

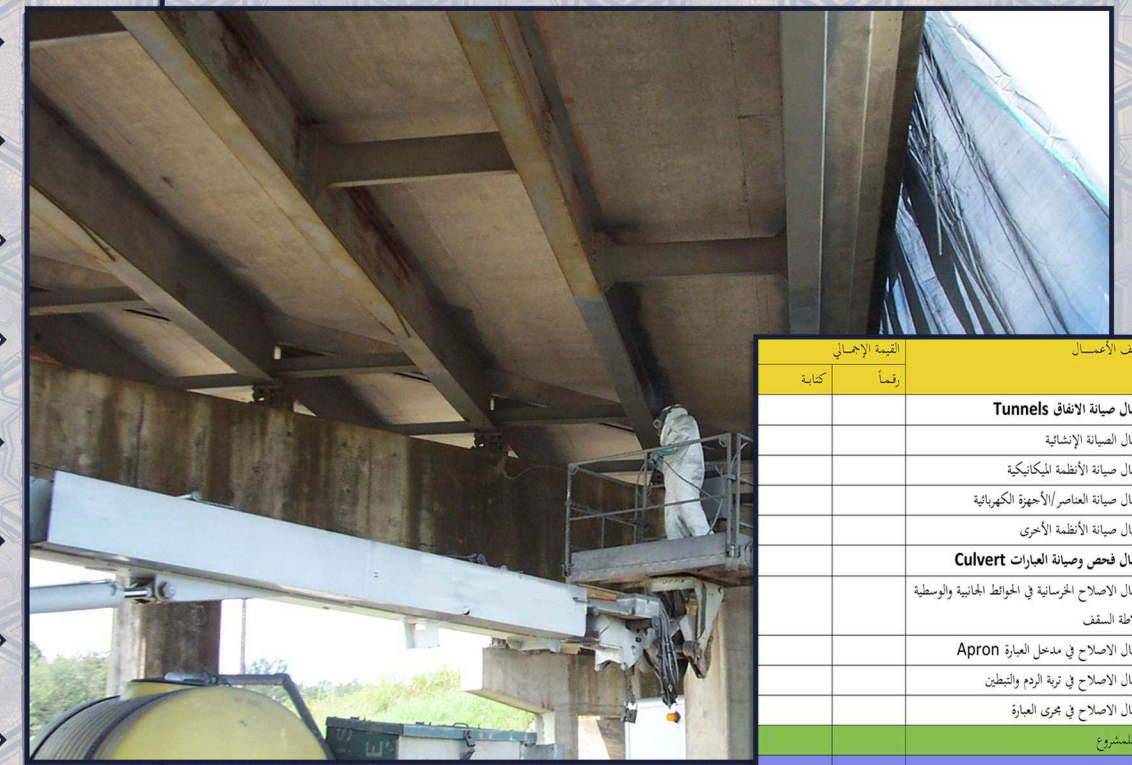


Kingdom of Saudi Arabia
Ministry of Municipal and Rural Affairs
Ministry Deputy For Technical Affairs
General Directorate of Operation and Maintenance

Bridges and Tunnels Maintenance Manual

(Part 2)

The Contract and Bills of Quantities



رقم	وصف الأعمال	القيمة الإجمالية
		رقماً
		كتابة
أولاً	أعمال صيانة الانفاق Tunnels	
1-1	أعمال الصيانة الإنشائية	
2-1	أعمال صيانة الأنظمة الميكانيكية	
3-1	أعمال صيانة العناصر/الأجهزة الكهربائية	
4-1	أعمال صيانة الأنظمة الأخرى	
ثانياً	أعمال فحص وصيانة العبارات Culvert	
1-2	أعمال الإصلاح الخرسانية في الحواجز الجانبية والوسطية وبلاطة السقف	
2-2	أعمال الإصلاح في مدخل العبارة Apron	
3-2	أعمال الإصلاح في تربة الردم والتسطين	
4-2	أعمال الإصلاح في مجرى العبارة	
القيمة الإجمالية للمشروع		
نسبة الخصم (إن وجدت)		
القيمة الإجمالية للمشروع بعد الخصم		

Kingdom of Saudi Arabia
Ministry of Municipal and Rural Affairs
Ministry Deputy for Technical Affairs
General Directorate of Operation and Maintenance

Bridges and Tunnels
Maintenance Manual

(Part 2)

The Contract and Bills of Quantities

1435H

Table of Contents

Para No.	Content	Page No.
1	Introduction	2
2	Main Contract Document (Contract Letter)	2
3	General conditions of contract	7
4	Appendix	47
5	Special conditions of contract	50
6	Technical Specifications	54
7	Bills of Quantities & Prices	56
7-1	What needs to be considered when preparing the Bills of Quantities	56
7-2	General Summary for the Bills of Quantities	57
7-2-1	Sample of Bills of Quantities for the Maintenance, Bridges & Under passes	57
7-2-2	Sample of Bills of Quantities for the Maintenance, Tunnels and Culverts	68

The Contract & Bills of Quantities

The Contract & Bills of Quantities:

1. Introduction:

Engineering contracts contain special and technical conditions, rules and specifications that differ depending on the type of service and the surrounding legal nature. They depend on the specifications observed in the area. Generally, the various types of contracts contain the following:

1. The main contract documents (the contract letter)
2. General conditions of contract
3. Special conditions of contract
4. Technical specifications
5. The bills of quantities and prices

It should be noted that the general conditions with all articles thereof that are issued by the Ministry of Finance in the Kingdom of Saudi Arabia serve as a fixed form in all various types of engineering contract

The bills of quantities under this part cover all activities and works such as the inspection and maintenance works for facilities under in the Manual such as the bridges, the tunnels, and the culverts.

2. The Main Contract Documents (the Contract Letter):

With the grace of Allah, a contract has been entered on (Day) .././.... corresponding to .././.... in (City) by and between the following parties:

One:

(The Ministry or the Administrative Body) represented in signing this contract by (.....), with address Zip Code, Kingdom of Saudi Arabia, and is referred hereinafter as the (Owner) (The First Party).

Two:

(.... Company/Establishment) with commercial registration CR number dated .././.... Entered in the Commercial Register of (City ...) with its Head Office in (City), and address in the Kingdom: P.O Box,

Postal Code, Kingdom of Saudi Arabia, represented in signing this contract by (.....) in his capacity as, and is referred hereinafter as the (the Second Party).

Whereas the First Party desires to operate, maintain and clean roads (Contract number) for which an invitation to bid was published in the local newspapers and the Second Party has submitted his proposal dated .././.... Corresponding to .././.... To carry out these works having acquainted himself with all terms and conditions of the contract as well as all relevant documents, the Second Party acknowledges that he has viewed the site and is fully aware of the government regulations for tenders and purchasing issued by the Royal Decree number M/58 issued 04/09/1427 H and its executive regulations issued by a decision number 362 dated 20/02/1428 H of his Excellency the Minister of Finance and the amendments, decisions and instructions thereof.

Whereas the First Party (Owner) has accepted the offer of the Second Party pursuant to the contents of the award letter number () dated .././.... Corresponding to .././.....,

Now therefore, **both parties have agreed to carry out the work according to the following:**

Article One:

Purpose of the Contract:

The purpose of this Contract is the operation, maintenance, and cleaning of the roads under the Contract number () as specified in the attached data and bills of quantities for a total length of () kilometers.

Article Two:

Documents of the Contract:

2-1 This Contract is made of the following documents:

- a. The main Contract document
 - b. Special conditions of contract
 - c. General conditions of contract
 - d. The bills of quantities and prices
 - e. Special specifications
 - f. General specification of roads and bridges construction
 - g. The technical manuals specified in Article One of the general conditions
 - h. Appendices (if any)
 - i. The awarding letter (letter of accepting the offer and awarding the contract)
 - j. The work programs, lectures, roadmaps and layouts that are agreed upon
 - k. Any correspondences between the two parties
- 2-2 These documents are an integrated whole; each document is an integral part of the Contract. The above mentioned documents interpret and complement each other.
- 2-3 In the event of contradiction between the provisions of the same document, the provision most appropriate to the subject matter shall be adopted. In the event of contradiction between the provisions of more than one document, the document proceeding shall prevail over the next document as specified in the order of precedence in Para of this article.

Article Three:**Contract period:**

The Contractor undertakes to carry out the following:

1. Execute general maintenance for all subject matter roads and pertaining facilities during three (3) consecutive Georgian years that start from the date of the Contractor taking over the site.

-
-
2. Execute the preventive maintenance works notified to the Contractor by the Owner during the validity of the Contract within the period or periods agreed upon by the two parties. In the event the period or periods are not during one week from the date of notifying the Contractor of the need to carry out the work, the Owner may specify the period or period and notify the Contractor accordingly without the right to contradict by the part of the Contractor.

Article Four:

Contract Price:

The total value of the works under this Contract shall be as follows:

- 4-1 The value of the ordinary maintenance works for () days according to the bill of quantities attached with this Contract are calculated on the basis of the Unit Price and their estimated quantities. The value shall be (SR) Saudi Riyals.
- 4-2 The value of the preventive maintenance works that are needed during the Contract period shall be according to the mortifications issued by the Owner and shall be specified in view of the price rates in the bills of quantities of the ordinary maintenance.

Article Five:

Payment:

The Owner undertakes to pay the Contract value in the manner and at the times specified in Article Fourteen “Payment” of the general conditions of the Contract against the Second Party carrying out and completing the works under the Contract.

Article Six:

Without prejudice with any other rules and regulations, the Contractor acknowledges that he has not paid or promised to pay any money or any

other benefit in order to secure this Contract. If this proves otherwise, any amount that is proved to have been paid or promised to be paid shall be deducted from the payments of the Contractor. In addition, the Owner shall have the right to cancel the Contract without compensation. The Contractor and his employees shall be held liable for such actions.

Article Seven:

Contract Organization:

This Contract shall be subject to the regulations observed in the Kingdom of Saudi Arabia which, shall govern the interpretation, execution, and the settlement of any claims arising under this Contract.

Article Eight:

Conflicts adjustment:

Any dispute arising from the execution of this Contract that can not be settled amicably between the two parties shall be referred to the jurisdiction of the Court of Grievances whose ruling shall be binding and final.

In witness thereof, the two parties signed this document in the place and date first mentioned above. The document I made into seven copies; the Contractor received a copy.

Allah grants success

Second Party

Name:

Title:

Signature:

First Party (Ministry or administrative Body)

Name:

Title:

Signature:

3. General Conditions of contract

Article One:

Definitions:

1. The Owner (First Party):

The Owner is the ministry or the Administrative Body that invited for the tender.

2. The Engineer:

The Engineer is the person of a natural or corporal character who is appointed by the Owner at any time to supervise and follow up the execution of the Contract.

3. The Representative of the Engineer:

The representative of the Engineer is any resident engineer or work supervisor appointed by the Owner or entrusted by the Engineer at any time to perform any of the Engineer's duties within the authorities that are notified in writing to the Contractor by the Owner or the Engineer.

4. The Contractor (The second Party):

The Contractor is a person or person of a natural or corporal character whom the Owner has accepted their price proposal. This includes their representatives, successors and those who replace them with the consent of the Employer.

5. The Representative of the Contractor:

The representative of the Contractor is the person or persons who are appointed by the Contractor to run d execute the work which is the subject matter of this Contract.

6. Works:

The works are all works that are to be executed pursuant to this Contract. They are:

a. Ordinary Maintenance Works:

The ordinary maintenance works are divided in two sections:

First section:

The first section includes the items regarding the operation, cleaning, and maintenance that are being executed on a continuous and periodic manner.

Second section:

The second section includes the items of the work regarding the means of safety, repair, equipping, and any other urgent works that are executed by an undertaking from the Engineer.

b. Temporary Works:

The temporary works include diversions, facilitating traffic on the road, and all works that do not have a permanent nature of any kind that can be easily eliminated, replaced, or cancelled during or after the execution of the works. The costs of the temporary works shall be included in the contract without prejudice to the provisions of Article Thirty Five.

b. Preventive Works:

The preventive works that are carried out by a work order from the Employer to repair all or some of the serious damage of all, or part of the road, its components or facilities that affect or have already affected the structural integrity and the infrastructure of the road, threaten the safety and users of the road as a result of decomposition and erosion by aging, other environmental factors, usage, or emergency extraordinary conditions. By its nature, preventive works do not come under the works and concept of ordinary works whether they carried out as repair, rehabilitation, upgrading, re-construction or improvement that are necessary to increase safety in ground intersections and dangerous curves. Such works cannot be enumerated and their quantities cannot be estimated unless there is a real need. They are carried out by a work order from the First Party as indicated in the specifications.

7. Equipment**a. Contractor Equipment**

Contractor equipment means the machinery, equipment and appliances pertaining to the Contractor that need to be provided for use to carry out the works and services.

b. Project Equipment

Project equipment means the machinery, equipment and appliances pertaining to the Owner (if any) that the Contractor undertakes to operate, maintain, and safe keep in carrying out the works and services throughout the Contract's period.

8. Approval:

Approval means the written approval; it includes the written confirmations subsequent to any previous verbal approval.

9. The words in singular form shall have the same meaning of the plural and vice versa if the context so requires.

10. The titles, and margins indicated in the Contract shall not constitute an integral part of the Contract; they are taken in consideration upon the interpretation of the Contract.

11. Consecutive days:

Consecutive days means every day of the week including Fridays and holidays.

12. Calendar:

The calendar means the day, month and year in Georgian calendar and the corresponding Hijri calendar.

13. General Specifications:

These are the general specifications of roads' construction, or any annexes thereof if any and bridges that are approved by the Owner.

14. Technical Evidence:

- a. These are the evidences that are approved by the Employer such as:
- b. Maintenance manual
- c. Materials manual
- d. Unified traffic control manual
- e. Work sites' traffic control equipment manual
- f. Work sites' traffic control book
- g. Survey manual
- h. Design manual
- i. Execution manual

15. Special Specifications:

These are the special specifications that are issued by the Employer. for the maintenance of the roads.

16. Drawings and Designs:

These are all the technical approved drawings and designs pursuant to which, all t works or any approved amendments are carried out. Tey include the methods of remedy and repair.

17. Site:

The site means the lanes, ears areas and roads' structures. It also means the places where works are executed on, under, or through or any other places provided by the Employer for the purposes o the contract. It also means any other places specified by the Contract as part of the site.

Article Two:**Contract' language:**

1. Arabic shall be the language approved in the interpretation and execution of this Contract.
2. If work so requires, some documents or part thereof may be submitted in a foreign language.
3. Following the Contract signing, correspondences shall be in Arabic. If the Contractor uses a foreign language, he shall translate it into Arabic on his own expenses.
4. In the event of contradiction between the Arabic and the foreign versions, the Arabic version shall prevail.

Article Three:**Scope of the Contract:**

1. The operation, maintenance and cleaning of () Contract number: (). This includes:
 - a. Cleaning of the components of the asphalt roads and their facilities including the lanes, hard shoulders; divider islands, clear spaces, facilities such as the bridges, culverts and others; water discharge systems and waterways; as well as removing all that may affect the safety of the road and their users; or deform their general view; or disturb traffic on them.
 - b. The scope of the Contract includes repairing the damage of the roads & their constructions and facilities resulting from wear due to aging, environmental factors, or usage, and executing the necessary modifications to increase the level of roads and traffic safety.
 - c. The scope of the Contract includes preventive and protective works, and supervision and observation of the roads & their structures and facilities twenty four (24) hours day throughout the duration of the Contract. It includes safekeeping them, recording any observation, violation or urgent situations; taking all necessary action pursuant to the Contract documents, and duly notify the Employer about them.

- d. The scope of the Contract includes the operation and maintenance of the supervision teams, the maintenance centers, the teams locations, trucks weight, mobile scales, and traffic counting equipments (if any).
 - e. The scope of the Contract includes all items of the ordinary maintenance works that the Contractor is approved to execute according to the agreed upon programs.
 - f. The scope of the Contract includes securing t technical equipments, operators, all manpower, materials, and plant necessary for carrying out the works in their respective places and at the times specified without delay.
 - g. The scope of the Contract includes quick response to any emergency of the road, and attending to such emergency by bringing and securing all necessary equipment, manpower, and warning signs to the location of the emergency as soon as it occurs and secure and facilitate the flow of traffic using the appropriate means without delay.
2. Preventive works for the roads under the Contract for which, the need arises and the Contractor is notified about it by the Owner.

Article Four:**Starting the Works:****First:****Ordinary Maintenance Works:**

- 1 The Contractor shall immediately after receiving the award letter, begin to take the arrangements, and prepare the outfitting necessary to start the works.
2. The Contract duration for the ordinary maintenance works shall start as of the date of taking over the site.

Second:**Preventive Maintenance Works:**

The Contract duration for the preventive maintenance works about which the Contractor is notified, shall start as of the date of taking over the sites of such works and for each notification at a time.

Third:

The Owner shall be notified in writing regarding the fixed time for handing over the site. In the event the Contractor does not show at the fixed time, the duration shall start from the time specified in the notification.

Article Five:**Supervision of Work:**

The Owner shall assign to the Engineer and the necessary staff (collectively referred to as the Engineer) to supervise on his behalf the execution of the Contract according to the Contract's documents. The Contractor shall execute the works according to the instructions and directions of the Engineer in a manner that shall not contradict the authorities assigned to the Engineer as specified in the Contract's provisions.

Article Six:**Site Handover Report:**

The sites of the ordinary maintenance works as well as the notifications of the preventive maintenance works shall be handed as per reports to be signed by the Engineer and the representative of the Contractor. the following shall be attached with each report:

1. Ordinary Maintenance Works

One: A statement shall be made that indicates the road numbers, names and lengths that have been handed over to the Contractor. Any discrepancy

to the roads' statement attached with the Contract shall be as well as the reasons for such discrepancy. A report shall be submitted that indicate the facilities and their contents to be maintained, operated or maintained.

2. Preventive Maintenance Works:

- A. Specify the sites and describe the works which, the Contract can start working on them.
- B. Specify the sites that the Contractor cannot start working on them and give reasons.

Two: If the date specified to handover the site coincides with an official, the site handover date shall be as of the first working day after the holiday.

Article Seven:

Authorities of the Engineer:

The authorities of the Engineer are:

- 1 To supervise, observe, inspect, accept, and rest the works, and any material, equipment, or method used by the Contractor.
- 2. To determine the sites for executing the ordinary maintenance works items (Section Two), and authorize the necessary quantities to the Contractor.
- 3. To measure and approve the works executed by the Contractor.
- 4. To authorize his representative in writing from time to time to exercise any of his authorities and powers granted to him provided that the representative s submit a copy of this written authorization to the Contractor. The written instructions and approvals issued by the representative of the Engineer to the Contractor within the scope of the official authorization given to him shall be binding upon the Contractor

and the Employer as though they have been issued by the Engineer himself. The following shall be observed:

- a. The negligence of the representative of the Engineer in performing any of the authorities granted to him shall not affect the authority of the Engineer who shall have the right to remedy the situation after that.
 - b. If the Contractor is not satisfied with any decision taken by the Engineer, he shall have the right within three (3) days from the date of the decision to ask the Engineer to revise the decision. The Engineer shall within from the request the Engineer either to substantiate cancel or amend the decision. If the Owner does get a response from the Engineer after the elapse of the period mentioned above, the decision of the Engineer shall be deemed cancelled.
5. The Engineer shall have no authority to relieve the Contractor from any of his duties, or obligations under this the Contract.
 6. The Engineer shall not have the right to instruct carrying out any work that may result in the delay or increase in the financial obligations of the Owner, nor to make any change in the works unless that is clearly stated in the Contract.

Article Eight;

Supervision of the contractor:

The Contractor shall carry out the necessary supervision – during and after the execution of the work – with a magnitude that the Engineer sees necessary to fulfill his contractual obligations in an accurate and proper manner. The Contractor or his representative, who is authorized in writing by the Engineer, shall permanently and constantly resident in the work site in order to supervise the execution of the works.

Article Nine;**Authorities of the Project Manager:**

The Contractor shall grant the project manager the authorities that enable him to perform his duties and execute the works in accordance with the Contract conditions and specifications.

Article Ten**Assignment to Third Parties:**

1. The contractor shall not have the right to assign to third parties any part of the Contract or any profit or interest that arise out of the Contract or ensue on it without securing a prior written approval of the Employer. Notwithstanding, the Contractor jointly with the assignee shall remain responsible before the Owner.
2. Pursuant to the preceding paragraph, it may not be possible to approve more than sixty percent (60%) of the Contract.
3. Before approving the assignment of the Contract or part thereof, the Government Body shall put the following on consideration:
 - a. Identify the reasons for requesting the assignment and whether if the Contractor had any contracts assigned before as per an acknowledgement submitted by the Contractor to the Government Body.
 - b. The assignment shall be as per an agreement entered by two parties of the assignment in order to specify their obligations before the Government Body the owner of the project.
 - c. The agreement shall not be effective until approved by the Government Body and its approval of the assignment.
 - d. The assignment should not lead to the damage of the project by executing it for decreased prices.

- e. The Contractor to whom the Contract is assigned shall have the characters of dealing with the government and shall be categorized in the scope and class of the works assigned to him.

Article Eleven:**Subcontracting:**

- 1) The Contractor shall not have the right to subcontract the execution of any of the works under the Contract or parts thereof without first securing a prior written consent from the Owner.
- 2) The Owner shall not be considered a part in the contracts entered between the Owner and his sub-contractors.
- 3) The consent of the Owner shall not relieve the Contractor from the responsibilities and obligations resulting on him under the Contract.
- 4) Any action, error, or negligence of the sub-contractor, his agents, employees or labors shall be deemed as though it is the action, error, or negligence of the Contractor himself.
- 5) The Employment contracts entered on the basis of payment for piece are not considered sub-contracting pursuant to this article.
- 6) The subcontractor shall be a specialist and officially categorized in the same class covering his obligations of the contracted works.

Article Twelve**Amendments, Additions and Cancellations:*****First:***

When practicing its authority in increasing, decreasing, or making any action, or change in the works under the Contract, the obligations of the Contractor, the Government Body should observe the following controls:

1. The additional works shall be a subject matter of the Contract and not out of its scope.

2. The amendments or changes of the works shall serve the interests of the facility, be without prejudice to the conditions and specifications d without, and without making change in the nature of the Contract or its financial balance.
3. It is important to ensure the availability of funds required for covering the additional works before authorizing the Contractor to execute them.
4. If the additional works do not have similar items or quantities in the Contract, the proposal shall be submitted to the committee that reviews the offers or the competent purchasing committee as necessary in order to study the these works and the suitability of the prices submitted by the Contractor. if the Contractor does not agree to the decision of the committee, a Contract may be entered with other Contractor in accordance with the government regulations for tenders and purchasing and its executive regulations.
5. It may not be possible to entrust additional works after taking over the works which, are the subject matter of the Contract.
6. All orders regarding the increase or decrease of the obligations of the Contractor and the due periods shall be issued by the competent body regarding the award.

Second:

The Contractor may not execute any works or services not covered in the quantities and items of the Contract without a written authorization. The Contractor shall not be entitled to the value of the works executed in violation of this provision.

Three:

The Contract's period may be extended by no more than 10% of the total value of the Contract provided that such percentage may not have

been exhausted in executing additional items or quantities under the Contract.

Article Thirteen:

Planning the Ordinary Maintenance Works:

Without prejudice to the continuous maintenance works required to be carried out around the clock including:

1. Every work that guarantees the flow of traffic on the road in a safe manner;
2. Cleaning the road surface and the repair of any cracks or holes in the road;
3. Cleaning all types of discharge systems and the repair of any deviation in the road;

The Contractor shall within one (1) month from the date of taking over the site, coordinate with the Engineer y preparing a time schedule for the works according to the special specifications and in the manner that guarantees performing the works during the Contract duration and within the value of the Contract. The Engineer may carry out any amendment to this plan according to the requirements of the work and any accidents that occur in the road.

Article Fourteen

Payments:

1. The Government Body has the right to pay the Contractor in advanced 10% of the contract value but the advanced payment shall not exceed fifty millions Saudi Riyals (SR 50.000.000) or the equivalent in foreign currency against a bank guarantee equal to this value. This advanced payment shall be deducted from the Contractor's payments on installments in accordance with the following controls:

- a. The contractor shall submit a bank guarantee equivalent to the advanced payment. The advanced payment shall be deducted from the interim and final payments.
 - b. The guarantee bank of the advance payment shall be equal to its value and valid until the full value of the payment has been recovered.
 - c. An advanced payment may not be made when renewing or extending the existing Contracts; or entrusting an additional works.
2. The payments of the Contractors shall be made pro rata to the actually executed works after deducting any amounts due on the Contractor such as penalties, or other deductions according to the conditions of the Contract. The payment period shall not exceed thirty (30) days from the date the Engineer approving the payment order or the check. .
3. The Contractor may assign the amounts accrued to him under the Contract with the approval of the Government Body according to the assignment form approved by the Ministry of Finance provided however, this shall not violate the conditions of the Contract or the rights of the government or other bodies towards the Contractor.
4. The final payment that shall be less than five percent (5%) of the total Contract's value shall be postponed until the preliminary final acceptance of the ordinary maintenance works for the third year of the Contract or the preliminary final acceptance of the preventive maintenance works are made; a certificate from the Department of Zakat and Income verifying the payment of the Contractor's Zakat and taxes, and a certificate from the General Organization for Social Insurance (GOSI) certifying the payment of social insurance and the settlement of the manpower dues has been submitted.
5. At the end of each Georgian month, the Engineer shall prepare the current accrual for all works that comply with the terms and

conditions of the Contract and the specifications the Contractor has executed within the month. The Contractor may have his reservations for any measures that he does not accept

6. If the Contractor refuses to sign the accrual, the Engineer shall submit the invoice for payment and provide a copy to the Contractor.
7. If the Contractor does not provide reservations within five (50 days, from the date of the letter notifying him of the accrual, he shall be deemed to have accepted it. Thereafter, he shall not be entitled to object to it.
8. The Contractor's payments shall be paid according to the current accruals every month. All amounts paid to the Contractor as per the current accruals shall be considered as payments on account. If any error in calculating the quantities or in the numbers is found, the error shall be corrected in the following accrual or the final accrual.
9. Following the completion of the works, the Engineer shall take part with the Contractor in the preparation of the final payment according to the final measurements of the executed works within thirty (30) days from the date of completion of such works.

Article Fifteen

Damages Inflicting Persons or Property:

1. The Contractor shall burden full responsibility and costs resulting on from any losses or damages that may inflict persons or properties as a consequence of the execution, or maintenance of such works or for any reason pertaining to them due to the negligence of the Contractor or his lack of coordination with the Employer. In such case, he shall also burden the responsibility for all liabilities, claims and expenses ensuing from them.
2. The Contractor shall not burden the responsibility for the losses or damages affecting to rights of common as this is an eventuality that

cannot be avoided as a result of the execution of the works pursuant to the Contract.

Article Sixteen

Suspension the Works & resulting Costs:

First:

Pursuant a written order from the Engineer, the Contractor shall stop the progress of works or any part thereof for any period determined by the Engineer. During the period the works are suspended, the Contractor shall protect and maintain the works to the extent deemed necessary by the Engineer.

Second:

The Owner shall not burden the costs resulting from suspended the works in the following cases:

1. If the suspension of the works is provided for in the Contract;
2. If suspension of the work is necessary to carry out the work in a proper manner, due to atmospheric conditions, or because of the negligence of the Contractor;
3. If suspension of the works is necessary for the safety of the works or any part thereof, or to the safety of the roads users.

Article Seventeen

Extending the Duration of Execution of the Works:

The duration of execution of the works shall be extended pursuant to the provisions of article 51 & 52 of the government regulations for tenders and purchasing and the regulations under the chapter 14 of its executive regulations.

Article Eighteen

The Initial Taking Over of the Ordinary Maintenance Works:

At the end of the Contract's period, the ordinary maintenance works shall be taken over initially by the Engineer as per a Minutes of Taking Over signed by the Engineer and the representative of the Contractor. The Minutes of Taking Over shall include a report of the quantities and the value of the executed works that have been taken over.

Article Nineteen

The Initial Taking Over of the Preventive Maintenance Works:

Upon the accomplishment of the works or integrated parts thereof, the Contractor shall clear the site of all equipment, materials, dirt, and rubbish. He shall pave it in a manner to make it suitable for use then send a written notification to the representative of the Owner, who should determine an inspection date to carry out the initial taking over. The representative of the Owner shall determine the inspection date as per a written notification during a period no later than fifteen (15) days from the date of the Contractor's notification.

Upon handing over the works, the Owner or his deputy shall inspect the works and take over initially in the presence of the Contractor or his representative. Minutes of initial Taking Over shall be made of several copies as needed; the Contractor is given a copy. If the initial Taking Over was carried out in the absence of the Contractor despite being notified as per a registered letter, the absence shall be recorded in the Minutes of Taking Over. If the inspected works are completed in the best way as required, the date of the Contractor's notification to the Owner notifying the Owner of his readiness to handover the works, shall be considered a date for the accomplishment of work and the beginning of the guarantee period. If however, the inspection reveals that some works have not been carried out in the best way possible, this shall be recorded in the Minutes of Taking Over. The handover shall be postponed until all required works are executed or repaired.

If the initial inspections reveal that some items or parts thereof had not been executed by the Contractor, and the initial taking over committee sees that the unexecuted works do not prevent taking advantage of the works and its use for its intended purposes, the Owner may in this case consider the works as initial handed over and request the Contractor to complete the missing works during a reasonable period. If the Contractor fails to do that, the Owner shall have the right to deduct the value of such works and entrust another Contractor to execute them on the account of the prime Contractor and charge him with the difference in price.

Article Twenty

Guarantee Period for the Preventive Maintenance Works:

The Contractor shall guarantee the preventive maintenance works to the best way possible for three hundred sixty (360) days starting from the date of the initial handover. In case of splitting the initial handover, the guarantee period shall be calculated for each part as of the date of its initial handover.

Article Twenty One

The Contractor's Responsibility during the Guarantee Period:

First:

The Contractor shall execute any repair, amendment, and reconstruction; and correct any defects that appear on the executed works as required in writing by the Owner or the Engineer during the guarantee period or upon the final handover. It is agreed that this shall not include the repair of defects resulting from wear and tear of handed over works provided that such defects are not the result of faulty maintenance, execution or used materials. The Contractor shall carry out all these works on his own expense if as deemed by the Engineer, the reason to such works is that the used materials, or workmanship, or execution are not compliant with the Contract, or due to default or

negligence of by the part of the Contractor in executing any explicit or implicit obligation ensuing on it pursuant to the Contract.

Two:

If the Contractor defaults or refrains from executing any of the works indicated in the paragraph above of this article, which are requested by the Engineer, the Owner shall have the right to execute such works by himself or other Contractors and collect the costs of such works from the Contractor. The Owner may deduct the amounts due to the Contractor or those which will be due later on or from any other dues.

Article Twenty Two:

Final Taking Over of Preventive Maintenance Works:

One month before the end of the guarantee period, the Contractor shall send a written notification to the Owner to specify a date for inspection in preparation for the final handover. If the inspection finds that the works comply with the terms and specifications, the works shall be handed over finally pursuant to a Minutes of Taking Over to be made in writing by the Owner or his deputy. Several copies as needed shall be made of these minutes and signed by either parties or their delegated persons. A copy shall be given to the Contractor.

If the inspection reveals a discrepancy, default or defect of some works even if they were not included in the Minutes of initial Taking Over, taking over shall be postponed. This shall extend the guarantee period until the omission has been completed or the defect repaired by the Contractor during a reasonable period to be determined by the Engineer. If the period elapses without the Contractor executing the require repairs, the Owner may if deems fit carry out the necessary repairs on the expense of the Contractor and under his responsibility, or deduct their prices under the bills of quantities from the guarantees submitted by the Contractor.

Article Twenty Three**Releasing the Final Guarantees:**

1. The final guarantee of the ordinary maintenance works shall be released after the end of the Contract duration and after approving the initial final taking over.
2. The final guarantee of the preventive maintenance works shall be released after approving their respective final taking over. If the final taking over is done on partial basis, the Owner may reduce the value of the final guarantee by five percent (5%) of the value of the works that are finally taken over.

Article Twenty Four**Default in Performing the Ordinary Maintenance Works:**

- a. If the Contractor defaults in the execution of his obligations or exhibits slackness in response to the emergencies, a penalty shall be imposed on him. The penalty shall be determined pursuant to the terms and specifications; at the end of the execution it may not exceed ten percent (10%) of the Contract's price.
- b. If the Contractor does not execute the works required from him, or if he does not provide any of the items and elements that are required to be provided according to the Contract's documents, the value of such works, items and/or elements shall be deducted from his dues even if the value exceeds ten percent (10%) of the Contract's value.

Article Twenty Five:**Delay Penalty:*****First:*****Delay Penalty:**

If the general works Contractor fails to achieve the completion of works and handing over the completed works in due time, a delay penalty shall be imposed on him. The delay penalty shall be calculated on the basis of the average daily cost of the project by dividing the Contract's price by its duration according to the following;

- a. Delay penalty on the first part of the delay period at the rate of one fourth of the average daily costs for every day of delay until the period exceeds fifteen (15) days or ten percent (10%) of the contract duration, whichever is greater.
- b. Delay penalty on the second part of the delay period at the rate of one half of the average daily costs for every day of delay until the period exceeds thirty (30) days or ten percent (15%) of the contract duration, whichever is greater.
- c. Delay penalty on the third part of the delay period at the rate of full average daily costs for every subsequent day of delay until the period exceeds thirty (30) days or ten percent (10%) of the contract duration, whichever is greater.
- d. The total penalties deducted may not exceed ten (10%) of the total Contract price.
- e. If the Government Body sees that the delayed part does not hinder making use of the works in the best way possible at the fixed date for its completion, does not make any interruption to using any other benefit, and does not negatively affect the completed parts of the works,

deduction of penalty shall be limited to the value of the delayed works according to the method of calculating the penalty of the original works provided that the penalty shall not exceed ten percent (10%) of the value of the delayed works.

Second;

Supervision Costs resulting on the Delay in Executing the Ordinary maintenance Works:

In addition to the penalty stipulated above, the Contractor shall burden the supervision fees during the period the Contractor is subjected to the penalty. These fees shall be calculated as follows:

a. Supervision by the Owner:

The supervision costs = value of delayed works x 0.01 x (delay period in days / the execution days in days)

b. Supervision by the Consultant:

The Contractor shall burden the actual costs of the Consultant's supervision of the execution of delayed works

c. Supervision of the Consultant's Personnel over more than one of the Government Body's project Simultaneously

The fees of the Consultant's personnel of the delayed project according to the following equations:

The (monthly) supervision fees of the delayed project=

The monthly salary of the employee(s) x the project's value

Total value of projects supervised by the Consultant (not taken over)

Having determined the total monthly supervision fees of the project, the supervision costs are deducted from the payments of the Contractor according to the delay period.

Article Twenty Six

Withdrawing the Work from the Contractor:

-
1. The government may withdraw the work from the Contractor and then revoke the Contract or execute it on the Contractor's account. The Government Body shall still have the right to claim due compensation from the Contractor against the inflicted damage(s) in the following cases:
 - a. There is evidence that the Contractor has by himself or through others either directly or indirectly attempted to bribe an employee of the Government Bodies that are subjected to the Regulations of Government Tenders & Purchasing, or to secure the Contract through bribery.
 - b. The Contractor failed to complete the works in due time, slowed its execution, or violated one of the Contract's terms and had not remedied his situations within fifteen (15) days from the date of being notified in writing to do so.
 - c. The Contractor assigns the Contract or sub-let it to third parties without a prior written approval from the Government Body.
 - d. The Contractor becomes bankrupt or will apply to declare his bankruptcy, becomes insolvent, or (as a company) is being wound up or liquidated.
 - e. The Contractor dies where his personal qualifications are the significant point in contracting, the Government Body may continue in contracting with the heirs if they have the adequate technical and financial guarantees.
 2. The work shall be withdrawn from the Contractor by a decision of the competent Minister or the Head of the Independent Department based on a recommendation from the committee that reviews the proposals or the competent purchasing committee as

appropriate. The Contractor shall be notified by a registered letter.

Article Twenty Seven

Effects of Withdrawing the Work:

1. A Report shall be written jointly with the withdrawn Contractor or his representative that verifies the state of the project at the time of withdrawing the project and the inventory of apparatus, equipments and materials. If the Contractor or his representative does not show up, he shall not have the right to object on the Minutes.
2. The contracting body shall have the right to seize the materials, and the equipments present in the site. The withdrawn Contractor may recover his materials and equipments after settling his account and paying the monies due on him.
3. The Contracting Body shall have the right to use the materials and equipments to complete the withdraw works. The condition of the materials and equipments shall be evidenced pursuant to paragraph (1) above of this article. The value of the materials and the similar rent of the equipments shall be estimated according to the prevailing prices.
4. The Government Body shall withhold the payments of withdrawn Contractor and extend the guarantee submitted by him to become valid until a final decision to seize it has been taken to cover the Government Body's claims towards the Contractor bending the final settlement of the financial matters of the project's works.
5. If the Government Body decides to execute the work on the account of the Contractor, the execution shall be according to the terms and specifications under the original Contract. The works may be executed using one of the following methods:

-
- a. To agree with the bidder of the second proposal that came next to winning Contractor's proposal to execute the works for the same prices under the Contract. If the bidder of the second proposal refuses, then negotiations may be initiated with the bidders in the order of precedence of their proposals. If no agreement is reached regarding the prices under the Contract, then negotiations shall be initiated with all bidders in the order of precedence of their proposals to execute the works for the prevailing prices.
 - b. The Government Body cannot execute the works according to the provision of paragraph (A) of this article; the works shall be executed by direct purchasing if the value is within that authority within the prevailing prices.
The Government Body cannot execute the works according to the provisions of paragraph (A ^ B) of this article, the withdrawn works shall be solicited for general tender according to the government regulations for tenders and purchasing and its executive regulations.
 - c. The value of the withdrawn works does not exceed one hundred thousand Saudi Riyals (SR 100.000), the Government Body may secure the works in the manner its deems suitable within the prevailing prices.
6. The withdrawn Contractor shall burden all costs of works - if executed on his account – all differences in prices resulting from the execution.
 7. The Government Body may manage the project or contracted works by itself or to entrust them to a Consultation Firm if it deems this achieves better benefits than withdrawing them.
 8. The Contractor dies but the heirs had no wish to continue the execution of the works according to the provisions of article fifty three (53 paragraph E) of the according to the government regulations for tenders and purchasing, the Contract shall be revoked, all executed works enumerated, all items in the site listed as per a Minutes to be signed by the deputy or representative of the heirs, and the final guarantee

released upon the settlement of all rights and obligations resulting on the Contract.

General Obligations

Article twenty Eight

Final Guarantee & the Insurance Policies:

First:

When notified of the award of the Contract, the Contractor shall submit within ten (10) days as of the date of the award of the Contract a final irrevocable guarantee valid throughout the duration of the Contract equal to five percent (5%) of the value of the ordinary maintenance works as a performance bond of the Contract.

Two:

The Contractor shall submit a final irrevocable guarantee equal to five percent (5%) of the value of each notification of preventive maintenance works during ten (10) days of the notification date as a performance bond. The guarantee shall be valid throughout the period of execution of works until the final handing over.

Third:

The Owner may grant the Contractor an additional period to submit the final guarantee equal to ten (10) days from the end of the expiry of the period referred to in the previous paragraphs (First & Second).

Fourth:

The guarantee shall be issued by a local bank or a foreign bank presented by a bank operating in the Kingdom of Saudi Arabia in a form approved by the Ministry of Finance. The bank shall be accredited by the Saudi Arabian Monetary Agency.

Fifth:

- a. If the Contractor delays the submission of the final guarantee, the preliminary guarantee shall not be returned to him. Negotiations shall be initiated with the next proposal in accordance with the

government regulations for tenders and purchasing and its executive regulations.

- b. The final guarantee shall be retained until the Contractor executes all of his obligations.
- c. The final guarantee shall be reduced in the annual continuous execution contracts according to the execution of the works provided that the guarantee shall not be less than five percent (5%) of the total value of the remaining works of the Contract.

Sixth:

Upon signing any Contract or notification of preventive maintenance works whose value exceed five million Saudi Riyals, the Contractor undertakes to submit to the Owner the required insurance policy certifying that he had insured the maintenance works and their basic components during the execution of works throughout the preliminary handing over of the works. The policy is made by a national insurance company.

Article Twenty Nine

Viewing the Site:

The Contractor shall on his own account view the site as well as the areas surrounding it and make sure by himself – before submitting his proposal – to acquaint himself with the shape and nature of the site. The Contractor shall also revise the quantities required for completing the works, means of access to the site, and the facilities he needs. The Contractor shall generally obtain by himself all necessary information and other factors that may affect his proposal.

Article Thirty

Adequacy of the Bid:

Before submitting his bid, the Contractor is assumed to have completed his information, and made sure of the prices he has listed in the table of quantities, and the price categories are adequate to cover all of his

obligations resulting on him under the Contract and other matters and things necessary for the accomplishment and maintenance of the works in an accurate and proper manner.

Article Thirty One

Contract's Documents:

1. After signing the Contract, the Contractor shall be given a complete copy of the main Contract documents; the terms & specifications; and the bills of quantities. The Contractor shall then burden on his own expense the preparation of any additional copies needed for performing his work. The Contractor shall inform the Engineer as per a written notification well in advance of his need to copies of any document not handed to him, and he needs for executing the works.
2. Upon notifying the Contractor of any preventive maintenance works, he shall be handed over the bills of quantities and the description of works necessary for the execution of the works, as well as a copy of all drawings if any.
3. The Contractor shall provide the project manager with a full copy of the Contract's documents to be maintained in the work site.

Article Thirty Two

Reviewing the Technical Documents:

The Contractor shall be responsible for reviewing the engineering and technical drawings in details during fifteen (15) days from the date of receiving them. The Contractor shall notify the Owner or the Engineer about any error or remark he finds out in the drawings and layouts during the execution. When the execution is complete, the Contractor shall submit to the Owner original copies of the drawings of the executed works as done. The Contractor shall also review the reports

and the recommendations of the soil test. This shall not relieve the designing Consultant or the supervisor from their contractual responsibilities.

Article Thirty Three

Contractor Personnel:

First:

Staff Needed for the Ordinary Maintenance Works:

The Contractor shall recruit the individuals required for the execution of the ordinary maintenance works according to what's specified in the bills of quantities and the required number of other personnel having the experience and skills in the scope of their respective specialization i.e. skilled labor, semi-skilled labor, and ordinary labors for the execution of the works in an accurate manner.

Second:

Staff Needed for the Preventive Maintenance Works:

The Contractor shall recruit another technical staff comprising engineers, surveyors, and labors to carry out the preventive maintenance works notified to him. The project manager remains responsible for running the preventive maintenance works. The costs of this staff shall be included in the costs of the Contract without any increase in its original price.

Third:

Employing Saudis:

1. The Contractor undertakes to recruit Saudis only in the jobs specified in the list prepared by the Owner within the Contract's documents. The Contractor undertakes that their salaries shall not be less than those of their counterparts in the Civil Service System & Regulations.

2. If the Contractor does not abide by recruiting Saudis pursuant to the provision of paragraph (1), penalties under the specifications and terms of the Contract shall be applied.
3. Saudis' recruitment shall be full and not partial recruitment. The Contractor shall submit certificates to evidence the registration of Saudi employees with the General Organization for Social Insurance (GOSI).

Fourth:

Recruitment of Labors:

The Contractor shall make special arrangements for recruiting labors and treat them – whether citizens or foreigners – within the provisions of the Labor and Workmen Regulations, Iqama (Residence System, as well as other relevant regulations).

Fifth:

Labors Uniforms and Means of their Protection:

The Contractor shall provide a uniform for his labors present at the work site. He shall also provide them with the means of safety such as reflexive jackets, and head hats.

Sixth:

Removing the Contractor Employees:

The Owner shall have the right at all times to ask the Contractor in writing to remove any undesired person and to replace him within fifteen (15) days from the date of being notified.

Article Thirty Four

Equipments Used:

1. The Contractor shall estimate the number, type and size of the equipments, and machineries necessary to perform the ordinary maintenance works, to secure the works, and to distribute them on the

work sites in the manner that enables him to perform the required works. Payments for the equipments and machineries shall be made according to their quantities specified in the approved table of quantities that are supplied to the site. These equipment may not be used for any works other than the ordinary maintenance works.

2. The equipments and machineries to the extent that enables the execution of the ordinary maintenance works shall be determined at the agreed upon times as per work program. It is agreed that the costs of these equipments, and machineries are included in the prices of the items of the preventive maintenance works.
3. The Contractor undertakes when transferring his equipments, and machineries to abide by the respective rules and regulation.

Article Thirty Five

Detours and the facilitation of Traffic on the Roads:

1. Upon executing any roads' ordinary maintenance works or preventive maintenance works, the Contractor undertakes to keep the traffic at the work site continuously flowing in a safe manner. He shall take all the necessary precautions and means of safety according to the specifications of Work sites' traffic control equipment guide and Work sites' traffic control book.
2. If the execution of works or repairs does not enable the continuity of traffic flow on the road, or is affected by it, the Contractor shall construct diversions approved by the supervising Engineer and in a manner that does not hinder the discharge of flood water, and shall not be in private properties. They need to be maintained on continuous basis.
3. If paving the detour is required, only the price of the asphalt layer shall be paid as per the prices in the bills of quantities.

4. The means of safety the Contractor is required to execute for such detours shall be paid for as per the prices of the special items in the bills of quantities and as per the special specifications.

Article Thirty Six

Infringing the right of the way:

The Contractor undertakes to notify the Engineer in writing about any infringement on the road or any nearby accidents that affect the road, its facilities or its users. The notification shall specify the location and type of infringement. If the Contractor is asked to remove the infringement, any of his ordinary maintenance equipment may be used free of charge.

Article Thirty Seven

Execution of Works:

First:

The Contractor shall abide by the written instructions and directions of the Engineer or his representative in any matter related to or associated with the execution of works. No work shall be covered from sight, and no material or equipment may be used without the approval of the Engineer.

Second:

The Contractor and all of his staff and sub-contractors undertake not to take any photograph of the facilities and structures or any part thereof without the approval of the Owner, and not to use the photographs for the purpose of advertisement without the prior written approval of the Owner.

Third:

The Contractor shall abide by the rules, regulation and decision issued by the competent bodies. He shall abide by the regulations and rules of

the Public Agencies and Authorities and the concerned companies. The Contractor shall burden the responsibility and prescribed penalties of any kind resulting from his violation of such regulations, rules or decisions.

Fourth:

The Contractor shall buy national products. He is not permitted to use similar products that are imported from abroad for the execution of the works. If there no national products that serve the requirements of the work, the Contractor undertake to buy the equipments, machineries and materials from Saudi agents.

Fifth:

The materials used – either local or foreign – shall be in conformity with the standard specifications approved by the Saudi Arabian Standards Organization (SASO). Items that have no equivalent specifications to SASO shall be in conformity with well-known international Specifications.

Sixth:

The rules and regulations pertaining to the Environmental Protection in the Kingdom of Saudi Arabia issued by the competent authorities shall be observed.

Seventh:

The Contractor shall secure the following services from Saudi companies/establishments:

- a. Cargo and personnel transportation services unless directly performed by him using equipments pertaining to him or to persons working directly with him;
- b. Local insurance services;
- c. Banking services;
- d. Rent, and land & buildings services;

- e. Catering and foodstuff services;

Ninth:

The Contractor undertakes to have an office in the region, or in any city near from the work site.

Tenth:

The Contractor shall submit his letters, accounts, and documents in Arabic. He shall responsible for them

Eleventh:

The Contractor shall allow the chance to other contractors he uses or permitted by the Owner, to enable them to execute their works.

Twelfth:

In the event of default of the Contractor or slackness in executing the orders of the Engineer, the Owner shall have the right to use other persons and pay them the due wages necessary for carrying out the said orders. The Contractor shall burden all cost resulting on that or connected to it. The Owner may have the right to collect such expenses from the Contractor, or deduct them from any accrual, or may become due to him.

Article Thirty Eight

Inspection of works:

- 1) The Contractor shall allow chance to the Engineer and his representatives, and to provide for them all required facilitation and assistance that enable them to inspect the executed works or currently being executed; or the materials or equipments used or will be used in the work.
- 2) When the work is ready or about to be ready for inspection, the Contractor shall send a written notification to the Engineer. The Engineer or his representative or his representative shall to come

quickly but not exceeding forty eight (48) hours for inspecting unless the Engineer sees that the matter is unnecessary and notifies the Contractor in writing about that.

- 3) The Contractor shall expose any part(s) of the works, or to make openings in or through them as ordered by the Engineer from time to time in order to inspect the executed works. The Contractor shall restore this part or those parts to their previous state.

Article Thirty Nine

Removing the Works that Violate the Contract:

During the phase of executing the work, the Engineer shall have the right to order the following in writing from time to time:

- 1) Remove any materials from the site the Engineer sees that they are not suitable for the Contract. This shall be done in a period or periods that mentioned before;
- 2) Compensate proper, suitable and compliant to the Contract instead of the removed materials;
- 3) Remove any work and re-execute it in a proper manner if the Engineer sees that the said work is in violation in terms of materials or workmanship, and execution despite any prior test of the said work and despite paying any part of its costs.

Article Forty

Equipments, Temporary works and materials:

The equipments and temporary works brought and made available by the Contractor shall be allocated totally for the construction and completion of works only and no other. The Contractor may not without a written approval from the Engineer to move them or any part thereof

from the site except for within the same site. The Engineer may not without proper cause refrain from giving the written approval

Article Forty One

Quantities:

The quantities mentioned in the bills of quantities attached with the Contract or the list of quantities of preventive maintenance works notified to the Contractor the Contract period are approximate of the works. Charging shall be based on the actual quantities that are executed.

Article Forty Two

Use of Explosives:

The Contractor may not use any explosives without a written permission from the Engineer and after obtaining the proper licenses from the competent authorities. The Engineer shall ensure before the explosives are used that the Contractor has complied with the rules and regulations in this regard. The refusal of the Engineer to give such permission shall not be reason for any claim against the Owner. It should be noted that the Engineer may not without proper cause refrain from giving the written permission

Article Forty Three

Default of the Owner;

The Owner shall carry out the Contract conditions in good faith and to pay to the Contractor the due installments. If the Owner violates any condition under the Contract defaults payment in due time, the Contractor shall have the right to claim compensation for the losses resulting on this default or that violation. However, the Contractor may not suspend the work based on the delay of payment by the Employer. The Contractor shall be deemed to assign any compensation not claimed

within thirty (30) days from the occurrence of the incidence on the basis of which compensation is claimed.

Article Forty Four

Labors' Salaries:

The Contractor shall submit as of the third payment a payroll of salaries he had paid to his labors for the previous period. The payroll shall be attested by the office of the representative of the Contractor and the Engineer. Each three subsequent months, bill of quantities shall submit a payroll similar to the previous one throughout the Contract duration. If the Contractor delays the payment of wages of his labors who are working in the project under the Contract, the Employer shall have the right to pay such wages out of the amounts owing directly to the Contractor from for this Contract. The Owner notifies the competent authorities without referring to the Contractor.

Article Forty Five

Evacuating the Site after Accomplishing the Works:

Immediately after accomplishing the works, the Contractor shall evacuate the site by removing all equipments, materials, wastes, and temporary works of any type and dispose of them by the methods he sees best without affecting the environment and the general appearance of the road and the surrounding areas. The Contractor shall refine the borrow bit. The Contractor shall leave the site tidy and ready to use.

Article Forty Six:

Intellectual Property Rights;

The Contractor shall be responsible for all claims and proceedings resulting or ensuing from his infringement on any right, concession, design, trade mark, trade name or other registered rights regarding any equipment, machineries or materials used in executing the works as well as from all claims, proceedings,

damages, expenses, fees, and costs resulting on or related to them no matter how much their amount is.

Article Forty seven:

Special Risks;

Special risks like war, invasion actions of hostile forces, military actions and the like. The Contractor shall not be responsible to compensate or other for any vandalism or destruction of the temporary works, the property of the Owner, property of third parties, any defect and damage inflicting death if such vandalism, destruction, or defect arises from the special risks, and except when something is subject to removal and rejection under the provisions of this Contract, the Contractor shall have the right to be paid by the Owner the price of the works, the temporary works, or the materials when their allocation to the work is evidenced if subjected to vandalism or destruction ensuing from the special risks whether they were in or near the sites of the works, or in the roads to the works. The Contractor shall also have the right to be paid by the Owner all costs required to repair the works or temporary works to the extent the Engineer deems necessary. Payment will be based on the cost price in addition to a reasonable profit as determined by the Engineer. Any vandalism, destruction, damage, or loss of life occurring as a result of an explosion, or pressure in any place or time because of a mine, ammunition, explosives or any military material shall be considered to have ensued from the special risks and will be subject to the provision of this article unless arising from an action or negligence of the Contractor, his sub-contractors or his employees.

If war breaks during the validity of this Contract, the Contractor shall take all possible actions and exert all efforts to complete the works but take into account that the Owner has the right at any time after the break of the war to terminate the Contract as per a written notification to the Contractor. Upon serving this notification, the Contract becomes terminated except where it pertains to the rights of both parties that are stipulated by this article without prejudice to the rights of either party regarding any violation prior to this Contract.

If the Contract is terminated by the break of war in the manner previously indicated, the Owner shall pay to the Contractor all his due rights for the works he had executed in addition to the price of the materials and goods supplied to the site after deducting the amount owing to the Owner with the Contractor from the balance of advance payments that are paid to him, or any other amount paid to the Contractor on the account of the execution of the works.

Article forty Eight

Taxes and Fees:

Upon adjusting i.e. increasing or decreasing the officially priced tax tariff, fees, taxes, materials or services after the date of submitting the proposal, the price of the proposal shall be increased or decreased as appropriate by the difference. The following shall be observed when paying the difference resulting from an increase:

- a. The Contractor must evidence that he had paid the officially priced tax tariff, fees, tax, materials or services on the basis of the categories adjusted by increase as a result of supplying materials for execution of the works.
- b. The adjustment of the officially priced tax tariff, fees, tax, materials or services should not have been issued after the end of the period specified for executing the works; and that the Contractor had burdened the prices as a result of his delay in executing the works unless it can be evidenced that the delay was out of his control.
- c. In any case, the decreased difference in officially priced tax tariff, fees, tax, materials or services shall be deduced from the Contractor unless it can be evidenced that he had fulfilled them on the basis of the original categories before the adjustment.

Article Forty Nine**Import and Customs Rules:**

The Contractor acknowledges that he is aware of the rules and regulations of Kingdom of Saudi Arabia shall apply to the supply and shipment of any product or part thereof to the kingdom, or to its export out of t kingdom including the rules related to the ban of imports.

Article Fifty**Material Tests and Road Researches:**

If the Owner decides to carry out research and take samples from some sites on the road, the Contractor shall secure the required means of safety, and to allow the team conducting this work to use any of the ordinary maintenance equipments and labors. All that is mentioned above shall be included in the prices of the items.

Article Fifty One**Confidentiality:**

The Contractor, all his employees and sub-contractors undertake not to disclose any data, drawings, documents or information (“the information”) whether oral or written; exploit the; or disclose them to any person. This applies to the information in his position or has viewed the secrets, transactions, deals, or the Owner’s affair because of his relation to the Contract or works. This obligation shall apply during the execution of the Contract, after the termination of the Contract by the Owner, or after the expiry of its duration.

Article Fifty Two**Sanctity of the Holy Places:**

Instructions and regulations require that non-Muslims are not to be allowed to enter the Harm area in Makkah Al-Mukarammah, and Al-Madinah Al-

Munawarah. The Contractor, his staff and employees shall abide by these instructions.

Article Fifty Three

Serving the Notifications:

- 1) Notifications and communications regarding this Contract shall either be delivered by hand against receipt, by official mail, or registered mail. They shall be deemed to be effectively given if communicated as mentioned above to the addresses indicated in main of the main document of the Contract.
- 2) It may be possible to change the address by notifying the other party thirty (30) days in advance of the change.

Article Fifty Four

Cancelling the Commercial Registration:

The Contractor shall not have the right to cancel his commercial registration before fulfilling all his obligations with the Employer.

4. Appendix

Pursuant to the telex circular number 17777/B dated 29/04/1430 H issued by the Bureau of the Council of Ministers regarding the approval of adding the regulations in the decision to the operation, maintenance and cleaning contract issued by the decision number 268 dated 20/10/1422 H.

First:

The Ministry of Labor shall transfer the sponsorship of manpower (labors, technicians and foremen) of the old contractor who work directly with the Government Body to the new contractor in continuous contract such as the operation,

maintenance, cleaning and catering contracts according to the following;

- 1) The government shall burden the manpower sponsorship transfer fees;
- 2) The manpower should have recruited for the execution of the Contract entered with the Government Body or whose sponsorships are transferred to work in the project. If the new Contractor does not need them, the old Contractor should deport them;
- 3) The transfer of manpower to the Contractor should take place with their acceptance and as per Contract s entered with them;
- 4) The new Contractor has to submit to the competent Labor Office verification from the Government Body certifying that the new Contractor is in need of the manpower who was working with the old Contractor. The Ministry of Labor shall consider the need of the new Contractor of the manpower pursuant to the need of the project.
- 5) All administrative and financial jobs with the new Contractor shall be limited to Saudis according to the numbers determined by the Ministry of Labor. The new Contractor shall abide by the Saudization percentage.
- 6) The period of the new Contract shall not be less than one year;
- 7) The transferred manpower shall not work in any job outside the scope of the Contract or in any other activity of the new Contractor during the Contract's period;

Second:

There needs to be coordination well in advance between the old Contractor and the new Contractor under the supervision of the beneficiary body in order to execute the Contract. The ministry shall be notified accordingly so an orderly way should be in place to transfer the manpower to ensure speedy transfer procedures to avoid delay in transferring the services or any problems in the execution of the Contract.

Third:

The contracts of Saudis who worked with the old Contractor and wish to continue work when the new Contractor enters into contracts with Government Body these Contracts shall continue with the acceptance of the old Contractor provided that their wages and benefits shall not be less than those they enjoyed when working for the old Contractor. They shall be given the opportunity to make use of the foreign experiences in the area of the technical professions to qualify them to occupy these jobs in the future. The Government Body shall notify the new Contractor accordingly in the conditions of the Contract when submitting his proposal.

Fourth:

The old Contractor shall evidence the case of any labor who escaped, left, died or whose sponsorship was transferred of that manpower that were recruited under their respective Contract.

Fifth:

The Ministry of Labor shall notify the Passport departments through the Labor Offices of the names of labors who were exempted from the fees who qualify for these controls.

5. Special Conditions of contract

1. Definitions and Abbreviations:

a. definitions:

- *Interpretation:* To determine the real intention of all parties in case of ambiguity of any item of the Contract's document; it is referred to the Owner to take a decision about it.
- *Titles and numbering:* the main divisions of the Special Conditions are called "Articles"; whole numbers are assigned to Articles. Subsequent divisions that fall within the clauses of the Articles are called "Sections". Sections are assigned decimals. Smaller divisions within the sections are called "Sub-Sections". Sub-sections are assigned letters or number between tow brackets.
- *Determining Time Periods:* all references to the word "Date" shall mean the day in the calendar and starts at twelve o'clock noon local time, Riyadh City Kingdom of Saudi Arabia of that day. All references to the months or years in the Contract are references to Georgian months and years unless the context dictates otherwise.

b. Abbreviation:

Abbreviation shall mean the use of English letter to refer to a body or reference in the Contract. For example:

SSA or SASO is the Saudi Arabian Standards Organization

2. Contract Execution Controls:

a. Contractor's Obligations:

All companies and establishment categorized in the field of bridges and tunnels maintenance may take part in this tender. The Contractor shall be completely responsible for all operations in the site and the methods of execution as well as the review of all details in the drawings stipulated in the specifications. The Contractor shall refer to the Owner

in case of ambiguity or error. The Contractor shall also be responsible for the supervision over all the labors and employees required for the maintenance of works and shall take all actions and procedures to recruit the labors and employees. The Contractor shall abide by the minimum number of manpower needed as specified in the Contract.

For example:

Job	Required number	Qualifications
Project manager	1	<ul style="list-style-type: none"> • Civil engineer with a minimum of 10 years of experience in the area of inspection and maintenance of bridges, tunnels and renovations • Experience certificate in inspection and maintenance of bridges, tunnels and rehabilitation. Knowledge of required tests
Site engineer	2	Civil engineer with a minimum of 10 years of experience in the area of inspection and maintenance of bridges, tunnels and rehabilitation
Site supervisor	2	<ul style="list-style-type: none"> • A minimum experience of 5 years in the area of projects
Surveyor	2	<ul style="list-style-type: none"> • A minimum experience of 5 years in the area of bridge and tunnel works
Materials	1	<ul style="list-style-type: none"> • Civil engineer (Bachelor

Job	Required number	Qualifications
engineer		degree) specialized in Materials <ul style="list-style-type: none"> • A minimum experience of 5 years in the area of structural works and rehabilitation
Labor team	13	<ul style="list-style-type: none"> • A qualified labor team qualified to undertake the works of the project (minimum number 8 labors)

b. Project Duration

The Contractor undertakes to execute and complete all works under the Contract within an agreed upon time period including the period required for preparation. The period shall become effective as of the date of handing over the work site to the Contractor as per a written Minute signed by both the Engineer and the Contractor.

c. Follow Up and Supervision

- (1) The supervising body: will be named in the Contract;
- (2) Follow up shall be carried out through reports. Meetings and photographs
 - **Types of Reports:** the Contractor shall submit all necessary reports requested by the Owner and as required by the interest of the work;
 - **Photographs:** The Contractor shall take photographs of the site from the beginning of the work and at time interval to be determined by the Owner (for example the first day of each month). The Contractor shall specify the locations of the photographs and the angles of sight;

- **Meetings:** the Contractor or his authorized representatives shall attend all meetings regarding the execution of the work and a meeting before beginning the works called Pre-Execution Meeting to have more explanations about the work and the proper manner of its execution. This meeting includes the following:
 - Procedures of correspondence;
 - Recruiting in-charge employees;
 - Carry out the cost control system and tables;
 - The time schedule for execution;
 - Safety program and accident prevention;
 - Health measures;
 - Work site management

6. Technical Specifications

1. Purpose of the Project

The project aims at undertaking various maintenance and repair works for a number of bridges and tunnels that require repair works in order to extend their service life and to serve the traffic in the region.

2. Scope of the Project's Work:

The scope of works includes the inspection and maintenance works for a number of bridges and tunnels, naming such bridges and tunnels and determining their location. In case of adding another location, the Contractor undertakes to work in the said site without any financial obligations as long as it is within the quantities agreed upon.

3. Phases of the Project's Works:

A. Based on the time schedule of the project that is prepared and submitted by the Contractor and approved by the Consultant, the Contractor shall be entrusted to undertake the tasks by direct work orders that have specific beginning and ending dates/ the work order shall include the following:

- The authorization by the members authorized by the Owner. The authorization shall specify the region where the work is required;
- Types of items and quantities required for the inspection and maintenance as per the proposal of the Contractor;
- Determine the date of the work order, its duration, and the end date according to the time schedule of the project and the vision of the supervising body. In case of delay, of the Contractor in execution, the penalty system shall be applied according to the delay penalty clause.

- An approved preliminary diagram that determines the description of the work area. If the drawing is not clear or does not include the streets' names;
- After the completion of the maintenance works as per the work order, the Contractor shall submit a notification of completion to the Owner indicating the actual quantities executed as is. Consequently, the competent supervisor of the Owner shall take over the works and ensure their compliance with the conditions and specifications of the Contract within an agreed upon period (mostly one week) starting from the time of completion of the works as per a notification submitted by the Contractor requesting the taking over of the works;
- The results of the laboratory test for the work orders that request laboratory tests s be attached. Physical photographs of the executed works indicated in the work orders shall also be attached. Photographs shall be indicative of the work site before and after the execution.

4. Suggested Time Schedule:

The time schedule shall be prepared by the Contractor before starting the works approved by the supervisor of the Owner regarding works that require an execution period of more than thirty (30) days.

5. Technical Specifications of the Project:

Before matching the prices to the items in the bills of quantities, the Contractor shall clearly identify the types of required works some of which, are included within the items, and ensure that he is well acquainted with the general and the special specifications, set up the work teams and the equipment necessary for the project.

- a. Work description;
- b. The item in the bills of quantities;
- c. Materials;
- d. Execution requirements

6. Drawings, maps and Designs**7. Bills of Quantities and Prices****7-1 Things to Consider when Preparing the Bills of Quantities**

- a. take in consideration putting the tables in a horizontal page;
- b. The bidder shall submit his prices according to the to the conditions and specifications and the Bills of Quantities approved by the Owner/ the Contractor may not make any amendment, make any reservations, scratch off any of the tender's items or specifications, and may not create specific tabled not mentioned in the tender' book.
- c. The individual and total tender prices and be written in the Bills of Quantities in figures and in writing (alphanumeric) in the local currency unless otherwise stipulated to be in a different currency.
- d. The Contractor may not make any amendment, erasure or wipeout in the submitted bid. Any correction made, must be re-written alphanumerically, sign and stamp it.
- e. The Contractor may not overlook or leave out any item in the Bills of Quantities without pricing.

7-2 General Summary for the Bills of Quantities

7-2-1 Sample of Bills of Quantities for the Maintenance of Bridges and Underpasses

1. General Summary of the Bills of Quantities:

Number	Description of Works	Total price	
		In figure	In letters
First	Concrete bridges repair works		
Second	Metallic bridges repair works		
Third	Pedestrian bridges repair works		
Total price of the Project			
Percent deduction (if any) (%)			
Total price of the Project after the deduction			

2. Detailed Bills of Quantities for the Maintenance of Bridges and Underpasses

Item	Description of works	Unit	Quantity	Unit price		Total price	
				In figure	In letter	In figure	In letter
<i>First:</i>	Concrete Bridges Repair Works:						
1-1 1-1-1	<p>Repair the structural concrete of columns & abatements, aprons, & slabs. It includes the following:</p> <p>Digging in all types of soil to the depths required including the removal, supply and installation of metallic works, scaffoldings required for handling the damaged parts taking the necessary precautions such as diversions, lighting, and means of safety</p>	M3/maintenance cycle					
1-1-2	After completing the item above, backfill by supplying good soil for backfill and compact at layers not exceeding 25 cm and 95% density of the maximum dry density.	M3/maintenance cycle					
1-1-3	Break and remove damaged concrete as agreed upon in the special technical specifications	M2/ maintenance cycle					

1-1-4	Sandblast to remove the materials suspended in the concrete and clean the rusty reinforcement steel	M2/ maintenance cycle					
1-1-5	Clean up the work area by removing the dust by compressed air, and apply a regular program of cleaning the surface to get rid of scaling	job					
1-1-6	Replace the steel that lost more than 25% of its section pursuant to the special technical specifications	Kilogram					
1-1-7	Treat the new concrete with water for 7 days	M2					
1-1-8	Inject the dry cracks by welding epoxy materials of high viscosity as indicated in the special technical specifications	Meter Length (ML)/ maintenance cycle					
1-1-9	Patch areas of small spalls by polymer-adjusted concrete and non-shrink cement	M2/ maintenance cycle					
1-1-10	For box girders prevent water and chloride from leaking to the bottom slab by placing a leak-proof cover on the surface of the beam	ML/Maintenance cycle					

1-1-11	(I-beam) and (T-beam) that are subjected to impact by heavy vehicles: Patch by high resistance concrete to return the cover to its proper status. Treat non-reinforced cracks by injecting with epoxy material	Maintenance					
1-1-12	For end and central piers make accurate evaluation of the foundation soil to ensure there are no differential depressions. Use sealant concrete compounds to prevent the formation of defects on the water surface level in addition to protecting the concrete at the water level by constructing anti-corrosion barrier, construct heavy in front of anti-flow direction in the end pier in the places where significant stacks are expected to pile up	ML / maintenance cycle					
1-1-13	<p>Repairing expansion joints:</p> <ul style="list-style-type: none"> • Cantilever metallic finger joints remove the rust forming on the metallic fingers; straighten the fingers to ensure they do not protrude up to avoid damage of car tires. 	ML / maintenance cycle					

	<ul style="list-style-type: none"> • Rigid joints: continuously maintain the joint covering plates and ensure they are tightly fixed • Flexible joints: maintain by replacing Neoprene and re-fix the metallic plate firmly on the moving parts of the upper section (deck) to prevent leakage • Standard joints: replace the rubber layers which are subjected to constant pressure. Re-fix the edges of the joint properly. Treat the concrete layer at both ends of the joint. Ensure no voids present that may cause leaking of surface water to the upper bridge section. Finally, clean up the joint opening continuously by pumping strong air current 						
1-1-14	<p>Re-construct the asphalt covering by deep and periodic inspection of the deteriorated surface. Repair holes filled with debris and limestone wastes and some cracks by</p>	M2 / maintenance cycle					

	Bitumen. Repair all damages spots to help prevent water leakage to the surface of the slab and improve the quality of the asphalt surface on the bridge for comfort of driving						
1-1-15	Drainage troughs and service lines: check the condition of the troughs with the upper grid & the pipes. Ensure that the pipes reach below the beams. Clean and wash the sand and debris resulting from wind.	Number/maintenance cycle					
1-1-16	Waterway under the bridge: in case of advance erosion, determine damaged area. Determine the size of embankments works or the need to use Gabion baskets or cladding with stones or concrete. Remove sediments, move the dirt and debris to remote areas away from the active valley waterway	M3 / maintenance cycle					
1-1-17	Bearings: the repair works include cleaning the bearings by removing the debris and rust. Change the protection covers. Change the upper and	Number / maintenance cycle					

	lower fixing bolts of each bearing. Repair by using grouting. Finally, lubricate the sliding steel parts.							
1-1-18	<p>Maintenance of the emergency stair in the lower car passages:</p> <ul style="list-style-type: none"> • Fasten the base and the upper parts attached to the ceiling of the passage • Fasten the vertical supports. Fastening method. Fasten the whole stairs. 	Number / maintenance cycle						
1-1-19	<p>Maintenance of the underpasses: Apply the maintenance items indicated in maintenance of concrete bridges (1-1-3), (1-1-4), (1-1-7), (1-1-8), (1-1-9) and (1-1-15)</p>							
Total Of Concrete Bridges Repair Works								

Item	Description of works	Unit	Quantity	Unit price		Total price	
				In figure	In letter	In figure	In letter
Second:	Metallic bridges Repair Works:						
2-1	Maintenance of side plates: clean by pressurized water (140 Bars). Ensure they are safely fastened in its proper place. Ensure the anchorage bolts are tightened. Straighten the plates to be at the same level	ML/maintenance cycle					
2-2	Maintenance of the bolts: tighten using calibration keys (Torque wrench). These keys must be calibrated once every 12 months. Submit the calibration certificate to the supervising Engineer. Replace the bolts with other with the same specifications in case of loss or break	Bridge / maintenance cycle					
2-3	Maintenance of the column plates joints: clean thoroughly and remove the rust, debris, dust and wastes by compressed air	Bridge / maintenance cycle					

2-4	Maintenance of the last two openings of the steel bridges because of the accumulation of debris and wastes on them. clean the areas around the supports and to the bridge deck to remove dust, wastes, and debris once every 3 months	Bridge / maintenance cycle						
Total Metallic Bridges Repair works								

Item	Description of works	Unit	Quantity	Unit price		Total price	
				In figure	In letter	In figure	In letter
Third:	Pedestrian Bridge Repair Works:						
3-1	Steel pedestrian bridges: Maintenance of the steel of the pedestrian bridge: inspect and follow up the steel. Ensure they are tightly anchored. Make appropriate welding. Treat the rust, corrosion, cracks and weak areas that affect the structural condition of the bridge. Inspect the connections and joints once every 12 months. Those affected by collisions shall be charged with the items of supply and installation.	Bridge /maintenance cycle					
3-1-2	Apply items of the metallic bridges items numbers (2-1), (2-2), (2-3), and (2-4)						
3-2 3-2-1	Concrete pedestrian bridges maintenance: Inspect and maintain the lanes and stairs by cleaning the two inspection lanes and the channel below. Replace the damaged pre-cast concrete slabs with new ones. Re-fasten displaced	Bridge /maintenance cycle					

	slabs in place once every 12 months						
3-2-2	Concrete column and slabs: apply the concrete bridge maintenance items numbers (1-1-3), (1-1-4), (1-1-7), (1-1-8) and (1-1-9).						
Total Pedestrian Bridge Repair Works							
GRAND TOTAL							

7-2-2 Sample of Tunnels and Culverts Maintenance Bills of Quantities

1. General Summary of the Bills of Quantities:

No.	Description of Works	Total price	
		In figure	In number
First	Tunnels Maintenance works		
1-1	Structural maintenance works		
1-2	Mechanical systems maintenance works		
1-3	Electrical Elements/Equipments maintenance works		
1-4	Other Systems maintenance works		
Second	Culverts Inspecting and Maintenance works		
2-1	Concrete repair works in wing walls, headwall and top plate		
2-2	Apron maintenance works		
2-3	Repair works of the backfill and lining soil		
2-4	Repair works of the		
Total project price			
Percentage of deduction (if any) (%)			
Total project price after deduction			

2. Detailed Bills of Quantities for Tunnels & Bridges Maintenance

Item	Description of works	Unit	Quantity	Unit price		Total price	
				In figure	In letter	In figure	In letter
First:	Tunnels Repair Works:						
1-1 1-1-1	Structural works: Repair damaged concrete in the lining works that include concrete according to the to concrete bridged repair works of the first article	Number of tunnels / maintenance cycle					
1-1-2	Thoroughly clean up the tunnel by pressurized water to remove wastes	Number of tunnels / maintenance cycle					
1-1-3	Discharge cleaning water and flood water. Check discharge channels	M2 / maintenance cycle					
1-1-4	Maintenance of the ceramic slabs and their surrounding metallic frames by cleaning with pressurized water, or replacing damaged ones with slabs of the same quality. In case of replacement with new ceramic slabs, the supervising Engineer shall approve this provided however, the quantity should not exceed the agreed upon.	M2 / maintenance cycle					
Total Price of the Structural Works							

Item	Description of works	Unit	Quantity	Unit price		Total price	
				In figure	In letter	In figure	In letter
1-2: 1-2-1	<p>Mechanical systems maintenance works: Inspection and of the tunnel water pipelines, chambers and water pumps as follows:</p> <ul style="list-style-type: none"> • Ensure the safety of gas exhaust fans, ventilation, repair ventilation or replace as needed; • Operate all pumps simultaneously to ensure proper drainage and operation of non-return valves, and safety of overload ; • Ensure the safety of supply lines and all fitted valves; make necessary repairs in addition to cleaning the water filters surrounding the fan below the pump. 	Number of tunnels /maintenance cycle					
1-2-2	<p>Inspection & maintenance of the ventilation covers including motors and fans. Make necessary tests to ensure the adequacy of equipments</p>	Number of tunnels /maintenance cycle					

1-2-3	Inspection and maintenance of cooling systems to ensure proper operation including all equipments, pipes, cooling units, water distribution units, and pumps. Make necessary tests.	Number of tunnels /maintenance cycle						
1-2-4	Inspection & maintenance of monitoring systems to ensure proper operation: Inspect and maintain the lines and discharge system to remove wastes and other external elements resulting from winds and accidents by repairing the damaged and defective areas or replace as necessary	Number of tunnels /maintenance cycle						
1-2-5	Inspection and maintenance of the fire fighting lines and systems: <ul style="list-style-type: none"> • Ensure the proper operation of fire extinguishers (manual & automatic), connections of fire hoses; • Operate pumping equipments to ensure proper operation. Check water tanks, warnings, control panels, & fire detectors 	Number of tunnels /maintenance cycle						
Total Mechanical Systems repair works								

Item	Description of works	Unit	Quantity	Unit price		Total price	
				In figure	In letter	In figure	In letter
1-3: 1-3-1	<p>Electrical equipments / elements maintenance works;</p> <p>Inspection and maintenance of the emergency systems as follows:</p> <ul style="list-style-type: none"> • Ensure the proper operation of the system in case of failure of the standard power system; <p>Make necessary tests according to the to an international association (i.e. NETA) to ensure the system works properly</p>	Number of tunnels /maintenance cycle					
1-3-2	<p>Inspection& maintenance of the lighting system as follows:</p> <ul style="list-style-type: none"> • Ensure proper operation of electric equipment, wires, cables, lamps, sensors, and control systems in supplying adequate light to the tunnel; • Measure the level of lighting in the tunnel and emergency exits and joints using the IES standards by comparing the readings with the 	Number of tunnels / maintenance cycle					

	<p>IES requirements;</p> <ul style="list-style-type: none"> • Detect visual damages including rust, & corrosion of lamp protector, loss of fittings such as covers, broken or dirty lamp; For rail transit tunnels ensure the proper operation of emergency lighting system, permanent lighting inside the tunnel giving adequate light. Ensure the emergency lighting switch connected to the third signaling power rail when the bar is disconnected from service. They should be situated every 240 meters 						
1-3-3	<p>Inspection & maintenance of fire detection systems as follows:</p> <ul style="list-style-type: none"> • Ensure documents in place that indicate that the system has been inspected at regular intervals according to the to the standards of the International Fire Fighting Society when they test or inspect they request copies of the documents for the last 7 years 	Number of tunnels / maintenance cycle					

1-3-4	<p>Inspection & maintenance of the communication systems as follows:</p> <ul style="list-style-type: none"> • Ensure the proper operation of the SCADA system and other components of the communication system (telephones, wireless, TV cameras) <p>Detect traffic lights during all phases</p>	Number of tunnels / maintenance cycle				
Total Electrical Equipments / Elements Maintenance Works						
1-4: 1-4-1	<p>Other systems maintenance works:</p> <p>Inspection & maintenance of the power system and third rail/overhead power system, as follows:</p> <ul style="list-style-type: none"> • Ensure that the steel contact rail is free from rust and is straight but keeping curvature at bends • Ensure the contact insulator and accessories are in place and not broken • Ensure that the protection panel and accessories cover the contact rail well. Ensure linked arches are ell-placed 	Number of tunnels / maintenance cycle				
1-4-2	<p>Inspection & maintenance of the signal system as follows:</p> <ul style="list-style-type: none"> • Ensure the proper operation of all 	Number of tunnels / maintenance cycle				

	<p>automatic signals and observation points,</p> <ul style="list-style-type: none"> • Ensure all relay lines work at a minimum voltage 750 volts at a height not less than 1.2 meters on the nearest signal holder or connection circuit • Keep the insulation of rail joint free from any problem that may affect the signal of the track <p>Record results of all tests and have them printed on the specially designated forms provided by the Owner</p>							
1-4-3	<p>Inspection & maintenance of the communication system as follows:</p> <ul style="list-style-type: none"> • Check that the emergency telephones are in place throughout the line in the proper placed at each station • Test the strength of signal of radial cables <p>Follow all instructions and recommendations of the manufacturers during inspection & maintenance of communication equipments</p>	Number of tunnels / maintenance cycle						
Total Other Systems Maintenance Works								
GRAND TOTAL OF TUNNEL MAINTENANCE WORKS								

Second		Culvert Maintenance Works					
2-1	<p>Concrete repair works in wing walls, headwall and top plate :</p> <ul style="list-style-type: none"> • Treat thinning and remove broken and deteriorated concrete parts from the damage areas. Treat the entire area and exceed it by 31-46 cm at least. Treat by sandblast or air blast but not water blast <p>Add cement grout to the sides and bottom of the treatment area</p>	square meter					
Total Concrete Walls and Slabs Repair Works							
2-2	<p>Apron repair works as follows: Inspection & maintenance of the apron's slab that regulates the water flow to the culvert and controls the inclination of the inlet. Put obstacle to prevent entry of sediments</p> <ul style="list-style-type: none"> • If fresh concrete is poured as repair or replacement create under passages to divert the flow for protection at the apron and the sides; • Clean and remove debris from the concrete and lining gravel 	Square meter					

	<ul style="list-style-type: none"> • Ensure that the soil under the apron is graduated and carefully selected to ensure no depression or leakage occurs. When replaced, it should be replaced by the same type of soil and compact it well to 95% of the dry maximum density. <p>Remove grass at the apron using manual tools to ensure quality.</p>						
Total Concrete Walls and Slabs Repair Works							
2-3	<p>Repair works of the backfill and lining soil as follows:</p> <ul style="list-style-type: none"> • Inspect open channel culverts (lined and non-lined) before and after water season by suitable preparation of the waterway to receive any quantity of rain water and other during the season. Inspect to remove the stagnant sediments and debris using manual tools • Place warning signs before starting the inspection and maintenance • In case of gravel lining, remove grass and small trees by manual tools to 	Square meter					

	<p>ensure quality</p> <ul style="list-style-type: none"> • Ensure there are no broken parts in the lining concrete and no missing gravel in case of gravel lining. Remove immediately if detected • Replace corroded or non-consistent backfill soil using the same type of soil & compact it well to 95% of the dry maximum density. • Check the wall of the culvert for concrete problems such as spalls. Renew by injected concrete after cleaning the surface and placing a wire grid on the walls d the top slab. <p>When spraying concrete for lining or paving, the reinforcement steel should be clean and free from rust and debris</p>						
Total filling soil and lining Repair Works							
2-4	<p>Repair works of the culvert duct:</p> <ul style="list-style-type: none"> • Remove debris and sediments in the culvert’s duct and apron based on the report submitted by the inspection team • Check the water 	Square meter					

	flow into the culvert to determine problems if any Clean the duct pressurized water (140 Bars) to remove sediments							
Total repair works of the culvert barrel								
Total culvert maintenance works								
GRAND TOTAL								