Quantitative Risk Assessment Study, if activated.

This period shall include fourteen (14) days for MPW review and approval of the Pre-Concept Design Report and (2) two months for MPW review and approval of other Authorities and MPW for the Concept Design Report.

### **3.2 Final Design and Tender Documents (Phase II) - (8) months (Optional)**

The period for this Phase shall be two months (2). This period shall include fourteen (2) two months for MPW review and approval.

### **3.3 Tenders' Evaluation and Preparation of Contract Documents- (Phase-III) - (2) Months (Optional)**

The period for this Phase shall not be more than two (2) months, including Fourteen (14) days for MPW review and approval, but commencement as per Ministry announcement. The duration shall be considered as not continuous due to other Authorities procedures.

## **4) CONSULTANT'S OFFICE IN STATE OF KUWAIT**

The International Consultant shall establish and maintain a fully operational office in the State of Kuwait, adequately staffed by qualified professional and support personnel for the design Agreement period in accordance with Article (5) mentioned in the General Conditions, Document I.

The established office in Kuwait shall perform the design work as described in this Agreement. Any specialized or advisory work may be undertaken at the Consultant's home office, outside Kuwait, with the prior approval of the MPW.

## **5) COOPERATION WITH LOCAL CONSULTANTS**

The International Consultant shall comply with the requirements and conditions of the Decision of the Minister of MPW and State Minister for Municipal Affairs No.193, for the year 2007, regarding the cooperation of with the local consulting firms, in accordance with Article 34/6 of Particular Conditions Document II and Ministry approved list.

The participation of the Local Consultant shall be max. 25% of overall works scope as per the man-months input of Professional & Technical staff.

## 6) CONSULTANT'S STAFF REQUIREMENTS AND QUALIFICATIONS

The Consultant shall base his technical proposal on the recommended minimum key staff positions, minimum qualifications and duration of previous experience for the key personnel employed on its projects. These requirements are summarized in the table below.

CVs of all nominated key and lead professional team/limited to a maximum of 12 members shall be submitted (Form T-1, T-2). Acceptance of tender as a whole will not imply automatic approval of any nominated staff candidates with the tender. Prior to mobilization, and at any time during the commission the Ministry reserve the right to re-evaluate any or all the nominated design staff candidates. The Consultant shall at written request of Ministry make all or any of the candidates available for interview and/or provide any documentations as deemed necessary for purpose of re-evaluate. Any substitution of nominated staff with equivalent or greater accredited qualifications and experience must be prior approved by the Engineer.

The Consultant's Design team shall include qualified Kuwaiti Engineers and technicians, in accordance with Article 34/5 (National Workers Support) mentioned in Particular Conditions Document II.

Item	Discipline	Position	Category	Academic Qualifications	Professional Qualifications	Years of Relevant Experience
1	Management	Project Manager	P	B.Sc. Civil Engineering	PE / MICE	20(1)(2)(3)(4)
		Design Manager	P	B.Sc. Civil Engineering	Appropriate Qualification	*20(1)(2))(4)
2	Highway	Highway Team Leader	P	B.Sc. in Civil Engineering + Relevant Software Certificate	Appropriate Qualification	*15 (1)(2)(4)
		Principal Highway Engineer				

3	Traffic & Transport	Traffic Team Leader	P	B.Sc. in Civil Engineering + Relevant Software Certificate	Appropriate Qualification	*15 (1)(2)(4)
		Senior Traffic Engineer				
		Senior Transport Planner				
		Principal Traffic Modeler				
4	Structure	Structures Team Leader	P	B.S. Civil Engineering + Relevant Software Certificate	Appropriate Qualification	*15 (1)(2)(4)
		Senior Bridge Engineer				
5	Utilities	Utilities Team Leader	P	B.S. Civil Engineering + Relevant Software Certificate	Appropriate Qualification	*12 (1)(2)(4)
		Principal Drainage Engineers				
6	Liaison	Liaison Officer	P	B.Sc. Civil Engineering or Appropriate Qualification	Appropriate Qualification	12 (1)(2)(4)
7	QS	Chartered Senior Quantity Surveyor	P	B.Sc. Civil Engineering or Appropriate Qualification	ARICS or Appropriate Qualification	*15(1)(2)(4)
8	QA/QC	QA/QC Specialist	P	B.Sc. Civil Engineering	PE/MICE or Appropriate Qualification	*20(1)(2)(4)

Notes to the above table:

1. Experience to include relevant working knowledge of computers. (\*Shall include knowledge and operation of relevant software).
2. Academic qualifications and Curricula Vitae's will be subject to the approval of the Ministry of Public Works.

3. **Project Manager must have at least 5 years' experience with the firm.**
4. **The CV's for the senior professions should indicate a history of at least five years responsible experience in the project roles.**
5. The staff positions described on the table above is to be considered as recommended staff requirements only. It is the responsibility of Consultant to include in the technical and financial proposal all necessary staff to carry out all requirements of the study within the allocated time.

The table above is to be included in the Consultant's Technical Proposal.

All staff required to use a vehicle must hold a current Kuwaiti driving license or a current driving license from their country of origin for expatriates, which is eligible for conversion to a Kuwaiti license.

In addition to the above, all key personnel are required to be able to read, write and fluently speak the English language.

## **7) CONDITIONS OF EMPLOYMENT**

The Consultant shall comply with the Kuwait Labor Law.

## **8) COMPUTERS, SOFTWARE AND EQUIPMENT SUPPLY**

The Consultant shall provide for MPW use 4 sets of computer stations with the latest version of licensed Software as shown below:

- MS Office (Arabic enable version)
- Desktop Publishing Software.
- Adobe Acrobat Pro
- Auto Desk Products (Civil 3D, BIM)

Each computer station shall be provided with printers, scanners and the necessary facilities to perform the expected work, specifications to be approved by MPW.

The Consultant shall provide other appropriate facilities necessary to follow up the design duties i.e. 4 digital cameras, 4 mobile phones, all criteria specifications relevant to the project and as per the instructions of Ministry. Also the necessary stationary and consumables at a rate of KD.200/month to be available during the whole period of the project. The Consultant shall include a separate cost for this item in the Direct Costs Form (F-2).

The Consultant shall bear the cost of maintenance of all above for the whole period of the Agreement, as instructed and approved by the Engineer.

## **9) SITE OFFICES FOR CONSTRUCTION**

The Consultant under this Agreement shall coordinate with MPW and Kuwait Municipality to designate a suitable area on Government Land for use of the Construction Supervision Consultant/MPW staff and Contractor's (site offices & storage yards) during the construction of the works.

This requirement is an advance action taken to locate a site to obtain the approval from the Kuwait Municipality for the Contractors use.

## **10) TRAINING PROGRAM (Optional)**

### **1.Training of Ministry Staff (Optional)**

In accordance with the provision of Article(29) in Document II "Particular Conditions, the Consultant shall accept and train a number of Kuwaiti Professionals for this Agreement. The Consultant is expected to provide a proper and comprehensive training program strategy. This training program strategy is important to the Ministry.

The Consultant ability in conveying practical professional and technical skills and new design and construction technology to the trainees will be well considered by the Ministry. Training shall be performed using latest engineering GIS applications.

The scope of training duration shall cover design phases required in this Agreement.

MPW will elect to assign minimum four (4) Kuwaiti professionals to the Consultant for training purposes and they are to be considered as part of the Consultant's team.

The training shall be performed in one group. The positions proposed for the training shall cover all tasks related to the nature of this project.

The Consultant shall provide a time schedule for the duration of the proposed program for the full period of the Agreement and to be reviewed accordingly.

The assigned engineers shall follow the Consultant's orders and instructions. The Consultant is required to provide the following:

- Relevant GIS application and shall coordinate with MPW – IT Department regarding the installation.
- A well-defined training program strategy based on the Roads Engineering Sector requirements to effectively implement the learning process of the trainee. The program shall allow and make the trainees to practice what they have learned to the greatest possible extent and the Consultant shall assume full responsibility for all work produced by the trainees.
- A continuous feedback on the performance of the trainees and monthly progress report shall be submitted to the Engineer. The Employer shall immediately be advised at any time if any of the trainees does not attend or frequently arrives late, or shows negligence, lack of interest and unwillingness to learn the new skills.
- Appropriate work facilities, such as office space, office furniture, tools, equipment and office supplies, etc. that are required for training purposes.

All administrative affairs of the trainees, such as salaries, annual leave, sick leave, etc. will be paid by the Ministry and will not be charged to the Consultant. The trainees will work the Ministry hours on site.

Reimbursement to the Consultant for the cost of this item will be made as per Statement 8 in Document II of the Agreement.

The Consultants Financial Proposal shall include the cost of Training of Ministry Staff for above mentioned period by monthly rate for trainee.

## **2. Study Tour (Optional)**

After signing the Consultancy Agreement and during the mobilization period, the Consultant may be required to plan and organize a Study Tour to a selected number of similar projects abroad, preferable Consultant country of origin. The results and findings of the tour shall help the Ministry to formulate and define the nature of the facilities required.

The Final plan of the Study Tour shall be determined and approved by mutual consent between the Ministry's Roads Engineering Sector and the Consultant before exercising the requirement and shall be subject to the Ministry's regulations in this regard.

The Consultant shall provide a comprehensive program considering a number of projects to be visited with a number of professionals from the Ministry to be included in the trip.

A maximum of three trips are to be conducted for the whole period of the Agreement with one week duration for each trip and maximum four professions per trip.

### **3. Study Trip Report**

Within two weeks after the conclusion of the tour, the Consultant shall issue a STUDY TRIP REPORT presenting the results and the findings of the tour.

The report shall contain a record of all the activities during the tour, photographs, minutes of meetings and any other relevant materials.

The final report must be approved by the Ministry Roads Engineering Sector.

The Consultant shall include a separate cost for the Study Tour in the Financial Proposal (Form F-3).

One single payment to be paid upon approval of the submitted Trip Report by the Consultant to Ministry's Roads Engineering Sector.

## **11) AGREEMENT DOCUMENT**

The Consultant after signing this Agreement shall provide Ministry with additional 3 hard copies of the Agreement Documents complete, as listed in Article (2) Of Document No.(II), together with 3 CD including scanned Agreement Document. This is for internal use of Ministry.

# WORK SCHEDULE FOR EF/R/278 / UPGRADING 2ND, 3RD RINGROAD AND DAMASCUS STR

DURATION	FIRST YEAR	SECOND YEAR	NEXT YEAR
<b>INITIAL/PLANNING STAGE</b>			
Agreement signing and Notice to Proceed	█		
<b>PROJECT DEVELOPMENT STAGE</b>			
<b>PHASE I - CONCEPT DESIGN</b>		2 2	
Pre-Concept Design	█	1 4	
Concept design Development	█		
KM Council Decision and KM Roads	█		
Review and Approval by Authorities	█		
Approval and NTP to Phase II	█		
<b>PHASE II - FINAL DESIGN and TENDER DOC.</b>		8	
Final Design		█	
Final Design Review and Approval by Authorities		█	
Tender Documents Preparation including review		█	
Approval and NTP to Phase III		█	
<b>TENDER PROCESS PERIOD</b>			
Phase III - TENDER EVALUATION/CONTRACT			*
Tender Evaluation		2	*
Contract Documents Preparation		█	
Approval and NTP to Construction Stage		█	
Agreement signing and Notice to Proceed			*
<b>CONSTRUCTION STAGE</b>			
<b>SUPERVISION STAGE</b>			2 4
			2 7

NOTE: \*- COMMENCEMENT AND DURATION DEPEND ON OTHER AUTHORITIES PROCEDURES

## **SECTION 3 – PROPOSAL SUBMISSION REQUIREMENTS**

### **1) TECHNICAL PROPOSAL FOR DESIGN SERVICES**

The Technical Proposal shall be prepared and submitted with separate sections demonstrating the Consultant's understanding of the project and discuss in details the approach and methods to perform the Design.

The proposal should also include information about the Consultant's organization, main activities, and financial standing, etc.

Full details of relevant experience of the Consultant, his associates and specialist Sub Consultant firm shall be included.

The proposal should describe plans for accomplishing the work with particular comments on work to be performed outside of Kuwait.

The Consultant is encouraged to discuss technical matters essential to the project, which might not have been specifically listed in these Terms of Reference.

The Ministry will take this into consideration when evaluating the proposal.

The consultant's Proposals shall be prepared in accordance with the requirements of these Terms of Reference and with due consideration to the Articles of MPW Agreement.

The Technical Proposal shall provide an explanation, if any, of Consultant's' employees being simultaneously employed on another Agreement resulting in a financial implication upon this Agreement.

The proposal shall include the following Technical Requirements:

#### **1.1 Discussion of Project Comprehension**

This element shall consist of a concise and complete discussion of the Consultant's comprehension of the project.

## **1.2 Consultant's Approach to Project Management**

The Consultant shall propose a management plan with organizational chart for the project clearly addressing the professional and technical staff responsible for each of the following activities and a description of their reporting relationships.

## **1.3 Work Program**

The Consultant shall produce a work program in accordance with the requirements of Terms of Reference presented in a bar chart form as shown in Form (T-4) attached and should be supported where necessary by written statements.

In preparing the work program, the Consultant shall highlight the milestones and the period for the MPW review of each phase of the work as shown in Section (2) Item 3.

Each task must be identify, described and interrelated to the staff duties, their duration, etc.

## **1.4 Man-Month Schedule**

The information regarding professional and technical staff to be submitted as shown in attached Form (T-5).

## **1.5 Curricula Vitae**

In describing the design program, the Consultant shall provide curriculum vitae (CV) for each person who shall occupy key managerial and engineering positions and all full-time engineering positions in the Kuwait office

Complete CV of all professional team members will be submitted as shown in attached Form (T-1 and T-2).

For all professional team members, the Consultant shall provide a brief description of the proposed position.

## 1.6 Relevant Experience

Full details of relevant experience of the Consultant, and his specialist Sub-Consultant firms, shall be submitted as request in attached Form (T-3 and T-4). Experience and a proven track record in similar projects will be a factor in the evaluation and selection of the Consultant.

**Each Consultant shall submit with the Technical Proposal a signed statement confirming that all the work shown was actually done by him or his Sub-Consultants.** References may be sought from past clients concerning design responsibilities, performance, etc.

## 2) FINANCIAL PROPOSAL FOR DESIGN SERVICES

The Consultant's Financial Proposal shall be in accordance with the requirements of the Terms of Reference.

Any Agreement between the Consultant and his Sub-Consultant shall be clearly identified. The Consultant and any associate or Sub-Consultant shall abide by the Terms and Conditions of the Agreement, which will be governed by the Laws of the State of Kuwait.

The Consultant shall prepare and submit the Financial Proposal Forms (F-1 to F-4) and the Technical Proposal Forms (T-1 to T-8) attached.  
If sufficient space is not available, the Consultant may use additional sheets provided the format is not revised in any way.

These Forms will be used by the Client to evaluate the Consultant's Proposal and ability to perform the work satisfactorily. In the event Article (11) of Document I of the Agreement is required to be used, the above tables will be used to evaluate any change in the scope of work.

Salary rates and staff related direct costs shall remain fixed for the full period of this Agreement; Escalation to the salary rates will be applicable for any extension after the date of Agreement contractual completion (according to the Approved Work Program included in Document No.II – The Particular Conditions of the Consultancy Agreement) for each phase and for any preceding phase which the start date will be affected due to that extension, provided that the reasons for that extension are beyond the control of the Consultant

Escalation to the salary rates will be based on official consumer price index (CPI) issued by the Ministry of Finance in the State of Kuwait, for the year immediately preceding the request and subject to the approval of the relevant authorities.

The Financial Proposal shall be submitted giving a Fixed Lump Sum Amount to accomplish all work included in the Terms of Reference.

## 2.1 Fees and Terms of Payments

Fees for professional services furnished by the Consultant (including miscellaneous items) and Sub-Consultants/Firms shall be on the basis of Percentage Completion as shown in the tables below which shall be made in accordance with the optional of Article (18) Document 1 of MPW Standard Agreement.

After MPW issue the Date of Enterprise the Consultant may apply for an advance payment fee in accordance with Article (20) of General Conditions – Document I and Article (20) of Particular Conditions – Document II of the Agreement.

The advance payment will be recovered completely by the MPW from the amounts due to the Consultant at least one month before completion date of the Agreement and as shown in the tables below.

<b>Phase I – Concept Design</b>			
<b>Payment No.</b>	<b>Description</b>	<b>Payment %</b>	<b>Recovery %</b>
1	Advanced Payment	10%	-
Payment and recovery is based on the total phase lump sum			
2	Phase – I Submittal of Pre-Concept Design	20%	-2.0%
3	Approval of Pre-Concept Design	20%	-2.0%
4	Submittal of Concept Design Report	30%	-3.0%
5	Approval of Concept Design	30%	-3.0%
<b>Total</b>		<b>110%</b>	<b>-10%</b>

<b>Phase II - Optional Item (Final Design, and Tender Documents)</b>			
<b>Payment No.</b>	<b>Description</b>	<b>Payment %</b>	<b>Recovery %</b>
6	Advanced Payment	10%	-
Payment and recovery is based on the total phase lump sum			
7	Submittal of Draft Final Design	50%	-5.0%
8	Approval of Final Design Report	30%	-3.0%
9	Approval of Tender Documents	20%	-2.0%
	Total	110%	-10%

<b>Phase III – Optional Item (Tenders' Evaluation and Preparation of Contract Documents).</b>			
<b>Payment No.</b>	<b>Description</b>	<b>Payment %</b>	<b>Recovery %</b>
10	Advanced Payment	10%	-
Payment and recovery is based on the total phase lump sum			
11	Tenders' Evaluation	70%	-7.0%
12	Contract Documents	30%	-3.0%
	Total	110%	-10%

## **1.7 Insurance**

### **1.7.1 Design Insurance**

In accordance with Article (21) INSURANCE of the General Conditions Document 1 and Article (21) of Document II, Insurance value for Design, preparation of Tender Documents, Tenders' evaluation and preparation of Contract Documents. The design insurance shall be 750,000 KD. - (Kuwaiti Dinars Seven Hundred Fifty Thousand only) and to be submitted with tender documents.

The Insurance Certificate shall be valid for 5 years from the date of submitting the Final Contract Documents.

### **1.7.2 Third Party Insurance**

The Consultant shall maintain valid Third Party Insurance with an approved Kuwaiti Insurance Company for duration of the Agreement to cover his liability in respect of accident or injury to his employees engaged in this project. The copy of certificate shall be submitted with Tender documents.

The Consultant shall include a separate cost for this item in the Direct Costs Form (F-2).

## **1.8 Performance Bond**

The Consultant shall submit to the Ministry a Performance Bond according to Article (19) of Document I: General Conditions.

The Consultant shall include a separate cost for this item in the Direct Costs Form (F-2).

## **1.9 Tax Retention**

The International Consultant payments will be subject to retention of income taxes as designated by the Ministry of Finance, in accordance with the laws of Kuwait.

The Ministry shall have the right to hold, a five percent (5%) of the total fees due to the Consultant for the assigned works which are subjected to

income taxes until the Consultant presents the receipt of the tax clearance from the Ministry of Finance.

### 1.10 Design Delay Penalty

The penalty for delay shall be applied in accordance with Article (24) mentioned in Document 1 and as per value indicated in Article (24) in Document II.

## 2) TERMS OF SUBMITTAL

The submitted proposal to the Ministry of Public Works shall be identified on the cover (in both Arabic and English language) as Technical and Financial Proposal for: Consultancy Services for the ***Study, Design and Construction Supervision for the Construction and Maintenance for the Upgrading of Second Ring Road, Third Ring Road and Damascus Street.***

Six (6) Hard Copies and (6) Six CDs of the Technical Proposal shall be submitted in a separate box identified as Technical Proposal.

Six (6) hard copies and Six (6) CDs (Protected) of a Financial Proposal shall be submitted in a separate box identified as Financial Proposal.

The Technical and Financial Proposals shall be inserted in separate envelopes, locked and sealed with a wax, both of them to be put in a box, then locked and sealed with a wax, and submitted to the Ministry.

The Technical proposal should be submitted in one bounded booklet only and should not exceed (100) hundred A4 size typed papers, one column, double face and each two sided printed page counts for one paper. Failure to comply will affect the evaluation of the consultant's proposal.

The following conditions apply to the Soft Copies:

- Soft Copies containing the Financial Proposal or any financial data will result in disqualifying the Consulting firm.

- In case of any discrepancy whatsoever between the Hard Copies and the Soft Copies, the Hard Copies will prevail.

All costs incurred in preparing the proposal shall be entirely at the Consultant's expenses. All submittals by the Consultant to MPW will be totally owned by MPW.

All submittals by the Consultant to MPW will be totally owned by MPW.

## **SECTION 4. ASSISTANCE TO BE PROVIDED BY THE MPW**

The MPW, where possible, may assist the Consultant to obtain data and technical support for use in the performance of the work under this Agreement.

### **1) Technical Support**

Any data or information by the Consultant to be obtained from the MPW's Research Station or the Materials and Research Laboratory, the MPW shall help the Consultant to obtain this data. The obtained data needs to be verified by the consultant through Independent Investigation and is responsible for the reliability of this data.

### **2) Data required for the design study**

The MPW shall assist the Consultant in obtaining the following data from the Municipality:

- Land Development planning information.
- Data available for traffic model updated for Kuwait Municipality – Latest Revision.
- Master plans and aerial photography of Kuwait
- Master plan of Sanitary and storm water performed by MPW
- Land Survey references points.

Document I. – General Conditions can be purchased from the Ministry of Public Works Financial Sector during the official working hours.

For any clarification regarding attached Document II – Particular Conditions, the Consultant can refer to the MPW Contracts and Documents Department of the Auditing and Review Sector.

Payment for obtaining above data or other information shall be made by the Consultant and shall be incorporated in the Consultant's overall financial proposal.

For all questions pertaining to this project, the Consultant may refer to the Ministry of Public Works in writing. Responses to any questions will be directed to all invited Consultants.

# ***VOLUME 2***

## ***CHAPTER 3***

### ***CONSTRUCTION SUPERVISION SERVICES***

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*MPW/Roads Engineering Sector  
EF/R/278  
TOR/November 2016*

Study, Design and Construction Supervision for the  
Construction and Maintenance for the Upgrading of  
Second Ring Road, Third Ring Road and Damascus  
Street

## **VOLUME 2**

### **CHAPTER 3**

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SECTION 2	Agreement and General Matters
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## **CHAPTER 3 CONSTRUCTION SUPERVISION SERVICES**

### **SECTION 1 – SCOPE OF SUPERVISION SERVICES**

#### **1.1 GENERAL**

The Consultant shall provide all administrative, engineering personnel, equipment and back-up services, other than those provided by MPW as described elsewhere in these terms of reference, necessary for the proper supervision of the execution of the works as described in Section-6 Attachment "A" – Particulars of Construction.

The Consultant shall provide adequance services **for each package separately** (minimum 3 Packages). Below find description of Consultant Services applicable for each package.

#### **1.2 DUTIES AND RESPONSIBILITIES OF THE CONSULTANT**

The Consultant shall, through his Resident Engineer and supervisory staff, fully supervise the execution of the Works to ensure that they are carried out in accordance with the Contract documents and MPW's requirements. The Resident Engineer shall be expected to act as the Engineer's representative within the scope of the powers delegated to him and he shall immediately notify MPW of any problem or action he proposes which may have a contractual significance. With regard to any issue that is not within his delegated powers, the Resident Engineer shall inform MPW and advice on appropriate action.

In carrying out his duties, the Resident Engineer shall comply with the requirements contained in MPW's Construction Manual for Kuwait Motorway/Expressway System and as further instructed by the Engineer from time to time.

The Resident Engineer's particular responsibilities are the administration of the site office, the supervision of construction and the contractual and financial control of the project. These responsibilities are defined more fully (but without limitation) below:

### **1.2.1 Administration**

The Resident Engineer's administration responsibilities shall be:

- (a) Setting up standards and procedures in conformity with MPW's requirements for the discipline and performance of his staff.
- (b) Reasonably anticipating the need for attendance on site of specialist technical support, and arranging for such attendance through the Project Engineer's Office.
- (c) Prepare a concept program for the construction activities.
- (d) Maintaining daily contact with MPW (through the Project Engineer's Office) and with the Contractor's representative on site, and shall endeavor to deal with any problems that may arise in a businesslike and amicable manner, in the interests of maintaining a good working relationship. All resolved issues shall be documented and presented to MPW staff.
- (e) Liaise with statutory authorities and public and to assist the Contractor in giving proper notices to the statutory authorities and urging him to complete such works within any agreed schedules.
- (f) Implementing all procedures in respect of obtaining approval and opening of detours. He shall notify the Project Engineer's Office of forthcoming detours so that members of the public can be informed in advance through the press.
- (g) Ensuring that adjoining owners are adequately forewarned of impending works and taking every care to avoid third party claims or disputes.
- (h) Enforcing safety measures on site and ensuring that the Contractor executes the works in compliance with safety measures specified in the contract. He shall ensure that site personnel wear safety helmets and all protective gear.
- (i) Conduct progress meetings and shall be responsible for arranging a monthly progress meeting on site with the contractor and for the proceedings of such meetings to be minuted and published promptly. Prior to these meeting the Resident Engineer shall, in consultation with the Contractor, prepare an agenda with a progress statement for all activities including those of any subcontractors or statutory authorities.

- (j) Maintaining daily inspection reports and any other reports and logs pertinent to the works.
- (k) The Consultant shall approve the detailing of any design drawings made by the Contractor with coordination with MPW.
- (l) Follow, review and ensure the Contractor's submittal of As-Built drawings is complete and correct. The final completed and certified copy of the as built drawings for all the works to be submitted by the Contractor on CD-ROM to MPW within (30) days after Substantial Completion of the Contract.
- (m) The Consultant shall establish and design a Website to publish the information and the progress of the project on a monthly basis.

### 1.2.2 Supervision

The Resident Engineer's responsibilities concerning the supervision of construction shall be:

- (a) Ensuring that the Contractor is complying with contract requirements, including current information, instructions, specifications from MPW and other relevant authorities.
- (b) Review and approve construction documents and Shop Drawings in a manner that will allow phased construction of the project. Design reviews will be conducted for items or segments of permanent construction works identified by the Contractor for early construction.
- (c) Ensuring that the contractor is using and maintaining all agreed benchmarks, survey stations and base lines for the setting out of the works.
- (d) Review the contractor's temporary works designs and construction methods for suitability for the works, and are safe for his operatives and third party personnel and property.
- (e) Ensuring that all detours, maintenance and protection of traffic are properly implemented. The maintenance of traffic is of prime importance at all times during the execution of the Works and the contractor shall submit for approval prior to opening detours.
- (f) Referring any complex technical problems arising in connection with either the temporary works or the works together with recommended solutions to the Engineer.

- (g) Ensuring that all technical submittals from the contractor are thoroughly checked and approved in a timely manner and that, in the event of non-compliance with the Contract, the deficiencies are clearly identified to the contractor.
- (h) Ensuring that the works are closely supervised by his field staff at all times, and for inspection of manufactured items, arrangements are made for the off – site examination of these items prior to delivery, subject to the consent of the Engineer.
- (i) Ensuring that all materials to be incorporated in the works are tested in accordance with the contract and that full liaison is maintained with MPW Governmental Centre for Testing and Laboratories throughout the construction period.
- (j) Ensuring that all mechanical and electrical plant and equipment are tested and fully commissioned in accordance with the Contract and that all documentation for the operation and maintenance of such plant and equipment is available prior to final handover.
- (k) Ensuring that the contractor's program as per Article 14 of the Document I – General Conditions is thoroughly checked and promptly approved. He shall also ensure that the Contractor's progress is monitored using the approved program and that the Engineer is immediately advised if at any time the contractor's progress falls significantly behind program or if any event occurs which may lead to a request for an extension of time.
- (l) Review the contractor's Substantial Completion application in accordance with the Contract and compile a list of outstanding works to be performed during Maintenance Period.

### **1.2.3 Contractual and Financial Control**

The Resident Engineer shall be responsible for the following:

- (a) The timely issue of site instructions and approval or submission for approval of variation orders in accordance with MPW's established procedures. Minor design work carried out in connection with any such variation order will not be considered as additional work.
- (b) The measurement of the executed works and for the preparation of interim and final valuations and payment certificates.

- (c) Notifying the Engineer immediately if the contractor submits any claim for extension of time and or for additional payment and proceeding immediately to study, evaluate and process such claims in accordance with MPW's established claims procedure. A detailed report analyzing such claims shall be submitted to MPW.
- (d) Providing monthly cost reports indicating the financial obligation of MPW under the Contract.
- (e) Providing monthly reports concerning progress of the Contract and the Consultant's administration of the project.

### **1.3 Training of MPW Staff**

In accordance with the provision of Article (29) in Document II of the Agreement Form, the Consultant shall accept and train a number of MPW Kuwaiti Engineers on this project. The Consultant is expected to provide a proper and comprehensive training program. This training program is very important to MPW. The Consultant ability in conveying practical engineering skills to the trainees for future use will be well considered by MPW. The scope of training shall cover all the work required for the supervision. The location of the training will be locally and offshore. Training shall be performed using latest Engineering design software.

MPW will elect to assign four (4) Kuwaiti engineers to the Consultant for training purposes and they are to be considered as part of the Consultant's team. The period for training shall be for the full period of the Agreement.

The assigned engineers shall follow the Consultant's orders and instructions. The Consultant is required to provide the following:

- The Consultant shall provide the GIS software and shall coordinate with MPW IT Department regarding the installation.
- The Consultant shall submit to MPW a well-defined training program to effectively implement the learning process of the trainee. The program shall allow and make the trainees to practice what they have learned to the greatest possible extent and the Consultant shall assume full responsibility for all work produced by the trainees.
- The Consultant shall provide MPW a continuous feed back and submit a monthly progress report on the trainees. The MPW shall be immediately advised at any time if any of the trainees does not

attend or frequently arrives late, or shows negligence, lack of interest and unwillingness to learn the new skills.

- The Consultant shall provide the trainees with appropriate work facilities, such as office space, office furniture, tools, equipment and office supplies, etc. that are required for training purposes.
- All administrative affairs of the trainees, such as salaries, annual leave, sick leave, etc. will be paid by MPW and will not be charged to the Consultant.
- MPW will give extra credit points to the Consultant with the best training program when evaluating the Technical and Financial proposal.

Reimbursement to the Consultant for the cost of this item will be made as per Article (29) in Document II of the Agreement.

## **2. Study Tour (Optional)**

After signing the Consultancy Agreement and during the mobilization period, the Consultant may be required to plan and organize a Study Tour to a selected number of similar projects abroad. The results and findings of the tour shall help the Ministry to formulate and define the nature of the facilities required.

The Final plan of the Study Tour shall be determined and approved by mutual consent between the Ministry's Roads Engineering Sector and the Consultant before exercising the requirement and shall be subject to the Ministry's regulations in this regard.

The Consultant shall provide a comprehensive program considering a number of projects to be visited with a number of professionals from the Ministry to be included in the trip.

A maximum of three trips are to be conducted for the whole period of the Agreement with one week duration for each trip and maximum four professions per trip.

## **Trip Report**

Within two weeks after the conclusion of the tour, the Consultant shall issue a Trip Report presenting the results and the findings of the tour.

The report shall contain a record of all the activities during the tour, photographs, minutes of meetings and any other relevant materials.

The final report must be approved by the Ministry Roads Engineering Sector.

The Consultant shall include a separate cost for the Study Tour in the Financial Proposal (Form F-3).

One single payment to be paid upon approval of the submitted Trip Report by the Consultant to Ministry's Roads Engineering Sector.

## **SECTION 2 - AGREEMENT AND GENERAL MATTERS**

### **2.1 TYPICAL AGREEMENT**

A typical Form of Agreement to be executed by MPW and the Consultant is available in MPW Roads Administration. This provides further information on the administration and conditions of the Agreement, the nature of services required and the conditions of contract.

The final approved Agreement will normally include the Agreement, Terms of Reference, Technical Proposal, Financial Proposal, Sub-Consultancy Agreement if applicable, and relevant Powers of Attorney. Printing and binding of the above mentioned documents shall be carried out by the Consultant in a total of ten (10) copies bound hardback including digitized form (CDs) of the same. Cost of this work shall be allowed for in the Office Direct Costs, Form (F-2).

### **2.2 PERIOD OF AGREEMENT**

**The total period for each package Agreement will be (27) Twenty Seven months of which the construction period is (24) Twenty Four months.** The Supervision Agreement and the Construction Contract shall commence on the same date. The Agreement shall run 90 days after substantial completion as specified in Section-6 Attachment (A) to these Terms of Reference. The Commencement Date shall be within 90 days from the date of signing the Agreement.

In the event the Consultant fails to finalize all administrative, contractual and financial matters etc. within the 90 days period after the Date of Substantial Completion of the Contract *for any reason*;

- *Not outside his control*, the Period of Agreement shall be extended until such date as all the various matters are finalized. All costs associated with such extension of the Period of Agreement shall be entirely at the Consultant's expense.
- *Beyond his control*, the Period of Agreement shall be extended subject to prior approval by MPW, of a detailed proposal from the Consultant. All cost associated with the extension shall be based upon the original terms listed in the original technical and financial proposal submitted by the Consultant and approved by the MPW

Should the Time for Completion of the Contract be extended for any reason, then the Period of Agreement shall be similarly extended subject to prior approval by MPW of a detailed proposal from the Consultant for

the extension. All cost associated with the extension shall be based upon the original terms listed in the original technical and financial proposal and approved by the MPW.

All proposals to extending the Period of Agreement shall be submitted to the Engineer at least six (6) months in advance to enable the Engineer obtaining necessary approvals from the concerned agencies prior to the expiry of the existing Agreement.

### 2.3 COORDINATION

It is important that a close liaison with MPW staff be maintained at all times during the period of Agreement. Liaison must also be maintained with;

- Ministry of Public Works (MPW)
- Kuwait Municipality (KM)
- Ministry of Interior – General Traffic Department (MOI-GTD)
- Ministry of Awqaf & Islamic Affairs
- Ministry of Defence (MOD)
- Kuwait Oil Company (KOC)
- Ministry of Communication (MOC) – Cables and Transportation
- Ministry of Electricity & Water (MEW)
- Kuwait Public Transport Company and other relevant companies
- Kuwait Fire Brigade (KFB)
- Public Authority for Agricultural Affairs & Fish Resources (PAAFR)
- Public Authority for Housing Welfare (PAHW)
- Public Authority for Industry (PIA)
- Kuwait Civil Aviation Authority
- Kuwait National Petroleum Company and other relevant companies regarding the location of petrol stations within project study limits.
- Kuwait Authority for Partnership Projects (KAPP)
- Other concerned Authorities
- Any Consultants working for the above Authorities or others

and all other public service Ministries and the like as needed for the successful completion of the project.

Continuous liaison should be accomplished with other consultants engaged by MPW, the Municipality and other Ministries concerning various planning, design and construction works which may have an impact on this project. Documentation of this coordination shall be maintained throughout the Period of Agreement.

## **SECTION 3 – SERVICES TO BE PROVIDED BY MPW**

### **2.1 STANDARDS AND CODES**

MPW will provide the Consultant, through the Contract, with a full set of standards and codes relevant to the execution of the Works.

### **2.2 ENGINEER'S SITE OFFICE FACILITIES**

MPW will provide the Consultant, through the Contract, with the Engineer's Site Office Facilities describe therein.

The Contractor will be responsible for the installation, furnishing (including office equipment) and maintenance of the facilities, payment of all charges, fees and other expenses in connection therewith, and removal of the facilities at the end of the Contract.

The provision for computers, printers, software and charges for stationary, printing, postal, telephone calls and Fax communications are not included within these facilities but are to be allowed for in the Consultant's Financial Proposal Form (F-2).

It should be noted that these site office facilities are provided for joint use by the Consultant's staff and MPW's Project Engineer and his staff.

In accordance with Contract Provisions, the Contractor will also be responsible for providing temporary site accommodation for the use of the Consultant prior to the Engineer's Site Office Facilities becoming available.

### **2.3 SITE LABORATORIES**

MPW will provide the Consultant, through the Contract, with the Site Laboratories described therein. The Contractor will be responsible for the installation, furnishing, equipping and maintenance of the laboratories and their removal at the end of the Contract.

## **SECTION 4 – SUBMITTAL REQUIREMENTS**

The Consultant's proposal shall be prepared and submitted according to the requirements of these Terms of Reference and with due consideration to the Articles of the General Conditions. The proposal shall consist of two parts, a Technical Proposal and a Financial Proposal.

Six (6) copies bound hard back of each proposal shall be submitted in a separate sealed boxes or envelopes and identified as "Technical or Financial Proposal for **CONSTRUCTION SUPERVISION AND MAINTENANCE FOR THE UPGRADING OF SECOND RING ROAD, THIRD RING ROAD AND DAMASCUS STREET**".

It must be clear that the Technical Proposal should be submitted separately from the Financial Proposal. The Consultant is also required to submit six (6) copies of the Technical proposals in digital form (CDs).

**The Technical proposal should be submitted in one bounded booklet only and should not exceed (100) hundred A4 size typed papers, double face and each two sided printed page counts for one paper. Failure to comply will affect the evaluation of the consultant's proposal.**

The following conditions apply to the soft copies:

- Soft copies containing the Financial Proposal or any financial data will result in disqualifying the Consulting Firm.
- In case of any discrepancy whatsoever between the Hard Copies and the Soft Copies the Hard Copies prevail.

The submittal requirements for each of the required proposals are outlined below:

### **3.1 TECHNICAL PROPOSAL**

#### **3.1.1 GENERAL**

The Consultant shall submit a Technical Proposal to outline understanding and appreciation of the Construction Contract and giving full details for the staff organization and work procedure in order to effectively administer the Contract and supervise the Works. For Technical Proposal the Consultant shall use typical Form (T-1 to T-8).

The Consultant shall base his Technical Proposal on the recommended staff positions described in item 4.1.4 (Staff Requirements and Qualifications) to these Terms of Reference. This will allow uniform basis

for comparison of proposals submitted by different consultants during the initial stage of the selection process. The Consultant submitting the most suitable proposal will have the opportunity during the negotiation stage of the selection process to offer alternative key staffing arrangements. These may be permitted provided the Consultant is able to fully justify such changes to MPW's complete satisfaction.

The Consultant should clearly indicate any conditions or speculations regarding the Terms of Reference in preparing the Technical Proposal. However, The Consultant shall not alter or amend the text of the Terms of Reference in any way.

### **3.1.2 ORGANIZATION**

The Technical Proposal shall include an organization chart showing the Consultant's proposed relationship to other positions specified in item 4.1.4 (Staff Requirements and Qualifications). Each staff position shall be fully described indicating the responsibilities of the employees and their relationship to other positions. The technical proposal shall clearly indicate the different staff being provided by the consultant and reserved for MPW.

### **3.1.3 STAFFING PROGRAM**

The Technical Proposal shall include a bar chart program Form (T-5) showing for each staff , the name, position, the firm, duration of the appointment and the total man-months in accordance with item 4.1.4 (Staff Requirements and Qualifications). This bar chart shall also indicate the proposed Date of Commencement and the proposed Dates of Substantial Completion and Final Completion of the Construction Contract.

The Consultant shall maintain as approved by the Engineer some staff as necessary during the 90-calendar days period beyond the Substantial Completion of the Works for the purpose of finalizing all administrative, contractual and financial matters for the contract, etc: The Consultant should have prior approval of the Engineer if any of the following staff required to be kept beyond substantial completion.

- Resident Engineer
- Section Engineer (1)
- Chartered Senior Quantity Surveyor
- Inspector (1)
- CADD - Draftsman
- Secretary – Resident Engineer

- Secretary – Project Engineer
- Clerk - Typist
- Driver/Expeditor

#### **4.1.3A STAFFING PROGRAM FOR THE MAINTENANCE PERIOD (Optional)**

The Consultant shall maintain as approved by the Engineer some staff as necessary during the maintenance period of the each contract for the purpose to supervise the execution of the defects during this period to ensure that they are carried out in accordance with the contract documents and MPW's requirements. The maintenance period as per MPW regulations is to be considered for a period of five years after the substantial completion of the works for each bid package. The Consultant shall include a separate cost for this task in the Financial Proposal Form (F-1).

Item	Position	Duration in Months
1	Resident Engineer	5
2	Section Engineer (1)	10
3	Inspector (1) Utilities	10
4	Inspector - Civil	10
5	CADD – Draftsman (1)	10
6	Secretary – Resident Engineer	5
7	Clerk – Typist	10

#### **3.1.4 STAFF REQUIREMENTS AND QUALIFICATIONS**

The MPW has established minimum qualifications and length of previous experience for key personnel employed on its project. The Consultant shall base his technical and financial proposal on the specified staff positions and durations. The requirements are summarized in the table below:

Item	Position	Category	Firm	Academic Qualifications	Professional Qualifications	Years of Relevant Experience	Duration in Months	Required No. of Staff
<b>Professional Staff Category</b>								
1	Resident Engineer	P	Int.	B.Sc. Civil Engineering	PE / MICE	15 (3)(4)(5)	24	1
2	Deputy Resident Engineer	P	Int.	B.Sc. Civil Engineering	PE / MICE	15 (3) (4)	24	1
3	Section Engineer Scheduler	P	Loc.	B.Sc. in Civil Engineering	Appropriate Qualification	12 (3) (4)	24	1
4	Section Engineers Highway	P	Int.	B.S. Civil Engineering	Appropriate Qualification	12 (3) (4)	18	1
5	Section Engineers Utilities	P	Int.	B.S. Civil Engineering	Appropriate Qualification	12 (3) (4)	18	1
6	Section Engineers Structures	P	Int.	B.S. Civil Engineering	Appropriate Qualification	12 (3) (4)	18	1
7	Section Engineers Civil	P	Int.	B.S. Civil Engineering	Appropriate Qualification	12 (3) (4)	18	1
8	Senior Contracts/ Claims Manager	P	Int.	B.S. Civil Engineering	Appropriate Qualification	12 (3) (4)	12	1
9	Materials Engineer	P	Int.	B.Sc. in Engineering / Science or Appropriate Qualification	Appropriate Qualification	8 (3) (4)	20	1
10	Construction Specialist (Safety)	P	Int.	Appropriate Qualification	Construction Safety Exp.	8 (3) (4)	18	1
11	Assistant Section Engineer	P	Loc.	B.Sc. or Appropriate Qualification	Appropriate Qualification	5 (3) (4)	18	4
12	Chartered Senior Quantity Surveyor	P	Int.	B.Sc. or Appropriate Qualification	ARICS or Appropriate Qualifications	15 (2)(3)(4)	18	1
13	Quantity Surveyor	P	Int.	B.Sc. Civil	Appropriate Qualification	6 (3) (4)	15	1
14	Senior Land Surveyor	P	Loc.	B.Sc.	Appropriate Qualification	12 (3) (4)	20	1
<b>Technical Staff Category</b>								
15	Land Surveyor	T.S.	Loc.	Diploma	Appropriate Qualification	5 (3) (4)	20	2

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16	Senior Lab Technician	T.S.	Loc.	-	Appropriate Experience	6 (3) (4)	20	1
17	Lab Technician	T.S	Loc.	-	Appropriate Training	4 (3) (4)	20	2
18	Inspector (Roads/ Utilities/ Structures)	T.S	Loc.	-	-	8 (4)	18	5
19	Inspector - Plant	T.S	Loc.	-	-	8 (4)	18	2
20	CADD Draftsman	T.S.	Loc.	Diploma	Appropriate Qualification	7 (3)	18	2
21	Chainman	T.S	Loc.	-	-	-	18	3
22	Secretary	T.S.	Loc.	-	-	-	24	2
23	Clerk Typist	-	Loc.	-	-	-	24	2
24	Driver Expeditior	-	Loc.	-	-	-	24	1

Notes to the above table:

- (1) Staff positions are allocated to one of two categories (P or T.S) which determine the conditions of employment and reimbursable benefits applicable to the position. 'P' refers to Professional. "T.S" refers to Technical and Support.
- (2) Years of post qualification experience.
- (3) Experience to include relevant working knowledge of relevant softwares.
- (4) Academic qualifications and Curricula Vitae's will be subject to the approval of the Ministry of Public Works.
- (5) **Resident Engineer must have at least 15 Years relevant experience of which 5 years experience is with the firm.**
- (6) The CV's for the senior professions should indicate a history of at least five years responsible experience in project roles.
- (7) The staff positions described on the table above are to be considered as recommended staff requirements and the Consultant shall appoint any professional or technical member which he thinks is necessary to perform the task.
- (8) PE - Member Professional Engineering – U.S.A.  
MICE - Member of Institution for Civil Engineering – U.K.  
ARICS - Member of Royal Institute of Chartered Surveyors

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Professional qualificationis from other countries will be subject to MPW approval provided that it is equivalent.

The table above is to be included in the Consultant's Technical Proposal.

All staff required to use a vehicle must hold a current Kuwaiti driving license or a current driving license from their country of origin for expatriates, which is eligible for conversion to a Kuwaiti license.

In addition to the above, all key personnel are required to be able to read, write and fluently speak the English language.

### **3.1.5 MAN-MONTH INPUT SCHEDULE**

The Consultant shall specify all professional and technical inputs he intends to use to implement his work program. This will be on a man-month basis, and each professional team member will be indicated by name, position, firm, and duration of involvement in the project. A Team Organization Chart indicating all members (both professional and technical) and their proposed inter-relationships shall also be submitted.

Staffing shall be on a permanent basis with emphasis on the background and experience in similar projects.

The Man-Month schedule shall be prepared on the basis of the concept program of the construction activities which will be proposed by the Consultant. However, this Man- Month schedule will be adjusted in due course in order to be correlated with the actual construction schedule that will be updated by the Contractor.

### **3.1.6 CURRICULA VITAE**

Complete curricula vitae of key senior professional team members will be submitted as shown in Form (T-1) and (T-2) in Volume 3. Any later change will only be permitted with the approval of MPW. However, for all professional and technical team members, the Consultant shall provide a brief description of the proposed position.

The technical proposal shall provide an explanation if any consultant's staff currently employed on other contract or would have a financial implication upon this Agreement. However, the Consultant may also be requested by the Ministry of Public Works to submit detail clarification.

### **3.1.7 CONSULTANT'S EXPERIENCE**

Full details of relevant experience of the Consultant shall be submitted as specified in Form (T-6, T-7, and T-8) Volume 3. Experience and proven track record in similar projects will be a factor in the evaluation and selection of the Consultant.

### **3.1.8 CONDITIONS OF EMPLOYMENT**

The Consultant shall comply with the Kuwaiti Labor Law. The cost for these expenses shall be included in the consultants overheads in the Financial proposal.

Notwithstanding the above, all Consultant's staff will be required to comply with the following conditions of employment :-

#### **3.1.8.1 Working Hours**

All Consultant's staff in Kuwait shall work a basic six day 48 hours a week with the seventh day being an unpaid rest day. During the month of Ramadan as well as the national holidays, the working hours will be as per the Kuwait Labour Law for labour in private sector. This will be subject to MPW interest and work requirements.

#### **3.1.8.2 Overtime**

With the probability that the Contractor will work extended hours including night working and operating on Fridays and Holidays, it will be necessary that the Consultant's staff also work extended hours.

Category P staff who work on their rest day or Public Holidays will receive one day leave as compensation for each day worked without any additional pay.

Category T.S staff who work on their rest day or Public Holidays will be reimbursed in accordance with the Kuwaiti Labor Law.

In respect of Category T.S staff, shift working, split shifts, rotation of rest day and other similar means shall be adopted whenever possible to reduce the costs of overtime.

Only overtime essential for the proper supervision of the Contractor's activities shall be worked.

### **3.1.8.3 Leave**

Each permanent Category P member and each permanent Category T.S member of the Consultant's staff will be permitted annual leave in accordance with the Kuwaiti Labor Law for labor in the Private Sector.

Staff will not be permitted to accrue more than 30 working days leave without the prior approval of the Project Engineer.

The Consultant will be required to coordinate annual leave so as to allow adequate cover to be provided and to arrange for replacement staff during the members annual leave.

No additional staff will be permitted for this purpose except as approved by MPW. Normally such approvals will be limited to essential administrative staff, e.g. secretarial.

All leave earned in lieu of working on rest days or Public Holidays is to be taken within a month following the days worked, providing work schedules permit.

In the event work schedules permit such leave to be taken in the month following the days worked and it is not taken, then such leave shall be forfeited.

Subject to the foregoing, no leave earned in lieu of working on rest days or Public Holidays may be carried forward to annual leave without the prior approval of the Project Engineer.

### **3.1.8.4 Sick Leave**

Each member of the Consultant's staff shall be entitled to paid sick leave in accordance with the Kuwaiti labour law.

### **3.1.8.5 MPW Trainees**

MPW will be responsible for all administrative affairs of trainees such as approval of annual leave and sick leave etc.

## **SECTION 5 - FINANCIAL PROPOSAL**

### **4.1 GENERAL**

The Consultant shall submit a Financial Proposal showing a detailed cost breakdown for the Supervision Services for each package included in the Technical proposal.

The Financial Proposal shall be based on the Kuwaiti Labor Law in effect when the Proposal is submitted. Should the Law subsequently change causing additional or reduced staff costs, then an appropriate adjustment to the rates and prices will be made as approved by MPW prior to Agreement signature.

The Terms of Reference contains Form (F-1 to F-6) which shall be fully completed as required and incorporated in the Financial Proposal.

### **4.2 RATES AND PRICES**

The Consultant's Financial Proposal shall include monthly salaries together with staff related direct costs, office overheads and profit, as well as other direct costs (non-staff related).

Salary rates and staff related direct costs shall remain fixed for the full period of this Agreement, Escalation to the salary rates will be applicable for any reasons beyond the control of the Consultant and for the following cases:

1. if the Consultant was not officially notified as to his assignment of this stage within eighteen (18) months from the contractual date of submitting the approved tender(s) documents of Design stage as per the contractual approved work program included in Document No.II – the Particular Conditions of the Consultancy Agreement and Form of Agreement and according to Article No.17/3 of the Document No.(I) - the General Conditions of the Consultancy Agreement.
2. for any extension after the date of the Agreement contractual completion of the supervision stage.

Escalation to the salary rates will be based on official consumer price index (CPI) issue by the Ministry of Finance –Kuwait, for the year immediately preceding subject to the approval of the relevant authorities.

### **4.3 STAFF SALARIES**

Forms (F-1, F-2 and F-3) shall be completed in respect of staff salaries and staff related direct costs.

#### **(a) Salaries**

Monthly salaries shall be exclusive of any “add-ons” or fringe benefits, such as pensions, insurance, bonuses, terminal benefits or any other

similar increments, all of which are considered to be included in the overhead charge. Salaries shall also be exclusive of all direct costs.

The actual salaries paid to staff provided under the Agreement may be higher or lower than those shown in the proposal, subject to the Engineer's approval. However, MPW requires that the average of the actual paid salaries be equal to or less than the average salaries given in the proposal.

The salary of each member of the Consultant's staff will be reimbursed at the Rate inserted in the financial proposal for each calendar month of actual work during the period of the staff members assignment without deduction for annual leave (other than unpaid leave), Public Holidays or sick leave not exceeding 12 working days in any one year.

Periods of unpaid leave and periods of sick leave in excess of 12 working days in any one year will not be reimbursed.

**(b) Overtime**

Overtime Payments will be permitted to Technical staff only. Payment will be in accordance with the Kuwait Labor Law for hours worked in excess of the standard eight-hour day.

This eight-hour day shall also be applicable during Ramadan. The reason behind overtimes payments must be justified to MPW.

For budget purposes, overtime payments shall be calculated as 10% of the salaries of Technical staff Form (F-1). This will be included in the other items, Form (F-2 and F-6). Overtime will be reimbursed at cost.

**4.4 DIRECT COSTS**

Form (F-2), which concern direct costs associated with the employment of the staff and other miscellaneous items shall be completed in full by the Consultant. Notwithstanding the provisions of sub sections 5.4.1 to 5.4.2 below.

Any direct costs what so ever not itemized in the tables or elsewhere shall be deemed to be included in the Consultant's overheads.

The Consultant shall submit a complete detailed breakdown of all direct costs items to support the figures he inserted in the tables.

The Consultant shall be permitted to overrun any of the individual budgets of these other direct cost items shown in Form (F-2) provided that the total amount of these other direct costs budget is not exceeded.

Reimbursement for each item shall be at cost as agreed with MPW.

#### **4.4.1 Consultant's Transport**

The Consultant's Financial Proposal shall include for the provision of suitable vehicles necessary for the supervision of the Works.

The type / model of all proposed vehicles shall be inserted in the column provided for this purposes in Form (F-5).

Replacement vehicles are to be provided, without charge, immediately when and if any vehicle is out of service.

Consultant's transport will be reimbursed at a fixed monthly rate inserted in the proposal which shall include all hire charges, supplementary insurance and fuel / oil costs. For part months the full vehicle rate or extended daily rate, whichever is the less, will be reimbursed.

No reimbursement will be made for transport costs in respect of vehicles allocated to individual staff members for periods of unpaid leave and for periods of sick leave in excess of 12 working days in any one year

Three quotations from lease hire companies are to be submitted with the proposal and the rates of the least quotations shall be entered in Form (F-5). All staff required to use a vehicle must hold a current Kuwaiti driving licence.

#### **4.4.2 Miscellaneous Items**

The Consultant's Financial Proposal shall include for the provision of the following other miscellaneous items in Form (F-2):

Providing all the necessary site office consumables equipments (survey equipments, word processors, computers and accessories, photocopy machine, digital faxes, mobiles without international line, stationery, etc.) codes and standard manuals and other reference materials and equipments required by the Consultant in the performance of his work shall be included as a part of the Consultant's overhead.

(a) **Computer Hardware and Software**

The Consultant shall include an allowance for the supply; installation and maintenance of computer stations or notebooks complete with printers, scanners, softwares, etc. Specifications, should be approved by MPW. Reimbursement will be at cost.

(b) **Site Photography**

The Consultant shall include an allowance for the supply of digital photographic, films, video and printing equipment to be used for recording the work of a specialist nature, accidents, bad workmanship and any other such incidents and the like where a permanent record is required, also for use in monthly progress report.

(c) **Reproduction of Record Drawing**

The Consultant shall include allowance for printing and binding record drawings and other miscellaneous printing tasks requested by the Project Engineer. Prior to commencing reproduction, three quotations are required to be submitted to the Project Engineer for approval. The Consultant is required to submit all final Contract Documents on CD-ROMs format. Reimbursement will be at cost.

(d) **Communications**

The Consultant shall provide his staff with the required mobile phones as necessary to maintain efficient communications on site between members of his staff. He shall include an allowance for postal, telephone calls, Fax communication charges, mobile phones. Payment will be made based on fixed rate inserted in the proposal.

(e) **Training MPW Staff**

MPW shall require the Consultant to train three engineers as stated in item 1.3 of these Terms of Reference. Reimbursement to the Consultant for the cost of the training will be paid as a Direct Cost based on a monthly rate per trainee inserted in the other items Form (F-2) and as per Article (29) in Document II of the Agreement.

(f) **Office Expenses**

The Consultant shall include a monthly rate to cover all main office expenses needed and not provided by the Contract such as fax machine, stationary, printing, binding, and all other back – up services not listed

above. The Consultant will be reimbursed at the rate inserted in the proposal.

**(g) Insurance**

The Consultant shall include the cost for Professional Indemnity Insurance as per the MPW Agreement Article (21) of Document No.1 – General Conditions.

Reimbursement for miscellaneous items (a) to (d) and (g) shall be at cost, for Items (e) and (f) will be reimbursed at the rate shown per calendar month.

All expenditure above except for items (b), (d), (f) and (g) requires the prior approval of the Engineer. Without such approval no costs will be reimbursed.

**(h) Website**

The Consultant shall include the cost for establishing and maintaining a Website to publish the information and the progress of the project on a monthly basis. Payment will be made based on fixed rate inserted in the other items Form (F-2). will be reimbursed at cost.

**4.5 OVERHEADS AND PROFIT**

Overheads and profit shall be shown in the Summary Form (F-6) and are to be calculated as indicated below.

**(a) Overheads**

Overheads shall be expressed as a percentage of the total salary costs (excluding overtime), and shall include all supporting costs to the professional, Technical and Administrative Staff, including without limitations, pensions, bonuses, terminal benefits, emergency leaves, home office costs and all other costs not separately identified in the Financial Proposal.

Reimbursement of Overheads shall be at the stated percentage of the total salary costs (excluding overtime).

**(b) Profit**

Profit shall be a fixed lump sum. Changes in staffing which do not result in an increase in the total cost of the Financial Proposal shall not be justification for an increase in the fixed lump sum for profit. For invoicing purposes the fixed lump sum shall be expressed as a percentage of the salary costs (excluding overtime) plus overhead.

Reimbursement of profit shall be for the fixed lump sum irrespective of the final total cost of salaries plus overheads provided the whole work under this Agreement is completed by the Consultant to the satisfaction of MPW.

**4.6 INVOICING**

The Financial Proposal submitted by the Consultant, and any modification made during negotiation of the Agreement shall be used by MPW as the invoice control document.

After issuing the date of enterprise, the Ministry will have the option, but not the obligation to pay to the Consultant in advance a payment in accordance with Article (20) of Document (I) and Article (20) of Document (II).

This advanced payment will be recovered from the amount due to the Consultant and subsequent payment installment.

Payment to the Consultant shall be made monthly or at other periods as agreed with MPW on the basis of itemized cost statements to be submitted by the Consultant, in accordance with Article (18) of Document (I) and Article (18) of Document II.

A portion of the fixed lump sum for profit shall be included in each cost statement calculated as a percentage (at the rate specified in the Financial Proposal) of the salary costs (excluding overtime) plus overheads being invoiced.

The total amount of the profit paid shall not exceed the fixed lump sum shown in the Agreement. The Consultant will submit supporting documentations (wage records, receipts, etc.) with his itemized cost statements.

When, in the opinion of MPW, any item in the invoice appears excessive when compared with the budget figures, the Consultant will be required to justify them to the full satisfaction of MPW.

MPW reserves the right to reject any part of the Consultant's invoice that in the opinion of MPW is excessive or improper.

All payments shall be made in Kuwaiti Dinars. Reimbursement for costs incurred outside Kuwait must be converted to Kuwaiti Dinars at the Consultant's local bank exchange rate (banks selling rate at foreign currency) current at the time of the invoicing.

No costs included in the financial proposal shall be varied on account of fluctuation in the international rates.

#### **4.7 AUDIT**

Prior to the initial payment to the Consultant for any work under this Agreement, the Consultant shall submit a statement from an independent certified public accounting firm certifying that the Consultant's system of accounting is such that only costs actually attributable to work under this Agreement will be charged to MPW.

The accounting firm shall be appointed by the Consultant subject to the prior written approval of the MPW. Cost of issuing this statement is considered included in the overhead factor.

The approved accounting firm shall also be expected to make periodic reviews of the Consultant's charges to verify that proper cost records are being maintained and that proper documentation to support all invoices is available in the Consultant's files.

These reviews are to be made upon request by MPW.

Immediately prior to the submittal of the final invoice under the Agreement, the accounting firm must perform an audit of the Consultant's accounts to verify that proper cost records were maintained and that proper documentation to support the final invoice is available in the Consultant's files.

All review reports and audit statements are to be transmitted by the accounting firm directly to MPW.

MPW or MPW's designated representative shall have the right to review or audit any invoices submitted under the provisions of the Agreement.

The Consultant also agrees to retain all records relating to works under this Agreement for a period of ten (10) years after the final payment to the Consultant for work carried out under the Agreement.

All documentation related to invoices shall be kept by the Consultant for a period of ten (10) years.

The Consultant shall include a separate cost for this item in the Direct Costs Form (F-2).

#### **4.8 Performance Bond**

The Consultant shall provide a Performance Bond, equal to 10% of the total value of this Stage, as per MPW Agreement Article (19) of Document II – Particular Conditions.

The performance bond shall be valid up to the date of issuing final Completion Certificate from MPW of the Construction Contract.

The Performance Bond value to be reduced by 50% from the original value during the Maintenance Period. The Consultant shall include a separate cost for this item in the Direct Costs Form (F-2).

#### **4.9 Penalty for Delay**

The penalty for delay shall be applied in accordance with Article (24) mentioned in Document 1 and Article (24) in Document II, should be fix amount as kD.200.- per day.

#### **4.10 Staff Absence Penalty**

The daily penalty due to the absence of any of the staff members without an accepted excuse by the Ministry will be as per the values indicated in the Article (24) of Document II - Particular Conditions

Where an employee has no legal and valid reasons for such absence and/or no authorization or approval from the MPW.

#### **4.11 Insurance**

The Consultant shall familiarize with the MPW Standard Agreement concerning the insurance policy.

The required coverage will be up to 10% of the Awarded Value of the Project in accordance with Article (21) of Document I, General Conditions.

## **SECTION 6 - ATTACHMENTS**

### **ATTACHMENT (A) - PARTICULARS OF CONSTRUCTION**

#### **A.1 GENERAL**

The Ministry of Public Works is intending to upgrade Second Ring Road, Third Ring Road and Damascus Street. The following particulars have been extracted for the Agreement No.EF/R/278 " **Study, Design and Construction Supervision for the Construction and Maintenance for the Upgrading of Second Ring Road, Third Ring Road and Damascus Street** ".

#### **A.2 DESCRIPTION OF WORKS**

"Refer to Figure 1 for the Location Map"

Minimum Scope of Works are described below:

##### **Second Ring Road:**

As per Design Manual for Roads and Bridges, Second Ring Road comes under the category of Ring Road according to Kuwait Road Hierarchy. The Ring Road includes through traffic routes that are usually of a lower design standard than Expressways and Freeways routes. The approximate length of the Second Ring Road under study is 5.0 km. The cross section of Second Ring Road varies from dual 2-lane to dual 3-lane. The posted speed limit on this roadway is 80 km per hour.

The Upgrading of Second Ring Road begins at the limits of the completed design of Junction with Jahra Motorway (Contract RA/166) and extends easterly to tie-in with the completed design of Junction with Cairo Street (Contract RA/200).

The design shall upgrade Second Ring Road to three (3) basic lanes in each direction, including approx., three (3) new major interchanges (Second Ring Road with Maghreb Motorway – Rout 40, Second Ring Road with Damascus Street – Rout 45 and Second Ring Road with Riyadh Expressway – Rout 50), six (6) new or improved signalized intersections (Jassim Hamad Al Sager Street, Kifan Street, Mohamad Humoud Al Shaya Street, Al Zahra'a Street, Ibn Abbas Street, Abdul Aziz Mohamad Al Duaij Street), six (6) new or improved right-on/right-off connections, bus stops and pedestrian bridges.

(Refer to Figure No. 5)

### **Third Ring Road:**

Third Ring Road is also classified as a Ring Road type as per Kuwait Road Hierarchy. The study section of Third Ring Road is 9.00 km and passes through several important residential neighborhoods. Sections of the Third Ring Road in Shuwaikh Industrial Area consist of mostly dual 2-lanes, whereas the sections east of Airport Road are mostly dual 3-lanes. The posted speed limit on this roadway is 80 km per hour.

The Upgrading of Third Ring Road begins at the limits, and includes, the Junction with Mohammed Ibn Kassem Street and extends easterly to tie-in with the completed design of Junction with Cairo Street (Contract RA/200). Improvements at the Mohammed Ibn Kassem Intersection shall include all work on Mohammed Ibn Kassem Street from the junction with the completed design of Jamal Abdul Nasser Motorway (Contract RA/167) to the Fourth Ring Road.

The design shall upgrade Third Ring Road to three basic (3) lanes in each direction, including approx., six (6) new major interchanges (Third Ring Road with Maghreb Motorway – Rout 40, Third Ring Road with Damascus Street – Rout 45, Third Ring Road with Riyadh Expressway – Rout 50, Third Ring Road with Airport Road – Rout 55, Third Ring Road with Ghazali Expressway – Rout 60 and Third Ring Road with Mohammed Ibn Kassem Street – Rout 601), eight (8) new or improved signalized intersections (Street No.69/Street No.30, Street No.10/Street No.21, Street No. 9/Street No.19, Kifan Street/Abdullah Al Khalaf Al Saeed Street, Sultan Al Kulaib Street, Mushari Abdullah Al Rawdan Street, Badr Street and Musa Ibn Nussair Street), new or improved right-on/right-off connections, bus stops and pedestrian bridges. Any required modifications to the parking areas west of Mohammed Ibn Kassem Street to accommodate the new improvements shall also be included.

The Conceptual Design Report for this Roadway shall pay special attention to and comprehensively address the special frontage ingress/egress and off-street parking requirements in Shuwaikh Area between Airport Road – Rout 50 and Mohammed Ibn Kassem Street. (Refer to Figure No. 5)

### **Damascus Street:**

Damascus Street belongs to the Expressway/Freeway as per Kuwait's Road Hierarchy. Damascus Street is a radial road located between Second Ring Road and Fifth Ring Road. This roadway consists of dual 3 lanes with frequent U-turns and signalized junctions. The posted speed limit on this roadway is 80 km per hour. The approximate length of the Damascus Street under study is 2.7 km.

The Upgrading of Damascus Street begins at, and includes, the intersection with Second Ring Road and extends southerly to tie-in with the completed design of interchange with Fifth Ring Road (Contract RA/257).

The design shall upgrade Damascus Street to ensure three (3) lanes in each direction, including approx., three (3) new major interchanges (at Second Ring Road, at Third Ring Road and at Fourth Ring Road), four (4) new or improved signalized intersections (Hamad Al Meshari Street/Abdulrahman Al Faris Street, Sami Ahmad Al Munayes Street/Essa Abdullatif Al Abdul Jaleel Street, Abu Ayyub Al Ansari Street and Tariq Bin Zeyad Street), approximately three (3) new or improved right-on/right-off connections, bus stops and pedestrian bridges.  
(Refer to Figure No. 5)

The works include proper matching to existing conditions, diversion (detours) and relocation of existing services and utilities, road and footpath surfacing, road fence and railguards, road lighting, road signs, road markings, traffic signaling, surface water drainage and any associated road works. The overall division of work can be summarized as follows:

<b>Item</b>	
<b>At Grade Roads</b>	
	Earthwork & Sub-Base, Base, Asphalt, Street furniture & Traffic control.including all necessary facilities, ATC and ITS.
<b>At Grade Local Access Roads</b>	
	Earthwork & Sub-Base, Base, Asphalt, Street furniture & Traffic control.
<b>Elevated Roadway (Bridges): A vehicular bridges and pedestrian bridges</b>	
	Excavation, Side protection & Dewatering, Concrete and Reinforcement, Street furniture, Traffic control & Miscellaneous
<b>Relocation of Utilities</b>	
	Box Culvert, Storm Water & Sanitary, Fresh & Brakish Water, and Electrical & Telephone
<b>Irrigation Network</b>	
	Relocationi if necessary of existing irrigation and should provide future crossings for all existing and proposed irrigation utilities.
<b>Drainage</b>	
	Drainage (road, bridge, ramp and trough) Pumping Station & General drainage
<b>Maintenance &amp; Protection of Traffic</b>	
<b>Compliance With New Environmental Requirements</b>	
<b>General</b>	
	Site Office, Site Laboratory, Insurance, equipment & supplies, vehicles and communication devices

### A.3 CONTRACT PARTICULARS

Commencement of Works shall be within 90 calendar days after Date of Signing the Contract.

Time period for substantial completion of each package shall be Twenty Four (24) months from the Date of Enterprise.

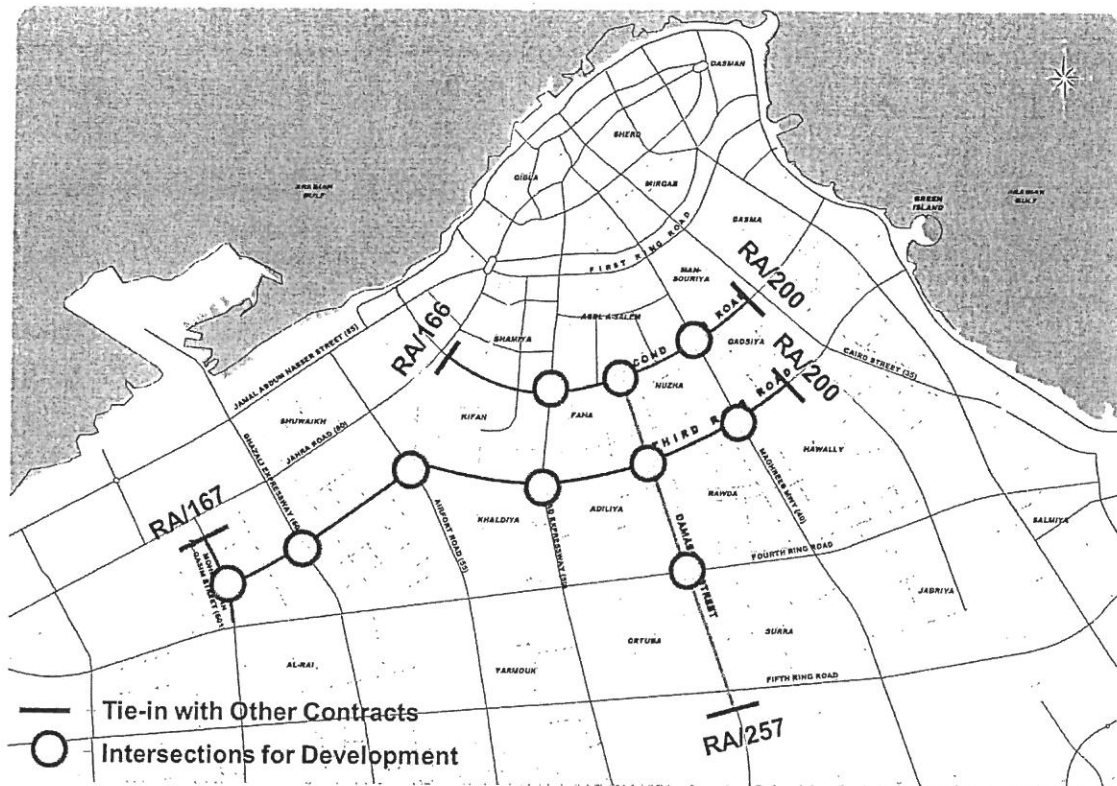


Figure # 1 – Location Map for Second Ring Road, Third Ring Road and Damascus Street

# ***VOLUME 3***

## ***Typical Forms***

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*MPW/Roads Engineering Sector  
EF/R/278  
TOR/November 2016*

Study, Design and Construction Supervision for the  
Construction and Maintenance for the Upgrading of  
Second Ring Road, Third Ring Road and Damascus  
Street

*Volume 3 / Page#1*

## VOLUME 3

### FINANCIAL PROPOSAL FORMS

F-1 Each phase should have two separate forms, one for Professional Staff and one for Technical Staff

For Supervision stage, another column (G) should be added to show overtime cost.

F-2 Separate form for each phase

F-3 Separate form for each task

F-4 For Design Stage only

F-5 For Supervisory Stage only

F-6 For Supervision Stage only



FINANCIAL PROPOSAL

FORM F-2

DIRECT COSTS AND OTHER ITEMS

AGREEMENT NO. EF/R/

Title:

Stage/Phase:

MAIN ITEMS

COST in KD

**I. DIRECT COSTS**

**A. Staff Related\*\***

_____
_____
_____
_____

_____
_____
_____
_____
_____

Subtotal A

**B. Office Costs**

_____
_____
_____
_____
_____
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_____

_____
_____
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_____
_____
_____
_____
_____

Subtotal B

Total Direct Costs

**II. OTHER ITEMS**

_____
_____
_____

_____
_____
_____

Subtotal

Total Other Items

Total Lump Sum Fee (Direct Costs + Other Items)

_____
-------

*\*\* These items are applicable only to staff of International Consultants working in Kuwait for less than two months. For International Travel, list point of departure, destination, Number of Round Trips and position of traveler from the Staff.*

Consultant's Name, Signature and Stamp



FINANCIAL PROPOSAL

FORM F-4

AGREEMENT NO. EF/R/\_\_\_\_\_  
TITLE:

TOTAL SUMMARY COSTS/DESIGN

	Description of Items	Salaries K.D.	Overheads K.D.	Profit K.D.	Cost K.D.	Man Months M/M
OBLIGATORY SERVICES	PHASE I - Conceptual Design					
	Direct Cost and Other Items					
	<b>1</b> TOTAL PHASE I DESIGN BASIC SERVICES (KD)					
OPTIONAL SERVICES	PHASE II - Final Design and Tender Documents					
	Direct Cost and other items					
	Phase III-Tenders' Evaluation and Contract Documents					
	Direct Cost and other items					
<b>2</b> TOTAL PHASE II, III OPTIONAL SERVICES(KD)						
MISCELLANOUS Services	Miscellaneous Tasks					
	<b>3</b> TOTAL OTHER OPTIONAL SERVICES (KD)					
	<b>(ADD 1 + 2 + 3) GRAND TOTAL CONSULTANCY SERVICES COST (KD)</b>					

Consultant's Name, Signature and Stamp

**FINANCIAL PROPOSAL**

FORM F-5

AGREEMENT No: EF/ R/  
TITLE:

**CONSULTANT'S TRANSPORTATION**

REF	Position Title or Allocation	Vehicle Type	Duration in Months	Monthly Rental KD	Monthly fuel/oil and insurance cost	Total transport cost KD 4 x (5 + 6)
	2	3	4	5	6	7
1						
<b>Total transport Cost (KD)</b>						

Notes:

- 1) The rates inserted in columns 5 & 6 are average rates for the whole period of the Agreement.
- 2) Reimbursement will be at cost.
- 3) Vehicle rates to be confirmed later by three actual quotations.

MPW/Roads Engineering Sector  
TOR/November 2016

Consultant's Name, Signature and Stamp



## TECHNICAL PROPOSAL FORMS

- Form T-1 For each key staff
- Form T-2 For each key staff
- Form T-3 Separate form for each stage
- Form T-4 Separate form for each stage
- Form T-5 Separate form for each phase
- Form T-6 Separate form for each firm
- Form T-7 Separate form for each firm
- Form T-8 Separate form for each firm



TECHNICAL PROPOSAL

FORM T-2

AGREEMENT NO. EF / R /

TITLE:

Stage/Phase

**CURRICULUM VITAE-EMPLOYEE'S EXPERIENCE**

PERIOD	Y / M	DESIGNATION POSITION	EMPLOYER'S NAME AND ADDRESS	PROJECT DESCRIPTION	DUTIES

MPW/Roads Engineering Sector  
TOR/November 2016

Consultant's Name, Signature and Stamp



TECHNICAL PROPOSAL

AGREEMENT NO. EF / R /  
TITLE:  
Stage/Phase:

FORM T-4

**WORK PROGRAM**

ACTIVITY Number	ACTIVITY/DELIVERABLES	NAME or CV REF.	MAN MONTH INPUT	DURATION	BAR CHART (DURATION IN MONTHS ) BY PHASE

*State clearly the activities required during each phase of work and indicate time period required in bar chart form.*

Consultant's Name, Signature and Stamp

MPW/Roads Engineering Sector  
TOR/November 2016



TECHNICAL PROPOSAL

FORM T-6

AGREEMENT NO. EF / R /  
TITLE:

CONSULTANT PROFILE - FIRM DATA

Firm Name : \_\_\_\_\_

Address : \_\_\_\_\_  
\_\_\_\_\_

Telephone Nos. : \_\_\_\_\_

Telefax Nos. : \_\_\_\_\_

Website Address : \_\_\_\_\_

E-mail address : \_\_\_\_\_

Principal Members of Firm : \_\_\_\_\_

Year Established : \_\_\_\_\_

Narrative Description of Firm : \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*Note: Above information shall be provided concerning the consultant,  
his associated and his sub-consulting firms.*

Consultant's Name, Signature and Stamp

MPW/Roads Engineering Sector  
TOR/November 2016



