



# NATIONAL HIGHWAY AUTHORITY

Procurement & Contract Administration Section

28-Mauve Area, G-9/1, Islamabad Tel: 9032727, Fax: 9260419

No. 2(518-01)/GM (P&CA)/NHA/2023/05

03 January 2023

**M/s Zahir Khan & Brothers (ZKB)**

Plot No. 44, Street No.11,

1-9/2, Islamabad

Email: [zkb\\_isb@yahoo.com](mailto:zkb_isb@yahoo.com)

Contact No.: +92-51-4444555, +92-51-4444533

Subject: **LOAN 4099-PAK: CENTRAL ASIA REGIONAL ECONOMIC COOPERATION (CAREC) CORRIDOR DEVELOPMENT INVESTMENT PROGRAM - TRANCHE II PROJECT**  
**OCB/CAREC/T-II: CONSTRUCTION OF ADDITIONAL CARRIAGEWAY FROM SHIKARPUR TO RAJANPUR OF N-55 (221.95 KM) UNDER ONE PACKAGE COMPRISING FOUR LOTS**  
**Lot - 1: Shikarpur - Kandhkot Section (Km 43+400 to Km 105+820) (62.42 Km)**

**CONTRACT DOCUMENT:**

Enclosed please find herewith, the duly signed Contract Documents for further necessary action in accordance with provisions of the Contract.

  
**(SAMI UR RAHMAN)**  
General Manager (P&CA)

**Enclosure:** Contract Documents

- i. Volume-I, Contract Agreement
- ii. Drawings

**Distribution**

- General Manager (CAREC), NHA, Islamabad.
- General Manager (B&A)/ Director (Accounts-Projects), NHA, Islamabad.
- Project Director (Project), NHA.
- The Engineer
- Consultants
- ADB-PRM
- NAB ... *Alongwith NAB Evaluation Performa*
- Director (MIS) ... *for uploading on NHA & PPRA website*
- Office Copy (Original Contract Document)

**Copy for kind information:**

- Member (Planning), NHA, Islamabad.
- Member (Engg-Coord), NHA, Islamabad.
- Member (AP), NHA, Islamabad.
- Member (Finance), NHA, Islamabad.
- Member (South-Zone), NHA, Karachi.
- Director (Technical) to Chairman, NHA, Islamabad

**ISLAMIC REPUBLIC OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
GOVERNMENT OF PAKISTAN**



**LOAN 4099-PAK: CENTRAL ASIA REGIONAL  
ECONOMIC COOPERATION (CAREC) CORRIDOR  
DEVELOPMENT INVESTMENT PROGRAM – TRANCHE  
- II PROJECT**

**CONTRACT DOCUMENTS**

**For**

**OCB/CAREC/T-II: CONSTRUCTION OF ADDITIONAL  
CARRIAGEWAY FROM SHIKARPUR TO RAJANPUR OF  
N-55 (221.95 KM) UNDER ONE PACKAGE  
COMPRISING FOUR LOTS**

**LOT-1: SHIKARPUR – KANDHKOT SECTION  
[KM 43+400 TO KM 105+820 (62.42 KM)]**



**JANUARY- 2023**



**National Highway Authority**

**28-Mauve Area, G-9/1, Islamabad**

**Phone: 051-9032727 – Fax 051-9260419**

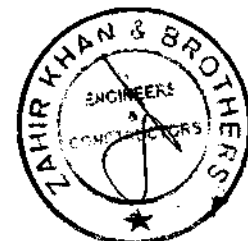
## TABLE OF CONTENTS

### **OCB/CAREC/T-II: CONSTRUCTION OF ADDITIONAL CARRIAGEWAY FROM SHIKARPUR TO RAJANPUR OF N-55 (221.95 KM) UNDER ONE PACKAGE COMPRISING FOUR LOTS:**

**LOT-1: SHIKARPUR – KANDHKOT SECTION [KM 43+400 TO KM 105+820 (62.42 KM)]**

#### **Volume – I (Contract Documents)**

1. The Contract Agreement;
2. Letter of Acceptance;
3. Letters of Bid (Letter of Technical Bid and Letter of Price Bid);
4. Addendum No.1 & 2;
5. The Particular Conditions of Contract Part-A: Contract Data;
6. The Particular Conditions of Contract Part-B;
7. The General Conditions of Contract (FIDIC MDB Version 2010);
8. Special & Technical Provisions;
9. NHA General Specifications – 1998 and its addendum (Volume-II);
10. Drawing (Volume II);
11. The Priced Bill of Quantities;
12. Appendices and Schedules to Bid and Bidding Forms (Technical and Financial Qualifications);
13. Environmental Management Plan;
14. Performance Security;
15. List of Eligible Countries that was specified in Section-5 of Bidding Document;
16. Any other documents forming part of the Contract;

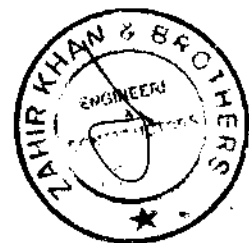


## Other Documents Forming Part of Contract Agreement

1. Advance Payment Security
2. Indemnity bond for Secured Advance against Materials brought at site
3. Copy of Memorandum and Articles of Association of the partners
4. PEC Certificates of the partners
5. Taxpayer Registration Certificates of the partners
6. Affidavit of Pending Litigation and No Blacklisting Information of the partners
7. Minutes of Pre-Bid Meeting
8. Minutes of Executive Board Meeting
9. Rate Analysis

### Volume-II

- Tender Drawings

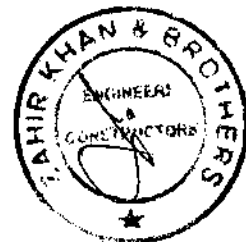




# CONTRACT AGREEMENT



5





### CONTRACT AGREEMENT

THIS AGREEMENT made the 20<sup>th</sup> day of December 2022, between **National Highway Authority (NHA)**, Ministry of Communications, Government of Pakistan, 28-Mauve Area, G-9/1, P.O. Box 1205, Islamabad, Pakistan (hereinafter "the Employer"), of the one part and **M/s Zahir Khan & Brothers (ZKB)**, Plot No. 44, Street No. 11, I-9/2, Islamabad, Pakistan (hereinafter "the Contractor") of the other part:

WHEREAS the Employer desires that the Works known as "**OCB/CAREC/T-II: Construction of Additional Carriageway from Shikarpur to Rajanpur of N-55 (221.95 Km); Lot-1: Shikarpur - Kandhkot Section [From Km 43+400 to Km 105+820 (62.42 Km)]**" should be executed by the Contractor, and has accepted a Bid by the Contractor for the execution and completion of these Works and the remedying of any defects therein.

The Employer and the Contractor agree as follows:

1. In this Agreement, words and expressions shall have the same meanings as are respectively assigned to them in the Contract Documents referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other Contract documents.

- (i) The Contract Agreement;
- (ii) The Letter of Acceptance;
- (iii) Letters of Bid (the Letter of Technical Bid and Letter of Price Bid);
- (iv) Addendum Nos. 1 & 2;
- (v) The Particular Conditions of Contract Part-A: Contract Data;
- (vi) The Particular Conditions of Contract Part-B;
- (vii) The General Conditions of Contract (FIDIC MDB Version 2010);
- (viii) Special & Technical Provisions;
- (ix) NHA General Specifications - 1998 and its Addendum (Volume-II);
- (x) Drawings (Volume-II);
- (xi) The Priced Bill of Quantities;
- (xii) Appendices and Schedules to Bid and Bidding Forms (Technical and Financial Qualifications);
- (xiii) Environmental Management Plan.
- (xiv) Performance Security;



(ASIM AMIN)  
Member (Planning)  
National Highway Authority  
Islamabad



Issued to ZKB for  
Contract Agreement

500/3160  
16/11/2022

*[Handwritten signature]*

NAZKAT HUSSAIN  
MP VENDOR  
Lic. No. 11581, Courts Islamabad

EDAV  
پانچ اداروں کی طرف سے پیش کی گئی اور اس کی  
پر اٹھانے کے لئے منظور کیا گیا۔









- (xv) The List of Eligible Countries that was specified in Section-5 of the Bidding Document
  - (xvi) Any other documents forming part of the Contract
3. In consideration of the payments to be made by the Employer to the Contractor as indicated in this Agreement, the Contractor hereby covenants with the Employer to execute the Works and to remedy defects therein in conformity in all respects with the provisions of the Contract.
4. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the contract at the times and in the manner prescribed by the Contract.

IN WITNESS WHEREOF the parties hereto have caused this Agreement to be executed in accordance with the laws of Islamic Republic of Pakistan on the day, month and year indicated above.

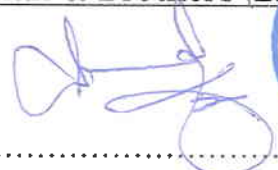

For and on behalf of the Employer  
National Highway Authority

Signed by:  (ASIM AMIN)  
Member (Planning)  
National Highway Authority  
Islamabad


In the presence of  
Witness, Name, Signature, Address, Date


  
.....  
AMI-UR-REHMAN  
GM (PE&A) NHA-HO

For and on behalf of the Contractor  
M/s Zahir Khan & Brothers (ZKB)

Signed by:    
Name: Muhammad Suleman Khan  
Designation: Director (ZKB)  
CNIC #: 54400-7631802-3

In the presence of  
Witness, Name, Signature, Address, Date

 7  
.....  
Muhammad Naseem  
13501-9472618-  
Kharomena Katke Manshera

ATTESTED  
  
Aaba Mansin  
NOTARY PUBLIC  
ISLAMABAD, PAKISTAN  
District High Court

Issued to ZKB

500/3161  
18/11/2022

for Contract Agreement -



NAZAR MUSSAIN  
SHOP VENDOR  
District: Courts Islamabad

پیدائشی اور رہائشی کی کاپی  
پیدا کرنے کے لئے درخواست  
کیا جائے گی۔

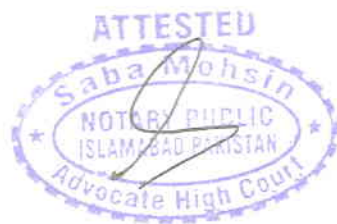


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144630

ONLY USED FOR ISLAMABAD



Issued to ZKR  
for Contract Agreement

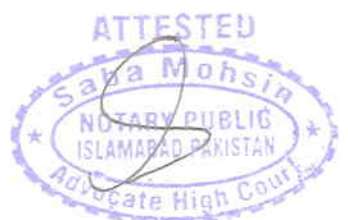
500 / 3/62  
16/11/2022

SAZAD HUSSAIN  
TENDOR

LCDA  
پاکستان کی بحری افواج کی  
پاکستان کی بحری افواج کی  
پاکستان کی بحری افواج کی









Issued to 26B

500 / 3163  
16/11/2022

for Contract Agreement

*[Large handwritten scribble]*

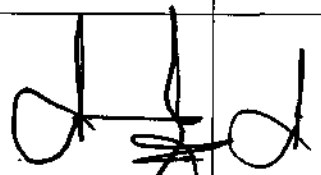

*[Handwritten signature]*

سیاسی امور کے لیے  
وزارت خارجہ کی  
GDA/سیاسی امور



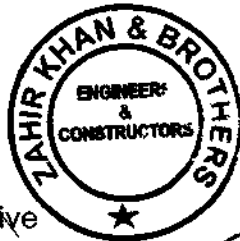
## POWER OF ATTORNEY

The undersigned **Mr. Zahir Khan (Chief Executive)**, holding CNIC No. **54400-0384681-9** born in Pakistan, as duly authorized signatory of ZAHIR KHAN & BROTHERS (ZKB), a company duly organized under the Laws of PAKISTAN, do hereby authorize;

Name	Designation	CNIC No.	Company	Specimen Signatures	Specimen Initials
Mr. Muhammad Suleman Khan	Director	54400-7631802-3	Zahir Khan & Brothers		

Whose specimen signatures & initials are appended above, to sign the Contract Agreement and Contract Documents for and on behalf of Zahir Khan & Brothers for the Project "Construction of Additional Carriageway from Shikarpur – Rajanpur of N-55 (221.95 Km); Lot – 1: Shikarpur – Kandhkot Section (Km 43+400 to Km 105+820) (62.42 Km)."

  
Zahir Khan  
Chief Executive  
Date 16-12-2022



10

**MOTORWAYS, HIGHWAYS, UNDERPASSES, FLYOVERS & INFRASTRUCTURE DEVELOPMENT SERVICES**

Head Office:  
14-C Model Town, Extension  
Khojak Road, Quetta Cantt.  
Ph : +92-81-2825480, 2830682  
Fax: +92-81-2825482

Sub Office:  
Plot # 44, St. No. 11, I-9/2 Islamabad  
Ph: +92-51-4444555  
Ph: +92-51-4444533  
Fax: +92-51-4444499

Sub Office:  
House # 50-A, Street No. 2,  
Gulshan-e-Faisal, Bath Island,  
Clifton, Karachi.  
Ph : +92-21-35870823  
Fax : +92-21-35870824  
Email: zkb\_constructors@yahoo.com



# LETTER OF ACCEPTANCE





# NATIONAL HIGHWAY AUTHORITY

Procurement & Contract Administration Section  
28 Mauve Area, G-9/I, Islamabad ☎ 051-9032917, ☎ 051-9260419

No. 2(518)/GM(P&CA)/NHA/2022/466

25 August, 2022

**M/s Zahir Khan & Brothers**

**Address:** Plot No. 44, Street No. 11, I-9/2,  
**Islamabad**

**Email Address:** 'xkb.isbi92@gmail.com

**Contact No.** +92-51-4444555, +92-51-4444533

**Subject:** **LOAN 4099-PAK: CENTRAL ASIA REGIONAL ECONOMIC COOPERATION (CAREC) CORRIDOR DEVELOPMENT INVESTMENT PROGRAM - TRANCHE II PROJECT**  
**OCB/CAREC/T-II: CONSTRUCTION OF ADDITIONAL CARRIAGEWAY FROM SHIKARPUR TO RAJANPUR OF N-55 (221.95 KM) UNDER ONE PACKAGE COMPRISING FOUR LOTS**  
**LOT-1: SHIKARPUR - KANDHKOT SECTION [KM 43+400 TO KM 105+820 (62.42 KM)]**

## **LETTER OF ACCEPTANCE (LOA)**

**Reference:** Your price bid opened on 9<sup>th</sup> March 2022

This is to notify you that your Bid dated 9<sup>th</sup> June 2021 for execution of the **OCB/CAREC/T-II: Construction of Additional Carriageway from Shikarpur to Rajanpur of N-55 (221.95 Km), Lot-1: Shikarpur - Kandhkot Section [Km 43+400 To Km 105+820 (62.42 Km)]** for the Accepted Contract Amount in the equivalent of **Pak Rs. 8,848,101,910/-** (Pak Rupees Eight Billion, Eight Hundred Forty Eight Million, One hundred One Thousand, Nine Hundred and Ten Only), as corrected and modified in accordance with Instruction to Bidders is hereby accepted by National Highway Authority.

2. You are requested to furnish the Performance Security within 28 days in accordance with the Conditions of Contract, using for that purpose the Performance Security Form included in Section 9 (Contract Forms) of the Bidding Documents.

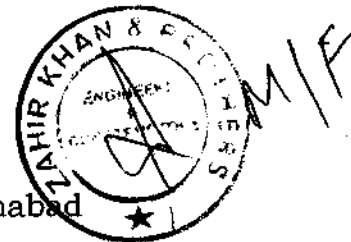


*(Signature)*

**(Sami-Ur-Rahman)**  
General Manager (P&CA)

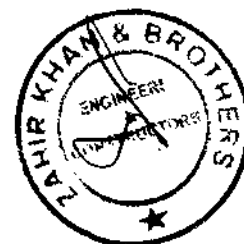
### **Copy for kind information to:**

- Member (Planning), NHA Islamabad
- Member (Aided Projects), NHA Islamabad
- Member (Engr. Coord), NHA Islamabad
- Member (Finance), NHA Islamabad
- Member (South-Zone), NHA Karachi
- General Manager (Aided Projects), NHA Islamabad
- General Manager (CAREC), NHA Islamabad
- General Manager (B&A), NHA Islamabad
- Director (Technical) to Chairman, NHA Islamabad
- Director (B&A) NHA Islamabad
- Asian Development Bank, PRM



# **LETTERS OF BID**

## **(Letter of Technical Bid and Letter of Price Bid)**



## Letter of Technical Bid

Date: .....

OCB No.: OCB/CAREC/T-IIInvitation for Bid No.: OCB/CAREC/T-II

To:

**General Manager (P&CA),  
National Highway Authority  
Islamabad.**

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (ITB) 8.
- (b) We offer to execute in conformity with the Bidding Documents the following Works:

### Construction of Additional Carriageway from Shikarpur – Rajanpur of N-55 (221.95 Km)

- Lot – 1: Shikarpur – Kandhkot Section from Km 43+400 to Km 105+820 (62.42 Km)  
 Lot – 2: Kandhkot – Kashmore Section from Km 105+820 to Km 164+600 (58.78 Km)  
 Lot – 3: Kashmore – Rojhan Section from Km 164+600 to Km 213+500 (48.90 Km)  
 Lot – 4: Rojhan – Rajanpur Section from Km 213+500 to Km 265+350 (51.85 Km)

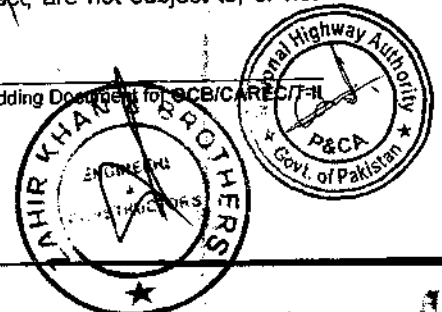
*[the bidder must insert number, location and chainage of one or the lots (as per ITB 1.1 under BDS) for which this Bid is being submitted]*

- (c) Our Bid consisting of the Technical Bid and the Price Bid shall be valid for a period of **180 days** from the date fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
- (d) Our firm, including any Subcontractors or Suppliers for any part of the Contract, have nationalities from eligible countries in accordance with ITB 4.2.
- (e) We, including any Subcontractors or Suppliers for any part of the contract, do not have any conflict of interest in accordance with ITB 4.3.
- (f) We are not participating, as a Bidder, either individually or as partner in a Joint Venture, in more than one Bid in this bidding process in accordance with ITB 4.3(e), other than alternative offers submitted in accordance with ITB 13.
- (g) Our firm, Joint Venture partners, associates, parent company, its affiliates or subsidiaries, including any Subcontractors or Suppliers for any part of the contract, are not subject to, or not

Single-Stage: Two Envelope

Procurement of Works

Bidding Document for OCB/CAREC/T-II



controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by the Asian Development Bank or a debarment imposed by the Asian Development Bank in accordance with the Agreement for Mutual Enforcement of Debarment Decisions between the Asian Development Bank and other development banks.<sup>1</sup>

- (h) Our firm, Joint Venture partners, associates, parent company, affiliates or subsidiaries, including any Subcontractors or Suppliers for any part of the Contract, are not, or have never been, temporarily suspended, debarred, declared ineligible, or blacklisted by the Employer's country, any international organization, and other donor agency.

If so debarred, declared ineligible, temporarily suspended, or blacklisted, please state details (as applicable to each Joint Venture partner, associate, parent company, affiliate, subsidiaries, Subcontractors, and/or Suppliers):

- (i) Name of Institution: \_\_\_\_\_  
 (ii) Period of debarment, ineligibility, or blacklisting [start and end date]: \_\_\_\_\_  
 (iii) Reason for the debarment, ineligibility, or blacklisting: \_\_\_\_\_

- (i) Our firm's, Joint Venture partners, associates, parent company's affiliates or subsidiaries, including any Subcontractors or Suppliers key officers and directors have not been [charged or convicted] of any criminal offense (including felonies and misdemeanors) or infractions/violations of ordinance which carry the penalty of imprisonment.

If so charged or convicted, please state details:

- (i) Nature of the offense/violation: \_\_\_\_\_  
 (ii) Court/Area of jurisdiction: \_\_\_\_\_  
 (iii) Resolution [i.e. dismissed; settled; convicted/duration of penalty]: \_\_\_\_\_  
 (iv) Other relevant details [please specify details]: \_\_\_\_\_

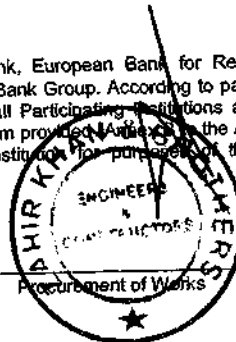
- (j) We understand that it is our obligation to notify ADB should our firm, Joint Venture partners, associates, parent company, affiliates or subsidiaries, including any Subcontractors or Suppliers, be temporarily suspended, debarred or become ineligible to work with ADB or any other MDBs, the Employer's country, international organizations, and other donor agencies, or any of our key officers and directors be charged or convicted of any criminal offense or infractions/violations of ordinance which carry the penalty of imprisonment.

- (k) Our firm, Joint Venture partners, associates, parent company, affiliates or subsidiaries, including any Subcontractors or Suppliers, are not from a country which is prohibited to export goods to or receive any payments from the Employer's country by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations.

- (l) [We are not a government-owned enterprise] / [We are a government-owned enterprise but meet the requirements of ITB 4.5].<sup>2</sup>

<sup>1</sup> These institutions include African Development Bank, European Bank for Reconstruction and Development (EBRD), Inter-American Development Bank (IADB), and the World Bank Group. According to paragraph 9 of the Agreement, other international financial institutions may join upon the consent of all Participating Institutions and signature of a Letter of Adherence by the international financial institution substantially in the form provided in Annex 1 to the Agreement. Upon adherence, such international financial institution shall become a Participating Institution for purposes of the Agreement. Bidders are advised to check [www.adb.org/integrity](http://www.adb.org/integrity) for updates.

<sup>2</sup> Use one of the two options as appropriate.





- (m) We have not been suspended nor declared ineligible by the Employer based on execution of a Bid-Securing Declaration in accordance with ITB 4.6.
- (n) We agree to permit ADB or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors appointed by ADB.
- (o) If our Bid is accepted, we commit to mobilizing key equipment and personnel in accordance with the requirements set forth in Section 6 (Employer's Requirements) and our technical proposal, or as otherwise agreed with the Employer.
- (p) We understand that any misrepresentation that knowingly or recklessly misleads, or attempts to mislead may lead to the automatic rejection of the Bid or cancellation of the contract, if awarded; and may result in remedial actions, in accordance with ADB's Anticorruption Policy (1998, as amended to date) and Integrity Principles and Guidelines (2015, as amended from time to time).

Name .....

In the capacity of .....

Signed .....

Duly authorized to sign the Bid for and on behalf of .....

Date .....





# ZAHIR KHAN & BROTHERS

## ENGINEERS & CONSTRUCTORS

### Letter of Technical Bid

Date: 9<sup>th</sup> June, 2021  
ICB No: OCB/CAREC/T-II  
Invitation for Bid No: OCB/CAREC/T-II

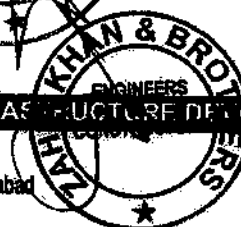
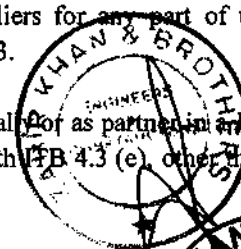
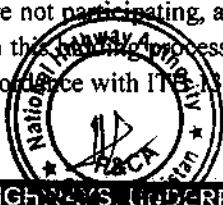
To:

**General Manager (P&CA),  
National Highway Authority  
Islamabad.**

*MA* *16/6/21* *16/6*

We, the undersigned, declare that:

- We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (ITB) 8.
- We offer to execute in conformity with the Bidding Documents the following Work:  
**Construction of Additional Carriageway from Shikarpur – Rajanpur of N-55 (221.95 Km)  
Lot – 1: Shikarpur – Kandhkot Section from Km 43+400 to Km 105+820 (62.42 Km)**
- Our Bid consisting of the Technical Bid and the Price Bid shall be valid for a period of **180** days from the date fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- Our firm, including any Subcontractors or Suppliers for any part of the Contract, have nationalities from eligible countries in accordance with ITB 4.2.
- We, including any Subcontractors or Suppliers for any part of the contract, do not have any conflict of interest in accordance with ITB 4.3.
- We are not participating, as a either individual or as partner in a joint Venture, in more than one Bid in this bidding process in accordance with ITB 4.3 (e), other than alternative offers submitted in accordance with ITB 4.3.



**MOTORWAYS, HIGHWAYS, UNDERPASSES, FLYOVERS & INFRASTRUCTURE DEVELOPMENT SERVICES**

Head Office:  
14-C Model Town, Extension  
Khojak Road, Quetta Cantt.  
Ph : +92-81-2825480, 2830682  
Fax: +92-81-2825482

Sub Office:  
Plot # 44, St. No. 11, I-9/2 Islamabad  
Ph: +92-51-4444555  
Ph: +92-51-4444533  
Fax +92-51-4444499

Sub Office:  
House # 50-A, Street No. 2,  
Gulshan-e-Faisal, Bath Island,  
Clifton, Karachi.  
Ph : +92-21-35870823  
Fax : +92-21-35870824  
Email: zkb\_constructors@yahoo.com

www.zkb.com.pk E-mail: info@zkb.com.pk



Engineers and Constructors

# ZAHIR KHAN & BROTHERS

## ENGINEERS & CONSTRUCTORS

- (g) Our firm, Joint Venture partners, associates, parent company its affiliates or subsidiaries, including any Subcontractors or Suppliers for any part of the contract, are not subject to, or not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by the Asian Development Bank or a debarment imposed by the Asian Development Bank in accordance with the Agreement for Mutual Enforcement of Debarment Decisions between the Asian Development Bank and other development banks.<sup>1</sup>
- (h) Our firm, Joint Venture partners, associates, parent company, affiliates or subsidiaries, including any Subcontractors or Suppliers for any part of the Contract, are not, or have never been, temporarily suspended, debarred, declared ineligible, or blacklisted by the Employer's country, any international organization, and other donor agency.

If so debarred, declared ineligible, temporarily suspended, or blacklisted, please state details (as applicable to each Joint Venture partner, associate, parent company, affiliate, subsidiaries, Subcontractors, and/or Suppliers):

- (i) Our firm's, Joint Venture partners, associates, parent company's affiliates or subsidiaries, including any Subcontractors or Suppliers key officers and directors have not been [charged or convicted] of any criminal offense (including felonies and misdemeanors) or infractions/violations of ordinance which carry the penalty of imprisonment.

If so charged or convicted, please state details:

- (j) We understand that it is our obligation to notify ADB should our firm, Joint Venture partners, associates, parent company, affiliates or subsidiaries, including any Subcontractors or Suppliers, be temporarily suspended, debarred or become ineligible to work with ADB or any other MDBs, the Employer's country, international organizations, and other donor agencies, or any of our key officers and directors be charged or convicted of any criminal offense or infractions/violations of ordinance which carry the penalty of imprisonment.

- (k) Our firm, Joint Venture partners, associates, parent company, affiliates or subsidiaries, including any Subcontractors or Suppliers, are not from a country which is prohibited to export goods to or receive any payments from the Employer's country by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations.

- (l) We are not a government – owned enterprise.

- (m) We have not been suspended nor declared ineligible by the Employer, based on execution of a Bid-Securing Declaration in accordance with ITB 4.6.

- (n) We agree to permit ADB or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors appointed by ADB.

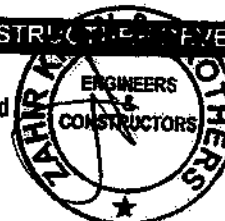
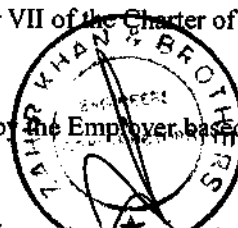
**MOTORWAYS, HIGHWAYS UNDERPASSES, FLYOVERS & INFRASTRUCTURE DEVELOPMENT SERVICES**

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Fax : +92-21-35870824  
Email: zkb\_constructors@yahoo.com



# ZAHIR KHAN & BROTHERS

## ENGINEERS & CONSTRUCTORS

- (o) If our Bid is accepted, we commit to mobilizing key equipment and personnel in accordance with the requirements set forth in Section 6 (Employer's Requirements) and our technical proposal, or as otherwise agreed with the Employer.
- (p) We understand that any misrepresentation that knowingly or recklessly misleads, or attempts to mislead may lead to the automatic rejection of the Bid or cancellation of the contract, if awarded; and may result in remedial actions, in accordance with ADB's Anticorruption Policy (1998, as amended to date) and Integrity Principles and Guidelines (2015, as amended from time to time).

Name MUHAMMAD SULEMAN KHAN

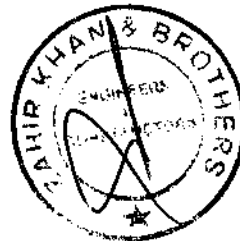
In the capacity of DIRECTOR

Signed \_\_\_\_\_



Duly authorized to sign the Bid for and on behalf of ZAHIR KHAN & BROTHERS (ZKB)

Date: 9<sup>th</sup> June, 2021



**MOTORWAYS, HIGHWAYS, UNDERPASSES, FLYOVERS & INFRASTRUCTURE DEVELOPMENT SERVICES**

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Email: zkb\_constructors@yahoo.com

## Letter of Price Bid

Date: .....

OCB No.: OCB/CAREC/T-IIIInvitation for Bid No.: OCB/CAREC/T-II

To:

General Manager (P&CA),  
National Highway Authority  
Islamabad.

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (ITB) 8.
- (b) We offer to execute in conformity with the Bidding Documents and the Technical Bid submitted for the following Works:

**Construction of Additional Carriageway from Shikarpur – Rajanpur of N-55 (221.95 Km)**

- Lot – 1: Shikarpur – Kandhkot Section from Km 43+400 to Km 105+820 (62.42 Km)  
 Lot – 2: Kandhkot – Kashmore Section from Km 105+820 to Km 164+600 (58.78 Km)  
 Lot – 3: Kashmore – Rojhan Section from Km 164+600 to Km 213+500 (48.90 Km)  
 Lot – 4: Rojhan – Rajanpur Section from Km 213+500 to Km 265+350 (51.85 Km)

*[the bidder must insert number, location and chainage of one or the lots (as per ITB 1.1 under BDS) for which this Bid is being submitted]*

- (c) The total price of our Bid, excluding any discounts offered in item (d) below is:

[amount in Pakistan Rupee in words], [amount in figures]

The total bid price from the Summary of Bill of Quantities should be entered by the bidder inside this box. Absence of the total bid price in the Letter of Price Bid may result in the rejection of the bid.

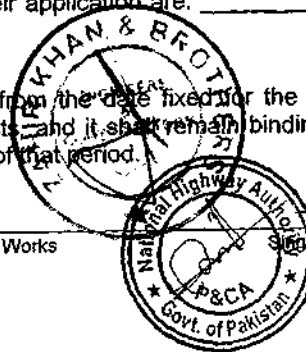
- (d) The discounts offered and the methodology for their application are: \_\_\_\_\_ [insert discounts and methodology for their application if any]

- (e) Our Bid shall be valid for a period of 180 days from the date fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

Bidding Document for OCB/CAREC/T-II

Procurement of Works

Single Stage: Two-Envelope



Handwritten signature or mark.

- (f) If our Bid is accepted, we commit to obtain a performance security in accordance with the Bidding Documents.
- (g) We have paid, or will pay the following commissions, gratuities, or fees with respect to the bidding process or execution of the Contract.<sup>1</sup>

Name of Recipient	Address	Reason	Amount
.....	.....	.....	.....
.....	.....	.....	.....

- (h) We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed.
- (i) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.
- (j) We agree to permit ADB or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors appointed by ADB.

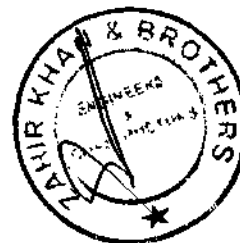
Name .....

In the capacity of .....

Signed .....

Duly authorized to sign the Bid for and on behalf of .....

Date .....



<sup>1</sup> If none has been paid or is to be paid, indicate "None".



# ZAHIR KHAN & BROTHERS

## ENGINEERS & CONSTRUCTORS

Engineers and Constructors

### Letter of Price Bid

Date: 9<sup>th</sup> June, 2021

OCB No.: OCB/CAREC/T-II

Invitation for Bid No.: OCB/CAREC/T-II

To:

**General Manager (P&CA),  
National Highway Authority  
Islamabad.**

We, the undersigned, declare that:

- We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (ITB) 8.
- We offer to execute in conformity with the Bidding Documents, and the Technical Bid submitted for the following Works:

**Construction of Additional Carriageway from Shikarpur - Rajanpur of N-55 (221.95 Km)**

**Lot - 1: Shikarpur - Kandhkot Section from Km 43+400 to Km 105+820 (62.42 Km)**

- The total price of our Bid, excluding any discounts offered in item (d) below is:

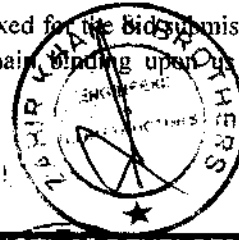
**Rs. 8,848,101,913.20 /-**

**(Rupees Eight Billion Eight Hundred Forty Eight Million One Hundred One Thousand Nine Hundred Thirteen and Nineteen Paisas Only)**

- The discounts offered and the methodology for their application are: (Nil)
- Our Bid shall be valid for a period of **180 days** from the date fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.



*[Handwritten signature]*



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Engineers and Constructors

# ZAHIR KHAN & BROTHERS

## ENGINEERS & CONSTRUCTORS

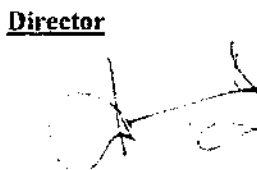
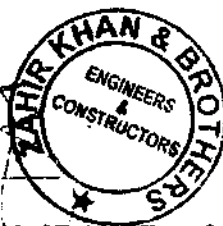
- (f) If our Bid is accepted, we commit to obtain a performance security in accordance with the Bidding Documents.
- (g) We have paid, or will pay the following commissions, gratuities, or fees with respect to the bidding process or execution of the Contract.<sup>1</sup>

Name of Recipient	Address	Reason	Amount
.....N/A.....	.....N/A.....	.....N/A.....	.....N/A.....
.....	.....	.....	.....

- (h) We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed.
- (i) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.
- (j) We agree to permit ADB or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors appointed by ADB.


Name Muhammad Suleman Khan  
 In the capacity of Director

Signed

Duly authorized to sign the Bid for and on behalf of Zahir Khan & Brothers  
 Date 9<sup>th</sup> June, 2021





### MOTORWAYS, HIGHWAYS, UNDERPASSES, FLYOVERS & INFRASTRUCTURE DEVELOPMENT SERVICES

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# ADDENDUM NO. 1 & 2



## ADDENDUM NO. 01

### CONSTRUCTION OF ADDITIONAL CARRIAGEWAY FROM SHIKARPUR-RAJANPUR OF N-55 (221.95 KM) UNDER ONE PACKAGE COMPRISING FOUR LOTS:

- LOT-1: SHIKARPUR - KANDHKOT SECTION  
FROM KM 43+400 TO KM 105+820 (62.42 KM)
- LOT-2: KANDHKOT - KASHMORE SECTION  
FROM KM 105+820 TO KM 164+600 (58.78 KM)
- LOT-3: KASHMORE - ROJHAN SECTION  
FROM KM 164+600 TO KM 213+500 (48.90 KM)
- LOT-4: ROJHAN - RAJANPUR SECTION  
FROM KM 213+500 TO KM 265+350 (51.85 KM)

The following amendments have been made in the bidding document under this Addendum, which shall be read and construed as an integral part of bidding document and shall take precedence in case of any conflict / ambiguities in the bidding document and other provisions of the bidding document in respect of the Lots mentioned above.

### VOLUME - I

#### **1. Bid Data Sheet of Section-2:**

- Page No. 2-5 of the Bidding Document (Section-2) be replaced with the amended Page No. 2-5 (Section-2) attached at **Annex-1**.
- Page No. 2-2 **ITB 11.3 (d)** the second bullet point "Unit price analysis for major items of works" is deleted.

#### **2. Section 3 - Evaluation and Qualification Criteria**

- Refer to Main Heading **2.3. Financial Situation** sub heading 2.3.1 **Historical Financial Performance:** under 1<sup>st</sup> Column (Criteria Requirement) is amended as following:

*"Submission of audited financial statements or, if not required by the law of the Bidder's country, other financial statements acceptable to the Employer, for the last three (03) years (i.e. Financial Year 2017-18, 2018-19 and 2019-20 of the bidders which close their accounts on June 30 every year OR Calendar Year 2017, 2018 and 2019 of the bidders which close their accounts on 31<sup>st</sup> December every year) to demonstrate the current soundness of the Bidder's financial position. As a minimum, the Bidder's net worth for the last year calculated as the difference between total assets and total liabilities should be positive."*

#### **3. BOQ (Lot-2):**

- Bill No. 6A, Bill No. 11 Weigh Station & Allied Works was missing. Lot-2 Bill no 6A, Bill no 11 is enclosed at **Annex-2**.

#### **4. BOQ (Lot-1,2,4)**

- BOQ Bill No. 6a Ancillary Works, Bill No. 3 electrical works is revised and Revision enclosed at **Annex-3**.

**VOLUME - I**



## ADDENDUM NO. 01

- Refer to main Title Page of Drawings for **KASHMORE - ROJHAN SECTION**: Section-IV is corrected as **Lot-3** (same should be read elsewhere).
- Refer to main Title Page of Drawings for **ROJHAN - RAJANPUR SECTION**: Section-V is corrected as **Lot-4**(same should be read elsewhere).

### 1. Lot-1,2,3,4

- Bridge at CH73+415 Drawing no 3905/102/TD/D-02 stands invalid for LOT-1,2,3,4 and be considered redundant. Concrete chute type-2 shall be used for this project. Connection point shall be road shoulder edge.

### 2. Lot-2

- Plan & profiles drawings for Km 109+400-109+900, 113+600 – 114+100, 145+800 – 146+000, 155+200 – 157+200 which were missing are enclosed. (Attachment - A)
- Dwg No. 3905/102/TD/P2GB1 and P2GB2: Drawings for bridge-1 and bridge-2 stand invalid for LOT-2.

### 3. Lot-1

- Bridge at CH73+415, Drawing No. 3905/102/TD/PIG104.is replaced with (Attachment-B)
- Bridge at CH97+455, Drawing No 3905/102/TD/P1G106 is replaced with (Attachment - C)
- Bridge at CH100+435, Drawing No 3905/102/TD/PIG108. is replaced with (Attachment - D)

### 4. Lot-3

- Drawing no: 3905/102/TD/SCH-02 is revised with (Attachment - E)

Other terms and conditions shall remain same.

--oo0oo--



	<p>The deadline for bid submission is:                  Date: Wednesday 09 June 2021                  Time: 1100 Hours</p>
ITB 25.1	<p>The opening of the Technical Bid shall take place at:                  NHA Auditorium, NHA Headquarters                  Street Address: 28-Mauve Area, Sector: G-9/1                  Floor/Room number: 2<sup>nd</sup> Floor, Room No. 207                  City: Islamabad                  Country: Pakistan                  Date: Wednesday 09 June 2021                  Time: 1130 Hours</p>
ITB 25.1	<p>Electronic bid opening procedure shall be as follows: Not Applicable.</p>
ITB 25.6	<p>The Letter of Technical Bid shall be initialed by three (03) representatives of the Employer attending Bid opening.</p>
ITB 25.10	<p>The Letter of Price Bid and Bill of Quantities shall be initialed by three (03) representatives of the Employer attending Bid opening.</p>

**E. Evaluation and Comparison of Bids**

ITB 32.2	<p>Qualifications of other firms such as the Bidder's subsidiaries, parent entities, affiliates, subcontractors shall not be permitted.</p>
ITB 33.1	<p>The Employer does not intend for the contractor to execute any specific elements of the Works through nominated subcontractors.</p>
ITB 35.1	<p>The currency that shall be used for bid evaluation and comparison purposes to convert all bid prices expressed in various currencies into a single currency is:                  Not relevant.</p>
ITB 36.1	<p>Domestic preference shall not apply.</p>
ITB 41.1	<p>Standstill provisions shall not apply.</p>

**F. Award of Contracts**

ITB 45.1	<p>The procedures for Bidding-Related Complaints are referenced in the "Procurement Regulations for ADB Borrowers (Appendix 7)." The Bidder should</p>
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Attachment Serial 4

Annex-2 of Attachment

**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT KANDH KOT - KASHMORE SECTION  
(INCLUDING KASHMORE BYPASS)**

**KM. (105+820 - KM. 164+600) LENGTH : 58.78 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. In Figures)	RATE (Rs. In Words)	Amount (Rs.)
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**BILL NO. 11 : WEIGH STATION & ALLIED WORKS**

11.1	Installation of SSWIM equipment including vault construction loop sensor installation ,necessary conducting for power and communication cables, scale hardware at location shown in drawings including foundations. Complete in all respect as per the direction of the Engineer In Charge at site.	No	1.00			
11.2	Construction of Weigh station building having 1 x living room , 1 x Admin room , Washroom & Kitchen & control room including complete furnishing. Complete in all respect as per drawings.	No	1.00			
11.3	Construction of manholes / junction boxes for drainage and cabling from weigh scale to scale house / control room.	No	6.00			
<b>TOTAL OF BILL NO. 6A-11 : ELECTRICAL WORKS ( WEIGH STATION &amp; ALLIED WORKS)</b>						



## INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)

KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM

## BILL OF QUANTITIES

BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA &amp; ALLIED WORKS)

Item No.	Description	Unit	Quantity	Rate (Rs. in Figures)	RATE (Rs. in Words)	Amount (Rs.)
<b>BILL NO 03. ELECTRICAL WORKS:</b>						
SP/EW-1	Supply and Installation of Transformer 100KVa Complete with all respects.	Each	1.00			
SP/EW-2	Supply, installation, testing and commissioning of PVC/PVC SWA cable 4 core cable copper/ conductor 16mm <sup>2</sup> laid in trenches with sand cushion and brick including excavation and backfilling or fixed to wall, ceiling and floors as per site requirements complete in all respects.	LM	180.00			
SP/EW-2a	.....ditto..... but 25mm <sup>2</sup>	LM	126.00			
SP/EW-2b	.....ditto..... but 32mm <sup>2</sup>	LM	32.00			
SP/EW-3	S/F earthing including boring/excavation, copper conductor etc. complete as drawings in all respect to achieve resistance not more than 2 Ohms.	Each	1.00			
SP/EW-4	Supply, installation, testing and commissioning of feeder pillar for supply of power to residence, stop over, toll plaza, external lighting and tube well installation having appropriate sizes as under earthing terminals for connecting of the incoming and outgoing cables complete in all respects as per drawings. 1 Magnetic contactor 225 Amps Schneider LC1F225 2.2 MCCB (TP) 250Amp Schneider EZC- 250N 5,3 C/T 200Amp 3, 6 ATS / AMF Relay 1, 7 timer with base OMRON H3BA-N 1, 8 Emergency Stop Switch 1, 9 Fuse Type Terminal Block 6mm 10, 10 Stopper for Terminal Block 2.5mm ONKA 20, 11 Selector Switch 3-Position FUJI AR22-PR2 2, 12 indication light RED/Green 5, 13 Cable Numbering Tagging & Drawing 1, 14 Wiring Duct Bus Bar Din rail & Crimps 1, 15 Wiring Charges 1, 16 Metal Enclosure (1000 x 800x 300mm) 1.	No.	1.00			
SP/EW-5	Supply, installation, testing and commissioning of feeder pillar for supply of power to residence, toll plaza, external lighting and tube well installation having appropriate sizes as under earthing terminals for connecting of the incoming and outgoing cables complete in all respects as per drawings.	No.	1.00			



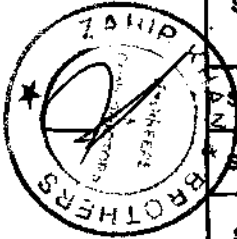
**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT KANDH KOT - KASHMIRE SECTION  
(INCLUDING KASHMIRE BYPASS)**

**KM. (105+820 - KM. 164+800) LENGTH : 58.78 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. in Figures)	RATE (Rs. in Words)	Amount (Rs.)
<b>BILL NO 03. ELECTRICAL WORKS:</b>						
SP/EW-1	Supply and installation of Transformer 100KVa Complete with all respects.	Each	1.00			
SP/EW-2	Supply, installation, testing and commissioning of PVC/PVC SWA cable 4 core cable copper conductor 16mm <sup>2</sup> laid in trenches with sand cushion and brick including excavation and backfilling or fixed to wall, ceiling and floors as per site requirements complete in all respects.	LM	180.00			
SP/EW-2a	.....ditto..... but 25mm <sup>2</sup>	LM	126.00			
SP/EW-2b	.....ditto..... but 32mm <sup>2</sup>	LM	32.00			
SP/EW-3	S/F earthing including boring/excavation, copper conductor etc. complete as drawings in all respect to achieve resistance not more than 2 Ohms.	Each	1.00			
SP/EW-4	Supply, installation, testing and commissioning of feeder pillar for supply of power to residence, stop over, toll plaza, external lighting and tube well installation having appropriate sizes as under earthing terminals for connecting of the incoming and outgoing cables complete in all respects as per drawings. 1 Magnetic contactor 225 Amps Schneider LC1F225 2,2 MCCB (TP) 250Amp Schneider EZC- 250N 5,3 C/T 200Amp 3, 6 ATS / AMF Relay 1, 7 timer with base OMRON H3BA-N 1, 8 Emergency Stop Switch 1, 9 Fuse Type Terminal Block 6mm 10, 10 Stopper for Terminal Block 2.5mm ONKA 20, 11 Selector Switch 3-Position FUJI AR22-PR2 2, 12 Indication light RED/Green 5, 13 Cable Numbering Tagging & Drawing 1, 14 Wiring Duct Bus Bar Din rail & Crimps 1, 15 Wiring Charges 1, 16 Metal Enclosure (1000 x 800x 300mm) 1.	No.	1.00			
SP/EW-5	Supply, installation, testing and commissioning of feeder pillar for supply of power to residence, toll plaza, external lighting and tube well installation having appropriate sizes as under earthing terminals for connecting of the incoming and outgoing cables complete in all respects as per drawings.	No.	1.00			



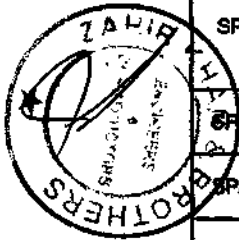
**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (ROJHAN - RAJANPUR SECTION)**

**KM (213+500 - KM, 265+350); LENGTH : 51.85 KM**

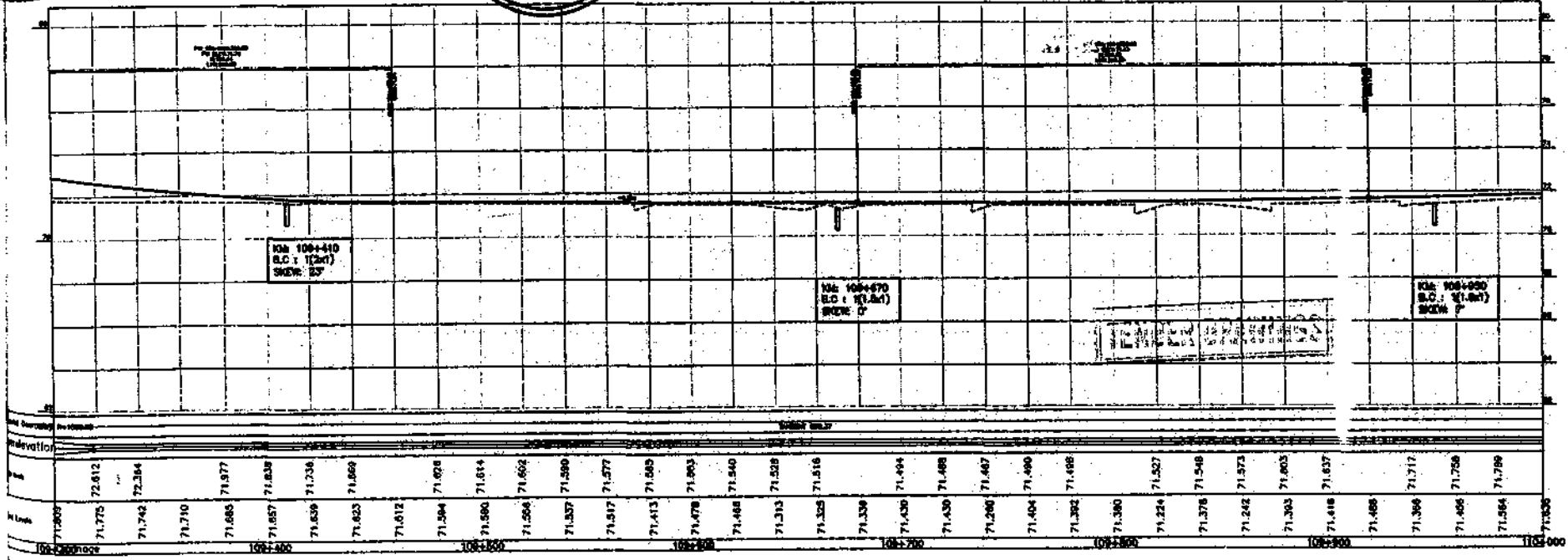
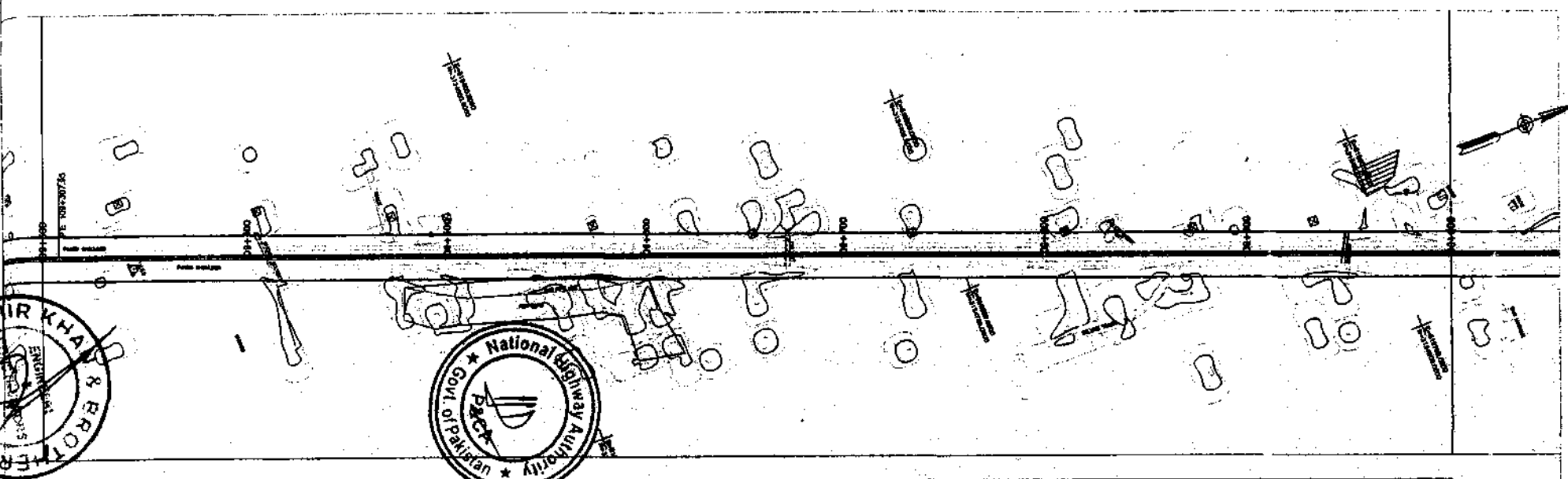
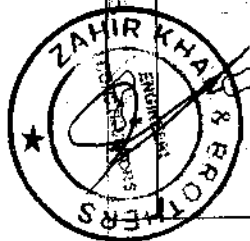
**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. in Figures)	RATE (Rs. in Words)	Amount (Rs.)
<b>BILL NO 03. ELECTRICAL WORKS:</b>						
SP/EW-1	Supply and Installation of Transformer 100KVa Complete with all respects.	Each	1.00			
SP/EW-2	Supply, installation, testing and commissioning of PVC/PVC SWA cable 4 core cable copper conductor 16mm <sup>2</sup> laid in trenches with sand cushion and brick including excavation and backfilling or fixed to wall, ceiling and floors as per site requirements complete in all respects.	LM	180.00			
SP/EW-2a	.....ditto..... but 25mm <sup>2</sup>	LM	128.00			
SP/EW-2b	.....ditto..... but 32mm <sup>2</sup>	LM	32.00			
SP/EW-3	S/F earthing including boring/excavation, copper conductor etc. complete as drawings in all respect to achieve resistance not more than 2 Ohms.	Each	1.00			
SP/EW-4	Supply, installation, testing and commissioning of feeder pillar for supply of power to residence, stop over, toll plaza, external lighting and tube well installation having appropriate sizes as under earthing terminals for connecting of the incoming and outgoing cables complete in all respects as per drawings. 1 Magnetic contactor 225 Amps Schneider LC1F225 2,2 MCCB (TP) 250Amp Schneider.EZC- 280N 5,3 C/T 280Amp 3, 6 ATS / AMF Relay 1, 7 timer with base OMRON H3BA-N 1, 8 Emergency Stop Switch 1, 9 Fuse Type Terminal Block 8mm 10, 10 Stopper for Terminal Block 2.5mm ONKA 20, 11 Selector Switch 3-Position FUJI AR22-PR2 2, 12 Indication light RED/Green 5, 13 Cable Numbering Tagging & Drawing 1, 14 Wiring Duct Bus Bar Din rail & Crimps 1, 15 Wiring Charges 1, 16 Metal Enclosure (1000 x 8000x 300mm) 1.	No.	1.00			
SP/EW-5	Supply, installation, testing and commissioning of feeder pillar for supply of power to residence, toll plaza, external lighting and tube well installation having appropriate sizes as under earthing terminals for connecting of the incoming and outgoing cables complete in all respects as per drawings.	No.	1.00			







23

GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS NATIONAL HIGHWAY AUTHORITY		<b>JAWAD KHAN</b> Project Manager M/S NESPAK	DRAWN M. A. RAJESH KHAN	PLAN & PROFILE KM: 109+300 ~ 110+000 SCALE 1:2000
			SUBMITTED RECOMMENDED CHD./VER.	
REV. DATE DESCRIPTION APPROVED APPROVED				

RATODERO ~ RAJANPUR ROAD  
 PACKAGE-II  
 (KANDH KOT TO KASHMORE)



Dh: 113+000.70  
 L: 255.255000  
 L: 253.7110  
 2472' 33.36"

**TENDER DRAWINGS**

72.835	72.836	72.837	72.838	72.839	72.840	72.841	72.842	72.843	72.844	72.845	72.846	72.847	72.848	72.849	72.850	72.851	72.852	72.853	72.854	72.855	72.856	72.857	72.858	72.859	72.860	72.861	72.862	72.863	72.864	72.865	72.866	72.867	72.868	72.869	72.870	72.871	72.872	72.873	72.874	72.875	72.876	72.877	72.878	72.879	72.880	72.881	72.882	72.883	72.884	72.885	72.886	72.887	72.888	72.889	72.890	72.891	72.892	72.893	72.894	72.895	72.896	72.897	72.898	72.899	72.900	72.901	72.902	72.903	72.904	72.905	72.906	72.907	72.908	72.909	72.910	72.911	72.912	72.913	72.914	72.915	72.916	72.917	72.918	72.919	72.920	72.921	72.922	72.923	72.924	72.925	72.926	72.927	72.928	72.929	72.930	72.931	72.932	72.933	72.934	72.935	72.936	72.937	72.938	72.939	72.940	72.941	72.942	72.943	72.944	72.945	72.946	72.947	72.948	72.949	72.950	72.951	72.952	72.953	72.954	72.955	72.956	72.957	72.958	72.959	72.960	72.961	72.962	72.963	72.964	72.965	72.966	72.967	72.968	72.969	72.970	72.971	72.972	72.973	72.974	72.975	72.976	72.977	72.978	72.979	72.980	72.981	72.982	72.983	72.984	72.985	72.986	72.987	72.988	72.989	72.990	72.991	72.992	72.993	72.994	72.995	72.996	72.997	72.998	72.999	73.000
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GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS NATIONAL HIGHWAY AUTHORITY	NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.	<b>JAWAD UL HAQ</b> Project Manager M/S NESPAK		DRAWN M A HADIZAH ARSHAD	PLAN & PROFILE KM: 113+500 ~ 114+200 SCALE 1:2000
		REV. DATE DESCRIPTION APPROVED APPROVED	SUBMITTED RECOMMENDED CRD./MR.	DATE JUNE, 2018	



CH: 155+285.99  
 R: 1150.000m,  
 L: 529.196m,  
 Δ: 153° 38' 03"

E: 556437.6740,  
 N: 314734.1941

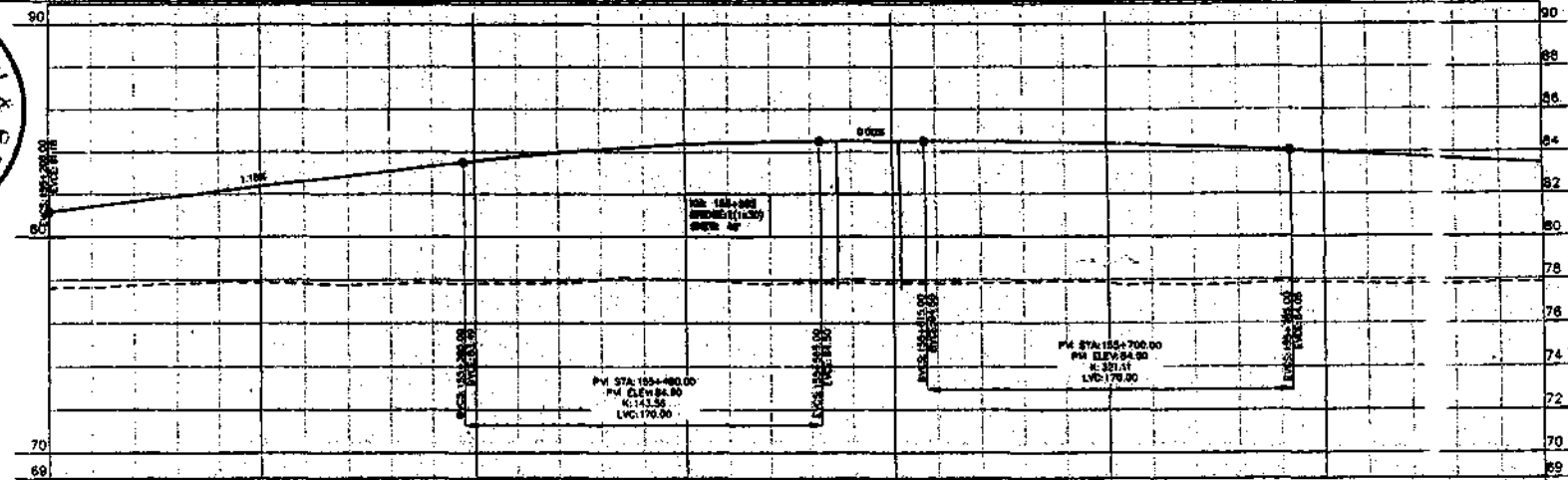


CH: 155+829.55  
 R: 550.000m,  
 L: 381.360m,  
 Δ: 140° 16' 20"

E: 556913.0755,  
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E: 556400.0000,  
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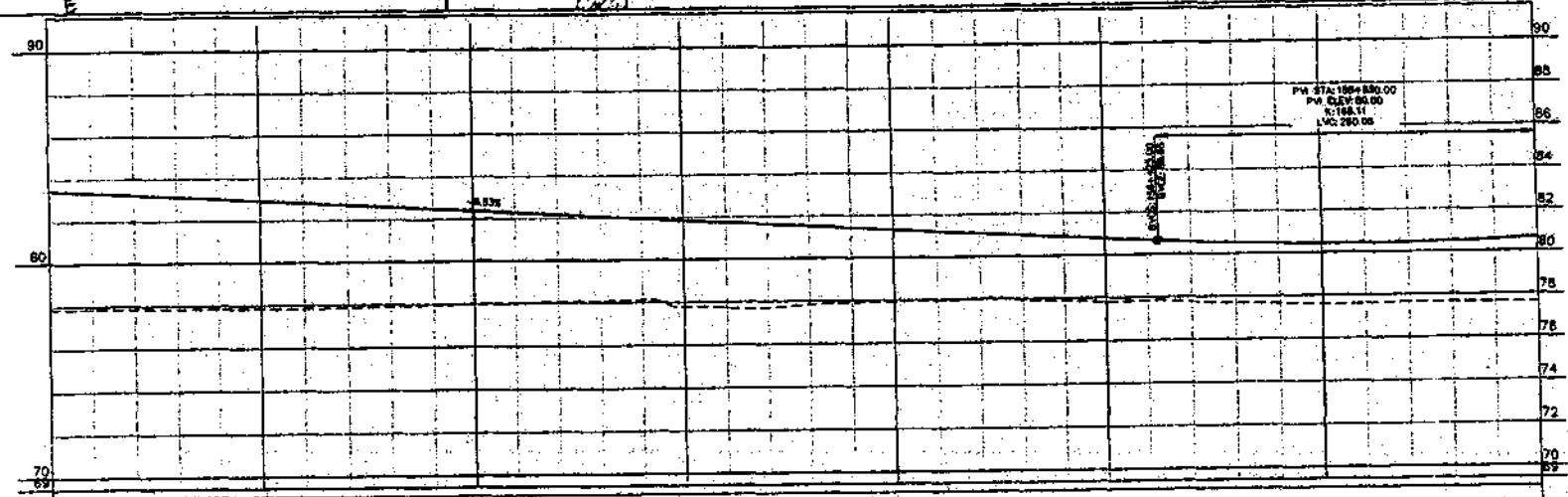
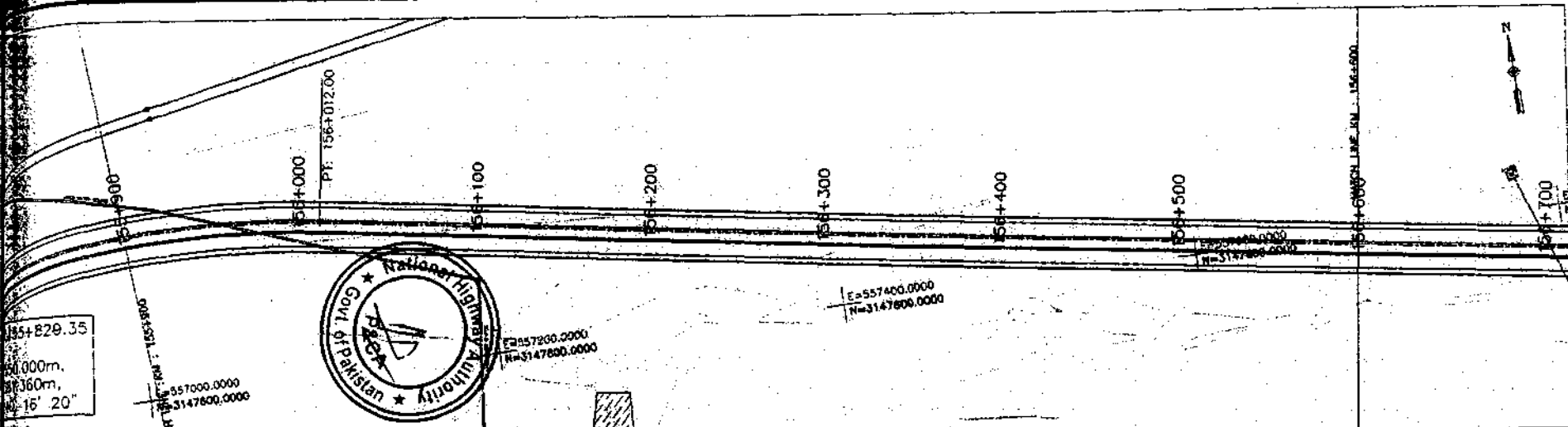
E: 557000.0000,  
 N: 3147000.0000



TENDER DRAWINGS

Horizontal Geometry	CURVE R=1150.00		TANGENT 84.82		CURVE R=550.00	
Superelevation						
Design Levels	81.421	81.658	81.895	82.132	82.368	82.605
				82.842	83.079	83.316
				83.552	83.788	83.956
				84.116	84.353	84.429
				84.478	84.499	84.500
				84.500	84.500	84.500
				84.500	84.490	84.468
				84.434	84.328	84.257
				84.173	84.078	83.971
				83.865	83.759	83.653
				83.547	83.547	83.547
Ground Levels	77.630	77.659	77.752	77.825	77.899	77.893
				77.820	77.767	77.813
				77.834	77.826	77.837
				77.848	77.992	78.061
				77.993	77.993	77.922
				77.805	77.851	77.846
				77.841	77.836	77.847
				77.884	77.917	77.884
				77.811	77.757	77.798
				77.867	77.853	77.812
				77.786	77.798	77.863
				77.860	77.860	77.860
Chainage	155+200	155+300	155+400	155+500	155+600	155+700
						155+800
						155+900

GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS NATIONAL HIGHWAY AUTHORITY	NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LTD.	DRAWN BY: <b>JAWAD UL HAQ</b> PROJECT MANAGER M/S NESPAK	CHECKED BY:	DATE:	RATODERO ~ RAJANPUR ROAD PACKAGE-II (KANDH KOT TO KASHMORE)	PLAN & PROFILE KM: 155+200 ~ KM: 155+900 SCALE: 1:2000
			APPROVED BY:	DATE:		



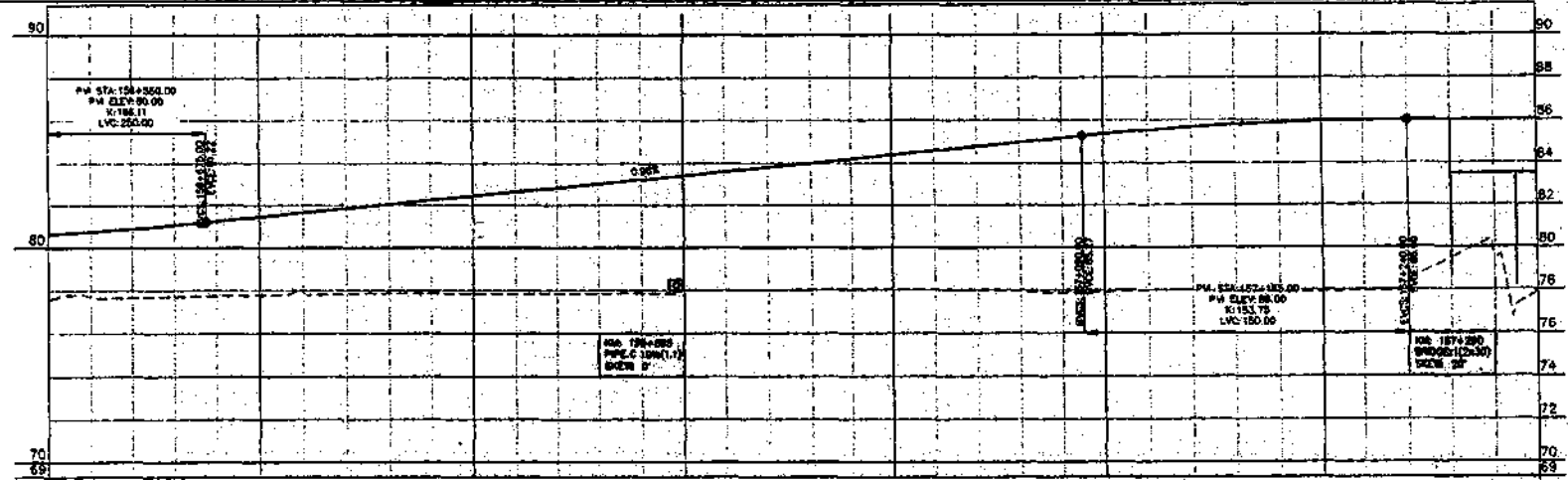
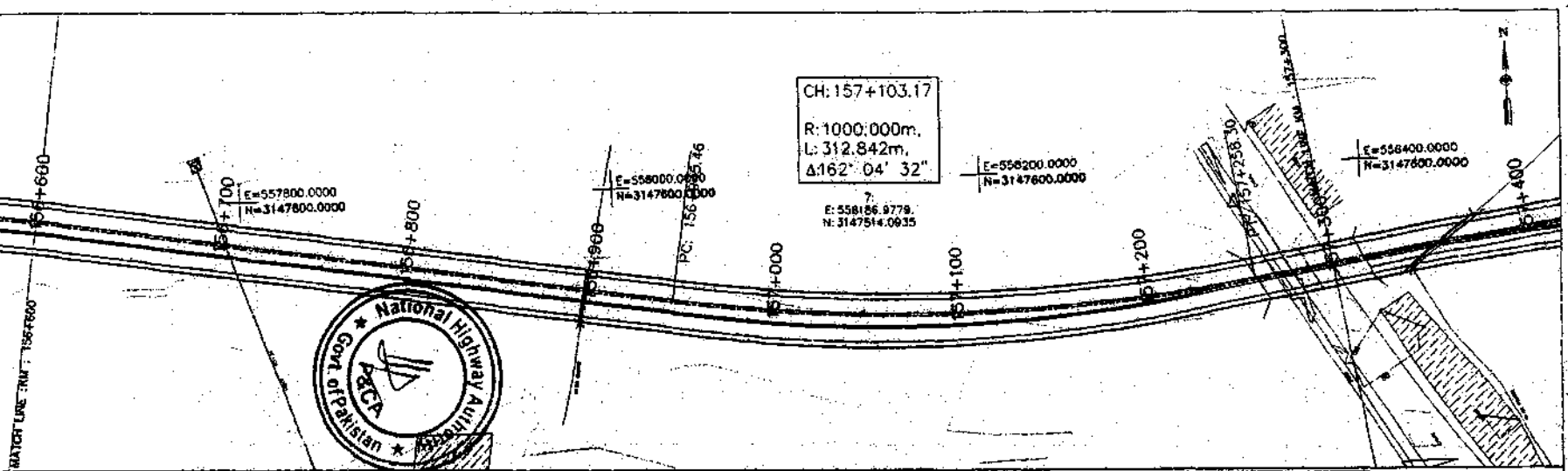
**TENDER DRAWINGS**

Horizontal Geometry	CURVE R=550.00		TANGENT 933.46																																	
Superelevation																																				
Design Levels	83.335	83.229	83.124	83.018	82.912	82.806	82.700	82.594	82.488	82.382	82.276	82.171	82.065	81.959	81.853	81.747	81.641	81.535	81.429	81.324	81.218	81.112	81.006	80.900	80.794	80.688	80.589	80.513	80.462	80.434	80.430	80.451	80.496	80.564		
Ground Levels	77.860	77.856	77.850	77.849	77.846	77.842	77.844	77.879	77.914	77.949	77.984	78.020	78.055	78.090	78.125	77.795	77.723	77.698	77.834	77.895	77.921	77.969	78.041	77.936	77.874	77.804	77.839	77.767	77.696	77.648	77.592	77.607	77.650	77.654	77.644	77.615
Chainage	155+900	156+000			156+100			156+200			156+300			156+400			156+500			156+600																

GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS NATIONAL HIGHWAY AUTHORITY	NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LTD.	<b>JAWAD ULLAH</b> Project Manager M/S. NESEA		DRAWN SUBMITTED RECOMMENDED END AGEN	IF A MAJORE AGENT 	<b>RATODERO ~ RAJANPUR ROAD</b> <b>PACKAGE-II</b> <b>(KANDH KOT TO KASHMIRE)</b>	PLAN & PROFILE KM: 155+900 ~ KM: 156+600 SCALE: 1:2000
		REV. DATE DESCRIPTION APPROVED APPROVED	DATE: July, 2018 DWG NO.: 3905/102/FD/2&P/28				



CH: 157+103.17  
 R: 1000.000m,  
 L: 312.842m,  
 Δ162° 04' 32"

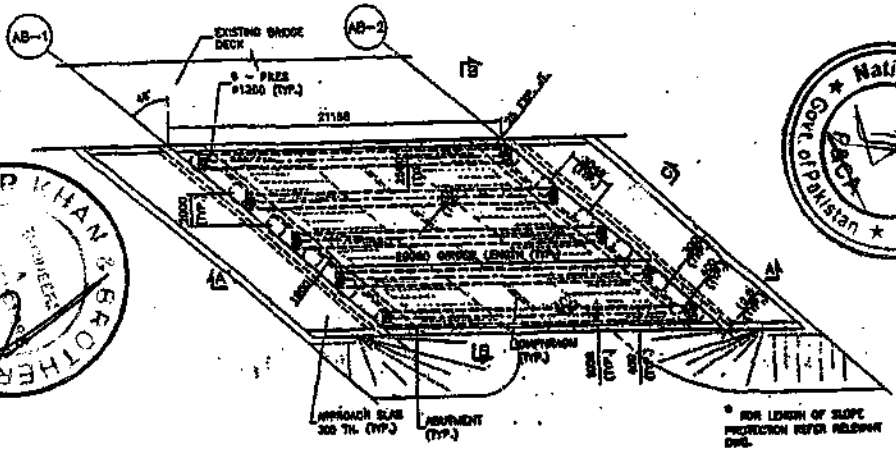


TENDER DRAWINGS

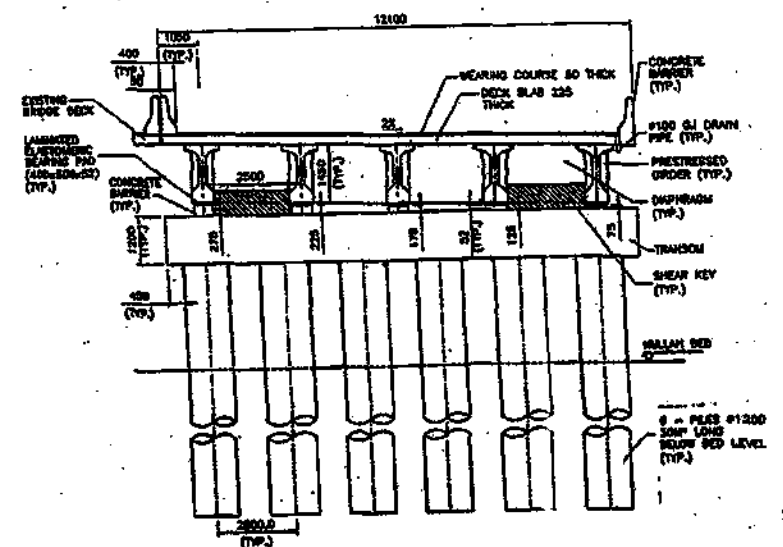
Horizontal Geometry	TANGENT 933.46		CURVE R=1000.00		TANGENT 352.23																														
Superelevation																																			
Design Levels	80.774	80.915	81.080	81.268	81.463	81.659	81.854	82.049	82.244	82.439	82.634	82.829	83.024	83.220	83.415	83.610	83.805	84.000	84.195	84.390	84.585	84.780	84.976	85.171	85.363	85.532	85.675	85.792	85.883	85.948	85.987	86.000	86.000		
Ground Levels	77.613	77.721	77.688	77.723	77.758	77.781	77.941	77.842	77.875	77.861	77.845	77.848	77.859	77.863	78.043	78.003	77.999	78.043	78.064	78.061	78.034	78.018	77.951	77.887	77.928	77.988	77.975	77.944	77.928	77.932	77.963	78.478	79.474	79.720	76.036
Chainage	156+600	156+700	156+800	156+900	157+000	157+100	157+200	157+300																											

GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS NATIONAL HIGHWAY AUTHORITY	NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.	<b>JAWAD USHTAQ</b> Project Manager		DRAWN SUBMITTED RECOMMENDED	M. ANJUM NISAR	PLAN & PROFILE KM: 156+600 - KM: 157+300 SCALE: 1:2000
		REV. DATE DESCRIPTION APPROVED APPROVED	DATE	DRAWING NO.	July, 2018 2005/102/70-2&P226	

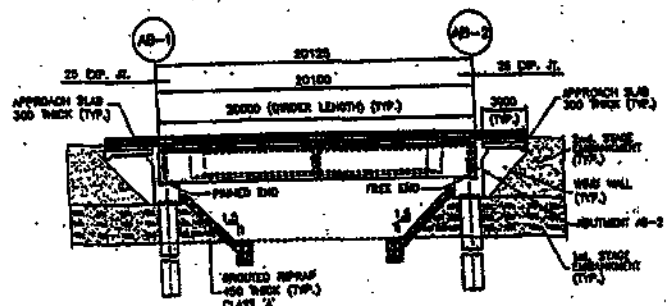
TENDER DRAWINGS  
NOT FOR CONSTRUCTION



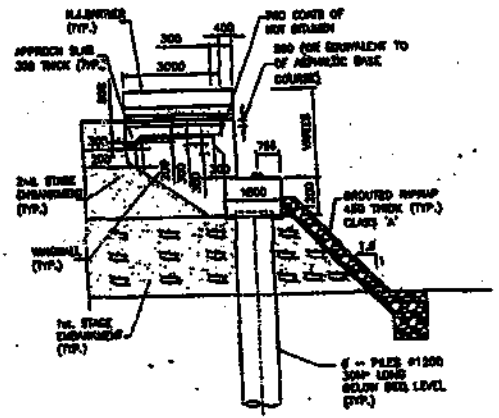
PLAN



SECTION B-B  
SCALE 1:40



SECTION A-A



SECTION C-C  
SCALE 1:75

TENDER DRAWINGS

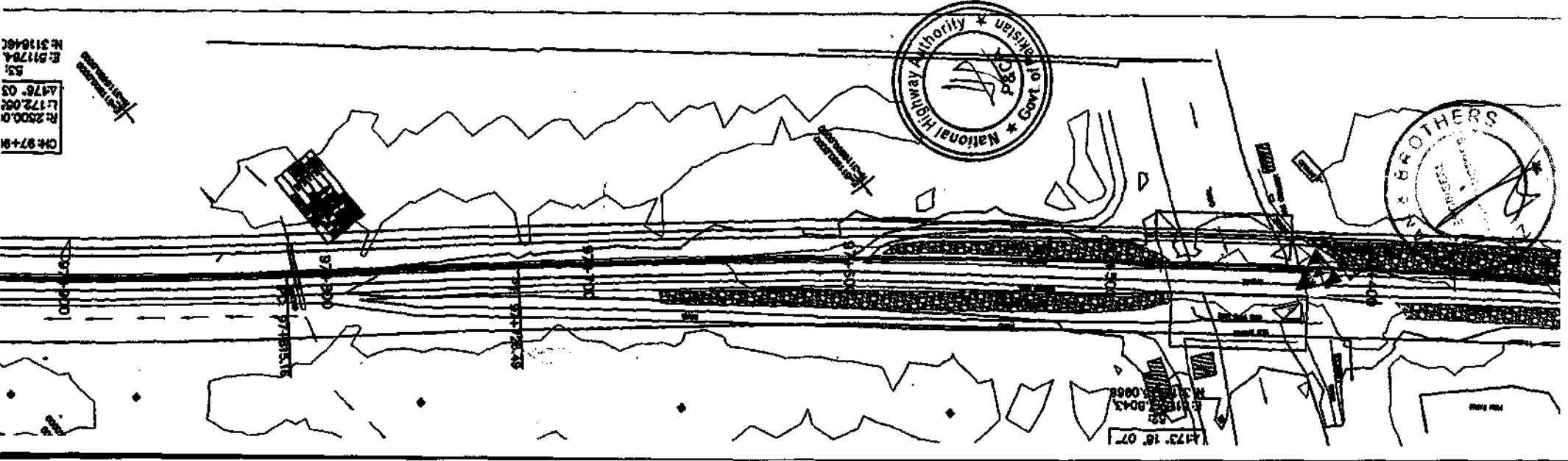
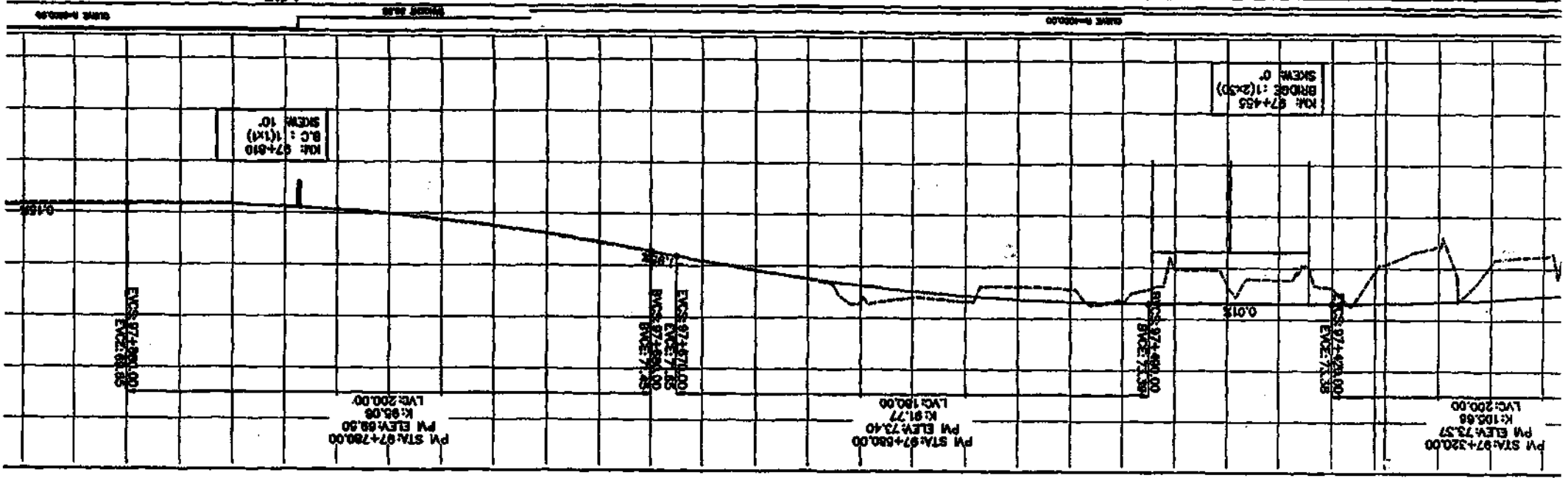
- NOTES:
- FOR GENERAL NOTES REFER DWG NO. P10001.
  - WORK THIS DRAWING IN CONJUNCTION WITH OTHER RELEVANT DRAWINGS.

GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS NATIONAL HIGHWAY AUTHORITY	NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. HEAD OFFICE: NESTER HOUSE, 1-C, BLOCK 'C', MODEL TOWN EXTENSION, LAHORE, PAKISTAN.	IN CHARGE: JAWAD UL HAQ	DRAWN BY: [Signature]	NO. OF SHEETS: 1/150	RATODERO ~ RAJAMPUR ROAD PACKAGE-1 (SHIKARPUR TO KANDE EOT)	GENERAL ARRANGEMENT PLAN, ELEVATION AND SECTIONS BRIDGE AT CH. 734+415	DATE: JULY 2018	DWG. NO.: 3005/100/ED/REG/104	SCHL: 1/150
		REV. 1: DATE DESCRIPTION APPROVED: [Signature]	DATE: JULY 2018	DWG. NO.: 3005/100/ED/REG/104			REV.		





71.520	73.070	71.823	73.205	71.193	73.301	72.993	73.363	72.790	73.382	72.670	73.386	72.457	73.394	72.304	73.385	72.081	73.380	71.850	73.364	71.620	73.338	71.390	73.312	71.160	73.286	70.930	73.260	70.700	73.234	70.470	73.208	70.240	73.182	70.010	73.156	69.780	73.130	69.550	73.104	69.320	73.078	69.090	73.052	68.860	73.026	68.630	73.000	68.400	72.974	68.170	72.948	67.940	72.922	67.710	72.896	67.480	72.870	67.250	72.844	67.020	72.818	66.790	72.792	66.560	72.766	66.330	72.740	66.100	72.714	65.870	72.688	65.640	72.662	65.410	72.636	65.180	72.610	64.950	72.584	64.720	72.558	64.490	72.532	64.260	72.506	64.030	72.480	63.800	72.454	63.570	72.428	63.340	72.402	63.110	72.376	62.880	72.350	62.650	72.324	62.420	72.298	62.190	72.272	61.960	72.246	61.730	72.220	61.500	72.194	61.270	72.168	61.040	72.142	60.810	72.116	60.580	72.090	60.350	72.064	60.120	72.038	59.890	72.012	59.660	71.986	59.430	71.960	59.200	71.934	58.970	71.908	58.740	71.882	58.510	71.856	58.280	71.830	58.050	71.804	57.820	71.778	57.590	71.752	57.360	71.726	57.130	71.700	56.900	71.674	56.670	71.648	56.440	71.622	56.210	71.596	55.980	71.570	55.750	71.544	55.520	71.518	55.290	71.492	55.060	71.466	54.830	71.440	54.600	71.414	54.370	71.388	54.140	71.362	53.910	71.336	53.680	71.310	53.450	71.284	53.220	71.258	52.990	71.232	52.760	71.206	52.530	71.180	52.300	71.154	52.070	71.128	51.840	71.102	51.610	71.076	51.380	71.050	51.150	71.024	50.920	71.000	50.690	70.974	50.460	70.948	50.230	70.922	50.000	70.896	49.770	70.870	49.540	70.844	49.310	70.818	49.080	70.792	48.850	70.766	48.620	70.740	48.390	70.714	48.160	70.688	47.930	70.662	47.700	70.636	47.470	70.610	47.240	70.584	47.010	70.558	46.780	70.532	46.550	70.506	46.320	70.480	46.090	70.454	45.860	70.428	45.630	70.402	45.400	70.376	45.170	70.350	44.940	70.324	44.710	70.298	44.480	70.272	44.250	70.246	44.020	70.220	43.790	70.194	43.560	70.168	43.330	70.142	43.100	70.116	42.870	70.090	42.640	70.064	42.410	70.038	42.180	70.012	41.950	69.986	41.720	69.960	41.490	69.934	41.260	69.908	41.030	69.882	40.800	69.856	40.570	69.830	40.340	69.804	40.110	69.778	39.880	69.752	39.650	69.726	39.420	69.700	39.190	69.674	38.960	69.648	38.730	69.622	38.500	69.596	38.270	69.570	38.040	69.544	37.810	69.518	37.580	69.492	37.350	69.466	37.120	69.440	36.890	69.414	36.660	69.388	36.430	69.362	36.200	69.336	35.970	69.310	35.740	69.284	35.510	69.258	35.280	69.232	35.050	69.206	34.820	69.180	34.590	69.154	34.360	69.128	34.130	69.102	33.900	69.076	33.670	69.050	33.440	69.024	33.210	69.000	32.980	68.974	32.750	68.948	32.520	68.922	32.290	68.896	32.060	68.870	31.830	68.844	31.600	68.818	31.370	68.792	31.140	68.766	30.910	68.740	30.680	68.714	30.450	68.688	30.220	68.662	29.990	68.636	29.760	68.610	29.530	68.584	29.300	68.558	29.070	68.532	28.840	68.506	28.610	68.480	28.380	68.454	28.150	68.428	27.920	68.402	27.690	68.376	27.460	68.350	27.230	68.324	27.000	68.298	26.770	68.272	26.540	68.246	26.310	68.220	26.080	68.194	25.850	68.168	25.620	68.142	25.390	68.116	25.160	68.090	24.930	68.064	24.700	68.038	24.470	68.012	24.240	67.986	24.010	67.960	23.780	67.934	23.550	67.908	23.320	67.882	23.090	67.856	22.860	67.830	22.630	67.804	22.400	67.778	22.170	67.752	21.940	67.726	21.710	67.700	21.480	67.674	21.250	67.648	21.020	67.622	20.790	67.596	20.560	67.570	20.330	67.544	20.100	67.518	19.870	67.492	19.640	67.466	19.410	67.440	19.180	67.414	18.950	67.388	18.720	67.362	18.490	67.336	18.260	67.310	18.030	67.284	17.800	67.258	17.570	67.232	17.340	67.206	17.110	67.180	16.880	67.154	16.650	67.128	16.420	67.102	16.190	67.076	15.960	67.050	15.730	67.024	15.500	67.000	15.270	66.974	15.040	66.948	14.810	66.922	14.580	66.896	14.350	66.870	14.120	66.844	13.890	66.818	13.660	66.792	13.430	66.766	13.200	66.740	12.970	66.714	12.740	66.688	12.510	66.662	12.280	66.636	12.050	66.610	11.820	66.584	11.590	66.558	11.360	66.532	11.130	66.506	10.900	66.480	10.670	66.454	10.440	66.428	10.210	66.402	9.980	66.376	9.750	66.350	9.520	66.324	9.290	66.298	9.060	66.272	8.830	66.246	8.600	66.220	8.370	66.194	8.140	66.168	7.910	66.142	7.680	66.116	7.450	66.090	7.220	66.064	6.990	66.038	6.760	66.012	6.530	65.986	6.300	65.960	6.070	65.934	5.840	65.908	5.610	65.882	5.380	65.856	5.150	65.830	4.920	65.804	4.690	65.778	4.460	65.752	4.230	65.726	4.000	65.700	3.770	65.674	3.540	65.648	3.310	65.622	3.080	65.596	2.850	65.570	2.620	65.544	2.390	65.518	2.160	65.492	1.930	65.466	1.700	65.440	1.470	65.414	1.240	65.388	1.010	65.362	0.780	65.336	0.550	65.310	0.320	65.284	0.090	65.258
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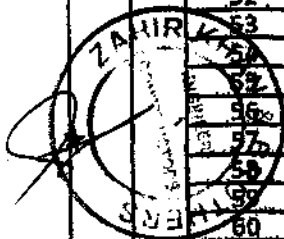


Attachment to S-45 Attachment - E of Addendum 1

TENDER DRAWING  
not to be used for construction

**SCHEDULE OF STRUCTURES ( KASHMORE TO RAJANPUR)**

S.No.	Chainage	SpanxHeight	Skew	Remarks
31	179+745	2(2.0x1.5)	0°	Box Culvert
32	179+827	1(1x20)	0°	Bridge
33	180+102	1(2x20)	0°	Bridge
34	180+206	2(2.0x1.5)	0°	Box Culvert
35	180+505	2(2.0x1.5)	0°	Box Culvert
36	180+669	1(3.0x2.0)	0°	Box Culvert
37	180+865	2(2.0x1.2)	0°	Box Culvert
38	180+985	1(2.0x1.2)	0°	Box Culvert
39	181+132	2(2.0x1.2)	0°	Box Culvert
40	181+652	1(2.0x1.2)	0°	Box Culvert
41	181+800	1(2.0x1.2)	0°	Box Culvert
42	182+365	1(2.0x1.2)	0°	Box Culvert
43	184+171	4(2.0x1.2)	0°	Box Culvert
44	184+594	4(2.0x1.2)	0°	Box Culvert
45	185+030	1(2.0x1.5)	0°	Box Culvert
46	185+430	1(2.0x1.2)	0°	Box Culvert
47	185+460	2(2.0x1.5)	0°	Box Culvert
48	185+490	1(2.0x1.2)	0°	Box Culvert
49	185+505	2(3.0x2.0)	0°	Box Culvert
50	185+650	1(2.0x1.5)	0°	Box Culvert
51	185+705	3(3.0x2.0)	0°	Box Culvert
52	185+800	1(2.0x1.2)	0°	Box Culvert
53	185+880	1(1.5x1.5)	0°	Box Culvert
54	186+052	1(1.5x1.5)	0°	Box Culvert
55	186+320	3(2.0x1.5)	0°	Box Culvert
56	186+540	1(15x20x15)	0°	Bridge
57	187+050	1(3x30)	0°	Bridge
58	187+985	3(2.0x1.2)	0°	Box Culvert
59	188+190	2(2.0x1.1)	0°	Box Culvert
60	188+350	2(2.0x1.2)	0°	Box Culvert



**TENDER DRAWINGS**

GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS NATIONAL HIGHWAY AUTHORITY	NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.	No. of sheets of drawings in this set of drawings	Date of issue of drawings	RAJODERO ~ RAJANPUR ROAD SECTION - IV (KASHMORE TO RAJANPUR)	TITLE SCHEDULE OF STRUCTURES	SCALE
		Name of Project Manager TAWAB UL HAQ	Name of Engineer [Illegible]		DATE MARCH 2018	SHEET NO. 3805/182/10/201-02

37



# NATIONAL HIGHWAY AUTHORITY

Procurement & Contract Administration Section  
28 Mauve Area, G-9/I, Islamabad ☎ 051-9032917, ☎ 051-9260419

No. 2(518)/Dir(P&CA)/NHA/2021/822

June 29, 2021

To,

All the prospective bidders  
M/s.....

Subject:

**ADDENDUM NO.2:**  
**CONSTRUCTION OF ADDITIONAL 2 LANE CARRIAGEWAY FROM**  
**SHIKARPUR TO RAJANPUR (N-55) CAREC TRANCHE-2**

**Lot - 1: Shikarpur - Kandhkot Section (Km 43+400 to Km 105+820) (62.42 Km)**

**Lot - 2: Kandhkot - Kashmore Section (Km 105+820 to Km 164+600) (58.78 Km)**

**Lot - 3: Kashmore - Rojhan Section (Km 164+600 to Km 213+500) (48.90 Km)**

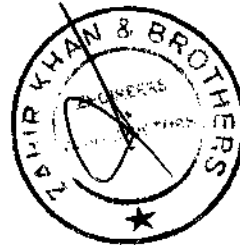
**Lot - 4: Rojhan - Rajanpur Section (Km 213+500 to Km 265+350) (51.85 Km)**

Find enclosed herewith Addendum No.2 for your information and necessary action, please.

  
(SAMI UR RAHMAN)  
General Manager (P&CA)

**Copy for information:**

- Member (Planning), NHA, Islamabad.



## ADDENDUM NO. 02

### CONSTRUCTION OF ADDITIONAL CARRIAGEWAY FROM SHIKARPUR-RAJANPUR OF N-55 (221.95 KM) UNDER ONE PACKAGE COMPRISING FOUR LOTS:

- LOT-1: SHIKARPUR - KANDHKOT SECTION  
FROM KM 43+400 TO KM 105+820 (62.42 KM)
- LOT-2: KANDHKOT - KASHMORE SECTION  
FROM KM 105+820 TO KM 164+600 (58.78 KM)
- LOT-3: KASHMORE - ROJHAN SECTION  
FROM KM 164+600 TO KM 213+500 (48.90 KM)
- LOT-4: ROJHAN - RAJANPUR SECTION  
FROM KM 213+500 TO KM 265+350 (51.85 KM)

The following amendments have been made in the bidding document and Addendum No. 01 under this Addendum, which shall be read and construed as an integral part of bidding document and shall take precedence in case of any conflict / ambiguities in the bidding document and other provisions of the bidding document in respect of the Lots mentioned above.

### VOLUME - I

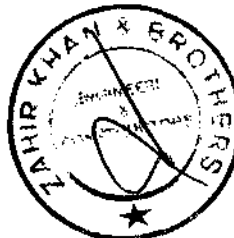
#### 1. Refer to Addendum No. 01, Volume-I, Para 4 BOQ (Lot-1,2,4):

- **Bill No. 6a Ancillary Works (Toll Plaza & Allied Works):**

The Bill No. 3 (Electrical Works) attached with Addendum No. 01 at Annex-3 and in the as-issued bidding document is deleted in its entirety and is replaced with **Attachment No. 1** of this Addendum.

#### 2. Other terms and conditions shall remain same.

--oo0oo--



**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)**  
**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)

Item No.	Description	Unit	Quantity	Rate (Rs. in Figures)	RATE (Rs. in Words)	Amount (Rs.)
<b>BILL NO 03. ELECTRICAL WORKS:</b>						
SP/EW-1	Supply and Installation of Transformer 100KVa Complete with all respects.	Each	1.00			
SP/EW-2	Supply, Installation, testing and commissioning of PVC/PVC SWA cable 4 core cable copper/ conductor 16mm <sup>2</sup> laid in trenches with sand cushion and brick including excavation and backfilling or fixed to wall, ceiling and floors as per site requirements complete in all respects.	LM	180.00			
SP/EW-2a	.....ditto..... but 25mm <sup>2</sup>	LM	126.00			
SP/EW-2b	.....ditto..... but 32mm <sup>2</sup>	LM	32.00			
SP/EW-3	S/F earthing including boring/excavation, copper conductor etc. complete as drawings in all respect to achieve resistance not more than 2 Ohms.	Each	1.00			
SP/EW-4	Supply, Installation, testing and commissioning of feedar pillar for supply of power to residence, stop over, toll plaza, external lighting and tube well installation having appropriate sizes as under earthing terminals for connecting of the incoming and outgoing cables complete in all respects as per drawings. 1 Magnetic contactor 225 Amps Schneider LC1F225 2,2 MCCB (TP) 250Amp Schneider EZC- 250N 5,3 C/T 200Amp 3, 6 ATS / AMF Relay 1, 7 timer with base OMRON H3BA-N 1, 8 Emergency Stop Switch 1, 9 Fuse Type Terminal Block 6mm 10, 10 Stopper for Terminal Block 2.5mm ONKA 20, 11 Selector Switch 3-Position FUJI AR22-PR2 2, 12 indication light RED/Green 5, 13 Cable Numbering Tagging & Drawing1, 14 Wiring Duct Bus Bar Din rail & Crimps 1, 15 Wiring Charges 1, 16 Metal Enclosure (1000 x 800x 300mm) 1.	No.	1.00			
SP/EW-5	Supply, Installation, testing and commissioning of feedar pillar for supply of power to residence, toll plaza, external lighting and tube well installation having appropriate sizes as under earthing terminals for connecting of the incoming and outgoing cables complete in all respects as per drawings.	No.	1.00			



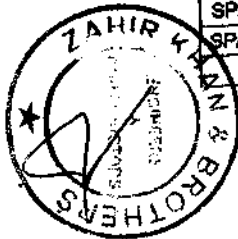
**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)**

**KM. (43+400 - KM. 105+820) LENGTH: 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. in Figures)	RATE (Rs. in Words)	Amount (Rs.)
SP/EW-6	Supply, installation, testing and commissioning of feeder pillar for supply of power to stop over, toll plaza, external lighting and tube well installation having appropriate sizes as under earthing terminals for connecting of the incoming and outgoing cables complete in all respects as per drawings.	Each	1.00			
SP/EW-7	Supply and installation of Tubular Poles 9m Long with 2 nos. of Crest LED Flood Light Model No. CR-TGA 100W-FL, LED Brand Bridgelux, Led Driver Mean Well UL Approved. Made in Pakistan Control Box with complete fittings.	No.	6.00			
SP/EW-8	Supply and installation of Tubular Poles 9.5m High of complete with single arm on RCC foundation as per drawings & wiring of crest LED street light Model No. CR-B100W-STL, LED Brand Bridgelux, LED Driver Mean Well UL Approved) controlled by Feeder Pillar also supply and installation with all 4 core 16mm <sup>2</sup> cables and 3 core PVC insulated cables in PVC pipe as per drawings and specifications complete in all respect.	No.	12.00			
SP/EW-9	Supply and installation of Tubular Poles 9.5m High of complete with double arm on RCC foundation as per drawings & wiring of crest LED street light Model No. CR-B100W-STL, LED Brand Bridgelux, LED Driver Mean Well UL Approved) controlled by Feeder Pillar also supply and installation with all 4 core 16mm <sup>2</sup> cables and 3 core PVC insulated cables in PVC pipe as per drawings and specifications complete in all respect i.e earthing.	No.	6.00			
SP/EW-10	Supply and fixing PVC conduit for ETTM system cables, fixed as per ETTM system companies required in concrete or trench, complete with all respects, excavation, bricks and backfilling as required & instructed by the engineers incharge.					
SP/EW-10-i	50mm I/d Class B polo / Beta or Shawal.	LM	30.00			
SP/EW-10-ii	75mm I/d Class B polo / Beta or Shawal.	LM	30.00			
SP/EW-10-iii	100mm I/d Class B polo / Beta or Shawal.	LM	270.00			
				<b>TOTAL OF BILL NO. 6A-03. ELECTRICAL WORKS:</b>		



Attachment No. 7  
Addendum No. 2

**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT KANDH KOT - KASHMORE SECTION  
(INCLUDING KASHMORE BYPASS)**

**KM. (105+820 - KM. 164+600) LENGTH : 58.78 KM**

**BILL OF QUANTITIES**

**BILL NO. 8a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. in Figures)	RATE (Rs. in Words)	Amount (Rs.)
<b>BILL NO 03. ELECTRICAL WORKS:</b>						
SP/EW-1	Supply and Installation of Transformer 100KVa Complete with all respects.	Each	1.00			
SP/EW-2	Supply, installation, testing and commissioning of PVC/PVC SWA cable 4 core cable copper/ conductor 16mm <sup>2</sup> laid in trenches with sand cushion and brick including excavation and backfilling or fixed to wall, ceiling and floors as per site requirements complete in all respects.	LM	180.00			
SP/EW-2a	.....ditto..... but 25mm <sup>2</sup>	LM	126.00			
SP/EW-2b	.....ditto..... but 32mm <sup>2</sup>	LM	32.00			
SP/EW-3	S/F earthing including boring/excavation, copper conductor etc. complete as drawings in all respect to achieve resistance not more than 2 Ohms.	Each	1.00			
SP/EW-4	Supply, installation, testing and commissioning of feeder pillar for supply of power to residence, stop over, toll plaza, external lighting and tube well installation having appropriate sizes as under earthing terminals for connecting of the incoming and outgoing cables complete in all respects as per drawings. 1 Magnetic contactor 225 Amps Schneider LC1F225 2.2 MCCB (TP) 250Amp Schneider EZC- 250N 5.3 C/T 200Amp 3, 6 ATS / AMF Relay 1, 7 timer with base OMRON H3BA-N 1, 8 Emergency Stop Switch 1, 9 Fuse Type Terminal Block 6mm 10, 10 Stopper for Terminal Block 2.5mm ONKA 20, 11 Selector Switch 3-Position FUJI AR22-PR2 2, 12 indication light RED/Green 5, 13 Cable Numbering Tagging & Drawing 1, 14 Wiring Duct Bus Bar Din rail & Crimps 1, 15 Wiring Charges 1, 16 Metal Enclosure (1000 x 800x 300mm) 1.	No.	1.00			
SP/EW-5	Supply, installation, testing and commissioning of feeder pillar for supply of power to residence, toll plaza, external lighting and tube well installation having appropriate sizes as under earthing terminals for connecting of the incoming and outgoing cables complete in all respects as per drawings.	No.	1.00			





**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT KANDH KOT - KASHMORE SECTION  
(INCLUDING KASHMORE BYPASS)**

**KM. (105+820 - KM. 164+600) LENGTH: 58.78 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. in Figures)	RATE (Rs. in Words)	Amount (Rs.)
SP/EW-6	Supply, installation, testing and commissioning of feeder pillar for supply of power to stop over, toll plaza, external lighting and tube well installation having appropriate sizes as under earthing terminals for connecting of the incoming and outgoing cables complete in all respects as per drawings.	Each	1.00			
SP/EW-7	Supply and installation of Tubular Poles 9m Long with 2 nos. of Crest LED Flood Light Model No. CR-TGA 100W-FL, LED Brand Bridgelux, Led Driver Mean Well UL Approved. Made in Pakistan Control Box with complete fittings.	No.	6.00			
SP/EW-8	Supply and installation of Tubular Poles 9.5m High of complete with single arm on RCC foundation as per drawings (wiring of crest LED street light Model No. CR-B100W-STL, LED Brand Bridgelux, LED Driver Mean Well UL Approved) controlled by Feeder Pillar also supply and installation with all 4 core 16mm <sup>2</sup> cables and 3 core PVC insulated cables in PVC pipe as per drawings and specifications complete in all respect.	No.	12.00			
SP/EW-9	Supply and installation of Tubular Poles 9.5m High of complete with double arm on RCC foundation as per drawings (wiring of crest LED street light Model No. CR-B100W-STL, LED Brand Bridgelux, LED Driver Mean Well UL Approved) controlled by Feeder Pillar also supply and installation with all 4 core 16mm <sup>2</sup> cables and 3 core PVC insulated cables in PVC pipe as per drawings and specifications complete in all respect i.e earthing.	No.	6.00			
SP/EW-10	Supply and fixing PVC conduit for ETTM system cables, fixed as per ETTM system companies required in concrete or trench, complete with all respects, excavation, bricks and backfilling as required & instructed by the engineers incharge.					
SP/EW-10-I	50mm i/d Class B pole / Beta or Shawal.	LM	30.00			
SP/EW-10-II	75mm i/d Class B pole / Beta or Shawal.	LM	30.00			
SP/EW-10-III	100mm i/d Class B pole / Beta or Shawal.	LM	270.00			
<b>TOTAL OF BILL NO. 6A-03. ELECTRICAL WORKS:</b>						



**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (ROJHAN - RAJANPUR SECTION)**

**KM (213+500 - KM. 265+350): LENGTH : 51.85 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Attachment No. 1 of  
Addendum No. 2

Item No.	Description	Unit	Quantity	Rate (Rs. in Figures)	RATE (Rs. in Words)	Amount (Rs.)
<b>BILL NO 03. ELECTRICAL WORKS:</b>						
SP/EW-1	Supply and installation of Transformer 100KVa Complete with all respects.	Each	1.00			
SP/EW-2	Supply, installation, testing and commissioning of PVC/PVC SWA cable 4 core cable copper/ conductor 16mm <sup>2</sup> laid in trenches with sand cushion and brick including excavation and backfilling or fixed to wall, ceiling and floors as per site requirements complete in all respects.	LM	180.00			
SP/EW-2a	.....ditto..... but 25mm <sup>2</sup>	LM	126.00			
SP/EW-2b	.....ditto..... but 32mm <sup>2</sup>	LM	32.00			
SP/EW-3	S/F earthing including boring/excavation, copper conductor etc. complete as drawings in all respect to achieve resistance not more than 2 Ohms.	Each	1.00			
SP/EW-4	Supply, installation, testing and commissioning of feeder pillar for supply of power to residence, stop over, toll plaza, external lighting and tube well installation having appropriate sizes as under earthing terminals for connecting of the incoming and outgoing cables complete in all respects as per drawings. 1 Magnetic contactor 225 Amps Schneider LC1F225 2,2 MCCB (TP) 250Amp Schneider E2C- 250N 5,3 C/T 200Amp 3, 6 ATS / AMF Relay 1, 7 timer with base OMRON H3BA-N 1, 8 Emergency Stop Switch 1, 9 Fuse Type Terminal Block 6mm 10, 10 Stopper for Terminal Block 2.5mm ONKA 20, 11 Selector Switch 3-Position FUJI AR22-PR2 2, 12 indication light RED/Green 5, 13 Cable Numbering Tagging & Drawing 1, 14 Wiring Duct Bus Bar Din rail & Crimps 1, 15 Wiring Charges 1, 16 Metal Enclosure (1000 x 800x 300mm) 1.	No.	1.00			
SP/EW-5	Supply, installation, testing and commissioning of feeder pillar for supply of power to residence, toll plaza, external lighting and tube well installation having appropriate sizes as under earthing terminals for connecting of the incoming and outgoing cables complete in all respects as per drawings.	No.	1.00			

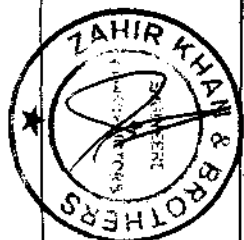


**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (ROJHAN ~ RAJANPUR SECTION)**  
**KM (213+500 - KM. 265+350): LENGTH : 51.85 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. in Figures)	RATE (Rs. in Words)	Amount (Rs.)
SP/EW-6	Supply, installation, testing and commissioning of feeder pillar for supply of power to stop over, toll plaza, external lighting and tube well installation having appropriate sizes as under earthing terminals for connecting of the incoming and outgoing cables complete in all respects as per drawings.	Each	1.00			
SP/EW-7	Supply and installation of Tubular Poles 9m Long with 2 nos. of Crest LED Flood Light Model No. CR-TGA 100W-FL, LED Brand Bridgelux, Led Driver Mean Well UL Approved. Made in Pakistan Control Box with complete fittings.	No.	6.00			
SP/EW-8	Supply and installation of Tubular Poles 9.5m High of complete with single arm on RCC foundation as per drawings i/e wiring of crest LED street light Model No. CR-B100W-STL, LED Brand Bridgelux, LED Driver Mean Well UL Approved) controlled by Feeder Pillar also supply and installation with all 4 core 16mm <sup>2</sup> cables and 3 core PVC insulated cables in PVC pipe as per drawings and specifications complete in all respect.	No.	12.00			
SP/EW-9	Supply and installation of Tubular Poles 9.5m High of complete with double arm on RCC foundation as per drawings i/e wiring of crest LED street light Model No. CR-B100W-STL, LED Brand Bridgelux, LED Driver Mean Well UL Approved) controlled by Feeder Pillar also supply and installation with all 4 core 16mm <sup>2</sup> cables and 3 core PVC insulated cables in PVC pipe as per drawings and specifications complete in all respect i.e earthing.	No.	8.00			
SP/EW-10	Supply and fixing PVC conduit for ETTM system cables, fixed as per ETTM system companies required in concrete or trench, complete with all respects, excavation, bricks and backfilling as required & instructed by the engineers incharge.					
SP/EW-10-I	50mm i/d Class B pole / Beta or Shawal.	LM	30.00			
SP/EW-10-II	75mm i/d Class B pole / Beta or Shawal.	LM	30.00			
SP/EW-10-III	100mm i/d Class B pole / Beta or Shawal.	LM	270.00			
<b>TOTAL OF BILL NO. 6A-03. ELECTRICAL WORKS:</b>						



# **THE PARTICULAR CONDITIONS OF CONTRACT PART-A: CONTRACT DATA**



## Section 8: Particular Conditions of Contract

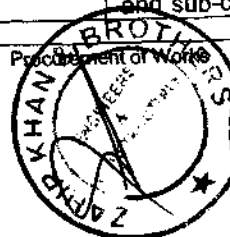
The following Particular Conditions of Contract (PCC) shall supplement the General Conditions of Contract (GCC). Whenever there is a conflict, the provisions herein shall prevail over those in the GCC.

### Part A - Contract Data

Ref. GCC	Subject	Data
1.1.2.2 and 1.3	Employer's name and address	National Highway Authority 28-Mauve Area, G-9/1, Islamabad.
1.1.2.4 and 1.3	Engineer's name and address	To be determined later, Employer will notify before commencement of work
1.1.2.11	Bank's name	Asian Development Bank (ADB)
1.1.2.12	Borrower's name	Islamic Republic of Pakistan
1.1.3.3	Time for completion	Lot-1: 730 days Lot-2: 730 days Lot-3: 730 days Lot-4: 730 days
1.1.3.7	Defects notification period	365 days.
1.1.5.6	Sections	Not Applicable
1.3	Electronic transmission systems	Facsimile and Email
1.4	Governing law	Law of Islamic Republic of Pakistan
1.4	Ruling language	English
1.4	Language for communications	English
2.1	Time for access to the site	28 days after Commencement Date
3.1(B)(ii)	Engineer's duties and authority	Variations resulting in an increase of the Accepted Contract Amount in excess of 0.1% shall require approval of the Employer.
4.2	Performance security	The performance security will be in the form of an unconditional bank guarantee in the amount(s) of 10% (ten percent) of the Contract Price payable in the currencies and proportions in which the Contract Price will be paid.
6.5	Normal working hours	8:00 AM to 5:00 PM inclusive of one hour break.
	Respectful Work Environment	The following paragraphs shall apply: The Contractor shall ensure that its employees and sub-contractors observe the highest ethical



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Bidding Document for OGB/CARECT-II

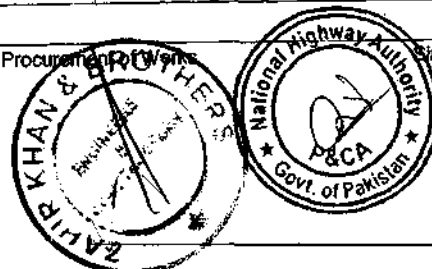



Single-Stage: Two-Envelope

		<p>standards and refrain from any form of bullying, discrimination, misconduct and harassment, including sexual harassment and shall, at all times, behave in a manner that creates an environment free of unethical behavior, bullying, misconduct and harassment, including sexual harassment. The Contractor shall take appropriate action against any employees or sub-contractors, including suspension or termination of employment or sub-contract, if any form of unethical or inappropriate behavior is identified.</p> <p>The Contractor shall conduct training programs for its employees and Subcontractors to raise awareness on and prevent any form of bullying, discrimination, misconduct and harassment including sexual harassment, and to promote a respectful work environment. The Contractor shall keep an up-to-date record of its employees and subcontractors who have attended and completed such training programs and provide such records to the Employer or the Engineer at their first written request.</p>
8.7 and 14.15(b)	<b>Delay damages for the Works</b>	0.05% of the Contract Price per day, in the currencies and proportions in which the Contract Price is payable.
8.7	<b>Maximum amount of delay damages</b>	10% (ten percent) of the Contract Price.
13.5.(b)(ii)	<b>Provisional Sums</b>	12% (twelve percent)
13.8	<b>Adjustments for Changes in Cost</b>	The Contract Price is <u>Adjustable</u> during Contract Execution.
14.1	<b>The Contract Price</b>	<p>The following sentence under Clause 14.1 shall <u>not</u> apply:</p> <p><i>"Notwithstanding the provisions of subparagraph (b), Contractor's Equipment, including essential spare parts therefore, imported by the Contractor for the sole purpose of executing the Contract shall be exempt from the payment of import duties and taxes upon importation."</i></p>



14.2	<b>Total advance payment</b>	10% (ten percent) of the Accepted Contract Amount payable in the currencies and proportions in which the Accepted Contract Amount is payable provided that the Contractor delivers the corresponding bank guarantee for advance payment to the Employer in a timely manner. In case this bank guarantee is not delivered until 42 (forty two) days after signing the Contract, the GCC Sub Clause 8.1 (d) shall not apply.
14.2(b)	<b>Repayment amortization of advance payment</b>	17% (Seventeen Percent)
14.3(c)	<b>Percentage of retention</b>	5% (five percent)
14.3(c)	<b>Limit of Retention Money</b>	5% (five percent) of the Accepted Contract Amount.
14.5(b)(i)	<b>Plant and Materials</b>	NIL
14.5(c)(i)	<b>Plant and Materials</b>	Steel Reinforcement, Asphalt Cement and Cement (OPC) (Refer to Schedule in Section 4)
14.6	<b>Minimum Amount of Interim Payment Certificates</b>	3% (three percent) of the Accepted Contract Amount.
15.2	<b>Termination by Employer</b>	This sentence will apply as Subclause 15.2(g): (g) the Engineer gives two consecutive Notices to submit the Program when the Contractor does not do so within 28 days after receiving the notice under Sub Clause 8.1, or update the Program and accelerate the works, to ensure compliance with Subclause 8.2 (Time for Completion) and the Contractor fails to submit or update the Program and demonstrate acceleration of the works within a reasonable period of time determined by the Engineer;
15.6	<b>Corrupt and Fraudulent Practices</b>	The following sentence shall apply: For the purposes of this Subclause: ADB's Anticorruption Policy (1998, as amended to date) requires Borrowers (including beneficiaries of ADB-financed activity), as well as Contractors, Subcontractors, manufacturers, and Consultants under ADB-financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, ADB (a) defines, for the purposes of this provision, the terms set forth below as follows: (i) "corrupt practice" means the offering, giving, receiving, or soliciting, directly



		<p>or indirectly, anything of value to influence improperly the actions of another party;</p> <p>(ii) "fraudulent practice" means any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;</p> <p>(iii) "coercive practice" means impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;</p> <p>(iv) "collusive practice" means an arrangement between two or more parties designed to achieve an improper purpose, including influencing improperly the actions of another party;</p> <p>(v) "abuse" means theft, waste or improper use of assets related to ADB-related activity, either committed intentionally or through reckless disregard;</p> <p>(vi) "conflict of interest" means any situation in which a party has interests that could improperly influence that party's performance of official duties or responsibilities, contractual obligations, or compliance with applicable laws and regulations;</p> <p>(vii) "obstructive practice" means (a) deliberately destroying, falsifying, altering or concealing of evidence material to an ADB investigation, or deliberately making false statements to investigators, with the intent to impede an ADB investigation; (b) threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to a Bank investigation or from pursuing the investigation; or (c) deliberate acts intended to impede the exercise of ADB's contractual rights of audit or inspection or access to information; and</p> <p>(viii) "integrity violation" is any act, as defined under ADB's Integrity Principles and Guidelines (2015, as amended from time to time), which violates ADB's Anticorruption Policy, including (i) to (vii) above and the following: violations of ADB sanctions, retaliation against whistleblowers or witnesses, and other violations of ADB's Anticorruption Policy, including</p>
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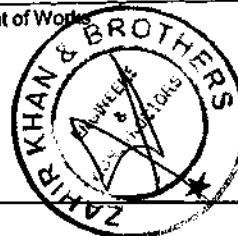




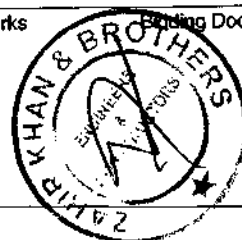
		<p>failure to adhere to the highest ethical standard.</p> <p>(b) will reject a proposal for award if it determines that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations in competing for the Contract;</p> <p>(c) will cancel the portion of the financing allocated to a contract if it determines at any time that representatives of the borrower or of a beneficiary of ADB-financing engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations during the procurement or the execution of that contract, without the borrower having taken timely and appropriate action satisfactory to ADB to remedy the situation; and</p> <p>(d) will impose remedial actions on a firm or an individual, at any time, in accordance with ADB's Anticorruption Policy and Integrity Principles and Guidelines, including declaring ineligible, either indefinitely or for a stated period of time, to participate in ADB-financed, -administered, or -supported activities or to benefit from an ADB-financed, -administered, or -supported contract, financially or otherwise, if it at any time determines that the firm or individual has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations.</p> <p>All Bidders, consultants, contractors, suppliers and other third parties engaged or involved in ADB-related activities have a duty to cooperate fully in any screening or investigation when requested by ADB to do so. Such cooperation includes, but is not limited to, the following:</p> <p>(a) being available to be interviewed and replying fully and truthfully to all questions asked;</p> <p>(b) providing ADB with any items requested that are within the party's control including, but not limited to, documents and other physical objects;</p> <p>(c) upon written request by ADB, authorizing other related entities to release directly to ADB such information that is specifically</p>
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<sup>1</sup> Whether as a Contractor, Subcontractor, Consultant, Manufacturer or Supplier, or Service Provider; or in any other capacity (different names are used depending on the particular Bidding Document).



		<p>and materially related, directly or indirectly, to the said entities or issues which are the subject of the investigation;</p> <p>(d) cooperating with all reasonable requests to search or physically inspect their person and/or work areas, including files, electronic databases, and personal property used on ADB activities, or that utilizes ADB's ICT resources or systems (including mobile phones, personal electronic devices, and electronic storage devices such as external disk drives);</p> <p>(e) cooperating in any testing requested by ADB, including but not limited to, fingerprint identification, handwriting analysis, and physical examination and analysis; and</p> <p>(f) preserving and protecting confidentiality of all information discussed with, and as required by, ADB.</p> <p>All Bidders, consultants, contractors and suppliers shall ensure that, in its contract with its sub-consultants, sub-contractors and other third parties engaged or involved in ADB-related activities, such sub-consultants, sub-contractors and other third parties similarly undertake the foregoing duty to cooperate fully in any screening or investigation when requested by ADB to do so.</p>
17.6	<b>Maximum total liability of the Contractor to the Employer</b>	The product of 1.15 times the Accepted Contract Amount
18.1	<b>Periods for submission of insurance:</b> (a) evidence of insurance. (b) relevant policies	The Contractor shall be the insuring party under the Contract. (a) Within 28 days after Commencement Date. (b) Within 28 days after the Commencement Date
18.2(d)	<b>Maximum amount of deductibles for insurance of the Employer's risks</b>	US\$ 20,000.
18.3	<b>Minimum amount of third party insurance</b>	US\$ 50,000 in case of injury, US\$ 100,000 per occurrence in case of death, and one percent of Accepted Contract Amount per occurrence in case of damage to property; number of occurrences unlimited.
20.2	<b>Date by which the Dispute Board shall be appointed</b>	28 days after the commencement
20.2	<b>The Dispute Board shall be comprised of</b>	Three Members



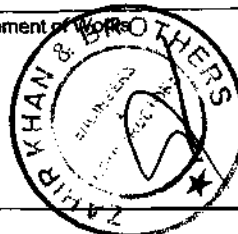
20.2	List of potential Dispute Board sole members	None
20.3	Appointment (if not agreed) to be made by	Pakistan Engineering Council, Islamabad
20.6 (a)	International arbitration shall be administered by	See Section 8-B (PCC 20.6)
20.6	Place of Arbitration	Agreed place of arbitration shall be a neutral place/venue in case of foreign contractor which shall neither be administered by and in the Employer's country nor in the foreign contractor's country.  In case of domestic Contractor, place of arbitration shall be Islamabad, Pakistan.

#### Summary of Sections of the Works

Section Name/Description (Subclause 1.1.5.6)	Time for Completion (Subclause 1.1.3.3)	Damages for Delay (Subclause 8.7)
Not Applicable		

### Part B – Specific Provisions

*Part B - Specific Provisions of the Particular Conditions of Contract are intended to address country, project, and contract specific requirements not covered by the General Conditions of Contract. Whoever drafts the specific provisions should be thoroughly familiar with the provisions of the General Conditions of Contract and with any specific requirements of the contract. Legal advice is recommended when amending provisions or drafting new ones.*



# THE PARTICULAR CONDITIONS OF CONTRACT PART-B



## Part B – Specific Provisions

### PARTICULAR CONDITIONS OF CONTRACT

#### PART –B

The following "Particular Conditions", include amendments and additions to the "General Conditions" which form part of the "Conditions of Contract for Construction", Multilateral Development bank Harmonized Edition 2010 published by the Federation International des Ingenieurs-Conseils (FIDIC).

#### Clause-1: General Provisions

- 1.1.2.6(a)** Add the following Sub Clause 1.1.2.6(a):
- Employer's Representative** **Employer's Representative** means **General Manager (CAREC)** or any other person appointed by the Employer and notified to the Engineer and Contractor from time to time."
- 1.1.5.7** Add the following at the end:
- Temporary Works** "e.g. the construction and maintenance of the Contractor's camp, plant yard and Pre-cast yard etc."
- 1.3** Add the following paragraphs at the end:
- Communications** "Copies of all communications exchanged between the Employer and the Contractor in connection with the Contract, shall be submitted to the Engineer by the sender of such communications".
- 1.5** Replace (a) to (i) with following:
- Priority of Documents**
- The Contract Agreement,
  - The Letter of Acceptance,
  - Letters of Bid,
  - Particular Conditions of Contract (Part-A Contract Data, Part-B Special Provisions),
  - Conditions of Contract (General Conditions of Contract for Construction MDB Harmonized Edition-2010),
  - Particular Specifications (if any),
  - The Addenda/Corrigenda to NHA General Specifications,
  - The NHA General Specifications (NHA's Specifications-1998),
  - Supplementary information as stated in section 6 of bidding documents,
  - Drawings,
  - Schedules to Bid,
  - Any other documents forming part of the Contract."
- 1.6** The text of last sentence of the Sub Clause 1.6 is deleted and replaced with following text:
- Contract Agreement** "The cost of stamp duties and similar charges (if any) imposed by law in connection with entry into the Contract Agreement shall be borne by the Contractor"
- 1.8** At the end of this Sub Clause add the following new paragraph:
- Care and Supply of Documents** "The Contractor shall make available to the Engineer / his agents the approved drawings, shop drawings, bar bending schedules, specifications or any other document required during inspection and testing of the Works."



1.9

**Delayed Drawing or Instructions**

Add the following at the end of first paragraph of this Sub Clause:

"This notice shall be given not less than 42 days prior to the requirement of such drawings or instructions required to be incorporated in the Works as per submitted programme in accordance with Sub-Clause 8.3 [Programme]."

**2.1 Right of Access to Site**

Add the following after the last sentence of this Sub-Clause:

*"There shall be no work nor construction activities at the Site or any part thereof (as the case may be) unless the Employer has granted access to the Site or part thereof (as the case may be) in accordance with this Sub-Clause 2.1.*

*The Employer shall be responsible for acquiring and providing legal and physical possession of the Site or any part thereof (as the case may be) and access thereto, and for providing possession of, and access to, all other areas reasonably required for the proper execution of the Contract, including all requisite rights of way.*

*Prior to, and as a condition of, granting the Contractor access to the Site or a relevant part thereof (as the case may be), for commencing work or any construction activities on the Site or part thereof, the Employer shall issue a notice to the Contractor (with a copy to ADB) confirming in writing ("Notice") all of the following with respect to the Site or part thereof:*

*(i) the corresponding final Resettlement Plan ("RP") and/ or the Due Diligence Report based on the detailed design of the Site or part thereof (as the case may be) have been submitted to, and accepted by, ADB;*

*(ii) due consultation, compensation payments and other entitlements have been provided to affected people fully in accordance with the RP for the Site or part thereof (as the case may be), and ADB has been duly notified of such provision in the Resettlement Plan Compliance Report accepted by ADB for the Site or part thereof;*

*(iii) completion of any other actions as required by the Employer;*

*(iv) the final initial environmental examination (IEE) is prepared by NHA and approved through issuance of no objection certificate (NOC) by national or provincial Environmental Protection Agency, in case an IEE is required by Pakistan's National/Provincial environmental legislation; and*

*(v) as a result of the confirmations contained above, the Employer accordingly grants the Contractor access to the Site or part thereof."*

**Clause-3: The Engineer**

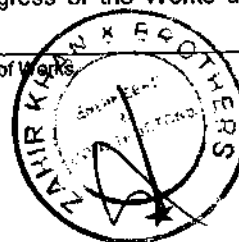
3.1

**Engineer's Duties and Authority**

Delete the second last paragraph and replace with the following:

"The Engineer shall obtain the approval of the Employer before taking action under the following Sub-Clauses of these conditions:

- a) Consenting to the sub-contracting of any part of Works under Sub-Clause 4.4;
- b) Certifying additional cost determined under Sub-Clause 4.12;
- c) Determining an extension of time under Sub-Clause 8.4;
- d) Suspending the progress of the Works under Sub-Clause 8.8 and



certifying an additional cost under Sub-Clause 8.9;

- e) Issuing the Taking-Over Certificate under Clause 10;
- f) Issuing a Performance Certificate under Sub-Clause 11.9;
- g) Issuing a Variation under Clause 13 except in emergency situation as reasonably determined by the Engineer involving loss/damages to life, property and /or Works, and if such a Variation would not increase the Accepted Contract Amount;
- h) Adjustment of Contract Price under Clauses 13.7 and 13.8; and
- i) Proceeding under Sub-Clause 14.11 and issuance of Final Payment Certificate under Sub-Clause 14.13."

### 3.5

#### Determinations

Insert the following after the word "specified." in line three of second paragraph:

"Such claim or request must be supported with evidence required to substantiate this claim or request or any other documents which the Engineer may reasonably ask from either Party."

### "3.6

#### Management Meeting

Add this Sub-Clause at the end of Clause 3:

The Engineer or the Employer may require the other to attend a management meeting in presence of the Contractor or otherwise, in order to review the progress with reference to the agreed programme and arrangements for future works. The Engineer shall record the business of management meeting and supply copies of the record to those attending the meeting and to the Employer. In the record, responsibilities for any actions to be taken shall be in accordance with the Contract.

No Traveling Allowance / Daily Allowance (TA/DA) or any other expenditure incurred by Contractor will be paid by the Employer to the Contractor in this connection."

### Clause-4: The Contractor

### 4.2

#### Performance Security

Insert following at the end of the second paragraph of this Sub-Clause:

"The Performance Security shall be issued either (a) by a schedule bank<sup>2</sup> located in the Country, or (b) by a reputable foreign bank, selected by the Contractor and acceptable to the Employer. If the bank issuing the Performance Security furnished by the Contractor is outside the Country, the issuer shall have a correspondent bank in the Country to make it enforceable in the Country. The Performance Security shall be in the form annexed to the Bidding Document.

The Performance Security of a Joint Venture shall be in the name of the Joint Venture."

### 4.3

#### Contractor's Representative

At the end of this Sub-Clause add:

"The Contractor's Representative or the person to whom Contractor's Representative delegates any power, functions and authority must be a qualified Professional Engineer (registered with Pakistan Engineering Council) in the relevant field.

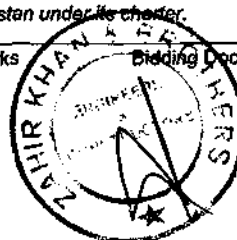
In addition to the Contractor's Representative, all engineers and foremen present at the Site, shall also be fluent in speaking Urdu or English Language, otherwise the Contractor shall provide sufficient interpreters at the Site to ensure adequate communication with the

<sup>2</sup> Schedule Banks are banks which are registered in the list of State Bank of Pakistan under its charter.

Single-Stage:



Procurement of Works



Bidding Document for OCB/CAREC/II



local personnel.

In case of JV where one of the firm/contractor is foreign, The contractor' authorized representative and his other professional Engineers working at site shall register themselves with the Pakistan Engineering Council.

In case of local firm or JV with a foreign firm, it is the obligation of the Contractor to ensure that all Senior Engineering Management Personnel as mentioned by the Contractor/JV in its Technical Bid/Contract Agreement are deployed at Site for execution of Works in accordance with the resource schedule stated in the program.

In case of Contractor's failure to deploy its key staff within 45 days after stipulated date of commencement, an amount of Rs. 10,000/- per person/day will be deducted from any money due to the contractor.

If the Employer finds sufficient evidence that the Contractor has not deployed its key staff at site, the Employer may, within 28 days after becoming aware of the events or circumstances, issue a Notice to the Contractor for Employers Claim pursuant to Clause 2.5."

4.8

**Safety Procedures**

Replace the first line with:

"The Contractor shall, at his own expense:"

At the end of bullet point (b), please add the following:

*"In particular, the Contractor is responsible for providing site workers with safe and healthy working conditions and establishes an operating system to prevent accidents, injuries, and disease."*

<p>4.12 <b>Unforeseeable physical Conditions</b></p>	<p>Add the following at the end of Sub-Clause:  <i>"In addition to notice of any unforeseeable physical conditions, the Contractor shall provide the Engineer and the Employer with a written notice of any unanticipated environmental, land acquisition and resettlement and/or indigenous peoples risks or impacts that arise during construction, implementation or operation of the Works, which were not considered in the initial environmental examination ("IEE"), the environmental management plan ("EMP") or the resettlement plan ("RP") attached hereto as Appendix [xxx], [xxx] and [xxx], respectively.</i>  <i>If any unanticipated environmental or social risks and impacts arise during construction that were not considered in the IEE, EMP and F.P, the Employer shall be informed with detailed description of the event and proposed corrective action plan".</i></p>
<p>4.15 <b>Access Route</b></p>	<p>Add the following at the end of Sub-Clause:  <i>"The Contractor shall fully reinstate pathways, other local infrastructure, and agricultural land to at least their pre-project condition upon the completion of construction."</i></p>

4.16

**Transport of Goods**

Add the following at the end of Sub-Clause by shifting the word "and" from after Para 'b' to after Para 'c' along with replacement of full stop at the end of Para 'c' with semicolon:

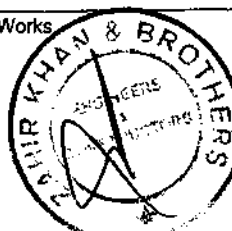
"(d) The Contractor shall adequately record the condition of roads, agricultural land and other infrastructure prior to starting to transport materials and construction."

4.18

Add the following paragraphs at the end of Sub-Clause:



Procurement of Works



Single-Stage, Two-Envelope





### Protection of Environments

"The Contractor, to ensure protection of the environment, shall take all necessary measures and precautions in conformity with statutory and regulatory environmental requirements enforced and amended from time to time including those provided under this Contract in the form of Environmental Management Plan and prescribed else wherein the Contract. The Contractor shall provide the Engineer and the Employer with a written notice of any unanticipated environmental, and acquisition and resettlement and/or social risks or impacts that arise during construction, implementation, operation of the Works that were not considered in the EMP or the Land Acquisition and Resettlement Plan attached here to as Appendix \_\_\_\_\_

The Contractor shall exercise care to protect the natural landscape and shall conduct his construction operations as to prevent any unnecessary destruction, scarring or defacing of the natural surroundings in the vicinity of the Works, except where clearing is required for Permanent Works, approved Temporary Works and the excavation operations. All trees and naïve vegetation shall be preserved and shall be protected from damages, which may be caused, by the Contractor's construction operations and equipment.

On completion of the Works all work area shall be smoothed and graded in a manner to conform the natural appearance of the landscape. Where unnecessary destruction, scarring damage or defacing may occur as a result of the Contractor's operations, it shall be repaired, replanted or otherwise corrected as directed by the Engineer at Contractor's expense.

Borrow areas shall be located and operated so as not to detract from the future usefulness or value of the sites. Upon completion of operations borrow areas shall be left in a safe and slightly better conditions. No borrow areas shall be located within 500 meter from the right of way.

During the execution of the Work required under the Contract, the Contractor shall carryout proper and efficient measures as often as necessary to reduce the dust nuisance and to prevent dust originating from his operations. For waste water disposal the provision of septic tank alone for worker's camp etc. will not be sufficient and may have to be supplemented with secondary treatment in form of gravel drains constructed wetland depending on the laboratory results of effluent from the septic tank.

The Contractor shall also comply with all applicable national, provincial and local environment laws and regulations. The Contractor shall: (a) prepare a Site Specific Environment Management Plan (SSEMP) which shall be finalized by the Employer and submitted for approval by ADB, such SSEMP shall be based on the EMP as required in the Initial Environmental Examination (IEE) Report; (b) comply with the measures relevant to the Contractor set forth in the IEE, the SSEMP, and the LARP (to the extent they concern impacts on affected people during construction; and (c) allocate the budget required to ensure that such measures are carried out. The Contractor shall submit quarterly reports on the carrying out of such measure to the Employer. The Contractor shall also comply with: (a) all applicable laws and regulations of Pakistan relating to health and safety; (b) the Environment Safeguards; (c) the Environmental Assessment and Review



Framework (EARF); and all measures and requirements set forth in the Safeguards Monitoring Report.

4.19

The entire text of Sub-Clause is deleted and substituted with the following:

Electricity, Water and Gas

"Except as otherwise stated in the Contract, the Contractor shall be responsible for the provision of all supplies of electricity, water, Gas and other services as are required for carrying out the Works at the Site. Any apparatus and equipment required for the use of these services shall be arranged by the Contractor, at its own risk and cost."

4.21

Progress Report

In the second line of first paragraph after the word "Contractor" add the text "in the format acceptable to the Engineer/Employer"

In subparagraph (g), the word "and" appearing at the end is deleted.

In sub-paragraph (h) the full stop appearing at the end is substituted with a semi colon.

Add the following subparagraph at the end of Sub-Clause with continuing order:

- (i) "Planned programme for the execution of the Works for the next two (2) months to enable the Engineer to determine its programme of inspection and testing;
- (j) Monthly summary of daily job record indicating weather conditions, deployment of Contractor's Equipment, labour employment (segregated by gender), local material procurement and material import, if any;
- (k) Salient contractual and project information; and
- (l) Monitoring of obligations in Sub-Clauses 4.12, 4.18, 4.25, 6.1, 6.4, 6.7, 6.20 and 6.21.

4.25

The Contractor shall comply with all applicable national, provincial, and local land acquisition and involuntary resettlement laws and regulations of Pakistan.

The Contractor shall comply with (i) the measures and requirements relevant to the Contractor which are set forth in the RP attached hereto as Appendix [ ], to the extent that it concerns impacts on affected people during construction; and (ii) any corrective or preventative actions set out in safeguards monitoring reports that the Employer will prepare from time to time to monitor implementation of the RP. The Contractor shall submit quarterly reports on the carrying out of such measures to the Employer.

*"In addition, the Contractor shall reflect the status of access to the Site or part thereof (as the case may be) in its monthly progress reports under "key milestones" and "project progress: planned vs. actual."*

The Contractor shall allocate a budget for compliance with these measures, requirements and actions.

### Clause-6: Staff and Labour

6.1

Engagement of Staff and Labour

Add the following as the second paragraph of this Sub-Clause:

"To the extent possible, the Contractor shall employ women and local people, including disadvantaged people living in the project area, who meet the job and efficiency requirements for the Works. The Contractor



shall not differentiate between men and women's wages or benefits for work of equal value. The contractor shall maximize female training and employment."

In addition, the Contractor shall enable conditions for women workers and take necessary actions to encourage women living in the project area to participate in the design and implementation of the project activities.

## 6.2

**Rates of Wages and Condition of Labour**

In first line Insert following after the word "wages":

"not less than the rates as published by Federal Bureau of Statistics or as established for trade or industry or market rate of the project area"

## 6.4

**Labour Laws**

The Contractor shall allow freedom of association and effectively recognize the right to collective bargaining.

*"The Contractor shall comply with Pakistan's applicable labor law and regulations and shall incorporate applicable workplace occupational safety norms. The Contractor shall not discriminate workers in respect of employment and occupation"*

## 6.6

**Facilities for Staff and Labour**

The text of first paragraph is deleted and substituted with the following:

*"Save insofar as the Contract otherwise provides, the Contractor shall provide and maintain suitable accommodation and amenities for all its staff and labour, employed for the purpose of or in connection with the Contract, including all fencing, water supply (both for drinking and other purpose), electricity supply, sanitation, fire prevention and fire fighting equipment, cooling system compliant with labour laws and acceptable to the Employer, refrigerator, furniture and other equipment in connection with such accommodation or amenities. The Contractor shall provide appropriate facilities for children of laborers in the construction Camp Sites. On completion of the Works, unless otherwise agreed the temporary camps/housing provided by the Contractor shall be removed and the Site be reinstated to its original condition, all to the approval of the Engineer.*

*Notwithstanding the above following completion of the Works in case the Employer require the Contractor not to remove/demolish the temporary-built camps/houses, then the relevant cost, as determined by the Engineer, shall be paid to the Contractor."*

## 6.7

**Health and Safety**

At the end of this Sub-Clause add:

"The Contractor shall ensure that all applicable road safety standards are complied with during execution of Works. For the purpose of first and second paragraphs of this Sub-Clause the expenditure will be borne by the Contractor and not the Employer. If Contractor fails to comply the provisions stated therein, the Contractor will be fined at the rate of Rs. 3000 /day of delay in provision of these facilities."

"The Contractor is responsible for establishment of preventive and emergency preparedness and response measures to avoid, and where avoidance is not possible, to minimize, adverse impacts and risks of the construction site work to the health and safety of local communities. Besides, as a specific section of the SSEMP referred to in sub-clause 4.18 [Protection of the Environment], the Contractor shall submit a detailed Site Specific Health and Safety Management Plan (SSHSM) for the Engineer's no objection showing how he/she intends to comply with the local Health and Safety laws and regulations and other specific



requirements prescribed in the Contract, taking into account the Supplementary Information in Section 6 of the bidding document (Employer's Requirements). Where unanticipated health and safety hazards or risks become apparent during the Contract, the Contractor is required to update the SSHSMP to outline the potential impacts to site works and associated mitigation measures for the Engineer's no objection.

The Contractor shall comply with the approved SSHSMP and any corrective or preventative actions set out in safeguards monitoring reports that the Employer will prepare from time to time to monitor the implementation of the project EMP through the SSHSMP.

In particular, the Contractor is required to provide all personnel on site including Employer's Personnel and visitors with personal protective equipment, including protection for feet (safety boots), head, eyes, ears (safety helmets) and hands, etc., in accordance with the Contractor's SSHSMP. The Contractor should ensure that his Subcontractors comply with the SSHSMP and provide all such necessary equipment to their personnel."

"In the event of a significant injury involving medical treatment or hospitalization and fatal accident the Contractor shall notify the Engineer immediately by verbal communication and submit a formal report as soon as practicable after its occurrence. For all accidents, whether fatal or not, the Contractor shall also notify the appropriate local authorities in accordance with the Laws of the Country. The Contractor shall carry out or engage appropriate service providers to conduct health and safety programs for workers employed under the project and to members of the local communities surrounding the Site, particularly women, and shall include information on the trafficking of women and the risk of sexually transmitted diseases, including HIV/AIDS in such programs."

6.8

Add the following paragraphs at the end of Sub-Clause:

**Contractor's  
Superintendence**

"The Contractor's superintending staff shall be qualified civil engineers or possess Diploma of Associate Engineer in Civil Engineering or civil technology depending upon the nature of assignment and have a working knowledge of English and Urdu, otherwise the Contractor shall arrange a sufficient number of competent interpreters available at the Site during all working hours.

The Contractor's superintending staff must be available at Site whenever the Engineer's representative or his subordinate staff related to construction supervision is inspecting and testing the Works as per Contractor's daily inspection and testing schedule."

6.10

Insert in second line after the word "Personnel":

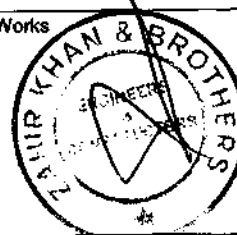
**Records of Contractor's  
Personnel and Equipment**

"along with their names, designation and their placing" in second line after the word 'Site' insert the following:

"along with their location of work, make, model and registration number or the number allotted to the specific equipment by the Contractor and printed on the front or sides of the equipment"

At the end of this Sub-Clause add:

"In case of disagreement by the Engineer on the above said records daily report as made by the inspector from the Engineer's staff showing the Contractor's equipment will be considered authentic while taking into account the duplication of any equipment reflected in the



Contractor's daily report."

6.15

**Measures against Insect and Pest Nuisance**

Replace the whole text of the Sub-Clause with the following:

"The Contractor shall at all times take the necessary precautions to protect the Contractors Personnel employed on the Site from all pests and reduce the dangers to health and the general nuisance caused by the same. The Contractor shall provide his staff and labour with suitable prophylactics for the prevention of malaria and shall take steps to prevent the formation of stagnant pools of water. He shall comply with all the regulations of the local health authorities in these respects and shall in particular arrange to spray thoroughly with approved insecticide all buildings erected on the Site. Such treatment shall be carried out at least once a year or as instructed by the Engineer. The Contractor shall warn his staff and labour of the dangers of Bilharzias and wild animals."

6.19

**Funeral Arrangements**

Replace the whole text of the Sub-Clause with the following:

"The Contractor shall make any necessary arrangements for the transport to any place as required for burial, of any of his local or expatriate employees or members of families of expatriate employees who may die at the place of Works or in the Country of Works. The Contractor shall also be responsible, to the extent required by the local regulations, for making any arrangements with regard to burial of any of his employees who may die while engaged upon the Works."

6.21

**Child Labor**

Replace the whole text of the Sub-Clause with the following:

"The Contractor shall not employ any child to perform work, including work that is economically exploitative or is likely to be hazardous to, or to interfere with, the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral or social development. "Child" means a child below the statutory minimum age of Fourteen (14) years."

6.25

**Epidemics**

Add the following paragraph as Sub-Clause 6.25:

In the event of any outbreak of illness of an epidemic nature, the Contractor shall comply with and carry out such regulations, orders, and requirements as may be made by the Government or the local or sanitary authorities for the purpose of dealing with and overcoming the same."

**Clause-7: Plant, Materials and Workmanship**

7.8

**Royalties**

In paragraph (a), the word "and" appearing at the end is deleted.

In paragraph (b), the full stop '.' appearing at the end is replaced with ", and"

Add the following paragraph as (c) at the end of Sub-Clause:

"c) use of other parties' intellectual property rights, including but not limited to patents and copyrights."

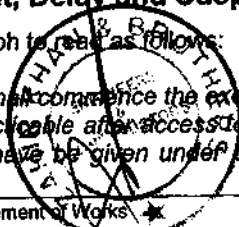
**Clause-8: Commencement, Delay and Suspension**

8.1

**Commencement of Works**

Amend the last paragraph to read as follows:

"The Contractor shall commence the execution of the Works as soon as is reasonably practicable after access to and possession of the Site or any part thereof have been given under Sub-Clause 2.1, and shall then



*proceed with the Works with due expedition and without delay."*

"Item (c) listed under the first paragraph is deleted"

**8.3  
Programme**

The following words shall be added after the words "..... in accordance with this Sub-Clause" at the end of the 4<sup>th</sup> paragraph of GCC 8.3:

"promptly, and in any event within twenty eight (28) days after the receipt of a notice from the Engineer".

Add at the end of item (a) listed in the first paragraph:

*"it being understood that the sequence of construction activities should take into account, to extent possible, the constraints due to land acquisition as set out in the LARP."*

The following paragraphs shall be inserted as the fifth and sixth paragraphs of GCC

"The programme shall be submitted in the form of Microsoft Project or other similar software (3 Nos. hard and soft copies). The Contractor shall also have a licensed copy of the software from a reputed firm which shall be accessible to the Engineer as well as his assistants. The Contractor shall organize a training programme for the staff of the Contractor as well as the staff of the Engineer.

In case of delayed submission of the revised programme in accordance with this Sub-Clause, the Contractor shall pay a penalty of Rs. 5,000/- (Rupees five thousand) for each day of delay in the submission of the programme. The maximum amount of penalty for delayed submission of the revised programme shall be Rs.1,000,000/-. Any penalty payable by the Contractor under this Sub-Clause shall first reduce the outstanding amounts due from the Employer to the Contractor (if any). Such penalty for delayed submission of revised programme does not prejudice the Employer's rights under the Contract, including without limitation the Employer's rights to terminate the Contract under GCC 15.2."

**Clause-9: Test on Completion**

**"9.5  
Specific Testing**

Add a new Sub-Clause 9.5 at the end of Clause 9 as follows:

The Contractor shall carry out joint roughness survey with the Engineer at the time of completion of the Works and on expiry of Defects Notification Period for issuance of Taking-Over Certificate and Performance Certificate. The Contractor shall provide man power and equipment for his survey and bear all the costs in this regard.

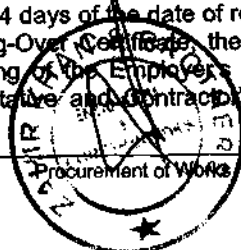
All tests be performed in presence of the Engineer/his agents or for any specific situation a committee notified by the Engineer with prior approval of Employer."

**Clause-10: Employer's Taking Over**

**10.1  
Taking Over of the Works and Sections**

Delete the third paragraph reading as "The Engineer ..... application:" and insert the following:

"Within 14 days of the date of receipt of Contractor's notice for issuance of Taking-Over Certificate, the Employer shall constitute a committee comprising of the Employer's representative, the Engineer/Engineer's representative and Contractor's Representative. The committee shall



within fourteen (14) days of its constitution conduct a detailed inspection of the Works completed by the Contractor to ascertain the completion or the extent of completion to decide about the issuance of Taking-Over Certificate. After the certification by the committee, the Engineer shall, within 14 days, issue the Taking-Over Certificate."

### Clause-11: Defects Liability

11.2

**Cost of Remedying Defects**

The full stop at the end of Para (c) is replaced with :

"including reinstatement, upon the completion of construction, of pathways, other local infrastructure, and agricultural land to at least their pre-project condition as recorded by the Contractor in consonance with its obligation in Clause 4.16."

11.9

**Performance Certificate**

Add the following paragraph before the first paragraph:

"At the completion of the Defect Notification Period the Employer shall constitute a committee comprising of the Employer's Representative, Engineer/Engineer's representative and the Contractor's Representative. The committee shall within fourteen (14) days conduct a detailed inspection of the Works to ascertain the issuance of Performance Certificate.

In middle paragraph of the GCC, replace the words "within 28 days after the latest of the expiry dates of the Defects Notification Period" with "within 28 days after the detailed inspection by the committee as required under this Sub-Clause"

### Clause-12: Measurement and Evaluation

12.3

**Evaluation**

"In subparagraph (a) (ii), replace "0.25%" with "1%".

In subparagraph (a) (iii), replace "1%" with "2%".

### Clause-14: Contract Price and Payment

14.5

**Plant and Materials Intended for the Works**

The text of Sub-para 14.5(c)(ii) and subsequent Para (fourth) is deleted and replaced with the following:

"(ii) the Contractor shall be entitled to receive from the Employer an amount for Materials as "Secured Advance" against an indemnity bond acceptable to the Employer (Form provided in Section 9) of such sum as the Engineer may consider proper in respect of the Materials (listed in the Schedules for payment and) delivered to the Site but not yet incorporated in the Permanent Works provided that:

- (1) The Materials are in accordance with the Specifications for the Permanent Works;
- (2) Such Materials have been delivered to the Site and are properly stored and protected against loss or damage or deterioration to the satisfaction of the Engineer but at the risk and cost of the Contractor;
- (3) The Contractor's records of the requirements, orders, receipts and use of Materials are kept in a form approved by the Engineer, and such records shall be available for inspection by the Engineer;
- (4) The Contractor shall submit with his monthly statement the



estimated value of the Materials on Site together with such documents as may be required by the Engineer for the purpose of valuation of Materials and providing evidence of ownership and payment therefore;

- (5) Ownership of such Materials shall be deemed to vest in the Employer and these Materials shall not be removed from the Site or otherwise disposed off without written permission of the Employer; and
  - (6) The sum payable for such Materials on Site shall not exceed 75% of the (i) landed cost of imported Materials, or (ii) ex-factory / ex-warehouse price of locally manufactured or produced Materials, or (iii) market price of other Materials, also keeping in view value of the Materials under the Contract taking into account the unit rates of the corresponding items of payment in the Bills of Quantity.
- (iii) The recovery of "Secured Advance" paid to the Contractor under the above provisions shall be effected from the monthly payments on actual consumption basis."

**14.7(a)**  
**Payment**

The respective reference to "42" and "21" shall be deleted and replaced with "56"

**14.13**  
**Issue of Final Payment Certificate**

The text of first paragraph of this Sub-Clause is replaced with the following:  
"Within 56 days after receiving the Final Statement and written discharge in accordance with Sub-Clause 14.11 [Application for Final Payment Certificate] and Sub-Clause 14.12 [Discharge], the Engineer shall issue, to the Employer [with a copy to the Contractor], the Final Payment Certificate which shall state the amount which is finally due as per Contract."

**Clause-15: Termination by Employer**

**15.2**  
**Termination by Employer**

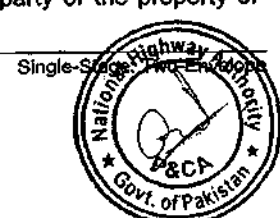
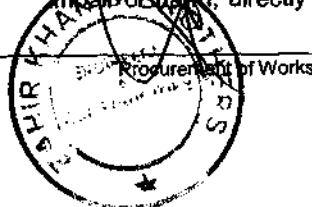
Replace the text of subparagraph (d) with the following:

"subcontracts the whole or part of the Works or assigns the whole or part of the Contract without consent of the Employer and required agreement"

**15.6**  
**Corrupt or Fraudulent Practices**

ADB's Anticorruption Policy requires Borrowers (including beneficiaries of ADB-financed activity), as well as Bidders, suppliers, and contractors under ADB-financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, ADB:

- (a) defines, for the purposes of this provision, the terms set forth below as follows:
  - (i) "corrupt practice" means the offering, giving, receiving, or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party;
  - (ii) "fraudulent practice" means any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;
  - (iii) "coercive practice" means impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of



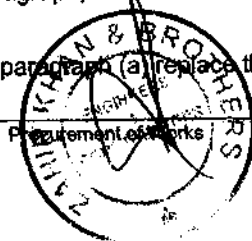


- the party to influence improperly the actions of a party;
- (iv) "collusive practice" means an arrangement between two or more parties designed to achieve an improper purpose, including influencing improperly the actions of another party;
  - (v) "integrity violation" means any act, as defined under ADB's Integrity Principles and Guidelines, which violates ADB's Anticorruption Policy including corrupt, fraudulent, coercive, or collusive practice, abuse, and obstructive practice.
  - (vi) "obstructive practice" means (a) deliberately destroying, falsifying, altering or concealing of evidence material to an ADB investigation; (b) making false statements to investigators in order to materially impede an ADB investigation; (c) failing to comply with requests to provide information, documents or records in connection with an OAI investigation; (d) threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or (e) materially impeding ADB's contractual rights of audit or access to information.
- (b) will reject a proposal for award if it determines that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations in competing for the Contract;
  - (c) will cancel the portion of the financing allocated to a contract if it determines at any time that representatives of the borrower or of a beneficiary of ADB-financing engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations during the procurement or the execution of that contract, without the borrower having taken timely and appropriate action satisfactory to ADB to remedy the situation;
  - (d) will sanction impose remedial actions on a firm or an individual, at any time, in accordance with ADB's Anticorruption Policy and Integrity Principles and Guidelines (both as amended from time to time), including declaring ineligible, either indefinitely or for a stated period of time, to participate in ADB-financed, or administered or supported activities or to benefit from an ADB-financed, administered or supported contract, financially or otherwise, if it at any time determines that the firm or individual has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations; and
  - (e) will have the right to require that a provision be included in bidding documents and in contracts financed by ADB, requiring Bidders, suppliers and contractors to permit ADB or its representative to inspect their accounts and records and other documents relating to the bid submission and contract performance and to have them audited by auditors appointed by ADB.

### Clause-16: Suspension and Termination by Contractor

- 16.1** First paragraph, third line, replace the number "21" with "42".
- Contractor's Entitlement to Suspend Work** In the second paragraph, fourth line the number "7" is replaced with "14".
- 16.2** In first line of subparagraph (a) replace the expression "42" with "56".

Single-Stage: Two-Envelope



Bidding Document for OCB/CAREC/II



**Termination by Contractor**

In third last paragraph, first line, replace the expression "14" with "28".

In second last paragraph, in last line, replace the expression "14" with "28".

Insert the following at the end of third last paragraph:

"the Employer shall provide notification within 7 days to the Contractor on ADB's suspension of the loan, and such notification shall state whether sufficient fund in appropriate currencies are expected to be available to the Employer to continue making payments to the Contractor beyond 42 days after the date of ADB's suspension of the loan."

**Clause-17: Risk and Responsibility****17.3****Employer's Risk**

The word "and" at the end of subparagraph (g) is deleted.

The full stop at the end of subparagraph (h) is replaced with comma.

Add the following at the end:

- i. Ionizing radiations or contamination by radioactivity from any nuclear fuel, or from any nuclear waste from combustion of nuclear fuel, radioactive toxic explosive or other hazardous properties of any explosive nuclear assembly nuclear component thereof, and
- j. biological/bacterial terrorism.

**Clause-18: Insurance****18.1****General Requirements for Insurances**

The following new paragraphs are added at the end of Sub-Clause 18.1:

"The Contractor shall be entitled to place all insurance relating to the Contract (including but not limited to, the insurance referred to in Sub-Clauses 18.2 [Insurance for Works and Contractor's Equipment], 18.3 [Insurance against Injury to Persons and Damage to Property] and 18.4 [Insurance for Contractor's Personnel] with the insurance company as approved by the Employer.

The relevant insuring party shall within 28 days from the Commencement Date submit to the other party:

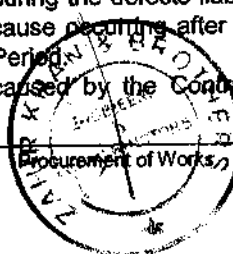
- a. Evidence that the insurance described in this Clause 18 [Insurance] have been effected, and
- b. Copies of the policies of insurance described in the Sub-Clause 18.2 [Insurance for Works and Contractor's Equipment], 18.3 [Insurance against Injury to Persons and Damage to Property] and 18.4 [insurance for Contractor's Personnel]. There shall be no obligation for the insurances in this Sub-Clause to include loss or damage caused by the Risks listed under Sub-Clause 17.3 [Employer's Risks] subparagraphs, (a) to(j) of the Conditions of Contract."

**18.2****Insurance for Works and Contractor's Equipment**

Add following paragraphs at the end of Sub- Clause 18.2:

"The insurance shall also cover:

- b. The Contractor for his liability:
  - i. during the defects liability for loss or damages arising from a cause occurring after commencement of Defects Notification Period
  - ii. caused by the Contractor in the course of any operations



carried out by him for the purpose of compliance with the obligations under defect liability.

It shall be the responsibility of the Contractor to notify the insurance company of any damage in the nature and extent of the Works and to ensure the adequacy of the insurance coverage at all times during period of the Contract.

### Clause-20: Claims, Disputes and Arbitration

20.6

#### Arbitration

Replace the subparagraphs (a) and (b) with the following paragraph:

"In case of foreign contractor, arbitration shall be carried out in accordance with the Rules of Arbitration of the International Chamber of Commerce, and in the case of domestic contractor, arbitration shall be carried out in accordance with the rules and provision of Arbitration Act 1940 of Islamic Republic of Pakistan. The place of arbitration shall be "Islamabad, Islamic Republic of Pakistan" for domestic Contractor and the city / country acceptable to the Parties in case of foreign Contractor."

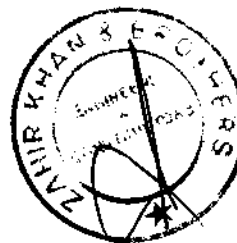
Add the following Clause after Clause 20:

#### Clause 21: Other Issues

"21.1

#### General Items

If the Contractor does not provide the items or fails to fulfill its obligations in respect of the items under Bill No. 7 within the time frame specified in its Program for these activities, the Engineer shall instruct the Contractor to fulfill its obligations in respect of the items under Bill No. 7 within 28 days, failing which the Engineer shall deduct the amounts due to the Contractor from Interim Payment Certificates in accordance with clause 3.5 [Determination] to compensate the Employer against the expenditure incurred by the Employer in this respect including his administrative overheads etc. @12%.



# **THE GENERAL CONDITIONS OF CONTRACT (FIDIC MDB VERSION 2010)**



# Conditions of Contract for Construction

MULTILATERAL DEVELOPMENT BANK HARMONISED EDITION

GENERAL CONDITIONS

June 2010

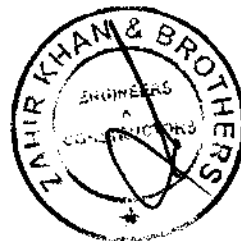
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FEDERATION INTERNATIONALE DES INGENIEURS-CONSEILS  
INTERNATIONAL FEDERATION OF CONSULTING ENGINEERS  
INTERNATIONALE VEREINIGUNG BERATENDER INGENIEURE  
FEDERACION INTERNACIONAL DE INGENIEROS CONSULTORES



## General Conditions

### CONTENTS

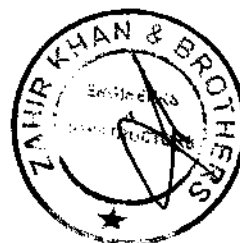
- 1 • General Provisions
  - 1.1 Definitions
  - 1.2 Interpretation
  - 1.3 Communications
  - 1.4 Law and Language
  - 1.5 Priority of Documents
  - 1.6 Contract Agreement
  - 1.7 Assignment
  - 1.8 Care and Supply of Documents
  - 1.9 Delayed Drawings or Instructions
  - 1.10 Employer's Use of Contractor's Documents
  - 1.11 Contractor's Use of Employer's Documents
  - 1.12 Confidential Details
  - 1.13 Compliance with Laws
  - 1.14 Joint and Several Liability
  - 1.15 Inspections and Audit by the Bank
- 2 The Employer
  - 2.1 Right of Access to the Site
  - 2.2 Permits, Licences or Approvals
  - 2.3 Employer's Personnel
  - 2.4 Employer's Financial Arrangements
  - 2.5 Employer's Claims
- 3 The Engineer
  - 3.1 Engineer's Duties and Authority
  - 3.2 Delegation by the Engineer
  - 3.3 Instructions of the Engineer
  - 3.4 Replacement of the Engineer
  - 3.5 Determinations



- 4 The Contractor
  - 4.1 Contractor's General Obligations
  - 4.2 Performance Security
  - 4.3 Contractor's Requirements
  - 4.4 Subcontractors
  - 4.5 Assignment of Benefit of Subcontract
  - 4.6 Co-operation
  - 4.7 Setting Out
  - 4.8 Safety Procedures
  - 4.9 Quality Assurance
  - 4.10 Site Data
  - 4.11 Sufficiency of the Accepted Contract Amount
  - 4.12 Unforeseeable Physical Conditions
  - 4.13 Rights of Way and Facilities
  - 4.14 Avoidance of Interference
  - 4.15 Access Route
  - 4.16 Transport of Goods
  - 4.17 Contractor's Equipment
  - 4.18 Protection of the Environment
  - 4.19 Electricity, Water and Gas
  - 4.20 Employer's Equipment and Free-Issue Materials
  - 4.21 Progress Reports
  - 4.22 Security of the Site
  - 4.23 Contractor's Operations on Site
  - 4.24 Fossils
- 5 Nominated Subcontractors
  - 5.1 Definition of "nominated Subcontractor"
  - 5.2 Objection to Nomination
  - 5.3 Payments to nominated Subcontractors
  - 5.4 Evidence of Payments
- 6 Staff and labour
  - 6.1 Engagement of Staff and labour



- 6.2 Rates of Wages and Conditions of Labour
- 6.3 Persons in the Service of Employer
- 6.4 Labour Laws
- 6.5 Working Hours
- 6.6 Facilities for Staff and Labour
- 6.7 Health and Safety
- 6.8 Contractor's Superintendence
- 6.9 Contractor's Personnel
- 6.10 Records of Contractor's Personnel and Equipment
- 6.11 Disorderly Conduct
- 6.12 Foreign Personnel
- 6.13 Supply of Foodstuffs
- 6.14 Supply of Water
- 6.15 Measures against Insect and Pest Nuisance
- 6.16 Alcoholic Liquor or Drugs
- 6.17 Arms and Ammunition
- 6.18 Festival and Religious Customs
- 6.19 Funeral Arrangements
- 6.20 Forced Labour
- 6.21 Child Labour
- 6.22 Employment Records of Workers
- 6.23 Workers' Organisations
- 6.24 Non-Discrimination and Equal Opportunity
- 7 Plant, Materials and Workmanship
  - 7.1 Manner of Execution
  - 7.2 Samples
  - 7.3 Inspection
  - 7.4 Testing
  - 7.5 Rejection
  - 7.6 Remedial Work
  - 7.7 Ownership of Plant and Materials
  - 7.8 Royalties
- 8 Commencement, Delays and Suspension

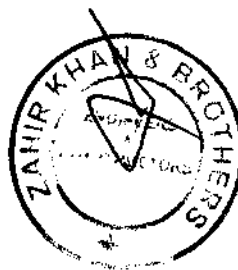




- 8.1 Commencement of Works
- 8.2 Time for Completion
- 8.3 Programme
- 8.4 Extension of Time for Completion
- 8.5 Delays Caused by Authorities
- 8.6 Rate of Progress
- 8.7 Delay Damages
- 8.8 Suspension of Work
- 8.9 Consequences of Suspension
- 8.10 Payment for Plant and Materials in Event of Suspension
- 8.11 Prolonged Suspension
- 8.12 Resumption of Work
- 9 Tests on Completion**
- 9.1 Contractor's Obligations
- 9.2 Delayed Tests
- 9.3 Retesting
- 9.4 Failure to Pass Tests on Completion
- 10 Employer's Taking Over**
- 10.1 Taking Over of the Works and Sections
- 10.2 Taking Over of Parts of the Works
- 10.3 Interference with Tests on Completion
- 10.4 Surfaces Requiring Reinstatement
- 11 Defects Liability**
- 11.1 Completion of Outstanding Work and Remedying Defects
- 11.2 Cost of Remedying Defects
- 11.3 Extension of Defects Notification Period
- 11.4 Failure to Remedy Defects
- 11.5 Removal of Defective Work
- 11.6 Further Tests
- 11.7 Right of Access
- 11.8 Contractor to Search
- 11.9 Performance Certificate



- 11.10 Unfulfilled Obligations
- 11.11 Clearance of Site
- 12 Measurement and Evaluation**
  - 12.1 Work to be Measured
  - 12.2 Method of Measurement
  - 12.3 Evaluation
  - 12.4 Omissions
- 13 Variations and Adjustments**
  - 13.1 Right to Vary
  - 13.2 Value Engineering
  - 13.3 Variation Procedure
  - 13.4 Payment in Applicable Currencies
  - 13.5 Provisional Sums
  - 13.6 Daywork
  - 13.7 Adjustments for Changes in Legislation
  - 13.8 Adjustments for Changes in Cost
- 14 Contract Price and Payment**
  - 14.1 The Contract Price
  - 14.2 Advance Payment
  - 14.3 Application for Interim Payment Certificates
  - 14.4 Schedule of Payments
  - 14.5 Plant and Materials intended for the Works
  - 14.6 Issue of Interim Payment Certificates
  - 14.7 Payment
  - 14.8 Delayed Payment
  - 14.9 Payment of Retention Money
  - 14.10 Statement at Completion
  - 14.11 Application for Final Payment Certificate
  - 14.12 Discharge
  - 14.13 Issue of Final Payment Certificate
  - 14.14 Cessation of Employer's Liability
  - 14.15 Currencies of Payment



- 15 Termination by Employer
  - 15.1 Notice to Correct
  - 15.2 Termination by Employer
  - 15.3 Valuation at Date of Termination
  - 15.4 Payment after Termination
  - 15.5 Employer's Entitlement to Termination for Convenience
  - 15.6 Corrupt and Fraudulent Practices
- 16 Suspension and Termination by Contractor
  - 16.1 Contractor's Entitlement to Suspend Work
  - 16.1 Termination by Contractor
  - 16.3 Cessation of Work and Removal of Contractor's Equipment
  - 16.4 Payment on Termination
- 17 Risk and Responsibility
  - 17.1 Indemnities
  - 17.2 Contractor's Care of the Works
  - 17.3 Employer's Risks
  - 17.4 Consequences of Employer's Risks
  - 17.5 Intellectual and Industrial Property Rights
  - 17.6 Limitation of Liability
  - 17.7 Use of Employer's Facilities/Accommodation
- 18 Insurance
  - 18.1 General Requirements for Insurances
  - 18.2 Insurance for Works and Contractor's Equipment
  - 18.3 Insurance against Injury to Persons and Damage to Property
  - 18.4 Insurance for Contractor's Personnel
- 19 Force Majeure
  - 19.1 Definition of Force Majeure
  - 19.2 Notice of Force Majeure
  - 19.3 Duty to Minimise Delay
  - 19.4 Consequences of Force Majeure
  - 19.5 Force Majeure Affecting Subcontractor



- 19.6 Optional Termination, Payment and Release
- 19.7 Release from Performance
- 20 **Claims, Disputes and Arbitration**
- 20.1 Contractor's Claims
- 20.2 Appointment of the Dispute Board
- 20.3 Failure to Agree of the Composition of the Dispute Board
- 20.4 Obtaining Dispute Board's Decision
- 20.5 Amicable Settlement
- 20.6 Arbitration
- 20.7 Failure to Comply with Dispute Board's Decision
- 20.8 Expiry of Dispute Board's Appointment

**APPENDIX: GENERAL CONDITIONS OF DISPUTE BOARD AGREEMENT**



## General Conditions

### 1 General Provisions

#### 1.1 Definitions

In the Conditions of Contract ("these Conditions"), which include Particular Conditions, Parts A and B, and these General Conditions, the following words and expressions shall have the meanings stated. Words indicating persons or parties include corporations and other legal entities, except where the context requires otherwise.

##### 1.1.1 The Contract

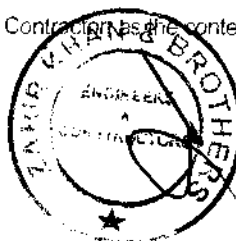
- 1.1.1.1 "Contract" means the Contract Agreement, the Letter of Acceptance, the Letter of Tender, these Conditions, the Specification, the Drawings, the Schedules, and the further documents (if any) which are listed in the Contract Agreement or in the Letter of Acceptance.
- 1.1.1.2 "Contract Agreement" means the contract agreement referred to in Sub-Clause 1.6 [Contract Agreement].
- 1.1.1.3 "Letter of Acceptance" means the letter of formal acceptance, signed by the Employer, of the Letter of Tender, including any annexed memoranda comprising agreements between and signed by both Parties. If there is no such letter of acceptance, the expression "Letter of Acceptance" means the Contract Agreement and the date of issuing or receiving the Letter of Acceptance means the date of signing the Contract Agreement.
- 1.1.1.4 "Letter of Tender" means the document entitled letter of tender or letter of bid, which was completed by the Contractor and includes the signed offer to the Employer for the Works.
- 1.1.1.5 "Specification" means the document entitled specification, as included in the Contract, and any additions and modifications to the specification in accordance with the Contract. Such document specifies the Works.
- 1.1.1.6 "Drawings" means the drawings of the Works, as included in the Contract, and any additional and modified drawings issued by (or on behalf of) the Employer in accordance with the Contract.
- 1.1.1.7 "Schedules" means the document(s) entitled schedules, completed by the Contractor and submitted with the Letter of Tender, as included in the Contract. Such document may include the Bill of Quantities, data, lists, and schedules of rates and/or prices.
- 1.1.1.8 "Tender" means the Letter of Tender and all other documents which the Contractor submitted with the Letter of Tender, as included in the Contract.
- 1.1.1.9 "Bill of Quantities", "Daywork Schedule" and "Schedule of Payment Currencies" mean the documents so named (if any) which are comprised in the Schedules.
- 1.1.1.10 "Contract Data" means the pages completed by the Employer entitled contract data which constitute Part A of the Particular Conditions.

##### 1.1.2 Parties and Persons

- 1.1.2.1 "Party" means the Employer or the Contractor as the context requires.



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9

- 1.1.2.2 "Employer" means the person named as employer in the Contract Data and the legal successors in title to this person.
- 1.1.2.3 "Contractor" means the person(s) named as contractor in the Letter of Tender accepted by the Employer and the legal successors in title to this person(s).
- 1.1.2.4 "Engineer" means the person appointed by the Employer to act as the Engineer for the purposes of the Contract and named in the Contract Data, or other person appointed from time to time by the Employer and notified to the Contractor under Sub-Clause 3.4 [Replacement of the Engineer].
- 1.1.2.5 "Contractor's Representative" means the person named by the Contractor in the Contract or appointed from time to time by the Contractor under Sub-Clause 4.3 [Contractor's Representative], who acts on behalf of the Contractor.
- 1.1.2.6 "Employer's Personnel" means the Engineer, the assistants referred to in Sub-Clause 3.2 [Delegation by the Engineer] and all other staff, labour and other employees of the Engineer and of the Employer; and any other personnel notified to the Contractor, by the Employer or the Engineer, as Employer's Personnel.
- 1.1.2.7 "Contractor's Personnel" means the Contractor's Representative and all personnel whom the Contractor utilises on Site, who may include the staff, labour and other employees of the Contractor and of each Subcontractor; and any other personnel assisting the Contractor in the execution of the Works.
- 1.1.2.8 "Subcontractor" means any person named in the Contract as a subcontractor, or any person appointed as a subcontractor, for a part of the Works; and the legal successors in title to each of these persons.
- 1.1.2.9 "DB" means the person or three persons appointed under Sub-Clause 20.2 [Appointment of the Dispute Board] or Sub-Clause 20.3 [Failure to Agree on the Composition of the Dispute Board]
- 1.1.2.10 "FIDIC" means the Fédération Internationale des Ingénieurs-Conseils, the international federation of consulting engineers.
- 1.1.2.11 "Bank" means the financing institution (if any) named in the Contract Data.
- 1.1.2.12 "Borrower" means the person (if any) named as the borrower in the Contract Data.

### 1.1.3 Dates, Tests, Periods and Completion

- 1.1.3.1 "Base Date" means the date 28 days prior to the latest date for submission of the Tender.
- 1.1.3.2 "Commencement Date" means the date notified under Sub-Clause 8.1 [Commencement of Works].
- 1.1.3.3 "Time for Completion" means the time for completing the Works or a Section (as the case may be) under Sub-Clause 8.2 [Time for Completion], as stated in the Contract Data (with any extension under Sub-Clause 8.4 [Extension of Time for Completion]), calculated from the Commencement Date.
- 1.1.3.4 "Tests on Completion" means the tests which are specified in the Contract or agreed by both Parties or instructed as a Variation, and which are carried out under Clause 9 [Tests on Completion] before the Works or a Section (as the case may be) are taken over by the Employer.
- 1.1.3.5 "Taking-Over Certificate" means a certificate issued under Clause 10 [Employer's Taking Over].



- 1.1.3.6 "Tests after Completion" means the tests (if any) which are specified in the Contract and which are carried out in accordance with the Specification after the Works or a Section (as the case may be) are taken over by the Employer.
- 1.1.3.7 "Defects Notification Period" means the period for notifying defects in the Works or a Section (as the case may be) under Sub-Clause 11.1 [Completion of Outstanding Work and Remedying Defects], which extends over 365 days except if otherwise stated in the Contract Data (with any extension under Sub-Clause 11.3 [Extension of Defects Notification Period]), calculated from the date on which the Works or Section is completed as certified under Sub-Clause 10.1 [Taking Over of the Works and Sections].
- 1.1.3.8 "Performance Certificate" means the certificate issued under Sub-Clause 11.9 [Performance Certificate].
- 1.1.3.9 "day" means a calendar day and "year" means 365 days.

#### 1.1.4 Money and Payments

- 1.1.4.1 "Accepted Contract Amount" means the amount accepted in the Letter of Acceptance for the execution and completion of the Works and the remedying of any defects.
- 1.1.4.2 "Contract Price" means the price defined in Sub-Clause 14.1 [The Contract Price], and includes adjustments in accordance with the Contract.
- 1.1.4.3 "Cost" means all expenditure reasonably incurred (or to be incurred) by the Contractor, whether on or off the Site, including overhead and similar charges, but does not include profit.
- 1.1.4.4 "Final Payment Certificate" means the payment certificate issued under Sub-Clause 14.13 [Issue of Final Payment Certificate].
- 1.1.4.5 "Final Statement" means the statement defined in Sub-Clause 14.11 [Application for Final Payment Certificate].
- 1.1.4.6 "Foreign Currency" means a currency in which part (or all) of the Contract Price is payable, but not the Local Currency.
- 1.1.4.7 "Interim Payment Certificate" means a payment certificate issued under Clause 14 [Contract Price and Payment], other than the Final Payment Certificate.
- 1.1.4.8 "Local Currency" means the currency of the Country.
- 1.1.4.9 "Payment Certificate" means a payment certificate issued under Clause 14 [Contract Price and Payment].
- 1.1.4.10 "Provisional Sum" means a sum (if any) which is specified in the Contract as a provisional sum, for the execution of any part of the Works or for the supply of Plant, Materials or services under Sub-Clause 13.5 [Provisional Sums].
- 1.1.4.11 "Retention Money" means the accumulated retention moneys which the Employer retains under Sub-Clause 14.3 [Application for Interim Payment Certificates] and pays under Sub-Clause 14.9 [Payment of Retention Money].
- 1.1.4.12 "Statement" means a statement submitted by the Contractor as part of an application, under Clause 14 [Contract Price and Payment], for a payment certificate.

#### 1.1.5 Works and Goods



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11

- 1.1.5.1 "Contractor's Equipment" means all apparatus, machinery, vehicles and other things required for the execution and completion of the Works and the remedying of any defects. However, Contractor's Equipment excludes Temporary Works, Employer's Equipment (if any), Plant, Materials and any other things intended to form or forming part of the Permanent Works.
- 1.1.5.2 "Goods" means Contractor's Equipment, Materials, Plant and Temporary Works, or any ... them as appropriate.
- 1.1.5.3 "Materials" means things of all kinds (other than Plant) intended to form or forming part of the Permanent Works, including the supply-only materials (if any) to be supplied by the Contractor under the Contract.
- 1.1.5.4 "Permanent Works" means the permanent works to be executed by the Contractor under the Contract.
- 1.1.5.5 "Plant" means the apparatus, machinery and other equipment intended to form or forming part of the Permanent Works, including vehicles purchased for the Employer and relating to the construction or operation of the Works.
- 1.1.5.6 "Section" means a part of the Works specified in the Contract Data as a Section (if any).
- 1.1.5.7 "Temporary Works" means all temporary works of every kind (other than Contractor's Equipment) required on Site for the execution and completion of the Permanent Works and the remedying of any defects.
- 1.1.5.8 "Works" mean the Permanent Works and the Temporary Works, or either of them as appropriate.

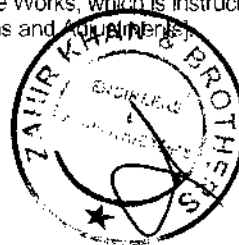
#### 1.1.6 Other Definitions

- 1.1.6.1 "Contractor's Documents" means the calculations, computer programs and other software, drawings, manuals, models and other documents of a technical nature (if any) supplied by the Contractor under the Contract.
- 1.1.6.2 "Country" means the country in which the Site (or most of it) is located, where the Permanent Works are to be executed.
- 1.1.6.3 "Employer's Equipment" means the apparatus, machinery and vehicles (if any) made available by the Employer for the use of the Contractor in the execution of the Works, as stated in the Specification; but does not include Plant which has not been taken over by the Employer.
- 1.1.6.4 "Force Majeure" is defined in Clause 19 [Force Majeure].
- 1.1.6.5 "Laws" means all national (or state) legislation, statutes, ordinances and other laws, and regulations and by-laws of any legally constituted public authority.
- 1.1.6.6 "Performance Security" means the security (or securities, if any) under Sub-Clause 4.2 [Performance Security].
- 1.1.6.7 "Site" means the places where the Permanent Works are to be executed, including storage and working areas, and to which Plant and Materials are to be delivered, and any other places as may be specified in the Contract as forming part of the Site.
- 1.1.6.8 "Unforeseeable" means not reasonably foreseeable by an experienced contractor by the Base Date.

"Variation" means any change to the Works, which is instructed or approved as a variation under Clause 13 [Variations and Amendments].



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12



1.1.6.10 "Notice of Dissatisfaction" means the notice given by either Party to the other under Sub-Clause 20.4 [Obtaining Dispute Board's Decision] indicating its dissatisfaction and intention to commence arbitration.

## 1.2 Interpretation

In the Contract, except where the context requires otherwise

- (a) words indicating one gender include all genders;
- (b) words indicating the singular also include the plural and words indicating the plural also include the singular;
- (c) provisions including the word "agree", "agreed" or "agreement" require the agreement to be recorded in writing;
- (d) "written" or "in writing" means hand-written, type-written, printed or electronically made, and resulting in a permanent record;
- (e) the word "tender" is synonymous with "bid" and "tenderer" with "bidder" and the words "tender documents" with "bidding documents".

The marginal words and other headings shall not be taken into consideration in the interpretation of these Conditions.

In these Conditions, provisions including the expression "Cost plus profit" require this profit to be one-twentieth (5%) of this Cost unless otherwise indicated in the Contract Data.

## 1.3 Communications

Wherever these Conditions provide for the giving or issuing of approvals, certificates, consents, determinations, notices, requests and discharges, these communications shall be:

- (a) in writing and delivered by hand (against receipt), sent by mail or courier, or transmitted using any of the agreed systems of electronic transmission as stated in the Contract Data; and
- (b) delivered, sent or transmitted to the address for the recipient's communications as stated in the Contract Data. However:
  - (i) if the recipient gives notice of another address, communications shall thereafter be delivered accordingly; and
  - (ii) if the recipient has not stated otherwise when requesting an approval or consent, it may be sent to the address from which the request was issued.

Approvals, certificates, consents and determinations shall not be unreasonably withheld or delayed. When a certificate is issued to a Party, the certifier shall send a copy to the other Party. When a notice is issued to a Party, by the other Party or the Engineer, a copy shall be sent to the Engineer or the other Party, as the case may be.

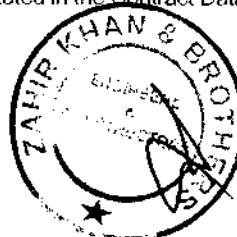
## 1.4 Law and Language

The Contract shall be governed by the law of the country or other jurisdiction stated in the Contract Data.

The language of the Contract shall be that stated in the Contract Data.



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13

The language for communications shall be that stated in the Contract Data. If no language is stated there, the language for communications shall be the ruling language of the Contract.

## 1.5 Priority of Documents

The documents forming the Contract are to be taken as mutually explanatory of one another. For the purposes of interpretation, the priority of the documents shall be in accordance with the following sequence:

- (a) the Contract Agreement (if any),
- (b) the Letter of Acceptance,
- (c) the Letter of Tender,
- (d) the Particular Conditions – Part A,
- (e) the Particular Conditions – Part B,
- (f) these General Conditions,
- (g) the Specification,
- (h) the Drawings, and
- (i) the Schedules and any other documents forming part of the Contract.

If an ambiguity or discrepancy is found in the documents, the Engineer shall issue any necessary clarification or instruction.

## 1.6 Contract Agreement

The Parties shall enter into a Contract Agreement within 28 days after the Contractor receives the Letter of Acceptance, unless the Particular Conditions establish otherwise. The Contract Agreement shall be based upon the form annexed to the Particular Conditions. The costs of stamp duties and similar charges (if any) imposed by law in connection with entry into the Contract Agreement shall be borne by the Employer.

## 1.7 Assignment

Neither Party shall assign the whole or any part of the Contract or any benefit or interest in or under the Contract. However, either Party:

- (a) may assign the whole or any part with the prior agreement of the other Party, at the sole discretion of such other Party, and
- (b) may, as security in favour of a bank or financial institution, assign its right to any moneys due, or to become due, under the Contract.

## 1.8 Care and Supply of Documents

The Specification and Drawings shall be in the custody and care of the Employer. Unless otherwise stated in the Contract, two copies of the Contract and of each subsequent Drawing shall be supplied to the Contractor, who may make or request further copies at the cost of the Contractor.



Each of the Contractor's Documents shall be in the custody and care of the Contractor, unless and until taken over by the Employer. Unless otherwise stated in the Contract, the Contractor shall supply to the Engineer six copies of each of the Contractor's Documents.

The Contractor shall keep, on the Site, a copy of the Contract, publications named in the Specification, the Contractor's Documents (if any), the Drawings and Variations and other communications given under the Contract. The Employer's Personnel shall have the right of access to all these documents at all reasonable times.

If a Party becomes aware of an error or defect in a document which was prepared for use in executing the Works, the Party shall promptly give notice to the other Party of such error or defect.

### 1.9 Delayed Drawings or Instructions

The Contractor shall give notice to the Engineer whenever the Works are likely to be delayed or disrupted if any necessary drawing or instruction is not issued to the Contractor within a particular time, which shall be reasonable. The notice shall include details of the necessary drawing or instruction, details of why and by when it should be issued, and the nature and amount of the delay or disruption likely to be suffered if it is late.

If the Contractor suffers delay and/or incurs Cost as a result of a failure of the Engineer to issue the notified drawing or instruction within a time which is reasonable and is specified in the notice with supporting details, the Contractor shall give a further notice to the Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

- (a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
- (b) payment of any such Cost plus profit, which shall be included in the Contract Price.

After receiving this further notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

However, if and to the extent that the Engineer's failure was caused by any error or delay by the Contractor, including an error in, or delay in the submission of, any of the Contractor's Documents, the Contractor shall not be entitled to such extension of time, Cost or profit.

### 1.10 Employer's Use of Contractor's Documents

As between the Parties, the Contractor shall retain the copyright and other intellectual property rights in the Contractor's Documents and other design documents made by (or on behalf of) the Contractor.

The Contractor shall be deemed (by signing the Contract) to give to the Employer a non-terminable transferable non-exclusive royalty-free licence to copy, use and communicate the Contractor's Documents, including making and using modifications of them. This licence shall:

- (a) apply throughout the actual or intended working life (whichever is longer) of the relevant parts of the Works,
- (b) entitle any person in proper possession of the relevant part of the Works to copy, use and communicate the Contractor's Documents for the purposes of completing, operating, maintaining, altering, adjusting, repairing and demolishing the Works, and
- (c) in the case of Contractor's Documents which are in the form of computer programs and other software, permit their use on any computer on the Site and other places as envisaged by the Contract, including replacements of any computers supplied by the Contractor.



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15

The Contractor's Documents and other design documents made by (or on behalf of) the Contractor shall not, without the Contractor's consent, be used, copied or communicated to a third party by (or on behalf of) the Employer for purposes other than those permitted under this Sub-Clause.

#### 1.11 Contractor's Use of Employer's Documents

As between the Parties, the Employer shall retain the copyright and other intellectual property rights in the Specification, the Drawings and other documents made by (or on behalf of) the Employer. The Contractor may, at his cost, copy, use, and obtain communication of these documents for the purposes of the Contract. They shall not, without the Employer's consent, be copied, used or communicated to a third party by the Contractor, except as necessary for the purposes of the Contract.

#### 1.12 Confidential Details

The Contractor's and the Employer's Personnel shall disclose all such confidential and other information as may be reasonably required in order to verify compliance with the Contract and allow its proper implementation.

Each of them shall treat the details of the Contract as private and confidential, except to the extent necessary to carry out their respective obligations under the Contract or to comply with applicable Laws. Each of them shall not publish or disclose any particulars of the Works prepared by the other Party without the previous agreement of the other Party. However, the Contractor shall be permitted to disclose any publicly available information, or information otherwise required to establish his qualifications to compete for other projects.

#### 1.13 Compliance with Laws

The Contractor shall, in performing the Contract, comply with applicable Laws. Unless otherwise stated in the Particular Conditions:

- (a) the Employer shall have obtained (or shall obtain) the planning, zoning, building permit or similar permission for the Permanent Works, and any other permissions described in the Specification as having been (or to be) obtained by the Employer; and the Employer shall indemnify and hold the Contractor harmless against and from the consequences of any failure to do so; and
- (b) the Contractor shall give all notices, pay all taxes, duties and fees, and obtain all permits, licences and approvals, as required by the Laws in relation to the execution and completion of the Works and the remedying of any defects; and the Contractor shall indemnify and hold the Employer harmless against and from the consequences of any failure to do so, unless the Contractor is impeded to accomplish these actions and shows evidence of its diligence.

#### 1.14 Joint and Several Liability

If the Contractor constitutes (under applicable Laws) a joint venture, consortium or other unincorporated grouping of two or more persons:

- (a) these persons shall be deemed to be jointly and severally liable to the Employer for the performance of the Contract;
- (b) these persons shall notify the Employer of their leader who shall have authority to bind the Contractor and each of these persons; and
- (c) the Contractor shall not alter its composition or legal status without the prior consent of the Employer.

#### 1.15 Inspections and Audit by the Bank



The Contractor shall permit the Bank and/or persons appointed by the Bank to inspect the Site and/or the Contractor's accounts and records relating to the performance of the Contract and to have such accounts and records audited by auditors appointed by the Bank if required by the Bank.

## 2 The Employer

### 2.1 Right of Access to the Site

The Employer shall give the Contractor right of access to, and possession of, all parts of the Site within the time (or times) stated in the Contract Data. The right and possession may not be exclusive to the Contractor. If, under the Contract, the Employer is required to give (to the Contractor) possession of any foundation, structure, plant or means of access, the Employer shall do so in the time and manner stated in the Specification. However, the Employer may withhold any such right or possession until the Performance Security has been received.

If no such time is stated in the Contract Data, the Employer shall give the Contractor right of access to, and possession of, the Site within such times as required to enable the Contractor to proceed without disruption in accordance with the programme submitted under Sub-Clause 8.3 [Programme].

If the Contractor suffers delay and/or incurs Cost as a result of a failure by the Employer to give any such right or possession within such time, the Contractor shall give notice to the Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

- (a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
- (b) payment of any such Cost plus profit, which shall be included in the Contract Price.

After receiving this notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

However, if and to the extent that the Employer's failure was caused by any error or delay by the Contractor, including an error in, or delay in the submission of, any of the Contractor's Documents, the Contractor shall not be entitled to such extension of time, Cost or profit.

### 2.2 Permits, Licences or Approvals

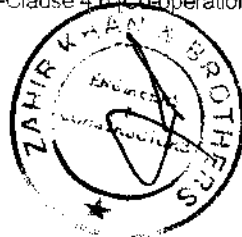
The Employer shall provide, at the request of the Contractor, such reasonable assistance as to allow the Contractor to obtain properly:

- (a) copies of the Laws of the Country which are relevant to the Contract but are not readily available, and
- (b) any permits, licences or approvals required by the Laws of the Country:
  - (i) which the Contractor is required to obtain under Sub-Clause 1.13 [Compliance with Laws],
  - (ii) for the delivery of Goods, including clearance through customs, and
  - (iii) for the export of Contractor's Equipment when it is removed from the Site.

### 2.3 Employer's Personnel

The Employer shall be responsible for ensuring that the Employer's Personnel and the Employer's other contractors on the Site:

co-operate with the Contractor's efforts under Sub-Clause 4.6 [Co-operation], and



- (b) take actions similar to those which the Contractor is required to take under sub-paragraphs (a), (b) and (c) of Sub-Clause 4.8 [Safety Procedures] and under Sub-Clause 4.18 [Protection of the Environment].

## 2.4 Employer's Financial Arrangements

The Employer shall submit, before the Commencement Date and thereafter within 28 days after receiving any request from the Contractor, reasonable evidence that financial arrangements have been made and are being maintained which will enable the Employer to pay the Contract Price punctually (as estimated at that time) in accordance with Clause 14 [Contract Price and Payment]. Before the Employer makes any material change to his financial arrangements, the Employer shall give notice to the Contractor with detailed particulars.

In addition, if the Bank has notified to the Borrower that the Bank has suspended disbursements under its loan, which finances in whole or in part the execution of the Works, the Employer shall give notice of such suspension to the Contractor with detailed particulars, including the date of such notification, with a copy to the Engineer, within 7 days of the Borrower having received the suspension notification from the Bank. If alternative funds will be available in appropriate currencies to the Employer to continue making payments to the Contractor beyond a date 60 days after the date of Bank notification of the suspension, the Employer shall provide reasonable evidence in his notice of the extent to which such funds will be available.

## 2.5 Employer's Claims

If the Employer considers himself to be entitled to any payment under any Clause of these Conditions or otherwise in connection with the Contract, and/or to any extension of the Defects Notification Period, the Employer or the Engineer shall give notice and particulars to the Contractor. However, notice is not required for payments due under Sub-Clause 4.19 [Electricity, Water and Gas], under Sub-Clause 4.20 [Employer's Equipment and Free-Issue Materials], or for other services requested by the Contractor.

The notice shall be given as soon as practicable and no longer than 28 days after the Employer became aware, or should have become aware, of the event or circumstances giving rise to the claim. A notice relating to any extension of the Defects Notification Period shall be given before the expiry of such period.

The particulars shall specify the Clause or other basis of the claim, and shall include substantiation of the amount and/or extension to which the Employer considers himself to be entitled in connection with the Contract. The Engineer shall then proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) the amount (if any) which the Employer is entitled to be paid by the Contractor, and/or (ii) the extension (if any) of the Defects Notification Period in accordance with Sub-Clause 11.3 [Extension of Defects Notification Period].

This amount may be included as a deduction in the Contract Price and Payment Certificates. The Employer shall only be entitled to set off against or make any deduction from an amount certified in a Payment Certificate, or to otherwise claim against the Contractor, in accordance with this Sub-Clause.

## 3 The Engineer

### 3.1 Engineer's Duties and Authority

The Employer shall appoint the Engineer who shall carry out the duties assigned to him in the Contract. The Engineer's staff shall include suitably qualified engineers and other professionals who are competent to carry out these duties.

The Engineer shall have no authority to amend the Contract.



The Engineer may exercise the authority attributable to the Engineer as specified in or necessarily to be implied from the Contract. If the Engineer is required to obtain the approval of the Employer before exercising a specified authority, the requirements shall be as stated in the Particular Conditions. The Employer shall promptly inform the Contractor of any change to the authority attributed to the Engineer.

However, whenever the Engineer exercises a specified authority for which the Employer's approval is required, then (for the purposes of the Contract) the Employer shall be deemed to have given approval.

Except as otherwise stated in these Conditions:

- (a) whenever carrying out duties or exercising authority, specified in or implied by the Contract, the Engineer shall be deemed to act for the Employer;
- (b) the Engineer has no authority to relieve either Party of any duties, obligations or responsibilities under the Contract;
- (c) any approval, check, certificate, consent, examination, inspection, instruction, notice, proposal, request, test, or similar act by the Engineer (including absence of disapproval) shall not relieve the Contractor from any responsibility he has under the Contract, including responsibility for errors, omissions, discrepancies and non-compliances; and
- (d) any act by the Engineer in response to a Contractor's request except as otherwise expressly specified shall be notified in writing to the Contractor within 28 days of receipt.

The following provisions shall apply:

The Engineer shall obtain the specific approval of the Employer before taking action under the following Sub-Clauses of these Conditions:

- (A) Sub-Clause 4.12: agreeing or determining an extension of time and/or additional cost.
- (B) Sub-Clause 13.1: instructing a Variation, except:
  - (i) in an emergency situation as determined by the Engineer, or
  - (ii) if such a Variation would increase the Accepted Contract Amount by less than the percentage specified in the Contract Data.
- (C) Sub-Clause 13.3: approving a proposal for Variation submitted by the Contractor in accordance with Sub Clause 13.1 or 13.2.
- (D) Sub-Clause 13.4: specifying the amount payable in each of the applicable currencies

Notwithstanding the obligation, as set out above, to obtain approval, if, in the opinion of the Engineer, an emergency occurs affecting the safety of life or of the Works or of adjoining property, he may, without relieving the Contractor of any of his duties and responsibility under the Contract, instruct the Contractor to execute all such work or to do all such things as may, in the opinion of the Engineer, be necessary to abate or reduce the risk. The Contractor shall forthwith comply, despite the absence of approval of the Employer, with any such instruction of the Engineer. The Engineer shall determine an addition to the Contract Price, in respect of such instruction, in accordance with Clause 13 and shall notify the Contractor accordingly, with a copy to the Employer.

### 3.2 Delegation by the Engineer

The Engineer may from time to time assign duties and delegate authority to assistants, and may also revoke such assignment or delegation. These assistants may include a resident engineer, and/or independent inspectors appointed to inspect and/or test items of Plant and/or Materials. The assignment, delegation or revocation shall be in writing and shall not take effect until copies have been received by both Parties. However, unless otherwise agreed by both Parties, the Engineer shall not delegate the authority to determine any matter in accordance with Sub-Clause 3.5 [Determinations].



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19

Assistants shall be suitably qualified persons, who are competent to carry out these duties and exercise this authority, and who are fluent in the language for communications defined in Sub-Clause 1.4 [Law and Language].

Each assistant, to whom duties have been assigned or authority has been delegated, shall only be authorised to issue instructions to the Contractor to the extent defined by the delegation. Any approval, check, certificate, consent, examination, inspection, instruction, notice, proposal, request, test, or similar act by an assistant, in accordance with the delegation, shall have the same effect as though the act had been an act of the Engineer. However:

- (a) any failure to disapprove any work, Plant or Materials shall not constitute approval, and shall therefore not prejudice the right of the Engineer to reject the work, Plant or Materials;
- (b) if the Contractor questions any determination or instruction of an assistant, the Contractor may refer the matter to the Engineer, who shall promptly confirm, reverse or vary the determination or instruction.

### 3.3 Instructions of the Engineer

The Engineer may issue to the Contractor (at any time) instructions and additional or modified Drawings which may be necessary for the execution of the Works and the remedying of any defects, all in accordance with the Contract. The Contractor shall only take instructions from the Engineer, or from an assistant to whom the appropriate authority has been delegated under this Clause. If an instruction constitutes a Variation, Clause 13 [Variations and Adjustments] shall apply.

The Contractor shall comply with the instructions given by the Engineer or delegated assistant, on any matter related to the Contract. Whenever practicable, their instructions shall be given in writing. If the Engineer or a delegated assistant:

- (a) gives an oral instruction,
- (b) receives a written confirmation of the instruction, from (or on behalf of) the Contractor, within two working days after giving the instruction, and
- (c) does not reply by issuing a written rejection and/or instruction within two working days after receiving the confirmation,

then the confirmation shall constitute the written instruction of the Engineer or delegated assistant (as the case may be).

### 3.4 Replacement of the Engineer

If the Employer intends to replace the Engineer, the Employer shall, not less than 21 days before the intended date of replacement, give notice to the Contractor of the name, address and relevant experience of the intended replacement Engineer. If the Contractor considers the intended replacement Engineer to be unsuitable, he has the right to raise objection against him by notice to the Employer, with supporting particulars, and the Employer shall give full and fair consideration to this objection.

### 3.5 Determinations

Whenever these Conditions provide that the Engineer shall proceed in accordance with this Sub-Clause 3.5 to agree or determine any matter, the Engineer shall consult with each Party in an endeavour to reach agreement. If agreement is not achieved, the Engineer shall make a fair determination in accordance with the Contract, taking due regard of all relevant circumstances.





The Engineer shall give notice to both Parties of each agreement or determination, with supporting particulars, within 28 days from the receipt of the corresponding claim or request except when otherwise specified. Each Party shall give effect to each agreement or determination unless and until revised under Clause 20 [Claims, Disputes and Arbitration].

## 4 The Contractor

### 4.1 Contractor's General Obligations

The Contractor shall design (to the extent specified in the Contract), execute and complete the Works in accordance with the Contract and with the Engineer's instructions, and shall remedy any defects in the Works.

The Contractor shall provide the Plant and Contractor's Documents specified in the Contract, and all Contractor's Personnel, Goods, consumables and other things and services, whether of a temporary or permanent nature, required in and for this design, execution, completion and remedying of defects.

All equipment, material, and services to be incorporated in or required for the Works shall have their origin in any eligible source country as defined by the Bank.

The Contractor shall be responsible for the adequacy, stability and safety of all Site operations and of all methods of construction. Except to the extent specified in the Contract, the Contractor (i) shall be responsible for all Contractor's Documents, Temporary Works, and such design of each item of Plant and Materials as is required for the item to be in accordance with the Contract, and (ii) shall not otherwise be responsible for the design or specification of the Permanent Works.

The Contractor shall, whenever required by the Engineer, submit details of the arrangements and methods which the Contractor proposes to adopt for the execution of the Works. No significant alteration to these arrangements and methods shall be made without this having previously been notified to the Engineer.

If the Contract specifies that the Contractor shall design any part of the Permanent Works, then unless otherwise stated in the Particular Conditions:

- (a) the Contractor shall submit to the Engineer the Contractor's Documents for this part in accordance with the procedures specified in the Contract;
- (b) these Contractor's Documents shall be in accordance with the Specification and Drawings, shall be written in the language for communications defined in Sub-Clause 1.4 [Law and Language], and shall include additional information required by the Engineer to add to the Drawings for co-ordination of each Party's designs;
- (c) the Contractor shall be responsible for this part and it shall, when the Works are completed, be fit for such purposes for which the part is intended as are specified in the Contract; and
- (d) prior to the commencement of the Tests on Completion, the Contractor shall submit to the Engineer the "as-built" documents and, if applicable, operation and maintenance manuals in accordance with the Specification and in sufficient detail for the Employer to operate, maintain, dismantle, reassemble, adjust and repair this part of the Works. Such part shall not be considered to be completed for the purposes of taking-over under Sub-Clause 10.1 [Taking Over of the Works and Sections] until these documents and manuals have been submitted to the Engineer.

### 4.2 Performance Security

The Contractor shall obtain (at his cost) a Performance Security for proper performance, in the amount stated in the Contract Data and denominated in the currency(ies) of the Contract or in a freely convertible currency acceptable to the Employer. If an amount is not stated in the Contract Data, this Sub-Clause shall not apply.



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21

The Contractor shall deliver the Performance Security to the Employer within 28 days after receiving the Letter of Acceptance, and shall send a copy to the Engineer. The Performance Security shall be issued by a reputable bank or financial institution selected by the Contractor, and shall be in the form annexed to the Particular Conditions, as stipulated by the Employer in the Contract Data, or in another form approved by the Employer.

The Contractor shall ensure that the Performance Security is valid and enforceable until the Contractor has executed and completed the Works and remedied any defects. If the terms of the Performance Security specify its expiry date, and the Contractor has not become entitled to receive the Performance Certificate by the date 28 days prior to the expiry date, the Contractor shall extend the validity of the Performance Security until the Works have been completed and any defects have been remedied.

The Employer shall not make a claim under the Performance Security, except for amounts to which the Employer is entitled under the Contract.

The Employer shall indemnify and hold the Contractor harmless against and from all damages, losses and expenses (including legal fees and expenses) resulting from a claim under the Performance Security to the extent to which the Employer was not entitled to make the claim.

The Employer shall return the Performance Security to the Contractor within 21 days after receiving a copy of the Performance Certificate.

Without limitation to the provisions of the rest of this Sub-Clause, whenever the Engineer determines an addition or a reduction to the Contract Price as a result of a change in cost and/or legislation, or as a result of a Variation, amounting to more than 25 percent of the portion of the Contract Price payable in a specific currency, the Contractor shall at the Engineer's request promptly increase, or may decrease, as the case may be, the value of the Performance Security in that currency by an equal percentage.

#### 4.3 Contractor's Representative

The Contractor shall appoint the Contractor's Representative and shall give him all authority necessary to act on the Contractor's behalf under the Contract.

Unless the Contractor's Representative is named in the Contract, the Contractor shall, prior to the Commencement Date, submit to the Engineer for consent the name and particulars of the person the Contractor proposes to appoint as Contractor's Representative. If consent is withheld or subsequently revoked in terms of Sub-Clause 6.9 [Contractor's Personnel], or if the appointed person fails to act as Contractor's Representative, the Contractor shall similarly submit the name and particulars of another suitable person for such appointment.

The Contractor shall not, without the prior consent of the Engineer, revoke the appointment of the Contractor's Representative or appoint a replacement.

The whole time of the Contractor's Representative shall be given to directing the Contractor's performance of the Contract. If the Contractor's Representative is to be temporarily absent from the Site during the execution of the Works, a suitable replacement person shall be appointed, subject to the Engineer's prior consent, and the Engineer shall be notified accordingly.

The Contractor's Representative shall, on behalf of the Contractor, receive instructions under Sub-Clause 3.3 [Instructions of the Engineer].

The Contractor's Representative may delegate any powers, functions and authority to any competent person, and may at any time revoke the delegation. Any delegation or revocation shall not take effect until the Engineer has received prior notice signed by the Contractor's Representative, naming the person and specifying the powers, functions and authority being delegated or revoked.

The Contractor's Representative shall be fluent in the language for communications defined in Sub-Clause 1.4 [Law and Language]. If the Contractor's Representative's delegates are not fluent in the said language, the Contractor shall make competent interpreters available during all working hours in a number deemed sufficient by the Engineer.



#### 4.4 Subcontractors

The Contractor shall not subcontract the whole of the Works.

The Contractor shall be responsible for the acts or defaults of any Subcontractor, his agents or employees, as if they were the acts or defaults of the Contractor. Unless otherwise stated in the Particular Conditions:

- (a) the Contractor shall not be required to obtain consent to suppliers solely of Materials, or to a subcontract for which the Subcontractor is named in the Contract;
- (b) the prior consent of the Engineer shall be obtained to other proposed Subcontractors;
- (c) the Contractor shall give the Engineer not less than 28 days' notice of the intended date of the commencement of each Subcontractor's work, and of the commencement of such work on the Site; and
- (d) each subcontract shall include provisions which would entitle the Employer to require the subcontract to be assigned to the Employer under Sub-Clause 4.5 [Assignment of Benefit of Subcontract] (if or when applicable) or in the event of termination under Sub-Clause 15.2 [Termination by Employer].

The Contractor shall ensure that the requirements imposed on the Contractor by Sub-Clause 1.12 [Confidential Details] apply equally to each Subcontractor.

Where practicable, the Contractor shall give fair and reasonable opportunity for contractors from the Country to be appointed as Subcontractors.

#### 4.5 Assignment of Benefit of Subcontract

If a Subcontractor's obligations extend beyond the expiry date of the relevant Defects Notification Period and the Engineer, prior to this date, instructs the Contractor to assign the benefit of such obligations to the Employer, then the Contractor shall do so. Unless otherwise stated in the assignment, the Contractor shall have no liability to the Employer for the work carried out by the Subcontractor after the assignment takes effect.

#### 4.6 Co-operation

The Contractor shall, as specified in the Contract or as instructed by the Engineer, allow appropriate opportunities for carrying out work to:

- (a) the Employer's Personnel,
- (b) any other contractors employed by the Employer, and
- (c) the personnel of any legally constituted public authorities,

who may be employed in the execution on or near the Site of any work not included in the Contract.

Any such instruction shall constitute a Variation if and to the extent that it causes the Contractor to suffer delays and/or to incur Unforeseeable Cost. Services for these personnel and other contractors may include the use of Contractor's Equipment, Temporary Works or access arrangements which are the responsibility of the Contractor.

If, under the Contract, the Employer is required to give to the Contractor possession of any foundation, structure, plant or means of access in accordance with Contractor's Documents, the Contractor shall submit such documents to the Engineer in the time and manner stated in the Specification.



#### 4.7 Setting Out

The Contractor shall set out the Works in relation to original points, lines and levels of reference specified in the Contract or notified by the Engineer. The Contractor shall be responsible for the correct positioning of all parts of the Works, and shall rectify any error in the positions, levels, dimensions or alignment of the Works.

The Employer shall be responsible for any errors in these specified or notified items of reference, but the Contractor shall use reasonable efforts to verify their accuracy before they are used.

If the Contractor suffers delay and/or incurs Cost from executing work which was necessitated by an error in these items of reference, and an experienced contractor could not reasonably have discovered such error and avoided this delay and/or Cost, the Contractor shall give notice to the Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

- (a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
- (b) payment of any such Cost plus profit, which shall be included in the Contract Price.

After receiving this notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) whether and (if so) to what extent the error could not reasonably have been discovered, and (ii) the matters described in sub-paragraphs (a) and (b) above related to this extent.

#### 4.8 Safety Procedures

The Contractor shall:

- (a) comply with all applicable safety regulations,
- (b) take care for the safety of all persons entitled to be on the Site,
- (c) use reasonable efforts to keep the Site and Works clear of unnecessary obstruction so as to avoid danger to these persons,
- (d) provide fencing, lighting, guarding and watching of the Works until completion and taking over under Clause 10 [Employer's Taking Over], and
- (e) provide any Temporary Works (including roadways, footways, guards and fences) which may be necessary, because of the execution of the Works, for the use and protection of the public and of owners and occupiers of adjacent land.

#### 4.9 Quality Assurance

The Contractor shall institute a quality assurance system to demonstrate compliance with the requirements of the Contract. The system shall be in accordance with the details stated in the Contract. The Engineer shall be entitled to audit any aspect of the system.

Details of all procedures and compliance documents shall be submitted to the Engineer for information before each design and execution stage is commenced. When any document of a technical nature is issued to the Engineer, evidence of the prior approval by the Contractor himself shall be apparent on the document itself.

Compliance with the quality assurance system shall not relieve the Contractor of any of his duties, obligations or responsibilities under the Contract.



#### 4.10 Site Data

The Employer shall have made available to the Contractor for his information, prior to the Base Date, all relevant data in the Employer's possession on sub-surface and hydrological conditions at the Site, including environmental aspects. The Employer shall similarly make available to the Contractor all such data which come into the Employer's possession after the Base Date. The Contractor shall be responsible for interpreting all such data.

To the extent which was practicable (taking account of cost and time), the Contractor shall be deemed to have obtained all necessary information as to risks, contingencies and other circumstances which may influence or affect the Tender or Works. To the same extent, the Contractor shall be deemed to have inspected and examined the Site, its surroundings, the above data and other available information, and to have been satisfied before submitting the Tender as to all relevant matters, including (without limitation):

- (a) the form and nature of the Site, including sub-surface conditions,
- (b) the hydrological and climatic conditions,
- (c) the extent and nature of the work and Goods necessary for the execution and completion of the Works and the remedying of any defects,
- (d) the Laws, procedures and labour practices of the Country, and
- (e) the Contractor's requirements for access, accommodation, facilities, personnel, power, transport, water and other services.

#### 4.11 Sufficiency of the Accepted Contract Amount

The Contractor shall be deemed to:

- (a) have satisfied himself as to the correctness and sufficiency of the Accepted Contract Amount, and
- (b) have based the Accepted Contract Amount on the data, interpretations, necessary information, inspections, examinations and satisfaction as to all relevant matters referred to in Sub-Clause 4.10 [Site Data].

Unless otherwise stated in the Contract, the Accepted Contract Amount covers all the Contractor's obligations under the Contract (including those under Provisional Sums, if any) and all things necessary for the proper execution and completion of the Works and the remedying of any defects.

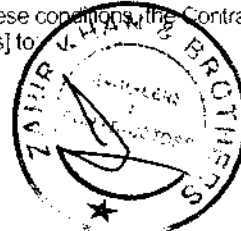
#### 4.12 Unforeseeable Physical Conditions

In this Sub-Clause, "physical conditions" means natural physical conditions and man-made and other physical obstructions and pollutants, which the Contractor encounters at the Site when executing the Works, including sub-surface and hydrological conditions but excluding climatic conditions.

If the Contractor encounters adverse physical conditions which he considers to have been Unforeseeable, the Contractor shall give notice to the Engineer as soon as practicable.

This notice shall describe the physical conditions, so that they can be inspected by the Engineer, and shall set out the reasons why the Contractor considers them to be Unforeseeable. The Contractor shall continue executing the Works, using such proper and reasonable measures as are appropriate for the physical conditions, and shall comply with any instructions which the Engineer may give. If an instruction constitutes a Variation, Clause 13 [Variations and Adjustments] shall apply.

If and to the extent that the Contractor encounters physical conditions which are Unforeseeable, gives such a notice, and suffers delay and/or incurs Cost due to these conditions, the Contractor shall be entitled subject to notice under Clause 20.1 [Contractor's Claims] to:



(a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and

(b) payment of any such Cost, which shall be included in the Contract Price.

Upon receiving such notice and inspecting and/or investigating these physical conditions, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) whether and (if so) to what extent these physical conditions were Unforeseeable, and (ii) the matters described in sub-paragraphs (a) and (b) above related to this extent.

However, before additional Cost is finally agreed or determined under sub-paragraph (ii), the Engineer may also review whether other physical conditions in similar parts of the Works (if any) were more favourable than could reasonably have been foreseen when the Contractor submitted the Tender. If and to the extent that these more favourable conditions were encountered, the Engineer may proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine the reductions in Cost which were due to these conditions, which may be included (as deductions) in the Contract Price and Payment Certificates. However, the net effect of all adjustments under sub-paragraph (b) and all these reductions, for all the physical conditions encountered in similar parts of the Works, shall not result in a net reduction in the Contract Price.

1. The Engineer shall take account of any evidence of the physical conditions foreseen by the Contractor when submitting the Tender, which shall be made available by the Contractor, but shall not be bound by the Contractor's interpretation of any such evidence.

#### 4.13 Rights of Way and Facilities

Unless otherwise specified in the Contract the Employer shall provide effective access to and possession of the Site including special and/or temporary rights-of-way which are necessary for the Works. The Contractor shall obtain, at his risk and cost, any additional rights of way or facilities outside the Site which he may require for the purposes of the Works.

#### 4.14 Avoidance of Interference

The Contractor shall not interfere unnecessarily or improperly with:

- (a) the convenience of the public, or  
(b) the access to and use and occupation of all roads and footpaths, irrespective of whether they are public or in the possession of the Employer or of others.

The Contractor shall indemnify and hold the Employer harmless against and from all damages, losses and expenses (including legal fees and expenses) resulting from any such unnecessary or improper interference.

#### 4.15 Access Route

The Contractor shall be deemed to have been satisfied as to the suitability and availability of access routes to the Site at Base Date. The Contractor shall use reasonable efforts to prevent any road or bridge from being damaged by the Contractor's traffic or by the Contractor's Personnel. These efforts shall include the proper use of appropriate vehicles and routes.

Except as otherwise stated in these Conditions:

- (a) the Contractor shall (as between the Parties) be responsible for any maintenance which may be required for his use of access routes;



- (b) the Contractor shall provide all necessary signs or directions along access routes, and shall obtain any permission which may be required from the relevant authorities for his use of routes, signs and directions;
- (c) the Employer shall not be responsible for any claims which may arise from the use or otherwise of any access route;
- (d) the Employer does not guarantee the suitability or availability of particular access routes; and
- (e) Costs due to non-suitability or non-availability, for the use required by the Contractor, of access routes shall be borne by the Contractor.

#### 4.16 Transport of Goods

Unless otherwise stated in the Particular Conditions:

- (a) the Contractor shall give the Engineer not less than 21 days' notice of the date on which any Plant or a major item of other Goods will be delivered to the Site;
- (b) the Contractor shall be responsible for packing, loading, transporting, receiving, unloading, storing and protecting all Goods and other things required for the Works; and
- (c) the Contractor shall indemnify and hold the Employer harmless against and from all damages, losses and expenses (including legal fees and expenses) resulting from the transport of Goods, and shall negotiate and pay all claims arising from their transport.

#### 4.17 Contractor's Equipment

The Contractor shall be responsible for all Contractor's Equipment. When brought on to the Site, Contractor's Equipment shall be deemed to be exclusively intended for the execution of the Works. The Contractor shall not remove from the Site any major items of Contractor's Equipment without the consent of the Engineer. However, consent shall not be required for vehicles transporting Goods or Contractor's Personnel off Site.

#### 4.18 Protection of the Environment

The Contractor shall take all reasonable steps to protect the environment (both on and off the Site) and to limit damage and nuisance to people and property resulting from pollution, noise and other results of his operations.

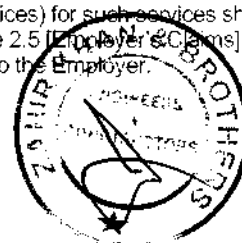
The Contractor shall ensure that emissions, surface discharges and effluent from the Contractor's activities shall not exceed the values stated in the Specification or prescribed by applicable Laws.

#### 4.19 Electricity, Water and Gas

The Contractor shall, except as stated below, be responsible for the provision of all power, water and other services he may require for his construction activities and to the extent defined in the Specifications, for the tests.

The Contractor shall be entitled to use for the purposes of the Works such supplies of electricity, water, gas and other services as may be available on the Site and of which details and prices are given in the Specification. The Contractor shall, at his risk and cost, provide any apparatus necessary for his use of these services and for measuring the quantities consumed.

The quantities consumed and the amounts due (at these prices) for such services shall be agreed or determined by the Engineer in accordance with Sub-Clause 2.5 [Employer's Claims] and Sub-Clause 3.5 [Determinations]. The Contractor shall pay these amounts to the Employer.



#### 4.20 Employer's Equipment and Free-Issue Materials

The Employer shall make the Employer's Equipment (if any) available for the use of the Contractor in the execution of the Works in accordance with the details, arrangements and prices stated in the Specification. Unless otherwise stated in the Specification:

- (a) the Employer shall be responsible for the Employer's Equipment, except that
- (b) the Contractor shall be responsible for each item of Employer's Equipment whilst any of the Contractor's Personnel is operating it, driving it, directing it or in possession or control of it.

The appropriate quantities and the amounts due (at such stated prices) for the use of Employer's Equipment shall be agreed or determined by the Engineer in accordance with Sub-Clause 2.5 [Employer's Claims] and Sub-Clause 3.5 [Determinations]. The Contractor shall pay these amounts to the Employer.

The Employer shall supply, free of charge, the "free-issue materials" (if any) in accordance with the details stated in the Specification. The Employer shall, at his risk and cost, provide these materials at the time and place specified in the Contract. The Contractor shall then visually inspect them, and shall promptly give notice to the Engineer of any shortage, defect or default in these materials. Unless otherwise agreed by both Parties, the Employer shall immediately rectify the notified shortage, defect or default.

After this visual inspection, the free-issue materials shall come under the care, custody and control of the Contractor. The Contractor's obligations of inspection, care, custody and control shall not relieve the Employer of liability for any shortage, defect or default not apparent from a visual inspection.

#### 4.21 Progress Reports

Unless otherwise stated in the Particular Conditions, monthly progress reports shall be prepared by the Contractor and submitted to the Engineer in six copies. The first report shall cover the period up to the end of the first calendar month following the Commencement Date. Reports shall be submitted monthly thereafter, each within 7 days after the last day of the period to which it relates.

Reporting shall continue until the Contractor has completed all work which is known to be outstanding at the completion date stated in the Taking-Over Certificate for the Works.

Each report shall include:

- (a) charts and detailed descriptions of progress, including each stage of design (if any), Contractor's Documents, procurement, manufacture, delivery to Site, construction, erection and testing; and including these stages for work by each nominated Subcontractor (as defined in Clause 5 [Nominated Subcontractors]),
- (b) photographs showing the status of manufacture and of progress on the Site;
- (c) for the manufacture of each main item of Plant and Materials, the name of the manufacturer, manufacture location, percentage progress, and the actual or expected dates of:
  - (i) commencement of manufacture,
  - (ii) Contractor's inspections,
  - (iii) tests, and
  - (iv) shipment and arrival at the Site;
- (d) the details described in Sub-Clause 6.10 [Records of Contractor's Personnel and Equipment];
- (e) copies of quality assurance documents, test results and certificates of Materials;





- (f) list of notices given under Sub-Clause 2.5 [Employer's Claims] and notices given under Sub-Clause 20.1 [Contractor's Claims];
- (g) safety statistics, including details of any hazardous incidents and activities relating to environmental aspects and public relations; and
- (h) comparisons of actual and planned progress, with details of any events or circumstances which may jeopardise the completion in accordance with the Contract, and the measures being (or to be) adopted to overcome delays.

#### 4.22 Security of the Site

Unless otherwise stated in the Particular Conditions:

- (a) the Contractor shall be responsible for keeping unauthorised persons off the Site, and
- (b) authorised persons shall be limited to the Contractor's Personnel and the Employer's Personnel; and to any other personnel notified to the Contractor, by the Employer or the Engineer, as authorised personnel of the Employer's other contractors on the Site.

#### 4.23 Contractor's Operations on Site

The Contractor shall confine his operations to the Site, and to any additional areas which may be obtained by the Contractor and agreed by the Engineer as additional working areas. The Contractor shall take all necessary precautions to keep Contractor's Equipment and Contractor's Personnel within the Site and these additional areas, and to keep them off adjacent land.

During the execution of the Works, the Contractor shall keep the Site free from all unnecessary obstruction, and shall store or dispose of any Contractor's Equipment or surplus materials. The Contractor shall clear away and remove from the Site any wreckage, rubbish and Temporary Works which are no longer required.

Upon the issue of a Taking-Over Certificate, the Contractor shall clear away and remove, from that part of the Site and Works to which the Taking-Over Certificate refers, all Contractor's Equipment, surplus material, wreckage, rubbish and Temporary Works. The Contractor shall leave that part of the Site and the Works in a clean and safe condition. However, the Contractor may retain on Site, during the Defects Notification Period, such Goods as are required for the Contractor to fulfil obligations under the Contract.

#### 4.24 Fossils

All fossils, coins, articles of value or antiquity, and structures and other remains or items of geological or archaeological interest found on the Site shall be placed under the care and authority of the Employer. The Contractor shall take reasonable precautions to prevent Contractor's Personnel or other persons from removing or damaging any of these findings.

The Contractor shall, upon discovery of any such finding, promptly give notice to the Engineer, who shall issue instructions for dealing with it. If the Contractor suffers delay and/or incurs Cost from complying with the instructions, the Contractor shall give a further notice to the Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

- (a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
- (b) payment of any such Cost, which shall be included in the Contract Price.

After receiving this further notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to name or determine these matters.



## 5 Nominated Subcontractors

### 5.1 Definition of "nominated Subcontractor"

In the Contract, "nominated Subcontractor" means a Subcontractor:

- (a) who is stated in the Contract as being a nominated Subcontractor, or
- (b) whom the Engineer, under Clause 13 [Variations and Adjustments], instructs the Contractor to employ as a Subcontractor subject to Sub-Clause 5.2 [Objection to Notification].

### 5.2 Objection to Nomination

The Contractor shall not be under any obligation to employ a nominated Subcontractor against whom the Contractor raises reasonable objection by notice to the Engineer as soon as practicable, with supporting particulars. An objection shall be deemed reasonable if it arises from (among other things) any of the following matters, unless the Employer agrees in writing to indemnify the Contractor against and from the consequences of the matter:

- (a) there are reasons to believe that the Subcontractor does not have sufficient competence, resources or financial strength;
- (b) the nominated Subcontractor does not accept to indemnify the Contractor against and from any negligence or misuse of Goods by the nominated Subcontractor, his agents and employees; or
- (c) the nominated Subcontractor does not accept to enter into a subcontract which specifies that, for the subcontracted work (including design, if any), the nominated Subcontractor shall:
  - (i) undertake to the Contractor such obligations and liabilities as will enable the Contractor to discharge his obligations and liabilities under the Contract,
  - (ii) indemnify the Contractor against and from all obligations and liabilities arising under or in connection with the Contract and from the consequences of any failure by the Subcontractor to perform these obligations or to fulfil these liabilities, and
  - (iii) be paid only if and when the Contractor has received from the Employer payments for sums due under the Subcontract referred to under Sub-Clause 5.3 [Payment to nominated Subcontractors].

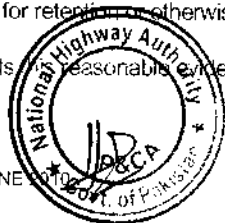
### 5.3 Payments to nominated Subcontractors

The Contractor shall pay to the nominated Subcontractor the amounts shown on the nominated Subcontractor's invoices approved by the Contractor which the Engineer certifies to be due in accordance with the subcontract. These amounts plus other charges shall be included in the Contract Price in accordance with sub-paragraph (b) of Sub-Clause 13.5 [Provisional Sums], except as stated in Sub-Clause 5.4 [Evidence of Payments].

### 5.4 Evidence of Payments

Before issuing a Payment Certificate which includes an amount payable to a nominated Subcontractor, the Engineer may request the Contractor to supply reasonable evidence that the nominated Subcontractor has received all amounts due in accordance with previous Payment Certificates, less applicable deductions for retention or otherwise. Unless the Contractor:

- (a) submits reasonable evidence to the Engineer, or



- (b) (i) satisfies the Engineer in writing that the Contractor is reasonably entitled to withhold or refuse to pay these amounts, and
- (ii) submits to the Engineer reasonable evidence that the nominated Subcontractor has been notified of the Contractor's entitlement,

then the Employer may (at his sole discretion) pay, direct to the nominated Subcontractor, part or all of such amounts previously certified (less applicable deductions) as are due to the nominated Subcontractor and for which the Contractor has failed to submit the evidence described in sub-paragraphs (a) or (b) above. The Contractor shall then repay, to the Employer, the amount which the nominated Subcontractor was directly paid by the Employer.

## 6 Staff and Labour

### 6.1 Engagement of Staff and Labour

Except as otherwise stated in the Specification, the Contractor shall make arrangements for the engagement of all staff and labour, local or otherwise, and for their payment, feeding, transport and, when appropriate, housing.

The Contractor is encouraged, to the extent practicable and reasonable, to employ staff and labour with appropriate qualifications and experience from sources within the Country.

### 6.2 Rates of Wages and Conditions of Labour

The Contractor shall pay rates of wages, and observe conditions of labour, which are not lower than those established for the trade or industry where the work is carried out. If no established rates or conditions are applicable, the Contractor shall pay rates of wages and observe conditions which are not lower than the general level of wages and conditions observed locally by employers whose trade or industry is similar to that of the Contractor.

The Contractor shall inform the Contractor's Personnel about their liability to pay personal income taxes in the Country in respect of such of their salaries, wages, allowances and any benefits as are subject to tax under the Laws of the Country for the time being in force, and the Contractor shall perform such duties in regard to such deductions thereof as may be imposed on him by such Laws.

### 6.3 Persons in the Service of Employer

The Contractor shall not recruit, or attempt to recruit, staff and labour from amongst the Employer's Personnel.

### 6.4 Labour Laws

The Contractor shall comply with all the relevant labour Laws applicable to the Contractor's Personnel, including Laws relating to their employment, health, safety, welfare, immigration and emigration, and shall allow them all their legal rights.

The Contractor shall require his employees to obey all applicable Laws, including those concerning safety at work.

### 6.5 Working Hours

No work shall be carried out on the Site on locally recognised days of rest, or outside the normal working hours stated in the Contract Data, unless:



- (a) otherwise stated in the Contract,
- (b) the Engineer gives consent, or
- (c) the work is unavoidable, or necessary for the protection of life or property or for the safety of the Works, in which case the Contractor shall immediately advise the Engineer.

## 6.6 Facilities for Staff and Labour

Except as otherwise stated in the Specification, the Contractor shall provide and maintain all necessary accommodation and welfare facilities for the Contractor's Personnel. The Contractor shall also provide facilities for the Employer's Personnel as stated in the Specification.

The Contractor shall not permit any of the Contractor's Personnel to maintain any temporary or permanent living quarters within the structures forming part of the Permanent Works.

## 6.7 Health and Safety

The Contractor shall at all times take all reasonable precautions to maintain the health and safety of the Contractor's Personnel. In collaboration with local health authorities, the Contractor shall ensure that medical staff, first aid facilities, sick bay and ambulance service are available at all times at the Site and at any accommodation for Contractor's and Employer's Personnel, and that suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics.

The Contractor shall appoint an accident prevention officer at the Site, responsible for maintaining safety and protection against accidents. This person shall be qualified for this responsibility, and shall have the authority to issue instructions and take protective measures to prevent accidents. Throughout the execution of the Works, the Contractor shall provide whatever is required by this person to exercise this responsibility and authority.

The Contractor shall send, to the Engineer, details of any accident as soon as practicable after its occurrence. The Contractor shall maintain records and make reports concerning health, safety and welfare of persons, and damage to property, as the Engineer may reasonably require.

HIV-AIDS Prevention. The Contractor shall conduct an HIV-AIDS awareness programme via an approved service provider, and shall undertake such other measures as are specified in this Contract to reduce the risk of the transfer of the HIV virus between and among the Contractor's Personnel and the local community, to promote early diagnosis and to assist affected individuals.

The Contractor shall throughout the contract (including the Defects Notification Period): (i) conduct Information, Education and Communication (IEC) campaigns, at least every other month, addressed to all the Site staff and labour (including all the Contractor's employees, all Subcontractors and any other Contractor's or Employer's personnel employees, and all truck drivers and crew making deliveries to Site for construction activities) and to the immediate local communities, concerning the risks, dangers and impact, and appropriate avoidance behaviour with respect to, of Sexually Transmitted Diseases (STD) - or Sexually Transmitted Infections (STI) in general and HIV/AIDS in particular; (ii) provide male or female condoms for all Site staff and labour as appropriate; and (iii) provide for STI and HIV/AIDS screening, diagnosis, counselling and referral to a dedicated national STI and HIV/AIDS programme, (unless otherwise agreed) of all Site staff and labour.

The Contractor shall include in the programme to be submitted for the execution of the Works under Sub-Clause 8.3 an alleviation programme for Site staff and labour and their families in respect of Sexually Transmitted Infections (STI) and Sexually Transmitted Diseases (STD) including HIV/AIDS. The STI, STD and HIV/AIDS alleviation programme shall indicate when, how and at what cost the Contractor plans to satisfy the requirements of this Sub-Clause and the related specification. For each component, the programme shall detail the resources to be provided or utilised and any related sub-contracting proposed. The programme shall also include provision of a detailed cost estimate with supporting documentation. Payment to the Contractor for preparation and implementation of this programme shall not exceed the Provisional Sum dedicated for this purpose.



## 6.8 Contractor's Superintendence

Throughout the execution of the Works, and as long thereafter as is necessary to fulfil the Contractor's obligations, the Contractor shall provide all necessary superintendence to plan, arrange, direct, manage, inspect and test the work.

Superintendence shall be given by a sufficient number of persons having adequate knowledge of the language for communications (defined in Sub-Clause 1.4 [Law and Language]) and of the operations to be carried out (including the methods and techniques required, the hazards likely to be encountered and methods of preventing accidents), for the satisfactory and safe execution of the Works.

## 6.9 Contractor's Personnel

The Contractor's Personnel shall be appropriately qualified, skilled and experienced in their respective trades or occupations. The Engineer may require the Contractor to remove (or cause to be removed) any person employed on the Site or Works, including the Contractor's Representative if applicable, who:

- (a) persists in any misconduct or lack of care,
- (b) carries out duties incompetently or negligently,
- (c) fails to conform with any provisions of the Contract, or
- (d) persists in any conduct which is prejudicial to safety, health, or the protection of the environment.

If appropriate, the Contractor shall then appoint (or cause to be appointed) a suitable replacement person.

## 6.10 Records of Contractor's Personnel and Equipment

The Contractor shall submit, to the Engineer, details showing the number of each class of Contractor's Personnel and of each type of Contractor's Equipment on the Site. Details shall be submitted each calendar month, in a form approved by the Engineer, until the Contractor has completed all work which is known to be outstanding at the completion date stated in the Taking-Over Certificate for the Works.

## 6.11 Disorderly Conduct

The Contractor shall at all times take all reasonable precautions to prevent any unlawful, riotous or disorderly conduct by or amongst the Contractor's Personnel, and to preserve peace and protection of persons and property on and near the Site.

## 6.12 Foreign Personnel

The Contractor may bring in to the Country any foreign personnel who are necessary for the execution of the Works to the extent allowed by the applicable Laws. The Contractor shall ensure that these personnel are provided with the required residence visas and work permits. The Employer will, if requested by the Contractor, use his best endeavours in a timely and expeditious manner to assist the Contractor in obtaining any local, state, national or government permission required for bringing in the Contractor's personnel.

The Contractor shall be responsible for the return of these personnel to the place where they were recruited or to their domicile. In the event of the death in the Country of any of these personnel or members of their families, the Contractor shall similarly be responsible for making the appropriate arrangements for their return or burial.



### 6.13 Supply of Foodstuffs

The Contractor shall arrange for the provision of a sufficient supply of suitable food as may be stated in the Specification at reasonable prices for the Contractor's Personnel for the purposes of or in connection with the Contract.

### 6.14 Supply of Water

The Contractor shall, having regard to local conditions, provide on the Site an adequate supply of drinking and other water for the use of the Contractor's Personnel.

### 6.15 Measures against Insect and Pest Nuisance

The Contractor shall at all times take the necessary precautions to protect the Contractor's Personnel employed on the Site from insect and pest nuisance, and to reduce the danger to their health. The Contractor shall comply with all the regulations of the local health authorities, including use of appropriate insecticide.

### 6.16 Alcoholic Liquor or Drugs

The Contractor shall not, otherwise than in accordance with the Laws of the Country, import, sell, give, barter or otherwise dispose of any alcoholic liquor or drugs, or permit or allow importation, sale, gift, barter or disposal thereof by Contractor's Personnel.

### 6.17 Arms and Ammunition

The Contractor shall not give, barter, or otherwise dispose of, to any person, any arms or ammunition of any kind, or allow Contractor's Personnel to do so.

### 6.18 Festivals and Religious Customs

The Contractor shall respect the Country's recognized festivals, days of rest and religious or other customs.

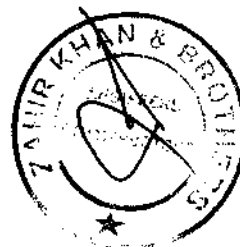
### 6.19 Funeral Arrangements

The Contractor shall be responsible, to the extent required by local regulations, for making any funeral arrangements for any of his local employees who may die while engaged upon the Works.

### 6.20 Forced Labour

The Contractor shall not employ forced labour, which consists of any work or service, not voluntarily performed, that is exacted from an individual under threat of force or penalty, and includes any kind of involuntary or compulsory labour, such as indentured labour, bonded labour or similar labour-contracting arrangements.

### 6.21 Child Labour



The Contractor shall not employ children in a manner that is economically exploitative, or is likely to be hazardous, or to interfere with, the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development. Where the relevant labour laws of the Country have provisions for employment of minors, the Contractor shall follow those laws applicable to the Contractor. Children below the age of 18 years shall not be employed in dangerous work.

## 6.22 Employment Records of Workers

The Contractor shall keep complete and accurate records of the employment of labour at the Site. The records shall include the names, ages, genders, hours worked and wages paid to all workers. These records shall be summarized on a monthly basis and submitted to the Engineer. These records shall be included in the details to be submitted by the Contractor under Sub-Clause 6.10 [Records of Contractor's Personnel and Equipment].

## 6.23 Workers' Organisations

In countries where the relevant labour laws recognise workers' rights to form and to join workers' organisations of their choosing without interference and to bargain collectively, the Contractor shall comply with such laws. Where the relevant labour laws substantially restrict workers' organisations, the Contractor shall enable alternative means for the Contractor's Personnel to express their grievances and protect their rights regarding working conditions and terms of employment. In either case described above, and where the relevant labour laws are silent, the Contractor shall not discourage the Contractor's Personnel from forming or joining workers' organisations of their choosing or from bargaining collectively, and shall not discriminate or retaliate against the Contractor's Personnel who participate, or seek to participate, in such organisations and bargain collectively. The Contractor shall engage with such workers' representatives. Workers' organisations are expected to fairly represent the workers in the workforce.

## 6.24 Non-Discrimination and Equal Opportunity

The Contractor shall not make employment decisions on the basis of personal characteristics unrelated to inherent job requirements. The Contractor shall base the employment relationship on the principle of equal opportunity and fair treatment, and shall not discriminate with respect to aspects of the employment relationship, including recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, promotion, termination of employment or retirement, and discipline. In countries where the relevant labour laws provide for non-discrimination in employment, the Contractor shall comply with such laws. When the relevant labour laws are silent on non-discrimination in employment, the Contractor shall meet this Sub-Clause's requirements. Special measures of protection or assistance to remedy past discrimination or selection for a particular job based on the inherent requirements of the job shall not be deemed discrimination.

# 7 Plant, Materials and Workmanship

## 7.1 Manner of Execution

The Contractor shall carry out the manufacture of Plant, the production and manufacture of Materials, and all other execution of the Works:

- (a) in the manner (if any) specified in the Contract,
- (b) in a proper workmanlike and careful manner, in accordance with recognised good practice, and
- (c) with properly equipped facilities and non-hazardous Materials, except as otherwise specified in the Contract.



## 7.2 Samples

The Contractor shall submit the following samples of Materials, and relevant information, to the Engineer for consent prior to using the Materials in or for the Works:

- (a) manufacturer's standard samples of Materials and samples specified in the Contract, all at the Contractor's cost, and
- (b) additional samples instructed by the Engineer as a Variation.

Each sample shall be labelled as to origin and intended use in the Works.

## 7.3 Inspection

The Employer's Personnel shall at all reasonable times:

- (a) have full access to all parts of the Site and to all places from which natural Materials are being obtained, and
- (b) during production, manufacture and construction (at the Site and elsewhere), be entitled to examine, inspect, measure and test the materials and workmanship, and to check the progress of manufacture of Plant and production and manufacture of Materials.

The Contractor shall give the Employer's Personnel full opportunity to carry out these activities, including providing access, facilities, permissions and safety equipment. No such activity shall relieve the Contractor from any obligation or responsibility.

The Contractor shall give notice to the Engineer whenever any work is ready and before it is covered up, put out of sight, or packaged for storage or transport. The Engineer shall then either carry out the examination, inspection, measurement or testing without unreasonable delay, or promptly give notice to the Contractor that the Engineer does not require to do so. If the Contractor fails to give the notice, he shall, if and when required by the Engineer, uncover the work and thereafter reinstate and make good, all at the Contractor's cost.

## 7.4 Testing

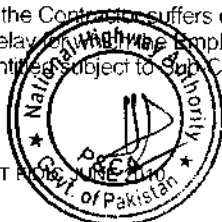
This Sub-Clause shall apply to all tests specified in the Contract, other than the Tests after Completion (if any).

Except as otherwise specified in the Contract, the Contractor shall provide all apparatus, assistance, documents and other information, electricity, equipment, fuel, consumables, instruments, labour, materials, and suitably qualified and experienced staff, as are necessary to carry out the specified tests efficiently. The Contractor shall agree, with the Engineer, the time and place for the specified testing of any Plant, Materials and other parts of the Works.

The Engineer may, under Clause 13 [Variations and Adjustments], vary the location or details of specified tests, or instruct the Contractor to carry out additional tests. If these varied or additional tests show that the tested Plant, Materials or workmanship is not in accordance with the Contract, the cost of carrying out this Variation shall be borne by the Contractor, notwithstanding other provisions of the Contract.

The Engineer shall give the Contractor not less than 24 hours' notice of the Engineer's intention to attend the tests. If the Engineer does not attend at the time and place agreed, the Contractor may proceed with the tests, unless otherwise instructed by the Engineer, and the tests shall then be deemed to have been made in the Engineer's presence.

If the Contractor suffers delay and/or incurs Cost from complying with these instructions or as a result of a delay of which the Employer is responsible, the Contractor shall give notice to the Engineer and shall be entitled to be subject to Sub-Clause 20.1 [Contractor's Claims] to





- (a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
- (b) payment of any such Cost plus profit, which shall be included in the Contract Price.

After receiving this notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

The Contractor shall promptly forward to the Engineer duly certified reports of the tests. When the specified tests have been passed, the Engineer shall endorse the Contractor's test certificate, or issue a certificate to him, to that effect. If the Engineer has not attended the tests, he shall be deemed to have accepted the readings as accurate.

## 7.5 Rejection

If, as a result of an examination, inspection, measurement or testing, any Plant, Materials or workmanship is found to be defective or otherwise not in accordance with the Contract, the Engineer may reject the Plant, Materials or workmanship by giving notice to the Contractor, with reasons. The Contractor shall then promptly make good the defect and ensure that the rejected item complies with the Contract.

If the Engineer requires this Plant, Materials or workmanship to be retested, the tests shall be repeated under the same terms and conditions. If the rejection and retesting cause the Employer to incur additional costs, the Contractor shall subject to Sub-Clause 2.5 [Employer's Claims] pay these costs to the Employer.

## 7.6 Remedial Work

Notwithstanding any previous test or certification, the Engineer may instruct the Contractor to:

- (a) remove from the Site and replace any Plant or Materials which is not in accordance with the Contract,
- (b) remove and re-execute any other work which is not in accordance with the Contract, and
- (c) execute any work which is urgently required for the safety of the Works, whether because of an accident, unforeseeable event or otherwise.

The Contractor shall comply with the instruction within a reasonable time, which shall be the time (if any) specified in the instruction, or immediately if urgency is specified under sub-paragraph (c).

If the Contractor fails to comply with the instruction, the Employer shall be entitled to employ and pay other persons to carry out the work. Except to the extent that the Contractor would have been entitled to payment for the work, the Contractor shall subject to Sub-Clause 2.5 [Employer's Claims] pay to the Employer all costs arising from this failure.

## 7.7 Ownership of Plant and Materials

Except as otherwise provided in the Contract, each item of Plant and Materials shall, to the extent consistent with the Laws of the Country, become the property of the Employer at whichever is the earlier of the following times, free from liens and other encumbrances:

- (a) when it is incorporated in the Works;
- (b) when the Contractor is paid the corresponding value of the Plant and Materials under Sub-Clause 8.10 [Payment for Plant and Materials in Event of Suspension].

## 7.8 Royalties



Unless otherwise stated in the Specification, the Contractor shall pay all royalties, rents and other payments for:

- (a) natural Materials obtained from outside the Site, and
- (b) the disposal of material from demolitions and excavations and of other surplus material (whether natural or man-made), except to the extent that disposal areas within the Site are specified in the Contract.

## 8 Commencement, Delays and Suspension

### 8.1 Commencement of Works

Except as otherwise specified in the Particular Conditions of Contract, the Commencement Date shall be the date at which the following precedent conditions have all been fulfilled and the Engineer's notification recording the agreement of both Parties on such fulfilment and instructing to commence the Work is received by the Contractor:

- (a) signature of the Contract Agreement by both Parties, and if required, approval of the Contract by relevant authorities of the Country;
- (b) delivery to the Contractor of reasonable evidence of the Employer's financial arrangements (under Sub-Clause 2.4 [Employer's Financial Arrangements]);
- (c) except if otherwise specified in the Contract Data, effective access to and possession of the Site given to the Contractor together with such permission(s) under (a) of Sub-Clause 1.13 [Compliance with Laws] as required for the commencement of the Works;
- (d) receipt by the Contractor of the Advance Payment under Sub-Clause 14.2 [Advance Payment] provided that the corresponding bank guarantee has been delivered by the Contractor.

If the said Engineer's instruction is not received by the Contractor within 180 days from his receipt of the Letter of Acceptance, the Contractor shall be entitled to terminate the Contract under Sub-Clause 16.2 [Termination by Contractor].

The Contractor shall commence the execution of the Works as soon as is reasonably practicable after the Commencement Date, and shall then proceed with the Works with due expedition and without delay.

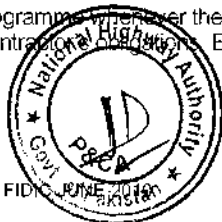
### 8.2 Time for Completion

The Contractor shall complete the whole of the Works, and each Section (if any), within the Time for Completion for the Works or Section (as the case may be), including:

- (a) achieving the passing of the Tests on Completion, and
- (b) completing all work which is stated in the Contract as being required for the Works or Section to be considered to be completed for the purposes of taking-over under Sub-Clause 10.1 [Taking Over of the Works and Sections].

### 8.3 Programme

The Contractor shall submit a detailed time programme to the Engineer within 28 days after receiving the notice under Sub-Clause 8.1 [Commencement of Works]. The Contractor shall also submit a revised programme whenever the previous programme is inconsistent with actual progress or with the Contract Data. Each programme shall include:



- (a) the order in which the Contractor intends to carry out the Works, including the anticipated timing of each stage of design (if any), Contractor's Documents, procurement, manufacture of Plant, delivery to Site, construction, erection and testing,
- (b) each of these stages for work by each nominated Subcontractor (as defined in Clause 5 [Nominated Subcontractors]),
- (c) the sequence and timing of inspections and tests specified in the Contract, and
- (d) a supporting report which includes:
  - (i) a general description of the methods which the Contractor intends to adopt, and of the major stages, in the execution of the Works, and
  - (ii) details showing the Contractor's reasonable estimate of the number of each class of Contractor's Personnel and of each type of Contractor's Equipment, required on the Site for each major stage.

Unless the Engineer, within 21 days after receiving a programme, gives notice to the Contractor stating the extent to which it does not comply with the Contract, the Contractor shall proceed in accordance with the programme, subject to his other obligations under the Contract. The Employer's Personnel shall be entitled to rely upon the programme when planning their activities.

The Contractor shall promptly give notice to the Engineer of specific probable future events or circumstances which may adversely affect the work, increase the Contract Price or delay the execution of the Works. The Engineer may require the Contractor to submit an estimate of the anticipated effect of the future event or circumstances, and/or a proposal under Sub-Clause 13.3 [Variation Procedure].

If, at any time, the Engineer gives notice to the Contractor that a programme fails (to the extent stated) to comply with the Contract or to be consistent with actual progress and the Contractor's stated intentions, the Contractor shall submit a revised programme to the Engineer in accordance with this Sub-Clause.

#### 8.4 Extension of Time for Completion

The Contractor shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to an extension of the Time for Completion if and to the extent that completion for the purposes of Sub-Clause 10.1 [Taking Over of the Works and Sections] is or will be delayed by any of the following causes:

- (a) a Variation (unless an adjustment to the Time for Completion has been agreed under Sub-Clause 13.3 [Variation Procedure]) or other substantial change in the quantity of an item of work included in the Contract,
- (b) a cause of delay giving an entitlement to extension of time under a Sub-Clause of these Conditions,
- (c) exceptionally adverse climatic conditions,
- (d) Unforeseeable shortages in the availability of personnel or Goods caused by epidemic or governmental actions, or
- (e) any delay, impediment or prevention caused by or attributable to the Employer, the Employer's Personnel, or the Employer's other contractors.

If the Contractor considers himself to be entitled to an extension of the Time for Completion, the Contractor shall give notice to the Engineer in accordance with Sub-Clause 20.1 [Contractor's Claims]. When determining each extension of time under Sub-Clause 20.1, the Engineer shall review previous determinations and may increase, but shall not decrease, the total extension of time.

#### 8.5 Delays Caused by Authorities



If the following conditions apply, namely:

- (a) the Contractor has diligently followed the procedures laid down by the relevant legally constituted public authorities in the Country,
- (b) these authorities delay or disrupt the Contractor's work, and
- (c) the delay or disruption was Unforeseeable,

then this delay or disruption will be considered as a cause of delay under sub-paragraph (b) of Sub-Clause 8.4 [Extension of Time for Completion].

## 8.6 Rate of Progress

If, at any time:

- (a) actual progress is too slow to complete within the Time for Completion, and/or
- (b) progress has fallen (or will fall) behind the current programme under Sub-Clause 8.3 [Programme],

other than as a result of a cause listed in Sub-Clause 8.4 [Extension of Time for Completion], then the Engineer may instruct the Contractor to submit, under Sub-Clause 8.3 [Programme], a revised programme and supporting report describing the revised methods which the Contractor proposes to adopt in order to expedite progress and complete within the Time for Completion.

Unless the Engineer notifies otherwise, the Contractor shall adopt these revised methods, which may require increases in the working hours and/or in the numbers of Contractor's Personnel and/or Goods, at the risk and cost of the Contractor. If these revised methods cause the Employer to incur additional costs, the Contractor shall subject to notice under Sub-Clause 2.5 [Employer's Claims] pay these costs to the Employer, in addition to delay damages (if any) under Sub-Clause 8.7 below.

Additional costs of revised methods including acceleration measures, instructed by the Engineer to reduce delays resulting from causes listed under Sub-Clause 8.4 [Extension of Time for Completion] shall be paid by the Employer, without generating, however, any other additional payment benefit to the Contractor.

## 8.7 Delay Damages

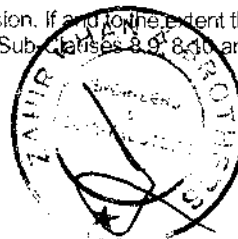
If the Contractor fails to comply with Sub-Clause 8.2 [Time for Completion], the Contractor shall subject to notice under Sub-Clause 2.5 [Employer's Claims] pay delay damages to the Employer for this default. These delay damages shall be the sum stated in the Contract Data, which shall be paid for every day which shall elapse between the relevant Time for Completion and the date stated in the Taking-Over Certificate. However, the total amount due under this Sub-Clause shall not exceed the maximum amount of delay damages (if any) stated in the Contract Data.

These delay damages shall be the only damages due from the Contractor for such default, other than in the event of termination under Sub-Clause 15.2 [Termination by Employer] prior to completion of the Works. These damages shall not relieve the Contractor from his obligation to complete the Works, or from any other duties, obligations or responsibilities which he may have under the Contract.

## 8.8 Suspension of Work

The Engineer may at any time instruct the Contractor to suspend progress of part or all of the Works. During such suspension, the Contractor shall protect, store and secure such part or the Works against any deterioration, loss or damage.

The Engineer may also notify the cause for the suspension. If and to the extent that the cause is notified and is the responsibility of the Contractor, the following Sub-Clauses 8.9, 8.10, and 8.11 shall not apply.



## 8.9 Consequences of Suspension

If the Contractor suffers delay and/or incurs Cost from complying with the Engineer's instructions under Sub-Clause 8.8 [Suspension of Work] and/or from resuming the work, the Contractor shall give notice to the Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

- (a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
- (b) payment of any such Cost, which shall be included in the Contract Price.

After receiving this notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

The Contractor shall not be entitled to an extension of time for, or to payment of the Cost incurred in, making good the consequences of the Contractor's faulty design, workmanship or materials, or of the Contractor's failure to protect, store or secure in accordance with Sub-Clause 8.8 [Suspension of Work].

## 8.10 Payment for Plant and Materials in Event of Suspension

The Contractor shall be entitled to payment of the value (as at the date of suspension) of Plant and/or Materials which have not been delivered to Site, if:

- (a) the work on Plant or delivery of Plant and/or Materials has been suspended for more than 28 days, and
- (b) the Contractor has marked the Plant and/or Materials as the Employer's property in accordance with the Engineer's instructions.

## 8.11 Prolonged Suspension

If the suspension under Sub-Clause 8.8 [Suspension of Work] has continued for more than 84 days, the Contractor may request the Engineer's permission to proceed. If the Engineer does not give permission within 28 days after being requested to do so, the Contractor may, by giving notice to the Engineer, treat the suspension as an omission under Clause 13 [Variations and Adjustments] of the affected part of the Works. If the suspension affects the whole of the Works, the Contractor may give notice of termination under Sub-Clause 16.2 [Termination by Contractor].

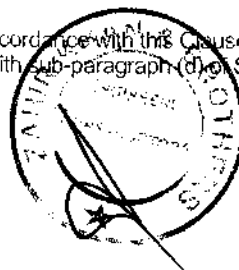
## 8.12 Resumption of Work

After the permission or instruction to proceed is given, the Contractor and the Engineer shall jointly examine the Works and the Plant and Materials affected by the suspension. The Contractor shall make good any deterioration or defect in or loss of the Works or Plant or Materials, which has occurred during the suspension after receiving from the Engineer an instruction to this effect under Clause 13 [Variations and Adjustments].

## 9 Tests on Completion

### 9.1 Contractor's Obligations

The Contractor shall carry out the Tests on Completion in accordance with this Clause and Sub-Clause 7.4 [Testing], after providing the documents in accordance with sub-paragraph (d) of Sub-Clause 4.1 [Contractor's General Obligations].



The Contractor shall give to the Engineer not less than 21 days' notice of the date after which the Contractor will be ready to carry out each of the Tests on Completion. Unless otherwise agreed, Tests on Completion shall be carried out within 14 days after this date, on such day or days as the Engineer shall instruct.

In considering the results of the Tests on Completion, the Engineer shall make allowances for the effect of any use of the Works by the Employer on the performance or other characteristics of the Works. As soon as the Works, or a Section, have passed any Tests on Completion, the Contractor shall submit a certified report of the results of these Tests to the Engineer.

## 9.2 Delayed Tests

If the Tests on Completion are being unduly delayed by the Employer, Sub-Clause 7.4 [Testing] (fifth paragraph) and/or Sub-Clause 10.3 [Interference with Tests on Completion] shall be applicable.

If the Tests on Completion are being unduly delayed by the Contractor, the Engineer may by notice require the Contractor to carry out the Tests within 21 days after receiving the notice. The Contractor shall carry out the Tests on such day or days within that period as the Contractor may fix and of which he shall give notice to the Engineer.

If the Contractor fails to carry out the Tests on Completion within the period of 21 days, the Employer's Personnel may proceed with the Tests at the risk and cost of the Contractor. The Tests on Completion shall then be deemed to have been carried out in the presence of the Contractor and the results of the Tests shall be accepted as accurate.

## 9.3 Retesting

If the Works, or a Section, fail to pass the Tests on Completion, Sub-Clause 7.5 [Rejection] shall apply, and the Engineer or the Contractor may require the failed Tests, and Tests on Completion on any related work, to be repeated under the same terms and conditions.

## 9.4 Failure to Pass Tests on Completion

If the Works, or a Section, fail to pass the Tests on Completion repeated under Sub-Clause 9.3 [Retesting], the Engineer shall be entitled to:

- (a) order further repetition of Tests on Completion under Sub-Clause 9.3;
- (b) if the failure deprives the Employer of substantially the whole benefit of the Works or Section, reject the Works or Section (as the case may be), in which event the Employer shall have the same remedies as are provided in sub-paragraph (c) of Sub-Clause 11.4 [Failure to Remedy Defects]; or
- (c) issue a Taking-Over Certificate, if the Employer so requests.

In the event of sub-paragraph (c), the Contractor shall proceed in accordance with all other obligations under the Contract, and the Contract Price shall be reduced by such amount as shall be appropriate to cover the reduced value to the Employer as a result of this failure. Unless the relevant reduction for this failure is stated (or its method of calculation is defined) in the Contract, the Employer may require the reduction to be (i) agreed by both Parties (in full satisfaction of this failure only) and paid before this Taking-Over Certificate is issued, or (ii) determined and paid under Sub-Clause 2.5 [Employer's Claims] and Sub-Clause 3.5 [Determinations].

## 10 Employer's Taking Over

### 10.1 Taking Over of the Works and Sections



Except as stated in Sub-Clause 9.4 [Failure to Pass Tests on Completion], the Works shall be taken over by the Employer when (i) the Works have been completed in accordance with the Contract, including the matters described in Sub-Clause 8.2 [Time for Completion] and except as allowed in sub-paragraph (a) below, and (ii) a Taking-Over Certificate for the Works has been issued, or is deemed to have been issued in accordance with this Sub-Clause.

The Contractor may apply by notice to the Engineer for a Taking-Over Certificate not earlier than 14 days before the Works will, in the Contractor's opinion, be complete and ready for taking over. If the Works are divided into Sections, the Contractor may similarly apply for a Taking-Over Certificate for each Section.

The Engineer shall, within 28 days after receiving the Contractor's application:

- (a) issue the Taking-Over Certificate to the Contractor, stating the date on which the Works or Section were completed in accordance with the Contract, except for any minor outstanding work and defects which will not substantially affect the use of the Works or Section for their intended purpose (either until or whilst this work is completed and these defects are remedied); or
- (b) reject the application, giving reasons and specifying the work required to be done by the Contractor to enable the Taking-Over Certificate to be issued. The Contractor shall then complete this work before issuing a further notice under this Sub-Clause.

If the Engineer fails either to issue the Taking-Over Certificate or to reject the Contractor's application within the period of 28 days, and if the Works or Section (as the case may be) are substantially in accordance with the Contract, the Taking-Over Certificate shall be deemed to have been issued on the last day of that period.

## 10.2 Taking Over of Parts of the Works

The Engineer may, at the sole discretion of the Employer, issue a Taking-Over Certificate for any part of the Permanent Works.

The Employer shall not use any part of the Works (other than as a temporary measure which is either specified in the Contract or agreed by both Parties) unless and until the Engineer has issued a Taking-Over Certificate for this part. However, if the Employer does use any part of the Works before the Taking-Over Certificate is issued:

- (a) the part which is used shall be deemed to have been taken over as from the date on which it is used,
- (b) the Contractor shall cease to be liable for the care of such part as from this date, when responsibility shall pass to the Employer, and
- (c) if requested by the Contractor, the Engineer shall issue a Taking-Over Certificate for this part.

After the Engineer has issued a Taking-Over Certificate for a part of the Works, the Contractor shall be given the earliest opportunity to take such steps as may be necessary to carry out any outstanding Tests on Completion. The Contractor shall carry out these Tests on Completion as soon as practicable before the expiry date of the relevant Defects Notification Period.

If the Contractor incurs Cost as a result of the Employer taking over and/or using a part of the Works, other than such use as is specified in the Contract or agreed by the Contractor, the Contractor shall (i) give notice to the Engineer and (ii) be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to payment of any such Cost plus profit, which shall be included in the Contract Price. After receiving this notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine this Cost and profit.



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43

If a Taking-Over Certificate has been issued for a part of the Works (other than a Section), the delay damages thereafter for completion of the remainder of the Works shall be reduced. Similarly, the delay damages for the remainder of the Section (if any) in which this part is included shall also be reduced. For any period of delay after the date stated in this Taking-Over Certificate, the proportional reduction in these delay damages shall be calculated as the proportion which the value of the part so certified bears to the value of the Works or Section (as the case may be) as a whole. The Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these proportions. The provisions of this paragraph shall only apply to the daily rate of delay damages under Sub-Clause 8.7 [Delay Damages], and shall not affect the maximum amount of these damages.

### 10.3 Interference with Tests on Completion

If the Contractor is prevented, for more than 14 days, from carrying out the Tests on Completion by a cause for which the Employer is responsible, the Employer shall be deemed to have taken over the Works or Section (as the case may be) on the date when the Tests on Completion would otherwise have been completed.

The Engineer shall then issue a Taking-Over Certificate accordingly, and the Contractor shall carry out the Tests on Completion as soon as practicable, before the expiry date of the Defects Notification Period. The Engineer shall require the Tests on Completion to be carried out by giving 14 days' notice and in accordance with the relevant provisions of the Contract.

If the Contractor suffers delay and/or incurs Cost as a result of this delay in carrying out the Tests on Completion, the Contractor shall give notice to the Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

- (a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
- (b) payment of any such Cost plus profit, which shall be included in the Contract Price.

After receiving this notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

### 10.4 Surfaces Requiring Reinstatement

Except as otherwise stated in a Taking-Over Certificate, a certificate for a Section or part of the Works shall not be deemed to certify completion of any ground or other surfaces requiring reinstatement.

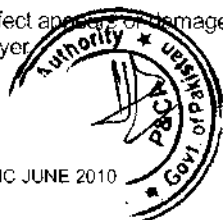
## 11 Defects Liability

### 11.1 Completion of Outstanding Work and Remedying Defects

In order that the Works and Contractor's Documents, and each Section, shall be in the condition required by the Contract (fair wear and tear excepted) by the expiry date of the relevant Defects Notification Period or as soon as practicable thereafter, the Contractor shall:

- (a) complete any work which is outstanding on the date stated in a Taking-Over Certificate, within such reasonable time as is instructed by the Engineer, and
- (b) execute all work required to remedy defects or damage, as may be notified by (or on behalf of) the Employer on or before the expiry date of the Defects Notification Period for the Works or Section (as the case may be).

If a defect appears or damage occurs, the Contractor shall be notified accordingly, by (or on behalf of) the Employer.





## 11.2 Cost of Remedying Defects

All work referred to in sub-paragraph (b) of Sub-Clause 11.1 [Completion of Outstanding Work and Remedying Defects] shall be executed at the risk and cost of the Contractor, if and to the extent that the work is attributable to:

- (a) any design for which the Contractor is responsible,
- (b) Plant, Materials or workmanship not being in accordance with the Contract, or
- (c) failure by the Contractor to comply with any other obligation.

If and to the extent that such work is attributable to any other cause, the Contractor shall be notified promptly by (or on behalf of) the Employer, and Sub-Clause 13.3 [Variation Procedure] shall apply.

## 11.3 Extension of Defects Notification Period

The Employer shall be entitled subject to Sub-Clause 2.5 [Employer's Claims] to an extension of the Defects Notification Period for the Works or a Section if and to the extent that the Works, Section or a major item of Plant (as the case may be, and after taking over) cannot be used for the purposes for which they are intended by reason of a defect or by reason of damage attributable to the Contractor. However, a Defects Notification Period shall not be extended by more than two years.

If delivery and/or erection of Plant and/or Materials was suspended under Sub-Clause 8.8 [Suspension of Work] or Sub-Clause 16.1 [Contractor's Entitlement to Suspend Work], the Contractor's obligations under this Clause shall not apply to any defects or damage occurring more than two years after the Defects Notification Period for the Plant and/or Materials would otherwise have expired.

## 11.4 Failure to Remedy Defects

If the Contractor fails to remedy any defect or damage within a reasonable time, a date may be fixed by (or on behalf of) the Employer, on or by which the defect or damage is to be remedied. The Contractor shall be given reasonable notice of this date.

If the Contractor fails to remedy the defect or damage by this notified date and this remedial work was to be executed at the cost of the Contractor under Sub-Clause 11.2 [Cost of Remedying Defects], the Employer may (at his option):

- (a) carry out the work himself or by others, in a reasonable manner and at the Contractor's cost, but the Contractor shall have no responsibility for this work; and the Contractor shall subject to Sub-Clause 2.5 [Employer's Claims] pay to the Employer the costs reasonably incurred by the Employer in remedying the defect or damage;
- (b) require the Engineer to agree or determine a reasonable reduction in the Contract Price in accordance with Sub-Clause 3.5 [Determinations]; or
- (c) if the defect or damage deprives the Employer of substantially the whole benefit of the Works or any major part of the Works, terminate the Contract as a whole, or in respect of such major part which cannot be put to the intended use. Without prejudice to any other rights, under the Contract or otherwise, the Employer shall then be entitled to recover all sums paid for the Works or for such part (as the case may be), plus financing costs and the cost of dismantling the same, clearing the Site and returning Plant and Materials to the Contractor.

## 11.5 Removal of Defective Work



If the defect or damage cannot be remedied expeditiously on the Site and the Employer gives consent, the Contractor may remove from the Site for the purposes of repair such items of Plant as are defective or damaged. This consent may require the Contractor to increase the amount of the Performance Security by the full replacement cost of these items, or to provide other appropriate security.

#### 11.6 Further Tests

If the work of remedying of any defect or damage may affect the performance of the Works, the Engineer may require the repetition of any of the tests described in the Contract. The requirement shall be made by notice within 28 days after the defect or damage is remedied.

These tests shall be carried out in accordance with the terms applicable to the previous tests, except that they shall be carried out at the risk and cost of the Party liable, under Sub-Clause 11.2 [Cost of Remedying Defects], for the cost of the remedial work.

#### 11.7 Right of Access

Until the Performance Certificate has been issued, the Contractor shall have such right of access to the Works as is reasonably required in order to comply with this Clause, except as may be inconsistent with the Employer's reasonable security restrictions.

#### 11.8 Contractor to Search

The Contractor shall, if required by the Engineer, search for the cause of any defect, under the direction of the Engineer. Unless the defect is to be remedied at the cost of the Contractor under Sub-Clause 11.2 [Cost of Remedying Defects], the Cost of the search plus profit shall be agreed or determined by the Engineer in accordance with Sub-Clause 3.5 [Determinations] and shall be included in the Contract Price.

#### 11.9 Performance Certificate

Performance of the Contractor's obligations shall not be considered to have been completed until the Engineer has issued the Performance Certificate to the Contractor, stating the date on which the Contractor completed his obligations under the Contract.

The Engineer shall issue the Performance Certificate within 28 days after the latest of the expiry dates of the Defects Notification Periods, or as soon thereafter as the Contractor has supplied all the Contractor's Documents and completed and tested all the Works, including remedying any defects. A copy of the Performance Certificate shall be issued to the Employer.

Only the Performance Certificate shall be deemed to constitute acceptance of the Works.

#### 11.10 Unfulfilled Obligations

After the Performance Certificate has been issued, each Party shall remain liable for the fulfilment of any obligation which remains unperformed at that time. For the purposes of determining the nature and extent of unperformed obligations, the Contract shall be deemed to remain in force.

#### 11.11 Clearance of Site

Upon receiving the Performance Certificate, the Contractor shall remove any remaining Contractor's Equipment, surplus material, wreckage, rubbish and Temporary Works from the Site.



If all these items have not been removed within 28 days after receipt by the Contractor of the Performance Certificate, the Employer may sell or otherwise dispose of any remaining items. The Employer shall be entitled to be paid the costs incurred in connection with, or attributable to, such sale or disposal and restoring the Site.

Any balance of the moneys from the sale shall be paid to the Contractor. If these moneys are less than the Employer's costs, the Contractor shall pay the outstanding balance to the Employer.

## 12 Measurement and Evaluation

### 12.1 Works to be Measured

The Works shall be measured, and valued for payment, in accordance with this Clause. The Contractor shall show in each application under Sub-Clauses 14.3 [Application for Interim Payment Certificates], 14.10 [Statement on Completion] and 14.11 [Application for Final Payment Certificate] the quantities and other particulars detailing the amounts which he considers to be entitled under the Contract.

Whenever the Engineer requires any part of the Works to be measured, reasonable notice shall be given to the Contractor's Representative, who shall:

- (a) promptly either attend or send another qualified representative to assist the Engineer in making the measurement, and
- (b) supply any particulars requested by the Engineer.

If the Contractor fails to attend or send a representative, the measurement made by (or on behalf of) the Engineer shall be accepted as accurate.

Except as otherwise stated in the Contract, wherever any Permanent Works are to be measured from records, these shall be prepared by the Engineer. The Contractor shall, as and when requested, attend to examine and agree the records with the Engineer, and shall sign the same when agreed. If the Contractor does not attend, the records shall be accepted as accurate.

If the Contractor examines and disagrees the records, and/or does not sign them as agreed, then the Contractor shall give notice to the Engineer of the respects in which the records are asserted to be inaccurate. After receiving this notice, the Engineer shall review the records and either confirm or vary them and certify the payment of the undisputed part. If the Contractor does not so give notice to the Engineer within 14 days after being requested to examine the records, they shall be accepted as accurate.

### 12.2 Method of Measurement

Except as otherwise stated in the Contract and notwithstanding local practice:

- (a) measurement shall be made of the net actual quantity of each item of the Permanent Works, and
- (b) the method of measurement shall be in accordance with the Bill of Quantities or other applicable Schedules.

### 12.3 Evaluation

Except as otherwise stated in the Contract, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine the Contract Price by evaluating each item of work, applying the measurement agreed or determined in accordance with the above Sub-Clauses 12.1 and 12.2 and the appropriate rate or price for the item.

For each item of work, the appropriate rate or price for the item shall be the rate or price specified for such item in the Contract, if there is no such item, specified for similar work.



Any item of work included in the Bill of Quantities for which no rate or price was specified shall be considered as included in other rates and prices in the Bill of Quantities and will not be paid for separately.

However, a new rate or price shall be appropriate for an item of work if:

- (a) (i) the measured quantity of the item is changed by more than 25% from the quantity of this item in the Bill of Quantities or other Schedule,
  - (ii) this change in quantity multiplied by such specified rate for this item exceeds 0.25% of the Accepted Contract Amount,
  - (iii) this change in quantity directly changes the Cost per unit quantity of this item by more than 1%, and
  - (iv) This item is not specified in the Contract as a "fixed rate item";
- or
- (b) (i) the work is instructed under Clause 13 [Variations and Adjustments],
  - (ii) no rate or price is specified in the Contract for this item, and
  - (iii) no specified rate or price is appropriate because the item of work is not of similar character, or is not executed under similar conditions, as any item in the Contract.

Each new rate or price shall be derived from any relevant rates or prices in the Contract, with reasonable adjustments to take account of the matters described in sub-paragraph (a) and/or (b), as applicable. If no rates or prices are relevant for the derivation of a new rate or price, it shall be derived from the reasonable Cost of executing the work, together with profit, taking account of any other relevant matters.

Until such time as an appropriate rate or price is agreed or determined, the Engineer shall determine a provisional rate or price for the purposes of Interim Payment Certificates as soon as the concerned work commences.

## 12.4 Omissions

Whenever the omission of any work forms part (or all) of a Variation, the value of which has not been agreed, if:

- (a) the Contractor will incur (or has incurred) cost which, if the work had not been omitted, would have been deemed to be covered by a sum forming part of the Accepted Contract Amount;
- (b) the omission of the work will result (or has resulted) in this sum not forming part of the Contract Price; and
- (c) this cost is not deemed to be included in the evaluation of any substituted work;

then the Contractor shall give notice to the Engineer accordingly, with supporting particulars. Upon receiving this notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine this cost, which shall be included in the Contract Price.

## 13 Variations and Adjustments

### 13.1 Right to Vary

Variations may be initiated by the Engineer at any time prior to issuing the Taking-Over Certificate for the Works, by an instruction or by a request for the Contractor to submit a proposal.



The Contractor shall execute and be bound by each Variation, unless the Contractor promptly gives notice to the Engineer stating (with supporting particulars) that (i) the Contractor cannot readily obtain the Goods required for the Variation, or (ii) such Variation triggers a substantial change in the sequence or progress of the Works. Upon receiving this notice, the Engineer shall cancel, confirm or vary the instruction.

Each Variation may include:

- (a) changes to the quantities of any item of work included in the Contract (however, such changes do not necessarily constitute a Variation),
- (b) changes to the quality and other characteristics of any item of work,
- (c) changes to the levels, positions and/or dimensions of any part of the Works,
- (d) omission of any work unless it is to be carried out by others,
- (e) any additional work, Plant, Materials or services necessary for the Permanent Works, including any associated Tests on Completion, boreholes and other testing and exploratory work, or
- (f) changes to the sequence or timing of the execution of the Works.

The Contractor shall not make any alteration and/or modification of the Permanent Works, unless and until the Engineer instructs or approves a Variation.

### 13.2 Value Engineering

The Contractor may, at any time, submit to the Engineer a written proposal which (in the Contractor's opinion) will, if adopted, (i) accelerate completion, (ii) reduce the cost to the Employer of executing, maintaining or operating the Works, (iii) improve the efficiency or value to the Employer of the completed Works, or (iv) otherwise be of benefit to the Employer.

The proposal shall be prepared at the cost of the Contractor and shall include the items listed in Sub-Clause 13.3 [Variation Procedure].

If a proposal, which is approved by the Engineer, includes a change in the design of part of the Permanent Works, then unless otherwise agreed by both Parties:

- (a) the Contractor shall design this part,
- (b) sub-paragraphs (a) to (d) of Sub-Clause 4.1 [Contractor's General Obligations] shall apply, and
- (c) if this change results in a reduction in the contract value of this part, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine a fee, which shall be included in the Contract Price. This fee shall be half (50%) of the difference between the following amounts:
  - (i) such reduction in contract value, resulting from the change, excluding adjustments under Sub-Clause 13.7 [Adjustments for Changes in Legislation] and Sub-Clause 13.8 [Adjustments for Changes in Cost], and
  - (ii) the reduction (if any) in the value to the Employer of the varied works, taking account of any reductions in quality, anticipated life or operational efficiencies.

However, if amount (i) is less than amount (ii), there shall not be a fee.

### 13.3 Variation Procedure



If the Engineer requests a proposal, prior to instructing a Variation, the Contractor shall respond in writing as soon as practicable, either by giving reasons why he cannot comply (if this is the case) or by submitting:

- (a) a description of the proposed work to be performed and a programme for its execution,
- (b) the Contractor's proposal for any necessary modifications to the programme according to Sub-Clause 8.3 [Programme] and to the Time for Completion, and
- (c) the Contractor's proposal for evaluation of the Variation.

The Engineer shall, as soon as practicable after receiving such proposal (under Sub-Clause 13.2 [Value Engineering] or otherwise), respond with approval, disapproval or comments. The Contractor shall not delay any work whilst awaiting a response.

Each instruction to execute a Variation, with any requirements for the recording of Costs, shall be issued by the Engineer to the Contractor, who shall acknowledge receipt.

Each Variation shall be evaluated in accordance with Clause 12 [Measurement and Evaluation], unless the Engineer instructs or approves otherwise in accordance with this Clause.

#### 13.4 Payment in Applicable Currencies

If the Contract provides for payment of the Contract Price in more than one currency, then whenever an adjustment is agreed, approved or determined as stated above, the amount payable in each of the applicable currencies shall be specified. For this purpose, reference shall be made to the actual or expected currency proportions of the Cost of the varied work, and to the proportions of various currencies specified for payment of the Contract Price.

#### 13.5 Provisional Sums

Each Provisional Sum shall only be used, in whole or in part, in accordance with the Engineer's instructions, and the Contract Price shall be adjusted accordingly. The total sum paid to the Contractor shall include only such amounts, for the work, supplies or services to which the Provisional Sum relates, as the Engineer shall have instructed. For each Provisional Sum, the Engineer may instruct:

- (a) work to be executed (including Plant, Materials or services to be supplied) by the Contractor and valued under Sub-Clause 13.3 [Variation Procedure]; and/or
- (b) Plant, Materials or services to be purchased by the Contractor, from a nominated Subcontractor (as defined in Clause 5 [Nominated Subcontractors]) or otherwise; and for which there shall be included in the Contract Price:
  - (i) the actual amounts paid (or due to be paid) by the Contractor, and
  - (ii) a sum for overhead charges and profit, calculated as a percentage of these actual amounts by applying the relevant percentage rate (if any) stated in the appropriate Schedule. If there is no such rate, the percentage rate stated in the Contract Data shall be applied.

The Contractor shall, when required by the Engineer, produce quotations, invoices, vouchers and accounts or receipts in substantiation.

#### 13.6 Daywork

For work of a minor or incidental nature, the Engineer may instruct that a Variation shall be executed on a daywork basis. The work shall then be valued in accordance with the Daywork Schedule included in the Contract. If the following procedure shall apply. If a Daywork Schedule is not included in the Contract, the Sub-Clause shall not apply.



Before ordering Goods for the work, the Contractor shall submit quotations to the Engineer. When applying for payment, the Contractor shall submit invoices, vouchers and accounts or receipts for any Goods.

Except for any items for which the Daywork Schedule specifies that payment is not due, the Contractor shall deliver each day to the Engineer accurate statements in duplicate which shall include the following details of the resources used in executing the previous day's work:

- (a) the names, occupations and time of Contractor's Personnel,
- (b) the identification, type and time of Contractor's Equipment and Temporary Works, and
- (c) the quantities and types of Plant and Materials used.

One copy of each statement will, if correct, or when agreed, be signed by the Engineer and returned to the Contractor. The Contractor shall then submit priced statements of these resources to the Engineer, prior to their inclusion in the next Statement under Sub-Clause 14.3 [Application for Interim Payment Certificates].

### 13.7 Adjustments for Changes in Legislation

The Contract Price shall be adjusted to take account of any increase or decrease in Cost resulting from a change in the Laws of the Country (including the introduction of new Laws and the repeal or modification of existing Laws) or in the judicial or official governmental interpretation of such Laws, made after the Base Date, which affect the Contractor in the performance of obligations under the Contract.

If the Contractor suffers (or will suffer) delay and/or incurs (or will incur) additional Cost as a result of these changes in the Laws or in such interpretations, made after the Base Date, the Contractor shall give notice to the Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

- (a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
- (b) payment of any such Cost, which shall be included in the Contract Price.

After receiving this notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

Notwithstanding the foregoing, the Contractor shall not be entitled to an extension of time if the relevant delay has already been taken into account in the determination of a previous extension of time and such Cost shall not be separately paid if the same shall already have been taken into account in the indexing of any inputs to the table of adjustment data in accordance with the provisions of Sub-Clause 13.8 [Adjustments for Changes in Cost].

### 13.8 Adjustments for Changes in Cost

In this Sub-Clause, "table of adjustment data" means the completed table of adjustment data for local and foreign currencies included in the Schedules. If there is no such table of adjustment data, this Sub-Clause shall not apply.

If this Sub-Clause applies, the amounts payable to the Contractor shall be adjusted for rises or falls in the cost of labour, Goods and other inputs to the Works, by the addition or deduction of the amounts determined by the formulae prescribed in this Sub-Clause. To the extent that full compensation for any rise or fall in Costs is not covered by the provisions of this or other Clauses, the Accepted Contract Amount shall be deemed to have included amounts to cover the contingency of other rises and falls in costs.



The adjustment to be applied to the amount otherwise payable to the Contractor, as valued in accordance with the appropriate Schedule and certified in Payment Certificates, shall be determined from formulae for each of the currencies in which the Contract Price is payable. No adjustment is to be applied to work valued on the basis of Cost or current prices. The formulae shall be of the following general type:

$$P_n = a + b L_n / L_o + c E_n / E_o + d M_n / M_o + \dots$$

where:

"P<sub>n</sub>" is the adjustment multiplier to be applied to the estimated contract value in the relevant currency of the work carried out in period "n", this period being a month unless otherwise stated in the Contract Data;

"a" is a fixed coefficient, stated in the relevant table of adjustment data, representing the non-adjustable portion in contractual payments;

"b", "c", "d", ... are coefficients representing the estimated proportion of each cost element related to the execution of the Works, as stated in the relevant table of adjustment data; such tabulated cost elements may be indicative of resources such as labour, equipment and materials;

"L<sub>n</sub>", "E<sub>n</sub>", "M<sub>n</sub>", ... are the current cost indices or reference prices for period "n", expressed in the relevant currency of payment, each of which is applicable to the relevant tabulated cost element on the date 49 days prior to the last day of the period (to which the particular Payment Certificate relates); and

"L<sub>o</sub>", "E<sub>o</sub>", "M<sub>o</sub>", ... are the base cost indices or reference prices, expressed in the relevant currency of payment, each of which is applicable to the relevant tabulated cost element on the Base Date.

The cost indices or reference prices stated in the table of adjustment data shall be used. If their source is in doubt, it shall be determined by the Engineer. For this purpose, reference shall be made to the values of the indices at stated dates for the purposes of clarification of the source; although these dates (and thus these values) may not correspond to the base cost indices.

In cases where the "currency of index" is not the relevant currency of payment, each index shall be converted into the relevant currency of payment at the selling rate, established by the central bank of the Country, of this relevant currency on the above date for which the index is required to be applicable

Until such time as each current cost index is available, the Engineer shall determine a provisional index for the issue of Interim Payment Certificates. When a current cost index is available, the adjustment shall be recalculated accordingly.

If the Contractor fails to complete the Works within the Time for Completion, adjustment of prices thereafter shall be made using either (i) each index or price applicable on the date 49 days prior to the expiry of the Time for Completion of the Works, or (ii) the current index or price, whichever is more favourable to the Employer.

The weightings (coefficients) for each of the factors of cost stated in the table(s) of adjustment data shall only be adjusted if they have been rendered unreasonable, unbalanced or inapplicable, as a result of Variations.

## 14 Contract Price and Payment

### 14.1 The Contract Price

Unless otherwise stated in the Particular Conditions:

- (a) the Contract Price shall be agreed or determined under Sub-Clause 12.3 [Evaluation] and be subject to adjustments in accordance with the Contract;





- (b) the Contractor shall pay all taxes, duties and fees required to be paid by him under the Contract, and the Contract Price shall not be adjusted for any of these costs except as stated in Sub-Clause 13.7 [Adjustments for Changes in Legislation];
- (c) any quantities which may be set out in the Bill of Quantities or other Schedule are estimated quantities and are not to be taken as the actual and correct quantities:
  - (i) of the Works which the Contractor is required to execute, or
  - (ii) for the purposes of Clause 12 [Measurement and Evaluation]; and
- (d) the Contractor shall submit to the Engineer, within 28 days after the Commencement Date, a proposed breakdown of each lump sum price in the Schedules. The Engineer may take account of the breakdown when preparing Payment Certificates, but shall not be bound by it.

Notwithstanding the provisions of sub-paragraph (b), Contractor's Equipment, including essential spare parts therefor, imported by the Contractor for the sole purpose of executing the Contract shall be exempt from the payment of import duties and taxes upon importation.

## 14.2 Advance Payment

The Employer shall make an advance payment, as an interest-free loan for mobilisation and cash flow support, when the Contractor submits a guarantee in accordance with this Sub-Clause. The total advance payment, the number and timing of instalments (if more than one), and the applicable currencies and proportions, shall be as stated in the Contract Data.

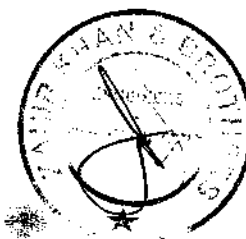
Unless and until the Employer receives this guarantee, or if the total advance payment is not stated in the Contract Data, this Sub-Clause shall not apply.

The Engineer shall deliver to the Employer and to the Contractor an Interim Payment Certificate for the advance payment or its first instalment after receiving a Statement (under Sub-Clause 14.3 [Application for Interim Payment Certificates]) and after the Employer receives (i) the Performance Security in accordance with Sub-Clause 4.2 [Performance Security] and (ii) a guarantee in amounts and currencies equal to the advance payment. This guarantee shall be issued by a reputable bank or financial institution selected by the Contractor and shall be in the form annexed to the Particular Conditions or in another form approved by the Employer.

The Contractor shall ensure that the guarantee is valid and enforceable until the advance payment has been repaid, but its amount shall be progressively reduced by the amount repaid by the Contractor as indicated in the Payment Certificates. If the terms of the guarantee specify its expiry date, and the advance payment has not been repaid by the date 28 days prior to the expiry date, the Contractor shall extend the validity of the guarantee until the advance payment has been repaid.

Unless stated otherwise in the Contract Data, the advance payment shall be repaid through percentage deductions from the interim payments determined by the Engineer in accordance with Sub-Clause 14.6 [Issue of Interim Payment Certificates], as follows:

- (a) deductions shall commence in the next interim Payment Certificate following that in which the total of all certified interim payments (excluding the advance payment and deductions and repayments of retention) exceeds 30 percent (30%) of the Accepted Contract Amount less Provisional Sums; and
- (b) deductions shall be made at the amortisation rate stated in the Contract Data of the amount of each Interim Payment Certificate (excluding the advance payment and deductions for its repayments as well as deductions for retention money) in the currencies and proportions of the advance payment until such time as the advance payment has been repaid; provided that the advance payment shall be completely repaid prior to the time when 90 percent (90%) of the Accepted Contract Amount less Provisional Sums has been certified for payment.



If the advance payment has not been repaid prior to the issue of the Taking-Over Certificate for the Works or prior to termination under Clause 15 [Termination by Employer], Clause 16 [Suspension and Termination by Contractor] or Clause 19 [Force Majeure] (as the case may be), the whole of the balance then outstanding shall immediately become due and in case of termination under Clause 15 [Termination by Employer], except for Sub-Clause 15.5 [Employer's Entitlement to Termination for Convenience], payable by the Contractor to the Employer.

### 14.3 Application for Interim Payment Certificates

The Contractor shall submit a Statement in six copies to the Engineer after the end of each month, in a form approved by the Engineer, showing in detail the amounts to which the Contractor considers himself to be entitled, together with supporting documents which shall include the report on the progress during this month in accordance with Sub-Clause 4.21 [Progress Reports].

The Statement shall include the following items, as applicable, which shall be expressed in the various currencies in which the Contract Price is payable, in the sequence listed:

- (a) the estimated contract value of the Works executed and the Contractor's Documents produced up to the end of the month (including Variations but excluding items described in sub-paragraphs (b) to (g) below);
- (b) any amounts to be added and deducted for changes in legislation and changes in cost, in accordance with Sub-Clause 13.7 [Adjustments for Changes in Legislation] and Sub-Clause 13.8 [Adjustments for Changes in Cost];
- (c) any amount to be deducted for retention, calculated by applying the percentage of retention stated in the Contract Data to the total of the above amounts, until the amount so retained by the Employer reaches the limit of Retention Money (if any) stated in the Contract Data;
- (d) any amounts to be added for the advance payment (if more than one instalment) and to be deducted for its repayments in accordance with Sub-Clause 14.2 [Advance Payment];
- (e) any amounts to be added and deducted for Plant and Materials in accordance with Sub-Clause 14.5 [Plant and Materials intended for the Works];
- (f) any other additions or deductions which may have become due under the Contract or otherwise, including those under Clause 20 [Claims, Disputes and Arbitration]; and
- (g) the deduction of amounts certified in all previous Payment Certificates.

### 14.4 Schedule of Payments

If the Contract includes a schedule of payments specifying the instalments in which the Contract Price will be paid, then unless otherwise stated in this schedule:

- (a) the instalments quoted in this schedule of payments shall be the estimated contract values for the purposes of sub-paragraph (a) of Sub-Clause 14.3 [Application for Interim Payment Certificates];
- (b) Sub-Clause 14.5 [Plant and Materials intended for the Works] shall not apply; and
- (c) if these instalments are not defined by reference to the actual progress achieved in executing the Works, and if actual progress is found to be less or more than that on which this schedule of payments was based, then the Engineer may proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine revised instalments, which shall take account of the extent to which progress is less or more than that on which the instalments were previously based.



If the Contract does not include a schedule of payments, the Contractor shall submit non-binding estimates of the payments which he expects to become due during each quarterly period. The first estimate shall be submitted within 42 days after the Commencement Date. Revised estimates shall be submitted at quarterly intervals, until the Taking-Over Certificate has been issued for the Works.

#### 14.5 Plant and Materials intended for the Works

If this Sub-Clause applies, Interim Payment Certificates shall include, under sub-paragraph (e) of Sub-Clause 14.3, (i) an amount for Plant and Materials which have been sent to the Site for incorporation in the Permanent Works, and (ii) a reduction when the contract value of such Plant and Materials is included as part of the Permanent Works under sub-paragraph (a) of Sub-Clause 14.3 [Application for Interim Payment Certificates].

If the lists referred to in sub-paragraphs (b)(i) or (c)(i) below are not included in the Schedules this Sub-Clause shall not apply.

The Engineer shall determine and certify each addition if the following conditions are satisfied:

(a) the Contractor has:

- (i) kept satisfactory records (including the orders, receipts, Costs and use of Plant and Materials) which are available for inspection, and
- (ii) submitted a statement of the Cost of acquiring and delivering the Plant and Materials to the Site, supported by satisfactory evidence;

and either:

(b) the relevant Plant and Materials:

- (i) are those listed in the Schedules for payment when shipped,
- (ii) have been shipped to the Country, en route to the Site, in accordance with the Contract; and
- (iii) are described in a clean shipped bill of lading or other evidence of shipment, which has been submitted to the Engineer together with evidence of payment of freight and insurance, any other documents reasonably required, and a bank guarantee in a form and issued by an entity approved by the Employer in amounts and currencies equal to the amount due under this Sub-Clause: this guarantee may be in a similar form to the form referred to in Sub-Clause 14.2 [Advance Payment] and shall be valid until the Plant and Materials are properly stored on Site and protected against loss, damage or deterioration;

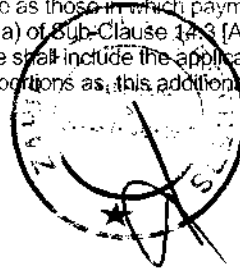
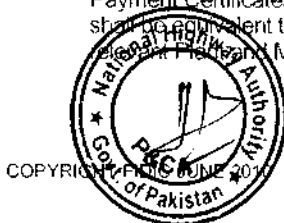
or

(c) the relevant Plant and Materials:

- (i) are those listed in the Schedules for payment when delivered to the Site, and
- (ii) have been delivered to and are properly stored on the Site, are protected against loss, damage or deterioration, and appear to be in accordance with the Contract.

The additional amount to be certified shall be the equivalent of eighty percent (80%) of the Engineer's determination of the cost of the Plant and Materials (including delivery to Site), taking account of the documents mentioned in this Sub-Clause and of the contract value of the Plant and Materials.

The currencies for this additional amount shall be the same as those in which payment will become due when the contract value is included under sub-paragraph (a) of Sub-Clause 14.3 [Application for Interim Payment Certificates]. At that time, the Payment Certificate shall include the applicable reduction which shall be equivalent to, and in the same currencies and proportions as, this additional amount for the Plant and Materials



## 14.6 Issue of Interim Payment Certificates

No amount will be certified or paid until the Employer has received and approved the Performance Security. Thereafter, the Engineer shall, within 28 days after receiving a Statement and supporting documents, deliver to the Employer and to the Contractor an Interim Payment Certificate which shall state the amount which the Engineer fairly determines to be due, with all supporting particulars for any reduction or withholding made by the Engineer on the Statement if any.

However, prior to issuing the Taking-Over Certificate for the Works, the Engineer shall not be bound to issue an Interim Payment Certificate in an amount which would (after retention and other deductions) be less than the minimum amount of Interim Payment Certificates (if any) stated in the Contract Data. In this event, the Engineer shall give notice to the Contractor accordingly.

An Interim Payment Certificate shall not be withheld for any other reason, although:

- (a) if any thing supplied or work done by the Contractor is not in accordance with the Contract, the cost of rectification or replacement may be withheld until rectification or replacement has been completed; and/or
- (b) if the Contractor was or is failing to perform any work or obligation in accordance with the Contract, and had been so notified by the Engineer, the value of this work or obligation may be withheld until the work or obligation has been performed.

The Engineer may in any Payment Certificate make any correction or modification that should properly be made to any previous Payment Certificate. A Payment Certificate shall not be deemed to indicate the Engineer's acceptance, approval, consent or satisfaction.

## 14.7 Payment

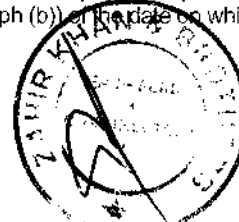
The Employer shall pay to the Contractor:

- (a) the first instalment of the advance payment within 42 days after issuing the Letter of Acceptance or within 21 days after receiving the documents in accordance with Sub-Clause 4.2 [Performance Security] and Sub-Clause 14.2 [Advance Payment], whichever is later;
- (b) the amount certified in each Interim Payment Certificate within 56 days after the Engineer receives the Statement and supporting documents; or, at a time when the Bank's loan or credit (from which part of the payments to the Contractor is being made) is suspended, the amount shown on any statement submitted by the Contractor within 14 days after such statement is submitted, any discrepancy being rectified in the next payment to the Contractor; and
- (c) the amount certified in the Final Payment Certificate within 56 days after the Employer receives this Payment Certificate; or, at a time when the Bank's loan or credit (from which part of the payments to the Contractor is being made) is suspended, the undisputed amount shown in the Final Statement within 56 days after the date of notification of the suspension in accordance with Sub-Clause 16.2 [Termination by Contractor].

Payment of the amount due in each currency shall be made into the bank account, nominated by the Contractor, in the payment country (for this currency) specified in the Contract.

## 14.8 Delayed Payment

If the Contractor does not receive payment in accordance with Sub-Clause 14.7 [Payment], the Contractor shall be entitled to receive financing charges compounded monthly on the amount unpaid during the period of delay. This period shall be deemed to commence on the date for payment specified in Sub-Clause 14.7 [Payment], irrespective (in the case of its sub-paragraph (b)) of the date on which any Interim Payment Certificate is issued.



Unless otherwise stated in the Particular Conditions, these financing charges shall be calculated at the annual rate of three percentage points above the discount rate of the central bank in the country of the currency of payment, or if not available, the interbank offered rate, and shall be paid in such currency.

The Contractor shall be entitled to this payment without formal notice or certification, and without prejudice to any other right or remedy.

#### 14.9 Payment of Retention Money

When the Taking-Over Certificate has been issued for the Works, the first half of the Retention Money shall be certified by the Engineer for payment to the Contractor. If a Taking-Over Certificate is issued for a Section or part of the Works, a proportion of the Retention Money shall be certified and paid. This proportion shall be half (50%) of the proportion calculated by dividing the estimated contract value of the Section or part, by the estimated final Contract Price.

Promptly after the latest of the expiry dates of the Defects Notification Periods, the outstanding balance of the Retention Money shall be certified by the Engineer for payment to the Contractor. If a Taking-Over Certificate was issued for a Section, a proportion of the second half of the Retention Money shall be certified and paid promptly after the expiry date of the Defects Notification Period for the Section. This proportion shall be half (50%) of the proportion calculated by dividing the estimated contract value of the Section by the estimated final Contract Price.

However, if any work remains to be executed under Clause 11 [Defects Liability], the Engineer shall be entitled to withhold certification of the estimated cost of this work until it has been executed.

When calculating these proportions, no account shall be taken of any adjustments under Sub-Clause 13.7 [Adjustments for Changes in Legislation] and Sub-Clause 13.8 [Adjustments for Changes in Cost].

Unless otherwise stated in the Particular Conditions, when the Taking-Over Certificate has been issued for the Works and the first half of the Retention Money has been certified for payment by the Engineer, the Contractor shall be entitled to substitute a guarantee, in the form annexed to the Particular Conditions or in another form approved by the Employer and issued by a reputable bank or financial institution selected by the Contractor, for the second half of the Retention Money. The Contractor shall ensure that the guarantee is in the amounts and currencies of the second half of the Retention Money and is valid and enforceable until the Contractor has executed and completed the Works and remedied any defects, as specified for the Performance Security in Sub-Clause 4.2. On receipt by the Employer of the required guarantee, the Engineer shall certify and the Employer shall pay the second half of the Retention Money. The release of the second half of the Retention Money against a guarantee shall then be in lieu of the release under the second paragraph of this Sub-Clause. The Employer shall return the guarantee to the Contractor within 21 days after receiving a copy of the Performance Certificate.

If the Performance Security required under Sub-Clause 4.2 is in the form of a demand guarantee, and the amount guaranteed under it when the Taking-Over Certificate is issued is more than half of the Retention Money, then the Retention Money guarantee will not be required. If the amount guaranteed under the Performance Security when the Taking-Over Certificate is issued is less than half of the Retention Money, the Retention Money guarantee will only be required for the difference between half of the Retention Money and the amount guaranteed under the Performance Security.

#### 14.10 Statement at Completion

Within 84 days after receiving the Taking-Over Certificate for the Works, the Contractor shall submit to the Engineer six copies of a Statement at completion with supporting documents, in accordance with Sub-Clause 14.3 [Application for Interim Payment Certificates], showing:

(a) the value of all work done in accordance with the Contract up to the date stated in the Taking-Over Certificate for the Works,

(b) the value of all claims which the Contractor considers to be due, and



- (c) an estimate of any other amounts which the Contractor considers will become due to him under the Contract. Estimated amounts shall be shown separately in this Statement at completion.

The Engineer shall then certify in accordance with Sub-Clause 14.6 [Issue of Interim Payment Certificates].

#### 14.11 Application for Final Payment Certificate

Within 56 days after receiving the Performance Certificate, the Contractor shall submit, to the Engineer, six copies of a draft final statement with supporting documents showing in detail in a form approved by the Engineer:

- (a) the value of all work done in accordance with the Contract, and
- (b) any further sums which the Contractor considers to be due to him under the Contract or otherwise.

If the Engineer disagrees with or cannot verify any part of the draft final statement, the Contractor shall submit such further information as the Engineer may reasonably require within 28 days from receipt of said draft and shall make such changes in the draft as may be agreed between them. The Contractor shall then prepare and submit to the Engineer the final statement as agreed. This agreed statement is referred to in these Conditions as the "Final Statement".

However if, following discussions between the Engineer and the Contractor and any changes to the draft final statement which are agreed, it becomes evident that a dispute exists, the Engineer shall deliver to the Employer (with a copy to the Contractor) an Interim Payment Certificate for the agreed parts of the draft final statement. Thereafter, if the dispute is finally resolved under Sub-Clause 20.4 [Obtaining Dispute Board's Decision] or Sub-Clause 20.5 [Amicable Settlement], the Contractor shall then prepare and submit to the Employer (with a copy to the Engineer) a Final Statement.

#### 14.12 Discharge

When submitting the Final Statement, the Contractor shall submit a discharge which confirms that the total of the Final Statement represents full and final settlement of all moneys due to the Contractor under or in connection with the Contract. This discharge may state that it becomes effective when the Contractor has received the Performance Security and the outstanding balance of this total, in which event the discharge shall be effective on such date.

#### 14.13 Issue of Final Payment Certificate

Within 28 days after receiving the Final Statement and discharge in accordance with Sub-Clause 14.11 [Application for Final Payment Certificate] and Sub-Clause 14.12 [Discharge], the Engineer shall deliver, to the Employer and to the Contractor, the Final Payment Certificate which shall state:

- (a) the amount which he fairly determines is finally due, and
- (b) after giving credit to the Employer for all amounts previously paid by the Employer and for all sums to which the Employer is entitled, the balance (if any) due from the Employer to the Contractor or from the Contractor to the Employer, as the case may be.

If the Contractor has not applied for a Final Payment Certificate in accordance with Sub-Clause 14.11 [Application for Final Payment Certificate] and Sub-Clause 14.12 [Discharge], the Engineer shall request the Contractor to do so. If the Contractor fails to submit an application within a period of 28 days, the Engineer shall issue the Final Payment Certificate for such amount as he fairly determines to be due.

#### 14.14 Cessation of Employer's Liability



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58

The Employer shall not be liable to the Contractor for any matter or thing under or in connection with the Contract or execution of the Works, except to the extent that the Contractor shall have included an amount expressly for it:

- (a) in the Final Statement and also
- (b) (except for matters or things arising after the issue of the Taking-Over Certificate for the Works) in the Statement at completion described in Sub-Clause 14.10 [Statement at Completion].

However, this Sub-Clause shall not limit the Employer's liability under his indemnification obligations, or the Employer's liability in any case of fraud, deliberate default or reckless misconduct by the Employer.

## 14.15 Currencies of Payment

The Contract Price shall be paid in the currency or currencies named in the Schedule of Payment Currencies. If more than one currency is so named, payments shall be made as follows:

- (a) if the Accepted Contract Amount was expressed in Local Currency only:
  - (i) the proportions or amounts of the Local and Foreign Currencies, and the fixed rates of exchange to be used for calculating the payments, shall be as stated in the Schedule of Payment Currencies, except as otherwise agreed by both Parties;
  - (ii) payments and deductions under Sub-Clause 13.5 [Provisional Sums] and Sub-Clause 13.7 [Adjustments for Changes in Legislation] shall be made in the applicable currencies and proportions; and
  - (iii) other payments and deductions under sub-paragraphs (a) to (d) of Sub-Clause 14.3 [Application for Interim Payment Certificates] shall be made in the currencies and proportions specified in sub-paragraph (a)(i) above;
- (b) payment of the damages specified in the Contract Data shall be made in the currencies and proportions specified in the Schedule of Payment Currencies;
- (c) other payments to the Employer by the Contractor shall be made in the currency in which the sum was expended by the Employer, or in such currency as may be agreed by both Parties;
- (d) if any amount payable by the Contractor to the Employer in a particular currency exceeds the sum payable by the Employer to the Contractor in that currency, the Employer may recover the balance of this amount from the sums otherwise payable to the Contractor in other currencies; and
- (e) if no rates of exchange are stated in the Schedule of Payment Currencies, they shall be those prevailing on the Base Date and determined by the central bank of the Country.

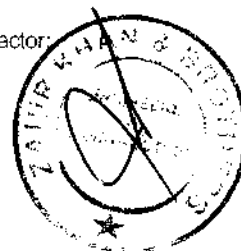
## 15 Termination by Employer

### 15.1 Notice to Correct

If the Contractor fails to carry out any obligation under the Contract, the Engineer may by notice require the Contractor to make good the failure and to remedy it within a specified reasonable time.

### 15.2 Termination by Employer

The Employer shall be entitled to terminate the Contract if the Contractor:



- (a) fails to comply with Sub-Clause 4.2 [Performance Security] or with a notice under Sub-Clause 15.1 [Notice to Correct],
- (b) abandons the Works or otherwise plainly demonstrates the intention not to continue performance of his obligations under the Contract,
- (c) without reasonable excuse fails:
  - (i) to proceed with the Works in accordance with Clause 8 [Commencement, Delays and Suspension], or
  - (ii) to comply with a notice issued under Sub-Clause 7.5 [Rejection] or Sub-Clause 7.6 [Remedial Work], within 28 days after receiving it,
- (d) subcontracts the whole of the Works or assigns the Contract without the required agreement,
- (e) becomes bankrupt or insolvent, goes into liquidation, has a receiving or administration order made against him, compounds with his creditors, or carries on business under a receiver, trustee or manager for the benefit of his creditors, or if any act is done or event occurs which (under applicable Laws) has a similar effect to any of these acts or events, or
- (f) gives or offers to give (directly or indirectly) to any person any bribe, gift, gratuity, commission or other thing of value, as an inducement or reward:
  - (i) for doing or forbearing to do any action in relation to the Contract, or
  - (ii) for showing or forbearing to show favour or disfavour to any person in relation to the Contract,

or if any of the Contractor's Personnel, agents or Subcontractors gives or offers to give (directly or indirectly) to any person any such inducement or reward as is described in this sub-paragraph (f). However, lawful inducements and rewards to Contractor's Personnel shall not entitle termination.

In any of these events or circumstances, the Employer may, upon giving 14 days' notice to the Contractor, terminate the Contract and expel the Contractor from the Site. However, in the case of sub-paragraph (e) or (f), the Employer may by notice terminate the Contract immediately.

The Employer's election to terminate the Contract shall not prejudice any other rights of the Employer, under the Contract or otherwise.

The Contractor shall then leave the Site and deliver any required Goods, all Contractor's Documents, and other design documents made by or for him, to the Engineer. However, the Contractor shall use his best efforts to comply immediately with any reasonable instructions included in the notice (i) for the assignment of any subcontract, and (ii) for the protection of life or property or for the safety of the Works.

After termination, the Employer may complete the Works and/or arrange for any other entities to do so. The Employer and these entities may then use any Goods, Contractor's Documents and other design documents made by or on behalf of the Contractor.

The Employer shall then give notice that the Contractor's Equipment and Temporary Works will be released to the Contractor at or near the Site. The Contractor shall promptly arrange their removal, at the risk and cost of the Contractor. However, if by this time the Contractor has failed to make a payment due to the Employer, these items may be sold by the Employer in order to recover this payment. Any balance of the proceeds shall then be paid to the Contractor.

### 15.3 Valuation at Date of Termination

As soon as practicable after a notice of termination under Sub-Clause 15.2 [Termination by Employer] has taken effect, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine the value of the Works, Goods and Contractor's Documents, and any other sums due to the Contractor, to be executed in accordance with the Contract.





## 15.4 Payment after Termination

After a notice of termination under Sub-Clause 15.2 [Termination by Employer] has taken effect, the Employer may:

- (a) proceed in accordance with Sub-Clause 2.5 [Employer's Claims]
- (b) withhold further payments to the Contractor until the costs of execution, completion and remedying of any defects, damages for delay in completion (if any), and all other costs incurred by the Employer, have been established, and/or
- (c) recover from the Contractor any losses and damages incurred by the Employer and any extra costs of completing the Works, after allowing for any sum due to the Contractor under Sub-Clause 15.3 [Valuation at Date of Termination]. After recovering any such losses, damages and extra costs, the Employer shall pay any balance to the Contractor.

## 15.5 Employer's Entitlement to Termination for Convenience

The Employer shall be entitled to terminate the Contract, at any time for the Employer's convenience, by giving notice of such termination to the Contractor. The termination shall take effect 28 days after the later of the dates on which the Contractor receives this notice or the Employer returns the Performance Security. The Employer shall not terminate the Contract under this Sub-Clause in order to execute the Works himself or to arrange for the Works to be executed by another contractor or to avoid a termination of the Contract by the Contractor under Clause 16.2 [Termination by Contractor].

After this termination, the Contractor shall proceed in accordance with Sub-Clause 16.3 [Cessation of Work and Removal of Contractor's Equipment] and shall be paid in accordance with Sub-Clause 16.4 [Payment on Termination].

## 15.6 Corrupt or Fraudulent Practices

If the Employer determines, based on reasonable evidence, that the Contractor has engaged in corrupt, fraudulent, collusive or coercive practices, in competing for or in executing the Contract, then the Employer may, after giving 14 days notice to the Contractor, terminate the Contract and expel him from the Site, and the provisions of Clause 15 shall apply as if such termination had been made under Sub-Clause 15.2 [Termination by Employer].

Should any employee of the Contractor be determined, based on reasonable evidence, to have engaged in a corrupt, fraudulent or coercive practice during the execution of the work then that employee shall be removed in accordance with Sub-Clause 6.9 [Contractor's Personnel].

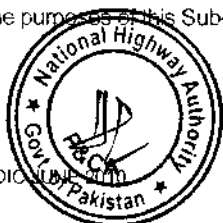
[For contracts financed by the African Development Bank]

For the purposes of this Sub-Clause:

- (a) "corrupt practice" means the offering, giving, receiving or soliciting of any thing of value to influence the action of a public official in the procurement process or in the Contract execution; and
- (b) "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of the Contract to the detriment of the Borrower, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition.

[For contracts financed by the Asian Development Bank]

For the purposes of this Sub-Clause:



- (a) "corrupt practice" means the offering, giving, receiving, or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party;
- (b) "fraudulent practice" means any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;
- (c) "coercive practice" means impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
- (d) "collusive practice" means an arrangement between two or more parties designed to achieve an improper purpose, including influencing improperly the actions of another party.

[For contracts financed by the Black Sea Trade and Development Bank and by the European Bank for Reconstruction and Development]

For the purposes of this Sub-Clause, the Bank defines, for the purposes of this provision, the terms set forth below as follows:

- (a) "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value to influence a person, or the threatening of injury to person, property or reputation, in connection with the procurement process or in contract execution in order to obtain or retain business or other improper advantage in the conduct of international business;
- (b) "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the client, and includes collusive practices among tenderers (prior to or after tender submission) designed to establish tender prices at artificial, non-competitive levels and to deprive the client of the benefits of free and open competition.

[For contracts financed by the Caribbean Development Bank:]

For the purposes of this Sub-Clause:

- (a) "corrupt practice" means the offering, giving, receiving or soliciting, directly or indirectly, of any thing of value to influence the action of a public official in the procurement process or in the Contract execution;
- (b) "fraudulent practice" means a misrepresentation or omission of facts in order to influence a procurement process or the execution of the Contract;
- (c) "collusive practice" means a scheme or arrangement between two or more bidders, with or without the knowledge of the Borrower, designed to establish bid prices at artificial, non-competitive levels;
- (d) "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the procurement process or affect the execution of a contract.

[For contracts financed by the Inter-American Development Bank]

For the purposes of this Sub-Clause:

The Bank requires that all Contractors adhere to the Bank's Policies for the Procurement of Works and Goods financed by the Bank. In particular, the Bank requires that all Borrowers (including grant beneficiaries), the executing agencies and contracting agencies, as well as all firms, entities and individuals bidding for or participating in a Bank-financed project, including, inter alia, applicants, bidders, contractors, consulting firms and individual consultants (including their respective officers, employees and agents) adhere to the highest ethical standards, and report to the Bank all suspected acts of fraud or corruption of which it has knowledge or becomes aware, during the Bidding Process and throughout the negotiation or execution of a Contract. Fraud and corruption are prohibited.

Fraud and corruption include acts of:



- (a) bribery,
- (b) extortion or coercion,
- (c) fraud, and
- (d) collusion.

The definitions of actions set forth below cover the most common types of corrupt practices, but are not exhaustive. For this reason, the Bank shall also take action in the event of any similar deed or complaint involving alleged acts of corruption, even when these are not specified in the following list. The Bank shall in all cases proceed in accordance with Sub-Clause 15.6.

In pursuance of this policy:

- (a) the Bank defines the terms set forth below as follows:
  - (i) "bribery" meaning the offering or giving of anything of value to influence the actions or decisions of third parties or the receiving or soliciting of any benefit in exchange for actions or omissions related to the performance of duties;
  - (ii) "extortion" or "coercion" meaning the act of obtaining something, compelling an action or influencing a decision through intimidation, threat or the use of force, where potential or actual injury may befall upon a person, his/her reputation or property;
  - (iii) "fraud" meaning any action or omission intended to misrepresent the truth so as to induce others to act in reliance thereof, with the purpose of obtaining some unjust advantage or causing damage to others; and
  - (iv) "collusion" meaning a secret agreement between two or more parties to defraud or cause damage to a person or entity or to obtain an unlawful purpose;
- (b) if the Bank, in accordance with its administrative procedures, demonstrates that any firm, entity or individual bidding for or participating in a Bank-financed project including, inter alia, applicants, bidders, contractors, consulting firms, individual consultants, borrowers (including grant beneficiaries), purchasers, executing agencies and contracting agency (including their respective officers, employees and agents) engaged in an act of fraud or corruption in connection with Bank-financed projects, the Bank may:
  - (i) decide not to finance any proposal to award a contract or a contract awarded financed by the Bank;
  - (ii) suspend disbursement of the operation if it is determined at any stage that evidence is sufficient to support a finding that an employee, agent or representative of the Borrower, Executing Agency or Contracting Agency has engaged in an act of fraud or corruption;
  - (iii) cancel and/or accelerate the payment of, the portion of a loan or grant earmarked for a contract, when there is evidence that the representative of the Borrower, or Beneficiary of a grant, has not taken the adequate remedial measures within a time period which the Bank considers reasonable, and in accordance with the due process guarantees of the Borrowing country's legislation;
  - (iv) issue a reprimand in the form of a formal letter of censure of the firm, entity or individual's behaviour;
  - (v) issue a declaration that an individual, entity or firm is ineligible, either permanently or for a stated period of time, to be awarded contracts under Bank-financed projects except under such conditions as the Bank deems to be appropriate;
  - (vi) refer the matter to appropriate law enforcement authorities; and/or;



- (vii) may impose other sanctions that it deems to be appropriate under the circumstances, including the imposition of fines representing reimbursement of the Bank for costs associated with investigations and proceedings. Such other sanctions may be imposed in addition to or in lieu of other sanctions;
- (c) the Bank has established administrative procedures for cases of allegations of fraud and corruption within the procurement process or the execution of a contract financed by the Bank which are available on the Bank's website (www. ....) updated from time to time. To that effect any complaint shall be submitted to the Bank's Office of Institutional Integrity (OI) for the appropriate investigation. Allegations may be presented confidentially or anonymously;
- (d) payments are expressly conditional upon the claimant's participation in the procurement process conformed with all applicable Bank policies on Fraud and Corruption described in this Sub-Clause 15.5; and
- (e) the imposition of any sanction referred to paragraph (b) of this Sub-Clause will be public;

The Bank will have the right to require that a Contractor permit the Bank to inspect their accounts and records and other documents relating to the submission of bids and contract performance and to have them audited by auditors appointed by the Bank. The Bank will have the right to require that Contractors to:

- (a) maintain all documents and records related to the Bank-financed project for five (5) years after completion of the work; and
- (b) require the delivery of any document necessary for the investigation of allegations of fraud or corruption and the availability of employees or agents of the contractor with knowledge of the Bank-financed project to respond to questions from the Bank.

If the Contractor refuses to comply with the Bank's request, the Bank, in its sole discretion, may take appropriate action against the Contractor.

The Contractor represents and warrants:

- (a) that they have read and understood the Bank's prohibition against fraud and corruption and agrees to abide by the applicable rules;
- (b) that they have not engaged in any violation of policies on fraud and corruption described herein;
- (c) that they have not misrepresented or concealed any material facts during the procurement or contract negotiation processes or performance of the contract;
- (d) that neither they nor any of their directors, officers or principal shareholders have been declared ineligible to be awarded Bank-financed contracts or have been convicted of a crime involving fraud or corruption;
- (e) that none of their directors, officers or principal shareholders has been a director, officer or principal shareholder of any other company or entity that has been declared ineligible to be awarded a Bank-financed contract or has been convicted of a crime involving fraud or corruption;
- (f) that all commissions, agents' fees, facilitating payments or revenue-sharing agreements related to the Bank-financed contract or consulting agreement have been disclosed;
- (g) that they acknowledge that the breach of any of these warranties constitute a basis for the imposition of any or a combination of the measures described in this Sub-Clause.

[For contracts financed by the World Bank]

In pursuance of this policy, the Bank:

- (a) defines, for the purposes of this provision, the terms set forth below as follows:



- (i) "corrupt practice" is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;

*In this context, "another party" refers to a public official acting in relation to the procurement process or contract execution]. In this context, "public official" includes World Bank staff and employees of other organisations taking or reviewing procurement decisions.*

- (ii) "fraudulent practice" is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;

*In this context, "party" refers to a public official; the terms "benefit" and "obligation" relate to the procurement process or contract execution; and the "act or omission" is intended to influence the procurement process or contract execution.*

- (iii) "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;

*In this context, "parties" refers to participants in the procurement process (including public officials) attempting to establish bid prices at artificial, non competitive levels.*

- (iv) "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;

*In this context, "parties" refers to participants in the procurement process (including public officials) attempting to establish bid prices at artificial, non competitive levels.*

- (v) "obstructive practice" is

- (A) deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or
- (B) acts intended to materially impede the exercise of the Bank's inspection and audit rights.

*In this context, "party" refers to a participant in the procurement process or contract execution.*

## 16 Suspension and Termination by Contractor

### 16.1 Contractor's Entitlement to Suspend Work

If the Engineer fails to certify in accordance with Sub-Clause 14.6 [Issue of Interim Payment Certificates] or the Employer fails to comply with Sub-Clause 2.4 [Employer's Financial Arrangements] or Sub-Clause 14.7 [Payment], the Contractor may, after giving not less than 21 days' notice to the Employer, suspend work (or reduce the rate of work) unless and until the Contractor has received the Payment Certificate, reasonable evidence or payment, as the case may be and as described in the notice.

Notwithstanding the above, if the Bank has suspended disbursements under the loan or credit from which payments to the Contractor are being made, in whole or in part, for the execution of the Works, and no alternative funds are available as provided for in Sub-Clause 2.4 [Employer's Financial Arrangements], the Contractor may by notice suspend work or reduce the rate of work at any time, but not less than 7 days after the Borrower having received the suspension notification from the Bank.

The Contractor's action shall not prejudice his entitlements to financing charges under Sub-Clause 14.8 [Delayed Payment] and to termination under Sub-Clause 16.2 [Termination by Contractor].



If the Contractor subsequently receives such Payment Certificate, evidence or payment (as described in the relevant Sub-Clause and in the above notice) before giving a notice of termination, the Contractor shall resume normal working as soon as is reasonably practicable.

If the Contractor suffers delay and/or incurs Cost as a result of suspending work (or reducing the rate of work) in accordance with this Sub-Clause, the Contractor shall give notice to the Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

- (a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
- (b) payment of any such Cost plus profit, which shall be included in the Contract Price.

After receiving this notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

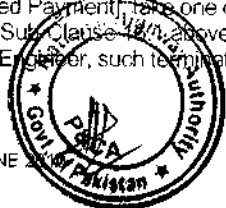
## 16.2 Termination by Contractor

The Contractor shall be entitled to terminate the Contract if:

- (a) the Contractor does not receive the reasonable evidence within 42 days after giving notice under Sub-Clause 16.1 [Contractor's Entitlement to Suspend Work] in respect of a failure to comply with Sub-Clause 2.4 [Employer's Financial Arrangements],
- (b) the Engineer fails, within 56 days after receiving a Statement and supporting documents, to issue the relevant Payment Certificate,
- (c) the Contractor does not receive the amount due under an Interim Payment Certificate within 42 days after the expiry of the time stated in Sub-Clause 14.7 [Payment] within which payment is to be made (except for deductions in accordance with Sub-Clause 2.5 [Employer's Claims]),
- (d) the Employer substantially fails to perform his obligations under the Contract in such manner as to materially and adversely affect the economic balance of the Contract and/or the ability of the Contractor to perform the Contract,
- (e) the Employer fails to comply with Sub-Clause 1.6 [Contract Agreement] or Sub-Clause 1.7 [Assignment],
- (f) a prolonged suspension affects the whole of the Works as described in Sub-Clause 8.11 [Prolonged Suspension],
- (g) the Employer becomes bankrupt or insolvent, goes into liquidation, has a receiving or administration order made against him, compounds with his creditors, or carries on business under a receiver, trustee or manager for the benefit of his creditors, or if any act is done or event occurs which (under applicable Laws) has a similar effect to any of these acts or events,
- (h) the Contractor does not receive the Engineer's instruction recording the agreement of both Parties on the fulfilment of the conditions for the Commencement of Works under Sub-Clause 8.1 [Commencement of Works].

In any of these events or circumstances, the Contractor may, upon giving 14 days' notice to the Employer, terminate the Contract. However, in the case of sub-paragraph (f) or (g), the Contractor may by notice terminate the Contract immediately.

In the event the Bank suspends the loan or credit from which part or whole of the payments to the Contractor are being made, if the Contractor has not received the sums due to him upon expiration of the 14 days referred to in Sub-Clause 14.7 [Payment] for payments under Interim Payment Certificates, the Contractor may, without prejudice to the Contractor's entitlement to financing charges under Sub-Clause 14.8 [Delayed Payment], take one of the following actions, namely (i) suspend work or reduce the rate of work under Sub-Clause 8.11 above, or (ii) terminate the Contract by giving notice to the Employer, with a copy to the Engineer, such termination to take effect 14 days after the giving of the notice.



The Contractor's election to terminate the Contract shall not prejudice any other rights of the Contractor, under the Contract or otherwise.

### 16.3 Cessation of Work and Removal of Contractor's Equipment

After a notice of termination under Sub-Clause 15.5 [Employer's Entitlement to Termination for Convenience], Sub-Clause 16.2 [Termination by Contractor] or Sub-Clause 19.6 [Optional Termination, Payment and Release] has taken effect, the Contractor shall promptly:

- (a) cease all further work, except for such work as may have been instructed by the Engineer for the protection of life or property or for the safety of the Works,
- (b) hand over Contractor's Documents, Plant, Materials and other work, for which the Contractor has received payment, and
- (c) remove all other Goods from the Site, except as necessary for safety, and leave the Site.

### 16.4 Payment on Termination

After a notice of termination under Sub-Clause 16.2 [Termination by Contractor] has taken effect, the Employer shall promptly:

- (a) return the Performance Security to the Contractor,
- (b) pay the Contractor in accordance with Sub-Clause 19.6 [Optional Termination, Payment and Release], and
- (c) pay to the Contractor the amount of any loss or damage sustained by the Contractor as a result of this termination.

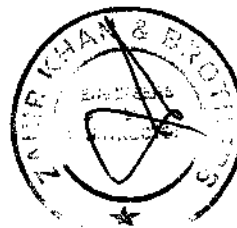
## 17 Risk and Responsibility

### 17.1 Indemnities

The Contractor shall indemnify and hold harmless the Employer, the Employer's Personnel, and their respective agents, against and from all claims, damages, losses and expenses (including legal fees and expenses) in respect of:

- (a) bodily injury, sickness, disease or death, of any person whatsoever arising out of or in the course of or by reason of the Contractor's design (if any), the execution and completion of the Works and the remedying of any defects, unless attributable to any negligence, wilful act or breach of the Contract by the Employer, the Employer's Personnel, or any of their respective agents, and
- (b) damage to or loss of any property, real or personal (other than the Works), to the extent that such damage or loss arises out of or in the course of or by reason of the Contractor's design (if any), the execution and completion of the Works and the remedying of any defects, unless and to the extent that any such damage or loss is attributable to any negligence, wilful act or breach of the Contract by the Employer, the Employer's Personnel, their respective agents, or anyone directly or indirectly employed by any of them.

The Employer shall indemnify and hold harmless the Contractor, the Contractor's Personnel, and their respective agents, against and from all claims, damages, losses and expenses (including legal fees and expenses) in respect of (1) bodily injury, sickness, disease or death, which is attributable to any negligence, wilful act or breach of the Contract by the Employer, the Employer's Personnel, or any of their respective agents, and (2) the matters for which liability may be excluded from insurance cover, as described in sub-clauses (d)(i), (ii) and (iii) of Sub-Clause 18.3 [Insurance Against Injury to Persons and Damage to Property].



## 17.2 Contractor's Care of the Works

The Contractor shall take full responsibility for the care of the Works and Goods from the Commencement Date until the Taking-Over Certificate is issued (or is deemed to be issued under Sub-Clause 10.1 [Taking Over of the Works and Sections]) for the Works, when responsibility for the care of the Works shall pass to the Employer. If a Taking-Over Certificate is issued (or is so deemed to be issued) for any Section or part of the Works, responsibility for the care of the Section or part shall then pass to the Employer.

After responsibility has accordingly passed to the Employer, the Contractor shall take responsibility for the care of any work which is outstanding on the date stated in a Taking-Over Certificate, until this outstanding work has been completed.

If any loss or damage happens to the Works, Goods or Contractor's Documents during the period when the Contractor is responsible for their care, from any cause not listed in Sub-Clause 17.3 [Employer's Risks], the Contractor shall rectify the loss or damage at the Contractor's risk and cost, so that the Works, Goods and Contractor's Documents conform with the Contract.

The Contractor shall be liable for any loss or damage caused by any actions performed by the Contractor after a Taking-Over Certificate has been issued. The Contractor shall also be liable for any loss or damage which occurs after a Taking-Over Certificate has been issued and which arose from a previous event for which the Contractor was liable.

## 17.3 Employer's Risks

The risks referred to in Sub-Clause 17.4 [Consequences of Employer's Risks] below, insofar as they directly affect the execution of the Works in the Country, are:

- (a) war, hostilities (whether war be declared or not), invasion, act of foreign enemies,
- (b) rebellion, terrorism, sabotage by persons other than the Contractor's Personnel, revolution, insurrection, military or usurped power, or civil war, within the Country,
- (c) riot, commotion or disorder within the Country by persons other than the Contractor's Personnel,
- (d) munitions of war, explosive materials, ionising radiation or contamination by radio-activity, within the Country, except as may be attributable to the Contractor's use of such munitions, explosives, radiation or radio-activity,
- (e) pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds,
- (f) use or occupation by the Employer of any part of the Permanent Works, except as may be specified in the Contract,
- (g) design of any part of the Works by the Employer's Personnel or by others for whom the Employer is responsible, and
- (h) any operation of the forces of nature which is Unforeseeable or against which an experienced contractor could not reasonably have been expected to have taken adequate preventive precautions.

## 17.4 Consequences of Employer's Risks

If and to the extent that any of the risks listed in Sub-Clause 17.3 above results in loss or damage to the Works, Goods or Contractor's Documents, the Contractor shall promptly give notice to the Engineer and shall rectify this loss or damage to the extent required by the Engineer.

If the Contractor suffers delay and/or incurs Cost from rectifying this loss or damage, the Contractor shall give a further notice to the Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:





- (a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
- (b) payment of any such Cost, which shall be included in the Contract Price. In the case of sub-paragraphs (f) and (g) of Sub-Clause 17.3 [Employer's Risks], Cost plus profit shall be payable.

After receiving this further notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

## 17.5 Intellectual and Industrial Property Rights

In this Sub-Clause, "infringement" means an infringement (or alleged infringement) of any patent, registered design, copyright, trade mark, trade name, trade secret or other intellectual or industrial property right relating to the Works, and "claim" means a claim (or proceedings pursuing a claim) alleging an infringement.

Whenever a Party does not give notice to the other Party of any claim within 28 days of receiving the claim, the first Party shall be deemed to have waived any right to indemnity under this Sub-Clause.

The Employer shall indemnify and hold the Contractor harmless against and from any claim alleging an infringement which is or was:

- (a) an unavoidable result of the Contractor's compliance with the Contract, or
- (b) a result of any Works being used by the Employer:
  - (i) for a purpose other than that indicated by, or reasonably to be inferred from, the Contract, or
  - (ii) in conjunction with any thing not supplied by the Contractor, unless such use was disclosed to the Contractor prior to the Base Date or is stated in the Contract.

The Contractor shall indemnify and hold the Employer harmless against and from any other claim which arises out of or in relation to (i) the manufacture, use, sale or import of any Goods, or (ii) any design for which the Contractor is responsible.

If a Party is entitled to be indemnified under this Sub-Clause, the indemnifying Party may (at its cost) conduct negotiations for the settlement of the claim, and any litigation or arbitration which may arise from it. The other Party shall, at the request and cost of the indemnifying Party, assist in contesting the claim. This other Party (and its Personnel) shall not make any admission which might be prejudicial to the indemnifying Party, unless the indemnifying Party failed to take over the conduct of any negotiations, litigation or arbitration upon being requested to do so by such other Party.

## 17.6 Limitation of Liability

Neither Party shall be liable to the other Party for loss of use of any Works, loss of profit, loss of any contract or for any indirect or consequential loss or damage which may be suffered by the other Party in connection with the Contract, other than as specifically provided in Sub-Clause 8.7 [Delay Damages]; Sub-Clause 11.2 [Cost of Remedying Defects]; Sub-Clause 15.4 [Payment after Termination]; Sub-Clause 16.4 [Payment on Termination]; Sub-Clause 17.1 [Indemnities]; Sub-Clause 17.4(b) [Consequences of Employer's Risks] and Sub-Clause 17.5 [Intellectual and Industrial Property Rights].

The total liability of the Contractor to the Employer, under or in connection with the Contract other than under Sub-Clause 4.19 [Electricity, Water and Gas], Sub-Clause 4.20 [Employer's Equipment and Free-Issue Materials], Sub-Clause 17.1 [Indemnities] and Sub-Clause 17.5 [Intellectual and Industrial Property Rights], shall not exceed the sum resulting from the application of a multiplier (less or greater than one) to the Accepted Contract Amount, as stated in the Contract Data, or (if such multiplier or other sum is not so stated) the Accepted Contract Amount.



This Sub-Clause shall not limit liability in any case of fraud, deliberate default or reckless misconduct by the defaulting Party.

## 17.7 Use of Employer's Accommodation/Facilities

The Contractor shall take full responsibility for the care of the Employer provided accommodation and facilities, if any, as detailed in the Specification, from the respective dates of hand-over to the Contractor until cessation of occupation (where hand-over or cessation of occupation may take place after the date stated in the Taking-Over Certificate for the Works).

If any loss or damage happens to any of the above items while the Contractor is responsible for their care arising from any cause whatsoever other than those for which the Employer is liable, the Contractor shall, at his own cost, rectify the loss or damage to the satisfaction of the Engineer.

## 18 Insurance

### 18.1 General Requirements for Insurances

In this Clause, "insuring Party" means, for each type of insurance, the Party responsible for effecting and maintaining the insurance specified in the relevant Sub-Clause.

Wherever the Contractor is the insuring Party, each insurance shall be effected with insurers and in terms approved by the Employer. These terms shall be consistent with any terms agreed by both Parties before the date of the Letter of Acceptance. This agreement of terms shall take precedence over the provisions of this Clause

Wherever the Employer is the insuring Party, each insurance shall be effected with insurers and in terms acceptable to the Contractor. These terms shall be consistent with any terms agreed by both Parties before the date of the Letter of Acceptance. This agreement of terms shall take precedence over the provisions of this Clause.

If a policy is required to indemnify joint insured, the cover shall apply separately to each insured as though a separate policy had been issued for each of the joint insured. If a policy indemnifies additional joint insured, namely in addition to the insured specified in this Clause, (i) the Contractor shall act under the policy on behalf of these additional joint insured except that the Employer shall act for Employer's Personnel, (ii) additional joint insured shall not be entitled to receive payments directly from the insurer or to have any other direct dealings with the insurer, and (iii) the insuring Party shall require all additional joint insured to comply with the conditions stipulated in the policy.

Each policy insuring against loss or damage shall provide for payments to be made in the currencies required to rectify the loss or damage. Payments received from insurers shall be used for the rectification of the loss or damage.

The relevant insuring Party shall, within the respective periods stated in the Contract Data (calculated from the Commencement Date), submit to the other Party:

- (a) evidence that the insurances described in this Clause have been effected, and
- (b) copies of the policies for the insurances described in Sub-Clause 18.2 [Insurance for Works and Contractor's Equipment] and Sub-Clause 18.3 [Insurance against Injury to Persons and Damage to Property].

When each premium is paid, the insuring Party shall submit evidence of payment to the other Party. Whenever evidence or policies are submitted, the insuring Party shall also give notice to the Engineer.

Each Party shall comply with the conditions stipulated in each of the insurance policies. The insuring Party shall keep the Insurers informed of any relevant changes to the execution of the Works and ensure that insurances are maintained in accordance with this Clause.



Neither Party shall make any material alteration to the terms of any insurance without the prior approval of the other Party. If an insurer makes (or attempts to make) any alteration, the Party first notified by the insurer shall promptly give notice to the other Party.

If the insuring Party fails to effect and keep in force any of the insurances it is required to effect and maintain under the Contract, or fails to provide satisfactory evidence and copies of policies in accordance with this Sub-Clause, the other Party may (at its option and without prejudice to any other right or remedy) effect insurance for the relevant coverage and pay the premiums due. The insuring Party shall pay the amount of these premiums to the other Party, and the Contract Price shall be adjusted accordingly.

Nothing in this Clause limits the obligations, liabilities or responsibilities of the Contractor or the Employer, under the other terms of the Contract or otherwise. Any amounts not insured or not recovered from the insurers shall be borne by the Contractor and/or the Employer in accordance with these obligations, liabilities or responsibilities. However, if the insuring Party fails to effect and keep in force an insurance which is available and which it is required to effect and maintain under the Contract, and the other Party neither approves the omission nor effects insurance for the coverage relevant to this default, any moneys which should have been recoverable under this insurance shall be paid by the insuring Party.

Payments by one Party to the other Party shall be subject to Sub-Clause 2.5 [Employer's Claims] or Sub-Clause 20.1 [Contractor's Claims], as applicable.

The Contractor shall be entitled to place all insurance relating to the Contract (including, but not limited to the insurance referred to Clause 18) with insurers from any eligible source country.

## 18.2 Insurance for Works and Contractor's Equipment

The insuring Party shall insure the Works, Plant, Materials and Contractor's Documents for not less than the full reinstatement cost including the costs of demolition, removal of debris and professional fees and profit. This insurance shall be effective from the date by which the evidence is to be submitted under subparagraph (a) of Sub-Clause 18.1 [General Requirements for Insurances], until the date of issue of the Taking-Over Certificate for the Works.

The insuring Party shall maintain this insurance to provide cover until the date of issue of the Performance Certificate, for loss or damage for which the Contractor is liable arising from a cause occurring prior to the issue of the Taking-Over Certificate, and for loss or damage caused by the Contractor in the course of any other operations (including those under Clause 11 [Defects Liability]).

The insuring Party shall insure the Contractor's Equipment for not less than the full replacement value, including delivery to Site. For each item of Contractor's Equipment, the insurance shall be effective while it is being transported to the Site and until it is no longer required as Contractor's Equipment.

Unless otherwise stated in the Particular Conditions, insurances under this Sub-Clause:

- (a) shall be effected and maintained by the Contractor as insuring Party,
- (b) shall be in the joint names of the Parties, who shall be jointly entitled to receive payments from the insurers, payments being held or allocated to the Party actually bearing the costs of rectifying the loss or damage,
- (c) shall cover all loss and damage from any cause not listed in Sub-Clause 17.3 [Employer's Risks],
- (d) shall also cover, to the extent specifically required in the bidding documents of the Contract, loss or damage to a part of the Works which is attributable to the use or occupation by the Employer of another part of the Works, and loss or damage from the risks listed in sub-paragraphs (c), (g) and (h) of Sub-Clause 17.3 [Employer's Risks], excluding (in each case) risks which are not insurable at commercially reasonable terms, with deductibles per occurrence of not more than the amount stated in the Contract Data (if an amount is not so stated, this sub-paragraph (d) shall not apply), and
- (e) may however exclude loss of, damage to, and reinstatement of:



- (i) a part of the Works which is in a defective condition due to a defect in its design, materials or workmanship (but cover shall include any other parts which are lost or damaged as a direct result of this defective condition and not as described in sub-paragraph (ii) below),
- (ii) a part of the Works which is lost or damaged in order to reinstate any other part of the Works if this other part is in a defective condition due to a defect in its design, materials or workmanship,
- (iii) a part of the Works which has been taken over by the Employer, except to the extent that the Contractor is liable for the loss or damage, and
- (iv) Goods while they are not in the Country, subject to Sub-Clause 14.5 [Plant and Materials intended for the Works].

If, more than one year after the Base Date, the cover described in sub-paragraph (d) above ceases to be available at commercially reasonable terms, the Contractor shall (as insuring Party) give notice to the Employer, with supporting particulars. The Employer shall then (i) be entitled subject to Sub-Clause 2.5 [Employer's Claims] to payment of an amount equivalent to such commercially reasonable terms as the Contractor should have expected to have paid for such cover, and (ii) be deemed, unless he obtains the cover at commercially reasonable terms, to have approved the omission under Sub-Clause 18.1 [General Requirements for Insurances].

### 18.3 Insurance against Injury to Persons and Damage to Property

The insuring Party shall insure against each Party's liability for any loss, damage, death or bodily injury which may occur to any physical property (except things insured under Sub-Clause 18.2 [Insurance for Works and Contractor's Equipment]) or to any person (except persons insured under Sub-Clause 18.4 [Insurance for Contractor's Personnel]), which may arise out of the Contractor's performance of the Contract and occurring before the issue of the Performance Certificate.

This insurance shall be for a limit per occurrence of not less than the amount stated in the Contract Data, with no limit on the number of occurrences. If an amount is not stated in the Contract Data, this Sub-Clause shall not apply.

Unless otherwise stated in the Particular Conditions, the insurances specified in this Sub-Clause:

- (a) shall be effected and maintained by the Contractor as insuring Party,
- (b) shall be in the joint names of the Parties,
- (c) shall be extended to cover liability for all loss and damage to the Employer's property (except things insured under Sub-Clause 18.2) arising out of the Contractor's performance of the Contract, and
- (d) may however exclude liability to the extent that it arises from:
  - (i) the Employer's right to have the Permanent Works executed on, over, under, in or through any land, and to occupy this land for the Permanent Works,
  - (ii) damage which is an unavoidable result of the Contractor's obligations to execute the Works and remedy any defects, and
  - (iii) a cause listed in Sub-Clause 17.3 [Employer's Risks], except to the extent that cover is available at commercially reasonable terms.

### 18.4 Insurance for Contractor's Personnel

The Contractor shall effect and maintain insurance against liability for claims, damages, losses and expenses (including legal fees and expenses) arising from injury, sickness, disease or death of any person employed by the Contractor or any other of the Contractor's Personnel.



The insurance shall cover the Employer and the Engineer against liability for claims, damages, losses and expenses (including legal fees and expenses) arising from injury, sickness, disease or death of any person employed by the Contractor or any other of the Contractor's Personnel, except that this insurance may exclude losses and claims to the extent that they arise from any act or neglect of the Employer or of the Employer's Personnel.

The insurance shall be maintained in full force and effect during the whole time that these personnel are engaged in the execution of the Works. For a Subcontractor's employees, the insurance may be effected by the Subcontractor, but the Contractor shall be responsible for compliance with this Clause.

## 19 Force Majeure

### 19.1 Definition of Force Majeure

In this Clause, "Force Majeure" means an exceptional event or circumstance:

- (a) which is beyond a Party's control,
- (b) which such Party could not reasonably have provided against before entering into the Contract,
- (c) which, having arisen, such Party could not reasonably have avoided or overcome, and
- (d) which is not substantially attributable to the other Party.

Force Majeure may include, but is not limited to, exceptional events or circumstances of the kind listed below, so long as conditions (a) to (d) above are satisfied:

- (i) war, hostilities (whether war be declared or not), invasion, act of foreign enemies,
- (ii) rebellion, terrorism, sabotage by persons other than the Contractor's Personnel, revolution, insurrection, military or usurped power, or civil war,
- (iii) riot, commotion, disorder, strike or lockout by persons other than the Contractor's Personnel,
- (iv) munitions of war, explosive materials, ionising radiation or contamination by radio-activity, except as may be attributable to the Contractor's use of such munitions, explosives, radiation or radio-activity, and
- (v) natural catastrophes such as earthquake, hurricane, typhoon or volcanic activity.

### 19.2 Notice of Force Majeure

If a Party is or will be prevented from performing its substantial obligations under the Contract by Force Majeure, then it shall give notice to the other Party of the event or circumstances constituting the Force Majeure and shall specify the obligations, the performance of which is or will be prevented. The notice shall be given within 14 days after the Party became aware, or should have become aware, of the relevant event or circumstance constituting Force Majeure.

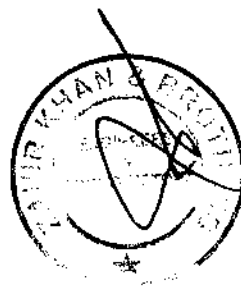
The Party shall, having given notice, be excused performance of its obligations for so long as such Force Majeure prevents it from performing them.

Notwithstanding any other provision of this Clause, Force Majeure shall not apply to obligations of either Party to make payments to the other Party under the Contract.

### 19.3 Duty to Minimise Delay



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73

Each Party shall at all times use all reasonable endeavours to minimise any delay in the performance of the Contract as a result of Force Majeure.

A Party shall give notice to the other Party when it ceases to be affected by the Force Majeure.

#### 19.4 Consequences of Force Majeure

If the Contractor is prevented from performing his substantial obligations under the Contract by Force Majeure of which notice has been given under Sub-Clause 19.2 [Notice of Force Majeure], and suffers delay and/or incurs Cost by reason of such Force Majeure, the Contractor shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

- (a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
- (b) if the event or circumstance is of the kind described in sub-paragraphs (i) to (iv) of Sub-Clause 19.1 [Definition of Force Majeure] and, in sub-paragraphs (ii) to (iv), occurs in the Country, payment of any such Cost, including the costs of rectifying or replacing the Works and/or Goods damaged or destroyed by Force Majeure, to the extent they are not indemnified through the insurance policy referred to in Sub-Clause 18.2 [Insurance for Works and Contractor's Equipment].

After receiving this notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

#### 19.5 Force Majeure Affecting Subcontractor

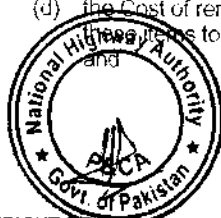
If any Subcontractor is entitled under any contract or agreement relating to the Works to relief from force majeure on terms additional to or broader than those specified in this Clause, such additional or broader force majeure events or circumstances shall not excuse the Contractor's non-performance or entitle him to relief under this Clause.

#### 19.6 Optional Termination, Payment and Release

If the execution of substantially all the Works in progress is prevented for a continuous period of 84 days by reason of Force Majeure of which notice has been given under Sub-Clause 19.2 [Notice of Force Majeure], or for multiple periods which total more than 140 days due to the same notified Force Majeure, then either Party may give to the other Party a notice of termination of the Contract. In this event, the termination shall take effect 7 days after the notice is given, and the Contractor shall proceed in accordance with Sub-Clause 16.3 [Cessation of Work and Removal of Contractor's Equipment].

Upon such termination, the Engineer shall determine the value of the work done and issue a Payment Certificate which shall include:

- (a) the amounts payable for any work carried out for which a price is stated in the Contract;
- (b) the Cost of Plant and Materials ordered for the Works which have been delivered to the Contractor, or of which the Contractor is liable to accept delivery; this Plant and Materials shall become the property of (and be at the risk of) the Employer when paid for by the Employer, and the Contractor shall place the same at the Employer's disposal;
- (c) other Cost or liabilities which in the circumstances were reasonably and necessarily incurred by the Contractor in the expectation of completing the Works;
- (d) the Cost of removal of Temporary Works and Contractor's Equipment from the Site and the return of the Contractor's works in his country (or to any other destination at no greater cost);



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74

- (e) the Cost of repatriation of the Contractor's staff and labour employed wholly in connection with the Works at the date of termination.

## 19.7 Release from Performance

Notwithstanding any other provision of this Clause, if any event or circumstance outside the control of the Parties (including, but not limited to, Force Majeure) arises which makes it impossible or unlawful for either or both Parties to fulfil its or their contractual obligations or which, under the law governing with the Contract, entitles the Parties to be released from further performance of the Contract, then upon notice by either Party to the other Party of such event or circumstance:

- (a) the Parties shall be discharged from further performance, without prejudice to the rights of either Party in respect of any previous breach of the Contract, and
- (b) the sum payable by the Employer to the Contractor shall be the same as would have been payable under Sub-Clause 19.6 [Optional Termination, Payment and Release] if the Contract had been terminated under Sub-Clause 19.6.

## 20 Claims, Disputes and Arbitration

### 20.1 Contractor's Claims

If the Contractor considers himself to be entitled to any extension of the Time for Completion and/or any additional payment, under any Clause of these Conditions or otherwise in connection with the Contract, the Contractor shall give notice to the Engineer, describing the event or circumstance giving rise to the claim. The notice shall be given as soon as practicable, and not later than 28 days after the Contractor became aware, or should have become aware, of the event or circumstance.

If the Contractor fails to give notice of a claim within such period of 28 days, the Time for Completion shall not be extended, the Contractor shall not be entitled to additional payment, and the Employer shall be discharged from all liability in connection with the claim. Otherwise, the following provisions of this Sub-Clause shall apply.

The Contractor shall also submit any other notices which are required by the Contract, and supporting particulars for the claim, all as relevant to such event or circumstance.

The Contractor shall keep such contemporary records as may be necessary to substantiate any claim, either on the Site or at another location acceptable to the Engineer. Without admitting the Employer's liability, the Engineer may, after receiving any notice under this Sub-Clause, monitor the record-keeping and/or instruct the Contractor to keep further contemporary records. The Contractor shall permit the Engineer to inspect all these records, and shall (if instructed) submit copies to the Engineer.

Within 42 days after the Contractor became aware (or should have become aware) of the event or circumstance giving rise to the claim, or within such other period as may be proposed by the Contractor and approved by the Engineer, the Contractor shall send to the Engineer a fully detailed claim which includes full supporting particulars of the basis of the claim and of the extension of time and/or additional payment claimed. If the event or circumstance giving rise to the claim has a continuing effect:

- (a) this fully detailed claim shall be considered as interim;
- (b) the Contractor shall send further interim claims at monthly intervals, giving the accumulated delay and/or amount claimed, and such further particulars as the Engineer may reasonably require; and
- (c) the Contractor shall send a final claim within 28 days after the end of the effects resulting from the event or circumstance, or within such other period as may be proposed by the Contractor and approved by the Engineer.



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75

Within 42 days after receiving a claim or any further particulars supporting a previous claim, or within such other period as may be proposed by the Engineer and approved by the Contractor, the Engineer shall respond with approval, or with disapproval and detailed comments. He may also request any necessary further particulars, but shall nevertheless give his response on the principles of the claim within the above defined time period.

Within the above defined period of 42 days, the Engineer shall proceed in accordance with Sub-Clause [Terminations] to agree or determine (i) the extension (if any) of the Time for Completion (before or after its expiry) in accordance with Sub-Clause 8.4 [Extension of Time for Completion], and/or (ii) the additional payment (if any) to which the Contractor is entitled under the Contract.

Each Payment Certificate shall include such additional payment for any claim as has been reasonably substantiated as due under the relevant provision of the Contract. Unless and until the particulars supplied are sufficient to substantiate the whole of the claim, the Contractor shall only be entitled to payment for such part of the claim as he has been able to substantiate.

If the Engineer does not respond within the timeframe defined in this Clause, either Party may consider that the claim is rejected by the Engineer and any of the Parties may refer to the Dispute Board in accordance with Sub-Clause 20.4 [Obtaining Dispute Board's Decision].

The requirements of this Sub-Clause are in addition to those of any other Sub-Clause which may apply to a claim. If the Contractor fails to comply with this or another Sub-Clause in relation to any claim, any extension of time and/or additional payment shall take account of the extent (if any) to which the failure has prevented or prejudiced proper investigation of the claim, unless the claim is excluded under the second paragraph of this Sub-Clause.

## 20.2 Appointment of the Dispute Board

Disputes shall be referred to a DB for decision in accordance with Sub-Clause 20.4 [Obtaining Dispute Board's Decision]. The Parties shall appoint a DB by the date stated in the Contract Data.

The DB shall comprise, as stated in the Contract Data, either one or three suitably qualified persons ("the members"), each of whom shall be fluent in the language for communication defined in the Contract and shall be a professional experienced in the type of construction involved in the Works and with the interpretation of contractual documents. If the number is not so stated and the Parties do not agree otherwise, the DB shall comprise three persons.

If the Parties have not jointly appointed the DB 21 days before the date stated in the Contract Data and the DB is to comprise three persons, each Party shall nominate one member for the approval of the other Party. The first two members shall recommend and the Parties shall agree upon the third member, who shall act as chairman.

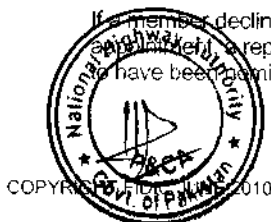
However, if a list of potential members has been agreed by the Parties and is included in the Contract, the members shall be selected from those on the list, other than anyone who is unable or unwilling to accept appointment to the DB.

The agreement between the Parties and either the sole member or each of the three members shall incorporate by reference the General Conditions of Dispute Board Agreement contained in the Appendix to these General Conditions, with such amendments as are agreed between them.

The terms of the remuneration of either the sole member or each of the three members, including the remuneration of any expert whom the DB consults, shall be mutually agreed upon by the Parties when agreeing the terms of appointment. Each Party shall be responsible for paying one-half of this remuneration.

If at any time the Parties so agree, they may jointly refer a matter to the DB for it to give its opinion. Neither Party shall consult the DB on any matter without the agreement of the other Party.

If a member declines to act or is unable to act as a result of death, disability, resignation or termination of appointment, a replacement shall be appointed in the same manner as the replaced person was required to have been nominated or agreed upon, as described in this Sub-Clause.





The appointment of any member may be terminated by mutual agreement of both Parties, but not by the Employer or the Contractor acting alone. Unless otherwise agreed by both Parties, the appointment of the DB (including each member) shall expire when the discharge referred to in Sub-Clause 14.12 [Discharge] shall have become effective.

### 20.3 Failure to Agree on the Composition of the Dispute Board

If any of the following conditions apply, namely:

- (a) the Parties fail to agree upon the appointment of the sole member of the DB by the date stated in the first paragraph of Sub-Clause 20.2, [Appointment of the Dispute Board]
- (b) either Party fails to nominate a member (for approval by the other Party), or fails to approve a member nominated by the other Party, of a DB of three persons by such date,
- (c) the Parties fail to agree upon the appointment of the third member (to act as chairman) of the DB by such date, or
- (d) the Parties fail to agree upon the appointment of a replacement person within 42 days after the date on which the sole member or one of the three members declines to act or is unable to act as a result of death, disability, resignation or termination of appointment,

then the appointing entity or official named in the Contract Data shall, upon the request of either or both of the Parties and after due consultation with both Parties, appoint this member of the DB. This appointment shall be final and conclusive. Each Party shall be responsible for paying one-half of the remuneration of the appointing entity or official.

### 20.4 Obtaining Dispute Board's Decision

If a dispute (of any kind whatsoever) arises between the Parties in connection with, or arising out of, the Contract or the execution of the Works, including any dispute as to any certificate, determination, instruction, opinion or valuation of the Engineer, either Party may refer the dispute in writing to the DB for its decision, with copies to the other Party and the Engineer. Such reference shall state that it is given under this Sub-Clause.

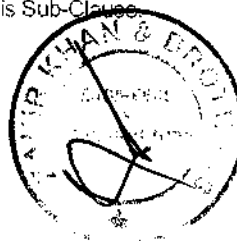
For a DB of three persons, the DB shall be deemed to have received such reference on the date when it is received by the chairman of the DB.

Both Parties shall promptly make available to the DB all such additional information, further access to the Site, and appropriate facilities, as the DB may require for the purposes of making a decision on such dispute. The DB shall be deemed to be not acting as arbitrator(s).

Within 84 days after receiving such reference, or within such other period as may be proposed by the DB and approved by both Parties, the DB shall give its decision, which shall be reasoned and shall state that it is given under this Sub-Clause. The decision shall be binding on both Parties, who shall promptly give effect to it unless and until it shall be revised in an amicable settlement or an arbitral award as described below. Unless the Contract has already been abandoned, repudiated or terminated, the Contractor shall continue to proceed with the Works in accordance with the Contract.

If either Party is dissatisfied with the DB's decision, then either Party may, within 28 days after receiving the decision, give a Notice of Dissatisfaction to the other Party indicating its dissatisfaction and intention to commence arbitration. If the DB fails to give its decision within the period of 84 days (or as otherwise approved) after receiving such reference, then either Party may, within 28 days after this period has expired, give a Notice of Dissatisfaction to the other Party.

In either event, this Notice of Dissatisfaction shall state that it is given under this Sub-Clause, and shall set out the matter in dispute and the reason(s) for dissatisfaction. Except as stated in Sub-Clause 20.7 [Failure to Comply with Dispute Board's Decision] and Sub-Clause 20.8 [Expiry of Dispute Board's Appointment], neither Party shall be entitled to commence arbitration of a dispute unless a Notice of Dissatisfaction has been given in accordance with this Sub-Clause.



If the DB has given its decision as to a matter in dispute to both Parties, and no Notice of Dissatisfaction has been given by either Party within 28 days after it received the DB's decision, then the decision shall become final and binding upon both Parties.

## 20.5 Amicable Settlement

Where a Notice of Dissatisfaction has been given under Sub-Clause 20.4 above, both Parties shall attempt to settle the dispute amicably before the commencement of arbitration. However, unless both Parties agree otherwise, the Party giving a Notice of Dissatisfaction in accordance with Sub-Clause 20.4 above should move to commence arbitration after the fifty-sixth day from the day on which a Notice of Dissatisfaction was given, even if no attempt at an amicable settlement has been made.

## 20.6 Arbitration

Any dispute between the Parties arising out of or in connection with the Contract not settled amicably in accordance with Sub-Clause 20.5 above and in respect of which the DB's decision (if any) has not become final and binding shall be finally settled by arbitration. Arbitration shall be conducted as follows:

- (a) if the contract is with foreign contractors,
- (i) for contracts financed by all participating Banks except under sub-paragraph (a) (2) below:
- international arbitration (1) with proceedings administered by the arbitration institution designated in the Contract Data, and conducted under the rules of arbitration of such institution; or, if so specified in the Contract Data, (2) international arbitration in accordance with the arbitration rules of the United Nations Commission on International Trade Law (UNCITRAL); or (3) if neither an arbitration institution nor UNCITRAL arbitration rules are specified in the Contract Data, with proceedings administered by the International Chamber of Commerce (ICC) and conducted under the ICC Rules of Arbitration; by one or more arbitrators appointed in accordance with said arbitration rules.
- (ii) for contracts financed by the Asian Development Bank:
- international arbitration (1) with proceedings administered by the arbitration institution specified in the Contract Data and conducted under the rules of arbitration of such institution unless it is specified in the Contract Data that the arbitration shall be conducted under the rules of the United Nations Commission on International Trade Law (UNCITRAL) and if UNCITRAL Rules are so specified then the named arbitration institution shall be the appointing authority and shall administer the arbitration); or (2) if an arbitration institution is not specified in the Contract Data, with proceedings administered by the Singapore International Arbitration Centre (SIAC) and conducted under the SIAC Rules, by one or more arbitrators appointed in accordance with the said arbitration rules.
- (b) if the Contract is with domestic contractors, arbitration with proceedings conducted in accordance with the laws of the Employer's country.

The place of arbitration shall be the neutral location specified in the Contract Data; and the arbitration shall be conducted in the language for communications defined in Sub-Clause 1.4 [Law and Language].

The arbitrators shall have full power to open up, review and revise any certificate, determination, instruction, opinion or valuation of the Engineer, and any decision of the DB, relevant to the dispute. Nothing shall disqualify representatives of the Parties and the Engineer from being called as a witness and giving evidence before the arbitrators on any matter whatsoever relevant to the dispute.

Neither Party shall be limited in the proceedings before the arbitrators to the evidence or arguments previously put before the DB to obtain its decision, or to the reasons for dissatisfaction given in its Notice of Dissatisfaction. Any decision of the DB shall be admissible in evidence in the arbitration.



Arbitration may be commenced prior to or after completion of the Works. The obligations of the Parties, the Engineer and the DB shall not be altered by reason of any arbitration being conducted during the progress of the Works.

## 20.7 Failure to Comply with Dispute Board's Decision

In the event that a Party fails to comply with a final and binding DB decision, then the other Party may, without prejudice to any other rights it may have, refer the failure itself to arbitration under Sub-Clause 20.6 [Arbitration]. Sub-Clause 20.4 [Obtaining Dispute Board's Decision] and Sub-Clause 20.5 [Amicable Settlement] shall not apply to this reference.

## 20.8 Expiry of Dispute Board's Appointment

If a dispute arises between the Parties in connection with, or arising out of, the Contract or the execution of the Works and there is no DB in place, whether by reason of the expiry of the DB's appointment or otherwise:

- (a) Sub-Clause 20.4 [Obtaining Dispute Board's Decision] and Sub-Clause 20.5 [Amicable Settlement] shall not apply, and
- (b) the dispute may be referred directly to arbitration under Sub-Clause 20.6 [Arbitration].

# APPENDIX

## A General Conditions of Dispute Board Agreement

### 1 Definitions

Each "Dispute Board Agreement" is a tripartite agreement by and between:

- (a) the "Employer";
- (b) the "Contractor"; and
- (c) the "Member" who is defined in the Dispute Board Agreement as being:
  - (i) the sole member of the "DB" and, where this is the case, all references to the "Other Members" do not apply, or
  - (ii) one of the three persons who are jointly called the "DB" (or "Dispute Board") and, where this is the case, the other two persons are called the "Other Members".

The Employer and the Contractor have entered (or intend to enter) into a contract, which is called the "Contract" and is defined in the Dispute Board Agreement, which incorporates this Appendix. In the Dispute Board Agreement, words and expressions which are not otherwise defined shall have the meanings assigned to them in the Contract.

### 2 General Provisions

Unless otherwise stated in the Dispute Board Agreement, it shall take effect on the latest of the following dates:

- (a) the Commencement Date defined in the Contract,



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- (b) when the Employer, the Contractor and the Member have each signed the Dispute Board Agreement, or
- (c) when the Employer, the Contractor and each of the Other Members (if any) have respectively each signed a dispute board agreement.

This employment of the Member is a personal appointment. At any time, the Member may give not less than 70 days' notice of resignation to the Employer and to the Contractor, and the Dispute Board Agreement shall terminate upon the expiry of this period.

### 3 Warranties

The Member warrants and agrees that he/she is and shall be impartial and independent of the Employer, the Contractor and the Engineer. The Member shall promptly disclose, to each of them and to the Other Members (if any), any fact or circumstance which might appear inconsistent with his/her warranty and agreement of impartiality and independence.

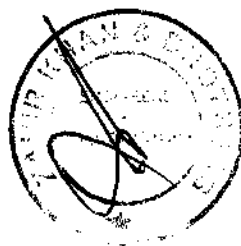
When appointing the Member, the Employer and the Contractor relied upon the Member's representations that he/she is:

- (a) experienced in the work which the Contractor is to carry out under the Contract,
- (b) experienced in the interpretation of contract documentation, and
- (c) fluent in the language for communications defined in the Contract.

### 4 General Obligations of the Member

The Member shall:

- (a) have no interest financial or otherwise in the Employer, the Contractor or Engineer, nor any financial interest in the Contract except for payment under the Dispute Board Agreement;
- (b) not previously have been employed as a consultant or otherwise by the Employer, the Contractor or the Engineer, except in such circumstances as were disclosed in writing to the Employer and the Contractor before they signed the Dispute Board Agreement;
- (c) have disclosed in writing to the Employer, the Contractor and the Other Members (if any), before entering into the Dispute Board Agreement and to his/her best knowledge and recollection, any professional or personal relationships with any director, officer or employee of the Employer, the Contractor or the Engineer, and any previous involvement in the overall project of which the Contract forms part;
- (d) not, for the duration of the Dispute Board Agreement, be employed as a consultant or otherwise by the Employer, the Contractor or the Engineer, except as may be agreed in writing by the Employer, the Contractor and the Other Members (if any);
- (e) comply with the annexed procedural rules and with Sub-Clause 20.4 of the Conditions of Contract;
- (f) not give advice to the Employer, the Contractor, the Employer's Personnel or the Contractor's Personnel concerning the conduct of the Contract, other than in accordance with the annexed procedural rules;
- (g) not while a Member enter into discussions or make any agreement with the Employer, the Contractor or the Engineer regarding employment by any of them, whether as a consultant or otherwise, after ceasing to act under the Dispute Board Agreement;



- (i) become conversant with the Contract and with the progress of the Works (and of any other parts of the project of which the Contract forms part) by studying all documents received which shall be maintained in a current working file;
- (j) treat the details of the Contract and all the DB's activities and hearings as private and confidential, and not publish or disclose them without the prior written consent of the Employer, the Contractor and the Other Members (if any); and
- (k) be available to give advice and opinions, on any matter relevant to the Contract when requested by both the Employer and the Contractor, subject to the agreement of the Other Members (if any).

## 5 General Obligations of the Employer and the Contractor

The Employer, the Contractor, the Employer's Personnel and the Contractor's Personnel shall not request advice from or consultation with the Member regarding the Contract, otherwise than in the normal course of the DB's activities under the Contract and the Dispute Board Agreement. The Employer and the Contractor shall be responsible for compliance with this provision, by the Employer's Personnel and the Contractor's Personnel respectively.

The Employer and the Contractor undertake to each other and to the Member that the Member shall not, except as otherwise agreed in writing by the Employer, the Contractor, the Member and the Other Members (if any):

- (a) be appointed as an arbitrator in any arbitration under the Contract;
- (b) be called as a witness to give evidence concerning any dispute before arbitrator(s) appointed for any arbitration under the Contract; or
- (c) be liable for any claims for anything done or omitted in the discharge or purported discharge of the Member's functions, unless the act or omission is shown to have been in bad faith.

The Employer and the Contractor hereby jointly and severally indemnify and hold the Member harmless against and from claims from which he is relieved from liability under the preceding paragraph.

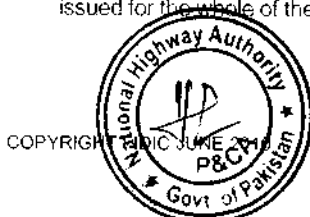
Whenever the Employer or the Contractor refers a dispute to the DB under Sub-Clause 20.4 of the Conditions of Contract, which will require the Member to make a site visit and attend a hearing, the Employer or the Contractor shall provide appropriate security for a sum equivalent to the reasonable expenses to be incurred by the Member. No account shall be taken of any other payments due or paid to the Member.

## 6 Payment

The Member shall be paid as follows, in the currency named in the Dispute Board Agreement:

- (a) a retainer fee per calendar month, which shall be considered as payment in full for:
  - (i) being available on 28 days' notice for all Site visits and hearings;
  - (ii) becoming and remaining conversant with all project developments and maintaining relevant files;
  - (iii) all office and overhead expenses including secretarial services, photocopying and office supplies incurred in connection with his duties; and
  - (iv) all services performed hereunder except those referred to in sub-paragraphs (b) and (c) of this Clause.

The retainer fee shall be paid with effect from the last day of the calendar month in which the Dispute Board Agreement becomes effective; until the last day of the calendar month in which the Taking-Over Certificate is issued for the whole of the Works.



With effect from the first day of the calendar month following the month in which the Taking-Over Certificate is issued for the whole of the Works, the retainer fee shall be reduced by one third. This reduced fee shall be paid until the first day of the calendar month in which the Member resigns or the Dispute Board Agreement is otherwise terminated.

- (b) a daily fee which shall be considered as payment in full for:
- (i) each day or part of a day up to a maximum of two days' travel time in each direction for the journey between the Member's home and the Site, or another location of a meeting with the Other Members (if any);
  - (ii) each working day on Site visits, hearings or preparing decisions; and
  - (iii) each day spent reading submissions in preparation for a hearing.
- (c) all reasonable expenses including necessary travel expenses (air fare in less than first class, hotel and subsistence and other direct travel expenses) incurred in connection with the Member's duties, as well as the cost of telephone calls, courier charges, faxes and telexes: a receipt shall be required for each item in excess of five percent of the daily fee referred to in sub-paragraph (b) of this Clause;
- (d) any taxes properly levied in the Country on payments made to the Member (unless a national or permanent resident of the Country) under this Clause 6.

The retainer and daily fees shall be as specified in the Dispute Board Agreement. Unless it specifies otherwise, these fees shall remain fixed for the first 24 calendar months, and shall thereafter be adjusted by agreement between the Employer, the Contractor and the Member, at each anniversary of the date on which the Dispute Board Agreement became effective.

If the parties fail to agree on the retainer fee or the daily fee, the appointing entity or official named in the Contract Data shall determine the amount of the fees to be used.

The Member shall submit invoices for payment of the monthly retainer and air fares quarterly in advance. Invoices for other expenses and for daily fees shall be submitted following the conclusion of a Site visit or hearing. All invoices shall be accompanied by a brief description of activities performed during the relevant period and shall be addressed to the Contractor.

The Contractor shall pay each of the Member's invoices in full within 56 calendar days after receiving each invoice and shall apply to the Employer (in the Statements under the Contract) for reimbursement of one-half of the amounts of these invoices. The Employer shall then pay the Contractor in accordance with the Contract.

If the Contractor fails to pay to the Member the amount to which he/she is entitled under the Dispute Board Agreement, the Employer shall pay the amount due to the Member and any other amount which may be required to maintain the operation of the DB; and without prejudice to the Employer's rights or remedies. In addition to all other rights arising from this default, the Employer shall be entitled to reimbursement of all sums paid in excess of one-half of these payments, plus all costs of recovering these sums and financing charges calculated at the rate specified in Sub-Clause 14.8 of the Conditions of Contract.

If the Member does not receive payment of the amount due within 70 days after submitting a valid invoice, the Member may (i) suspend his/her services (without notice) until the payment is received, and/or (ii) resign his/her appointment by giving notice under Clause 7.

## 7 Termination

At any time: (i) the Employer and the Contractor may jointly terminate the Dispute Board Agreement by giving 42 days' notice to the Member; or (ii) the Member may resign as provided for in Clause 2.

If the Member fails to comply with the Dispute Board Agreement, the Employer and the Contractor may, without prejudice to their other rights, terminate it by notice to the Member. The notice shall take effect when received by the Member.



If the Employer or the Contractor fails to comply with the Dispute Board Agreement, the Member may, without prejudice to his other rights, terminate it by notice to the Employer and the Contractor. The notice shall take effect when received by them both.

Any such notice, resignation and termination shall be final and binding on the Employer, the Contractor and the Member. However, a notice by the Employer or the Contractor, but not by both, shall be of no effect.

## 8 Default of the Member

If the Member fails to comply with any of his obligations under Clause 4 (a) - (d) above, he shall not be entitled to any fees or expenses hereunder and shall, without prejudice to their other rights, reimburse each of the Employer and the Contractor for any fees and expenses received by the Member and the Other Members (if any), for proceedings or decisions (if any) of the DB which are rendered void or ineffective by the said failure to comply.

If the Member fails to comply with any of his obligations under Clause 4 (e) - (k) above, he shall not be entitled to any fees or expenses hereunder from the date and to the extent of the non-compliance and shall, without prejudice to their other rights, reimburse each of the Employer and the Contractor for any fees and expenses already received by the Member, for proceedings or decisions (if any) of the DB which are rendered void or ineffective by the said failure to comply.

## 9 Disputes

Any dispute or claim arising out of or in connection with this Dispute Board Agreement, or the breach, termination or invalidity thereof, shall be finally settled by institutional arbitration. If no other arbitration institute is agreed, the arbitration shall be conducted under the Rules of Arbitration of the International Chamber of Commerce by one arbitrator appointed in accordance with these Rules of Arbitration.

## PROCEDURAL RULES

- 1 Unless otherwise agreed by the Employer and the Contractor, the DB shall visit the Site at intervals of not more than 140 days, including times of critical construction events, at the request of either the Employer or the Contractor. Unless otherwise agreed by the Employer, the Contractor and the DB, the period between consecutive visits shall not be less than 70 days, except as required to convene a hearing as described below.
- 2 The timing of and agenda for each Site visit shall be as agreed jointly by the DB, the Employer and the Contractor, or in the absence of agreement, shall be decided by the DB. The purpose of Site visits is to enable the DB to become and remain acquainted with the progress of the Works and of any actual or potential problems or claims, and, as far as reasonable, to endeavour to prevent potential problems or claims from becoming disputes.
- 3 Site visits shall be attended by the Employer, the Contractor and the Engineer and shall be co-ordinated by the Employer in co-operation with the Contractor. The Employer shall ensure the provision of appropriate conference facilities and secretarial and copying services. At the conclusion of each Site visit and before leaving the site, the DB shall prepare a report on its activities during the visit and shall send copies to the Employer and the Contractor.
- 4 The Employer and the Contractor shall furnish to the DB one copy of all documents which the DB may request, including Contract documents, progress reports, variation instructions, certificates and other documents pertinent to the performance of the Contract. All communications between the DB and the Employer or the Contractor shall be copied to the other Party. If the DB comprises three persons, the Employer and the Contractor shall send copies of these requested documents and these communications to each of these persons.



- 5 If any dispute is referred to the DB in accordance with Sub-Clause 20.4 of the Conditions of Contract, the DB shall proceed in accordance with Sub-Clause 20.4 and these Rules. Subject to the time allowed to give notice of a decision and other relevant factors, the DB shall:
- (a) act fairly and impartially as between the Employer and the Contractor, giving each of them a reasonable opportunity of putting his case and responding to the other's case, and
  - (b) adopt procedures suitable to the dispute, avoiding unnecessary delay or expense.
- 6 The DB may conduct a hearing on the dispute, in which event it will decide on the date and place for the hearing and may request that written documentation and arguments from the Employer and the Contractor be presented to it prior to or at the hearing.
- 7 Except as otherwise agreed in writing by the Employer and the Contractor, the DB shall have power to adopt an inquisitorial procedure, to refuse admission to hearings or audience at hearings to any persons other than representatives of the Employer, the Contractor and the Engineer, and to proceed in the absence of any party who the DB is satisfied received notice of the hearing; but shall have discretion to decide whether and to what extent this power may be exercised.
- 8 The Employer and the Contractor empower the DB, among other things, to:
- (a) establish the procedure to be applied in deciding a dispute,
  - (b) decide upon the DB's own jurisdiction, and as to the scope of any dispute referred to it,
  - (c) conduct any hearing as it thinks fit, not being bound by any rules or procedures other than those contained in the Contract and these Rules.
  - (d) take the initiative in ascertaining the facts and matters required for a decision,
  - (e) make use of its own specialist knowledge, if any,
  - (f) decide upon the payment of financing charges in accordance with the Contract,
  - (g) decide upon any provisional relief such as interim or conservatory measures, and
  - (h) open up, review and revise any certificate, decision, determination, instruction, opinion or valuation of the Engineer, relevant to the dispute.
- 9 The DB shall not express any opinions during any hearing concerning the merits of any arguments advanced by the Parties. Thereafter, the DB shall make and give its decision in accordance with Sub-Clause 20.4, or as otherwise agreed by the Employer and the Contractor in writing. If the DB comprises three persons:
- (a) it shall convene in private after a hearing, in order to have discussions and prepare its decision;
  - (b) it shall endeavour to reach a unanimous decision: if this proves impossible the applicable decision shall be made by a majority of the Members, who may require the minority Member to prepare a written report for submission to the Employer and the Contractor; and
  - (c) if a Member fails to attend a meeting or hearing, or to fulfil any required function, the other two Members may nevertheless proceed to make a decision, unless:
    - (i) either the Employer or the Contractor does not agree that they do so, or
    - (ii) the absent Member is the chairman and he/she instructs the other Members to not make a decision.



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84



# **SPECIAL & TECHNICAL PROVISIONS**



Let-1

**SP-117a FORMATION OF GRANULAR MATERIAL PLATFORM**  
**SP-117b FORMATION OF EMBANKMENT FROM BORROW ROCK MATERIAL**

**117.1 DESCRIPTION**

This work shall consist of the formation of embankment in areas of soft embankment foundation, water ponding areas, high water levels, where compaction of natural ground is unable to achieve the density required in Item 104 with the prescribed general method. This would also include the wet areas which cannot be dried by scarifying or other measures and which exhibit moderate to severe heaving of surface during proof-rolling.

The embankment shall consist of a working platform of the granular material or rock material followed by the embankment fill material at toe of the embankment, all placed in accordance with these specifications and the specifications for other work items involved and in conformity with the lines, grades, sections and dimensions shown on the drawings or as directed by the Engineer's Representative.

**117.2 MATERIAL REQUIREMENTS**

**117.2.1 Granular Material Platform**

The material for the granular material platform shall consist of normal or processed granular fill material obtained from borrow excavation or quarry waste. This material shall conform to the following Specifications:

Size	%age of Weight Passing Mesh Sieve AASHTO T-27
37.5 mm	100
10 mm	75 - 100
# 4	60 - 80
# 10	45 - 65
# 40	25 - 40
# 100	0 - 15
# 200	0 - 5

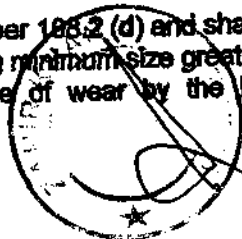
It shall also be checked that selected grading is such that intrusion into the working platform material of subgrade or natural ground surface material is not allowed. For this condition to be met it will be required that the ratio as below shall be checked and followed:

$$\frac{D15 - (\text{Granular Fill Material})}{D85 - (\text{Natural Ground Material})} < 5$$

D85 and D15 mean the practical diameters corresponding to 85% and 15% respectively, passing (by weight) in a grain size analysis.

**117.2.2 Rock Fill Material**

Rock fill material shall be as per 103.2 (d) and shall consist predominantly of rock (boulder) type material having minimum size greater than one quarter cubic meter and shall have the a percentage of wear by the Los Angeles Abrasion test (



AASHTO T-96) of not more than thirty (30) to qualify for rock material. The type of material to be used shall be finalized as per the site requirement with the approval of The Engineer.

**117.3 CONSTRUCTION REQUIREMENTS**

**117.3.1 Granular Material Platform**

Granular platform material shall be used in water logged areas. Prior to laying of granular material platform, water logged area upon which embankment is to be placed, shall be dried and drained or kept drained of all surface water prior to commencing of fill in accordance with the relevant specifications.

Construction of the granular fill layer shall proceed from one end of the soft area by using the granular fill as a ramp for further granular fill transport. The thickness of the granular fill shall be as shown on the project drawings or as directed by the Engineer's Representative and the width shall be that of the embankment or part as directed by the Engineer's Representative. The placement and compaction of the working platform shall be carried out by the use of appropriate light equipment, in layers, if necessary. The placement, spreading and compaction of the granular material platform shall be carried out by using light equipment. The top 15 cm of the platform shall be compacted to at least 90% AASHTO T-180 density.

In those areas of high water levels and salinity with soft subsoils and where embankments are high such as approach fills to structures, special provisions shall be made to measure and determine likely fill settlements which may occur. These preconditions are necessary in order to specify particular construction procedures which may be necessary and to establish the time at which the pavement structure can be placed to avoid cracks and subsidence of these layers. In particular, additional compaction of the fill material and its adequate protection shall be required to prevent and underscore the risk of "collapse" settlement.

No extra payment under this item shall be made to the Contractor for re-working, re-instatement, replacement of granular material which has become slushy, or replenishing of granular material for whatever reason.

**117.3.2 Formation of Embankment with Rock Material**

Embankment formed of material consisting predominantly of rock shall be used where water ponding condition exists. Embankment formed of material consisting predominantly of rock fragment of such size that the material cannot be placed in layers of the thickness prescribed without crushing, pulverizing or further breaking down the pieces, such material may be placed in layers not exceeding in thickness than the approximate average size of the rocks except that no layer shall exceed eighty (80) centimeters of loose measurement and compacted by a vibratory roller.

The material shall be carefully placed in layers, so that all large stones will be well distributed and voids completely filled with smaller stones, clean small shells, shale, earth, sand, gravel, to form a solid mass. After placing rock material, surface shall be covered with a layer of fine material having thickness less than twenty (20) centimeters. Such fine material shall be reserved from roadway excavation by the Contractor. Should such material be available but not reserved, Contractor will supply and place borrow material for forming smooth grade without extra payment. Each layer shall be leveled with motor



grader, bulldozer or similar equipment capable of shifting and forming the layer into a neat and orderly condition. Material for each layer should be consolidated with heavy weight vibratory roller until settlement as checked between two consecutive passes of roller is less than one (1) percent of the layer thickness. For evaluation of settlement, survey points should be established and rolling continued until difference of levels as checked after two consecutive passes is less than one (1) percent of the total layer thickness. More over initial rolling of overlaid fine material shall be done without watering to ensure their intrusion in voids of rock layer beneath. Watering shall be done when voids are properly filled.

**117.4 MEASUREMENT AND PAYMENT**

The quantities measured against this item as shown on the drawings with respect to line and grades shall be paid for at the contract unit price for the pay items listed below and shown in the Bill of Quantities. These prices and payments shall constitute full payment and compensation for providing including hauling, processing, placing at site and compacting as specified, replenishing granular material / rock material for remedying loss of material due to traffic and sinking of granular material platform during construction due to whatever reason, including all equipment, labour, material and all other costs related to the completion of works in all respects.

On first-time completion and approval of granular material platform, only 75% payment for pay item SP 117a and SP 117b shall be made to the Contractor. Balance 25% payment for pay item SP 117a and SP 117b shall be made to the Contractor only when it has been approved by the Engineer's Representative and ready to receive oncoming layer of embankment. In case of using granular material platform and rock fill material, item 101 and item 104 of NHA CSR shall not be entertained.

Pay Item No.	Description	Unit of Measurement
SP-117a	Formation of Granular Material Platform	CM
SP-117b	Formation of Embankment from Borrow Rock Material	CM



**SP 118 FILLING OF CENTER MEDIAN WITH SWEET SOIL**

**118.1 DESCRIPTION**

This work shall consist of providing & filling sweet earth in center median, shown on the drawing or as required by the Engineer.

**118.2 MATERIAL REQUIREMENTS**

**118.2.1 Sweet Soil**

Sweet soil shall consist of a natural friable surface soil without admixture of undesirable subsoll, refuse, or foreign materials. It shall be reasonable free from roots, hard clay, coarse gravel, stones larger than 3cm in diameter, noxious woods, tall grass, or other litter, and shall have been taken from the field where healthy growth of crops, grasses, trees or other vegetation was cultivated.

**118.3 CONSTRUCTION REQUIREMENTS**

**118.3.1 Source of Material**

The contractor shall notify the area to the Engineer at least 7 days prior to his intention of digging in that area and placement of top soil. The operation of digging and then placement shall start only after approval of Engineer and quality of soil to be placed as top soil in the designated areas as shown on the drawings or as directed by the Engineer.

**118.3.2 Place of Sweet Top Soil**

The top soil shall be evenly spread and to the line and slope as shown on the drawings and compacted to degree of compaction of natural ground a depth of not less than 15 cm or as directed by the Engineer. Spreading shall not be done when the ground topsoil is excessively wet or otherwise in the condition detrimental to the work.

After spreading has been completed, large clods, stones, roots, stumps and other such unwanted material if any shall be raked and removed.

**118.4 MEASUREMENT AND PAYMENT**

Measurement of sweet top solling shall be measured by the cubic meter, which has been placed in accordance with these specifications and accepted by the Engineer.

The quantity measured for payment as described above; shall be at contract price for items listed below, and as shown in bill of quantities. The payment shall include full compensation for furnishing all material, labour and equipment including water, transport and all cost necessary to complete the work in accordance with these specifications and accepted by the Engineer.

Pay Item No.	Description	Unit of Measurement
SP-118	Filling of center median with sweet soil.	CM



**414.1 SCOPE OF WORK**

The Contractor shall carry out confirmatory boring at bridge and Flyover sites at locations marked on the drawings or as directed by the Engineer's Representative.

The purpose of the Work specified herein is to determine the type, nature, arrangement, thickness and texture of the various subsurface strata, the conditions and the Engineering characteristics of the subsurface materials as they exist to the depth and at the locations specified. This is to be accomplished by means of drilling, in-situ testing, collection of disturbed and undisturbed soil and water samples and laboratory testing.

The Contractor shall carry out the specified works under the supervision of the Engineer's Representative.

**414.1.1 Plant and Equipment**

The Contractor shall keep at least one rotary drill machine and one percussion winch along with accessories on the site to meet the requirements of the Work. The plant and equipment shall be in good operating condition and capable of performing efficiently the Work as set forth.

**414.1.2 Drillers and Supervisory Staff**

The Contractor shall provide qualified, experienced, orderly and thoroughly competent persons at all times including geotechnical engineers or engineering geologists who shall conduct and supervise drilling, sampling, logging and in-situ testing at the site. The Contractor shall remove any of his employees from the site that in the opinion of the Engineer does not meet these requirements.

The Contractor shall make his own arrangements for housing of his personnel, security and storage of the equipment and supplies at the site.

**414.1.3 Setting up at each Hole**

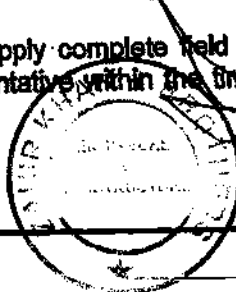
The Contractor shall make all the necessary arrangements for setting-up plant and equipment at each location, carrying out the work specified, preparation and reinstatement of the work areas, improvement to access routes and all other temporary works.

**414.1.4 Measurement of Quantities**

The quantities shown in the Bill of Quantities are only approximate. The payment shall be made on the basis of actual work performed in accordance with the Specifications.

**414.1.5 Submission of Field and Laboratory Data**

The Contractor shall supply complete field and laboratory investigation data to the Engineer's Representative within the time set forth for completion of works.



This data shall include copies of all the approved logs and test records provided during the course of the Contract including any alterations or amendments required by the Engineer's Representative.

#### 414.1.6 Location of Investigation Points

- a) The locations of investigation points shall be established in the field by the Contractor on the basis of the Drawings to be provided later or as directed by the Engineer's Representative. Locating the boreholes accurately in the field shall be the sole responsibility of the Contractor.
- b) It is to be understood that further Drawings may be issued by the Engineer showing the revised locations of investigation points.
- c) All the investigation points shall be located by the Contractor through field survey to an accuracy of 1 m in plan and 0.05 m in ground elevation.

#### 414.2 WORK METHODOLOGY

##### 414.2.1 Investigated Areas

The location of the boreholes will be selected as directed by The Engineer. The Engineer will specify from time to time during the Contract period, the exact location and reference number of all holes. To locate the holes accurately in the field shall however be the Contractor's responsibility.

##### 414.2.2 Casing

A hole shall be cased in any stratum which is friable or not sufficiently strong to stand unsupported, or as and when directed by the Engineer's Representative.

The Contractor shall ensure that casings are of a suitable size and inserted in such a manner as to render them recoverable. The Contract Rates for drilling shall be deemed to include the supply, insertion and recovery of casing including any damage, loss or delay caused by difficulty or failure in recovering casing.

##### 414.2.3 Removal of Casing

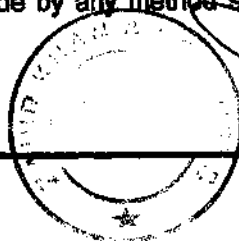
Casing shall neither be removed from any hole nor any filling introduced into it until permission is given by the Engineer. This permission will normally be given as soon as work in the hole is completed and the groundwater level has been measured.

As far as possible the Contractor shall avoid leaving a hole overnight after he has begun to withdraw the casing and before he has finished.

##### 414.2.4 Supplementary Holes

Abandoned holes and / or the holes from which unsatisfactory samples have been obtained and/or in which unsatisfactory field tests have been performed due to the negligence of the Contractor shall be supplemented by other holes adjacent to the original location. The exact location of such supplementary holes shall be specified by the Engineer in the field.

The depth where the unacceptable holes were abandoned or to the depths where unsatisfactory samples were obtained or unsatisfactory field testing was performed may be made by any method selected by the Contractor that in the



opinion of the Engineer will permit satisfactory field testing and sampling below those depths at which original hole was abandoned shall be carried out using only the specified method of advancing the hole.

No payment will be made for that portion of the supplementary hole above the depth paid for in the unacceptable hole.

#### 414.2.5 Groundwater Level

The groundwater level in holes shall be determined after completion of the hole or when required by the Engineer, as follows:

Clear water shall be added or the hole shall be bailed-out as necessary to bring the water level to the expected groundwater level as directed by the Engineer and the water level shall be measured and recorded at intervals of 6 hours for a period of twenty four (24) hours thereafter.

#### 414.2.6 Backfilling Holes

Boreholes shall be backfilled with grout as directed by the Engineer.

Grouting for backfilling holes shall consist of a mud formed by mixing one (1) part by weight of bentonite with ten (10) parts of water, to which two parts by weight of cement shall be added after the bentonite and water have been thoroughly mixed. Alternatively, holes may be backfilled with purpose-made pellets of bentonite or bentonite/cement, provided they are of a size which, in the opinion of the Engineer, is compatible with the size of hole. If there is no standing water in the hole, grout may be poured in from the top. If there is standing water in the hole, the grout shall be fed into the bottom of the hole by a tremie pipe, the end of which shall always be below the groundwater junction while grouting is being carried out.

Grout backfill shall be taken up to 30 cm below the original ground level. Any apparent loss of grout due to leakage or consolidation within one week shall be made-up with fresh grout and then the remaining depth of the hole shall be filled with concrete.

#### 414.2.7 Logs

Logs of boreholes shall be provided on an approved specimen. These shall include descriptions of all strata including details of the soil macrofabric (such as frequency, orientation and nature of fissures) and details of samples taken, and an account of all observations and field tests. Logs of boreholes shall include notes on the nature, quantity and colour of the drilling fluid returns. All logs shall be subject to the approval of the Engineer and two draft copies shall be submitted to the Engineer, not more than two days after the hole is backfilled. Soil descriptions shall conform to ASTM designation D 2488 and classified according to ASTM designation D 2487. All depths and thicknesses of topsoil and strata shall be recorded in meters and all reduced levels shall be recorded in meters with reference to Survey of Pakistan datum. Accurate determination of ground levels at all the hole points is the Contractor's responsibility for which no extra payment shall be made.

#### Contractor's Responsibility for Records





The presence of the Engineer or any of his staff and their keeping separate drilling records shall not relieve the Contractor of any of his responsibilities for keeping records.

**414.2.9 Order of Work**

The order in which the work is to be accomplished shall be determined and approved in the field by the Engineer.

**414.3 DRILLING**

**414.3.1 Depth of Drilling**

Drilling would generally be required up to a minimum of 45 meters depth or at least 5 m below the pile tip level, whichever is more or as directed by the Engineer.

**414.3.2 Accuracy of Alignment of Holes**

Boreholes will be within 2 degrees of the vertical unless the Engineer's Representative has ordered the drilling of an angled hole in which case the hole angle shall be within 5 degrees of the angle specified.

**414.3.3 Drilling Plant**

The drilling plant and ancillary equipment to be mobilized at the site should be adequate to advance the boreholes in an efficient manner, to the required depths.

Rotary drilling rigs shall be of the hydraulic feed type equipped with side discharge type fish tail and tricone bits for drilling. Bits and casing shall conform to B.S. 4019; Part I; 1974 or an approved equivalent.

Drilling bits shall be of side discharge type designed to prevent unnecessary disturbance of soil at bottom of the hole by flow of drilling fluid, unless the Engineer directs otherwise.

**414.3.4 Drilling Procedure**

The method of drilling shall be of any approved standard and accepted method by means of which a hole of specified diameter is extended to the desired depth. The normal method of drilling shall be rotary unless gravelly strata are encountered where percussion may be used.

During drilling the Contractor shall regulate the drilling operation which ensures minimum disturbance in the underlying material in which the in-situ testing and sampling is to be carried out.

In rock, core drilling shall be carried out in such a manner and using such sizes of bits, that the maximum core is recovered. This requires close surveillance of the flushing media, drilling pressures, lengths of runs, use of appropriate core barrels and other factors relevant to the nature of the material drilled. The drill bit shall be withdrawn and core removed as often as may be necessary to secure the maximum possible amount of core. In soft or friable formation, dry drilling techniques may be required using single tube core barrel with tungsten carbide bits as directed by the Engineer. The cores would be placed in core boxes in a proper manner.



#### 414.3.5 Stabilizing of Holes

Drilling mud of suitable consistency shall be used during rotary cum wash boring to stabilize the walls of boreholes by preventing caving-in and to avoid disturbance of the sampling horizons. The drilling mud shall be a mixture of bentonite and water with approved chemical additives being used, if required, to assist in modifying its density and viscosity. The density and viscosity shall be selected considering such factors as hole stability, cutting operation and undisturbed samples recovery.

Where drilling mud is not effective, casing of appropriate size and strength may be used subject to the approval of the Engineer. It will be responsibility of the Contractor to use appropriate means to stabilize the walls of the boreholes.

It shall be ensured that there is no jetting action of the drilling fluid. The minimum amount of drilling fluid necessary to carry away the cuttings shall be used. During drilling the Contractor shall regulate the pressure of the drilling fluid to ensure minimum disturbance to the underlying material in which the in-situ testing and sampling is to be carried out.

#### 414.4 SAMPLING

##### 414.4.1 General

The Contractor shall take disturbed or undisturbed samples from any borehole when ordered to do so by the Engineer. This shall include the provision of all necessary sampling equipment, tubes and containers, crates and boxes, as well as handling and transportation to the approved laboratory or store at site.

##### 414.4.2 Approval of Equipment

No equipment or containers shall be used unless and until approved by the Engineer.

##### 414.4.3 Care of Samples

The Contractor shall be responsible for the safe keeping of samples of all kinds until these have been handed over to the designated laboratory or disposed of on the Engineer's instruction as the case may be. Any sample lost, damaged or showing signs of deterioration while in the Contractor's care shall be replaced by the Contractor at no expense.

##### 414.4.4 Labeling Samples

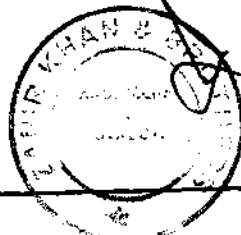
All disturbed and undisturbed soil samples and water samples taken from holes shall be clearly labeled. Each label shall include the following information:

- a) Name of Contract
- b) Reference number of the holes
- c) Reference number of sample
- d) Date of sampling
- e) Brief description of the sample (e.g. stiff brown silty clay)
- f) Depth of the top and bottom of the sample below ground level
- g) Number of the sampler tube

Tubes and crates for undisturbed samples shall be labeled "Do not jar or vibrate" and "Haul and transport in a horizontal position".



#### 414.4.5 Disturbed Samples



In all the boreholes, small disturbed samples shall be taken at the top of each stratum, and at intervals as directed by the Engineer. Material from the cutting shoes of open drive undisturbed samples, and from the split spoon sampler used for Standard Penetration Tests, shall also be taken as disturbed samples.

**414.4.6 Undisturbed Sampling**

Undisturbed sampling from boreholes shall be done by Shelby tube or Pitcher/Denison sampler or as directed by the Engineer. The undisturbed samples should be properly sealed and preserved as directed by the Engineer.

**414.4.7 Cores**

The cores obtained from boreholes shall be carefully removed from the core barrel and placed in the boxes in the correct sequence, with increasing depth from left to right and top to bottom in the box. Coloured photographs of cores shall be taken at site.

Where the core is contained in an expandable triple tube liner, the ends of the tube shall be sealed and waxed as directed by the Engineer.

Each core run shall be segregated by labeled wooden blocks 25 mm thick and the depth of the bottom of each run shall be marked on the partitions in the core box with paint.

No box shall contain more than 3 meters of core.

**414.4.8 Core Samples**

Selected cores, preferably not less than 30 cm in length, shall be preserved as core samples. The preservation would consist of clearance of any loose sludge, waxing of cores, packing in wooden boxes using sawdust and labeling before transportation to the testing laboratory.

**414.4.9 Water Samples**

The Contractor shall take water samples from holes when directed by the Engineer before the addition of water to the hole unless it is unavoidable. If necessary, the hole shall be bailed-out before taking the sample to ensure that any potential contaminant is removed. No fuel or other potential contaminant shall be allowed to enter the hole. The method of sampling shall be as approved by the Engineer. Samples shall only be stored in approved, air tight and scrupulously clean, containers and shall not be less than 1 litre in volume.

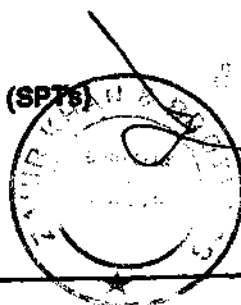
**414.4.10 Transportation of Samples**

All samples shall be shifted to the store at the site, the day they are collected. Samples in tubes shall be kept and transported with the tubes in a horizontal position.

The samples shall be continuously transported to the testing laboratory on conclusion of every borehole and on the instructions of the Engineer. The laboratory for testing shall be approved by the Engineer.

**414.5 IN-SITU TESTS**

**414.5.1 Standard Penetration Tests (SPTs)**



When directed by the Engineer the Contractor shall carry out Standard Penetration Tests (SPTs) in boreholes. The penetration resistance 'N' shall be expressed as the number of blows of a 63.5 kg hammer freely dropping 76.2 cm required to force the standard split tube sampler 30.5 cm into the soil.

Standard Penetration Test (SPTs) shall be conducted in the boreholes in accordance with ASTM 1586 generally at 1 meter depth interval or as directed by the Engineer at the site.

#### 414.6 LABORATORY TESTING

##### 414.6.1 General

The samples shall be tested in a laboratory approved by the Engineer. The Engineer shall have access to the laboratories to supervise and check the laboratory testing of the samples. The testing shall be carried out in accordance with ASTM, BSS or AASHTO Standards or as directed by the Engineer. The Contractor shall arrange to carry out the following laboratory tests on the specified samples of the subsoil materials. The samples to be tested and the tests to be carried out for each sample shall be specified by the Engineer.

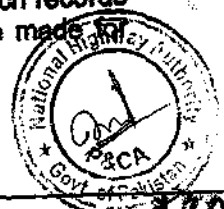
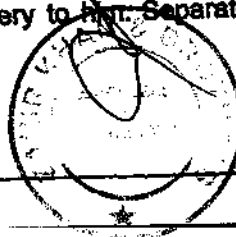
##### 414.6.2 Type of Tests

Sr. No.	Name of Test	Standard
i.	Grain size analysis	ASTM D 422
ii.	Liquid limit, plastic limit	ASTM D 4318
iii.	Specific gravity	ASTM D 854
iv.	Unit weight of soil	
v.	Unconfined compression (soil)	ASTM D 2166
vi.	Unconfined compression (rock)	ASTM D 2938
vii.	Natural moisture content	ASTM D 2216
viii.	Consolidation	ASTM D 2435
ix.	Direct shear	ASTM D 3080
x.	Triaxial compression test	ASTM D 4767
xi.	Sulphate content of Soil	BS 1377
xii.	Organic matter content of soil	BS 1377
xiii.	Total dissolved salts of soil	BS 1377
xiv.	Chloride content of soil	BS 1377
xv.	Chemical analysis of water BS 1377	
	a) Sulphate content of water	
	b) Total dissolved salts of water	
	c) Chloride content of water	
	d) pH of water	

#### 414.7 RECORDS AND REPORTS

##### 414.7.1 Records

- a) The Contractor shall keep accurate logs and records of all work accomplished under this item. All such records shall be preserved in good condition and order by the Contractor until these are delivered and accepted by the Engineer. The Engineer shall have the right to examine such records at any time prior to their delivery to him. Separate logs shall be made for



each borehole. The following information shall be included on the logs or in the records for boreholes:

- i. Borehole number or designation and elevation of top of borehole.
  - ii. Method of drilling holes.
  - iii. Dates and time by depths when hole was performed.
  - iv. Type of drilling fluid used.
  - v. Depths at which samples were recovered or attempts made to collect samples along with designation, thickness and type.
  - vi. Record of SPT on borehole log.
  - vii. The classification or description by depth of the materials samples including a description of condition of compactness or stiffness of soil materials encountered and moisture conditions.
  - viii. Depth of groundwater level if encountered.
  - ix. Depth of bottom of borehole.
- b) The Contractor shall furnish the Engineer with the record as specified above in duplicate, not later than 48 hours after completion of each borehole.
- c) The presence of Engineer or the keeping of separate records by the Engineer shall not relieve the Contractor of the responsibility for the work specified in this Section. Payment shall not be made for any work for which the records have not been furnished by the Contractor.

#### 414.7.2

#### Reports

- a) The results of each borehole and the field tests carried out shall be communicated to the Engineer as follows:
- i. Oral reports as the work proceeds.
  - ii. Three sets of complete data of the work within two (2) days of the date of completion of borehole.
- b) The data shall comprise:
- i. A site plan showing the position of the boreholes and giving their map reference.
  - ii. The borehole logs
  - iii. Complete results of field tests
  - iv. Comments on any point which the Engineer has put-up to the Contractor for inquiry and investigation during the Works.
- c) Complete results of laboratory tests shall be communicated to the Engineer within seven (07) days of the date of completion of borehole.

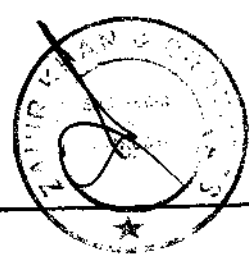
#### 414.8

#### MEASUREMENT AND PAYMENT

The measurement and payment for the Work specified in the Contract for drilling of bore holes, collection of disturbed, undisturbed and rock core samples, performing the standard penetration tests, laboratory testing and compilation and submission of results shall be done and paid for as per the pay item given in the BOQ, which payment shall be full compensation for furnishing of material, tools, equipment and incidentals and for performing all the work involved in this item as mentioned above in this specification.



BSI No. 4d(i) : Structures (Soil Investigation for Bridges)		
Spec. No.	Spec. Description	Class
SP-414 (a)	6" minimum dia drilling straight rotary/ Percussion including back filling of holes from NSL upto 45m depth or till the rock level which ever is met earlier.	LM
SP-414(b)	Perform SPT at 1 m interval i/c collection, preservation & Transportation of disturbed samples to an approved Laboratory.	No.
SP-414(b-1)	Continuous core drilling in bedrock up to a maximum of 5 m depth below rock strike level, including determination of core recovery/ RQD, preservation of core samples in core boxes, labelling, waxing of selected core samples, photography of rock cores and transportation of core samples to the laboratory. In case core recovery is less than 80% reduce run length to 0.6 m.	LM
SP-414(c)	Collection of undisturbed soil samples from boreholes using Shelby pitcher/denison sampler i/c preservation and transportation of samples to an approved Laboratory.	No.
SP-414(d)	Performance of FDT in test pits through sand replacement method i/c moisture content determination.	No.
SP-414(e)	Excavation of testpits upto 1.5 m depth along road alignment including backfilling of pits to original condition.	M
SP-414(f)	Collection of undisturbed block samples from test pits at appropriate location as directed by the Engineer.	No.
SP-414(f1)	Collection of composite bulk sample (atleast 60 kg for sandy/clayey soils and 120 kg for gravelly soils)	No.
SP-414(g)	Collection & preservation of water samples from bore holes & transportation to an approved Laboratory.	No.
SP-414(h)	Laboratory Testing	No.
I.	Grain size analysis.	No.
II.	Hydrometer analysis.	No.
III.	Atterberg limits	No.
IV.	Specific gravity	No.
V.	Natural moisture content	No.
VI.	Bulk density & Dry density (Soil/rock cores)	No.
VII.	Direct shear test	No.
VIII.	Consolidation test (collapse/swell potential)	No.
IX.	Unconfined compression test (Soil/rock core)	No.
X.	Chemical analysis of soil	No.
XI.	Chemical analysis of water	No.
XII.	Submission of Investigation Report (triplicate)	No.
XIII.	CBR	No.
XVI.	Modified Proctor Test	No.



**1. General**

Expansion joints will follow Specifications of AASHTO-SS-Division II-section 19 "Bridge deck joints seals"

The Contractor shall submit to the Engineer, complete documentations about the Expansion joints he intends to use for the movements shown on the Drawings, including references of the last 10 years, material Specifications for metal, rubber and bonding between them, fixations, and test certificates from authorized laboratories showing that the proposed joints meet the specifications.

Elsewhere the submittal will be accompanied by samples of at least 0.50m, with its fixations.

The expansion joints shall satisfy the following functional requirements:

1. It shall withstand traffic loads of the highway, and accommodate movements between the deck and abutment or the adjacent deck.
2. It shall have good riding quality and shall not cause any inconvenience to road user.
3. It shall not cause skidding hazard.
4. It shall not generate excessive noise or vibration during the passage of vehicles.
5. Parts liable to wear out shall be easily replaceable.
6. It shall be watertight and will have provision for carrying away water and silt.
7. It shall be easy to inspect and maintain.
8. It shall be resistant in hot and very sunny climate.

**2. Construction Requirements**

The methodology of placing the expansion joint will be clearly described by the Contractor with a complete set of drawings.

Connection or overlapping between roadway and walkway expansion joints will be clearly shown.

Connection with water proofing of the deck will be detailed.

All necessary provisions in deck reinforcement will be indicated.

Initial gap at the time of placing will be clearly indicated and justified.

The second stage reinforced concrete for fixations, if any, will be Class Y concrete and will be included in pay item SP- 417.



**SP-417a SONIC INTEGRITY TESTS (SIT) ON ALL PILES**

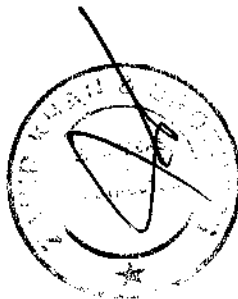
**1. SONIC INTEGRITY TESTS (SIT)**

All working piles shall be subjected to Sonic Integrity Testing (SIT) by a specialist agency engaged by the Contractor. The SIT equipment like FPDS (Foundation Pile Diagnostic System) or equivalent, as approved by the Engineer, shall be used for this purpose. The testing shall be done as per ASTM D5882-07. Before starting this testing, the Contractor shall submit his Method statement for approval of the Engineer.

The contractor shall arrange performance and interpretation of these tests by the specialist agency like TNO Netherlands or equivalent. The interpretation shall include information on pile length, concrete crushing strength, Sonic Pulse Velocity and defects like necking / honeycombing etc. A separate report shall be submitted for SIT carried out on piles by the Contractor.

**2. PAYMENT**

Item No.	Description	Unit of Measurement
SP-417a	Sonic Integrity Tests (SIT) on all piles	Each





3. Measurement and Payment

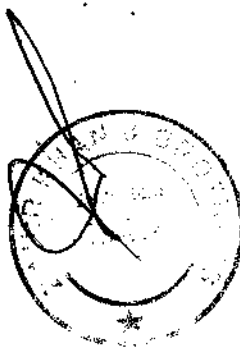
3.1 Measurement

The length of computed joints for roadway is measured in linear meter between the faces of the kerbs, plus 150 mm height on each bridge railing.

3.2 Payment

The accepted quantity measured as provided above shall be paid for at the contract unit price respectively for the pay items listed below and shown in the Bill of Quantities which price and payment shall be full compensation for furnishing all materials, labour, equipment, tools and incidentals and any work pertaining to expansion joints and which is not paid for separately, necessary to complete the item.

Pay Item No.	Description	Unit of Measurement
SP-417	Manufactured trade mark expansion Joints for roadway, for (25-30) mm movement	M



**SP-418 GALVANIZED IRON DRAIN PIPE**

**418.1 DESCRIPTION**

The Contractor shall furnish and place galvanized iron drain pipe (AASHTO Standards M 1118-80 1988) in accordance with the plan of Bridge deck, specifications and/or as ordered by the Engineer.

**418.2 MATERIALS**

The Galvanized iron pipe shall conform to the requirements of ASTM Designation A120.

**418.3 CONSTRUCTION**

Where the pipe is used for bridge drains, it shall be cast in the deck and shall be flush with the deck surface.

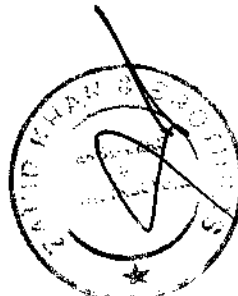
**418.4 MEASUREMENT**

The quantity to be paid for under this item will be number of linear meter of pipe incorporated in the work in accordance with the plans and specifications and as directed by the Engineer.

**418.5 PAYMENT**

The unit price bid per linear meter shall include the cost of furnishing and placement including all labor, materials and equipment necessary to complete the work.

Item No.	Description	Unit of Measurement
SP-418	GI drain pipe Dia 100 mm	M



**SP-501 SUPPLYING AND INSTALLATION OF uPVC PIPE 100/150 MM Dia**

**501.1 DESCRIPTION**

The work consists of supplying, installing, and commissioning of all material and services of the complete conduits and pipes as specified herein, shown on the Drawings and/or as directed by the Engineer's Representative.

The Contractor shall get the prior approval of the layout from the Engineer's Representative at Site for exact route, location and position of the conduits and pipes.

**501.2 GENERAL**

The Contractor shall ensure exact location and route of conduit and pipes in coordination with other services as per site requirements and get the approval of Engineer's representative prior to execution of the work.

**501.3 APPLICABLE STANDARD/CODES**

Latest editions of the following standards/codes shall be applicable for the materials in scope of this Section:

- BS 6099 - PVC Conduits and Accessories
- BS 3595 - PVC Pipes and Accessories
- BS 4346 - Cement Solvent for Jointing

**501.4 MATERIAL**

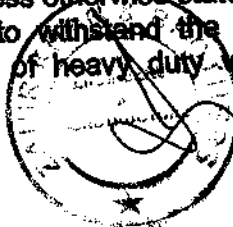
**501.4.1 uPVC Conduits and Accessories**

The heavy gauge uPVC conduits and accessories conforming to BS6099 shall be generally used. The uPVC conduits and accessories of light gauge may be used on the project with the concurrence of the Engineer's Representative.

The uPVC bends, sockets, elbows, couplings etc. shall conform to the same specifications as for the conduits. The uPVC bends shall have enlarged ends to receive conduit without any reduction in the internal diameter at joint. Manufactured smooth bends shall be used where conduit changes direction. Bending of conduits by heating or otherwise will not be allowed in any situation. The use of sharp 90-degree bends and tees will not be allowed.

**501.4.2 uPVC Pipe and Accessories**

The pipe shall be rigid. All pipes shall be minimum Class D (Working pressure - 12 bar), unless otherwise stated on drawings. The buried uPVC pipe should be able to withstand the external load acting upon it by continuous movement of heavy duty vehicles such as trucks, cranes



forklift, etc. Where pipe changes direction, manufactured smooth bends shall be used. Bending of pipes by heating or otherwise will be allowed in special cases only. Bending of pipes by heating shall be carried out by first filling the pipe with sand inside and then immediately removing the sand. The use of sharp 90-degree bends and tees will not be allowed. The bends shall conform to same specifications as given for uPVC conduits. For joining of pipe all precautions and procedures recommended by manufacturer shall be followed.

**501.5 INSTALLATION**

**501.5.1 uPVC Pipe**

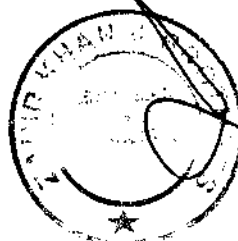
Rigid PVC pipes shall be installed under roads and paved areas, at crossing with other services as shown on the Drawings and/or as directed by the Engineer's Representative. The depth of the pipe shall vary according to the conditions at site, and approval of Engineer's Representative shall be obtained prior to installation. In general the pipes shall be installed underground at the following depths measured from the top of the pipe and or as directed by the Engineer's representative.

Under roads and paved surface	800 mm below the finished surface
When crossing other services	250-mm vertical clearance for the crossing length 500 mm horizontal clearance with CC protective cover

The trench of required dimensions shall be excavated and the bottom of trench cleaned and leveled. A four-inch thick bed of fine sand shall be provided over which the uPVC pipes installed after proper alignment. Where two or more pipes are installed in the same trench the clearance between pipes shall not be less than two inches. After laying of pipe the trench shall be backfilled with clean-screened earth in layer of four inches. Each layer shall be properly compacted. All joints shall be sealed adequately to prevent entry of foreign elements.

For crossing of major services, the uPVC pipes shall installed in trench of size as shown on drawings or as directed by the Engineer and will be covered with concrete class A as per drawings or as directed by the Engineer.

The installation of pipes shall be completed in all respects including its fixing at terminations, before cabling work is started. All sharp edges and burrs shall be removed by using reamer or any approved device. The pipe shall be thoroughly cleaned of dirt and dust from inside. The pipes shall be installed in proper co-ordination with other works.



501.6

**MEASUREMENT AND PAYMENT**

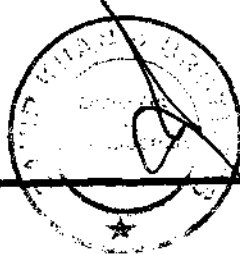
**Measurement**

Measurement shall be made for the number of running meters of pipes acceptably supplied and installed by the Contractor.

**Payment**

Payment shall be made for the total numbers of meters measured, as provided above, at the Contract unit price. The payment shall constitute full compensation for supplying, installing and completion of the laying of the uPVC pipes including jointing materials and accessories and all incidentals for completion of the work.

Pay Item No.	Description	Unit of Measurement
SP-501	Supplying & Installation of uPVC Pipe 100/150mm dia	M



**SP-502 RELOCATION OF UNLINED WATER COURSES**  
**& SP-503 RELOCATION OF BRICK LINED WATER COURSES**

**1 DESCRIPTION**

The work shall consist of dismantling and disposal as required of existing brick lined / unlined water course and relocating the same with standard work items and required discharged capacity as approved by the Engineer's Representative for smooth flow of water.

**2 MATERIAL REQUIREMENT**

**Brick Lining**

This shall conform to the requirements of Item 410.2 of General Specification.

**3 CONSTRUCTION REQUIREMENT**

**Cross-section for Relocation**

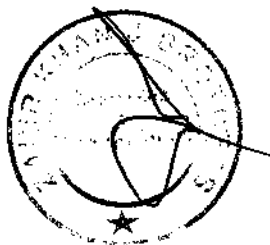
This shall be cut and dressed according to specified /required line and grade as directed by the Engineer's Representative, prior to commencement of this work.

Brick lining shall conform to the requirements of Item no 410.3 of General Specification.

**4 MEASUREMENT**

The work of relocation of (Unlined) water course which is completed as per line, grade and cross-section according to discharge capacity, accepted by the Engineer shall be measured in square meters.

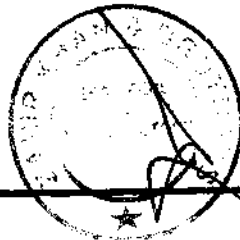
The work of brick lining on cement mortar for lined water course, which is completed according to the required thickness and grade, shall be measured by superficial area accepted by the Engineer's Representative. The unit of measurement shall be square meters.



## 5 PAYMENT

Payment shall be made as measured above and shall be full compensation for relocation of the water courses, disposal of surplus /dismantled/unsuitable material; provision of all labour ,materials, equipment, tools and all others necessary to complete the work as prescribed above and accepted by the Engineer's Representative.

Pay Item No	Description	Unit of Measurement
SP-502	Relocation of Unlined Water Course	SM
SP-503	Relocation of Brick Lined Watercourse	SM



**504.1****DESCRIPTION**

The work shall consist of supply and installation of delineators /angle reflectors at locations detailed on drawings or as directed by the Engineer, complete in all respect. The work will be executed as per item 607 "Traffic Road Signs and Safety Devices of general specifications with amendments as follows:

In item 607 "Traffic Road Signs and Safety Devices" of general specifications, add in line 1, after "furnishing" insert ",", delete "and" and after "traffic signs" insert "and delineators"

Add at the end of para:

Unless otherwise shown on the Drawings, all signs shall be lettered in both Urdu and English. In case of any discrepancy between NTRC requirements and General Specifications, the requirements of NTRC shall govern.

**504.2****MATERIAL REQUIREMENTS**

In Item 607 "Traffic Road Signs and Safety Devices" of general specifications, add new para under head "Material Requirement" as follows:

Materials shall be of new stock unless otherwise shown on the Drawings or ordered by the Engineer's Representative and shall conform to the item 607 of general specifications with amendments as mentioned below:

**504.2.2****Rubber Washer**

In 607.2.6, Add at the end "Thickness of rubber washer is as given below:

On top	3 mm
On Bottom	2 mm

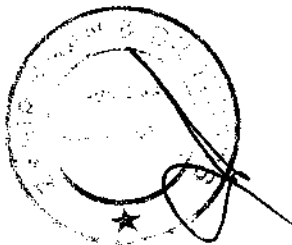
**504.2.3****Concrete Foundation Blocks**

In 607.2.9, in line 1, delete "Class A" and replace with "Class A1".

In line 3, after "mm", add "or as shown on the drawings or as directed by the Engineer."

**504.2.4****Road Posts and Hazard Markers**

In 607.2.10, in line 6, delete "with standing" and replace with "withstanding".





#### 504.2.4 Excavation and Backfilling

In 607.3.1, Add at the end of para 3:

Concrete shall be placed against the undisturbed excavated faces, except that the top fifteen (15) centimeters of each footing shall be formed. Forming of the entire footing will not be permitted unless approved by the Engineer. Concrete shall be thoroughly rodded and spaded so as to eliminate all voids. Tops of footings shall be finished with a wood float and all exposed edges shall be rounded with an edger.

Backfill shall be thoroughly compacted by mechanical tampers, and care taken to prevent damage to the finished concrete. Backfill shall be brought up level with the finished ground line. Pipe post bases and/or posts set in concrete shall be firmly supported, plumb, vertical and at the proper elevation.

In case precast concrete foundations are used, these shall be of the concrete class 'A1' and of the sizes as shown on the drawings.

#### 504.2.5 Erection of Posts

In 607.3.2, In line 3, delete "the" written in between "to" and "prevent".

#### 504.2.6 Installations of Safety Devices

In 607.3.5, In line 11, delete "a" written in between "for" and "prohibiting".

#### 504.2.7 Sign Faces

In item 607.3.6, following amendments be made as mentioned below:

##### a) Design

In serial No. 3, line 1, delete "italics" and replace with "Smalls".

In serial No. 4, delete "21 cm" and replace with "35 cm".

In serial No. 5, delete "17 cm" and replace with "25 cm".

In serial No. 5, delete "italics" and replace with "Small".

In serial No. 6, delete "3.5 cm" and replace with "10 cm".

In serial No. 10, delete "4 cm" and replace with "2.3 cm".

In serial No. 11, delete "23 cm" and replace with "35 cm".

In serial No. 13, delete "Size of letter for km. Height" and replace with "Height of letter for km".



**504.2.8 Storage of Signs**

After 607.3.7, add the following:

**504.2.9 Painting**

The rear sign face of all signs shall be painted with two (2) coats priming paint pigmented with chromates of chromes (excluding lead chromes) plus two (2) coats of weather-resisting dull silver gray paint. Where connection of large aluminum sheet signs to a steel stiffening frame is required, the studs or screws, bolts and washers shall be painted to properly match the color of the surrounding material.

All painting shall conform to the requirements of Section 413 of General Specifications.

**504.2.10 Placement and Orientation**

The Engineer will approve and mark the longitudinal location of each sign on the working drawings submitted by the Contractor.

The sign shall be laterally positioned from the shoulder or curb as shown on the approved drawings or directed by the Engineer.

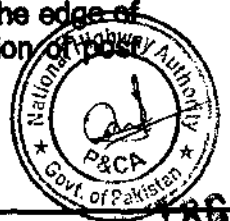
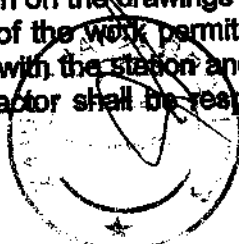
The Contractor shall stake the location of each sign support and shall get its approval from the Engineer prior to carrying out excavation for foundations. The Engineer may order change in location due to site constraints. No separate payment shall be made to the Contractor on account of such change if the change is made before fixing of the sign support in concrete block.

The Contractor shall be responsible for the proper elevation, off-set, level and orientation of all signs he erects. He shall exercise due care on the preservation of stakes for his and the Engineer's use. If any stakes are lost, damaged, displaced, or removed, the Contractor shall have them reset at his own expense.

Unless otherwise shown on the drawings all signs shall be erected so that the edge and face of the sign are truly vertical and face is at an angle of ninety three (93) degrees to the centerline; that is, facing slightly away from the centerline of the lane which the sign serves. Where lanes divide or are on sharp curves, the Contractor shall orient sign faces as indicated on the Drawings or by the Engineer so that they will be most effective both during day and night and so as to avoid specular reflection and glare. All sign supports shall be plumbed.

**504.2.11 Sign Posts**

Lengths of posts shown on the drawings for signs are for bidding purposes only. When progress of the work permits, the Engineer will authorize the location of each sign, with the station and offset distance from the edge of pavement. The Contractor shall be responsible for determination of post



TRG

lengths to provide the vertical clearance shown on the drawings. Field cutting of posts shall be performed by sawing.

"Sign Post Support Assemblies" shall be fabricated as detailed on the drawings. Test specimens for pipe shall be taken at least fifteen (15) centimeters from one (1) end of the pipe, instead of at the ends as specified in ASTM A 53, Grade B. When Galvanizing is specified assemblies shall be hot-dip galvanized after fabrication. All welds shall be mechanically cleaned before Galvanizing. Galvanized materials on which the Galvanizing has been damaged in transporting, handling, or erection will be rejected or may, with the approval of the Engineer, be repaired in the field by the zinc alloy stick method. Required field welds and adjacent areas on which the Galvanizing has been damaged shall be galvanized by this same method. The zinc alloy stick shall be cast from zinc, tin, and lead in combination with fluxing ingredients. The compound shall be completely liquid at a temperature not lower than two hundred and forty six (246) degrees C. The area to be re-galvanized shall be thoroughly cleaned, including the removal of slag on welds. The surface shall be heated with an oxyacetylene torch to approximately three hundred and fifteen (315) degrees C, and the alloy stick rubbed over the surface to fix a deposit. While the alloy is still liquid, a clean wire brush shall be used to smooth the deposit evenly over the entire area being re-galvanized. If a heavy deposit or build-up is required to match the original coating, more alloys shall be added immediately to the initial bond deposit and spread with a paddle or brush until the required thickness is obtained. Edges of drilled holes shall be coated with commercially available zinc-rich paint. Shop drawings will not be required for pipe posts.

The Contractor shall furnish to the Engineer, fabricators' certifications in triplicate certifying that the material supplied conforms to all of the requirements specified.

#### 504.2.12 Fastening Signs to Sign Posts

Signs shall be fastened to sign supports in accordance with the requirements of the drawings, the recommendations of the sign manufacturer and to the satisfaction of the Engineer.

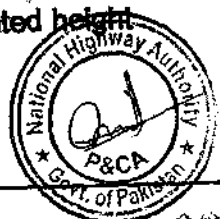
After installation of signs on their supports all bolt heads, screw heads, and washers which are exposed on the face of the sign shall be painted. The color of the paint used shall be as nearly as practical the same as the color of the background or message area at the point where the bolt, screw, or washer is exposed.

Where steel signs are mounted with aluminum hardware or on steel posts, approved asphalt, nylon, or neoprene insulation shall be installed at all points where dissimilar metals might come in contact.

#### 504.3

#### Erection of Delineators and Marker Posts

Delineators shall be erected at locations shown on the drawings and set at elevations such that the Delineator reflectors will be at the indicated height.



above the ground surfaces. Unless otherwise noted in the Drawings or authorized by the Engineer's Representative, holes for posts shall be of the depth and size shown on the Drawings. Posts shall be set plumb and will be set to lines and grades as specified on the drawings. The cost of all excavation and concrete will be considered subsidiary to the bid item (s) for Delineators. Chevron shall also be installed on same pattern except using high density sheet for good reflection.

When noted on the Drawings or authorized by the Engineer's Representative, the posts shall be erected by driving, either by hand or with approved mechanical devices. The method of driving shall not substantially alter the cross-sectional dimensions of the posts or materially damage the coating. Battered tops will not be permitted. Posts which, in the opinion of the Engineer's Representative, are bent or otherwise damaged during or after erection shall be removed from the site and replaced at the Contractor's expense. After driving, the portion of the posts above ground shall be plumb and the posts shall be firm in the ground.

Reflectors shall be attached to the posts as indicated on the drawings or as directed by the Engineer or according to the manufacturer's specifications.

504.4

**PAYMENT**

Pay Item No.	Description	Unit of Measurement
SP-504	Delineators / Angle Reflector	Each



**SP-505 CLEANING AND MINOR REPAIR OF EXISTING STRUCTURE (CULVERTS)**

**1 DESCRIPTION**

The work shall consist of cleaning of existing culverts from all type of dirt, clearing the complete water way and minor repair i.e. minor inlet & outlet repairs, covering of steel reinforcement with cement concrete (class A) as per drawings or as directed by the Engineer's Representative for smooth flow of water.

**2 CONSTRUCTION REQUIREMENT**

All the culverts need to be cleaned and required minor repair will be verified by contractor at site as per drawings or as per the directions of the Engineer's representative. Cracks shall be marked and repaired with cement sand slurry of ratio (1:3) and will be plastered.

**3 MEASUREMENT**

The work of cleaning and repair of culverts which is completed as per drawing and site requirement shall be measured in number of culverts which are cleaned and repaired, complete in all respect to the entire satisfaction of the Engineer representative.

**4 PAYMENT**

Payment shall be made as measured above and shall be full compensation for cleaning of choked culverts, minor repair and complete the work as prescribed above and accepted by the Engineer's Representative.

Pay Item No	Description	Unit of Measurement
SP-505	Cleaning and Minor Repair of Existing Structure (Culverts)	Each



**1 DESCRIPTION**

The work shall consist of dismantling of existing guard rail at locations specified in drawings or as directed by the Engineer.

**2 CONSTRUCTION REQUIREMENT**

Foundation concrete of existing guard rail will be dismantled with the help of jack hammer. Care must be taken in dismantling process keeping in view the site safety. Damaged and un-damaged guard rail will be notified to the Engineer's representative at site. Un-damaged guard rail will be used positively on project road.

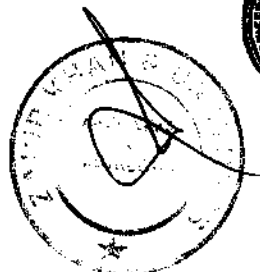
**3 MEASUREMENT**

The work of dismantling of guard rail shall be measured in linear meters which are dismantled, complete in all respect to the entire satisfaction of the Engineer representative

**4 PAYMENT**

Payment shall be made as measured above and shall be full compensation for dismantling of foundation and guard rail, complete the work as prescribed above and accepted by the Engineer's Representative.

Pay Item No	Description	Unit of Measurement
SP-507	Dismantling of existing guard rail	M



## 601.1

## GENERAL

The work shall consist of supply, fabrication and installation of gantry signs at locations as shown on drawings or as directed by the Engineer as per the site requirement, complete in all respect. Gantry signs shall be required to be installed to provide the information about the important places and restriction enforced for type of passing vehicles.

The gantry signs shall be manufactured and installed in accordance with the details shown in the gantry sign's drawings and as directed and approved by the Engineer's representative. The sign panel shall be designed suiting the situation and approved by the Engineer's representative before its manufacture.

Gantry Sign Structure

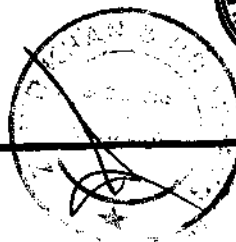
The contractor shall be responsible to submit the complete methodology and shop drawings prior to the start of any activity and get approved from the Engineer representative. All work in respect of the furnishing, construction of foundation and erection and finishing of gantry sign structure shall conform to the drawings and to the relevant requirements of General Specifications section 401 "Concrete", section 404 "Steel Reinforcement", section 413 "Steel Structures and section 607 "traffic signs and safety devices" with amendments made in SP-504.

## 601.2

## MEASUREMENT AND PAYMENT

The item shall be paid for as under, which price and payment shall be full compensation for all the costs necessary for the proper manufacture, installation and completion of work prescribed in the item/drawing:

Payment Item No.	Description	Unit of Measurement
SP-601a	Gantry Sign Type-I as shown on drawing	Each
SP-601b	Gantry Sign Type-II (Cantilever) as shown on drawing	Each



**SS-1 PROVIDING SULPHATE RESISTANT CEMENT IN CONCRETE WORKS**

**SS.1 DESCRIPTION**

This work shall consist of using sulphate resistant cement instead of ordinary Portland cement in concrete works of specified class, where specified in drawings or as per the site requirement.

**SS.2 MATERIALS**

The material requirement shall be same as specified in Item 401 of NHA general specifications except:

Replace para 2 of heading 401.2 (Material Requirements) Sub heading 401.2.1 (Portland cement) with following:

"Portland cement shall conform to the requirements of the standard specifications for Portland cement, AASHTO Designation M85 (ASTM Designation C150). The type of cement to be used shall be type-V (sulphate resisting cement), where specified on drawing / BOQ or as per the directions of the Engineer".

**SS.3 CONSTRUCTION REQUIREMENT**

Construction requirement shall be same as specified in item 401 of general specifications.

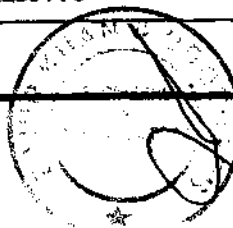
**SS.4 MEASUREMENT**

Measurement requirement shall be same as specified in item 401 of NHA general specifications.

**SS.5 PAYMENT**

The unit price per cubic meter to be paid covered under this provision shall be the difference of unit cost of sulphate resistant cement per cubic meter and ordinary Portland cement per cubic meter.

Item No.	Description	Unit of Measurement
SS-1	Extra over for providing sulphate resistant cement in concrete works of specified class:	
	For Plum Concrete	CM
	For Concrete Class B	CM
	For Lean Concrete	CM
	For Concrete Class A 2	CM
	For Concrete Class A 3	CM





**SP 701 PROVISIONS OF SURVEY TEAMS AND INSTRUMENTS**

**701.1 DESCRIPTION**

The Contractor shall provide and maintain survey equipment for the sole use of the Engineer. All surveying equipment shall be new and shall be maintained throughout the Contract period and replaced by the Contractor free of charge in case of damage or loss. The survey equipment shall be supplied to the Engineer within thirty (30) calendar days from the Engineer's Order to Commence the Works.

Upon completion of the Contract, the surveying instruments and equipment shall become the property of the Employer and shall be handed over completely, and in a state of good, condition and working order taking into account fair wear and tear.

The Contractor shall provide adequate number of helpers, along with the equipment, to the Engineer/Engineer's Representative to assist in carrying out the field works.

**701.2 EXTENT OF PROVISION AND GENERAL REQUIREMENT**

The Contractor shall provide and maintain at his own cost at least the following surveying equipment and any other surveying equipment deemed essential for the Work by the Engineer's Representative for the sole use of the Engineer's Representative:

Sr. No	Description	Quantity
1	<b>Electronic Total Station</b> 1" reading, 6" Accuracy, memory 10,000 points or more, Built-in SD Card Slot & USB Port, programs topographic survey, setting out, curve Guide Light, Keyboard, Automatic Dual Axis Compensator working range $\pm 6'$ distance range reflector less 400 meter with single prism 5000 meter, with Triple Prism 6000 meters, one Bailey & Quick Charger in Standard Accessories (Made in Japan or Equivalent).	1 Nos.
2	Software for Data Downloading.	1 No.
3	Single Prism Target Set includes: Prism, range pole graduated 2.6m., tilting mount with Coaxial Target Plate.	4 Nos.
4	Automatic Level, magnification 32X	2 Nos.
5	Levelling Staves with graduations in metric units	12 Nos.
6	Steel measuring tapes 30 m long	4 Nos.
7	Lockable Pocket tapes 5 m.	4 Nos.
8	TRIPOD (Aluminium)	5 Nos.



9	TRIPOD for Prism Pole	4 Nos.
10	Club hammers 2 kg.	4 Nos.
11	Sledge hammers 4 kg.	4 Nos.
12	Traffic Cones	40 Nos.

13	Survey Umbrellas	6 Nos.
14	Aluminum Straight Edges, 4 m long	2 Nos.
15	Aluminum Straight Edges, 5 m long	2 Nos.
16	Spirit Levels, 30cm long	4 Nos.

- All miscellaneous tools, equipment and materials required in surveying in numbers as determined by the Engineer's Representative.

All new surveying equipment shall be provided and maintained throughout the Contract period. In case of damage or loss those shall be replaced by the Contractor at his own cost.

The Contractor shall make available two (02) qualified surveyors and transport for checking and incorporation as and when required by the Engineer's Representative.

The survey equipment shall be placed at the disposal of the Engineer's Representative during the Contract period and shall be returned to the Employer on completion of the Contract, complete and in a good state, taking into account fair wear and tear.

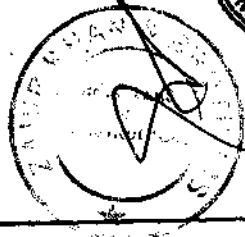
The Contractor shall provide adequate supplies of expendable materials i.e. level books, pencils, erasers inks, drawing papers, pegs, nails, flags, brushes and paints etc. as required by the Engineer's Representative.

701.3

### PAYMENT

The cost of supplying the equipment shall be paid as re-imbusement against provisional sum substantiated by vouchers from the owner plus twelve (12) percent surcharge to the contractor for administrative and overhead expenses including income tax (7.5%) related to the purchase and delivery of said items.

For running and maintenance, supporting staff, transport, stationery, utilities etc. shall be paid under maintain of Surveyor Instrument.



Payment shall constitute full compensation for all costs of provision and maintenance of equipment, furnishing survey teams, supplies of expendable materials, necessary labor/helpers and all other incidental item(s) for the proper completion of the Work as stated herein above and as directed by the Engineer's Representative:

Item No.	Description	Unit of Measurement
SP-701(a)	Provide Surveying and Allied Instruments.	P.S.
SP-701(b)	Maintain Survey Instruments, provide vehicle, Survey Team & helpers.	Month



**SP 702 PROVIDE EQUIP & FURNISH ENGINEER'S OFFICE & ACCOMODATION**

**702.1 General**

The contractor shall provide a Site Office on hiring basis against provisional sum provided in the Bill of Quantities. The Site Office includes the following:

- i) Office accommodation
- ii) Office furnishing and equipment
- iii) Office running and maintenance.
- iv) Office supporting staff

**702.2 Engineer's Representative Office / Accommodation**

The office accommodation as approved and accepted by the Engineer shall be provided on rental basis. The overall size of the Engineer office shall be approximately 500 Sq. meters and residence accommodation of about 2,000 Sq.m having all kind of facilities.

**702.3 Furnishing & Equipment**

The furniture and equipment as approved and accepted by the Engineer shall be provided by the Contractor on the instructions of the Engineer or Representative of Engineer as per the requirement.

**702.4 Running and Maintenance**

702.4.1 The contractor shall be responsible for the running and maintenance of office accommodation, residence accommodation, furnishing and equipment etc. bills for all services/utilities to be paid by the contractor.

702.4.2 Office and Drawing Stationery and necessary equipment shall be provided by the contractor on monthly requirement basis as per the requirement or as directed by the Engineer.

**702.5 Supporting Staff**

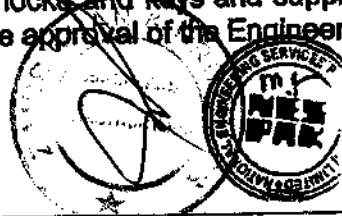
The contractor shall provide to the Engineer following supporting staff.

- |      |            |                   |
|------|------------|-------------------|
| i)   | Nalb Qasid | Two               |
| ii)  | Cook       | one and helper 02 |
| iii) | Sweeper    | two               |
| iv)  | Guards     | Three             |

The appointment of the supporting staff shall be subject to the approval of the Engineer and once assigned shall not be transferred or laid off without prior approval of the Engineer.



In case of power failure and non-availability of power, electric power through generators shall also be provided by the contractor. All rooms shall be provided with standard office lighting of the flours cent type. All rooms shall have doors with locks and keys and supplied Air-conditioning and heating system as per the approval of the Engineer.



The water supply shall be maintained through water supply system of the town or locality boring/installing well with pump or by an elevated or pressure storage tank with a capacity of 2500 gallons.

A telephone shall be installed in Engineer's Office or cell phone may also be provided to facilitate the Engineer. Engineer office will be equipped with air-conditioning unit as per requirement.

**702.6 Measurement and Payment**

For the hiring of accommodation for site office if approved & allowed by the Engineer, the cost of rent and supplying office furniture and Equipment shall be paid as re-imburement against provisional sum substantiated by vouchers from the owner plus ten (12) percent surcharge to the contractor for administrative and overhead expenses including income tax (7.5%) related to the purchase and delivery of said items.

For running and maintenance, office supporting staff, drawings, stationery, utilities bills etc. shall be paid under maintain of Engineer's office.

If the contractor does not provide necessary facility, Engineer shall hire the accommodation and arrange necessary supplies of furniture and equipment and employ staff etc. as specified and maintain the office. Expenditures shall be recovered from the IPC's / running bills of the contractor by adding hundred (100) percent overheads.

Pay Item No.	Description	Unit of Measurement
SP-702 a	Provide the Employer's and Engineer's Representative's Office and Residence (on rental basis)	Provisional Sum
SP-702 b	Furnish and Equip. the Employer's & Engineer's Representative Office and Residence	Provisional Sum
SP-702 c	Maintain Employer's and Engineer's Office and Residence	Month



**SP 703 PROVIDE, EQUIP AND MAINTAIN LABORATORY FOR THE PROJECT**

**703.1 Description**

The building for the base laboratory shall be hired (minimum 500 Sq.m covered area) and shall be fully equipped, with all necessary furnishing & equipment, utilities, installations and others as directed by the Engineer.

**703.2 General Requirements**

The furnishing of equipment shall ensure conducting all tests related to construction as per the list provided by the Engineer. In case if any test required for testing of material cannot be performed in the project laboratory, the Engineer may authorize such test to be carried out at the cost of contractor, at any other laboratory. The Contractor shall provide at no cost to the Engineer, technicians, helpers and vehicles deemed necessary by the Engineer, to assist in the operation of the laboratories as required by the Contractor's proposed program of work. Technicians and helpers once assigned to the laboratories may be removed by the Contractor only with the approval of the Engineer and salaries shall be paid by the contractor. The equipment shall be procured within 15 days on the instructions of the Engineer.

The contractor shall maintain the laboratory equipment, apparatus and supplies necessary to permit execution of all standard test required by the specifications. Lists of specific laboratory equipment shall be provided as per the requirement and recommendation to purchase from recognized manufacturers. The Contractor shall submit to the Engineer for his approval at the earliest. The list shall include the manufacturer's name and descriptive literature. Lab Equipment, fixtures and furniture shall remain the property of the Employer after completion of the project.

**703.3 Facility of the Material Testing**

Material testing equipment as described above shall be provided within minimum period. In case of delay in providing such facility, as an interim arrangement, temporary facilities of testing material shall be provided as agreed by the Engineer. Contractor may be paid for maintenance of temporary laboratory, provided such facilities are acceptable to the Engineer. Contractor shall also be responsible for extra expenses of the Engineer for conduction of test in temporary arrangement.

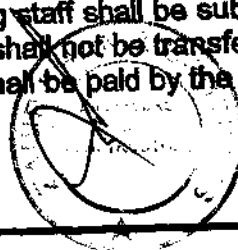
**703.3.1 Supporting Staff**

The contractor shall provide to the Engineer following supporting staff.

- |      |            |      |
|------|------------|------|
| i)   | Naib Qasid | One  |
| ii)  | Chowkidar  | Two  |
| iii) | Sweeper    | One  |
| iv)  | Helpers    | Four |



The appointment of the supporting staff shall be subject to the approval of the Engineer and once assigned shall not be transferred or laid off without the Engineer approval. Salaries shall be paid by the contractor.



**703.4 Running and Maintenance**

703.4.1 The contractor shall be responsible for the running and maintenance of Laboratory, furnishing and equipment etc. bills for all services/utilities to be paid by the contractor.

703.4.2 Office and Drawing Stationery and necessary equipment & material shall be provided by the contractor on monthly requirement basis as directed by the Engineer.

**703.5 MEASUREMENT AND PAYMENT**

**703.5.1 Measurement**

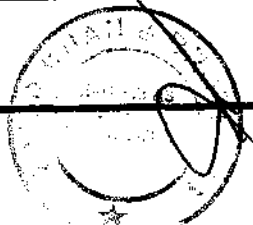
Work under this item shall be measured in two portions.

- i) Hired the building for Material Testing Laboratory and purchase of laboratory equipment shall be paid as reimbursement against provisional sum substantiated by vouchers from the owner plus twelve (12) percent surcharge to the contractor for administrative, overhead expenses including income tax (7.5%) related to the purchase and delivery of said items.
- ii) For running and maintenance and office supporting staff, drawing stationery, Lab. Material/equipment (minor), utilities bills, helpers (04 nos.) etc. shall be paid under maintain base Laboratory. Maintain Laboratory, to be measured for the duration of the contract and paid as per the rate/month.

**703.6 Payment**

The quantities under this item of work shall be paid at the contract price indicated in the Bill of Quantities which price and payment shall constitute full compensation for all costs of furnishing labor, materials, equipment and incidentals for the proper completion of the work indicated in these specifications and specified on the drawings and Special Provisions (Specification).

Pay Item No.	Description	Unit of Measurement
SP- 703 a	Provide Material Testing Project Laboratory (on rental basis)	Provisional Sum
SP- 703 b	Equip and Furnish Material Testing Project Laboratory	Provisional Sum
SP- 703 c	Maintain Material Testing Project Laboratory including provision of 04 helpers	Month



**708.1 General**

The transport for the Employer's / Engineer's Representative and site staff is to be provided under this Contract for which rate item has been provided in the B.O.Q. Contractor shall procure these vehicles under the instruction of the Engineer.

**Procurement of Vehicles**

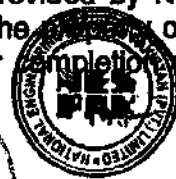
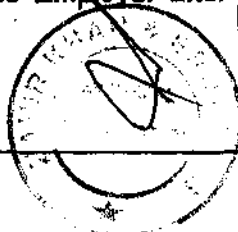
The contractor shall procure the vehicles from the local market, get these registered in the name of the Employer and hand over to the Employer's and Engineer's Representative, however transport for OHS Manager shall be hired from local market on rental basis.

Details /Type of vehicles are as under:

- SP-708a : Two (02) No vehicles for the Employer's representatives  
01 Nos will be Toyota Double Cabin with A/C (4 Wheel drive) with Hood  
01 Nos will be Toyota Corolla 1300 cc with A/C
- SP-708b : Seven (07) No vehicles for the Engineer's representatives  
01 Nos will be Toyota Double Cabin with A/C (4 Wheel drive) with Hood  
02 Nos will be Toyota Corolla 1300 cc with A/C  
04 Nos will be Suzuki Bolan (Carry)
- SP-708bi : Two (02) No vehicles for the OHS Manager  
01 No will be Toyota Corolla 1300 cc with A/C  
01 No will be Suzuki Bolan (Carry)

Total no of 11 Nos. vehicles shall be covered under this provision, out of which 02 No Vehicles i.e. Toyota Double Cabin and Suzuki Carry Bolan shall be procured for Engineer Representatives under this provision. 09 vehicles out of 11 vehicles shall be provided by NHA from its vehicles pool for smooth execution of project. Vehicles to be provided by NHA from its own vehicle's pool, type of vehicle may alter as per availability, however equivalent type of vehicle shall be provided.

Vehicle shall be procured as new/ latest model at the time of delivery when instructions to procure the vehicles is given as per approval of the Engineer and 02 Nos vehicles for OHS Manager and support staff shall be hired on rental basis when instructions to hire these vehicles will be given by The Engineer. The new / rental vehicles shall be handed over to Employer / Engineer's Representative for the entire length of project. The Contractor shall be responsible for the cost of running & maintenance of all 11 Nos vehicles whether procured under this provision or provided by NHA from it vehicles pool. Newly procured vehicle shall remain the property of the Employer and shall be handed over to the Employer after completion of the work in good





working condition. The cost of vehicle shall be inclusive all like purchase, transportation, registration and other dues incurred in this regard. In case new vehicles are not purchased, same numbers of road worthy conditions vehicles shall be hired and its rent cost shall be paid through pay item SP 708a, rental cost shall be approved by the Employer.

In case of delay, failure or default on the part of the Contractor in providing the facilities under these provisions, the Engineer's Representative may arrange the same at the risk and cost of the Contractor or hired the vehicles for project period.

### 708.2 Running & Maintenance

The Contractor shall be responsible for the running and maintenance of these vehicles which includes petrol, diesel, repair works, regular tuning, replacement of tires, registration, comprehensive insurance, annual renewal, lubricants, servicing including providing drivers etc.

### 708.3 Method of Payment

On the instructions and determination by the Engineer, Contractor shall be paid for the Services under this Clause as follows:-

- i) For the procurement of vehicles, Contractor shall provide the original supporting vouchers/receipts including applicable levies & other taxes paid for procurement of vehicles.
- ii) For running and maintenance of above vehicles including salaries of drivers, the Contractor shall be paid on monthly basis.
- iii) On failure of the contractor to provide and of the services under this clause or even otherwise notwithstanding anything contained in any other clauses of the Contract Documents, the "Engineer" shall have the authority to nominate/sublet to any other contracting agency on recommendation of the Resident Engineer for the supply of services under this clause, the payment for which shall be made through this contract direct to the nominated agency out of Provisional Sum provided in the Contract or hire the good road worthy vehicles and recover the cost with 100% penalty charges from contractor's IPC's.

Item No.	Description	Unit of Measurement
Sp-708b	Provide Engineer's Representative Transport (I) Toyota Double Cabin with A/C (4 Wheel drive) (II) Suzuki Bolan (Carry)	Each
SP-708bi	Provide OHS Manager and support staff Transport (On rental basis) (I) Toyota Corolla 1300 cc with A/C (01 No) (II) Suzuki Carry (01 No)	Vehicle- Month  Vehicle- Month
Sp-708c	Running & Maintenance of Employer's / Engineer's Representative's Transport	Vehicle- Month



### **SP-OHS (Occupational Health and Safety)**

#### **General:**

The Contractor shall appoint one OHS manager having minimum qualification of Masters in Environmental science or equivalent with international certifications i.e. OSHA or NEBOSH along with four nos support staff having min qualification of graduation in relevant discipline to act full-time as Safety/Risk Assessment/ Accident prevention Officer throughout the duration of project and shall notify the Engineer of such appointment. The OHS manager shall be experienced in all matters relating to health and safety on site and shall be familiar with all relevant safety regulations and legislation. The OHS manager shall have the power to receive instructions from the Engineer on matters relating to the health and safety of personnel on site and the safe conduct of site operations. It will be the responsibility of OHS manager to prepare OHS manual covering all the risks involved in operational activities and will submit to the Engineer for approval. After approval of subject manual, proper monitoring of OHS activities will be done and monthly progress report will be submitted to the Engineer. If the contractor uses existing roads for the transportation of his materials and equipment for the project or for detour roads, the Contractor shall be responsible for maintaining these existing roads during construction and ensuring all OHS protocols. After the completion of the project, the Contractor shall be responsible for reinstating the existing roads used to its original state ensuring that all mitigation measures are adopted for reinstatement and safe usage. Prior to use the existing roads, the Contractor shall investigate and document the entire length of the existing road condition together with the Engineer's staff including photographs or video.

#### **Responsibilities of OHS Manager:**

OHS manager will be contractor representative at site regarding monitoring of OHS works. OHS manager will be responsible for the implementation of health and safety at site and will supervise implementation of the contractor's OHS policies. The OHS manager will also be responsible for health and safety aspects of work sites and shall submit monthly reports to concerned the Engineer representative on the status of implementation of mitigation measures, complaints received and actions taken. The contractor's OHS manager, in coordination with the CSC (construction supervision consultant) shall set-up a grievance redress committee that will address any complaints arising project implementation. The OHS manager shall ensure that all necessary equipment (listed below) and support including but not limited to provision of dedicated vehicle, office space and accessories, safety related tools are provided to the OHS Manager and concerned staff during the currency of the contract. The OHS manager shall conduct necessary trainings for Employer and site staff for developing awareness about OHS. It will also be the responsibility of OHS manager to keep and maintain necessary first aid kit at site in order to cope with emergency situations.



### LIST OF NECESSARY EQUIPMENT

SAFETY SHOES	FACE SHIELDS	SAFETY GOGGLES
HARDHATS	DUST AND FUME MASKS	GLOVES (LEATHER)
COVERALL DRESSES	EAR PLUGS	GLOVES (COTTON)
FULL BODY HARNESS	EAR MUFFS	NAVIGATIONAL SIGNAGE
HIGH VISIBILITY VESTS	ROPE (PLASTIC 4MM)	WARNING TAPE RED & WHITE
HIGH VISIBILITY CONES	MANDATORY SIGNAGE	PVC MESH (ORANGE)
TRAFFIC BARRIERS	CAUTIONARY SIGNAGE	PROHIBITORY SIGNAGE
GREEN NET (PVC)		

**Payment:**

The payment for activities under this item shall be paid at the contract price and monthly rate as per the measurement unit indicated in the Bill of Quantities after certification by the Engineer / Employer and any other concerned stakeholder or authority nominated by the Employer that activities related to the item of OHS have been performed and managed satisfactorily by the Contractor.

SP-OHS	Item Description	Unit
i)	Provide 1 x Qualified OHS Manager having international certifications as per specifications.	Month
ii)	Provide 4 nos support staff as assistant to OHS Manager as per specifications.	Month
iii)	Equip OHS Manager with necessary accessories i.e. stationery, laptop etc for proper monitoring of OHS activities.	LS
iv)	Conduct OHS awareness trainings for Employer and contractor staff at site and conducting courses to visitors and new comers.	Month
v)	Carrying out and submit the OHS manual to the Engineer's representative, monitoring of all site activities as per OHS manual and submitting monthly progress report to the Engineer representative at site.	LS
vi)	Construct and maintain detours i.e. installation of safety signs and other related safety features, preparing diversion plans and submit to the Engineer's representative in accordance with GCC.	LS
vii)	Provide and maintain PPE's at site.	Month
viii)	Provide and maintain first aid kit at site.	Month



NSI-IV

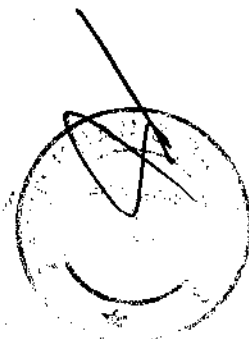
**EMPLOYING TRAINEE ENGINEER'S WITH BOARDING, LODGING AND MESSING**

The contractor will employ total 04 nos Trainee Engineers after the approval of the Employer, throughout the duration of project as per the contract and BOQ. Each Trainee Engineer will be given a monthly stipend Rs. 50,000 (minimum) by the contractor. 01 no Trainee Engineer out of total 04 nos shall be hired for NHA (Design-QS) for complete duration of project. The period of training of each trainee will be as per the contract. The Contractor will prepare a comprehensive training program and get it approved from NHA. It will be the contractor's responsibility for the provision of boarding & lodging of each Trainee Engineer or paid separately its cost.

**Measurement and Payment**

The number of Trainee Engineers shall be counted and paid to contractor as per the contract unit price which includes full compensation for all costs necessary like monthly stipend, boarding, lodging and transport facility.

Item No.	Description	Unit of Measurement
NSI-IV	Employing Trainee Engineer's With Boarding, Lodging And Messing	Man-Month



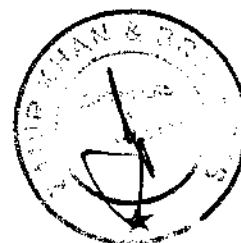
# **NHA GENERAL SPECIFICATIONS – 1998 AND ITS ADDENDUM**



# DRAWING (VOLUME II)



# THE PRICED BILL OF QUANTITIES





# NATIONAL HIGHWAY AUTHORITY

Procurement & Contract Administration Section  
28 Mauve Area, G-9/I, Islamabad ☎ 051-9032727, ☎ 051-9260419

No. 2(518)/GM(P&CA)/NHA/2022/704

02 December, 2022

To,

**M/s Zahir Khan & Brothers (ZKB)**  
Plot No. 44, Street No.11,  
I-9/2, Islamabad  
Email: [zkb\\_isb@yahoo.com](mailto:zkb_isb@yahoo.com)  
Contact No.: +92-51-4444555, +92-51-4444533

Subject: **LOAN 4099-PAK: CENTRAL ASIA REGIONAL ECONOMIC COOPERATION (CAREC) CORRIDOR DEVELOPMENT INVESTMENT PROGRAM - TRANCHE II PROJECT**  
**OCS/CAREC/T-II: CONSTRUCTION OF ADDITIONAL CARRIAGEWAY FROM SHIKARPUR TO RAJANPUR OF N-55 (221.95 KM) UNDER ONE PACKAGE COMPRISING FOUR LOTS**  
**Lot - 1: Shikarpur - Kandhkot Section (Km 43+400 to Km 105+820) (62.42 Km)**

Reference: Your Price Bid opened on 9<sup>th</sup> March 2022.


This is with reference to above you are informed that during the detailed evaluation some errors have been noticed in your bid and are given as under:

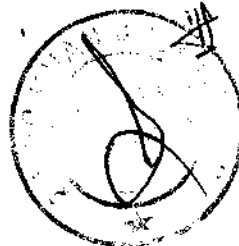
- a) In Bill No. 1, you have quoted rate of Rs. 6 against the Pay Item 104 (Compaction of Natural Ground) in Bill No. 1 (Earth Works) and amount quoted after multiplication with the quantity of 1,460,806.6 SM is Rs. 8,764,842.00. The corrected amount, however, after multiplication of rate with quantity becomes Rs. 8,764,839.60.
2. The correction has been made in accordance with ITB 34.1. Your final amount comes out to be **PKR Rs. 8,848,101,910/-**. You are requested to concur the above mentioned correction and the final amount at the earliest, please.



**Copy for information to:**

- Member (Planning), NHA, Islamabad.

  
(Sami-Ur-Rahman)  
General Manager (P&CA)







Engineers and Constructors

# ZAHIR KHAN & BROTHERS

## ENGINEERS & CONSTRUCTORS

Ref: ZKB/CAREC/N-55/L-1/2022/841

6<sup>th</sup> December, 2022

General Manager (P&CA)  
National Highway Authority  
Islamabad.

Subject: **LOAN 4099-PAK: CENTRAL ASIA REGIONAL ECONOMIC COOPERATION (CAREC) CORRIDOR DEVELOPMENT INVESTMENT PROGRAM - TRANCHE-II PROJECT: OCB/CAREC/T-II: CONSTRUCTION OF ADDITIONAL CARRIAGEWAY FROM SHIKARPUR TO RAJANPUR OF N-55 (221.95 KM) UNDER ONE PACKAGE COMPRISING FOUR LOTS: Lot-1: Shikarpur - Kandhkor Section (Km 43+400 to Km 105+820)**

Reference: Your letter No. 2(518)/GM(P&CA)/NHA / 2022/704 Dated 02 December, 2022

Dear Sir,

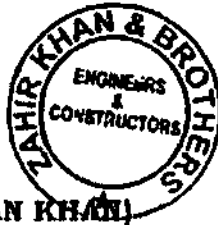
This is in reference to your letter stated hereinabove. Concurrence is hereby accorded to the corrected amount of PKR 8,848,101,910/- effected against Bill No -1 (Earth Works) of our priced Bid, submitted in respect of the Lot - 1(Km 43+400 to Km 105+820) regarding the subject project.

2. This concurrence issues herewith in fulfillment of the codal requirement framed by the Employers NHA Please.

Thanking you,

Yours faithfully,

(MUHAMMAD SAEEM KHAN)  
Director/Authorized Rep.



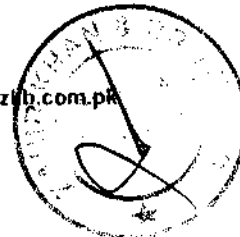
**MOTORWAYS, HIGHWAYS, UNDERPASSES, FLYOVERS & INFRASTRUCTURE DEVELOPMENT SERVICES**

Head Office:  
14-C Model Town, Extension  
Khojak Road, Quetta Cantt.  
Ph: +92-81-2825480, 2830682  
Fax: +92-81-2825482

Sub Office:  
Plot # 44, St. No. 11, I-B/2 Islamabad  
Ph: +92-51-4444555  
Ph: +92-51-4444533  
Fax: +92-51-4444499

Sub Office:  
House # 50-A, Street No. 2,  
Gulshan-e-Faisal, Bath Island,  
Clifton, Karachi.  
Ph: +92-21-35870823  
Fax: +92-21-35870824  
Email: zkb\_constructors@yahoo.com

www.zkb.com.pk E-mail: info@zkb.com.pk



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## Bill of Quantities

### A. Preamble

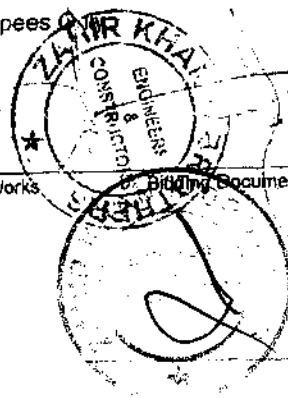
1. The Bill of Quantities shall be read in conjunction with the Conditions of Contract, Specifications and Drawings.
2. The quantities given in the Bill of Quantities are estimated and provisional, and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of work executed and measured by the Contractor and verified by the Engineer and valued at the rates and prices entered in the priced Bill of Quantities, where applicable, and otherwise at such rates and prices as the Engineer may fix as per the Contract.
3. The rates and prices entered in the priced Bill of Quantities shall, except insofar as it is otherwise provided under the Contract include all costs of Contractor's plant, labour, supervision, materials, execution, insurance, profit, taxes and duties, together with all general risks, liabilities and obligations set out or implied in the Contract. Furthermore all duties, taxes and other levies payable by the Contractor under the Contract, or for any other cause, as on the date 28 days prior to deadline for submission of Bids, shall be included in the rates and prices and the total Bid Price submitted by the Bidder.
4. A rate or price shall be entered against each item in the priced Bill of Quantities, whether quantities are stated or not. The cost of items against which the Contractor will have failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bill of Quantities.
5. The whole cost of complying with the provisions of the Contract shall be included in the items provided in the priced Bill of Quantities, and where no items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related items of the Works.
6. General directions and description of work and materials are not necessarily repeated nor summarised in the Bill of Quantities. References to the relevant sections of the Bidding Documents shall be made before entering prices against each item in the priced Bill of Quantities.
7. Provisional sums included and so designated in the Bill of Quantities shall be expended in whole or in part at the direction and discretion of the Engineer and the Employer in accordance with Conditions of Contract.

### B. Work Items

1. The Bill of Quantities mainly contains the following Bills:

- 1 Earth Work
  - 2 Sub-Base and Base Course
  - 3 Surfacing and Pavement
  - 4 Structures
  - 5 Drainage and Erosion Works
  - 6 Ancillary Works
  - 6a Ancillary Works (Toll Plaza & Allied Works)
  - 7 General Items
- Summary of Bill of Quantities

2. Bidders shall Price the Bill of Quantities in Pakistani Rupees



**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**

lot-1:

**SHIKARPUR - KANDHKOT SECTION**  
**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**  
**ABSTRACT OF COST**

Bill No.	Description	Amount (Rs.)
1	Earth Work	
2	Sub Base & Base	
3	Surface Course & Pavement	
4a	Structures (Box Culverts)	
4b	Structures (Retaining Walls & Toe Walls)	
4c	Structures (Bridges Including Soil Investigation)	
4d	Structures (Underpasses)	
5	Drainage And Erosion Works	
6	Ancillary Works	
6a	Ancillary Works (Toll Plaza & Allied Works)	
7	General Items	
<b>TOTAL AMOUNT (BILL NO. 1 - 7)</b>		



Rupees in Words: \_\_\_\_\_



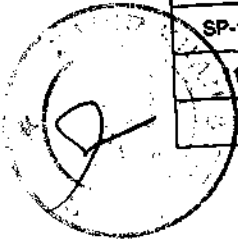
*for*

**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**

**SHIKARPUR - KANDHKOT SECTION**  
**KM. (43+400 - KM. 105+820) LENGTH: 62.42 KM**

**BILL OF QUANTITIES**

Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
<b>BILL NO. 01 EARTH WORKS</b>						
101	Clearing and Grubbing	SM	1,460,807			
102a	Removal of Trees 150-300 mm Girth	Each	100			
102b	Removal of Trees 301-600 mm Girth	Each	100			
102c	Removal of Trees 601mm or over Girth	Each	50			
104	Compaction of Natural Ground	SM	1,460,807			
106a	Excavate Unsuitable Common Material	CM	24,000			
108c	Formation of Embankment from borrow excavation in common material	CM	1,422,981			
108d	Formation of Embankment from Structural Excavation in common material	CM	17,026			
109a	Subgrade Preparation in Earthcut	SM	13,200			
SP-117a	Formation of granular material platform	CM	11,880			
SP-117b	Formation of Embankment from Borrow Rock Material	CM	199,760			
SP-118	Filling of Center Median With Sweet Soil	CM	5,940			
10	Improved Subgrade (CBR > 25)	CM	265,519			
<b>TOTAL (BILL NO. 01)</b>						



**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**

**SHIKARPUR - KANDHKOT SECTION**  
 KM. (49+400 - KM. 105+820) LENGTH : 62.42 KM

**BILL OF QUANTITIES**

Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
<b>BILL NO. 02 SUB-BASE &amp; BASE</b>						
201	Granular Subbase	CM	295,776			
202	Aggregate Base (Laid With Paver)	CM	256,969			
203b	Asphaltic Base Course Plant mix (Class B)	CM	137,776			
209a	Breaking of Existing Road Pavement Structure	CM	66,049			
209b	Scarification of Existing Road Pavement	SM	60,375			
					<b>TOTAL (BILL NO. 02)</b>	



**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**

**SHIKARPUR - KANDHKOT SECTION**  
 KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM

**BILL OF QUANTITIES**

Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
<b>BILL NO. 03 SURFACING &amp; PAVEMENTS</b>						
302a	Cut back Asphalt for Bituminous Prime Coat	SM	907,959.00			
303a	Cut back Asphalt for Bituminous Tack Coat	SM	1,722,203.70			
304c	Triple Surface Treatment	SM	329,879.00			
305a	Asphaltic Concrete for Wearing Course (Class A)	CM	45,193.16			
<b>TOTAL (BILL NO. 03)</b>						



**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**

**SHIKARPUR - KANDHKOT SECTION**  
 KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM

**BILL OF QUANTITIES**

Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
<b>BIN No 4a</b>	<b>Structure (Box Culverts)</b>					
107a	Structural Excavation in Common Material	CM	5,016.10			
107d	Granular Backfill	CM	978.72			
107e	Common Backfill	CM	1,488.08			
401 a2i	Concrete Class A2 (Underground)	CM	60.81			
401a2ii	Concrete Class A2 (On ground)	CM	2,782.56			
401 a3ii	Concrete Class A3 (On ground)	CM	1,041.81			
401 a3iii	Concrete Class A3 (Elevated)	CM	2,364.75			
401f	Lean Concrete	CM	1,140.20			
SS-1	Extra Over for Providing Sulphate Resistant Cement in Concrete Works of specified Class:					
	for Concrete Class A 2	CM	2,843.37			
	for Concrete Class A 3	CM	1,041.81			
	for Lean Concrete	CM	1,140.20			
404b	Reinforcement as per AASHTO M-31 Grade-60	Ton	980.79			
406a	Premoulded Joint Filler 25mm Thick with Bitumastic Joint Seal	SM	397.93			
406dii	PVC Water Stop 9" Size	M	1,037.30			
509d	Grouted Rip Rap Class A	CM	207.51			
509 b	Riprap Class B	CM	1,013.86			
509 h	Filter Layer of Granular Material	CM	103.76			
SP-505	Cleaning & Minor Repair of Existing Structure (Culverts)	Each	62.00			
<b>TOTAL (BILL NO. 4a)</b>						



**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**

**SHIKARPUR - KANDHKOT SECTION**  
 KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM

**BILL OF QUANTITIES**

Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
<b>Bill No 4b</b>	<b>Structure (Retaining Walls &amp; Toe Walls)</b>					
107a	Structural Excavation in Common Material	CM	17,770.50			
401c	Lean Concrete	CM	8,096.00			
401b	Concrete Class B	CM	774.50			
401h	Plum (Cyclopean / Rubble) Concrete (2:1 Conc. Stone Ratio)	CM	73,510.25			
SS-1	Extra Over for Providing Sulphate Resistant Cement in Concrete Works of specified Class:					
	for Plum Concrete	CM	73,510.25			
	for Concrete Class B	CM	774.50			
	for Lean Concrete	CM	8,096.00			
	<b>TOTAL (BILL NO. 4b)</b>					



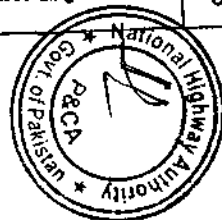


**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**

**SHIKARPUR - KANDHKOT SECTION**  
**KM. (43+400 - KM. 105+820) LENGTH: 62.42 KM**

**BILL OF QUANTITIES**

Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
<b>Bill No 4c</b>	<b>Structure (Bridges)</b>					
107a	Structural Excavation in Common Material	CM	1,535.68			
107d	Granular Backfill	CM	1,535.68			
107e	Common Backfill	CM	1,535.68			
401 a2ii	Concrete Class 'A2' (ON GROUND) Approach Slab, Barrier	CM	811.41			
401 a3iii	Concrete Class 'A3' (ELEVATED) Pier, Transom, Deck Slab, Diaphragm, Coping, Beam Seat, Back wall & Wing Walls	CM	4,549.70			
401 a3i	Concrete Class 'A3' (UNDERGROUND) Piles	CM	6,295.64			
401 giv	Precast Concrete Class D1	CM	3,968.58			
401 f	Lean Concrete	CM	89.44			
SS-1	Extra Over for Providing Sulphate Resistant Cement in Concrete Works of specified Class:					
	for Concrete Class A 2	CM	811.41			
	for Concrete Class A 3	CM	6,295.64			
	for Lean Concrete	CM	89.44			
404 b	Reinforcement as per AASHTO M 31 Grade 60.	Tons	2,608.73			
404 h	Reinforcement (Structural Shapes) as per ASTM A-36.	Tons	8.76			
405 a	Prestressing Wire Strand, 3/8" - 1/2" dia. Complete in all respects	Tons	192.39			
405 b	Launching of Girder	Tons	9,167.03			
406 ei	Elastomeric Bearing Pads (According to size & thickness) USA/EU Make	Cu.cm	1,372,800.00			



**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**

**SHIKARPUR - KANDHKOT SECTION**  
 KM. (43+400 - KM. 105+820) LENGTH: 62.42 KM

**BILL OF QUANTITIES**

Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
407 d1	Cast-in place concrete piles, upto 1.00 M dia in Normal Soil (Boring only)	LM	910.80			
407 d2	Cast-in place concrete piles, upto 1.00 M dia in Gravel Soil (Boring only)	LM	1,366.20			
407 d3	Cast-in place concrete piles, 1.1 - 1.5 M dia in Normal Soil (Boring only)	LM	1,333.20			
407 d4	Cast-in place concrete piles, 1.1 - 1.5 M dia in Gravel Strata(Boring only)	LM	1,999.80			
407 i	Pile Load Test for dia 1 - 1.5 M (2.5 times Design Load)	Each	10.00			
407h	Proof Load Test on Working pile (1.5 times Design Load)	Each	10.00			
407 n	Permanent Pile casing (liner 12 mm Thick) for piles	Tons	202.49			
509 d	Grouted Rip Rap Class A	CM	3,542.59			
509 h	Filter Layer of Granular Material	CM	3,620.39			
SP-417(a)	Sonic Integrity Tests (SIT) on all Piles	Each	180.00			
SP-417	Manufactured Trade Marks expansion joints for roadway (25 ~ 30) mm movement	M	454.96			
SP-418	GI Drain Pipe Dia 100 mm	M	1,433.00			
<b>TOTAL (BILL NO. 4c)</b>						



**INDUS HIGHWAY (N-65) ADDITIONAL CARRIAGEWAY ROAD PROJECT**

**SHIKARPUR - KANDHKOT SECTION**

KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM

**BILL OF QUANTITIES**

Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
<b>BRI No 4c (i)</b>	<b>Structure (Soil Investigation for Bridges)</b>					
SP-414 (a)	6" minimum dia drilling straight rotary/ Percussion including back filling of holes from NSL upto 45m depth or till the rock level which ever is met earlier.	LM	500.00			
SP-414(b)	Perform SPT at 1 m interval l/c collection, preservation & Transportation of disturbed samples to an approved Laboratory.	No.	150.00			
SP-414(b-1)	Continuous core drilling in bedrock up to a maximum of 5 m depth below rock strike level, including determination of core recovery/ RQD, preservation of core samples in core boxes, labelling, waxing of selected core samples, photography of rock cores and transportation of core samples to the laboratory, in case core recovery is less than 80% reduce run length to 0.5 m.	LM	80.00			
SP-414(c)	Collection of undisturbed soil samples from boreholes using Shelby pitcher/denison sampler l/c preservation and transportation of samples to an approved Laboratory.	No.	80.00			
SP-414(d)	Performance of FDT in test pits through sand replacement method l/c moisture content determination.	No.	180.00			
SP-414(e)	Excavation of testpits upto 1.5 m depth along road alignment including backfilling of pits to original condition.	M	80.00			
SP-414(f)	Collection of undisturbed block samples from test pits at appropriate location as directed by the Engineer.	No.	80.00			
SP-414(f1)	Collection of composite bulk sample (atleast 60 kg for sandy/clayey soils and 120 kg for gravelly soils).	No.	80.00			
SP-414(g)	Collection & preservation of water samples from bore holes & transportation to an approved Laboratory.	No.	80.00			



**INDUS HIGHWAY (N-65) ADDITIONAL CARRIAGEWAY ROAD PROJECT**

**SHIKARPUR - KANDHKOT SECTION**  
 KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM

**BILL OF QUANTITIES**

Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
SP-414(h).	Laboratory Testing	No.	50.00			
	Grain size analysis	No.	50.00			
ii.	Hydrometer analysis.	No.	50.00			
iii.	Atterberg limits	No.	50.00			
iv.	Specific gravity	No.	50.00			
v.	Natural moisture content	No.	50.00			
vi.	Bulk density & Dry density (Soil/rock cores)	No.	50.00			
vii.	Direct shear test	No.	50.00			
viii.	Consolidation test (collapse/swell potential)	No.	50.00			
ix.	Unconfined compression test (Soil/rock cores)	No.	50.00			
x.	Chemical analysis of soil	No.	50.00			
xi.	Chemical analysis of water	No.	50.00			
xii.	Submission of Investigation Report (triplicate)	No.	50.00			
xiii.	CBR	No.	50.00			
xvi.	Modified Proctor Test	No.	50.00			
<b>TOTAL BILL NO. 4c (f)</b>						



**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**

**SHKARPUR - KANDHKOT SECTION**  
**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
<b>Bill No. 4d:</b>	<b>Structures (Underpasses)</b>					
107a	Structural Excavation in Common Material	CM	3477.72			
107d	Granular Backfill	CM	9924.80			
401 a2i	Concrete Class A2 (Underground) Cutoff Walls	CM	79.51			
401 a2ii	Concrete Class A2 (On Ground) Approach Slab	CM	499.48			
401 a3i	Concrete Class A3 (On ground) Base Slabs	CM	2319.53			
401 a3iii	Concrete Class A3 (Elevated) Abutment Walls, Top Slab, Wingwalls, Parapets	CM	5502.12			
401f	Lean Concrete	CM	423.73			
SS-1	Extra Over for Providing Sulphate Resistant Cement in Concrete Works of specified Class:					
	for Concrete Class A 2	CM	578.99			
	for Concrete Class A 3	CM	7821.65			
	for Lean Concrete	CM	423.73			
404b	Reinforcement as per AASHTO M-31 Grade-60	Ton	1492.88			
406a	Premoulded Joint Filler 25mm Thick with Bitumastic Joint Seal	SM	62.44			
406dii	PVC Water Stops 9" Size	M	1313.99			
509 a	Rip Rap Class A	CM	869.91			
						<b>TOTAL BILL NO. 4d</b>

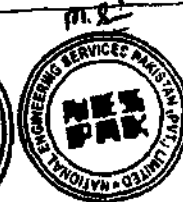


**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**

**SHKARPUR - KANDHKOT SECTION**  
 KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM

**BILL OF QUANTITIES**

Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
Bill No 5	<b>Drainage &amp; Erosion Works</b>					
401a1f	Concrete Class A-1 (On Ground) for Chutes, Ducls (Services Crossing) & Drain	CM	8,852.80			
401f	Lean Concrete (Drain)	CM	1,562.00			
404b	Reinforcement as per AASHTO M-31 Grade 80	Ton	865.28			
412a	Stone Masonary Dressed Coursed with Mortar	CM	507.54			
501d	Reinforced Concrete Pipe AASHTO M 170, Class II diameter 810 mm	M	220.00			
501e	Reinforced Concrete Pipe AASHTO M 170, Class II diameter 760 mm	M	680.00			
501f	Reinforced Concrete Pipe AASHTO M 170, Class II diameter 910 mm	M	680.00			
501h	Reinforced Concrete Pipe AASHTO M 170, Class II diameter 1220 mm	M	264.00			
502b	Concrete Class B in bedding and Encasement of Concrete Pipe Culvert	CM	3,144.22			
507a	Steel Wire Mesh for Gablons	Kg	66,028.00			
507b	Rock Fill in Gablons	CM	6,802.59			
510	Dismantling of Structures and Obstructions	CM	3,000.00			
611b2	Grouted Stone Pitching 20-25 cm Thick with Bitumen Joints	SM	47,777.40			
SP-501	Supplying & Installation of uPVC Pipe 100/150 mm dia	M	20,000.00			
SP-502	Relocation of Unlined Watercourse	SM	500.00			
SP-503	Relocation of Brick Lined Watercourse	SM	500.00			
<b>TOTAL BILL NO. 5</b>						

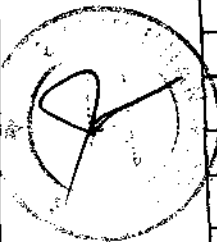


**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**

**SHIKARPUR - KANDHKOT SECTION**  
**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
Bill No. 6	<b>Auxiliary Works</b>					
401f	Lean Concrete (New Jersey Barrier)	CM	6,015.52			
601ai	RCC New Jersey Barrier (In-situ) for median ; double face (including reinforcement)	M	61,995.00			
601aif	RCC New Jersey Barrier (In Situ) as per drawings ; Single face (including reinforcement)	M	1,000.00			
601aif	Pre-cast Curb in Concrete Class A-1 including bedding and haunching as per drawings	M	14,175.00			
604a	Metal Guard Rail	M	10,120.00			
604b	Metal Guard Rail End Pieces	Each	203.00			
604c	Steel Post for Metal Guard Rail	Each	5,326.32			
607a	Traffic Road Signs, Category -1	Each	150.00			
607b	Traffic Road Signs, Category - 2	Each	150.00			
607e	Traffic Road Signs, Category - 3c	SM	350.00			
608h2	Pavement Marking in Reflective TP Paint of 15 cm Width	M	310,878.26			
608j2	Pavement Marking in Reflective TP Paint for 4m Arrows	Each	115.00			
608d	Reflectorised Plastic Pavement Studs ,(Raised Profile Type - Single)	Each	29,185.20			
610c	Kilometer Post	Each	63.00			
612a	Furnishing and Planting of Trees including Maintenance of 2 Years	Each	6,300.00			
SP-504	Delimiters/Angle Reflector	Each	4,752.95			
SP-607	Dismantling of Existing Guard Rail	M	2,000.00			
SP-601a	Gantry Sign Type -I as shown on drawings	Each	3.00			
SP-601b	Gantry Sign Type -II (Cantilever) as shown on drawings	Each	3.00			
NS-I	Installation of Antiglare screen on New Jersey Barrier as per drawings and specifications.	Each	124,843.00			
						TOTAL BILL NO. 6



**INDUS HIGHWAY (N-65) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR - KANDHKOT SECTION)**

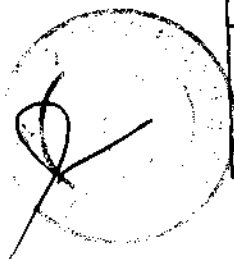
**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**SUMMARY COST**

**BILL NO 6a : (TOLL PLAZA & ALLIED WORKS)**

Sr No	Description	Civil Works	Plumbing Works	Electrical Works	Total Cost (Rs.)
1	Toll Plaza				
2	Toll Booth				
3	Steel Canopy				
4	Office & Accomodation				
5	Generator Room				
6	Weigh Station & Allied Works				
	<b>Total Cost in Rs.</b>				

Rupees in Words: \_\_\_\_\_



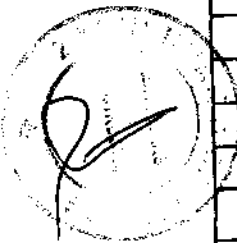


**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR - KANDHKOT SECTION)**  
**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. in Figures)	RATE (Rs. in Words)	Amount (Rs.)
<b>BILL NO. 01 PAVEMENT WORKS:</b>						
101	Clearing and Grubbing	SM	7,035.00			
102a	Removal of Trees 150-300 mm Girth	Each	12.00			
102b	Removal of Trees 301-600 mm Girth	Each	11.00			
102c	Removal of Trees 600 mm or over girth	Each	31.00			
104	Compaction of Natural Ground	SM	7,035.00			
106c	Excavation of Surplus common material	CM	1,280.00			
107a	Structural excavation in common material	CM	67.00			
107d	Granular Backfill	CM	22.00			
107e	Common Backfill	CM	16.00			
108a	Formation of Embankment from roadway excavation in common material	CM	768.00			
108c	Formation of Embankment from borrow excavation in common material	CM	6,151.00			
109a	Subgrade preparation in earth cut	SM	3,333.00			
203b	Asphaltic Base Course Class B	CM	329.00			
206b	Water Bound Macadam base with coarse aggregate Class B	CM	823.00			
209a	Breaking of Existing road pavement structure	CM	555.00			
302a	Cut-Back Asphalt For Bituminous Prime Coat	SM	4,113.00			
303a	Cut-Back Asphalt For Bituminous Tack Coat	SM	4,113.00			
305b	Asphaltic concrete wearing course class-B	CM	206.00			
401a1ii	Concrete Class A-1 (on ground) for rigid pavement & barrier.	CM	1,450.00			
401b	Concrete Class B Toll Booth protection works	CM	78.00			

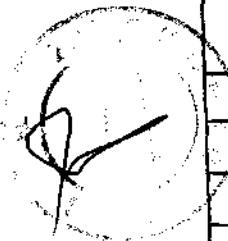


**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR - KANDHKOT SECTION)**  
**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. in Figures)	RATE (Rs. in Words)	Amount (Rs.)
401f	Lean Concrete	CM	495.00			
404a	Reinforcement as per AASHTO M-31 grade 40	Tons	2.00			
404b	Reinforcement as per AASHTO M-31 grade 60	Tons	20.00			
410	Brick work for manhole, crash barrier etc.	CM	31.00			
510	Dismantling of structure and obstruction	CM	24.00			
601dii	Precast kerb in concrete class A-1 of size 450 x 150 mm including concrete bedding and haunching.	LM	128.00			
604a	Metal guard rail	LM	160.00			
604d	Steel post of metal guard rail	LM	96.00			
607a	Traffic road sign category 1	Each	4.00			
607b	Traffic road sign category 2	Each	4.00			
607c	Traffic road sign category (3a)	Each	8.00			
607e	Traffic road sign category (3c)	SM	38.00			
608h1	Pavement marking in reflectorized CR paint 150mm	LM	2,000.00			
609c	Reflecting Pavement studs raised profile type single sided	Each	950.00			
501a	Providing and placing of RCC pipe 310mm dia for drainage complete with all respect as per drawing and specifications.	LM	110.00			
NSI-2	Apply 03 coats plastic emulsion paint as specified.	SM	1,200.00			
NSI-3	Providing and placing plastic drums with sand in position. As per drawings	Each	182.00			
NSI-4	Providing and placing soft wooden blocks (0.3 x 0.15 x 0.15m) in position.	Each	272.00			
NSI-5	Providing and placing polythene sheet under rigid pavement	SM	5,187.00			
NSI-6	Providing all the material as per drawings & specifications and making of expansion joint as instruction of engineer in charge.	LM	980.00			
NSI-7	Providing all the material as per drawings & specifications and making of construction joint as instruction of engineer in charge.	LM	621.00			
				<b>TOTAL OF BILL NO. 6A-01 PAVEMENT WORKS:</b>		



**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)**  
**KM. (43+400 - KM. 105+820) LENGTH: 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. in Figures)	RATE (Rs. in Words)	Amount (Rs.)
<b>BILL NO. 02 PLUMBING WORKS:</b>						
S.P-PW -1	Boring of well in all types of soil 100mm dia upto 90m depth.	LM	80.00			
S.P-PW -2	S/I of 100mm dia Pak therm PVC pipe casing of wall 1/4" thickness.	LM	70.00			
S.P-PW -3	S/I testing and commissioning pumping set of capacity 100m head and 60gpm including electrical wiring and pipe from pump setting to ground level and foundation etc. complete in all respect.	Set	1.00			
S.P-PW -4	S/I testing and commissioning centrifugal pumping set AC electrical motor driven 400V, 3 phase, 50 Hz, 2hp motor mounted on common channel base plate duly aligned including starter wiring and foundations etc. complete in all respect.	Set	1.00			
S.P-PW -5	Supply and fix tubes water quality (RAKtherm) with all fitting (i.e sockets, bends, tees, elbows, where required) and laid complete in trenches inclusive of excavation and backfilling or fixed to wall, ceiling, floors etc including caps, plugs as required 20mm diameter (high quality)	LM	70.00			
S.P-PW -6	.....Ditto..... But 25mm diameter	LM	60.00			
S.P-PW -7	.....Ditto..... But 50mm diameter	LM	30.00			
S.P-PW -8	Supply and fix valves "pets" pattern, strong gunmetal, high pressure " full way" valves with iron wheel head screwed both ends for iron pipe, 25mm diameter.	Each	4.00			
S.P-PW -9	.....Ditto.... But 50mm diameter.	Each	2.00			
S.P-PW -10	S / F bib cock brass chromium plated fancy type screwed down BSP 20mm diameter.	Each	6.00			
S.P-PW -11	Construction of RCC under ground water tank complete in all respect of capacity 4250 liters:	Job	1.00			
S.P-PW -12	Construction of soakage pit as per drawings and specifications.					
				<b>TOTAL BILL NO. 6A-02 : 02 PLUMBING WORKS:</b>		



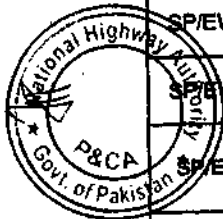
# INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR - KANDHKOT SECTION)

KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM

## BILL OF QUANTITIES

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. in Figures)	RATE (Rs. in Words)	Amount (Rs.)
<b>BILL NO 03. ELECTRICAL WORKS:</b>						
SP/EW-1	Supply and installation of Transformer 100KVa Complete with all respects.	Each	1.00			
SP/EW-2	Supply, installation, testing and commissioning of PVC/PVC SWA cable 4 core cable copper/ conductor 16mm <sup>2</sup> laid in trenches with sand cushion and brick including excavation and backfilling or fixed to wall, ceiling and floors as per site requirements complete in all respects.	LM	180.00			
SP/EW-2a	.....ditto..... but 25mm <sup>2</sup>	LM	128.00			
SP/EW-2b	.....ditto..... but 25mm <sup>3</sup>	LM	32.00			
SP/EW-3	S/F earthing including boring/excavation, copper conductor etc. complete as drawings in all respect to achieve resistance not more than 2 Ohms.	Each	1.00			
SP/EW-4	Supply, installation, testing and commissioning of feeder pillar for supply of power to residence, stop over, toll plaza, external lighting and tube well installation having appropriate sizes as under earthing terminals for connecting of the incoming and outgoing cables complete in all respects as per drawings. 1 Magnetic contactor 225 Amps Schneider LC1F225 2,2 MCCB (TP) 250Amp Schneider EZC- 250N 5,3 C/T 200Amp 3, 6 ATS / AMF Relay 1, 7 timer with base OMRON H3BA-N 1, 8 Emergency Stop Switch 1, 9 Fuse Type Terminal Block 6mm 10, 10 Stopper for Terminal Block 2.5mm ONKA 20, 11 Selector Switch 3-Position FUJI AR22-PR2 2, 12 Indication light RED/Green 5, 13 Cable Numbering Tagging & Drawing 1, 14 Wiring Duct Bus Bar Din rail & Crimps 1, 15 Wiring Charges 1, 16 Metal Enclosure (1000 x 800x 300mm) 1.	No.	1.00			
SP/EW-5	Supply, installation, testing and commissioning of feeder pillar for supply of power to residence, toll plaza, external lighting and tube well installation having appropriate sizes as under earthing terminals for connecting of the incoming and outgoing cables complete in all respects as per drawings.	No.	1.00			



**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)**  
**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. in Figures)	RATE (Rs. in Words)	Amount (Rs.)
SP/EW-6	Supply, installation, testing and commissioning of feeder pillar for supply of power to stop over, toll plaza, external lighting and tube well installation having appropriate sizes as under earthing terminals for connecting of the incoming and outgoing cables complete in all respects as per drawings.	Each	1.00			
SP/EW-7	Supply and installation of Tubular Poles 9m Long with 2 nos. of Crest LED Flood Light Model No. CR-TGA 100W-FL, LED Brand Bridgelux, Led Driver Mean Well UL Approved. Made in Pakistan Control Box with complete fittings.	No.	6.00			
SP/EW-8	Supply and installation of Tubular Poles 9.5m High of complete with single arm on RCC foundation as per drawings i/e wiring of crest LED street light Model No. CR-B100W-STL, LED Brand Bridgelux, LED Driver Mean Well UL Approved) controlled by Feeder Pillar also supply and installation with all 4 core 16mm2 cables and 3 core PVC insulated cables in PVC pipe as per drawings and specifications complete in all respect.	No.	12.00			
SP/EW-9	Supply and installation of Tubular Poles 9.5m High of complete with double arm on RCC foundation as per drawings i/e wiring of crest LED street light Model No. CR-B100W-STL, LED Brand Bridgelux, LED Driver Mean Well UL Approved) controlled by Feeder Pillar also supply and installation with all 4 core 16mm2 cables and 3 core PVC insulated cables in PVC pipe as per drawings and specifications complete in all respect i.e earthing.	No.	6.00			
SP/EW-10	Supply and fixing PVC conduit for ETTM system cables, fixed as per ETTM system companies required in concrete or trench, complete with all respects, excavation, bricks and backfilling as required & instructed by the engineers incharge.					
SP/EW-10-i	50mm i/d Class B polo / Beta or Shawal.	LM	30.00			
SP/EW-10-ii	75mm i/d Class B polo / Beta or Shawal.	LM	30.00			
SP/EW-10-iii	100mm i/d Class B polo / Beta or Shawal.	LM	270.00			
<b>TOTAL OF BILL NO. 6A-03. ELECTRICAL WORKS:</b>						

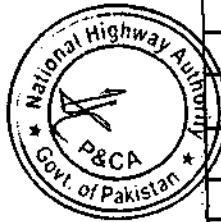


**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)**  
**KM. 143+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. in Figures)	RATE (Rs. in Words)	Amount (Rs.)
<b>BILL NO 04: TOLL BOOTH</b>						
NSI-1	P/F of Aluminium Composite Panel on outer side of booth	SM	24.94			
NSI-2	P/F of 2 ply Fiber glass on Inner side of toll booth	SM	24.94			
NSI-3	P/F of Insulation Thermo pore 25 kg / cum in between ms sheet and fiber glass in toll booth	SM	21.91			
NSI-4	P/F of False Ceiling 0.6x0.6 side of toll booth	SM	4.06			
NSI-5	P/F of computer and cash table with Lassani (16mm) 3/4" thick	SM	1.35			
NSI-6	P/F of Ventilator of Aluminium Sliding shutter with grill in Toll Booth	SM	0.23			
NSI-7	P/F of 50mm Sqr. 16 swg Frame pipe for toll booth	M	93.06			
NSI-8	P/F of 100mm with 8.0 mm wall thickness steel pipe frame for Toll Booth protection	M	49.96			
NSI-9	P/F of Tempered Glass 5mm thick in toll booth	SM	7.37			
NSI-10	P/F of 10" dia Exhaust fan along with closers and fly netting	Each	1.00			
NSI-12	P/F of Rawplug 12.5mm thick 150mm long for booth protection pipe.	No.	16.00			
NSI-13	P/F of steel base plate 250 mm dia 16mm thick for booth protection pipe.	No.	4.00			
NSI-14	P/F of steel base plate 250x250 mm dia 16 mm thick for booth protection pipe	No.	4.00			
NSI-16	P/F of Crest brand LED slim Panel Lights (Model: CR-882-8PL) in false ceiling (12 watts of Toll Booth as per approved drawing.)	No.	2.00			
NSI-17	P/F of Door lock of Toll Booth as per approved drawing.	No.	1.00			
NSI-18	P/F of complete Wiring with PVC conduit in Booth for Exhaust fan, two LED Slim Lights and two sockets, A/C 1.0 ton etc. as per approved drawing	No.	1.00			
NSI-19	P/F of Circuit breaker as per requirement, as per approved drawing.	No.	3.00			
NSI-20	P/F of one three pin socket outlet 15/20 amps point controlled by one switch wiring complete with pvc single core cable 4 sq. m in concealed pvc conduit including earth wire. Circuit breaker as per requirement, as per approved drawing	No.	3.00			
NSI-21	P/F of Power plug along with accessories	No.	1.00			



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**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. in Figures)	RATE (Rs. in Words)	Amount (Rs.)
NSI-22	P/I of A/C 1.0 ton ACSON / Mitsubishi or Equal of MS pipe grill fixed for outdoor unit complete fitting with all safety measures and necessary welding bolts and nuts as required, rubber packing and other materials. Power plug along with accessories.	No.	1.00			
NSI-23	P/I circuit wiring from DB to switch board, wiring with PVC single core cable 2.5 sq. mm + 1.5 mm as ECC in PVC conduit concealed as per site requirement of als. Power plug along with accessories	M	25.00			
NSI-24	Providing of Revolving Chair as per requirement or as directed by the engineer	No.	1.00			
<b>SUB TOTAL OF BILL NO. 6A-04: TOLL BOOTH (01 No)</b>						
<b>TOTAL OF BILL NO. 6A-04: 16 Nos TOLL BOOTH</b>						



# INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR - KANDHKOT SECTION)

KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM

## BILL OF QUANTITIES

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. in Figures)	RATE (Rs. in Words)	Amount (Rs.)
<b>BILL NO 05: (STEEL WORKS) Fabrication</b>						
SC-1	Providing Fabricating and installing structural steel works including shop welding, field splicing, bolting, painting over exposed surfaces as required in the structural drawings and notes also including all accessories such as bolts, connecting angles, connection, plates, the rods etc complete in all respects as per drawings and specifications or as directed by the engineer. Steel Column Box Section- 15" 15" 0.5" Thick 28.72 Kg/ft	Kg	45,000.00			
SC-2	.....Ditto..... High Tensile anchor bolts and nuts, 25mm dia	Nos.	64.00			
SC-3	Supply, cutting to size and erecting 22 SWG Black Iron Powder coated sheet for false ceiling including overtape, edge elements and making openings. Also including fixings with "J" bolts, nuts and washers etc. complete in all respects as per specification and as directed by the engineer	Sqm.	740.00			
SC-4	Providing and fixing specified GI corrugated sheeting 22 SWG for roof including anchor bolts. Complete in all respects as per details given in the drawings or as directed by the engineer	Sqm.	740.00			
SC-5	Providing and fixing specified GI rain water pipe (111 or equivalent approved) fixed along steel columns, including bends and other fixing etc. complete in all respects as per drawings and the specifications or as directed by the Engineer. a) 100mm dia	m	53.60			
SC-6	Provide, fabricate and fix G.I sheet drainage gully as per details on the structural drawings and specified or as directed by the engineer complete in all respects (750mm x 500mm)	m	40.00			
SC-7	Supply / installation of 3M (high intensity Grade reflecting Sheet) on 16 SWG G.I sheet with the name of Toll Plaza of appropriate readable size complete in all respects without air bubbles the rate shall include of all materials steel pipe and angle frame, riveting and installation complete at site as directed by the engineer	Sqm	60.00			





**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)**

**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. in Figures)	RATE (Rs. In Words)	Amount (Rs.)
SC-8	Supply and install canopy Light (Crest LED Canopy Light Model No. CR-56-90W-KPL, LED Brand: CREE, LED Driver : Mean Well UL approved) electrical connections and wiring (Pakistan/life/new age cables) all items should be made in Pakistan.	Nos.	16.00			
SC-9	Supply and install Facia Illumination (Crest LED Flood Light (Model No. CR-TGA30W-FL, LED Brand Bridgelux, Led Driver Mean Well UL Approved) on Bracket Along with pipe as per site requirement) Electrical connections and wiring (Pakistan/life/new age cables) all items should be made in Pakistan	Nos.	16.00			
SC-10	Supply/install G.I channel hanging frame with appropriate spacing for fixing of false ceiling sheet	SM	768.00			
SC-11	Providing/grouting master flow 524 (non shrinkage material) between existing foundation and base plate, having 650 x 650 mm foundation including cost of carriage labor etc	Nos.	6.00			
SC-12	Encasing of 100mm drain pipe and 65mm dia electric pipe with the "H" column with 16 gauge GI sheet fixed with 10mm dia nuts welded with angle iron and bolts 40mm long duly painted with enamel paint etc. complete	Sqm.	56.00			
<b>TOTAL OF BILL NO. 6A-05: (STEEL WORKS) Fabrication</b>						



**INDUS HIGHWAY (N-65) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)**

**KM. (43+400 - KM. 105+820) LENGTH: 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. in Figures)	RATE (Rs. in Words)	Amount (Rs.)
<b>BILL NO 06 (ELECTRICAL WORKS) Steel Canopy:</b>						
SC/E-01	Supply installation and commissioning of cu PVC insulated 3 core cables in PVC pipe including all material and accessories as shown on drawings all complete (iv) 3 core 4mm sq. (Pakistan/life/new age Cables)	LM	240.00			
SC/E-02	Supply installation and commissioning of cu PVC insulated 3 core cables in PVC pipe including all material and accessories as shown on drawings all complete (iv) 3 core 2.5mm sq. (Pakistan/life/new age Cables)	LM	240.00			
SC/E-03	Supply installation testing and commissioning of cu PVC pipes including all material and accessories as shown on drawings all complete (iv) 4 core 10mm sq. (Pakistan/life/new age Cables)	LM	248.00			
SC/E-04	Supplying and laying of following heavy duty PVC pipe buried under ground in ceiling, walls, floor & columns etc for incoming and outgoing cables at various points and also weather proof from both ends including all materials and accessories as per site requirement as shown on drawings complete in all respects					
	(i) 100mm polo/ beta or Shawal	LM	112.00			
	(i) 50mm polo/ beta or Shawal	LM	96.00			
<b>TOTAL OF BILL NO. 6A-06: (ELECTRICAL WORKS) Steel Canopy:</b>						



726

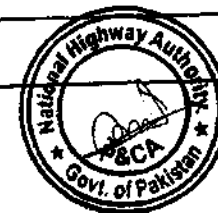
**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR - KANDHKOT SECTK N)**

**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. in Figures)	RATE (Rs. in Words)	Amount (Rs.)
<b>BILL NO 07: CIVIL WORKS (OFFICE AND ACCOMODATION BUILDING)</b>						
107a	Excavate as in common soil upto 1.5 meter depth in foundations and pipe trenches and throw earth clear of edges of excavation with in 10 meter	Cum	141.00			
108c	Making embankment as in hard soil, filling in foundations, pipe trenches under floors or around buildings etc 1.5 meter below or above ground level spoil obtained from excavation in foundations over areas with in 10 meter including watering and compaction in 150mm layers and dressing to required profiles and shapes	Cum	364.00			
401f	Providing and laying of lean concrete as in foundation using crushed or broken stone graded as specified (Lean concrete)	Cum	23.00			
401a1	Providing and laying of reinforced cement concrete class "A" using crushed stone in foundations, independent column footings, roof slab, walls landings, plinth beams and bends etc, as specified requiring shuttering (reinforcement measured and paid separately)	Cum	121.00			
404a	Supply and fix round deformed bars grade 40 (as per AASHTO M31) including cutting, bending, binding and placing reinforcement in position as specified	ton	1.21			
404b	Supply and fix round deformed bars grade 60 (as per AASHTO M31) including cutting, bending, binding and placing reinforcement in position as specified	ton	10.93			
401f	Providing and laying 75mm thick PCC 1:4:8 laid under floors using crush stone all as specified (Lean concrete)	Cum	21.00			
401b	Providing laying cement concrete 1:2:4 using crushed stone laid in floor slabs as under layer of terrazo/tiles etc as specified (Concrete Class B)	Cum	21.00			
410	Burnt brickwork in wall over 115mm thick laid And jointed in cement mortar 1:4 staright or to curve with inner radius of 1.5m.	Cum	315.00			
S-P 1	Providing and laying of sand cushion under floors all as per drawings & specifications.	Cum	29.00			



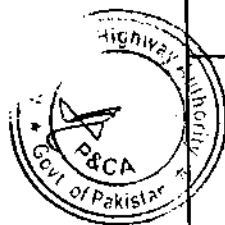
# INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR - KANDHKOT SECTION)

KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM

## BILL OF QUANTITIES

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. in Figures)	RATE (Rs. in Words)	Amount (Rs.)
S-P 2	Providing and laying of brick ballast under floors all as per drawing & specifications	Cum	21.00			
S-P 3	Termite proofing to all building area with approved chemical all as specified.	Sqm	560.00			
S-P 4	50mm thick DPC of PCC (1:2:4) using 3mm aggregate and finished smooth with steel float covered with two coats of hot bitumen @0.75 kg per Sqm and double layer of polythene sheet as required	Sqm	42.00			
S-P 5	75mm thick PCC (1:2:4) screeding with XPM weigh n.exc 4.5kg/Sqm over 50mm thick thermopore sheet, two layers polythene sheet and two coats water proofing compound using bitumen 10-20 applied hot @4.9 kg/ 10 Sqm per coat including pee gravels and cleaning the surface before applying bitumen as specified complete with all respects	Sqm	371.00			
S-P 6	Supply and fix kitchen floor sink cabinet with or without drawers including all necessary chromium plated mongry, fitting/fixtures and deodar wood edging provided to doors and drawer of cabinet and 20mm thick prepolished marble slab fix on top of cabinet as specified all as per drawing	Mater	6.00			
S-P 7	Supply and fix kitchen wall cabinet including all necessary chromium plated mongry, fitting/fixtures and deodar wood edging provided to doors of cabinet as specified all as per drawings	Meter	6.00			
S-P 8	Supply and fix kitchen exhaust hood and duct of 20mm thick lamination board with 26 gauge GI sheet lining inside including fitting/fixtures as specified all as per drawings	Meter	1.00			
S-P 9	Wooden flush doors covered with fibre glass and steel frame, imported lock, brass mongry and architrave where shown, including 3 coats synthetic enamel paint etc all as per drawing.	Sqm	38.00			
S-P 10	Supply and fix aluminium premium model bronze colour sliding windows including fly/insect proofing 5mm tinted imported glass etc all as per drawings	Sqm	44.00			



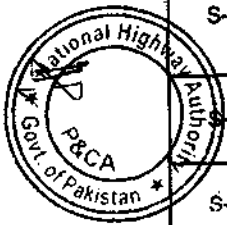
**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)**

**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. in Figures)	RATE (Rs. in Words)	Amount (Rs.)
S-P 11	Supply and fix aluminium door powder coated with 5mm frosted glass of washroom areas all as per drawing	Sqm	2.00			
S-P 12	Supply and fix cast iron work weight n.exc 6 kg in grating, mahole covers all as per drawings and specifications	Kg	15.00			
S-P 13	Supply and fix MS 16 gauge square pipe railing & grills with painting complete all as per drawings and specifications.	Sqm	43.00			
S-P 14	Supply and fix steel grill & ( stair hand rail) with painting complete all as per drawings & specifications	Sqm	6.00			
S-P 15	Providing and laying 300mmx300mmx20mm thick Marble tiles in floors setting and jointing in CM (1:2) including cutting, rubbing and polishing all as per drawings & specifications	Sqm	286.00			
S-P 16	Providing and laying 12mm thick boticina cream marble set in CM (1:2) as in skirting including cutting, rubbing, and polishing all as per drawigs and specifications	Sqm	20.00			
S-P 17	.....Ditto..... but venly top slabs if granite marble including cutting bowl etc all as per drawings & specifications	Sqm	2.00			
S-P 18	Supply and fix 200mmx200mm ceramic mat tiles set in CM(1:2) including joints fitted with white cement all as per drawing.	Sqm	142.00			
S-P 19	Providing and fixing 20mm laminated win board ward robe with wooden frame and lamination win board drawers including brass many fittings all as per drawings	Each	24.00			
S-P 20	13mm thick cement plaster (1:4) finished smooth as specified	Sqm	2,715.00			
S-P 21	13mm thick cement plaster (1:4) with 3% puddlo finished smooth as specified	Sqm	16.00			
S-P 22	Appy 3 coasts plastic emulsion paint as specified	Sqm	2,155.00			
S-P 23	Apply graphio coating external face of walls	Sqm	560.00			
S-P 24	24 gauge CGI rolling shutter with frame and accessories all as per drawings	Sqm	9.00			



**TOTAL OF BILL NO. 6A-07: CIVIL WORKS (OFFICE AND ACCOMODATION BUILDING)**



227

**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION I)**

**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. in Figures)	RATE (Rs. in Words)	Amount (Rs.)
<b>BILL NO 08: PLUMBING WORKS (OFFICE AND ACCOMODATION BUILDING):</b>						
SP-WS-1	Supply and fix tubes water quality (G.I) with all fitting (i.e sockets, bends, tees, elbows etc.) and laid complete in trenches (exclusive of excavation) or fixed to walls, ceilings, floors etc including caps, plugs as required 15mm diameter (light quality)	Meter	62.00			
SP-WS-2	Ditto..... But 20mm diameter	Meter	46.00			
SP-WS-3	Ditto..... But 25mm diameter	Meter	80.00			
SP-WS-4	Ditto..... But 32mm diameter	Meter	15.00			
SP-WS-5	Ditto..... But 50mm diameter	Meter	25.00			
SP-WS-6	Supply and fix valves "peets" pattern, strong gunmetal, high pressure, "full-way" valves with iron wheel head screwed both ends for iron pipe, 20 mm diameter	Each	5.00			
SP-WS-7	Ditto..... But 25mm diameter	Each	4.00			
SP-WS-8	Ditto..... But 40mm diameter	Each	2.00			
SP-WS-9	Ditto..... But 60mm diameter	Each	1.00			
SP-WS-10	S/F bib cock brass chromium plated fancy type screwed down BSP 15mm diameter	Each	14.00			
SP-WS-11	S/F 15mm Tee stop cock brass chromium plated screw down high pressure fancy type	Each	30.00			
SP-WS-12	S/F 15mm stop cock brass chromium plated screw down high pressure fancy type	Each	24.00			
SP-WS-13	S/F adjustable CP shower fancy type	Each	7.00			
SP-WS-14	S/F Electric gyser of capacity 45 ltr.	Each	3.00			



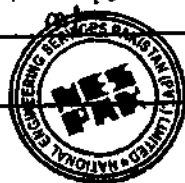
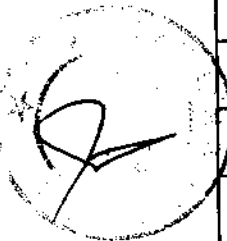
**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)**

**KM. (43+400 - KM. 105+620) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. in Figures)	RATE (Rs. in Words)	Amount (Rs.)
SP-WS-15	Supply and fix water closet apparatus European pattern complete comprising closet, 13 ltr cistern flushing, seat cover etc (coupled set) in white / light colour any size or make fixed to concrete.	Each	7.00			
SP-WS-16	Supply and fix sink scullery of stainless steel with single drainage board complete shallow or deep pattern upto 6000 centimeter square, super, fixed to brick work or wood (Pak made).	Each	1.00			
SP-WS-17	Supply and fix vanity in white/light colour with one hole, coupling chain & plug and bottle trap best quality (Imported) fixed to brick or concrete work.	Each	6.00			
SP-WS-18	Supply and fixed urinals blazed ware complete with flush tank.	Each	7.00			
SP-WS-19	Supply and fix mirror any shape and pattern 5mm thick of sizes, foreign made edged ground complete fixed to brick or concrete work	Sqm	6.00			
SP-WS-20	Supply and fix 100mm dia CI floor trap including reducer etc complete	Each	18.00			
SP-WS-21	Supply and fix casted grating chromium plated 150mm x 150mm	Each	16.00			
SP-WS-22	Supply and fix 50mm bore cast iron soil waste and vent pipes and fitting as specified (Spun pipe)	Meter	50.00			
SP-WS-23	.....Ditto.... But 75mm bore	Meter	40.00			
SP-WS-24	.....Ditto.... But 100mm bore	Meter	65.00			
SP-WS-25	Supply and fix 50mm bore CI bends tapers, double socket and oval pattern accessories complete	Each	22.00			
SP-WS-26	.....Ditto.... But 75mm bore	Each	22.00			
SP-WS-27	.....Ditto.... But 100mm bore	Each	27.00			
SP-WS-28	Supply and fix 50mm bore CI tee branch pieces single equal or unequal arms etc complete	Each	3.00			
SP-WS-29	.....Ditto.... But 75mm bore	Each	3.00			



**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)**

**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. in Figures)	RATE (Rs. in Words)	Amount (Rs.)
SP-WS-30	.....Ditto.... But 100mm bore	Each	5.00			
SP-WS-31	Supply and fix 50mm bore CI cowls for vent pipes	Each	5.00			
SP-WS-32	Supply and fix reinforced cement concrete pipe 100mm bore , laid and jointed with spigot socket or collars as specified	Meter	15.00			
SP-WS-33	.....Ditto.... But 150mm bore	Meter	20.00			
SP-WS-34	Supply and fix glazed ware gully trap embedding in PCC (1:2:4) concrete 150mm all around and at bottom of gully trap all as specified	Each	4.00			
SP-WS-35	Construction man holes rectangular exceeding 600mm deep from invert to surface of cover, including main channel set in CM (1:1) 230 mm thick brick walls complete with man hole covers	Each	2.00			
SP-WS-36	Construction of septic tank for 24Men all as per drawings and Specifications	Each	1.00			
SP-WS-37	Supply and fix CP Mixer 15mm dia best quality for vanities and sink etc	Each	4.00			
SP-WS-38	Providing and laying 100mm dia wire ballon grating over rain water pipes	Each	6.00			
<b>TOTAL OF BILL NO. 6A-08: PLUMBING WORKS (OFFICE AND ACCOMODATION BUILDING):</b>						



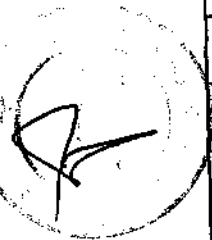


**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)**  
**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. in Figures)	RATE (Rs. in Words)	Amount (Rs.)
<b>BILL NO 09 : ELECTRICAL WORKS (OFFICE AND ACCOMODATION BUILDING)</b>						
SP-EW-1	S/F Circuit wiring from DB to switch board, wiring with PVC single core cable 2.5 Sq. mm + 1.5 Sq. mm as ECC in PVC conduit concealed as per site requirement	Point	13.00			
SP-EW-2	S/F of one fan point, one light point, one bell point controlled by one switch, wiring complete with PVC single core cable 1.5 mm <sup>2</sup> in concealed PVC conduit	Point	160.00			
SP-EW-3	S/F of one three pin socket outlet 5 Amps point controlled by one switch wiring complete with PVC single core cable 1.5 mm in concealed PVC conduit including earthwire.	Point	18.00			
SP-EW-4	S/F of one three pin socket outlet 15/20 Amps point controlled by one switch wiring complete with PVC single core cable 4 Sq.mm in concealed PVC conduit including earth wire	Point	19.00			
SP-EW-5	S/F bracket wall with globe white glass opal 150mm dia complete with gallery and lamps holder BC	Each	30.00			
SP-EW-6	S/F Philips palty fitting complete with 1x40 W tube lamp starter and holders	Each	32.00			
SP-EW-7	S/F Ceiling mounted Philips light complete with flourocent tube, choke, starter and capacitor TCS 4 x 20W	Each	6.00			
SP-EW-8	S/F SPOT LIGHTs philips made with holder/ reflector complete	Each	1.00			
SP-EW-9	S/F ceiling lights fancy type as approved by Engineer in Charge	Each	3.00			
SP-EW-10	S/F schandlier single bulb fancy type as approved by engineer in charge	Each	3.00			
SP-EW-11	S/F bulb head fitting cast iron with guard tapped 20mm E.T. according to BSS No. 229 of 1957	Each	25.00			
SP-EW-12	S/F switch SP 5 amps piano type mounted in cast or malleable iron galvanized conduit box with bakelite plate	Each	150.00			
SP-EW-13	S/F switch socket outlet 3 pin 5 Amps bakelite shuttered complete	Each	27.00			



176



**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)**  
**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. in Figures)	RATE (Rs. in Words)	Amount (Rs.)
SP-EW-14	.....ditto..... but 20 Amps.	Each	20.00			
SP-EW-15	S/F earthing including boring/excavation, copper rod 25mm, 3000 mm long and copper conductor etc. complete in all respects to achieve resistance not more than 5 Ohms.	Each	1.00			
SP-EW-16	S/F clamp hooked for fan concealed	Each	27.00			
SP-EW-17	S/F fan electric with regulator blades, canopy and rod including connections, provision of cables and fan of 140 CM sweep of approved make	Each	25.00			
SP-EW-18	S/F exhaust fan 250mm capacity with shutter/grill plastic body single action (Pak fan)	Each	7.00			
SP-EW-19	S/F fan electric AC exhaust 30 CM 220/230 volts S.P. complete with shutter	Each	5.00			
SP-EW-20	S/F wall bracket fan fancy plastic body 450mm Pak fan	Each	3.00			
SP-EW-21	S/F PVC conduit 40mm dia complete with all bands, tees, boxes, saddles, etc for concealed wiring	Metre	17.00			
SP-EW-22	S/F of board distribution MS sheet steel 16 BG thick with hinged cover and locking arrangement duty painted inside/outside with suitable size of busbar for connecting incoming and outgoing MCCB consisting of following:-					
	<b>INCOMING</b>					
	MCCB TP 500/660 volts 50 cycle complete with thermal & magnetic trip 60 Amps (Breaking capacity 7.5 KA)					
	<b>OUTGOING</b>					
	1. MCB SP 220V 10A to 20A = 33 Nos.	Set	1.00			
<b>TOTAL OF BILL NO. 6A-09 : ELECTRICAL WORKS (OFFICE AND ACCOMODATION BUILDING)</b>						



**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)**

**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. in Figures)	RATE (Rs. in Words)	Amount (Rs.)
<b>BILL NO 10 : ELECTRICAL WORKS (GENERATOR ROOM)</b>						
G-EW-1	S/F circuit wiring from DB to switch board, wiring with PVC single core cable 2.5 Sq.mm + 1.5 Sq.mm ECC in PVC conduit concealed as per site requirement	Point	1.00			
G-EW-2	S/F of one fan point, one light point, one bell point controlled by one switch, wiring complete with PVC single core cable 1.5mm <sup>2</sup> in concealed PVC conduit	Point	10.00			
G-EW-3	S/F of one three pin socket outlet 5 Amps point controlled by one switch wiring complete with PVC single core cable 1.5mm in concealed with PVC conduit including earth wire.	Point	2.00			
G-EW-4	S/F of one three pin socket outlet 15/20 Amps point controlled by one switch wiring complete with PVC single core cable 4 Sq.mm in concealed PVC conduit including earth wire	Point	1.00			
G-EW-5	S/F bracket wall with globe white glass opal 150 mm dia complete with gallery and lamp holder BC	Each	1.00			
G-EW-6	S/F Philips patty fitting complete with 1x40 W tube lamp starter and holders.	Each	1.00			
G-EW-7	S/F bulb head fitting cast iron with guard tapped 20mm E.T. according to BSS No. 229 of 1957	Each	4.00			
G-EW-8	S/F switch SP 5 amps piano type mounted in cast or malleable iron galvanized conduit box bakelite plate	Each	9.00			
G-EW-9	S/F switch SP socket outlet 3 pin 5 Amps bakelite shuttered pattern complete	Each	2.00			



**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)**

**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. in Figures)	RATE (Rs. in Words)	Amount (Rs.)
G-EW-10	.....ditto..... But 20 Amps	Each	1.00			
G-EW-11	S/F earthing including boring/excavation, copper rod 25mm Ø, 3000 mm long and copper conductor etc. complete in all respects to achieve resistance not more than 5 Ohms,	Each	1.00			
G-EW-12	S/F clamp hook for fan concealed	Each	1.00			
G-EW-13	S/F fan electric with regulator blades, canopy and rod incl. connections, provision of cables of fan 140 CM sweep of approved make	Each	1.00			
G-EW-14	S/F fan electric AC exhaust 45 CM 220/230 volts S.P complete with shutter	Each	2.00			
G-EW-15	S/F of board distribution MS sheet steel 16 BG thick with hinged cover and locking arrangement duly painted inside/outside with suitable size of busbar for connecting incoming and outgoing MCCB consisting of following:-					
	<b>INCOMING</b>					
	1. MCB SP 220 volts 50 cycle complete 30 amper 1 No.					
	<b>OUTGOING</b>					
	1. MCB SP 220 V 10 A to 20 A = 4 No.s	Set	1.00			
	<b>STANDBY POWER GENERATION</b>					
G-EW-16	Supply, installation, testing and commissioning diesel engine power, Caterpillar Made or equivalent, 100 KVA capacity 0.8 PF, 3 phase, 4 wire, 220/415 V, 50 Hz including AMF/ATS panel, making foundation and all other arrangements to make the set functional having diesel tank capacity of atleast 8 hours.	No.	1.00			
<b>TOTAL OF BILL NO. 6A-10 : ELECTRICAL WORKS (GENERATOR ROOM)</b>						



**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR - KANDHKOT SECTION)**

**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. in Figures)	RATE (Rs. in Words)	Amount (Rs.)
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**BILL NO. 11 : WEIGH STATION & ALLIED WORKS**

11.1	Installation of SSWIM equipment including vault construction loop sensor installation, necessary conduiting for power and communication cables, scale hardware at location shown in drawings including foundations. Complete in all respect as per the direction of the Engineer In Charge at site.	No	1.00			
11.2	Construction of Weigh station building having 1 x living room, 1 x Admin room, Washroom & Kitchen & control room including complete furnishing. Complete in all respect as per drawings.	No	1.00			
11.3	Construction of manholes / junction boxes for drainage and cabling from weigh scale to scale house / control room.	No	6.00			
<b>TOTAL OF BILL NO: 6A-11 : ELECTRICAL WORKS (WEIGH STATION &amp; ALLIED WORKS)</b>						



**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**

**SHIKARPUR - KANDHKOT SECTION**  
 KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM

**BILL OF QUANTITIES**

Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
<b>Bill No 7</b>	<b>General Items</b>					
Sp-701 (a)	Provide Surveying & allied instruments	PS	-	1,500,000.00	One Point Five Million	1,500,000.00
Sp-701 (b)	Maintain Survey Instruments, provide vehicle, Survey Team & helpers	Month	24.00			
Sp-702 a	Provide the Employer's and Engineer's Representative's Office & Residence (on rental basis)	PS	-	2,500,000.00	Two Point Five Million Only	2,500,000.00
Sp-702b	Furnish and Equip. Employer's & Engineer's Representative office & Residence.	PS	-	2,000,000.00	Two Million Only	2,000,000.00
Sp-702c	Maintain Employer's and Engineer's Representative office & Residence.	Month	24.00			
Sp-703a	Provide Material Testing Project Laboratory (rental basis)	PS	-	1,500,000.00	One Point Five Million	1,500,000.00
Sp-703b	Equip & Furnish Material Testing Project Laboratory.	PS	-	3,500,000.00	Three Point Five Million Only	3,500,000.00
Sp-703c	Maintain Material Testing Project Laboratory including provision 04 helpers	Month	24.00			
Sp-708b	Provide Engineer's Representative Transport (i) Toyota Double Cabin with A/C (4 wheel drive)	Each	1.00			
	(ii) Suzuki Bolan (Carry)	Each	1.00			
SP-708bi	Provide OHS Manager and support staff Transport (On rental basis) (i) Toyota Corolla 1300 cc with A/C (01 No)	Vehicle-Month	24.00			
	(ii) Suzuki Carry (01 No)	Vehicle-Month	24.00			
Sp-708c	Running & Maintenance of Employer's / Engineer's Representative's Transport	Vehicle-Month	264.00			
NSI-IV	Employing Trainee Engineer's with Boarding, Lodging and messing	Man-Month	96.00			



**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**

**SHIKARPUR - KANDHKOT SECTION**

KM. (43+400 - KM. 105+820) LENGTH: 62.42 KM

**BILL OF QUANTITIES**

Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
<b>OHS Provisions:</b>						
<b>SP-OHS</b>						
i)	Provide 1 x Qualified OHS Manager having international certifications as per specifications.	Man-Month	24.00			
ii)	Provide 4 nos support staff as assistant to OHS Manager as per specifications.	Man-Month	96.00			
iii)	Equip OHS Manager with necessary accessories i.e. stationery, laptop etc for proper monitoring of OHS activities.	LS	-			
iv)	Conduct OHS awareness trainings for Employer and contractor staff at site and conducting courses to visitors and new comers.	Month	24.00			
v)	Carrying out and submit the OHS manual to the Engineer's representative, monitoring of all site activities as per OHS manual and submitting monthly progress report to the Engineer representative at site.	LS	-			
vi)	Construct and maintain detours i.e. installation of safety signs and other related safety features, preparing diversion plans and submit to the Engineer's representative in accordance with GCC.	LS	-			
vii)	Provide and maintain PPE's at site.	Month	24.00			
viii)	Provide and maintain first aid kit at site.	Month	24.00			
						<b>TOTAL BILL NO. 7</b>



**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**

**SHIKARPUR ~ KANDHKOT SECTION**

**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**ABSTRACT OF COST**

Bill No.	Description	Amount (Rs.)
1	Earth Work	1,164,326,122.00
2	Sub Base & Base	3,144,606,675.00
3	Surface Course & Pavement	1,129,190,158.30
4a	Structures (Box Culverts)	304,452,699.00
4b	Structures (Retaining Walls & Toe Walls)	357,288,200.00
4c	Structures (Bridges Including Soil Investigation)	1,018,483,904.00
4d	Structures (Underpasses)	421,696,981.00
5	Drainage And Erosion Works	460,767,230.00
6	Ancillary Works	640,611,936.20
6a	Ancillary Works (Toll Plaza & Allied Works)	130,018,007.70
7	General Items	76,660,000.00
<b>TOTAL AMOUNT (BILL NO. 1 - 7)</b>		<b>8,848,101,913.20</b>

**Rupees Eight Billion Eight Hundred Forty Eight Million One Hundred One Thousand Nine Hundred  
Thirteen and Nineteen Paise Only**





**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**

**SHIKARPUR~KANDHKOT SECTION**

**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

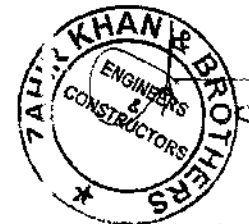
**BILL OF QUANTITIES**

Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount
				In Figures	In Words	
<b>BILL NO. 01 EARTH WORKS</b>						
101	Clearing and Grubbing	SM	1,460,807	10.00	Rupees Ten Only	14,608,070.00
102a	Removal of Trees 150-300 mm Girth	Each	100	300.00	Rupees Three hundred Only	30,000.00
102b	Removal of Trees 301-600 mm Girth	Each	100	900.00	Rupees Nine Hundred Only	90,000.00
102c	Removal of Trees 601mm or over Girth	Each	50	3,000.00	Rupees Three Thousand Only	150,000.00
104	Compaction of Natural Ground	SM	1,460,807	6.00	Rupees Six Only	8,764,839.60
106a	Excavate Unsuitable Common Material	CM	24,000	400.00	Rupees Four Hundred Only	9,600,000.00
108c	Formation of Embankment from borrow excavation in common material	CM	1,422,981	450.00	Rupees Four Hundred Fifty Only	640,341,450.00
108d	Formation of Embankment from Structural Excavation in common material	CM	17,026	360.00	Rupees Three Hundred Sixty Only	6,129,360.00
109a	Subgrade Preparation in Earthcut	SM	13,200	76.00	Rupees Seventy Six Only	1,003,200.00
SP-117a	Formation of granular material platform	CM	11,880	2,300.00	Rupees Two Thousand Three Hundred Only	27,324,000.00
SP-117b	Formation of Embankment from Borrow Rock Material	CM	199,760	1,200.00	Rupees One Thousand Two Hundred Only	239,712,000.00
SP-118	Filling of Center Median With Sweet Soil	CM	5,940	700.00	Rupees Seven Hundred Only	4,158,000.00
110	Improved Subgrade (CBR > 25)	CM	265,519	800.00	Rupees Eight Hundred Only	212,415,200.00
<b>TOTAL (BILL NO. 01)</b>						<b>1,164,326,119.60</b>



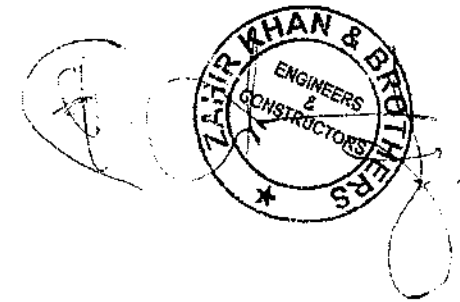
**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**  
**SHIKARPUR ~ KANDHKOT SECTION**  
**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**  
**BILL OF QUANTITIES**

Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
<b>BILL NO. 01 EARTH WORKS</b>						
101	Clearing and Grubbing	SM	1,460,807.00	10.00	Rupees Ten Only	14,608,070
102a	Removal of Trees 150-300 mm Girth	Each	100.00	300.00	Rupees Three Hundred Only	30,000
102b	Removal of Trees 301-600 mm Girth	Each	100.00	900.00	Rupees Nine Hundred Only	90,000
102c	Removal of Trees 601mm or over Girth	Each	50.00	3,000.00	Rupees Three Thousand Only	150,000
104	Compaction of Natural Ground	SM	1,460,807.00	6.00	Rupees Six Only	8,764,842
106a	Excavate Unsuitable Common Material	CM	24,000.00	400.00	Rupees Four Hundred Only	9,600,000
108c	Formation of Embankment from borrow excavation in common material	CM	1,422,981.00	450.00	Rupees Four Hundred Fifty Only	640,341,450
108d	Formation of Embankment from Structural Excavation in common material	CM	17,026.00	360.00	Rupees Three Hundred Sixty Only	6,129,360
109a	Subgrade Preparation in Earthcut	SM	13,200.00	76.00	Rupees Seventy Six Only	1,003,200
SP-117a	Formation of granular material platform	CM	11,880.00	2,300.00	Rupees Two Thousand Three Hundred Only	27,324,000
SP-117b	Formation of Embankment from Borrow Rock Material	CM	199,760.00	1,200.00	Rupees One Thousand Two Hundred Only	239,712,000
SP-118	Filling of Center Median With Sweet Soil	CM	5,940.00	700.00	Rupees Seven Hundred Only	4,158,000
110	Improved Subgrade (CBR > 25)	CM	265,519.00	800.00	Rupees Eight Hundred Only	212,415,200
<b>TOTAL (BILL NO. 01)</b>						<b>1,164,326,122</b>



**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**  
**SHIKARPUR ~ KANDHKOT SECTION**  
**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**  
**BILL OF QUANTITIES**

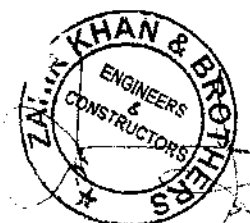
Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
<b>BILL NO. 02 SUB-BASE &amp; BASE</b>						
201	Granular Subbase	CM	295,775.00	1,600.00	Rupees One Thousand Six Hundred Only	473,240,000
202	Aggregate Base (Laid With Paver)	CM	256,969.00	1,750.00	Rupees One Thousand Seven Hundred Fifty Only	449,695,750
203b	Asphaltic Base Course Plant mix (Class B)	CM	137,776.00	16,000.00	Rupees Sixteen Thousand Only	2,204,416,000
209a	Breaking of Existing Road Pavement Structure	CM	66,049.00	200.00	Rupees Two Hundred Only	13,209,800
209b	Scarification of Existing Road Pavement	SM	60,375.00	67.00	Rupees Sixty Seven Only	4,045,125
<b>TOTAL (BILL NO. 02)</b>						<b>3,144,606,675</b>



**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**  
**SHIKARPUR ~ KANDHKOT SECTION**  
**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**  
**BILL OF QUANTITIES**

Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
<b>BILL NO. 03 SURFACING &amp; PAVEMENTS</b>						
302a	Cut back Asphalt for Bituminous Prime Coat	SM	907,959.00	123.00	Rupees One Hundred Twenty Three Only	111,678,957.00
303a	Cut back Asphalt for Bituminous Tack Coat	SM	1,722,203.70	49.00	Rupees Forty Nine Only	84,387,981.30
304c	Triple Surface Treatment	SM	329,679.00	500.00	Rupees Five Hundred Only	164,839,500.00
305a	Asphaltic Concrete for Wearing Course (Class A)	CM	45,193.16	17,000.00	Rupees Seventeen Thousand Only	768,283,720.00
<b>TOTAL (BILL NO. 03)</b>						<b>1,129,190,158</b>

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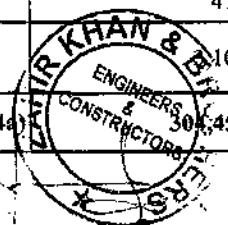
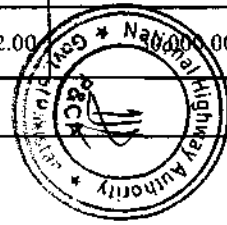

**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**

**SHIKARPUR ~ KANDHKOT SECTION**

**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

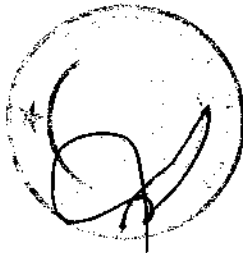
**BILL OF QUANTITIES**

Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
<b>Bill No 4a</b>	<b>Structure (Box Culverts)</b>					
107a	Structural Excavation in Common Material	CM	5,016.10	500.00	Rupees Five Hundred Only	2,508,050.00
107d	Granular Backfill	CM	978.72	2,500.00	Rupees Two Thousand Five Hundred Only	2,446,800.00
107e	Common Backfill	CM	1,468.08	800.00	Rupees Eight Hundred Only	1,174,464.00
401 a2i	Concrete Class A2 (Underground)	CM	60.81	14,000.00	Rupees Fourteen Thousand Only	851,340.00
401a2ii	Concrete Class A2 (On ground)	CM	2,782.56	13,500.00	Rupees Thirteen Thousand Five Hundred Only	37,564,560.00
401 a3ii	Concrete Class A3 (On ground)	CM	1,041.81	14,000.00	Rupees Fourteen Thousand Only	14,585,340.00
401 a3iii	Concrete Class A3 (Elevated)	CM	2,364.75	14,500.00	Rupees Fourteen Thousand Five Hundred Only	34,288,875.00
401f	Lean Concrete	CM	1,140.20	9,000.00	Rupees Nine Thousand Only	10,261,800.00
SS-1	Extra Over for Providing Sulphate Resistant Cement in Concrete Works of specified Class:					
	for Concrete Class A 2	CM	2,843.37	1,200.00	Rupees One Thousand Two Hundred Only	3,412,044.00
	for Concrete Class A 3	CM	1,041.81	1,600.00	Rupees One Thousand Six Hundred Only	1,666,896.00
	for Lean Concrete	CM	1,140.20	1,600.00	Rupees One Thousand Six Hundred Only	1,824,320.00
404b	Reinforcement as per AASHTO M-31 Grade-60	Ton	980.79	170,000.00	Rupees One Hundred Seventy Thousand Only	166,734,300.00
406a	Premoulded Joint Filler 25mm Thick with Bitumastic Joint Seal	SM	397.93	7,000.00	Rupees Seven Thousand Only	2,785,510.00
406dii	PVC Water Stop 9" Size	M	1,037.30	4,000.00	Rupees Four Thousand Only	4,149,200.00
509d	Grouted Rip Rap Class A	CM	207.51	12,000.00	Rupees Twelve Thousand Only	2,490,120.00
509 b	Riprap Class B	CM	1,013.86	14,000.00	Rupees Fourteen Thousand Only	14,194,040.00
509 h	Filter Layer of Granular Material	CM	103.76	4,000.00	Rupees Four Thousand Only	415,040.00
SP-505	Cleaning & Minor Repair of Existing Structure (Culverts)	Each	62.00	1,600.00	Rupees Fifty Thousand Only	100,000.00
					<b>TOTAL (BILL NO. 4a)</b>	<b>30,452,699.00</b>



**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**  
**SHIKARPUR ~ KANDHKOT SECTION**  
**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**  
**BILL OF QUANTITIES**

Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
<b>Bill No 4b</b>	<b>Structure (Retaining Walls &amp; Toe Walls)</b>					
107a	Structural Excavation in Common Material	CM	17,770.50	500.00	Rupees Five Hundred Only	8,885,250.00
401f	Lean Concrete	CM	8,096.00	5,000.00	Rupees Five Thousand Only	40,480,000.00
401b	Concrete Class B	CM	774.50	14,000.00	Rupees Fourteen Thousand Only	10,843,000.00
401h	Plum (Cyclopean / Rubble) Concrete (2:1 Conc. Stone Ratio)	CM	73,510.25	3,000.00	Rupees Three Thousand Only	220,530,750.00
SS-1	Extra Over for Providing Sulphate Resistant Cement in Concrete Works of specified Class:					-
	for Plum Concrete	CM	73,510.25	800.00	Rupees Eight Hundred Only	58,808,200.00
	for Concrete Class B	CM	774.50	2,000.00	Rupees Two Thousand Only	1,549,000.00
	for Lean Concrete	CM	8,096.00	2,000.00	Rupees Two Thousand Only	16,192,000.00
<b>TOTAL (BILL NO. 4b)</b>						<b>357,288,200.00</b>

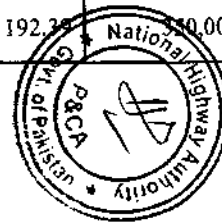


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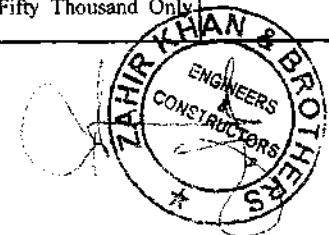
**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**  
**SHIKARPUR - KANDHKOT SECTION**  
**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**  
**BILL OF QUANTITIES**

Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
<b>Bill No 4c</b>	<b>Structure (Bridges)</b>					
107a	Structural Excavation in Common Material	CM	1,535.68	500.00	Rupees Five Hundred Only	767,840.00
107d	Granular Backfill	CM	1,535.68	3,000.00	Rupees Three Thousand Only	4,607,040.00
107e	Common Backfill	CM	1,535.68	700.00	Rupees Seven Hundred Only	1,074,976.00
401 a2ii	Concrete Class 'A2' (ON GROUND) Approach Slab, Barrier	CM	811.41	14,000.00	Rupees Fourteen Thousand Only	11,359,740.00
401 a3iii	Concrete Class 'A3' (ELEVATED) Pier, Transom, Deck Slab, Diaphragm, Coping, Beam Seat, Back wall & Wing Walls	CM	4,549.70	14,500.00	Rupees Fourteen Thousand Five Hundred Only	65,970,650.00
401 a3i	Concrete Class 'A3' (UNDERGROUND) Piles	CM	6,295.64	10,000.00	Rupees Ten Thousand Only	62,956,400.00
401 giv	Precast Concrete Class D1	CM	3,968.58	14,000.00	Rupees Fourteen Thousand Only	55,560,120.00
401 f	Lean Concrete	CM	89.44	12,000.00	Rupees Twelve Thousand Only	1,073,280.00
SS-1	Extra Over for Providing Sulphate Resistant Cement in Concrete Works of specified Class:					-
	for Concrete Class A 2	CM	811.41	1,200.00	Rupees One Thousand Two Hundred Only	973,692.00
	for Concrete Class A 3	CM	6,295.64	1,200.00	Rupees One Thousand Two Hundred Only	7,554,768.00
	for Lean Concrete	CM	89.44	1,200.00	Rupees One Thousand Two Hundred Only	107,328.00
404 b	Reinforcement as per AASHTO M 31 Grade 60.	Tons	2,608.73	170,000.00	Rupees One Hundred Seventy Thousand Only	443,484,100.00
404 h	Reinforcement (Structural Shapes) as per ASTM A-36.	Tons	8.76	500,000.00	Rupees Five Hundred Thousand Only	4,380,000.00
405 a	Prestressing Wire Strand, 3/8" -1/2 " dia. Complete in all respects	Tons	192.25	350,000.00	Rupees Three Hundred Fifty Thousand Only	67,336,500.00

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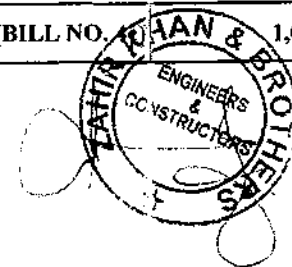


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**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**  
**SHIKARPUR ~ KANDHKOT SECTION**  
**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**  
**BILL OF QUANTITIES**


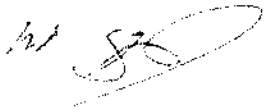
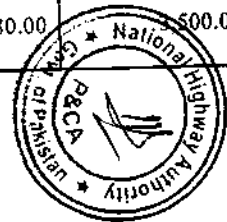
Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
405 b	Launching of Girder	Tons	9,167.03	2,000.00	Rupees Two Thousand Only	18,334,060.00
406 ei	Elastomeric Bearing Pads (According to size & thickness) USA/EU Make	Cu.cm	1,372,800.00	14.00	Rupees Fourteen Only	19,219,200.00
407 d1	Cast-in place concrete piles, upto 1.00 M dia in Normal Soil (Boring only)	LM	910.80	12,000.00	Rupees Twelve Thousand Only	10,929,600.00
407 d2	Cast-in place concrete piles, upto 1.00 M dia in Gravel Soil (Boring only)	LM	1,366.20	12,000.00	Rupees Twelve Thousand Only	16,394,400.00
407 d3	Cast-in place concrete piles, 1.1 -1.5 M dia in Normal Soil (Boring only)	LM	1,333.20	14,000.00	Rupees Fourteen Thousand Only	18,664,800.00
407 d4	Cast-in place concrete piles, 1.1 -1.5 M dia in Gravel Strata(Boring only)	LM	1,999.80	14,000.00	Rupees Fourteen Thousand Only	27,997,200.00
407 i	Pile Load Test for dia 1 - 1.5 M (2.5 times Design Load)	Each	10.00	1,500,000.00	Rupees One Million Five Hundred Thousand Only	15,000,000.00
407h	Proof Load Test on Working pile (1.5 times Design Load)	Each	10.00	1,200,000.00	Rupees One Million Two Hundred Thousand Only	12,000,000.00
407 n	Permanent Pile casing (liner 12 mm Thick) for piles	Tons	202.49	230,000.00	Rupees Two Hundred Thirty Thousand Only	46,572,700.00
509 d	Grouted Rip Rap Class A	CM	3,542.59	7,000.00	Rupees Seven Thousand Only	24,798,130.00
509 h	Filter Layer of Granular Material	CM	3,620.39	8,000.00	Rupees Eight Thousand Only	28,963,120.00
SP-417(a)	Sonic Integrity Tests (SIT) on all Piles	Each	160.00	8,000.00	Rupees Eight Thousand Only	1,280,000.00
SP-417	Manufactured Trade Marks expansion joints for roadway (25 - 30) mm movement	M	454.96	80,000.00	Rupees Eighty Thousand Only	36,396,800.00
SP-418	GI Drain Pipe Dia 100 mm	M	1,433.00	3,000.00	Rupees Three Thousand Only	4,299,000.00
<b>TOTAL (BILL NO. 1008)</b>						<b>1,008,055,444.00</b>

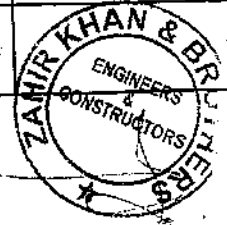





**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**  
**SHIKARPUR ~ KANDHKOT SECTION**  
**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**  
**BILL OF QUANTITIES**

Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
<b>Bill No 4c (i)</b>	<b>Structure (Soil Investigation for Bridges)</b>					
SP-414 (a)	6" minimum dia drilling straight rotary/ Percussion including back filling of holes from NSL upto 45m depth or till the rock level which ever is met earlier.	LM	500.00	8,668.00	Rupees Eight Thousand Six Hundred Sixty Eight Only	4,334,000
SP-414(b)	Perform SPT at 1 m interval i/c collection, preservation & Transportation of disturbed samples to an approved Laboratory.	No.	150.00	728.00	Rupees Seven Hundred Twenty Eight Only	109,200
SP-414(b-1)	Continuous core drilling in bedrock up to a maximum of 5 m depth below rock strike level, including determination of core recovery/ RQD, preservation of core samples in core boxes, labelling, waxing of selected core samples, photography of rock cores and transportation of core samples to the laboratory. In case core recovery is less than 80% reduce run length to 0.5 m.	LM	80.00	6,000.00	Rupees Six Thousand Only	480,000
SP-414(c)	Collection of undisturbed soil samples from boreholes using Shelby pitcher/denison sampler i/c preservation and transportation of samples to an approved Laboratory.	No.	80.00	5,547.00	Rupees Five Thousand Five Hundred Forty Seven Only	443,760
SP-414(d)	Performance of FDT in test pits through sand replacement method i/c moisture content determination.	No.	180.00	1,200.00	Rupees One Thousand Two Hundred Only	216,000
SP-414(e)	Excavation of testpits upto 1.5 m depth along road allignment including backfilling of pits to original condition.	M	80.00	4,000.00	Rupees Four Thousand Only	320,000
SP-414(f)	Collection of undisturbed block samples from test pits at appropriate location as directed by the Engineer.	No.	80.00	500.00	Rupees Three Thousand Five Hundred Only	280,000

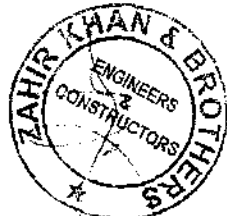




**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**  
**SHIKARPUR ~ KANDHKOT SECTION**  
**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**  
**BILL OF QUANTITIES**

Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
SP-414(f1)	Collection of composite bulk sample (atleast 60 kg for sandy/clayey soils and 120 kg for gravely soils).	No.	80.00	1,500.00	Rupees One Thousand Five Hundred Only	120,000

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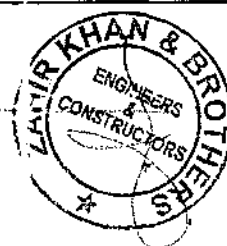
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**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**  
**SHIKARPUR ~ KANDHKOT SECTION**  
**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**  
**BILL OF QUANTITIES**

Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
SP-414(g)	Collection & preservation of water samples from bore holes & transportation to an approved Laboratory.	No.	80.00	900.00	Rupees Nine Hundred Only	72,000
SP-414(h)i.	Laboratory Testing Grain size analysis.	No.	50.00	700.00	Rupees Seven Hundred Only	35,000
ii.	Hydrometer analysis.	No.	50.00	900.00	Rupees Nine Hundred Only	45,000
iii.	Atterberg limits	No.	50.00	900.00	Rupees Nine Hundred Only	45,000
iv.	Specific gravity	No.	50.00	900.00	Rupees Nine Hundred Only	45,000
v.	Natural moisture content	No.	50.00	170.00	Rupees One Hundred Seventy Only	8,500
vi.	Bulk density & Dry density (Soil/rock cores)	No.	50.00	500.00	Rupees Five Hundred Only	25,000
vii.	Direct shear test	No.	50.00	3,500.00	Rupees Three Thousand Five Hundred Only	175,000
viii.	Consolidation test (collapse/swell potential)	No.	50.00	4,000.00	Rupees Four Thousand Only	200,000
ix.	Unconfined compression test (Soil/rock cores)	No.	50.00	1,000.00	Rupees One Thousand Only	50,000
x.	Chemical analysis of soil	No.	50.00	2,000.00	Rupees Two Thousand Only	100,000
xi.	Chemical analysis of water	No.	50.00	2,000.00	Rupees Two Thousand Only	100,000
xii.	Submission of Investigation Report (triplicate)	No.	50.00	60,000.00	Rupees Sixty Thousand Only	3,000,000
xiii	CBR	No.	50.00	2,500.00	Rupees Two Thousand Five Hundred Only	125,000
xvi.	Modified Proctor Test	No.	50.00	2,000.00	Rupees Two Thousand Only	100,000
<b>TOTAL BILL NO. 4c (i)</b>						<b>10,428,460</b>

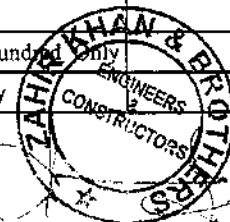
**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**  
**SHIKARPUR ~ KANDHKOT SECTION**  
**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**  
**BILL OF QUANTITIES**

Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
<b>Bill No. 4d:</b>	<b>Structures (Underpasses)</b>					
107a	Structural Excavation in Common Material	CM	3,477.72	500.00	Rupees Five Hundred Only	1,738,860.00
107d	Granular Backfill	CM	9,924.80	2,500.00	Rupees Two Thousand Five Hundred Only	24,812,000.00
401 a2i	Concrete Class A2 (Underground) Cutoff Walls	CM	79.51	14,000.00	Rupees Fourteen Thousand Only	1,113,140.00
401 a2ii	Concrete Class A2 (On Ground) Approach Slab	CM	499.48	14,000.00	Rupees Fourteen Thousand Only	6,992,720.00
401 a3ii	Concrete Class A3 (On ground) Base Slabs	CM	2,319.53	14,500.00	Rupees Fourteen Thousand Five Hundred Only	33,633,185.00
401 a3iii	Concrete Class A3 (Elevated) Abutment Walls, Top Slab, Wingwalls, Parapets	CM	5,502.12	12,500.00	Rupees Twelve Thousand Five Hundred Only	68,776,500.00
401f	Lean Concrete	CM	423.73	9,000.00	Rupees Nine Thousand Only	3,813,570.00
SS-1	Extra Over for Providing Sulphate Resistant Cement in Concrete Works of specified Class:					
	for Concrete Class A 2	CM	578.99	1,200.00	Rupees One Thousand Two Hundred Only	694,788.00
	for Concrete Class A 3	CM	7,821.65	1,400.00	Rupees One Thousand Four Hundred Only	10,950,310.00
	for Lean Concrete	CM	423.73	1,600.00	Rupees One Thousand Six Hundred Only	677,968.00
404b	Reinforcement as per AASHTO M-31 Grade-60	Ton	1,492.88	170,000.00	Rupees One Hundred Seventy Thousand Only	253,789,600.00
406a	Premoulded Joint Filler 25mm Thick with Bitumastic Joint Seal	SM	62.44	12,000.00	Rupees Twelve Thousand Only	749,280.00
406dii	PVC Water Stops 9" Size	M	1,313.99	4,000.00	Rupees Four Thousand Only	5,255,960.00
509 a	Rip Rap Class A	CM	869.91	10,000.00	Rupees Ten Thousand Only	8,699,100.00
					<b>TOTAL BILL</b>	<b>421,696,981.00</b>

260

**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**  
**SHIKARPUR ~ KANDHKOT SECTION**  
**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**  
**BILL OF QUANTITIES**

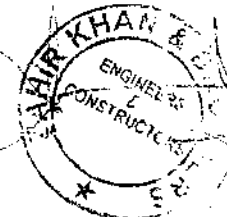
Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
<b>Bill No 5</b>	<b>Drainage &amp; Erosion Works</b>					
401a1ii	Concrete Class A1 (On Ground) for Chutes, Ducts (Services Crossing) & Drain	CM	8,652.80	8,000.00	Rupees Eight Thousand Only	69,222,400.00
401f	Lean Concrete (Drain)	CM	1,562.00	9,000.00	Rupees Nine Thousand Only	14,058,000.00
404b	Reinforcement as per AASHTO M-31 Grade 60	Ton	865.28	100,000.00	Rupees One Hundred Thousand Only	86,528,000.0
412a	Stone Masonary Dressed Coursed with Mortar	CM	507.54	12,000.00	Rupees Twelve Thousand Only	6,090,480.00
501d	Reinforced Concrete Pipe AASHTO M 170,Class II diameter 610 mm	M	220.00	14,000.00	Rupees Fourteen Thousand Only	3,080,000.00
501e	Reinforced Concrete Pipe AASHTO M 170,Class II diameter 750 mm	M	660.00	15,000.00	Rupees Fifteen Thousand Only	9,900,000.00
501f	Reinforced Concrete Pipe AASHTO M 170,Class II diameter 910 mm	M	660.00	22,000.00	Rupees Twenty Two Thousand Only	14,520,000.00
501 h	Reinforced Concrete Pipe AASHTO M 170,Class II diameter 1220 mm	M	264.00	30,000.00	Rupees Thirty Thousand Only	7,920,000.00
502b	Concrete Class B in bedding and Encasement of Concrete Pipe Culvert	CM	3,144.22	9,000.00	Rupees Nine Thousand Only	28,297,980.00
507a	Steel Wire Mesh for Gabions	Kg	66,026.00	400.00	Rupees Four Hundred Only	26,410,400.00
507b	Rock Fill in Gabions	CM	6,602.59	3,000.00	Rupees Three Thousand Only	19,807,770.00
510	Dismantling of Structures and Obstructions	CM	3,000.00	2,000.00	Rupees Two Thousand Only	6,000,000.00
511b2	Grouted Stone Pitching 20-25 cm Thick with Bitumen Joints	SM	47,777.40	3,000.00	Rupees Three Thousand Only	143,332,200.00
SP-501	Supplying & Installation of uPVC Pipe 100/150 mm dia	M	20,000.00	1,000.00	Rupees One Thousand Only	20,000,000.00
SP-502	Relocation of Unlined Watercourse	SM	500.00	2,200.00	Rupees Two Thousand Two Hundred Only	1,100,000.00
SP-503	Relocation of Brick Lined Watercourse	SM	500.00	9,000.00	Rupees Nine Thousand Only	4,500,000.00



**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**  
**SHIKARPUR ~ KANDHKOT SECTION**  
**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**  
**BILL OF QUANTITIES**

Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
				<b>TOTAL BILL NO. 5</b>		<b>460,767,230.00</b>

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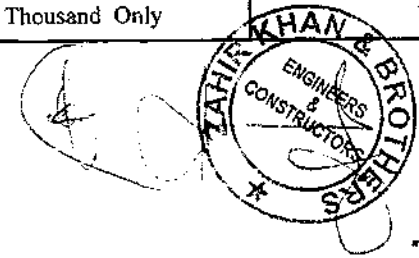
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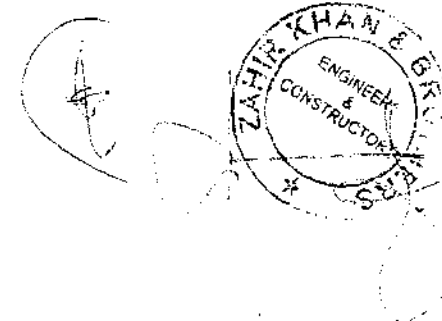
**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**  
**SHIKARPUR ~ KANDHKOT SECTION**  
**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**  
**BILL OF QUANTITIES**

Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
<b>Bill No 6</b>	<b>Ancillary Works</b>					
401f	Lean Concrete (New Jersey Barrier)	CM	6,015.52	7,000.00	Rupees Seven Thousand Only	42,108,640.00
601 ai	RCC New Jersey Barrier (In-situ) for median ; double face (including reinforcement)	M	61,995.00	4,000.00	Rupees Four Thousand Only	247,980,000.00
601 aii	RCC New Jersey Barrier (In Situ) as per drawings; Single face (including reinforcement)	M	1,000.00	10,000.00	Rupees Ten Thousand Only	10,000,000.00
601 dii	Pre-cast Curb in Concrete Class A-1 including bedding and haunching as per drawings	M	14,175.00	2,800.00	Rupees Two Thousand Eight Hundred Only	39,690,000.00
604a	Metal Guard Rail	M	10,120.00	6,000.00	Rupees Six Thousand Only	60,720,000.00
604b	Metal Guard Rail End Pieces	Each	203.00	12,000.00	Rupees Twelve Thousand Only	2,436,000.00
604d	Steel Post for Metal Guard Rail	Each	5,326.32	5,000.00	Rupees Five Thousand Only	26,631,600.00
607a	Traffic Road Signs, Category -1	Each	150.00	80,000.00	Rupees Eighty Thousand Only	12,000,000.00
607b	Traffic Road Signs, Category - 2	Each	150.00	80,000.00	Rupees Eighty Thousand Only	12,000,000.00
607e	Traffic Road Signs, Category - 3c	SM	350.00	80,000.00	Rupees Eighty Thousand Only	28,000,000.00
608h2	Pavement Marking in Reflective TP Paint of 15 cm Width	M	310,878.26	120.00	Rupees One Hundred Twenty Only	37,305,391.20
608j2	Pavement Marking in Reflective TP Paint for 4m Arrows	Each	115.00	4,000.00	Rupees Four Thousand Only	460,000.00
609ci	Reflectorised Plastic Pavement Studs (Raised Profile Type - Single)	Each	29,185.20	800.00	Rupees Eight Hundred Only	23,348,160.00
610c	Kilometer Post	Each	63.00	20,000.00	Rupees Twenty Thousand Only	1,260,000.00



**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**  
**SHIKARPUR ~ KANDHKOT SECTION**  
**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**  
**BILL OF QUANTITIES**

Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
612a	Furnishing and Planting of Trees Including Maintenance of 2 Years	Each	6,300.00	1,509.00	Rupees One Thousand Five Hundred Nine Only	9,506,700.00
SP-504	Delineators/Angle Reflector	Each	4,752.95	1,100.00	Rupees One Thousand One Hundred Only	5,228,245.00
SP-507	Dismantling of Existing Guard Rail	M	2,000.00	1,000.00	Rupees One Thousand Only	2,000,000.00
SP-601a	Gantry Sign Type -I as shown on drawings	Each	3.00	5,000,000.00	Rupees Five Million Only	15,000,000.00
SP-601b	Gantry Sign Type -II (Cantilever) as shown on drawings	Each	3.00	5,000,000.00	Rupees Five Million Only	15,000,000.00
NSI-I	Installation of Antiglare screen on New Jersey Barrier as per drawings and specifications.	Each	124,843.00	400.00	Rupees Four Hundred Only	49,937,200.00
<b>TOTAL BILL NO. 6</b>						<b>640,611,936.20</b>





**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)**

**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**SUMMARY COST**

**BILL NO 6a : (TOLL PLAZA & ALLIED WORKS)**

Sr No	Description	Civil Works	Plumbing Works	Electrical Works	Total Cost (Rs.)
1	Toll Plaza	45,621,628.51	1265200	6,643,200.00	53,530,028.51
2	Toll Booth		5,743,944.00		5,743,944.00
3	Steel Canopy	17,331,320.00		1,416,400.00	18,747,720.00
4	Office & Accomodation	12,901,165.19	1,181,450.00	1,651,300.00	15,733,915.19
5	Generator Room	-	-	3,211,400.00	3,211,400.00
6	Weigh Station & Allied Works		33,051,000.00		33,051,000.00
	<b>Total Cost In Rs.</b>				<b>130,018,007.70</b>

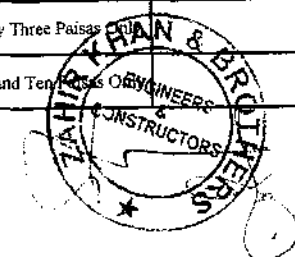
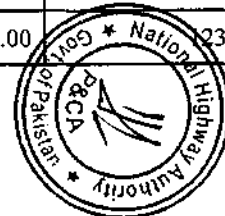


**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)**  
**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. In Figures)	RATE (Rs. in Words)	Amount (Rs.)
<b>BILL NO. 01 PAVEMENT WORKS:</b>						
101	Clearing and Grubbing	SM	7,035.00	25.28	Rupees Twenty Five and Twenty Eight Paisas Only	177,844.80
102a	Removal of Trees 150-300 mm Girth	Each	12.00	416.27	Rupees Four Hundred Sixteen and Twenty Seven Paisas Only	4,995.24
102b	Removal of Trees 301-600 mm Girth	Each	11.00	1,008.71	Rupees One Thousand Eight and Seventy One Paisas Only	11,095.81
102c	Removal of Trees 600 mm or over girth	Each	31.00	4,034.85	Rupees Four Thousand Thirty Four and Eighty Five Paisas Only	125,080.35
104	Compaction of Natural Ground	SM	7,035.00	27.61	Rupees Twenty Seven and Sixty One Paisas Only	194,236.35
106c	Excavation of Surplus common material	CM	1,280.00	323.83	Rupees Three Hundred Twenty Three and Eighty Three Paisas Only	414,502.40
107a	Structural excavation in common material	CM	67.00	359.83	Rupees Three Hundred Fifty Nine and Eighty Three Paisas Only	24,108.61
107d	Granular Backfill	CM	22.00	1,330.58	Rupees One Thousand Three Hundred Thirty and Fifty Eight Paisas Only	29,272.76
107e	Common Backfill	CM	16.00	246.37	Rupees Two Hundred Forty Six and Thirty Seven Paisas Only	3,941.92
108a	Formation of Embankment from roadway excavation in common material	CM	768.00	397.39	Rupees Three Hundred Ninety Seven and Thirty Nine Paisas Only	305,195.52
108c	Formation of Embankment from borrow excavation in common material	CM	6,151.00	445.92	Rupees Four Hundred Forty Five and Ninety Two Paisas Only	2,742,853.92
109a	Subgrade preparation in earth cut	SM	3,333.00	76.61	Rupees Seventy Six and Sixty One Paisas Only	255,341.13
203b	Asphaltic Base Course Class B	CM	329.00	18,221.86	Rupees Eighteen Thousand Two Hundred Twenty One and Eighty Six Paisas Only	5,994,991.94
206b	Water Bound Macadam base with coarse aggregate Class B	CM	823.00	1,567.06	Rupees One Thousand Five Hundred Sixty Seven and Six Paisas Only	1,289,690.38
209a	Breaking of Existing road pavement structure	CM	555.00	607.93	Rupees Six Hundred Seven and Ninety Three Paisas Only	337,401.15
302a	Cut-Back Asphalt For Bituminous Prime Coat	SM	4,113.00	23.1	Rupees One Hundred Twenty Three and Ten Paisas Only	506,310.30

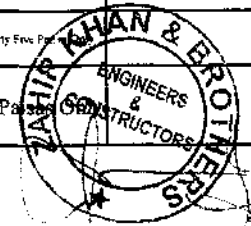
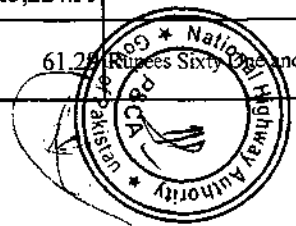


**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION )  
KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. In Figures)	RATE (Rs. in Words)	Amount (Rs.)
303a	Cut-Back Asphalt For Bituminous Tack Coat	SM	4,113.00	49.3	Rupees Forty Nine and Thirty Pisas Only	202,770.90
305b	Asphaltic concrete wearing course class-B	CM	206.00	19,774.43	Rupees Nineteen Thousand Seven Hundred Seventy Four and Forty Three Pisas Only	4,073,532.58
401a1ii	Concrete Class A-1 (on ground) for rigid pavement & barrier.	CM	1,450.00	10,472.55	Rupees Ten Thousand Four Hundred Seventy Two and Fifty Five Pisas Only	15,185,197.50
401b	Concrete Class B Toll Booth protection works	CM	78.00	7,281.91	Rupees Seven Thousand Two Hundred Eighty One and Ninety One Pisas Only	567,988.98
401f	Lean Concrete	CM	495.00	5,553.91	Rupees Five Thousand Five Hundred Fifty Three and Ninety One Pisas Only	2,749,185.45
404a	Reinforcement as per AASHTO M-31 grade 40	Tons	2.00	113,509.21	Rupees One Hundred Thirteen Thousand Five Hundred Nine and Twenty One Pisas Only	227,018.42
404b	Reinforcement as per AASHTO M-31 grade 60	Tons	20.00	116,134.21	Rupees One Hundred Sixteen Thousand One Hundred Thirty Four and Twenty One Pisas Only	2,322,684.20
410	Brick work for manhole, crash barrier etc.	CM	31.00	7,182.26	Rupees Seven Thousand One Hundred Eighty Two and Twenty Six Pisas Only	222,650.06
510	Dismantling of structure and obstruction	CM	24.00	1,584.07	Rupees One Thousand Five Hundred Eighty Four and Seven Pisas Only	38,017.68
601dii	Precast kerb in concrete class A-1 of size 450 x 150 mm including concrete bedding and haunching.	LM	128.00	1,006.55	Rupees One Thousand Six and Fifty Five Pisas Only	128,838.40
604a	Metal guard rail	LM	160.00	4,249.16	Rupees Four Thousand Two Hundred Forty Nine and Sixteen Pisas Only	679,865.60
604d	Steel post of metal guard rail	LM	96.00	5,074.55	Rupees Five Thousand Seventy Four and Fifty Five Pisas Only	487,156.80
607a	Traffic road sign category 1	Each	4.00	15,752.97	Rupees Fifteen Thousand Seven Hundred Fifty Two and Ninety Seven Pisas Only	63,011.88
607b	Traffic road sign category 2	Each	4.00	19,258.39	Rupees Nineteen Thousand Two Hundred Fifty Eight and Thirty Nine Pisas Only	77,033.56
607c	Traffic road sign category (3a)	Each	6.00	29,996.12	Rupees Twenty Nine Thousand Nine Hundred Ninety Six and Twelve Pisas Only	179,976.72
607e	Traffic road sign category (3c)	SM	38.00	25,224.35	Rupees Twenty Five Thousand Two Hundred Twenty Four and Thirty Five Pisas Only	958,525.30
608h1	Pavement marking in reflectorized CR paint 150mm	LM	2,000.00	61.29	Rupees Sixty One and Twenty Nine Pisas Only	122,580.00

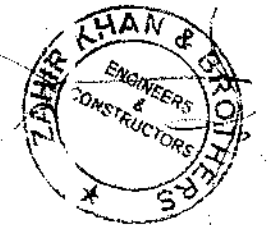


**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)  
KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. In Figures)	RATE (Rs. in Words)	Amount (Rs.)
609c	Reflecting Pavement studs raised profile type single sided	Each	950.00	690.75	Rupees Six Hundred Ninety and Seventy Five Paises Only	656,212.50
501a	Providing and placing of RCC pipe 310mm dia for drainage complete with all respect as per drawing and specifications.	LM	110.00	3,560.54	Rupees Three Thousand Five Hundred Sixty and Fifty Four Paises Only	391,659.40
NSI-2	Apply 03 coats plastic emulsion paint as specified.	SM	1,200.00	465	Rupees Four Hundred Sixty Five Only	558,000.00
NSI-3	Providing and placing plastic drums with sand in position. As per drawings	Each	192.00	2000	Rupees Two Thousand Only	384,000.00
NSI-4	Providing and placing soft wooden blocks (0.3 x 0.15 x 0.15m) in position.	Each	272.00	1500	Rupees One Thousand Five Hundred Only	408,000.00
NSI-5	Providing and placing polythene sheet under rigid pavement	SM	5,167.00	80	Rupees Eighty Only	413,360.00
NSI-6	Providing all the material as per drawings & specifications and making of expansion joint as instruction of engineer in charge.	LM	980.00	1200	Rupees One Thousand Two Hundred Only	1,176,000.00
NSI-7	Providing all the material as per drawings & specifications and making of construction joint as instruction of engineer in charge.	LM	621.00	1500	Rupees One Thousand Five Hundred Only	931,500.00
<b>TOTAL OF BILL NO. 6A-01 PAVEMENT WORKS</b>						<b>45,621,628.51</b>

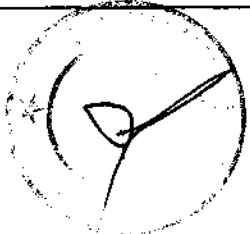



**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)  
KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

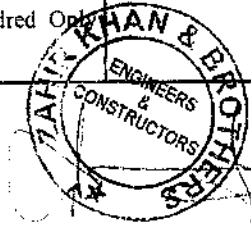
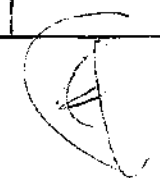
**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. In Figures)	RATE (Rs. in Words)	Amount (Rs.)
<b>BILL NO. 02 PLUMBING WORKS:</b>						
S.P-PW -1	Boring of well in all types of soil 100mm dia upto 90m depth.	LM	80.00	3,500.00	Rupees Three Thousand Five Hundred Only	280,000.00
S.P-PW -2	S/I of 100mm dia Pak therm PVC pipe casing of wall 1/4" thickness.	LM	70.00	1,500.00	Rupees One Thousand Five Hundred Only	105,000.00
S.P-PW -3	S/I testing and commisioning pumping set of capacity 100m head and 60gpm including electrical wiring and pipe from pump setting to ground level and foundation etc. complete in all respect.	Set	1.00	250,000.00	Rupees Two Hundred Fifty Thousand Only	250,000.00
S.P-PW -4	S/I testing and commisioning centrifugal pumping set AC electrical motor driven 400V, 3 phase, 50 Hz, 2hp motor mounted on common channel base plate duly aligned including starter wiring and foundations etc. complete in all respect.	Set	1.00	150,000.00	Rupees One Hundred Fifty Thousand Only	150,000.00
S.P-PW -5	Supply and fix tubes water quality (RAKtherm) with all fitting (i.e sockets, bends, tees, elbows, where required) and laid complete in trenches inclusive of excavation and backfilling or fixed to wall, ceiling, floors etc including caps, plugs as required 20mm diameter (high quality)	LM	70.00	300.00	Rupees Three Hundred Only	21,000.00
S.P-PW -6	.....Ditto.....But 25mm diameter	LM	60.00	350.00	Rupees Three Hundred Fifty Only	21,000.00
S.P-PW -7	.....Ditto.....But 50mm diameter	LM	30.00	600.00	Rupees Six Hundred Only	18,000.00
S.P-PW -8	Supply and fix valves "pets" pattern, strong gunmetal, high pressure" full way" valves with iron wheel head screwed both ends for iron pipe, 25mm diameter.	Each	4.00	1,500.00	Rupees One Thousand Five Hundred Only	6,000.00



*M/S*



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**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)  
KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

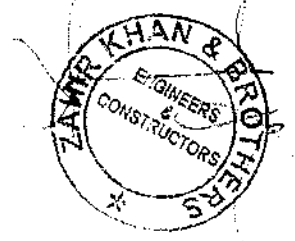
**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. In Figures)	RATE (Rs. in Words)	Amount (Rs.)
S.P-PW -9	.....Ditto..... But 50mm diameter.	Each	2.00	3,500.00	Rupees Three Thousand Five Hundred Only	7,000.00
S.P-PW-10	S / F bib cock brass chromium plated fancy type screwed down BSP 20mm diameter.	Each	6.00	1,200.00	Rupees One Thousand Two Hundred Only	7,200.00
S.P-PW -11	Construction of RCC under ground water tank complete in all respect of capacity 4250 liters.	Job	1.00	250,000.00	Rupees Two Hundred Fifty Thousand Only	250,000.00
S.P-PW -12	Construction of soakage pit as per drawings and specifications.	Job	1.00	150,000.00	Rupees One Hundred Fifty Thousand Only	150,000.00
<b>TOTAL OF BILL NO. 6A-02 : 02 PLUMBING WORKS:</b>						<b>1,265,200</b>

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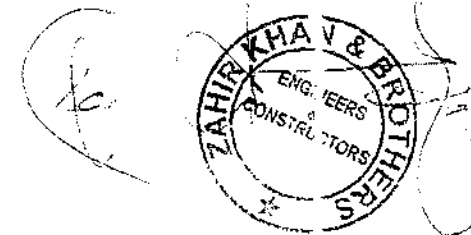
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**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)  
KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. In Figures)	RATE (Rs. in Words)	Amount (Rs.)
<b>BILL NO 03. ELECTRICAL WORKS:</b>						
SP/EW-1	Supply and Installation of Transformer 100KVa Complete with all respects.	Each	1.00	2,000,000.00	Rupees Two Million Only	2,000,000.00
SP/EW-2	Supply, Installation, testing and commissioning of PVC/PVC SWA cable 4 core cable copper/ conductor 16mm <sup>2</sup> laid in trenches with sand cushion and brick including excavation and backfilling or fixed to wall, ceiling and floors as per site requirements complete in all respects.	LM	180.00	1,500.00	Rupees One Thousand Five Hundred Only	270,000.00
SP/EW-2a	.....ditto..... but 25mm <sup>2</sup>	LM	126.00	2,200.00	Rupees Two Thousand Two Hundred Only	277,200.00
SP/EW-2b	.....ditto..... but 32mm <sup>2</sup>	LM	32.00	3,500.00	Rupees Three Thousand Five Hundred Only	112,000.00
SP/EW-3	S/F earthing including boring/excavation, copper conductor etc. complete as drawings in all respect to achieve resistance not more than 2 Ohms.	Each	1.00	35,000.00	Rupees Thirty Five Thousand Only	35,000.00



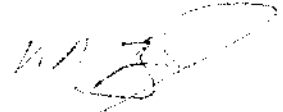
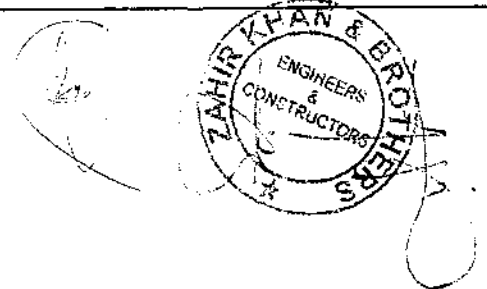
**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)**

**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. In Figures)	RATE (Rs. in Words)	Amount (Rs.)
SP/EW-4	Supply, Installation, testing and commissioning of feedar pillar for supply of power to residence, stop over, toll plaza, external lighting and tube well installation having appropriate sizes as under earthing terminals for connecting of the incoming and outgoing cables complete in all respects as per drawings. 1 Magnetic contactor 225 Amps Schneider LC1F225 2,2 MCCB (TP) 250Amp Schneider E2C- 250N 5,3 C/T 200Amp 3, 6 ATS / AMF Relay 1, 7 timer with base OMRON H3BA-N 1, 8 Emergency Stop Switch 1, 9 Fuse Type Terminal Block 6mm 10,10 Stopper for Terminal Block 2.5mm ONKA20,11 Selector Switch 3-Position FUJI AR22-PR2 2,12 indication light RED/Green 5,13 Cable Numbering Tagging & Drawingl, 14 Wiring Duct Bus Bar Din rail & Crimps 1,15 Wiring Charges 1, 16 Metal Enclosure (1000 x 800x 300mm) 1.	No.	1.00	150,000.00	Rupees One Hundred Fifty Thousand Only	150,000.00
SP/EW-5	Supply, Installation, testing and commissioning of feedar pillar for supply of power to residence, toll plaza, external lighting and tube well installation having appropriate sizes as under earthing terminals for connecting of the incoming and outgoing cables complete in all respects as per drawings.	No.	1.00	50,000.00	Rupees Fifty Thousand Only	50,000.00

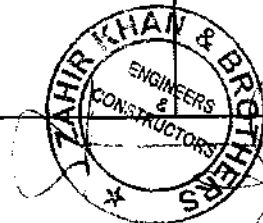


**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)  
KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. In Figures)	RATE (Rs. in Words)	Amount (Rs.)
SP/EW-6	Supply, Installation, testing and commissioning of feedar pillar for supply of power to stop over, toll plaza, external lighting and tube well installation having appropriate sizes as under earthing terminals for connecting of the incoming and outgoing cables complete in all respects as per drawings.	Each	1.00	50,000.00	Rupees Fifty Thousand Only	50,000.00
SP/EW-7	Supply and installation of Tubular Poles 9m Long with 2 nos. of Crest LED Flood Light Model No. CR-TGA 100W-FL, LED Brand Bridgelux, Led Driver Mean Well UL Approved. Made in Pakistan Control Box with complete fittings.	No.	6.00	150,000.00	Rupees One Hundred Fifty Thousand Only	900,000.00
SP/EW-8	Supply and installation of Tubular Poles 9.5m High of complete with single arm on RCC foundation as per drawings i/e wiring of crest LED street light Model No. CR-B100W-STL, LED Brand Bridgelux, LED Driver Mean Well UL Approved) controlled by Feedar Pillar also supply and installation with all 4 core 16mm <sup>2</sup> cables and 3 core PVC insulated cables in PVC pipe as per drawings and specifications complete in all respect.	No.	12.00	120,000.00	Rupees One Hundred Twenty Thousand Only	1,440,000.00
SP/EW-9	Supply and installation of Tubular Poles 9.5m High of complete with double arm on RCC foundation as per drawings i/e wiring of crest LED street light Model No. CR-B100W-STL, LED Brand Bridgelux, LED Driver Mean Well UL Approved) controlled by Feedar Pillar also supply and installation with all 4 core 16mm <sup>2</sup> cables and 3 core PVC insulated cables in PVC pipe as per drawings and specifications complete in all respect. <u>be earthing</u>	No.	6.00	165,000.00	Rupees One Hundred Sixty Five Thousand Only	990,000.00



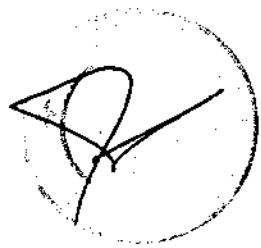
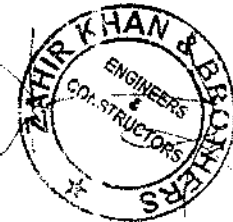
**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)**

**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. In Figures)	RATE (Rs. in Words)	Amount (Rs.)
SP/EW-10	Supply and fixing PVC conduit for ETTM system cables, fixed as per ETTM system companies required in concrete or trench, complete with all respects, excavation, bricks and backfilling as required & instructed by the engineers incharge.				Rupees Zero Only	-
SP/EW-10-i	50mm i/d Class B polo / Beta or Shawal.	LM	30.00	650.00	Rupees Six Hundred Fifty Only	19,500.00
SP/EW-10-ii	75mm i/d Class B polo / Beta or Shawal.	LM	30.00	850.00	Rupees Eight Hundred Fifty Only	25,500.00
SP/EW-10-iii	100mm i/d Class B polo / Beta or Shawal.	LM	270.00	1,200.00	Rupees One Thousand Two Hundred Only	324,000.00
<b>TOTAL OF BILL NO. 6A-03. ELECTRICAL WORKS:</b>						<b>6,643,200.00</b>



**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)**

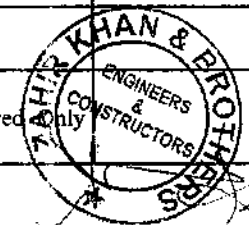
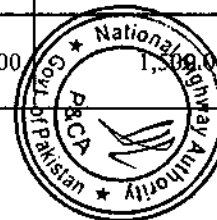
**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. In Figures)	RATE (Rs. in Words)	Amount (Rs.)
<b>BILL NO 04: TOLL BOOTH</b>						
NSI-1	P/F of Aluminium Composite Panel on outer side of booth	SM	24.94	3,500.00	Rupees Three Thousand Five Hundred Only	87,290.00
NSI-2	P/F of 2 ply Fiber glass on inner side of toll booth	SM	24.94	1,500.00	Rupees One Thousand Five Hundred Only	37,410.00
NSI-3	P/F of insulation Thermopore 25 kg / cum in between ms sheet and fiber glass in toll booth	SM	21.91	50.00	Rupees Fifty Only	1,095.50
NSI-4	P/F of False Ceiling 0.6x0.6 side of toll booth	SM	4.06	1,800.00	Rupees One Thousand Eight Hundred Only	7,308.00
NSI-5	P/F of computer and cash table with Lassani (16mm) 3/4" thick	SM	1.35	4,500.00	Rupees Four Thousand Five Hundred Only	6,075.00
NSI-6	P/F of Ventilator of Aluminium Sliding shutter with grill in Toll Booth	SM	0.23	5,500.00	Rupees Five Thousand Five Hundred Only	1,265.00
NSI-7	P/F of 50mm Sqr. 16 swg Frame pipe for toll booth	M	93.06	200.00	Rupees Two Hundred Only	18,612.00
NSI-8	P/F of 100mm with 8.0 mm wall thickness steel pipe frame for Toll Booth protection	M	49.96	350.00	Rupees Three Hundred Fifty Only	17,486.00
NSI-9	P/F of Tempered Glass 5mm thick in toll booth	SM	7.37	1,500.00	Rupees One Thousand Five Hundred Only	11,055.00
NSI-10	P/F of 10" dia Exhaust fan along with closers and fly netting	Each	1.00	3,500.00	Rupees Three Thousand Five Hundred Only	3,500.00
NSI-12	P/F of Rawlplug 12.5mm thick 150mm long for booth protection pipe.	No.	16.00	1,000.00	Rupees One Thousand Only	16,000.00
NSI-13	P/F of steel base plate 250 mm dia 16mm thick for booth protection pipe.	No.	4.00	2,500.00	Rupees Two Thousand Five Hundred Only	10,000.00
NSI-14	P/F of steel base plate 250x250 mm dia 16 mm thick for booth protection pipe	No.	4.00	2,500.00	Rupees Two Thousand Five Hundred Only	10,000.00
NSI-16	P/F of Crest brand LED slim Panel Lights (Model: CR-882-8PL) in false ceiling (12 watts of Toll Booth as per approved drawing.)	No.	2.00	3,500.00	Rupees Three Thousand Five Hundred Only	7,000.00
NSI-17	P/F of Door lock of Toll Booth as per approved drawing.	No.	1.00	2,000.00	Rupees Two Thousand Only	2,000.00
NSI-18	P/F of complete Wiring with PVC conduit in Booth for Exhaust fan, two LED Slim Lights and two sockets, A/C 1.0 ton etc. as per approved drawing	No.	1.00	1,500.00	Rupees One Thousand Five Hundred Only	1,500.00

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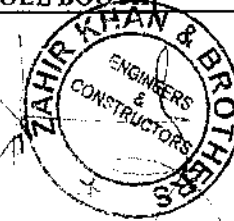


**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)  
KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. In Figures)	RATE (Rs. in Words)	Amount (Rs.)
NSI-19	P/F of Circuit breaker as per requirement, as per approved drawing.	No.	3.00	500.00	Rupees Five Hundred Only	1,500.00
NSI-20	P/F of one three pin socket outlet 15/20 amps point controlled by one switch wiring complete with pvc single core cable 4 sq. m in concealed pvc conduit including earth wire. Circuit breaker as per requirement, as per approved drawing	No.	3.00	3,500.00	Rupees Three Thousand Five Hundred Only	10,500.00
NSI-21	P/F of Power plug along with accessories	No.	1.00	650.00	Rupees Six Hundred Fifty Only	650.00
NSI-22	P/I of A/C 1.0 ton ACSON / Mitsubishi or Equal of MS pipe grill fixed for outdoor unit complete fitting with all safety measures and necessary welding bolts and nuts as required, rubber packing and other materials. Power plug along with accessories.	No.	1.00	85,000.00	Rupees Eighty Five Thousand Only	85,000.00
NSI-23	P/I circuit wiring from DB to switch board, wiring with PVC single core cable 2.5 sq. mm + 1.5 mm as ECC in PVC conduit concealed as per site requirement of ais. Power plug along with accessories	M	25.00	650.00	Rupees Six Hundred Fifty Only	16,250.00
NSI-24	Providing of Revolving Chair as per requirement or as directed by the engineer	No.	1.00	7,500.00	Rupees Seven Thousand Five Hundred Only	7,500.00
<b>SUB TOTAL OF BILL NO. 6A-04: TOLL BOOTH (01 No)</b>						<b>358,995.50</b>
<b>TOTAL OF BILL NO. 6A-04:16 Nos TOLL BOOTH</b>						<b>5,743,944.00</b>



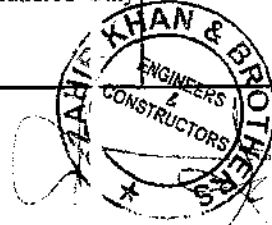
**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)**

**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. In Figures)	RATE (Rs. in Words)	Amount (Rs.)
<b>BILL NO 05: (STEEL WORKS) Fabrication</b>						
SC-1	Providing Fabricating and installing structural steel works including shop welding, field splicing, bolting, painting over exposed surfaces as required in the structural drawings and notes also including all accessories such as bolts, connecting angles, connection plates, the rods etc complete in all respects as per drawings and specifications or as directed by the engineer. Steel Column Box Section-15" 15" 0.5" Thick 28.7 Kc/ft	Kg	45,000.00	220.00	Rupees Two Hundred Twenty Only	9,900,000.00
SC-2	.....Ditto..... High Tensile anchor bolts and nuts, 25mm dia	Nos.	64.00	1,500.00	Rupees One Thousand Five Hundred Only	96,000.00
SC-3	Supply, cutting to size and erecting 22 SWG Black Iron Powder coated sheet for false ceiling including overtape, edge elements and making openings. Also including fixing with "J" bolts, nuts and washers etc. complete in all respects as per specification and as directed by the engineer	Sqm.	740.00	1,800.00	Rupees One Thousand Eight Hundred Only	1,332,000.00
SC-4	Providing and fixing specified GI corrugated sheeting 22 SWG for roof including anchor bolts. Complete in all respects as per details given in the drawings or as directed by the engineer	Sqm.	740.00	1,800.00	Rupees One Thousand Eight Hundred Only	1,332,000.00
SC-5	Providing and fixing specified GI rain water pipe (1/2" or equivalent approved) fixed along steel columns, including bands and other fixing etc. complete in all respects as per drawings and the specifications or as directed by the Engineer. a) 100mm dia	m	53.60	1,200.00	Rupees One Thousand Two Hundred Only	64,320.00

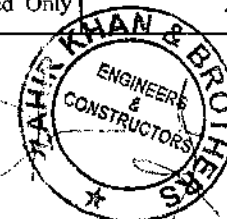
**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)**

**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. In Figures)	RATE (Rs. in Words)	Amount (Rs.)
SC-6	Provide, fabricate and fix G.I sheet drainage gully as per details on the structural drawings and specified or as directed by the engineer complete in all respects (750mm x 500mm)	m	40.00	1,500.00	Rupees One Thousand Five Hundred Only	60,000.00
SC-7	Supply / installation of 3M (high intensity Grade reflecting Sheet) on 16 SWG G.I sheet with the name of Toll Plaza of appropriate readable size complete in all respects without air bubbles the rate shall inclusive of all materials steel pipe and angle frame , riveting and installation complete at site as directed by the engineer	Sqm	60.00	15,000.00	Rupees Fifteen Thousand Only	900,000.00
SC-8	Supply and install canopy Light (Crest LED Canopy Light Model No. CR-56-90W-KPL, LED Brand: CREE, LED Driver: Mean Well UL approved) electrical connections and wiring (Pakistan/life/new age cables) all items should be made in Pakistan.	Nos.	16.00	25,000.00	Rupees Twenty Five Thousand Only	400,000.00
SC-9	Supply and install Facia illumination (Crest LED Flood Light (Model No. CR-TGA30W-FL, LED Brand Bridgelux, Led Driver Mean Well UL Approved) on Bracket Along with pipe as per site requirement) Electrical connections and wiring (Pakistan/life/new age cables) all items should be made in Pakistan	Nos.	16.00	18,000.00	Rupees Eighteen Thousand Only	288,000.00
SC-10	Supply/install G.I channel hanging frame with appropriate spacing for fixing of false ceiling sheet	SM	768.00	3,500.00	Rupees Three Thousand Five Hundred Only	2,688,000.00



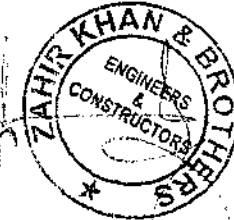
**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)**

**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

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**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. In Figures)	RATE (Rs. in Words)	Amount (Rs.)
SC-11	Providing/grouting master flow 524 (non shrinkage material) between existing foundation and base plate, having 650 x 650 mm foundation including cost of carriage labor etc	Nos.	6.00	12,500.00	Rupees Twelve Thousand Five Hundred Only	75,000.00
SC-12	Encasing of 100mm drain pipe and 65mm dia electric pipe with the "H" column with 16 gauge GI sheet fixed with 10mm dia nuts welded with angle iron and bolts 40mm long duly painted with enamel paint etc. complete	Sqm.	56.00	3,500.00	Rupees Three Thousand Five Hundred Only	196,000.00
<b>TOTAL OF BILL NO. 6A-05: (STEEL WORKS) Fabrication</b>						<b>17,331,320.00</b>



**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)**

**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

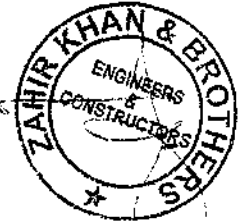
Item No.	Description	Unit	Quantity	Rate (Rs. In Figures)	RATE (Rs. in Words)	Amount (Rs.)
<b>BILL NO 06 (ELECTRICAL WORKS) Steel Canopy:</b>						
SC/E-01	Supply installation and commissioning of cu PVC insulated 3 core cables in PVC pipe including all material and accessories as shown on drawings all complete (iv) 3 core 4mm sq. (Pakistan/life/new age Cables)	LM	240.00	1,500.00	Rupees One Thousand Five Hundred Only	360,000.00
SC/E-02	Supply installation and commissioning of cu PVC insulated 3 core cables In PVC pipe including all material and accessories as shown on drawings all complete (iv) 3 core 2.5mm sq. (Pakistan/life/new age Cables)	LM	240.00	1,200.00	Rupees One Thousand Two Hundred Only	288,000.00
SC/E-03	Supply installation testing and commissioning of cu PVC pipes including all material and accessories as shown on drawings all complete (iv) 4 core 10mm sq. (Pakistan/life/new age Cables)	LM	248.00	2,250.00	Rupees Two Thousand Two Hundred Fifty Only	558,000.00
SC/E-04	Supplying and laying of following heavy duty PVC pipe buried under ground in ceiling, walls, floor & columns etc for incoming and outgoing cables at various points and also weather proof from both ends including all materials and accessories as per site requirement as shown on drawings complete in all respects					
	(i) 100mm polo/ beta or Shawal	LM	112.00	1,150.00	Rupees One Thousand One Hundred Fifty Only	128,800.00
	(i) 50mm polo/ beta or Shawal	LM	96.00	850.00	Rupees Eight Hundred Fifty Only	81,600.00
<b>TOTAL OF BILL NO. 6A-06: (ELECTRICAL WORKS) Steel Canc py:</b>						<b>1,416,400.00</b>



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**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)**

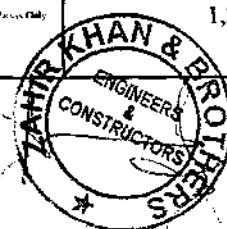
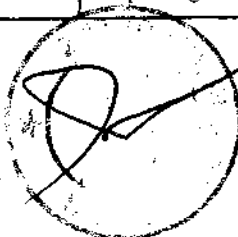
**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. In Figures)	RATE (Rs. in Words)	Amount (Rs.)
<b>BILL NO 07: CIVIL WORKS (OFFICE AND ACCOMODATION BUILDING)</b>						
107a	Excavate as in common soil upto 1.5 meter depth in foundations and pipe trenches and throw earth clear of edges of excavation with in 10 meter	Cum	141.00	359.83	Rupees Three Hundred Fifty Nine and Eighty Three Paisas Only	50,736.03
108c	Making embankment as in hard soil, filling in foundations, pipe trenches under floors or around buildings etc 1.5 meter below or above ground level soil obtained from excavation in foundations over areas with in 10 meter including watering and compaction in 150mm layers and dressing to required profiles and shapes	Cum	364.00	445.92	Rupees Four Hundred Forty Five and Ninety Two Paisas Only	162,314.88
401f	Providing and laying of lean concrete as in foundation using crushed or broken stone graded as specified (Lean concrete)	Cum	23.00	5,553.91	Rupees Five Thousand Five Hundred Fifty Three and Ninety One Paisas Only	127,739.93
401a1	Providing and laying of reinforced cement concrete class "A" using crushed stone in foundations, independent column footings, roof slab, walls landings, plinth beams and bends etc, as specified requiring shuttering (reinforcement measured and paid separately)	Cum	121.00	10,694.77	Rupees Ten Thousand Six Hundred Ninety Four and Seventy Seven Paisas Only	1,294,067.17
404a	Supply and fix round deformed bars grade 40 (as per AASHTO M31) including cutting, bending, binding and placing reinforcement in position as specified	ton	1.21	113,509.21	Rupees One Hundred Thirteen Thousand Five Hundred Nine and Twenty One Paisas Only	137,345.14
404b	Supply and fix round deformed bars grade 60 (as per AASHTO M31) including cutting, bending, binding and placing reinforcement in position as specified	ton	10.93	116,134.21	Rupees One Hundred Sixteen Thousand One Hundred Thirty Four and Twenty One Paisas Only	1,269,346.92

281

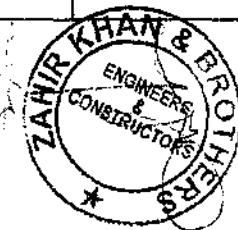


**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)  
KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. In Figures)	RATE (Rs. in Words)	Amount (Rs.)
401 f	Providing and laying 75mm thick PCC 1:4:8 laid under floors using crush stone all as specified (Lean concrete)	Cum	21.00	5,553.91	Rupees Five Thousand Five Hundred Fifty Three and Ninety One Paise Only	116,632.11
401b	Providing laying cement concrete 1:2:4 using crushed stone laid in floor slabs as under layer of terrazo/tiles etc as specified (Concrete Class B)	Cum	21.00	7,281.91	Rupees Seven Thousand Two Hundred Eighty One and Ninety One Paise Only	152,920.11
410	Burnt brickwork in wall over 115mm thick laid And jointed in cement mortar 1:4 straight or to curve with inner radius of 1.5m.	Cum	315.00	7,182.26	Rupees Seven Thousand One Hundred Eighty Two and Twenty Six Paise Only	2,262,411.90
S-P 1	Providing and laying of sand cushion under floors all as per drawings & specifications.	Cum	29.00	5,000.00	Rupees Five Thousand Only	145,000.00
S-P 2	Providing and laying of brick ballast under floors all as per drawing & specifications.	Cum	21.00	4,000.00	Rupees Four Thousand Only	84,000.00
S-P 3	Termite proofing to all building area with approved chemical all as specified.	Sqm	560.00	300.00	Rupees Three Hundred Only	168,000.00
S-P 4	50mm thick DPC of PCC (1:2:4) using 3mm aggregate and finished smooth with steel float covered with two coats of hot bitumen @0.75 kg per Sqm and double layer of polythene sheet as required	Sqm	42.00	1,000.00	Rupees One Thousand Only	42,000.00
S-P 5	75mm thick PCC (1:2:4) screeding with XPM weigh n.exc 4.5kg/Sqm over 50mm thick thermopore sheet, two layers polythene sheet and two coats water proofing compound using bitumen 10-20 applied hot @4.9 kg/10 Sqm per coat including pee gravels and cleaning the surface before applying bitumen as specified complete with all respects	Sqm	371.00	875.00	Rupees Eight Hundred Seventy Five Only	324,625.00

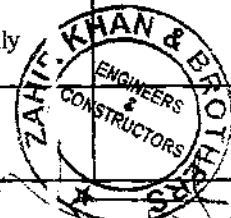



**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)  
KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. In Figures)	RATE (Rs. in Words)	Amount (Rs.)
S-P 6	Supply and fix kitchen floor sink cabinet with or without drawers including all necessary chromium plated mongry, fitting/fixtures and deodar wood eding provided to doors and drawer of cabinet and 20mm thick prepolished marble slab fix on top of cabinet as specified all as per drawing	Mater	6.00	17,850.00	Rupees Seventeen Thousand Eight Hundred Fifty Only	107,100.00
S-P 7	Supply and fix kitchen wall cabinet including all necessary chromium plated mongry, fitting/fixtures and deodar wood edging provided to doors of cabinet as specified all as per drawings	Meter	6.00	20,000.00	Rupees Twenty Thousand Only	120,000.00
S-P 8	Supply and fix kitchen exhaust hood and duct of 20mm thick lamination board with 26 gauge GI sheet lining inside including fitting/fixtures as specified all as per drawings	Meter	1.00	20,000.00	Rupees Twenty Thousand Only	20,000.00
S-P 9	Wooden flush doors covered with fibre glass and steel frame, imported lock, brass mongry and architrave where shown, including 3 coats synthetic enamel paint etc all as per drawing.	Sqm	38.00	9,000.00	Rupees Nine Thousand Only	342,000.00
S-P 10	Supply and fix aluminium premium model bronze colour sliding windows including fly/insect proofing 5mm tinted imported glass etc all as per drawings	Sqm	44.00	7,500.00	Rupees Seven Thousand Five Hundred Only	330,000.00
S-P 11	Supply and fix aluminium door powder coated with 5mm frosted glass of washroom areas all as per drawing	Sqm	2.00	11,200.00	Rupees Eleven Thousand Two Hundred Only	22,400.00
S-P 12	Supply and fix cast Iron work weight n.exc 6 kg in grating, mahole covers all as per drawings and specifications	Kg	15.00	350.00	Rupees Three Hundred Fifty Only	5,250.00
S-P 13	Supply and fix MS 16 gauge square pipe railing & grills with painting complete all as per drawings and specifications.	Sqm	43.00	5,000.00	Rupees Five Thousand Only	215,000.00



**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)  
KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

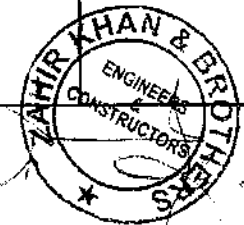
Item No.	Description	Unit	Quantity	Rate (Rs. In Figures)	RATE (Rs. in Words)	Amount (Rs.)
S-P 14	Supply and fix steel grill & (stair hand rail) with painting complete all as per drawings & specifications	Sqm	6.00	4,000.00	Rupees Four Thousand Only	24,000.00
S-P 15	Providing and laying 300mmx300mmx20mm thick Marble tiles in floors setting and jointing in CM (1:2) including cutting, rubbing and polishing all as per drawings & specifications	Sqm	286.00	5,500.00	Rupees Five Thousand Five Hundred Only	1,573,000.00
S-P 16	Providing and laying 12mm thick boticina cream marble set in CM (1:2) as in skirting including cutting, rubbing, and polishing all as per drawings and specifications	Sqm	20.00	4,500.00	Rupees Four Thousand Five Hundred Only	90,000.00
S-P 17	.....Ditto.....but venity top slabs if granite marble including cutting bowl etc all as per drawings & specifications	Sqm	2.00	8,000.00	Rupees Eight Thousand Only	16,000.00
S-P 18	Supply and fix 200mmx200mm ceramic mat tiles set in CM(1:2) including joints fitted with white cement all as per drawing.	Sqm	142.00	2,500.00	Rupees Two Thousand Five Hundred Only	355,000.00
S-P 19	Providing and fixing 20mm laminated win board ward robe with wooden frame and lamination win board drawers including brass mangy fittings all as per drawings	Each	24.00	35,000.00	Rupees Thirty Five Thousand Only	840,000.00
S-P 20	13mm thick cement plaster (1:4) finished smooth as specified	Sqm	2,715.00	400.00	Rupees Four Hundred Only	1,086,000.00
S-P 21	13mm thick cement plaster (1:4) with 3% puddle finished smooth as specified	Sqm	16.00	450.00	Rupees Four Hundred Fifty Only	7,200.00
S-P 22	Apply 3 coasts plastic emulsion paint as specified	Sqm	2,155.00	465.00	Rupees Four Hundred Sixty Five Only	1,002,075.00
S-P 23	Apply grapitio coating external face of walls	Sqm	560.00	650.00	Rupees Six Hundred Fifty Only	364,000.00
S-P 24	24 gauge CGI rolling shutter with frame and other accessories all as per drawings	Sqm	9.00	5,000.00	Rupees Five Thousand Only	45,000.00
<b>TOTAL OF BILL NO. 6A-01 CIVIL WORKS (OFFICE AND ACCOMODATION BUILDING)</b>						<b>12,901,165.19</b>

**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)  
KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. In Figures)	RATE (Rs. in Words)	Amount (Rs.)
<b>BILL NO 08: PLUMBING WORKS (OFFICE AND ACCOMODATION BUILDING):</b>						
SP-WS-1	Supply and fix tubes water quality (G.I) with all fitting (i.e sockets, bends, tees, elbow etc.) and laid complete in trenches (exclusive of excavation) or fixed to walls, ceilings, floors etc including caps, plugs as required 15mm diameter (light quality)	Meter	62.00	750.00	Rupees Seven Hundred Fifty Only	46,500.00
SP-WS-2	Ditto.....But 20mm diameter	Meter	46.00	850.00	Rupees Eight Hundred Fifty Only	39,100.00
SP-WS-3	Ditto.....But 25mm diameter	Meter	80.00	950.00	Rupees Nine Hundred Fifty Only	76,000.00
SP-WS-4	Ditto.....But 32mm diameter	Meter	15.00	1,050.00	Rupees One Thousand Fifty Only	15,750.00
SP-WS-5	Ditto.....But 50mm diameter	Meter	25.00	1,500.00	Rupees One Thousand Five Hundred Only	37,500.00
SP-WS-6	Supply and fix valves "peets" pattern, strong gunmetal, high pressure, "full-way" valves with iron wheel head screwed both ends for iron pipe, 20 mm diameter	Each	5.00	1,500.00	Rupees One Thousand Five Hundred Only	7,500.00
SP-WS-7	Ditto.....But 25mm diameter	Each	4.00	1,800.00	Rupees One Thousand Eight Hundred Only	7,200.00
SP-WS-8	Ditto.....But 40mm diameter	Each	2.00	2,500.00	Rupees Two Thousand Five Hundred Only	5,000.00
SP-WS-9	Ditto.....But 60mm diameter	Each	1.00	4,500.00	Rupees Four Thousand Five Hundred Only	4,500.00
SP-WS-10	S/F bib cock brass chromium plated fancy type screwed down BSP 15mm diameter	Each	14.00	750.00	Rupees Seven Hundred Fifty Only	10,500.00
SP-WS-11	S/F 15mm Tee stop cock brass chromium plated screw down high pressure fancy type	Each	30.00	650.00	Rupees Six Hundred Fifty Only	19,500.00
SP-WS-12	S/F 15mm stop cock brass chromium plated screw down high pressure fancy type	Each	24.00	650.00	Rupees Six Hundred Fifty Only	15,600.00
SP-WS-13	S/F adjustable CP shower fancy type	Each	7.00	12,500.00	Rupees Twelve Thousand Five Hundred Only	87,500.00
SP-WS-14	S/F Electric gyser of capacity 45 ltr.	Each	3.00	35,000.00	Rupees Thirty Five Thousand Only	105,000.00
SP-WS-15	Supply and fix water closet apparatus European pattern complete comprising closet, 13 ltr cistern flushing, seat cover etc (coupled set) in white / light colour any size or make fixed to concrete.	Each	7.00	15,000.00	Rupees Fifteen Thousand Only	105,000.00



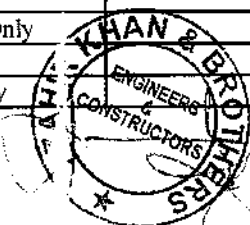
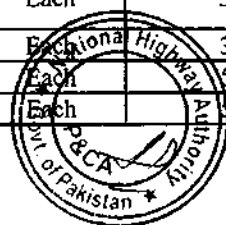
**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)**

**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. In Figures)	RATE (Rs. in Words)	Amount (Rs.)
SP-WS-16	Supply and fix sink scullery of stainless steel with single drainage board complete shallow or deep pattern upto 6000 centimeter square, super, fixed to brick work or wood (Pak made).	Each	1.00	12,000.00	Rupees Twelve Thousand Only	12,000.00
SP-WS-17	Supply and fix vanity in white/light colour with one hole, coupling chain & plug and bottle trap best quality (imported) fixed to brick or concrete work.	Each	6.00	9,500.00	Rupees Nine Thousand Five Hundred Only	57,000.00
SP-WS-18	Supply and fixed urinals glazed ware complete with flush tank.	Each	7.00	7,500.00	Rupees Seven Thousand Five Hundred Only	52,500.00
SP-WS-19	Supply and fix mirror any shape and pattern 5mm thick of sizes, foreign made edged ground complete fixed to brick or concrete work	Sqm	6.00	4,000.00	Rupees Four Thousand Only	24,000.00
SP-WS-20	Supply and fix 100mm dia CI floor trap including reducer etc complete	Each	18.00	1,500.00	Rupees One Thousand Five Hundred Only	27,000.00
SP-WS-21	Supply and fix casted grating chromium plated 150mm x 150mm	Each	16.00	300.00	Rupees Three Hundred Only	4,800.00
SP-WS-22	Supply and fix 50mm bore cast iron soil waste and vent pipes and fitting as specified (Spun pipe)	Meter	50.00	650.00	Rupees Six Hundred Fifty Only	32,500.00
SP-WS-23	.....Ditto.... But 75mm bore	Meter	40.00	750.00	Rupees Seven Hundred Fifty Only	30,000.00
SP-WS-24	.....Ditto.... But 100mm bore	Meter	65.00	1,000.00	Rupees One Thousand Only	65,000.00
SP-WS-25	Supply and fix 50mm bore CI bends tapers, double socket and oval pattern accessories complete	Each	22.00	650.00	Rupees Six Hundred Fifty Only	14,300.00
SP-WS-26	.....Ditto.... But 75mm bore	Each	22.00	750.00	Rupees Seven Hundred Fifty Only	16,500.00
SP-WS-27	.....Ditto... But 100mm bore	Each	27.00	1,000.00	Rupees One Thousand Only	27,000.00
SP-WS-28	Supply and fix 50mm bore CI tee branch pieces single equal or unequal arms etc complete	Each	3.00	650.00	Rupees Six Hundred Fifty Only	1,950.00
SP-WS-29	.....Ditto.... But 75mm bore	Each	3.00	750.00	Rupees Seven Hundred Fifty Only	2,250.00
SP-WS-30	.....Ditto.... But 100mm bore	Each	5.00	1,000.00	Rupees One Thousand Only	5,000.00
SP-WS-31	Supply and fix 50mm bore CI cowis for vent pipes	Each	5.00	650.00	Rupees Six Hundred Fifty Only	3,250.00



286

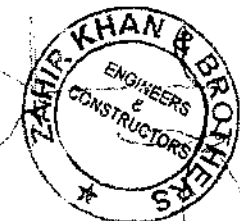
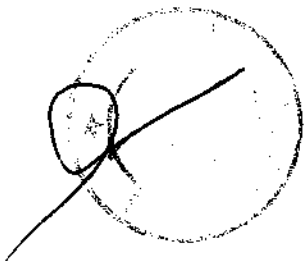
**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)**

**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. In Figures)	RATE (Rs. in Words)	Amount (Rs.)
SP-WS-32	Supply and fix reinforced cement concrete pipe 100mm bore, laid and jointed with spigot socket or collars as specified	Meter	15.00	750.00	Rupees Seven Hundred Fifty Only	11,250.00
SP-WS-33	.....Ditto.... But 150mm bore	Meter	20.00	1,200.00	Rupees One Thousand Two Hundred Only	24,000.00
SP-WS-34	Supply and fix glazed ware gully trap embedding in PCC (1:2:4) concrete 150mm all around and at bottom of gully trap all as specified	Each	4.00	1,500.00	Rupees One Thousand Five Hundred Only	6,000.00
SP-WS-35	Construction man holes rectangular exceeding 600mm deep from invert to surface of cover, including main channel set in CM (1:1) 230 mm thick brick walls complete with man hole covers	Each	2.00	8,500.00	Rupees Eight Thousand Five Hundred Only	17,000.00
SP-WS-36	Construction of septic tank for 24Men all as per drawins and Specifications	Each	1.00	125,000.00	Rupees One Hundred Twenty Five Thousand Only	125,000.00
SP-WS-37	Supply and fix CP Mixer 15mm dia best quality for vanities and sink etc	Each	4.00	5,000.00	Rupees Five Thousand Only	20,000.00
SP-WS-38	Providing and laying 100mm dia wire ballon grating over rain water pipes	Each	6.00	3,500.00	Rupees Three Thousand Five Hundred Only	21,000.00
<b>TOTAL OF BILL NO. 6A-08: PLUMBING WORKS (OFFICE AND ACCOMODATION BUILDING):</b>						<b>1,181,450.00</b>



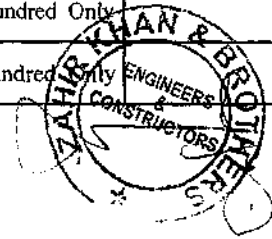
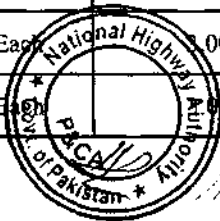
**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)**

**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. In Figures)	RATE (Rs. in Words)	Amount (Rs.)
<b>BILL NO 09 : ELECTRICAL WORKS (OFFICE AND ACCOMODATION BUILDING)</b>						
SP-EW-1	S/F Circuit wiring from DB to switch board, wiring with PVC single core cable 2.5 Sq. mm + 1.5 Sq. mm as ECC in PVC conduit concealed as per site requirement	Point	13.00	2,000.00	Rupees Two Thousand Only	26,000.00
SP-EW-2	S/F of one fan point, one light point, one bell point controlled by one switch, wiring complete with PVC single core cable 1.5 mm <sup>2</sup> in concealed PVC conduit	Point	160.00	2,000.00	Rupees Two Thousand Only	320,000.00
SP-EW-3	S/F of one three pin socket outlet 5 Amps point controlled by one switch wiring complete with PVC single core cable 1.5 mm in concealed PVC conduit including earthwire.	Point	18.00	2,000.00	Rupees Two Thousand Only	36,000.00
SP-EW-4	S/F of one three pin socket outlet 15/20 Amps point controlled by one switch wiring complete with PVC single core cable 4 Sq.mm in concealed PVC conduit including earth wire	Point	19.00	2,500.00	Rupees Two Thousand Five Hundred Only	47,500.00
SP-EW-5	S/F bracket wall with globe white glass opal 150mm dia complete with gallery and lamps holder BC	Each	30.00	1,500.00	Rupees One Thousand Five Hundred Only	45,000.00
SP-EW-6	S/F Philips patty fitting complete with 1x40 W tube lamp starter and holders	Each	32.00	1,000.00	Rupees One Thousand Only	32,000.00
SP-EW-7	S/F Ceiling mounted Philips light complete with flourocent tube, choke, starter and capacitor TCS 4 x 20W	Each	6.00	1,500.00	Rupees One Thousand Five Hundred Only	9,000.00
SP-EW-8	S/F SPOT LIGHTs philips made with holder/ reflector complete	Each	1.00	2,500.00	Rupees Two Thousand Five Hundred Only	2,500.00
SP-EW-9	S/F ceiling lights fancy type as approved by Engineer in Charge	Each	3.00	3,500.00	Rupees Three Thousand Five Hundred Only	10,500.00
SP-EW-10	S/F schandlier single bulb fancy type as approved by engineer in charge	Each	3.00	1,500.00	Rupees One Thousand Five Hundred Only	4,500.00





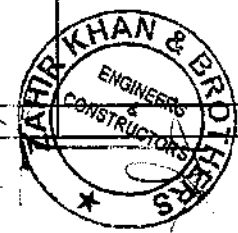
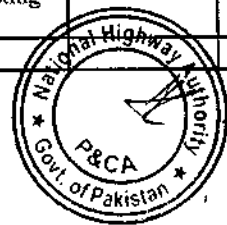
**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR - KANDHKOT SECTION)  
KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. In Figures)	RATE (Rs. in Words)	Amount (Rs.)
SP-EW-11	S/F bulb head fitting cast iron with guard tapped 20mm E.T. according to BSS No. 229 of 1957	Each	25.00	1,650.00	Rupees One Thousand Six Hundred Fifty Only	41,250.00
SP-EW-12	S/F switch SP 5 amps piano type mounted in cast or malleable iron galvanized conduit box with bakelite plate	Each	150.00	1,000.00	Rupees One Thousand Only	150,000.00
SP-EW-13	S/F switch socket outlet 3 pin 5 Amps bakelite shuttered complete	Each	27.00	1,000.00	Rupees One Thousand Only	27,000.00
SP-EW-14	.....ditto.....but 20 Amps.	Each	20.00	1,800.00	Rupees One Thousand Eight Hundred Only	36,000.00
SP-EW-15	S/F earthing including boring/excavation, copper rod 25mm, 3000 mm long and copper conductor etc. complete in all respects to achieve resistance not more than 5 Ohms.	Each	1.00	35,000.00	Rupees Thirty Five Thousand Only	35,000.00
SP-EW-16	S/F clamp hooked for fan concealed	Each	27.00	1,000.00	Rupees One Thousand Only	27,000.00
SP-EW-17	S/F fan electric with regulator blades, canopy and rod including connections, provision of cables and fan of 140 CM sweep of approved make	Each	25.00	7,500.00	Rupees Seven Thousand Five Hundred Only	187,500.00
SP-EW-18	S/F exhaust fan 250mm capacity with shutter/grill plastic body single action (Pak fan)	Each	7.00	2,500.00	Rupees Two Thousand Five Hundred Only	17,500.00
SP-EW-19	S/F fan electric AC exhaust 30 CM 220/230 volts S.P. complete with shutter	Each	5.00	100,000.00	Rupees One Hundred Thousand Only	500,000.00
SP-EW-20	S/F wall bracket fan fancy plastic body 450mm Pak fan	Each	3.00	12,000.00	Rupees Twelve Thousand Only	36,000.00
SP-EW-21	S/F PVC conduit 40mm dia complete with all bands, tees, boxes, saddles, etc for concealed wiring	Metre	17.00	650.00	Rupees Six Hundred Fifty Only	11,050.00
SP-EW-22	S/F of board distribution MS sheet steel 16 BG thick with hinged cover and locking arrangement duly painted inside/outside with suitable size of busbar for connecting incoming and outgoing MCCB consisting of following:- <b>INCOMING</b>					

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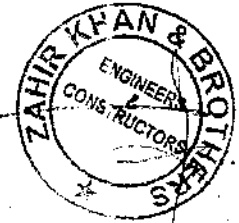
**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)  
 KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. In Figures)	RATE (Rs. in Words)	Amount (Rs.)
	MCCB TP 500/660 volts 50 cycle complete with thermal & magnetic trip 60 Amps (Brreaking capcity 7.5 KA)					
	<b>OUTGOING</b>					
	1. MCB SP 220V 10A to 20A = 33 Nos.	Set	1.00	50,000.00	Rupees Fifty Thousand Only	50,000.00
<b>TOTAL OF BILL NO. 6A-09 : ELECTRICAL WORKS (OFFICE AND ACCOMODATION BUILDING)</b>						<b>1,651,300.00</b>

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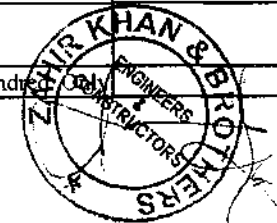
**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)**

**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. In Figures)	RATE (Rs. in Words)	Amount (Rs.)
<b>BILL NO 10 : ELECTRICAL WORKS (GENERATOR ROOM)</b>						
G-EW-1	S/F circuit wiring from DB to switch board, wiring with PVC single core cable 2.5 Sq.mm + 1.5 Sq.mm ECC in PVC conduit concealed as per site requirement	Point	1.00	2,500.00	Rupees Two Thousand Five Hundred Only	2,500.00
G-EW-2	S/F of one fan point, one light point, one bell point controlled by one switch, wiring complete with PVC single core cable 1.5mm <sup>2</sup> in concealed PVC conduit	Point	10.00	2,000.00	Rupees Two Thousand Only	20,000.00
G-EW-3	S/F of one three pin socket outlet 5 Amps point controlled by one switch wiring complete with PVC single core cable 1.5mm in concealed with PVC conduit including earth wire.	Point	2.00	1,500.00	Rupees One Thousand Five Hundred Only	3,000.00
G-EW-4	S/F of one three pin socket outlet 15/20 Amps point controlled by one switch wiring complete with PVC single core cable 4 Sq.mm in concealed PVC conduit including earth wire	Point	1.00	2,500.00	Rupees Two Thousand Five Hundred Only	2,500.00
G-EW-5	S/F bracket wall with globe white glass opal 150 mm dia complete with gallery and lamp holder BC	Each	1.00	1,500.00	Rupees One Thousand Five Hundred Only	1,500.00
G-EW-6	S/F Philips patty fitting complete with 1x40 W tube lamp starter and holders.	Each	1.00	1,500.00	Rupees One Thousand Five Hundred Only	1,500.00
G-EW-7	S/F bulb head fitting cast iron with guard tapped 20mm E.T. according to BSS No. 229 of 1957	Each	4.00	1,650.00	Rupees One Thousand Six Hundred Fifty Only	6,600.00
G-EW-8	S/F switch SP 5 amps piano type mounted in cast or malleable iron galvanized conduit box bakelite plate	Each	9.00	1,000.00	Rupees One Thousand Only	9,000.00
G-EW-9	S/F switch SP socket outlet 3 pin 5 Amps bakelite shuttered pattern complete	Each	2.00	1,000.00	Rupees One Thousand Only	2,000.00
G-EW-10	ditto.....But 20 Amps	Each	1.00	1,800.00	Rupees One Thousand Eight Hundred Only	1,800.00



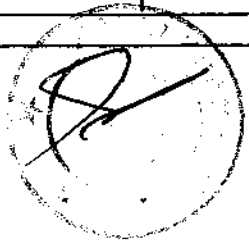
**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)  
KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

**BILL OF QUANTITIES**

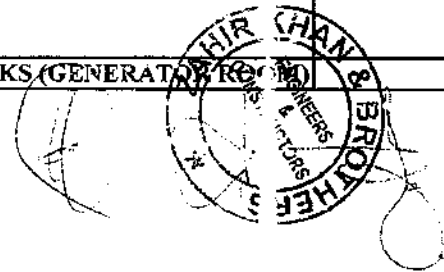
**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. In Figures)	RATE (Rs. in Words)	Amount (Rs.)
G-EW-11	S/F earthing including boring/excavation, copper rod 25mm ø, 3000 mm long and copper conductor etc. complete in all respects to achieve resistance not more than 5 Ohms.	Each	1.00	35,000.00	Rupees Thirty Five Thousand Only	35,000.00
G-EW-12	S/F clamp hook for fan concealed	Each	1.00	1,000.00	Rupees One Thousand Only	1,000.00
G-EW-13	S/F fan electric with regulator blades, canopy and rod incl. connections, provision of cables of fan 140 CM sweep of approved make	Each	1.00	50,000.00	Rupees Fifty Thousand Only	50,000.00
G-EW-14	S/F fan electric AC exhaust 45 CM 220/230 volts S.P complete with shutter	Each	2.00	12,500.00	Rupees Twelve Thousand Five Hundred Only	25,000.00
G-EW-15	S/F of board distribution MS sheet steel 16 BG thick with hinged cover and locking arrangement duly painted inside/outside with suitable size of busbar for connecting incoming and outgoing MCCB consisting of following:-					
	<b>INCOMING</b>					
	1. MCB SP 220 volts 50 cycle complete 30 ampsd 1 No.					
	<b>OUTGOING</b>					
	1. MCB SP 220 V 10 A to 20 A = 4 No.s	Set	1.00	50,000.00	Rupees Fifty Thousand Only	50,000.00
	<b>STANDBY POWER GENERATION</b>					
G-EW-16	Supply, installation, testing and commissioning diesel engine power, Caterpillar Made or equivalent, 100 KVA capacity 0.8 PF, 3 phase, 4 wire, 220/415 V, 50 Hz including AMF/ATS panel, making foundation and all other arrangements to make the set functional having diesel tank capacity of atleast 8 hours.	No.	1.00	3,000,000.00	Rupees Three Million Only	3,000,000.00
<b>TOTAL OF BILL NO. 6A-10 : ELECTRICAL WORKS (GENERATOR ROOM)</b>						<b>3,211,400.00</b>

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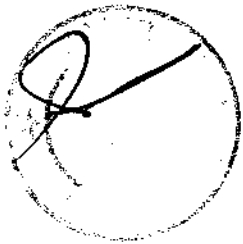


**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT (SHIKARPUR ~ KANDHKOT SECTION)  
KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**

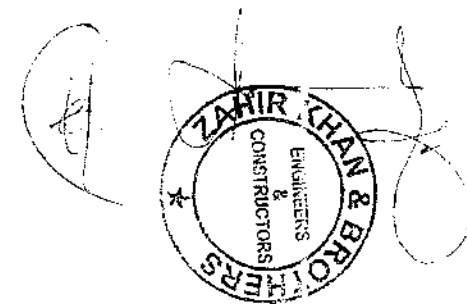
**BILL OF QUANTITIES**

**BILL NO. 6a : ANCILLARY WORKS (TOLL PLAZA & ALLIED WORKS)**

Item No.	Description	Unit	Quantity	Rate (Rs. In Figures)	RATE (Rs. in Words)	Amount (Rs.)
<b>BILL NO. 11 : WEIGH STATION &amp; ALLIED WORKS</b>						
11.1	Installation of SSWIM equipment including vault construction loop sensor installation ,necessary conduiting for power and communication cables,scale hardware at location shown in drawings including foundations. Complete in all respect as per the direction of the Engineer In Charge at site.	No	1.00	30,000,000.00	Rupees Thirty Million Only	30,000,000.00
11.2	Construction of Weigh station building having 1 x living room ,1 x Admin room , Washroom & Kitchen & control room incuding complete furnishing. Complete in all respect as per drawings.	No	1.00	3,000,000.00	Rupees Three Million Only	3,000,000.00
11.3	Construction of manholes / junction boxes for drainage and cabling from weigh scale to scale house / control room.	No	6.00	8,500.00	Rupees Eight Thousand Five Hundred Only	51,000.00
<b>TOTAL OF BILL NO. 6A-11 : ELECTRICAL WORKS (WEIGH STATION &amp; ALLIED WORKS)</b>						<b>33,051,000.00</b>



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**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**  
**SHIKARPUR ~ KANDHKOT SECTION**  
**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**  
**BILL OF QUANTITIES**

Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
Bill No 7	<b>General Items</b>					
Sp-701 (a)	Provide Surveying & allied instruments	PS	-	1,500,000.00	Rupees One Million Five Hundred Thousand Only	1,500,000.00
Sp-701 (b)	Maintain Survey Instruments, provide vehicle, Survey Team & helpers	Month	24.00	100,000.00	Rupees One Hundred Thousand Only	2,400,000.00
Sp-702 a	Provide the Employer's and Engineer's Representative's Office & Residence (on rental basis)	PS	-	2,500,000.00	Rupees Two Million Five Hundred Thousand Only	2,500,000.00
Sp-702b	Furnish and Equip. Employer's & Engineer's Representative office & Residence.	PS	-	2,000,000.00	Rupees Two Million Only	2,000,000.00
Sp-702c	Maintain Employer's and Engineer's Representative office & Residence.	Month	24.00	250,000.00	Rupees Two Hundred Fifty Thousand Only	6,000,000.00
Sp-703a	Provide Material Testing Project Laboratory (rental basis)	PS	-	1,500,000.00	Rupees One Million Five Hundred Thousand Only	1,500,000.00
Sp-703b	Equip & Furnish Material Testing Project Laboratory.	PS	-	3,500,000.00	Rupees Three Million Five Hundred Thousand Only	3,500,000.00
Sp-703c	Maintain Material Testing Project Laboratory including provision 04 helpers	Month	24.00	80,000.00	Rupees Eighty Thousand Only	1,920,000.00
Sp-708b	Provide Engineer's Representative Transport (i) Toyota Double Cabin with A/C (4 wheel drive)	Each	1.00	6,500,000.00	Rupees Six Million Five Hundred Thousand Only	6,500,000.00
	(ii) Suzuki Bolan (Carry)	Each	1.00	1,200,000.00	Rupees One Million Two Hundred Thousand Only	1,200,000.00
SP-708bi	Provide OHS Manager and support staff Transport (On rental basis)	Vehicle-Month	24.00	80,000.00	Rupees Eighty Thousand Only	1,920,000.00
	(i) Toyota Corolla 1300 cc with A/C (01 No)	Vehicle-Month	24.00	70,000.00	Rupees Seventy Thousand Only	1,680,000.00
	(ii) Suzuki Carry (01 No)	Vehicle-Month	24.00	70,000.00	Rupees Seventy Thousand Only	1,680,000.00
Sp-708c	Running & Maintenance of Employer's / Engineer's Representative's Transport	Vehicle-Month	264.00	75,000.00	Rupees Seventy Five Thousand Only	19,800,000.00
NSI-IV	Employing Trainee Engineer's with Boarding, Lodging and messing.	Man-Month	96.00	45,000.00	Rupees Forty Five Thousand Only	4,320,000.00

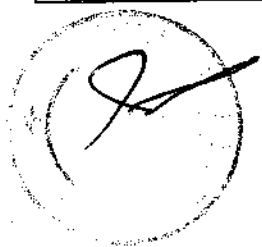
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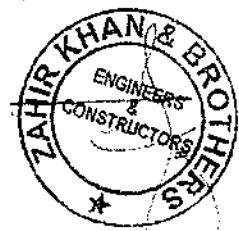
National Highway Authority  
P&CA  
Govt of Pakistan

ZAHIR KHAN BROTHERS  
ENGINEERS & CONSTRUCTORS

**INDUS HIGHWAY (N-55) ADDITIONAL CARRIAGEWAY ROAD PROJECT**  
**SHIKARPUR - KANDHKOT SECTION**  
**KM. (43+400 - KM. 105+820) LENGTH : 62.42 KM**  
**BILL OF QUANTITIES**

Item No.	Description	Unit	Quantity	Unit Rate (Rs.)		Amount (Rs.)
				In Figures	In Words	
<b>OHS Provisions:</b>						
<b>SP-OHS</b>						
i)	Provide 1 x Qualified OHS Manager having international certifications as per specifications.	Man-Month	24.00	150,000.00	Rupees One Hundred Fifty Thousand Only	3,600,000.00
ii)	Provide 4 nos support staff as assistant to OHS Manager as per specifications.	Man-Month	96.00	50,000.00	Rupees Fifty Thousand Only	4,800,000.00
iii)	Equip OHS Manager with necessary accessories i.e. stationery, laptop etc for proper monitoring of OHS activities.	LS	-	500,000.00	Rupees Five Hundred Thousand Only	500,000.00
iv)	Conduct OHS awareness trainings for Employer and contractor staff at site and conducting courses to visitors and new comers.	Month	24.00	100,000.00	Rupees One Hundred Thousand Only	2,400,000.00
v)	Carrying out and submit the OHS manual to the Engineer's representative, monitoring of all site activities as per OHS manual and submitting monthly progress report to the Engineer representative at site.	LS	-	500,000.00	Rupees Five Hundred Thousand Only	500,000.00
vi)	Construct and maintain detours i.e. installation of safety signs and other related safety features, preparing diversion plans and submit to the Engineer's representative in accordance with GCC.	LS	-	5,000,000.00	Rupees Five Million Only	5,000,000.00
vii)	Provide and maintain PPE's at site.	Month	24.00	100,000.00	Rupees One Hundred Thousand Only	2,400,000.00
viii)	Provide and maintain first aid kit at site.	Month	24.00	30,000.00	Rupees Thirty Thousand Only	720,000.00
<b>TOTAL BILL NO.</b>						<b>76,660,000.00</b>



# **APPENDICES AND SCHEDULES TO BID AND BIDDING FORMS (TECHNICAL AND FINANCIAL QUALIFICATIONS)**





## Schedules

### Schedule of Payment Currencies

For Construction of Additional Carriageway from Shikarpur – Rajanpur of N-55 (221.95 Km)  
Lot – 1: Shikarpur – Kandhkot Section from Km 43+400 to Km 105+820 (62.42 Km)

Separate tables may be required if the various sections of the Works (or of the Bill of Quantities) will have substantially different foreign and local currency requirements. In such a case, the Employer should prepare separate tables for each Section of the Works.

	A	B	C	D
Name of Payment Currency	Amount of Currency	Rate of Exchange to Local Currency	Local Currency Equivalent $C = A \times B$	Percentage of Net Bid Price (NBP) $\frac{100 \times C}{NBP}$
Local Currency		1.00		
Foreign Currency #1				
Foreign Currency #2				
Foreign Currency #3				
Net Bid Price				100.00
Provisional Sums Expressed in Local Currency		1.00		
BID PRICE				

#### Note

- The rates of exchange shall be the selling rates 28 days prior to the deadline for submission of bids published by the source specified in BDS 15.
- The bidder is required to substantiate and rationalize the justification of the Foreign Currency Component.
- The Foreign Currency Component shall be payable on actual expenditures.
- Actual expenditures and receipts may include but not limited to:
  - (a) For Equipment and Spare Parts: Lading / L. C. Papers, sale-purchase documents. Evidence of mobilization of equipment at project site etc.
  - (b) For Staff: The master payroll, evidence of presence of staff at project site. Payment / withdrawal of salary i.e. cross-check-bank account details.



## Schedules

### Schedule of Payment Currencies

For Construction of Additional Carriageway from Shikarpur – Rajanpur of N-55 (221.95 Km)  
Lot – 1: Shikarpur – Kandhkot Section from Km 43+400 to Km 105+820 (62.42 Km)

Separate tables may be required if the various sections of the Works (or of the Bill of Quantities) will have substantially different foreign and local currency requirements. In such a case, the Employer should prepare separate tables for each Section of the Works.

Name of Payment Currency	A Amount of Currency	B Rate of Exchange to Local Currency	C Local Currency Equivalent $C = A \times B$	D Percentage of Net Bid Price (NBP) $\frac{100 \times C}{NBP}$
Local Currency		1.00		
Foreign Currency #1				
Foreign Currency #2				
Foreign Currency #3				
Net Bid Price				100.00
Provisional Sums Expressed in Local Currency		1.00		
BID PRICE				

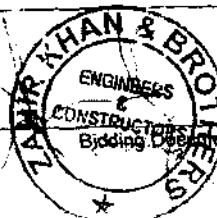
#### Note

- The rates of exchange shall be the selling rates 28 days prior to the deadline for submission of bids published by the source specified in BDS 15.
- The bidder is required to substantiate and rationalize the justification of the Foreign Currency Component.
- The Foreign Currency Component shall be payable on actual expenditures.
- Actual expenditures and receipts may include but not limited to:
  - (a) For Equipment and Spare Parts: Lading / L. C. Papers, sale-purchase documents. Evidence of mobilization of equipment at project site etc.
  - (b) For Staff: The master payroll, evidence of presence of staff at project site. Payment / withdrawal of salary i.e. cross-check bank account details.



Single-Stage: Two-Envelope

Procurement of Works



**Tables of Adjustment Data****Table A - Local Currency**

For Construction of Additional Carriageway from Shikarpur – Rajanpur of N-55 (221.95 Km)  
Lot – 1: Shikarpur – Kandhkot Section from Km 43+400 to Km 105+820 (62.42 Km)

Sr. No.	Description	Unit	Weightages	Applicable Index
1	2	3	4	5
(i)	Fixed Portion	-	0.52	-
(ii)	High Speed Diesel [for all types of fuel]	Liter	0.15	Monthly Statistical Bulletin, Pakistan Bureau of Statistics / Pakistan State Oil
(iii)	Labour Unskilled	Day (Per Day)	0.05	Monthly Statistical Bulletin, Pakistan Bureau of Statistics GOP (District: Dera Ghazi Khan)
(iv)	Cement (Ordinary Portland Cement) [for all types of Cement]	Per Bag	0.05	Monthly Statistical Bulletin, Pakistan Bureau of Statistics GOP (District: Dera Ghazi Khan)
(v)	Iron Bar (M.S. Bar) 1/2" [for all types of Steel elements]	Metric Ton	0.06	Monthly Statistical Bulletin, Pakistan Bureau of Statistics GOP (District: Dera Ghazi Khan)
(vi)	Asphalt Cement in Bulk Penetration Grade 60/70 (in bulk)	Metric Ton	0.17	EX (NRL), Karachi.
	<b>Total</b>		<b>1.000</b>	

**Note:**

1. Base prices of Specified Materials shall be as of actually prevailing on the base date notified by the Engineer with the approval of the Employer after the award of works. As per GCC 1.1.3.1, "Base Date" means the date 28 days prior to the deadline for bid submission".
2. The basic prices are meant to be ex-factory prices and inclusive of all kinds of taxes and duties that can be levied at source.
3. Adjustment of increase / decrease shall only be admissible for the materials (elements representing relevant category) listed above.
4. Value of work done for escalation purpose shall be value of permanent works (Excluding Bill for General Items & Provisional Sums).
5. All Amounts in Pak Rupees only.



**Table of Adjustment Data**

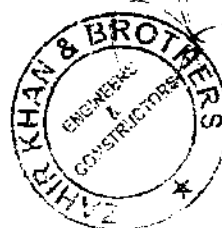
**Table A - Local Currency**

**For Construction of Additional Carriageway from Shikarpur – Rajanpur of N-55 (221.95 Km)  
Lot – 1: Shikarpur – Kandhkot Section from Km 43+400 to Km 105+820 (62.42 Km)**

Sr. No.	Description	Unit	Weightages	Applicable Index
1	2	3	4	5
(i)	Fixed Portion	-	0.52	-
(ii)	High Speed Diesel [for all types of fuel]	Liter	0.15	Monthly Statistical Bulletin, Pakistan Bureau of Statistics / Pakistan State Oil
(iii)	Labour Unskilled	Day (Per Day)	0.05	Monthly Statistical Bulletin, Pakistan Bureau of Statistics GOP (District: Dera Ghazi Khan)
(iv)	Cement (Ordinary Portland Cement) [for all types of Cement]	Per Bag	0.05	Monthly Statistical Bulletin, Pakistan Bureau of Statistics GOP (District: Dera Ghazi Khan)
(v)	Iron Bar (M.S. Bar 1/2" [for all types of Steel elements])	Metric Ton	0.06	Monthly Statistical Bulletin, Pakistan Bureau of Statistics GOP (District: Dera Ghazi Khan)
(vi)	Asphalt Cement in Bulk Penetration Grade 60/70 (in bulk)	Metric Ton	0.17	EX (NRL), Karachi.
	<b>Total</b>		<b>1.000</b>	

Note:

1. Base prices of Specified Materials shall be as of actually prevailing on the base date notified by the Engineer with the approval of the Employer after the award of works. As per GCC 1.1.3.1, "Base Date" means the date 28 days prior to the deadline for bid submission".
2. The basic prices are meant to be ex-factory prices and inclusive of all kinds of taxes and duties that can be levied at source.
3. Adjustment of increase / decrease shall only be admissible for the materials (elements representing relevant category) listed above.
4. Value of work done for escalation purpose shall be value of permanent works (Excluding Bill for General Items & Provisional Sums).
5. All Amounts in Pak Rupees only.



## List of Materials for Payment (Reference GCC/PCC 14.5)

Sr. No.	Type of Material	Limit for Payment*			
		Lot - 1	Lot - 2	Lot - 3	Lot - 4
1	Steel Reinforcement (Grade 60) (Approximately four (04) times of average monthly consumption)	PKR 100 Million	PKR 130 Million	PKR 115 Million	PKR 115 Million
2	Asphalt Cement (Grades 60-70 and 80-100) only if stored in sealed drums (Approximately three (03) times of average monthly consumption)	PKR 350 Million	PKR 400 Million	PKR 200 Million	PKR 200 Million
3	Cement (OPC) (Approximately two (02) times of average monthly consumption)	PKR 100 Million	PKR 130 Million	PKR 115 Million	PKR 115 Million

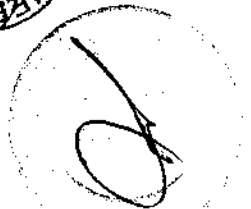
\* prescribes upper limit for net amount of payment, at any time, which shall not exceed in any certification by the Engineer against Contractor's Statement in accordance with GCC 14.3(e); the Engineer shall, however, make sure that the quantities stored and accepted for payments do not exceed their consumption requirements for execution and completion of Works particularly when the Works are in advanced stage / nearing completion.



**List of Materials for Payment  
(Reference GCC/PCC 14.5)**

Sr. No.	Type of Material	Limit for Payment*
		Lot - 1
1	Steel Reinforcement (Grade 60) (Approximately four (04) times of average monthly consumption)	PKR 100 Million
2	Asphalt Cement (Grades 60-70 and 80-100) only if stored in sealed drums (Approximately three (03) times of average monthly consumption)	PKR 350 Million
3	Cement (OPC) (Approximately two (02) times of average monthly consumption)	PKR 100 Million

\* Prescribes upper limit for net amount payment, at any time, which shall not exceed in any certification by the Engineer against Contractor's Statement in accordance with GCC 14.3(e); the Engineer shall, however, make sure that the quantities stored and accepted for payments do not exceed their consumption requirements for execution and completion of Works particularly when the Works are in advanced stage / nearing completion.

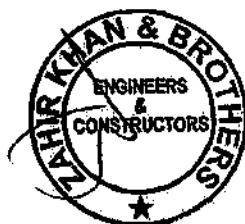


# Zahir Khan & Brothers



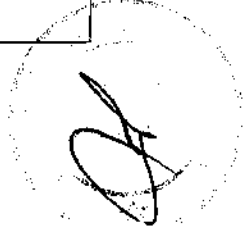
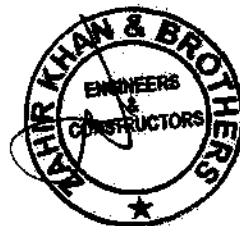
## Form ELI - 1: Bidder's Information Sheet

Bidder's Information	
Bidder's legal name	ZAHIR KHAN & BROTHERS
In case of a Joint Venture, legal name of each partner	N/A
Bidder's country of constitution	PAKISTAN
Bidder's year of constitution	1982
Bidder's legal address in country of constitution	Plot No. 44 Street, No. 11, I-9/2, Islamabad. Telephone: +92-51-4444555, 4444533 Fax: +92-51-4444499 E-mail: zkb.isbi92@gmail.com
Bidder's authorized representative (name, address, telephone number(s), fax number(s), e-mail address)	MUHAMMAD SULEMAN KHAN Director Plot No. 44 Street, No. 11, I-9/2, Islamabad. Telephone: +92-51-4444555, 4444533 Fax: +92-51-4444499 E-mail: zkb.isbi92@gmail.com
Attached are copies of the following documents.	
<input checked="" type="checkbox"/> 1. In case of a single entity, articles of incorporation or constitution of the legal entity named above, in accordance with ITB 4.1 and ITB 4.2. <input checked="" type="checkbox"/> 2. Authorization to represent the firm or Joint Venture named above, in accordance with ITB 20.2 <input checked="" type="checkbox"/> 3. In case of a Joint Venture, a letter of intent to form a Joint Venture or Joint Venture agreement, in accordance with ITB 4.1 <input checked="" type="checkbox"/> 4. In case of a government-owned enterprise, documents establishing legal and financial autonomy and compliance with commercial law in accordance with ITB 4.5. <input checked="" type="checkbox"/> 5. Registration with Pakistan Engineering Council (PEC), where required, in accordance with criterion 2.1.6 for eligibility under Section 3, Evaluation and Qualification Criteria.	



**Form ELI - 2: Joint Venture Information Sheet**

Joint Venture / Specialist Subcontractor Information	
Bidder's legal name	
Joint Venture Partner's or Specialist Subcontractor's legal name	
Joint Venture Partner's or Specialist Subcontractor's country of constitution	
Joint Venture Partner's or Specialist Subcontractor's year of constitution	<b>N/A</b>
Joint Venture Partner's or Specialist Subcontractor's legal address in country of constitution	
<b>Joint Venture Partner's or Specialist Subcontractor's authorized representative Information</b> (name, address, telephone number(s), fax number(s), e-mail address)	
Attached are copies of the following documents. <ul style="list-style-type: none"> <li><input type="checkbox"/> 1. Articles of incorporation or constitution of the legal entity named above, in accordance with ITB 4.1 and ITB 4.2.</li> <li><input type="checkbox"/> 2. Authorization to represent the firm named above, in accordance with ITB 20.2.</li> <li><input type="checkbox"/> 3. In the case of a government-owned enterprise, documents establishing legal and financial autonomy and compliance with commercial law, in accordance with ITB 4.5.</li> <li><input type="checkbox"/> 4. Registration with Pakistan Engineering Council (PEC), where required, in accordance with criterion 2.1.6 for eligibility under Section 3, Evaluation and Qualification Criteria.</li> </ul>	





# Zahir Khan & Brothers



## Form CON - 1: Historical Contract Nonperformance

Each Bidder must fill out this form in accordance with Criteria 2.2.1 and 2.2.3 of Section 3 (Evaluation and Qualification Criteria) to describe any history of nonperforming contracts and pending litigation or arbitration formally commenced against it.

In case of a Joint Venture, each Joint Venture Partner must fill out this form separately and provide the Joint Venture Partner's name:

Joint Venture Partner:                     N/A                    

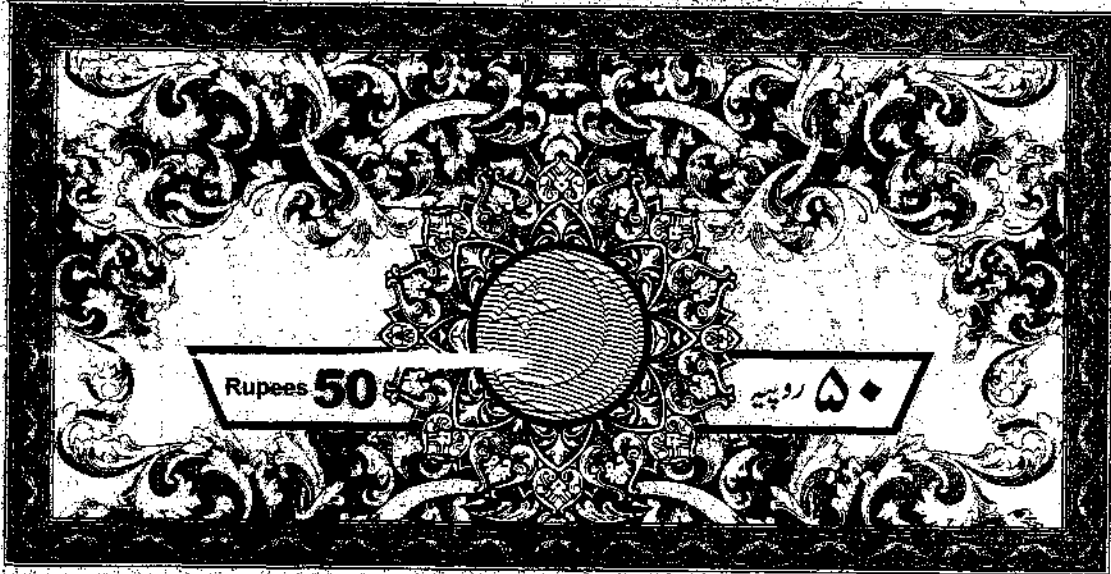
Table 1: History of Nonperforming Contracts			
Choose one of the following:			
<input checked="" type="checkbox"/> No nonperforming contracts.			
<input checked="" type="checkbox"/> Below is a description of nonperforming contracts involving the Bidder (or each Joint Venture Partner if Bidder is a Joint Venture).			
Year	Description	Amount of Nonperformed Portion of Contract (\$ equivalent)	Total Contract Amount (\$ equivalent)
	Contract Identification: Name of Employer: Address of Employer: Reason(s) for nonperformance:	<i>Nil</i>	

Table 2: Pending Litigation and Arbitration			
Choose one of the following:			
<input checked="" type="checkbox"/> No pending litigation and Arbitration.			
<input checked="" type="checkbox"/> Below is a description of all pending litigation and Arbitration involving the Bidder (or each Joint Venture Partner if Bidder is a Joint Venture).			
Year	Matter in Dispute	Value of Pending Claim in \$ Equivalent	Value of Pending Claim as a Percentage of Net Worth
	Contract Identification: Name of Employer: Address of Employer: Reason(s) for nonperformance:	<i>Nil</i>	

**Note**

Table 2 of this form shall only be included if Criterion 2.2.3 of Section 3 (Evaluation and Qualification Criteria) is applicable.





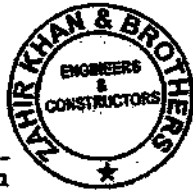
**AFFIDAVIT**

**NONPERFORMING CONTRACT**

We, Zahir Khan & Brothers (ZKB) hereby declare that Contract Non Performance did not occur by us with any State / Federal Govt. or any Autonomous body.

For and on behalf of Zahir Khan & Brothers

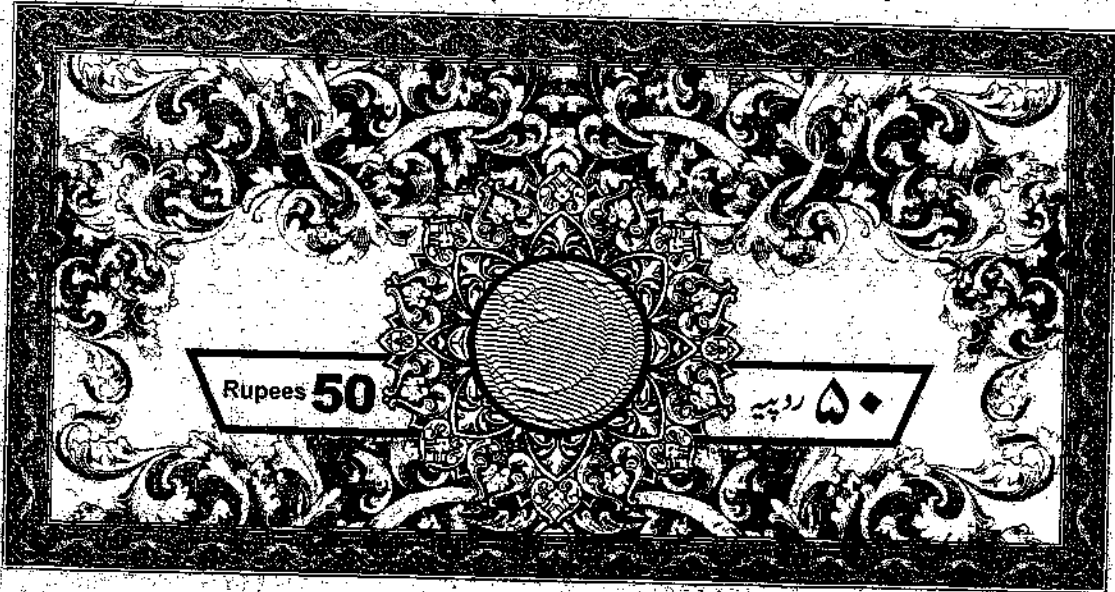
Muhammad Sulaman Khan  
Director  
Dated: 07<sup>th</sup> June, 2021



**ATTESTED**







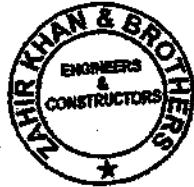
**AFFIDAVIT**

**NO BLACK LISTING**

We solemnly declare that our firm has never been blacklisted by any Government, Semi Government, or any Autonomous body.

For and on behalf of Zahir Khan & Brothers

Muhammad Sulaiman Khan  
Director  
Dated: 07<sup>th</sup> June, 2021



**ATTESTED**



# Zahir Khan & Brothers



## Form FIN – 1: Historical Financial Performance

Each Bidder must fill out this form.

In case of a Joint Venture each Joint Venture partner must fill out this form separately and provide the Joint Venture Partner's name:

Joint Venture Partner: N/A

Financial Data for Previous three (03) Years [S Equivalent]		
Year 1: 2020	Year 2: 2019	Year 3: 2018
\$ Rate - 168.05	\$ Rate - 163.05	\$ Rate - 121.53

### Information from Balance Sheet

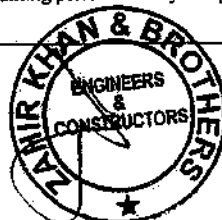
Total Assets (TA)	420,157,594	374,989,240	629,745,411
Total Liabilities (TL)	82,544,485	98,936,900	240,196,552
Net Worth = TA – TL	337,613,113	276,052,340	389,548,859
Current Assets (CA)	110,054,931	131,492,729	232,940,334
Current Liabilities (CL)	82,544,481	95,956,997	192,619,820
Working Capital = CA - CL	27,510,450	To be obtained for most recent year and carried forward to FIN – 3 Line 1; in case of Joint Ventures, to the corresponding Joint Venture partner' FIN-3.	

### Information from Balance Sheet

Total Revenues	72,721,885	140,002,292	331,589,857
Profits Before Taxes	10,160,461	28,852,203	56,653,263
Profits After Taxes	5,459,485	18,352,031	41,335,926

Attached are copies of financial statement (balance sheets including all related notes and income statements) for the last three years, as indicated above, complying with the following conditions:

- Unless otherwise required by Section 3 of the Bidding Document, all such documents reflect the financial situation of the legal entity or entities comprising the Bidder and not the Bidder's parent companies, subsidiaries, or affiliates.
- Historical financial statements must be audited by a certified accountant.
- Historical financial statements must be complete, including all notes to the financial statements.
- Historical financial statements must correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted).



# Zahir Khan & Brothers



## Form FIN - 2: Average Annual Construction Turnover

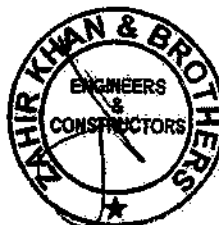
Each Bidder must fill out this form.

The information supplied should be the Annual Construction Turnover of the Bidder or each Partner of a Joint Venture in terms of the amounts billed to clients for each year for work in progress or completed, converted to US dollars at the rate of exchange at the end of the period reported.

In case of a Joint Venture, each Joint Venture partner must fill out this form separately and provide the Joint Venture partner's name:

Joint Venture Partner:                     N/A                    

Annual Turnover Data for the Last three (03) Years (Construction only)			
Year	Amount Currency	Exchange Rate	\$ Equivalent
2020	12,220,910,973	168.05	72,721,875
2019	22,827,373,733	163.05	140,002,293
2018	40,298,115,232	121.53	331,589,857
Average Annual Construction Turnover			181,438,009



# Zahir Khan & Brothers



## Form FIN - 3: Availability of Financial Resources

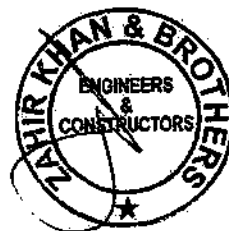
Bidders must demonstrate sufficient financial resources, usually comprising of Working Capital supplemented by credit line statements or overdraft facilities and others to meet the Bidder's financial requirements for

- (a) Its current contract commitments, and
- (b) The subject contract.

In case of a Joint Venture, each Joint Venture must fill out this form separately and provide the Joint Venture Partner's name:

Joint Venture Partner: N/A

Financial Resources		
No.	Source of financing	Amount (\$ equivalent)
1	Working Capital (to be taken from FIN - 1)	27,510,450
2	Credit Line*	[PKR = 1,500,000,000] [Exchange Rate = 151.34] 9,911,458
3	Other Financial Resources	-
Total Available Financial Resources		37,421,908



# Zahir Khan & Brothers



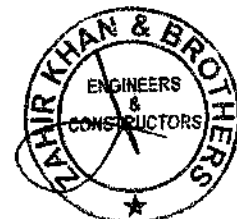
## Form FIN – 4: Financial Requirements for Current Contract Commitments

Bidders (or each Joint Venture Partner) should provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

In case of a Joint Venture, each Joint Venture Partner must fill out this form separately and provide the Joint Venture Partner's name:

Joint Venture Partner: N/A

Current Contract Commitments						
No.	Name of Contract	Employer's Contact (Address, Tel, Fax)	Contract Completion Date	Outstanding Contract Value in PKR (X) <sup>a</sup>	Remaining Contract Period in months (Y) <sup>b</sup>	Monthly Financial Resources Requirements in PKR (X / Y)
1	Construction of Mangi Dam and Water Conveyance System Package – 1: Construction of Main Dam Allied Structures	Irrigation Deptt. Quetta	June-22	800,001,231	12	66,666,769
2	CPEC Package –IV Pindi Gheb to Tarap	NHA	June-22	JV ZKB Share 2,100,110,320	12	175,009,193
3	CPEC Package –V Hakia to Pindi Gheb	NHA	June-22	JV ZKB Share 1,860,003,811	12	155,000,317
4	Procurement of works for Rehabilitation / Improvement of water Supply & Sewerage System in north Zone, Sialkot – Lot 1: Sewerage Line and Allied System Lines and Allied WORKS (Zone 3-A)	PICIIP	Dec-22	JV ZKB Share 836,561,965	18	46,475,665
5	Procurement of works for Rehabilitation / Improvement of water Supply & Sewerage System in north Zone, Sialkot – Lot 2: Pre-Cast RCC Conduits and Allied Works (Zone 3-B)	PICIIP	Dec-22	JV ZKB Share 853,361,478	18	47,408,971



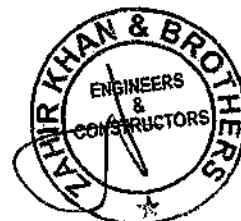


# Zahir Khan & Brothers



6	Procurement of works for Rehabilitation / Improvement of water Supply & Sewerage System in north Zone, Sialkot - Lot 3: Influent Pumping station, Force main and Allied Works (Zone 3-C)	PICHP	Dec-22	Contract Agreement yet to be executed		--
7	Procurement of works for Rehabilitation / Improvement of water Supply & Sewerage System in north Zone, Sialkot - Lot 4: Water Supply System (Zone 3-D)	PICHP	Jun-22	JV ZKB Share 501,233,125	18	27,846,285
8	Procurement of works for Sahiwal - Water and Sanitation - Lot 4: South Zone Trunk Main Sewer, effluent Pumping Station and Allied Works	PICHP	Jun-22	Contract Agreement yet to be executed		--
<b>Total in PKR</b>						<b>518,407,200</b>
<b>Exchange Rate</b>						<b>151.34</b>
<b>Total Monthly Financial Requirement for Current Contract Commitments US \$</b>						<b>3,425,447</b>

- a Remaining outstanding contract values to be calculated from 28 days prior to the bid submission deadline (\$ equivalent based on the foreign exchange rate as of the same date).
- b Remaining contract period to be calculated from 28 days prior to bid submission deadline.



# Zahir Khan & Brothers



## Form FIN – 5: Self-Assessment Tool for Bidder’s Compliance to Financial Resources (Criterion 2.3.3 of Section 3)

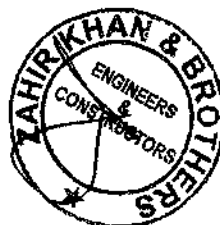
This form requires the same information submitted in Forms FIN – 3 and FIN – FIN – 4. All conditions of “Available Financial Resources Net of CCC  $\geq$  Requirement for the Subject Contract” must be satisfied to qualify.

### Form FIN – 5A: For Single Entities

For Single Entities: (A)	Total Available Financial Resources from FIN – 3 (B)	Total Monthly Financial Requirement for Current Contract Commitments (CCC) from FIN – 4 (C)	Available Financial Resources Net of CCC $D = (B - C)$	Requirement for the Subject Contract (E)	Results: Yes or No [D must be greater than or equal to E] (F)
Zahir Khan & Brothers (Name of Bidder)	37,421,908	3,425,447	33,996,461	US \$ 07 Million	Yes

### Form FIN – 5A: For Single Entities

For Joint Ventures: (A)	Total Available Financial Resources from FIN – 3 (B)	Total Monthly Financial Requirement for Current Contract Commitments (CCC) from FIN – 4 (C)	Available Financial Resources Net of CCC $D = (B - C)$	Requirement for the Subject Contract (E)	Results: Yes or No [D must be greater than or equal to E] (F)
One Partner:					
(Name of Partner 1)				.....	
Each Partner:					
(Name of Partner 2)				.....	
(Name of Partner 3)				.....	
All Partners combined	$\Sigma D =$ Sum of available financial resources net of current contract commitments for all Partners		$\Sigma D =$ _____	.....	



# Zahir Khan & Brothers

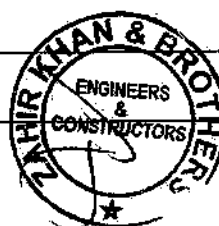


## Form EXP – 1: Contracts of Similar Size and Nature

Fill out only (1) form per contract.

The exchange rate to be used to calculate the value of the contract for conversion to a specific currency shall be the selling rate of the borrower's national bank on the date of the contract.

Contract of Similar Size and Nature		
<b>Contract No. 1 of 3</b>	<b>Contract Identification:</b> Construction of Karachi Lahore Motorway (KLM) Section III: Lahore Abdul Hakeem (230 Km)	
<b>Award Date: Dec – 2015</b>	<b>Completion Date: March – 2019</b>	
<b>Total Contract Amount</b>	PKR 148,654,427,238	(@ 151.34) <b>982,254,706 USD</b>
<b>If partner in a Joint Venture or subcontractor, specify participation of total contract amount</b>	<b>Percent of Total: 30%</b>	<b>294,676,411.86 USD</b> Amount: PKR 44,596,328,171
<b>Employer's name Address Telephone number Fax number E-mail</b>	National Highway Authority, 28 Mauve Area, G-9/1, Islamabad Phone No. 051-9232727 Fax No. 051-9250419	
Description of the Similarity in Accordance with Criterion 2.4.1 of Section 3 (Evaluation and Qualification Criteria)		
<b>The similarity of the Bidder's participation shall be based on :</b>	<b>Scope of Work:</b>	
1. the physical size	230 Kilometer	
2. nature of works	Construction of Motorway	
3. complexity, methods	Construction of Karachi Lahore Motorway (KLM) Section III:	
4. technology or	Lahore Abdul Hakeem (230 Km)	
5. other characteristics	Interchanges, Toll Plazas, Service Areas etc.	





## NATIONAL HIGHWAY AUTHORITY

Office of General Manager  
Lahore - Multan Section, M-3  
Of Peshawar - Karachi Motorway Project  
Sharaqpur interchange (M-3) on main Sharaqpur - Sheikhupura Road,  
Tehsil Sharaqpur, District Sheikhupura.

No. GM (M-3)PKM/NHA/2020/ 28

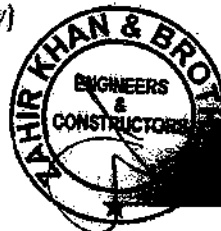
11<sup>th</sup> February, 2020

Subject: **Taking Over Certificate (TOC)**  
**(LAHORE - MULTAN SECTION) M-3, OF PESHAWAR - KARACHI**  
**MOTORWAY PROJECT.**

- |   |   |
|---|---|
| i. Contract                                     | Lahore-Abdul Hakeem (Section-III) of Peshawar-Karachi Motorway.   |
| ii. Contractor                                  | China Railway 20 Group-Zahir Khan Brothers, Joint Venture.  |
| iii. Project Length                             | 230 Kms (06 Lane Controlled Access)   |
| iv. PC-1 Cost                                   | 150.665 Billion   |
| v. Contract Cost                                | 148.654 Billion   |
| vi. Date of Commencement                        | 19-02-2016  |
| vii. Defect Notification Period/<br>Maintenance | 03 years, after issuance of Taking Over Certificate as per contract clause 11.9 Of Particular Conditions of Contract (GCC) Part-II. |
| viii. Attachments                               | a. M&I report / outstanding works as well as Remaining defective works.<br>b. Undertaking of contractor                             |

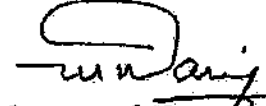
2. In accordance with contract clause-10.2 of General Conditions of Contract (GCoC) upon agreement of both parties i.e. The Employer/NHA and Contractor, Chairman NHA in the capacity of "The Employer" has accorded approval for issuance of Taking Over Certificate (TOC) of parts of the subject project works. Pursuant to approval of the Employer the Taking Over Certificate (TOC) of following package of works is being issued w.e.f. 1<sup>st</sup> April, 2019.

- i. Main Carriage way along with shoulders
- ii. Service Area at KM 1045+575 (Tandlianwala)
- iii. Service Area at KM 1109+500 (Nankana Sahib)
- iv. Rest Area at KM 1082+400 (Jaranwala)
- v. Toll Plazas on all loops/Interchanges (except main toll plazas on both ends of motorway)
- vi. Weigh stations on all loops/Interchanges (except main toll plazas on both ends of motorway)



Page 1 of 2

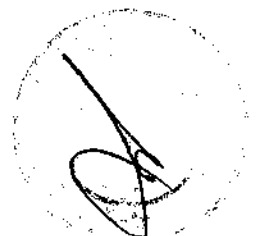
3. Defect Notification Period for above mentioned package of works shall be for three (03) years in-accordance with contract clause 11.9 of GCC-Part-II and shall commence w.e.f. 1<sup>st</sup> April, 2019.

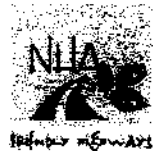


(Muhammad Naseem Arif)  
General Manager (PKM) M-3,  
NHA, Lahore.

Copy to

- Member (MWs-South), NHA, Lahore.
- General Manager (M&I), NHA, Islamabad.
- Project Director (M-3), PKM, NHA, Lahore.
- Director (Tech), NHA, Islamabad.
- CRE, M/s. AER consultant Lahore.
- Mr. Zhang Junbo, Authorized Representative M/s CR20G-ZKB JV.





# NATIONAL HIGHWAY AUTHORITY

Office of Project Director  
Lahore - Multan Section, M-3  
Of Peshawar - Karachi Motorway Project  
Sharaqpur Interchange (M-3) on main Sharaqpur - Sheikhupura Road,  
Tehsil Sharaqpur, District Sheikhupura.  
PH # 056-2891002

NO. PD (PKM) M-3/NHA/19/

26<sup>th</sup> December, 2019

## TO WHOM IT MAY CONCERN

Subject: **Completion of Works.**  
**(LAHORE - MULTAN SECTION) M-3, OF PESHAWAR - KARACHI**  
**MOTORWAY PROJECT.**

Construction of Lahore - Abdul Hakeem Motorway (M-3) project is awarded to Joint venture of M/s China Railways 20 Group and M/s Zahir Khan and Brothers (CR20G-ZKB JV). The total length of the project is 230 KM. Scope of work includes embankment formation (including flood prone area), construction of structures on canals/water channels, Road, railways and the protection work / drainage and erosion control works etc.

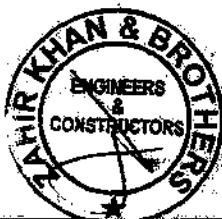
2. This is to certify that M/s Zahir Khan & Brothers has successfully completed the work on subject project as well as related to irrigation/Flood prone area amounting to Rs 9.881 billion approximately. The detail of irrigation related work and other works of project completed by M/s Zahir Khan and Brothers is as under:

Total Project cost:	Rs. 148.654 Billion
M/s CR20G Share:	70% (Rs. 104.058 Billion)
M/s Zahir Khan & Brothers Share:	30% (Rs. 44.596 Billion)

### Key Activities Break Down of Irrigation/Flood Works.

Sr. No.	Description	Unit	Quantity	Amount (Rs) Millions
1	Embankment	CuM	4,811,662	3,559.91
2	<b>Major &amp; Minor Structure</b>			
(i)	Reinforced Concrete	CuM	62,642	1,744.09
(ii)	Reinforced Concrete (Class D)	CuM	6,721	211.37
(iii)	Other Concrete	CuM	1,767	27.41
(iv)	Reinforcement (Steel)	Ton	10,023	1,600.05
(v)	Pre-stressing Wire Stand	Ton	356	164.86

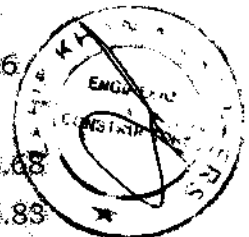
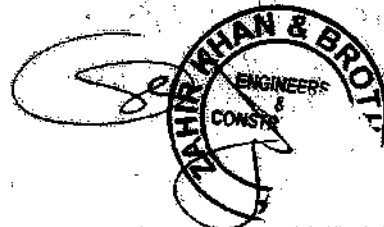
Page 1 of 3



(vi)	Misc Work			
<b>3</b>	<b>Protection Works (Stone Pitching/Rip Rap)</b>			
(i)	Reinforced Concrete	CuM	5,356	203.80
(ii)	Other Concrete	CuM	1,163	31.10
(iii)	Reinforcement (Steel)	Ton	482	84.61
(iv)	Protection Works (Rip Rap)	CuM	70,693	521.54
(v)	Misc Work			177.77
	<b>Total</b>			<b>9,881.00</b>

**Key Activities Break Down of Other Works.**

St. No.	Description	Unit	Quantity	Amount (Rs) Millions
1	Embankment	CuM	10,134,763	6,764.50
2	Granular Sub-Base	CuM	597,967	1,442.36
3	Aggregate Base Course	CuM	721,218	2,921.67
4	Asphaltic Base Course	CuM	308,672	6,812.97
5	Asphalt Concrete for Wearing Course	CuM	102,343	2,349.85
<b>6</b>	<b>Major Structure (Bridges)</b>			
(i)	Reinforced Concrete	CuM	21,079	609.65
(ii)	Reinforced Concrete (Class D)	CuM	2,498	78.57
(iii)	Reinforcement (Steel)	Ton	3,271	522.22
(iv)	Pre-stressing Wire Stand	Ton	102	47.43
(v)	Cast in Place Concrete Piles	M	31,161	990.01
<b>7</b>	<b>Minor Structures</b>			
(i)	Reinforced Concrete	CuM	73,286	1,836.98
(ii)	Other Concrete	CuM	6,911	114.61
(iii)	Reinforcement (Steel)	Ton	9,445	1,624.82
<b>8</b>	<b>Drainage and Erosion Control Works</b>			
(i)	Reinforced Concrete	CuM	4,419	168.13
(ii)	Other Concrete	CuM	10,941	66.56
(iii)	Protection Works (Rip Rap)	CuM	18,788	142.36
<b>9</b>	<b>Ancillary Works</b>			
(i)	New Jersey Barrier	M	101,988	1,475.65
(ii)	Metal Beam Guard Rail	M	187,650	1,024.83



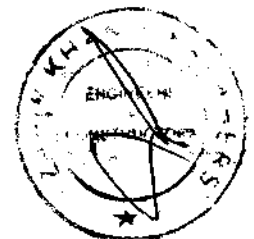
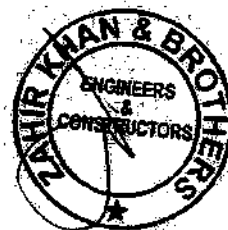
(iii)	Pavement Marking in Reflective TP Paint for Lane Marking (15 cm)	M	791,161	172.99
(iv)	Galvanized Wiremesh Fence	M	222,827	498.74
(v)	Services Area, Rest Areas, Toll Plazas (Buildings)	SqM	37,204	1,062.00
10	Intelligent Transportation System (ITS)			1,093.45
11	Landscaping			541.57
	<b>Total</b>			<b>32,361.93</b>



**(Basharat Hussain)**  
Project Director

**Copy to**

- Member (MWs-South), NHA, Lahore.
- General Manager (M-3), PKM, NHA, Sharaqpur.







# NATIONAL HIGHWAY AUTHORITY

Procurement & Contract Administration Section  
28. Mauve Area, G-9/I, Islamabad ☎ 051-9032727, 051-9260419

No. 214561/GM(P&CA)/NHA/2015/1767

December, 2015

To,

Mr. Gu Hejun, Authorized Representative  
M/s China Railway 20 Bureau Group Corporation  
As M/s CR20G-ZKB KLM JV

- (i) No. 89 Taihua Road, Weiyang District, Xi'an City, Shaanxi Province, China, Postal Code: 710616, Tel/Fax: +862982153510.  
(ii) Apartment 1706, Floor 19, Tower A, Centaurus, Jinnah Avenue, F-8/4, Islamabad.  
Tel: 051-8737409, 0316-5140396, 0313-3233652.  
E-mail: 510843935@qq.com, 604576294@qq.com

Subject: **LETTER OF ACCEPTANCE:**  
**Engineering, Procurement and Construction (EPC) of Karachi - Lahore Motorway (KLM), Section-III: Lahore - Abdul Hakeem (230 KM Approx.).**

Reference: Your financial bid opened on 24<sup>th</sup> August 2015.

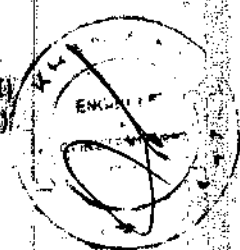
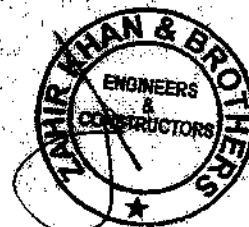
- In accordance with Clause 33.1 of the Instructions to Bidders, undersigned is pleased to inform you the acceptance of your evaluated Bid amounting to Rs. 148,654,427,238/- (Rupees One Hundred Forty Eight Billion, Six Hundred Fifty Four Million, Four Hundred Twenty Seven Thousand, Two Hundred and Thirty Eight Only) by the Competent Authority.
- The aforementioned amount is the "Contract Price" payable in consideration of design, execution, completion, maintenance and defects liability of the Works as prescribed in the Contract Documents and undertaking on Stamped Paper No. 111280 submitted by you on 24<sup>th</sup> August 2015 (copy attached) regarding captioned EPC project.
- Please proceed according to the Clause 34.1 of Instructions to Bidders and also with due consideration to the conditions stipulated within the Contract Documents.

Enclosure: As above.

(MUMHTAR AHMED DURRANI)  
General Manager (P&CA)

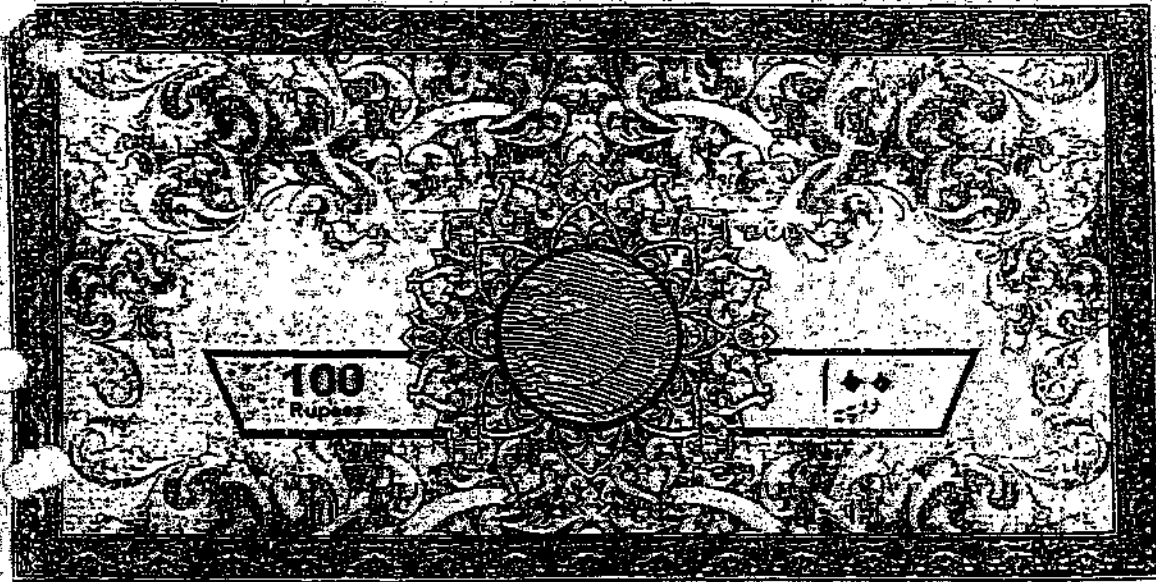
Copy for Kind Information to:

- Chairman, NHA, Islamabad.
- Member (Planning), NHA, Islamabad.
- Member (Engg.-Coord), NHA, Islamabad.
- Member (Finance), NHA, Islamabad.
- Member (KLM), NHA, Islamabad.
- Member (Central Zone), NHA, Lahore.
- General Manager (KLM), Section-III, NHA.



111280

THE NATIONAL HIGHWAY AUTHORITY IS NOT RESPONSIBLE FOR THE CONTENTS OF THIS DOCUMENT



### UNDERTAKING

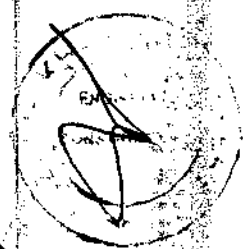
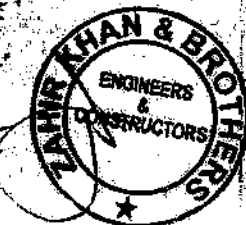
CHINA RAILWAY 20 BUREAU GROUP CORPORATION and ZAHIR KHAN & BROTHERS JV PARTNERS hereinafter referred to as "CR20G-ZKB JV JOINT VENTURE" ("the Joint Venture") do hereby concede that as per requirements of bid we were to bid as per the Employer's Requirements. However, during presentation on technical bids, it was found that there have been deviations from the Employer's requirements. We hereby undertake to conform and meet with all Employer's Requirements of Bidding Documents in our detailed design if we get the project at no extra cost to NHA. We will not claim any extra cost to make our design compliant with the aforementioned requirements in the contract.

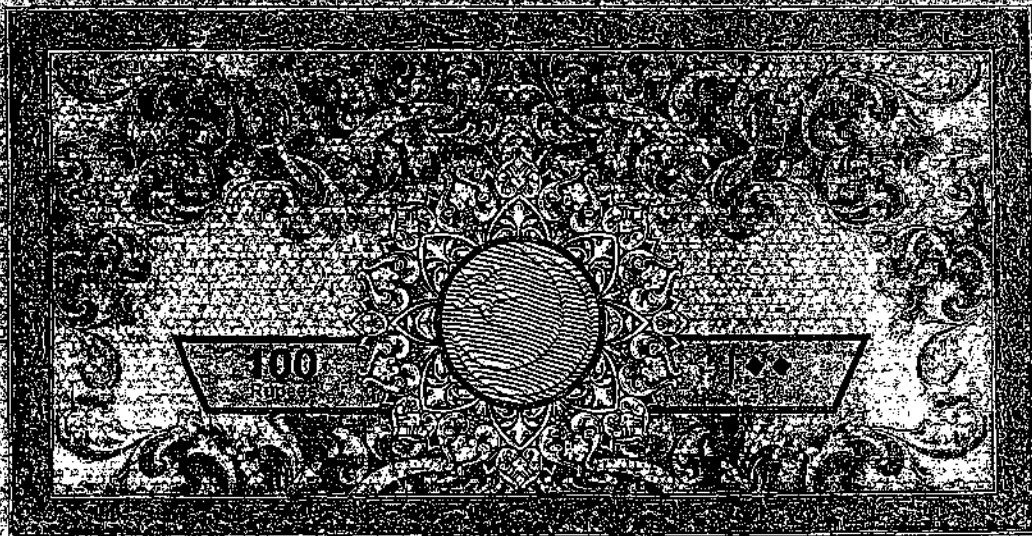
This undertaking may be part of Contract Document.



Sign and Signature of Authorized Representative of Joint Venture.

(MUKHEER AHMED DURRANI)  
General Manager (P&CA)  
(Countersigned)





**PRE-BID JOINT VENTURE AGREEMENT 标前联合体协议**

This Pre-bid Joint Venture Agreement is made on the 15 day of June, 2015 by and between: 本标前联合体协议于 2015 年 6 月 15 日签订, 签订双方为

CHINA RAILWAY 20 BUREAU GROUP CORPORATION (hereinafter referred to as "CR20G") a company incorporated in People's Republic of China having its Registered Office at No.89 Taihua Road, Weiyang District, Xi'an, China;

中铁二十局集团有限公司 (以下简称为 CR20G), 是一家中国公司, 其办公地点位于中国陕西省西安市未央区太华北路 89 号;

And 和

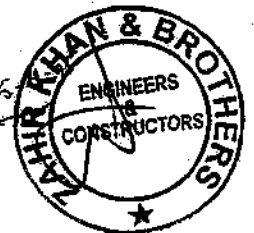
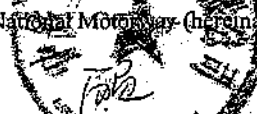
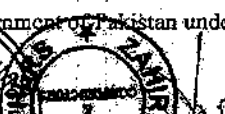
ZAHIR KHAN & BROTHERS (hereinafter referred to as "ZKB"), a company incorporated in Pakistan having its Registered Office at Plot No.44, Street # 11, I-9/2, Islamabad.

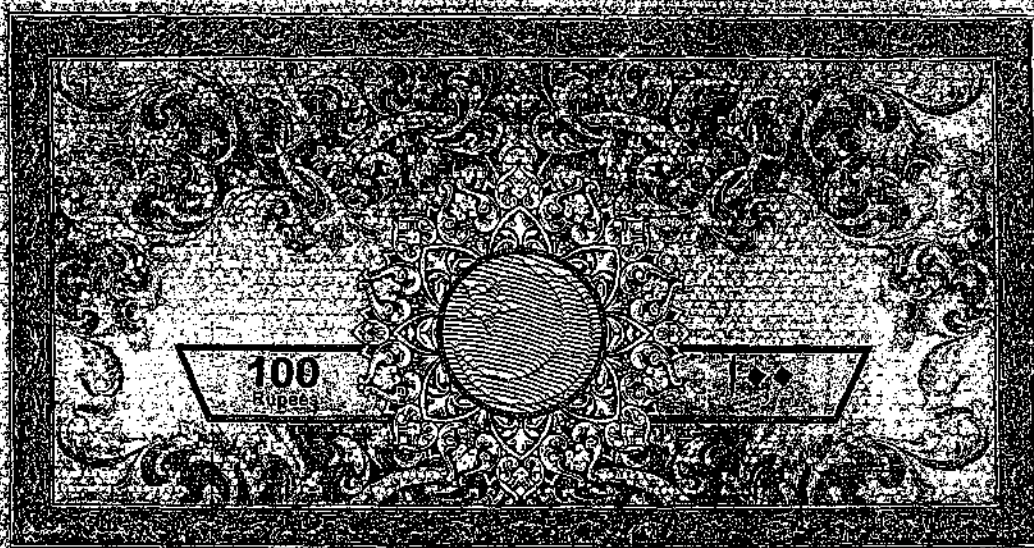
查希尔·汗兄弟公司 (以下简称为 ZKB), 是一家巴基斯坦公司, 注册办公地址为伊斯兰堡, I9/2, 11 号街, 44 号。

[Hereinafter individually referred to as the "Party" or together as the "Parties", which expression(s) shall be deemed to mean and include its/their respective successor(s) and permitted assign(s)].

[以下分别称为 "一方" 或合称为 "双方", 该表述意思应视为包括它/它们各自的继任者和允许的转让]

WHEREAS the NATIONAL HIGHWAY AUTHORITY (NHA), PAKISTAN (hereinafter referred to as "the Client") has announced Invitation for Bid for Construction of below mentioned project of ENGINEERING, PROCURMENT & CONSTRUCTION (EPC) OF KARACHI LAHORE MOTORWAY (KLM): ABDUL HAKEEM-LAHORE SECTION (230 KM) being financed by Government of Pakistan under National Motorway (hereinafter referred to as "the Project");





鉴于巴基斯坦国家公路局（以下称为“业主”），宣布对卡拉奇至拉合尔（KLM）高速公路阿卜杜拉哈基姆段至拉合尔段邀请进行设计、采购、施工（EPC）招标，资金由巴基斯坦政府和公路部项目办提供（以下称为“本项目”）；

WHEREAS the Parties are desirous of submitting the Bid to the Client for the Project as a joint venture ("the Bid") for any and all of the Work as a joint venture.

鉴于双方渴望就该工程组成联合体，向业主递交投标文件，并作为一个联合体进行所有和必须的工作。

WHEREAS the Parties have, therefore, decided to form a joint venture called as "CR20G-ZKB KLM JOINT VENTURE" ("the Joint Venture") and submit the Bid to the Client in the name of the Joint Venture for the performance of the Work under the Project and in the event of the Work being awarded by the Client to the Joint Venture, to sign an EPC Contract with the Client in the name of the Joint Venture ("the Contract").

鉴于双方已经决定组成联合体，联合体名称为"CR20G-ZKB KLM JOINT VENTURE"（“联合体”），并以联合体名义递交投标文件并履行工程，如果业主授予联合体本项目，双方将以联合体名义同业主签订 EPC 合同（“合同”）

WHEREAS this Agreement shall serve as the basis of the mutual understanding between the Parties, for the foregoing purposes.

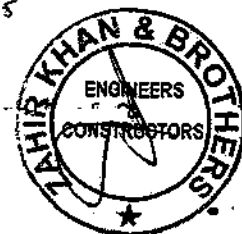
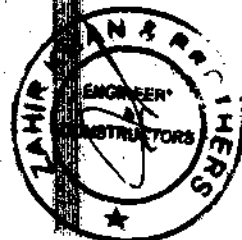
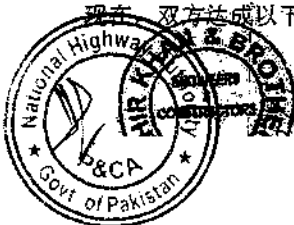
鉴于上述目的，本协议建立在相互理解的基础上。

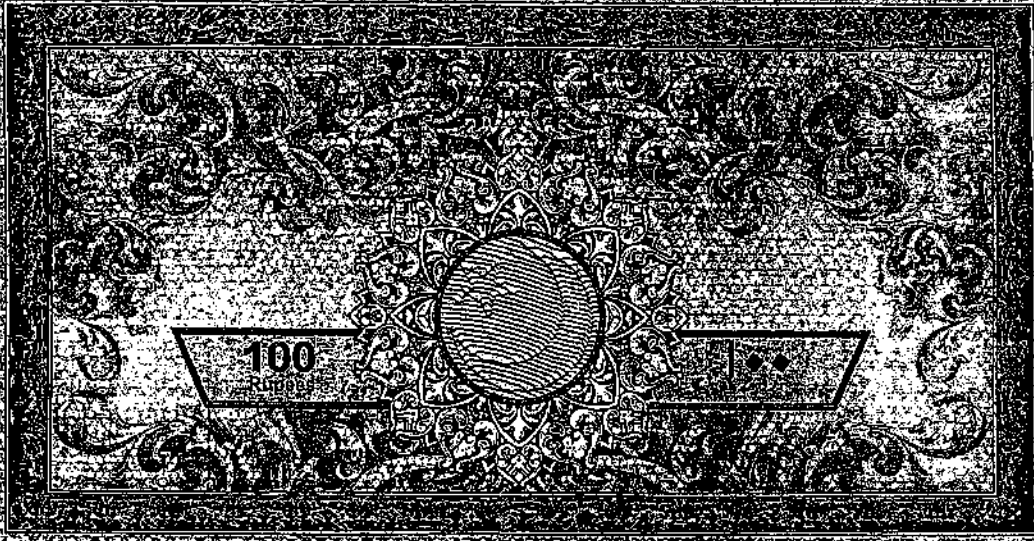
WHEREAS the Parties have agreed to exclusively cooperate with each other on the basis of the above understanding and the principles set forth in this Agreement.

鉴于双方同意在相互理解和本协议规定原则基础上，进行排他性合作。

NOW, the Parties hereby agree as follows:

现在，双方达成以下协议：





**1. Exclusive Cooperation 排他性合作**

The Parties shall cooperate exclusively with each other in good faith and no Party shall enter into any relationship with any person or firm other than the other Party to this Agreement for any purpose in connection with the Project.

双方应相互真诚地排他性合作，除了本协议的另一方，任何一方不得与其他任何人或公司就该工程有关的任何目的建立任何关系。

The above principle shall also apply for the affiliates and subsidiaries of the Parties.

以上原则也应适用于缔约方的分支机构和子公司。

**2. Proposal Preparation 投标文件编制**

Each Party shall bear and pay its own expenses for the preparation of the Bid, up to the award of the Contract. Neither of the Parties shall be entitled to any claim against the other Party, whether direct or indirect, actual or contingent and shall each bear in full, the consequences of the costs and expenses they have individually incurred and/or the losses they have suffered, except for cases of gross negligence or willful misconduct, in respect thereof.

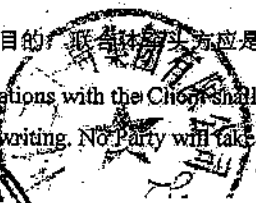
每一方应承担和支付投标文件编制的费用，直到项目中标。除了重大过失或故意不当行为，任何一方都无权向另一方要求赔偿，无论直接或间接，实际的或偶然的，应全额承担他们各自的成本和费用或他们遭受的损失。

**3. Leader of the Joint Venture and Coordination with the Client 联合体牵头方和业主协调**

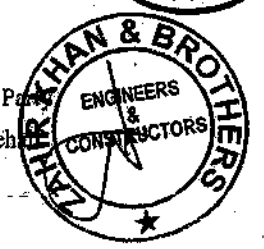
For the purpose of the Agreement and the Contract, the leader of the Joint Venture shall be CR20G ("the Leader").

对于该协议和合同的目的，联合体牵头方应是 CR20G("牵头方")。

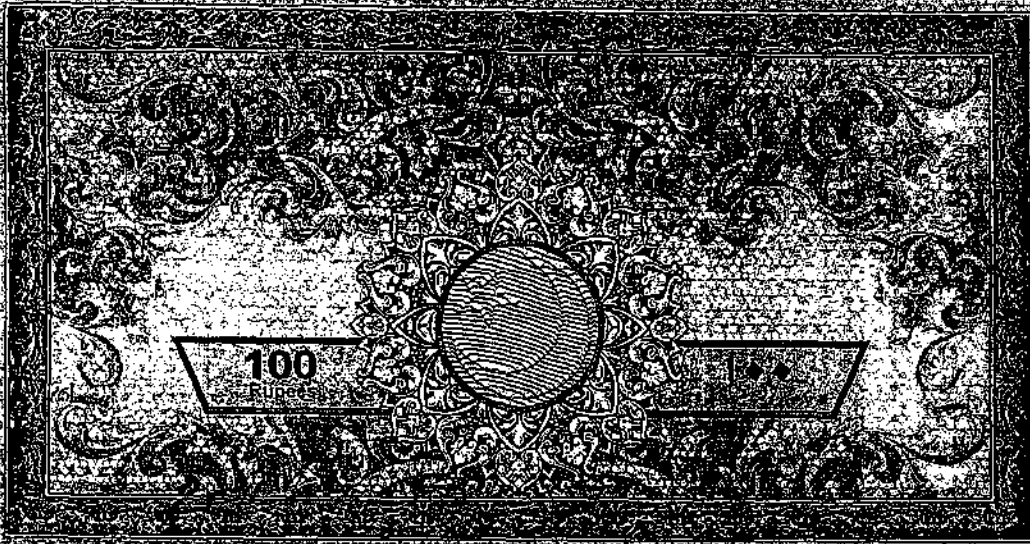
In all matters, the negotiations with the Client shall be jointly conducted by the Parties, unless a Party shall otherwise be authorized in writing. No Party will take any decision or make any commitment on behalf of the other Party.



15-6-15







of the other Party, without the prior written consent of the other Party. Following are the authorized representatives of the Joint Venture:

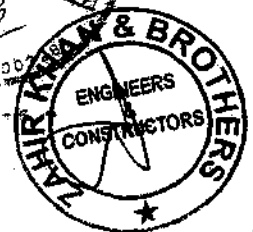
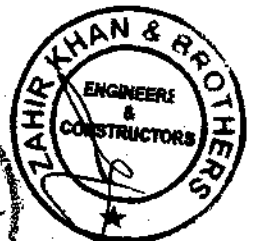
- 1. Mr. Song Rongjun (Passport No: P01675948) from CR20G,
- 2. Mr. Gu Hejun (Passport No: P01675949) from CR20G,
- 3. Mr. Zahir Khan (Passport No: JS 4106813 ) from ZKB,
- 4. Mr. Mohabat Khan (Passport No: MA 4102632 ) from ZKB.

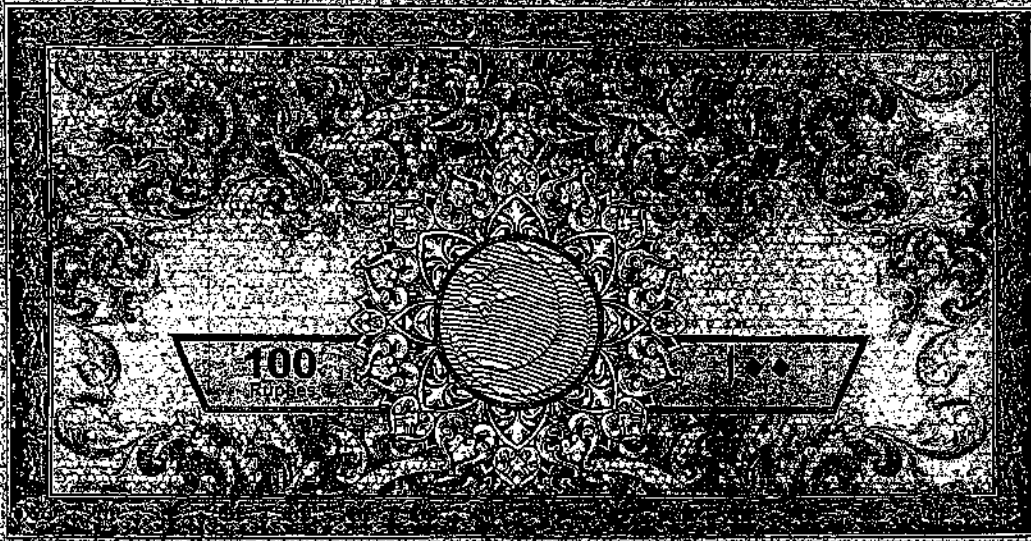
原则上，同业主的协商应由双方共同进行，除非一方书面授权另一方。未经另一方事先书面同意，任何一方不得代表另一方做出决定或承诺。以下人员为联合体的授权代表：

- 1. 宋荣军先生（护照号：P01675948）来自中铁二十局集团
- 2. 顾和军先生（护照号：P01675949）来自中铁二十局集团
- 3. Zahir Khan 先生（护照号：Passport No: JS 4106813 ）来自 ZKB
- 4. Mohabat Khan 先生（护照号：Passport No: MA 4102632 ）来自 ZKB

The relationship between the Parties being strictly limited to the purposes of this Agreement, nothing herein contained shall be construed to create a general partnership or any other continuing relationship or commitment among the Parties. In no event shall the Parties consider the Joint Venture and/or this Pre-bid Agreement to be, or in any way act as though it were, a corporation, partnership or any other form of entity having any independent legal entity whatsoever.

双方关系仅严格限于该协议的目的。所载条款不得解释为双方建立普遍的合作关系或任何持续性关系或承诺。在任何情况下，双方不得认为该联合体和/或该预投标协议，或者以任何方式行为好像是，一个公司、合伙企业或者任何形式的具有独立的法律实体。





4. Participation 参与份额

The percentage of participation of the Parties in the Joint Venture shall be as follows:

联合体各方参与份额比例如下:

CR20G - 70%

ZKB - 30%

5. Guarantees and Liabilities 担保责任

Each Party shall indemnify and hold harmless the other Party, for any claims and/or costs incurred as a result of the information, data, specifications and quantities it has furnished to the other Party.

每一方应对由于提供给另一方的信息、数据、规范和工程量造成的任何索赔和/或承担费用进行赔偿, 不损害另外一方。

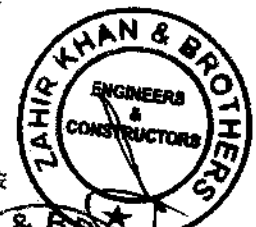
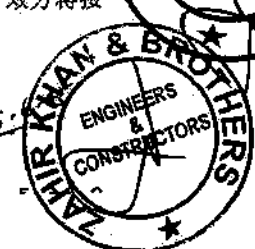
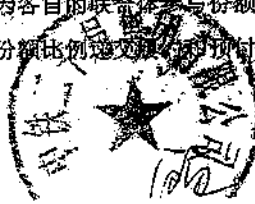
Each Party shall be responsible and be liable for the guarantees and undertakings relevant to its own scope of works. However, the Parties shall be jointly and severally liable towards the Client in respect of the execution of the Works under the Projects to the extent required under the Contract.

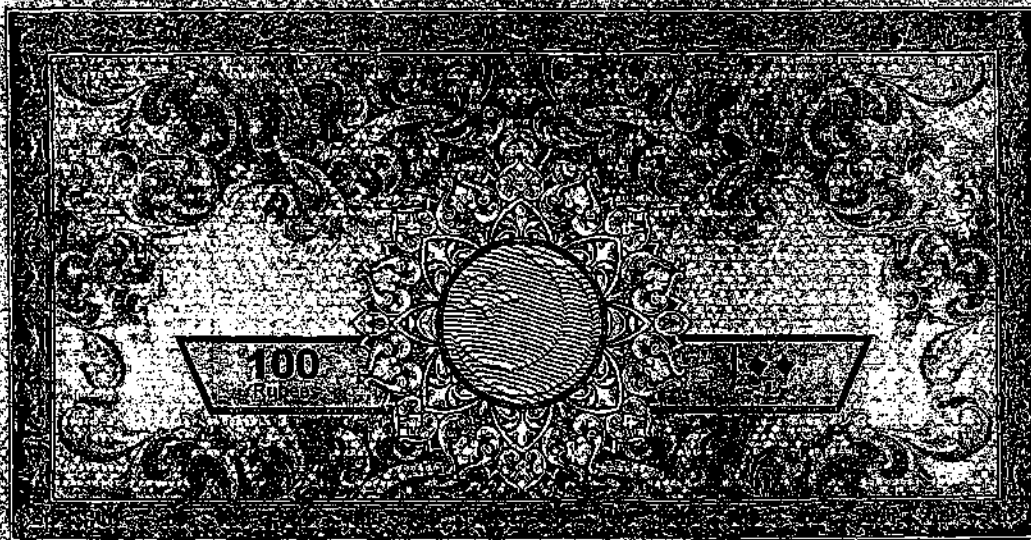
每一方应对有关各自工作范围的担保和承诺负责。然而, 双方应就合同要求范围内的工程项下的项目执行对业主承担连带责任。

6. Bonds and/or Guarantees 保证金和/或担保

Each Party shall submit the bid bonds, and/or letters of guarantees, as may be required by the tender documents, for its own participation in the Joint Venture. The Performance and the Advance Payment Bonds will be submitted by the Parties in proportion to their respective percentage of participation in the Joint Venture.

每一方应按照招标文件要求为各自的联合参与份额递交投标保证金, 和/或保函。双方将按其在联合体中按各自的参与份额比例递交履约和预付款保证金。





**7. Taxes, Duties, Levies 税金、关税、征税**

The Parties shall be fully responsible and pay for any taxes, duties, levies, etc. and any and all other similar charges and expenses in connection with their own portion whether arising in or outside Pakistan.

双方应全面负责，并支付与各自部分相关的任何税金、关税、征税等，以及任何和所有类似费用和支出，无论是否在巴基斯坦或国外。

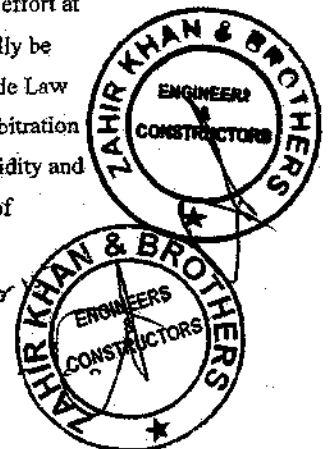
**8. Consequential Damages 相应的损失赔偿**

In no way the Parties will be liable to each other for loss of profit or any other indirect costs and/or consequential damages. However, any breach of the contractual obligations of a Party resulting in a breach of the other Party of its respective obligations vis-a-vis the Client or third parties and resulting in damage shall not be considered as indirect or consequential damage.

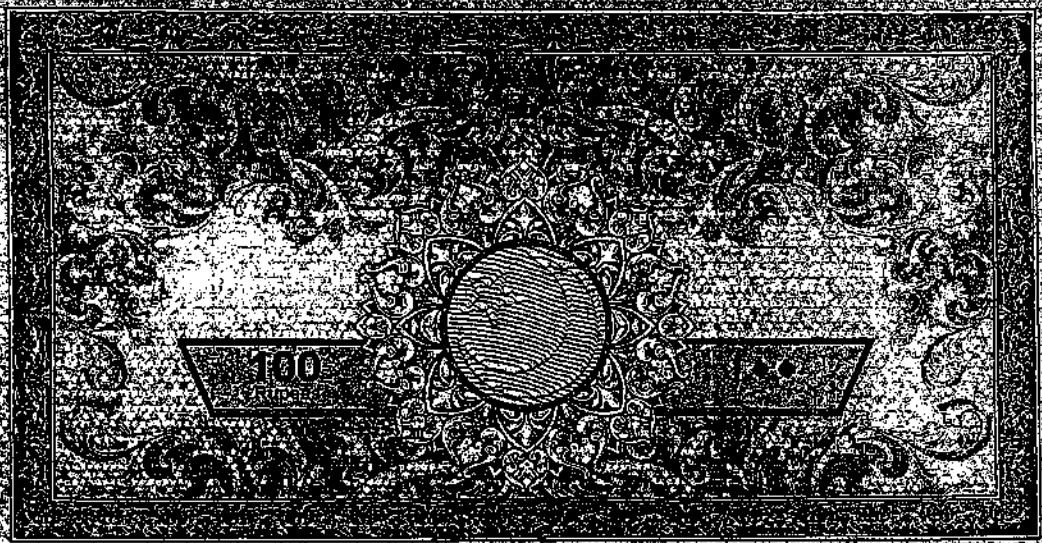
双方无法对彼此的利润损失或任何其他间接成本和/或相应的损失赔偿。然而，一方任何违反合同义务导致另一方违反关于业主或第三方的各自义务并导致损害的，不应视为间接或相应的损害。

**9. Arbitration and Governing Law 仲裁和适用法律**

Any dispute, controversy or claim arising out of or relating to this Agreement or the breach, termination or invalidity thereof, shall be settled by an amicable effort of the Parties, such effort shall be deemed to have failed when one Party so notifies the other Party in writing. If the effort at settlement has failed, then all disputes arising in connection with the Agreement shall finally be referred to the Rules of Arbitration of United Nations Commission on International Trade Law ("UNCITRAL") by arbitrator(s) appointed in accordance with those rules. The place of arbitration shall be in Singapore, and the arbitration shall be conducted in English Language. The validity and performance of this Agreement shall be governed in all respects by the substantive Laws of Singapore. The decision of the Arbitrator shall be binding on the Parties.







本协议或及其违约、终止或无效所产生或有关的任何争议、纠纷或索赔，应由双方友好努力解决，当一方书面通知另一方时，视为该努力失败。如果争议解决的努力失败，那么本协议引起的所有争议应最终将根据联合国委员会国际贸易仲裁法（“联合国国际贸易法委员会”），由按照这些规则指定的仲裁员来裁决。仲裁地点应设在新加坡，仲裁应以英文进行。本协议的效力和履行，应在所有方面由新加坡的实体法管辖。仲裁员的裁决对双方均有约束力。

**10. Confidentiality 保密**

All documentation and information provided in connection with this Agreement and the execution of the Contracts shall be treated in a confidential manner and shall not be used for any application other than that covered by this Agreement.

所有与本协议和合同执行相关提供的文件和信息应以保密的方式处理，不应用于除本协议涵盖的其他任何应用。

**11. Assignment 转让**

No Party may assign any of its obligations or liabilities under this Agreement or the Contracts to any party, which is not a subsidiary or an affiliated company, without the prior written consent of the other Party, which consent shall not be unreasonably withheld.

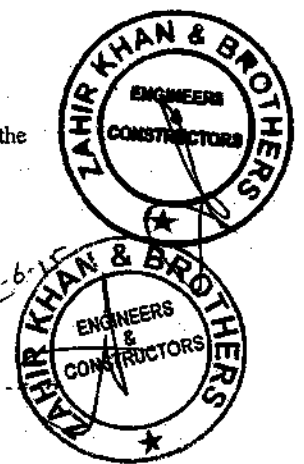
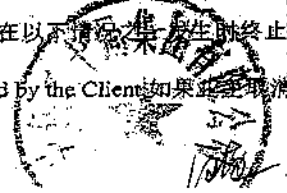
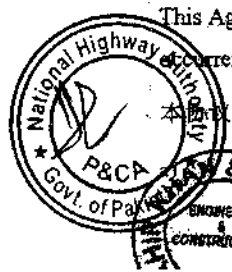
未经另一方不得被无理拒绝的事先书面同意，任何一方不可转让本协议或本合同的任何义务或责任给非子公司或附属公司的一方。

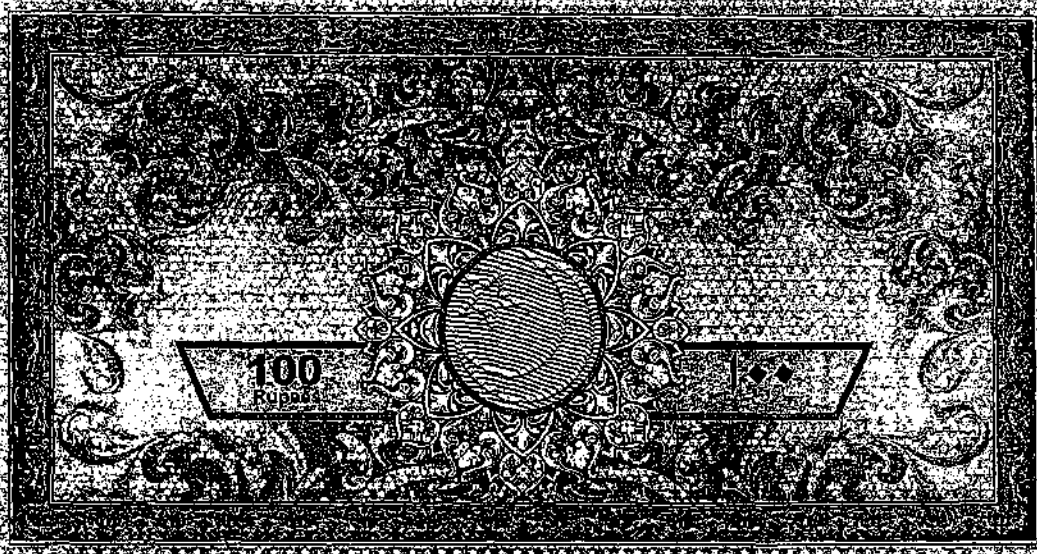
**12. Validity and Termination 有效性和终止**

This Agreement shall be effective as of the date first herein above entered and terminate upon the occurrence of any one of the following events:

本协议自签署之日起生效，在以下情况之一发生时终止：

Bids are cancelled by the Client 如果此等取消招标





b) If the Projects are awarded to another party 如果工程授予其他方。

13. This Agreement is made into three copies, one for each Party, and the third one attached in tender documents which submitted to Employer, comes into effect upon the signatures of the Parties' authorized representatives.

本协议一式三份由双方授权代表签署，双方各执一份，另一份附在标书中递交给业主。

14. This Agreement is written in both Chinese and English, and the English shall prevail in case of any dispute.

本协议为中、英双语版，如有任何争议，应以英文为准。

In witness whereof, CR20G and ZKB has signed this Agreement on the day and year first entered hereinabove.

特此见证，CR20G 和 ZKB 在以上日期签署本协议。

CHINA RAILWAY 20 BUREAU GROUP CORPORATION  
中铁二十局集团有限公司



*Handwritten signature of Gu Hejun*

GU HEJUN 顾和军

Authorized Signatory 授权人签字

ZAHIR KHAN & BROTHERS  
查希尔·汗兄弟公司

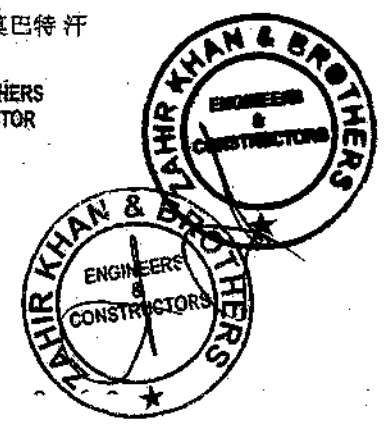
*Handwritten signature of Muhabat Khan*

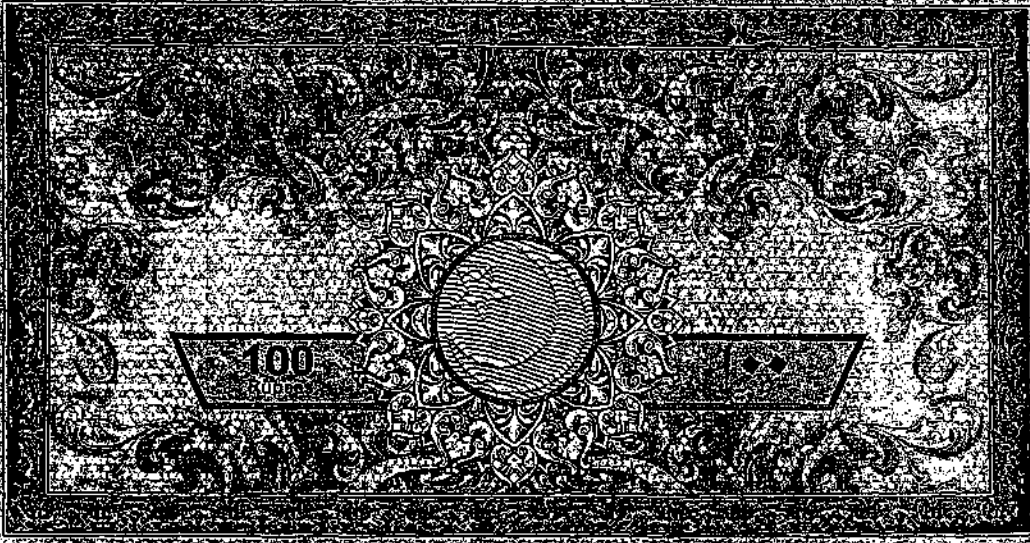
MUHABAT KHAN 莫巴特汗

ZAHIR KHAN & BROTHERS  
ENGINEERS & CONTRACTOR

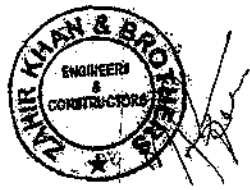


ATTESTED

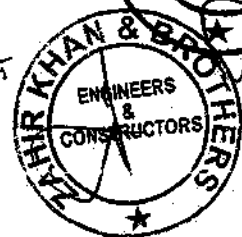




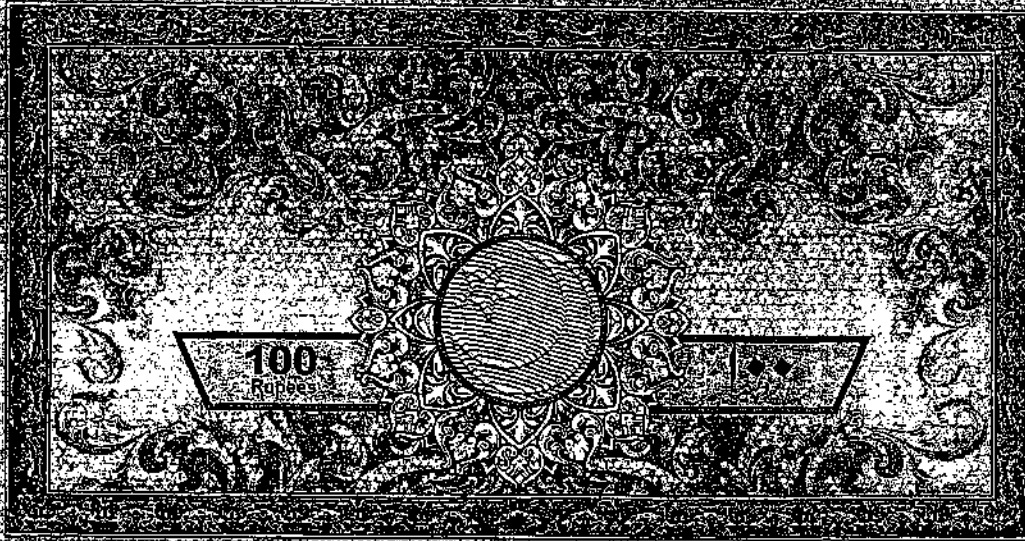
*only for Value*



ATTESTED



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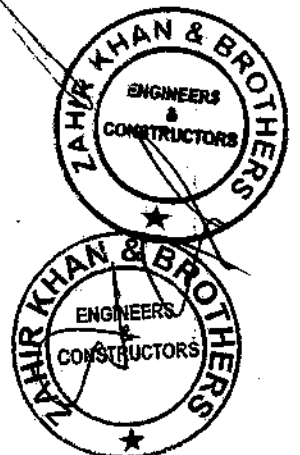
*only for Value*



ATTESTED



15-6-15



# Zahir Khan & Brothers

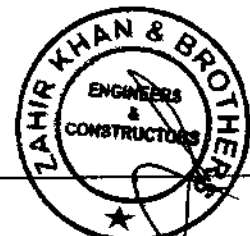
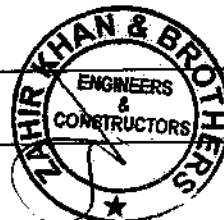


## Form EXP – 1: Contracts of Similar Size and Nature

Fill out only (1) form per contract.

The exchange rate to be used to calculate the value of the contract for conversion to a specific currency shall be the selling rate of the borrower's national bank on the date of the contract.

Contract of Similar Size and Nature	
Contract No. 2 of 3	<b>Contract Identification:</b> Construction of Hassanabdal – Havelian Section of E-35-III: Sarai Saleh to Simlaila (Km 39+611 to Km 58+711)
Award Date: Dec - 2015	Completion Date: Sep 2019
Total Contract Amount	PKR 13,300,406,150 (@ 151.34) 87,884,288 USD
If partner in a Joint Venture or subcontractor, specify participation of total contract amount	Percent of Total: 50% 43,942,137 USD Amount: PKR 6,650,203,075
Employer's name Address Telephone number Fax number E-mail	National Highway Authority, 28 Mauve Area, G-9/1, Islamabad Phone No. 051-9232727 Fax No. 051-9250419
Description of the Similarity in Accordance with Criterion 2.4.1 of Section 3 (Evaluation and Qualification Criteria)	
The similarity of the Bidder's participation shall be based on :  1. the physical size 2. nature of works 3. complexity, methods 4. technology or 5. other characteristics	<b>Scope of Work:</b>  19 Kilometer Construction of Expressway Construction of Hassanabdal – Havelian Section of E-35-III: Sarai Saleh to Simlaila (Km 39+611 to Km 58+711) Interchanges, Toll Plazas, etc.





26 August, 2020  
Dohwa/NHA/E-35/2020/73/2

M/s Limak – ZKB (JV),  
ZKB Camp, Toot Mehra,  
Near 2 Naliya Stop,  
Sarai Saleh

Project: Construction of Hassanabdal – Havelian Section of E-35 – ICB-E-35-III: Sarai Saleh to Simlaila (Km 39+611 to Km 58+711)

Subject: Issuance of Taking Over Certificate for Part Works Km 5+000 to Km 17+012 under Sub-Clause-10.1, COC

Ref: 1. No. 2(8)/GM (E-35)/NHA/2020/2824 dated 25 August, 2020  
1. No. LIMAK-ZKB/E-35-III/200420/01 dated 20 April, 2020  
2. No. LIMAK-ZKB/E-35-III/150919/dated 15 September, 2019

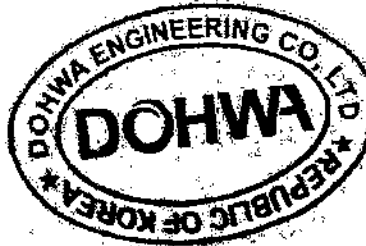
Dear Sir,

Subsequent to the Approval of the Employer, under the provisions of Sub-Clause-3.1(e), COC, Taking Over Certificate for the completed Part Works, from Km 5+000 to Km 17+012, is hereby issued under the provisions of Sub-Clause-10.1, PCC, accordingly.

Copies of the Taking Over Certificate, along with the prescribed attachments and the Employer's above referred letter, are enclosed herewith, for your information and record.

Thanking you, we remain,

Sincerely Yours,



  
LEE Youn Eoo  
Team Leader/The Engineer (E-35)

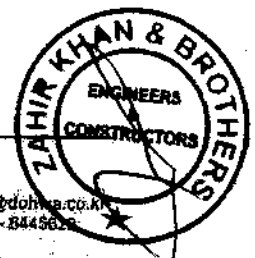
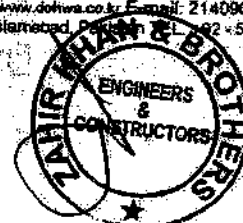
Encl: As above

Copy to:

1. General Manager (E-35), NHA, Burhan
2. Project Director (E-35), NHA, Burhan
3. Resident Engineer, Package-3, Sarai Saleh

DOHWA ENGINEERING CO., LTD.

436 Samsung-ro, Gangnam-gu, Seoul 135-518, Korea. Tel: +82 2 6323 3300. Fax: +82 2 596 5527. www.dohwa.co.kr. E-mail: 214090@dohwa.co.kr  
Local Address: Apartment No. 205-B, Tower-B, Jinnah Avenue, F-6, Centaurus Mall, Islamabad, Pakistan. Tel: +92 351 8445629





**NATIONAL HIGHWAY AUTHORITY**  
**Hassanabdal-Havelian Expressway (E-35)**

**General Manager (E-35)**  
PO Munnoo Nagar, Near Jallo  
Teh. Hassanabdal, District Attock  
Ph. 057-2362032, Fax: 057-2362091

No.2 (8)/GM (E-35)/ NHA/2020/2824

25<sup>th</sup> August, 2020

**Mr. LEE Youn Eoo**  
Team Leader/The Engineer (E-35)  
M/s Dohwa.  
Burhan.

Subject: HASSANABDAL - HAVELIAN EXPRESSWAY (E-35) PACKAGE-III  
SARAI SALEH TO HAVELIAN (KM 05+000 TO KM 17+012)  
Issuance of Taking over Certificate under Sub-Clause 10.1 COC

Ref: Your office letter No.Dohwa/NHA/E-35/2020/7189 dated 24<sup>th</sup> April, 2020.

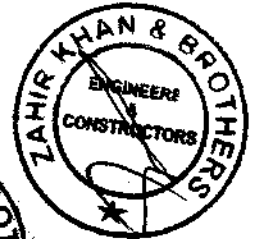
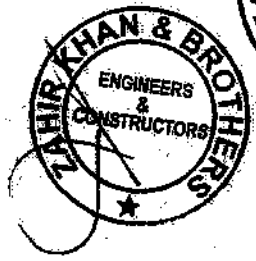
Please be informed that Worthy Chairman NHA in the capacity of Employer has very kindly accorded approval under Clause 3.1(e) of Particular Conditions of Contract for issuance of Taking over Certificate in respect of work completed under contract for Package-3 "Shahi Maqsood to Havelian [Km 05+000 to Km 17+012]" of E-35 project.

2. You are therefore requested to proceed further with provision under Clause 10.1 of Particular Conditions of Contract, please.

*(Signature)*  
25/8/2020  
**(JAHANGIR AHMAD)**  
General Manager (E-35)

- C.C**
- Member (North MWs), NHA, Burhan.
  - PD (E-35) NHA, Burhan.
  - File.

**RECEIVED**  
M/S DOHWA ENGINEERING  
25 AUG 2020  
Daily # 5728  
Smp.





**NATIONAL HIGHWAY AUTHORITY**  
**CONSTRUCTION OF HASSAN ROAD - HAVELIAN SECTION OF E-85 (CB-E85-11)**  
 Sarai Sahib to Sindulla (Km. 39+811 to Km 58+711)  
**TAKING OVER CERTIFICATE (TOC)**  
**UNDER CLAUSE 10.1 OF THE CONDITIONS OF CONTRACT**

**IDENTIFICATION**

**Project Name:** Construction of Hassan Road Havelian Section of E-85 (CB-E85-11) Sarai Sahib to Sindulla (Km. 39+811 to Km. 58+711)  
**Contract No.:** P.W.D. Sarai Sahib to Sindulla (Km. 39+811 to Km. 58+711)  
**Contractor:** M. TAHIR KHAN & BROTHERS (Pvt.) Ltd., 9, Durrani Road, Faisalabad and TAHIR KHAN & BROTHERS (Pvt.) Ltd., Faisalabad  
**Project Manager:** Mr. Fawaz Ahmed  
**Project Director:** Mr. Fawaz Ahmed

**CERTIFICATION**

**Contract No.:** P.W.D. Sarai Sahib to Sindulla (Km. 39+811 to Km. 58+711)  
**Date of Completion:** 23<sup>rd</sup> September 2019  
**Location of work completed:** As per Attachment 'A'  
**Contractor's Declaration Date of Completion:** 23<sup>rd</sup> September 2019  
**Defect Liability Commencement Date:** 11<sup>th</sup> September 2019  
**Defect Liability Period:** 180 Days  
**Defect Liability Expires on:** 07<sup>th</sup> September 2020  
**Taking Over/Completion Review Committee Members:**  
 In Attendance at Completion: In Absentia:  
 (a) General Manager (E-85) (i) The Engineer (Technical) Engineer (Contract Manager) (Completion) and  
 (ii) Project Director (E-85) (ii) Site Staff/Authorized Representative (iii) Team  
 (iii) Director (Maintenance) (E-85) (iv) District Engineer (E-85)  
 (iv) District Engineer (E-85) (v) DD (Construction) (E-85) (E-85)

**THIS CERTIFICATION DOES NOT SIGNIFY ACCEPTANCE OF THE WORK. THE PURPOSE IS TO ESTABLISH THE DATE IN RELATION TO DELAY DAMAGES AND FOR COMMENCEMENT OF THE DEFECT LIABILITY PERIOD.**

I hereby declare that the Project "Construction of Hassan Road - Havelian Section of E-85 - (CB-E85-11) Sarai Sahib to Sindulla (Km. 39+811 to Km. 58+711)" has been completed in accordance with the contract documents. All the outstanding works are listed in the Attachment 'B' and defective works are listed in the Attachment 'C'. I hereby undertake on behalf of the contractor M. TAHIR KHAN & BROTHERS (Pvt.) Ltd. and TAHIR KHAN & BROTHERS (Pvt.) Ltd. to rectify the outstanding works and/or carry out the defective work during the Defect Liability Period as listed in Attachment 'B' and Attachment 'C' as per P.W.D. Sarai Sahib to Sindulla (Km. 39+811 to Km. 58+711) Part A - Contract Data, S&B 001-1.1.1.7.

*[Signature]* Date: \_\_\_\_\_  
 Contract No. / Contractor's Authorized Representative

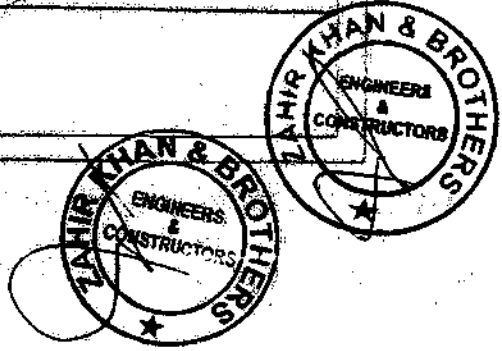
The Engineer (Technical) has reviewed the Project Construction Progress Reports and the Project Site and is satisfied that the Project is Complete except for the "Defect Liability" obligations, listed in the Attachments 'B' & 'C'.

*[Signature]* Team Leader (E-85) (i) M. TAHIR KHAN & BROTHERS (Pvt.) Ltd.  
*[Signature]* (ii) M. TAHIR KHAN & BROTHERS (Pvt.) Ltd.  
*[Signature]* DD (Construction) (E-85) (E-85) National Highway Authority  
*[Signature]* Director (Maintenance) (E-85) National Highway Authority  
*[Signature]* Project Director (E-85) National Highway Authority  
*[Signature]* General Manager (E-85) National Highway Authority

This Taking Over Certificate is valid only for the purpose of completion of the project and is not a guarantee with the provisions of Clause 10.1.1 of the Conditions of Contract, General Conditions with Defect Liability provisions, stated in the Attachment 'B' & 'C'.

*[Signature]*  
 (E-85) (E-85) (E-85)

- CC - Attachments:**
- A) Description of works proposed.
  - B) Outstanding works as per Para. 1.1.1.
  - C) Defective works as per Para. 1.1.1.
  - D) Inspection Committee Report







# NATIONAL HIGHWAY AUTHORITY

Procurement & Contract Administration Section  
28 Mauve Area, G-9/I, Islamabad ☎ 051-9032727, 051-9260419

No. 2(441-3)/GM(P&CA)/NHA/2015/14/0

12<sup>th</sup> October, 2015

M/s LIMAK - ZKB JV  
Plot No. 44, Street No. 11  
I-9/2, Islamabad.  
Fax No. 051-4444499  
Email: zkb\_isb@yahoo.com  
limak@limak.com.tr

Subject: **LETTER OF ACCEPTANCE:**  
**National Trade Corridor Highway Investment Program (Tranche-3)**  
**Construction of Hassanabdal - Havelian Expressway Section of E-35**  
**ICB-E-35-III: Sarai Saleh to Simlailla (Km 39+611 to Km 58+711)**

Reference: Your financial bid opened on 19<sup>th</sup> May 2015.

In accordance with Clause 40.1 of the Instructions to Bidders, undersigned is pleased to inform you the acceptance of your evaluated Bid by the Competent Authority amounting to **Rs. 8,188,128,888/-** (Pakistani Rupees Eight Billion One Hundred Eighty Eight Million, One Hundred Twenty Eight Thousand, Eight Hundred and Eighty Eight Only) with the condition at para 4 below.

2. The aforementioned amount is the "Contract Price" payable in consideration of Execution, Completion and Defects Liability of the Works as prescribed by Contract Documents.

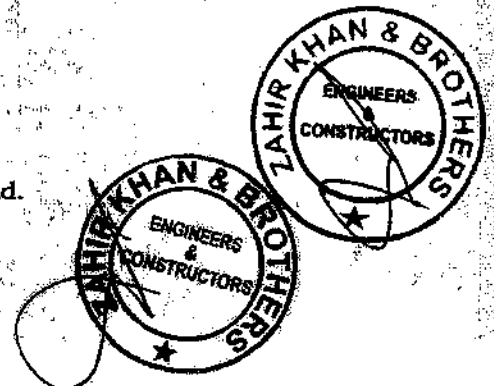
3. You are requested to proceed with Clause 41 & 42 of Instructions to Bidders and to furnish the Performance Security within 28 days in accordance with the Conditions of Contract, using for that purpose, the Performance Security Form included in Section 9 (Contract Forms) of the Bidding Document.

4. Your rates for item Nos. 102a, 102b, 108a, 108bi, 108bii, 108c & 108d were not rational. The rate analysis provided by you is not satisfactory, particularly rate of 108c is extremely high. Therefore, any increase in quantity of 108c will be paid at new rates established by the Engineer as per Clause 3.5 of COC. The Clause 12.3 of COC will not be applicable for this rate.

(MUKHTAR AHMED DURRANI)  
General Manager (P&CA)

**Copy for kind information:**

- Member (Planning), NHA, Islamabad.
- Member (Engg. Coord), NHA, Islamabad.
- Member (Finance), NHA, Islamabad.
- Member (North-Zone), NHA, Peshawar.
- General Manager (EC), NHA, Islamabad.
- General Manager (B&A), NHA, Islamabad.
- Director (Accounts, Aided Projects), NHA, Islamabad.
- SO Technical to Chairman, NHA, Islamabad.
- Asian Development Bank, PRM.



# DOHWA

DOHWA Engineering Co., Ltd.

In association with



ENGINEERING & MANAGEMENT  
SERVICES



PRIME ENGINEERING & TESTING  
CONSULTANTS PVT. LTD.

29 June, 2018

Dohwa/NHA/E-35/2018/5559

M/s Limak – ZKB (JV),  
ZKB Camp, Toot Mehra  
Near 2 Naliya Stop,  
Sarai Saleh.

Project: Construction of Hassanabdal – Havelian Section of E-35 – ICB-E-35-III: Sarai Saleh to Simlaila (Km 39+611 to Km 58+711)

Subject: APPROVAL OF VARIATION ORDER NO. 02

Ref: N.H.A Letter No. 2 (8) / GM (E-35)/NHA/2018/2004 dated 29 June, 2018

Dear Sir,

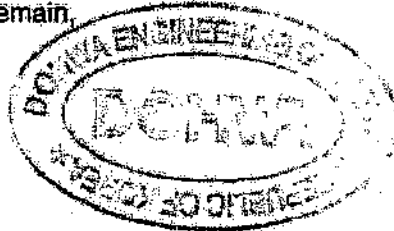
Subsequent to approval by the Employer, notified vide letter referred above, the Variation Order No. 02, is hereby issued under the provisions of Clause-13, COC, with particulars as under:

Original Contract Price	: Rs. 8,188,128,888
Amount of Variation Order No. 01	: Rs 3,595,345,855
Amount of this Variation Order No. 02	: Rs. 1,516,931,407
Revised Contract Price	: Rs. 13,300,406,150
Percentage Increase over Original Contract Price	: 62.44 %
Revised Completion Date	: 12 December, 2018

A copy of the Employer's above referred letter, is enclosed for ready reference.

Thanking you, we remain,

Sincerely Yours,

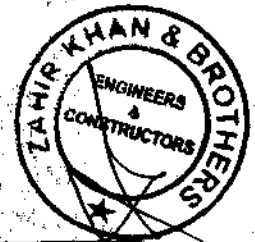


SEOL Jeong Ho  
Team Leader/The Engineer (E-35)

Enclosed: As above

Copy to:

1. General Manager (E-35), NHA, Burhan.
2. Project Director (E-35), NHA, Burhan.
3. Resident Engineer (E-35), Package-III



DOHWA ENGINEERING CO., LTD.

438 Samseong-ro, Gangnam-gu, Seoul 135-510, Korea Tel: +82 2 6323 3303 Fax: +82 2 556 5527 www.dohwa.co.kr E-mail: 214890@dohwa.co.kr

Local Address: Government No. 706-A, 7<sup>th</sup> Floor, F-6, Jinnah Avenue, Centaurus, Islamabad, Pakistan TEL: +92 - 51 - 8445622





**NATIONAL HIGHWAY AUTHORITY**  
**Hassanabdal-Havelian Expressway (E-35)**

**General Manager (E-35)**  
PO Munnoo Nagar, Near Jallo  
Teh. Hassanabdal, District Attock  
Ph. 057-2362032, Fax: 057-2362091

No.2 (8)/GM (E-35)/ NHA/2018/2004

29<sup>th</sup> June, 2018

**Mr. SEOL Jeong Ho**  
Team Leader/The Engineer (E-35)  
**Burhan**

**Subject: HASSANABDAL-HAVELIAN EXPRESSWAY (E-35) ICB-E-35-III, Package-III.**

**APPROVAL OF VARIATION ORDER NO.02**

Reference: Anticipatory approval of Worthy Chairman NHA of minutes of 305<sup>th</sup> Executive Board meeting held on 28<sup>th</sup> June, 2018.

With reference to the above, this is to inform you that NHA Executive Board have very kindly accorded the approval of Variation Order No.2 amounting to Rs.1,516,931,407/- with the revised Contract cost of Rs.13,300,406,150/- which is 62.44% above the original Contract Cost of Rs.8,188,128,888/- with the revised completion date upto 12<sup>th</sup> December, 2018 for Contract No. ICB-E-35-III "Construction of Hassanabdal - Havelian Expressway E-35, Sarai Saleh to Simlaila (Km 39+6.11~Km 58+7.11) Package-III in favour of M/s LIMAK-ZKB (JV).

2. You are therefore, advised to notify the same to the contractor under Clause 13 of C.O.C, please.

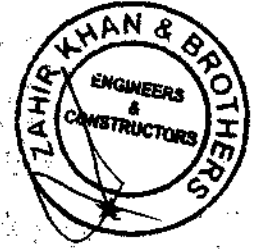
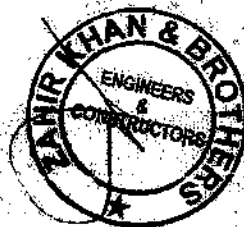
**Encl: Copy of Approved Variation Order No.2**

29/6/18  
**(JAHANGIR AHMAD)**  
General Manager (E-35)

**C.C**

- Member (North MWS), NHA
- PD (E-35) NHA, Burhan.
- Director (Accounts), NHA, Islamabad.
- File

RECEIVED  
29 JUN 2018  
4530  
[Signature]





**NATIONAL HIGHWAY AUTHORITY**  
Office of Project Director (LEBP)

Shahpur Interchange  
Thokar Niaz Baig  
Lahore.  
Ph: 042-99232727  
04<sup>th</sup> November, 2020

No. PD (LEBP)/NHA/ZKB/2020/3133

**TO WHOM IT MAY CONCERN**

**Subject: CONSTRUCTION OF LAHORE EASTERN BYPASS: PACKAGE-I FROM LAHORE RING ROAD TO KALA KHATAI ROAD INCLUDING BRIDGE OVER RIVER RAVI AND LAKHUBHER INTERCHANGE**

**FLOOD WORKS**

The work for construction of Lahore Eastern Bypass from Km 0+000 ~ 11+113 including main bridge (6-Lane) on River Ravi (Package-I) has been awarded to M/s ZKB - Reliable JV. The project has been constructed in River Khadar by considering recommendation of Hydrology report provided by Irrigation Department.

This is to certify that M/s ZKB - Reliable JV has successfully undertaken the work related to River Bed and flood protection works for an amount of Rs. 4,518,430 Million out of Rs. 8,412,461 Million, being the part of Lahore Eastern Bypass Project (LEBP).

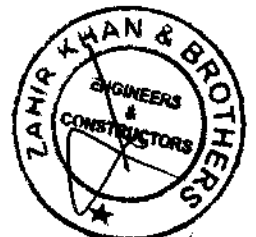
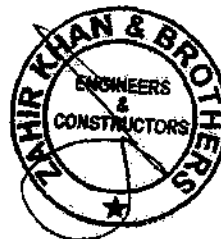
Detail of River Bed and flood Protection works is as under:

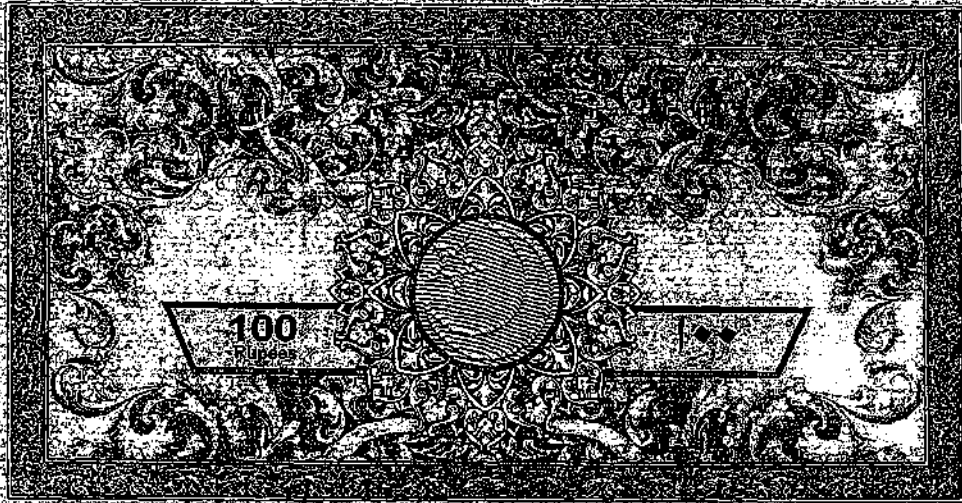
(i) Earth Work	=Rs. 2,506,258,962.00
(ii) Bridge over River Ravi (792-M Long) Excl. Super structure	=Rs. 557,524,561.00
(iii) Guide Banks, apron & stone pitching	=Rs. 853,348,903.00
(iv) Bridge over Shahdara Distributary Excl. Super structure	=Rs. 165,841,957.00
(v) Under passes & Cattle Creeps	=Rs. 435,456,520.00
<b>Total Amount</b>	<b>=Rs. 4,518,430,903.00</b>

Note: The underpasses and Cattle Creeps in the River Khadar, have been constructed by considering the invert level as per Highest Flood Level + 6 feet Free Board as per the recommendation of Irrigation Department, Government of Punjab.

*Qdt*  
*20/11/20*  
(MUHAMMAD IMRAN KHAN)  
Project Director (LEBP)  
NHA, Lahore.

Project Director (L.E.B.P.)  
National Highway Authority  
Lahore.





PRE-BID JOINT VENTURE AGREEMENT

This Pre-bid Joint Venture Agreement is made on this 8<sup>th</sup> day of December, 2014 by and between:

LIMAK CONSTRUCTION INDUSTRY AND TRADE INC. (hereinafter referred to as "LIMAK") a company incorporated in Turkey, by the Company Registration No. 31872 and having its Registered Office at HAFTA SOKAK No. 9 G.O.P. Ankara / Turkey;

And

ZAHIR KHAN & BROTHERS (hereinafter referred to as "ZKB"), a company incorporated in Pakistan having its Registered Office at House 200, Street No.74, F-11/1, Islamabad.

[Hereinafter individually referred to as the "Party" or together as the "Parties", which expression(s) shall be deemed to mean and include its/their respective successor(s) and permitted assign(s)].

WHEREAS the NATIONAL HIGHWAY AUTHORITY (NHA), PAKISTAN (hereinafter referred to as "the Client") has announced Invitation for Bids for Construction of Hassanabdal-Havelian Expressway-35 (E-35) Package-III "Sarai Saleh-Simlaila being financed by Asian Development Bank (ADB) under National Trade Corridor Highway Investment Program (NTCHIP) Pakistan (hereinafter referred to as 'the Project');

1.

WHEREAS the Parties are desirous of submitting the Bid to the Client for the Project as a joint venture ("the Tender") for any and all of the Works as a joint venture.

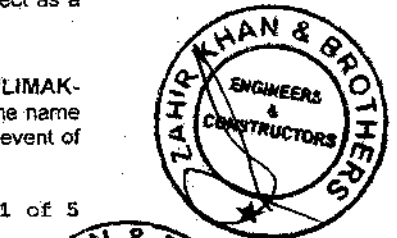
WHEREAS the Parties have, therefore, decided to form a joint venture called as "LIMAK-ZKB JOINT VENTURE" ("the Joint Venture") and submit the Bid to the Client in the name of the Joint Venture for the performance of the Works under the Project and in the event of

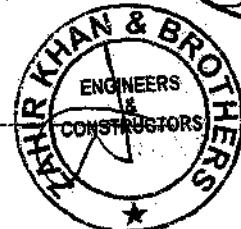
  
**LIMAK**  
İNS. SAN. ve TİC. A.Ş.  
Hafta Sokak No: 9 G.O.P./ANKARA  
Tic. Sic. No: 31872 445 88 00 (10 Haz)

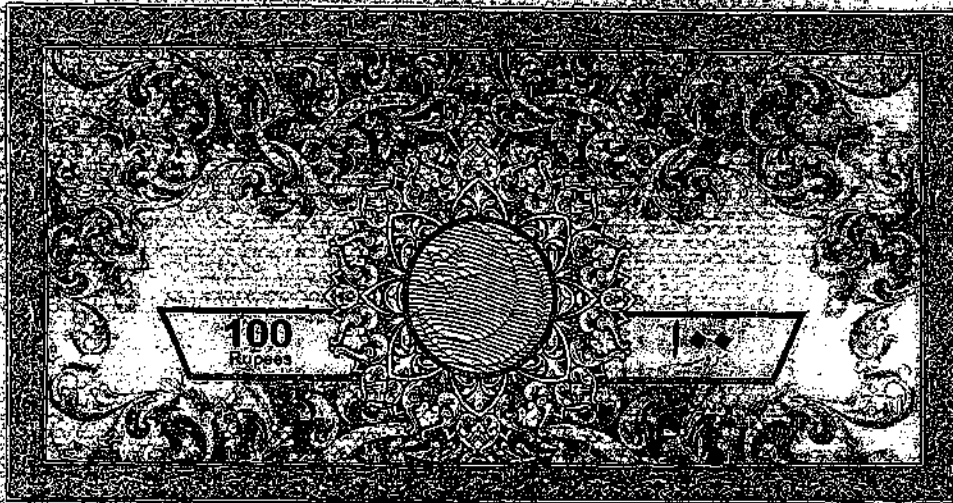
  
ZAHIR KHAN & BROTHERS  
ENGINEERS & CONSTRUCTORS

Page 1 of 5

  
National Highway Authority  
P&CA  
Govt. of Pakistan

  
ZAHIR KHAN & BROTHERS  
ENGINEERS & CONSTRUCTORS

  
ZAHIR KHAN & BROTHERS  
ENGINEERS & CONSTRUCTORS



the Works being awarded by the Client to the Joint Venture, to sign a turnkey contract with the Client in the name of the Joint Venture ("the Contract").

WHEREAS this Agreement shall serve as the basis of the mutual understanding between the Parties, for the foregoing purposes.

WHEREAS the Parties have agreed to exclusively cooperate with each other on the basis of the above understanding and the principles set forth in this Agreement.

NOW, the Parties hereby agree as follows:

1- Exclusive Cooperation

The Parties shall cooperate exclusively with each other in goodfaith and no Party shall enter into any relationship with any person or firm other than the other Party to this Agreement for any purpose in connection with the Project.

The above principle shall also apply for the affiliates and subsidiaries of the Parties.

2- Proposal Preparation

Each Party shall bear and pay its own expenses for the preparation of the Tender, up to the award of the Contract. Neither of the Parties shall be entitled to any claim against the other Party, whether direct or indirect, actual or contingent and shall each bear in full, the consequences of the costs and expenses they have individually incurred and/or the losses they have suffered, except for cases of gross negligence or willful misconduct, in respect thereof.

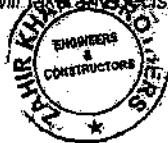
3- Leader of the Joint Venture and Coordination with the Client

For the purpose of the Agreement and the Contract, the leader of the Joint Venture shall be ZKB ("the Leader").

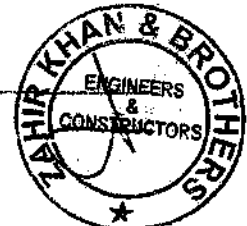
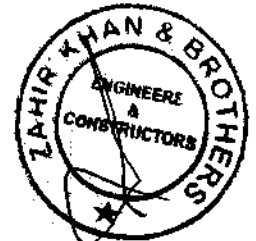
In principle, the negotiations with the Client shall be jointly conducted by the Parties, unless a Party authorises the other in writing. No Party will take any decision or make any commitment

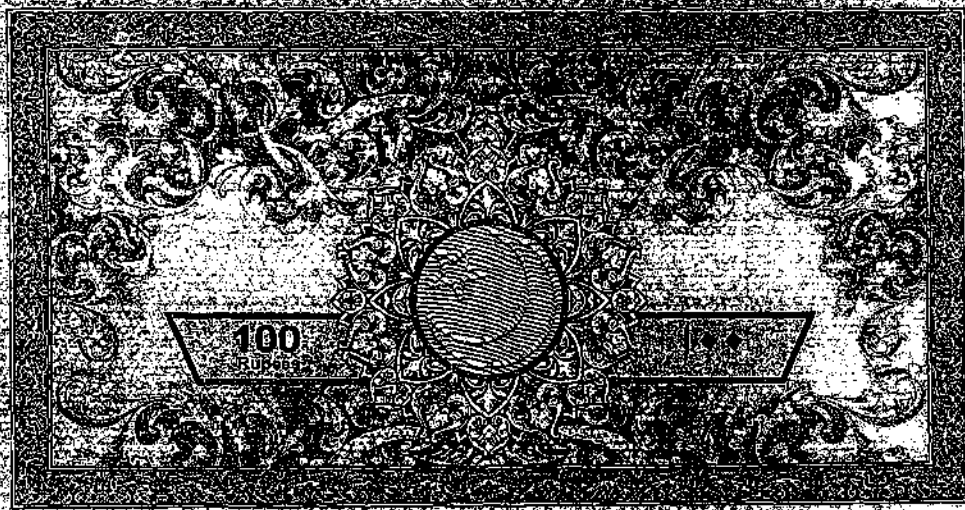


Karachi  
LIMAK  
S.A.N. vs TIC. A.S.  
Sokak No: 6 G.O.P./ANKARA  
0.312 448 88 00 (70 Hat)



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on behalf of the other Party, without the prior written consent of the other Party. Followings are authorized representatives of the JV:-

1. Mr. Turhan SERDAR Bacaksiz, Member Board Limak
2. Mr. A. Koray ERGUN, Manager International Projects Coordination
3. Mr. ZAHIR Khan, Chief Executive ZKB
4. Mr. Muhabat Khan, Director ZKB

The relationship between the Parties being strictly limited to the purposes of this Agreement, nothing herein contained shall be construed to create a general partnership or any other continuing relationship or commitment among the Parties. In no event shall

the Parties consider the Joint Venture and/or this Pre-bid Agreement to be, or in any way act as though it were, a corporation, partnership or any other form of entity having any independent legal entity whatsoever.

**4- Participation**

The percentage of participation of the Parties in the Joint Venture shall be as follows:

LIMAK	-	50%
ZKB	-	50%

**5- Guarantees and Liabilities**

Each Party shall indemnify and hold harmless the other Party, for any claims and/or costs incurred as a result of the information, data, specifications and quantities it has furnished to the other Party.

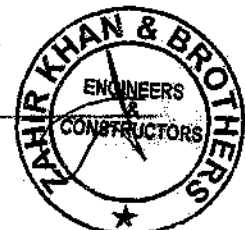
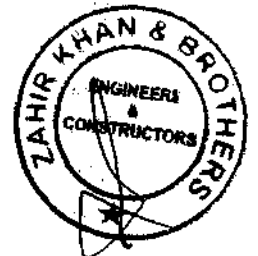
Each Party shall be responsible and be liable for the guarantees and undertakings relevant to its own scope of works. However, the Parties shall be jointly and severally liable towards the Client in respect of the execution of the Works under the Project to the extent required under the Contract.

**6- Bonds and/or Guarantees**

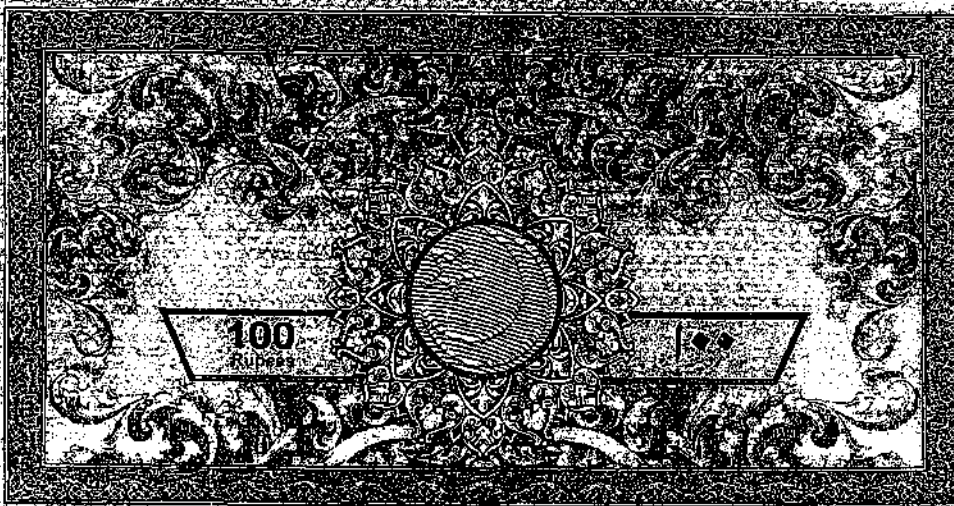
Each Party shall submit the bid bond, and/or letters of guarantees, as may be required by the tender documents, for its own participation in the Joint Venture. The Performance and the



*Koray*  
**LIMAK**  
 INS. SAN. ve TIC. A. S.  
 Hattı Sokak No: 9 G.O.P./ANKARA  
 Tel: 0 312 448 85 00 (10 Hat)







Advance Payment Bond will be submitted by the Parties in proportion to their respective percentage of participation in the Joint Venture.

**7- Taxes, Duties, Levies**

The Parties shall be fully responsible and pay for any taxes, duties, levies, etc. and any and all other similar charges and expenses in connection with their own portion whether arising in or outside Pakistan.

**8- Consequential Damages**

In no way the Parties will be liable to each other for loss of profit or any other indirect costs and/or consequential damages. However, any breach of the contractual obligations of a Party resulting in a breach of the other Party of its respective obligations vis-a-vis the Client or third parties and resulting in damage shall not be considered as indirect or consequential damage.

**9- Arbitration and Governing Law**

Any dispute, controversy or claim arising out of or relating to this Agreement or the breach, termination or invalidity thereof, shall be settled by an amicable effort of the Parties, such effort shall be deemed to have failed when one Party so notifies the other Party in writing. If the effort at settlement has failed, then all disputes arising in connection with the Agreement shall finally be settled under the Rules of Arbitration of United Nations Commission on International Trade Law ("UNCITRAL") by arbitrator(s) appointed in accordance with those rules. The place of arbitration shall be in Geneva, Switzerland and the arbitration shall be conducted in English Language. The validity and performance of this Agreement shall be governed in all respects by the substantive Laws of Geneva, Switzerland. The decision of the Arbitrator shall be binding on the parties.

**10- Confidentiality**

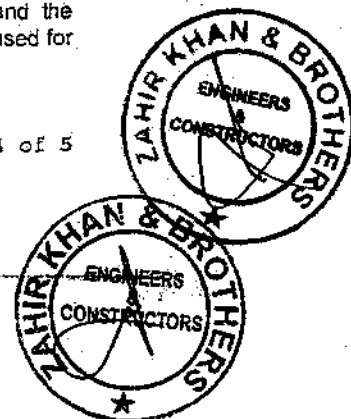
All documentation and information provided in connection with this Agreement and the execution of the Contract shall be treated in a confidential manner and shall not be used for any application other than that covered by this Agreement.



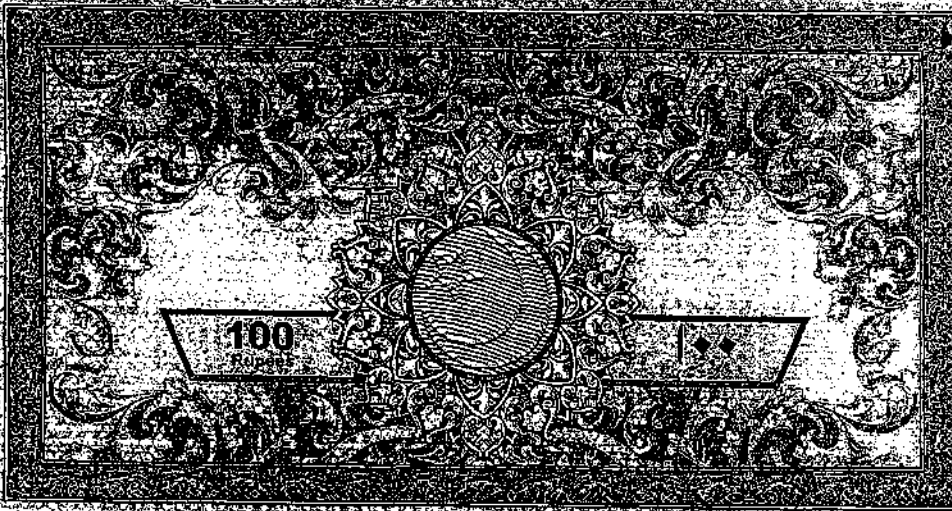
*Karim*  
**LIMAK**  
 S. SAN. ve TIC. A. S.  
 Sokak No: 9 G.D. PANKARA  
 3512 446 88 00 (10 Hat)



*[Handwritten signature]*







**11- Assignment**

No Party may assign any of its obligations or liabilities under this Agreement or the Contract to any party, which is not a subsidiary or an affiliated company, without the prior written consent of the other Party, which consent shall not be unreasonably withheld.


**12- Validity and Termination**

This Agreement shall be effective as of the date first herein above entered and terminate upon the occurrence of any one of the following events:

- a) If the bid is cancelled by the Client;
- b) If the Project is awarded to other party.

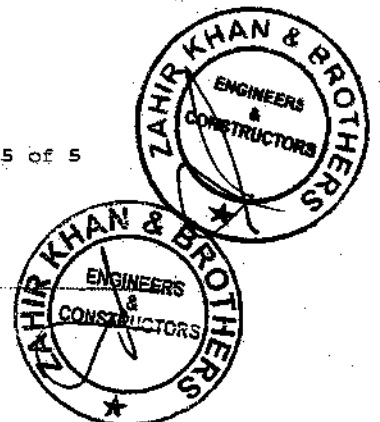
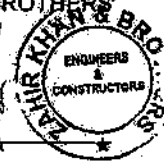
In witness whereof, LIMAK and ZKB has signed this Agreement on the day and year first entered hereinabove.

**LIMAK CONSTRUCTION INDUSTRY  
AND TRADE INC**

  
**LIMAK**  
INS. SAN. ve TIC. A. S.  
Rafia Sokak No: 9 G.3. B. ANKARA  
T.C. 06 100 000 000 000 000 000  
**A. Koray ERGUN**  
Authorized Signatory

**ZAHIR KHAN & BROTHERS**

  
**MOHABAT KHAN**  
DIRECTOR

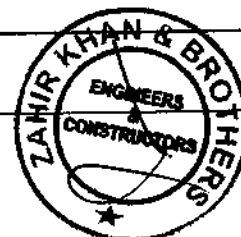
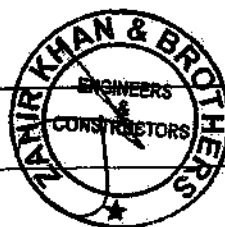


## Form EXP – 1: Contracts of Similar Size and Nature

Fill out only (1) form per contract.

The exchange rate to be used to calculate the value of the contract for conversion to a specific currency shall be the selling rate of the borrower's national bank on the date of the contract.

Contract of Similar Size and Nature		
<b>Contract No. 3 of 3</b>	<b>Contract Identification:</b> Construction of Lahore Eastern Bypass Package – 1 From Lahore Ring Road to Kala Khatai Road Including Bridge over River and Lakhudher Interchange	
<b>Award Date: Jan – 2017</b>	<b>Completion Date: Oct – 2019</b>	
<b>Total Contract Amount</b>	PKR 8,412.461 Million	(@ 151.34) <b>55.586 (Million) USD</b>
<b>If partner in a Joint Venture or subcontractor, specify participation of total contract amount</b>	<b>Percent of Total: 60%</b>	<b>33.351 (Million) USD</b> Amount: PKR 5,047.477 Million
<b>Employer's name Address Telephone number Fax number E-mail</b>	National Highway Authority, 28 Mauve Area, G-9/1, Islamabad Phone No. 051-9232727 Fax No. 051-9250419	
Description of the Similarity in Accordance with Criterion 2.4.1 of Section 3 (Evaluation and Qualification Criteria)		
<p><b>The similarity of the Bidder's participation shall be based on :</b></p> <ol style="list-style-type: none"> <li>1. the physical size</li> <li>6. nature of works</li> <li>7. complexity, methods</li> <li>8. technology or</li> <li>9. other characteristics</li> </ol>	<p><b>Scope of Work:</b></p> <p><b>Construction of Lahore Eastern Bypass Package – 1 From Lahore Ring Road to Kala Khatai Road Including Bridge over River and Lakhudher Interchange</b></p>	



# Zahir Khan & Brothers



## Form EXP – 2: Construction Experience in Key Activities

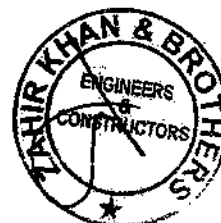
Fill out one (1) form per contract.

Each Bidder must fill out this form.

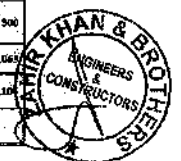
If complied by Specialist Subcontractor, each Specialist Subcontractor must fill out this form and provide the Specialist Subcontractor's name:

Specialist Subcontractor:                     N/A                    

Contract with Similar Key Activities	
<b>Contract No 01 of 05</b>	<b>Contract Identification</b> Construction of Karachi Lahore Motorway (KLM) Section III: Lahore Abdul Hakeem (230 Km)
<b>Award Date</b> Dec – 2015	<b>Completion Date</b> March – 2019
<b>Total Contract Amount</b>	PKR 148,654,427,238 (@ 151.34) 982,254,706 USD
<b>If Partner in a Joint Venture or Subcontractor, specify participation of total contract amount</b>	<b>Percent of Total</b> 30%  294,676,411.86 USD Amount: PKR 44,596,328,171
<b>Employer's name</b> <b>Address</b> <b>Telephone number</b> <b>Fax number</b> <b>E-mail</b>	National Highway Authority, 28 Mauve Area, G-9/1, Islamabad Phone No. 051-9232727 Fax No. 051-9250419
<b>Description of the Key Activities in Accordance with Criterion 2.4.2 of Section 3 (Evaluation and Qualification Criteria)</b>	
<b>Construction experience is required in the following key activities:</b>	
<b>Lot – 1:</b> Embankment 656,000 Cu.m / in any one Year	3,768,771 Cu.m / Year
Sub-Base / Base Course 275,000 Cu.m / in any one Year	1,934,433 Cu.m / Year
Asphaltic Concrete Pavement 18,100 Cu.m / in any one Year	122,732 Cu.m / Year
Concrete (for bridges) 63,000 Cu.m / in any one Year	56,471 Cu.m / Year



Sl. No.	Description	2016												2017												
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	
<b>Enbankment</b>																										
1	Construction of Karachi Lahore Motorway (ELM) Section-II Lahore Abdul Hakeem (230 Km)																									
2	Construction of Hassanabadi - Havelian Section of E-35-III: Sarai Saleh to Simla																									
3	Lahore Eastern Bypass Package-I (LEBP)																									
4	Upgradation Widening & Improvement of Dhab - Maghkok (Lot-I)																									
5	Lahore Orange Line Metro Train Project Package-II																									
	<b>Total</b>																									
	<b>Year Wise Qty</b>																									
<b>Subbase/Base Course</b>																										
1	Construction of Karachi Lahore Motorway (ELM) Section-II Lahore Abdul Hakeem (230 Km)																									
2	Construction of Hassanabadi - Havelian Section of E-35-III: Sarai Saleh to Simla																									
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5	Lahore Orange Line Metro Train Project Package-II																									
	<b>Total</b>																									
	<b>Year Wise Qty</b>																									
<b>Asphaltic Concrete Pavement</b>																										
1	Construction of Karachi Lahore Motorway (ELM) Section-II Lahore Abdul Hakeem (230 Km)																									
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5	Lahore Orange Line Metro Train Project Package-II																									
	<b>Total</b>																									
	<b>Year Wise Qty</b>																									
<b>Concrete</b>																										
1	Construction of Karachi Lahore Motorway (ELM) Section-II Lahore Abdul Hakeem (230 Km)																									
2	Construction of Hassanabadi - Havelian Section of E-35-III: Sarai Saleh to Simla																									
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5	Lahore Orange Line Metro Train Project Package-II																									
	<b>Total</b>																									
	<b>Year Wise Qty</b>																									

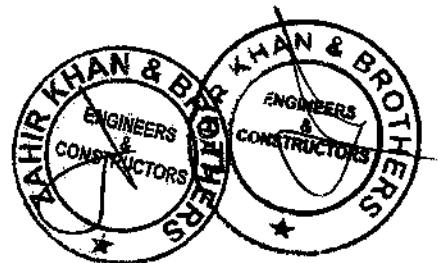




**Construction of Karachi Lahore Motorway (KLM)  
Section-III Lahore Abdul Hakeem (230 Km)**

Embankment	Sub-base/Base Course	Asphaltic Concrete Pavement	Concrete
2,638,615	18,007,900	678,457	1,200
37,859,057		694,974	10,858
1,676,665	3,639,323		4,201
			191
			23,041
			19,549
			45,000
			31,061
			3,515
			74,600
			84,371
			15,102
			28,685
			1,814
			20,122
			61,636
			4,178
			16,697
			50,871
			2,065
			7,038
			74,625
			4,605
			49,938
<b>42,174,337</b>	<b>21,647,223</b>	<b>1,373,431</b>	<b>634,963</b>

ZKB JV Share 30%			
14,761,018	7,576,528	480,701	222,237
Per Year Qty			
3,768,771	1,934,433	122,732	56,741



# Zahir Khan & Brothers



## Form EXP – 2: Construction Experience in Key Activities

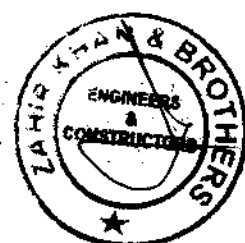
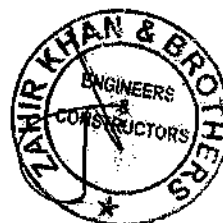
Fill out one (1) form per contract.

Each Bidder must fill out this form.

If compiled by Specialist Subcontractor, each Specialist Subcontractor must fill out this form and provide the Specialist Subcontractor's name:

Specialist Subcontractor: N/A

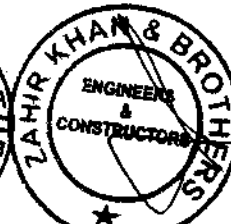
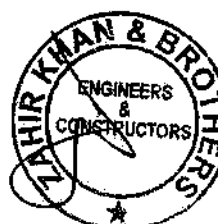
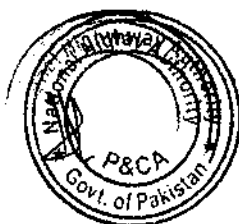
Contract with Similar Key Activities	
<b>Contract No 02 of 05</b>	<b>Contract Identification</b> Construction of Hassanabdal – Havelian Section of E-35-III: Sarai Saleh to Simlaila (Km 39+611 to Km 58+711)
<b>Award Date</b> Dec – 2017	<b>Completion Date</b> Sep – 2019
<b>Total Contract Amount</b>	PKR 13,300,406,150 (@ 151.34) <b>87,884,288 USD</b>
<b>If Partner in a Joint Venture or Subcontractor, specify participation of total contract amount</b>	<b>Percent of Total</b> 50% <b>43,942,137 USD</b> Amount: PKR 6,650,203,075
<b>Employer's name</b> <b>Address</b> <b>Telephone number</b> <b>Fax number</b> <b>E-mail</b>	National Highway Authority, 28 Mauve Area, G-9/1, Islamabad Phone No. 051-9232727 Fax No. 051-9250419
<b>Description of the Key Activities in Accordance with Criterion 2.4.2 of Section 3 (Evaluation and Qualification Criteria)</b>	
<b>Construction experience is required in the following key activities:</b>	
<b>Lot – 1:</b> Embankment 656,000 Cu.m / in any one Year	405,151 Cu.m / Year
Sub-Base / Base Course 275,000 Cu.m / in any one Year	16,751 Cu.m / Year
Asphaltic Concrete Pavement 18,100 Cu.m / in any one Year	7,385 Cu.m / Year
Concrete (for bridges) 63,000 Cu.m / in any one Year	24,551 Cu.m / Year



**Construction of Hassanabdal - Havelian  
Section of E-35-III: Sarai Saleh to Simaila**

Embankment	Sub-base/Base Course	Asphaltic Concrete Pavement	Concrete
1,556,667	92,723	50,810	8,727
159,407	71,997	21,805	2,671
1,294,130			4,277
696,694			40,416
277,088			2,042
			25,826
			2,328
			7,859
			1,155
			19,695
			524
			16,849
			19,194
			2,189
			1,849
			36,891
			2,452
			189
			446
			10,470
			1,534
			18,972
			14,393
			468
<b>3,983,987</b>	<b>164,720</b>	<b>72,615</b>	<b>241,414</b>

ZKB JV Share 50%			
1,991,993	82,360	36,308	120,707
Per Year Qty			
405,151	16,751	7,385	24,551





# Zahir Khan & Brothers



## Form EXP - 2: Construction Experience in Key Activities

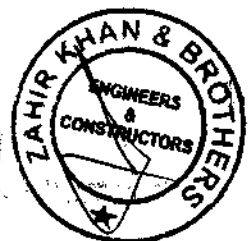
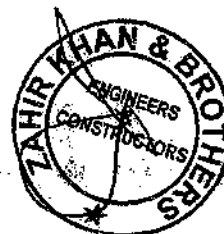
Fill out one (1) form per contract.

Each Bidder must fill out this form.

If complied by Specialist Subcontractor, each Specialist Subcontractor must fill out this form and provide the Specialist Subcontractor's name:

Specialist Subcontractor:                     N/A                    

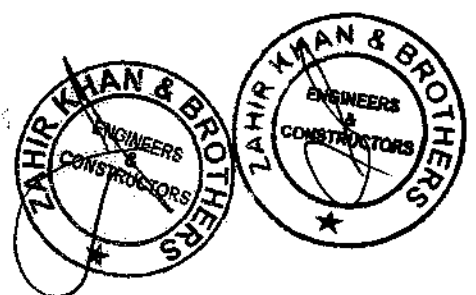
Contract with Similar Key Activities	
<b>Contract No 03 of 05</b>	<b>Contract Identification</b> Construction of Lahore Eastern Bypass Package – 1 From Lahore Ring Road to Kala Khatai Road Including Bridge over River and Lakhudher Interchange
<b>Award Date</b> Jan – 2017	<b>Completion Date</b> Oct – 2019
<b>Total Contract Amount</b>	PKR 8,412,461 Million (@ 151.34) 55.586 (Million) USD
<b>If Partner in a Joint Venture or Subcontractor, specify participation of total contract amount</b>	<b>Percent of Total</b> 60% <b>33.351 (Million) USD</b> Amount: PKR 5,047.477 Million
<b>Employer's name</b> <b>Address</b> <b>Telephone number</b> <b>Fax number</b> <b>E-mail</b>	National Highway Authority, 28 Mauve Area, G-9/1, Islamabad Phone No. 051-9232727 Fax No. 051-9250419
Description of the Key Activities in Accordance with Criterion 2.4.2 of Section 3 (Evaluation and Qualification Criteria)	
<b>Construction experience is required in the following key activities:</b>	
<b>Lot – 1:</b> Embankment 656,000 Cu.m / in any one Year	1,035,373 Cu.m / Year
Sub-Base / Base Course 275, 000 Cu.m / in any one Year	41,604 Cu.m / Year
Asphaltic Concrete Pavement 18,100 Cu.m / in any one Year	9,798 Cu.m / Year
Concrete (for bridges) 63,000 Cu.m / in any one Year	11,618 Cu.m / Year



## Lahore Eastern Bypass Package-I (LEBP)

Embankment	Sub-base/Base Course	Asphaltic Concrete Pavement	Concrete
83,876	134,670	38,617	162
5,874,413	108,021	18,540	1,045
81,390			11,745
			30
			296
			2,304
			1,477
			56
			9,278
			6,960
			798
			284
			2,760
			131
			837
			128
			2,492
			845
			154
			1,262
			5,241
			329
			611
			4,439
			6,073
			1,018
			369
			1,973
			2,645
			530
			13
			122
			1,367
<b>6,039,679</b>	<b>242,691</b>	<b>57,157</b>	<b>67,774</b>

ZKB JV Share 60%			
3,623,807	145,615	34,294	40,664
Per Year Qty			
1,035,373	41,604	9,798	11,618

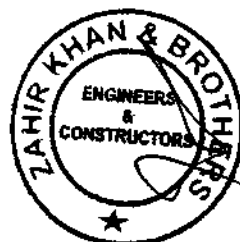


## Equipment Requirements

Using Form EQU in Section 4 (Bidding Forms), the Bidder must demonstrate that it has the key equipment listed below for each lot:

No.	Equipment Type and Characteristics	Minimum Number Required
1	Concrete Batching Plant (35 Cu.m/hr minimum)	1
2	Crane 20 ton	1
3	Concrete Pump	1
4	Concrete Transit Mixer (6 Cu.m Minimum)	6
5	Complete Set of Shuttering & scaffolding (Steel) 100 Sq.m	1
6	Asphalt plant	1
7	Asphalt paver	2
8	Cold Milling Machine	1
9	Rollers (Asphalt and Earthwork)	10
10	Graders	3
11	Dump Trucks	35
12	Wheel Loaders	4
13	Excavators	6
14	Bull Dozers	4
15	Bitumen Sprayers	2
16	Lane Marking Machines	2

Note: The bidder shall furnish on judicial stamp paper an undertaking after the signing of the contract stating that it shall bring the equipment mentioned here-in-above or more to successfully execute and complete the project within the completion period.



## Equipment

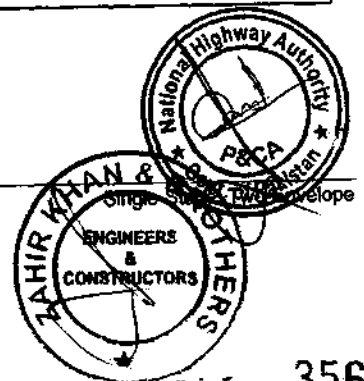
### Form EQU: Equipment

The Bidder shall provide adequate information and details to demonstrate clearly that it has the capability to meet the equipment requirements indicated in Section 6 (Employer's Requirements), using the Forms below. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder.

<b>Item of Equipment</b>	
<b>Equipment Information</b>	Name of manufacturer
	Model and power rating
	Capacity
	Year of manufacture
<b>Current Status</b>	Current location
	Details of current commitments
<b>Source</b>	Indicate source of the equipment <input type="checkbox"/> Owned <input type="checkbox"/> Rented <input type="checkbox"/> Leased <input type="checkbox"/> Specially manufactured

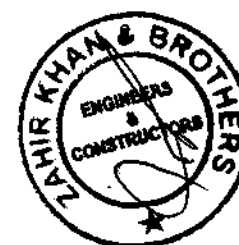
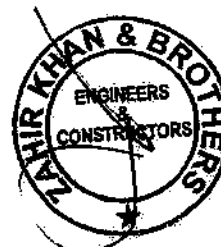
Omit the following information for equipment owned by the Bidder.

<b>Owner</b>	Name of owner	
	Address of owner	
	Telephone	Contact name and title
	Fax	Telex
<b>Agreements</b>	Details of rental / lease / manufacture agreements specific to the project	



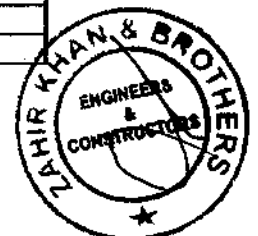
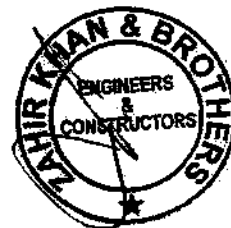
**Details of Plant Machinery for Pavement & Asphalt Works**

Sr. No.	Equipment	Type/Make	Capacity	Year of Manufacturing	Qty
1	Asphalt Batching Plant	NEGATA	80Tons	1999	1
2	Asphalt Batching Plant	THANAKA	160Tons	2006	1
3	Asphalt Batching Plant	Parkar	100Tons	1998	2
4	Asphalt Batching Plant	VIANOVA	180Tons	2003	1
5	Asphalt Batching Plant	IMMA IMAM	350Tons	1999	1
6	Asphalt Paver	VOGLAY	8.5M	2011	2
7	Asphalt Paver	VOGLAY	7.3M	2009	4
8	Asphalt Paver	Blue Max	7.3M	1998	2
9	Asphalt Paver	DYNAPAC	7.3M	1998-99	2
10	Asphalt Paver	CEDRAPIDES	8M	2007	4
11	TANDOM Road Rollers	CATERPILLER	10-12Tons	2005-08	6
12	TANDOM Road Rollers	HAMMA	10-12Tons	2003-04	4
13	TANDOM Road Rollers	DYNAPAC	10-12Tons	1998-2000	4
14	Road Rollers PTR	DYNAPAC	12Tons	1995-97	6
15	Road Rollers PTR	DYNAPAC	10Tons	2000	9
16	Road Rollers PTR	SAKAI	12Tons	2004	10
17	Road Rollers PTR	KAWASAKI	12Tons	2000	9
18	Bitumen Distributor with spray tanker	FORD	10Tons	2001	2
19	Bitumen Distributor with spray tanker	ISUZU	8Tons	1999	1
20	Bitumen Distributor with spray tanker	Ford	12Tons	2002	1
21	Bitumen Distributor with spray tanker	NISAN	8Tons	2007	1
22	Double Drum Roller	DYNAPAC	20Tons	2003-04	8
23	Asphalt Cutting Machine	Robbian		2011-12	20
24	Asphalt Core Cutter	Robbian		2009	6
25	Generators	CATERPILLER	600kva	2004-06	4
26	Generators	CATERPILLER	500kva	2001-03	5
27	Generators	CATERPILLER	400kva	2006-07	7
28	Generators	CATERPILLER	325KvA	2008	4
29	Generators	CUMMINS	600kva	1998-2001	3
30	Generators	CUMMINS	500kva	2002-03	4
31	Generators	CUMMINS	400kva	1999-2001	5
32	Generators	CUMMINS	300kva	2004-05	5
33	Generators	CUMMINS	200kva	2007	3
34	Generators	CUMMINS	100kva	2005-06	3
35	Generators	DENYO	80kva	2001-02	40
36	Generators	DENYO	65kva	1999-2000	25
37	Generators	DENYO	50kva	2007-08	25
38	Generators	DENYO	40kva	2011-12	25
39	Generators	DENYO	25kva	2005-06	25
40	Generators	Siemens	150KvA	2007	4
41	Generators	Perkns	175KvA	2003	8

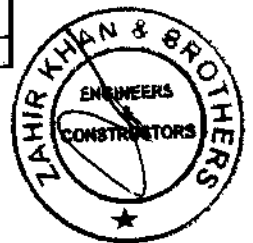
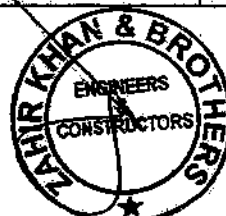


Detail of Plant & Machinery for Structure Work					
Sr. No.	Equipment	Type/Make	Capacity	Year of Manufacturing	Qty
1	Concrete Patching Plants	ALBA	100CbM/Hr	2001	3
2	Concrete Patching Plants	CHINA	80CbM/Hr	2010-12	6
3	Concrete Patching Plants	CHINA	60CbM/Hr	2011-13	12
4	Concrete Patching Plants	CHINA	45CbM/Hr	2010-14	6
5	Mobile Concrete Pump	PutzMeister	42M	1998	3
6	Mobile Concrete Pump	SWING	35M	2001	2
7	Mobile Concrete Pump	ALBA	35M	1999	3
8	Mobile Concrete Pump	SANY	42M	2008	4
9	Mobile Concrete Pump	PutzMeister	35M	1997	3
10	Mobile Concrete Pump	Koyo Koto	25M	2000-01	3
11	Mobile Concrete Pump	Koyo Koto	22M	2000-01	3
12	Concrete Stationary Pump	ZoomLine	60CbM/Hr	2010	3
13	Concrete Stationary Pump	SANY	60CbM/Hr	2011	3
14	Tower Crane		5Tons	1999-2000	3
15	Concrete Transit Mixers	NISSAN	6CbM	1991-2001	45
16	Concrete Transit Mixers	NISSAN	7CbM	1995-2005	15
17	Concrete Transit Mixers	HINO	9CbM	1999-2005	20
18	Concrete Transit Mixers	HINO	6CbM		15
19	Concrete Transit Mixers	ISUZU	3CbM	1996-97	7
20	Mobile Cranes	KATO	45Tons	1998	2
21	Mobile Cranes	TADANO	50Tons	2001	1
22	Mobile Cranes	P&H	35Tons	1998	3
23	Mobile Cranes	TADANO	25Tons	1999-2000	4
Piling Equipment					
24	Piling Machine	SoilMec	SR60	2010	1
25	Piling Machine	SoilMec	SR50	2007	1
26	Piling Machine	SANY	SR50	2008	1
Shuttering					
27	Steel Scaffolding Pipes				4M Feet
28	Steel Shuttering				250,000SqM
29	Steel Clamp Joints				2.5M No.
30	Wooden Shuttering				150,000SqM

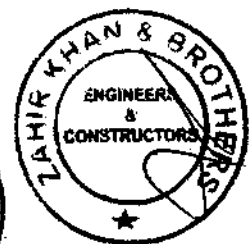
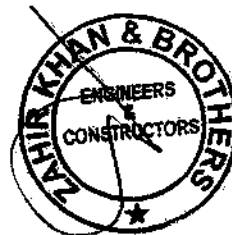
Details of Plant & Machinery for Earth Works					
Sr. No.	Equipment	Type/Make	Capacity	Year of Manufacturing	Qty
1	Vibratory Road Rollers	DYNAPAC	18-20Tons	2004-05	8
2	Vibratory Road Rollers	DYNAPAC	16-18Tons	2002-05	17
3	Vibratory Road Rollers	DYNAPAC	12-16Tons	1998-02	12
4	Vibratory Road Rollers	SAKAI	14-16Tons	1999-01	7
5	Vibratory Road Rollers	SAKAI	12-14Tons	1996-2000	8
6	Vibratory Road Rollers	VibroMax	12-14Tons	1999-01	7
7	Vibratory Road Rollers	Ingersol	16-18Tons	1994-98	9
8	MotorGrader	CATERPILLER	14G	1994-96	4
9	MotorGrader	CATERPILLER	12G	1994-95	3



10	MotorGrader	CATERPILLER	140G	1991-95	17
11	MotorGrader	CATERPILLER	140H	2002-07	5
12	MotorGrader	KOMATSU	705A-4	1995-97	10
13	MotorGrader	KOMATSU	605A-5	1998-2005	6
14	MotorGrader	KOMATSU	505A-4	1999-2004	4
15	MotorGrader	KOMATSU	405	2001-03	4
16	MotorGrader	VOLVO	620	2005	3
17	Dozer	CATERPILLER	D9H	1994-1996	4
18	Dozer	CATERPILLER	D8K	1996-1997	4
19	Dozer	CATERPILLER	D8H	1994-1997	8
20	Dozer	CATERPILLER	D6	1991-1995	6
21	Dozer	KOMATSU	D155	1995-1997	6
22	Excavator	HITACHI	EX120	1994-1996	3
23	Excavator	HITACHI	EX100	1992-1998	8
24	Excavator	HITACHI	EX200	1996-2001	8
25	Excavator	HITACHI	EX220	1998-2004	7
26	Excavator	KOMATSU	PC200	1998-2000	3
27	Excavator	KOMATSU	PC220	1998-1999	3
28	Excavator	DOOSAN	DX140	2001-2004	8
29	Excavator	DOOSAN	DX200	2000-2003	4
30	Jack Hammer			2001-2007	23
31	Wheel Loaders	CATERPILLER	910	1995-2003	15
32	Wheel Loaders	CATERPILLER	950E	1995-1998	8
33	Wheel Loaders	CATERPILLER	950B	1991-1994	8
34	Wheel Loaders	CATERPILLER	966E	1994-1997	9
35	Wheel Loaders	CATERPILLER	966F	1998-2002	11
36	Wheel Loaders	TCM	988	2003	2
37	Wheel Loaders	TCM	950	1999	2
38	Wheel Loaders	TCM	996	1999-2001	4
39	Dumpers 12 Wheeler	HINO	40Tons	1999-2005	40
40	Dumpers 10 Wheeler	NISSAN	25Tons	1991-2005	60
41	Dumpers 10 Wheeler	NISSAN	30Tons	1991-2005	25
42	Dumpers 10 Wheeler	HINO	25Tons	1995-2008	25
43	Dumpers 10 Wheeler	HINO	30Tons	1995-2008	20
44	Dumpers 6 Wheeler	ISUZU	16Tons	1999-2006	15
45	Tractors	Messy Ferguson	240	1999-2008	20
46	Tractors	Messy Ferguson	325	2012	10
47	Tractors	Messy Ferguson	345	2001-2010	10
48	Low Bed Trailers with Prime Mover	NISSAN	45Tons	1998-1999	4
49	Low Bed Trailers with Prime Mover	NISSAN	65Tons	1998-1999	3
50	Low Bed Trailers with Prime Mover	NISSAN	80Tons	1998-1999	2
51	Low Bed Trailers with Prime Mover	HINO	60Tons	1995-2001	4
52	High Bed Trailer	NISSAN	45Tons	2001-2010	8



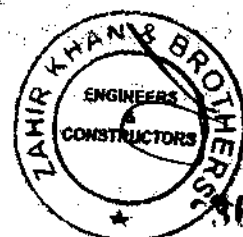
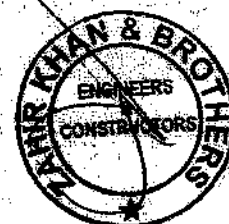
53	High Bed Traller	HINO	60Tons	2001-2014	10
54	Flat Body Trucks	NISSAN	35Tons	2000-2006	7
55	Water Boozer	NISSAN	40,000 Ltr	1999-2005	27
56	Water boozer	HINO	40,000 ltr	1994-2003	19
57	Water Boozer	NISSAN	25,000 Ltr	1999-2007	11
58	Water Boozer	HINO	25,000 Ltr	1999-2007	12
59	Water Boozer	ISUZU	15,000-20,000 Ltr	2000-2005	22
60	Truck Mounted Crane	HINO	5-9 Tons	1999-2002	6
<b>Light Vehicles</b>					
61	Pickup Double Cabin	TOYOTA		1995-2013	45
62	Pickup Single Cabin	TOYOTA		1991-2014	52
63	Staff Van	TOYOTA		2001-2007	15



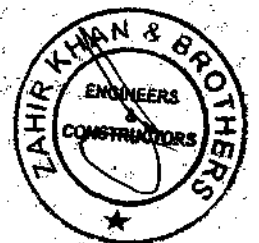


**DETAIL OF PLANT AND MACHINERY  
FOR ASPHALT WORKS AND STRUCTURE WORK**

Sr. No	Equipment	Type/Make	Capacity	Year of Manufacture	Qty
1.	Asphalt Bathing plant	Nagata	80 Tons	1991	1
2.	Asphalt Bathing plant	Parkar	60 Tons	1990	1
3.	Asphalt Bathing plant	Parkar	100 Tons	1990	2
4.	Asphalt Bathing plant	Vianova	350 Tons	1999	1
5.	Asphalt Bathing plant	Imma iniam	180 Tons	2003	1
6.	Asphalt Paver	Nagata	7.3 Meters	1992-93	4
7.	Asphalt Paver	Bluemax	6 Meters	1990-91	2
8.	Asphalt Paver	Cadripit	7.3 Meters	2000-01	4
9.	Asphalt Paver	Voglay	8.5 Meters	2004	2
10.	Tandom Road Rollar	Dynapac	8-10 Tons	1990-91	4
11.	Tandom Road Rollar	Kawasaki	10-12 Tons	1992-93	2
12.	Tandom Road Rollar	Hamma	12 Tons	2003-04	3
13.	Road Rollar PTR	Sakai	10 Tons	1993	6
14.	Road Rollar PTR	Dynapac	10 Tons	1993	2
15.	Road Rollar PTR	Kawasaki	12 Tons	2000	9
16.	Road Rollar PTR	Sakai	12 Tons	1998	10
17.	Asphalt Bitumen distributor with Spary Tanker	Nagata	10 Tons	1998	2
18.	Asphalt Bitumen distributor with Spary Tanker	Nissan	68 Tons	1999	1
19.	Asphalt Bitumen distributor with Spary Tanker	Ford	12 Tons	2002	1
20.	Asphalt Cutter Machine	Honda	10 Tons	1998-99	8
21.	Asphalt Core Cutter Machine	Honda	18 Tons	1997-98	1
22.	Generator	Denyo	50 KVA	2006	12
23.	Generator	Denyo	65 KVA	2006	10
24.	Generator	Caterpillar	100 KVA	2004	12
25.	Generator	Caterpillar	200 KVA	1998	5
26.	Generator	Cummins	300 KVA	2008	1
27.	Generator	Cat	400 KVA	2007	2
28.	Generator	Siement	500 KVA	2003	2
29.	Generator	Cummins	600 KVA	1999	3
30.	Concrete Batching Plant	Alba	25 Cum/Hour	1984	5
31.	Concrete Batching Plant	China	60 Cum/Hour	2006	3
32.	Concrete Batching Plant	Alba	100 Cum/Hour	2004	2
33.	Concrete Pump	Alba	20 Cum/Hour	1993-94	2
34.	Concrete Pump	Swing	30 Cum/Hour	1999	2
35.	Concrete Pump	Nissan	25 Cum/Hour	2000	1
36.	Transit Concrete Mixer	Isuzu	03 Cum	1996	7
37.	Transit Concrete Mixer	Nissan	05 Cum	1989-92	10
38.	Transit Concrete Mixer	Nissan	06 Cum	1995	6
39.	Transit Concrete Mixer	Volvo	05 Cum	1999	5

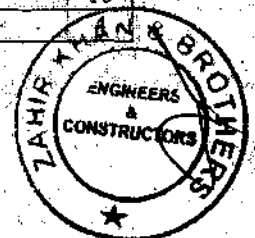
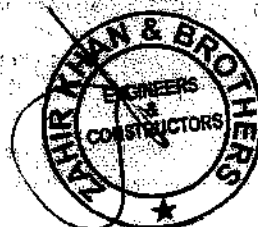


Sr. No.	Equipment	Type/Make	Capacity	Year of Manufacture	Qty
40.	Concrete Vibrator	Robin	10 HP	2000	12
41.	Concrete Vibrator	Honda	08 KVA	2000	15
42.	Crane Machine	Tokyo	30 Ton	1998	1
43.	Crane Machine	Tedano	50 Ton	2001	2
44.	Crane Machine	Nissan	35 Ton	1997	3
45.	Crane Machine	Mitsubishi	40 Ton	1994	1
46.	Vibrator & Compactor	Honda	02 HP	1999	20
47.	Pilling Machine	Hitachi	100Cm to 150 Cm	1991-92	2
48.	Steel Scaffolding With Clamp etc	-	1,000,000 Rft	50,000 Clamps	
49.	Steel Shuttering	-	60,000 Sqm		
50.	Wooden Shuttering	-	35,000 Sqm		

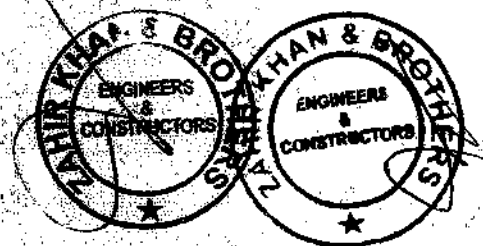


**DETAIL OF PLANT AND MACHINERY  
FOR EARTHWORK**

Sr. No	Equipment	Type/Make	Capacity	Year of Manufacture	Qty
1.	Vibratory Road Roller	Kawasaki	10 Ton	1986-1995	8
2.	Vibratory Road Roller	Vibromax	12 Ton	1999-2001	7
3.	Vibratory Road Roller	Sakai	14 Ton	1986+	8
4.	Vibratory Road Roller	Sakai	16 Ton	1992+	7
5.	Vibratory Road Roller	Dynapac	18 Ton	1993+	20
6.	Vibratory Road Roller	Sakai	18 Ton	1994+	9
7.	Vibratory Road Roller	Ingersol	18 Ton	1992+93	9
8.	Motor Grader	Caterpillar	14 G	1994+	6
9.	Motor Grader	Caterpillar	12 G	1994+	4
10.	Motor Grader	Komatsu	705A-4	1995+	10
11.	Motor Grader	Komatsu	605A-4	1991-92+	4
12.	Motor Grader	Komatsu	405	1991-92+	4
13.	Motor Grader	Caterpillar	140 G	1994+	6
14.	Motor Grader	Caterpillar	120 G	1994+	4
15.	Motor Grader	Vellvo	620	2000+	3
16.	Motor Grader	Mitsubishi	710	1997+	2
17.	Dozer	Komatsu	D-6	1989+	4
18.	Dozer	Caterpillar	D-8	1989+	5
19.	Dozer	Caterpillar	D-9	1996+	2
20.	Excavator	Hitachi	Ex-100	1992+	8
21.	Excavator	Hitachi	Ex-200	1996+	
22.	Excavator	Komatsu	PC 220	1998+	3
23.	Excavator	CAT	PC 220	1995+	3
24.	Jackhammer	Hitachi	C200	1999+	15
25.	Loader	Caterpillar	950 E	1996+	5
26.	Loader	Caterpillar	950-B	1994+	2
27.	Loader	Caterpillar	966-E	1994+	5
28.	Loader	Caterpillar	966-E	1998+	5
29.	Loader	TCM	699 F		7
30.	Loader		966		4
31.	Dumper 10 Wheeler	Nissan	25 Ton	1998+	35
32.	Dumper 10 Wheeler	Nissan	25 Ton	1990+	35
33.	Dumper 6 Wheeler	Hino	15 Ton	1992+	15
34.	Dumper 10 Wheeler	Hino	10 Ton	1986-1995	8
35.	Dumper 10 Wheeler	Billaras	12 Ton	1999-2001	7
36.	Tractor	Massey	14 Ton	1986+	8
37.	Tractor	Massey	16 Ton	1992+	7
38.	Tractor	Bed Ford	18 Ton	1993+	20
39.	Trucks	Suzu	18 Ton	1994+	9
40.	Trucks	Suzu	18 Ton	1992-93+	9
41.	Trucks	Nissan	14 G	1994+	6
42.	Trucks	Foard	12 G	1994+	4
43.	Trucks	Bed Foard	705A-4	1995+	10
44.	Water Boozer	Nissan	605A-4	1991-92+	



45.	Water Boozzer	Hino	405	1991-92+	4
46.	Water Boozzer	Suzuki	140 G	1994+	6
47.	Water Boozzer	Vallvo	120 G	1994+	4
48.	Water Boozzer	Toyota	620	2000+	3
49.	Pick up Double Cabin	Toyota	710	1997+	2
50.	Pick up Double Cabin	Toyota	D-6	1989+	4
51.	Pick up Double Cabin	Toyota	D-8	1989+	5
52.	Pick up Double Cabin	Toyota	D-9	1996+	2
53.	Pick up Double Cabin	Toyota	Ex-100	1992+	8
54.	Pick up Double Cabin	Toyota	Ex-200	1996+	
55.	Pick up Double Cabin	Toyota	PC 220	1998+	3
56.	Pick up Double Cabin	Toyota	PC 220	1995+	3
57.	Pick up Double Cabin	Toyota	C200	1999+	15
58.	Staff Van	Toyota	950-E	1996+	5
59.	Staff Van	Toyota	950-B	1994+	2
60.	Field Lab Survey	Toyota	966-E	1998+	5
61.	Equipment		966-E		5
62.	Level Machin	Sokkia- Pantix-Nikon	966-F 966		7
63.	Theodolites	Sokkia	25 Ton	1998+	4
64.	Total Station	Pantix- Sokkia	25 Ton 15 Ton	1990+ 1998+	35 35
65.	Field Test Lab Complete	Cat			15
66.	Power Station	Sokia			





## Equipment

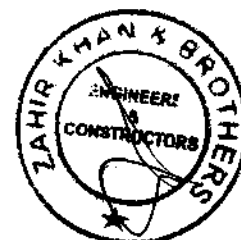
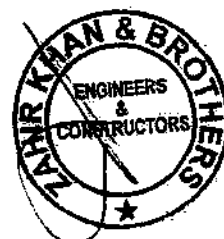
### Form EQU: Equipment

The Bidder shall provide adequate information and details to demonstrate clearly that it has the capability to meet the equipment requirements indicated in Section 6 (Employer's Requirements), using the Forms below. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder.

<b>Item of Equipment</b>	
<b>Concrete Batching Plant (35 Cu.m/hr minimum) 01 Nos.</b>	
<b>Equipment Information</b>	<b>Name of manufacturer</b> CHINA
	<b>Capacity</b> 80 Cum/hr
	<b>Model and power rating</b> 2012
	<b>Year of manufacture</b> 2012
<b>Current Status</b>	<b>Current location</b> Karachi
	<b>Details of current commitments</b> Idle
<b>Source</b>	<b>Indicate source of the equipment</b>
	<input checked="" type="checkbox"/> Owned <input type="checkbox"/> Rented <input type="checkbox"/> Leased <input type="checkbox"/> Specially Manufactured

Omit the following information for equipment owned by the Bidder.

<b>Owner</b>	<b>Name of owner</b>	
	<b>Address of owner</b>	
	<b>Telephone</b>	<b>Contact name and title</b>
	<b>Fax</b>	<b>Telex</b>
	N/A	
<b>Agreements</b>	<b>Details of rental / lease / manufacture agreements specific to the project</b>	



# Zahir Khan & Brothers



## Equipment

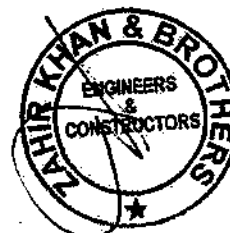
### Form EQU: Equipment

The Bidder shall provide adequate information and details to demonstrate clearly that it has the capability to meet the equipment requirements indicated in Section 6 (Employer's Requirements), using the Forms below. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder.

Item of Equipment	
<b>Crane 20 Ton (01 Nos.)</b>	
Equipment Information	Name of manufacturer <b>KATO</b>
	Capacity <b>45 Ton</b>
Current Status	Model and power rating <b>1998</b>
	Year of manufacture <b>1998</b>
Current Status	Current location <b>Karachi</b>
	Details of current commitments <b>Idle</b>
Source	Indicate source of the equipment <input checked="" type="checkbox"/> Owned <input type="checkbox"/> Rented <input type="checkbox"/> Leased <input type="checkbox"/> Specially Manufactured

Omit the following information for equipment owned by the Bidder.

Owner	Name of owner	
	Address of owner	
	Telephone <b>N/A</b>	Contact name and title
	Fax <b>N/A</b>	Telex
Agreements	Details of rental / lease / manufacture agreements specific to the project	



## Equipment

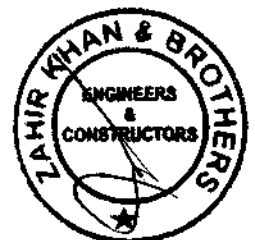
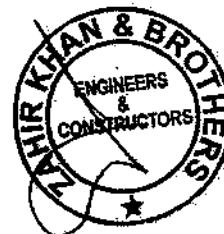
### Form EQU: Equipment

The Bidder shall provide adequate information and details to demonstrate clearly that it has the capability to meet the equipment requirements indicated in Section 6 (Employer's Requirements), using the Forms below. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder.

Item of Equipment	
<b>Concrete Pump (01 Nos.)</b>	
Equipment Information	Name of manufacturer <b>SANY</b>
	Capacity <b>42 Meter</b>
Current Status	Model and power rating <b>2008</b>
	Year of manufacture <b>2008</b>
Current Status	Current location <b>Karachi</b>
	Details of current commitments <b>Idle</b>
Source	Indicate source of the equipment <input checked="" type="checkbox"/> Owned <input type="checkbox"/> Rented <input type="checkbox"/> Leased <input type="checkbox"/> Specially Manufactured

Omit the following information for equipment owned by the Bidder.

Owner	Name of owner
	Address of owner
	Telephone
	Fax
<b>N/A</b>	
Agreements	Details of rental / lease / manufacture agreements specific to the project



# Zahir Khan & Brothers



## Equipment

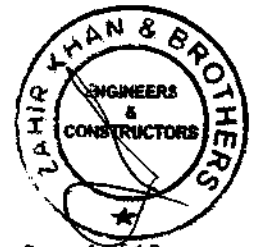
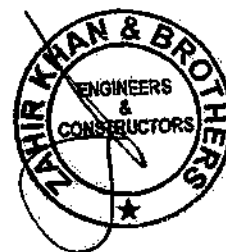
### Form EQU: Equipment

The Bidder shall provide adequate information and details to demonstrate clearly that it has the capability to meet the equipment requirements indicated in Section 6 (Employer's Requirements), using the Forms below. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder.

Item of Equipment	
<b>Concrete Transit Mixer (6 Cu.m Minimum) 06 Nos.</b>	
Equipment Information	Name of manufacturer <b>NISSAN</b>
	Capacity <b>6 Cum</b>
Current Status	Model and power rating <b>2001</b>
	Year of manufacture <b>2001</b>
Current Status	Current location <b>Karachi</b>
	Details of current commitments <b>Idle</b>
Source	Indicate source of the equipment <input checked="" type="checkbox"/> Owned <input type="checkbox"/> Rented <input type="checkbox"/> Leased <input type="checkbox"/> Specially Manufactured

Omit the following information for equipment owned by the Bidder.

Owner	Name of owner	
	Address of owner	
	Telephone	Contact name and title
	Fax	Telex
<b>N/A</b>		
Agreements	Details of rental / lease / manufacture agreements specific to the project	





## Equipment

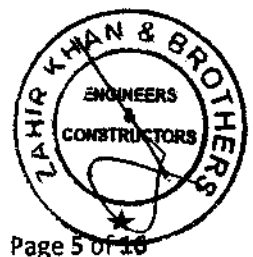
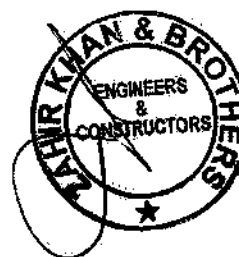
### Form EQU: Equipment

The Bidder shall provide adequate information and details to demonstrate clearly that it has the capability to meet the equipment requirements indicated in Section 6 (Employer's Requirements), using the Forms below. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder.

Item of Equipment <b>Complete Set of Shuttering &amp; scaffolding (Steel) 100 Sq.m) 01 Nos.</b>		
Equipment Information	Name of manufacturer <b>Shuttering/Scaffolding</b>	Model and power rating -
	Capacity <b>250,000Sq.m/4M Feet</b>	Year of manufacture -
Current Status	Current location <b>Karachi</b>	
	Details of current commitments <b>Idle</b>	
Source	Indicate source of the equipment <input checked="" type="checkbox"/> Owned <input type="checkbox"/> Rented <input type="checkbox"/> Leased <input type="checkbox"/> Specially Manufactured	

Omit the following information for equipment owned by the Bidder.

Owner	Name of owner	
	Address of owner	
	Telephone	Contact name and title
	Fax	Telex
<b>N/A</b>		
Agreements	Details of rental / lease / manufacture agreements specific to the project	



# Zahir Khan & Brothers



## Equipment

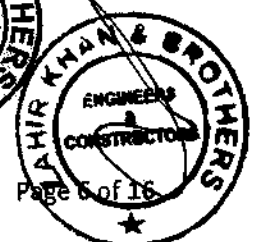
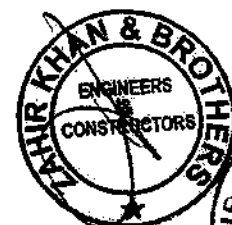
### Form EQU: Equipment

The Bidder shall provide adequate information and details to demonstrate clearly that it has the capability to meet the equipment requirements indicated in Section 6 (Employer's Requirements), using the Forms below. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder.

Item of Equipment	
<b>Asphalt Plant (01 Nos.)</b>	
Equipment Information	Name of manufacturer <b>Parkar</b>
	Capacity <b>100 Tons</b>
Current Status	Model and power rating <b>1998</b>
	Year of manufacture <b>1998</b>
Current Status	Current location <b>Karachi</b>
	Details of current commitments <b>Idle</b>
Source	Indicate source of the equipment <input checked="" type="checkbox"/> Owned <input type="checkbox"/> Rented <input type="checkbox"/> Leased <input type="checkbox"/> Specially Manufactured

Omit the following information for equipment owned by the Bidder.

Owner	Name of owner	
	Address of owner	
	Telephone	Contact name and title
	Fax	Telex
Agreements	Details of rental / lease / manufacture agreements specific to the project	



## Equipment

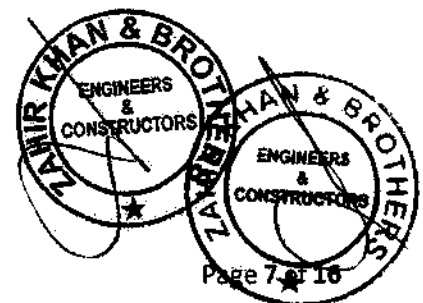
### Form EQU: Equipment

The Bidder shall provide adequate information and details to demonstrate clearly that it has the capability to meet the equipment requirements indicated in Section 6 (Employer's Requirements), using the Forms below. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder.

Item of Equipment		
<b>Asphalt Paver (02 Nos.)</b>		
Equipment Information	Name of manufacturer <b>VOGLAY</b>	Model and power rating <b>2011</b>
	Capacity <b>8.5 M</b>	Year of manufacture <b>2011</b>
Current Status	Current location <b>Karachi</b>	
	Details of current commitments <b>Idle</b>	
Source	Indicate source of the equipment <input checked="" type="checkbox"/> Owned <input type="checkbox"/> Rented <input type="checkbox"/> Leased <input type="checkbox"/> Specially Manufactured	

Omit the following information for equipment owned by the Bidder.

Owner	Name of owner	
	Address of owner	
	Telephone	Contact name and title
	Fax	Telex
<b>N/A</b>		
Agreements	Details of rental / lease / manufacture agreements specific to the project	



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## Equipment

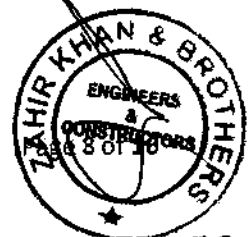
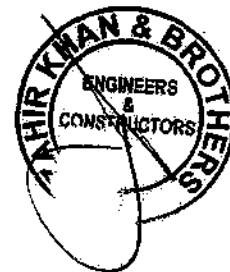
### Form EQU: Equipment

The Bidder shall provide adequate information and details to demonstrate clearly that it has the capability to meet the equipment requirements indicated in Section 6 (Employer's Requirements), using the Forms below. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder.

Item of Equipment		<b>Cold Milling Machine (01 Nos.)</b>	
Equipment Information	Name of manufacturer	Model and power rating	
	Capacity	Year of manufacture	
Current Status	Current location		
	Details of current commitments		
Source	Indicate source of the equipment		
	<input checked="" type="checkbox"/> Owned <input type="checkbox"/> Rented <input type="checkbox"/> Leased <input type="checkbox"/> Specially Manufactured		

Omit the following information for equipment owned by the Bidder.

Owner	Name of owner		
	Address of owner		
	Telephone	<b>N/A</b>	Contact name and title
	Fax		Telex
Agreements	Details of rental / lease / manufacture agreements specific to the project		



# Zahir Khan & Brothers



## Equipment

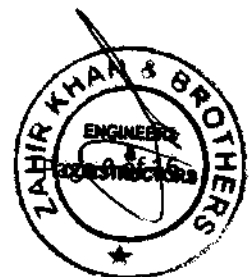
### Form EQU: Equipment

The Bidder shall provide adequate information and details to demonstrate clearly that it has the capability to meet the equipment requirements indicated in Section 6 (Employer's Requirements), using the Forms below. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder.

Item of Equipment		
<b>Rollers (Asphalt and Earthwork) 10 Nos.</b>		
Equipment Information	Name of manufacturer	Model and power rating
	Capacity	Year of manufacture
Current Status	Current location <b>Karachi</b>	
	Details of current commitments <b>Idle</b>	
Source	Indicate source of the equipment <input checked="" type="checkbox"/> Owned <input type="checkbox"/> Rented <input type="checkbox"/> Leased <input type="checkbox"/> Specially Manufactured	

Omit the following information for equipment owned by the Bidder.

Owner	Name of owner	
	Address of owner	
	Telephone	Contact name and title
	Fax	Telex
<b>N/A</b>		
Agreements	Details of rental / lease / manufacture agreements specific to the project	



# Zahir Khan & Brothers



## Equipment

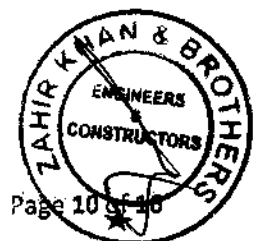
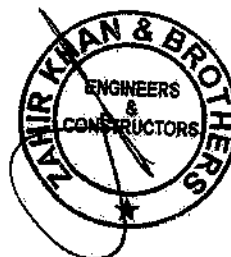
### Form EQU: Equipment

The Bidder shall provide adequate information and details to demonstrate clearly that it has the capability to meet the equipment requirements indicated in Section 6 (Employer's Requirements), using the Forms below. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder.

Item of Equipment		Graders (03 Nos.)	
Equipment Information	Name of manufacturer	Model and power rating	
	Capacity	Year of manufacture	
Current Status	Current location <b>Karachi</b>		
	Details of current commitments <b>Idle</b>		
Source	Indicate source of the equipment <input checked="" type="checkbox"/> Owned <input type="checkbox"/> Rented <input type="checkbox"/> Leased <input type="checkbox"/> Specially Manufactured		

Omit the following information for equipment owned by the Bidder.

Owner	Name of owner		
	Address of owner		
	Telephone	<b>N/A</b>	Contact name and title
	Fax		Telex
Agreements	Details of rental / lease / manufacture agreements specific to the project		



# Zahir Khan & Brothers



## Equipment

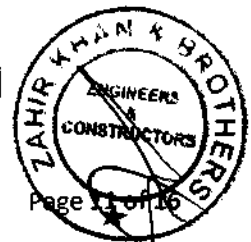
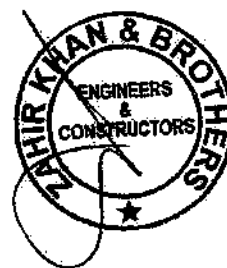
### Form EQU: Equipment

The Bidder shall provide adequate information and details to demonstrate clearly that it has the capability to meet the equipment requirements indicated in Section 6 (Employer's Requirements), using the Forms below. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder.

Item of Equipment	
<b>Dum Trucks (35 Nos.)</b>	
Equipment Information	Name of manufacturer
	Model and power rating
	Capacity
	Year of manufacture
Current Status	Current location <b>Karachi</b>
	Details of current commitments <b>Idle</b>
Source	Indicate source of the equipment <input checked="" type="checkbox"/> Owned <input type="checkbox"/> Rented <input type="checkbox"/> Leased <input type="checkbox"/> Specially Manufactured

Omit the following information for equipment owned by the Bidder.

Owner	Name of owner	
	Address of owner	
	Telephone	Contact name and title
	Fax	Telex
Agreements	Details of rental / lease / manufacture agreements specific to the project	



## Equipment

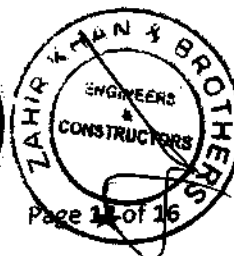
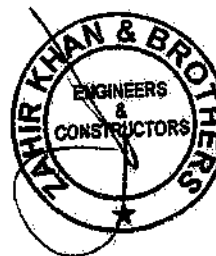
### Form EQU: Equipment

The Bidder shall provide adequate information and details to demonstrate clearly that it has the capability to meet the equipment requirements indicated in Section 6 (Employer's Requirements), using the Forms below. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder.

Item of Equipment		<b>Wheel Loaders (04 Nos.)</b>	
Equipment Information	Name of manufacturer	Model and power rating	
	Capacity	Year of manufacture	
Current Status	Current location <b>Karachi</b>		
	Details of current commitments <b>Idle</b>		
Source	Indicate source of the equipment <input checked="" type="checkbox"/> Owned <input type="checkbox"/> Rented <input type="checkbox"/> Leased <input type="checkbox"/> Specially Manufactured		

Omit the following information for equipment owned by the Bidder.

Owner	Name of owner		
	Address of owner		
	Telephone	<b>N/A</b>	Contact name and title
	Fax		Telex
Agreements	Details of rental / lease / manufacture agreements specific to the project		





# Zahir Khan & Brothers



## Equipment

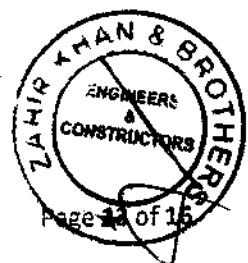
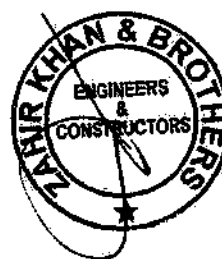
### Form EQU: Equipment

The Bidder shall provide adequate information and details to demonstrate clearly that it has the capability to meet the equipment requirements indicated in Section 6 (Employer's Requirements), using the Forms below. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder.

Item of Equipment		
<b>Excavators (06 Nos.)</b>		
Equipment Information	Name of manufacturer	Model and power rating
	Capacity	Year of manufacture
Current Status	Current location <b>Karachi</b>	
	Details of current commitments <b>Idle</b>	
Source	Indicate source of the equipment <input checked="" type="checkbox"/> Owned <input type="checkbox"/> Rented <input type="checkbox"/> Leased <input type="checkbox"/> Specially Manufactured	

Omit the following information for equipment owned by the Bidder.

Owner	Name of owner	
	Address of owner	
	Telephone	Contact name and title
	Fax	Telex
<b>N/A</b>		
Agreements	Details of rental / lease / manufacture agreements specific to the project	



## Equipment

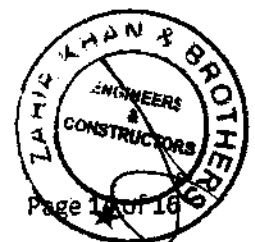
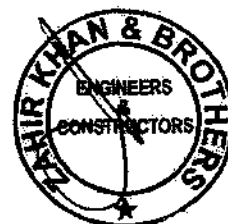
### Form EQU: Equipment

The Bidder shall provide adequate information and details to demonstrate clearly that it has the capability to meet the equipment requirements indicated in Section 6 (Employer's Requirements), using the Forms below. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder.

Item of Equipment		
<b>Bull Dozers (04 Nos.)</b>		
Equipment Information	Name of manufacturer	Model and power rating
	Capacity	Year of manufacture
Current Status	Current location <b>Karachi</b>	
	Details of current commitments <b>Idle</b>	
Source	Indicate source of the equipment <input checked="" type="checkbox"/> Owned <input type="checkbox"/> Rented <input type="checkbox"/> Leased <input type="checkbox"/> Specially Manufactured	

Omit the following information for equipment owned by the Bidder.

Owner	Name of owner	
	Address of owner	
	Telephone	Contact name and title
	Fax	Telex
Agreements	Details of rental / lease / manufacture agreements specific to the project	



# Zahir Khan & Brothers



## Equipment

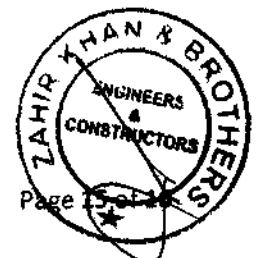
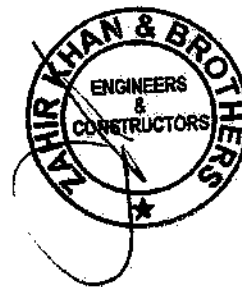
### Form EQU: Equipment

The Bidder shall provide adequate information and details to demonstrate clearly that it has the capability to meet the equipment requirements indicated in Section 6 (Employer's Requirements), using the Forms below. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder.

Item of Equipment		
<b>Bitumen Sprayers (02 Nos.)</b>		
Equipment Information	Name of manufacturer	Model and power rating
	Capacity	Year of manufacture
Current Status	Current location <b>Karachi</b>	
	Details of current commitments <b>Idle</b>	
Source	Indicate source of the equipment <input checked="" type="checkbox"/> Owned <input type="checkbox"/> Rented <input type="checkbox"/> Leased <input type="checkbox"/> Specially Manufactured	

Omit the following information for equipment owned by the Bidder.

Owner	Name of owner	
	Address of owner	
	Telephone	Contact name and title
	Fax	Telex
<b>N/A</b>		
Agreements	Details of rental / lease / manufacture agreements specific to the project	



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## Equipment

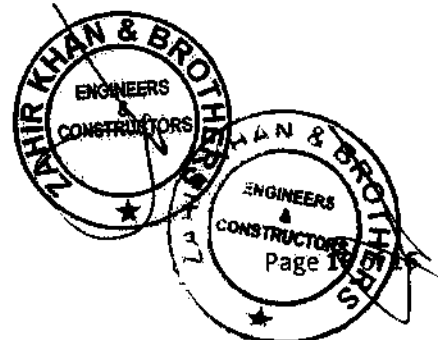
### Form EQU: Equipment

The Bidder shall provide adequate information and details to demonstrate clearly that it has the capability to meet the equipment requirements indicated in Section 6 (Employer's Requirements), using the Forms below. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder.

Item of Equipment		<b>Lane Marking Machine (02 Nos.)</b>	
Equipment Information	Name of manufacturer	Model and power rating	
	Capacity	Year of manufacture	
Current Status	Current location <b>Karachi</b>		
	Details of current commitments <b>Idle</b>		
Source	Indicate source of the equipment <input checked="" type="checkbox"/> Owned <input type="checkbox"/> Rented <input type="checkbox"/> Leased <input type="checkbox"/> Specially Manufactured		

Omit the following information for equipment owned by the Bidder.

Owner	Name of owner		
	Address of owner		
	Telephone	<b>N/A</b>	Contact name and title
	Fax		Telex
Agreements	Details of rental / lease / manufacture agreements specific to the project		





# ZAHIR KHAN & BROTHERS

## ORGANIZATION CHART FOR THE SUPERVISORY STAFF AND LABOUR



PROJECT MANAGER

DY. PROJECT MANAGER

HEALTH AND SAFETY MANAGER

QA / QC MANAGER

ADMIN MANAGER

ACCOUNTS MANAGER

CONSTRUCTION MANAGER

PLANNING ENGINEER

MATERIAL ENGINEER

SAFETY SPECIALIST

MECHANICAL ENGINEER



SITE ENGINEER STRUCTURE

SITE ENGINEER EARTHWORK

SENIOR SURVEYOR

QUANTITY SURVEYOR

LAB TECHNICIAN

ASSISTANT MANAGER

SUPERVISOR

SUPERVISOR

SURVEYOR

SUPPORTING STAFF

SUPPORTING STAFF

SUPPORTING STAFF

SUPPORTING STAFF

FORMAN & LABOUR

FORMAN & LABOUR

SUPPORTING STAFF



## Personnel Requirements

Using Form PER - 1 and PER - 2 in Section 4 (Bidding Forms), the Bidder must demonstrate that it has personnel who meet the following requirements for each lot:

No.	Position	Total Work Experience [years]	Experience in Similar Work [years]
1	Project Manager	20	10
2	Deputy Project Engineer/Planning Engineer	10	5
3	Material Engineer	10	5
4	Structure Engineer	10	5
5	Highway Engineer	10	5
6	Qualified / Experienced Surveyors (2 Nos)	15	10
7	Qualified Environmentalist	10	5
8	Qualified Health and Safety Expert	10	5
9	Quantity Surveyor	15	10

Note: All engineers whether foreign or local must be registered with Pakistan Engineering Council (PEC). Copy of registration certificate shall be required to be submitted to Employer prior to starting any activity at site



## Personnel

### Form PER - 1: Proposed Personnel

Bidder should provide the details of the proposed personnel and their experience record in the relevant Information Forms below for each candidate:

1.	Title of position*
	Name
2.	Title of position*
	Name
3.	Title of position*
	Name
4.	Title of position*
	Name
5.	Title of position*
	Name
6.	Title of position*
	Name
etc.	Title of position*
	Name

**Note --**

\* As listed in Section 6 (Employer's Requirements).



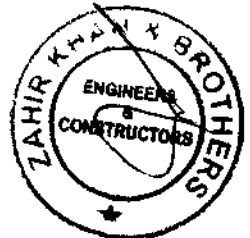
# Zahir Khan & Brothers



## Form PER – 1: Proposed Personnel

Bidder should provide the details of the proposed personnel and their experience record in the relevant Information Forms below for each candidate:

1.	Title of position*	:	Project Manager
	Name	:	Muhammad Azizullah Cheema
2.	Title of position*	:	Deputy Project Engineer / Planning Engineer
	Name	:	Engr. Khalil Jibran Quareshi
3.	Title of position*	:	Material Engineer
	Name	:	Shahid Iqbal
4.	Title of position*	:	Structure Engineer
	Name	:	Syed Zahid Ali Shah Bokhari
5.	Title of position*	:	Highway Engineer
	Name	:	Sadiq Muhammad
6.	Title of position*	:	Qualified / Experienced Surveyor
	Name	:	Mian Shakir Ullah
	Name	:	Muhammad Riaz Khan
7.	Title of position*	:	Qualified Environmentalist.
	Name	:	Shaukat Zaman
8.	Title of position*	:	Qualified Health and Safety Expert
	Name	:	Muhammad Umer Umair
9.	Title of position*	:	Quantity Surveyor
	Name	:	Mohammad Arif Khan



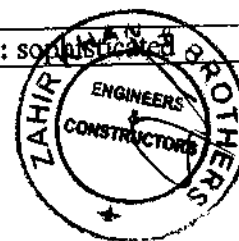
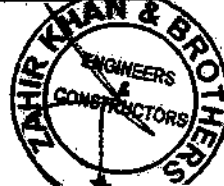
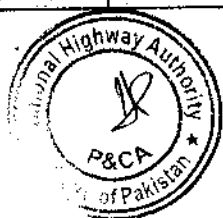


## Form PER – 2: Resume of Proposed Personnel

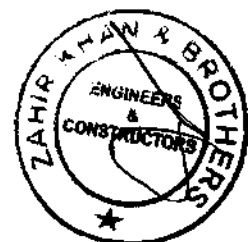
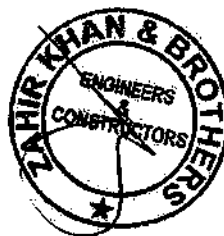
<b>Position :</b>		
<b>Project Manager</b>		
<b>Personnel Information :</b>	<b>Name:</b> Muhammad Azizullah Cheema	<b>Date of Birth :</b> 1 <sup>st</sup> . January, 1951
	<b>Professional Qualifications:</b> B. Sc (Civil) Engineer <b>PEC No. Civil/7230</b>	
<b>Present Employment:</b>	<b>Name Employer:</b> M/S Zahir Khan & Brothers	
	<b>Address of Employer:</b> Plot 44, Street 11, I-9/2, Islamabad.	
	<b>Telephone :</b> 051-4444533 – 4444555	<b>Contact (manager /personnel officer)</b> Mohabat Khan
	<b>Fax:</b> +92-51-4444499	<b>E-mail :</b> zkb.isbi92@gmail.com
	<b>Job Title:</b> Civil Engineer	<b>Years With present employer :</b> Jan. 2010 to date

Summarize Professional Experience in Reverse chronological order. Indicate Particular Technical and managerial experience relevant to the project.

From	TO	Company /Project /position/ Relevant technical and Management Experience
Jan. 2010	To date	M/S Zahir Khan & Brothers, Project Manager on various Projects including <ul style="list-style-type: none"> <li>• Qilla Saifullah – Zohb Section (150 KM)</li> <li>• Karachi Lahore Motorway</li> </ul>
Jan. 2009	Jun. 2010	M/S SM Ashraf D Baloch, Project Manager, 28 Km Road Project (NHA) connecting New Larkana – Mirpur Khas Bridge over River Indus to N-55, including River Training Works.
Jun. 2008	Jan. 2009	M/S Karcon Pvt. Ltd. Project Manager, Darra Adam Khel to Budhbher Road Project N-55 NHA, Link Road connecting M-1 to N-5 near Peshawar Toll Plaza with Interchanges at both ends as well as Bridges over Main Rialway Track and N-5.
Jan. 2004	May 2008	M/S Barqaab Consulting Services, Project Manager and earlier Resident Engineer Rainy Canal Project controlling 5 Major Contracts involving large scale earthworks, structures, Bridges and specialized sophisticated Structures and River Training Works. Handled Right Bank Outfall Drain (RBOD) Projects.
Feb. 2001	Dec. 2003	M/S Zoom Engineers, Executive Director, Planning moniting and contracts activities of various Public Buildings and Industrial Projects.
Jul. 1997	Jan. 2001	M/S Izhar Pvt. Ltd., General Manager, Projects part of M-2 and various Commercial and Industrial Projects.
Jan. 1991	Jun. 1997	M/S National Engineers, General Manager: sophisticated



		surveying and automated mapping Project of Lahore and Gujranwala area electricity boards in Joint Venture with an American Company (Geonex), PARCO pipe line microwave stations from MuzafarGarh to Sheikhpura Project in Joint Venture with British Company (GTS). FordwaSidiqia Canal Project. Tile Drainage Project (WAPDA) Mirpur Khas, Sinch.
Sep. 1988	Jan. 1991	M/S Crescent Agdevco, Manager Contracts and Co-ordination, 4 <sup>th</sup> Drainage (Tile Drainage) Project (WAPDA) Faisalabad. Agdevco is a Canadian Company.
Aug. 1987	Aug. 1988	M/S Descon Pvt. Ltd. Chief Engineer, various Building Projects.
Oct. 1986	Aug. 1987	M/S Technical Associates, Project Manager, 500 Bed Cantonment Board Hospital Project, Rawalpindi.
Jul. 1984	Oct. 1986	M/S Universal Corporation Ltd., Manager Divisional Office.
Jan. 1984	Dec. 1984	M/S Ali Associates, Project Manager, NARC Multi Storey Building Project, Islamabad.
Sep. 1982	Jan. 1984	M/S M. Iftikhar & Co., Project Manager, Attack Cement Project, Hub Chowki, Balochistan in Joint Venture with Romanian Govt. Engineers.
Nov. 1979	Aug. 1982	M/S Industrial & Cement Engineers (Consultant), Resident Engineer, Dandot Cement Project, Khewra. Head of Consultant's Team controlling 3 separate contracts.
Sep. 1976	Oct. 1979	M/S Builders Associates Pvt. Ltd., Project Manager, LDA 11 storey (plus 3 basements) Project Lahore, 500 Bed Sheikh Zaid Hospital Project, Lahore. Bakers Yeist Plant Project, Kala Shahkaku.
Jun. 1975	Aug. 1976	M/S Architects and Designers Associates (Consultants), Junior Engineer, Design, Structures.

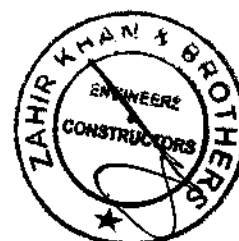


## Form PER – 2: Resume of Proposed Personnel

<b>Position :</b>		
<b>Deputy Project Engineer / Planning Engineer</b>		
<b>Personnel Information :</b>	<b>Name:</b> Engr. Khalil Jibran Qureshi	<b>Date of Birth :</b> 20-10-1982
	<b>Professional Qualifications:</b> B. Sc Civil Engineer PEC Registration No. Civil/27686	
<b>Present Employment:</b>	<b>Name Employer:</b> M/S Zahir Khan & Brothers	
	<b>Address of Employer:</b> Plot 44, Street 11, I-9/2, Islamabad.	
	<b>Telephone :</b> 051-4444533 – 4444555	<b>Contact (manager /personnel officer)</b> Mohabat Khan
	<b>Fax:</b> +92-51-4444499	<b>E-mail :</b> zkb.isbi92@gmail.com
	<b>Job Title:</b> Civil Engineer	<b>Years With present employer :</b> 2016 to date

Summarize Professional Experience in Reverse chronological order. Indicate Particular Technical and managerial experience relevant to the project.

From	TO	Company /Project /position/ Relevant technical and Management Experience
Jan. 2016	To date	M/S Zahir Khan & Brothers, Deputy Project Manager / Planning Engineer on CPEC-IV Project including <ul style="list-style-type: none"> <li>• Metro Bus Project Islamabad (DLP Period).</li> <li>• CPEC – 5 Hakla to Pindi Gheb</li> </ul>
Mar. 2012	Dec. 2015	M/S Saadullah Khan & Brothers – as Deputy Project Manager of Balochistan Projects.
Jun. 2008	Mar. 2008	M/S Saadullah Khan & Brothers as Deputy Project Manager Manager, Kalat Quetta-Chamman Kalat Quetta, Sec-11 CB-1, (60 Km), ICB-3 (59.8 Km) & Sec-IIIB (5 Bridges).
Nov. 2007	May 2008	M/S Saadullah Khan & Brothers as Deputy Project Manager, Lining of Lakhpass Tunnel Project, Quetta.
Mar. 2006	Oct. 2007	M/S Saadullah Khan & Brothers as Construction Manager, N-25 Kalat-Quetta- Chamman Kalat – Quetta, Sec-11Cb-1 (60 Km), ICB-3 (59.8 Km).
Sep. 2005	Feb. 2006	Sardar Muhammad Ashraf D. Baloch, as Site Engineer, Nawabshah Padedan Road Project (P-2) 60 Kms (ADB Funded).

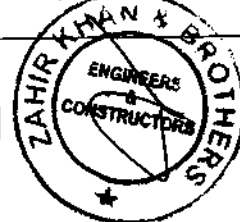
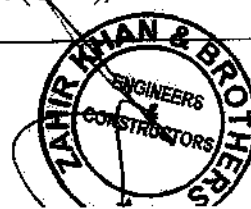


## Form PER – 2: Resume of Proposed Personnel

<b>Position :</b>			<b>Material Engineer</b>		
<b>Personnel Information :</b>	<b>Name:</b> Shahid Iqbal		<b>Date of Birth :</b> 01-05-1975		
	<b>Professional Qualifications:</b> BSc University of Punjab				
<b>Present Employment:</b>	<b>Name Employer:</b> M/S Zahir Khan & Brothers				
	<b>Address of Employer:</b> Plot 44, Street 11, I-9/2, Islamabad.				
	<b>Telephone :</b> 051-4444533 – 4444555		<b>Contact (manager /personnel officer)</b> Mohabat Khan		
	<b>Fax:</b> +92-51-4444499		<b>E-mail :</b> zkb.isbi92@gmail.com		
	<b>Job Title:</b> Material Engineer		<b>Years With present employer :</b> 2007 to date		

Summarize Professional Experience in Reverse chronological order. Indicate Particular Technical and managerial experience relevant to the project.

From	TO	Company /Project /position/ Relevant technical and Management Experience
Jun. 2007	To date	M/S Zahir Khan & Brothers, Material Engineer on various projects including <ul style="list-style-type: none"> <li>• Sukkur – Shikarpur – Jackabad (N-65)</li> <li>• Metro Bus Project Islamabad.</li> <li>• Metro Bus Project Multan.</li> <li>• Karachi Lahore Motorway.</li> <li>• E-35 Hassainabdal to Havelian</li> </ul>
Apr. 2005	May 2007	M/S Husnain Cotex Limited, Material Engineer, Sher Shah Bridge over River Chenab Multan – Muzaffar Garh (N-70).
Oct. 2004	Mar. 2005	M/S Echowest International (Pvt.) Ltd., Assistant Material Engineer, Sunder Industrial Estate Sunder, Lahore.
Jan. 2004	Oct. 2004	M/S Ramzan & Sons (Pvt.) Ltd. (RSL), Assistant Material Engineer, Greater Thal Canal (GTC-03).
Feb. 2003	Dec. 2003	M/S Ghulam Rasool & Co. (GRC), Assistant Material Engineer, Faizpur Interchange (M-2).
Nov. 2001	Dec. 2002	M/S PAMIC (Pvt.) Ltd., Senior Lab. Technician (SLT) Pindi Bhattian – Faisalabad Motorway (M-3).
Sep. 2000	Oct. 2001	M/S Ghulam Rasool & Co. (GRC), Senior Lab. Technician (SLT) Remodelling of Thal Canal Project.
Oct. 1999	Aug. 2000	M/S Gammon Pak (Pvt.) Ltd. Quality Control Officer (QCO), Flyover Kachehry Chowk, Multan.
Mar. 1998	Sep. 1999	M/S A A Associates Consultants, Material Inspector, Chiniot Bridge Project.
Nov. 1996	Feb. 1998	M/S Ghulam Rasool & Co. (GRC), Lab. Technician, 2 <sup>nd</sup> Talibwala Bridge Project (M-2).
Jun. 1995	Oct. 1996	M/S Ghulam Rasool & Co. (GRC), Lab. Technician, Chiniot Bridge Project.

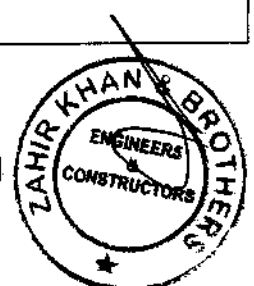
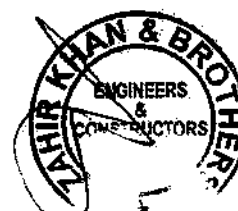
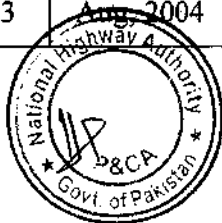


## Resume of Proposed Personnel

<b>Position :</b>		
<b>Structure Engineer</b>		
<b>Personnel Information :</b>	<b>Name:</b> Syed Zahid Ali Shah Bokhari	<b>Date of Birth :</b> 9 <sup>th</sup> July, 1965
	<b>Professional Qualifications:</b> B.Sc.Civil Engineer PEC No. Civil/23785	
<b>Present Employment:</b>	<b>Name Employer:</b> M/S Zahir Khan & Brothers	
	<b>Address of Employer:</b> Plot 44, Street 11, I-9/2, Islamabad.	
	<b>Telephone :</b> 051-4444533 – 4444555	<b>Contact (manager /personnel officer)</b> Mohabat Khan
	<b>Fax:</b> +92-51-4444499	<b>E-mail :</b> zkb.isbi92@gmail.com
	<b>Job Title:</b> Civil Engineer	<b>Years With present employer :</b> July 2017 to date

Summarize Professional Experience in Reverse chronological order. Indicate Particular Technical and managerial experience relevant to the project.

From	TO	Company /Project /position/ Relevant technical and Management Experience
July, 2017	till-date	M/s Zahir Khan & Brothers (ZKB) as Structure Engineer
Feb, 2016	Jan, 2017	M/s Al-Imam Enterprises Pvt Ltd. Structure Engineer
Dec, 2013	Feb, 2016	M/s Engineering Consultancy Services Punjab (Pvt) Ltd. Structure Engineer
Mar, 2013	Nov, 2013	M/s JBI Oman/DAK Group Managers Projects
Jun, 2012	Feb, 2013	M/s Engineering Consultancy Services Punjab Pvt Ltd, Lahore Resident Engineer
Oct, 2011	Jun, 2012	M/s Etimaad Engineering Pvt. Ltd. as Structure Engineer
Jun, 2011	Sep, 2011	M/s Echo-West International Sr. as Structure Engineer
Jun, 2010	Jun, 2011	M/s Eden Housing, Lahore Structure Engineer
Nov, 2008	Jun, 2010	M/s PAL Group UAE Pak Office as Structure Engineer
Apr, 2007	Sep, 2008	M/s Eden Builders, Lahore Structure Engineer
Feb, 2005	Apr, 2007	M/s Bahria Town, Lahore Project Manager
Aug, 2004	Feb, 2005	M/s Tijaraat Developers DHA Project Manager
Apr, 2003	Aug, 2004	M/s BPS (Pvt) Ltd, Lahore Site Engineer

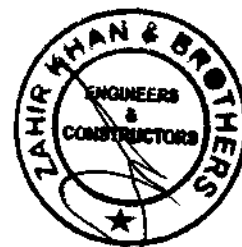
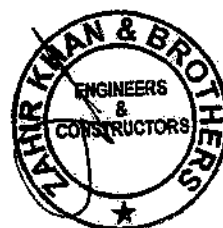


## Form PER – 2: Resume of Proposed Personnel

<b>Position :</b>		
<b>Highway Engineer</b>		
<b>Personnel Information :</b>	<b>Name:</b> Engr. Sadiq Muhammad	<b>Date of Birth :</b> 02-04-1956
	<b>Professional Qualifications:</b> B. Sc (Civil) Engineer PEC No. Civil/11142	
<b>Present Employment:</b>	<b>Name Employer:</b> M/S Zahir Khan & Brothers	
	<b>Address of Employer:</b> Plot 44, Street 11, I-9/2, Islamabad.	
	<b>Telephone :</b> 051-4444533 – 4444555	<b>Contact (manager /personnel officer)</b> Mohabat Khan
	<b>Fax:</b> +92-51-4444499	<b>E-mail :</b> zkb.isbi92@gmail.com
	<b>Job Title:</b> Civil Engineer	<b>Years With present employer :</b> Jan. 2003 to date

Summarize Professional Experience in Reverse chronological order. Indicate Particular Technical and managerial experience relevant to the project.

From	TO	Company /Project /position/ Relevant technical and Management Experience
2003	To date	M/S Zahir Khan & Brothers, Highway Construction Manager on various Projects including <ul style="list-style-type: none"> <li>• Sukkur – Shikarpur – Jackabad (N-65)</li> <li>• Metro Bus Project Multan</li> <li>• Metro Bus Project Islamabad</li> <li>• Metro Bus Project Lahore</li> <li>• CPEC - 4 Pindi Gheb to Tarap</li> </ul>
1993	1999	FWO / in-Charge N-5
1990	1992	MES / In-Charge Engineer
1987	1990	FWO / Road Construction
1984	1986	NLC / Project Officer

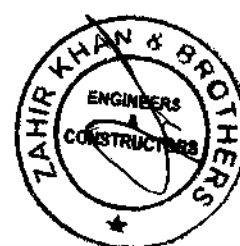
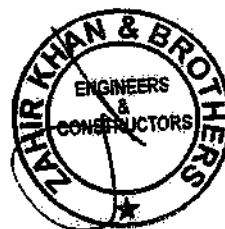


## Form PER – 2: Resume of Proposed Personnel

<b>Position :</b>		<b>Qualified / Experience Surveyor</b>	
<b>Personnel Information :</b>	<b>Name:</b> Mian Shakir Ullah	<b>Date of Birth :</b> 01-01-1978	
	<b>Professional Qualifications:</b> DAE Civil		
<b>Present Employment:</b>	<b>Name Employer:</b> M/S Zahir Khan & Brothers		
	<b>Address of Employer:</b> Plot 44, Street 11, I-9/2, Islamabad.		
	<b>Telephone :</b> 051-4444533 – 4444555	<b>Contact (manager /personnel officer)</b> Mohabat Khan	
	<b>Fax:</b> +92-51-4444499	<b>E-mail :</b> zkb.isbi92@gmail.com	
	<b>Job Title:</b> Senior Surveyor	<b>Years With present employer :</b> Jan. 2011 to date	

Summarize Professional Experience in Reverse chronological order. Indicate Particular Technical and managerial experience relevant to the project.

From	TO	Company /Project /position/ Relevant technical and Management Experience
Jan. 2011	To date	M/S Zahir Khan & Brothers, Chief Surveyor on various project including <ul style="list-style-type: none"> <li>• Qilla Saifullah – Zhob (N-50)</li> <li>• Metro Bus Project Lahore</li> <li>• Metro Bus Project Islamabad.</li> <li>• Metro Bus Project Multan.</li> <li>• Karachi Lahore Motorway</li> </ul>
Mar. 2006	Jan. 2011	M/S SKB Kalat-Quetta-Chaman N-25 as Surveyor
Apr. 2004	Dec. 2005	M/S Shah Zaman Pvt. Ltd. at Banu Link Road as Surveyor
Apr. 1998	May 2001	M/S Bayinder Insaat at Islamabad – Peshawar Motorway Project M-1 as Surveyor
Jul. 1997	Apr. 1998	China Petroleum Engineering Construction Corp. at Gablat-Noshera Additional Carriageway as Assistant Surveyor

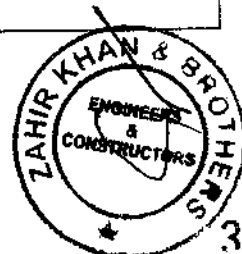
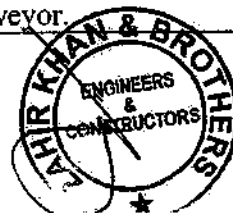


## Form PER – 2: Resume of Proposed Personnel

<b>Position :</b>		<b>Qualified / Experience Surveyor</b>	
<b>Personnel Information :</b>	<b>Name:</b> Muhammad Riaz Khan	<b>Date of Birth :</b> 02-01-1970	
	<b>Professional Qualifications:</b> DAE Civil		
<b>Present Employment:</b>	<b>Name Employer:</b> M/S Zahir Khan & Brothers		
	<b>Address of Employer:</b> Plot 44, Street 11, I-9/2, Islamabad.		
	<b>Telephone :</b> 051-4444533 – 4444555	<b>Contact (manager /personnel officer)</b> Mohabat Khan	
	<b>Fax:</b> +92-51-4444499	<b>E-mail :</b> zkb.isbi92@gmail.com	
	<b>Job Title:</b> Surveyor	<b>Years With present employer :</b> Jan. 2011 to date	

Summarize Professional Experience in Reverse chronological order. Indicate Particular Technical and managerial experience relevant to the project.

From	TO	Company /Project /position/ Relevant technical and Management Experience
Jan. 2011	To date	M/S Zahir Khan & Brothers, Chief Surveyor on various project including <ul style="list-style-type: none"> <li>• Qilla Saifullah – Ghob (N-50)</li> <li>• Metro Bus Project Lahore</li> <li>• Metro Bus Project Islamabad.</li> <li>• Metro Bus Project Multan.</li> <li>• Zhob – Killi Khudae Nazar (N-50)</li> </ul>
Jan. 2007	Jan. 2011	Limak-ZKB JV Hub-Uthal Road Project (N-25) as Senior Surveyor
Sep. 2003	Jan. 2007	Inter Construct Pvt. Ltd. Waigum Rud Khajori Section III-A(2), Loralai (N-70) as Chief Surveyor
Sep. 2002	Aug. 2003	Echo West International (Pvt.) Ltd. Kingdom Saudia Arabia Embassy & Resident Villas, Islamabad as Senior Surveyor.
Aug. 2000	Aug. 2002	Echo West International (Pvt.) Ltd. Hala-Moro Road Project (N-5) as a Surveyor.
Jul. 1999	Aug. 2000	Kania Laal & Brothers (Pvt.) Ltd. (KLB) Jaamsahab to Mur Jumro Road Project (FMR) as Surveyor
Jul. 1998	Jul. 1999	China International Co-Operation of Echonomic & Technical Co-Operation Pacakge 4B, Mirpurkhas to Mirwah Road Project as a Surveyor
Jan. 1993	Aug. 1994	SECA (Italy) Pakistan Branch Construction of ACW from Karachi to Hyderabad as Surveyor.



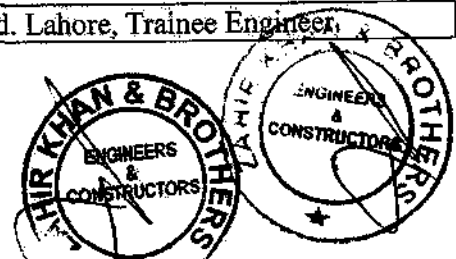


## Form PER – 2: Resume of Proposed Personnel

<b>Position :</b>		<b>Qualified Environmentalist</b>	
<b>Personnel Information :</b>	<b>Name:</b> Shaukat Zaman	<b>Date of Birth :</b> 28-07-1953	
	<b>Professional Qualifications:</b> B.Sc PEC No. METALL/627		
<b>Present Employment:</b>	<b>Name Employer:</b> M/S Zahir Khan & Brothers		
	<b>Address of Employer:</b> Plot 44, Street 11, I-9/2, Islamabad.		
	<b>Telephone :</b> 051-4444533 – 4444555	<b>Contact (manager /personnel officer)</b> Mohabat Khan	
	<b>Fax:</b> +92-51-4444499	<b>E-mail :</b> zkb.isbi92@gmail.com	
	<b>Job Title:</b> Environment Engineer	<b>Years With present employer :</b> 2012 to date	

Summarize Professional Experience in Reverse chronological order. Indicate Particular Technical and managerial experience relevant to the project.

From	TO	Company /Project /position/ Relevant technical and Management Experience
Jun. 2012	To date	M/S Zahir Khan & Brothers, Environment Health, & Safety Engineer on Various ADB Projects including <ul style="list-style-type: none"> <li>• Qilla – Saifullah – Zohb Section (150 Km)</li> <li>• Metro Lahore, Metro Islamabad and Metro Multan.</li> <li>• E-35 Hassanabdai to Havelian.</li> </ul>
Apr. 2008	Apr. 2012	M/S Karcon Environmental Health, & Safety Engineer, Supervision / Monitoring of Environmental aspects on Different Road Projects.
Oct. 2006	Sep. 2007	SGS Pakistan (Pvt.) Ltd. Peshawar, Senior Executive Environmental Health, & Safety Officer, Inspection Services as well as testing / evaluation of minerals and provision of environmental monitoring services to various industries / clients.
Feb. 2000	Nov. 2005	M/S Daudons Armory, Manager Systems, Manager HRD, Environmental Management Representative.
Mar. 1996	Mar. 1998	M/S Pak-Swiss small scale enterprevor promotion program Swiss NGO, prepared 70 pages document environmental control and heat losses in BTK brick kills approved form swiss technical team, zewnich Switzerland.
Jun. 1983	Mar. 1996	Heavy Mechanical Complex (HMC) Taxila, Deputy Manager Technical, Remained on Various Managerial Posts.
Mar. 1981	Jun. 1983	Metal Industry Research and Development Centre (MIRDC), Govt. of Pakistan, Ministry of Industries, Kot Lakh Pat, Lahore, Junior Engineer (NPS-17)
Oct. 1980	Mar. 1981	M/S Ittefaq Foundries Pvt. Ltd. Lahore, Trainee Engineer.

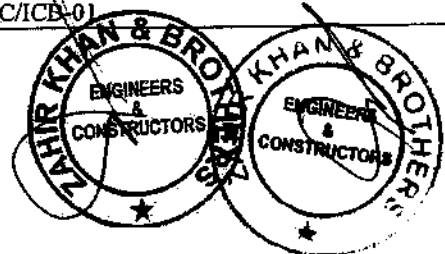


## Form PER – 2: Resume of Proposed Personnel

<b>Position :</b>		
<b>Qualified Health and Safety Expert</b>		
<b>Personnel Information :</b>	<b>Name:</b> Engr. Muhammad Umer Umair	<b>Date of Birth :</b> 5-2-1980
	<b>Professional Qualifications:</b> NEBOSH & IOSH Certified	
<b>Present Employment:</b>	<b>Name Employer:</b> M/S Zahir Khan & Brothers	
	<b>Address of Employer:</b> Plot 44, Street 11, I-9/2, Islamabad.	
	<b>Telephone :</b> 051-4444533 -- 4444555	<b>Contact (manager /personnel officer)</b> Mohabat Khan
	<b>Fax:</b> +92-51-4444499	<b>E-mail :</b> zkb.isbi92@gmail.com
	<b>Job Title:</b> Qualified Health and Safety Expert	<b>Years With present employer :</b> 2016 to date

Summarize Professional Experience in Reverse chronological order. Indicate Particular Technical and managerial experience relevant to the project.

From	TO	Company /Project /position/ Relevant technical and Management Experience
July. 2016	To date	M/S Zahir Khan & Brothers (ZKB) Joint Venture with CR20G (China Group) Working as Qualified Health and Safety Expert <ul style="list-style-type: none"> <li>Peshawar Karachi Motorway (PKM), a part of China Pakistan Economic Corridor (CPEC), Abdul Hakim to Lahore Portion, Section III.</li> </ul>
Jan. 2016	June. 2016	Nishan Engineers (Pvt) Ltd. (In cooperation with China Railway first Group) Working as HSE Manager, Dasu Hydropower Project, Contract No Dasu-PCI-01R and Dasu-RV
July. 2014	Dec. 2015	Nishan Engineers (Pvt) Ltd. (In cooperation with Sino Dydro Co. Ltd.) Working as HSE Manager, Lower Bari Doab Canal Improvement Project (LBDCIP), funded by Asian Development
Jan. 2014	July. 2014	Sinotec.Co.ltd (Multinational Engineering Project Organization) Working as Environmental Expert, Marala Hydropower Project (MHP) head Marala District Sialkot, funded by Asian Development bank, Contract # ICB-pb-001.
Jan. 2011	Jan. 2014	Ghulam Rasool and Company (Pvt) Ltd. Working as HSE Manager, Lower Bari Doab Canal Improvement Project (LBDCIP), funded by Asian Development Bank, Contract # LBDC/ICB-01

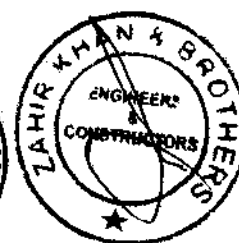
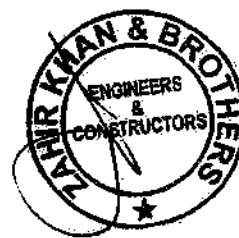


## Form PER – 2: Resume of Proposed Personnel

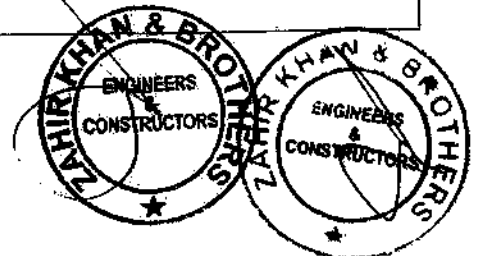
<b>Position :</b>		
<b>Quantity Surveyor</b>		
<b>Personnel Information :</b>	<b>Name:</b> Mohammad Arif Khan	<b>Date of Birth :</b> 20-03-1968
	<b>Professional Qualifications:</b> DAE Civil Primavera P-6 Enterprises	
<b>Present Employment:</b>	<b>Name Employer:</b> M/S Zahir Khan & Brothers	
	<b>Address of Employer:</b> Plot 44, Street 11, I-9/2, Islamabad.	
	<b>Telephone :</b> 051-4444533 – 4444555	<b>Contact (manager /personnel officer)</b> Mohabat Khan
	<b>Fax:</b> +92-51-4444499	<b>E-mail :</b> zkb.isbi92@gmail.com
	<b>Job Title:</b> Senior Quantity Surveyor	<b>Years With present employer :</b> 1 <sup>st</sup> . Jan. 2015 to date

Summarize Professional Experience in Reverse chronological order. Indicate Particular Technical and managerial experience relevant to the project.

Form	To	Company / Project / Position / Relevant Technical and Management Experience
1 <sup>st</sup> Jan. 2015	To date	<b>M/S ZAHIR KHAN &amp; BROTHERS (ZKB)</b> as Quantity Engineer Rawalpindi Islamabad Metro Bus Project from Shaheed - e - Millat Road to Secretrate.
16 <sup>th</sup> march 2010	30 <sup>th</sup> Nov. 2014	<b>ZARGHOON ENTERPRISES (PVTD.) LT.</b> as senior Costing / Planning Engineer Rehabilitation of Coastal Highway Gharo to keti Bunder Package - III Km 45+000 to 48+000 / Improvement and Rehabilitation of Lakhi - Naudero - Larkana Road Package - I (Lakhi to Madiji) Km 0+000 to 30+800 / Reconstruction & Rehabilitation of Road From Sujawal - Jati Road Mile 0/0 - 22/0 District Thatta



1 <sup>st</sup> July 2004	15 <sup>th</sup> March 2010	<b>M/S ZAHIR KHAN &amp; BROTHERS (ZKB)</b> as Cost / Quantity Engineer I) Deltization of National Highway from Pakistan steel Mill to Ghaggar Phattak 13 Km (Cost of Work 325.00 Million) NHA II) Construction of Bridge - Package 1 Karachi - Thatta Hyderabad Section N-5 10 Bridges (Cost of work 146.09 Million) NHA III) Rehabilitation and Improvement of Sharah-e-Uloom Korangi 8000 Road (Cost of work 950.00 Million) CDGK IV) Construction of Link Road from Sharah-e-Noorhajan to Manghopier Rod at Karachi (Cost of Work 223.00 Million) NHA V) Earth work and Buildings Project at CROF (Cost of Work 120.00 Million) COW VI) Rehabilitation of Super Highway Package-1.3Km.13+000 to 18.300 Both Carriageway (Cost of work 105.00 Million) NHA VII) Shara-e-Ghalib from Bilawal Chorangi to Sherijinnah Colony Railway Phattak Karachi (Cost of work 120.00 Million) CDGK VIII) Improvement of National Highway (N-50) From Muslim Bagh to Qila Safullah (ICB-3A) 50 km. (Cost of Work 1,667.19 Million)
1 <sup>st</sup> July 2002	30 <sup>th</sup> June 2004	<b>M/S TECHNO ENGINEERING SERVICES (PVT.) LTD.</b> as Quantity Engineer White Oil Pipe Line Project Bin Qasim to Multan Oil Refinery (850 Km)
1 <sup>st</sup> Oct. 2001	30 <sup>th</sup> June. 2004	<b>M/S MAQBOOL ASSCIATES (PVT.) LTD.</b> as Quantity Surveyor Mehran Highway Project Karachi D.M.C. Upgrading (Cost of work 130.00 Million)
1 <sup>st</sup> Jan. 1998	30 <sup>th</sup> Sep. 2001	<b>M/S CHINA JINCHUAN NON-FERROUS METALS CORPORATION.</b> as Quantity Engineer. Gawadar-Ratodero Road Project, Khuzar-Shahdadt Kot Section IV, Package 1 (35 Km.) (Cost of work 490.00 Million)
16 <sup>th</sup> Jan. 1995	31 <sup>st</sup> Dec. 1997	<b>CHINA PETROLEUM ENGINEERING CONSTRUCTION CORPORATION INTERNATIONAL.</b> as Senior Quantity Surveyor. Mauripur Sewage Treatment Plant Cont. K2SA 1, an ADB funded Project. (Cost of work 1020.00 Million)
1 <sup>st</sup> Sep. 1994	15 <sup>th</sup> Jan. 1995	<b>ZARGHOON ENTERPRISES (PVT.) LTD.</b> as Senior Quantity Surveyor. Indus Highway Project, Shorinullah-Rajanpur Section, Contract-6, 96 Km.
June 1990	31 <sup>st</sup> Aug. 1994	<b>M/S SECA ITALY PAKISTAN BRANCH.</b> as Quantity Surveyor. FHR CONTRACT 2 (Karachi-Hyderabad Km 81-148). Additional carriage way along Super Highway Karachi-Hyderabad Km 81 to Km 148.

































## METHOD STATEMENT

### **Construction of Additional Carriageway from Shikarpur – Rajanpur of N-55 (221.95 Km)**

#### **Lot – 1: Shikarpur – Kandhkot Section from Km 43+400 to Km 105+820 (62.42 Km)**

## **1 Typical Construction Methods**

### **1.1 Introduction**

- 1.1.1 This Appendix provides an outline of typical construction methods and plant likely to be used for the main roadworks, structures including bridges, and environmental mitigation works.

#### **Scope & Constraints**

The work under this Contract comprises of Construction of Additional Carriageway from Shikarpur – Rajanpur of N-55 (221.95 Km) Lot – 1: Shikarpur – Kandhkot Section from Km 43+400 to Km 105+820 (62.42 Km) including all the structures and upto the entire satisfaction of The Engineer & Employer.

**Bid Reference No: OCB/CAREC/T-II**

The work will involve following major construction activities:

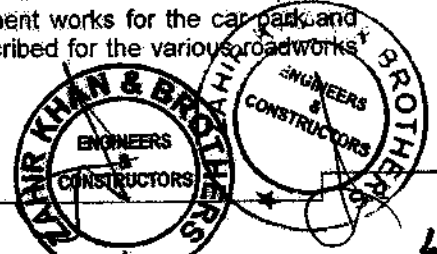
- Earth work
- Sub-Base & Base Course
- Surfacing & Pavement
- Retaining Structures
- Structures (Culverts)
- Ancillary Works
- ETC (As detailed in drawings, specifications and Bill of Quantities) All as per Contract Drawings and Specifications.

The project is being financed by Government of Pakistan and the project completion period is **730 Days**.

### **1.2 Roadworks**

#### **Establishment of the Site Compound**

- 1.2.1 Preliminary activities include the setting up of the contractor's compounds and offices for the Contractor and Engineer. This also includes cabins, stores, welfare facilities and car park. The contractor will determine the location of the main site compound and seek all necessary approvals for its design and construction. Due to the size of the scheme, other smaller offices and compounds are likely to be established along the route. Preparatory works for the temporary site establishments will involve some site clearance work, minor earthworks operations to level the site, drainage and pavement works for the car park and service installation. Typical plant will be similar to that described for the various roadworks operations below.



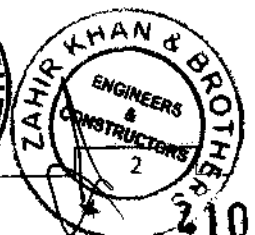
- 1.2.2 Services to the site cabins and offices will include electrical, communications, water and sewerage facilities. The site compound will to be erected, maintained and subsequently removed in a manner that will have minimum impact on the locality.
- 1.2.3 Specific facilities and structures identified in the Contract will be surveyed to determine their structural condition prior to any works commencing in the neighborhood. Restrictions will apply to activities undertaken in the vicinity of these properties relating to working hours, movements of site personnel, control of dust, noise and vibration levels induced during construction. These measures aim to minimize or control nuisance during construction and also avoid damage to nearby structures and buildings.
- 1.2.4 Site operatives and site staff will use the site establishments, on a daily basis, when the facilities are significantly completed and access is available for personal vehicles and other forms of transport. Construction plant will be established in the site compound and in working areas of the route, when the relevant work permits and licenses are issued.
- 1.2.5 The initial actions will involve the construction of site access and egress points. Wherever practicable, haul routes will also be established to ensure that construction traffic is contained within the confines of the site, as far as possible. However, since the route intersects rivers, main roads, local roads and other obstructions the use of other public roads is likely to be required and approval for this will be sought by the contractor with the relevant authorities.

#### Temporary and Permanent Fencing

- 1.2.6 The land area occupied by the permanent works will be identified accurately on the ground, by surveying and installing appropriate pegs and posts, prior to the works commencing. The area defined will be the area of land acquired by the contractor has to be acquired by agreement to facilitate construction of the works due to his own method of working.
- 1.2.7 This will involve the installation of permanent fencing with temporary fencing erected where it is not possible to install the permanent fence, for example at areas where land will be returned to agriculture following completion of the works, or if the contractor considers that there is a risk of damage to the permanent works during construction.
- 1.2.8 The permanent fencing, required to denote the permanent highway boundary will generally be a 1.4m high timber post and four-rail fence. This would, however be supplemented with additional measures suitable for the exclusion of badgers, otters, rabbits and other wildlife. Temporary fencing will generally be a post and wire or chespale fence.
- 1.2.9 Other specific fencing that may be required temporarily will include silt/sediment fences to prevent sediment reaching watercourses and higher security fences at compounds or where additional security of the works is required.
- 1.2.10 Fence materials such as posts, rails, wires and mesh will be delivered to the site, either to the main compound or directly to satellite compound. Typically, materials will be transported along the site by tractor and trailer mounted with hydraulic plant for driving the fence posts. Some fences may require a concrete foundation, or the ground may be too hard for driven fence posts. In this instance a small excavator will be used. Following fence post installation, the rails, wires and mesh will be attached manually.
- 1.2.11 Environmental fencing e.g otter fencing and badger fencing, requires to extend below ground level and this requires an element of excavation which will be undertaken using a small excavator or by hand digging.



**Site Clearance and Demolition**



- 1.2.12 Site clearance and demolition works includes the following:
- isolation and diversion of live services;
  - general clearance;
  - demolition of building, walls and bridges;
  - removal of pipelines, public and privately owned services or supplies;
  - tree felling and removal of stumps, removal of fencing, hedges, bushes and undergrowth;

- 1.2.13 Plant required for the site clearance activities will include, but not be limited to:
- crane mounted, hydraulic operated demolition apparatus;
  - cranes, excavators, bulldozers;
  - tractors, dump trucks;
  - mechanical saws, portable electric and pneumatic tools, cutting and burning sets;

1.2.14 Any material to be reused in the permanent works (eg dry stone walls) will be stockpiled.

1.2.15 Surplus and unsuitable materials arising from the site clearance operations will be disposed of at appropriate, approved landfill sites around or outside the project area. Burning of materials on site will not be permitted, except when specifically required for which approvals will be required. Materials for disposal will be transported in appropriate dump trucks along prescribed routes. The routes will be included in the main construction contract documents or the contractor will be required to seek approval from the relevant authority should he wish to use any other routes.

1.2.16 The contractor will be responsible for the timing of demolition and site clearance activities and he will be required to take account of seasonal incidents, such as such as bird breeding seasons and relocation of any species in his works programme.

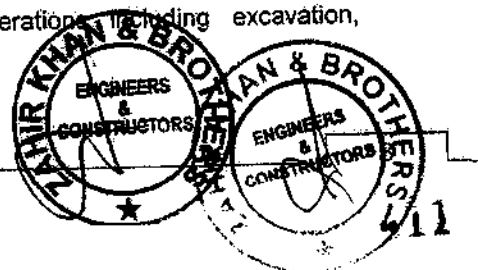
#### **Contaminated Materials**

1.2.17 The treatment of hazardous materials encountered in site clearance will comply with specific contract requirements and will require an assessment in accordance with current health and safety regulations including the Control of Substances Hazardous To Health Regulations. Contaminated materials may have to be disposed of outside the developed area if there are no any licensed site nearby.

#### **Temporary and Permanent Surface Water Outfalls**

1.2.18 Temporary arrangements will be made to control surface water run-off, during construction, where surface water could affect the works or the environmental performance of mitigation measures. Measures implemented may include temporary settlement ponds which will allow sediment to settle before clean water is discharged via a temporary outfall pipe or ditch to receiving watercourses. Other options for disposal of water include discharging to sewers if they have sufficient capacity or taking water off site in bowsers or tankers for disposal. It is likely that the permanent drainage basins and ponds will be constructed and used during construction. These will be cleaned and maintained following the main construction works for incorporation in the final scheme drainage network. During the construction period, and particularly the earthworks construction phase, water will be directed to these ponds using temporary cut off ditches within the works. Temporary ponds will require to be maintained during the course of the works, to remove sediment and silt, for example, and ensure that the ponds operate to an acceptable level.

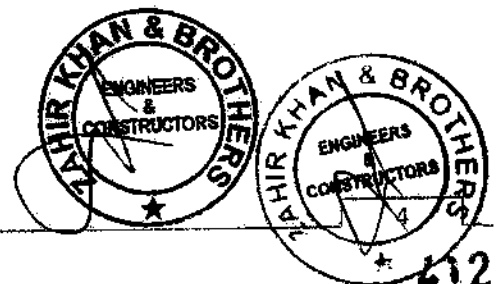
1.2.19 Construction of the ponds will involve earthworks operations including excavation, placement of fill and compaction. Typical plant will include



- excavators, bulldozers
- tractors, dump trucks

### Service Diversions

- 1.2.20 It is possible that some service diversions will be undertaken in advance of the main construction works. However, other diversion are only likely to be possible once construction has reached a certain point.
- 1.2.21 Services are either located above or below ground. For works above ground, posts, towers or pylons will have to be delivered to the site and constructed. This will involve transport of materials and some excavation and concrete works for foundations or footings. Plant likely to be involved will include:
- excavators
  - dump trucks and lorries
  - concrete transit mixers
  - cranes
- 1.2.22 For works below ground, excavation will be necessary to the ensure the services are placed in a trench at an appropriate level. Where the service apparatus will pass below the route, ducting and a concrete surround will be required to protect the diversion and will be delivered to the site. Plant likely to be involved will include:
- excavators
  - dump trucks
  - concrete transit mixers
  - hand operated compact



## Topsoil Stripping and Storage

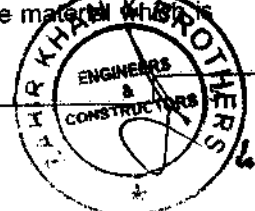
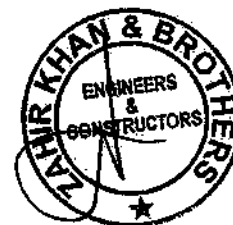
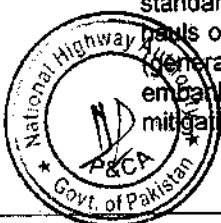
- 1.2.23 Where appropriate, topsoil will be stripped off the full area occupied by the roads, cuttings, embankments and associated structures to depths defined for each particular location. The topsoil will be stockpiled in large mounds, outwit working areas, until such time as it is re-used on the exposed side slopes of embankments and cuttings. Otherwise, adjacent grassland areas are to be protected. Measures such as cut off ditches may be required around stockpiles to transfer any contaminated run-off to temporary settlement ponds.
- 1.2.24 The plant generally used for topsoil stripping includes rubber-tired motorized scrapers, for long haul; and crawler tractors with scrapers, when stockpiles are close to the excavations. More controlled procedures will be required in environmentally sensitive zones where smaller excavators would be used to load dump truck transporters. Limits will be imposed on the maximum distance from the zone of excavation to the point of deposition of the topsoil to control invasive plant species and ensure that topsoil is reused close to the location it was stripped. In addition, archaeologists may be required during the topsoil stripping process.

## Pre-Earthworks Drainage

- 1.2.25 Pre-earthworks drainage comprises unlined or lined ditches, or filter drains constructed at the top of cutting slopes or toe of embankments where required by the design to prevent surface or ground water entering the works. When placed at the top of cuttings, surface water carried by the pre-earthworks drainage is clean and can be transferred directly to watercourses unless the rate of discharge has to be controlled. When placed at the toe of embankments, surface water carried by the pre-earthworks drainage will contain sediment from run-off from the embankments being constructed and will be required to discharge water to temporary settlement ponds prior to it being discharged to a watercourse.
- 1.2.26 Pre-earthworks drainage will involve excavation of a ditch or trench with the excavated material being transported to a tip or for reuse within the works. Plant likely to be involved will include:
- excavators
  - tractors, dump trucks
- 1.2.27 It should be noted that some ditches will have to be lined depending on the nature of the subsoil to prevent ingress of sediment into the ditch. Other options in this instance would include us of filter drains. Plant likely to be involved will include:
- excavators
  - tractors, dump trucks
  - concrete transit mixers

## Earthworks (Cuttings and Embankments)

- 1.2.28 The principal earthworks process involves layered excavations of soils in cuttings and transportation of the excavated soil to neighbouring zones where embankments are required. Deposition in the fill areas will be built up by depositing the material and using bulldozers to place it in layers which are compacted by rollers. This earthworks procedure continues until the ground elevation in cuttings is reduced, and embankments are built, to the road formation level. The road formation level is the plane between the soil layers and structural road pavement materials.
- 1.2.29 Generally, it is preferred to achieve a cut/fill balance and have short haul distances to minimise transport of earthworks materials along the site between cuttings where they are excavated and embankments where they are placed. The undulating topography of the site and alignment standards to be provided complicate achievement of an earthworks quantities balance and long hauls of material may be required. Excavations in cutting will include the removal of the top layers (generally around 2m deep) of material which are likely to be unacceptable for use in the main road embankments and transport of this material to stock piles to be reused as landscaping earthworks mitigation at a later date. The lower layers of the cuttings are likely to comprise material which is



more acceptable for use in the main road embankments and this will be transported and compacted as described above.

1.2.30 Some excavations may encounter rock and this is harder to excavate. In some instances, rock may be ripped using a bulldozer with a blade attached to the rear. Other options include using a hydraulic breaker (also known as a rock hammer or pecker) or blasting. Blasting is only likely to be used for the removal of large quantities of rock to expedite programme or for harder rock which cannot be ripped. Blasting involves drilling holes to the required depth in the rock, placing charges and detonators. Prior to blasting, the blast area is evacuated and controlled blasting occurs. The blasted rock is transferred to dump trucks and transferred for reuse as bulk rockfill in the works or to a crusher to process the rock into aggregate for use as drainage bedding and filter material, pavement materials, concrete aggregates etc.

1.2.31 The main items of plant required for the earthworks activities will include but is not limited to:

- rubber-tyred motorised scrapers and crawler tractors with scrapers for cut / fill operations
- bulldozers to grade banks in cuttings
- front loading bucket excavators and dump trucks in cuttings
- bulldozers with ripping blades or tracked excavators with a hydraulic breaker for rock excavations
- dump trucks for off-site disposal of unsuitable and surplus
- bulldozers to layer and grade soil deposited in embankments
- smooth or vibrating rollers to compact the fill in layers
- motor graders to plane and trim the formation
- rock crushers

#### **Environmental Bunds and Landscaping**

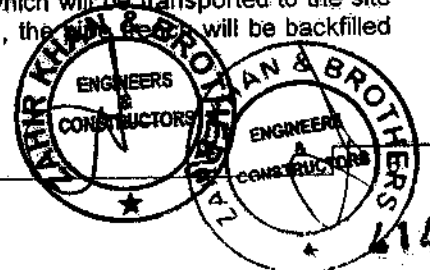
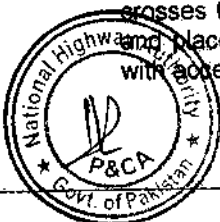
1.2.32 Construction of environmental bunds for landscaping or noise attenuation purposes is part of the overall earthworks operation. As indicated above, the material used to form these bunds is likely to be excavated from the top of cuttings and stockpiled prior to use.

1.2.33 The material will be loaded from the stockpile and transported along the haul road to the location of the earthworks mitigation where it is deposited, placed and compacted.

#### **Drainage, Service Ducts and Chambers**

1.2.34 Construction of carriageway drainage will involve laying filter drains, carrier drains and outfalls to transport surface water run-off from side slopes, carriageways and other paved areas. Drainage products will include pipes, gully pots, cover gratings, graded gravel to bed, gravel filter material, and other stone pieces for balancing ponds and open channels. Manholes and chambers will be built with in-situ concrete bases, precast concrete ring or brickwork walls and iron cover on precast concrete caps. Drainage products and construction materials will be delivered to site by road.

1.2.35 Construction of carriageway drainage will involve excavation of the drain with material being deposited adjacent to the drain in the road verge or transported for reuse or disposal. Gravel bedding and filter material (crushed rock) is delivered to the works. This may be from a local quarry or may be excavated and processed on site. The bedding material is placed at the bottom of the excavated trench and the drainage pipes, are placed on top. The filter material is then placed on top. Some filter drains have a geotextile surround to prevent sediment ingress into the filter material. If this is required it will be placed in the trench prior to depositing the pipe bedding and will wrap around approximately the bottom two thirds of the filter material. If the drainage pipe crosses the road carriageway, it will have a concrete surround which will be transported to the site and placed around the pipe in the trench. Following concreting, the pipe bed will be backfilled with acceptable earthworks material.



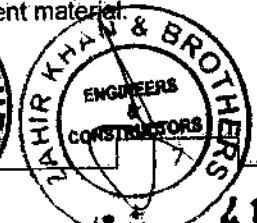
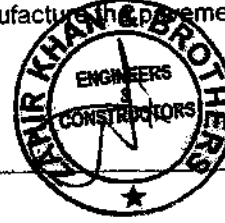
- 1.2.36 Catch pits and manholes will be constructed as described previously for pre-earthworks drainage.
- 1.2.37 As described previously, the permanent treatment and attenuation facilities will be constructed in a similar manner as the temporary ponds described previously or by cleaning and maintaining the temporary ponds constructed previously.
- 1.2.38 An outflow from the will be constructed from the carriageway drainage network to the permanent ponds and from the permanent ponds to the receiving watercourse. This will be in the form of a pipe or ditch and will involve trench or ditch excavation as described previously for pre-earthworks drainage. If a piped outfall is proposed, a headwall will be required at the point it discharges to the receiving watercourse. Headwalls are likely to be insitu concrete although they may have a stone facing or other finish applied following the main headwall works. Headwall construction will involve excavation to form the base of the headwall, steel fixing, shuttering, concreting and backfilling operations. During this operation, temporary diversion or damming of the watercourse may be required.
- 1.2.39 Service ducts and chambers are constructed in a similar manner as carriageway drainage and catchpits/manholes. Service chambers may, however, be brick built involving transport of materials and on site manufacture and use of mortar.
- 1.2.40 Plant likely to be involved in the construction of the drainage system will include:
- excavators
  - tractors, dump trucks
  - concrete transit mixers

#### **Topsoil Spreading, Seeding and Turfing**

- 1.2.41 Top soiling and seeding will be undertaken as soon as possible after earthworks construction is completed. This will enable the subsoil to be sealed preventing sediment run-off. As described previously, topsoil will have been stripped and stored adjacent to the works. The topsoil will be transported from the topsoil storage locations to the works and will be placed by a tracked excavator. Grass seeding may be by hand or by machine spreading, undertaken in the relevant areas specified in the landscape design.

#### **Pavement Construction**

- 1.2.42 Pavement construction involves building the pavement up in layers.
- 1.2.43 The bottom layer (sub-base) is a crushed rock aggregate which will be delivered to the site from local quarries or crushed and graded on site from excavated rock, as described previously. The material is deposited and then pushed into place and compacted. Plant likely to be involved in pavement construction will include:
- Bulldozers
  - motorised graders
  - waters sprayers
  - dump trucks
  - rollers
  - pneumatic spades and other hand tools.
- 1.2.44 The upper pavement layers can be a cement bound material, concrete or bituminous material. All of these will involve transport of material to the site either from local sources or from a batching plant on site. On large projects, it is not uncommon for on site batching plants to be constructed, depending on the availability of suitable materials on site to manufacture the pavement material.



### Roadworks Finishes including Safety Barriers, Signs, Road Markings, Lighting

- 1.2.45 Following pavement construction, safety barriers will be installed. Posts and barriers are delivered to the site and safety barrier installation then involves driving steel posts into the ground or excavating small footings and placing concrete into which the posts are set. The barriers are bolted to the posts and fixed to small concrete anchorages either end.
- 1.2.46 Sign installation will involve excavation for the foundations which are concrete and setting the posts. The sign faces are then fixed to the sign posts. Some signs may be lit and will require cabling to be passed through the service ducts installed as described previously.
- 1.2.47 Road markings will be sprayed onto the road surface using specialist lorry mounted equipment.
- 1.2.48 Lighting columns are installed in a similar manner as traffic sign posts.
- 1.2.49 Plant likely to be involved in road finishes construction will include:
- Rubber tyred excavators
  - Dump Trucks
  - Concrete transit mixers

### Accommodation Works

- 1.2.50 Accommodation works may be bridges, access roads, fences and walls or other ancillary items agreed with landowners. Construction methods will be similar to those described for these items in this outline methodology.

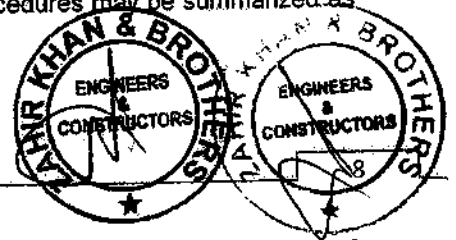
## 1.3 Structures

### Bridge Construction

- 1.3.1 The sequence bridges are constructed in can be significantly affected by the location of the structure: for example if it is on the line of an existing road the need to keep traffic flowing can result in complex construction phasing at bridges.
- 1.3.2 An overbridge carries a road over a deck, supported on piers and abutments which are supported by foundations. Abutments are formed to support the ends of the bridge deck; piers are formed in the central reserve or verge to support the inner parts of the deck. The main bridge elements can be steel or concrete or combinations of these. Concrete can be cast on site (in situ) or the bridge can include precast units which are transported to the site. The exact form and materials used on each bridge is specific to individual locations depending on the nature of the bridge, the alignment of road it carries, the distances between the piers and between the piers and abutments (spans).
- 1.3.3 The road surface on the bridge deck is normally a bituminous bound pavement laid on a waterproofing coat. Bridge deck waterproofing can either be a spray applied or sheet membrane system. The spray applied system comprises a solvent free methyl methacrylate resin spray and a polymer modified bituminous based hot melt adhesive tack coat. The sheet membrane system comprises a non-woven polyester reinforced, styrene-butadene-styrene (SBS) polymer modified bitumen sheet with a solvent-based bituminous primer and blown (oxidised) bitumen bonding. A steel parapet is also fixed to the bridge deck.

### Bridge Construction Sequence

- 1.3.4 Construction of overbridges will commence when the earthworks embankments on the adjacent sections of road are at abutment level. The bridge construction procedures may be summarized as follows:





### Bridge Foundations

1.3.5 Foundations are required for the abutments and piers. Foundations can be either concrete pad or piled.

1.3.6 Pad footings are generally constructed as follows:

- excavation to a depth of approximately 2.5 meters below formation level to a suitable founding soil strata.
- laying a concrete layer, approximately 75 mm thick, at foundation formation level over the full extent of the rectangular foundation to produce a clean, flat plain surface, capable of containing the wet structural foundation concrete. The concrete layer is transported to the site in a concrete wagon.
- fabricating cages of steel reinforcement, which is done on site, with bars protruding vertically for subsequent concrete pours.
- Placing formwork for the foundation slab. Formwork will be comprised of wooden or metal sheets supported by wooden stakes or other props.
- Transporting concrete to the site and pouring and compacting the concrete, by vibration, to required level, in formwork.
- Leaving the concrete for a period of time to enable it to cure before stripping the formwork to from foundation base.
- Steel reinforcement is fixed for the pier followed by shutters for the pier.
- Placing concrete for the pier, including vibration and finish to exposed top of concrete.
- curing fresh concrete, stripping shutters, treating concrete surface and backfilling over excavations with acceptable material and compacting using a small machine operated compactor.

1.3.7 Piled foundations are generally constructed as follows:

- carry out preliminary excavations at foundation positions.
- install foundation piles to a suitable load bearing soil strata - this can either be by driving reconstructed concrete or steel piles to the required depth with a pile driver, or by using a boring machine to create the void for the pile, placing a casing in the void followed by lowering steel reinforcement and pouring concrete to form the pile.
- complete excavations to the appropriate formation level.
- trim projecting piles to required level using mechanical saws or cutting equipment.
- Construction of a reinforcement pile cap upon which piers and abutments will be constructed follows in a similar manner as the construction of the pad footing.

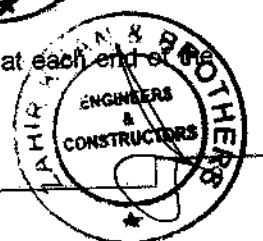
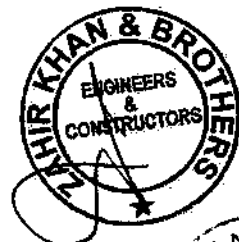
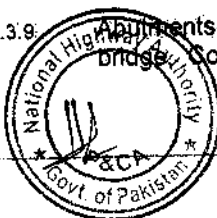
### Bridge Piers

1.3.8 Bridge piers are generally concrete columns and are constructed as follows:

- fixing a grillage of steel reinforcement for piers to the starter bars.
- erecting vertical formwork for piers with shores and bracing.
- placing and vibrating concrete into formwork for piers.
- stripping shutters and curing concrete

### Abutments

1.3.9 Abutments are concrete seats upon which the bridge beams can be supported at each end of a bridge. Construction of abutments is generally undertaken as follows:



- fixing a grillage of steel reinforcement for abutment walls.
- erecting vertical formwork for abutment walls.
- placing concrete in wall formwork and compacting by vibration
- removing shutters, curing concrete, treating exposed surfaces and applying waterproof membrane to faces retaining soil fill – the waterproof membrane can typically be a bitumen coating applied by brush or spray.
- A drain is laid behind the abutments comprising a small pipe with a granular surround.
- placing and compacting granular fill, behind abutments and wing walls, to road formation level.
- preparation of seatings for bridge beams.

### Bridge Deck

1.3.10 Bridge decks can be several different forms, as follows:

- Concrete deck cast on site (in situ deck).
- Beam and slab, with beams being precast concrete or steel, and the deck being concrete cast in situ.

1.3.11 In situ decks are generally constructed as follows:

- Erecting formwork on staging to support the wet concrete forming the deck.
- Erecting a steel reinforcement cage within the formwork.
- Pumping concrete into the formwork and compacting by vibration.
- Preparing a finish to the top surface of the wet concrete by smoothing the concrete with a float.
- Leaving the concrete for a period of time to enable it to cure before removing the staging.

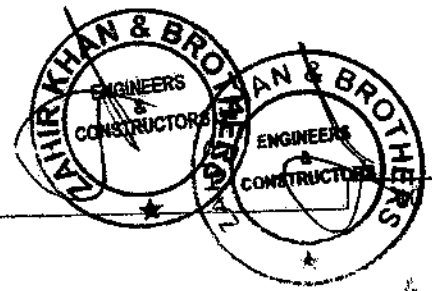
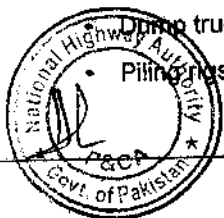
1.3.12 Decks supported by beams are constructed as follows:

- taking delivery of precast / prestressed concrete or steel bridge beams and erecting in position over temporary props at pier positions and abutments using cranes;
- erecting soffit formwork, between and along outer edges of bridge beams, and side forms for edge parapet beam and diaphragms / transverse beams;
- fixing inserts for services and additional structural elements;
- fixing grillage of steel reinforcement for in-situ concrete deck and parapet beam;
- placing concrete for bridge deck and in-situ edge beams. This is normally done as a staged process. The first stage involves the concrete pour of the main deck sections, followed by the diaphragms / transverse beams and finally the edge beams
- curing deck concrete, stripping formwork, treating exposed surfaces,
- waterproofing top of structural deck;
- completing services

1.3.13 The deck is completed with construction of the verges/footways, and placement of the deck waterproofing system as described above. The final stages of bridge construction include erecting metal parapet elements and applying pavement markings.

1.3.15 Plant likely to be involved in bridge construction includes:

- Excavators
- Dump trucks and lorries
- Piling rigs



- Mobile cranes
- Concrete wagons and pumps
- Hand compactors
- Paving machines and smooth rollers

#### 1.4 Ancillary Works

- 1.4.1 Traffic sign boards will be prepared as per drawings and will be fixed at the positions as stated by the engineer. The different categories of sign boards, like regulatory, warning and informatory sign boards, have their own specific dimensions and colour schemes. Special care will be taken to achieve required standards. A specified width of line will be marked on pavement with approved reflective paint. For this purpose skilled labour will be employed to complete the task efficiently and in a way which increases the aesthetics of pavement.

#### 1.5 Environmental Mitigation

##### Earthworks Mitigation

- 1.5.1 Earthworks mitigation comprises graded out slopes and bunds and is described previously in this outline methodology.

##### Landscape and Ecological Mitigation Planting

- 1.5.2 Planting works are seasonally dependent and are generally undertaken in autumn or spring. Planting works are undertaken manually with plants delivered to the site and planted.

##### Noise Barriers

- 1.5.3 Noise barrier construction is similar to fence construction as described previously.

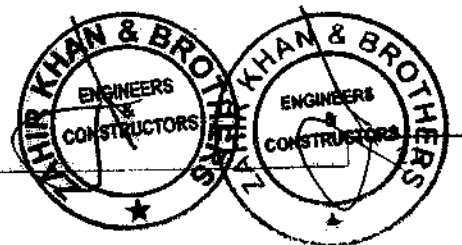
##### Ecological Mitigation

- 1.5.4 Specific mitigation required for ecological purposes may include fencing, bridges, enhancements for culverts, and construction as previously described.

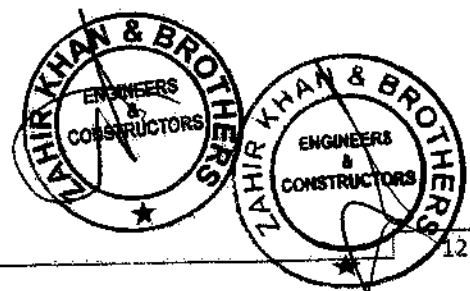
#### 1.6 Temporary Works

- 1.6.1 Temporary works are generally described previously under the relevant construction element. In addition, temporary traffic management will in place during construction at works close to or on existing roads, and at site access and egress points. Such measures may include:

- Traffic cones
- Traffic signals
- Temporary signs
- Temporary lighting
- Temporary speed restrictions
- Temporary diversions
- Narrow lanes
- Lane closures
- Partial or full road closures (to be agreed with the NHA) with appropriate diversion signing in place



- 1.6.2 Temporary works involving traffic management can be disruptive to the local road network if not managed properly. The Contract for the scheme will contain specific restrictions regarding traffic management and routing of vehicles to and from the site. The contractor will prepare his own programme for the construction of the works, which will require approval by the Scottish Executive's representative on site. This programme will take into account the traffic management requirements of the contract for works affecting all existing roads. It is unlikely that any lane closures of the main trunk or A class roads will be permitted during peak hours except under exceptional circumstances and as a consequence it is anticipated that much of the off line works will be completed without affecting the trunk road traffic directly. However, impacts due to additional construction and delivery vehicles using these routes will occur.
- 1.6.3 During construction of tie-ins with the existing road network or at locations where the proposed route is close to existing roads, narrow lanes may be used by the Contractor to facilitate construction. It is also possible that sections of temporary carriageway may be required to enable the flow of traffic to be maintained. During all traffic management works, the appropriate standards will be adhered to including those specifying geometric standards and pavement construction standards necessary to minimize disruption to road users.
- 1.6.4 If contraflows are required overnight, temporary lighting will be required. Temporary lighting will also be required where structures are constructed over live traffic during night time periods. A typical example would be lifting bridge deck beams over the existing roads at the key junctions. This may have to be undertaken during night time road closures to ensure the safety of traffic is maintained and disruption is minimized. Road closures will be kept to a minimum and will involve adequate signing of appropriate diversion routes.
- 1.7 Maintenance**
- 1.7.1 Inspection works and maintenance will be required for the scheme. Routine maintenance could include works such as pavement rehabilitation, drainage works, safety barrier works, structural inspections and repairs. All of these may require traffic management measures to be implemented to ensure the safety of the workforce and road users during the works.
- 1.7.2 Winter maintenance will involve gritting and snow clearing to ensure the road surface is safe to drive on.
- 1.7.3 Landscape maintenance will involve grass cutting, weeding and general plant maintenance and this may also require temporary traffic management measures.
- 1.7.4 As described previously, a concession company will have responsibility for the design and construction of the scheme and they would continue to operate the completed road for an extended concession period. Following expiry of the concession period, responsibility for operating and maintaining the trunk road will return to the NHA.



## SCHEDULE OF MOBILIZATION

### **Mobilization of Key Personnel:**

Immediately after the letter of award, we shall mobilize the required key personnel for planning and setting up of works.

### **Construction of Camp and Other Facilities:**

The next step will be to mobilize and set up a site camp including the office, workshop, residence of our staff and labor etc.

### **Site Preparation:**

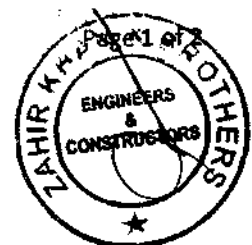
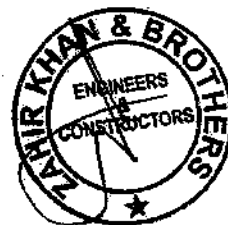
The camp shall be cleared of all vegetation and it will be done by proper equipment. Access roads will first be constructed to enable the machinery and construction equipment to be transported to the camp and site. Suitable arrangements for parking of equipment will also be constructed.

### **Services:**

Power connection from electric supply line will be taken, which will be sufficient enough to operate the lighting system. A generator shall also be provided for un-interrupted power supply. The water supply source shall be developed to cope with the requirements of the camp.

### **Sanitation:**

Proper drainage shall be provided to keep the camp environment free of obnoxious odor and other pollutions.



### **Construction of Site Facilities:**

The suitable site for camp will be selected having ample area for skilled and supervisory staff. Workshop along with ware-house shall be located in the same camp duly cordoned by barbed wire fencing and other security arrangements. Contractor office will be accommodated at an appropriate location to attend all site construction areas amicably. The office will be according to the requirements of all staff as proposed in our organization chart.

### **Machinery & Equipment:**

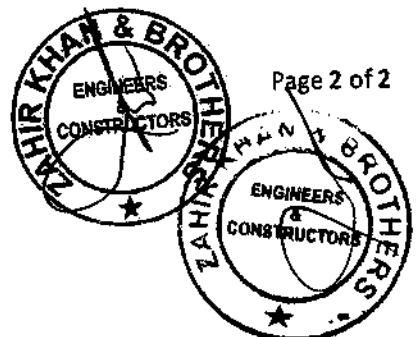
All plants and equipment shall be transported to be on site for carrying out proper work in accordance with the construction schedule.

### **Material Storage:**

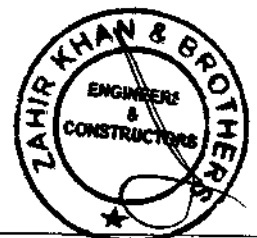
A central store of construction materials will be located in the main construction camp. Separate storage bins will be constructed for aggregates and sand. The bins will be covered with plastic sheets for protection of rains. Separate covered sheets will be constructed for the storage of cement and steel. As per schedule program major materials for construction shall be procured and stacked at a suitable location along the construction area to facilitate the execution of work.

### **Mobilization Program:**

Mobilization program based on the construction program is given in Primavera program.



# ENVIRONMENTAL MANAGEMENT PLAN



OCB/CAREC/T-II: Construction of Additional Carriageway from Shikarpur to Rajanpur of N-55 (221.95 KM) under one Package Comprising Four Lots: Lot-1: Shikarpur – Kandhkot Section [KM 43+400 to KM 105+820 (62.42 KM)]

# Initial Environmental Examination

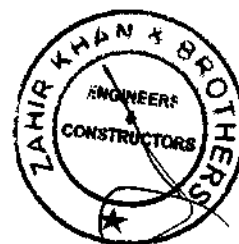
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Main Report (Sections 7b to 10)  
Project Number: 48404-004  
September 2021

Pakistan: Central Asia Regional Economic Cooperation  
Corridor Development Investment Program (Tranche 2)

Shikarpur–Rajanpur Section of N55

Prepared by the National Highway Authority Pakistan for the Asian Development Bank.





## SECTION 8: ENVIRONMENTAL MANAGEMENT PLAN

### 8.1 Environmental Management

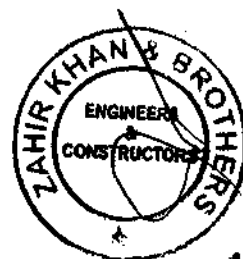
294. The objective of the Environmental Management Plan (EMP) is to address all the major environmental issues and provide framework for the implementation of the proposed mitigation measures during the preconstruction, construction and operational phases of the proposed project. The proper implementation of the EMP will ensure that all the adverse environmental impacts identified in the IEE are adequately mitigated, either totally prevented or minimized to an acceptable level and required actions to achieve those objectives are successfully adopted by the concerned institutions or regulatory agencies. The implementation of EMP should be carefully coordinated with the design and construction program of the project to ensure that relevant mitigation measures are implemented at the appropriate stage and that adequate resources are properly allocated to achieve the desired results.
295. The Contractor will be responsible for the implementation of the proposed Project under the direction of "Supervision Consultant (SC)" and NHA (EALS). The Contractor should be bound to follow the provisions of the contract documents especially about environmental protection and apply good construction techniques and methodology without damaging the environment.
296. Obligation of the contractor, to safeguard, mitigate adverse impacts and rehabilitate the environment should be addressed through environmental provisions in the FIDIC conditions of contract for construction, MDB harmonized addition- June 2010 and special clauses included in the contract related to environment. FIDIC clause 4.18 (protection of environment), 4.8 (safety procedures), 6.4 (labor laws), 16.3 (cessation of work/ remedial work), 2.3 b (employers' personnel), 4.21 (progress report) are important in this regard.

### 8.2 Institutional Responsibilities

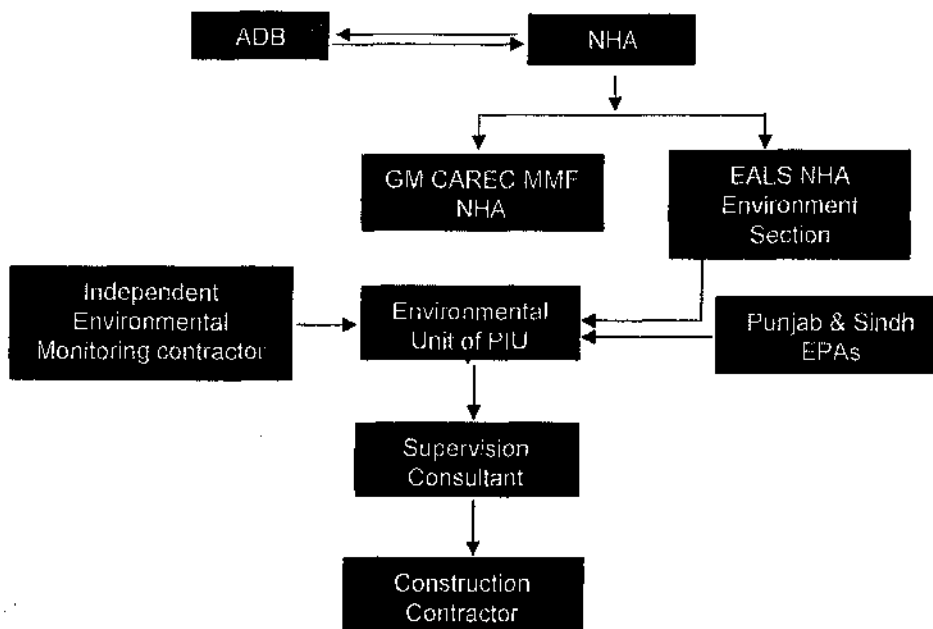
297. NHA (EALS) have separate environment section headed by Director Environment to overall manage the environment related tasks and to guide project preparation, project construction, operation and maintenance work. However, overall responsibility for implementation of EMP falls to the PIU for the Project
298. Institutions involved for the executing of EMP would involve: EALS (NHA), Environmental Unit of PIU headed by (GM) CAREC-MMF, Environmental Unit of CSC, Environmental Unit of Contractor, Independent environmental monitoring contractor and EPA Punjab and Sindh. The institutional framework is shown in **Figure 8.1**.

#### 8.2.1 EALS (NHA)

299. The responsibilities of EALS, NHA as a borrower include:
- Ensuring the Implementation of agreed technical and institutional measures specified in safeguard management plans
  - Monitoring and evaluation of environmental and social impacts and risks associated with the project
  - Review of the safeguard monitoring reports submitted by PIU on the status of the implementation of agreed actions
  - Ensuring the Project Implementation Unit (PIU) submits regular project progress reports to the ADB, with separate safeguards chapter
  - Safeguard report is prepared based on the inputs by contractors and project consultants and PIU dedicated staff's observations
  - Impose penalty and/ or require corrective action in case of non-compliance



- Semiannual reporting to ADB, or more frequently if new issues emerge, or sensitivities occur
- Reporting to EPA as per requirement of NOC
- In case the project is not in compliance with environment and social safeguard GM CAREC, can suspend work and employ the third parties to correct noncompliance.



**Figure 8.1: Institutional framework for environmental management**

### 8.2.2 Project Implementation Unit (PIU)

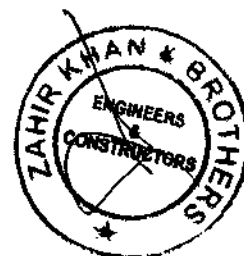
300. PIU will be responsible for:

- Depending on availability of environmental expertise in NHA, hiring of environmental specialists
- Ensuring environmental provisions and expertise are covered by supervision consultancy and construction contract
- Supervision and monitoring the implementation of EMP
- Establish regular reporting by supervision consultant and contractor and environmental safeguard as a part of progress report
- Undertaking regular visits to project sites and report to the Bank on the status and any new / unexpected issues
- Follow up with contractors and consultants on environmental compliance and ensure enforcement
- Submission of semi – annual monitoring reports to NHA EALS for review and onward submission to ADB

### 8.2.3 Asian Development Bank

301. Bank team is responsible for:

- Reviewing the status of implementation of EMP
- Assisting and guiding the Borrower in addressing the issues identified by the supervision
- Conducting periodic site visits and supervision mission for detailed review for projects with significant impacts



- Reviewing of environmental management plan
- The need to improve Borrower's capacity
- Reviewing the periodic safeguard monitoring reports to ensure compliance as planned
- Resolution of grievances, especially, directly received to ADB

#### 8.2.4 Construction Supervision Consultant (CSC)

302. CSC would be responsible for:

- Review and endorsement of SSEMP, and giving the input, if required, to assist contractor
- Review of bi annual environmental monitoring reports by the third-party contractor (Labs)
- Prepare corrective action plan in case of non-compliance
- Review EMP every six month and updating, if required
- Supervision of implementations of EMP and supporting contractor for environmental compliance
- Checking and endorsement of environmental part of method statements
- Preparing the training material and assist or providing the training
- Responding to environmental incidents reported
- Setting Environmental Management and Monitoring System (EMMS) and insurance EMMS in place
- Review and assistance in preparation of bi annual report and all other reports
- Grant approval for all facilities (establishment of camp, asphalt and batching plants, borrow areas) in light of the EMP requirements.
- The CSC's Environment Officer must be hired before construction starts so that the SSEMP is prepared in time

#### 8.2.5 Contractor

303. The contractor will be responsible for:

- Implementation of environmental mitigation measures at preconstruction and construction stage
- Preparation of CEMP describing the mechanism to comply with the EMP and get it approved from CSC Environmental unit and PIU Environmental unit prior to mobilization
- Frequent monitoring and reporting of compliance of EMP
- The Contractor's Environment Officer must be hired before construction starts so that the SSEMP is prepared in time.

#### 8.2.6 Third Party Environmental Monitoring Contractors

304. Environmental monitoring contractor will be responsible to carry out testing for various environmental attributes including air, noise, and water quality on behalf of PIU. The monitoring would be carried out prior to start of work to establish the baseline conditions and the frequent monitoring as specified in the EMP during the construction.

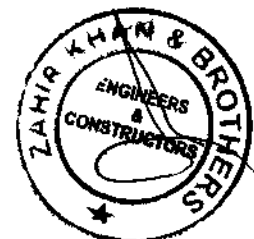
#### 8.3 Staffing Requirement

305. Environmental staff will be required by Contractor, CSC and PIU. GM CAREC will approve the hiring of environmental staff to ensure the hiring of competent staff. Following functionaries with the indicative level of effort (LoE) will be involved in the implementation of EMP during construction:

**GM CAREC (Head of PIU)**

**Project Director (Timely implementation of Project)**

**EALS NHA**



- Director Environment

**Environmental Unit of PIU**

- Environmental safeguard expert full time
- One additional staff member for each section full time

**Environmental unit of CSC**

- Team leader (International Environmental Specialist for 4 months on intermittent basis)
- Environmental Specialist for each section (03 Nationals expert full time)

**Contractor**

- Environment Specialist (Full time)
- HSE Specialist (Full time)
- Environmental Technician (03) (Full time)
- Environmental Management Training Consultant (may be through CSC environment unit or by independent through Lump Sum Contract)

**8.4 Reporting and Feedback Mechanism**

306. The contractor's environmental unit will manage the daily activities to be conducted in compliance with the EMP and will be responsible for weekly reporting while CSC would be responsible for monthly inspecting and monitoring report. CSC will draft the semiannual environmental monitoring report and finalize with the PIU. PIU will submit that report to EALS for onward submission to ADB (see Table). EALS would also submit the periodic reports to EPA as per conditions of environmental approval.

**Table 8.1: Reporting Requirements**

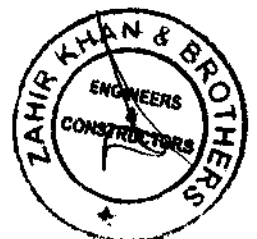
Reporting responsibility	Reporting Requirement	Report submitted to
Contractor	Weekly compliance report	CSC
Construction Supervision Consultant (CSC)	Monthly Environmental Compliance Report Semi Annual Environmental Monitoring Report	PIU
PIU	Semi Annual reports	EALS NHA
EALS NHA	Final Environmental report after completion of defect liability period.	ADB, EPA

**8.5 Environmental Technical Assistance and Training Plan**

307. To raise the level of professional and managerial staff, there is a need to upgrade their knowledge in the related areas. Director Environment (EALS) should play a key role in this respect and arrange the training programs.

308. Training would be required to all the three agencies including contractor, CSC, PIU, to build their capacity with the following objectives:

- Full understanding of the EMP
- Understanding of their responsibilities
- Enhance the capability to undertake their responsibilities



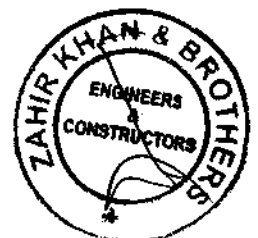
309. There will be three levels of trainings (Table: 8.2) and CSS will maintain the training register.

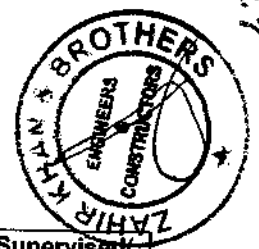
**Table 8.2: Training of Institutions involved in Environmental Compliance**

Level of Training	Responsibility	Contents
Project Induction	CSC	Overview of environmental policy of Project, Environmental approval conditions, response to environment incidents, PPEs, Environmental receptors, environmental conformances. Sanitation and Healthcare
Tool Box talks	Filed level by Contractor	Environmental aspect of managing waterways crossings, soil erosion and sedimentation control, dust & noise control, wild life protection, safety of workers, waste management etc.
Capacity Building of NHA, PIU, Contractor, and CSC national staff	International consultant to develop the training material and conduction	ADB safeguard Policy. Environmental laws, Monitoring & Evaluation of EMP, EHS guidelines, Standards, Institutional responsibilities, reporting & feed back

### 8.6 Summary of Environmental Management Plan

310. Table 8.3 provides the framework for the implementation of environmental management plan during different phases of the proposed project. It portrays impacts, mitigations measures and the responsible organizations for the implementation of the mitigation measures. Where additional costs are required for any mitigation measure it is given in the table:



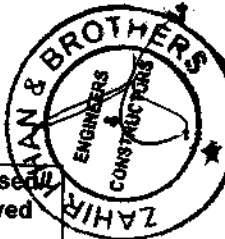


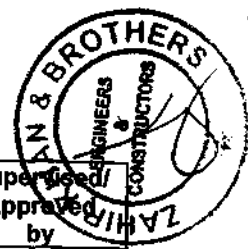
**Table 8.3 Environmental Management Plan**

Issue	Location	Mitigation Measure	Timings	Estimated Cost	Implemented by	Supervised/ Approved by
<b>Pre- Construction</b>						
Dust and Noise	Entire Road	Consultation with representatives from villages, mosques, schools for the timings to avoid significant impact	Prior to construction Activity	Included in Construction contract cost	Contractor	NHA/ CSC
Flooding	All bridges and culverts especially bridge on Canal emerging from Guddo barrage near Kashmore	All bridges and culverts to be designed not less than the current the current capacity	Prior to construction Activity	Included in Construction contract cost	Design team	NHA
CEMP	Entire road	CEMP Need to be prepared	Prior to construction Activity	Included in Construction contract cost	Contractor	NHA/CSC
Biodiversity Conservation	Entire road	Identification and labelling of tree in RoW to be uprooted and obtain necessary approval	Prior to construction Activity	Included in Construction contract cost	Contractor	
Disposal of excavation spoil and waste pavement	Proposed Disposal Sites	<p>Before starting excavation work and removal of pavement seek approval from CSC of disposal sites meeting the following criteria:</p> <p>Located at distance of 50 m from watercourses</p> <p>No chances for the sedimentation and blockage of nearby water courses for example due to slope failure</p> <p>Not causing damage to crops/ productive area</p> <p>Prefer the sites needs to be improved by filling such as for school, universities, play grounds etc.</p>	Prior to construction Activity	Included in Construction contract cost	Contractor CSC	NHA



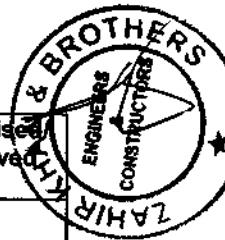
Issue	Location	Mitigation Measure	Timings	Estimated Cost	Implemented by	Supervised/ Approved by
Procurement of material from illegal source	Source of construction material	Contractor will ensure that construction material such as sand, gravel, aggregates, will be obtained from approved quarries. NHA also listed the approved quarries in provinces in Composite Schedule of Rates (CSR 2014).	Prior to construction Activity			
Identification of site for construction camps, asphalt & batching plant and crushers		Follow the following criteria for selection of sites: Site must be 0.5 km away from the localities & cultural sites and 100m away from the existing road; Asphalt, batching and crushing plants must be installed in the downwind direction of residential areas.	Prior to construction at each section		Contractor	NHA/ CSC
Land Acquisition	Throughout the alignment	Mitigation measures will involve careful alignment and route selection by the designer to minimize the impact; and Adequate budget will be provided in the Project cost for the compensation to the affected people as per Land Acquisition Act, 1894 and ADB Safeguard Policy Statement 2009.	Prior to Construction	PKR 2200 M Given in PC-1	Design team	NHA (EALS)
Alignment selection for Bypass		Avoid sharp curves/turns in the design; Assure minimum tree cutting and vegetation clearance during alignment selection; and Selection of the route with minimum dislocation/ resettlement of the structures/residents.	Prior to Construction	Included in detail design cost	Design team	NHA
<b>Construction Stage</b>						
Air Pollution	Entire road and related facilities particularly	Asphalt plants and batching plants to located at downwind & minimum distance to nearest dwelling of 500 meters and must be equipped with	Throughout construction	PKR 1800, 000/-	Contractor	PIU





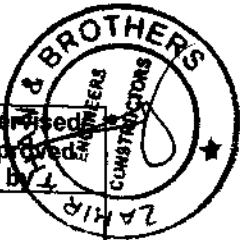
Issue	Location	Mitigation Measure	Timings	Estimated Cost	Implemented by	Supervised/ Approved by
	<p>sensitive areas as mentioned below:</p> <p>Residential Areas near Shikarpur, Kashmore, Rojhan Rajanpur, Khanpur, Kandhkot, etc.</p> <p>Rural Health Centre near Khanpur and Rojhan</p> <p>Masjid Ali-ul-Murtaza at Kandhkot, Jamia Masjid Qadria near Kashmore and Noorani Masjid near Rajanpur, etc.</p>	<p>controlling devices such as Electrostatic Precipitator (EP), bughouse filters</p> <p>Generators to be equipped with emission controlling devices and well-maintained generator ad machinery</p> <p>Material transport. Dumper trucks carrying earth fill, sand, gravels covered with tarpaulins or other suitable cover</p> <p>Speed limits of 20 km/ hour all kind of vehicles through administrative control and engineering control (signs, bumps, barriers etc.)</p> <p>Debagging of cement in a sheltered area</p> <p>Stockpiles management: Covering/ shading of stock piles and if needed water spraying especially at crusher sites</p> <p>Construction Site management: watering of dusty construction site and material handling routs and demolition work such as trimming activities by using breaker</p> <p>Clean Up: contractor will immediately clean up dusty material or mud left on or around the public road such as by tractor mounted vacuum cleaner</p>		<p>For Monitoring</p> <p>Cost for other measures included in contract</p>		
<p>Water Quality and Quantity</p>	<p>Construction sites adjacent to water bodies and water source for construction e.g. Nullah Crossing (Meeral), Begari Canal Crossing (Kandhkot), Nearby</p>	<p>Don't disturb the streams recharging the community water, or used for community</p> <p>Consult with residents to identify well or water source within 50 m project road and demarcation to avoid the damage by machinery</p> <p>To limit the spill of material into water bodies no construction material including soil, spoil,</p>	<p>Throughout construction</p>	<p>PKR 270,000/-</p> <p>For surface water quality</p> <p>Cost for other measures included in contract</p>	<p>Contractor</p>	<p>PIU/ CSC</p>




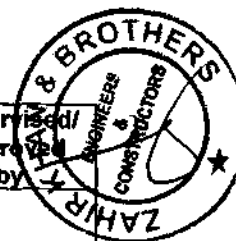


Issue	Location	Mitigation Measure	Timings	Estimated Cost	Implemented by	Supervised/ Approved by
	Water Pond (Kandhkot and Bakshapur), Pat Feeder Distributary Crossing (Kashmore), Pat Feeder Canal Crossing (Kashmore), Matwah Distributary Crossing near Rojhan and Kadra Canal Crossing Near Kot Mithan etc.	aggregates, chemicals or other material will be stored within 50 meter of the water body				
Water Pollution Control	Construction camps and active sites especially near sensitive receptors mentioned in water quality and quantity section	<p>Wastewater from workshops: Wastewater effluent from contractor's workshop and equipment washing yards would be passed through gravel/ sand beds to remove oil/ grease contaminants before discharging it into natural streams;</p> <p>Sanitary wastewater: Sanitary wastewater should be treated through buried septic tank and the capacity of the septic tank should be three times than the generated effluent per day. Manholes onsite should be covered and sealed. Guidelines for sanitary wastewater from IFC/ World Bank may be consulted.</p> <p>Public Roads: around the site entrance and site hoardings should be kept clean and free of muddy water</p> <p>Road drainage: provision of retention pond with cascading to drain the road surface runoff.</p>	Throughout construction	PKR 540,000/-  For wastewater testing  Cost for other measures included in contract	Contractor	PIU/ CSC





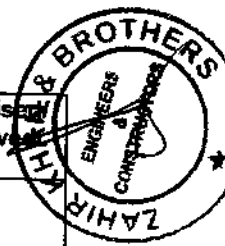
Issue	Location	Mitigation Measure	Timings	Estimated Cost	Implemented by	Supervised & Approved by
		<p>Water ponding at Batching Plants: Stored water for batching plants should be used or drained during shut of as this will cause water ponding leaving the scum at the top serving as a habitat for mosquitoes and vectors.</p> <p>Canal Water: construction debris should not find its way in to canals and washing machinery with the canal water should be prohibited.</p>				
Noise Control	<p>Key noise receptor along the road alignment particularly sensitive areas as mentioned below:</p> <p>Residential Areas near Shikarpur, Kashmore, Rojhan Rajanpur, Khanpur, Kandhkot, etc.</p> <p>Rural Health Centre near Khanpur and Rojhan</p> <p>Masjid Ali-ul-Murtaza at Kandhkot, Jamia Masjid Qadria near Kashmore and Noorani Masjid near Rajanpur, etc.</p>	<p>Source Control: well-maintained machinery with exhaust system, enclosures for stationary equipment and operate generators, compressors with door closed, reduce speed limits, turning off or throttled down idle equipment,</p> <p>Timings: Adjust operation timings between 8 a.m. to 6 p.m.</p> <p>Notification: Provide advance warning to community on timings of noisy activities and strictly comply that</p> <p>GRM: establish the mechanism to handle the complaints from communities, maintain register for complaints on sites, and seek suggestions from community</p>	Throughout construction	<p>PKR 576,000/-</p> <p>For noise monitoring</p>	Contractor	<p>PIU/ CSC</p> 



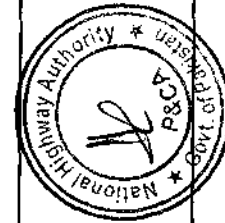
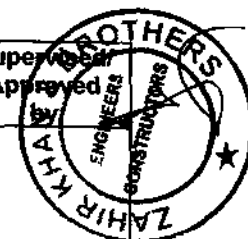
Issue	Location	Mitigation Measure	Timings	Estimated Cost	Implemented by	Supervised/ Approved by
Waste Management	Entire Road, camp sites, Workshops, Related facilities	<p><b>Waste Minimization:</b> Procure the material which have less packaging and the quantity required, recycle and reuse of construction waste material as fill material, concrete meeting grading requirements for drainage layer etc. Good housekeeping practices.</p> <p><b>Storage and Containments:</b> Provided containers in appropriate size and numbers for construction and hazardous waste</p> <p><b>Chemical &amp; hazardous Waste:</b> Proper storage and labelling according to hazardous substance rule 2003. Disposed of by licensed contractor, provision of drip trays for oil drum, clean up the spill immediately, store on hardened surface, proper storage of oil rags,</p> <p><b>Used Tires:</b> Used tires to be sold out to licensed contractor to avoid becoming the habitat for mosquitoes,</p> <p><b>Spoil and inert Waste:</b> Spoils and inert waste to be disposed of on approved site by CSC in accordance with aggregate. Spoil will not be disposed of to disturb vegetation, rehabilitate and restore the spoil disposal site with agreed plan</p> <p><b>Municipal Waste:</b> provided the bins to worker for recycling of the MSW and the food waste should not be stored for more than two days and disposed of the nearest dumping site through TMA.</p>	Throughout construction	Included In construction cost	Contractor	PIU/ CSC



Issue	Location	Mitigation Measure	Timings	Estimated Cost	Implemented by	Supervised/ Approved by
		Administration: Prohibit the burning of waste & spill from containers and ban the entry of scavengers				
Storage of Chemicals and dangerous goods	Hazardous Material Storage Site	<p>Access control: Locking of hazardous material storage place and clear instruction on the door based on MSDS and applicable laws.</p> <p>Spill control: secondary containment for oil spillage (drip trays), provision of spill kit/ sand/ saw dust/ for absorbing spill</p> <p>Surface: Storage on hardened/ non permeable surfaces</p>	Throughout construction	Included In construction cost	Contractor	PIU/ CSC
Fire Prevention/ Emergency Preparedness	Active Sites, Workshops, Campsites and related facilities	<p>Fire Extinguishers: Placement and maintenance of fire extinguishers with trainings to use them</p> <p>Accident/ Incident Reporting: system should be in place and reviewed time to time for corrective &amp; preventive actions.</p> <p>Escape Route: Escape route and gathering area should be mapped, displayed, demarcated and not blocked/ obstructed.</p> <p>Emergency Contact Detail: Contact detail for Fire department along with emergency services such as 1122, Edhi Ambulance services, bomb disposal team, police etc. with in-house emergency team should be displayed</p>	Throughout construction	Included In construction cost	Contractor	PIU/ CSC
Protection of Cultural and religious sites	Near the cultural and religious sites	Access: Access for the religious site should not be disturbed due to construction activities as there are many mosques along the road and community should be consulted for extra measures during prayer timings.	Throughout construction	Included In construction cost	Contractor	PIU/ CSC



Issue	Location	Mitigation Measure	Timings	Estimated Cost	Implemented by	Super Approved by
		No listed or protected cultural heritage site is being affected; however, there are some in the vicinity, the access of the locals and visitors coming from far should not be blocked.				
Resource Conservation		Water Conservation: through recycling for dust suppression, prevention of pipe leakages and wastages.	Throughout construction	Included In construction cost	Contractor	PIU/ CSC
Energy Conservation		<p>Energy Conservation: adopting energy conservation best practices, shutting of diesel power plants and equipment while not in use, locating the raw material source to the minimum distance, use gas cylinder to avoid timber, control fuel spill and leakages through piping system,</p> <p>Raw material: Prevent the deterioration and wastage by covering, separation of different raw materials, and regular quantification by track record</p>	Throughout construction	Included In construction cost	Contractor	PIU/ CSC
Occupational Health & Safety	Worksites, Batching plants & Asphalt Plants, Quarry Area, campsite, subcontractor campsite	<p>Workplace Structure: campsites, workshops, semi-finished product area etc. should be structurally stable and to meet severe climatic conditions</p> <p>Lighting: workplace should be properly illuminated with lightening arrangement at place (Minimum Workplace illumination Intensity by IFC/ WB)</p> <p>Safe work Instruction: workplace safety instruction should be at place of work/ workstation according to nature of work</p> <p>Signboards: signboards must be at place for electrical devices, compressors material, emergency exit, pipe color coding, labels according to international standards</p>	Throughout construction	Included In construction cost	Contractor	PIU/ CSC

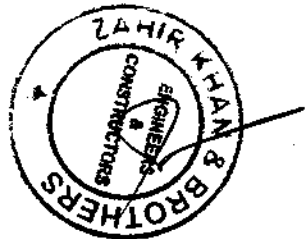




Issue	Location	Mitigation Measure	Timings	Estimated Cost	Implemented by	Supervised/ Approved by
		<p>Electrical Hazard: All electrical cords, cables and hand power tool free from fray or exposed cords and protected from traffic by shielding or suspending above traffic areas. There should be approach zone established around or under high voltage power lines.</p> <p>Drinking and Potable Water: provision of clean drinking water to both direct and contractual labor at all sites in the form of dispensers or in coolers. Potable water must be available in good quantity and quality for all the workers</p> <p>Eating Area: Clean eating area should be available, with gas cylinders, stoves for both direct and contractual labor</p> <p>Lavatories &amp; Showers: There should be sufficient lavatories and showers with reasonable quantity of water. Waste water must be discharged through septic tanks</p> <p>First Aid: provision of first aid kit and arrangements for medical practitioner and ambulance and emergency numbers displayed</p> <p>Air supply and temperature: fan/ cooler/ heaters should be available for all the works according to the weather conditions and nature of work</p> <p>Safe Access: safe access to workers for work and mean of egress in case of emergency and restricted access for trespassers</p> <p>Communication &amp; Trainings: provide OHS training, visitor orientation, New task employee training, Area signage, labeling of equipment, ad communicate hazard codes</p>				



Issue	Location	Mitigation Measure	Timings	Estimated Cost	Implemented by	Supervised/ Approved by
		<p>Physical hazards: revolving shift of workers in case of repetitive motion/annual lifting, elimination of hazards due to working at height, slip &amp; falls, struck by objects and moving machinery by using of scaffolding, full body harness for height more than 2-meter, warning taps and barricading</p> <p>Chemical hazards: oil/ chemical spill control and capping of contaminated land with at least 1-meter clean soil</p> <p>Biological hazards: Avoid the unhygienic conditions to fight with epidemic diseases such as dengue fever etc.</p> <p>PPEs: workers should have available and trained to use the PPEs for head protection, eye protection, face protection, body protection, feet protection, hand protection, based on nature of work. For welding/ hot work welder goggles/ full face eye shield must be provided with fire extinguisher at place</p> <p>Fuel Storage Area: Fuel storage area should be covered and tanks must be buried or placed on built frame</p>				
Community Prevention, Health and Safety	Active and abandoned site, campsite, Batching and Asphalt Plants	<p>Disease Control: Avoid water poundings creating habitat for mosquitoes breeding, safe measure against vector born/ communicable disease among workers and communities</p> <p>Access restriction: No trespassing and access restriction by combination of institutional and administration control by signage and fencing, locking of hazardous material, demarcating/ fencing of restricted area, avoid interaction of</p>	Throughout construction	Included In construction cost	Contractor	PIU/ CSC





Issue	Location	Mitigation Measure	Timings	Estimated Cost	Implemented by	Supervised/ Approved by
		<p>pedestrian and machinery, No grazing animals onsite</p> <p>Load on Infrastructure: avoid use of community road for use of heavy vehicles and repair the damage caused immediately, the use of sewerage system, electricity and gas should not put extra load on community such as load shedding and boiling of gutters</p> <p>Water quality and quantity: Don't disturb the quality and quantity of community water by over extraction and contamination of wells.</p> <p>Uncovered Openings and Abandoned Structures: Cover the openings and trenches creating fall hazards</p> <p>Traffic control: awareness and campaign against road related accidents, flagman, traffic diversion plan on print and live media and signage &amp; illumination, don't leave partially demolished structures</p> <p>GRM: Effective GRM should be at place to resolve grievances of community</p> <p>Business loss: Avoid the business loss by provision of access to exiting gas stations and other commercial and industrial businesses.</p>				
Socioeconomic Issues		<p>Avoid the incidence of conflicts of transitive workforce with community, damage to crops and community structures, cutting the links between communities. Hiring of locals for labors and short contracts such as for plantation, transportation of material etc. Avoid any activity causing access restriction and pay the judicial payments for</p>	Throughout construction	Included in construction cost	Contractor	PIU/ CSC







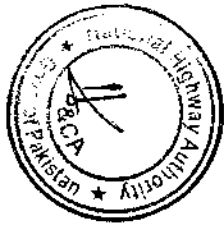
Issue	Location	Mitigation Measure	Timings	Estimated Cost	Implemented by	Supervised/ Approved by
		leased area and restoration of the leased area to original shape during the demobilization.				
Climate Change		<p>Effects of climate change: Pavement design and material selection taking in to account changes climate variable such as temperature, precipitation and soil moisture. Adequate drainage structures to be resistant to extreme flooding events</p> <p>Effects on Climate: Measures to reduce GHG emissions and fugitive dust. Controlling devices for asphalt and batching plants. avoid wastage of raw material, least material transport distance, green infra-structure including landscape, eye mounds, trees</p>	Throughout construction	Included in construction cost	Contractor	PIU/ CSC
Protection of Flora and Fauna		<p>Tree Identification: label all the trees which need to be removed</p> <p>Good Practices: For each removed tree, compensatory trees need to be replanted taking in to account some trees would die during initial growing period; Existing nurseries along the road may be contacted for sapling; otherwise, nurseries may be developed near to alignment through local contractors; The community shall be consulted in each community for the type of trees and appropriate season;</p> <p>Sapling Aftercare: engage persons from the community to aftercare the sapling particularly in dry season. The plantation should be started during the construction- not all at the end of construction phase</p>	Throughout construction	Included In construction cost	Contractor	PIU/ CSC





Issue	Location	Mitigation Measure	Timings	Estimated Cost	Implemented by	Supervised/ Approved by
Ecological Displacement		Prevention of displacement of valuable flora from the compensatory land: The land given in compensation to acquired land should not be in area with natural vegetation. The land should be from already cleared off agriculture area.	Throughout construction	-	Contractor	PIU/ CSC
Traffic Management	Throughout construction site	Traffic Management Plan: A traffic diversion plan will be set out how the traffic on road and access to highway would be maintained with proper signage. In case of diversions, the speed limits and signs should be mentioned well ahead to guide the road users resulting in smooth traffic flow  Speed Limit: At construction the maximum allowable limit should not exceed than 20 km/hr.	Throughout construction	Included In construction cost	Contractor	PIU/ CSC
<b>Operation Phase</b>						
Noise Levels & Air Pollution	Main Entry Points/ Interchanges  Near noise sensitive receptors as mentioned above in construction phase	Emission standards: Vehicle with black smoke from exhaust should not allow to enter the road. Vehicle must meet the emission standard of EPA	During operation		NHA	NHA
Road Maintenance & Drainage	Throughout the alignment	Drainage Management: Monitor and maintain drainage structures and ditches including culverts. Clean out culverts and side channels when they begin to fill with sediment and lose their effectiveness; Ensure oil and debris should not reach nearby water bodies by using screens, sediment traps, and oil sumps and retrofitting barriers	During operation		NHA	NHA





Issue	Location	Mitigation Measure	Timings	Estimated Cost	Implemented by	Supervised/ Approved by
		Potholes and mud holes: Fill mud holes and potholes with good quality gravel; remove fallen trees and limbs obscuring roadways; and use water from settling basins and retention ponds for road maintenance.				
Accidents of hazardous material	Throughout the alignment	In case of any accidental spill, there should be a relevant department in NHA dealing with it in accordance with emergency plan; and  A road administration department should be established after the completion of the project which will administrate the transport of hazardous substances.	During operation		NHA/Highway police	NHA
Use and maintenance of equipment	Throughout the alignment	Install concrete pads, drains, and oil/water pits in areas where vehicle and equipment maintenance and fueling will occur regularly along the highway	During operation		NHA /Highway police	NHA
Collusion with pedestrian & animals	Throughout the alignment	Collusion with pedestrians: Pedestrian bridges would be provided and barriers at medians would be provided in urban areas to restrict the pedestrian to come on the road  Animal vehicle Collusions: Assigning the animal crossing areas and provision of speed reduction devices with warning signs	During operation		NHA	NHA
Road Safety	Throughout the alignment	Enforcement of speed limits, installation of speed guns and speed checking by motorway police with enforcement of penalties for the violators.	During operation		Highway Police	NHA
Embankment & ROW protection	Throughout the alignment	Road Inspection: regular inspection of road and ancillary structure	During operation		Maintenance department of NHA	NHA

Issue	Location	Mitigation Measure	Timings	Estimated Cost	Implemented by	Supervised/ Approved by
		<p>Prevent plantation within 5 meters of the outer edge of the road shoulder and/ or within 5 meters of the base of slope</p> <p>Prevent the construction of any permanent or temporary structure within 10 meters of the outer edge of the unpaved shoulder and/or within 10 m of the base of any embankment</p> <p>Implement the NHA bylaws for permitting system to protect and manage land use within legal ROW (Regulatory framework and SOPs for preservation and commercial use of ROW 2004)</p>				



## 8.7 Environmental Monitoring Requirements

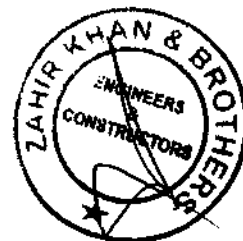
311. The Environmental Mitigation and Monitoring Plan provides the framework for the implementation of the mitigating measures and monitoring during the preconstruction, construction and operation phases of the proposed project (Table 8.4) whereas Table 8.5 gives estimate for monitoring of the environmental quality parameters during construction phases of the proposed project.

### 8.7.1 Pre-construction Ambient Environment Monitoring

312. Environmental Monitoring locations have been identified for Ambient Air, Noise and Water Quality monitoring. The criteria for selection of monitoring locations along with map showing environmental monitoring and sampling points are attached in Section 5.1.3. Environmental monitoring has been conducted in July, 2020 and results of ambient air, noise monitoring and water testing are provided as Annex III.

**Table 8.4: Ambient Environment Baseline Sampling**

Item	Sampling Parameter
Surface Water	Temperature, pH, TDS, BOD, COD, Phenols, Chloride, Copper, Lead, Manganese, Sulphate, Zinc, Silver, Boron, Barium, Iron
Air Quality	CO, NO <sub>x</sub> , SO <sub>x</sub> , PM <sub>10</sub> .
Noise	Equivalent Noise Levels in dB (A)
Drinking Water	Color, pH, Turbidity, Total Hardness, TDS, Antimony, Barium, Chloride, Fluoride, Nitrate, Nitrite, Odor & Taste, Arsenic, Total Coliforms, Fecal Coli forms (E.Coli).



**Table 8.5: Environmental Monitoring Plan**

Environmental Control	Location	Means of Monitoring	Frequency	Responsibility	
				Implementation	Monitoring
<b>Preconstruction – Before Site Preparation</b>					
Initial Community Meetings	Along the Highway & Ancillary sites areas	Method: Consultation & observations Parameters: Consult village leaders, communities, affected people and observe the requirement for signboards required for contract details, contacts of PIU and GRM details	Before site preparation and as required	Contractor	CSC PIU
CEMP by Contractor		Visual checks CSC Records	Before site preparation	Contractor	CSC PIU
Contractor coordinates with Utility Companies	Affected sites	NOCs, Affected communities Interviews	As required Before site preparation	Contractor	CSC PIU
Tree Removal		Labeling of trees to be uprooted- only necessary NOC if required	Before site preparation	Contractor	CSC PIU
<b>Preconstruction – Baseline Monitoring (Project Specific)</b>					
Air Quality	Key Sensitive receptors along the corridor	Method: establish baseline conditions by measuring criteria pollutants Duration: 24 hours continuous monitoring	Once before site Preparation	Contractor will hire an independent certified lab	PIU/ CSC
Water Quality and Quantity	500 meters upstream and 500 meters downstream of major water body crossings	Method: establish baseline conditions Parameters: Temperature, pH, TDS, BOD, COD, Phenols, Chloride, Copper, Lead, Manganese, Sulphate, Zinc, Silver, Boron, Barium, Iron	Once before site preparation	-do-	PIU/ CSC
Noise	Key Noise Sensitive Receptor	Method: Establish project specific baseline conditions at key Noise receptors inside and outside for equivalent noise levels dB (A). Duration: 24 hours continuous monitoring	Once before site Preparation	-do-	PIU/ CSC
<b>Construction Stage – Impact Offset</b>					



Environmental Control	Location	Means of Monitoring	Frequency	Responsibility	
				Implementation	Monitoring
Community Discussion	Communities	Minutes	Every three months	Contractor	PIU/ CSC
Interview with affected people	Where required along the entire strip	Non-Compliance Notices (if any) to the Contractor by CSC after consultation	When required or quarterly	CSC	PIU
Site Preparation & Vegetation Clearance	Construction Corridor (All along the highway)	Visual inspection of loss of vegetation, soil erosion & instability, surface water pollution	Daily or Weekly when required	Contractor	PIU/CSC
Erosion Control	Side slopes of embankments and Stockpiles	Visual inspection of: Occurrence of erosion Drainage arrangements Landscaping & plantation Covered stockpile and dust cover on trucks Complaints log Interviews	At the end of filling activity	Contractor	PIU/CSC
Operation of Borrow and Quarry site	Barrow pits Quarry Area	Visual inspections of: Quarry sites/ borrow areas for change in landscape and creation of water ponds. Fertile layer conservation Photographs (area specified for borrow pits) Complaints and interview with nearby communities about blasting effects on buildings and movement of heavy machinery on public roads	Once before operation for photographs and then on monthly basis	Contractor	PIU/CSC
Material Supply	Material Supply Sites	Inspection of possession of: official approval or valid operating license of primary suppliers (asphalt, cement, quarry and borrow material) Haulage distance Recycling/ reuse	Before the agreement for supply of material is finalized.	Contractor	PIU/CSC
Storage and Handling of materials	Material storage yard/Work area and Construction camps	Visual Inspection of Covered storage facilities Iron bar/ cast Iron placement stands	Monthly	Contractor	PIU/CSC



Environmental Control	Location	Means of Monitoring	Frequency	Responsibility	
				Implementation	Monitoring
Traffic Safety	Entire road, Haul roads	Visual inspection of: Signage Safety barriers Flagmen Temporary bypasses Complaints log Accident records Interview	Weekly and as needed	Contractor	PIU/CSC
Air Pollution Control	Active site near sensitive sites and settlements,  Storage Yards  Asphalt and Batching Plants	Air Quality Monitoring Mobile Lab Duration: 24 hours continuous monitoring  Visual inspection of: Fugitive dust Open burning Sprinkling/ dust suppression techniques Truck covering Covered Stockpiles Visual inspection to ensure asphalt plant equipped with dust controlling devices and located >500 m from residential areas. Dark smoke Speed limits Stockpiles covered	Quarterly	Contractor	PIU/CSC
Noise Control	Near the sensitive sites and settlements	Noise meters Duration: 24 hours continuous monitoring	Quarterly	Contractor	PIU/CSC
	Construction sites	Visual inspection of conditions of equipment, Enclosures Generators and compressors operate with door closed	Weekly	Contractor	PIU/CSC
Wastewater Pollution Control	Active site & Campsite	Visual inspection of Septic tanks and untreated discharge of wastewater to storm water (color, litter, foam)	Weekly	Contractor	PIU/CSC





Environmental Control	Location	Means of Monitoring	Frequency	Responsibility	
				Implementation	Monitoring
		Septic Tank testing (BOD, COD, N, P, Oil & Grease) Kitchen water Washing bays Silt removal facilities Covering of manholes Stagnant water at Batching plants & Asphalt plant			
Surface Water Quality	500 meters upstream and 500 meters downstream of major Water body crossings	Water quality monitoring Parameters: TSS, Temperature, BOD, COD, oil & grease, Turbidity, Lead, Zn, Iron, Nitrate, Phosphate	Quarterly during bridge construction	Contractor	PIU/CSC
Drainage & Sedimentations	Entire road, culverts & drains	Visual inspection	Monthly After precipitation	Contractor	PIU/CSC
Fire Prevention	Active site and camp sites	Visual inspection of Fire extinguishers Escape routes Marked assembly area Displaying of emergency contact detail	Weekly and as required	Contractor	PIU/CSC
Climate Change Resilience	Entire Project	Inspection of: Energy conservation Techniques Emission controlling devices Wastage of raw material Leakages of oil, water, fuel Efficient use of machinery Material resistant to extreme weather Least material transport distance Drainage/ high Risk flooding areas, ponds, wetlands Green Infrastructure; eye lands, Trees, landscape,	Monthly	Contractor	PIU/CSC
Resource Conservation	Active site and campsite workshop, filling station	Visual inspection of: Equipment not in use shut off Oil, fuel, water leakages Gas cylinders to avoid timber Wastage of raw materials Recycling/ Reuse	Monthly	Contractor	PIU/CSC



Environmental Control	Location	Means of Monitoring	Frequency	Responsibility	
				Implementation	Monitoring
Storage of Chemicals and Dangerous Goods	Filling area Workshops Store rooms	Visual inspection of: Storage with License conditions Labelling, Sealed containers, Suitable trucks for haulage Chemical spillage Spill kit/sand/ saw dust Secondary containment Locks MSDS Training records	Weekly or as required	Contractor	PIU/CSC
Waste Management	Active Construction site and camp sites, toilet, kitchen, runoff	Visual Inspection of: Clean, tidy, litter free Housekeeping Separate bins/ containers Removal of construction waste Litter, foam in nearby drains Collection Contractor Licensee Oil rags/used tires/contaminated soil Scum over stored water Disposal site Interviews	Daily	Contractor	PIU/CSC
Workers Health & Safety	Worksites Batching & Asphalt Plants  Campsite (water quality)	Visual Inspection of: Detours and dust suppression lavatories & shower's water availability Onsite traffic control First aid kit, eyewash station, Medical Practitioner & ambulance Ambience and illumination PPEs issued/ used Barricading Drinking water Testing Eating area Training Records Workplace safety instruction and signboards Pipe color coding Trespassing	Weekly  Drinking water quality testing once before start and annually at campsites	Contractor	PIU/CSC



Environmental Control	Location	Means of Monitoring	Frequency	Responsibility	
				Implementation	Monitoring
		Water poundings Fuel storage area- buried tanks Workers behavior			
Community safety	Entire Project Area  Barrow pits Quarry Areas Asphalt & batching Plants	Complaints register Traffic related accidents record Traffic Diversions Deterioration of existing roads Water ponding Access restriction to camps Uncovered openings/ open trenches Abandoned structures/ Partially demolished Complaints related to vector born disease Interviews with workers & locals	Monthly	Contractor	PIU/CSC
Protection of Fauna & Flora	In the project area	Visual inspection of: Sheep and grazing animals in campsite Use of timber Crops along corridor Animal Corridors Plantation work	Daily	Contractor	PIU/CSC
Cultural and archeological sites	At work sites or graveyards (if shifting required)	Visual inspection & records	Daily, weekly as required	Contractor	PIU/CSC
Socio-economic Issues	Entire project Area	Visual inspection of existing roads deterioration Utilities related complaints Record of conflict incidents Damage to crops and structures Access restriction Leased areas	Monthly	Contractor	PIU/CSC
Training	Entire Project	Training records Interviews with workers Topics: OHS and Emergency Response, Community information	6-Monthly	Contractor	PIU/ CSC



Environmental Control	Location	Means of Monitoring	Frequency	Responsibility	
				Implementation	Monitoring
Reinstatement of work-related sites, demobilization, Works Contract Signoff & Handover		Visual inspection of: Clear sites Construction waste disposal Site safety Drainage Landscaping Comparing ancillary site area with photographs taken before start of work	Once before sign off	Contractor	PIU/ CSC



## 8.8 Environmental Management Plan Indicative Cost

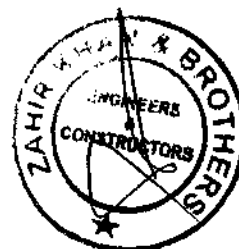
313. The cost for compliance of EMP and its operation is estimated in the Table 8.6.

**Table 8.6: Environmental Management Plan Indicative Cost**

Item	Cost USD	Remarks
<b>Mitigation Cost</b>		
<b>Environmental Monitoring</b>		
Environmental Monitoring (air, noise and water for baseline) at key points	5,000	Once for air, noise and water for baseline
Environmental Monitoring (air, noise and water during construction stage) at key points	60,000	Quarterly for air, noise and water for 3 years
Training Arrangements (Training will be carried out by CSC)	50,000	Contractor will pay for the Arrangements
<b>Hiring of Staff</b>		
Contractor Environment Specialist	195,000	39 Person months
CSC Environment Specialists (1 International + 3 National)	(130,000 + 189,000) 319,000	4 person months for international + 26 person months for 3 position <sup>23</sup>
PIU Environment Staff	156,000	39-man months
PIU Grievance Redress Staff	39,000	39-man months
Vehicles	100,000	Lumpsum
Fire extinguishers	4,500	Lumpsum
PPEs	700,000	Lumpsum
Drinking water facilities	5,000	Lumpsum
First Aid	300,000	Lumpsum
Tarpaulin	10,000	Lumpsum
Borrow pits	-	Included in project cost
Disposal area	-	Included in project cost
<b>Subtotal</b>	1,943,500	
Contingency (10 % of total cost)	194,350	
<b>Total Cost</b>	2,137,850	
Note: Environmental Mitigation Cost of PKR 300 M (2.14 M) is included in PC-1		



<sup>23</sup>TOR for consultancy services (T-II) Projects



## ENVIRONMENTAL MANAGEMENT PLAN

### Environment Management and Monitoring Plan

Environmental Management facilitates managing and reducing short- and long-term potential environmental impacts. Environmental Management may involve strategies, plans and practices for minimum environmental damages and quality assurance. Best management practices shall be adopted during different stages of the project. Implementation of best management practices can be achieved by guidelines for building works, contractual bindings to the contractors, or provision of trainings to the staff.

Environmental Monitoring is undertaken during both the construction and operational phases to ensure the effectiveness of the proposed mitigation measures/BMPs. Specific monitoring indicators, monitoring and reporting frequencies, responsibilities for the collection and analysis of data as well as the reporting requirements has been outlined in Environmental Management and Monitoring Plan (EMMP) below:

### Implementation of Mitigation Plan

- Construction Contractor is responsible for implementation of mitigation measures provided in the proposed EMMP as well as for obtaining all construction activities related permits and agreements. For the effective implementation and management of the proposed mitigation measures, it is necessary to develop an EMP which basically provides a delivery mechanism to address the potential impacts of the Project activities and to develop a monitoring program in order to minimize the potential impacts during construction and operational stages of the Project.

### The EMP has been prepared with an objective of:

- Providing an implementation plan for the mitigation of possible environmental issues arising during construction and operation of the project
- Developing a monitoring mechanisms and identifying the requisite monitoring parameters to conform to mitigation measures recommended in the EIA.



## CONSTRUCTION OF ADDITIONAL CARRIAGEWAY SHIKARPUR ~ RAJANPUR SECTION

- Defining roles and responsibilities of the project proponent for the implementation of EMP and identifying areas where these roles and responsibilities can be shared with other organizations involved in the execution and monitoring of the Project.
- Defining the requirements necessary for documenting compliance with the EMP and communicating it to all the concerned regulatory agencies.
- If necessary, this meeting/training can include provision of some basic environmental knowledge as well as specific knowledge related to EMP implementation e.g. in prevention of damages on vegetation, transportation, handling and storage of construction materials and waste (including proper handling of the hazardous materials like oil, etc.).
- Well before start of work on ground, the project contractor will get acquaintance of the EIA, particularly the EMP and the mitigation measures to be taken in execution of the project. Monitoring of the EMP will be carried out by the Supervision Contractor or Environmental Officer (EO) who should supervise implementation of EMP and liaison with concerned EPA.
- After commissioning of the project, a concerned department will take responsibility of implementing EMP related to operation of the facility. It is highly recommended to associate concerned department with the project right from the beginning of the project and training may be imparted in advance of starting the actual operation of.

### Implementation of Environmental Mitigation and Monitoring Plan (EMMP)

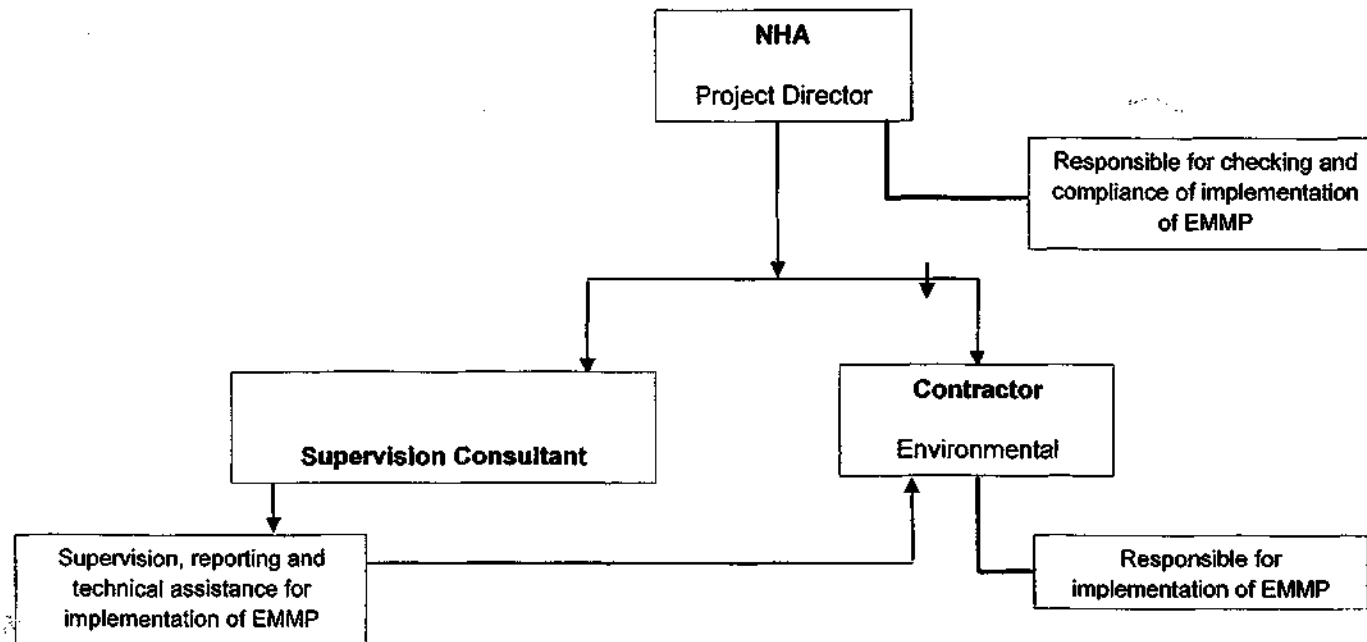
The following staff will be involved in the implementation of EMMP;

- Environmental Engineer from Environmental Supervision Consultant
- Site Environmental Engineer of the Contractor
- Representative from NHA

The contractor shall be made bound through contract documents to implement the suggested mitigation measures in the EMMP. The EMMP shall be included as a clause of the contract documents. The organizational setup for implementation of EMMP is given below in Figure:



**CONSTRUCTION OF ADDITIONAL CARRIAGEWAY  
SHIKARPUR ~ RAJANPUR SECTION**



**Organizational Setup for implementation of EMMP**

**Roles and Responsibilities of the Functionaries involved in EMMP Implementation**

**a. NHA: Project Director**

Project Director of NHA will have responsibility for assuring implementation of EMMP. This includes the following:

- Ensuring that the required environmental training is provided to the staff concerned;
- The Project Director will be responsible for carrying out visits to the construction sites to review the environmental performance of the contractors;





**CONSTRUCTION OF ADDITIONAL CARRIAGEWAY  
SHIKARPUR ~ RAJANPUR SECTION**

- Monitoring the progress of environment related activities; and
- Ensure that the construction contractor is implementing the additional measures suggested by NESPAK in monthly environmental monitoring reports.

**b. Supervision Consultant : Environmental Engineer**

Environmental Engineer will oversee the performance of contractor through periodic monitoring to make sure that the contractor is carrying out the work in accordance with EMMP. The Environmental Engineer/Specialist will also provide assistance to the Contractor's Staff to implement EMMP.

**c. Construction Contractor : Site Environmental Engineer**

Site Environmental Engineer of Construction Contractor will carry out the implementation of the mitigation measures at construction site. Construction Contractor will be bound through contract documents to appoint the Site Environmental Engineer with relevant educational background and experience.

**Reporting Mechanism**

Progress reporting related to environmental activities will be the responsibility of the Environmental Engineer of Supervision Consultant. Environmental Engineer will also be responsible for submitting a monthly EMMP compliance report for the project to the concerned EPD.

**Non-Compliance of the EMMP**

The implementation of the proposed EMMP involves inputs from various functionaries as discussed earlier. Contractor shall be primarily responsible for ensuring implementation of the mitigation measures proposed in the EMMP, which shall be part of the contract documents. The provision of the environmental mitigation cost shall be made in the total cost of project, for which contractor shall be paid on the basis of monthly compliance reports. However, if the contractor fails to comply with the



## CONSTRUCTION OF ADDITIONAL CARRIAGEWAY SHIKARPUR ~ RAJANPUR SECTION

implementation of EMMP and submission of the monthly compliance reports, deductions shall be made from the payments to the contractor claimed under the heads of environmental components.

### Functions of EO and SC

#### EMP Implementation at Planning and design stage

- Set up system for environmental management.
- Ensure that the terms of reference for project contractor adequately cover environmental and social issues
- Ensure that the contractor develops and carryout environmental implementation plan that is in consistent with the EMP
- Supervise environmental assessments, and providing substantial inputs and guidance.

#### EMP Implementation at Pre-construction phase

- Identify problems to be faced by community to access roads during construction and verifying whether ramps/diversions have been provided where required.
- Ensure that the contractor has selected right sites for worker's camps. The contractor should undertake to restore environment of these sites to the original conditions when work is completed.
- Establish a grievance readdress committee to deal with public complaints

#### EMP Implementation at Construction phase

- Liaison with Project staff of different sections, Project Implementation Agencies (NHA), concerned EPA and furnishes fortnight EMP implementation report.
- Hold and attend project meetings and indicate any violation of EMP, if observed.
- Supervise and provide technical support to Project and operational staff to help ensure compliance of EMP.

#### EMP Implementation at Operation stage

Coordinate with the operational staff working under different departments and other relevant departments to ensue environmental sustainability of dualization of Ratodero to Shikarpur road section.



**CONSTRUCTION OF ADDITIONAL CARRIAGEWAY  
SHIKARPUR ~ RAJANPUR SECTION**

Arrange Post EIA visits and report progress of environmental compliance to the concerned EPA.

Report to NHA any environmental issue observed but not envisaged in EIA report and take measures to offset it by himself or by seeking technical support of environmental experts.

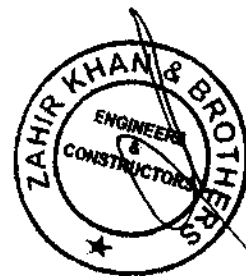
**Monitoring Program**

Environmental Monitoring is essential part of EMP which is required to assess, whether the committed mitigation measures are being taken to achieve objectives of goals of environmental protection.

- The management of NHA may constitute an Environment Monitoring Committee (EMC) headed by a senior officer of NHA to oversee whether objectives of EMP are being achieved. The EMC will perform the following functions:
  - Periodically review EMP Implementation Report of EO to check compliance of EMP
  - Advise on disposal of construction wastes and excavated soil including development of landscape
  - Closely monitor drainage design and sewerage structure and system and issue instruction to EO and concerned department for remedial actions where necessary.
- Visit project site from time to time to verify actions on ground
- Review steps taken to redress public complaints
- Upon completion of the project, ensure restoration of environment of worker's camps and asphalt building sites to the pre project condition



# PERFORMANCE SECURITY



OCB/CAREC/T-II: Construction of Additional Carriageway from Shikarpur to Rajanpur of N-55 (221.95 KM) under one Package Comprising Four Lots: Lot-1: Shikarpur – Kandhkot Section [KM 43+400 to KM 105+820 (62.42 KM)]





# NATIONAL HIGHWAY AUTHORITY

Procurement & Contract Administration Section

28 Mauve Area, G-9/I, Islamabad ☎ 051-9032927, 📠 051-9260419

No. 2(518)/GM(P&CA)/NHA/2022/30

20<sup>th</sup> September, 2022

To,

Director (B&A)  
National Highway Authority  
**Islamabad.**

Subject: **VERIFICATION OF PERFORMANCE SECURITY / BANK GUARANTEE:**

**OCB/CAREC/T-II: CONSTRUCTION OF ADDITIONAL CARRIAGEWAY FROM SHIKARPUR TO RAJANPUR OF N-55 (221.95 KM) UNDER ONE PACKAGE COMPRISING FOUR LOTS**  
➤ **LOT-1: SHIKARPUR - KANDHKOT SECTION [FROM KM 105+820 TO KM 164+600 (58.78 KM)]**

Performance Security in original issued by The Bank Al Habib Limited, Razia Sharif Plaza, Blue Area, Islamabad, forwarded by M/s Zahir Khan & Brothers for the subject project is enclosed herewith. Detail is as under:

Sr. No.	Name of Firms	LG No.	Issue Date	Expiry Date	Amount (Rs.)	Name of Bank
1	M/s Zahir Khan & Brothers	0004/1284/2022	16-09-22	15-09-25	884,810,191	Bank Al Habib Limited

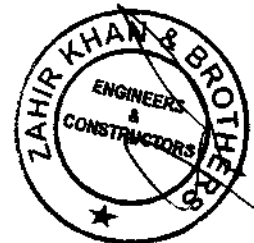
2. The above-mentioned Performance Security in original is being submitted for scrutiny, acceptance, verification and record, please.

*Sarmad*  
20/6/22  
(SARMAD SAUD AULAKH)  
Director (P&CA)

Enclosure: (i) Performance Guarantees (01 page in original)  
(ii) The relevant provisions of bid documents

Cc:

- Member (Planning), NHA, Islamabad.
- GM (B&A), NHA, Islamabad.
- GM(P&CA), NHA, Islamabad.



262/c



Friendly Highways

**NATIONAL HIGHWAY AUTHORITY**  
**FINANCE WING (Aided Projects)**  
28- Mauve Area, G-9/1, Islamabad  
☎: 051- 9032613

2-(518)

No. Accounts/AP/CAREC/T-II /Lot-01/NHA/2022/483

04th October, 2022

**Director (P&CA)**  
National Highway Authority  
**ISLAMABAD.**

Subject: - **VARIFICATION OF PERFORMANCE SECURITY BANK GUARANTEE AGAINST CONSTRUCTION OF ADDITIONAL CARRIAGEWAY FROM SHIKARPUR TO RAJANPUR OF N-55 (221.95 KM) LOT-1: SHIKARPUR - KANDHKOT SECTION [KM 43+400 TO KM 105+820 (62.42 KM)].**

Refer: Letter No. 2(518GM(P&CA)NHA/2022/30 dated 20th September,2022 (Copy enclosed).

I am directed to intimate that the Performance Security Bank Guarantee with below details has been issued by M/s Bank AL Habib Limited, Razia Sharif Plaza, Blue Area, Islamabad on behalf of M/s Zahir Khan & Brothers, for "Construction of Additional Carriageway from Shikarpur to Rajanpur of N-55 (221.95 KM) Lot-1: Shikarpur - Kandhkot Section [KM 43+400 to KM 105+820 (Length 62.42 Kms)].

Contract No.	Bank Guarantee No.	Amount Rs.	Validity	Status
OCB/CAREC/T-II	004/1284/2022	884,810,191/-	15.09.2025	Confirmed by the head office of Bank Al-Habib Ltd.

The afore-stated Performance Bank Guarantee has been confirmed by the head office of the issuing bank. Copy of the same is hereby forwarded for information and record, please.

*Sajjad* 04/10/2022  
**(SAJJAD MAHMOOD)**  
Asstt. Dir. (A/Cs)-Aided Projects

C.C.

- Member (Planning) NHA, HQ, Islamabad
- General Manager (P&CA) NHA, HQ, Islamabad.
- Master File.



*For read, please*  
*MC (A)*  
*7/10/22*

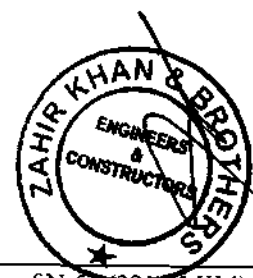


*Same*

483

1000  
NO. 6/10/22  
M. 356-117 (P&CA)-4  
07-10-22

# LIST OF ELIGIBLE COUNTRIES



OCB/CAREC/T-II: Construction of Additional Carriageway from Shikarpur to Rajanpur of N-55 (221.95 KM) under one Package Comprising Four Lots: Lot-1: Shikarpur – Kandhkot Section [KM 43+400 to KM 105+820 (62.42 KM)]



## Section 5: Eligible Countries

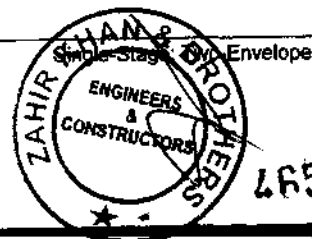
This Section contains the list of eligible countries.

- |                                      |   |
|--------------------------------------|---|
| 1. Afghanistan                       | 35. Micronesia, Federal States of       |
| 2. Armenia                           | 36. Mongolia                            |
| 3. Australia                         | 37. Myanmar                             |
| 4. Austria                           | 38. Nauru, Republic of                  |
| 5. Azerbaijan                        | 39. Nepal                               |
| 6. Bangladesh                        | 40. Netherlands                         |
| 7. Belgium                           | 41. New Zealand                         |
| 8. Bhutan                            | 42. Norway                              |
| 9. Brunei Darussalam                 | 43. Pakistan                            |
| 10. Cambodia                         | 44. Palau, Republic of                  |
| 11. Canada                           | 45. Papua New Guinea                    |
| 12. China, People's Republic of      | 46. Philippines                         |
| 13. Cook Islands                     | 47. Portugal                            |
| 14. Denmark                          | 48. Samoa                               |
| 15. Fiji Islands, Republic of        | 49. Singapore                           |
| 16. Finland                          | 50. Solomon Islands                     |
| 17. France                           | 51. Spain                               |
| 18. Georgia                          | 52. Sri Lanka                           |
| 19. Germany                          | 53. Sweden                              |
| 20. Hong Kong, China                 | 54. Switzerland                         |
| 21. India                            | 55. Tajikistan                          |
| 22. Indonesia                        | 56. Taipei, China                       |
| 23. Ireland                          | 57. Thailand                            |
| 24. Italy                            | 58. Timor-Leste, Democratic Republic of |
| 25. Japan                            | 59. Tonga                               |
| 26. Kazakhstan                       | 60. Turkey                              |
| 27. Kiribati                         | 61. Turkmenistan                        |
| 28. Korea, Republic of               | 62. Tuvalu                              |
| 29. Kyrgyz, Republic of              | 63. United Kingdom                      |
| 30. Lao People's Democratic Republic | 64. United States of America            |
| 31. Luxembourg                       | 65. Uzbekistan                          |
| 32. Malaysia                         | 66. Vanuatu                             |
| 33. Maldives                         | 67. Viet Nam                            |
| 34. Marshall Islands                 | 68. Niue                                |

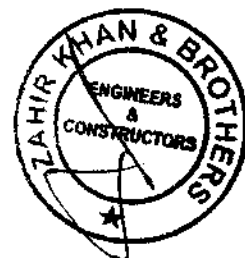


Bidding Document for Q&A CAREC/T-II

Procurement of Works



**ANY OTHER  
DOCUMENTS FORMING  
PART OF THE  
CONTRACT**



## Advance Payment Security

..... Bank's name, and address of issuing branch or office<sup>1</sup> .....

**Beneficiary:** ..... Name and address of the employer .....

**Date:** .....

**Advance Payment Guarantee No.:** .....

We have been informed that ..... name of the contractor. .... (hereinafter called "the Contractor") has entered into Contract No. .... reference number of the contract. .... dated ..... with you, for the execution of ..... name of contract and brief description of works. .... (hereinafter called "the Contract").

Furthermore, we understand that, according to the Conditions of the Contract, an advance payment in the sum ..... name of the currency and amount in words<sup>2</sup>. .... (..... amount in figures. .... ) is to be made against an advance payment guarantee.

At the request of the Contractor, we ..... name of the bank. .... hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of ..... name of the currency and amount in words<sup>3</sup>. .... (..... amount in figures. .... ) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation under the Contract because the Contractor used the advance payment for purposes other than the costs of mobilization in respect of the Works.

It is a condition for any claim and payment under this guarantee to be made that the advance payment referred to above less withholding tax must have been received by the Contractor on its account number ..... Contractor's account number. .... at ..... name and address of the bank. .... This guarantee shall become effective upon receipt of the advance payment on this bank account.

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Contractor as indicated in copies of interim statements or payment certificates which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of a copy of the interim payment certificate indicating that ninety percent (90%) of the Contract Price has been certified for payment, or on the ... day of .....<sup>4</sup>, whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 758

.....  
Signature(s) and seal of bank (where appropriate)

**Note to Bidder**  
If the institution issuing the advance payment security is located outside the country of the employer, it shall have a correspondent financial institution located in the country of the employer to make it enforceable.

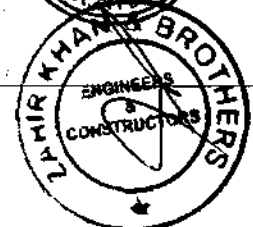
<sup>1</sup> All italicized text is for guidance on how to prepare this demand guarantee and shall be deleted from the final document.  
<sup>2</sup> The guarantor shall insert an amount representing the amount of the advance payment denominated either in the currency(ies) of the advance payment as specified in the Contract, or in a freely convertible currency acceptable to the employer.  
<sup>3</sup> Footnote 2.  
<sup>4</sup> Insert the expected expiration date of the time for completion. The employer should note that in the event of an extension of the time for completion of the contract, the employer would need to request an extension of this guarantee from the guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the employer might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [6 months][1 year], in response to the Employer's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."



Bidding Document for OCB/CAREC/T-II

Procurement of Works

Single Stage: Two-Envelope



467

**INDEMNITY BOND  
FOR SECURED ADVANCE  
AGAINST MATERIALS BROUGHT AT SITE  
(ON PAK RS.40 JUDICIAL STAMP PAPER)**

This Deed of Indemnity is issued by M/s. \_\_\_\_\_  
\_\_\_\_\_  
(Name of the Contractor) in favor of National Highway  
Authority, 28-Mauve Area, G-9/1, Islamabad.

Whereas the National Highway Authority (hereinafter called the Employer) has paid the Secured Advance against the cost of Materials through any Bank or like agency by any other method by virtue of the terms of the Contract existing between the Parties. The details of the Materials and their price for which Secured Advance is sought for the period \_\_\_\_\_ till consumption of the Materials is as under:-

1. \_\_\_\_\_ at Rs. \_\_\_\_\_ per \_\_\_\_\_ = Rs. \_\_\_\_\_
2. \_\_\_\_\_ at Rs. \_\_\_\_\_ per \_\_\_\_\_ = Rs. \_\_\_\_\_

**THEREFORE THIS DEED OF INDEMNITY WITNESSETH AS FOLLOWS:**

I/We \_\_\_\_\_ of M/s \_\_\_\_\_ do hereby indemnify the Employer for all losses due to thefts, arson, pilferage, loss due to flood and inundation, shortage, deterioration and depreciation etc. through any act of Man or God or slump in the Market of any or all the Materials financed or paid by the Employer on our request for financing payment against Materials.

I/We \_\_\_\_\_ shall indemnify the Employer against any or all claims and damages arising out of or resulting to the said Materials.

I/We \_\_\_\_\_ further declare that we will faithfully abide by the above declaration and solemnly affirm that we will not remove, sell, pilferage any of the Materials against which the Employer has paid us such a Secured Advance and will not pledge the same with any Bank, Finance Corporation, Firm, Company, Individual or the like agency or create any change whereon in any from what so ever, except incorporating in the Permanent Works under the Contract.

I/We \_\_\_\_\_ do hereby also declare that in the event of my/our infringement of the declaration made above the Employer will be entitled to forfeit all such Materials and also proceed against me/us according to the relevant clause pertaining to breach of Contract and further invoke the power or seek any remedies secured of any kind under the Contract signed with us or otherwise available under the Law.

Place \_\_\_\_\_ Dated \_\_\_\_\_

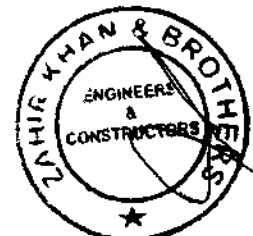
Contractor \_\_\_\_\_ (Signature)  
Name and CNIC/Passport (copy attached) number \_\_\_\_\_



Single-Stage: Two Envelope

Procurement of Works

Bidding Document for OCB/CAREC/II





OFFICE OF THE REGISTRAR OF FIRMS  
**PARTNERSHIP ACT, 1932**  
 GOVERNMENT OF BALOCHISTAN, QUETTA

**SAY NO TO CORRUPTION**

No. Firm/Regn/DGIQ/310

Dated Quetta the 28-06-2018

M/S Zahir Khan & Brothers,  
 Pir Mohammad Khan Road,  
 Quetta.

Subject: - **CHANGE IN CONSTITUTION OF THE FIRMS (REGISTERED) VIDE**  
**No. 665 DATED 12-07-1982.**

In the matter of M/S Zahir Khan & Brothers, Pir Mohammad Khan Road Quetta the receipt of notice under section 63 of the Partnership Act, 1932 is hereby acknowledge and the following changes in the constitution of the Firm have been inserted.

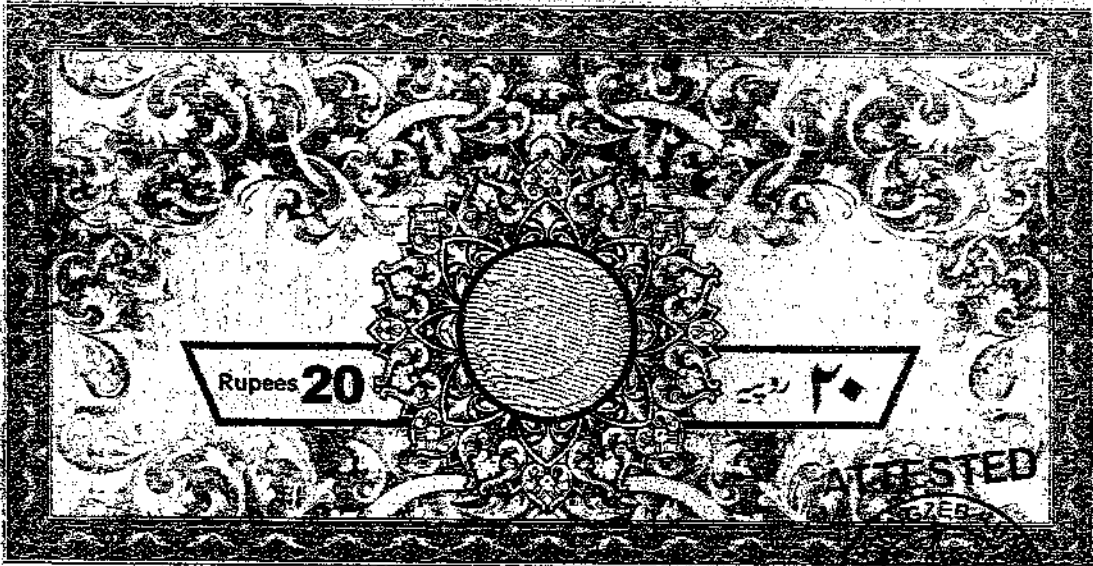
PREVIOUS CONSTITUTION OF THE FIRM.		PRESENT CONSTITUTION OF THE FIRM	SHARES
1. Mr. Zahir Khan S/o Haji Mohammad. CNIC No. 54400-0384681-9	92%	1. Mr. Zahir Khan S/o Haji Mohammad. CNIC No. 54400-0384681-9	51%
2. Mr. Mohammad Sulaiman S/o Zahir Khan. CNIC No. 54400-7631802-3	04%	2. Mr. Mohabat Khan S/o Zahir Khan. CNIC No. 54400-0375263-3	41%
3. Mr. Samiullah S/o Habibullah Khan. CNIC No. 54401-9206885-9	04%	3. Mr. Mohammad Sulaiman S/o Zahir Khan. CNIC No. 54400-7631802-3	04%
		4. Mr. Samiullah S/o Habibullah Khan. CNIC No. 54401-9206885-9	04%

Note: - Mr. Mohabat Khan S/o Zahir Khan CNIC No. 54400-0375263-3 joint on 28-06-2018.  
 Given under my hand and seal at Quetta-dated 28-06-2018.



*(Signature)*  
 REGISTRAR OF FIRMS  
 DIRECTOR OF INDUSTRIES  
 BALOCHISTAN





DEED OF PARTNERSHIP

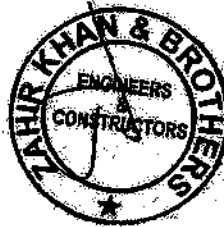
Dated: 2<sup>nd</sup> March, 2018

THIS DEED OF PARTNERSHIP AGREEMENT DATED 2<sup>nd</sup> MARCH 2018 IS MADE AND ENTERED INTO BETWEEN: EACH OF THE PERSONS NAMED AS PARTNERS MENTIONED IN THE HEADINGS BELOW.

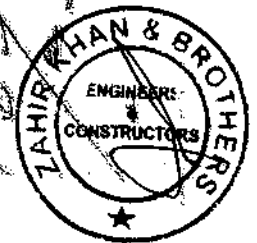
WHEREAS the Partners agree to continue the previously formed partnership firm registered with The Registrar of Firms, Quetta, Baluchistan vide No. 663 of 1982 with the name and style stipulated herein below at Clause 3 (the "Firm") with its principal office at Quetta, Baluchistan, Pakistan for the purpose and carrying on the business and objects more particularly described in Clause 4 of this Deed.

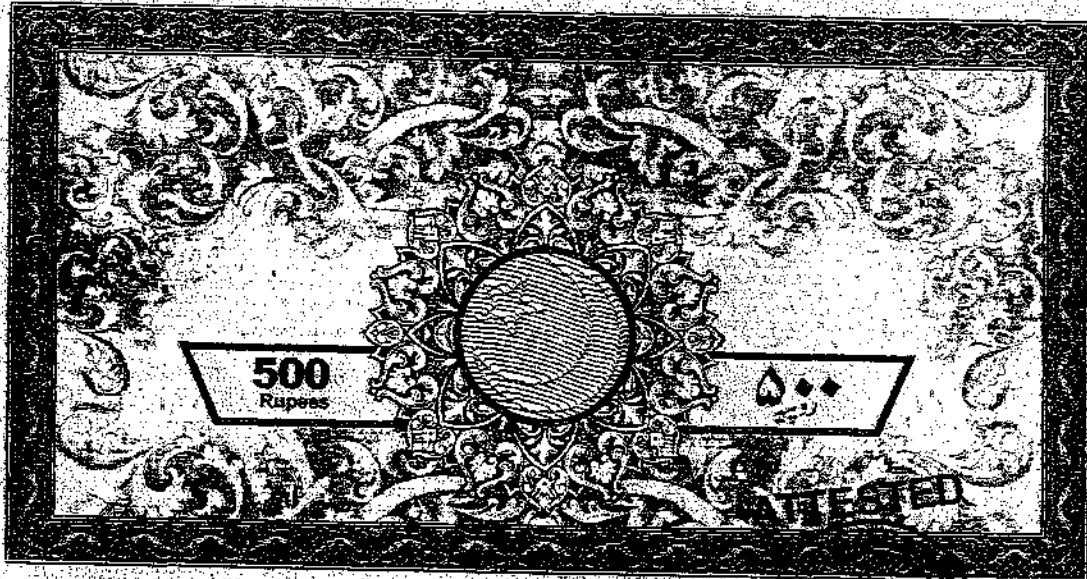
WHEREAS, the Partners agree to amend and restate in total the deed executed and entered into on 02.07.1982 and the amendments undertaken therein vide addendums dated 29.07.2008, 24.06.2013 and 01.03.2018. This Deed signed here today, shall supersede all previous written or oral commitments and shall stand to supersede all the agreements entered into by the Partner, current or retiring.

Addendum to Partnership Deed 01.03.2018



Handwritten signatures of the partners and witnesses, including a signature that appears to be 'Tahir Khan'.





**PARTNERSHIP DEED**  
**BY AND BETWEEN**

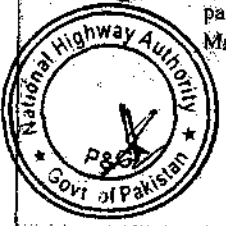
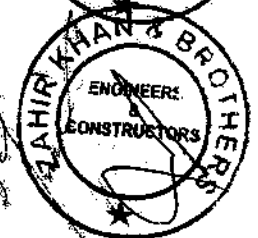
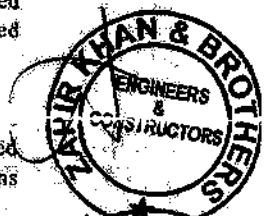
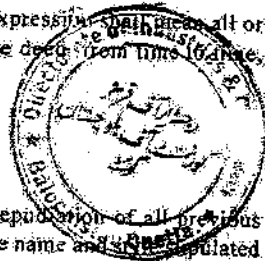


1. Mr. Zahir Khan, son of Haji Mohammad, resident of Quetta, bearing CNIC No. 54400-0384681-9, (which expression shall be deemed to mean and include, where the context so requires, his heirs, executors and administrators), of the First Part
2. Mr. Mohabat Khan, son of Zahir Khan, resident of Quetta, bearing CNIC No. 54400-0375263-3, (which expression shall be deemed to mean and include, where the context so requires, his heirs, executors and administrators), of the Second Part
3. Mr. Muhammad Suleman Khan, son of Zahir Khan, resident of Quetta, bearing CNIC No. 54400-7631802-3, (which expression shall be deemed to mean and include, where the context so requires, his heirs, executors and administrators), of the Third Part
4. Mr. Samiullah, son of Habibullah Khan, resident of Quetta, bearing CNIC No. 54401-9206885-9, (which expression shall be deemed to mean and include, where the context so requires, his heirs, executors and administrators), of the Fourth Part

(Each separately called a "Partner" and collectively the "Partners"), which expression shall mean all or such number of the aforesaid partners and any partner entered or added to the deed from time to time as the context may require)

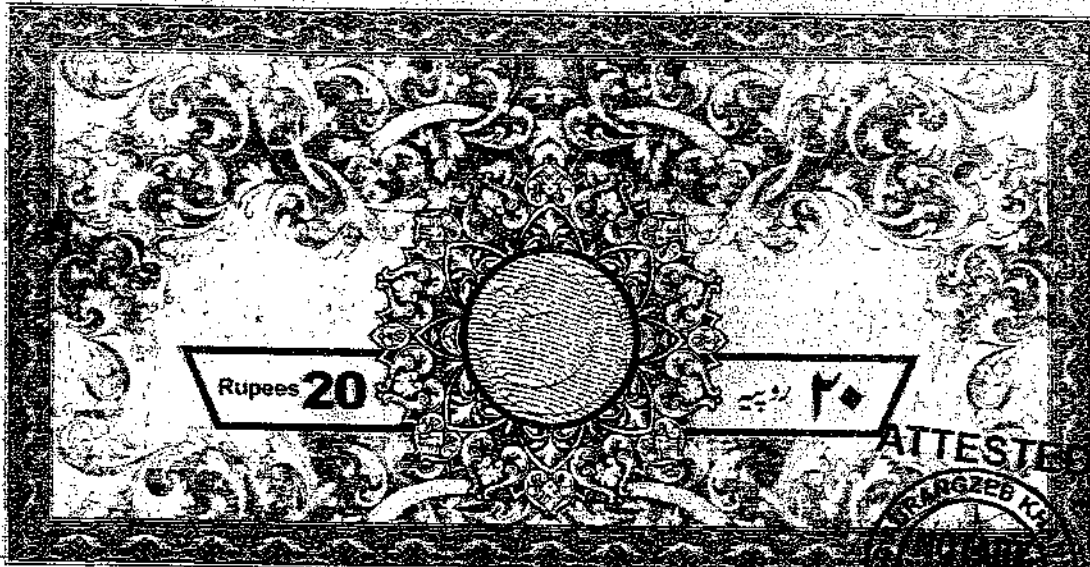
**WHEREAS**

- A. This Deed is being entered into by the Partners in suppression and repudiation of all previous written or oral commitments/arrangements entered into to operate in the name and style of the firm herein below at Clause 3 and existing/formed pursuant to the deed dated 12.07.1982 (Attached herewith as Annex - A),
- B. Subsequent changes in the Partnership have been recorded on 29.07.2008 (Attached herewith as Annex - B), on 24.06.2013 (Attached herewith as Annex - C) and further on 01.03.2018 (attached herewith as Annex-D). Change in the Partnership once again has resulted in terms and conditions of the Partnership to be drawn afresh.
- C. That a partner is admitted to the Firm, namely Mr. Mohabat Khan S/o Zahir Khan. Therefore, partnership has been reconstituted and partners' equity holdings accordingly vide inclusion of Mr. Mohabat Khan S/o Zahir Khan as listed at serial no. 2 hereinabove.



Handwritten signatures of the partners and witnesses.





NOW, THEREFORE, this Partnership Deed witnesses and is hereby agreed by and between the parties as follows:

**1. GOVERNING LEGISLATION**

1.1. By this Agreement, the Partners enter into a Partnership in accordance with the laws of the Islamic Republic of Pakistan and this deed shall constitute the governing document for the operations of the Partnership and shall be subject to all the Applicable laws of Pakistan.

**2. NAME**

2.1. The form and structure of the firm shall be a partnership and the activities of the Firm shall be carried out in the name of **M/S Zahir Khan & Brothers**. The Partners may choose to adopt a different name for the Partnership, however, the change shall only be taken unanimously and shall not be undertaken with simple majority.

2.2. Any other business, as and when agreed between the partners, to be undertaken in any category which is not mentioned herein in this deed, shall always be under the name and style agreed by the partners.

2.3. The Partnership Business name shall be owned by the Partnership. Should any partner cease to be a member of the Partnership, the partnership shall continue to retain exclusive ownership and right to use the partnership business name and no outgoing partner shall be eligible to demand or recover any value for the goodwill of the Firm.

**3. PURPOSE**

3.1. The purpose of the business shall be to carry on Construction Works of Roads, Buildings, Dams and all other types of Construction and works taken in pursuance or in consequence thereof as well as designing obtained from the Private clients and Public authorities/Government. This shall also include Import, Export and other business mutually agreed to be carried on by the Partners.

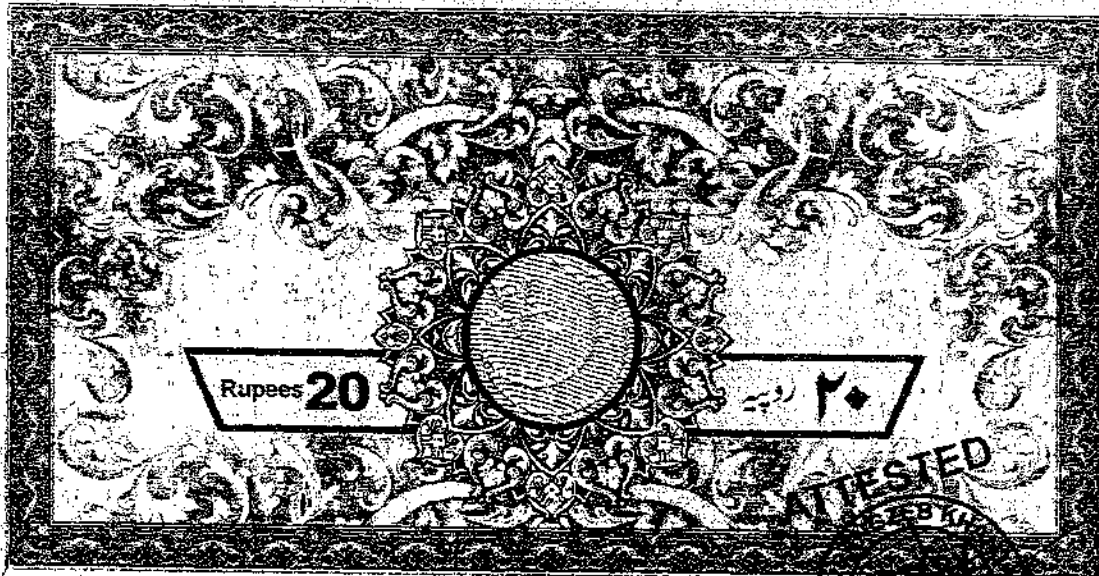
3.2. The Partnership may enter into other partnerships, joint ventures and agreements for provision of services, however, all agreements shall be undertaken after approval of the partners holding a simple majority.

*[Handwritten signature]*

*[Handwritten signature]*

*[Handwritten signature]*





**4. COMMENCEMENT**

4.1. The commencement date of the Partnership shall be 12.07.1987 and continuance thereof, shall be maintained vide the instant partnership deed from the date all parties to this deed affix their signatures hereupon.

**5. BUSINESS AND PLACE OF BUSINESS**

5.1. The activities of the Firm shall be carried on at such place or places, as the Partners may from time to time determine by unanimous decision. However, for all purposes of declaring the hierarchy of offices, Quetta Office, shall at all times, be the Principle and Head Office of the Firm.

5.2. The Place of Business shall also include branches anywhere in Pakistan and abroad.

**6. TERM**

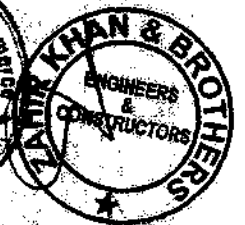
6.1. The duration of the Firm/Partnership shall be at will and shall only be wound up or terminated with the explicit unanimous decision of the partners.

**7. CAPITAL**

7.1. The Partners may determine by unanimous decision to increase or decrease the capital and their respective contributions (if any) thereto, and provided further that the Partners may, instead of raising the capital of the Firm, advance such sum of money by way of loan to the Firm as may be considered expedient and under such terms and conditions as the Partners may determine unanimously.

7.2. The partners agree to contribute to the capital of the firm in the following per-

i.	Mr. Zahir Khan	31%
ii.	Mr. Mohabat Khan	41%
iii.	Mr. Muhammad Suleman Khan	4%
iv.	Mr. Samiullah	4%

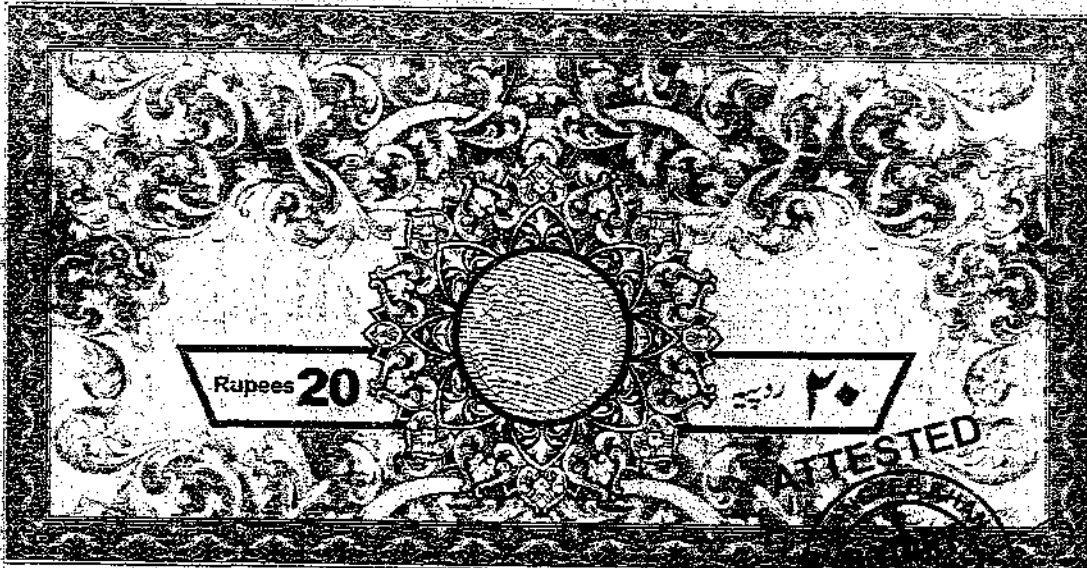


7.3. The Partners agree that on induction of a new working business partner at any time, an amendment to this Deed would be undertaken and the partners may either decide to increase the Capital to accommodate the new partner and dilute their percentage of shareholding to the new Partner and subject to such conditions as may be set unanimously by the Partners.



*(Handwritten signatures of the partners)*





**8. IF FUTURE CONTRIBUTIONS NEEDED**

8.1. If, at any future time, more money is required to carry on the Partnership Business, and all Partners vote to increase the Capital Contributions required by the Partners, the additional capital shall be paid in by the Partners.

**9. DUTIES OF WORKING PARTNERS**

9.1. Each of the Partners is anticipated to be working Partner and they shall collectively be responsible for and entitled to carry out day to day functioning of the Firm. No Partner shall do, omit to do, effect or cause any act to the detriment of the interests of the Firm or any of the Partners. The Managing Partner is entitled to nominate any other person or partner for any particular work.

9.2. Mr. Zahir Khan with mutual consultation and approval of the other Partner(s), shall be the Managing Partner of the Firm and be responsible for day to day function of the Principal Office of the Firm including overseeing the affairs of other offices for better management and hence shall have authority over all the affairs of Firm, *inter alia*, Signing of agreements, expenses, hiring and firing of personnel, equipment purchases, renovations etc. He shall also be authorized to deal with the Government and other authorities, fill in tenders, sign agreements, documents, open and operate bank accounts, receive bills, cheques, cash and make disbursement of the same.

Mr. Zahir Khan is also given the authority by the Partners to delegate in whole or in part any responsibility(ies) of the Managing Partner to any one of the other partners for a specified period of time and he shall be the sole authority to revoke the delegated authority at any time.

**10. PROFITS AND LOSSES**

10.1. The amount of Net Profit and Net Losses of the Partnership to be allocated to and charged against each Partner shall be determined by the Percentage set opposite his name as provided in Clause above.

10.2. The Managing Partner shall be responsible for Net Profits and Losses in the same ratio as determined by the Percentage set opposite each Partners name in Clause above.

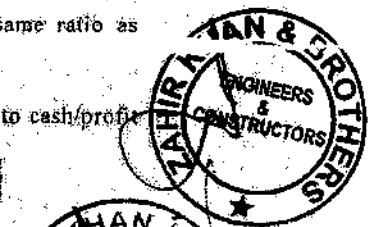
10.3. No Partner shall be entitled to any priority or preference over any other Partner as to cash/profit distributions.

**11. FISCAL MATTERS**

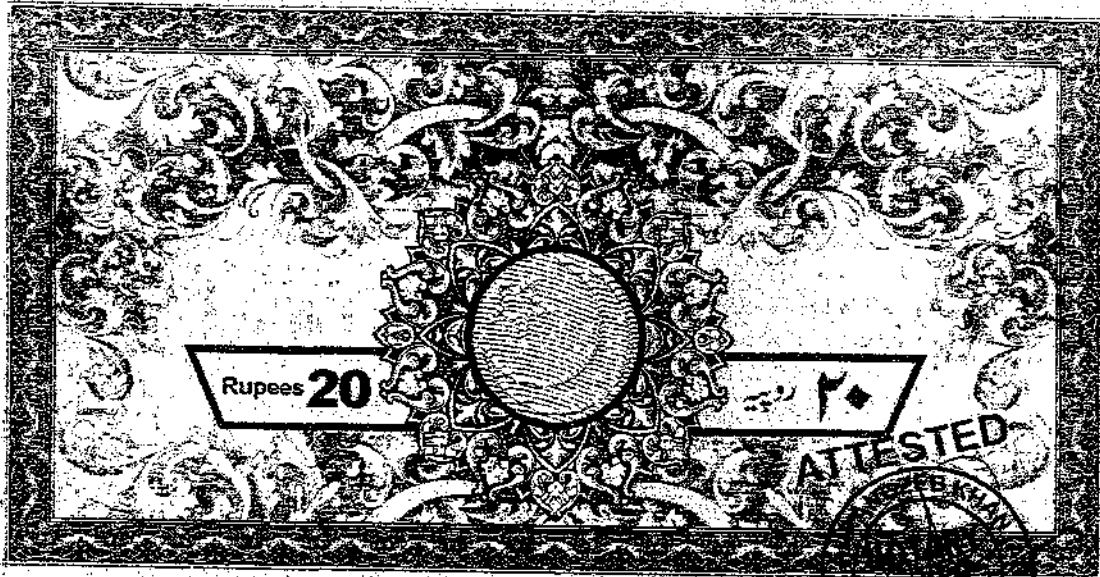
The Partnership books and record shall be kept or made on financial year basis. The Partner shall determine the method of accounting to be used in keeping the Partnership accounts.



Three handwritten signatures in black ink, appearing to be of different individuals, are written across the bottom of the page.







**15. FINANCIAL REPORTS AND FINANCIAL YEAR**

15.1. The financial year of the Firm for taxation and corporate law purposes shall end on June 30 of each year.

15.2. The Firm will furnish to each Partner as soon as available and in any event within four (4) months after the end of each financial year, a copy of the financial statements of the Firm as of the end of that financial year prepared in conformity with generally accepted accounting principles. The designated Partners shall put their signature on the financial statements.

**16. DISABILITY / RETIREMENT**

16.1. A Partner may opt for retirement in case he suffers from any physical or mental disability, or due to an illness which is a permanent hurdle in performance of his duties towards the Firm

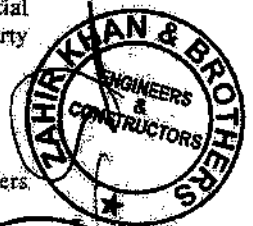
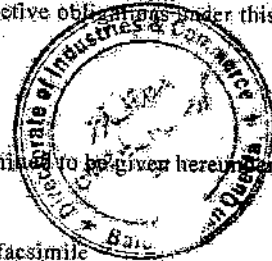
**17. GOOD FAITH**

17.1. Each Partner agrees that they shall in good faith undertake to perform their obligations in this Deed, to satisfy all conditions and to cause the transactions contemplated by this Agreement to be carried out promptly in accordance with its terms. The Partners shall cooperate fully with each other in connection with any actions required to be taken as party of their respective obligations under this Deed.

**18. NOTICES**

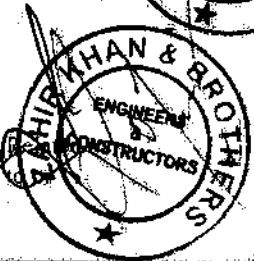
18.1. All notices, consents, waivers or other communications required or permitted to be given hereunder shall be:

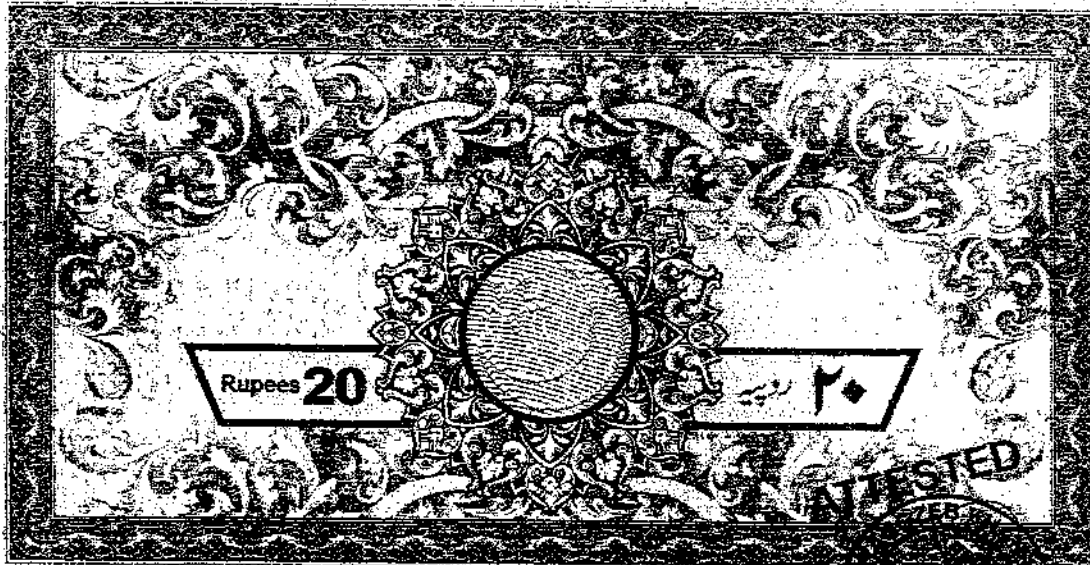
- a) Given in writing delivered by person, by certified mail, prepaid post or facsimile
- b) Addressed, depending on the proposed method of service, to the recipient at its postal or residential address, email address or facsimile number or to such other address or facsimile number as a Party may time to time notify the other.
- c) Delivered in person, by certified mail, email address, prepaid post or facsimile.
- d) Be signed by a person duly authorized by the person or, if an email or facsimile, have the senders name on it.



**19. CONFIDENTIALITY**

No Partner will, nor will a Partner allow, suffer, permit or cause any Related Entity or the Corporate to make, publish or issue any statement or report concerning, relating to





referring to:

- a) Any trade secrets; or
- b) Business or;
- c) Any confidential information; or
- d) Any information whether Confidential Information or not that could or might assist a competitor

19.2. Nothing in this clause prevents any party from complying with any obligation which is imposed upon any of them by any statute, rule or regulation, court order or requirements. Neither the Firm or any Partner or Related Entity or Related Body Corporate is prevented by this clause from using or disclosing any information where such disclosure is necessary or desirable in order to bring or defend any court proceedings, or to enforce any right or settlement.

19.3. No Partner will allow any Related Entity or Related Body Corporate to dispute the Firm's exclusive rights to and/or ownership of

- a) All trade secrets;
- b) All confidential information



19.4. This clause does not prohibit or inhibit any proper measure, advertising or promotion of the Business, the Firm or its Products.

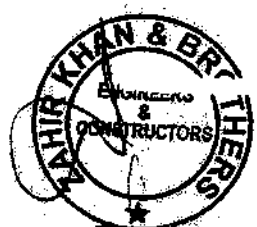
**20. MEDIATION AND ARBITRATION**

20.1. All disputes arising between the Parties hereto as to any matter or thing arising from or in any manner connected with this Agreement shall be dealt with amicably through mediation and consultation among the Partners. In case the dispute cannot be resolved through mediation, the same shall be governed to Arbitration in accordance with the Arbitration Act 1940. The place of Arbitration shall be Quetta, Baluchistan, Pakistan.

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**21. AMENDMENTS TO THE DEED**

21.1. The Partners agree that after execution of this Deed, this Deed shall only be amended in writing, on mutual agreement and unanimous decisions of the Partners.

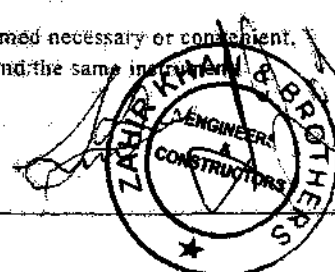


**22. COUNTERPARTS**

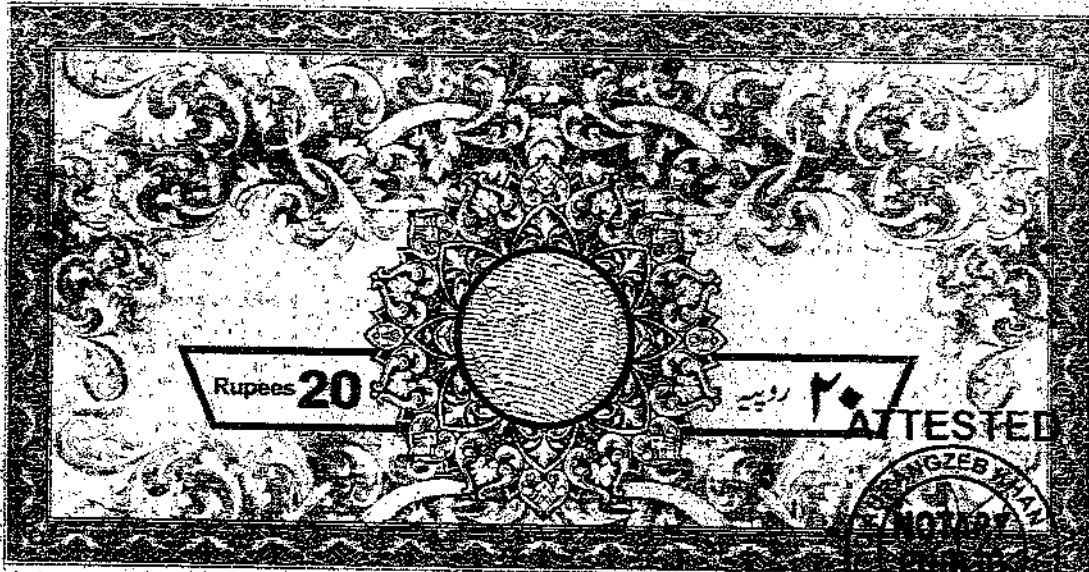
22.1. This Deed may be executed in as many counterparts as may be deemed necessary or convenient. Counterparts taken together shall be deemed to constitute one and the same instrument.



Handwritten signatures of the partners.







**23. WAIVER**

23.1. No delay or indulgence by a Partner in enforcing any of the terms and conditions of this Agreement shall restrict the rights and powers of the other Partners nor shall any waiver by a Party of any breach of this Agreement shall operate as a waiver of or in relation to any subsequent or any continuing breach of it.

23.2. Each Partner hereby expressly waives the right to require partition of any Partnership Property or any part thereof.

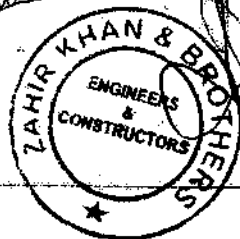
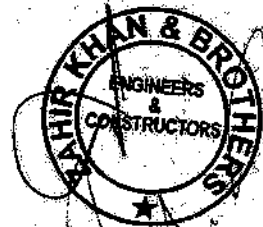
**24. ENTIRE AGREEMENT**

24.1. Except as otherwise expressly provided in this Deed of Partnership, this Agreement contains the entire Agreement of the partners with respect to the terms and conditions of the Partnership and supersedes all prior agreements, certificates, and understandings, oral or otherwise, among the Partners, with respect to these matters.

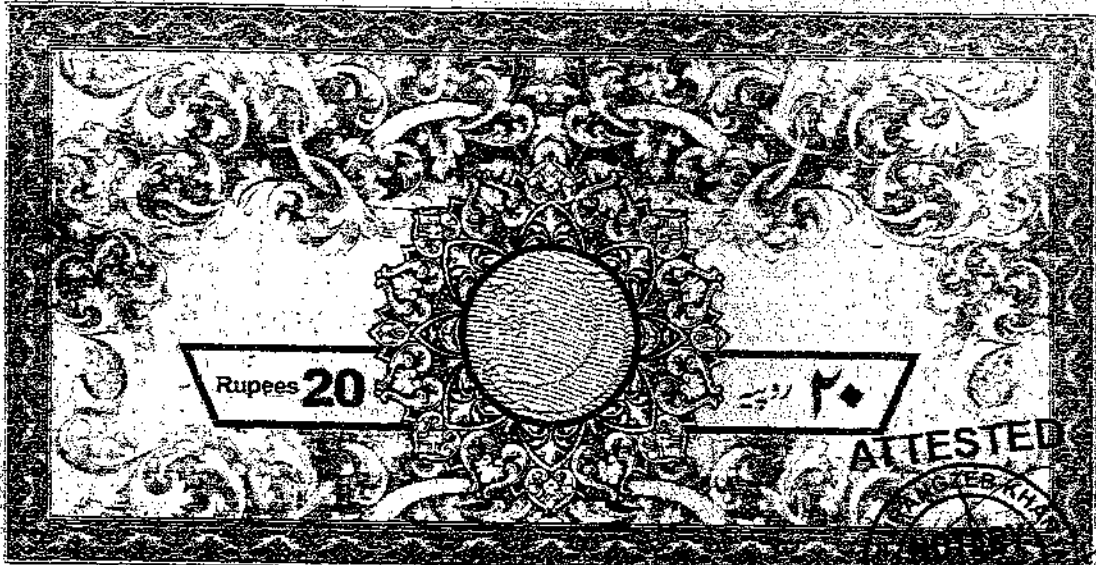
24.2. This Agreement shall be binding on and for the benefit of the respective successors, inheritors, assigns and personal representatives of the partners, except to the extent of any contrary provisions in this Agreement.

**25. SEVERABILITY**

25.1. Each provision of this Agreement is considered to be severable. If, for any reason, any provision or any part of a provision is determined to be invalid and contrary to any existing or future applicable law, the invalidity shall not impair the operation of or affect those portions of this Agreement that are valid, but this Agreement shall be construed and enforced in all respects as if the invalid or unenforceable provision or provisions has been omitted.



*(Handwritten signatures and initials)*



IN WITNESS WHEREOF, have executed and put their respective signatures to this Deed of Partnership on this the 2<sup>nd</sup> day of March, 2018 in presence of the Witnesses Below.

1. Zahir Khan  
CNIC No. 54400-0384681-9

3. Muhammad Suleman Khan  
CNIC No. 54400-7631802-3

2. Mohabat Khan  
CNIC No. 54400-0375263-3

4. Samiullah  
CNIC No. 54401-9206885-9

Witnesses

1. Name

2. Name

CNIC No.

CNIC No.

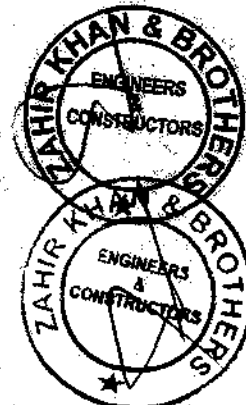
*U. Ayub*  
3522-8901699-1

*Ihsan ul haq*

37101-8154380-1

Signature

Signature



Initial Date of Registration in PEC: Jan 31, 2006



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Serial No. 526088  
PEC-11

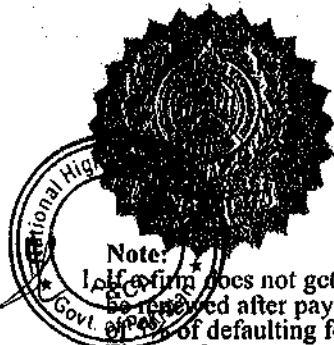
**PAKISTAN ENGINEERING COUNCIL**  
Licence No: 13 Category: CA Validity: 30 June, 2023  
**LICENCE OF PAKISTANI CONSTRUCTOR/OPERATOR**  
(Under the bye-laws of Pakistan Engineering Council 1987)

The firm will bid individually and not in competition with M/S ABC CONSTRUCTION (PVT) LTD (C6/43233), M/S ZK DEVELOPERS (PVT) LTD (C6/71656) AND M/S ZAHIR KHAN & BROTHERS (O6/476) for the same project.

This is to certify that M/s ZAHIR KHAN & BROTHERS (Licencee), with its registered office at PLOT# 44 ST.# 11 I-9/2, ISLAMABAD have been licenced under Construction and Operation of Engineering Works Bye-laws 1987, until the validity date to construct/operate engineering works, the construction/capital cost of which does not exceed Rs. NO LIMIT provided the licencee fulfils all the qualification requirements prescribed by Client or Employer for a particular engineering work; and subject to the licencee continuing to fulfill all the requirements of the bye-laws.

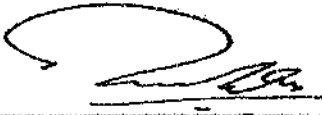
Field of Specialization BC01 - BC02 - BC03 - BC04 - CE01 - CE02 - CE04 - CE06 - CE08 - CE09 - CE10 - CE11 (General engineering Works only) - CE11 (Infrastructure Development Works) - EE01 - EE02 - EE03 - EE04 - EE05 - EE06 - EE07 - EE08 - EE10 - EE11 (General Electrical Works Only) - ME01 - ME02 - ME03 - ME04 - ME05 - ME06 - ME07 (General Mechanical Works only) - (THIRTY ONLY) (Specialization Code Nos. for detail see overleaf)

Date of Issue: Jun 17, 2022  
(Islamabad)



Note:

1. If a firm does not get renewal of its license within a year after expiry of its license, the firm may be removed after payment of outstanding fee if entire defaulting period plus surcharge at the rate of 10% of defaulting fee amount, or as prescribed from time to time.
2. The employer must ensure employment of engineers whose names are mentioned on backside of the licence. The Consulting Engineer (the Engineer Incharge in case the consultant is not appointed) shall monitor the number of engineers employed by the Constructor/Operator and inform the Council accordingly.
3. Owner(s) of the firm shall be held responsible, if any information, document or paper submitted by him/them is found incorrect or forged.

  
Registrar  
Pakistan Engineering Council,  
Islamabad.

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Initial Date of Registration: 10 PEC: Jan 31, 2006



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Serial No. 487742  
PEC-11

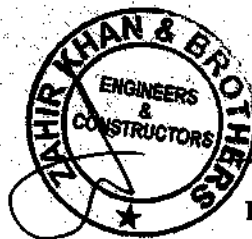
**PAKISTAN ENGINEERING COUNCIL**  
Licence No: 13 Category: CA Validity: 30 June, 2021  
**LICENCE OF PAKISTANI CONSTRUCTOR/OPERATOR**  
(Under the bye-laws of Pakistan Engineering Council 1987)

This is to certify that M/s **ZAHIR KHAN & BROTHERS** (Licencee), with its registered office at **PLOT# 44 ST.# 11 1-9/2, ISLAMABAD** have been licenced under Construction and Operation of Engineering Works Bye-laws 1987, until the validity date to construct/operate engineering works, the construction/capital cost of which does not exceed Rs. **NO LIMIT** provided the licencee fulfils all the qualification requirements prescribed by Client or Employer for a particular engineering work, and subject to the licencee continuing to fulfill all the requirements of the bye-laws.

Field of Specialization **BC01 - BC02 - BC03 - CE01 - CE02 - CE04 - CE06 - CE08 - CE09 - CE10 - CE11 (General engineering Works only) - EE01 - EE02 - EE03 - EE04 - EE05 - EE06 - EE07 - EE11 (General Electrical Works Only) - ME01 - ME02 - ME03 - ME04 - ME05 - ME06 - ME07 (General Mechanical Works only) - (TWENTY SIX ONLY)** (Specialization Code Nos. for detail see overleaf)

Date of Issue: Jan 2, 2021  
(Islamabad)

*Handwritten signatures and initials*



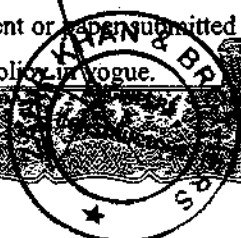
*Handwritten signature of Registrar*

Registrar  
Pakistan Engineering Council,  
Islamabad.



1. If a firm does not get renewal of its license within a year after expiry of its license, the firm may be renewed after payment of outstanding fee if entire defaulting period plus surcharge at the rate of 5% of defaulting fee amount, or as prescribed from time to time.
2. The employer must ensure employment of engineers whose names are mentioned on backside of the licence. The Consulting Engineer (the Engineer Incharge in case the consultant is not appointed) shall monitor the number of engineers employed by the Constructor/Operator and inform the Council accordingly.
3. Owner(s) of the firm shall be held responsible, if any information, document or report submitted by him/them is found incorrect or forged.
4. Supervisory Engineers will be replaced/ presented by 30-Jun-2021 as per policy in vogue.

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# NATIONAL HIGHWAY AUTHORITY

Procurement & Contract Administration Section  
28 Mauve Area, G-9/I, Islamabad ☎ 051-9032917, ☎ 051-9260419

No. 2(518)/Dir(P&CA)/NHA/2021/3/6

May 26, 2021

To,

All the prospective bidders  
M/s.....  
.....

Subject:

**MINUTES OF PRE-BID MEETING AND ADDENDUM NO.1:  
CONSTRUCTION OF ADDITIONAL 2 LANE CARRIAGEWAY FROM  
SHIKARPUR TO RAJANPUR (N-55) CAREC TRANCHE-2**

**Lot - 1: Shikarpur - Kandhkot Section (Km 43+400 to Km 105+820) (62.42 Km)**

**Lot - 2: Kandhkot - Kashmir Section (Km 105+820 to Km 164+600) (58.78 Km)**

**Lot - 3: Kashmir - Rojhan Section (Km 164+600 to Km 213+500) (48.90 Km)**

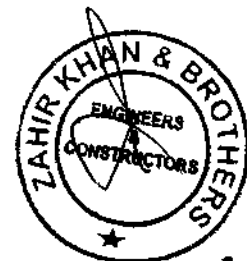
**Lot - 4: Rojhan - Rajanpur Section (Km 213+500 to Km 265+350) (51.85 Km)**

Find enclosed herewith Minutes of Pre-Bid Meeting alongwith Addendum No.1 for your information and necessary action, please.

  
(SAMI UR RAHMAN)  
General Manager (P&CA)

**Copy for information:**

- Member (Planning), NHA, Islamabad.





## MINUTES OF PRE-BID MEETING HELD ON 22<sup>ND</sup> APRIL 2021

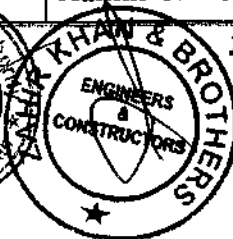
### CONSTRUCTION OF ADDITIONAL CARRIAGEWAY FROM SHIKARPUR-RAJANPUR OF N-55 (221.95 KM) UNDER ONE PACKAGE COMPRISING FOUR LOTS:

- **LOT-1: SHIKARPUR - KANDHKOT SECTION**  
**FROM KM 43+400 TO KM 105+820 (62.42 KM)**
- **LOT-2: KANDHKOT - KASHMORE SECTION**  
**FROM KM 105+820 TO KM 164+600 (58.78 KM)**
- **LOT-3: KASHMORE - ROJHAN SECTION**  
**FROM KM 164+600 TO KM 213+500 (48.90 KM)**
- **LOT-4: ROJHAN - RAJANPUR SECTION**  
**FROM KM 213+500 TO KM 265+350 (51.85 KM)**

A Pre-Bid Meeting was held in NHA Auditorium at 1100 hours on 22 April 2021 to discuss the bidding documents issued to bidders and clarifies the points, if any, raised by them. The following attended the Meeting

- **National Highway Authority**
  - i. Mr. Sami ur Rahman, General Manager (P&CA) - NHA
  - ii. Mr. Jehanzeb Khan Niazi, Director (P&CA) - NHA
  - iii. Mr. Liaqat Ali, Deputy Director (P&CA) - NHA
  - iv. Mr. Noshewan, Jr. Engineer (NESPAK)
- **ADB Observer**
  - i. Mr. Shafiq Wazir, Procurement Specialist, ADB
- **Bidders**

S/No	Company Name	Name	Designation
1	M/s CSI-SPARCO JV	Mr. Wang Jieqing	Representative
2	M/s CCECC	Mr. M. Tanveer Ahmed	Marketing Assistant
3	M/s CRFG	Mr. Basit Ali	Marketing Manager
4	M/s CSCBL	Mr. Wangwer	Marketing Manager
5	M/s CSCEC	Mr. Umer Farooq	General Manager BD
6	M/s China International Water and Electric Corp.	Mr. Naqeeb ur Rehman	Admin (Manager)
7	M/s China Gezouba group Company ltd.	Mr. Zain Tariq	Manager Business Development
8	M/s CRBC	Mr. Zeeshan Ul Haq	Civil Engineer
9	M/s XINJIANG BEIXIN	Mr. Sarfaraz Malik	Marketing Manager
10	M/s Nauman Construction Company	Mr. Hamza Ikram	Jr. Contract Engineer
11	M/s SMC	Mr. Fahad Ali	Admin Officer

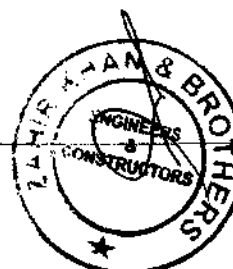


S/No	Company Name	Name	Position
12	M/s Matracon Pakistan (Pvt) Ltd.	Mr. Qaisar Mahmood	Manager (Contracts)
13	M/s China Railway No. 3 Engineering Group	Mr. Eleanor	Business Manager
14	M/s Habib Rafiq (Pvt) Ltd.	Mr. Adeel Shahzad	Manager (Planning)
15	M/s AM Associates	Mr. M. Usman	Planning Engineer
16	M/s CFMCC	Mr. Mudassar	Contract Manager
17	M/s Zarghoon Enterprises	Mr. Talat Manzor	Representative

02. General Manager (P&CA) welcomed the participants of the Pre-bid meeting. He asked the bidders to come forward with their questions.

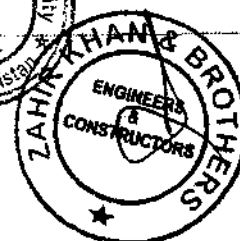
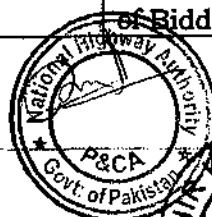
03. The queries raised and their replies are detailed below:

S/No	Query	Reply
1.	<b>Section 2: Bid Data Sheet, ITB 11.3(d)</b> The bidder shall submit with its price Bid the Unit price analysis for major items of works, in this respect kindly specify the content of major items.	If the lowest evaluated bidder's bid price is seriously unbalanced or frontloaded in the opinion of the employer, the employer will ask only to the lowest evaluate bidder to submit detailed price analysis for any or all items of the bill of quantities to demonstrate the internal consistency. The submission of rate analysis for major items by the all the bidders is an extra burden over the prospective bidders.  (Please refer to the attached Addendum No. 01 to the Bidding Document).
2.	<b>Tender Drawings, Lot-2</b> Plan & profiles drawings for Km 109+400-109+900, 113+600 - 114+100, 145+800 - 146+000, 155+200 - 157+200 are missing from documents, kindly please verify.	Missing drawings are enclosed.  (Please refer to the attached Addendum No. 01 to the Bidding Document).

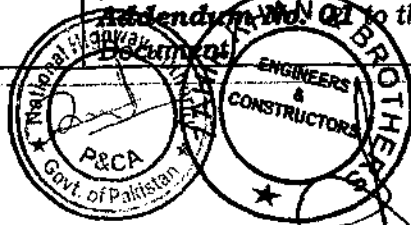




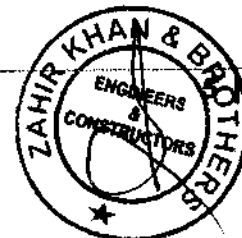
S/No	Question	Answer
3.	<b>Section 2: Bid Data Sheet, ITB 22.1</b> The deadline for bid submission is 20 May 2021, considering the given time in preparing our Bids against 4 Lots is very limited, in order to facilitate the preparation of substantially responsive and commercially competitive Bids, you are therefore, kindly requested to extend the deadline for bid submission at least by <b>one month</b> .	Based on the fact that Ramadan is ongoing followed by Eid holidays and also third wave of COVID-19 is at its peak, the deadline for submission of bids has been extended to <b>9 June 2021</b> .  <i>(Please refer to the attached Addendum No. 01 to the Bidding Document).</i>
4.	Bill No. 6A, Bill No. 11 Weigh Station & Allied Works is missing.	Lot-2 Bill no 6A, Bill no 11 is enclosed.  <i>(Please refer to the attached Addendum No. 01 to the Bidding Document).</i>
5.	For Qualifying the same category of works in the same Lot, is the applicant allowed to use the experience from different projects in different years. For example: The embankment completed by A project in 2016+ the embankment completed by B Project in 2017, so and so forth.	The bidders are required to substantiate the experience in key activities on the projects executed within the years specified in the bidding documents.  For any specific activity, the bidder has to submit evidence of execution and completion of that specific activity in any <b>one year</b> within the last seven (07) years.
6.	The qualification criteria "within 1 year" means 1 natural calendar year (from Jan. to Dec.) or any consecutive 12 months?	Any consecutive 12 months, within the last seven (07) years.
7.	Do excavation and compaction count as the quantity of works completed?	No.
8.	Does experience in concrete bridges in railway project and pavement of runway project count as experience of key activities?	Yes.
9.	Advance payment may be made 15% of contract price against insurance bond from AA rated company.	Not agreed.
10.	Recovery of Advance payment may be made at the same rate as Advance payment from each IPC.	Not Agreed.
11.	Bid Security, Performance Security and Advance payment Guarantees in the form of Insurance Bond from AA rated company may be allowed.	Not Agreed.
12.	Limit of retention money may be reduced to 2.5% of Contract Price.	Please process as per conditions of Bidding Documents.



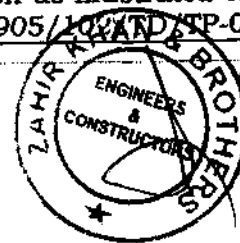
S/No	Question	Answers
13.	Amount of Bonus may be same as amount of delay damages i.e., 0.05% of contract price for each day subject to maximum of 10% of contract price.	There is no bonus for early completion.
14.	Time for Payment to the contractor may be reduced to 28 days from contractor's submission.	Not Agreed.
15.	Soft form (Excel) of BOQ may please be provided.	BOQ in Excel sheet can be provided at the bidder's risk and cost. If there is any discrepancy/ambiguity between as issued BOQ and soft copy of shared BOQ in Excel format, the issued BOQ in bidding document shall prevail.
16.	Minimum amount of Interim payment certificates may be reduced to 2% of Accepted Contract Price to ease cashbox for the contractor.	Not Agreed.
17.	Will the CAD version drawings or more clearly visible drawings be provided?	Drawings provided with bidding documents are legible. However any drawing, a bidder finds him not clear may be provided with fresh copy.
18.	Does it have any preferential tax rate for this project? What is the applicable tax for this project?	Information on the tax obligations in the Client's country can be found at Federal Board of Revenue Website i.e., <a href="http://www.fbr.gov.pk">www.fbr.gov.pk</a> .
19.	Ten (10) items #407d3, #407d4...SP-418 showing in Bill # 4C in Lot 2 and 3 are same as ten (10) items #407d1, #407d2.... SP-417(a) showing in Bill #4c in lot 4, they are same in content, but different in item No. only... Can we correct the item No. of these in Lot 4 to make the same as these in Lot-1?	Ten items as highlighted in LOT-1, LOT-2, LOT-3, LOT-4 are correct in quantities and items no. Bidder is requested to quote rate against items keeping in view the quantity provided in BOQ of respective bill no 4c. of each LOT
20.	Is the unit "Each" against item No. SP-708b in Lot-4 the same thing as "Vehicle Month" against item No. SP-708b in Lot-1? Please clarify	Unit of SP-708b in BOQ's of LOT-1 & LOT-4 is correct and is mentioned as "Each". No change required. Proceed as per bidding document.
21.	Which Kind of Material to be used for the pipe 450mm being connected with chute where is the connection point? does it require concrete casing around the Pipe?	Drawing no 3905/102/TD/D-02 stands invalid for LOT-1,2,3,4 and be considered redundant. Concrete chute type-2 shall be used for this project. Connection point shall be road shoulder edge. (Please refer to the attached Addendum No. Q1 to the Bidding Document)



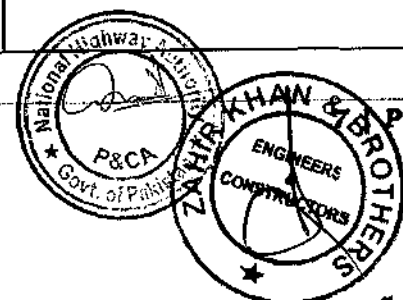
S/No	Question	Answer
22.	Does it require pile diameter 1200mm and pile length 20m for all bridges?	Pile length is provided in drawings keeping in view the representative bore logs along the project stretch. However, test pile length shall be determined upon provision of geotechnical investigation report submitted by contractor covered in his scope of work vide bill no 4c(i). After pile test load report, working drawings for pile works shall be issued.
23.	Refer to clause 2.4.2 "Construction Experience in Key Activities" of the Evaluation and Qualification Criteria of subject contracts. Kindly confirm if requirements mentioned for key activities must be fulfilled by any one partner of the Joint Venture or can the experience of all partners combined be considered to meet the threshold requirement?	Yes, it is confirmed that the requirements mentioned for key activities must be fulfilled by any one partner of the Joint Venture.
24.	A per ITB 10.1 "The translation of the documents shall be duly notarized" kindly confirm the type of authorizations acceptable for the bid?	The documents state notarized meaning thereby attested and witnessed by the Notary Public.
25.	Tender Drawing, lot 2,3,4 the drawing for route location plan is not clear. Please provide clear colored drawing for route location plan	Coloured Route Location Plan is available. Soft Copy can be provided on bidder's request at his own risk.
26.	BOQ Bill No. 6a Ancillary Works, Lot-4: Bill No. 05 Steel Works SC-2.... Ditto...high tensile anchor bolts and nuts, 25mm dial. Item No. SC-1 is for the "Steel Column box" and its unit is KG. Item SC-2 is anchor bolt and the unit is No. Please confirm the payment Unit for Item No. SC-2.	Unit for LOT 4, Bill No. 6a Ancillary Works, Bill No. 05 Steel Works item no: SC-2 is correct in BOQ.
27.	BOQ Bill No. 6a Ancillary Works, Lot-1: Bill No. 05 Steel Works SC-2.... Ditto...high tensile anchor bolts and nuts, 25mm dial. Item No. SC-1 is for the "Steel Column box" and its unit is KG. Item SC-2 is anchor bolt and the unit is No. Please confirm the payment Unit fir Item No. SC-2.	Unit for LOT 1, Bill No. 6a Ancillary Works, Bill No. 05 Steel Works item no: SC-2 is correct in BOQ.



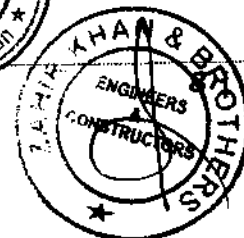
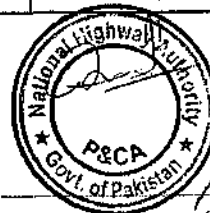
S/No	Q/No	A/No
28.	BOQ Bill No. 6a Ancillary Works, Lot-4 Bill No. 3 Electrical Works SP/EW-2b.... ditto .... but 25mm3 Please confirm the Number and Unit in the description if SP/EW-2b, as the description of SP/EW-2a is "..... ditto....but 25mm2"	BOQ Bill No. 6a Ancillary Works, LOT 4: Bill no. 3 electrical works SP/EW-2b....ditto....but 25mm3, Cable size is 32mm2 instead of 25mm3, which is mentioned wrong. Unit and quantity is correct. <i>(Please refer to the attached Addendum No. 01 to the Bidding Document).</i>
29.	BOQ Bill No. 6a Ancillary Works, Lot-2 Bill No. 3 electrical works SP/EW-2b.... ditto .... but 25mm3 Please confirm the Number and Unit in the description if SP/EW-2b, as the description of SP/EW-2a is "..... ditto....but 25mm2"	BOQ Bill No. 6a Ancillary Works, LOT 2: Bill no. 3 electrical works SP/EW-2b....ditto....but 25mm3, Cable size is 32mm2 instead of 25mm3, which is mentioned wrong. Unit and quantity is correct. Revision enclosed. <i>(Please refer to the attached Addendum No. 01 to the Bidding Document).</i>
30.	BOQ Bill No. 6a Ancillary Works, Lot-1 Bill No. 3 electrical works SP/EW-2b.... ditto .... but 25mm3 Please confirm the Number and Unit in the description if SP/EW-2b, as the description of SP/EW-2a is "..... ditto .... but 25mm2"	BOQ Bill No. 6a Ancillary Works, LOT 1: Bill no. 3 electrical works SP/EW-2b....ditto....but 25mm3, Cable size is 32mm2 instead of 25mm3, which is mentioned wrong. Unit and quantity is correct. <i>(Please refer to the attached Addendum No. 01 to the Bidding Document).</i>
31.	BOQ Bill No. 6a Ancillary Works, Lot-1 Bill No. 01 pavement 203b&206b Please provide the drawing for 203b&206b	Drawing detail for Bill No. 6a Ancillary Works, Lot 1 Bill No. 01 pavement 203b&206b: these items are to be utilized in flexible pavement widening portion as illustrated on drawing no: 3905/102/TD/TP-04
32.	BOQ Bill No. 6a Ancillary Works, Lot-2 Bill No. 01 pavement 203b & 206b Please provide the drawing for 203b & 206b	Drawing detail for Bill No. 6a Ancillary Works, Lot 2 Bill No. 01 pavement 203b&206b: these items are to be utilized in flexible pavement widening portion as illustrated on drawing no: 3905/102/TD/TP-04.
33.	BOQ Bill No. 6a Ancillary Works, Lot-4 Bill No. 01 pavement 203b & 206b Please provide the drawing for 203b & 206b	Drawing detail for Bill No. 6a Ancillary Works, Lot 4 Bill No. 01 pavement 203b&206b: these items are to be utilized in flexible pavement widening portion as illustrated on drawing no: 3905/102/TD/TP-04.



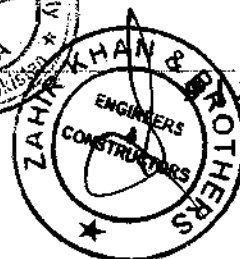
S/No	Question	Answer
34.	Bidding Documents Bill of Quantities, Lot-1, 2, 3, 4 Bill No. 4b Retaining walls and Toe Walls Please provide the drawing for Retaining Walls & Toe Walls.	Bill No. 4b Retaining walls and Toe Walls, drawing is already included in the as issued drawings. However can be provided at the bidder's request at his own risk
35.	Tender Drawing, Lot-2 Drawing No. 3905/102/TD/SCH-02 The drawing shows 48 box culverts, which does not match the 52 box culverts in bidding documents Bill of Quantities, Lot-2, Bill No. 4a, SP-505, please clarify which one prevails.	In LOT-2, there is involved cleaning and minor repair of 52 nos existing culverts covering under item SP-505. 52 nos culverts have included the culverts of Kashmore city too. However 48 nos existing culverts shall be extended for achievement of 4 lane road configuration.
36.	Bidding documents Bill of quantities Lot-1, 2, 3, 4 Bill No. 02 Sub base & base 209a Please clarify if the demolished structure can be reused	Useable Pavement structure after breaking existing road pavement shall be used effectively for construction of subbase and base course.
37.	Bidding documents Bill of quantities Lot-1, 2, 3, 4 Bill of quantities, Bill No. 4a SP-505, cleaning and mining repair of existing culverts. Please confirm the range of cleaning for example 20m from inlet and outlet slab.	Special provision, SP-505 is illustrative of scope of work covering this item. However, cleaning may be required in portion of length of existing culverts or in full length, which is scope of this respective item. Bidder should quote accordingly.
38.	Bidding documents Bill of Quantities Lot-1, 2, 3, 4 No. 6 Ancillary Works 612a, "furnishing and planting of trees including maintenance of 2 years". As Defect Notification Period is 365 days pursuant to section 8 PCC 1.1.3.7, it is advised that the period of 2 years shall be decreased to 1 year, no later than the end of defect notification period.	Please proceed as per conditions/Requirements of Bidding Documents.
39.	Tender Drawing Lot-1 Bridge at CH73+415, drawing No. 3905/102/TD/PIG104. There are 6 piles *D1200* 30 meter long in section B-B, however there are 4 piles *D1200* 25m long in section C-C, please clarify.	There are 6 piles provided at abutment having length 30m. Revised drawing is enclosed. (Please refer to the attached <b>Addendum No. 01</b> to the Bidding Document).
40.	Tender drawing lot 1, Bridge at CH78+650, drawing No 3905/102/TD/PIG105. There are 4 piles *D1200* 25 meter long in section B-B, however there are 4 piles *D1200* 30m long in section C-C, please clarify.	Piles no and pile length mentioned for bridge at Km 78+650 in section B-B and section C-C are same and correct.



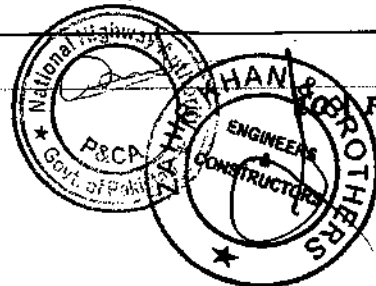
S/No	Question	Answer
41.	Tender drawing lot 1, Bridge at CH97+455, Drawing No 3905/102/TD/SCH-03 and Drawing No 3905/102/TD/P1G106. The span for this bridge is 2*25m in Drawing No. 3905/102/TD/SCH-03, however the span is 1*25m in Drawing No. 3905/102/TD/P1G106. Please clarify.	Span of bridge at Km 97+455 is 2 x 30m. Drawing for bridge at Km 97+455 provided in bidding documents stand invalid. Revised plan /profile drawing and structure drawing is attached. (Please refer to the attached <b>Addendum No. 01</b> to the Bidding Document).
42.	Tender drawing Lot-1, Bridge at CH100+435, drawing No 3905/102/TD/PIG108.  There are 6 piles *D1200* 30 meter long in section B-B, however there are 4 piles *D1200* 25m long in section C-C, please clarify.	There are 6 piles provided at abutment having length 30m. Revised drawing is enclosed. (Please refer to the attached <b>Addendum No. 01</b> to the Bidding Document).
43.	Tender drawing Lot-2, Bridge list at CH149+240, drawing No. 395/102/TD/p2B001 and Drawing No. 3905/102/TD/P2G104.  The span for this bridge is 7*40m in Drawing No. drawing No. 395/102/TD/p2B001, however the span is 3*40m in Drawing No. 3905/102/TD/P2G104. Please clarify.	Span of bridge at Km 149+240 is 7 x 40m, which is correct in highlighted drawings.
44.	Tender drawing Lot-2, Bridge at CH157+130, CH157+898, CH159+200, Drawing missing. Please provide the drawing for these bridges. However, there are "bridge 1" and Bridge 2" in Dwg No. 3905/102/TD/P2GB1 and P2GB2 without chainage for any bridges. Please clarify and match these drawing with bridge.	Bridge at Km 157+130 and Km 157+898 falls in Kashmore city as there is provided bypass for Kashmore. Bridge-1 and bridge -2 also falls in Kashmore city. Drawings for bridge-1 and bridge-2 stand invalid for LOT-2. (Please refer to the attached <b>Addendum No. 01</b> to the Bidding Document).
45.	Tender drawing Lot-3, Bridge at CH187+540, Drawing No. 3905/102/TD/SCH-02 and Drawing No. 3905/102/TD/P3g104  The chain age for this bridge is CH187+540 in Drawing NO.3905/102/TD/SCH-02, however the Chainage is 186+540 in Drawing No.3905/102/TD/P1G104. Please Clarify?	Chainage for bridge is Km 186+540. Revised drawing no: 3905/102/TD/SCH-02 is attached. (Please refer to the attached <b>Addendum No. 01</b> to the Bidding Document).



S/No	Question	Answer
46.	Is it necessary for pre-qualification to purchase the documents from NHA?	No. The eligible bidders have the option to download the bidding document at no cost from NHA website i.e., <a href="http://www.nha.gov.pk">www.nha.gov.pk</a> . Eligible bidders opting to download the bidding document from NHA website shall inform NHA in writing at the address <b>[General Manager (P&amp;CA), Address: National Highway Authority, 28-Mauve Area, Sector: G-9/1, 2<sup>nd</sup> Floor, Room No. 223, Islamabad (44000), Pakistan Telephone: 00-92-51-9032727, Facsimile number: 00-92-51-9260419]</b> failing which NHA shall not be responsible if the bidder does not receive clarifications and amendments, if any. In case of any discrepancy between the downloaded document and hard copy, the latter shall prevail.
47.	Can we submit Bid Security directly from Banks in China?	Please refer to the bidding document (ITB 19)
48.	Clause 14.5 (b) of Instructions to Bidders, it is mentioned that <i>A Bid submitted with a fixed price will be treated as non-responsive and be rejected.</i> Is it necessary to fill Foreign Currency Requirement? What if we will not import any resources from outside Pakistan?	No, it is necessary to fill Foreign Currency Requirement if no expenses are to be incurred in the foreign currency. The bidder shall in such cases state in schedule of currencies to indicate all payments in the local currency.  Please refer ITB 15.1 Price quoted shall be entirely in local currency. As per bidding documents, although the bidding price is in local currency, however, the contractor is entitled to be paid up to three currencies during implementation.
49.	No format for Credit Line letter is given in Bidding documents. Please Clarify.	There is no specific format for Credit Line Letter, please refer to BDS, ITB 11.2(g) (vii) for requirement related to lines of credit and PN-3 in the Section IV.

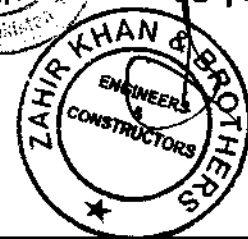
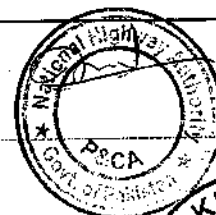


S/No.	Question	Answer
50.	The time for payment to Contractor under Clause 14.7 (b) may please be reduced from 56 days to 21 days to maintain Contractor's Cash Flow requirements.	Not Agreed.
51.	<p>About construction experience required in Clause No. 2.4.1 which is reproduced as below:  "Participation as a contractor, joint Venture partner, or Subcontractor. in at least one contract that has been successfully or substantially completed within the last seven years....."</p> <p>How to identify the term "substantially completed"? what percentage of completion is termed as substantially completed Project? Does it include a project which is completed 80% of the whole project or not?</p> <p>How to identify the date to be included in within the last seven years?</p>	Completion or substantial completion certificates issued by the concerned departments may be treated as completed projects.
52.	After the contractor win this project, during the implement, what kind of security will be arranged by client?	Contractor is responsible for all types of security and Client's responsibility would be limited up to the extent of assistance in acquiring the security clearance / NOC for the foreign nationals, securing visas, work permits on a no-cost basis.
53.	Whether the payment from client shall be dollar or not?	Please refer to ITB 15.3.
54.	As per ITB 11.3 (d) of BDS, bidder shall submit unit price analysis for major items of work. Is it compulsory and what is threshold for major and minor items?	<p>If the lowest evaluated bidder's bid price is seriously unbalanced or frontloaded in the opinion of the employer, the employer will ask only to the lowest evaluate bidder to submit detailed price analysis for any or all items of the bill of quantities to demonstrate the internal consistency as per ITB 36.5.</p> <p>The submission of rate analysis for major items by the all the bidders is an extra burden over the prospective bidders.</p> <p><i>(Please refer to the attached Addendum No. 01 to the Bidding Document).</i></p>

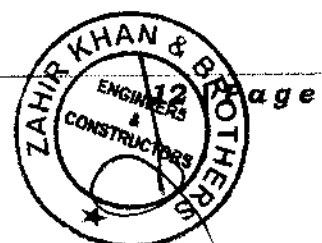




S/No	Question	Answers
55.	As per ITB 12.1 of BDS, units and rates in figures entered into the bill of Quantities Should be unambiguous and typewritten. Can you provide BOQ in excel sheet so there may not be any clerical error in retyping the BOQ?	BOQ in Excel sheet can be provided at the bidder's risk and cost. If there is any discrepancy/ambiguity between as issued BOQ and soft copy of shared BOQ in Excel format, the issued BOQ in bidding document shall prevail.
56.	Refer to criteria 2.4.2. Construction Experience in Key Activities <b>"Concrete for Bridges"</b> for Lot No. 1 & 2 given in Section-3 of Bidding Document Vol-1 wherein we see that quantity required are 63,000 Cum. And 137,000 Cum. Which are not corresponding with the quantities given in their BOQs having quantities 22,821.82 Cum. And 38,986.96 Cum respectively. The quantities required in criteria for bridges should be corresponding with their respective BOQ therefore we request that the same may be considered accordingly, please.	Not agreed, please follow the as issued bidding document.
57.	Quantum of work as specified under section 2.4.2 for Lot-01 to Lot-04 for bridge concrete is very high when comparing it with BOQs quantum of the respective Lot, it varies from 2.8% to 32% of the given criteria, kindly reconsider it and allow it for all types of concrete instead of bridge only or reduced the quantum as to cope with BOQ quantum for the respective Lot.	Not agreed, please follow the as issued bidding document.
58.	Number of JV partners are not specified in the issued documents.	There is no limitation on number of JV partners
59.	Requirement under 2.4.1 criterion for each partner not mentioned unlike it has been demarcated under 2.3.2 as 25% for each partner & 40% for leading partner, kindly clarify. You are requested to kindly allow the same for all partners under combined requirement on the basis of JV share.	Not agreed, please follow the as issued bidding document.
60.	Quantum of work under key activities in case of JV partner under 2.4.2 has not been distributed for each partner separately or as their defined share/combined quantum of JV partners must meet the given quantum of key activities.	Please follow the as issued bidding document.
61.	Can the experience of concreting for other structures meeting or exceeding the required grads/classes for bridges be considered?	No



62.	The provided BOQ of Lot-2 indicates the quantities of concrete for bridges is 28,269 Cum only, whereas, to qualify the experience criterion, the bidder has to demonstrate 137,100 cum. In one-year, similar cases apply to other Lots also, in this respect, kindly please clarify the rationale of such high requirements.	Please follow the as issued bidding document.
63.	<b>Tender Drawing, Lot-1</b> Genera Arrangement Plan & Elevation for bridges at CH 43+287, 43+570 44+270 are missing from document, kindly please provide the same.  Typical Cross section for CH from KM 43+400 to 45+600 is missing from the document, kindly please provide the same.	Refer drawing no: 3905/102/TD/CS-03 for typical cross-section of chainage Km 43+400 to Km 45+600. Km 43+570, Km 44+270 are already four lane structures. No need to widen. However, bridge at Km 43+287 is part of scope of LOT-01 and drawings have already been provided in tender drawings..
64.	<b>Tender Drawing, Lot-3</b> It is mentioned in the Schedule of Structures that there is a Bridge (15*30*15) at CH 187+540 whereas, the General Arrangement Plan & Evaluation for this bridge is missing from the document, kindly please provide the same.	Correct chainage of bridge is Km 186+540. Revised drawing no: 3905/102/TD/SCH-02 is attached. <i>(Please refer to the attached Addendum No. 01 to the Bidding Document).</i>
65.	<b>Bill of Quantities, Lot-3 &amp; Lot-4</b> It is specified in the 612a of Bill 6 (Ancillary Works) that, the Contractor shall maintenance tress for 2 years, whereas the Defect Notification Period for the project is only One year. Kindly please verify.	Item 612a is proposed to be executed within contract period. However, contractor shall be responsible for maintenance of two years including defect notification period of one year. The contractor to whom the contract will be awarded should plan this activity in such a way that could maintain the planned trees for two years (i.e. one year of remaining execution period of overall project + one year of DLP)
66.	<b>Lot-3 &amp; Lot-4</b> You are kindly requested to specify the suggested location for Borrow Pits and Disposal Site.	This requirement is part of contractors work methodology.
67.	<b>Lot-3</b> You are kindly requested to specify the scope of lability for dismantlement of the underground cable and OFC lines at KM 166+800.	It is responsibility of contractor to ensure safety of utilities till their re-location.



68.	<b>Lot-1, 2, 3, 4</b> The work of temporary Bypass is not described in the BOQ, kindly please verify.	All type of traffic diversions necessary to execute the road works successfully comes under contractor work methodology. No separate payment in this regard shall be made.
69.	Which party shall be responsible for the connection of high voltage line along the carriageway, the Employer or the Contractor?	The obligations shall be fulfilled as per conditions of the contract.
70.	It seems there is a disparity in requirement of Audited Financial Statements/Reports in recently advertised GoP projects and the instant Project financed by ADB, please clarify.	<i>Please refer to the attached Addendum No. 01 to the Bidding Document)</i>
71.	Section 3: Evaluation and Qualification Criteria, 2.3.2 "Average Annual Construction Turnover" and 2.4.1 "Contracts of Similar Size and Nature" that must be revised in accordance with standard ADB Guidelines as is reproduced herein under: "usually the specifying value is 80% of the estimated value of the subject cited Contract, while AACTO to usually based on 75 % of estimated Value"	It is to informed that Bidding Documents has been prepared using the ADB Standard Template of Bidding Document. All the Criteria has been worked out by using User's Guide to Procurement of Works which was duly agreed and approved by ADB. Therefore, there is no need to revise the mentioned criteria.
72.	There is not Item in the BOQ for hauling material in excess of the free haul distance of 1.0 KM. Kindly please confirm the Overhaul Payment.	Please follow NHA specification in strict compliance. There is no such provision.
73.	You are kindly requested to provide us the specifications for Toll Plaza.	Description of items of toll plaza is very elaborative and clearly specify the scope of work.

04. Firms were advised to read the bid document and visit site area prior to submission of their bids.

05. The meeting concluded with a vote of thanks to all the participants.

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15. **Agenda Item 11**  
**Loan 4099-Pak, Central Asia Regional Economic Cooperation Corridor Development Investment Program (CAREC), Tranche-II, OCB/CAREC/T-II: Construction of Additional Carriageway from Shikarpur to Rajanpur of N-55 (221.95 km) Under One Package Comprising Four LOTS:**

**LOT-1: Shikarpur - Kandhkot Section (Km 43+400 to Km 105+820 (62.42 Km)**

**LOT-3: Kashmore - Rojhan Section (Km 164+600) to Km 213+500 (48.90 Km) and**

**LOT-4: Rojhan - Rajanpur Section (Km 213+500 to Km 265+350) 51.85 Km**

**Proposal**

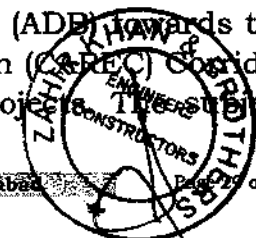
15.1. The Executive Board was requested to approve the award of following Works, OCB/CAREC/T-II: Construction of Additional Carriageway from Shikarpur to Rajanpur of N-55 (221.95 Km), to M/s Zahir Khan and Brothers:

- a. Lot-1: Shikarpur - Kandhkot Section [Km 43+400 To Km 105+820 (62.42 Km)] at the lowest evaluated Bid Price of PKR.8,848,101,910.80 which is 3.99% below the Engineer's Estimate based on CSR 2014.
- b. Lot-3: Kashmore - Rojhan Section [Km 164+600 to Km 213+500 (48.90 Km)] at lowest evaluated Bid Price of PKR 6,414,199,929.60 which is 5.95% below the Engineer's Estimate based on CSR 2014 and
- c. Lot-4: Rojhan - Rajanpur Section [Km 213+500 to Km 265+350 (51.85 Km)] at lowest evaluated Bid Price of PKR.7,312,776,399.82 which is 4.93% below the Engineer's Estimate based on CSR 2014.

**Presentation**

15.2. The GM (P&CA) introduced the proposal contained in the working paper. He informed about background of case as under.

15.3. Scope of Work. The Islamic Republic of Pakistan has received a loan from the Asian Development Bank (ADB) towards the cost of Central Asia Regional Economic Cooperation (CAREC) Corridor Development Investment Program - Tranche-II Project. The subject



project i.e. OCB/CAREC/T-II: Construction of Additional Carriageway from Shikarpur to Rajanpur of N-55 (221.95 Km), Lot-1: Shikarpur - Kandhkot Section [Km 43+400 To Km 105+820 (62.42 Km)], Construction of Additional Carriageway from Shikarpur to Rajanpur of N-55 (221.95 Km), Lot-3: Kashmore - Rojhan Section [Km 164+600 to Km 213+500 (48.90 Km)] and Lot-4: Rojhan - Rajanpur Section [Km 213+500 to Km 265+350 (51.85 Km)] is included in CAREC T-II.

15.4. Source of Funding. The project is a part of Central Asia Regional Economic Cooperation (CAREC) Corridor Development Investment Program - Tranche-II Projects and being financed by ADB under Loan No.4099-PAK.

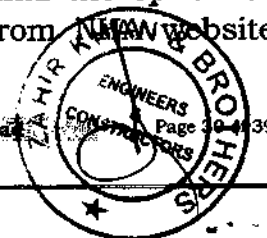
15.5. PC-I Status. The PC-I of project i.e. Indus Highway (N-55) Additional Carriageway Project (Shikarpur to Rajanpur) Length 221.95 KM approved by ECNEC in its meeting held on 1<sup>st</sup> October, at the cost of Rs. 44,703.89/- Million. Out of total cost, Rs. 40233.50 million (US\$ 241.27 million) will be financed through ADB loan under Multi Tranche Financing Facilities (MFF) and balance cost of Rs.4470.390 million will be financed by the Government of Pakistan.

15.6. Engineer's Estimate (EE).

EE based on CSR 2014:	Lot-1	:	PKR 9,216.190 million
	Lot-3	:	PKR 6,819.973 million
	Lot-4	:	PKR 7,692.117 million

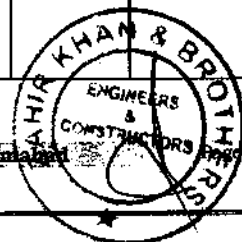
15.7. Tendering.

- a. It was agreed between NHA and ADB that the procurement of subject works shall be done on Single Stage Two Envelope Procedure in accordance with ADB's Guidelines for Procurement of Single Stage Two Envelope Procedure for civil works.
- b. The Invitation for Bids was advertised in the leading National Newspapers on April 06, 2021 including Daily Dawn (English); Daily The News (English); and Daily Jang (Urdu). The IFB was also uploaded on the (i) ADB website (adb.org) and (ii) NHA website (www.nha.gov.pk) copy of which was sent to ADB. The bidding documents for the said project were issued to all bidders who submitted applications for purchase. Moreover, bidders also had the option to download the bidding document from NHA website

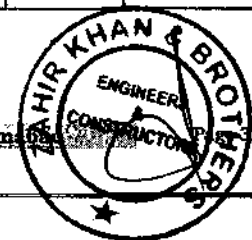


(www.nha.gov.pk) free of cost. The pre-bid meeting was held on April 22, 2021 at NHA HQ Islamabad. Seventeen (17) prospective bidders attended the pre bid meeting. Detail of bidders who submitted their bids on June 09, 2021 is given below:

B#	Bidder Name	Legal Status	Origin	Lot
1.	M/s China International Water and Electric Corporation	Single	PRC	1
				2
				3
				4
2.	M/s Ningxia Communication Construction Co. Ltd	Single	PRC	1
				3
3.	M/s China Railway First Group Co Ltd	Single	PRC	1
4.	M/s China State Construction Engineering Corporation Ltd	Single	PRC	1
				2
				3
				4
5.	M/s Shaanxi Construction Engineering Group Corporation Ltd - M/s Umer Jan & Co (Joint Venture)	JV	PRC/ Pakistan	1
				3
				4
6.	M/s China Civil Engineering Construction Corporation (CCECC)	Single	PRC	1
				2
7.	M/s Zahir Khan and Brother (ZKB)	Single	Pakistan	1
				2
				3
				4
8.	M/s China Gezhouba Group Company Limited (CGGC)	Single	PRC	1
				2
9.	M/s China Road and Bridge Corporation - M/s Matracon Pakistan (Pvt) Ltd (Joint Venture)	JV	PRC/ Pakistan	1
				2
				3
				4
10.	SMC Joint Venture M/s Sultan Mahmood & Company - M/s Saadullah Khan and Brothers Joint Venture	JV	Pakistan	2
11.	SMC Joint Venture M/s Sultan Mahmood & Company - M/s Asad Constructions and Engineering Joint Venture	JV	Pakistan	3
				4
12.	M/s KNK Joint Venture [M/s KNK (Pvt) Ltd and M/s Saadullah Khan and Brothers (Joint Venture)]	JV	Pakistan	3
				4
13.	M/s China Railway No. 3 Engineering Group Co Limited and M/s Zarghoon Enterprises (Pvt) Ltd (Joint Venture)	JV	PRC/ Pakistan	2



B#	Bidder Name	Legal Status	Origin	Lot
14.	M/s Ningxia Communication Construction Co. Ltd, M/s Nauman Construction Company (Pvt) Ltd and M/s Muhammad Sajjad (Pvt) Ltd (Joint Venture)	JV	PRC/ Pakistan	2
				4
15.	M/s Zhongding International Engineering Co. Ltd, M/s Sardar Mohammad Ashraf D. Baloch (Pvt) Ltd and M/s MBC and Sons Builders and Developers (Joint Venture)	JV	PRC/ Pakistan	2
16.	M/s China Shandong International Economic and Technical Cooperation Group Ltd and M/s SPARCO Construction Company (Joint Venture)	JV	PRC/ Pakistan	3
				4
17.	M/s China Gezhouba Group Co Ltd and M/s Habib Rafiq (Pvt) Limited (Joint Venture)	JV	PRC/ Pakistan	3
				4
18.	M/s China Civil Engineering Construction Corporation and M/s China Railway 22 <sup>nd</sup> Bureau Group Co. Ltd	JV	PRC	3
				4
19.	M/s Jiangsu Haitong Construction Engineering Co. Ltd and M/s Aitmaad Builders and Developers (ABD) (Joint Venture)	JV	PRC/ Pakistan	3
20.	M/s China Railway No. 3 Engineering Group Co Limited; M/s Nauman Construction Company; and M/s Habib Construction Company (Joint Venture)	JV	PRC/ Pakistan	3
21.	M/s Zhongding International Engineering Co. Ltd, M/s Sardar Mohammad Ashraf D. Baloch (Pvt) Ltd, M/s MBC and Sons Builders and Developers, and M/s AM&MJ (Joint Venture)	JV	PRC/ Pakistan	3
22.	M/s China Railway No. 3 Engineering Group Co Limited and M/s AM Associates (Joint Venture)	JV	PRC/ Pakistan	4
23.	M/s Zhongding International Engineering Co. Ltd, and M/s Techno Engineering Services (Pvt) Ltd	JV	PRC/ Pakistan	4



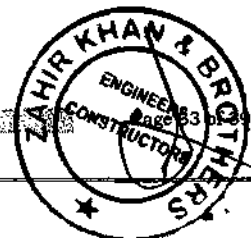


15.8. Technical Bid Evaluation.

- a. Technical Bids were opened on June 09, 2021 at NHA, HQs, Islamabad by the Bid Opening / Evaluation Committee in the presence of representatives of bidders, whereas the Price Bids were kept unopened and sealed in safe custody.
- b. The Technical Bids of all the bidders were evaluated in accordance with the approved qualification criteria as stipulated in the bidding documents. Following bidders were considered as technically Responsive and Qualified:

B#	Bidder Name	Legal Status	Origin	Lot	Qualified for each Single Lot	Qualified for Combination of Lots
6	M/s China Civil Engineering Construction Corporation	Single Entity	PRC	1	Yes	Qualified for both Lots [Lot-1 & 2]
				2		
7	M/s Zahir Khan and Brother (ZKB)	Single Entity	PAK	1		Qualified for any three Lots
				2		
				3		
				4		
9	M/s China Road and Bridge Corporation - M/s Matracon Pakistan (Pvt) Ltd (JV)	JV	PRC/PAK	1	Yes	Qualified for all 04 Lots [Lot-1 to 4]
				2		
				3		
				4		

- c. However, ADB did not support the Bid Opening and Evaluation Committees recommendation for Bidder No. 9: M/s China Road and Bridge Corporation – M/s Matracon Pakistan (Pvt) Ltd (JV) (Lot-1,2,3 & 4) as qualified and substantially responsive due to sanctioning of lead firm i.e. M/s China Road and Bridge Corporation by the ADB's office of Anti-Corruption and Integrity on November 04, 2021. Therefore, ADB recommended six bids submitted by Bidder No. 6 & 7 as substantially responsive and to open their Price Bids. Consequently, Addendum to TBER was prepared and duly signed by Bid Evaluation Committee was shared with ADB on March 08, 2022.





15.9. Opening of Financial Bids. After receiving ADB's concurrence of TBER, the Price Bids of technically qualified bidders were opened at 1100 hours on March 09, 2022 in NHA Auditorium, HQ, Islamabad by the Bid Opening/Evaluation Committee, in the presence of representatives of the bidders. The quoted/announced bid prices during bid opening are summarized as under:

a. Lot-1.

B#	Bidder Name	Announced Bid (PKR)	Premium / Rebate Offered (PKR)	Final Bid Price (PKR)
6	M/s China Civil Engineering Construction Corporation	9,244,589,753.15	367,012,753.15	8,877,577,000.0
7	M/s Zahir Khan and Brother	8,848,101,913.20	Nil	8,848,101,913.20

b. Lot-2.

B#	Bidder Name	Announced Bid (PKR)	Premium / Rebate Offered (PKR)	Final Bid Price (PKR)
6	M/s China Civil Engineering Construction Corporation	11,741,988,811.27	466,188,811.27	11,275,800,000.00
7	M/s Zahir Khan and Brother	11,399,239,660.06	Nil	11,399,239,660.06

c. Lot-3.

B#	Bidder Name	Announced Bid (PKR)	Premium / Rebate Offered (PKR)	Final Bid Price (PKR)
7	M/s Zahir Khan and Brother	6,413,408,729.60	Nil	6,413,408,729.60

d. Lot-4.

B#	Bidder Name	Announced Bid (PKR)	Premium / Rebate Offered (PKR)	Final Bid Price (PKR)
7	M/s Zahir Khan and Brother	7,312,776,399.82	Nil	7,312,776,399.82

15.10. Bid Evaluation. The above price bids were evaluated in detail in accordance with ADB's Standard Procedures. Bids were checked for arithmetic errors in accordance with the provisions of the Bidding Document and such errors were corrected. A general price comparison is undertaken based on corrected prices exhibited in the preceding section. Bidders' price variations are calculated relative to Engineer's Estimate based on CSR 2014:





a. Lot-1: Engineer's Estimate.

<u>Bidder No</u>	<u>Name of Contractor</u>	<u>Final Bid Amount (PKR)</u>	<u>Position</u>	<u>%age of EE</u>
7	M/s Zahir Khan and Brothers	8,848,101,910.80	1 <sup>st</sup>	-3.99%
6	M/s China Civil Engineering Construction Corporation	8,877,583,003.60	2 <sup>nd</sup>	-3.67%

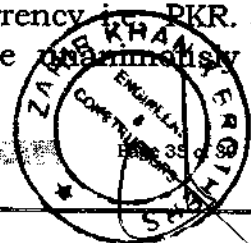
b. Lot-3: Engineer's Estimate.

<u>Bidder No</u>	<u>Name of Contractor</u>	<u>Final Bid Amount (PKR)</u>	<u>Position</u>	<u>%age of EE</u>
7	M/s Zahir Khan and Brothers	6,414,199,929.60	1 <sup>st</sup>	-5.95%

c. Lot-4: Engineer's Estimate.

<u>Bidder No</u>	<u>Name of Contractor</u>	<u>Final Bid Amount (PKR)</u>	<u>Position</u>	<u>%age of EE</u>
7	M/s Zahir Khan and Brothers	7,312,776,399.82	1 <sup>st</sup>	-4.93%

d. It is pertinent to mention here that Bidder No. 6: M/s China Civil Engineering Construction Corporation which happens to be the lowest announced bidder in Lot-2 has claimed 35% of Foreign currency component in the Schedule of Payment Currencies as per ITB clause 15.3 of Bidding Documents. However, as per ITB 15.6 Bidders may be required by the Employer to clarify their foreign currency requirements, and to substantiate that the amounts included in the unit rates and prices as shown in the Schedule of Payment Currencies are reasonable and responsive to ITB 15.3, in which case a detailed breakdown of its foreign currency requirements shall be provided by the Bidder. Accordingly, the bidder was asked to substantiate its claim of foreign currency component (which was later reduced by the bidder to 20%) on multiple occasions however the bidder failed to substantiate its claim of foreign currency component with reasonable documentary evidence. The bidder also declined to concur the recommendation of Bid Evaluation Committee to consider Foreign Currency Component as Nil and accept all the payments in local currency i.e. PKR. Therefore, Bid Evaluation Committee unanimously

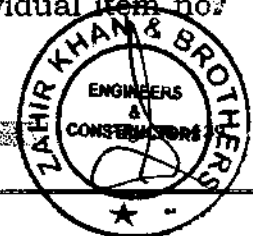


recommended for annulment of Lot-2 and for the rebidding for the same in PBER.

- e. However, ADB in its comments to PBER did not agree with Bid Evaluation Committee's decision to annul the subject procurement for Lot-2 and to proceed for rebidding. ADB suggested that there should be further negotiations with bidder. Accordingly, the bidder was called for meeting and negotiations were held once again. However, the bidder was still reluctant to waive off its claim of foreign currency component and escalation on it.

15.11. Reasonableness/Examination of Unbalanced Rates for Lowest Evaluated Bid.

- a. As per explanation given in the ADB's Guide on Bid Evaluation (Pages 18 and 19), there can be two categories of unbalanced bids: (i) higher unit prices for earlier works; and (ii) higher unit rates for underestimated work items. The rates for major items are predominately consistent in the lowest evaluated bid. Therefore, both the above cases are not evident in the lowest evaluated bids in all four (04) lots. Hence, the conclusion is that all the four (04) lowest bids are balanced in the light of Bid Evaluation Guide.
- b. Comparison of unit rates and prices, particularly early work items, of the lowest evaluated bid with the Executing Agency's/Engineer's estimate were carried out. The comparison indicates that the unit rates of the lowest evaluated responsive bid in all the three (03) lots do not fall into the above (i) nor (ii), given the following observations:
- i. Most of the rates are on the lower side, however, there is no indication of front loading or any other visible trend.
  - ii. Significant variation has been observed in some quoted rates, however, it is pertinent to note that percentage of these items to the total price bid is not significant neither as an individual item nor as cumulative.



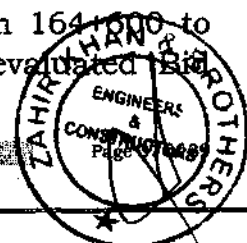
- c. The comparison indicates that the unit rates of the lowest evaluated responsive bids of bidder at Serial No. 7 [M/s Zahir Khan and Brothers] for Lot-1 as well as for Lot-3 and Lot-4 are mostly balanced.
- d. The bids submitted by the Bidder-7 [for Lot-1, Lot-3 and Lot-4] are satisfactory and do not found to be unbalanced because of the reasons explained above.

15.12. Concurrence of ADB.

- a. The Price Bid Evaluation Report (PBER) was forwarded to Asian Development Bank (ADB) for their review and concurrence on April 14, 2022. ADB issued No Objection for award of contract for Lot-1, Lot-3 and Lot-4 on May 26, 2022.
- b. However, ADB did not agree with the Bid Evaluation Committees recommendation to annul the procurement process for Lot-2 and has recommended for the award of contracts to the bidder i.e. M/s CCECC at its evaluated Price bid. Therefore, ADB suggested to revisit NHA's position and if the same recommendation has been made ADB would have to declare non-compliance and cancel the funding for Lot-2. In this regard, a letter has been written to ADB and as soon as the ADB response is received Bid Evaluation Committee in light of ADB's response will deliberate and recommended accordingly.

15.13. Recommendation of Tender Acceptance Committee. On the basis of examination of the terms and conditions of the bidding documents and evaluation of bids carried out herein above, Tender Acceptance Committee unanimously recommended that the following Contract for Works, OCB/CAREC/T-II: Construction of Additional Carriageway from Shikarpur to Rajanpur of N-55 (221.95 Km), be awarded to M/s Zahir Khan and Brothers:

- a. Lot-1. Shikarpur - Kandhkot Section [Km 43+400 To Km 105+820 (62.42 Km)] at the lowest evaluated Bid Price of PKR 8,848,101,910.80, which is 3.99% below the Engineer's Estimate based on CSR 2014,
- b. Lot-3. Kashmore - Rojhan Section [Km 164+500 to Km 213+500 (48.90 Km)] at lowest evaluated Bid





Price of PKR 6,414,199,929.60, which is 5.95% below the Engineer's Estimate based on CSR 2014 and

- c. Lot-4. Rojhan - Rajanpur Section [Km 213+500 to Km 265+350 (51.85 Km)] at lowest evaluated Bid Price of PKR 7,312,776,399.82, which is 4.93% below the Engineer's Estimate based on CSR 2014.

### Deliberation

15.14. On the query of Additional Secretary (Budget), the Member (Planning) apprised that the successful bidder of Lot-2 demanded payment in Foreign Exchange Component (FEC) as per ADB guidelines, which was not covered in approved PC-I. He added that NHA is revising the PC-I to add FEC and the same along with request for award of Lot-2 will be presented in next Board meeting.

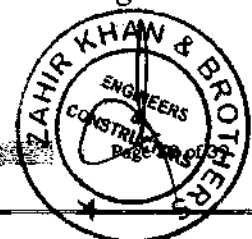
15.15. On the query of Chief (NTRC), the GM (P&CA) informed that the lowest bidders have given bid validity up to June 30, 2022.

15.16. The Board deliberated and cleared the proposal.

### Decision

15.17. The NHA Executive Board approved the award of following works, OCB/CAREC/T-II: Construction of Additional Carriageway from Shikarpur to Rajanpur of N-55 (221.95 Km), to M/s Zahir Khan and Brothers:

- a. Lot-1: Shikarpur - Kandhkot Section [Km 43+400 To Km 105+820 (62.42 Km)] at the lowest evaluated Bid Price of PKR.8,848,101,910.80 (Rupees eight billion, eight hundred forty-eight million, one hundred one thousand, nine hundred ten & eighty paise only), which is 3.99% below the Engineer's Estimate based on CSR 2014.
- b. Lot-3: Kashmore - Rojhan Section [Km 164+600 to Km 213+500 (48.90 Km)] at lowest evaluated Bid Price of PKR.6,414,199,929.60 (Rupees six billion, four hundred fourteen million, one hundred ninety-nine thousand, nine hundred twenty-nine & sixty paise only), which is 5.95% below the Engineer's Estimate based on CSR 2014 and

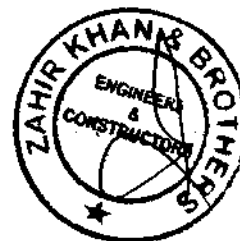


- c. Lot-4: Rojhan - Rajanpur Section [Km 213+500 to Km 265+350 (51.85 Km)] at lowest evaluated Bid Price of PKR.7,312,776,399.82 (Rupees seven billion, three hundred twelve million, seven hundred seventy-six thousand, three hundred ninety-nine & eighty two paisa only), which is 4.93% below the Engineer's Estimate based on CSR 2014.

Action By : Member (Planning)

16. **Conclusion**

16.1. The Chairman wrapped up the meeting by thanking the Board Members for their active participation and useful input.



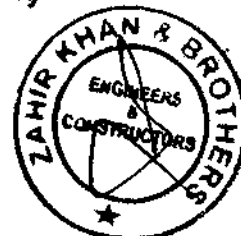


# RATE ANALYSIS

Submitted to: **General Manager (P&CA)**  
National Highway Authority,  
28-Mauve Area, G-9/1, Islamabad,  
Islamic Republic of Pakistan.

Invitation #:	<b>OCB/CAREC/T-II</b>
Bid Title:	<b>Construction of Additional Carriageway from Shikarpur to Rajanpur of N-55 (221.95 Km)</b>
Lot - 1:	<b>Shikarpur - Kandhkot Section from Km 43+400 to Km 105+820 (62.42 Km)</b>

Submitted by: **ZAHIR KHAN & BROTHERS**  
**Plot # 44, Street No. 11, I-9/2,**  
**Islamabad.**









**CONSTRUCTION OF ADDITIONAL CARRIGEWAY FROM SHIKARPUR TO RAJANPUR OF N-55**  
**Lot-1 Shikarpur - Kandhkot Section from Km 43+400 to Km 105+820 (62.42Km)**

**Unit Price Analysis**

**Bill No. 1:- Earth Work**

Item No. 106a

145 /Cum/Hour

Item Description: Excavation Unsuitable Common Material

Estimated Quantity (Q) 24,000

Sr. No	Equipment Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Bull-Dozer. 200 H. P	1	165.52	5,609.54	928,475.15
2	Excavator (Track Type) 100 H.P	4	662.07	2,774.44	1,836,872.92
3	Jack Hammer	0	-	293.48	-
4	Dumper 18 T	10	1,655.17	2,664.12	4,409,580.81
5	Picup	2	331.03	1,219.02	403,536.79
6	Rock Driller	0	-	365.22	-
Sub-total (1)					7,578,465.68

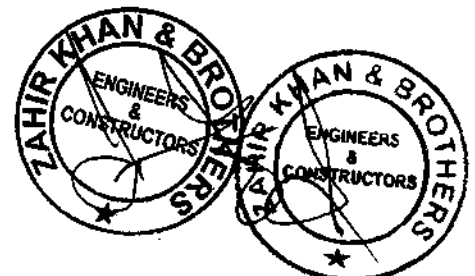
Sr. No	Manpower Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Sr. Earthwork Forman	1	165.52	684.00	113,213.79
2	Jr. Earthwork Forman	2	331.03	366.00	121,158.62
3	Sr. Surveyor	1	165.52	844.00	139,696.55
4	Surveyor Helper	2	331.03	138.00	45,682.76
5	Laboures	6	993.10	151.00	149,958.62
6	Watchman	2	331.03	151.00	49,986.21
Sub-total (2)					619,696.55

Sr. No	Material Cost	Unit	Qty	Local Currency	
				Unit Rate	Amount
Sub-total (3)					-

(4) Total Direct Job Costs (DJC):(1)+(2)+(3)				8,198,162.231
(5) Indirect Cost and Profit:(4)		10.00%		819,816.223
(6) Total:(4)+(5)				9,017,978.454
(7) Add 7.5% Incom Tax				731,177.693
(8) Combined Rupee Rate:(6+7)				9,749,156.147
(9) Combined Rupee Rate:(8/Q)				406.215
(10 )Say Rupee Rate:				400.000



03













**CONSTRUCTION OF ADDITIONAL CARRIGEWAY FROM SHIKARPUR TO RAJANPUR OF N-55**  
**Lot-1 Shikarpur - Kandhkot Section from Km 43+400 to Km 105+820 (62.42Km)**

**Unit Price Analysis**

Bill No. 1:- Earth Work

Item No. 110

125 /Cum/Hour

Item Description: Improved Subgrade (CBR > 25)

Estimated Quantity (Q) 265,519

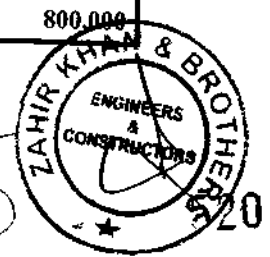
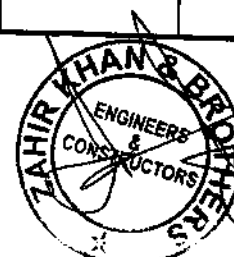
Sr. No	Equipment Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Loader 2.50 Cu.M	1	2,124.15	3,589.55	7,624,752.58
2	Excavtor (Track Type) 100 H.P	2	4,248.30	2,774.44	11,786,679
3	Bull-Dozer. 200 H. P	0	-	5,609.54	0
4	Grader	3	6,372.46	4,189.11	26,694,938.55
5	Combination Roller 18 Ton	4	8,496.61	3,055.43	25,960,757.73
6	Dumpers	10	21,241.52	2,664.12	56,589,995.20
7	Water bowser	2	4,248.30	1,586.08	6,738,150.01
8	Pickup	1	2,124.15	1,219.02	2,589,378.23
9	Tractor	1	2,124.15	1,268.91	2,695,353.10
10					
Sub-total (1)					140,680,004.73

Sr. No	Manpower Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Sr. Earthwork Forman	1.00	2,124.15	684.00	1,452,919.97
2	Jr. Earthwork Forman	2.00	4,248.30	366.00	1,554,879.26
3	Sr. Surveyor	1.00	2,124.15	844.00	1,792,784.29
4	Surveyor Helper	2.00	4,248.30	138.00	586,265.95
5	Laboures	6.00	12,744.91	151.00	1,924,481.71
6	Watchman	2.00	4,248.30	151.00	641,493.90
Sub-total (2)					7,952,825.09

Sr. No	Material Cost	Unit	Qty	Local Currency	
				Unit Rate	Amount
1	Water Charges	L.sum	265,519	5.00	1,327,595.00
2	Borrow pit Material Charges	Cum	265,519	110.00	29,207,090.00
Sub-total (3)					30,534,685.00

(4) Total Direct Job Costs (DJC):(1)+(2)+(3)					
(5) Indirect Cost and Profit:(4)					179,167,514.818
(6) Total:(4)+(5)			10.00%		17,916,751.482
(7) Add 7.5% Incom Tax					197,084,266.300
(8) Combined Rupee Rate:(6+7)					15,979,592.312
(9) Combined Rupee Rate:(8/Q)					213,063,858.611
(10) Say Rupee Rate:					802.443
					800,000

All taxes and levies shall be included













**CONSTRUCTION OF ADDITIONAL CARRIGEWAY FROM SHIKARPUR TO RAJANPUR OF N-55**  
**Lot-1 Shikarpur - Kandhkot Section from Km 43+400 to Km 105+820 (62.42Km)**

**Unit Price Analysis**

Bill No. 2:- Sub Base & Base Course

Item No. 209b

425 /Sqm/Hour

Item Description: Scarification of Existing Road Pavement

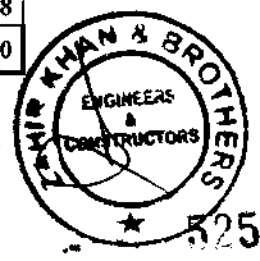
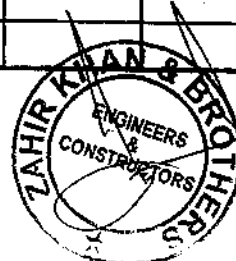
Estimated Quantity (Q) 60,375

Sr. No	Equipment Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Excavator	2	284.12	2,774.44	788,268.35
2	Grader	1	142.06	4,189.11	595,100.47
3	Dumpers	4	568.24	2,664.12	1,513,848.00
4	Pickup	1	142.06	1,219.02	173,172.18
5	Tractor 80 H. P	2	284.12	1,268.91	360,519.11
Sub-total (1)					3,430,908.11

Sr. No	Manpower Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Sr. Earthwork Forman	0.50	71.03	684.00	48,584.12
2	Jr. Earthwork Forman	1.00	142.06	366.00	51,993.53
3	Sr. Surveyor	0.50	71.03	844.00	59,948.82
4	Surveyor Helper	1.00	142.06	138.00	19,604.12
5	Laboures	6.00	852.35	151.00	128,705.29
6	Watchman	-	-	151.00	0.00
Sub-total (2)					308,835.88

Sr. No	Material Cost	Unit	Qty	Local Currency	
				Unit Rate	Amount
1	Water Charges	L.sum	60,375.00	0.00	0.00
Sub-total (3)					0.00

(4) Total Direct Job Costs (DJC):(1)+(2)+(3)				3,430,908.106
(5) Indirect Cost and Profit:(4)		10.00%		343,090.811
(6) Total:(4)+(5)				3,773,998.916
(7) Add 7.5% Incom Tax				305,995.832
(8) Combined Rupee Rate:(6+7)				4,079,994.749
(9) Combined Rupee Rate:(8/Q)				67.578
(10) Say Rupee				67.000













**CONSTRUCTION OF ADDITIONAL CARRIGEWAY FROM SHIKARPUR TO RAJANPUR OF N-55**  
**Lot-1 Shikarpur - Kandhkot Section from Km 43+400 to Km 105+820 (62.42Km)**

**Unit Price Analysis**

Bill No. 4a:- Structures ( Box Culverts )

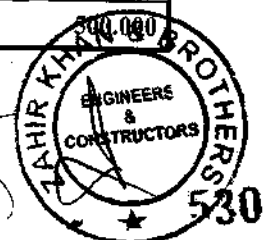
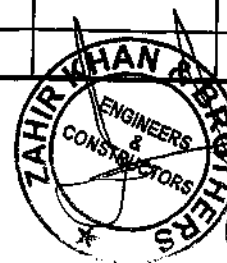
Item No. 107a      100 /Cum/Hour  
 Item Description: Structural Excavation in Common Material  
 Estimated Quantity (Q) 5,016

Sr. No	Equipment Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Bull-Dozer. 200 H. P	1	50.16	5,609.54	281,374.40
2	Excavtor (Track Type) 100 H.P	2	100.32	2,774.44	278,332.17
3	Jack Hammer	0	-	293.48	-
4	Dumper 18 T	10	501.60	2,664.12	1,336,323.46
5	Picup	1	50.16	1,219.02	61,145.91
6	Rock Driller	0	-	365.22	-
Sub-total (1)					1,957,175.94

Sr. No	Manpower Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Sr. Earthwork Forman	1	50.16	684.00	34,309.44
2	Jr. Earthwork Forman	2	100.32	366.00	36,717.12
3	Sr. Surveyor	1	50.16	844.00	42,335.04
4	Surveyor Helper	2	100.32	138.00	13,844.16
5	Laboures	6	300.96	151.00	45,444.96
6	Watchman	2	100.32	151.00	15,148.32
Sub-total (2)					187,799.04

Sr. No	Material Cost	Unit	Qty	Local Currency	
				Unit Rate	Amount
Sub-total (3)					-

(4) Total Direct Job Costs (DJC):(1)+(2)+(3)				2,144,974.982
(5) Indirect Cost and Profit:(4)		10.00%		214,497.498
(6) Total:(4)+(5)				2,359,472.480
(7) Add 7.5% Incom Tax				191,306.029
(8) Combined Rupee Rate:(6+7)				2,550,778.509
(9) Combined Rupee Rate:(8/Q)				508.528
(10 )Say Rupee Rate				



**CONSTRUCTION OF ADDITIONAL CARRIGEWAY FROM SHIKARPUR TO RAJANPUR OF N-55**  
**Lot-1 Shikarpur - Kandhkot Section from Km 43+400 to Km 105+820 (62.42Km)**

**Unit Price Analysis**

Bill No. 4a:- Structures ( Box Culverts )

Item No. 107d

37 /Cum/Hour

Item Description: Granular Backfill

Estimated Quantity (Q) 978.72

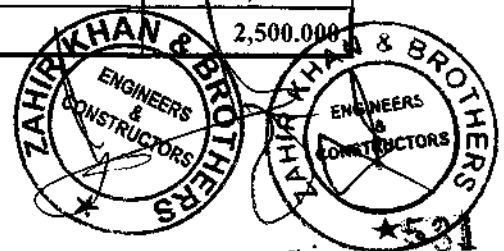
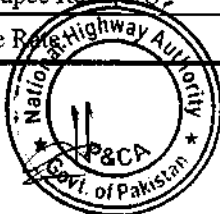
1 Rs

Sr. No	Equipment Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Loader 2.50 Cu.M	1	26.24	3,589.55	94,186.75
2	Grader	1	26.24	4,189.11	109,918.73
3	Combination Roller 18 Ton	2	52.48	3,055.43	160,343.52
4	Dumpers	6	157.43	2,664.12	419,425.61
5	Water bowser	1	26.24	1,586.08	41,617.38
6	Pickup	2	52.48	1,219.02	63,971.94
Sub-total (1)					889,463.93

Sr. No	Manpower Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Sr. Earthwork Forman	1	26.24	684.00	17,947.57
2	Jr. Earthwork Forman	2	52.48	366.00	19,207.05
3	Sr. Surveyor	1	26.24	844.00	22,145.84
4	Surveyor Helper	2	52.48	138.00	7,242.00
5	Laboures	8	209.91	151.00	31,696.88
6	Watchman	4	104.96	151.00	15,848.44
Sub-total (2)					114,087.79

Sr. No	Material Cost	Unit	Qty	Local Currency	
				Unit Rate	Amount
1	Water Charges	L.sum	978.72	20.00	19,574.40
2	Supply of Granular Sub Base Material	Cum	978.72	1,009.14	987,668.30
3	Add Wastage 5%				49,383.41
Sub-total (3)					1,056,626.11

(4) Total Direct Job Costs (DJC):(1)+(2)+(3)				2,060,177.832
(5) Indirect Cost and Profit:(4)		10.00%		206,017.783
(6) Total:(4)+(5)				2,266,195.615
(7) Add 7.5% Incom Tax				183,743.140
(8) Combined Rupee Rate:(6+7)				2,449,938.756
(9) Combined Rupee Rate:(8/Q)				2,503.207
(10) Say Rupee Rate				2,500.000





**CONSTRUCTION OF ADDITIONAL CARRIGEWAY FROM SHIKARPUR TO RAJANPUR OF N-55**  
**Lot-1 Shikarpur - Kandhkot Section from Km 43+400 to Km 105+820 (62.42Km)**

**Unit Price Analysis**

Bill No. 4a:- Structures ( Box Culverts )

Item No. 401a2i

20 /Cum/Hour

Item Description: Concrete Class A2 ( Underground)

Estimated Quantity (Q) 60.81

Sr. No	Equipment Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Concrete Batching Plant 30 CUM/H	1	3.0405	3,462.17	10,526.72
2	Front End Loader 2.50 Cu.M	1	3.0405	3,589.55	10,914.03
3	Water Tank Bowser Type 12000 Litre	1	3.0405	1,586.08	4,822.48
4	Concrete Transit Mixer 6 Cu. M	5	15.2025	3,152.70	47,928.99
5	Concrete Pump	1	3.0405	2,874.44	8,739.75
6	Crane 20 Ton	1	3.0405	2,246.51	6,830.52
7	Vibrator (Poker 1.5 ")	3	9.1215	479.24	4,371.37
8	Compressor 300 CFM	1	3.0405	1,863.90	5,667.20
9	Picup	2	6.0810	1,219.02	7,412.84
10	Tractor 80 H. P	1	3.0405	1,268.91	3,858.11
	Sub-total (1)				111,072.00

Sr. No	Manpower Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Structural Engineer	1	3.04	1,015.00	3,086.11
2	Site Engineer	2	6.08	537.00	3,265.50
3	Site Supervisors	2	6.08	342.00	2,079.70
4	Sr. Surveyor	1	3.04	844.00	2,566.18
5	J.Surveyor	2	6.08	450.00	2,736.45
6	Surveyor Helper	4	12.16	138.00	1,678.36
7	Mason	10	30.41	247.00	7,510.04
8	Carpenters	10	30.41	247.00	7,510.04
9	Laboures	10	30.4	151.00	4,591.16
10	Watchman	4	12.2	151.00	1,836.46
	Sub-total (2)				36,859.98

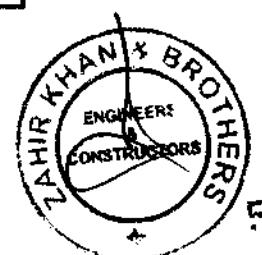
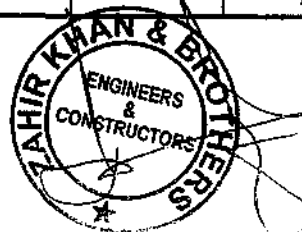
Sr. No	Material Cost	Unit	Qty	Local Currency	
				Unit Rate	Amount
1	Cement	Bags	425.67	605.31	257,662.31
2	Cursh	Cft	1,824.30	60.00	109,458.00
3	Sand	Cft	942.56	20.00	18,851.10
4	Water Charges for Concrete	L.sum	60.81	50.00	3,040.50
5	Add Wastage 5%	%			19,450.60
6	Shutting	Sqm	243.24	350.00	85,134.00
7	Curring Charges for 28 Dayes ( 50 Cum/Hour x 28 )	Hours	34.05	1,586.08	54,011.73
8	Add mixture	Ltr	212.84	100.00	21,283.50
	Sub-total (3)				568,891.74

(4) Total Direct Job Costs (DJC):(1)+(2)+(3)				716,823.722
(5) Indirect Cost and Profit:(4)		10.00%		71,682.372
(6) Total:(4)+(5)				788,506.094
(7) Add 7.5% Incom Tax				63,932.074
(8) Combined Rupee Rate:(6+7)				852,438.168
(9) Combined Rupee Rate:(8/Q)				14,018.059
(10 )Say Rupee Rate:				14,000.000

All taxes and levies shall be included



23



533

**CONSTRUCTION OF ADDITIONAL CARRIGEWAY FROM SHIKARPUR TO RAJANPUR OF N-55**  
**Lot-1 Shikarpur - Kandhkot Section from Km 43+400 to Km 105+820 (62.42Km)**

**Unit Price Analysis**

Bill No. 4a:- Structures ( Box Culverts )

Item No. 401a2ii

25 /Cum/Hour

Item Description: Concrete Class A2 ( On ground)

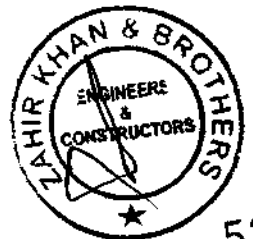
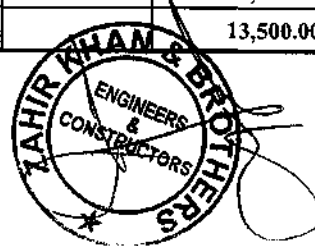
Estimated Quantity (Q) 60.81

Sr. No	Equipment Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Concrete Batching Plant 30 CUM/H	1	2.4324	3,462.17	8,421.37
2	Front End Loader 2.50 Cu.M	1	2.4324	3,589.55	8,731.22
3	Water Tank Bowser Type 12000 Litre	1	2.4324	1,586.08	3,857.98
4	Concrete Transit Mixer 6 Cu. M	6	14.5944	3,152.70	46,011.83
5	Concrete Pump	1	2.4324	2,874.44	6,991.80
6	Crane 20 Ton	1	2.4324	2,246.51	5,464.41
7	Vibrator (Poker 1.5 ")	3	7.2972	479.24	3,497.10
8	Compressor 300 CFM	1	2.4324	1,863.90	4,533.76
9	Picup	2	4.8648	1,219.02	5,930.28
10	Tractor 80 H. P	1	2.4324	1,268.91	3,086.49
	Sub-total (1)				96,526.24

Sr. No	Manpower Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Structural Engineer	0.5	1.22	1,015.00	1,234.44
2	Site Engineer	1	2.43	537.00	1,306.20
3	Site Supervisors	2	4.86	342.00	1,663.76
4	Sr. Surveyor	0.5	1.22	844.00	1,026.47
5	J.Surveyor	1	2.43	450.00	1,094.58
6	Surveyor Helper	4	9.73	138.00	1,342.68
7	Mason	12	29.19	247.00	7,209.63
8	Carpenters	8	19.46	247.00	4,806.42
9	Laboures	12	29.2	151.00	4,407.51
10	Watchman	5	12.2	151.00	1,836.46
	Sub-total (2)				25,928.17

Sr. No	Material Cost	Unit	Qty	Local Currency	
				Unit Rate	Amount
1	Cement	Bags	425.67	605.31	257,662.31
2	Cursh	Cft	1,824.30	60.00	109,458.00
3	Sand	Cft	942.56	20.00	18,851.10
4	Water Charges for Concrete	L.sum	60.81	50.00	3,040.50
5	Add Wastage 5%	%			19,450.60
6	Shuttring	Sqm	243.24	400.00	97,296.00
7	Curring Charges for 28 Dayes ( 60 Cum/Hour x 28 )	Hours	28.38	1,586.08	45,009.78
8	Add mixture	Ltr	212.84	100.00	21,283.50
	Sub-total (3)				572,051.78

(4) Total Direct Job Costs (DJC):(1)+(2)+(3)				694,506.190
(5) Indirect Cost and Profit:(4)		10.00%		69,450.619
(6) Total:(4)+(5)				763,956.809
(7) Add 7.5% Incom Tax				61,941.618
(8) Combined Rupee Rate:(6+7)				825,898.427
(9) Combined Rupee Rate:(8/Q)				13,581.622
(10 )Say Rupee Rate				13,500.000



**CONSTRUCTION OF ADDITIONAL CARRIGEWAY FROM SHIKARPUR TO RAJANPUR OF N-55**  
**Lot-1 Shikarpur - Kandhkot Section from Km 43+400 to Km 105+820 (62.42Km)**

**Unit Price Analysis**

Bill No. 4a:- Structures ( Box Culverts )

Item No. 401a3ii

18 /Cum/Hour

Item Description: Concrete Class A3( On ground)

Estimated Quantity (Q) 1,041.81

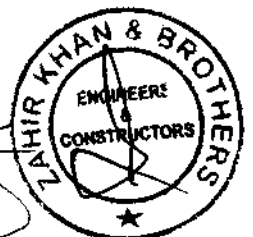
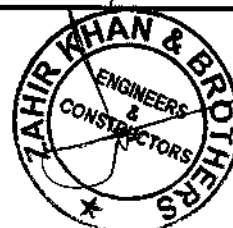
Sr. No	Equipment Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Concrete Batching Plant 30 CUM/H	1	57.8783	3,462.17	200,384.45
2	Front End Loader 2.50 Cu.M	1	57.8783	3,589.55	207,757.25
3	Water Tank Bowser Type 12000 Litre	1	57.8783	1,586.08	91,799.67
4	Concrete Transit Mixer 6 Cu. M	6	347.2700	3,152.70	1,094,839.64
5	Concrete Pump	1	57.8783	2,874.44	166,368.00
6	Crane 20 Ton	1	57.8783	2,246.51	130,024.33
7	Vibrator (Poker 1.5 ")	3	173.6350	479.24	83,212.54
8	Compressor 300 CFM	1	57.8783	1,863.90	107,879.58
9	Picup	2	115.7567	1,219.02	141,109.39
10	Tractor 80 H. P	1	57.8783	1,268.91	73,442.27
	Sub-total (1)				2,296,817.11

Sr. No	Manpower Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Structural Engineer	0.5	28.94	1,015.00	29,373.25
2	Site Engineer	1	57.88	537.00	31,080.67
3	Site Supervisors	2	115.76	342.00	39,588.78
4	Sr. Surveyor	0.5	28.94	844.00	24,424.66
5	J.Surveyor	1	57.88	450.00	26,045.25
6	Surveyor Helper	4	231.51	138.00	31,948.84
7	Mason	12	694.54	247.00	171,551.38
8	Carpenters	8	463.03	247.00	114,367.59
9	Laboures	12	694.5	151.00	104,875.54
10	Watchman	5	289.4	151.00	43,698.14
	Sub-total (2)				616,954.09

Sr. No	Material Cost	Unit	Qty	Local Currency	
				Unit Rate	Amount
1	Cement	Bags	8,334.48	605.31	5,044,944.09
2	Cursh	Cft	31,254.30	60.00	1,875,258.00
3	Sand	Cft	16,148.06	20.00	322,961.10
4	Water Charges for Concrete	L.sum	1,041.81	50.00	52,090.50
5	Add Wastage 5%	%			364,762.68
6	Shuttring	Sqm	3,646.34	350.00	1,276,217.25
7	Curring Charges for 28 Dayes ( 60 Cum/Hour x 28 )	Hours	486.18	1,586.08	771,117.20
8	Add mixture	Ltr	4,167.24	100.00	416,724.00
	Sub-total (3)				10,124,074.83

(4) Total Direct Job Costs (DJC):(1)+(2)+(3)			13,037,846.025
(5) Indirect Cost and Profit:(4)		10.00%	1,303,784.603
(6) Total:(4)+(5)			14,341,630.628
(7) Add 7.5% Incom Tax			1,162,819.411
(8) Combined Rupee Rate:(6+7)			15,504,450.039
(9) Combined Rupee Rate:(8/Q)			14,882.224
(10 )Say Rupee Rate:			14,500.000

All taxes and levies shall be included



**CONSTRUCTION OF ADDITIONAL CARRIGEWAY FROM SHIKARPUR TO RAJANPUR OF N-55**  
**Lot-1 Shikarpur - Kandhkot Section from Km 43+400 to Km 105+820 (62.42Km)**

**Unit Price Analysis**

Bill No. 4a:- Structures ( Box Culverts )

Item No. 401a3iii

25 /Cum/Hour

Item Description: Concrete Class A3( Elevated)

Estimated Quantity (Q) 2,364.75

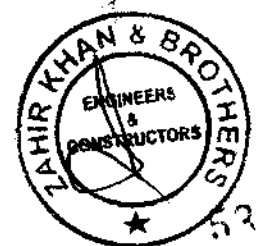
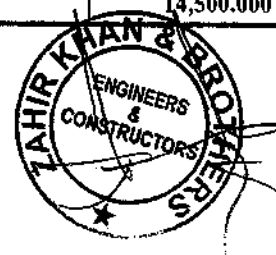
Sr. No	Equipment Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Concrete Batching Plant 30 CUM/H	1	94.5900	3,462.17	327,486.37
2	Front End Loader 2.50 Cu.M	1	94.5900	3,589.55	339,535.66
3	Water Tank Bowser Type 12000 Litre	1	94.5900	1,586.08	150,000.00
4	Concrete Transit Mixer 6 Cu. M	6	567.5400	3,152.70	1,789,285.83
5	Concrete Pump	1	94.5900	2,874.44	271,893.61
6	Crane 20 Ton	1	94.5900	2,246.51	212,497.50
7	Vibrator (Poker 1.5 ")	3	283.7700	479.24	135,993.44
8	Compressor 300 CFM	1	94.5900	1,863.90	176,306.55
9	Picup	2	189.1800	1,219.02	230,613.71
10	Tractor 80 H. P	1	94.5900	1,268.91	120,025.99
	Sub-total (1)				3,753,665.97

Sr. No	Manpower Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Structural Engineer	0.5	47.30	1,015.00	48,004.43
2	Site Engineer	1	94.59	537.00	50,794.83
3	Site Supervisors	2	189.18	342.00	64,699.56
4	Sr. Surveyor	0.5	47.30	844.00	39,916.98
5	J.Surveyor	1	94.59	450.00	42,565.50
6	Surveyor Helper	4	378.36	138.00	52,213.68
7	Mason	12	1,135.08	247.00	280,364.76
8	Carpenters	8	756.72	247.00	186,909.84
9	Laboures	12	1,135.1	151.00	171,397.08
10	Watchman	5	473.0	151.00	71,415.45
	Sub-total (2)				1,008,282.11

Sr. No	Material Cost	Unit	Qty	Local Currency	
				Unit Rate	Amount
1	Cement	Bags	18,918.00	605.31	11,451,254.58
2	Cursh	Cft	70,942.50	60.00	4,256,550.00
3	Sand	Cft	36,653.63	20.00	733,072.50
4	Water Charges for Concrete	L.sum	2,364.75	50.00	118,237.50
5	Add Wastage 5%	%			827,955.73
6	Shuttring	Sqm	10,641.38	450.00	4,788,618.75
7	Curring Charges for 28 Dayes ( 60 Cum/Hour x 28 )	Hours	827.66	1,586.08	1,312,738.94
8	Add mixture	Ltr	9,459.00	100.00	945,900.00
	Sub-total (3)				24,434,328.00

(4) Total Direct Job Costs (DJC):(1)+(2)+(3)				29,196,276.068
(5) Indirect Cost and Profit:(4)		10.00%		2,919,627.607
(6) Total:(4)+(5)				32,115,903.675
(7) Add 7.5% Incom Tax				2,603,957.470
(8) Combined Rupee Rate:(6+7)				34,719,861.145
(9) Combined Rupee Rate:(8/Q)				14,682.254
(10 )Say Rupee Rate:				14,500.000

All taxes and levies shall be included







**CONSTRUCTION OF ADDITIONAL CARRIGEWAY FROM SHIKARPUR TO RAJANPUR OF N-55**  
**Lot-1 Shikarpur - Kandhkot Section from Km 43+400 to Km 105+820 (62.42Km)**

Unit Price Analysis

Bill No. 4a:- Structures ( Box Culverts )

Item No. 509d

2 /Cum/Hour

Item Description: Grouted Rip Rap Class A

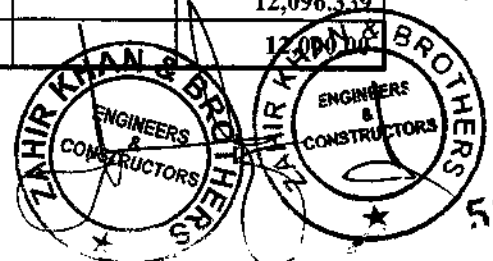
Estimated Quantity (Q) 207.51

Sr. No	Equipment Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Tractor 80 H. P	2	237.15	1,268.91	300,926.93
2	Water bowser	1	118.58	1,586.08	188,072.83
3	Pickup	1	118.58	1,219.02	144,547.60
	Sub-total (1)				633,547.36

Sr. No	Manpower Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Sr. Earthwork Forman	1	118.58	684.00	81,106.77
2	Jr. Earthwork Forman	2	237.15	366.00	86,798.47
3	Sr. Surveyor	1	118.58	844.00	100,079.11
4	Surveyor Helper	2	237.15	138.00	32,727.29
5	Laboures	6	711.46	151.00	107,430.89
6	Watchman	2	237.15	151.00	35,810.30
	Sub-total (2)				443,952.82

Sr. No	Material Cost	Unit	Qty	Local Currency	
				Unit Rate	Amount
1	Water Charges	Cum	207.51	20.00	4,150.20
2	Supply of Ston at Site	cft	7,329.25	40.00	293,170.13
3	Riprap Fixing Labour Rate	cft	7,329.25	35.00	256,523.86
4	Cement	Bags	622.53	605.31	376,823.63
5	Sand	Cft	3,664.63	20.00	73,292.53
6	Add Wastage of Ston		10%		29,317.01
	Sub-total (3)				1,033,277.37

(4) Total Direct Job Costs (DJC):(1)+(2)+(3)				2,110,777.555
(5) Indirect Cost and Profit:(4)		10.00%		211,077.756
(6) Total:(4)+(5)				2,321,855.311
(7) Add 7.5% Incom Tax				188,256.029
(8) Combined Rupee Rate:(6+7)				2,510,111.339
(9) Combined Rupee Rate:(8/Q)				12,096.339
(10 )Say Rupee Rate:				12,096.339



**CONSTRUCTION OF ADDITIONAL CARRIGEWAY FROM SHIKARPUR TO RAJANPUR OF N-55**  
**Lot-1 Shikarpur - Kandhkot Section from Km 43+400 to Km 105+820 (62.42Km)**

**Unit Price Analysis**

Bill No. 4a:- Structures ( Box Culverts )

Item No. 509b

2 /Cum/Hour

Item Description: Riprap Class B

Estimated Quantity (Q) 13,721

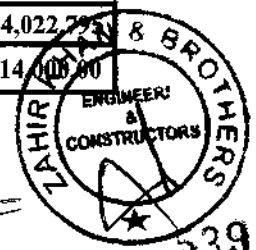
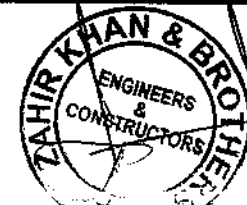
Sr. No	Equipment Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Tractor 80 H. P	2	#####	1,268.91	17,410,684.28
2	Water bowser	1	6,860.50	1,586.08	10,881,301.84
3	Pickup	1	6,860.50	1,219.02	8,363,068.81
	Sub-total (1)				36,655,054.93

Sr. No	Manpower Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Sr. Earthwork Foreman	1	6,860.50	525.00	3,601,762.50
2	Jr. Earthwork Foreman	1	6,860.50	270.00	1,852,335.00
3	Surveyor	1	6,860.50	429.00	2,943,154.50
4	Surveyor Helper	2	#####	94.00	1,289,774.00
5	Labours/Flag man	4	#####	75.00	2,058,150.00
6					
	Sub-total (2)				11,745,176.00

Sr. No	Material Cost	Unit	Qty	Local Currency	
				Unit Rate	Amount
1	Water Charges	L.sum	13,721	20.00	274,420.00
2	Supply of Ston at Site	cft	484,626	150.00	72,693,858.00
3	Riprap Fixing Labour Rate	cft	484,626	40.00	19,385,028.80
4	Add Wastage of Ston		10%		7,560,161.23
	Sub-total (3)				99,913,468.03

(4) Total Direct Job Costs (DJC):(1)+(2)+(3)				148,313,698.967
(5) Indirect Cost and Profit:(4)		20.00%		29,662,739.793
(6) Total:(4)+(5)				177,976,438.760
(7) Add 7.5% Incom Tax				14,430,329.655
(8) Combined Rupee Rate:(6+7)				192,406,768.415
(9) Combined Rupee Rate:(8/Q)				14,022,775.88
(10 )Say Rupee Rate:				14,000.00

All taxes and levies included



**CONSTRUCTION OF ADDITIONAL CARRIGEWAY FROM SHIKARPUR TO RAJANPUR OF N-55**  
**Lot-1 Shikarpur - Kandhkot Section from Km 43+400 to Km 105+820 (62.42Km)**

**Unit Price Analysis**

Bill No. 4a:- Structures ( Box Culverts )

Item No. 509h

10 /Cum/Hour

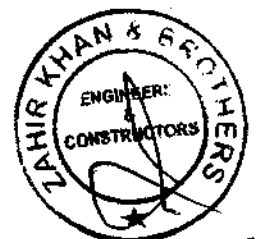
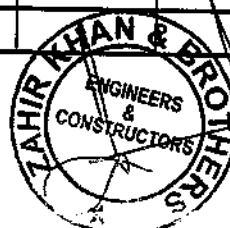
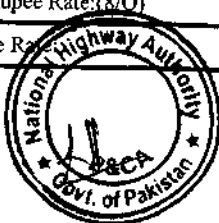
Item Description: Filter Layer of Granular Material  
 Estimated Quantity (Q) 103.76

Sr. No	Equipment Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Loader 2.50 Cu.M	1	10.38	3,589.55	37,245.18
2	Tractor 80 H. P	1	10.38	1,268.91	13,166.19
3	Combination Roller 18 Ton	1	10.38	3,055.43	31,703.10
4	Dumpers	4	41.50	2,664.12	110,571.71
5	Water bowser	1	10.38	1,586.08	16,457.17
6	Pickup	1	10.38	1,219.02	12,648.52
Sub-total (1)					221,791.87

Sr. No	Manpower Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Sr. Earthwork Foreman	1	10.38	525.00	5,447.40
2	Jr. Earthwork Foreman	2	20.75	270.00	5,603.04
3	Surveyor	1	10.38	429.00	4,451.30
4	Surveyor Helper	2	20.75	94.00	1,950.69
5	Labours/Flag man	8	83.01	75.00	6,225.60
6					
Sub-total (2)					23,678.03

Sr. No	Material Cost	Unit	Qty	Local Currency	
				Unit Rate	Amount
1	Water Charges	L.sum	104	10.00	1,037.60
2	Supply of Granular Filter Material	Cum	104	1,009.14	104,708.66
3	Add Wastage 5%			5%	5,235.43
Sub-total (3)					110,981.70

(4) Total Direct Job Costs (DJC):(1)+(2)+(3)				356,451.600
(5) Indirect Cost and Profit:(4)		10.00%		35,645.160
(6) Total:(4)+(5)				392,096.760
(7) Add 7.5% Incom Tax				31,791.205
(8) Combined Rupee Rate:(6+7)				423,887.966
(9) Combined Rupee Rate:(8/0)				4,085.273
(10 )Say Rupee R				4,000.00













**CONSTRUCTION OF ADDITIONAL CARRIGEWAY FROM SHIKARPUR TO RAJANPUR OF N-55**  
**Lot-1 Shikarpur - Kandhkot Section from Km 43+400 to Km 105+820 (62.42Km)**

**Unit Price Analysis**

Bill No. 4c:- Structure ( Bridges )

Item No. 107a

100 /Cum/Hour

Item Description: Structural Excavation in Common Material

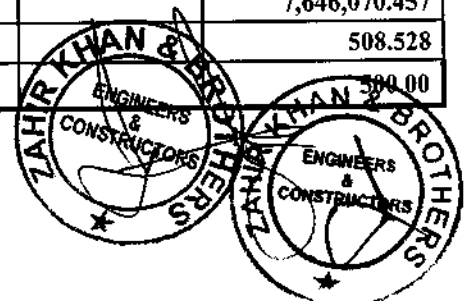
Estimated Quantity (Q) 15,036

Sr. No	Equipment Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Bull-Dozer. 200 H. P	1	150.36	5,609.54	843,432.09
2	Excavtor (Track Type) 100 H.P	2	300.71	2,774.44	834,312.89
3	Jack Hammer	0	-	293.48	-
4	Dumper 18 T	10	1,503.57	2,664.12	4,005,688.20
5	Picup	1	150.36	1,219.02	183,287.55
6	Rock Driller	0	-	365.22	-
Sub-total (1)					5,866,720.73

Sr. No	Manpower Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Sr. Earthwork Forman	1	150.36	684.00	102,844.05
2	Jr. Earthwork Forman	2	300.71	366.00	110,061.18
3	Sr. Surveyor	1	150.36	844.00	126,901.14
4	Surveyor Helper	2	300.71	138.00	41,498.48
5	Laboures	6	902.14	151.00	136,223.26
6	Watchman	2	300.71	151.00	45,407.75
Sub-total (2)					562,935.86

Sr. No	Material Cost	Unit	Qty	Local Currency	
				Unit Rate	Amount
Sub-total (3)					-

(4) Total Direct Job Costs (DJC):(1)+(2)+(3)				6,429,656.586
(5) Indirect Cost and Profit:(4)		10.00%		642,965.659
(6) Total:(4)+(5)				7,072,622.245
(7) Add 7.5% Incom Tax				573,448.212
(8) Combined Rupee Rate:(6+7)				7,646,070.457
(9) Combined Rupee Rate:(8/Q)				508.528
(10 )Say Rupee				500.00







**CONSTRUCTION OF ADDITIONAL CARRIGEWAY FROM SHIKARPUR TO RAJANPUR OF N-55**  
**Lot-1 Shikarpur - Kandhkot Section from Km 43+400 to Km 105+820 (62.42Km)**

**Unit Price Analysis**

Bill No. 4c:- Structure ( Bridges )

Item No. 401a2ii

12 /Cum/Hour

Item Description: Concrete Class A2 ( On ground)

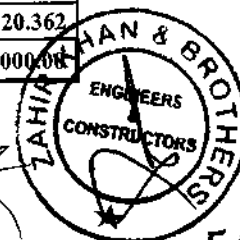
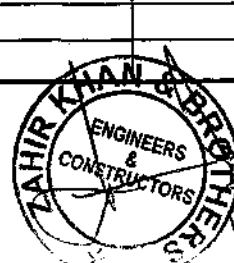
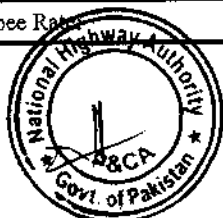
Estimated Quantity (Q) 811.41

Sr. No	Equipment Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Concrete Batching Plant 30 CUM/H	1	67.6175	3,462.17	234,103.07
2	Front End Loader 2.50 Cu.M	1	67.6175	3,589.55	242,716.49
3	Water Tank Bowser Type 12000 Litre	1	67.6175	1,586.08	107,246.76
4	Concrete Transit Mixer 6 Cu. M	4	270.4700	3,152.70	852,711.94
5	Concrete Pump	1	67.6175	2,874.44	194,362.68
6	Crane 20 Ton	1	67.6175	2,246.51	151,903.48
7	Vibrator (Poker 1.5 ")	3	202.8525	479.24	97,214.68
8	Compressor 300 CFM	1	67.6175	1,863.90	126,032.43
9	Picup	2	135.2350	1,219.02	164,853.82
10	Tractor 80 H. P	1	67.6175	1,268.91	85,800.37
	Sub-total (1)				2,256,945.73

Sr. No	Manpower Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Structural Engineer	0.5	33.81	1,015.00	34,315.88
2	Site Engineer	1	67.62	537.00	36,310.60
3	Site Supervisors	2	135.24	342.00	46,250.37
4	Sr. Surveyor	0.5	33.81	844.00	28,534.59
5	J.Surveyor	1	67.62	450.00	30,427.88
6	Surveyor Helper	4	270.47	138.00	37,324.86
7	Mason	4	270.47	247.00	66,806.09
8	Carpenters	2	135.24	247.00	33,403.05
9	Laboures	10	676.2	151.00	102,102.43
10	Watchman	2	135.2	151.00	20,420.49
	Sub-total (2)				435,896.21

Sr. No	Material Cost	Unit	Qty	Local Currency	
				Unit Rate	Amount
1	Cement	Bags	5,679.87	605.31	3,438,082.11
2	Cursh	Cft	24,342.30	60.00	1,460,538.00
3	Sand	Cft	12,576.86	20.00	251,537.10
4	Water Charges for Concrete	L.sum	811.41	50.00	40,570.50
5	Add Wastage 5%	%	5%		259,536.39
6	Shuttring	Sqm	1,622.82	300.00	486,846.00
7	Curring Charges for 28 Dayes ( 50 Cum/Hour x 28 )	Hours	454.39	1,586.08	720,698.26
8	Add mixture	Ltr	2,839.94	100.00	283,993.50
	Sub-total (3)				6,941,801.85

(4) Total Direct Job Costs (DJC):(1)+(2)+(3)				9,634,643.800
(5) Indirect Cost and Profit:(4)		10.00%		963,464.380
(6) Total:(4)+(5)				10,598,108.180
(7) Add 7.5% Incom Tax				859,294.611
(8) Combined Rupee Rate:(6+7)				11,457,402.792
(9) Combined Rupee Rate:(8/Q)				14,120.362
(10 )Say Rupee Rate				14,000.000



**CONSTRUCTION OF ADDITIONAL CARRIGEWAY FROM SHIKARPUR TO RAJANPUR OF N-55**  
 Lot-I Suikarpur - Kandhkot Section from Km 43+400 to Km 105+820 (62.42Km)

**Unit Price Analysis**

Bill No. 4c:- Structure ( Bridges )

Item No. 401a3ii

20 /Cum/Hour

Item Description: Concrete Class A3( Elevated)Pier, Transom, Deck Slab

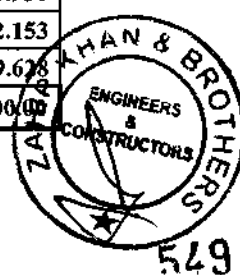
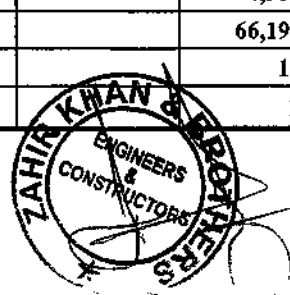
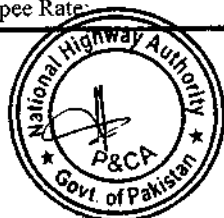
Estimated Quantity (Q) 4,549.70

Sr. No	Equipment Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Concrete Batching Plant 30 CUM/H	1	227.4850	3,462.17	787,591.05
2	Front End Loader 2.50 Cu.M	1	227.4850	3,589.55	816,569.08
3	Water Tank Bowser Type 12000 Litre	1	227.4850	1,586.08	360,809.41
4	Concrete Transit Mixer 6 Cu. M	6	1,364.9100	3,152.70	4,303,157.69
5	Concrete Pump	1	227.4850	2,874.44	653,892.77
6	Crane 20 Ton	1	227.4850	2,246.51	511,047.62
7	Vibrator (Poker 1.5 ")	3	682.4550	479.24	327,058.55
8	Compressor 300 CFM	1	227.4850	1,863.90	424,009.88
9	Picup	2	454.9700	1,219.02	554,616.34
10	Tractor 80 H. P	1	227.4850	1,268.91	288,657.50
	Sub-total (1)				9,027,409.90

Sr. No	Manpower Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Structural Engineer	0.5	113.74	1,015.00	115,448.64
2	Site Engineer	1	227.49	537.00	122,159.45
3	Site Supervisors	2	454.97	342.00	155,599.74
4	Sr. Surveyor	0.5	113.74	844.00	95,998.67
5	J.Surveyor	1	227.49	450.00	102,368.25
6	Surveyor Helper	4	909.94	138.00	125,571.72
7	Mason	12	2,729.82	247.00	674,265.54
8	Carpenters	8	1,819.88	247.00	449,510.36
9	Laboures	12	2,729.8	151.00	412,202.82
10	Watchman	5	1,137.4	151.00	171,751.18
	Sub-total (2)				2,424,876.36

Sr. No	Material Cost	Unit	Qty	Local Currency	
				Unit Rate	Amount
1	Cement	Bags	36,397.60	605.31	22,031,831.26
2	Cursh	Cft	136,491.00	60.00	8,189,460.00
3	Sand	Cft	70,520.35	20.00	1,410,407.00
4	Water Charges for Concrete	L.sum	4,549.70	50.00	227,485.00
5	Add Wastage 5%	%			1,592,959.16
6	Shuttring	Sqm	15,923.95	350.00	5,573,382.50
7	Curring Charges for 28 Dayes ( 60 Cum/Hour x 28 )	Hours	2,123.19	1,586.08	3,367,554.48
8	Add mixture	Ltr	18,198.80	100.00	1,819,880.00
	Sub-total (3)				44,212,959.40

(4) Total Direct Job Costs (DJC):(1)+(2)+(3)				55,665,245.658
(5) Indirect Cost and Profit:(4)		10.00%		5,566,524.566
(6) Total:(4)+(5)				61,231,770.223
(7) Add 7.5% Incom Tax				4,964,671.930
(8) Combined Rupee Rate:(6+7)				66,196,442.153
(9) Combined Rupee Rate:(8/Q)				14,549.628
(10) Say Rupee Rate:				14,500.00



**CONSTRUCTION OF ADDITIONAL CARRIGEWAY FROM SHIKARPUR TO RAJANPUR OF N-55**  
**Lot-1 Shikarpur - Kandhkot Section from Km 43+400 to Km 105+820 (62.42Km)**

**Unit Price Analysis**

Bill No. 4c:- Structure ( Bridges )

Item No. 401a3i

40 /Cum/Hour

Item Description: Concrete Class A3 (Under Ground) Piles

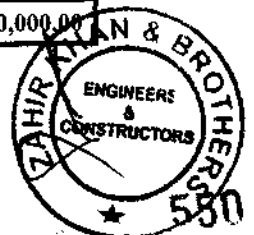
Estimated Quantity (Q) 6,295.64

Sr. No	Equipment Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Concrete Batching Plant 50 CUM/H	1	157.3910	3,846.73	605,440.75
2	Front End Loader 2.50 Cu.M	1	157.3910	3,589.55	564,963.07
3	Water Tank Bowser Type 12000 Litre	1	157.3910	1,586.08	249,634.72
4	Concrete Transit Mixer 6 Cu. M	6	944.3460	3,152.70	2,977,243.74
5	Concrete Pump	1	157.3910	2,874.44	452,411.53
6	Crane 20 Ton	1	157.3910	2,246.51	353,580.66
7	Vibrator (Poker 1.5 ")	3	472.1730	479.24	226,283.37
8	Compressor 300 CFM	1	157.3910	1,863.90	293,361.50
9	Picup	2	314.7820	1,219.02	383,724.73
10	Tractor 80 H. P	1	157.3910	1,268.91	199,714.67
	Sub-total (1)				6,306,358.74

Sr. No	Manpower Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Structural Engineer	0.5	78.70	1,015.00	79,875.93
2	Site Engineer	1	157.39	537.00	84,518.97
3	Site Supervisors	2	314.78	342.00	107,655.44
4	Sr. Surveyor	0.5	78.70	844.00	66,419.00
5	J.Surveyor	1	157.39	450.00	70,825.95
6	Surveyor Helper	4	629.56	138.00	86,879.83
7	Mason	12	1,888.69	247.00	466,506.92
8	Carpenters	8	1,259.13	247.00	311,004.62
9	Laboures	12	1,888.7	151.00	285,192.49
10	Watchman	5	787.0	151.00	118,830.21
	Sub-total (2)				1,677,709.36

Sr. No	Material Cost	Unit	Qty	Local Currency	
				Unit Rate	Amount
1	Cement	Bags	50,365.12	605.31	30,486,510.79
2	Cursh	Cft	188,869.20	60.00	11,332,152.00
3	Sand	Cft	97,582.42	20.00	1,951,648.40
4	Water Charges for Concrete	L.sum	6,295.64	10.00	62,956.40
5	Add Wastage 5%	%			2,191,663.38
6	Shuttring	Sqm			
7	Add mixture	Ltr	25,182.56	100.00	2,518,256.00
	Sub-total (3)				48,543,186.97

(4) Total Direct Job Costs (DJC):(1)+(2)+(3)				56,527,255.069
(5) Indirect Cost and Profit:(4)		10.00%		5,652,725.507
(6) Total:(4)+(5)				62,179,980.576
(7) Add 7.5% Incom Tax				5,041,552.825
(8) Combined Rupee Rate:(6+7)				67,221,533.401
(9) Combined Rupee Rate:(8/Q)				10,677.474
(10 )Say Rupee Rate				10,000.00



**CONSTRUCTION OF ADDITIONAL CARRIGEWAY FROM SHIKARPUR TO RAJANPUR OF N-55**  
**Lot-1 Shikarpur - Kandhkot Section from Km 43+400 to Km 105+820 (62.42Km)**

**Unit Price Analysis**

Bill No. 4c:- Structure ( Bridges )

Item No. 401g-iv

20 /Cum/Hour

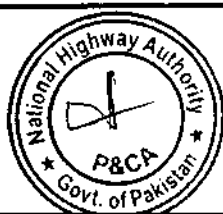
Item Description: Precast Concrete Class D1  
 Estimated Quantity (Q) 3,968.58

Sr. No	Equipment Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Concrete Batching Plant 30 CUM/H	1	198.4290	3,462.17	686,994.33
	Front End Loader 2.50 Cu.M	1	198.4290	3,589.55	712,271.08
3	Water Tank Bowser Type 12000 Litre	1	198.4290	1,586.08	314,724.27
4	Concrete Transit Mixer 6 Cu. M	4	793.7160	3,152.70	2,502,351.88
5	Concrete Pump	1	198.4290	2,874.44	570,372.94
6	Crane 20 Ton	1	198.4290	2,246.51	445,772.99
7	Vibrator (Poker 1.5 ")	3	595.2870	479.24	285,284.31
8	Compressor 300 CFM	1	198.4290	1,863.90	369,852.33
9	Picup	2	396.8580	1,219.02	483,776.80
10	Tractor 80 H. P	1	198.4290	1,268.91	251,788.11
	Sub-total (1)				6,623,189.04

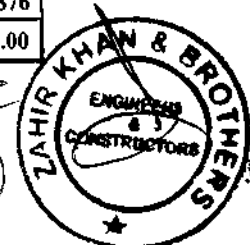
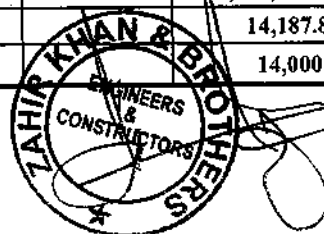
Sr. No	Manpower Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Structural Engineer	0.5	99.21	1,015.00	100,702.72
2	Site Engineer	1	198.43	537.00	106,556.37
3	Site Supervisors	2	396.86	342.00	135,725.44
4	Sr. Surveyor	0.5	99.21	844.00	83,737.04
5	J.Surveyor	1	198.43	450.00	89,293.05
6	Surveyor Helper	4	793.72	138.00	109,532.81
7	Mason	4	793.72	247.00	196,047.85
8	Carpenters	2	396.86	247.00	98,023.93
9	Laboures	10	1,984.3	151.00	299,627.79
10	Watchman	2	396.9	151.00	59,925.56
	Sub-total (2)				1,279,172.55

Sr. No	Material Cost	Unit	Qty	Local Currency	
				Unit Rate	Amount
1	Cement	Bags	33,732.93	605.31	20,418,879.86
2	Cursh	Cft	119,057.40	60.00	7,143,444.00
3	Sand	Cft	61,512.99	20.00	1,230,259.80
4	Water Charges for Concrete	L.sum	3,968.58	50.00	198,429.00
5	Add Wastage 5%	%	5%		1,449,550.63
6	Shuttring	Sqm	13,890.03	400.00	5,556,012.00
7	Curring Charges for 28 Dayes ( 50 Cum/Hour x 28 )	Hours	1,111.20	1,586.08	1,762,455.90
8	Add mixture	Ltr	16,866.47	100.00	1,686,646.50
	Sub-total (3)				39,445,677.69

(4) Total Direct Job Costs (DJC):(1)+(2)+(3)				47,348,039.286
(5) Indirect Cost and Profit:(4)		10.00%		4,734,803.929
(6) Total:(4)+(5)				52,082,843.215
(7) Add 7.5% Incom Tax				4,222,876.928
(8) Combined Rupee Rate:(6+7)				56,305,720.143
(9) Combined Rupee Rate:(8/Q)				14,187.876
(10 )Say Rupee Rate:				14,000.00



42













**CONSTRUCTION OF ADDITIONAL CARRIGEWAY FROM SHIKARPUR TO RAJANPUR OF N-55**  
**Lot-1 Shikarpur - Kandhkot Section from Km 43+400 to Km 105+820 (62.42Km)**

**Unit Price Analysis**

Bill No. 4d:- Structure ( Underpasses)

Item No. 401a2i

18 /Cum/Hour

Item Description: Concrete Class A2 ( Underground)

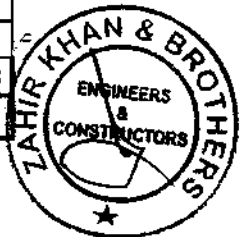
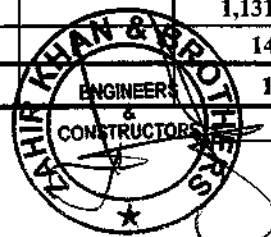
Estimated Quantity (Q) 79.51

Sr. No	Equipment Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Concrete Batching Plant 30 CUM/H	1	4.4172	3,462.17	15,293.16
2	Front End Loader 2.50 Cu.M	1	4.4172	3,589.55	15,855.85
3	Water Tank Bowser Type 12000 Litre	1	4.4172	1,586.08	7,006.07
4	Concrete Transit Mixer 6 Cu. M	5	22.0861	3,152.70	69,630.98
5	Concrete Pump	1	4.4172	2,874.44	12,697.06
6	Crane 20 Ton	1	4.4172	2,246.51	9,923.34
7	Vibrator (Poker 1.5 ")	2	8.8344	479.24	4,233.80
8	Compressor 300 CFM	1	4.4172	1,863.90	8,233.27
9	Picup	1	4.4172	1,219.02	5,384.67
10	Tractor 80 H. P	1	4.4172	1,268.91	5,605.05
Sub-total (1)					<b>153,863.24</b>

Sr. No	Manpower Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Structural Engineer	1	4.42	1,015.00	4,483.48
2	Site Engineer	2	8.83	537.00	4,744.10
3	Site Supervisors	2	8.83	342.00	3,021.38
4	Sr. Surveyor	1	4.42	844.00	3,728.14
5	J.Surveyor	2	8.83	450.00	3,975.50
6	Surveyor Helper	4	17.67	138.00	2,438.31
7	Mason	10	44.17	247.00	10,910.54
8	Carpenters	10	44.17	247.00	10,910.54
9	Laboures	10	44.2	151.00	6,670.01
10	Watchman	4	17.7	151.00	2,668.00
Sub-total (2)					<b>53,549.99</b>

Sr. No	Material Cost	Unit	Qty	Local Currency	
				Unit Rate	Amount
1	Cement	Bags	556.57	605.31	336,897.39
2	Cursh	Cft	2,385.30	60.00	143,118.00
3	Sand	Cft	1,232.41	20.00	24,648.10
4	Water Charges for Concrete	L.sum	79.51	50.00	3,975.50
5	Add Wastage 5%	%			25,431.95
6	Shutting	Sqm	318.04	350.00	111,314.00
7	Curring Charges for 28 Dayes ( 50 Cum/Hour x 28 )	Hours	44.53	1,586.08	70,621.16
8	Add mixture	Ltr	278.29	100.00	27,828.50
Sub-total (3)					<b>743,834.60</b>

(4) Total Direct Job Costs (DJC):(1)+(2)+(3)				951,247.827
(5) Indirect Cost and Profit:(4)		10.00%		95,124.783
(6) Total:(4)+(5)				1,046,372.610
(7) Add 7.5% Incom Tax				84,839.891
(8) Combined Rupee Rate:(6+7)				<b>1,131,212.501</b>
(9) Combined Rupee Rate:(8/Q)				14,227.298
(10 )Say Rupee Rate:				<b>14,000.00</b>



**CONSTRUCTION OF ADDITIONAL CARRIGEWAY FROM SHIKARPUR TO RAJANPUR OF N-55**  
**Lot-1 Shikarpur - Kandhkot Section from Km 43+400 to Km 105+820 (62.42Km)**

**Unit Price Analysis**

Bill No. 4d:- Structure ( Underpasses)

Item No. 401a2ii

10 /Cum/Hour

Item Description: Concrete Class A2 ( On ground) Approach Slab

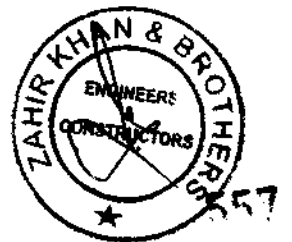
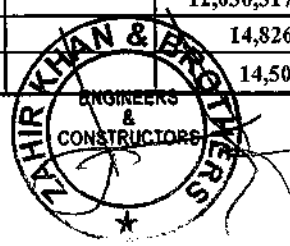
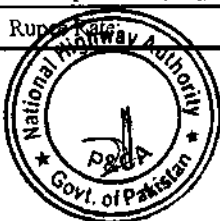
Estimated Quantity (Q) 811.41

Sr. No	Equipment Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Concrete Batching Plant 30 CUM/H	1	81.1410	3,462.17	280,923.69
2	Front End Loader 2.50 Cu.M	1	81.1410	3,589.55	291,259.78
3	Water Tank Bowser Type 12000 Litre	1	81.1410	1,586.08	128,696.12
4	Concrete Transit Mixer 6 Cu. M	4	324.5640	3,152.70	1,023,254.33
5	Concrete Pump	1	81.1410	2,874.44	233,235.22
6	Crane 20 Ton	1	81.1410	2,246.51	182,284.17
7	Vibrator (Poker 1.5 ")	3	243.4230	479.24	116,657.62
8	Compressor 300 CFM	1	81.1410	1,863.90	151,238.92
9	Picup	2	162.2820	1,219.02	197,824.58
10	Tractor 80 H. P	1	81.1410	1,268.91	102,960.45
	Sub-total (1)				2,708,334.88

Sr. No	Manpower Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Structural Engineer	0.5	40.57	1,015.00	41,179.06
2	Site Engineer	1	81.14	537.00	43,572.72
3	Site Supervisors	2	162.28	342.00	55,500.44
4	Sr. Surveyor	0.5	40.57	844.00	34,241.50
5	J.Surveyor	1	81.14	450.00	36,513.45
6	Surveyor Helper	4	324.56	138.00	44,789.83
7	Mason	4	324.56	247.00	80,167.31
8	Carpenters	2	162.28	247.00	40,083.65
9	Laboures	10	811.4	151.00	122,522.91
10	Watchman	2	162.3	151.00	24,504.58
	Sub-total (2)				523,075.46

Sr. No	Material Cost	Unit	Qty	Local Currency	
				Unit Rate	Amount
1	Cement	Bags	5,679.87	605.31	3,438,082.11
2	Cursh	Cft	24,342.30	60.00	1,460,538.00
3	Sand	Cft	12,576.86	20.00	251,537.10
4	Water Charges for Concrete	L.sum	811.41	50.00	40,570.50
5	Add Wastage 5%	%	5%		259,536.39
6	Shuttring	Sqm	1,622.82	300.00	486,846.00
7	Curring Charges for 28 Dayes ( 50 Cum/Hour x 28 )	Hours	454.39	1,586.08	720,698.26
8	Add mixture	Ltr	2,271.95	100.00	227,194.80
	Sub-total (3)				6,885,003.15

(4) Total Direct Job Costs (DJC):(1)+(2)+(3)				10,116,413.490
(5) Indirect Cost and Profit:(4)		10.00%		1,011,641.349
(6) Total:(4)+(5)				11,128,054.839
(7) Add 7.5% Incom Tax				902,262.686
(8) Combined Rupee Rate:(6+7)				12,030,317.525
(9) Combined Rupee Rate:(8/Q)				14,826.435
(10 )Say Rupee Rate				14,500.00



**CONSTRUCTION OF ADDITIONAL CARRIGEWAY FROM SHIKARPUR TO RAJANPUR OF N-55**  
**Lot-1 Shikarpur - Kanankot Section from Km 43+400 to Km 105+820 (62.42Km)**

**Unit Price Analysis**

Bill No. 4d:- Structure ( Underpasses)

Item No. 401a3ii

23 /Cum/Hour

Item Description: Concrete Class A3( On ground) Base Slab

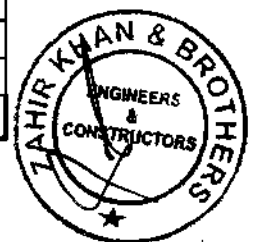
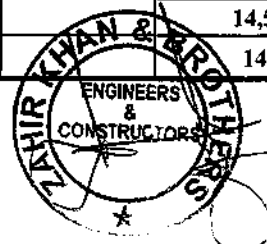
Estimated Quantity (Q) 2,319.53

Sr. No	Equipment Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Concrete Batching Plant 30 CUM/H	1	100.8491	3,462.17	349,156.53
2	Front End Loader 2.50 Cu.M	1	100.8491	3,389.33	302,003.13
3	Water Tank Bowser Type 12000 Litre	1	100.8491	1,586.08	159,954.79
4	Concrete Transit Mixer 6 Cu. M	6	605.0948	3,152.70	1,907,684.95
5	Concrete Pump	1	100.8491	2,874.44	289,885.13
6	Crane 20 Ton	1	100.8491	2,246.51	226,558.71
7	Vibrator (Poker 1.5 ")	3	302.5474	479.24	144,992.29
8	Compressor 300 CFM	1	100.8491	1,863.90	187,972.96
9	Picup	2	201.6983	1,219.02	245,873.69
10	Tractor 80 H. P	1	100.8491	1,268.91	127,968.25
	Sub-total (1)				4,002,050.41

Sr. No	Manpower Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Structural Engineer	1	100.85	1,015.00	102,361.87
2	Site Engineer	2	201.70	537.00	108,311.97
3	Site Supervisors	2	201.70	342.00	68,980.81
4	Sr. Surveyor	1	100.85	844.00	85,116.67
5	J.Surveyor	2	201.70	450.00	90,764.22
6	Surveyor Helper	4	403.40	138.00	55,668.72
7	Mason	12	1,210.19	247.00	298,916.82
8	Carpenters	8	806.79	247.00	199,277.88
9	Laboures	12	1,210.2	151.00	182,738.62
10	Watchman	5	504.2	151.00	76,141.09
	Sub-total (2)				1,268,278.66

Sr. No	Material Cost	Unit	Qty	Local Currency	
				Unit Rate	Amount
1	Cement	Bags	18,556.24	605.31	11,232,277.63
2	Cursh	Cft	69,585.90	60.00	4,175,154.00
3	Sand	Cft	35,952.72	20.00	719,054.30
4	Water Charges for Concrete	L.sum	2,319.53	50.00	115,976.50
5	Add Wastage 5%	%			812,123.12
6	Shuttring	Sqm	8,582.26	350.00	3,003,791.35
7	Curing Charges for 28 Days ( 50 Cum/Hour x 28 )	Hours	1,298.94	1,586.08	2,060,217.68
8	Add mixture	Ltr	9,278.12	100.00	927,812.00
	Sub-total (3)				23,046,406.59

(4) Total Direct Job Costs (DJC):(1)+(2)+(3)				28,316,735.664
(5) Indirect Cost and Profit:(4)		10.00%		2,831,673.566
(6) Total:(4)+(5)				31,148,409.230
(7) Add 7.5% Incom Tax				2,525,513.020
(8) Combined Rupee Rate:(6+7)				33,673,922.251
(9) Combined Rupee Rate:(8/Q)				14,517.563
(10 )Say Rupee				14,500.00



**CONSTRUCTION OF ADDITIONAL CARRIGEWAY FROM SHIKARPUR TO RAJANPUR OF N-55**  
**Lot-1 Shikarpur - Kandhkot Section from Km 43+400 to Km 105+820 (62.42Km)**

**Unit Price Analysis**

Bill No. 4d:- Structure ( Underpasses)

Item No. 401a3ii

40 /Cum/Hour

Item Description: Concrete Class A3( Elevated) Abutment Walls, Top Slab  
 Estimated Quantity (Q) 5,502.12

Sr. No	Equipment Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Concrete Batching Plant 50 CUM/H	1	137.5530	3,846.73	529,129.31
2	Front End Loader 2.50 Cu.M	1	137.5530	3,589.55	493,753.55
3	Water Tank Bowser Type 12000 Litre	1	137.5530	1,586.08	218,170.06
4	Concrete Transit Mixer 6 Cu. M	5	687.7650	3,152.70	2,168,319.71
5	Concrete Pump	1	137.5530	2,874.44	395,388.32
6	Crane 20 Ton	1	137.5530	2,246.51	309,014.37
7	Vibrator (Poker 1.5 ")	3	412.6590	479.24	197,761.98
8	Compressor 300 CFM	1	137.5530	1,863.90	256,385.40
9	Picup	2	275.1060	1,219.02	335,359.00
10	Tractor 80 H. P	1	137.5530	1,268.91	174,542.08
Sub-total (1)					5,077,823.78

Sr. No	Manpower Cost	No.	Hours	Local Currency	
				Unit Rate	Amount
1	Structural Engineer	0.5	68.78	1,015.00	69,808.15
2	Site Engineer	1	137.55	537.00	73,865.96
3	Site Supervisors	2	275.11	342.00	94,086.25
4	Sr. Surveyor	0.5	68.78	844.00	58,047.37
5	J.Surveyor	1	137.55	450.00	61,898.85
6	Surveyor Helper	4	550.21	138.00	75,929.26
7	Mason	12	1,650.64	247.00	407,707.09
8	Carpenters	8	1,100.42	247.00	271,804.73
9	Laboures	12	1,650.6	151.00	249,246.04
10	Watchman	5	687.8	151.00	103,852.52
Sub-total (2)					1,466,246.20

Sr. No	Material Cost	Unit	Qty	Local Currency	
				Unit Rate	Amount
1	Cement	Bags	44,016.96	605.31	26,643,906.06
2	Cursh	Cft	165,063.60	60.00	9,903,816.00
3	Sand	Cft	85,282.86	20.00	1,705,657.20
4	Water Charges for Concrete	L.sum	5,502.12	50.00	275,106.00
5	Add Wastage 5%	%			1,926,424.26
6	Shuttring	Sqm	16,506.36	350.00	5,777,226.00
7	Curring Charges for 28 Dayes ( 60 Cum/Hour x 28 )	Hours	2,567.66	1,586.08	4,072,507.83
8	Add mixture	Ltr	22,008.48	100.00	2,200,848.00
Sub-total (3)					52,505,491.35

(4) Total Direct Job Costs (DJC):(1)+(2)+(3)				59,049,561.329
(5) Indirect Cost and Profit:(4)		10.00%		5,904,956.133
(6) Total:(4)+(5)				64,954,517.462
(7) Add 7.5% Incom Tax				5,266,512.276
(8) Combined Rupee Rate:(6+7)				70,221,029.738
(9) Combined Rupee Rate:(8/Q)				12,762.541
(10 )Say Rupee Rate:				12,500.00

