

NATIONAL GRID COMPANY(NGC) OF PAKISTAN

TENDER DOCUMENT NO. XEN-S&I-EHV-II-RYK-01-2026-27



ADDITION OF 02 NOS. 220KV LINE BAYS AT EXISTING 220/132KV GRID STATION DAHARKI

- Name Address of the contractor to whom these Tender Documents are issued for tendering

- Designation and Address of the NGC office with whom Registered

- Signature of NGC Officer who issue these Tender Documents to the above Tenderer

Name (in Block Letter) designation and Address of NGCs above officer

**EXECUTIVE ENGINEER (S&I), EHV-II, NGC,
132KV Grid station Shahbaz Pur Road Rahim Yar
Khan**

Telephone No. 068-9330007

NATIONAL GRID COMPANY(NGC) OF PAKISTAN
TENDER DOCUMENT NO. XEN-S&I-EHV-II-RYK-01-2026-27



ADDITION OF 02 NOS. 220KV LINE BAYS AT EXISTING 220/132KV
GRID STATION DAHARKI

Prepared By:

EXECUTIVE ENGINEER (S&I)
EHV-II NGC, RAHIM YAR KHAN

–August 2026

SINGLE STAGE - TWO ENVELOPE (SSTE)

Sr. No.	Description
1.	Invitation for Bids
2.	Instructions to Bidders
3.	Bid Data Sheet
4.	Bid Forms & Appendices to Bid
5.	General Conditions of Contract
6.	Special Conditions of Contract
7.	Employer's Requirements/Special Provisions
8.	Specifications
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10.	Drawings

**INVITATION
FOR
BIDS**



National Grid Company of Pakistan Limited (NGC)
(Formerly NTDC)

Ref No. Xen/S&I/NGC/R.YK/1081-88
Date: 31 / 07 / 2026

**EXECUTIVE ENGINEER
(S&I), NGC RAHIM YAR
KHAN**

**Director (M&PR) NGC,
G-63, WAPDA House,
Lahore.**

SUBJECT: NOTICE FOR INVITING TENDER

Please find enclosed the Notice of Inviting Tenders for publication in the National Daily Newspapers at least one Urdu & one English for:

TENDER NO. XEN-S&I-EHV-II-RYK-01-2026-2027)

Name of Work:

**ADDITION OF 02 NOS. 220KV LINE BAYS AT EXISTING 220/132KV GRID STATION
DAHARKI**

Please ensure that the TENDER must be published within 2 days after receipt of this letter and also taking into consideration necessary implementation/requirement and upload on NGC's website www.ntdc.com.pk.

D.A./As above.

**Executive Engineer EHV-II
S&I Division NGC R.Y. Khan**

Copy to:

1. General Manager (PD/GSC) South NGC Hyderabad
2. Chief Engineer (PD/GSC) South NGC Hyderabad.
3. Project Director EHV-II NGC Hyderabad.
4. Director (I.T) NGC, Wapda House, Lahore with the request to upload the above tender notice on NGC website, please.
5. Deputy Manager (CA) EHV-II NGC Hyderabad.
6. Assistant Manager (CA) EHV-II NGC Hyderabad.
7. SDO EHV-II S&I Sub Division NGC Multan Camp @ Sukkur.
- Master File.

INVITATION FOR BIDS

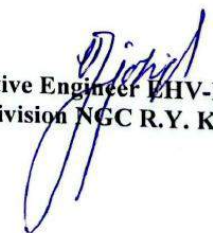
Date: 31/07/2026

Bid Reference No: XEN-S&I-EHV-II-RYK-01-2026-2027)

1. National Grid Company (NGC) of Pakistan "The Employer", intends to get the works done for Tender No. **XEN-S&I-EHV-II-RYK-01-2026-2027)** . The Scope of works includes the following:

**ADDITION OF 02 NOS. 220KV LINE BAYS AT EXISTING 220/132KV GRID
STATION DAHARKI**

2. The Employer invites sealed bids from eligible firms or persons licensed by the Pakistan Engineering Council in the appropriate category for the above scope of Works. National Competitive Bidding (NCB) will be conducted in accordance with **PEC Single Stage - Two Envelope (SSTE) procedure** on EPADS and PPRA. The complete bidding documents are available on PPRA and NGC websites
3. A complete set of Bidding Documents may be purchased by an interested Bidder on submission of a written application to the above office upon payment of a non-refundable fee of 5,000/- Rupees up to **24.08.2026** before 11:00 am from the office of Executive Engineer (S&I) Division EHV-II NGC, 132kv Grid station Shahbaz Pur Road Rahim Yar Khan
4. All the bids shall be submitted electronically through E-Pak Acquisition and Disposal System (E-PADS) by **24-08-2026**, at **11.00 a.m.** and shall be opened on same day at **11.30 a.m.** through E-PADS in the presence of the bidders.
5. All bids must be accompanied by a bid security in the amount not less than 2% of total bid amount/- **Bid Security in PKR (Refundable)** in the form of CDR or a Bank Guarantee issued by a Scheduled Bank in Pakistan in Favor of "**EXECUTIVE ENGINEER (S&I) DIVISION EHV-II NGC RAHIM YAR KHAN**" valid for a period up to Twenty-Eight (28) days beyond the bid validity date should be submitted in **original** to the office of EXECUTIVE ENGINEER (S&I) DIVISION EHV-II NGC RAHIM YAR KHAN before **11.00 a.m.** by **24-08-2026**. The bids shall be **opened on E-PADS only on 24-08-2026 at 11:30 a.m.**
6. The interested eligible bidders may obtain further information from the office of Executive Engineer (S&I) Division EHV-II NGC, 132kv Grid station Shahbaz Pur Road Rahim Yar Khan. No bid other than EPADS will be accepted. Executive Engineer (S&I) Division EHV-II NGC Rahim Yar Khan will not be responsible for any cost or expense incurred by bidders in connection with the preparation of Bids. If there is a public holiday announced by the Government, on the tender opening date, then the tender will be opened on the next working day.
7. NGC reserve all its rights regarding rejection of bids as defined in Rule 33(1) of PPRA Rules 2004.


Executive Engineer EHV-II
S&I Division NGC R.Y. Khan

INSTRUCTIONS TO BIDDERS

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SECTION-I

INSTRUCTIONS TO BIDDERS

Instructions to Bidders

A. GENERAL

IB.1 Scope of Bid

- 1.1 The Employer as defined in the Bidding Data hereinafter called “the Employer” wishes to receive bids for the construction and completion of works as described in these Bidding Documents, and summarized in the Bidding Data hereinafter referred to as the “Works”.
- 1.2 The successful bidder will be expected to complete the Works within the time specified in Appendix-A to Bid and the Bidding Data.

IB.2 Source of Funds

- 2.1 The Employer has arranged the funds through its own resources indicated in the Bidding Data in local currency towards the cost of the project specified in the Bidding Data and it is intended that this will be applied to eligible payments under the Contract for which these Bidding Documents are issued.

IB.3 Eligible Bidders

- 3.1 This Invitation for Bids is open to all bidders meeting the following requirements:
 - a. Duly licensed by the Pakistan Engineering Council (PEC) in the category relevant to the value of the Works.
 - b. Duly prequalified / enlisted with the Employer.

IB.4 One Bid per Bidder

- 4.1 Each bidder shall submit only one bid by himself. A bidder who submits or participates in more than one bid (other than alternatives pursuant to Clause IB.16) will be disqualified.

IB.5 Cost of Bidding

- 5.1 The bidders shall bear all costs associated with the preparation and submission of their respective bids and the Employer will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

IB.6 Site Visit

- 6.1 The bidders are advised to visit and examine the Site of Works and its surroundings and obtain for themselves on their own responsibility all information that may be necessary for preparing the bid and entering into a contract for construction of the Works. All cost in this respect shall be at the bidder’s own expense.

- 6.2 The bidders and any of their personnel or agents will be granted permission by the Employer to enter upon his premises and lands for the purpose of such inspection, but only upon the express condition that the bidders, their personnel and agents, will release and indemnify the Employer, his personnel and agents from and against all liability in respect thereof and will be responsible for death or personal injury, loss of or damage to property and any other loss, damage, costs and expenses incurred as a result of such inspection.

B. BIDDING DOCUMENTS

IB.7 Contents of Bidding Documents

- 7.1 The Bidding Documents, in addition to invitation for bids, are those stated below and should be read in conjunction with any Addenda issued in accordance with Clause IB.9.
1. Instructions to Bidders.
 2. Bidding Data.
 3. Form of Bid & Appendices to Bid.
 4. Bill of Quantities.
 5. Form of Bid Security.
 6. Form of Contract Agreement.
 7. Forms of Performance Security and Mobilization Advance Guarantee/Bond.
 8. General Conditions of Contract, Part-I (GCC).
 9. Particular Conditions of Contract, Part-II (PCC).
 10. Specifications – Special Provisions.
- 7.2 The bidders are expected to examine carefully the contents of all the above documents. Failure to comply with the requirements of bid submission will be at the Bidder's own risk. Pursuant to Clause IB.26, bids which are not substantially responsive to the requirements of the Bidding Documents will be rejected.

IB.8 Clarification of Bidding Documents

- 8.1 Any prospective bidder requiring any clarification (s) in respect of the Bidding Documents may notify the Employer in writing at the Employer's address indicated in the Invitation for Bids. The Employer will respond to any request for clarification which he receives earlier than 07 days prior to the deadline for submission of bids.

Copies of the Employer's response will be forwarded to all purchasers of the Bidding Documents, including a description of the enquiry but without identifying its source.

IB.9 Amendment of Bidding Documents

- 9.1 At any time prior to the deadline for submission of bids, the Employer may, for any reason, whether at his own initiative or in response to a clarification requested by a prospective bidder, modify the Bidding Documents by issuing addendum.
- 9.2 Any addendum thus issued shall be part of the Bidding Documents pursuant to Sub-Clause 7.1 hereof and shall be communicated in writing to all purchasers of the Bidding Documents. Prospective bidders shall acknowledge receipt of each addendum in writing

- to the Employer.
- 9.3 To afford prospective bidders reasonable time in which to take an addendum into account in preparing their bids, the Employer may extend the deadline for submission of bids in accordance with Clause IB.20

C. PREPARATION OF BIDS

IB.10 Language of Bid

- 10.1 The bid and all correspondence and documents related to the bid exchanged by a bidder and the Employer shall be in the bid language stipulated in the Bidding Data and Particular Conditions of Contract. Supporting documents and printed literature furnished by the bidders may be in any other language provided the same are accompanied by an accurate translation of the relevant parts in the bid language, in which case, for purposes of evaluation of the bid, the translation in bid language shall prevail.

IB.11 Documents Accompanying the Bid

- 11.1 Each bidder shall:

- (a) submit a written power of attorney authorizing the signatory of the bid to act for and on behalf of the bidder;
- (b) update the information indicated and listed in the Bidding Data and would include the following:
 - (i) Evidence of access to financial resources alongwith average annual construction turnover;
 - (ii) Work commitments
 - (iii) Current litigation information; and
 - (iv) Availability of necessary equipment.and
- (c) furnish a technical proposal taking into account the various Appendices to Bid specially the following:

Appendix-D to Bid	Proposed Construction Schedule
Appendix-E to Bid	Method of Performing the Work
Appendix-F to Bid	List of Major Equipment
Appendix-J to Bid	Organization Chart for Supervisory Staff

and other pertinent information such as mobilization program etc.;

- 11.2 Bidders shall also submit proposals of work methods and schedule, in sufficient detail to demonstrate the adequacy of the Bidders' proposals to meet the technical specifications and the completion time referred to in Sub-Clause 1.2 hereof.

IB.12 Bid Prices

- 12.1 Unless stated otherwise in the Bidding Documents, the Contract shall be for the

whole of the Works as described in Sub-Clause 1.1 hereof, based on the unit rates and / or prices submitted by the bidder.

12.2 The bidders shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items against which no rate or price is entered by a bidder will not be paid for by the Employer when executed and shall be deemed covered by rates and prices for other items in the Bill of Quantities.

12.3 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 the deadline for submission of bids shall be included in the rates and prices and the total Bid Price submitted by a bidder.

Additional / reduced duties, taxes and levies due to subsequent additions or changes in legislation shall be reimbursed / deducted as per Sub-Clause 70.2 of the General Conditions of Contract Part-I.

IB.13 Currencies of Bid and Payment

13.1 The unit rates and the prices shall be quoted by the bidder entirely in Pak rupees.

IB.14 Bid Validity

14.1 Bids shall remain valid for the period stipulated in the Bidding Data after the Date of Bid Opening specified in Clause IB.23.

14.2 In exceptional circumstances, prior to expiry of the original bid validity period, the Employer may request that the bidders extend the period of validity for a specified additional period which shall in no case be more than the original bid validity period. The request and the responses thereto shall be made in writing. A bidder may refuse the request without forfeiting his Bid Security. A bidder agreeing to the request will not be required or permitted to modify his bid, but will be required to extend the validity of his Bid Security for the period of the extension, and in compliance with Clause IB.15 in all respects.

IB.15 Bid Security

15.1 Each bidder shall furnish, as part of his bid, a Bid Security in the amount stipulated in the Bidding Data in Pak Rupees or an equivalent amount in a freely convertible currency.

15.2 The Bid Security shall be, at the option of the bidder, in the form of Deposit at Call or a Bank Guarantee issued by a Scheduled Bank in Pakistan or from a foreign bank duly counter guaranteed by a Scheduled Bank in Pakistan in favor of the Employer valid for a period **28** days beyond the Bid Validity date.

15.3 Any bid not accompanied by an acceptable Bid Security shall be rejected by the Employer as non-responsive.

15.4 The bid securities of unsuccessful bidders will be returned as promptly as

possible, but not later than 28 days after the expiration of the period of Bid Validity.

- 15.5 The Bid Security of the successful bidder will be returned when the bidder has furnished the required Performance Security and signed the Contract Agreement.
- 15.6 The Bid Security may be forfeited:
 - (a) if the bidder withdraws his bid except as provided in Sub-Clause 22.1;
 - (b) if the bidder does not accept the correction of his Bid Price pursuant to Sub-Clause 27.2 hereof; or
 - (c) In the case of successful bidder, if he fails within the specified time limit to:
 - (i) furnish the required Performance Security; or
 - (ii) sign the Contract Agreement.

IB.16 Alternate Proposals by Bidder

- 16.1 Should any bidder consider that he can offer any advantages to the Employer by a modification to the designs, specifications or other conditions, he may, in addition to his bid to be submitted in strict compliance with the Bidding Documents, submit any Alternate Proposal(s) containing (a) relevant design calculations; (b) technical specifications; (c) proposed construction methodology; and (d) any other relevant details / conditions, provided always that the total sum entered on the Form of Bid shall be that which represents complete compliance with the Bidding Documents.
- 16.2 Alternate Proposal(s), if any, of the lowest evaluated responsive bidder only may be considered by the Employer as the basis for the award of Contract to such bidder.

IB.17 Pre-Bid Meeting

- 17.1 The Employer may, on his own motion or at the request of any prospective bidder(s), hold a pre-bid meeting to clarify issues and to answer any questions on matters related to the Bidding Documents. The date, time and venue of pre-bid meeting, if convened, are as stipulated in the Bidding Data. All prospective bidders or their authorized representatives shall be invited to attend such a pre-bid meeting.
- 17.2 Minutes of the pre-bid meeting, including the text of the questions raised and the replies given, will be transmitted without delay to all purchasers of the Bidding Documents. Any modification of the Bidding Documents listed in Sub-Clause 7.1 hereof which may become necessary as a result of the pre-bid meeting shall be made by the Employer exclusively through the issue of an Addendum pursuant to Clause IB.9 and not through the minutes of the pre-bid meeting.

IB.18 Format and Signing of Bid

- 18.1 Bidders are particularly directed that the amount entered on the Form of Bid shall be for performing the Contract strictly in accordance with the Bidding Documents.
- 18.2 All appendices to Bid are to be properly completed and signed.
- 18.3 No alteration is to be made in the Form of Bid nor in the Appendices thereto except in filling up the blanks as directed. If any such alterations be made or if these instructions be not fully complied with, the bid may be rejected.
- 18.4 Each bidder shall prepare by filling out the forms completely and without alterations one (1) original and number of copies, specified in the Bidding Data, of the documents comprising the bid as described in Clause IB.7 and clearly mark them "ORIGINAL" and "COPY" as appropriate. In the event of discrepancy between them, the original shall prevail.
- 18.5 The original and all copies of the bid shall be typed or written in indelible ink (in the case of copies, Photostats are also acceptable) and shall be signed by a person or persons duly authorized to sign on behalf of the bidder pursuant to Sub- Clause 11.1(a) hereof. All pages of the bid shall be initialed and stamped by the person or persons signing the bid.
- 18.6 The bid shall contain no alterations, omissions or additions, except to comply with instructions issued by the Employer, or as are necessary to correct errors made by the bidder, in which case such corrections shall be initialed by the person or persons signing the bid.
- 18.7 Bidders shall indicate in the space provided in the Form of Bid their full and proper addresses at which notices may be legally served on them and to which all correspondence in connection with their bids and the Contract is to be sent.
- 18.8 Bidders should retain a copy of the Bidding Documents as their file copy.

D. SUBMISSION OF BIDS

IB.19 Sealing and Marking of Bids

- 19.1 Each bidder shall submit his bid as under:
 - (a) ORIGINAL and each copy of the Bid shall be separately sealed and put in separate envelopes and marked as such.
 - (b) The envelopes containing the ORIGINAL and copies will be put in one sealed envelope and addressed / identified as given in Sub- Clause 19.2 hereof.

19.2 The inner and outer envelopes shall:

- (a) be addressed to the Employer at the address provided in the Bidding Data;
- (b) bear the name and identification number of the contract as defined in the Bidding Data; and
- (c) provide a warning not to open before the time and date for bid opening, as specified in the Bidding Data.

19.3 In addition to the identification required in Sub- Clause 19.2 hereof, the inner envelope shall indicate the name and address of the bidder to enable the bid to be returned unopened in case it is declared “late” pursuant to Clause IB.21

19.4 If the outer envelope is not sealed and marked as above, the Employer will assume no responsibility for the misplacement or premature opening of the Bid.

IB.20 Deadline for Submission of Bids

- 20.1
- (a) Bids must be received by the Employer at the address specified no later than the time and date stipulated in the Bidding Data.
 - (b) Bids with charges payable will not be accepted, nor will arrangements be undertaken to collect the bids from any delivery point other than that specified above. Bidders shall bear all expenses incurred in the preparation and delivery of bids. No claims will be entertained for refund of such expenses.
 - (c) Where delivery of a bid is by mail and the bidder wishes to receive an acknowledgment of receipt of such bid, he shall make a request for such acknowledgment in a separate letter attached to but not included in the sealed bid package.
 - (d) Upon request, acknowledgment of receipt of bids will be provided to those making delivery in person or by messenger.
- 20.2 The Employer may, at his discretion, extend the deadline for submission of bids by issuing an amendment in accordance with Clause IB.9, in which case all rights and obligations of the Employer and the bidders previously subject to the original deadline will thereafter be subject to the deadline as extended.

IB.21 Late Bids

- 21.1
- (a) Any bid received by the Employer after the deadline for submission of bids prescribed in Clause IB.20 will be returned unopened to such bidder.
 - (b) Delays in the mail, delays of person in transit, or delivery of a bid to the wrong office shall not be accepted as an excuse for failure to deliver a bid at the proper place and time. It shall be the bidder’s responsibility to

determine the manner in which timely delivery of his bid will be accomplished either in person, by messenger or by mail.

IB.22 Modification, Substitution and Withdrawal of Bids

- 22.1 Any bidder may modify, substitute or withdraw his bid after bid submission provided that the modification, substitution or written notice of withdrawal is received by the Employer prior to the deadline for submission of bids.
- 22.2 The modification, substitution, or notice for withdrawal of any bid shall be prepared, sealed, marked and delivered in accordance with the provisions of Clause IB.19 with the outer and inner envelopes additionally marked “MODIFICATION”, “SUBSTITUTION” or “WITHDRAWAL” as appropriate.
- 22.3 No bid may be modified by a bidder after the deadline for submission of bids except in accordance with Sub-Clauses 22.1 and 27.2.
- 22.4 Withdrawal of a bid during the interval between the deadline for submission of bids and the expiration of the period of bid validity specified in the Form of Bid may result in forfeiture of the Bid Security in pursuance to Clause IB.15.

E. BID OPENING AND EVALUATION

IB.23 Bid Opening

- 23.1 The Employer will open the bids, including withdrawals, substitution and modifications made pursuant to Clause IB.22, in the presence of bidders’ representatives who choose to attend, at the time, date and location stipulated in the Bidding Data. The bidders’ representatives who are present shall sign a register evidencing their attendance.
- 23.2 Envelopes marked “MODIFICATION”, “SUBSTITUTION” or “WITHDRAWAL” shall be opened and read out first. Bids for which an acceptable notice of withdrawal has been submitted pursuant to Clause IB.22 shall not be opened.
- 23.3 The bidder’s name, total Bid Price and price of any Alternate Proposal(s), any discounts, bid modifications, substitution and withdrawals, the presence or absence of Bid Security, and such other details as the Employer may consider appropriate, will be announced by the Employer at the opening of bids.
- 23.4 Employer shall prepare minutes of the bid opening, including the information disclosed to those present in accordance with the Sub-Clause 23.3.

IB.24 Process to be Confidential

- 24.1 Information relating to the examination, clarification, evaluation and comparison of bid and recommendations for the award of a contract shall not be disclosed to

bidders or any other person not officially concerned with such process before the announcement of bid evaluation report which shall be done at least ten (10) days prior to issue of Letter of Acceptance. The announcement to all Bidders will include table(s) comprising read out prices, discounted prices, price adjustments made, final evaluated prices and recommendations against all the bids evaluated. Any effort by a bidder to influence the Employer's processing of bids or award decisions may result in the rejection of such bidder's bid. Whereas any bidder feeling aggrieved may lodge a written complaint not later than fifteen (15) days after the announcement of the bid evaluation report; however mere fact of lodging a complaint shall not warrant suspension of the procurement process.

IB.25 Clarification of Bids

- 25.1 To assist in the examination, evaluation and comparison of bids, the Employer may, at his discretion, ask any bidder for clarification of his bid, including breakdowns of unit rates. The request for clarification and the response shall be in writing but no change in the price or substance of the bid shall be sought, offered or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the bids in accordance with Clause IB.28.

IB.26 Examination of Bids and Determination of Responsiveness

- 26.1 Prior to the detailed evaluation of bids, the Employer will determine whether each bid is substantially responsive to the requirements of the Bidding Documents.
- 26.2 A substantially responsive bid is one which (i) meets the eligibility criteria;(ii) has been properly signed; (iii) is accompanied by the required Bid Security; and (iv) conforms to all the terms, conditions and specifications of the Bidding Documents, without material deviation or reservation. A material deviation or reservation is one (i) which affect in any substantial way the scope, quality or performance of the Works; (ii) which limits in any substantial way, inconsistent with the Bidding Documents, the Employer's rights or the bidder's obligations under the Contract; or (iii) adoption/rectification whereof would affect unfairly the competitive position of other bidders presenting substantially responsive bids.
- 26.3 If a bid is not substantially responsive, it will be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the non-conforming deviation or reservation.

IB.27 Correction of Errors

- 27.1 Bids determined to be substantially responsive will be checked by the Employer for any arithmetic errors. Errors will be corrected by the Employer as follows:
- (a) where there is a discrepancy between the amounts in figures and in words, the amount in words will govern; and

- (b) where there is a discrepancy between the unit rate and the line-item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern, unless in the opinion of the Employer there is an obviously gross misplacement of the decimal point in the unit rate, in which case the line-item total as quoted will govern and the unit rate will be corrected.
- 27.2 The amount stated in the Form of Bid will be adjusted by the Employer in accordance with the above procedure for the correction of errors and with the concurrence of the bidder, shall be considered as binding upon the bidder. If the bidder does not accept the corrected Bid Price, his Bid will be rejected, and the Bid Security shall be forfeited in accordance with Sub- Clause 15.6(b) hereof.

IB.28 Evaluation and Comparison of Bids

- 28.1 The Employer will evaluate and compare only the Bids determined to be substantially responsive in accordance with Clause IB.26.
- 28.2 In evaluating the Bids, the Employer will determine for each Bid the evaluated Bid Price by adjusting the Bid Price as follows:
 - (a) making any correction for errors pursuant to Clause IB.27;
 - (b) excluding Provisional Sums and the provision, if any, for contingencies in the Summary Bill of Quantities, but including competitively priced Day work; and
 - (c) making an appropriate adjustment for any other acceptable variation or deviation.
- 28.3 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be taken into account in Bid evaluation.
- 28.4 If the Bid of the successful bidder is seriously unbalanced in relation to the Employer's estimate of the cost of work to be performed under the Contract, the Employer may require the bidder to produce detailed price analyses for any or all items of the Bill of Quantities to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analyses, the Employer may require that the amount of the Performance Security set forth in Clause IB.32 be increased at the expense of the successful bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful bidder under the Contract.

F. AWARD OF CONTRACT

IB.29 Award

- 29.1 Subject to Clauses IB.30 and IB.34, the Employer will award the Contract to the

bidder whose bid has been determined to be substantially responsive to the Bidding Documents and who has offered the lowest evaluated Bid Price, provided that such bidder has been determined to be eligible in accordance with the provisions of Clause IB.3 and qualify pursuant to Sub-Clause IB 29.2.

- 29.2 The Employer, at any stage of the bid evaluation, having credible reasons for or *prima facie* evidence of any defect in supplier's or contractor's capacities, may require the suppliers or contractors to provide information concerning their professional, technical, financial, legal or managerial competence.
- 29.3 Provided that such qualification shall only be laid down after recording reasons thereof in writing. They shall form part of the records of that bid evaluation report.

IB.30 Employer's Right to Accept any Bid and to Reject any or all Bids

- 30.1 Notwithstanding Clause IB.29, the Employer reserves the right to accept or reject any Bid, and to annul the bidding process and reject all bids, at any time prior to award of Contract, without thereby incurring any liability to the affected bidders or any obligation except that the grounds for rejection of all bids shall upon request be communicated to any bidder who submitted a bid, without justification of grounds. Rejection of all bids shall be notified to all bidders promptly.

IB.31 Notification of Award

- 31.1 Prior to expiration of the period of bid validity prescribed by the Employer, the Employer will notify the successful bidder in writing ("Letter of Acceptance") that his Bid has been accepted. This letter shall name the sum which the Employer will pay the Contractor in consideration of the execution and completion of the Works by the Contractor as prescribed by the Contract (hereinafter and in the Conditions of Contract called the "Contract Price").
- 31.2 No Negotiation with the bidder having evaluated as lowest responsive or any other bidder shall be permitted, however, Employer may have clarification meetings to get clarify any item in the bid evaluation report.
- 31.3 The notification of award and its acceptance by the bidder will constitute the formation of the Contract, binding the Employer and the bidder till signing of the formal Contract Agreement.
- 31.4 Upon furnishing by the successful bidder of a Performance Security, the Employer will promptly notify the other bidders that their Bids have been unsuccessful and return their bid securities.

IB.32 Performance Security

- 32.1 The successful bidder shall furnish to the Employer a Performance Security in the form and the amount stipulated in the Bidding Data and the Conditions of

Contract within a period of 14 days after the receipt of Letter of Acceptance.

- 32.2 Failure of the successful bidder to comply with the requirements of Sub-Clause IB.32.1 or Clauses IB.33 or IB.35 shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security.

IB.33 Signing of Contract Agreement

- 33.1 Within 14 days from the date of furnishing of acceptable Performance Security under the Conditions of Contract, the Employer will send the successful bidder the Contract Agreement in the form provided in the Bidding Documents, incorporating all agreements between the parties.
- 33.2 The formal Agreement between the Employer and the successful bidder shall be executed within 07 days of the receipt of the Contract Agreement by the successful bidder from the Employer.

IB.34 General Performance of the Bidders

The Employer reserves the right to obtain information regarding performance of the bidders on their previously awarded contracts/works. The Employer may in case of consistent poor performance of any Bidder as reported by the employers of the previously awarded contracts, inter alia, reject his bid and/or refer the case to the Pakistan Engineering Council (PEC). Upon such reference, PEC in accordance with its rules, procedures and relevant laws of the land take such action as may be deemed appropriate under the circumstances of the case including black listing of such Bidder and debarring him from participation in future bidding for similar works.

IB.35 Integrity Pact

The Bidder shall sign and stamp the Integrity Pact provided at Appendix-L to Bid in the Bidding Documents for all Federal Government procurement contracts exceeding Rupees ten million. Failure to provide such Integrity Pact shall make the bidder non-responsive.

IB.36 Instructions not Part of Contract

Bids shall be prepared and submitted in accordance with these Instructions which are provided to assist bidders in preparing their bids, and do not constitute part of the Bid or the Contract Documents.

SECTION-II

BID DATA SHEET

BID DATA SHEET

The following specific data for the Works to be bided shall complement, amend, or supplement the provisions in the Instructions to Bidders. Wherever there is a conflict, the provisions herein shall prevail over those in the Instructions to Bidders.

IB 1.1	Name and address of the Employer: Name: National Grid Company (NGC) of Pakistan Address: Executive Engineer EHV-II S&I Division NGC 132 KV Grid Station Shahbazpur Road Rahim Yar Khan Telephone No. 068-9330007 The bidding is open to National Competitive Bidding (NCB) through Single Stage Two Envelope (SSTE) procedure.
IB 1.1	The name of the NCB is: <u>ADDITION OF 02 NOS. 220KV LINE BAYS AT EXISTING 220/132KV GRID STATION DAHARKI</u> The identification number of the NCB is XEN-S&I-EHV-II-RYK-01-2026-27 The number and identification of lots comprising this NCB is: One The quoted price must correspond to full scope of work. The detailed scope of Works has been delineated under Special Provisions of this Bidding Document and includes but not limited to <u>ADDITION OF 02 NOS. 220KV LINE BAYS AT EXISTING 220/132KV GRID STATION DAHARKI</u> The scope of work shall also include the implementation of all environmental, social, labor, occupational health and safety (OHS), and community health and safety measures as specified in the Contract, Specifications, and applicable laws.
IB 1.1	Time of completion is 180-Days from the date of commencement or 30-days from the date of final approved shutdown whichever is later.
IB 1.2	Source of Funding: NGC own resources
IB 2.1	Name and address of the Employer: Name: National Grid Company (NGC) of Pakistan Address: Executive Engineer EHV-II S&I Division NGC 132 KV Grid Station Shahbazpur Road Rahim Yar Khan Telephone No. 068-9330007 The bidding is open to National Competitive Bidding (NCB) through Single Stage Two Envelope (SSTE) procedure.
IB 3.1 (a)	The existing sub clause 3.1(a) is deleted and replaced with following: The Invitation for Bids is open to all bidders in their sole capacity or as joint venture meeting the following requirements: i) The Bidder shall be duly licensed by the Pakistan Engineering Council (PEC)

	minimum in the appropriate category relevant to the value of the works or had applied for renewal of license before submission of its bid. In case of Joint Venture, all the partners shall be duly licensed by PEC and the sum total of the limit of construction cost permitted by the categories of the individual licensees shall not be less than limit of construction cost permitted by the category required here above. ii) Pakistani constructor shall be on Active Taxpayers List of the Federal Board of Revenue and relevant Provincial Revenue Authority. iii) The Bidder shall not be blacklisted by NGC/WAPDA/DISCOs/any Government/Public department/Donor Agencies which also includes ADB at the time of submission of bids. The Bidder should provide details of previous black listing, if any. An affidavit is to be provided by the Bidder that the Bidder is not black listed by NGC/WAPDA/DISCOs/any Government/Public department/Donor Agencies which includes ADB at the time of submission of bids. Further, the bidder shall submit an Undertaking along with his bid that he has read and accepts the provisions of NGC policy (attached with the bidding document) for blacklisting of contractors. Non-submission of this undertaking may result in the rejection of the bid.
IB 3.1(b)	Delete IB 3.1(b) and replace it with the following. Qualification of the Bidder To be qualified for award of the contract, the Bidder shall meet the qualification criteria delineated herein below: 1. <u>Construction Experience:</u> The Bidder as main contractor or approved sub contractor (single entity or joint venture partner) should have completed one No. similar nature of work at 220kV Grid Station for 220kV Transformer Bay/Line Bay or higher rating with similar scope of work within the last ten (10) years. For the above or other contracts executed during the period stipulated here above, the Bidder shall have a minimum construction experience, comprising of Civil works, Erection, Testing & Commissioning Works. Such substation switchyard must have been operating successfully for at least One (01) year prior to deadline for submission of Bids. If the Bidder has executed the above contract(s) as a JV partner, he must substantiate that he has carried out all the activities mentioned here above. In case the bid is submitted by a joint venture, Lead Partner shall meet the above experience criteria. However, each partner, other than Lead Partner, shall have experience of execution of construction contracts of at least

132kV or higher rating line bay/augmentation/addition of substation/Power House switchyard as main contractor or as approved subcontractor during last ten (10) years.

The Bidder shall submit with the Bid evidence in this regard including inter alia copies (with English translation) of the contract agreement(s) and substantial completion certificate(s), Performance certificate duly notarized, for the contract(s).

2. Key Personnel:

The Bidder shall have the personnel for the key positions to be deployed meeting the following requirements: (Information to be submitted in Appendix PER Forms to Bid given in Section-III of the Bidding Documents)

Positions	Relevant Construction Experience (years)
Project Manager	10
Construction Manager	07
Site Engineer Civil	05
Site Engineer Electrical	05
Safe Guard Expert	05

The above personnel shall be graduate professional engineers or equivalent.

3. Bidder's Financial Capability:

The Employer will take into account the following criteria to verify the financial qualification of the Bidder.

- i. The audited Financial "Standalone" Statements (Balance Sheet along with Notes, Profit & Loss Accounts and Cash Flow Statement) audited by Chartered Accountant for the last three (03) years shall be submitted by the Bidder.

The Bidder's Financial Statements for the last three years of the audited accounts should show that it has positive "NET WORTH" calculated as a difference between total assets and total liabilities (Information to be submitted in prescribed Form QF-5 of Appendix-M to Bid given in Section-III of the Bidding Documents).

In case of JV, each JV partner shall meet the aforementioned criteria.

- ii. The Bidder's Income & Expenditure / Profit and Loss Accounts should show minimum average annual turnover for the last three years not less than **equal to the bid value** for participation in bid (Information to be submitted in prescribed Form QF-6 of Appendix-M to Bid given in Section-III of the Bidding Documents).

iii. In case of JV, all the JV partners shall combinedly meet the requisite criteria with the lead partner and other partner(s) meeting not less than 40% and 25% respectively of the said criteria.

iv. The Bidder must demonstrate access to, or availability of, financial resources such as liquid assets, lines of credit, and other financial means to meet the total cash flow demands of this contract plus 25% of the Bidder's commitments for running contracts. (Information to be submitted in prescribed Form QF-7 of Appendix-M to Bid given in Section-III of the Bidding Documents).

v. In case of JV, all the JV partners combined shall meet the requisite criteria with the lead partner and other partner(s) meeting not less than 40% and 25% respectively of the said criteria. The Bidder shall provide his current work commitments in form QF-4 of Appendix-M to Bid given in Section-III of the Bidding Documents.

The bidder shall provide bank certificate for his lines of credit on the prescribed Form QF-8 of Appendix-M to Bid given in Section-III of the Bidding Documents.

4. Bidder's Litigation History

Bidders are required to submit details of all litigation, arbitration and other claims whether pending, threatened or resolved in the last five years.

The Employer may disqualify bidder in the event that the total amount of pending or threatened litigation, arbitration or other claims represents fifty percent (50%) of the Bidder's net worth. Details in this regard should be submitted in the prescribed Form QF-9 given in Appendix-M of Section-III of Bidding Document.

Construction Experience and Financial Capability of sub-contractors, subsidiaries or parent/sister/affiliate companies shall not be considered for qualification of the Bidder.

The Qualification of the Bidders will be based on meeting the pass/fail criteria as demonstrated by the Bidders' responses in the respective Appendices.

The above stated requirements are the minimum and the Employer reserves the right to request for any additional information. The Employer also reserves the right to reject the proposal of any Bidder, if in the opinion of the Employer the qualification details are incomplete, ambiguous or the Bidder is found not qualified to satisfactorily perform the Contract.

The above stated Appendices should be completed as per prescribed format and

	submitted along with required attachments. The missing or incomplete information/documents may render the bid substantially non-responsive. In this regard, the Employer does not have an obligation to request any document/certificates.
IB 4.1	Add the following at the end of sub-clause 4.1: Two or more firms partially or wholly owned or directed by common individuals, regardless of the extent of their shares or interest with each other shall not be eligible to bid or compete for the same tender. Only one such firm shall be eligible to bid for a tender. However, such firms may form a joint venture to bid as one venture.
IB 6.1	The following para is added at the end of clause IB 6.1: The Bidder shall inspect the site, examine and obtain all information required and satisfy himself regarding matters and things such as access to site, communication, transport, right of way, the type and number of equipment and facilities required for the satisfactory completion of work, the quantity of various sections of the work, the availability of local labor, availability and rates of materials, local working conditions, uncertainties of weather, obstructions and hindrances that may arise etc., which may affect the work or cost thereof, before submission of his bid. In conducting the site visit, the Bidder shall familiarize itself with site-specific environmental conditions, occupational health and safety risks, live substation hazards, and potential impacts on nearby communities. Ignorance of site conditions shall not be accepted by the Employer as basis for any claim for compensation. The submission of a bid by the bidder will be construed as evidence that such an examination was made and any later claims/disputes in regard to rates quoted shall not be entertained or considered by the Employer.
IB 7.2	The following para is added at the end of clause IB 7.2: The Bidders should ensure that they have received the Bidding Documents including Addenda (if any) complete in all respects. The Employer accepts no responsibility for any Bidder lacking a complete set of Bidding Documents including Addenda (if any).
IB 8.1	The Sub-Clause 8.1 is amended as follows: “Any prospective bidder requiring any clarification (s) in respect of the Bidding Documents may notify the Employer in writing at the Employer’s address indicated in the Invitation for Bids not later than 14 days prior to date fixed for submission of Bids. The Employer will respond to any request for clarification not later than 7 days prior to the deadline for submission of bids. Copies of the Employer’s response will be forwarded to all purchasers of the Bidding Documents, including a description of the enquiry but without identifying its source. Further, the mere request for clarification from the bidders shall not be a ground for seeking extension in the deadline for submission of Bids.”
IB 10.1	The bid with all accompanying documents and all communications in relation to or concerning the bidding Process shall be in English language and strictly on the

	forms provided in the bidding Documents. In case any of these Documents is in another language, it must be accompanied by an accurate translation of the relevant passages in English, in which case, for all purposes of interpretation of the bid, the translation in English shall prevail. Any portions of Bids that are not in English may not be evaluated. Failure to comply with this may disqualify a bid.
IB 11.1	Documents Comprising the Bid For Each Lot, The Bid submitted by the Bidder shall be prepared in two (02) separate envelopes, one containing the “Technical Bid” and the other containing “Price Bid” comprising the following documents in the respective envelope: I. Technical Bid a) Duly filled-in Form of Technical Bid (Annexure-A) with following Appendices to Bid: i) Appendix-A to Bid Special Stipulations ii) Appendix-B to Bid Bill of Quantities iii) Appendix-C to Bid Proposed Construction Schedule iv) Appendix-D to Bid Method of Performing the Work v) Appendix-E to Bid List of Major Equipment-Related Items vi) Appendix-F to Bid Construction Camp and Housing Facilities vii) Appendix-G to Bid List of Sub-Contractors viii) Appendix-H to Bid Organizational Chart of the Supervisory Staff and Labor ix) Appendix-I to Bid Deviations x) Appendix-P to Bid Integrity Pact xi) Appendix-K to Bid Bidder’s Qualification Forms xii) Appendix-L to Bid Bidder’s plan to comply with the project safeguards requirement xiii) Appendix-M to Bid Bidder’s Contract Management Plan xiv) Appendix-N to Bid Bidder’s Environmental Management Plan xv) Bid Security to be furnished in accordance with Clause IB 15.1 xvi) Appendix-Q to Bid Duly Signed ADB Integrity Covenant b) Undertaking by the Bidder in respect of submission of required Bid Security as per Appendix-O to Bid; c) PEC License pursuant to Sub Clause 3.1(i); and d) Written Power of Attorney, duly notarized, authorizing the signatory of the bid to act for and on behalf of the Bidder e) Copies of Original Documents defining the constitution or legal status, place of registration and principal place of business of the bidder and JV partners; f) An affidavit that the Bidder has not been black listed pursuant to Sub-Clause

	3.1(a)(iv); g) An Undertaking that the Bidder has read and accepts NTDC's SOP for Blacklisting of Contractors pursuant to Sub-Clause 3.1(a)(iv); II. Price Bid a) Duly filled-in Form of Price Bid (Annexure-B) with following Appendices to Bid: i) Appendix-B to Bid Bill of Quantities b) Bid Security; and Any other document required to be submitted in accordance with these Bidding Documents.
IB 11.1(b)	To be qualified for award, Bidders shall provide satisfactory evidence to the Employer of their capability and adequacy of resources to carry out the contract effectively.
IB 11.1 (c)	The bidder must demonstrate that it has the personnel for the key positions that meet the following requirements using format given in Appendix B: • Civil Engineers 10 years of general work experience with 05 years specific to project • Electrical Engineers 10 years of general work experience with 05 years specific to project
IB 11.1(d)	The following is hereby added The Bidder shall submit: (a) an outline Environmental, Health and Safety (EHS) Management Plan; (b) an undertaking to comply with applicable labor laws and ADB Core Labor Standards; and (c) a Worker Code of Conduct addressing occupational safety and GBV/SEA prevention
IB 11.2	Following is added at the end of Sub-Clause IB.11.2: “(f) The maximum J.V. partners shall not be more than three (03).”
IB 12.2	These price schedules forms must be completed without any alterations to its format and no substitutes shall be accepted. All blank spaces shall be filled in with the information requested.
IB 13	Clause IB.13 is substituted with the following: “The unit rates and prices shall be quoted by the Bidder entirely in Pak Rupees. All payments under the contract shall be made in Pak Rupees only. Bidders expecting to incur expenditures in currency(ies) other than Pak Rupees shall manage foreign currency(ies) at their own arrangement. The exchange risk in this regard, if any, shall be deemed to be included in unit rates and prices quoted by the Bidder.”
IB 14.1	The period for Bid validity shall be minimum (90) days after the date of Bid opening.

IB 15.1	The amount of Bid Security shall not be less than 2% of total Bid amount.
IB 15.2	For each Lot, Sub-Clause IB.15.2 is substituted with the following: “The Bid Security shall be, at the option of the Bidder, in the form of Deposit at Call or a Guarantee issued by a Scheduled Bank in Pakistan in favor of the “EXECUTIVE ENGINEER (S&I) Division EHV-II NGC Rahim Yar Khan” on the prescribed Form annexed to these Documents valid for a period 28 days beyond the Bid Validity date. The Bid Security of Joint Venture shall be in the name of Joint Venture submitting the Bid.
IB 15.6	The following is added at the end of Sub-Clause IB.15.6: “(d) If the Bidder is found involved in corrupt and fraudulent practices.”
IB 17.1	Pre-bid meeting will take place on 19.08.2026 at 11:30 Hrs
IB 19.2 (a)	Employer's address for the purpose of Bid security submission: Name: National Grid Company (NGC) of Pakistan Address: Executive Engineer EHV-II S&I Division NGC 132 KV Grid Station Shahbazpur Road Rahim Yar Khan
IB 19.2 (b)	<u>ADDITION OF 02 NOS. 220KV LINE BAYS AT EXISTING 220/132KV GRID STATION DAHARKI</u> The identification number of the NCB is XEN-S&I-EHV-II-RYK-01-2026-27
IB 19.2 (c)	For each Lot, Para (c) of Sub-Clause 19.2 is substituted by the following: The outer envelopes and the inner envelopes containing the Bid shall bear a warning not to open before the time and date for the opening of Bids, in accordance with IB 23.1.
IB 20.1 (a)	Deadline for Submission of bid on EPADs: Date: 24.08.2026 before 11:00 HRS Deadline for Submission of bid Security: Date: 24.08.2026 11:00 HRS Address: Executive Engineer EHV-II S&I Division NGC 132 KV Grid Station Shahbazpur Road Rahim Yar Khan

IB 20.1 (c)	The delivery of the bid will be on EPADS, only.
IB 23.1 (a)	The Employer shall open the Technical Bids on EPAD, on the date, and time specified herein in the presence of Bidder's designated representatives who choose to attend. The Bidders' representatives who are present shall sign a register evidencing their attendance. Venue: Executive Engineer EHV-II S&I Division NGC 132 KV Grid Station Shahbazpur Road Rahim Yar Khan Telephone No. +92-3357401960 Date: 24.08.2026 at 11: 30 HRS on EPADs The Price Bids will remain unopened until the time of opening of the Price Bids. The date, time, and location of the opening of Price Bids will be on EPADs. If the Price Bid is submitted through any other mean instead of EPADs, the Employer shall reject the entire Bid and record at the time of opening of the Technical Bids.
23.12	The Employer shall prepare a record of the opening of Price Bids that shall include, as a minimum: the name of the Bidder, the Bid Price any discounts, cross discounts, any alternative offers and presence of Bid Security. A copy of the record shall be distributed to all Bidders present at the time of Price Bid opening.
IB 24.2	Add the following new Sub Clause after IB 24.1: 24.2 Bidders and their respective agents, suppliers, sub-contractors, representatives and anyone else on behalf of the bidder will not communicate or attempt to communicate directly or indirectly with the Employer, including any employees, directors, officers, agents or representatives of any of them during any part of the Competitive Bidding Process, except as expressly directed or permitted by the Employer. Bidders will also not engage in any form of political or other lobbying whatsoever with respect to their Bids, or otherwise attempt to influence the outcome of the Competitive Bidding Process. In the event of any such communications or lobbying, Employer may at any time reject any Bid by that Bidder without further consideration.
IB 25.1	Add the following at the end of Sub-Clause 25.1: The Employer may, at his discretion, ask any Bidder for confirmation/submission of missing information to clarify its Bid. However, the Employer does not have an obligation to request any additional information or clarification with respect to missing or deficient information in a Bid. Any clarification submitted by a Bidder that is not in response to a request by the Employer shall not be considered.

IB 25.2	Add the following new Sub-Clause: If a Bidder does not provide clarifications of its Bid by the date and time set in the Employer's request for clarification, its Bid may be rejected.
IB 26.1	i. The Employer may refuse to consider, remove from the evaluation process entirely and to reject out right any Bid that the Employer determines is materially incomplete, obscure or irregular, that contains exceptions or variations not acceptable to the Employer or that omits any material information required to be submitted by the bidding Documents. ii. The evaluation of various experience criteria shall be done on the basis of certificates (issued by Order Placing Authority clearly indicating the date of issue) submitted by the bidder for which responsibility to furnish necessary documentary proof rests on participating Bidder.
IB 26.2	Sub-Clause 26.2 is substituted by the following: "A substantially responsive Bid is one which (i) meets the eligibility criteria; (ii) has been properly signed; (iii) meets the qualification criteria delineated at Sub-Clause IB.3 hereof; and (iv) conforms to all the terms, conditions and specifications of the Bidding Documents, without material deviation or reservation. (v) is accompanied by the required Bid Security; A material deviation or reservation is one (i) which affect in any substantial way the scope, quality or performance of the Works; (ii) which limits in any substantial way, inconsistent with the Bidding Documents, the Employer's rights or the Bidder's obligations under the Contract; or (iii) adoption/rectification whereof would affect unfairly the competitive position of other Bidders presenting substantially responsive bids. Any minor informality or non-conformity or irregularity in a Bid which does not constitute a material deviation may be waived by the Employer, provided such waiver does not prejudice or affect the relative ranking of any Bidder."
IB 26.4	Following Sub-Clauses are added at the end of Sub-Clause 26.3: The Employer may reject any Bid as non-responsive if found materially incomplete, obscure, irregular or omits any material information required to be submitted by the Bidding Documents.
IB 27.3	Following Sub Clause is added after Sub Clause 27.2: If as a result of arithmetic correction, the Bid Price is increased substantially, the Bidder may be asked to increase the amount of its Bid Security accordingly by submitting its amendment within fifteen (15) days from issuing date of such notification. If the Bidder fails to provide the requisite amendment of the Bid Security within the stipulated period, his Bid will be held substantially non-responsive and will be rejected.

IB 28.1	The Employer will evaluate the bids, including all clarifications, additional information, modifications and negotiated changes, by applying the Eligibility and Qualification Criteria. Without limiting the particular criteria, the Employer may take into account the following in the Evaluation of bids: i. The quality of a bidder's performance on previous contracts with Employer or others; ii. Anticipated or ongoing claims with or in connection with a bidder; iii. Any security or safety concerns which Employer may have in respect of a bidder or its facilities, subcontractors or suppliers; iv. The results of any interview with a bidder or supplied references; or v. Any knowledge of or experience with a bidder or its principals, directions, officers and employees. The Employer may independently verify any information (including conducting credit, reference and other checks with respect to a bidder) and consider such findings in its evaluation. Employer is not required to inform bidders of how bids were ranked in the evaluation process.
IB 28.4	The amount of the increased performance security shall be decided at the sole discretion of the Employer, which shall be final, binding and conclusive on the bidder. If the price analysis is found unsatisfactory then the Employer may reject such bid.
IB 28.5	Following new Sub Clause is added after IB 28.4: The Employer will evaluate the Bids, including all clarifications, additional information, modifications and negotiated changes, by applying the Eligibility and Qualification Criteria. Without limiting the particular criteria, the Employer may take into account the following in the Evaluation of Bids: i. Non-performance by a Bidder on previous contracts with Employer or others; ii. The quality of a Bidder's performance on previous contracts with Employer or others; iii. Anticipated or ongoing claims with or in connection with a Bidder; iv. Any security of safety concerns which Employer may have in respect of a Bidder or its facilities, subcontractors or suppliers; v. The results of any interview with a Bidder or supplied references; or vi. Any knowledge of or experience with a Bidder or its principals, directions, officers and employees. The Employer may independently verify any information (including conducting credit, reference and other checks with respect to a Bidder) and consider such findings in its evaluation. Employer is not required to inform Bidders of how Bids were ranked in the

	evaluation process.
IB 29.3	Following text is added at the end of Sub Clause 29.2 The Employer reserves the right to assess the capacity and capability of the Bidder, to successfully execute the scope of work covered under the Bidding Documents within stipulated completion period. This assessment may inter alia include for (i) document verification; (ii) details of work executed, work in hand, anticipated in future; (iii) details of tools & plant; (iv) availability of requisite key personnel (v) financial resources; (vi) details of quality system in place; (vii) past experience and performance; (viii) customer feedback (ix) Bank's feedback etc .
IB 30.1	The Employer reserves the right to reject any bid on the following accounts, apart from those mentioned in the bidding documents: i. Bid is not received by the due date and time specified. ii. Bid is not accompanied by Bid security as specified in the document; Bid security is inadequate; Bid guarantee is not in the specified format. iii. Bid does not cover the complete scope of work. iv. Bid does not contain all required particulars as per Schedules & Forms prescribed in the bidding documents. v. Deviations, conditionality or reservations have been introduced to any part of the bidding documents which may not be acceptable to the Employer in its sole discretion. vi. Bidder does not respond promptly and thoroughly to the request for supplementary information required for the evaluation of his Bid. vii. Bid does not meet minimum acceptable standards of completeness, consistency and detail. viii. Bid received from any Black listed Firm / Contractor. If at any time it is found that a material misrepresentation of facts is made or uncovered; the information submitted by the bidder concerning his qualification was false and materially inaccurate or incomplete. If the bidder is the Lead Member of a consortium, then the entire consortium may be disqualified/ rejected.
IB 32.1	For each Lot, The Bidder shall furnish an unconditional Performance Security, equal to ten percent (10%) of the total Contract Price in the form prescribed in the conditions of Contract.
IB 33	Text of Clause IB.33 is deleted and substituted as follows: Within Seven (07) days from the date of furnishing of acceptable Performance Security under the Conditions of Contract, the successful bidder shall depute its representative duly authorized for formal signing of the Contract Agreement, Form of which is provided in the Bidding Documents.

**FORMAT FOR POWER OF ATTORNEY FOR SIGNING OF BID
POWER OF ATTORNEY**

Know all men by these presents, we _____(name and address of the registered office of the Bidder) do hereby constitute, appoint and authorize Mr. / Ms. _____R/o _____(name and address of residence) who is presently employed with us and holding the position of _____, as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to the bid of the (please state the name and address of the bidder) for Bidding Document No. **XEN-S&I-EHV-II-RYK-01-2026-27**

ADDITION OF 02 NOS. 220KV LINE BAYS AT EXISTING 220/132KV GRID STATION DAHARKI

(the “tender”), including signing and submission of all documents and providing information / responses to National Grid Company of Pakistan (NGC), representing us in all matters in connection with our bid for the said tender.

We hereby agree to ratify all acts, deeds and things done by our said attorney pursuant to this Power of Attorney and agree that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For
(Signature)
(Name, Title, Email ID and Address)

Accepted
.....(Signature)
(Name, Title, Email ID and Address of the Attorney)

ACKNOWLEDGMENT

Before me, a Notary Public for and in the city of _____, this _____ of August 2026 personally came and appeared:

NAME _____	IDENTIFICATION DOCUMENT _____
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Known to me to be the same person/s who executed the foregoing Special Power of Attorney in favor of _____, and acknowledged to me the same is/are his/her/their free and voluntary act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my notarial seal, the date and place above written.

NOTARY PUBLIC

A. FORM OF UNDERTAKING BY THE JOINT VENTURE PARTNERS

(On Company's Letter Head)

THIS JOINT DEED OF UNDERTAKING executed on this..... day of Two Thousand andby..... a company incorporated under the laws of and having its Registered Office at (hereinafter called the "Party No.1" which expression shall include its successors, executors and permitted assigns) and M/s.....a company incorporated under the laws ofand having its Registered Office at..... (hereinafter called the "Party No.2" which expression shall include its successors, executors and permitted assigns) and M/s... .. a Company incorporated under the laws of.....and having its Registered Office at..... (hereinafter called the "Party No.3" which expression shall include its successors, executors and permitted assigns) for the purpose of making a bid and entering into a contract [hereinafter called the "Contract" {in case of award)] against the Identification No.....for _____ associated with _____ of (hereinafter called the "**Employer**").

WHEREAS the Party No.1, Party No.2 and Party No.3 have entered into an Agreement dated AND WHEREAS the Employer invited bids for the design, manufacture, Supply of Equipment Materials stipulated in the bidding documents under _____ (Lot #) _____ associated with _____.

AND WHEREAS Clause 2, Section-ITB and 'Qualification & Evaluation Requirement of the Bidder'(clause 13, 24 & 26 of ITB), and technical provisions forming part of the bidding documents, inter-alia, stipulates that an Undertaking of two or more qualified partners, meeting the requirements of 'Qualification & Evaluation Requirement of the Bidder', as applicable may bid, provided, the Joint Venture fulfills all other requirements under Clause 2, 13, 24 & 26 of ITB and in such a case, the Letter of Bids (Technical & Price Bid Form) shall be signed by the Partner –In Charge so as to legally bind all the Partners of the Joint Venture, who will be jointly and severally liable to perform the Contract and all obligations hereunder.

The above clause further states that this Undertaking shall be attached to the bid and the Contract performance guarantee will be as per the format enclosed with the bidding document without any restrictions or liability for either party.

AND WHEREAS the bid is being submitted to the Employer vide proposal No.....dated..... by Party No.1 based on this Undertaking between all the parties; under these presents and the bid in accordance with the requirements of Clause 2, 13, 24 & 26 (Section-ITB) has been signed by all the parties.

NOW THIS UNDERTAKING WITNESSETH AS UNDER:

In consideration of the above premises and agreements all the parties of this Deed of Undertaking do hereby declare and undertake:

1. In requirement of the award of the Contract by the Employer to the Joint Venture Partners, we, the Parties do hereby undertake that M/s..... the Party No.1, shall act as Lead Partner and further declare and confirm that we the parties to the Joint Venture shall jointly and severally be bound unto the Employer for the successful performance of the Contract and shall be fully responsible for the design, manufacture, Supply, and successful performance of the equipment in accordance with the Contract:
2. In case of any breach or default of the said Contract by any of the parties to the Joint Venture, the party(s) do hereby undertake to be fully responsible for the successful performance of the Contract and to carry out all the obligations and responsibilities under the Contract in accordance with the requirements of the Contract.
3. Further, if the Employer suffers any loss or damage on account of any breach in the Contract or any shortfall in the performance of the equipment in meeting the performances guaranteed as per the specification in terms of the Contract, the Party(s) of these presents undertake to promptly make good such loss or damages caused to the Employer, on its demand without any demur. It shall not be necessary or obligatory for the Employer to proceed against Lead Partner to these presents before proceeding against or dealing with the other Party(s), the Employer can proceed against any of the parties who shall be jointly and severally liable for the performance and all other liabilities/obligations under the Contract to the Employer.
4. The financial liability of the Parties of this Deed of Undertaking to the Employer, with respect to any of the claims rising out of the performance or non-performance of the obligations set forth in this Deed of Undertaking, read in conjunction with the relevant conditions of the Contract shall, however not be limited in any way so as to restrict or limit the liabilities or obligations of any of the Parties of this Deed of Undertaking.
5. It is expressly understood and agreed between the Parties to this Undertaking that the responsibilities and obligations of each of the Parties shall be as delineated in Annexure attached with this undertaking. It is further undertaken by the parties that the above sharing of responsibilities and obligations shall not in any way be a limitation of joint and several responsibilities of the Parties under the Contract.
6. It is also understood that this Undertaking is provided for the purposes of undertaking joint and several liabilities of the partners to the Joint Venture for submission of the bid and performance of the Contract if awarded and that this Undertaking shall not be deemed to give rise to any additional liabilities or obligations, in any manner or any law, on any of the Parties to this Undertaking or on the Joint Venture, other than the express provisions of the Contract.
7. This Undertaking shall be construed and interpreted in accordance with the provisions of the Contract.

8. In case of an award of a Contract, we the parties to this Deed of Undertaking do hereby agree that we shall be jointly and severally responsible for furnishing a Contract performance security from a bank in favor of the Employer in the currency/currencies of the Contract.
9. It is further agreed that this Deed of Undertaking shall be irrevocable and shall form an integral part of the bid and shall continue to be enforceable till the Employer discharges the same or upon the completion of the Contract in accordance with its provisions, whichever is earlier. It shall be effective from the date first mentioned above for all purposes and intents.

IN WITNESS WHEREOF, the Parties to this Deed of Undertaking have through their authorized representatives executed these presents and affixed Common Seals of their companies, on the day, month and year first mentioned above.

Common Seal of
has been affixed in my/ our
presence pursuant to Board of
Director's Resolution dated

For Lead Partner (Party No.-1)
For and on behalf of M/s
.....

Name

Designation

Signature

(Signature of the authorized
representative)

WITNESS :

I.

II.

Common Seal of
has been affixed in my/ our
presence pursuant to Board of
Director's Resolution dated

For Party No.-2
For and on behalf of M/s.....

Name

(Signature of the authorized
representative)

Designation

Signature

WITNESS:

I.

II.

Common Seal of
has been affixed in my/ our
presence pursuant to Board of
Director's Resolution dated

For Party No.-3
For and on behalf of M/s.
.....

Name

Designation

Signature

(Signature of the authorized
representative)

WITNESS:

I.

II.

Notes:

1. In the event that the successful Bidder is a joint venture formed of two or more companies, the Employer requires that the parties to the joint venture accept joint and several liabilities for all obligations under the Contract.
2. The maximum number of J.V. partners is three (3).

B. FORM OF LETTER OF INTENT BY JV PARTNERS TO ENTER INTO JV AGREEMENT

THIS LETTER OF INTENT signed on this..... day of..... Two Thousand andby..... a company incorporated under the laws of.....and having its Registered Office at(hereinafter called the "Party No.1" which expression shall include its successors, executors and permitted assigns) and M/s...a company incorporated under the laws of.....and having its Registered Office at..... (hereinafter called the "Party No.2" which expression shall include its successors, executors and permitted assigns) and M/s... .. a Company incorporated under the laws of..... and having its Registered Office at..... (hereinafter called the "Party No.3" which expression shall include its successors, executors and permitted assigns) for the purpose of making a bid and entering into a contract [hereinafter called the "Contract" {in case of award)] against the Specification No..... for associated with of (hereinafter called the "**Employer**").

WHEREAS the Party No.1, Party No.2 and Party No.3 intend to enter into a Joint Venture Agreement

AND WHEREAS the Employer invited bids as per the above-mentioned Specification for the design, manufacture, Supply of Equipment Materials stipulated in the bidding documents under (Lot #) associated with .

AND WHEREAS Clause 2, Section-ITB and 'Qualification & Evaluation Requirement of the Bidder'(clause 13, 24 & 26 of ITB), and technical provisions forming part of the bidding documents, inter-alia, stipulates that two or more qualified partners, meeting the requirements of Clause 2, Section-ITB and 'Qualification & Evaluation Requirement of the Bidder'(clause 13, 24 & 26 of ITB), as applicable may bid, provided, they submit a Letter of Intent to enter into Joint Venture Agreement and the Joint Venture Partners fulfill all other requirements under Clause 2, Section-ITB and 'Qualification & Evaluation Requirement of the Bidder'(clause 13, 24 & 26 of ITB), and technical provisions forming part of the bidding documents and in such a case, the Letter of Bid (Technical and Price Bid Form) shall be signed by all the proposed partners so as to legally bind all the Partners of the Joint Venture, who will be jointly and severally liable to perform the Contract by entering into Joint Venture Agreement as per proforma specified in this Section IV. Bidding Forms of the Bidding Documents which will be legally binding on all partners and all obligations hereunder.

The above clause further states that this Letter of Intent shall be attached to the bid and the Contract performance guarantee will be as per the format enclosed with the bidding document without any restrictions or liability for either party.

AND WHEREAS the bid is being submitted to the Employer vide proposal No.....dated..... by Party No.1 based on this Letter of Intent between all the parties; under these presents and the bid in accordance with the requirements of Clause 4.1, Section-ITB and 'Qualification Requirement of the Bidder', Section-Evaluation and Qualification Criteria, has been signed by all the parties.

NOW THIS UNDERTAKING WITNESSETH AS UNDER:

In consideration of the above premises and agreements all the parties of this Letter of Intent do hereby declare and undertake:

1. In requirement of the award of the Contract by the Employer to the Joint Venture Partners, we, the Parties do hereby undertake that M/s..... the Party No.1, shall act as Lead Partner and further declare and confirm that we the parties to the Joint Venture shall jointly and severally be bound unto the Employer for the successful performance of the Contract and shall be fully responsible for the design, manufacture, Supply, and successful performance of the equipment in accordance with the Contract for which we shall enter into Joint Venture Agreement as per proforma specified in this Section IV. Bidding Forms of the Bidding Documents which will be legally binding on all partners:
2. If the Contract is awarded to Joint Venture, then in case of any breach or default of the said Contract by any of the parties to the Joint Venture, the party(s) will be fully responsible for the successful performance of the Contract and to carry out all the obligations and responsibilities under the Contract in accordance with the requirements of the Contract.
3. Further, if the Employer suffers any loss or damage on account of any breach in the Contract or any shortfall in the performance of the equipment in meeting the performances guaranteed as per the specification in terms of the Contract, the Party(s) of these presents will promptly make good such loss or damages caused to the Employer, on its demand without any demur. It shall not be necessary or obligatory for the Employer to proceed against Lead Partner to these presents before proceeding against or dealing with the other Party(s), the Employer can proceed against any of the parties who shall be jointly and severally liable for the performance and all other liabilities/obligations under the Contract to the Employer.
4. The financial liability of the Parties of the Deed of Undertaking to the Employer in the event of award of Contract on the Joint Venture, with respect to any of the claims arising out of the performance or non-performance of the obligations set forth in the Deed of Undertaking, read in conjunction with the relevant conditions of the Contract shall, however not be limited in any way so as to restrict or limit the liabilities or obligations of any of the Parties of the Deed of Undertaking.
5. It is expressly understood and agreed between the Parties to this Letter of Intent that the responsibilities and obligations of each of the Parties shall be as delineated in Annexure

attached with this Letter of Intent. It is further undertaken by the parties that the above sharing of responsibilities and obligations shall not in any way be a limitation of joint and several responsibilities of the Parties under the Contract in the event of award on Joint Venture.

6. It is also understood that this Letter of Intent is provided for the purposes of undertaking joint and several liabilities of the partners to the Joint Venture for submission of the bid and performance of the Contract if awarded and that this Letter of Intent shall not be deemed to give rise to any additional liabilities or obligations, in any manner or any law, on any of the Parties to this Letter of Intent or on the Joint Venture, other than the express provisions of the Contract.
7. This Letter of Intent shall be construed and interpreted in accordance with the provisions of the Contract.
8. In case of an award of a Contract, we the parties to this Letter of Intent do hereby agree that we shall enter into Joint Venture Agreement as per proforma specified in this Section IV. Bidding Forms of the Bidding Documents which will be legally binding on all partners and we shall be jointly and severally responsible for furnishing a Contract performance security from a bank in favor of the Employer in the currency/currencies of the Contract.
9. It is further agreed that this Letter of Intent shall be irrevocable and shall form an integral part of the bid. It shall be effective from the date first mentioned above for all purposes and intents.

IN WITNESS WHEREOF, the Parties to this Letter of Intent have through their authorized representatives executed these presents and affixed Common Seals of their companies, on the day, month and year first mentioned above.

Common Seal of
has been affixed in my/ our
presence pursuant to Board of
Director's Resolution dated

For Lead Partner (Party No.-1)
For and on behalf of M/s
.....

Name
Designation

Signature

(Signature of the authorized
representative)

WITNESS:

I.

II.

Common Seal of
has been affixed in my/ our
presence pursuant to Board of
Director's Resolution dated

Name

Designation

Signature

WITNESS:

I.

II.

Common Seal of
has been affixed in my/ our
presence pursuant to Board of
Director's Resolution dated

Name

Designation

Signature

WITNESS:

I.

II.

For Party No.-2
For and on behalf of M/s.....

(Signature of the authorized
representative)

For Party No.-3
For and on behalf of M/s.
.....

(Signature of the authorized
representative)

Notes:

1. In the event that the successful Bidder is a joint venture formed of two or more companies, the Employer requires that the parties to the joint venture accept joint and several liabilities for all obligations under the Contract.
2. The maximum number of J.V. partners is three (3).

XEN-S&I-EHV-II-RYK-01-2026-27		
FORM OF BID AND APPENDICES TO BID		
	Form of Bid	
	Bill of Quantities (Preamble)	
	Appendix-A to Bid : Special Stipulations	
	Appendix-B to Bid : Bill of Quantities	
	Appendix-C to Bid : Personnel	
	Appendix-D to Bid : Proposed Construction Schedule	
	Appendix-E to Bid : Method of Performing the Work	
	Appendix-F to Bid : List of Major Equipment – Related Items	
	Appendix-G to Bid : Construction Camp and Housing Facilities	
	Appendix-H to Bid : List of Subcontractors	
	Appendix-I to Bid : Schedules of deviations	
	Appendix-J to Bid : Organization Chart of the Supervisory Staff and Labor	
	Appendix-K to Bid : Bidder’s Qualification Forms	
	QF-1: General Information	
	QF-2: Construction Experience	
	QF-3: Performance Certificate	
	QF-4: Current Contract Commitments	
	QF-5: Financial Data	
	QF-6: Annual Turnover Data	
	QF-7: Financial Resources	
	QF-8: Bank Certificate	
	QF-9: Pending Litigation	
	Appendix-L to Bid Bidder’s Plan for Project Safeguard Requirements	
	Appendix-M to Bid: Bidder’s Contract Management Plan	
	Appendix-N to Bid Bidder’s Environmental Management Plan	
	Appendix-O to Bid : Integrity Pact	
	Appendix-P to Bid : UNDERTAKING OF BID SECURITY	
	Appendix Q to Bid ADB Integrity Covenant	
FORMS		
	BID SECURITY	
	PERFORMANCE SECURITY	
	CONTRACT AGREEMENT	
	MOBILIZATION ADVANCE GUARANTEE/BOND	

SECTION-III

FORM OF BID AND APPENDICES TO BID

FORM OF TECHNICAL BID

Bid Reference No.XEN-S&I-EHV-II-RYK-01-2026 -27

NAME OF PROJECT:

ADDITION OF 02 NOS. 220KV LINE BAYS AT EXISTING 220/132KV GRID STATION DAHARKI

To:

Executive Engineer EHV-II
S&I Division NGC 132 KV Grid
Station Shahbazpur Road Rahim Yar Khan
Telephone No. 068-9330007
We, the undersigned, declare that:

- (a) We have examined the Bidding Documents including Instructions to Bidders, Bidding Data, Conditions of Contract, Contract Data, Specifications, Drawings, if any, Schedule of Prices and Addenda Nos. _____ in accordance with Instructions to Bidders (IB) 9 for the execution of the above-named Works, we, the undersigned, being a company doing business under the name of and address _____ and being duly incorporated under the laws of Pakistan hereby offer to execute and complete such Works and remedy any defects therein in conformity with the said Documents including Addenda.
- (b) Our Bid consisting of the Technical Bid and the Price Bid shall be valid for a period of 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;
- (c) As security for due performance of the under takings and obligations of our bid, we submit here with a Bid security, in the amount specified in Bidding Data Sheet, which is valid (at least) 28 days beyond validity of Bid itself.
- (d) We undertake, if our Bid is accepted, to commence the Works and to deliver and complete the Works comprised in the Contract within the time(s) stated in Contract Data.
- (e) We are not participating, as a Bidder or as a subcontractor, in more than one bid in this bidding process, other than alternative offers submitted in accordance with IB16 (as applicable).

- (f) We agree to permit Employer or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors. This permission is extended for verification of any information provided in our Technical Bid which comprises all documents enclosed herewith in accordance with IB.11.1 of the Bidding Data Sheet.

Name.....

In the capacity
of.....

Signed.....

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

Date.....

Address.....
...

Email.....

Form of Price Bid

Bid Reference No.

XEN-EHV-II-S&I-RYK-01-2026-27

NAME OF PROJECT:

ADDITION OF 02 NOS. 220KV LINE BAYS AT EXISTING 220/132KV GRID STATION DAHARKI

To:

Executive Engineer EHV-II
S&I Division NGC 132 KV Grid
Station Shahbazpur Road Rahim Yar Khan
Telephone No. 068-9330007
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 (IB);
- (b) The total price of our Bid, excluding any discounts offered including Addenda thereto for the Total Bid Price of Rupees (_____)

or

such other sum as may be ascertained in accordance with the said Documents.

- (c) The discounts offered and the methodology for their application is:
.....
- (d) Our Bid shall be valid for a period of 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;
- (e) If our Bid is accepted, we commit to obtain a performance security in accordance with the Bidding Documents;
- (f) 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 and we do hereby declare that the Bid is made without any collusion, comparison of figures or arrangement with any other bidder for the Works.
- (g) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.

- (h) We agree to permit Employer or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors. This permission is extended for verification of any information provided in our Technical Bid which comprises all documents enclosed herewith in accordance with IB.11.1 of the Bidding Data Sheet.
- (i) If awarded the contract, the person named below shall act as Contractor's Representative.
- (j) We do hereby declare that the Bid is made without any collusion, comparison of figures or arrangement with any other person or persons making a bid for the Works.

Name.....
.....

In the capacity
of.....

Signed.....
.....

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

Date.....

Address.....
.....

Email.....
.....

Appendix-A to Bid**SPECIAL STIPULATIONS****Clause****Conditions of Contract**

1.	Law Applicable	5.1(b)	The law to be applied is the law of Islamic Republic of Pakistan.
2.	Amount of Performance Security	10.1	10% of total Contract Price stated in the Letter of Acceptance.
3.	Time for Furnishing Program	14.1	Within 15 days from the date of receipt of Letter of Acceptance.
4.	Minimum amount of third-party Insurance	23.2	Rs. 500,000 per occurrence with number of occurrences unlimited.
5.	Time for Commencement	41.1	From Engineer's Notice to commence which shall be issued within 14-days from the date of signing of contract agreement.
6.	Time for Completion	43.1, 48.2	Time of completion is 180-Days from the date of commencement or 30-days from the date of final approved shutdown whichever is later.
7.	a) Amount of Liquidated Damages	47.1	0.25% for each day of delay in completion of the Works subject to a maximum of 10% of Contract Price stated in the Letter of Acceptance.
8.	b) Amount of Bonus	47.3	Not Applicable
9.	Defects Liability Period	49.1	180 days from the effective date of Taking Over Certificate issued by the concerned GSO/AM formation.
10.	Percentage of Retention Money	60.2	10% of the amount of Interim Payment Certificate
11.	Limit of Retention Money	60.2	10% of Contract Price stated in the Letter of Acceptance.
12.	Time of Payment from delivery of Engineer's Interim Payment Certificate to the Employer.	60.10	As per NGC standard Procedure
13.	Adjustment of Price	70.1	Applicable as per bidding documents

PRICE ADJUSTMENT UNDER SUB-CLAUSE

GCC 70.1 OF GENERAL CONDITIONS OF CONTRACT

The source of indices and the weight ages or coefficients for use in the adjustment formula under Sub-Clause 70.1 shall be as follows:

Cost Element ¹	Description	Weight ages 1	Applicable Index
1	2	3	4
(i)	Fixed Portion (A)	0.30	-
(ii)	Local Labor per day Unskilled Labor (UL): Skilled Labor (L):	0.15(b) 0.10(c)	Government of Pakistan (GoP), Pakistan Bureau of Statistics (PBS) Monthly Bulletin of Statistics - Intercity Consumer Prices for unskilled labor for city -Intercity Consumer Prices for skilled labor for Sukkur city
(iii)	Cement (C): Ordinary Portland Cement (OPC) per metric ton representing all types of cement used in the Works	0.12(d)	Government of Pakistan (GoP), Pakistan Bureau of Statistics (PBS) Monthly Bulletin of Statistics - Intercity Wholesale Prices of selected commodities for Sukkur city
(iv)	Reinforcing Steel Bars (S): ½ inch dia round MS bars per metric ton representing all types and dimensions of Steel Reinforcement used in the Works	0.17(e)	Government of Pakistan (GoP), Pakistan Bureau of Statistics (PBS) Monthly Bulletin of Statistics - Intercity Wholesale Prices of Selected Commodities for Sukkur city
(v)	High Speed Diesel (HSD) per liter (D)	0.11(f)	Retail Sale Price as notified by Pakistan State Oil (PSO) Limited on its website
(vi)	Altron Premium per liter (P)	0.05 (g)	Retail Sale Price as notified by Pakistan State Oil (PSO) Limited on its website
	Total	1.00	

Notes:

1. The base cost indices Lo, Mo, Eo, etc., or prices shall be those prevailing on 28 days prior to the latest date for submission of Bids. Current (Revised) Indices Ln, Mn, En, etc or Prices, shall be those prevailing on 28 days prior to the last day of billing month to which a particular monthly statement is related.
2. Any fluctuation in the indices or prices of materials other than those given above shall not be subject to adjustment of the Contract Price.
3. The adjustment to the monthly statements in respect of changes in cost shall be determined from the following formula:-

$$P_n = A + b \frac{L_n}{L_o} + c \frac{M_n}{M_o} + d \frac{E_n}{E_o} + \dots$$

- Pn is a price adjustment factor to be applied to the amount for the payment of the work carried out in the subject month, determined in accordance with Paragraph 60.1 (a), and with Paragraphs 60.1 (b) and (e), where any variations and day work are not otherwise subject to adjustment;
- A is a constant, specified in this above table representing the nonadjustable portion in contractual payments;
- b, c, d, etc., are weight ages or coefficients representing the estimated proportion of each cost element (labour, cement and reinforcing steel etc.) in the Works or Sections thereof, net of Provisional Sums and Prime Cost; the sum of A, b, c, d, etc., shall be one.

**BILL OF QUANTITIES
(PREAMBLE)**

General

1. The Bill of Quantities shall be read in conjunction with the Conditions of Contract, Specifications and Drawings. The Schedules do not generally give a full description of the Services to be performed under each item. Bidders shall be deemed to have read the Technical Specifications and other sections of the Bidding Documents and reviewed the Drawings to ascertain the full scope of the requirements included in each item prior to filling in the rates and prices. The entered rates and prices shall be deemed to include for the full scope as aforesaid, including overheads and profit.
2. If bidders are unclear or uncertain as to the scope of any item, they shall seek clarification in accordance with IB 8 prior to submitting their bids.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. Provisional sums if 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 in accordance with Sub-Clause 58.2 of Part I, General Conditions of Contract.

Units & Abbreviations

9. Units of measurement, symbols and abbreviations expressed in the Bidding Documents shall comply with the System International Unites (SI Units).

The following abbreviations shall be used in the Price Schedules:

Abbreviation

Pakistani Rupees	PKR
Number	No.
Kilometre	km
Kilogram	kg
Linear Meter	Lin Mtr
Percent	%
Quantity	Qty

Pricing

10. Prices shall be filled in indelible ink, and any alterations necessary due to errors, etc., shall be initialed by the Bidder.
11. Bid prices shall be quoted in the manner indicated and, in the currencies, specified in the Instructions to Bidders, in the Bidding Documents. For each item, bidders shall complete each appropriate column in the respective Schedules, giving the price breakdown as indicated in the Schedules. Prices given in the Schedules against each item shall be for the scope covered by that item as detailed in Section 6 (Employer's Requirements), Technical Specifications, Drawings or elsewhere in the Bidding Documents.
12. Payments will be made to the Contractor in the currency indicated under each respective item.
13. The TOTAL for each Schedule and TOTAL of the Grand Summary shall be deemed to be the total price for executing and completing the Facilities in accordance with the Contract, whether or not each individual item has been priced.
14. When requested by the Employer for the purposes of making payments or part payments, valuing variations or evaluating claims, or for such other purposes as the Employer may reasonably require, the Contractor shall provide the Employer with a breakdown of any composite or lump sum items included in the Schedules.
15. Except as otherwise expressly provided under the Conditions of Contract, the unit rates and lump sum amounts entered in the Price Schedules will be the rates at which the Contractor will be paid, and shall be deemed to include for the full scope and all costs incurred by the Contractor in the performance of the Facilities, the provision of services including his overheads, income tax, super tax, other indirect costs, profits and costs of accepting the general risks, liabilities and obligations set forth or implied in the Contract, except for such costs which are specified as reimbursable under the Contract.

A. BOQ FOR CIVIL WORKS FOR ADDITION OF 02 NOS. 220KV LINE BAYS AT EXSITING 220/132KV GRID STATION DAHARKI.

Sr. No.	Description	Unit	Qty.	Unit Rate (PKR)	Total (PKR)
1	Earth Work				
1.1	Clearing and grubbing of the complete site area for bushes, vegetation trees, roots and weeds etc. as per Drawings, Specifications and as directed by the Engineer including dismantling of old civil works if any, disposal of debris away from site to any lead.	Lot	1		
1.2	Filling, leveling and compaction of the built-up substation area with fill material to raise the level of the area in horizontal layers of 200 mm thickness (max) compacted up to 95% modified Proctor Density as per approved Contour Plan and Specifications and as directed by the Employer representative.				
1.2.1	Using borrow fill material as per NGC Specification with compaction 95% proctor density with mechanical means with any lead and lift for raising (after clearing, grubbing of site, joint level survey will establish the backfilling quantity).	Cu.m	6,000		
1.2.2	Filling with Using material excavated from the other foundations on site with compaction 95% proctor density with mechanical means.	Cu.m	2,000		
	Total of Item No.1			Total:	-
2	220kV Equipment Foundation				
2.1	220kV Switchyard Equipment/Gantry Foundations:				
	Supply and Construction of reinforced cement concrete work for Equipment's and Gantry foundations having minimum cylinder crushing strength of 211 kg/cm ² at 28 days using SRC conforming to ASTM C-150 inclusive of excavation / cutting, dewatering (if any), lean concrete/P.C.C/blinding layer, reinforcement (Grade 60), shuttering, concreting, curing, bitumen coating (min two coats) below +_ 0 Level on all concrete surfaces, compacted backfilling, leveling/grading, slope protection (where necessary), removal of surplus earth from site area as directed by Engineer, installation of stubs / anchor bolts, capping & grouting under structure sole and in block-out etc.				
i.	220kV post insulator (PI) foundation as per specifications and drawing.	No.	19		

ii.	220kV Single Pole Circuit breakers (CB) foundations as per specifications and drawing.	Set	4		
iii.	220kV CT/CVT/CCVT/LT foundations as per specification and drawing.	No.	21		
iv.	220kV Surge Arrester (SA) foundation as per specification and drawing.	No.	6		
v.	220kV Bus/Line Isolators (ISO) foundations as per specification and drawing.	Set.	10		
vi.	220kV High level gantry foundation (18.5+4) m as per specification and drawing.	No.	8		
vii.	220kV low level gantry foundation (13+5.5+4) m as per specification and drawing.	No.	4		
viii.	220kV low level gantry foundation (13m) as per specification and drawing.	No.	4		
Total of Item No.2					-
3	Switchyard Cable Trenches:				
3.1	Providing RCC cable trenches type A, B, C and D, inclusive of precast RCC trench covers, all type of connections, slope, rain water drainage, supply & installation of tie channels/cable hangers embedded in walls etc. complete as per specification and drawing including expansion joints.				
i.	Cable Trench Type-A	Li.m	100.00		
ii.	Cable Trench Type-B	Li.m	300.00		
iii.	Cable Trench Type-C	Li.m	150.00		
iv.	Cable Trench Type-D	Li.m	120.00		
3.2	Supply and construction of cable trench crossing under transformer way and switchyard path complete in all aspects as per specification and drawing.				
i.	Culvert for trench Type-A	Li.m	10		
ii.	Culvert for trench Type-B	Li.m	20		
iii.	Culvert for trench Type-C	Li.m	10		
3.3	Supply and construction of draw pit with pumping arrangement for each draw pit individually as per specification and drawing PDW/TB-354 and its connection with cable trenches.	No.	02		
3.4	Design, Supply and Construction of PCC road 3m wide complete in all aspects as per specification and drawing No. PDW/TV-2609	Li.m	150		
3.5	Supply and laying of 230mm RCC pipes under road complete in all respects.	Li.m	250		
3.6	Supply and Installation of PVC conduit approved by Engineer for carrying miscellaneous cables from cable trenches to equipment as specified.				
i.	50mm (2inch) dia along with accessories (i.e. bends, joints)	Li.m	1000		
ii.	100mm (4inch) dia along with accessories (i.e. bends, joints)	Li.m	500		
iii.	150mm (6inch) dia along with accessories (i.e. bends, joints)	Li.m	250		
Total of Item No.3.					-

4	Gravel Work				
i.	Supply and placing of river run gravel 40 to 75mm size (in 200mm thick layer) including toe wall (if required) in switchyard area as specified and as directed by the Engineer.	cu.m	850		
Total of Item No.4					-
5	Extra BOQ Items				
i.	Excavation to any type of soil by any means.	cu.m	500		
ii.	Providing and laying Lean Concrete 140 kg/cm^2, using coarse sand and screened graded and washed aggregate, in required shape and design, including forms, molds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.)	cu.m	150		
iii.	Providing and laying RCC 210 kg/cm^2, using coarse sand and screened graded and washed aggregate, in required shape and design, including forms, molds, shuttering, lifting, compacting, curing, rendering and finishing exposed surface, complete (but excluding the cost of steel reinforcement, its fabrication and placing in position, etc.)	cu.m	150		
iv.	Providing of deformed steel bars of ASTM A-615 Grade 60 for reinforced cement concrete, including cutting, bending, laying in position, making joints and fastenings, including cost of binding wire and labour charges for binding of steel reinforcement (also includes removal of rust from bars)	Kg.	2000		
v.	Providing and laying Fair Face plain brick work 229mm (9") thick in foundations, walls etc. s per drawings and specifications in 1:4 C.M	Cu.m	125		
vi.	Providing and laying minimum 1/2" thick cement plaster in 1:4 C.M using ordinary Portland cement wherever required.	Sq.m	500		
vii.	P/F platform of 40x4 mm G.I. strip flat and bottom of G.I. tee iron 50x100x6mm fixing in position including the allied civil works complete in all respect as per Specifications and Drawing	No.	20		
Total of Item No.5					-
Total of item No.1,2,3,4&5					
Notes:					
1.	The quantities mentioned in the BOQ are estimated quantities. The actual quantities may vary depending upon detailed engineering and approved drawings. However, the unit rates for material and service quoted in the BOQ/ bid shall remain firm and final.				
2.	The drawings mentioned in BOQ are just for estimation/tender purpose. Foundation design is subjected to change as per site conditions. The offered unit rates shall be adjusted as per actual civil work quantities based on relevant BOQ items (Break up is to be provided by bidder/extra BOQ items whichever is minimum).				
3.	The breakup of unit rates for each item/works quoted in the BOQ shall be provided with the bid in accordance with the design drawings provided with the tender and the work at site shall be executed as per construction drawings provided/approved by the Engineer.				
4.	Switchyard trenches shall be provided with gradual slope for proper disposal/drainage of rain				

	water keeping in view the safety of other equipment in the Switchyard. Switchyard paths/roads shall be provided keeping in view the slope/level of switchyard, future extension and movement of cranes and its clearance from equipment/live parts.
5.	Switchyard area shall be designed in appropriate levels if applicable as per contour plan and $\pm$ zero level to be provided by NGC to minimize cutting and filling with proper provision of rain water drainage.
6.	Any other item deemed necessary by the bidder for the successful completion and smooth operation of the project and not quoted above may also be quoted separately and mentioned herewith prior to the Bid submission.
7.	Any item/sub-item and its quantity not mentioned above or not quoted separately by the bidder in his bid, shall not be paid after the award of the Contract to the successful bidder.
8.	In case of discrepancy between unit price and total price, unit price shall prevail and the payment will be made accordingly.
9.	The cost quoted for above Works shall include cost of labor and cost of all accessories/material/equipment required for successful completion and operation.
10.	This BOQ has been based on drawing provided by CE (SS Design) NGC. Any change in switchyard layout plan would result in change of scope as given above.

B. BOQ FOR ELECRICAL WORKS (INSTALLATION/ERECTION, TESTING & COMMISSIONING) FOR ADDITION OF 02 NOS. 220KV LINE BAYS AT EXSITING 220/132KV GRID STATION DAHARKI.

Sr. No.	Description	Unit	Qty.	Unit Rate (PKR)	Total (PKR)
A	220KV Equipment				
1	Circuit Breakers: Assembly and erection of three pole, 220kV 2000A, 40kA 1 Sec, SF6 Circuit Breaker with steel supporting structure, LCC and all accessories and associated work including but not limited to main dia connections using Al pipe/bundle conductor and control /power wiring/cabling with local control cubicle as per details given in specifications and drawings.	Set	4		
2	Bus & Line Isolators: Assembly and erection of three pole, 220kV, 2000A, 40kA 3 Sec, Disconnecter switch with or without earthing blades along with steel supporting structure, LCC and all accessories and associated work including but not limited to main dia connections using Al pipe/bundle conductor and control/ power wiring/cabling with local control cubicle as per details given in specifications and drawings.	Set	10		
3	Current Transformer: Assembly and erection of 220kV, single pole, 50kA 1 Sec, Current Transformer along with steel supporting structure, MK Box and all accessories and associated work including but not limited to main dia connections using Al pipe/bundle conductor as per details given in specifications and drawings.	No.	12		
4	Voltage Transformer: Assembly and erection of 220kV, single pole, CVT/CCVT along with steel supporting structure, MK and all accessories and associated work including but not limited to main dia. connections using Al pipe/bundle conductor as per details given in specifications and drawings.	No.	9		
5	Surge Arrester: Assembly and erection of 220kV, single pole, Surge Arrester along with steel supporting structure and all accessories and associated work including but not limited to main dia connections using Al pipe/bundle conductor as per details given in specifications and drawings.	No.	6		
6	Post Insulator: Assembly and erection of 220kV, single pole, Post Insulators along with steel supporting structure and all accessories and associated work including but not limited to main dia connections using Al pipe/bundle conductor as per details given in specifications and drawings	No.	19		
7	Assembly, Installation, erection, of Main Busbars and its equipment/strain bus connections using bundle conductor/Al. pipe with all accessories, associated hardware, string assemblies and jumpers complete as per specification and drawings.	Lot	1		
8	Assembly, Installation of 220kV over-head Strain Buses and equipment connection using bundle conductors with all accessories, associated hardware, string assemblies and jumpers complete as per specification and drawings.	Lot	1		

9	Assembly, Installation of over-head Shield Wire with all accessories and hardware for and supply of connectors/clamps for 220kV portion of switchyard complete as per specifications and drawings.	Lot	1		
10	Assembly and erection of Gantry Columns & Beams as mentioned below along with accessories and associated work as per drawing and. specification				
10.1	Beams				
	16m	No.	8		
	18.5m	No.	4		
10.2	Columns				
	(18.5+4) m	No.	8		
	(13+5.5+4) m	No.	4		
	13m	No.	4		
	Total of Item No. A			Total:	
B	Substation General Equipment				
1	Excavation, laying, thermite welding, filling and testing of substation underground earthing mesh for 220kV switchyard, equipment, cable trenches, indoor equipment, cable trays complete as per specifications and drawings.	Lot	1		
2	Design, supply (including but not limited to all the Cables, Distribution Boxes, Circuit Breakers, Lights, Relays, Switches, Sockets, Sensors, Fittings & Fixtures, etc. required as per specification), Installation, wiring and connections of complete switchyard lighting including all associated works as per specifications and approved drawings.	Lot	1		
3	Firefighting System: Supply and installation of CO2, DCP and Halotron extinguishers for switchyards as per prevailing NGC, NFPA and international practices:				
i	CO2 6kg Extinguisher	No.	1		
ii	Haltron, 4kg Extinguisher	No.	1		
iii	Dry Chemical Powder 6kg Extinguisher	No.	1		
iv	CO2 30kg Extinguisher Cart	No.	1		
v	DCP 30kg Extinguisher Cart	No.	1		
	Total of Item No. B			Total:	
C	Testing and Commissioning of each equipment installed in the yard and control house building as well as Complete plant/Grid station, complete in all respects as per instructions of Engineers	Lot	1		
	Total of Item No. C			Total:	
	Total of Item No. (A, B, C)			Total:	

Summary of BOQ	
FOR ADDITION OF TWO NUMBER LINE BAYS AND ASSOCIATED CIVIL WORKS AT EXISTING 220KV GRID STATION DAHARKI NGC	
Description	Total Price (Rs.)
A: - Civil Work Cost	
B: - Electrical work cost i.e. Installation/Erection, Testing & Commissioning	
Total (A+B)	
Add 15 % SST	
Grand Total inclusive of SST	

Note:

1. The quantities mentioned in BOQ are estimated quantities. The actual quantities may vary depending upon detailed engineering and approved drawings. However, the unit rates for material and service quoted in the BOQ/ bid shall remain firm and final.
2. The breakup of unit rates for each item/works quoted in the BOQ shall be provided with the bid in accordance with the design drawings provided with the tender and the work at site shall be executed as per construction drawings provided/ approved by the Employer.
3. Any other item deemed necessary by the bidder for the successful completion and smooth operation of the project and not quoted above may also be quoted separately and mentioned herewith prior to the Bid submission.
4. Any item/ sub-item and its quantity not mentioned above or not quoted separately by the bidder in his bid, shall not be paid after the award of the Contract to the successful bidder.
5. In case of discrepancy between unit price and total price, unit price shall prevail and the payment will be made accordingly.
6. The cost quoted for above Works shall include cost of labor and cost of all accessories/material/ equipment required for successful completion and operation.
7. In case of failure by the bidder to fill the price of Sales Tax in relevant column, the quoted price of the bidder will be considered inclusive of Sales Tax applicable as per Law and relevant provisions of the Bidding Documents.

Name of Bidder

Signature of Bidder

Appendix-C to Bid

Proposed Personnel

Form PER – 1: Proposed Personnel

Bidders should provide the names of suitably qualified personnel to meet the specified requirements for each of the positions listed in Section 2. The data on their experience should be supplied using the Form 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

Form PER – 2: Resume of Proposed Personnel

The Bidder shall provide all the information requested below. Fields with asterisk (*) shall be used for evaluation.

Position*		
Personnel information	Name	Date of birth
	Professional qualifications	
Present employment	Name of employer	
	Address of employer	
	Telephone	Contact (manager / personnel officer)
	Fax	E-mail
	Job title	Years with present employer

Summarize professional experience in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

From*	To*	Company, Project, Position and Relevant Technical and Management Experience*

PROPOSED CONSTRUCTION SCHEDULE

The Works shall be completed on or before the date stated in Appendix-A to Bid. The Bidder shall provide as Appendix-C to Bid, the Construction Schedule in the bar chart (CPM, PERT or any other to be specified herein) showing the sequence of work items and the period of time during which he proposes to complete each work item in such a manner that his proposed programme for completion of the whole of the Works and parts of the Works may meet Employer's completion targets in days noted below and counted from the date of signing of Contract Agreement. (Attach sheets as required for the specified form of Construction Schedule):

Note: The bidder shall also indicate the construction crews employed to achieve the completion target for the following:

Type of Crews	No. of Crew employed	Expected Progress/month/crew*
Civil Crew		
Piling Crew		
Electrical Crew		

* Mention the required time per tower of a crew to complete a certain activity e.g., foundation etc.

METHOD OF PERFORMING THE WORK

The Bidder is required to submit a narrative outlining the method of performing the Work. The narrative should indicate in detail and include but not be limited to:

1. Organization Chart indicating head office and field office personnel involved in management and supervision, engineering, equipment maintenance and purchasing.
2. Mobilization in Pakistan, the type of facilities including personnel accommodation, office accommodation, provision for maintenance and for storage, communications, security and other services to be used.
3. The method of executing the Works, the procedures for installation of equipment and machinery and transportation of equipment and materials to the site.

EQUIPMENT

Form EQ – 1: List of Major Equipment – Related Items

The Bidder will provide on Sheet 2 of this Appendix a list of all major equipment and related items, under separate heading for items owned, to be purchased or to be arranged on lease by him to carry out the Works. The information shall include make, type, capacity, and anticipated period of utilization for all equipment which shall be in sufficient detail to demonstrate fully that the equipment will meet all requirements of the Specifications.

Form EQ – 2: List of Major Equipment

Owned Purchased or Leased	Description of Unit (Make, Model, Year)	Capacity HP Rating	Condition	Present Location or Source	Date of Delivery at Site	Period of Work on Project
1	2	3	4	5	6	7
A) Civil Work a. Owned b. To be Purchased c. To be arranged on Lease						
B) Piling Work a. Owned b. To be Purchased c. To be arranged on Lease						
C) Electrical Work a. Owned b. To be Purchased c. To be arranged on Lease						

CONSTRUCTION CAMP AND HOUSING FACILITIES

The Contractor in accordance with Clause 34 of the Conditions of Contract shall provide description of his construction camp's facilities and staff housing requirements.

The Contractor shall be responsible for pumps, electrical power, water and electrical distribution systems, and sewerage system including all fittings, pipes and other items necessary for servicing the Contractor's construction camp.

The Bidder shall list or explain his plans for providing these facilities for the service of the Contract as follows:

1. Site Preparation (clearing, land preparation, etc.).
2. Provision of Services.
 - a) Power (expected power load, etc.).
 - b) Water (required amount and system proposed).
 - c) Sanitation (sewage disposal system, etc.).
3. Construction of Facilities
 - a) Contractor's Office. Workshop and Work Areas (areas required and proposed layout, type of construction of buildings, etc.).
 - b) Warehouses and Storage Areas (area required, type of construction and layout).
 - c) Housing and Staff Facilities (Plans for housing for proposed staff, layout, type of construction, etc.).
4. Construction Equipment Assembly and Preparation (detailed plans for carrying out this activity).
5. Other Items Proposed (Security services, etc.).

LIST OF SUBCONTRACTORS

I/We intend to subcontract the following parts of the Work to subcontractors. In my/our opinion, the subcontractors named hereunder are reliable and competent to perform that part of the work for which each is listed.

Enclosed are documentation outlining experience of subcontractors, the curriculum vitae and experience of their key personnel who will be assigned to the Contract, equipment to be supplied by them, size, location and type of contracts carried out in the past.

Part of Works (Give Details)	Subcontractor (With Complete Address)
1	2

DEVIATIONS

Form D1-Deviations from Contractual Conditions

Deviations if any, which the bidder has taken to the Contractual Conditions in preparation of his bid, must be listed below.

Sr. No.	Clause No. /Section No.	Deviations
---------	-------------------------	------------

Note: Attach additional sheets, if necessary.

Form D2-Deviations from Technical Conditions

Deviations if any, which the bidder has taken to the Technical Provisions in preparation of his bid, must be listed below.

Sr. No.	Clause No. /Section No.	Deviations
---------	-------------------------	------------

Note: Attach additional sheets, if necessary.

**ORGANIZATION CHART
FOR THE
SUPERVISORY STAFF AND LABOUR**

BIDDER'S QUALIFICATION FORMS

QF-1	General Information
QF-2	Construction Experience
QF-3	Performance Certificate
QF-4	Current Contract Commitments
QF-5	Financial Data
QF-6	Annual Turnover Data
QF-7	Financial Resources
QF-8	Bank Certificate
QF-9	Pending Litigation

Note: -

1. These forms shall be filled up and furnished by the Bidder and its Joint Venture partner(s), if any.
2. If necessary, additional sheets may be added to the forms. Each page of each form should be clearly marked in the right top corner as follows: Form QF1, page 1; Form QF1, page 2, etc.
3. Some forms will require attachments. Such attachments should be clearly marked as follows: Attachment 1 to Form QF1, Attachment 2 to Form QF1, etc.

Form QF-1: General Information

Bidder is requested to complete the information in this form. Nationally information of Bidders should also be provided.

1.	Name of Bidder	
2.	Head office address	
3.	Local office address (if any)	
4.	Telephone	Contract
5.	Facsimile	e-mail
6.	Place of incorporation/registration	Year of incorporation/registration
7.	Main lines of Business 1. 2. 3. 4.	Since: Since: Since: Since:

Note:

Copies of following credentials shall be attached:

- (a) Copy of incorporation/registration certificate
- (b) Organization chart
- (c) PEC registration certificate in the appropriate category

Signature and Seal of Bidder:

Form QF-2: Construction Experience

Note: To be filled in accordance with criteria described in clause IB3.1 (b) Section-II of the bidding documents

Name Of the Project.....

Order Placed by (full address of Employer)	Order No. and date	Description of Works	Value of order	Date of completion as per contract	Date of actual completion	Remarks indicating reasons for late completion , if any	Has the project been running satisfactorily ? (Attach a certificate from the Employer)	Contact person along with Telephone No., Fax No. and email address

Signature and Seal of the Bidder.....

Place:

Date:

Form QF-3: Performance Certificate

It is certified that M/s. _____ has conducted the following works against mentioned project.

Sr. No.	Contract No. & Date	Designation & address of order placing authority/User	Name of Project	Description of Works	Date of Completion	Work Performance

The above services/Works have been performed against our Project and their performance is found satisfactory.

Date of issuing _____

Signature of issuing authority with seal
Name and Designation of issuing authority
Address along with Phone No. and
Fax of issuing authority

Note: In case of those bidders who have provided services to NTDC shall furnish the details of such works in the above Performa which shall be signed by their authorized signatory along with seal and certificate is not required from the Employer in this respect.

Form QF-4: Current Contract Commitments

Bidders 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.

Sr. No.	Particulars of works executed	Contract No. & Date	Name of Contract placing Authority	Ordered Value (in)	Value of balance work
1	2	3	4	5	6
2					
3					
4					
5					
6					
7					

Signature & Seal of the bidder:

Form QF-5: Financial Data

Financial Data for Previous 3 Years			
Particular	2025-26	2024-25	2023-24
Total Assets			
Total Liabilities			
Net Worth			
Current Assets			
Current Liabilities			
Information from Income Statement			
Total Revenues			
Profits Before Taxes			
Profits After Taxes			
Attached are copies of financial statements (balance sheets including all related notes, and income statements) for the last three years, as indicated above, complying with the following conditions.			
- All such documents reflect the financial situation of the Bidder and not sister or parent companies. - Historic financial statements must be audited by a certified accountant. - Historic Financial statements must be complete, including all notes to the financial statements. - Historic financial statements must correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted).			

Signature and Seal of the bidder:

Form QF-6: Annual Turnover Data

Name of Bidder/Joint Venture Partner:

Bidder is requested to complete the information in this form separately. The information supplied should be the annual turnover of the Bidder, in terms of the amounts billed to clients for each year for work in progress or completed.

Annual turnover data for the following last three fiscal years			
Year	Amount Currency	Exchange Rate	Equivalent Amount (in the currency of Bid)
2023			
2024			
2025			
Average Annual Turnover			

Signature and Seal of Bidder:

Form QF-7: Financial Resources

Specify proposed sources of financing, such as liquid assets, unencumbered real assets, lines of credit, and other financial means, net of current commitments, available to meet the total construction cash flow demands of the subject contract.

Financial Resources		
Sr. No.	Source of Financing	Amount
1.		
2.		
3.		
4.		

Signature and Seal of Bidder:

Form QF-8: Bank Certificate

This is to certify that M/s..... is a reputed company with a good financial standing.

If the contract for the work, namelyis awarded to the above firm, we shall be able to provide overdraft/credit facilities to the extent of Rs..... to meet their working capital requirements for executing the above contract.

Signature of Senior Bank Manager: _____
Name of the Senior Bank Manager: _____
Address of the Bank: _____

Stamp of the Bank

Note: Certificate should be on the letter head of the bank.

Form QF-9: Pending Litigation

Each Bidder must fill in this form

Pending Litigation					
Year	Name of Other Party(s)	Matter of Dispute	Litigation where (Court/ arbitration)	Amount involved	Value of pending claim as a %age of net worth

Signature and Seal of the bidder:

Bidder's Plan for Project Safeguard Requirements

Contract Management Plan

Bidder's Environmental Management Plan

(INTEGRITY PACT)

DECLARATION OF FEES, COMMISSION AND BROKERAGE ETC. PAYABLE BY THE SUPPLIERS OF GOODS, SERVICES & WORKS IN CONTRACTS WORTH RS. 10.00 MILLION OR MORE

Contract No. _____ Dated _____

Contract Value: _____

Contract Title: _____

..... [Name of Supplier] hereby declares that it has not obtained or induced the procurement of any contract, right, interest, privilege or other obligation or benefit from Government of Pakistan (GoP) or any administrative subdivision or agency thereof or any other entity owned or controlled by GoP through any corrupt business practice.

Without limiting the generality of the foregoing, [name of Supplier] represents and warrants that it has fully declared the brokerage, commission, fees etc. paid or payable to anyone and not given or agreed to give and shall not give or agree to give to anyone within or outside Pakistan either directly or indirectly through any natural or juridical person, including its affiliate, agent, associate, broker, consultant, director, promoter, shareholder, sponsor or subsidiary, any commission, gratification, bribe, finder's fee or kickback, whether described as consultation fee or otherwise, with the object of obtaining or inducing the procurement of a contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP, except that which has been expressly declared pursuant hereto.

[name of Supplier] certifies that it has made and will make full disclosure of all agreements and arrangements with all persons in respect of or related to the transaction with GoP and has not taken any action or will not take any action to circumvent the above declaration, representation or warranty.

[name of Supplier] accepts full responsibility and strict liability for making any false declaration, not making full disclosure, misrepresenting facts or taking any action likely to defeat the purpose of this declaration, representation and warranty. It agrees that any contract, right, interest, privilege or other obligation or benefit obtained or procured as aforesaid shall, without prejudice to any other rights and remedies available to GoP under any law, contract or other instrument, be voidable at the option of GoP.

Notwithstanding any rights and remedies exercised by GoP in this regard, [name of Supplier] agrees to indemnify GoP for any loss or damage incurred by it on account of its corrupt business practices and further pay compensation to GoP in an amount equivalent to ten times the sum of any commission, gratification, bribe, finder's fee or kickback given by [name of Supplier] as aforesaid for the purpose of obtaining or inducing the procurement of any contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP.

Name of Buyer:

Signature:

[Seal]

Name of Seller/Supplier:

Signature:

[Seal]

**UNDERTAKING OF BID SECURITY
(To be Submitted on a Non-Judicial Stamp Paper)**

We _____ (name of Bidder) undertake that Bid Security in accordance with Clause IB-19 of the bidding document is enclosed with our Price bid.

Signature and Seal of the Bidder:

BID SECURITY (Bank Guarantee)

Security Executed on _____
(Date)

Name of Surety (Bank) with Address: _____
(Scheduled Bank in Pakistan)

Name of Principal (Bidder) with Address _____

Penal Sum of Security Rupees. _____ (Rs. _____)

Bid Reference No. _____

KNOW ALL MEN BY THESE PRESENTS, that in pursuance of the terms of the Bid and at the request of the said Principal (Bidder) we, the Surety above named, are held and firmly bound unto _____

(hereinafter called the 'Employer') in the sum stated above for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Bidder has submitted the accompanying Bid dated _____ for Bid No. _____ for _____ (Particulars of Bid) to the said Employer; and

WHEREAS, the Employer has required as a condition for considering said Bid that the Bidder furnishes a Bid Security in the above said sum from a Scheduled Bank in Pakistan or from a foreign bank duly counter-guaranteed by a Scheduled Bank in Pakistan, to the Employer, conditioned as under:

- (1) that the Bid Security shall remain in force up to and including the date 28 days after the deadline for validity of bids as stated in the Instructions to Bidders or as it may be extended by the Employer, notice of which extension(s) to the Surety is hereby waived;
- (2) that the Bid Security of unsuccessful Bidders will be returned by the Employer after expiry of its validity or upon signing of the Contract Agreement; and
- (3) that in the event of failure of the successful Bidder to execute the proposed Contract Agreement for such work and furnish the required Performance Security, the entire said sum be paid immediately to the said Employer pursuant to Clause 15.6 of the Instruction to Bidders for the successful Bidder's failure to perform.

NOW THEREFORE, if the successful Bidder shall, within the period specified thereof, on the prescribed form presented to him for signature enter into a formal Contract with the said Employer in accordance with his Bid as accepted and furnish within fourteen(14) days of his being requested to do so, a Performance Security with good and sufficient surety, as may be required, upon the form prescribed by the said Employer for the faithful performance and proper fulfilment of the said Contract or in the event of non-withdrawal of the said Bid within the time specified for its validity then this obligation shall be void and of no effect, but otherwise to remain in full force and effect.

PROVIDED THAT the Surety shall forthwith pay the Employer the said sum upon first written demand of the Employer (without cavil or argument) and without requiring the Employer to

prove or to show grounds or reasons for such demand, notice of which shall be sent by the Employer by registered post duly addressed to the Surety at its address given above.

PROVIDED ALSO THAT the Employer shall be the sole and final judge for deciding whether the Principal (Bidder) has duly performed his obligations to sign the Contract Agreement and to furnish the requisite Performance Security within the time stated above, or has defaulted in fulfilling said requirements and the Surety shall pay without objection the said sum upon demand from the Employer forthwith and without any reference to the Principal (Bidder) or any other person.

IN WITNESS WHEREOF, the above bounden Surety has executed the instrument under its seal on the date indicated above, the name and seal of the Surety being hereto affixed and these presents duly signed by its undersigned representative pursuant to authority of its governing body.

SURETY (Bank)

WITNESS:

Signature _____

1. _____

Name _____

Title _____

Corporate Secretary (Seal)

Corporate Guarantor (Seal)

2. _____

Name, Title & Address

FORM OF PERFORMANCE SECURITY
(Bank Guarantee)

Guarantee No. _____
Executed on _____
Expiry date _____

[Letter by the Guarantor to the Employer]

Name of Guarantor (Bank) with address: _____
(Scheduled Bank in Pakistan)

Name of Principal (Contractor) with address: _____

Penal Sum of Security (express in words and figures) _____

Letter of Acceptance No. _____ Dated _____

KNOW ALL MEN BY THESE PRESENTS, that in pursuance of the terms of the Bidding Documents and above said Letter of Acceptance (hereinafter called the Documents) and at the request of the said Principal we, the Guarantor above named, are held and firmly bound unto the _____ (hereinafter called the Employer) in the penal sum of the amount stated above for the payment of which sum well and truly to be made to the said Employer, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the principal has accepted the Employer's above said Letter of Acceptance for _____
(Name of Contract) for the _____
(Name of Project).

NOW THEREFORE, if the Principal (Contractor) shall well and truly perform and fulfill all the undertakings, covenants, terms and conditions of the said Documents during the original terms of the said Documents and any extensions thereof that may be granted by the Employer, with or without notice to the Guarantor, which notice is, hereby, waived and shall also well and truly perform and fulfill all the undertakings, covenants terms and conditions of the Contract and of any and all modifications of said Documents that may hereafter be made, notice of which modifications to the Guarantor being hereby waived, then, this obligation to be void; otherwise to remain in full force and virtue till all requirements of Clause 49, Defects Liability, of Conditions of Contract are fulfilled.

Our total liability under this Guarantee is limited to the sum stated above and it is a condition of any liability attaching to us under this Guarantee that the claim for payment in writing shall be received by us within the validity period of this Guarantee, failing which we shall be discharged of our liability, if any, under this Guarantee.

We, _____ (the Guarantor), waiving all objections and defences under the Contract, do hereby irrevocably and independently guarantee to pay to the Employer without delay upon the Employer's first written demand without cavil or arguments and without requiring the Employer to prove or to show grounds or reasons for such demand any

sum or sums up to the amount stated above, against the Employer's written declaration that the Principal has refused or failed to perform the obligations under the Contract which payment will be effected by the Guarantor to Employer's designated Bank & Account Number.

PROVIDED ALSO THAT the Employer shall be the sole and final judge for deciding whether the principal (Contractor) has duly performed his obligations under the Contract or has defaulted in fulfilling said obligations and the Guarantor shall pay without objection any sum or sums up to the amount stated above upon first written demand from the Employer forthwith and without any reference to the principal or any other person.

IN WITNESS WHEREOF, the above-bounden Guarantor has executed this Instrument under its seal on the date indicated above, the name and corporate seal of the Guarantor being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Witness:	Guarantor (Bank)
1. _____	Signature _____
_____	Name _____
Corporate Secretary (Seal)	Title _____
2. _____	

Name, Title & Address	Corporate Guarantor (Seal)

FORM OF CONTRACT AGREEMENT

THIS CONTRACT AGREEMENT (hereinafter called the "Agreement") made on the _____ day of _____ (month) 20____ between _____ (hereafter called the "Employer") of the one part and _____ (hereafter called the "Contractor") of the other part.

WHEREAS the Employer is desirous that certain Works, viz _____ should be executed by the Contractor and has accepted a Bid by the Contractor for the execution and completion of such Works and the remedying of any defects therein.

NOW this Agreement witnesseth as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.
2. The following documents after incorporating addenda, if any, except those parts relating to Instructions to Bidders shall be deemed to form and be read and construed as part of this Agreement, viz:
 - (a) The Contract Agreement;
 - (b) The Letter of Acceptance;
 - (c) The completed Form of Bid;
 - (d) Special Stipulations (Appendix-A to Bid);
 - (e) The Particular Conditions of Contract;
 - (f) The General Conditions;
 - (g) The priced Bill of Quantities;
 - (h) The completed Appendices to Bid;
 - (i) The Specifications.
 - (j) _____ (any other)
3. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy defects therein in conformity and 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 as per provisions of the Contract, 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 on the _____ day, month and year first before written in accordance with their respective laws.

Signature of the Contactor

Signature of Employer

(Seal)

(Seal)

Signed, Sealed and Delivered in the presence of:

Witness:

Witness:

(Name, Title and Address)

(Name, Title and Address)

ADB Integrity Covenant

1. The ADB Integrity Covenant applies throughout the procurement process and performance/execution process of the Contract (if awarded).
2. Firms and individuals, including but not limited to Bidders, suppliers, Contractors(if awarded), agents, subcontractors, subconsultants, service providers, sub suppliers, manufacturers (including their respective officers, directors, employees and personnel) participating in the procurement and performance/execution of the Contract are required to observe the highest standard of ethics, as applicable and in accordance with Asian Development Bank's Anticorruption Policy (1998, as amended from time to time). We acknowledge that we have read and understand ADB's Anticorruption Policy and Integrity Principles and Guidelines (2015, as amended from time to time).
3. For the purpose of provision 2, the terms are 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) "abuse" means theft, waste, or improper use of assets related to ADB-related activity, either committed intentionally or through reckless disregard;
 - (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;
 - (vii) "integrity violation" means 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 (vi) above and the following: obstructive practice, violations of ADB sanctions, retaliation against whistleblowers or witnesses, and other violations of ADB's Anticorruption Policy, including failure to adhere to the highest ethical standard.
4. Pursuant to provision 2, ADB 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 ¹in 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.
5. All Bidders, consultants, Contractors (if awarded), suppliers, manufacturers, service providers, and other third parties engaged or involved in the procurement and execution/performance of the Contract and their respective officers, directors, employees and personnel, are obliged to cooperate fully in any investigation when requested by ADB to do so. As determined on a case by case basis by ADB, such cooperation includes, but is not limited to, the following:

¹ 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).

- (a) being available to be interviewed and replying fully and truthfully to all questions asked;
 - (b) providing ADB with any items requested that are within the party's control including, but not limited to, documents and other physical objects;
 - (c) upon written request by ADB, authorizing other related entities to release directly to ADB such information that is specifically and materially related, directly or indirectly, to the said entities or issues which are the subject of the investigation;
 - (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 Information and Communications Technology (ICT) resources or systems (including mobile phones, personal electronic devices, and electronic storage devices such as external disk drives);
 - (e) cooperating in any testing requested by ADB, including but not limited to, fingerprint identification, handwriting analysis, and physical examination and analysis; and
 - (f) preserving and protecting confidentiality of all information discussed with, and as required by, ADB.
6. All Bidders, consultants, Contractors (if awarded) and suppliers shall require their officers, directors, employees, personnel, agents to ensure that, in its contracts with its sub-consultants, subcontractors, and other third parties engaged or involved in the procurement and execution/performance of the Contract, and other third parties similarly are obliged to cooperate fully in any investigation when requested by ADB to do so.

We, the undersigned, declare that:

7. We, our directors, key officers, key personnel, including any subcontractor, consultants, subconsultants, manufacturers, service providers or supplier for any part of the Contract, do not have any conflict of interest in accordance with IB 3.2.
- If there is any conflict of interest, please state details:
- Parties involved in the conflict of interest: _____
- Details about the conflict of interest: _____
8. At any time following submission of our Bid, we shall permit, and shall cause our joint venture partners, directors, key officers, key personnel, associates, parent company, affiliates or subsidiaries, including any subcontractors, consultants, subconsultants, manufacturers, service providers or suppliers for any part of the Bid and/or Contract (if awarded) to permit ADB or its representative to inspect our site, assets, accounts and records and other documents relating to the Bid submission and performance/execution of the Contract (if awarded) and to have them audited by auditors appointed by ADB. We understand that failure of this obligation may constitute obstructive practice that may result in debarment and/or contract termination. This provision 8 shall survive termination and/or expiration of the Contract (if awarded).
9. The Bidder or Contractor (if awarded) undertakes that no fees, gratuities, rebates, gifts, commissions or other payments, other than those shown in the Form of Price Bid and Integrity Pact, have been given or received in connection with the procurement process or in the contract execution/performance.
10. Our firm, joint venture partners, our respective direct and indirect shareholders, directors, key officers, key personnel, associates, parent company, affiliates or subsidiaries, including any subcontractors, consultants, subconsultants, manufacturers, service providers 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 multilateral development banks. If we become subject to such temporary suspension and debarment during the procurement and performance/execution of the Contract, we shall inform the Employer.

11. Our firm, joint venture partners, associates, parent company, affiliates or subsidiaries, including any Subcontractors, consultants, subconsultants, manufacturers, service providers or suppliers, key officers, directors and key personnel are not from a country which is prohibited to export goods or services to, or receive any payments from the Employer's country and/or are not prohibited to receive payments for particular goods or services by 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. We shall inform the Employer if the situation described in this declaration 11 occurs during the procurement and execution/performance of the Contract.
12. Regardless of whether the Contract will be awarded to us, we shall preserve all accounts, records and other documents related to Bid submission for at least 3 years from the date of submission of the bid or the period prescribed in applicable law, whichever is longer. If we are awarded the Contract, we shall preserve all accounts, records and other documents related to the procurement and performance/execution of the Contract for at least 5 years after completing the works contemplated in the relevant Contract or the period prescribed in applicable law, whichever is longer.
13. We certify on behalf of the Bidder, that the information provided in the bid has been fully reviewed, given in good faith, and to the best of our knowledge is true and complete. We understand that it is our obligation to inform the Employer of any changes to the information as and when it becomes known to us. 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 of Buyer:

Signature:

[Seal]

Name of Seller/Supplier:

Signature:

[Seal]

SECTION-IV

GENERAL CONDITIONS OF CONTRACT

SECTION-IV GENERAL CONDITIONS OF CONTRACT

This bidding document follows the FIDIC conditions of contract for construction works. The Conditions of Contract Comprise of two Sections: Section-IV – General Conditions of Contract, and Section-V – Particular Conditions of Contract.

All the general Conditions shall be as per the FIDIC documents indicated below. These shall be read along with the Particular Conditions of Contract for interpretation. In case of any discrepancy between these General Conditions of Contract and the Particular Conditions of the Contract of Section-V, the provisions under the latter shall govern.

FIDIC FEDERATION INTERNATIONALE DES INGENIEURS – CONSEILS

PART-I & PART-II CONDITIONS OF CONTRACT FOR WORKS OF CIVIL TO BE ARRANGED BY THE BIDDERS (FIDIC CONCDITIONS) ENGINEERING CONSTRUCTION

FOURTH EDITION 1987

Reprinted 1988 with editorial amendments

Reprinted 1992 with editorial amendments



FEDERATION INTERNATIONALE DES INGENIEURS-CONSEILS

CONDITIONS OF CONTRACT

FOR WORKS OF CIVIL

ENGINEERING CONSTRUCTION

PART I GENERAL CONDITIONS

WITH FORMS OF TENDER AND AGREEMENT

PART II CONDITIONS OF PARTICULAR APPLICATION

WITH GUIDELINES FOR PREPARATION OF PART II CLAUSES

FOURTH EDITION 1987

Reprinted 1988 with editorial amendments

Reprinted 1992 with further amendments



FEDERATION INTERNATIONALE DES INGENIEURS-CONSEILS

CONDITIONS OF CONTRACT

FOR WORKS OF CIVIL

ENGINEERING CONSTRUCTION

PART I GENERAL CONDITIONS

WITH FORMS OF TENDER AND AGREEMENT

FOURTH EDITION 1987

Reprinted 1988 with editorial amendments

Reprinted 1992 with further amendments

FOREWORD

The terms of the Fourth Edition of the Conditions of Contract for Works of Civil Engineering Construction have been prepared by the Fédération Internationale des Ingénieurs Conseils (FIDIC) and are recommended for general use for the purpose of construction of such works where tenders are invited on an international basis. The Conditions, subject to minor modifications, are also suitable for use on domestic contracts.

The version in English of the Conditions is considered by FIDIC as the official and authentic text for the purpose of translation.

In the preparation of the Conditions it was recognised that while there are numerous Clauses which will be generally applicable there are some Clauses which must necessarily vary to take account of the circumstances and locality of the Works. The Clauses of general application have been grouped together in this document and are referred to as Part I – General Conditions. They have been printed in a form which will facilitate their inclusion as printed in the contract documents normally prepared.

The General Conditions are linked with the Conditions of Particular Application, referred to as Part II, by the corresponding numbering of the Clauses, so that Parts I and II together comprise the Conditions governing the rights and obligations of the parties.

Part II must be specially drafted to suit each individual Contract.

When dredging and certain types of reclamation work are involved special consideration must be given to Part II.

To assist in the preparation of Part II explanatory material and example clauses are published with the Conditions in a separately bound document entitled “Conditions of Contract for Works of Civil Engineering Construction, Part II – Conditions of Particular Application, with Guidelines for preparation of Part II Clauses, Fourth Edition”.

FIDIC has published a “Guide to the Use of FIDIC Conditions of Contract for Works of Civil Engineering Construction” which includes comments on the provisions of the Fourth Edition of the Conditions. Users of the Fourth Edition may find it helpful to refer to this Guide.

It may also be helpful for users to refer to other FIDIC publications, such as:

Tendering Procedure (First Edition 1982)

Construction, Insurance and Law (1986)

FIDIC gratefully acknowledges the suggestions and comments it has received during the preparation of this edition from European International Contractors (EIC) as mandatory of Confederation of International Contractors Associations (CICA) with participation of Associated General Contractors of America (AGC).

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PART I - GENERAL CONDITIONS

Definitions and Interpretation

Definitions

- 1.1** In the Contract (as hereinafter defined) the following words and expressions shall have the meanings hereby assigned to them, except where the context otherwise requires:
- (a) (i) “Employer” means the person named as such in Part II of these Conditions and the legal successors in title to such person, but not (except with the consent of the Contractor) any assignee of such person.
 - (ii) “Contractor” means the person whose tender has been accepted by the Employer and the legal successors in title to such person, but not (except with the consent of the Employer) any assignee of such person.
 - (iii) “Subcontractor” means any person named in the Contract as a Subcontractor for a part of the Works or any person to whom a part of the Works has been subcontracted with the consent of the Engineer and the legal successors in title to such person, but not any assignee of any such person.
 - (iv) “Engineer” means the person appointed by the Employer to act as Engineer for the purposes of the Contract and named as such in Part II of these Conditions.
 - (v) “Engineer’s Representative” means a person appointed from time to time by the Engineer under Sub-Clause 2.2.
 - (b) (i) “Contract” means these Conditions (Parts I and II), the Specification, the Drawings, the Bill of Quantities, the Tender, the Letter of Acceptance, the Contract Agreement (if completed) and such further documents as may be expressly incorporated in the Letter of Acceptance or Contract Agreement (if completed).
 - (ii) “Specification” means the specification of the Works included in the Contract and any modification thereof or addition thereto made under Clause 51 or submitted by the Contractor and approved by the Engineer.
 - (iii) “Drawings” means all drawings, calculations and technical information of a like nature provided by the Engineer to the Contractor under the Contract and all drawings, calculations, samples, patterns, models, operation and maintenance manuals and other technical information of a like nature submitted by the Contractor and approved by the Engineer.
 - (iv) “Bill of Quantities” means the priced and completed bill of quantities forming part of the Tender.
 - (v) “Tender” means the Contractor’s priced offer to the Employer for the execution and completion of the Works and the remedying of any defects therein in accordance with the provisions of the Contract, as accepted by the Letter of Acceptance.
 - (vi) “Letter of Acceptance” means the formal acceptance by the Employer of the Tender.
 - (vii) “Contract Agreement” means the contract agreement (if any) referred to in Sub-Clause 9.1.
 - (viii) “Appendix to Tender” means the appendix comprised in the form of Tender annexed to these Conditions.
 - (c) (i) “Commencement Date” means the date upon which the Contractor receives the notice to commence issued by the Engineer pursuant to Clause 41.
 - (ii) “Time for Completion” means the time for completing the execution of and passing the Tests on Completion of the Works or any Section or part thereof as stated in the Contract (or as extended under Clause 44) calculated from the Commencement Date.

- (d) (i) “Tests on Completion” means the tests specified in the Contract or otherwise agreed by the Engineer and the Contractor which are to be made by the Contractor before the Works or any Section or part thereof are taken over by the Employer.
- (ii) “Taking-Over Certificate” means a certificate issued pursuant to Clause 48.
- (e) (i) “Contract Price” means the sum stated in the Letter of Acceptance as payable to the Contractor for the execution and completion of the Works and the remedying of any defects therein in accordance with the provisions of the Contract.
- (ii) “Retention Money” means the aggregate of all monies retained by the Employer pursuant to Sub-Clause 60.2(a).
- (iii) “Interim Payment Certificate” means any certificate of payment issued by the Engineer other than the Final Payment Certificate.
- (iv) “Final Payment Certificate” means the certificate of payment issued by the Engineer pursuant to Sub-Clause 60.8.
- (f) (i) “Works” means the Permanent Works and the Temporary Works or either of them as appropriate.
- (ii) “Permanent Works” means the permanent works to be executed (including Plant) in accordance with the Contract.
- (iii) “Temporary Works” means all temporary works of every kind (other than Contractor’s Equipment) required in or about the execution and completion of the Works and the remedying of any defects therein.
- (iv) “Plant” means machinery, apparatus and the like intended to form or forming part of the Permanent Works.
- (v) “Contractor’s Equipment” means all appliances and things of whatsoever nature (other than Temporary Works) required for the execution and completion of the Works and the remedying of any defects therein, but does not include Plant, materials or other things intended to form or forming part of the Permanent Works.
- (vi) “Section” means a part of the Works specifically identified in the Contract as a Section.
- (vii) “Site” means the places provided by the Employer where the Works are to be executed and any other places as may be specifically designated in the Contract as forming part of the Site.
- (g) (i) “cost” means all expenditure properly incurred or to be incurred, whether on or off the Site, including overhead and other charges properly allocable thereto but does not include any allowance for profit.
- (ii) “day” means calendar day.
- (iii) “foreign currency” means a currency of a country other than that in which the Works are to be located.
- (iv) “writing” means any hand-written, type-written, or printed communication, including telex, cable and facsimile transmission.

**Headings and
Marginal Notes**

- 1.2** The headings and marginal notes in these Conditions shall not be deemed part thereof or be taken into consideration in the interpretation or construction thereof or of the Contract.

Interpretation

- 1.3** Words importing persons or parties shall include firms and corporations and any organisation having legal capacity.

**Singular and
Plural**

- 1.4** Words importing the singular only also include the plural and vice versa where the context requires.

**Notices,
Consents,
Approvals,
Certificates and
Determinations**

- 1.5** Wherever in the Contract provision is made for the giving or issue of any notice, consent, approval, certificate or determination by any person, unless otherwise specified such notice, consent, approval, certificate or determination shall be in writing and the words “notify”, “certify” or “determine” shall be construed accordingly. Any such consent, approval, certificate or determination shall not unreasonably be withheld or delayed.

Engineer and Engineer’s Representative

**Engineer’s
Duties and
Authority**

- 2. 1** (a) The Engineer shall carry out the duties specified in the Contract.
- (b) The Engineer may exercise the authority specified in or necessarily to be implied from the Contract, provided, however, that if the Engineer is required, under the terms of his appointment by the Employer, to obtain the specific approval of the Employer before exercising any such authority, particulars of such requirements shall be set out in Part II of these Conditions. Provided further that any requisite approval shall be deemed to have been given by the Employer for any such authority exercised by the Engineer.
- (c) Except as expressly stated in the Contract, the Engineer shall have no authority to relieve the Contractor of any of his obligations under the Contract.

**Engineer’s
Representative**

- 2.2** The Engineer’s Representative shall be appointed by and be responsible to the Engineer and shall carry out such duties and exercise such authority as may be delegated to him by the Engineer under Sub-Clause 2.3.

**Engineer’s
Authority to
Delegate**

- 2.3** The Engineer may from time to time delegate to the Engineer’s Representative any of the duties and authorities vested in the Engineer and he may at any time revoke such delegation. Any such delegation or revocation shall be in writing and shall not take effect until a copy thereof has been delivered to the Employer and the Contractor.

Any communication given by the Engineer’s Representative to the Contractor in accordance with such delegation shall have the same effect as though it had been given by the Engineer. Provided that:

- (a) any failure of the Engineer’s Representative to disapprove any work, materials or Plant shall not prejudice the authority of the Engineer to disapprove such work, materials or Plant and to give instructions for the rectification thereof; and
- (b) if the Contractor questions any communication of the Engineer’s Representative he may refer the matter to the Engineer who shall confirm, reverse or vary the contents of such communication.

**Appointment
of Assistants**

- 2.4** The Engineer or the Engineer’s Representative may appoint any number of persons to assist the Engineer’s Representative in the carrying out of his duties under Sub-Clause 2.2. He shall notify to the Contractor the names, duties and scope of authority of such persons. Such assistants shall have no authority to issue any instructions to the Contractor save in so far as such instructions may be necessary to enable them to carry out their duties and to secure their acceptance of materials, Plant or workmanship as being in accordance with the Contract, and any instructions given by any of them for those purposes shall be deemed to have been given by the Engineer’s Representative.

**Instructions
in Writing**

- 2.5** Instructions given by the Engineer shall be in writing, provided that if for any reason the Engineer considers it necessary to give any such instruction orally, the Contractor shall comply with such instruction. Confirmation in writing of such oral instruction given by the Engineer, whether before or after the carrying out of the instruction, shall be deemed to be an instruction within the meaning of this Sub-Clause. Provided further that if the Contractor, within 7 days, confirms in writing to the Engineer any oral instruction of the Engineer and such confirmation is not contradicted in writing within 7 days by the Engineer, it shall be deemed to be an instruction of the Engineer.

The provisions of this Sub-Clause shall equally apply to instructions given by the Engineer's Representative and any assistants of the Engineer or the Engineer's Representative appointed pursuant to Sub-Clause 2.4.

Engineer to Act Impartially

2.6 Wherever, under the Contract, the Engineer is required to exercise his discretion by:

- (a) giving his decision, opinion or consent,
- (b) expressing his satisfaction or approval,
- (c) determining value, or
- (d) otherwise taking action which may affect the rights and obligations of the Employer or the Contractor

he shall exercise such discretion impartially within the terms of the Contract and having regard to all the circumstances. Any such decision, opinion, consent, expression of satisfaction, or approval, determination of value or action may be opened up, reviewed or revised as provided in Clause 67.

Assignment and Subcontracting

Assignment of Contract

3.1 The Contractor shall not, without the prior consent of the Employer (which consent, notwithstanding the provisions of Sub-Clause 1.5, shall be at the sole discretion of the Employer), assign the Contract or any part thereof, or any benefit or interest therein or thereunder, otherwise than by:

- (a) a charge in favour of the Contractor's bankers of any monies due or to become due under the Contract, or
- (b) assignment to the Contractor's insurers (in cases where the insurers have discharged the Contractor's loss or liability) of the Contractor's right to obtain relief against any other party liable.

Subcontracting

4.1 The Contractor shall not subcontract the whole of the Works. Except where otherwise provided by the Contract, the Contractor shall not subcontract any part of the Works without the prior consent of the Engineer. Any such consent shall not relieve the Contractor from any liability or obligation under the Contract and he shall be responsible for the acts, defaults and neglects of any Subcontractor, his agents, servants or workmen as fully as if they were the acts, defaults or neglects of the Contractor, his agents, servants or workmen.

Provided that the Contractor shall not be required to obtain such consent for:

- (a) the provision of labour,
- (b) the purchase of materials which are in accordance with the standards specified in the Contract, or
- (c) the subcontracting of any part of the Works for which the Subcontractor is named in the Contract.

Assignment of Subcontractors' Obligations

4.2 In the event of a Subcontractor having undertaken towards the Contractor in respect of the work executed, or the goods, materials, Plant or services supplied by such Subcontractor, any continuing obligation extending for a period exceeding that of the Defects Liability Period under the Contract, the Contractor shall at any time, after the expiration of such Period, assign to the Employer, at the Employer's request and cost, the benefit of such obligation for the unexpired duration thereof.

Contract Documents

Language/s and Law

5.1 There is stated in Part II of these Conditions:

- (a) the language or languages in which the Contract documents shall be drawn up, and
- (b) the country or state the law of which shall apply to the Contract and according to which the Contract shall be construed.

If the said documents are written in more than one language, the language according to which the Contract shall be construed and interpreted is also stated in Part II of these Conditions, being therein designated the "Ruling Language".

Priority of Contract Documents

5.2 The several documents forming the Contract are to be taken as mutually explanatory of one another, but in case of ambiguities or discrepancies the same shall be explained and adjusted by the Engineer who shall thereupon issue to the Contractor instructions thereon and in such event, unless otherwise provided in the Contract, the priority of the documents forming the Contract shall be as follows:

- (1) The Contract Agreement (if completed);
- (2) The Letter of Acceptance;
- (3) The Tender;
- (4) Part II of these Conditions;
- (5) Part I of these Conditions; and
- (6) Any other document forming part of the Contract.

Custody and Supply of Drawings and Documents

6.1 The Drawings shall remain in the sole custody of the Engineer, but two copies thereof shall be provided to the Contractor free of charge. The Contractor shall make at his own cost any further copies required by him. Unless it is strictly necessary for the purposes of the Contract, the Drawings, Specification and other documents provided by the Employer or the Engineer shall not, without the consent of the Engineer, be used or communicated to a third party by the Contractor. Upon issue of the Defects Liability Certificate, the Contractor shall return to the Engineer all Drawings, Specification and other documents provided under the Contract.

The Contractor shall supply to the Engineer four copies of all Drawings, Specification and other documents submitted by the Contractor and approved by the Engineer in accordance with Clause 7, together with a reproducible copy of any material which cannot be reproduced to an equal standard by photocopying. In addition the Contractor shall supply such further copies of such Drawings, Specification and other documents as the Engineer may request in writing for the use of the Employer, who shall pay the cost thereof.

One Copy of Drawings to be Kept on Site

6.2 One copy of the Drawings, provided to or supplied by the Contractor as aforesaid, shall be kept by the Contractor on the Site and the same shall at all reasonable times be available for inspection and use by the Engineer and by any other person authorised by the Engineer in writing.

Disruption of Progress

6.3 The Contractor shall give notice to the Engineer, with a copy to the Employer, whenever planning or execution of the Works is likely to be delayed or disrupted unless any further drawing or instruction is issued by the Engineer within a reasonable time. The notice shall include details of the drawing or instruction required and of why and by when it is required and of any delay or disruption likely to be suffered if it is late.

Delays and Cost of Delay of Drawings

6.4 If, by reason of any failure or inability of the Engineer to issue, within a time reasonable in all the circumstances, any drawing or instruction for which notice has been given by the Contractor in accordance with Sub-Clause 6.3, the Contractor suffers delay and/or incurs costs then the Engineer shall, after due consultation with the Employer and the Contractor, determine:

- (a) any extension of time to which the Contractor is entitled under Clause 44, and
- (b) the amount of such costs, which shall be added to the Contract Price, and shall notify the Contractor accordingly, with a copy to the Employer.

Failure by Contractor to Submit Drawings

6.5 If the failure or inability of the Engineer to issue any drawings or instructions is caused in whole or in part by the failure of the Contractor to submit Drawings, Specification or other documents which he is required to submit under the Contract, the Engineer shall take such failure by the Contractor into account when making his determination pursuant to Sub-Clause 6.4.

Supplementary Drawings and Instructions	7.1	The Engineer shall have authority to issue to the Contractor, from time to time, such supplementary Drawings and instructions as shall be necessary for the purpose of the proper and adequate execution and completion of the Works and the remedying of any defects therein. The Contractor shall carry out and be bound by the same.
Permanent Works Designed by Contractor	7.2	Where the Contract expressly provides that part of the Permanent Works shall be designed by the Contractor, he shall submit to the Engineer, for approval: (a) such drawings, specifications, calculations and other information as shall be necessary to satisfy the Engineer as to the suitability and adequacy of that design, and (b) operation and maintenance manuals together with drawings of the Permanent Works as completed, in sufficient detail to enable the Employer to operate, maintain, dismantle, reassemble and adjust the Permanent Works incorporating that design. The Works shall not be considered to be completed for the purposes of taking over in accordance with Clause 48 until such operation and maintenance manuals, together with drawings on completion, have been submitted to and approved by the Engineer.
Responsibility Unaffected by Approval	7.3	Approval by the Engineer, in accordance with Sub-Clause 7.2, shall not relieve the Contractor of any of his responsibilities under the Contract.

General Obligations

Contractor's General Responsibilities	8.1	The Contractor shall, with due care and diligence, design (to the extent provided for by the Contract), execute and complete the Works and remedy any defects therein in accordance with the provisions of the Contract. The Contractor shall provide all superintendence, labour, materials, Plant, Contractor's Equipment and all other things, whether of a temporary or permanent nature, required in and for such design, execution, completion and remedying of any defects, so far as the necessity for providing the same is specified in or is reasonably to be inferred from the Contract. The Contractor shall give prompt notice to the Engineer, with a copy to the Employer, of any error, omission, fault or other defect in the design of or Specification for the Works which he discovers when reviewing the Contract or executing the Works.
Site Operations and Methods of Construction	8.2	The Contractor shall take full responsibility for the adequacy, stability and safety of all Site operations and methods of construction. Provided that the Contractor shall not be responsible (except as stated hereunder or as may be otherwise agreed) for the design or specification of Permanent Works, or for the design or specification of any Temporary Works not prepared by the Contractor. Where the Contract expressly provides that part of the Permanent Works shall be designed by the Contractor, he shall be fully responsible for that part of such Works, notwithstanding any approval by the Engineer.
Contract Agreement	9.1	The Contractor shall, if called upon so to do, enter into and execute the Contract Agreement, to be prepared and completed at the cost of the Employer, in the form annexed to these Conditions with such modification as may be necessary.
Performance Security	10.1	If the Contract requires the Contractor to obtain security for his proper performance of the Contract, he shall obtain and provide to the Employer such security within 28 days after the receipt of the Letter of Acceptance, in the sum stated in the Appendix to Tender. When providing such security to the Employer, the Contractor shall notify the Engineer of so doing. Such security shall be in the form annexed to these Conditions or in such other form as may be agreed between the Employer and the Contractor. The institution providing such security shall be subject to the approval of the Employer. The cost of complying with the requirements of this Clause shall be borne by the Contractor, unless the Contract otherwise provides.

Period of Validity of Performance Security	10.2	The performance security shall be valid until the Contractor has executed and completed the Works and remedied any defects therein in accordance with the Contract. No claim shall be made against such security after the issue of the Defects Liability Certificate in accordance with Sub-Clause 62.1 and such security shall be returned to the Contractor within 14 days of the issue of the said Defects Liability Certificate.
Claims under Performance Security	10.3	Prior to making a claim under the performance security the Employer shall, in every case, notify the Contractor stating the nature of the default in respect of which the claim is to be made.
Inspection of Site	11.1	The Employer shall have made available to the Contractor, before the submission by the Contractor of the Tender, such data on hydrological and sub-surface conditions as have been obtained by or on behalf of the Employer from investigations undertaken relevant to the Works but the Contractor shall be responsible for his own interpretation thereof. The Contractor shall be deemed to have inspected and examined the Site and its surroundings and information available in connection therewith and to have satisfied himself (so far as is practicable, having regard to considerations of cost and time) before submitting his Tender, as to: (a) the form and nature thereof, including the sub-surface conditions, (b) the hydrological and climatic conditions, (c) the extent and nature of work and materials necessary for the execution and completion of the Works and the remedying of any defects therein, and (d) the means of access to the Site and the accommodation he may require, and, in general, shall be deemed to have obtained all necessary information, subject as above mentioned, as to risks, contingencies and all other circumstances which may influence or affect his Tender. The Contractor shall be deemed to have based his Tender on the data made available by the Employer and on his own inspection and examination, all as aforementioned.
Sufficiency of Tender	12.1	The Contractor shall be deemed to have satisfied himself as to the correctness and sufficiency of the Tender and of the rates and prices stated in the Bill of Quantities, all of which shall, except insofar as it is otherwise provided in the Contract, cover all his obligations under the Contract (including those in respect of the supply of goods, materials, Plant or services or of contingencies for which there is a Provisional Sum) and all matters and things necessary for the proper execution and completion of the Works and the remedying of any defects therein.
Not Foreseeable Physical Obstructions or Conditions	12.2	If, however, during the execution of the Works the Contractor encounters physical obstructions or physical conditions, other than climatic conditions on the Site, which obstructions or conditions were, in his opinion, not foreseeable by an experienced contractor, the Contractor shall forthwith give notice thereof to the Engineer, with a copy to the Employer. On receipt of such notice, the Engineer shall, if in his opinion such obstructions or conditions could not have been reasonably foreseen by an experienced contractor, after due consultation with the Employer and the Contractor, determine: (a) any extension of time to which the Contractor is entitled under Clause 44, and (b) the amount of any costs which may have been incurred by the Contractor by reason of such obstructions or conditions having been encountered, which shall be added to the Contract Price, and shall notify the Contractor accordingly, with a copy to the Employer. Such determination shall take account of any instruction which the Engineer may issue to the Contractor in connection therewith, and any proper and reasonable measures acceptable to the Engineer which the Contractor may take in the absence of specific instructions from the Engineer.

Work to be in Accordance with Contract	13.1	Unless it is legally or physically impossible, the Contractor shall execute and complete the Works and remedy any defects therein in strict accordance with the Contract to the satisfaction of the Engineer. The Contractor shall comply with and adhere strictly to the Engineer's instructions on any matter, whether mentioned in the Contract or not, touching or concerning the Works. The Contractor shall take instructions only from the Engineer (or his delegate).
Programme to be Submitted	14.1	The Contractor shall, within the time stated in Part II of these Conditions after the date of the Letter of Acceptance, submit to the Engineer for his consent a programme, in such form and detail as the Engineer shall reasonably prescribe, for the execution of the Works. The Contractor shall, whenever required by the Engineer, also provide in writing for his information a general description of the arrangements and methods which the Contractor proposes to adopt for the execution of the Works.
Revised Programme	14.2	If at any time it should appear to the Engineer that the actual progress of the Works does not conform to the programme to which consent has been given under Sub-Clause 14.1, the Contractor shall produce, at the request of the Engineer, a revised programme showing the modifications to such programme necessary to ensure completion of the Works within the Time for Completion.
Cash Flow Estimate to be Submitted	14.3	The Contractor shall, within the time stated in Part II of these Conditions after the date of the Letter of Acceptance, provide to the Engineer for his information a detailed cash flow estimate, in quarterly periods, of all payments to which the Contractor will be entitled under the Contract and the Contractor shall subsequently supply revised cash flow estimates at quarterly intervals, if required to do so by the Engineer.
Contractor not Relieved of Duties or Responsibilities	14.4	The submission to and consent by the Engineer of such programmes or the provision of such general descriptions or cash flow estimates shall not relieve the Contractor of any of his duties or responsibilities under the Contract.
Contractor's Superintendence	15. 1	The Contractor shall provide all necessary superintendence during the execution of the Works and as long thereafter as the Engineer may consider necessary for the proper fulfilling of the Contractor's obligations under the Contract. The Contractor, or a competent and authorised representative approved of by the Engineer, which approval may at any time be withdrawn, shall give his whole time to the superintendence of the Works. Such authorised representative shall receive, on behalf of the Contractor, instructions from the Engineer. If approval of the representative is withdrawn by the Engineer, the Contractor shall, as soon as is practicable, having regard to the requirement of replacing him as hereinafter mentioned, after receiving notice of such withdrawal, remove the representative from the Works and shall not thereafter employ him again on the Works in any capacity and shall replace him by another representative approved by the Engineer.
Contractor's Employees	16. 1	The Contractor shall provide on the Site in connection with the execution and completion of the Works and the remedying of any defects therein : (a) only such technical assistants as are skilled and experienced in their respective callings and such foremen and leading hands as are competent to give proper superintendence of the Works, and (b) such skilled, semi-skilled and unskilled labour as is necessary for the proper and timely fulfilling of the Contractor's obligations under the Contract.
Engineer at Liberty to Object	16.2	The Engineer shall be at liberty to object to and require the Contractor to remove forthwith from the Works any person provided by the Contractor who, in the opinion of the Engineer, misconducts himself, or is incompetent or negligent in the proper performance of his duties, or whose presence on Site is otherwise considered by the Engineer to be undesirable, and such person shall not be again allowed upon the Works without the consent of the Engineer. Any person so removed from the Works shall be replaced as soon as possible.

Setting-out	17.1 The Contractor shall be responsible for: (a) the accurate setting-out of the Works in relation to original points, lines and levels of reference given by the Engineer in writing, (b) the correctness, subject as above mentioned, of the position, levels, dimensions and alignment of all parts of the Works, and (c) the provision of all necessary instruments, appliances and labour in connection with the foregoing responsibilities. If, at any time during the execution of the Works, any error appears in the position, levels, dimensions or alignment of any part of the Works, the Contractor, on being required so to do by the Engineer, shall, at his own cost, rectify such error to the satisfaction of the Engineer, unless such error is based on incorrect data supplied in writing by the Engineer, in which case the Engineer shall determine an addition to the Contract Price in accordance with Clause 52 and shall notify the Contractor accordingly, with a copy to the Employer. The checking of any setting-out or of any line or level by the Engineer shall not in any way relieve the Contractor of his responsibility for the accuracy thereof and the Contractor shall carefully protect and preserve all bench-marks, sight-rails, pegs and other things used in setting-out the Works.
Boreholes and Exploratory Excavation	18.1 If, at any time during the execution of the Works, the Engineer requires the Contractor to make boreholes or to carry out exploratory excavation, such requirement shall be the subject of an instruction in accordance with Clause 51, unless an item or a Provisional Sum in respect of such work is included in the Bill of Quantities.
Safety, Security and Protection of the Environment	19.1 The Contractor shall, throughout the execution and completion of the Works and the remedying of any defects therein: (a) have full regard for the safety of all persons entitled to be upon the Site and keep the Site (so far as the same is under his control) and the Works (so far as the same are not completed or occupied by the Employer) in an orderly state appropriate to the avoidance of danger to such persons, (b) provide and maintain at his own cost all lights, guards, fencing, warning signs and watching, when and where necessary or required by the Engineer or by any duly constituted authority, for the protection of the Works or for the safety and convenience of the public or others, and (c) take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of his methods of operation.
Employer's Responsibilities	19.2 If under Clause 31 the Employer shall carry out work on the Site with his own workmen he shall, in respect of such work: (a) have full regard to the safety of all persons entitled to be upon the Site, and (b) keep the Site in an orderly state appropriate to the avoidance of danger to such persons. If under Clause 31 the Employer shall employ other contractors on the Site he shall require them to have the same regard for safety and avoidance of danger.
Care of Works	20.1 The Contractor shall take full responsibility for the care of the Works and materials and Plant for incorporation therein from the Commencement Date until the date of issue of the Taking-Over Certificate for the whole of the Works, when the responsibility for the said care shall pass to the Employer. Provided that: (a) if the Engineer issues a Taking-Over Certificate for any Section or part of the Permanent Works the Contractor shall cease to be liable for the care of that Section or part from the date of issue of the Taking-Over Certificate, when the responsibility for the care of that Section or part shall pass to the Employer, and

(b) the Contractor shall take full responsibility for the care of any outstanding Works and materials and Plant for incorporation therein which he undertakes to finish during the Defects Liability Period until such outstanding Works have been completed pursuant to Clause 49.

Responsibility to Rectify Loss or Damage	20.2 If any loss or damage happens to the Works, or any part thereof, or materials or Plant for incorporation therein, during the period for which the Contractor is responsible for the care thereof, from any cause whatsoever, other than the risks defined in Sub-Clause 20.4, the Contractor shall, at his own cost, rectify such loss or damage so that the Permanent Works conform in every respect with the provisions of the Contract to the satisfaction of the Engineer. The Contractor shall also be liable for any loss or damage to the Works occasioned by him in the course of any operations carried out by him for the purpose of complying with his obligations under Clauses 49 and 50.
Loss or Damage Due to Employer's Risks	20.3 In the event of any such loss or damage happening from any of the risks defined in Sub-Clause 20.4, or in combination with other risks, the Contractor shall, if and to the extent required by the Engineer, rectify the loss or damage and the Engineer shall determine an addition to the Contract Price in accordance with Clause 52 and shall notify the Contractor accordingly, with a copy to the Employer. In the case of a combination of risks causing loss or damage any such determination shall take into account the proportional responsibility of the Contractor and the Employer.
Employer's Risks	20.4 The Employer's risks are: (a) war, hostilities (whether war be declared or not), invasion, act of foreign enemies, (b) rebellion, revolution, insurrection, or military or usurped power, or civil war, (c) ionising radiations, or contamination by radio-activity from any nuclear fuel, or from any nuclear waste from the combustion of nuclear fuel, radio-active toxic explosive or other hazardous properties of any explosive nuclear assembly or nuclear component thereof, (d) pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds, (e) riot, commotion or disorder, unless solely restricted to employees of the Contractor or of his Subcontractors and arising from the conduct of the Works, (f) loss or damage due to the use or occupation by the Employer of any Section or part of the Permanent Works, except as may be provided for in the Contract, (g) loss or damage to the extent that it is due to the design of the Works, other than any part of the design provided by the Contractor or for which the Contractor is responsible, and (h) any operation of the forces of nature against which an experienced contractor could not reasonably have been expected to take precautions.
Insurance of Works and Contractor's Equipment	21.1 The Contractor shall, without limiting his or the Employer's obligations and responsibilities under Clause 20, insure: (a) the Works, together with materials and Plant for incorporation therein, to the full replacement cost (the term "cost" in this context shall include profit), (b) an additional sum of 15 per cent of such replacement cost, or as may be specified in Part II of these Conditions, to cover any additional costs of and incidental to the rectification of loss or damage including professional fees and the cost of demolishing and removing any part of the Works and of removing debris of whatsoever nature, and (c) the Contractor's Equipment and other things brought onto the Site by the Contractor, for a sum sufficient to provide for their replacement at the Site.

Scope of Cover	21.2	The insurance in paragraphs (a) and (b) of Sub-Clause 21.1 shall be in the joint names of the Contractor and the Employer and shall cover: (a) the Employer and the Contractor against all loss or damage from whatsoever cause arising, other than as provided in Sub-Clause 21.4, from the start of work at the Site until the date of issue of the relevant Taking-Over Certificate in respect of the Works or any Section or part thereof as the case may be, and (b) the Contractor for his liability: (i) during the Defects Liability Period for loss or damage arising from a cause occurring prior to the commencement of the Defects Liability Period, and (ii) for loss or damage occasioned by the Contractor in the course of any operations carried out by him for the purpose of complying with his obligations under Clauses 49 and 50.
	21.3	Any amounts not insured or not recovered from the insurers shall be borne by the Employer or the Contractor in accordance with their responsibilities under Clause 20.
Responsibility for Amounts not Recovered	21.4	There shall be no obligation for the insurances in Sub-Clause 21.1 to include loss or damage caused by: (a) war, hostilities (whether war be declared or not), invasion, act of foreign enemies, (b) rebellion, revolution, insurrection, or military or usurped power, or civil war, (c) ionising radiations, or contamination by radio-activity from any nuclear fuel, or from any nuclear waste from the combustion of nuclear fuel, radio-active toxic explosive or other hazardous properties of any explosive nuclear assembly or nuclear component thereof, or (d) pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds.
Exclusions		
Damage to Persons and Property	22.1	The Contractor shall, except if and so far as the Contract provides otherwise, indemnify the Employer against all losses and claims in respect of: (a) death of or injury to any person, or (b) loss of or damage to any property (other than the Works), which may arise out of or in consequence of the execution and completion of the Works and the remedying of any defects therein, and against all claims, proceedings, damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto, subject to the exceptions defined in Sub-Clause 22.2.
	22.2	The “exceptions” referred to in Sub-Clause 22.1 are: (a) the permanent use or occupation of land by the Works, or any part thereof, (b) the right of the Employer to execute the Works, or any part thereof, on, over, under, in or through any land, (c) damage to property which is the unavoidable result of the execution and completion of the Works, or the remedying of any defects therein, in accordance with the Contract, and (d) death of or injury to persons or loss of or damage to property resulting from any act or neglect of the Employer, his agents, servants or other contractors, not being employed by the Contractor, or in respect of any claims, proceedings, damages, costs, charges and expenses in respect thereof or in relation thereto or, where the injury or damage was contributed to by the Contractor, his servants or agents, such part of the said injury or damage as may be just and equitable having regard to the extent of the responsibility of the Employer, his servants or agents or other contractors for the injury or damage.
Exceptions		

Indemnity by Employer	22.3	The Employer shall indemnify the Contractor against all claims, proceedings, damages, costs, charges and expenses in respect of the matters referred to in the exceptions defined in Sub-Clause 22.2.
Third Party Insurance (including Employer's Property)	23.1	The Contractor shall, without limiting his or the Employer's obligations and responsibilities under Clause 22, insure, in the joint names of the Contractor and the Employer, against liabilities for death of or injury to any person (other than as provided in Clause 24) or loss of or damage to any property (other than the Works) arising out of the performance of the Contract, other than the exceptions defined in paragraphs (a), (b) and (c) of Sub-Clause 22.2.
Minimum Amount of Insurance	23.2	Such insurance shall be for at least the amount stated in the Appendix to Tender.
Cross Liabilities	23.3	The insurance policy shall include a cross liability clause such that the insurance shall apply to the Contractor and to the Employer as separate insureds.
Accident or Injury to Workmen	24.1	The Employer shall not be liable for or in respect of any damages or compensation payable to any workman or other person in the employment of the Contractor or any Subcontractor, other than death or injury resulting from any act or default of the Employer, his agents or servants. The Contractor shall indemnify and keep indemnified the Employer against all such damages and compensation, other than those for which the Employer is liable as aforesaid, and against all claims, proceedings, damages, costs, charges, and expenses whatsoever in respect thereof or in relation thereto.
Insurance Against Accident to Workmen	24.2	The Contractor shall insure against such liability and shall continue such insurance during the whole of the time that any persons are employed by him on the Works. Provided that, in respect of any persons employed by any Subcontractor, the Contractor's obligations to insure as aforesaid under this Sub-Clause shall be satisfied if the Subcontractor shall have insured against the liability in respect of such persons in such manner that the Employer is indemnified under the policy, but the Contractor shall require such Subcontractor to produce to the Employer, when required, such policy of insurance and the receipt for the payment of the current premium.
Evidence and Terms of Insurances	25.1	The Contractor shall provide evidence to the Employer prior to the start of work at the Site that the insurances required under the Contract have been effected and shall, within 84 days of the Commencement Date, provide the insurance policies to the Employer. When providing such evidence and such policies to the Employer, the Contractor shall notify the Engineer of so doing. Such insurance policies shall be consistent with the general terms agreed prior to the issue of the Letter of Acceptance. The Contractor shall effect all insurances for which he is responsible with insurers and in terms approved by the Employer.
Adequacy of Insurances	25.2	The Contractor shall notify the insurers of changes in the nature, extent or programme for the execution of the Works and ensure the adequacy of the insurances at all times in accordance with the terms of the Contract and shall, when required, produce to the Employer the insurance policies in force and the receipts for payment of the current premiums.
Remedy on Contractor's Failure to Insure	25.3	If the Contractor fails to effect and keep in force any of the insurances required under the Contract, or fails to provide the policies to the Employer within the period required by Sub-Clause 25.1, then and in any such case the Employer may effect and keep in force any such insurances and pay any premium as may be necessary for that purpose and from time to time deduct the amount so paid from any monies due or to become due to the Contractor, or recover the same as a debt due from the Contractor.
Compliance with Policy Conditions	25.4	In the event that the Contractor or the Employer fails to comply with conditions imposed by the insurance policies effected pursuant to the Contract, each shall indemnify the other against all losses and claims arising from such failure.

**Compliance with
Statutes,
Regulations**

26.1 The Contractor shall conform in all respects, including by the giving of all notices and the paying of all fees, with the provisions of:

(a) any National or State Statute, Ordinance, or other Law, or any regulation, or bye-law of any local or other duly constituted authority in relation to the execution and completion of the Works and the remedying of any defects therein, and

(b) the rules and regulations of all public bodies and companies whose property or rights are affected or may be affected in any way by the Works,

and the Contractor shall keep the Employer indemnified against all penalties and liability of every kind for breach of any such provisions. Provided always that the Employer shall be responsible for obtaining any planning, zoning or other similar permission required for the Works to proceed and shall indemnify the Contractor in accordance with Sub-Clause 22.3.

Fossils

27.1 All fossils, coins, articles of value or antiquity and structures and other remains or things of geological or archaeological interest discovered on the Site shall, as between the Employer and the Contractor, be deemed to be the absolute property of the Employer. The Contractor shall take reasonable precautions to prevent his workmen or any other persons from removing or damaging any such article or thing and shall, immediately upon discovery thereof and before removal, acquaint the Engineer of such discovery and carry out the Engineer's instructions for dealing with the same. If, by reason of such instructions, the Contractor suffers delay and/or incurs costs then the Engineer shall, after due consultation with the Employer and the Contractor, determine:

(a) any extension of time to which the Contractor is entitled under Clause 44, and

(b) the amount of such costs, which shall be added to the Contract Price,

and shall notify the Contractor accordingly, with a copy to the Employer.

Patent Rights

28.1 The Contractor shall save harmless and indemnify the Employer from and against all claims and proceedings for or on account of infringement of any patent rights, design trademark or name or other protected rights in respect of any Contractor's Equipment, materials or Plant used for or in connection with or for incorporation in the Works and from and against all damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto, except where such infringement results from compliance with the design or Specification provided by the Engineer.

Royalties

28.2 Except where otherwise stated, the Contractor shall pay all tonnage and other royalties, rent and other payments or compensation, if any, for getting stone, sand, gravel, clay or other materials required for the Works.

**Interference
with Traffic
and Adjoining
Properties**

29.1 All operations necessary for the execution and completion of the Works and the remedying of any defects therein shall, so far as compliance with the requirements of the Contract permits, be carried on so as not to interfere unnecessarily or improperly with:

(a) the convenience of the public, or

(b) the access to, use and occupation of public or private roads and footpaths to or of properties whether in the possession of the Employer or of any other person.

The Contractor shall save harmless and indemnify the Employer in respect of all claims, proceedings, damages, costs, charges and expenses whatsoever arising out of, or in relation to, any such matters insofar as the Contractor is responsible therefor.

Avoidance of Damage to Roads	30.1	The Contractor shall use every reasonable means to prevent any of the roads or bridges communicating with or on the routes to the Site from being damaged or injured by any traffic of the Contractor or any of his Subcontractors and, in particular, shall select routes, choose and use vehicles and restrict and distribute loads so that any such extraordinary traffic as will inevitably arise from the moving of materials, Plant, Contractor's Equipment or Temporary Works from and to the Site shall be limited, as far as reasonably possible, and so that no unnecessary damage or injury may be occasioned to such roads and bridges.
Transport of Contractor's Equipment or Temporary Works	30.2	Save insofar as the Contract otherwise provides, the Contractor shall be responsible for and shall pay the cost of strengthening any bridges or altering or improving any road communicating with or on the routes to the Site to facilitate the movement of Contractor's Equipment or Temporary Works and the Contractor shall indemnify and keep indemnified the Employer against all claims for damage to any such road or bridge caused by such movement, including such claims as may be made directly against the Employer, and shall negotiate and pay all claims arising solely out of such damage.
Transport of Materials or Plant	30.3	If, notwithstanding Sub-Clause 30.1, any damage occurs to any bridge or road communicating with or on the routes to the Site arising from the transport of materials or Plant, the Contractor shall notify the Engineer with a copy to the Employer, as soon as he becomes aware of such damage or as soon as he receives any claim from the authority entitled to make such claim. Where under any law or regulation the haulier of such materials or Plant is required to indemnify the road authority against damage the Employer shall not be liable for any costs, charges or expenses in respect thereof or in relation thereto. In other cases the Employer shall negotiate the settlement of and pay all sums due in respect of such claim and shall indemnify the Contractor in respect thereof and in respect of all claims, proceedings, damages, costs, charges and expenses in relation thereto. Provided that if and so far as any such claim or part thereof is, in the opinion of the Engineer, due to any failure on the part of the Contractor to observe and perform his obligations under Sub-Clause 30.1, then the amount, determined by the Engineer, after due consultation with the Employer and the Contractor, to be due to such failure shall be recoverable from the Contractor by the Employer and may be deducted by the Employer from any monies due or to become due to the Contractor and the Engineer shall notify the Contractor accordingly, with a copy to the Employer. Provided also that the Employer shall notify the Contractor whenever a settlement is to be negotiated and, where any amount may be due from the Contractor, the Employer shall consult with the Contractor before such settlement is agreed.
Waterborne Traffic	30.4	Where the nature of the Works is such as to require the use by the Contractor of waterborne transport the foregoing provisions of this Clause shall be construed as though "road" included a lock, dock, sea wall or other structure related to a waterway and "vehicle" included craft, and shall have effect accordingly.
Opportunities for Other Contractors	31.1	The Contractor shall, in accordance with the requirements of the Engineer, afford all reasonable opportunities for carrying out their work to: (a) any other contractors employed by the Employer and their workmen, (b) the workmen of the Employer, and (c) the workmen of any duly constituted authorities who may be employed in the execution on or near the Site of any work not included in the Contract or of any contract which the Employer may enter into in connection with or ancillary to the Works.
Facilities for Other Contractors	31.2	If, however, pursuant to Sub-Clause 31.1 the Contractor shall, on the written request of the Engineer: (a) make available to any such other contractor, or to the Employer or any such authority, any roads or ways for the maintenance of which the Contractor is responsible,

(b) permit the use, by any such, of Temporary Works or Contractor's Equipment on the Site, or

(c) provide any other service of whatsoever nature for any such,

the Engineer shall determine an addition to the Contract Price in accordance with Clause 52 and shall notify the Contractor accordingly, with a copy to the Employer.

Contractor to Keep Site Clear	32.1	During the execution of the Works the Contractor shall keep the Site reasonably free from all unnecessary obstruction and shall store or dispose of any Contractor's Equipment and surplus materials and clear away and remove from the Site any wreckage, rubbish or Temporary Works no longer required.
Clearance of Site on Completion	33.1	Upon the issue of any Taking-Over Certificate the Contractor shall clear away and remove from that part of the Site to which such Taking-Over Certificate relates all Contractor's Equipment, surplus material, rubbish and Temporary Works of every kind, and leave such part of the Site and Works clean and in a workmanlike condition to the satisfaction of the Engineer. Provided that the Contractor shall be entitled to retain on Site, until the end of the Defects Liability Period, such materials, Contractor's Equipment and Temporary Works as are required by him for the purpose of fulfilling his obligations during the Defects Liability Period.

Labour

Engagement of Staff and Labour	34.1	The Contractor shall, unless otherwise provided in the Contract, make his own arrangements for the engagement of all staff and labour, local or other, and for their payment, housing, feeding and transport.
Returns of Labour and Contractor's Equipment	35.1	The Contractor shall, if required by the Engineer, deliver to the Engineer a return in detail, in such form and at such intervals as the Engineer may prescribe, showing the staff and the numbers of the several classes of labour from time to time employed by the Contractor on the Site and such information respecting Contractor's Equipment as the Engineer may require.

Materials, Plant and Workmanship

Quality of Materials, Plant and Workmanship	36.1	All materials, Plant and workmanship shall be: (a) of the respective kinds described in the Contract and in accordance with the Engineer's instructions, and (b) subjected from time to time to such tests as the Engineer may require at the place of manufacture, fabrication or preparation, or on the Site or at such other place or places as may be specified in the Contract, or at all or any of such places. The Contractor shall provide such assistance, labour, electricity, fuels, stores, apparatus and instruments as are normally required for examining, measuring and testing any materials or Plant and shall supply samples of materials, before incorporation in the Works, for testing as may be selected and required by the Engineer.
Cost of Samples	36.2	All samples shall be supplied by the Contractor at his own cost if the supply thereof is clearly intended by or provided for in the Contract.
Cost of Tests	36.3	The cost of making any test shall be borne by the Contractor if such test is: (a) clearly intended by or provided for in the Contract, or (b) particularised in the Contract (in cases only of a test under load or of a test to ascertain whether the design of any finished or partially finished work is appropriate for the purposes which it was intended to fulfil) in sufficient detail to enable the Contractor to price or allow for the same in his Tender.

Cost of Tests not Provided for	36.4	If any test required by the Engineer which is: (a) not so intended by or provided for, (b) (in the cases above mentioned) not so particularised, or (c) (though so intended or provided for) required by the Engineer to be carried out at any place other than the Site or the place of manufacture, fabrication or preparation of the materials or Plant tested, shows the materials, Plant or workmanship not to be in accordance with the provisions of the Contract to the satisfaction of the Engineer, then the cost of such test shall be borne by the Contractor, but in any other case Sub-Clause 36.5 shall apply.
Engineer's Determination where Tests not Provided for	36.5	Where, pursuant to Sub-Clause 36.4, this Sub-Clause applies the Engineer shall, after due consultation with the Employer and the Contractor, determine: (a) any extension of time to which the Contractor is entitled under Clause 44, and (b) the amount of such costs, which shall be added to the Contract Price, and shall notify the Contractor accordingly, with a copy to the Employer.
Inspection of Operations	37.1	The Engineer, and any person authorised by him, shall at all reasonable times have access to the Site and to all workshops and places where materials or Plant are being manufactured, fabricated or prepared for the Works and the Contractor shall afford every facility for and every assistance in obtaining the right to such access.
Inspection and Testing	37.2	The Engineer shall be entitled, during manufacture, fabrication or preparation to inspect and test the materials and Plant to be supplied under the Contract. If materials or Plant are being manufactured, fabricated or prepared in workshops or places other than those of the Contractor, the Contractor shall obtain permission for the Engineer to carry out such inspection and testing in those workshops or places. Such inspection or testing shall not release the Contractor from any obligation under the Contract.
Dates for Inspection and Testing	37.3	The Contractor shall agree with the Engineer on the time and place for the inspection or testing of any materials or Plant as provided in the Contract. The Engineer shall give the Contractor not less than 24 hours notice of his intention to carry out the inspection or to attend the tests. If the Engineer, or his duly authorised representative, does not attend on the date agreed, the Contractor may, unless otherwise instructed by the Engineer, proceed with the tests, which shall be deemed to have been made in the presence of the Engineer. The Contractor shall forthwith forward to the Engineer duly certified copies of the test readings. If the Engineer has not attended the tests, he shall accept the said readings as accurate.
Rejection	37.4	If, at the time and place agreed in accordance with Sub-Clause 37.3, the materials or Plant are not ready for inspection or testing or if, as a result of the inspection or testing referred to in this Clause, the Engineer determines that the materials or Plant are defective or otherwise not in accordance with the Contract, he may reject the materials or Plant and shall notify the Contractor thereof immediately. The notice shall state the Engineer's objections with reasons. The Contractor shall then promptly make good the defect or ensure that rejected materials or Plant comply with the Contract. If the Engineer so requests, the tests of rejected materials or Plant shall be made or repeated under the same terms and conditions. All costs incurred by the Employer by the repetition of the tests shall, after due consultation with the Employer and the Contractor, be determined by the Engineer and shall be recoverable from the Contractor by the Employer and may be deducted from any monies due or to become due to the Contractor and the Engineer shall notify the Contractor accordingly, with a copy to the Employer.

Independent Inspection	37.5	The Engineer may delegate inspection and testing of materials or Plant to an independent inspector. Any such delegation shall be effected in accordance with Sub-Clause 2.4 and for this purpose such independent inspector shall be considered as an assistant of the Engineer. Notice of such appointment (not being less than 14 days) shall be given by the Engineer to the Contractor.
Examination of Work before Covering up	38.1	No part of the Works shall be covered up or put out of view without the approval of the Engineer and the Contractor shall afford full opportunity for the Engineer to examine and measure any such part of the Works which is about to be covered up or put out of view and to examine foundations before any part of the Works is placed thereon. The Contractor shall give notice to the Engineer whenever any such part of the Works or foundations is or are ready or about to be ready for examination and the Engineer shall, without unreasonable delay, unless he considers it unnecessary and advises the Contractor accordingly, attend for the purpose of examining and measuring such part of the Works or of examining such foundations.
Uncovering and Making Openings	38.2	The Contractor shall uncover any part of the Works or make openings in or through the same as the Engineer may from time to time instruct and shall reinstate and make good such part. If any such part has been covered up or put out of view after compliance with the requirement of Sub-Clause 38.1 and is found to be executed in accordance with the Contract, the Engineer shall, after due consultation with the Employer and the Contractor, determine the amount of the Contractor's costs in respect of such of uncovering, making openings in or through, reinstating and making good the same, which shall be added to the Contract Price, and shall notify the Contractor accordingly, with a copy to the Employer. In any other case all costs shall be borne by the Contractor.
Removal of Improper Work, Materials or Plant	39.1	The Engineer shall have authority to issue instructions from time to time, for: (a) the removal from the Site, within such time or times as may be specified in the instruction, of any materials or Plant which, in the opinion of the Engineer, are not in accordance with the Contract, (b) the substitution of proper and suitable materials or Plant, and (c) the removal and proper re-execution, notwithstanding any previous test thereof or interim payment therefor, of any work which, in respect of (i) materials, Plant or workmanship, or (ii) design by the Contractor or for which he is responsible, is not, in the opinion of the Engineer, in accordance with the Contract.
Default of Contractor in Compliance	39.2	In case of default on the part of the Contractor in carrying out such instruction within the time specified therein or, if none, within a reasonable time, the Employer shall be entitled to employ and pay other persons to carry out the same and all costs consequent thereon or incidental thereto shall, after due consultation with the Employer and the Contractor, be determined by the Engineer and shall be recoverable from the Contractor by the Employer, and may be deducted by the Employer from any monies due or to become due to the Contractor and the Engineer shall notify the Contractor accordingly, with a copy to the Employer.

Suspension

Suspension of Work	40. 1	The Contractor shall, on the instructions of the Engineer, suspend the progress of the Works or any part thereof for such time and in such manner as the Engineer may consider necessary and shall, during such suspension, properly protect and secure the Works or such part thereof so far as is necessary in the opinion of the Engineer. Unless such suspension is: (a) otherwise provided for in the Contract, (b) necessary by reason of some default of or breach of contract by the Contractor or for which he is responsible,
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(c) necessary by reason of climatic conditions on the Site, or

(d) necessary for the proper execution of the Works or for the safety of the Works or any part thereof (save to the extent that such necessity arises from any act or default by the Engineer or the Employer or from any of the risks defined in Sub-Clause 20.4),

Sub-Clause 40.2 shall apply.

**Engineer's
Determination
following
Suspension**

40.2 Where, pursuant to Sub-Clause 40.1, this Sub-Clause applies the Engineer shall, after due consultation with the Employer and the Contractor, determine:

(a) any extension of time to which the Contractor is entitled under Clause 44, and

(b) the amount, which shall be added to the Contract Price, in respect of the cost incurred by the Contractor by reason of such suspension,

and shall notify the Contractor accordingly, with a copy to the Employer.

**Suspension
lasting more
than 84 Days**

40.3 If the progress of the Works or any part thereof is suspended on the instructions of the Engineer and if permission to resume work is not given by the Engineer within a period of 84 days from the date of suspension then, unless such suspension is within paragraph (a), (b), (c) or (d) of Sub-Clause 40.1, the Contractor may give notice to the Engineer requiring permission, within 28 days from the receipt thereof, to proceed with the Works or that part thereof in regard to which progress is suspended. If, within the said time, such permission is not granted, the Contractor may, but is not bound to, elect to treat the suspension, where it affects part only of the Works, as an omission of such part under Clause 51 by giving a further notice to the Engineer to that effect, or, where it affects the whole of the Works, treat the suspension as an event of default by the Employer and terminate his employment under the Contract in accordance with the provisions of Sub-Clause 69.1, whereupon the provisions of Sub-Clauses 69.2 and 69.3 shall apply.

Commencement and Delays

**Commencement
of Works**

41.1 The Contractor shall commence the Works as soon as is reasonably possible after the receipt by him of a notice to this effect from the Engineer, which notice shall be issued within the time stated in the Appendix to Tender after the date of the Letter of Acceptance. Thereafter, the Contractor shall proceed with the Works with due expedition and without delay.

**Possession of
Site and Access
Thereto**

42.1 Save insofar as the Contract may prescribe:

(a) the extent of portions of the Site of which the Contractor is to be given possession from time to time,

(b) the order in which such portions shall be made available to the Contractor,

and, subject to any requirement in the Contract as to the order in which the Works shall be executed, the Employer will, with the Engineer's notice to commence the Works, give to the Contractor possession of

(c) so much of the Site, and

(d) such access as, in accordance with the Contract, is to be provided by the Employer as may be required to enable the Contractor to commence and proceed with the execution of the Works in accordance with the programme referred to in Clause 14, if any, and otherwise in accordance with such reasonable proposals as the Contractor shall, by notice to the Engineer with a copy to the Employer, make. The Employer will, from time to time as the Works proceed, give to the Contractor possession of such further portions of the Site as may be required to enable the Contractor to proceed with the execution of the Works with due dispatch in accordance with such programme or proposals, as the case may be.

Failure to Give Possession	42.2	If the Contractor suffers delay and/or incurs costs from failure on the part of the Employer to give possession in accordance with the terms of Sub-Clause 42.1, the Engineer shall, after due consultation with the Employer and the Contractor, determine: (a) any extension of time to which the Contractor is entitled under Clause 44, and (b) the amount of such costs, which shall be added to the Contract Price, and shall notify the Contractor accordingly, with a copy to the Employer.
Rights of Way and Facilities	42.3	The Contractor shall bear all costs and charges for special or temporary rights of way required by him in connection with access to the Site. The Contractor shall also provide at his own cost any additional facilities outside the Site required by him for the purposes of the Works.
Time for Completion	43.1	The whole of the Works and, if applicable, any Section required to be completed within a particular time as stated in the Appendix to Tender, shall be completed, in accordance with the provisions of Clause 48, within the time stated in the Appendix to Tender for the whole of the Works or the Section (as the case may be), calculated from the Commencement Date, or such extended time as may be allowed under Clause 44.
Extension of Time for Completion	44.1	In the event of: (a) the amount or nature of extra or additional work, (b) any cause of delay referred to in these Conditions, (c) exceptionally adverse climatic conditions, (d) any delay, impediment or prevention by the Employer, or (e) other special circumstances which may occur, other than through a default of or breach of contract by the Contractor or for which he is responsible, being such as fairly to entitle the Contractor to an extension of the Time for Completion of the Works, or any Section or part thereof, the Engineer shall, after due consultation with the Employer and the Contractor, determine the amount of such extension and shall notify the Contractor accordingly, with a copy to the Employer.
Contractor to Provide Notification and Detailed Particulars	44.2	Provided that the Engineer is not bound to make any determination unless the Contractor has (a) within 28 days after such event has first arisen notified the Engineer with a copy to the Employer, and (b) within 28 days, or such other reasonable time as may be agreed by the Engineer, after such notification submitted to the Engineer detailed particulars of any extension of time to which he may consider himself entitled in order that such submission may be investigated at the time.
Interim Determination of Extension	44.3	Provided also that where an event has a continuing effect such that it is not practicable for the Contractor to submit detailed particulars within the period of 28 days referred to in Sub-Clause 44.2(b), he shall nevertheless be entitled to an extension of time provided that he has submitted to the Engineer interim particulars at intervals of not more than 28 days and final particulars within 28 days of the end of the effects resulting from the event. On receipt of such interim particulars, the Engineer shall, without undue delay, make an interim determination of extension of time and, on receipt of the final particulars, the Engineer shall review all the circumstances and shall determine an overall extension of time in regard to the event. In both such cases the Engineer shall make his determination after due consultation with the Employer and the Contractor and shall notify the Contractor of the determination, with a copy to the Employer. No final review shall result in a decrease of any extension of time already determined by the Engineer.

Restriction on Working Hours **45.1** Subject to any provision to the contrary contained in the Contract, none of the Works shall, save as hereinafter provided, be carried on during the night or on locally recognised days of rest without the consent of the Engineer, except when work is unavoidable or absolutely necessary for the saving of life or property or for the safety of the Works, in which case the Contractor shall immediately advise the Engineer. Provided that the provisions of this Clause shall not be applicable in the case of any work which it is customary to carry out by multiple shifts.

Rate of Progress **46.1** If for any reason, which does not entitle the Contractor to an extension of time, the rate of progress of the Works or any Section is at any time, in the opinion of the Engineer, too slow to comply with the Time for Completion, the Engineer shall so notify the Contractor who shall thereupon take such steps as are necessary, subject to the consent of the Engineer, to expedite progress so as to comply with the Time for Completion. The Contractor shall not be entitled to any additional payment for taking such steps. If, as a result of any notice given by the Engineer under this Clause, the Contractor considers that it is necessary to do any work at night or on locally recognised days of rest, he shall be entitled to seek the consent of the Engineer so to do. Provided that if any steps, taken by the Contractor in meeting his obligations under this Clause, involve the Employer in additional supervision costs, such costs shall, after due consultation with the Employer and the Contractor, be determined by the Engineer and shall be recoverable from the Contractor by the Employer, and may be deducted by the Employer from any monies due or to become due to the Contractor and the Engineer shall notify the Contractor accordingly, with a copy to the Employer.

Liquidated Damages for Delay **47.1** If the Contractor fails to comply with the Time for Completion in accordance with Clause 48, for the whole of the Works or, if applicable, any Section within the relevant time prescribed by Clause 43, then the Contractor shall pay to the Employer the relevant sum stated in the Appendix to Tender as liquidated damages for such default and not as a penalty (which sum shall be the only monies due from the Contractor for such default) for every day or part of a day which shall elapse between the relevant Time for Completion and the date stated in a Taking-Over Certificate of the whole of the Works or the relevant Section, subject to the applicable limit stated in the Appendix to Tender. The Employer may, without prejudice to any other method of recovery, deduct the amount of such damages from any monies due or to become due to the Contractor. The payment or deduction of such damages shall not relieve the Contractor from his obligation to complete the Works, or from any other of his obligations and liabilities under the Contract.

Reduction of Liquidated Damages **47.2** If, before the Time for Completion of the whole of the Works or, if applicable, any Section, a Taking-Over Certificate has been issued for any part of the Works or of a Section, the liquidated damages for delay in completion of the remainder of the Works or of that Section shall, for any period of delay after the date stated in such Taking-Over Certificate, and in the absence of alternative provisions in the Contract, be reduced in the proportion which the value of the part so certified bears to the value of the whole of the Works or Section, as applicable. The provisions of this Sub-Clause shall only apply to the rate of liquidated damages and shall not affect the limit thereof.

Taking-Over Certificate	48.1	When the whole of the Works have been substantially completed and have satisfactorily passed any Tests on Completion prescribed by the Contract, the Contractor may give a notice to that effect to the Engineer, with a copy to the Employer, accompanied by a written undertaking to finish with due expedition any outstanding work during the Defects Liability Period. Such notice and undertaking shall be deemed to be a request by the Contractor for the Engineer to issue a Taking-Over Certificate in respect of the Works. The Engineer shall, within 21 days of the date of delivery of such notice, either issue to the Contractor, with a copy to the Employer, a Taking-Over Certificate, stating the date on which, in his opinion, the Works were substantially completed in accordance with the Contract, or give instructions in writing to the Contractor specifying all the work which, in the Engineer's opinion, is required to be done by the Contractor before the issue of such Certificate. The Engineer shall also notify the Contractor of any defects in the Works affecting substantial completion that may appear after such instructions and before completion of the Works specified therein. The Contractor shall be entitled to receive such Taking-Over Certificate within 21 days of completion, to the satisfaction of the Engineer, of the Works so specified and remedying any defects so notified.
Taking Over of Sections or Parts	48.2	Similarly, in accordance with the procedure set out in Sub-Clause 48.1, the Contractor may request and the Engineer shall issue a Taking-Over Certificate in respect of: (a) any Section in respect of which a separate Time for Completion is provided in the Appendix to Tender, (b) any substantial part of the Permanent Works which has been both completed to the satisfaction of the Engineer and, otherwise than as provided for in the Contract, occupied or used by the Employer, or (c) any part of the Permanent Works which the Employer has elected to occupy or use prior to completion (where such prior occupation or use is not provided for in the Contract or has not been agreed by the Contractor as a temporary measure).
Substantial Completion of Parts	48.3	If any part of the Permanent Works has been substantially completed and has satisfactorily passed any Tests on Completion prescribed by the Contract, the Engineer may issue a Taking-Over Certificate in respect of that part of the Permanent Works before completion of the whole of the Works and, upon the issue of such Certificate, the Contractor shall be deemed to have undertaken to complete with due expedition any outstanding work in that part of the Permanent Works during the Defects Liability Period.
Surfaces Requiring Reinstatement	48.4	Provided that a Taking-Over Certificate given in respect of any Section or part of the Permanent Works before completion of the whole of the Works shall not be deemed to certify completion of any ground or surfaces requiring reinstatement, unless such Taking-Over Certificate shall expressly so state.

Defects Liability

Defects Liability Period	49.1	In these Conditions the expression "Defects Liability Period" shall mean the defects liability period named in the Appendix to Tender, calculated from: (a) the date of completion of the Works certified by the Engineer in accordance with Clause 48, or (b) in the event of more than one certificate having been issued by the Engineer under Clause 48, the respective dates so certified, and in relation to the Defects Liability Period the expression "the Works" shall be construed accordingly.
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Completion of Outstanding Work and Remedying Defects	49.2	To the intent that the Works shall, at or as soon as practicable after the expiration of the Defects Liability Period, be delivered to the Employer in the condition required by the Contract, fair wear and tear excepted, to the satisfaction of the Engineer, the Contractor shall: (a) complete the work, if any, outstanding on the date stated in the Taking-Over Certificate as soon as practicable after such date, and (b) execute all such work of amendment, reconstruction, and remedying defects, shrinkages or other faults as the Engineer may, during the Defects Liability Period or within 14 days after its expiration, as a result of an inspection made by or on behalf of the Engineer prior to its expiration, instruct the Contractor to execute.
Cost of Remedying Defects	49.3	All work referred to in Sub-Clause 49.2 (b) shall be executed by the Contractor at his own cost if the necessity thereof is, in the opinion of the Engineer, due to: (a) the use of materials, Plant or workmanship not in accordance with the Contract, (b) where the Contractor is responsible for the design of part of the Permanent Works, any fault in such design, or (c) the neglect or failure on the part of the Contractor to comply with any obligation, expressed or implied, on the Contractor's part under the Contract. If, in the opinion of the Engineer, such necessity is due to any other cause, he shall determine an addition to the Contract Price in accordance with Clause 52 and shall notify the Contractor accordingly, with a copy to the Employer.
Contractor's Failure to Carry Out Instructions	49.4	In case of default on the part of the Contractor in carrying out such instruction within a reasonable time, the Employer shall be entitled to employ and pay other persons to carry out the same and if such work is work which, in the opinion of the Engineer, the Contractor was liable to do at his own cost under the Contract, then all costs consequent thereon or incidental thereto shall, after due consultation with the Employer and the Contractor, be determined by the Engineer and shall be recoverable from the Contractor by the Employer, and may be deducted by the Employer from any monies due or to become due to the Contractor and the Engineer shall notify the Contractor accordingly, with a copy to the Employer.
Contractor to Search	50.1	If any defect, shrinkage or other fault in the Works appears at any time prior to the end of the Defects Liability Period, the Engineer may instruct the Contractor, with copy to the Employer, to search under the directions of the Engineer for the cause thereof. Unless such defect, shrinkage or other fault is one for which the Contractor is liable under the Contract, the Engineer shall, after due consultation with the Employer and the Contractor, determine the amount in respect of the costs of such search incurred by the Contractor, which shall be added to the Contract Price and shall notify the Contractor accordingly, with a copy to the Employer. If such defect, shrinkage or other fault is one for which the Contractor is liable, the cost of the work carried out in searching as aforesaid shall be borne by the Contractor and he shall in such case remedy such defect, shrinkage or other fault at his own cost in accordance with the provisions of Clause 49.

Alterations, Additions and Omissions

Variations	51.1	The Engineer shall make any variation of the form, quality or quantity of the Works or any part thereof that may, in his opinion, be necessary and for that purpose, or if for any other reason it shall, in his opinion, be appropriate, he shall have the authority to instruct the Contractor to do and the Contractor shall do any of the following: (a) increase or decrease the quantity of any work included in the Contract, (b) omit any such work (but not if the omitted work is to be carried out by the Employer or by another contractor),
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- (c) change the character or quality or kind of any such work,
- (d) change the levels, lines, position and dimensions of any part of the Works,
- (e) execute additional work of any kind necessary for the completion of the Works, or
- (f) change any specified sequence or timing of construction of any part of the Works.

No such variation shall in any way vitiate or invalidate the Contract, but the effect, if any, of all such variations shall be valued in accordance with Clause 52. Provided that where the issue of an instruction to vary the Works is necessitated by some default of or breach of contract by the Contractor or for which he is responsible, any additional cost attributable to such default shall be borne by the Contractor.

Instructions for Variations	51.2	The Contractor shall not make any such variation without an instruction of the Engineer. Provided that no instruction shall be required for increase or decrease in the quantity of any work where such increase or decrease is not the result of an instruction given under this Clause, but is the result of the quantities exceeding or being less than those stated in the Bill of Quantities.
Valuation of Variations	52.1	All variations referred to in Clause 51 and any additions to the Contract Price which are required to be determined in accordance with Clause 52 (for the purposes of this Clause referred to as "varied work"), shall be valued at the rates and prices set out in the Contract if, in the opinion of the Engineer, the same shall be applicable. If the Contract does not contain any rates or prices applicable to the varied work, the rates and prices in the Contract shall be used as the basis for valuation so far as may be reasonable, failing which, after due consultation by the Engineer with the Employer and the Contractor, suitable rates or prices shall be agreed upon between the Engineer and the Contractor. In the event of disagreement the Engineer shall fix such rates or prices as are, in his opinion, appropriate and shall notify the Contractor accordingly, with a copy to the Employer. Until such time as rates or prices are agreed or fixed, the Engineer shall determine provisional rates or prices to enable on-account payments to be included in certificates issued in accordance with Clause 60.
Power of Engineer to Fix Rates	52.2	Provided that if the nature or amount of any varied work relative to the nature or amount of the whole of the Works or to any part thereof, is such that, in the opinion of the Engineer, the rate or price contained in the Contract for any item of the Works is, by reason of such varied work, rendered inappropriate or inapplicable, then, after due consultation by the Engineer with the Employer and the Contractor, a suitable rate or price shall be agreed upon between the Engineer and the Contractor. In the event of disagreement the Engineer shall fix such other rate or price as is, in his opinion, appropriate and shall notify the Contractor accordingly, with a copy to the Employer. Until such time as rates or prices are agreed or fixed, the Engineer shall determine provisional rates or prices to enable on-account payments to be included in certificates issued in accordance with Clause 60. Provided also that no varied work instructed to be done by the Engineer pursuant to Clause 51 shall be valued under Sub-Clause 52.1 or under this Sub-Clause unless, within 14 days of the date of such instruction and, other than in the case of omitted work, before the commencement of the varied work, notice shall have been given either: (a) by the Contractor to the Engineer of his intention to claim extra payment or a varied rate or price, or (b) by the Engineer to the Contractor of his intention to vary a rate or price.
Variations Exceeding 15 per cent	52.3	If, on the issue of the Taking-Over Certificate for the whole of the Works, it is found that as a result of: (a) all varied work valued under Sub-Clauses 52.1 and 52.2, and

(b) all adjustments upon measurement of the estimated quantities set out in the Bill of Quantities, excluding Provisional Sums, dayworks and adjustments of price made under Clause 70,

but not from any other cause, there have been additions to or deductions from the Contract Price which taken together are in excess of 15 per cent of the “Effective Contract Price” (which for the purposes of this Sub-Clause shall mean the Contract Price, excluding Provisional Sums and allowance for dayworks, if any) then and in such event (subject to any action already taken under any other Sub-Clause of this Clause), after due consultation by the Engineer with the Employer and the Contractor, there shall be added to or deducted from the Contract Price such further sum as may be agreed between the Contractor and the Engineer or, failing agreement, determined by the Engineer having regard to the Contractor’s Site and general overhead costs of the Contract. The Engineer shall notify the Contractor of any determination made under this Sub-Clause, with a copy to the Employer. Such sum shall be based only on the amount by which such additions or deductions shall be in excess of 15 per cent of the Effective Contract Price.

Daywork 52.4 The Engineer may, if in his opinion it is necessary or desirable, issue an instruction that any varied work shall be executed on a daywork basis. The Contractor shall then be paid for such varied work under the terms set out in the daywork schedule included in the Contract and at the rates and prices affixed thereto by him in the Tender.

The Contractor shall furnish to the Engineer such receipts or other vouchers as may be necessary to prove the amounts paid and, before ordering materials, shall submit to the Engineer quotations for the same for his approval.

In respect of such of the Works executed on a daywork basis, the Contractor shall, during the continuance of such work, deliver each day to the Engineer an exact list in duplicate of the names, occupation and time of all workmen employed on such work and a statement, also in duplicate, showing the description and quantity of all materials and Contractor’s Equipment used thereon or therefor other than Contractor’s Equipment which is included in the percentage addition in accordance with such daywork schedule. One copy of each list and statement will, if correct, or when agreed, be signed by the Engineer and returned to the Contractor.

At the end of each month the Contractor shall deliver to the Engineer a priced statement of the labour, materials and Contractor’s Equipment, except as aforesaid, used and the Contractor shall not be entitled to any payment unless such lists and statements have been fully and punctually rendered. Provided always that if the Engineer considers that for any reason the sending of such lists or statements by the Contractor, in accordance with the foregoing provision, was impracticable he shall nevertheless be entitled to authorise payment for such work, either as daywork, on being satisfied as to the time employed and the labour, materials and Contractor’s Equipment used on such work, or at such value therefor as shall, in his opinion, be fair and reasonable.

Procedure for Claims

Notice of Claims 53.1 Notwithstanding any other provision of the Contract, if the Contractor intends to claim any additional payment pursuant to any Clause of these Conditions or otherwise, he shall give notice of his intention to the Engineer, with a copy to the Employer, within 28 days after the event giving rise to the claim has first arisen.

Contemporary Records 53.2 Upon the happening of the event referred to in Sub-Clause 53.1, the Contractor shall keep such contemporary records as may reasonably be necessary to support any claim he may subsequently wish to make. Without necessarily admitting the Employer’s liability, the Engineer shall, on receipt of a notice under Sub-Clause 53.1, inspect such contemporary records and may instruct the Contractor to keep

any further contemporary records as are reasonable and may be material to the claim of which notice has been given. The Contractor shall permit the Engineer to inspect all records kept pursuant to this Sub-Clause and shall supply him with copies thereof as and when the Engineer so instructs.

Substantiation of Claims	53.3	Within 28 days, or such other reasonable time as may be agreed by the Engineer, of giving notice under Sub-Clause 53.1, the Contractor shall send to the Engineer an account giving detailed particulars of the amount claimed and the grounds upon which the claim is based. Where the event giving rise to the claim has a continuing effect, such account shall be considered to be an interim account and the Contractor shall, at such intervals as the Engineer may reasonably require, send further interim accounts giving the accumulated amount of the claim and any further grounds upon which it is based. In cases where interim accounts are sent to the Engineer, the Contractor shall send a final account within 28 days of the end of the effects resulting from the event. The Contractor shall, if required by the Engineer so to do, copy to the Employer all accounts sent to the Engineer pursuant to this Sub-Clause.
Failure to Comply	53.4	If the Contractor fails to comply with any of the provisions of this Clause in respect of any claim which he seeks to make, his entitlement to payment in respect thereof shall not exceed such amount as the Engineer or any arbitrator or arbitrators appointed pursuant to Sub-Clause 67.3 assessing the claim considers to be verified by contemporary records (whether or not such records were brought to the Engineer's notice as required under Sub-Clauses 53.2 and 53.3).
Payment of Claims	53.5	The Contractor shall be entitled to have included in any interim payment certified by the Engineer pursuant to Clause 60 such amount in respect of any claim as the Engineer, after due consultation with the Employer and the Contractor, may consider due to the Contractor provided that the Contractor has supplied sufficient particulars to enable the Engineer to determine the amount due. If such particulars are insufficient to substantiate the whole of the claim, the Contractor shall be entitled to payment in respect of such part of the claim as such particulars may substantiate to the satisfaction of the Engineer. The Engineer shall notify the Contractor of any determination made under this Sub-Clause, with a copy to the Employer.

Contractor's Equipment, Temporary Works and Materials

Contractor's Equipment, Temporary Works and Materials; Exclusive Use for the Works	54.1	All Contractor's Equipment, Temporary Works and materials provided by the Contractor shall, when brought on to the Site, be deemed to be exclusively intended for the execution of the Works and the Contractor shall not remove the same or any part thereof, except for the purpose of moving it from one part of the Site to another, without the consent of the Engineer. Provided that consent shall not be required for vehicles engaged in transporting any staff, labour, Contractor's Equipment, Temporary Works, Plant or materials to or from the Site.
Employer not Liable for Damage	54.2	The Employer shall not at any time be liable, save as mentioned in Clauses 20 and 65, for the loss of or damage to any of the said Contractor's Equipment, Temporary Works or materials.
Customs Clearance	54.3	The Employer will use his best endeavours in assisting the Contractor, where required, in obtaining clearance through the Customs of Contractor's Equipment, materials and other things required for the Works.
Re-export of Contractor's Equipment	54.4	In respect of any Contractor's Equipment which the Contractor has imported for the purposes of the Works, the Employer will use his best endeavours to assist the Contractor, where required, in procuring any necessary Government consent to the re-export of such Contractor's Equipment by the Contractor upon the removal thereof pursuant to the terms of the Contract.

Conditions of Hire of Contractor's Equipment	54.5	With a view to securing, in the event of termination under Clause 63, the continued availability, for the purpose of executing the Works, of any hired Contractor's Equipment, the Contractor shall not bring on to the Site any hired Contractor's Equipment unless there is an agreement for the hire thereof (which agreement shall be deemed not to include an agreement for hire purchase) which contains a provision that the owner thereof will, on request in writing made by the Employer within 7 days after the date on which any termination has become effective, and on the Employer undertaking to pay all hire charges in respect thereof from such date, hire such Contractor's Equipment to the Employer on the same terms in all respects as the same was hired to the Contractor save that the Employer shall be entitled to permit the use thereof by any other contractor employed by him for the purpose of executing and completing the Works and remedying any defects therein, under the terms of the said Clause 63.
Costs for the Purpose of Clause 63	54.6	In the event of the Employer entering into any agreement for the hire of Contractor's Equipment pursuant to Sub-Clause 54.5, all sums properly paid by the Employer under the provisions of any such agreement and all costs incurred by him (including stamp duties) in entering into such agreement shall be deemed, for the purpose of Clause 63, to be part of the cost of executing and completing the Works and the remedying of any defects therein.
Incorporation of Clause in Subcontracts	54.7	The Contractor shall, where entering into any subcontract for the execution of any part of the Works, incorporate in such subcontract (by reference or otherwise) the provisions of this Clause in relation to Contractor's Equipment, Temporary Works or materials brought on to the Site by the Subcontractor.
Approval of Materials not Implied	54.8	The operation of this Clause shall not be deemed to imply any approval by the Engineer of the materials or other matters referred to therein nor shall it prevent the rejection of any such materials at any time by the Engineer.

Measurement

Quantities	55.1	The quantities set out in the Bill of Quantities are the estimated quantities for the Works, and they are not to be taken as the actual and correct quantities of the Works to be executed by the Contractor in fulfilment of his obligations under the Contract.
Works to be Measured	56.1	The Engineer shall, except as otherwise stated, ascertain and determine by measurement the value of the Works in accordance with the Contract and the Contractor shall be paid that value in accordance with Clause 60. The Engineer shall, when he requires any part of the Works to be measured, give reasonable notice to the Contractor's authorised agent, who shall: (a) forthwith attend or send a qualified representative to assist the Engineer in making such measurement, and (b) supply all particulars required by the Engineer. Should the Contractor not attend, or neglect or omit to send such representative, then the measurement made by the Engineer or approved by him shall be taken to be the correct measurement of such part of the Works. For the purpose of measuring such Permanent Works as are to be measured by records and drawings, the Engineer shall prepare records and drawings as the work proceeds and the Contractor, as and when called upon to do so in writing, shall, within 14 days, attend to examine and agree such records and drawings with the Engineer and shall sign the same when so agreed. If the Contractor does not attend to examine and agree such records and drawings, they shall be taken to be correct. If, after examination of such records and drawings, the Contractor does not agree the same or does not sign the same as agreed, they shall nevertheless be taken to be correct, unless the Contractor, within 14 days of such examination, lodges with the Engineer notice of the respects in which such records and drawings are claimed by him to be incorrect. On receipt of such notice, the Engineer shall review the records and drawings and either confirm or vary them.

Method of Measurement	57.1	The Works shall be measured net, notwithstanding any general or local custom, except where otherwise provided for in the Contract.
Breakdown of Lump Sum Items	57.2	For the purposes of statements submitted in accordance with Sub-Clause 60.1, the Contractor shall submit to the Engineer, within 28 days after the receipt of the Letter of Acceptance, a breakdown for each of the lump sum items contained in the Tender. Such breakdowns shall be subject to the approval of the Engineer.

Provisional Sums

Definition of “Provisional Sum”	58.1	“Provisional Sum” means a sum included in the Contract and so designated in the Bill of Quantities for the execution of any part of the Works or for the supply of goods, materials, Plant or services, or for contingencies, which sum may be used, in whole or in part, or not at all, on the instructions of the Engineer. The Contractor shall be entitled to only such amounts in respect of the work, supply or contingencies to which such Provisional Sums relate as the Engineer shall determine in accordance with this Clause. The Engineer shall notify the Contractor of any determination made under this Sub-Clause, with a copy to the Employer.
Use of Provisional Sums	58.2	In respect of every Provisional Sum the Engineer shall have authority to issue instructions for the execution of work or for the supply of goods, materials, Plant or services by: (a) the Contractor, in which case the Contractor shall be entitled to an amount equal to the value thereof determined in accordance with Clause 52, and (b) a nominated Subcontractor, as hereinafter defined, in which case the sum to be paid to the Contractor therefor shall be determined and paid in accordance with Sub-Clause 59.4.
Production of Vouchers	58.3	The Contractor shall produce to the Engineer all quotations, invoices, vouchers and accounts or receipts in connection with expenditure in respect of Provisional Sums, except where work is valued in accordance with rates or prices set out in the Tender.

Nominated Subcontractors

Definition of “Nominated Subcontractors”	59.1	All specialists, merchants, tradesmen and others executing any work or supplying any goods, materials, Plant or services for which Provisional Sums are included in the Contract, who may have been or be nominated or selected or approved by the Employer or the Engineer, and all persons to whom by virtue of the provisions of the Contract the Contractor is required to subcontract shall, in the execution of such work or the supply of such goods, materials, Plant or services, be deemed to be subcontractors to the Contractor and are referred to in this Contract as “nominated Subcontractors”.
Nominated Subcontractors; Objection to Nomination	59.2	The Contractor shall not be required by the Employer or the Engineer, or be deemed to be under any obligation, to employ any nominated Subcontractor against whom the Contractor may raise reasonable objection, or who declines to enter into a subcontract with the Contractor containing provisions: (a) that in respect of the work, goods, materials, Plant or services the subject of the subcontract, the nominated Subcontractor will undertake towards the Contractor such obligations and liabilities as will enable the Contractor to discharge his own obligations and liabilities towards the Employer under the terms of the Contract and will save harmless and indemnify the Contractor from and against the same and from all claims, proceedings, damages, costs, charges and expenses whatsoever arising out of or in connection therewith, or arising out of or in connection with any failure to perform such obligations or to fulfil such liabilities, and

(b) that the nominated Subcontractor will save harmless and indemnify the Contractor from and against any negligence by the nominated Subcontractor, his agents, workmen and servants and from and against any misuse by him or them of any Temporary Works provided by the Contractor for the purposes of the Contract and from all claims as aforesaid.

**Design
Requirements
to be Expressly
Stated**

59.3 If in connection with any Provisional Sum the services to be provided include any matter of design or specification of any part of the Permanent Works or of any Plant to be incorporated therein, such requirement shall be expressly stated in the Contract and shall be included in any nominated Subcontract. The nominated Subcontract shall specify that the nominated Subcontractor providing such services will save harmless and indemnify the Contractor from and against the same and from all claims, proceedings, damages, costs, charges and expenses whatsoever arising out of or in connection with any failure to perform such obligations or to fulfil such liabilities.

**Payments to
Nominated
Subcontractors**

59.4 For all work executed or goods, materials, Plant or services supplied by any nominated Subcontractor, the Contractor shall be entitled to:

(a) the actual price paid or due to be paid by the Contractor, on the instructions of the Engineer, and in accordance with the subcontract;

(b) in respect of labour supplied by the Contractor, the sum, if any, entered in the Bill of Quantities or, if instructed by the Engineer pursuant to paragraph (a) of Sub-Clause 58.2, as may be determined in accordance with Clause 52; and

(c) in respect of all other charges and profit, a sum being a percentage rate of the actual price paid or due to be paid calculated, where provision has been made in the Bill of Quantities for a rate to be set against the relevant Provisional Sum, at the rate inserted by the Contractor against that item or, where no such provision has been made, at the rate inserted by the Contractor in the Appendix to Tender and repeated where provision for such is made in a special item provided in the Bill of Quantities for such purpose.

**Certification of
Payments to
Nominated
Subcontractors**

59.5 Before issuing, under Clause 60, any certificate, which includes any payment in respect of work done or goods, materials, Plant or services supplied by any nominated Subcontractor, the Engineer shall be entitled to demand from the Contractor reasonable proof that all payments, less retentions, included in previous certificates in respect of the work or goods, materials, Plant or services of such nominated Subcontractor have been paid or discharged by the Contractor. If the Contractor fails to supply such proof then, unless the Contractor:

(a) satisfies the Engineer in writing that he has reasonable cause for withholding or refusing to make such payments, and

(b) produces to the Engineer reasonable proof that he has so informed such nominated Subcontractor in writing,

the Employer shall be entitled to pay to such nominated Subcontractor direct, upon the certificate of the Engineer, all payments, less retentions, provided for in the nominated Subcontract, which the Contractor has failed to make to such nominated Subcontractor and to deduct by way of set-off the amount so paid by the Employer from any sums due or to become due from the Employer to the Contractor.

Provided that, where the Engineer has certified and the Employer has paid direct as aforesaid, the Engineer shall, in issuing any further certificate in favour of the Contractor, deduct from the amount thereof the amount so paid, direct as aforesaid, but shall not withhold or delay the issue of the certificate itself when due to be issued under the terms of the Contract.

Certificates and Payment

Monthly Statements

60.1 The Contractor shall submit to the Engineer after the end of each month six copies, each signed by the Contractor's representative approved by the Engineer in accordance with Sub-Clause 15.1, of a statement, in such form as the Engineer may from time to time prescribe, showing the amounts to which the Contractor considers himself to be entitled up to the end of the month in respect of:

- (a) the value of the Permanent Works executed,
- (b) any other items in the Bill of Quantities including those for Contractor's Equipment, Temporary Works, dayworks and the like,
- (c) the percentage of the invoice value of listed materials, all as stated in the Appendix to Tender, and Plant delivered by the Contractor on the Site for incorporation in the Permanent Works but not incorporated in such Works,
- (d) adjustments under Clause 70, and
- (e) any other sum to which the Contractor may be entitled under the Contract or otherwise.

Monthly Payments

60.2 The Engineer shall, within 28 days of receiving such statement, deliver to the Employer an Interim Payment Certificate stating the amount of payment to the Contractor which the Engineer considers due and payable in respect of such statement, subject:

(a) firstly, to the retention of the amount calculated by applying the Percentage of Retention stated in the Appendix to Tender, to the amount to which the Contractor is entitled under paragraphs (a), (b), (c) and (e) of Sub-Clause 60.1 until the amount so retained reaches the Limit of Retention Money stated in the Appendix to Tender, and

(b) secondly, to the deduction, other than pursuant to Clause 47, of any sums which may have become due and payable by the Contractor to the Employer.

Provided that the Engineer shall not be bound to certify any payment under this Sub-Clause if the net amount thereof, after all retentions and deductions, would be less than the Minimum Amount of Interim Payment Certificates stated in the Appendix to Tender.

Notwithstanding the terms of this Clause or any other Clause of the Contract no amount will be certified by the Engineer for payment until the performance security, if required under the Contract, has been provided by the Contractor and approved by the Employer.

Payment of Retention Money

60.3 (a) Upon the issue of the Taking-Over Certificate with respect to the whole of the Works, one half of the Retention Money, or upon the issue of a Taking-Over Certificate with respect to a Section or part of the Permanent Works only such proportion thereof as the Engineer determines having regard to the relative value of such Section or part of the Permanent Works, shall be certified by the Engineer for payment to the Contractor.

(b) Upon the expiration of the Defects Liability Period for the Works the other half of the Retention Money shall be certified by the Engineer for payment to the Contractor. Provided that, in the event of different Defects Liability Periods having become applicable to different Sections or parts of the Permanent Works pursuant to Clause 48, the expression "expiration of the Defects Liability Period" shall, for the purposes of this Sub-Clause, be deemed to mean the expiration of the latest of such periods. Provided also that if at such time there shall remain to be executed by the Contractor any work instructed, pursuant to Clauses 49 and 50, in respect of the Works, the Engineer shall be entitled to withhold certification until completion of such work of so much of the balance of the Retention Money as shall, in the opinion of the Engineer, represent the cost of the work remaining to be executed.

Correction of Certificates

60.4 The Engineer may by any Interim Payment Certificate make any correction or modification in any previous Interim Payment Certificate which shall have been issued by him and shall have authority, if any work is not being carried out to his satisfaction, to omit or reduce the value of such work in any Interim Payment Certificate.

Statement at Completion	60.5	Not later than 84 days after the issue of the Taking-Over Certificate in respect of the whole of the Works, the Contractor shall submit to the Engineer six copies of a Statement at Completion with supporting documents showing in detail, in the form approved by the Engineer: (a) the final value of all work done in accordance with the Contract up to the date stated in such Taking-Over Certificate, (b) any further sums which the Contractor considers to be due, and (c) an estimate of amounts which the Contractor considers will become due to him under the Contract. The estimated amounts shall be shown separately in such Statement at Completion. The Engineer shall certify payment in accordance with Sub-Clause 60.2.
Final Statement	60.6	Not later than 56 days after the issue of the Defects Liability Certificate pursuant to Sub-Clause 62.1, the Contractor shall submit to the Engineer for consideration six copies of a draft final statement with supporting documents showing in detail, in the 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 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 (for the purposes of these Conditions referred to as the "Final Statement"). If, following discussions between the Engineer and the Contractor and any changes to the draft final statement which may be agreed between them, it becomes evident that a dispute exists, the Engineer shall deliver to the Employer an Interim Payment Certificate for those parts of the draft final statement, if any, which are not in dispute. The dispute may then be settled in accordance with Clause 67.
Discharge	60.7	Upon submission of the Final Statement, the Contractor shall give to the Employer, with a copy to the Engineer, a written discharge confirming that the total of the Final Statement represents full and final settlement of all monies due to the Contractor arising out of or in respect of the Contract. Provided that such discharge shall become effective only after payment due under the Final Payment Certificate issued pursuant to Sub-Clause 60.8 has been made and the performance security referred to in Sub-Clause 10.1, if any, has been returned to the Contractor.
Final Payment Certificate	60.8	Within 28 days after receipt of the Final Statement, and the written discharge, the Engineer shall issue to the Employer (with a copy to the Contractor) a Final Payment Certificate stating: (a) the amount which, in the opinion of the Engineer, is finally due under the Contract or otherwise, 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 other than under Clause 47, the balance, if any, due from the Employer to the Contractor or from the Contractor to the Employer as the case may be.
Cessation of Employer's Liability	60.9	The Employer shall not be liable to the Contractor for any matter or thing arising out of or in connection with the Contract or execution of the Works, unless the Contractor shall have included a claim in respect thereof in his Final Statement and (except in respect of matters or things arising after the issue of the Taking-Over Certificate in respect of the whole of the Works) in the Statement at Completion referred to in Sub-Clause 60.5.

Time for Payment	60.10	The amount due to the Contractor under any Interim Payment Certificate issued by the Engineer pursuant to this Clause, or to any other term of the Contract, shall, subject to Clause 47, be paid by the Employer to the Contractor within 28 days after such Interim Payment Certificate has been delivered to the Employer, or, in the case of the Final Payment Certificate referred to in Sub-Clause 60.8, within 56 days, after such Final Payment Certificate has been delivered to the Employer. In the event of the failure of the Employer to make payment within the times stated, the Employer shall pay to the Contractor interest at the rate stated in the Appendix to Tender upon all sums unpaid from the date by which the same should have been paid. The provisions of this Sub-Clause are without prejudice to the Contractor's entitlement under Clause 69 or otherwise.
Approval only by Defects Liability Certificate	61.1	Only the Defects Liability Certificate, referred to in Clause 62, shall be deemed to constitute approval of the Works.
Defects Liability Certificate	62.1	The Contract shall not be considered as completed until a Defects Liability Certificate shall have been signed by the Engineer and delivered to the Employer, with a copy to the Contractor, stating the date on which the Contractor shall have completed his obligations to execute and complete the Works and remedy any defects therein to the Engineer's satisfaction. The Defects Liability Certificate shall be given by the Engineer within 28 days after the expiration of the Defects Liability Period, or, if different defects liability periods shall become applicable to different Sections or parts of the Permanent Works, the expiration of the latest such period, or as soon thereafter as any works instructed, pursuant to Clauses 49 and 50, have been completed to the satisfaction of the Engineer. Provided that the issue of the Defects Liability Certificate shall not be a condition precedent to payment to the Contractor of the second portion of the Retention Money in accordance with the conditions set out in Sub-Clause 60.3.
Unfulfilled Obligations	62.2	Notwithstanding the issue of the Defects Liability Certificate the Contractor and the Employer shall remain liable for the fulfilment of any obligation incurred under the provisions of the Contract prior to the issue of the Defects Liability Certificate which remains unperformed at the time such Defects Liability Certificate is issued and, for the purposes of determining the nature and extent of any such obligation, the Contract shall be deemed to remain in force between the parties to the Contract.

Remedies

Default of Contractor	63.1	If the Contractor is deemed by law unable to pay his debts as they fall due, or enters into voluntary or involuntary bankruptcy, liquidation or dissolution (other than a voluntary liquidation for the purposes of amalgamation or reconstruction), or becomes insolvent, or makes an arrangement with, or assignment in favour of, his creditors, or agrees to carry out the Contract under a committee of inspection of his creditors, or if a receiver, administrator, trustee or liquidator is appointed over any substantial part of his assets, or if, under any law or regulation relating to reorganization, arrangement or readjustment of debts, proceedings are commenced against the Contractor or resolutions passed in connection with dissolution or liquidation or if any steps are taken to enforce any security interest over a substantial part of the assets of the Contractor, or if any act is done or event occurs with respect to the Contractor or his assets which, under any applicable law has a substantially similar effect to any of the foregoing acts or events, or if the Contractor has contravened Sub-Clause 3.1, or has an execution levied on his goods, or if the Engineer certifies to the Employer, with a copy to the Contractor, that, in his opinion, the Contractor: (a) has repudiated the Contract, (b) without reasonable excuse has failed (i) to commence the Works in accordance with Sub-Clause 41.1, or (ii) to proceed with the Works, or any Section thereof, within 28 days after receiving notice pursuant to Sub-Clause 46.1,
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(c) has failed to comply with a notice issued pursuant to Sub-Clause 37.4 or an instruction issued pursuant to Sub-Clause 39.1 within 28 days after having received it,

(d) despite previous warning from the Engineer, in writing, is otherwise persistently or flagrantly neglecting to comply with any of his obligations under the Contract, or

(e) has contravened Sub-Clause 4.1,

then the Employer may, after giving 14 days' notice to the Contractor, enter upon the Site and the Works and terminate the employment of the Contractor without thereby releasing the Contractor from any of his obligations or liabilities under the Contract, or affecting the rights and authorities conferred on the Employer or the Engineer by the Contract, and may himself complete the Works or may employ any other contractor to complete the Works. The Employer or such other contractor may use for such completion so much of the Contractor's Equipment, Temporary Works and materials as he or they may think proper.

**Valuation at Date
of Termination**

63.2

The Engineer shall, as soon as may be practicable after any such entry and termination by the Employer, fix and determine ex parte, or by or after reference to the parties or after such investigation or enquiries as he may think fit to make or institute, and shall certify:

a) what amount (if any) had, at the time of such entry and termination, been reasonably earned by or would reasonably accrue to the Contractor in respect of work then actually done by him under the Contract, and

(b) the value of any of the said unused or partially used materials, any Contractor's Equipment and any Temporary Works.

**Payment after
Termination**

63.3

If the Employer terminates the Contractor's employment under this Clause, he shall not be liable to pay to the Contractor any further amount (including damages) in respect of the Contract until the expiration of the Defects Liability Period and there after until the costs of execution, completion and remedying of any defects, damages for delay in completion (if any) and all other expenses incurred by the Employer have been ascertained and the amount thereof certified by the Engineer. The Contractor shall then be entitled to receive only such sum (if any) as the Engineer may certify would have been payable to him upon due completion by him after deducting the said amount. If such amount exceeds the sum which would have been payable to the Contractor on due completion by him, then the Contractor shall, upon demand, pay to the Employer the amount of such excess and it shall be deemed a debt due by the Contractor to the Employer and shall be recoverable accordingly.

**Assignment of
Benefit of
Agreement**

63.4

Unless prohibited by law, the Contractor shall, if so instructed by the Engineer within 14 days of such entry and termination referred to in Sub-Clause 63.1, assign to the Employer the benefit of any agreement for the supply of any goods or materials or services and/or for the execution of any work for the purposes of the Contract, which the Contractor may have entered into.

**Urgent Remedial
Work**

64.1

If, by reason of any accident, or failure, or other event occurring to, in, or in connection with the Works, or any part thereof, either during the execution of the Works, or during the Defects Liability Period, any remedial or other work is, in the opinion of the Engineer, urgently necessary for the safety of the Works and the Contractor is unable or unwilling at once to do such work, the Employer shall be entitled to employ and pay other persons to carry out such work as the Engineer may consider necessary. If the work or repair so done by the Employer is work which, in the opinion of the Engineer, the Contractor was liable to do at his own cost under the Contract, then all costs consequent thereon or incidental thereto shall, after due consultation with the Employer and the Contractor, be determined by the Engineer and shall be recoverable from the Contractor by the Employer, and may be deducted by the Employer from any monies due or to become due to the Contractor and the Engineer shall notify the Contractor accordingly, with a copy to the Employer. Provided that the Engineer shall, as soon after the occurrence of any such emergency as may be reasonably practicable, notify the Contractor thereof.

Special Risks

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| No Liability for Special Risks | 65.1 | <p>The Contractor shall be under no liability whatsoever in consequence of any of the special risks referred to in Sub-Clause 65.2, whether by way of indemnity or otherwise, for or in respect of:</p> <ul style="list-style-type: none"> (a) destruction of or damage to the Works, save to work condemned under the provisions of Clause 39 prior to the occurrence of any of the said special risks, (b) destruction of or damage to property, whether of the Employer or third parties, or (c) injury or loss of life. |
| Special Risks | 65.2 | <p>The special risks are:</p> <ul style="list-style-type: none"> (a) the risks defined under paragraphs (a), (c), (d) and (e) of Sub-Clause 20.4, and (b) the risks defined under paragraph (b) of Sub-Clause 20.4 insofar as these relate to the country in which the Works are to be executed. |
| Damage to Works by Special Risks | 65.3 | <p>If the Works or any materials or Plant on or near or in transit to the Site, or any of the Contractor's Equipment, sustain destruction or damage by reason of any of the said special risks, the Contractor shall be entitled to payment in accordance with the Contract for any Permanent Works duly executed and for any materials or Plant so destroyed or damaged and, so far as may be required by the Engineer or as may be necessary for the completion of the Works, to payment for:</p> <ul style="list-style-type: none"> (a) rectifying any such destruction or damage to the Works, and (b) replacing or rectifying such materials or Contractor's Equipment, <p>and the Engineer shall determine an addition to the Contract Price in accordance with Clause 52 (which shall in the case of the cost of replacement of Contractor's Equipment include the fair market value thereof as determined by the Engineer) and shall notify the Contractor accordingly, with a copy to the Employer.</p> |
| Projectile, Missile | 65.4 | <p>Destruction, damage, injury or loss of life caused by the explosion or impact, whenever and wherever occurring, of any mine, bomb, shell, grenade, or other projectile, missile, munition, or explosive of war, shall be deemed to be a consequence of the said special risks.</p> |
| Increased Costs arising from Special Risks | 65.5 | <p>Save to the extent that the Contractor is entitled to payment under any other provision of the Contract, the Employer shall repay to the Contractor any costs of the execution of the Works (other than such as may be attributable to the cost of reconstructing work condemned under the provisions of Clause 39 prior to the occurrence of any special risk) which are howsoever attributable to or consequent on or the result of or in any way whatsoever connected with the said special risks, subject however to the provisions in this Clause hereinafter contained in regard to outbreak of war, but the Contractor shall, as soon as any such cost comes to his knowledge, forthwith notify the Engineer thereof. The Engineer shall, after due consultation with the Employer and the Contractor, determine the amount of the Contractor's costs in respect thereof which shall be added to the Contract Price and shall notify the Contractor accordingly, with a copy to the Employer.</p> |
| Outbreak of War | 65.6 | <p>If, during the currency of the Contract, there is an outbreak of war, whether war is declared or not, in any part of the world which, whether financially or otherwise, materially affects the execution of the Works, the Contractor shall, unless and until the Contract is terminated under the provisions of this Clause, continue to use his best endeavours to complete the execution of the Works. Provided that the Employer shall be entitled, at any time after such outbreak of war, to terminate the Contract by giving notice to the Contractor and, upon such notice being given, the Contract shall, except as to the rights of the parties under this Clause and Clause 67, terminate, but without prejudice to the rights of either party in respect of any antecedent breach thereof.</p> |

Removal of Contractor's Equipment on Termination

65.7 If the Contract is terminated under the provisions of Sub-Clause 65.6, the Contractor shall, with all reasonable dispatch, remove from the Site all Contractor's Equipment and shall give similar facilities to his Subcontractors to do so.

Payment if Contract Terminated

65.8 If the Contract is terminated as aforesaid, the Contractor shall be paid by the Employer, insofar as such amounts or items have not already been covered by payments on account made to the Contractor, for all work executed prior to the date of termination at the rates and prices provided in the Contract and in addition:

(a) the amounts payable in respect of any preliminary items referred to in the Bill of Quantities, so far as the work or service comprised therein has been carried out or performed, and a proper proportion of any such items which have been partially carried out or performed;

(b) the cost of materials, Plant or goods reasonably ordered for the Works which have been delivered to the Contractor or of which the Contractor is legally liable to accept delivery, such materials, Plant or goods becoming the property of the Employer upon such payments being made by him;

(c) a sum being the amount of any expenditure reasonably incurred by the Contractor in the expectation of completing the whole of the Works insofar as such expenditure has not been covered by any other payments referred to in this Sub-Clause;

(d) any additional sum payable under the provisions of Sub-Clauses 65.3 and 65.5;

(e) such proportion of the cost as may be reasonable, taking into account payments made or to be made for work executed, of removal of Contractor's Equipment under Sub-Clause 65.7 and, if required by the Contractor, return thereof to the Contractor's main plant yard in his country of registration or to other destination, at no greater cost; and

(f) the reasonable cost of repatriation of all the Contractor's staff and workmen employed on or in connection with the Works at the time of such termination.

Provided that against any payment due from the Employer under this Sub-Clause, the Employer shall be entitled to be credited with any outstanding balances due from the Contractor for advances in respect of Contractor's Equipment, materials and Plant and any other sums which, at the date of termination, were recoverable by the Employer from the Contractor under the terms of the Contract. Any sums payable under this Sub-Clause shall, after due consultation with the Employer and the Contractor, be determined by the Engineer who shall notify the Contractor accordingly, with a copy to the Employer.

Release from Performance

Payment in Event of Release from Performance

66.1 If any circumstance outside the control of both parties arises after the issue of the Letter of Acceptance which renders it impossible or unlawful for either or both parties to fulfil his or their contractual obligations, or under the law governing the Contract the parties are released from further performance, then the parties shall be discharged from the Contract, except as to their rights under this Clause and Clause 67 and without prejudice to the rights of either party in respect of any antecedent breach of the Contract, and the sum payable by the Employer to the Contractor in respect of the work executed shall be the same as that which would have been payable under Clause 65 if the Contract had been terminated under the provisions of Clause 65.

Settlement of Disputes

Engineer's Decision

67.1 If a dispute of any kind whatsoever arises between the Employer and the Contractor in connection with, or arising out of, the Contract or the execution of the Works, whether during the execution of the Works or after their completion and whether before or after repudiation or other termination of the Contract, including any dispute as to any opinion, instruction, determination, certificate or valuation of the Engineer, the matter in dispute shall, in the first place, be referred in writing to the Engineer, with a copy to the other party. Such reference shall state that it is made pursuant to this Clause. No later than the eighty-fourth day after the day on which he received such reference the Engineer shall give notice of his decision to the Employer and the Contractor. Such decision shall state that it is made pursuant to this Clause.

Unless the Contract has already been repudiated or terminated, the Contractor shall, in every case, continue to proceed with the Works with all due diligence and the Contractor and the Employer shall give effect forthwith to every such decision of the Engineer unless and until the same shall be revised, as hereinafter provided, in an amicable settlement or an arbitral award.

If either the Employer or the Contractor be dissatisfied with any decision of the Engineer, or if the Engineer fails to give notice of his decision on or before the eighty-fourth day after the day on which he received the reference, then either the Employer or the Contractor may, on or before the seventieth day after the day on which he received notice of such decision, or on or before the seventieth day after the day on which the said period of 84 days expired, as the case may be, give notice to the other party, with a copy for information to the Engineer, of his intention to commence arbitration, as hereinafter provided, as to the matter in dispute. Such notice shall establish the entitlement of the party giving the same to commence arbitration, as hereinafter provided, as to such dispute and, subject to Sub-Clause 67.4, no arbitration in respect thereof may be commenced unless such notice is given.

If the Engineer has given notice of his decision as to a matter in dispute to the Employer and the Contractor and no notice of intention to commence arbitration as to such dispute has been given by either the Employer or the Contractor on or before the seventieth day after the day on which the parties received notice as to such decision from the Engineer, the said decision shall become final and binding upon the Employer and the Contractor.

Amicable Settlement

67.2 Where notice of intention to commence arbitration as to a dispute has been given in accordance with Sub-Clause 67.1, the parties shall attempt to settle such dispute amicably before the commencement of arbitration. Provided that, unless the parties otherwise agree, arbitration may be commenced on or after the fifty-sixth day after the day on which notice of intention to commence arbitration of such dispute was given, even if no attempt at amicable settlement thereof has been made.

Arbitration

67.3 Any dispute in respect of which:

(a) the decision, if any, of the Engineer has not become final and binding pursuant to Sub-Clause 67.1, and

(b) amicable settlement has not been reached within the period stated in Sub-Clause 67.2,

shall be finally settled, unless otherwise specified in the Contract, under the Rules of Conciliation and Arbitration of the International Chamber of Commerce by one or more arbitrators appointed under such Rules. The said arbitrator/s shall have full power to open up, review and revise any decision, opinion, instruction, determination, certificate or valuation of the Engineer related to the dispute.

Neither party shall be limited in the proceedings before such arbitrator/s to the evidence or arguments put before the Engineer for the purpose of obtaining his said decision pursuant to Sub-Clause 67.1. No such decision shall disqualify the Engineer from being called as a witness and giving evidence before the arbitrator/s on any matter whatsoever relevant to the dispute.

Arbitration may be commenced prior to or after completion of the Works, provided that the obligations of the Employer, the Engineer and the Contractor shall not be altered by reason of the arbitration being conducted during the progress of the Works.

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| Failure to Comply with Engineer's Decision | 67.4 | Where neither the Employer nor the Contractor has given notice of intention to commence arbitration of a dispute within the period stated in Sub-Clause 67.1 and the related decision has become final and binding, either party may, if the other party fails to comply with such decision, and without prejudice to any other rights it may have, refer the failure to arbitration in accordance with Sub-Clause 67.3. The provisions of Sub-Clauses 67.1 and 67.2 shall not apply to any such reference. |
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Notices

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| Notice to Contractor | 68.1 | All certificates, notices or instructions to be given to the Contractor by the Employer or the Engineer under the terms of the Contract shall be sent by post, cable, telex or facsimile transmission to or left at the Contractor's principal place of business or such other address as the Contractor shall nominate for that purpose. |
| Notice to Employer and Engineer | 68.2 | Any notice to be given to the Employer or to the Engineer under the terms of the Contract shall be sent by post, cable, telex or facsimile transmission to or left at the respective addresses nominated for that purpose in Part II of these Conditions. |
| Change of Address | 68.3 | Either party may change a nominated address to another address in the country where the Works are being executed by prior notice to the other party, with a copy to the Engineer, and the Engineer may do so by prior notice to both parties. |

Default of Employer

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| Default of Employer | 69.1 | <p>In the event of the Employer:</p> <ul style="list-style-type: none"> (a) failing to pay to the Contractor the amount due under any certificate of the Engineer within 28 days after the expiry of the time stated in Sub-Clause 60.10 within which payment is to be made, subject to any deduction that the Employer is entitled to make under the Contract, (b) interfering with or obstructing or refusing any required approval to the issue of any such certificate, (c) becoming bankrupt or, being a company, going into liquidation, other than for the purpose of a scheme of reconstruction or amalgamation, or (d) giving notice to the Contractor that for unforeseen economic reasons it is impossible for him to continue to meet his contractual obligations, <p>the Contractor shall be entitled to terminate his employment under the Contract by giving notice to the Employer, with a copy to the Engineer. Such termination shall take effect 14 days after the giving of the notice.</p> |
| Removal of Contractor's Equipment | 69.2 | Upon the expiry of the 14 days' notice referred to in Sub-Clause 69.1, the Contractor shall, notwithstanding the provisions of Sub-Clause 54.1, with all reasonable despatch, remove from the Site all Contractor's Equipment brought by him thereon. |
| Payment on Termination | 69.3 | In the event of such termination the Employer shall be under the same obligations to the Contractor in regard to payment as if the Contract had been terminated under the provisions of Clause 65, but, in addition to the payments specified in Sub-Clause 65.8, the Employer shall pay to the Contractor the amount of any loss or damage to the Contractor arising out of or in connection with or by consequence of such termination. |

**Contractor's
Entitlement to
Suspend Work**

69.4 Without prejudice to the Contractor's entitlement to interest under Sub-Clause 60.10 and to terminate under Sub-Clause 69.1, the Contractor may, if the Employer fails to pay the Contractor the amount due under any certificate of the Engineer within 28 days after the expiry of the time stated in Sub-Clause 60.10 within which payment is to be made, subject to any deduction that the Employer is entitled to make under the Contract, after giving 28 days' prior notice to the Employer, with a copy to the Engineer, suspend work or reduce the rate of work.

If the Contractor suspends work or reduces the rate of work in accordance with the provisions of this Sub-Clause and thereby suffers delay or incurs costs the Engineer shall, after due consultation with the Employer and the Contractor, determine:

(a) any extension of time to which the Contractor is entitled under Clause 44, and

(b) the amount of such costs, which shall be added to the Contract Price,

and shall notify the Contractor accordingly, with a copy to the Employer.

**Resumption
of Work**

69.5 Where the Contractor suspends work or reduces the rate of work, having given notice in accordance with Sub-Clause 69.4, and the Employer subsequently pays the amount due, including interest pursuant to Sub-Clause 60.10, the Contractor's entitlement under Sub-Clause 69.1 shall, if notice of termination has not been given, lapse and the Contractor shall resume normal working as soon as is reasonably possible.

Changes in Cost and Legislation

**Increase or
Decrease
of Cost**

70.1 There shall be added to or deducted from the Contract Price such sums in respect of rise or fall in the cost of labour and/or materials or any other matters affecting the cost of the execution of the Works as may be determined in accordance with Part II of these Conditions.

**Subsequent
Legislation**

70.2 If, after the date 28 days prior to the latest date for submission of tenders for the Contract there occur in the country in which the Works are being or are to be executed changes to any National or State Statute, Ordinance, Decree or other Law or any regulation or bye-law of any local or other duly constituted authority, or the introduction of any such State Statute, Ordinance, Decree, Law, regulation or bye-law which causes additional or reduced cost to the Contractor, other than under Sub-Clause 70.1, in the execution of the Contract, such additional or reduced cost shall, after due consultation with the Employer and the Contractor, be determined by the Engineer and shall be added to or deducted from the Contract Price- and the Engineer shall notify the Contractor accordingly, with a copy to the Employer.

Currency and Rates of Exchange

**Currency
Restrictions**

71.1 If, after the date 28 days prior to the latest date for submission of tenders for the Contract, the Government or authorised agency of the Government of the country in which the Works are being or are to be executed imposes currency restrictions and/or transfer of currency restrictions in relation to the currency or currencies in which the Contract Price is to be paid, the Employer shall reimburse any loss or damage to the Contractor arising therefrom, without prejudice to the right of the Contractor to exercise any other rights or remedies to which he is entitled in such event.

**Rates of
Exchange**

72.1 Where the Contract provides for payment in whole or in part to be made to the Contractor in foreign currency or currencies, such payment shall not be subject to variations in the rate or rates of exchange between such specified foreign currency or currencies and the currency of the country in which the Works are to be executed.

**Currency
Proportions**

72.2 Where the Employer has required the Tender to be expressed in a single currency but with payment to be made in more than one currency and the Contractor has stated the proportions or amounts of other currency or currencies in which he requires payment to be made, the rate or rates of exchange applicable for calculating the payment of such proportions or amounts shall, unless otherwise stated in Part II of these Conditions, be those prevailing, as determined by the Central Bank of the country in which the Works are to be executed, on the date 28 days prior to the latest date for the submission of tenders for the Contract, as has been notified to the Contractor by the Employer prior to the submission of tenders or as provided for in the Tender.

**Currencies of
Payment for
Provisional Sums**

72.3 Where the Contract provides for payment in more than one currency, the proportions or amounts to be paid in foreign currencies in respect of Provisional Sums shall be determined in accordance with the principles set forth in Sub-Clauses 72.1 and 72.2 as and when these sums are utilised in whole or in part in accordance with the provisions of Clauses 58 and 59.

REFERENCE TO PART II

As stated in the Foreword at the beginning of this document, the FIDIC Conditions comprise both Part I and Part II. Certain Clauses, namely Sub-Clauses 1.1 paragraph (a) (i) and (iv), 5.1 (part), 14.1, 14.3, 68.2 and 70.1 must include additional wording in Part II for the Conditions to be complete. Other Clauses may require additional wording to supplement Part I or to cover particular circumstances or the type of work (dredging is an example).

Part II Conditions of Particular Application with guidelines for the preparation of Part II are printed in a separately bound document.

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TENDER

NAME OF CONTRACT: * _____

TO: * _____

Gentlemen,

1. Having examined the Conditions of Contract, Specification, Drawings, and Bill of Quantities and Addenda Nos _____ for the execution of the above-named Works, we, the undersigned, offer to execute and complete such Works and remedy any defects therein in conformity with the Conditions of Contract, Specification, Drawings, Bill of Quantities and Addenda for the sum of

(_____)
or such other sum as may be ascertained in accordance with the said Conditions.

2. We acknowledge that the Appendix forms part of our Tender.
3. We undertake, if our Tender is accepted, to commence the Works as soon as is reasonably possible after the receipt of the Engineer's notice to commence, and to complete the whole of the Works comprised in the Contract within the time stated in the Appendix to Tender.
4. We agree to abide by this Tender for the period of * _____ days from the date fixed for receiving the same and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
5. Unless and until a formal Agreement is prepared and executed this Tender, together with your written acceptance thereof, shall constitute a binding contract between us.
6. We understand that you are not bound to accept the lowest or any tender you may receive.

Dated this _____ day of _____ 19 _____

Signature _____ in the capacity of _____

duly authorised to sign tenders for and on behalf of _____

(IN BLOCK CAPITALS)

Address _____

Witness _____

Address _____

Occupation _____

(Note: All details marked * shall be inserted before issue of Tender documents.)

Appendix

	Sub-Clause	
Amount of security (if any) _____	10.1	_____ per cent of the Contract Price
Minimum amount of third party insurance	23.2	_____ per occurrence, with the number of occurrences unlimited
Time for issue of notice to commence	41.1	_____ days
Time for Completion _____	43.1	_____ days
Amount of liquidated damages _____	47.1	_____ per day
Limit of liquidated damages _____	47.1	_____
Defects Liability Period _____	49.1	_____ days
Percentage for adjustment of Provisional Sums	59.4(c)	_____ percent
Percentage of invoice value of listed materials and Plant _____	60.1 (c)	_____ per cent
Percentage of Retention _____	60.2	_____ per cent
Limit of Retention Money _____	60.2	_____
Minimum Amount of Interim Payment Certificates _____	60.2	_____
Rate of interest upon unpaid sums _____	60.10	_____ per cent per annum

Initials of Signatory of Tender _____

(Notes: All details in the list above, other than percentage figure against Sub-Clause 59.4, shall be inserted before issue of Tender documents. Where a number of days is to be inserted, it is desirable, for consistency with the Conditions, that the number should be a multiple of seven.

Additional entries are necessary where provision is included in the Contract for:

- (a) completion of Sections (Sub-Clauses 43.1 and 48.2(a))
- (b) liquidated damages for Sections (Sub-Clause 47.1)
- (c) a bonus (Sub-Clause 47.3 – Part II)
- (d) payment for materials on Site (Sub-Clause 60.1(c))
- (e) payment in foreign currencies (Clause 60 – Part II)
- (f) an advance payment (Clause 60 – Part II)
- (g) adjustments to the Contract Price on account of Specified Materials
(Sub-Clause 70.1 – Part II)
- (h) rates of exchange (Sub-Clause 72.2 – Part II)

Agreement

This Agreement made the _____ day of _____ 19 _____

Between _____

of _____

_____ (hereinafter called "the Employer") of the one part and

_____ of _____

(hereinafter called "the Contractor") of the other part

Whereas the Employer is desirous that certain Works should be executed by the Contractor, viz _____

and has accepted a Tender by the Contractor for the execution and completion of such Works and the remedying of any defects therein

Now this Agreement witnesseth as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz:
 - (a) The Letter of Acceptance;
 - (b) The said Tender;
 - (c) The Conditions of Contract (Parts I and II);
 - (d) The Specification;
 - (e) The Drawings; and
 - (f) The Bill of Quantities.
3. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned the Contractor hereby covenants with the Employer to execute and complete the Works and remedy any 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 the day and year first before written in accordance with their respective laws.

The Common Seal of _____

_____ was hereunto affixed in the presence of:-

or

Signed Sealed and Delivered by the

said _____

in the presence of:

EDITORIAL AMENDMENTS IN 1988

Following publication of the Fourth Edition in 1987 of the Conditions of Contract for Works of Civil Engineering Construction, a number of editorial amendments were agreed by FIDIC. The amendments were incorporated during a 1988 reprinting and the list below clarifies the differences between the 1988 reprint and the original document.

Foreword		The last sentence of the first paragraph previously read “The Conditions are equally suitable for use on domestic contracts. ”
Page	6	Sub-Clause 10.1. A comma has been inserted after the word “Contract” in the second line. The third sentence previously read “Such security shall be in such form as may be agreed between the Employer and the Contractor.”
Page	11	Sub-Clause 22.1 (b) was previously one complete paragraph, ie there was no space between the words “ . . . other than the Works), ” and the remainder of the Sub-Clause.
Page	15	Sub-Clause 31.2 (c) was previously one complete paragraph, ie there was no space between the words “... nature for any such,” and the remainder of the Sub-Clause.
Page	20	Sub-Clause 44.3. The penultimate sentence was previously, “In both such cases the Engineer shall notify the Contractor accordingly, with a copy to the Employer. ”
Page	21	Sub-Clause 49.1 (a). The word “substantial” has been deleted.
Page	29	Sub-Clause 60.3 (b) was previously two paragraphs, the second beginning with the words “Provided also that if at such time . . .”
Page	30	Sub-Clause 60.5. The word “The” has been inserted at the beginning of the final paragraph.
Page	35	Sub-Clause 67.1. In the eighth line of the third paragraph, a comma has been inserted after the word “provided”. In the second line of the fourth paragraph, the word “notice” replaces the word “notification”.
Page	38	Reference to Part II. In the third line, the words “and (iv)” have been inserted after paragraph (a) (i).
Tender		
Item	3.	The word “Works” has been capitalised.
Agreement		
Line	4	Inverted commas have been inserted following the words “the Employer.”
Line	6	Inverted commas have been inserted before the word “the” instead of before the word “Contractor.”
Line	8	The word “Contractor” has been capitalised.
Line	9	The words “Tender by the Contractor” were previously “Tender by Contractor. ”
Line	11	The word “Agreement” has been capitalised.
Last lines		The Agreement previously ended with the words “Binding Signature of Employer” and “Binding Signature of Contractor”.

FURTHER AMENDMENTS IN 1992

The following amendments have been made to the 1988 Reprint of the Fourth Edition of the Conditions of Contract for Works of Civil Engineering Construction. The amendments of the 1988 Reprint are shown on the previous page. In addition, some minor changes in the use of punctuation marks (commas, semicolons, colons and stops), as well as the use of the words “or” and “and” have been introduced to attain uniformity in the style of all Clauses. These minor changes which improve the style, but which have no effect on the meaning of Clauses, have not been listed below.

FOREWORD

The eighth paragraph previously referred to the anticipated publication of the “Guide to the Use of FIDIC Conditions of Contract for Works of Civil Engineering Construction”.

- | | | |
|-------------|-----------|---|
| Page | 2 | Sub-Clause 1.1, sub-para (e). Definitions (iii) “Interim Payment Certificate” and (iv) “Final Payment Certificate” have been added. |
| Page | 6 | Sub-Clause 8.1. Second paragraph has been added. |
| Page | 7 | Sub-Clause 12.2. Marginal note. The word “Adverse” has been changed to read “Not Foreseeable” (also amended in the Contents and the Index). |
| Page | 8 | Sub-Clause 13.1. Last sentence has been shortened by deleting the words “or, subject to the provisions of Clause 2, from the Engineer’s Representative.”, and adding the words “(or his delegate).”. |
| | | Sub-Clause 15.1, para 1. Last sentence has been shortened by placing a full stop after the word “Engineer”, deleting the words “or subject to the provisions of Clause 2, the Engineer’s Representative.” |
| Page | 10 | Sub-Clause 21.1, sub-para (a). The words “(the term “cost” in this context shall include profit)” have been added. |
| Page | 11 | Sub-Clause 21.4, sub-para (a). The word “where” has been corrected to read “whether”. |
| Page | 18 | Sub-Clause 40.3. The word “written” has been deleted at the end of the first line. |
| Page | 19 | Sub-Clause 42.3. The word “wayleaves” has been changed to read “rights of way” in the text and marginal note (also amended in the Contents and the Index). |
| Page | 29 | Sub-Clause 60.1, sub-para (e). The words “or otherwise” have been added at the end

Sub-Clause 60.2. The words “certify to the Employer” have been changed to read “deliver to the Employer an Interim Payment Certificate stating”, the word “thereof” has been changed to read “of such statement” and the word “he” has been changed to read “the Engineer”. Sub-para (b). The words “Interim Certificates” have been changed to read “Interim Payment Certificates”.

Sub-Clause 60.3, sub-para (b). In the eighth line, the word “ordered” has been changed to read “instructed”.

Sub-Clause 60.4. The words “interim certificate” in the first and fourth lines, and the word “certificate” in the second line, have been changed to read “Interim Payment Certificate”. |
| Page | 30 | Sub-Clause 60.5. In the second line, after the word “Engineer”, the words “six copies of” have been added.

Sub-Clause 60.6. In the second line, after the word “consideration”, the words “six copies of” have been added. Sub-para (b). The words “or otherwise” have been added at the end. At the end of the sub-clause, the final paragraph has been added.

Sub-Clause 60.7 and Sub-Clause 60.8 (text and marginal note). The words “Final Certificate” have been changed to read “Final Payment Certificate” (also amended in the Contents and the Index).

Sub-Clause 60.8 (a). The words “or otherwise” have been added. Sub-Clause 60.8 (b). The words “under the Contract other than Clause 47” have been changed to read “other than under Clause 47”.

Sub-Clause 60.10. In the first and fourth lines, the words “interim certificate” have |

Page	31	been changed to read “Interim Payment Certificate”. In the fifth and sixth lines, the words “Final Certificate” have been changed to read “Final Payment Certificate”. The words “or otherwise” have been added at the end.
Page	33	Sub-Clause 65.6. In the ninth line, the words “and to the operation of Clause 67” have been changed to read “and Clause 67”.
Page	34	Sub-Clause 66.1. In the second line the word “party” has been changed to read “or both parties”, in the third line between the words “his” and “contractual” the words “or their” have been added. In the fourth line after the word “then”, the words “the parties shall be discharged from the Contract, except as to their rights under this Clause and Clause 67 and without prejudice to the rights of either party in respect of any antecedent breach of the Contract, and ” have been added.
Page	35	Sub-Clause 67.2. The words “arbitration of such dispute shall not be commenced unless an attempt has first been made by the parties to settle such dispute amicably” have been changed to read “ the parties shall attempt to settle such dispute amicably before the commencement of arbitration.” The words “whether or not any attempt at amicable settlement thereof has been made” have been changed to read “even if no attempt at amicable settlement thereof has been made”.
Page	37	Sub-Clause 69.1, Sub-para (d). The words “unforeseen reasons, due to economic dislocation” have been changed to read “unforeseen economic reasons”. Sub-Clause 69.4. In the second line of the second paragraph, the word “cost” has been changed to read “costs”.
Page	38	REFERENCE TO PART II. In the third line, the words “5.1 part” have been changed to read “5.1 (part)”.
TENDER		Paragraph 1. In the last line, the word “sums” has been changed to read “sum”.
Appendix		In the ninth line, the words “and Plant” have been added. In the twelfth line, the word “Payment” has been added. In the thirteenth line, the words “per annum” have been added.
EDITORIAL AMENDMENTS		For page 35, after the words “Sub-Clause 67.1” the first sentence has been inserted.

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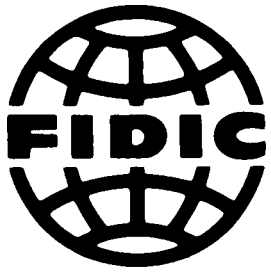
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FEDERATION INTERNATIONALE DES INGENIEURS-CONSEILS

CONDITIONS OF CONTRACT

FOR WORKS OF CIVIL

ENGINEERING CONSTRUCTION

**PART II CONDITIONS OF PARTICULAR
APPLICATION WITH GUIDELINES FOR
PREPARATION OF PART II CLAUSES**

FOURTH EDITION 1987

Reprinted 1988 with editorial amendments

Reprinted 1992 with further amendments

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INTRODUCTION

The terms of the Fourth Edition of the Conditions of Contract for Works of Civil Engineering Construction have been prepared by the Fédération Internationale des Ingénieurs Conseils (FIDIC) and are recommended for general use for the purpose of construction of such works where tenders are invited on an international basis. The Conditions, subject to minor modifications, are also suitable for use on domestic contracts.

The version in English of the Conditions is considered by FIDIC as the official and authentic text for the purpose of translation.

The Clauses of general application have been grouped together in a separately bound document and are referred to as Part I—General Conditions. They have been printed in a form which will facilitate their inclusion, as printed, in the contract documents normally prepared.

In the preparation of the Conditions it was recognised that while there are numerous Clauses which will be generally applicable there are some Clauses which must necessarily vary to take account of the circumstances and locality of the Works.

Part I – General Conditions and Part II – Conditions of Particular Application together comprise the Conditions governing the rights and obligations of the parties.

For this reason a Part II standard form has not been produced. It will be necessary to prepare a Part II document for each individual contract and the Guidelines are intended to aid in this task by giving options for various clauses where appropriate.

Part II clauses may arise for one or more reasons, of which the following are examples:

- (i) Where the wording in Part I specifically requires that further information is to be included in Part II and the Conditions would not be complete without that information, namely in Sub-Clauses 1.1 paragraphs (a) (i) and (iv), 5.1 (part), 14.1, 14.3, 68.2 and 70.1
- (ii) Where the wording in Part I indicates that supplementary information may be included in Part II, but the conditions would still be complete without any such information, namely in Sub-Clauses 2.1 paragraph (b), 5.1 (part), 21.1 paragraph (b) and 72.2.
- (iii) Where the type, circumstances or locality of the Works necessitates additional Clauses or Sub-Clauses.
- (iv) Where the law of the country or exceptional circumstances necessitate an alteration in Part I. Such alterations should be effected by stating in Part II that a particular Clause, or part of a Clause, in Part I is deleted and giving the substitute Clause, or part, as applicable.

As far as possible, in the Clauses that are mentioned hereunder, example wording is provided. In the case of some Clauses, however, only an aide-memoire for the preparation is given. Before incorporating any example wording it must be checked to ensure that it is wholly suitable for the particular circumstances and, if not, it must be varied. Where example wording is varied and in all cases where additional material is included in Part II, care must be taken that no ambiguity is created with Part I or between the Clauses in Part II.

Dredging and Reclamation Work

Special consideration must be given to Part II where dredging and certain types of reclamation work are involved. Dredgers are considerably more expensive than most items of Contractor's Equipment and the capital value of a dredger can often exceed the value of the Contract on which it is used.

For this reason, it is in the interests of both the Employer and the Contractor that a dredger is operated intensively in the most economic fashion, subject to the quality of work and any other over-riding factors. With this end in view, it is customary to allow the Contractor to execute dredging work continuously by day and by night seven days a week. Another difference from most civil engineering is that on dredging work the Contractor is not normally held responsible for the remedying of defects after the date of completion as certified under Clause 48. Part II contains explanations and example wording to cover the above points and others relating to dredging. Clauses 11, 12, 18, 19, 28, 40, 45, 49, 50 and 51 are those which most often require attention in Part II when dredging work is involved and reference is included under each of these Clauses. Other Clauses may also need additions in Part II in certain circumstances. Reclamation work varies greatly in character and each instance must be considered before deciding whether it is appropriate to introduce in Part II changes similar to those adopted for dredging, or to use the standard civil engineering form unaltered.

PART II CONDITIONS OF PARTICULAR APPLICATION

Clause 1

Sub-Clause 1.1 – Definitions

(a) (i) *The Employer is (insert name)*

(a) (iv) *The Engineer is (insert name)*

If further definitions are essential, additions should be made to the list.

Clause 2

Sub-Clause 2.1 – Engineer's Duties

EXAMPLE

The Engineer shall obtain the specific approval of the Employer before carrying out his duties in accordance with the following Clauses of Part 1:

(a) *Clause (insert applicable number)*

(b) *Clause (insert applicable number)*

(c) *Clause (insert applicable number)*

This list should be extended or reduced as necessary.

In some cases the obligation to obtain the approval of the Employer may apply to only one Sub-Clause out of several in a Clause or approval may only be necessary beyond certain limits, monetary or otherwise. Where this is so, the example wording must be varied.

If the obligation to obtain the approval of the Employer could lead to the Engineer being unable to take action in an emergency, where matters of safety are involved, an additional paragraph may be necessary.

EXAMPLE

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 responsibilities 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 52 and shall notify the Contractor accordingly, with a copy to the Employer.

Clause 5

Sub-Clause 5.1 – Language/s and Law

(a) *The language is (insert as applicable)*

(b) *The law is that in force in (insert name of country)*

If necessary (a) above should be varied to read:

The languages are (insert as applicable)

and there should be added

The Ruling Language is (insert as applicable)

Sub-Clause 5.2 – Priority of Contract Documents

Where it is decided that an order of precedence of all documents should be included, this Sub-Clause may be varied as follows:

EXAMPLE

Delete the documents listed 1 - 6 and substitute:

- (1) the Contract Agreement (if completed);*
- (2) the Letter of Acceptance;*
- (3) the Tender;*
- (4) the Conditions of Contract Part II;*
- (5) the Conditions of Contract Part I;*
- (6) the Specification;*
- (7) the Drawings; and*
- (8) the priced Bill of Quantities*

or

Where it is decided that no order of precedence of documents should be included, this Sub-Clause may be varied as follows:

EXAMPLE

Delete the text of the Sub-Clause and substitute:

The several documents forming the Contract are to be taken as mutually explanatory of one another, but in the case of ambiguities or discrepancies the priority shall be that accorded by law. If, in the opinion of the Engineer, such ambiguities or discrepancies make it necessary to issue any instruction to the Contractor in explanation or adjustment, the Engineer shall have authority to issue such instruction.

Clause 9

Where it is decided that a Contract Agreement should be entered into and executed the form must be annexed to these Conditions as stated in Sub-Clause 9.1 of Part I of these Conditions.

A suitable form is annexed to Part I – General Conditions.

Clause 10

Sub-Clause 10.1 – Performance Security

Where it is decided that a performance security should be obtained by the Contractor, the form must be annexed to these Conditions as stated in Sub-Clause 10.1 of Part I of these Conditions.

Two example forms of performance security are given on pages 7, 8 and 9. The Clause and wording of the example forms may have to be varied to comply with the law of the Contract which may require the forms to be executed under seal.

Where there is provision in the Contract for payments to the Contractor to be made in foreign currency, Sub-Clause 10.1 of Part I of these Conditions may be varied.

EXAMPLE

After the first sentence, insert the following sentence:

The security shall be denominated in the types and proportions of currencies stated in the Appendix to Tender.

Where the source of the performance security is to be restricted, an additional Sub-Clause may be added.

Source of Performance Security	10.4 <i>EXAMPLE SUB-CLAUSES</i> <i>The performance security, submitted by the Contractor in accordance with Sub-Clause 10.1, shall be furnished by an institution registered in (insert the country where the Works are to be executed) or licensed to do business in such country.</i>
or	
Source of Performance Security	10.4 <i>Where the performance security is in the form of a bank guarantee, it shall be issued by:</i> <i>(a) a bank located in the country of the Employer, or</i> <i>(b) a foreign bank through a correspondent bank located in the country of the Employer.</i>

Clause 11

Where the bulk or complexity of the data, or reasons of security enforced by the country where the Works are to be executed, makes it impracticable for the Employer to make all data available with the Tender Documents and inspection of some data by the Contractor at an office is therefore expected, it would be advisable to make the circumstances clear.

Access to Data	11.2 <i>EXAMPLE SUB-CLAUSE</i> <i>Data made available by the Employer in accordance with Sub-Clause 11.1 shall be deemed to include data listed elsewhere in the Contract as open for inspection at (insert particulars of the office or offices where such data is stored)</i>
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Sub-Clause 11.1 – Inspection of Site

For a Contract comprising dredging and reclamation work the Clause may be varied as follows:

EXAMPLE

In the first paragraph, delete the words “hydrological and sub-surface” and substitute “hydrographic and sub-seabed”.

In the second paragraph, under (a) delete the word “sub-surface” and substitute “sub-seabed” and under (b) delete the word “hydrological” and substitute “hydrographic”.

Clause 12

Sub-Clause 12.2 – Not Foreseeable Obstructions or Conditions

For a Contract comprising dredging and some types of reclamation work the Sub-Clause may require to be varied.

EXAMPLE

Delete the words “, other than climatic conditions on the Site, ”.

Clause 14

Sub-Clause 14.1 – Programme to be Submitted

The time within which the programme shall be submitted shall be (insert number) days.

Sub-Clause 14.3 – Cash Flow Estimate to be Submitted

The time within which the detailed cash flow estimate shall be submitted shall be (insert number) days.

In both examples given above it is desirable for consistency with the rest of the Conditions that the number of days inserted should be a multiple of seven.

EXAMPLE PERFORMANCE GUARANTEE

By this guarantee We, _____
whose registered office is at _____
(hereinafter called "the Contractor") and _____
whose registered office is at _____
(hereinafter called "the Guarantor") are held and firmly bound unto
_____ (hereinafter called "the Employer")
in the sum of _____ for the payment of which sum
the Contractor and the Guarantor bind themselves, their successors and assigns
jointly and severally by these presents.

Whereas the Contractor by an Agreement made between the Employer of the one
part and the Contractor of the other part has entered into a Contract (hereinafter
called "the said Contract ") to execute and complete certain Works and remedy
any defects therein as therein mentioned in conformity with the provisions of the
said Contract.

Now the Condition of the above-written Guarantee is such that if the Contractor
shall duly perform and observe all the terms provisions conditions and
stipulations of the said Contract on the Contractor's part to be performed and
observed according to the true purport intent and meaning thereof or if on
default by the Contractor the Guarantor shall satisfy and discharge the damages
sustained by the Employer thereby up to the amount of the above-written
Guarantee then this obligation shall be null and void but otherwise shall be and
remain in full force and effect but no alteration in terms of the said Contract or in
the extent or nature of the Works to be executed, completed and defects therein
remedied thereunder and no allowance of time by the Employer or the Engineer
under the said Contract nor any forbearance or forgiveness in or in respect of any
matter or thing concerning the said Contract on the part of the Employer or the
said Engineer shall in any way release the Guarantor from any liability under the
above-written Guarantee. Provided always that the above obligation of
Guarantor to satisfy and discharge the damages sustained by the Employer shall
arise only

(a) on written notice from both the Employer and the Contractor that the
Employer and the Contractor have mutually agreed that the amount of damages
concerned is payable to the Employer or

(b) on receipt by the Guarantor of a legally certified copy of an award issued in
arbitration proceeding carried out in conformity with the terms of the said
Contract that the amount of the damages is payable to the Employer.

Signed on _____	Signed on _____
on behalf of _____	on behalf of _____
by _____	by _____
in the capacity of _____	in the capacity of _____
in the presence of _____	in the presence of _____

EXAMPLE SURETY BOND FOR PERFORMANCE

Know all Men by these Presents that (name and address of Contractor)

as Principal (hereinafter called "the Contractor") and (name, legal title and address of Surety) _____

as Surety (hereinafter called "the Surety"), are held and firmly bound unto (name and address of Employer) _____

_____ as Obligee (hereinafter called "the Employer") in the amount of _____ for the payment of which sum, well and truly to be made, the Contractor and the Surety bind themselves; their successors and assigns, jointly and severally, firmly by these presents.

Whereas the Contractor has entered into a written contract agreement with the Employer dated the _____ day of _____ 19____
for (name of Works) _____
in accordance with the plans and specifications and amendments thereto, to the extent herein provided for, are by reference made part hereof and are hereinafter referred to as the Contract.

Now, therefore, the Condition of this Obligation is such that, if the Contractor shall promptly and faithfully perform the said Contract (including any amendments thereto) then this obligation shall be null and void; otherwise it shall remain in full force and effect.

Whenever Contractor shall be, and declared by Employer to be, in default under the Contract, the Employer having performed the Employer's obligations thereunder, the Surety may promptly remedy the default, or shall promptly:

- (1) Complete the Contract in accordance with its terms and conditions; or*
- (2) Obtain a bid or bids for submission to the Employer for completing the Contract in accordance with its terms and conditions, and upon determination by Employer and Surety of the lowest responsible bidder, arrange for a contract between such bidder and Employer and make available as work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract Value; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the Contract Value", as used in this paragraph, shall mean the total amount payable by Employer to Contractor under the Contract, less the amount properly paid by Employer to Contractor; or*
- (3) Pay the Employer the amount required by Employer to complete the Contract in accordance with its terms and conditions any amount up to a total not exceeding the amount of this Bond.*

The Surety shall not be liable for a greater sum than the specified penalty of this Bond.

Any suit under this Bond must be instituted before the issue of the Defects Liability Certificate.

No right of action shall accrue on this Bond to or for the use of any person or corporation other than the Employer named herein or the heirs, executors, administrators or successors of the Employer.

<i>Signed on _____</i>	<i>Signed on _____</i>
<i>on behalf of _____</i>	<i>on behalf of _____</i>
<i>by _____</i>	<i>by _____</i>
<i>in the capacity of _____</i>	<i>in the capacity of _____</i>
<i>in the presence of _____</i>	<i>in the presence of _____</i>

Clause 15

Where the language in which the Contract documents have been drawn up is not the language of the country in which the Works are to be executed, or where for any other reason it is necessary to stipulate that the Contractor's authorised representative shall be fluent in a particular language, an additional Sub-Clause may be added.

EXAMPLE SUB-CLAUSES

Language Ability of Contractor's Representative 15.2 *The Contractor's authorised representative shall be fluent in (insert name of language).*

or

Interpreter to be Made Available 15.2 *If the Contractor's authorised representative is not, in the opinion of the Engineer, fluent in (insert name of language), the Contractor shall have available on Site at all times a competent interpreter to ensure the proper transmission of instructions and information.*

Clause 16

Where the language in which the Contract documents have been drawn up is not the language of the country in which the Works are to be executed, or where for any other reason it is necessary to stipulate that members of the Contractor's superintending staff shall be fluent in a particular language, an additional Sub-Clause may be added.

EXAMPLE SUB-CLAUSE

Language Ability of Superintending Staff 16.3 *A reasonable proportion of the Contractor's superintending staff shall have a working knowledge of (insert name of language) or the Contractor shall have available on Site at all times a sufficient number of competent interpreters to ensure the proper transmission of instructions and information.*

Where there is a desire, but not a legal requirement, that the Contractor makes reasonable use of materials from or persons resident in the country in which the Works are to be executed, an additional Sub-Clause may be added.

EXAMPLE SUB-CLAUSE

Employment of Local Personnel 16.4 *The Contractor is encouraged, to the extent practicable and reasonable, to employ staff and labour from sources within (insert name of country).*

Clause 18

Sub-Clause 18.1 – Boreholes and Exploratory Excavation

For a Contract comprising dredging and reclamation work the Sub-Clause may require to be varied.

EXAMPLE

Add second sentence as follows:

Such exploratory excavation shall be deemed to include dredging.

Clause 19

Sub-Clause 19.1 – Safety, Security and Protection of the Environment

Where a Contract includes dredging the possibility of pollution should be given particular attention and additional wording may be required. For example, where fishing and recreation areas might be influenced, the Contractor should be required to plan and execute the dredging so that the effect is kept to a minimum. Where there is a risk of chemical pollution from soluble sediments in the dredging area, for instance in a harbour, it is important that sufficient information is provided with the Tender documents. Responsibilities should be clearly defined.

Clause 21

Sub-Clause 21.1 – Insurance of Works and Contractor's Equipment

Where there is provision in the Contract for payments to the Contractor to be made in foreign currency, this Sub-Clause may be varied.

EXAMPLE

Add final sentence as follows:

The insurance in paragraphs (a) and (b) shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred.

Where it is decided to state the deductible limits for the Employer's Risks, this Sub-Clause may be varied.

EXAMPLE

Add to paragraph (a) as follows:

and with deductible limits for the Employer's Risks not exceeding (insert amounts)

Clauses 21, 23 and 25. Insurances Arranged by Employer

In certain circumstances, such as where a number of separate contractors are employed on a single project, or phased take-over is involved, it may be preferable for the Employer to arrange insurance of the Works, and Third Party insurance. In such case, it must be clear in the Contract that the Contractor is not precluded from taking out any additional insurance, should he desire to do so, over and above that to be arranged by the Employer.

Tenderers must be provided at the Tender stage with details of the insurance to be arranged by the Employer, in order to assess what provision to make in their rates and prices for any additional insurance, and for the amount of policy deductibles which they will be required to bear. Such details shall form part of the Contract between the Employer and the Contractor.

Example wording to allow for the arrangement of insurance by the Employer is as follows:

EXAMPLE

Clause 21

Delete the text of the Clause and substitute the following re-numbered Sub-Clauses:

Insurance 21.1 of Works *Without limiting his or the Contractor's obligations and responsibilities under Clause 20, the Employer will insure:*

(a) the Works, together with materials and Plant for incorporation therein, to the full replacement cost (the term "cost" in this context shall include profit), and

(b) an additional sum to cover any additional costs of and incidental to the rectification of loss or damage including professional fees and the cost of demolishing and removing any part of the Works and of removing debris of whatsoever nature.

Insurance of Contractor's Equipment 21.2 *The Contractor shall, without limiting his obligations and responsibilities under Clause 20, insure the Contractor's Equipment and other things brought onto the site by the Contractor, for a sum sufficient to provide for their replacement at the Site.*

Scope of Cover 21.3 *The insurance in Sub-Clause 21.1 shall be in the joint names of the Contractor and the Employer and shall cover:*

(a) the Employer and the Contractor against loss or damage as provided in the details of insurance annexed to these Conditions, from the start of work at the Site until the date of issue of the relevant Taking-Over Certificate in respect of the Works or any Section or part thereof as the case may be, and

(b) the Contractor for his liability:

(i) during the Defects Liability Period for loss or damage arising from a cause occurring prior to the commencement of the Defects Liability Period, or

(ii) occasioned by the Contractor in the course of any operations carried out by him for the purpose of complying with his obligations under Clauses 49 and 50.

**Responsibility for
Amounts not
Recovered**

21.4 Any amounts not insured or not recovered from the insurers shall be borne by the Employer or the Contractor in accordance with their responsibilities under Clause 20.

Clause 23

Delete the text of the Clause and substitute:

**Third Party
Insurance
(including
Employer's
Property)**

23.1 Without limiting his or the Contractor's obligations and responsibilities under Clause 22, the Employer will insure in the joint names of the Contractor and the Employer, against liabilities for death of or injury to any person (other than as provided in Clause 24) or loss of or damage to any property other than the Works) arising out of the performance of the Contract, as provided in the details of insurance referred to in Sub-Clause 21.3.

Clause 25

Delete the text of the Clause and substitute:

**Evidence
and Terms of
Insurances**

25.1 The insurance policies to be arranged by the Employer pursuant to Clauses 21 and 23 shall be consistent with the general terms described in the Tender and copies of such policies shall when required be supplied by the Employer to the Contractor.

**Adequacy of
Insurances**

25.2 The Employer shall notify the insurers of changes in the nature, extent or programme for execution of the Works and ensure the adequacy of the insurances at all times in accordance with the terms of the Contract and shall, when required, produce to the Contractor the insurance policies in force and the receipts for payment of the premiums. No variations shall be made to the insurances by the Employer without the prior approval of the Contractor.

**Remedy on
Employer's
Failure to Insure**

25.3 If and so far as the Employer fails to effect and keep in force any of the insurances referred to in Sub-Clause 25.1, then the Contractor may effect and keep in force any such insurance and pay any premium as may be necessary for that purpose and add the amount so paid to any monies due or to become due to the Contractor, or recover the same as a debt due from the Employer.

**Compliance with
Policy Conditions**

25.4 In the event that the Contractor or the Employer fails to comply with conditions imposed by the insurance policies effected pursuant to the Contract, each shall indemnify the other against all losses and claims arising from such failure.

Clause 28

Sub-Clause 28.2 – Royalties

For a Contract comprising dredging and reclamation work and for any other Contract involving the dumping of materials the Sub-Clause may require to be varied.

EXAMPLE

Add second sentence as follows:

The Contractor shall also be liable for all payments or compensation, if any, levied in relation to the dumping of part or all of any such materials.

It is sometimes the case on dredging contracts for the Employer to bear the costs of tonnage and other royalties, rent and other payments or compensation. If such conditions are to apply, Sub-Clause 28.2 should be varied either by adding wording or by deleting the existing wording and substituting new wording.

Clause 31

Where the particular requirements of other contractors are known within reasonable limits at the time of preparation of the Contract documents, details must be stated. The Specification is usually the appropriate place to do so but, exceptionally, some reference may be desirable in the Conditions. In that case, an additional Sub-Clause or Sub-Clauses could be added to this Clause.

Clause 34

It will generally be necessary to add a number of Sub-Clauses, to take account of the circumstances and locality of the Works, covering such matters as: permits and registration of expatriate employees; repatriation to place of recruitment; provision of temporary housing for employees; requirements in respect of accommodation for staff of Employer and Engineer; standards of accommodation to be provided; provision of access roads, hospital, school, power, water, drainage, fire services, refuse collection, communal buildings, shops, telephones; hours and conditions of working; rates of pay; compliance with labour legislation; maintenance of records of safety and health.

EXAMPLE SUB-CLAUSES (to be numbered, as appropriate)

Rates of Wages and Conditions of Labour 34. *The Contractor shall pay rates of wages and observe conditions of labour not less favourable than those established for the trade or industry where the work is carried out. In the absence of any rates of wages or conditions of labour so established, the Contractor shall pay rates of wages and observe conditions of labour which are not less favourable than the general level of wages and conditions observed by other employers whose general circumstances in the trade or industry in which the Contractor is engaged are similar.*

Employment of Persons in the Service of Others 34. *The Contractor shall not recruit or attempt to recruit his staff and labour from amongst persons in the service of the Employer or the Engineer.*

Repatriation of Labour 34. *The Contractor shall be responsible for the return to the place where they were recruited or to their domicile of all such persons as he recruited and employed for the purposes of or in connection with the Contract and shall maintain such persons as are to be so returned in a suitable manner until they shall have left the Site or, in the case of persons who are not nationals of and have been recruited outside (insert name of country), shall have left (insert name of country).*

Housing for Labour 34. *Save insofar as the Contract otherwise provides, the Contractor shall provide and maintain such accommodation and amenities as he may consider necessary for all his staff and labour, employed for the purposes of or in connection with the Contract, including all fencing, water supply (both for drinking and other purposes), electricity supply, sanitation, cookhouses, fire prevention and fire-fighting equipment, air conditioning, cookers, refrigerators, furniture and other requirements in connection with such accommodation or amenities. On completion of the Contract, unless otherwise agreed with the Employer, the temporary camps/housing provided by the Contractor shall be removed and the site reinstated to its original condition, all to the approval of the Engineer.*

Accident Prevention Officer; Accidents 34. *The Contractor shall have on his staff at the Site an officer dealing only with questions regarding the safety and protection against accidents of all staff and labour. This officer shall be qualified for this work and shall have the authority to issue instructions and shall take protective measures to prevent accidents.*

Health and Safety	34.	<i>Due precautions shall be taken by the Contractor, and at his own cost, to ensure the safety of his staff and labour and, in collaboration with and to the requirements of the local health authorities, to ensure that medical staff first aid equipment and stores, sick bay and suitable ambulance service are available at the camps, housing and on the Site at all times throughout the period of the Contract and that suitable arrangements are made for the prevention of epidemics and for all necessary welfare and hygiene requirements.</i>
Measures against Insect and Pest Nuisance	34.	<i>The Contractor shall at all times take the necessary precautions to protect all staff and labour employed on the site from insect nuisance, rats and other pests and reduce the dangers to health and the general nuisance occasioned by the same. The Contractor shall provide his staff and labour with suitable prophylactics for the prevention of malaria and 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 bilharzia and wild animals.</i>
Epidemics	34.	<i>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 medical or sanitary authorities, for the purpose of dealing with and overcoming the same.</i>
Burial of the Dead	34.	<i>The Contractor shall make all necessary arrangements for the transport, to any place as required for burial, of any of his expatriate employees or members of their families who may die in (insert name of country). 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 local employees who may die while engaged upon the Works.</i>
Supply of Foodstuffs	34.	<i>The Contractor shall arrange for the provision of a sufficient supply of suitable food at reasonable prices for all his staff, labour and Subcontractors, for the purposes of or in connection with the Contract.</i>
Supply of Water	34.	<i>The Contractor shall, so far as is reasonably practicable, having regard to local conditions, provide on the Site an adequate supply of drinking and other water for the use of his staff and labour.</i>
Alcoholic Liquor or Drugs	34.	<i>The Contractor shall not, otherwise than in accordance with the Statutes, Ordinances and Government Regulations or Orders for the time being in force, import, sell, give, barter or otherwise dispose of any alcoholic liquor or drugs, or permit or suffer any such importation, sale, gift, barter or disposal by his Subcontractors, agents, staff or labour.</i>
Arms and Ammunition	34.	<i>The Contractor shall not give, barter or otherwise dispose of to any person or persons, any arms or ammunition of any kind or permit or suffer the same as aforesaid.</i>
Festivals and Religious Customs	34.	<i>The Contractor shall in all dealings with his staff and labour have due regard to all recognised festivals, days of rest and religious or other customs.</i>
Disorderly Conduct	34.	<i>The Contractor shall at all times take all reasonable precautions to prevent any unlawful, riotous or disorderly conduct by or amongst his staff and labour and for the preservation of peace and protection of persons and property in the neighbourhood of the Works against the same.</i>

Clause 35

Additional Sub-Clauses may be desirable to cover circumstances which require the maintenance of particular records or the provision of certain specific reports.

- Records of Safety and Health** 35. *EXAMPLE SUB-CLAUSES (to be numbered, as appropriate)*
The Contractor shall maintain such records and make such reports concerning safety, health and welfare of persons and damage to property as the Engineer may from time to time prescribe.
- Reporting of Accidents** 35. *The Contractor shall report to the Engineer details of any accident as soon as possible after its occurrence. In the case of any fatality or serious accident, the Contractor shall, in addition, notify the Engineer immediately by the quickest available means.*

Clause 40

For a Contract comprising dredging and some types of reclamation work the Clause may be varied.

Sub-Clause 40.1 – Suspension of Work

EXAMPLE

Delete paragraph (c) and renumber paragraph (d) as (c).

Sub-Clause 40.3 – Suspension Lasting more than 84 Days

EXAMPLE

In the first sentence delete the words “, (c) or (d)” and substitute “or (c)”.

Clause 43

Sub-Clause 43.1 – Time for Completion

Where completion is stated to be by a date and not within a period of time, the Sub-Clause will require to be varied.

EXAMPLE

Delete the words, “within the time... such extended time” and substitute “by the date or dates stated in the Appendix to Tender for the whole of the Works or the Section (as the case may be) or such later date or dates”.

Clause 45

For a Contract located in an isolated area, where environmental restrictions do not apply, or where a Contract comprises work, such as dredging and reclamation, that may require continuous working, the Clause may be varied.

EXAMPLE

Delete Sub-Clause 45.1 and substitute:

- Working Hours 45.1** *Subject to any provision to the contrary contained in the Contract, the Contractor shall have the option to work continuously by day and by night and on locally recognised days of rest.*

The Contractor's option may be further extended by substituting, in place of the last three words:

holidays or days of rest.

Clause 47

Where it is desired to make provision for the payment of a bonus or bonuses for early completion, an additional Sub-Clause may be added.

In the case where a bonus is provided for early completion of the whole of the Works:

Bonus for Completion 47.3

EXAMPLE SUB-CLAUSE

If the Contractor achieves completion of the Works prior to the time prescribed by Clause 43, the Employer shall pay to the Contractor a sum of (insert figure) for every day which shall elapse between the date stated in the Taking-Over Certificate in respect of the Works issued in accordance with Clause 48 and the time prescribed in Clause 43.

or

In the case where bonuses are provided for early completion of Sections of the Works and details, other than the dates, are given in the Specification:

Bonus for Completion 47.3

EXAMPLE SUB-CLAUSE

Sections are required to be completed by the dates given in the Appendix to Tender in order that such Sections may be occupied and used by the Employer in advance of the completion of the whole of the Works.

Details of the work required to be executed to entitle the Contractor to bonus payments and the amount of the bonuses are stated in the Specification.

For the purposes of calculating bonus payments, the dates given in the Appendix to Tender for completion of Sections are fixed and, unless otherwise agreed, no adjustments of the dates by reason of granting an extension of time pursuant to Clause 44 or any other Clause of these Conditions will be allowed.

Issue of certificates by the Engineer that the Sections were satisfactory and complete by the dates given on the certificates shall, subject to Clause 60, entitle the Contractor to the bonus payments calculated in accordance with the Specification.

Clause 48

Where it can be foreseen that, when the whole of the Works have been substantially completed, the Contractor may be prevented by reasons beyond his control from carrying out the Tests on Completion, an additional Sub-Clause may be added.

Prevention from Testing 48.5

EXAMPLE SUB-CLAUSE

If the Contractor is prevented from carrying out the Tests on Completion by a cause for which the Employer or the Engineer or other contractors employed by the Employer are responsible, the Employer shall be deemed to have taken over the Works on the date when the Tests on Completion would have been completed but for such prevention. The Engineer shall issue a Taking-Over Certificate accordingly. Provided always that the Works shall not be deemed to have been taken over if they are not substantially in accordance with the Contract.

If the Works are taken over under this Sub-Clause the Contractor shall nevertheless carry out the Tests on Completion during the Defects Liability Period. The Engineer shall require the Tests to be carried out by giving 14 days notice.

Any additional costs to which the Contractor may be put, in making the Tests on Completion during the Defects Liability Period, shall be added to the Contract Price.

Clause 49

For a Contract which includes a high proportion of Plant, an additional Sub-Clause may be necessary.

Extension of Defects Liability

49.5

EXAMPLE SUB-CLAUSE

The provisions of this Clause shall apply to all replacements or renewals of Plant carried out by the Contractor to remedy defects and damage as if the replacements and renewals had been taken over on the date they were completed. The Defects Liability Period for the Works shall be extended by a period equal to the period during which the Works cannot be used by reason of a defect or damage. If only part of the Works is affected the Defects Liability Period shall be extended only for that part. In neither case shall the Defects Liability Period extend beyond 2 years from the date of taking over.

When progress in respect of Plant has been suspended under Clause 40, the Contractor's obligations under this Clause shall not apply to any defects occurring more than 3 years after the Time for Completion established on the date of the Letter of Acceptance.

For a Contract comprising dredging work an additional Sub-Clause may be added.

No Remedying of Defects in Dredging Work after Completion

49.5

EXAMPLE SUB-CLAUSE

Notwithstanding Sub-Clause 49.2, the Contractor shall have no responsibility for the remedying of defects, shrinkages or other faults in respect of dredging work after the date stated in the Taking-Over Certificate.

Clause 50

For a Contract comprising dredging work and where the second Example Sub-Clause 49.5 has been adopted, an additional Sub-Clause should be added.

No Responsibility for Cost of Searching of Dredging Work

50.2

EXAMPLE SUB-CLAUSE

Notwithstanding Sub-Clause 50.1, the Contractor shall have no responsibility to bear the cost of searching for any defect, shrinkage or other fault in respect of dredging work after the date stated in the Taking-Over Certificate.

Clause 51

Sub-Clause 51.1 – Variations

For a Contract comprising dredging and some types of reclamation work the Sub-Clause may require to be varied.

EXAMPLE

Add final sentence as follows:

Provided also that the Contractor shall be under no obligation to execute any variation which cannot be executed by the Contractor's Equipment being used or to be used on the Works.

Clause 52

Where provision is made in the Contract for payment in foreign currency, this Clause may be varied.

Sub-Clause 52.1 – Valuation of Variations

EXAMPLE

Add final sentence as follows:

The agreement, fixing or determination of any rates or prices as aforesaid shall include any foreign currency and the proportion thereof.

Sub-Clause 52.2 – Power of Engineer to Fix Rates

Add to first paragraph final sentence as follows:

The agreement or fixing of any rates or prices as aforesaid shall include any foreign currency and the proportion thereof.

Sub-Clause 52.3 – Variations Exceeding 15 per cent

Add final sentence as follows:

The adjustment or fixing of any sum as aforesaid shall have due regard to any foreign currency included in the Effective Contract Price and the proportion thereof.

Where it is required to place some limitation on the range of items for which the rates and prices may be subject to review, the Clause may be varied.

Sub-Clause 52.2 – Power of Engineer to Fix Rates

EXAMPLE

At the end of the first paragraph add:

Provided further that no change in the rate or price for any item contained in the Contract shall be considered unless such item accounts for an amount more than 2 per cent of the Contract Price, and the actual quantity of work executed under the item exceeds or falls short of the quantity set out in the Bill of Quantities by more than 25 per cent.

Clause 54

Where vesting of Contractor's Equipment, Temporary Works and materials in the Employer is required, additional Sub-Clauses may be added.

EXAMPLE WORDING AND SUB-CLAUSES

Sub-Clauses 54.2 and 54.3 shall be renumbered as 54.3 and 54.4 and Sub-Clauses 54.4 to 54.8 shall be renumbered as 54.6 to 54.10. Add additional Sub-Clauses as follows:

Vesting 54.2 *All Contractor's Equipment, Temporary Works and materials owned by the Contractor, or by any company in which the Contractor has a controlling interest, shall, when on the Site, be deemed to be the property of the Employer. Provided always that the vesting of such property in the Employer shall not prejudice the right of the Contractor to the sole use of the said Contractor's Equipment, Temporary Works and materials for the purpose of the Works nor shall it affect the Contractor's responsibility to operate and maintain the same under the provisions of the Contract.*

Revesting and Removal 54.5 *Upon the removal, with the consent of the Engineer under Sub-Clauses 54.1, of any such Contractor's Equipment, Temporary Works or materials as have been deemed to have become the property of the Employer under Sub-Clause 54.2, the property therein shall be deemed to revest in the Contractor and, upon completion of the Works, the property in the remainder of such Contractor's Equipment, Temporary Works and materials shall, subject to Clause 63, be deemed to revest in the Contractor.*

Clause 60

Additional Sub-Clauses may be necessary to cover certain other matters relating to payments.

Where payments are to be made in various currencies in predetermined proportions and calculated at fixed rates of exchange the following 3 Sub-Clauses, which should be taken together, may be added:

- Currency of Account and Rates of Exchange** 60. *EXAMPLE SUB-CLAUSES (to be numbered, as appropriate)*
The currency of account shall be the (insert name of currency) and for the purposes of the Contract conversion between (insert name of currency) and other currencies stated in the Appendix to Tender shall be made in accordance with the Table of Exchange Rates in the Appendix to Tender. Conversion between the currencies stated in such Table other than the (insert name of currency) shall be made at rates of exchange determined by use of the relative rates of exchange between such currencies and the (insert name of currency) set out therein.
- Payments to Contractor** 60. *All payments to the Contractor by the Employer shall be made :*
(a) in the case of payment(s) under Sub-Clause(s) 70.2 and (insert number of any other applicable Clause), in (insert name of currency/ies);
(b) in the case of payments for certain provisional sum items excluded from the Appendix to Tender, in the currencies and proportions applicable to these items at the time when the Engineer gives instructions for the work covered by these items to be carried out; and
(c) in any other case, including Increase or Decrease of Costs under Sub-Clause 70.1, in the currencies and proportions stated in the Appendix to Tender as applicable to such payment provided that the proportions of currencies stated in the Appendix to Tender may from time to time upon the application of either party be varied as may be agreed.
- Payments to Employer** 60. *All payments to the Employer by the Contractor including payments made by way of deduction or set-off shall be made :*
(a) in the case of credit(s) under Sub-Clause(s) 70.2 and (insert number of any other applicable Clause) in (insert name of currency/ies);
(b) in the case of liquidated damages under Clause 47, in (insert name of currency/ies);
(c) in the case of reimbursement of any sum previously expended by the Employer, in the currency in which the sum was expended by the Employer; and
(d) in any other case, in such currency as may be agreed.
If the part payable in a particular currency of any sum payable to the Contractor is wholly or partly insufficient to satisfy by way of deduction or set-off a payment due to the Employer in that currency, in accordance with the provisions of this Sub-Clause, then the Employer may if he so desires make such deduction or set-off wholly or partly as the case may be from the balance of such sum payable in other currencies.

Where all payments are to be made in one currency the following Sub-Clause may be added:

- Currency of Account and Payments** 60. *EXAMPLE SUB-CLAUSE (to be numbered, as appropriate)*
The currency of account shall be the (insert name of currency) and all payments made in accordance with the Contract shall be in (insert name of currency). Such (insert name of currency), other than for local costs, shall be fully convertible. The percentage of such payments attributed to local costs shall be as stated in the Appendix to Tender.

Where place of payment is to be defined the following Sub-Clause may be added:

- Place of Payment** **60.** **EXAMPLE SUB-CLAUSE** (to be numbered, as appropriate)
Payments to the Contractor by the Employer shall be made into a bank account nominated by the Contractor in the country of the currency of payment. Where payment is to be made in more than one currency separate bank accounts shall be nominated by the Contractor in the country of each currency and payments shall be made by the Employer accordingly.

Where provision is to be included for an advance payment the following Sub-Clause may be added:

- Advance Payment** **60.** **EXAMPLE SUB-CLAUSE** (to be numbered, as appropriate)
An advance payment of the amount stated in the Appendix to Tender shall, following the presentation by the Contractor to the Employer of an approved performance security in accordance with Sub-Clause 10.1 and a Guarantee in terms approved by the Employer for the full value of the advance payment, be certified by the Engineer for payment to the Contractor. Such Guarantee shall be progressively reduced by the amount repaid by the Contractor as indicated in Interim Payment Certificates of the Engineer issued in accordance with this Clause. The advance payment shall not be subject to retention. The advance payment shall be repaid by way of reduction in Interim Payment Certificates commencing with the next certificate issued after the total certified value of the Permanent Works and any other items in the Bill of Quantities (excluding the deduction of retention) exceeds (insert figure) per cent of the sum stated in the Letter of Acceptance. The amount of the reduction in each Interim Payment Certificate shall be one (insert fraction) of the difference between the total value of the Permanent Works and any other items in the Bill of Quantities (excluding the deduction of retention) due for certification in such Interim Payment Certificate and the said value in the last preceding Interim Payment Certificate until the advance payment has been repaid in full. Provided that upon the issue of a Taking-Over Certificate for the whole of the Works or upon the happening of any of the events specified in Sub-Clause 63.1 or termination under Clauses 65, 66 or 69, the whole of the balance then outstanding shall immediately become due and payable by the Contractor to the Employer.

Clause 67

Where it is considered desirable to add to Sub-Clauses 67.3 provisions with respect to the number of arbitrators, the place of arbitration and the language of arbitration, the following paragraphs may be added to Sub-Clause 67.3:

EXAMPLE

The arbitral tribunal shall consist of (a sole or three) arbitrator(s).

The place of arbitration shall be(city and country).

The language of the arbitration shall be.....

It is desirable that the place of arbitration be situated in a state, other than that of the Employer or the Contractor, which has a modern and liberal arbitration law and which has ratified a bilateral or multilateral convention (such as the 1958 New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards), or both, that would facilitate the enforcement of an arbitral award in the states of the parties to the Contract.

In the absence of stipulations as to the three above mentioned matters, (number of arbitrators, place of arbitration and language of arbitration), the ICC will decide on the number of arbitrators (typically three in any substantial construction dispute) and on the place of arbitration. The arbitral tribunal will decide on the language of the arbitration if the parties cannot agree.

It may also be considered desirable in some cases for other parties to be joined into any arbitration between the Employer and the Contractor, thereby creating a multi-party arbitration. While this may be feasible, multi-party arbitration clauses require skillful draftmanship on a case-by-case basis. No satisfactory standard form of multi-party arbitration clause for international use has yet been developed.

Where it is decided that a settlement of dispute procedure, other than that of the International Chamber of Commerce (ICC), should be used the Clause may be varied.

Sub-Clause 67.3 – Arbitration

EXAMPLE

Following paragraph (b), delete the words “shall be finally settled... International Chamber of Commerce” and substitute “shall be finally settled under the UNCITRAL Arbitration Rules as administered by (insert name of administering authority)”.

Where alternatives to the ICC are considered care should be taken to establish that the favoured alternative is appropriate for the circumstances of the Contract and that the wording of Clause 67 is checked and amended as may be necessary to avoid any ambiguity with the alternative. Care should be taken to define exactly how the arbitral tribunal is to be appointed and, where appropriate, an appointing authority should be designated.

Clause 68

Sub-Clause 68.2 – Notice to Employer and Engineer

For the purposes of this Sub-Clause the respective addresses are:

(a) The Employer (insert address)

(b) The Engineer (insert address)

The addresses should be inserted when the documents are being prepared prior to inviting tenders.

Clause 69

Sub-Clause 69.1 – Default of Employer

Where the Employer is a government it may be considered appropriate to vary the Sub-Clause.

EXAMPLE

Delete paragraph (c) and renumber paragraph (d) as (c).

Where the terms of the Sub-Clause, when read in conjunction with Sub-Clause 69.3, are in conflict with the law of the country the Sub-Clause may require to be varied.

EXAMPLE

Delete “or” at the end of paragraph (c) and delete paragraph (d).

Clause 70

Three alternative methods of dealing with price adjustment are given below.

The first alternative is suitable where a contract is of short duration and no price adjustment is to be made:

Sub-Clause 70.1—Increase or Decrease in Cost

EXAMPLE

Delete the text of the Sub-Clause and substitute

Subject to Sub-Clause 70.2, the Contract Price shall not be subject to any adjustment in respect of rise or fall in the cost of labour, materials or any other matters affecting the cost of execution of the Contract.

Sub-Clause 70.2—Subsequent Legislation

EXAMPLE

Delete the words “, other than under Sub-Clause 70.1, ”.

The second alternative is suitable where price adjustment is to be made by establishing the difference in cost between the basic price and the current price of local labour and specified materials:

Sub-Clause 70.1—Increase or Decrease in Cost

EXAMPLE

Delete the text of the Sub-Clause and substitute

Adjustments to the Contract Price shall be made in respect of rise or fall in the cost of local labour and specified materials as set out in this Sub-Clause.

(a) Local Workmen

(i) For the purpose of this Sub-Clause:

“Local Workmen” means skilled, semi-skilled and unskilled workmen of all trades engaged by the Contractor on the Site for the purpose of or in connection with the Contract or engaged full time by the Contractor off the Site for the purpose of or in connection with the Contract (by way of illustration but not limitation: workmen engaged full time in any office, store, workshop or quarry);

“Basic Rate” means the applicable basic minimum wage rate prevailing on the date 28 days prior to the latest date for submission of tenders by reason of any National or State Statute, Ordinance, Decree or other Law or any regulations or bye-law of any local or other duly constituted authority, or in order to conform with practice amongst good employers generally in the area where the Works are to be carried out; and

“Current Rate” means the applicable basic minimum wage rate for Local Workmen prevailing on any date subsequent to the date 28 days prior to the latest date set for submission of tenders by reason of any National or State Statute, Ordinance, Decree or other Law or any regulation or bye-law of any local or other duly constituted authority, or in order to conform with practice amongst good employers generally in the area where the works are to be carried out.

(ii) The adjustment to the Contract Price under the terms of this Sub-Clause shall be calculated by multiplying the difference between the Basic and Current Rates for Local workmen by:

(a) the number of all hours actually worked, and

(b) in respect of those hours worked at overtime rates, by the product of the number of said hours and the percentage addition required by the law to be paid by the Contractor for overtime.

Such adjustment may be either an addition to or a deduction from the Contract Price.

(iii) No other adjustment of the Contract Price on account of fluctuation in the remuneration of Local Workmen shall be made.

(b) Specified Materials

(i) For the purpose of this Sub-Clause:

“Specified Materials” means the materials stated in Appendix (insert reference) to Tender required on the Site for the execution and completion of the Works;

“Basic Prices” means the current prices for the specified materials prevailing on the date 28 days prior to the latest date for submission of tenders; and

“Current Prices” means the current prices for the specified materials prevailing at any date subsequent to the date 28 days prior to the latest date for submission of tenders.

(ii) The adjustment to the Contract Price under the terms of this Sub-Clause shall be calculated by applying the difference between the Basic and Current Prices to the quantity of the appropriate Specified Material which is delivered to the Site during the period for which the particular Current Price is effective. Such adjustment may be either an addition to or a deduction from the Contract Price.

(iii) The Contractor shall use due diligence to ensure that excessive wastage of the Specified Materials shall not occur. Any Specified Materials removed from the Site shall be clearly identified in the records required under paragraph (d) of this Sub-Clause.

(iv) The provisions of this Sub-Clause shall apply to fuels used in Contractor's Equipment engaged on the Site for the purposes of executing the Works, including vehicles owned by the Contractor (or hired by him under long term arrangements under which the Contractor is obligated to supply fuel) engaged in transporting any staff, labour, Contractor's Equipment, Temporary Works, Plant or materials to and from the Site. Such fuels shall be clearly identified in the records required under paragraph (d) of this Sub-Clause. The provisions of this Sub-Clause shall not apply to any fuels sold or supplied to any employee of the Contractor or to any person for use in any motor vehicle not being used for the purposes of the Contract.

(v) The Contractor shall at all times have regard to suitable markets and shall, whenever buying materials a variation in the cost of which would give rise to an adjustment of the Contract Price under this Sub-Clause, be diligent to buy or procure the same at the most economical prices as are consistent with the due performance by the Contractor of his obligations under the Contract.

If at any time there shall have been any lack of diligence, default or negligence on the part of the Contractor, whether in observing the above requirements or otherwise, then, for the purposes of adjusting the Contract Price pursuant hereto, no account shall be taken of any increase in cost which may be attributable to such lack of diligence, default or negligence and the amount by which any cost would have been decreased but for such lack of diligence, default or negligence shall be deducted from the Contract Price.

(vi) No other adjustment to the Contract Price on account of fluctuation in the cost of materials shall be made.

(c) Overheads and Profits Excluded

In determining the amount of any adjustment to the Contract Price pursuant to this Sub-Clause no account shall be taken of any overheads or profits.

(d) Notices and Records

The Contractor shall forthwith, upon the happening of any event which may or may be likely to give rise to adjustment of the Contract Price pursuant to this Sub-Clause, give notice thereof to the Engineer and the Contractor shall keep such books, accounts and other documents and records as are necessary to enable adjustment under this Sub-Clause to be made and shall, at the request of the Engineer, furnish any invoices, accounts, documents or records so kept and such other information as the Engineer may require.

(e) Adjustment after Date of Completion

Adjustment to the Contract Price, after the due date for completion of the whole of the Works pursuant to Clause 43, or after the date of completion of the whole of the Works certified pursuant to Clause 48, shall be made in accordance with Current Rates or Current Prices, as applicable, ruling at the due date for completion or the date stated in the Taking-Over Certificate, whichever is the earlier.

(f) Determination of Adjustment to Contract Price

The amount of any adjustment to the Contract Price pursuant to this Sub-Clause shall be determined by the Engineer in accordance with the foregoing rules.

EXAMPLE APPENDIX TO TENDER
for use in conjunction with the second alternative.

SPECIFIED MATERIALS

MATERIAL	UNIT	PRICE AND LOCATION	TRANSPORT TO SITE	PRICE DELIVERED TO SITE	REMARKS
Bitumen					
Diesel					
Petrol					
Lubricants					
Cement					
Reinforcing Steel					
Explosives					

NOTES:

- 1. The Contractor shall provide copies of quotations to substantiate all prices included in the above table.*
 - 2. All subsequent price substantiation shall be from the same source as original unless otherwise agreed by the Engineer.*
 - 3. The Contractor shall submit full explanation and provide substantiating documentation for the mode of transport to Site he proposes. Only the proposed documented mode of transport shall qualify for price adjustment.*
- (Note: Materials stated in the Appendix to Tender should be those of which substantial quantities are involved.)*

The third alternative is suitable where price adjustment is to be made through the application of indices in a formula:

Sub-Clause 70.1 – Increase or Decrease in Cost

EXAMPLE

Delete the text of the Sub-Clause and substitute

(a) Adjustments to the Contract Price in respect of rise and fall in the cost of labour and materials and other matters affecting the cost of execution of the Works shall be calculated for each monthly statement pursuant to Sub-Clause 60.1, the Statement at Completion pursuant to Sub-Clause 60.5 and the Final Statement pursuant to Sub-Clause 60.6 in accordance with the provisions of this Sub-Clause if there shall be any changes in the following Index figures compiled by (insert details of source of indices) and published by (insert details of publication):

- (i) the Index of the cost of Labour in (insert name of country),*
- (ii) the Index of the cost of (insert other factor, as relevant), or*
- (iii) the Index of the cost of (insert other factor, as relevant).*

(b) For the purpose of this Sub-Clause:

- (i) “Base Index Figure” shall mean the index figure applicable on the date 28 days prior to the latest date for submission of tenders, and*
- (ii) “Current Index Figure” shall mean the index figure applicable on the last day of the period to which the particular statement relates.*

Provided that in respect of any work the value of which is included in any such monthly statement (or Statement at Completion or Final Statement) and which was executed after the due date (or extended date) for completion of the whole of the Works, pursuant to Clause 43, the Current Index Figure shall be the index figure applicable on the aforesaid due date (or extended date) for completion of the whole of the Works.

(iii) "Effective Value" shall be the difference between:

(a) The amount which is due to the Contractor under the provisions of Sub-Clauses 60.2, 60.5 or 60.8 (before deducting retention and excluding repayment of the advance payment) less any amounts for:

work executed under nominated Subcontracts

materials and Plant on the Site, as referred to in Sub-Clause 60.1 (c)

dayworks, variations or any other items based on actual cost or current prices, and bonuses (if any)

adjustments under Clause 70,

and

(b) The amount calculated in accordance with (b) (iii) (a) of this Sub-Clause and included in the last preceding statement.

(c) The adjustment to the Contract Price shall be calculated by multiplying the Effective Value by a Price Fluctuation Factor which shall be the net sum of the products obtained by multiplying each of the proportions given in paragraph (d) of this Sub-Clause by the following fraction:

$$\frac{\text{Current Index Figure} - \text{Base Index Figure}}{\text{Base Index Figure}}$$

calculated using the relevant index figures.

(d) For the purpose of calculating the Price Fluctuation Factor, the proportions referred to in paragraph (c) of this Sub-Clause shall (irrespective of the actual constituents of the work) be as follows:

- 0. in respect of labour (and supervision) costs subject to adjustment by reference to the Index referred to in (a) (i) of this Sub-Clause;
- 0. in respect of _____ by reference to the Index referred to in (a) (ii) of this Sub-Clause;
- 0. in respect of _____ by reference to the Index referred to in (a) (iii) of this Sub-Clause;
- 0. in respect of all other costs which shall not be subject to any adjustment;
- 1.00 Total

(e) Where the value of an Index is not known at the time of calculation, the latest available value shall be used and any adjustment necessary shall be made in subsequent monthly statements.

(Note: The number of indices included under (a) of this Sub-Clause may be varied, if it is determined that a different number of factors should be separately identified, and in such case (d) of this Sub-Clause must be altered to be consistent.)

Clause 72

Sub-Clause 72.2 – Currency Proportions

Where it is decided that the rate or rates of exchange shall be established from a source other than the Central Bank of the country, the Sub-Clause may be varied.

EXAMPLE

Delete the words from "prevailing..." to the end of the sentence and substitute "stated in the Appendix to Tender".

Clause 73 onwards

Where circumstances require, additional Clauses may be added.

EXAMPLE CLAUSES (to be numbered, starting with Clause 73, as appropriate).

Where the law applicable to the Contract does not cover bribery, the following example Clause may be added.

- Bribes** .1 *If the Contractor or any of his Subcontractors, agents or servants offers to give or agrees to offer or give to any person, any bribe, gift, gratuity or commission as an inducement or reward for doing or forbearing to do any action in relation to the Contract or any other contract with the Employer or for showing or forbearing to show favour or disfavour to any person in relation to the Contract or any other contract with the Employer, then the Employer may enter upon the Site and the Works and terminate the employment of the Contractor and the provisions of Clause 63 hereof shall apply as if such entry and termination had been made pursuant to that Clause.*

Where circumstances require that particular confidentiality is observed, the following example Clause may be added.

- Details to be Confidential** .1 *The Contractor shall treat the details of the Contract as private and confidential, save in so far as may be necessary for the purposes thereof, and shall not publish or disclose the same or any particulars thereof in any trade or technical paper or elsewhere without the previous consent in writing of the Employer or the Engineer. If any dispute arises as to the necessity of any publication or disclosure for the purpose of the Contract the same shall be referred to the Employer whose determination shall be final.*

Where the Contract is being financed wholly or in part by an international financial institution whose rules or policies require a restriction on the use of the funds provided, the following example Clause may be added.

- Expenditure Restricted** .1 *The Contractor shall not make any expenditures for the purpose of the Contract in the territories of any country which is not a member of (insert name of international financial institution) nor shall he make any expenditure for goods produced in or services supplied from such territories.*

Where the Contractor may be a joint venture, the following example Clause may be added.

- Joint and Several Liability** .1 *If the Contractor is a joint venture of two or more persons, all such persons shall be jointly and severally bound to the Employer for the fulfilment of the terms of the Contract and shall designate one of such persons to act as leader with authority to bind the joint venture. The composition or the constitution of the joint venture shall not be altered without the prior consent of the Employer.*

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EDITORIAL AMENDMENTS IN 1988

Following publication in 1987 of the Fourth Edition of the Conditions of Contract for Works of Civil Engineering Construction, a number of editorial amendments were agreed by FIDIC. The amendments have been incorporated during reprinting in 1988 and the list below clarifies the differences between the 1988 reprint and the original document.

- Page 5** Clause 9. The words “as stated in Sub-Clause 9.1 of Part 1 of these Conditions” have been added to the final line of the first paragraph.
- Page 6** Sub-Clause 12.2. A comma has been moved from after the word “words” to immediately before the word “other”. The word “Site” has been capitalised.
- Page 7** Example performance guarantee. A comma previously appeared between the words “and” and “complete” in the third line of the paragraph beginning “Whereas”.
The fifth line of the paragraph beginning “Now the Condition . . .” previously read “. . . default by the Contract . . .”
- Page 12** Sub-Clause 21.3. (b) (ii). A full stop has been inserted following “50”.
- Page 13** Sub-Clause 34. Repatriation of Labour. A comma has been inserted between the words “country)” and “shall”.
- Page 14** Sub-Clause 34. Epidemics. The word “Contractor” has been capitalised in the first line.
Sub-Clause 34. Alcoholic Liquor or Drugs. The word “Contractor” has been capitalised in the first line.
- Page 15** Sub-Clause 40.3. This was previously incorrectly listed as 40.2.
- Page 17** Sub-Clause 49.5. The last line of the first paragraph previously read “. . . extend beyond 730 days”.
- Page 20** Sub-Clause 67.3. The word “a” previously appeared before the bracket on the penultimate line of the Example.
- Page 21** Sub-Clause 70.2. A comma has been moved from after the word “words” to immediately before the word “other”.

FURTHER AMENDMENTS IN 1992

The following amendments have been made to the 1988 reprint of the Fourth Edition. In addition, some minor changes in the use of punctuation marks (commas, semicolons, colons and stops), as well as the use of the words “or” and “and” have been introduced to attain uniformity in the style of all Clauses. These minor changes which improve the style, but which have no effect on the meaning of Clauses, have not been listed below.

Contents		The words “Index” and “Editorial Amendments” have been added at the bottom of the page.
Page	1	INTRODUCTION. The words “, subject to minor modifications” have been added, and the word “equally” changed to read “also”.
Page	3	Sub-Clause 1.1. In the last sentence, the words “for example the name of an International Financing Institution (IFI)” have been deleted.
Page	4	Clause 9. In the first paragraph the words “of Part I” have been added. In the second paragraph “I” has been corrected to read “1”.
Page	5	Clause 12. Sub-Clause 12.2. In the title the word “Adverse” has been changed to read “Not Foreseeable” (also amended in the Contents and the Index).
Page	10	Sub-Clause 21.1, sub-para (a). The words “(the term “cost” in this context shall include profit)” have been added.
Page	13	Example Sub-Clause for Supply of Foodstuffs. The words “staff and labour, or his Subcontractors” have been changed to read “ staff, labour and Subcontractors”
Page	19	Example Sub-Clause for Advance Payment. The words “interim certificate” have been changed to read “Interim Payment Certificate”, in both the singular and plural. Clause 67. The first four paragraphs of the commentary have been added.
Page	24	Sub-Clause 70.1. In the formula, the word “Based” has been corrected to read “Base”.
Page	25	Example Clause for Bribes. The word “Sub-contractors” has been corrected to read “Subcontractors”. Example Clause for Details to be Confidential. In the sixth line, the words “the decision of” have been deleted. In the seventh line, the word “award” has been changed to read “determination” Example Clause for Expenditure Restricted. In the commentary and text, the leading capital letters on the words “International Financing Institutions” have been changed to small letters. In the commentary, the word “Articles” has been changed to read “rules or policies”. In the third line, the word “not” has been corrected to read “nor”. EDITORIAL AMENDMENTS (1988). In the last item, the words “Line 21” have been corrected to read “Page 21”.

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SECTION-V

SPECIAL CONDITIONS OF CONTRACT

SPECIAL CONDITIONS OF CONTRACT

(Mandatory Provisions not to be Amended / Substituted except as instructed by PEC)

1.1 Definitions

- (a) (i) The Employer is: National Grid Company of Pakistan (NGC)
 Executive Engineer EHV-II
 S&I Division NGC 132 KV Grid
 Station Shahbazpur Road Rahim Yar Khan
 Telephone No. 068-9330007
- (a) (iv) The Engineer is: Chief Engineer (Sub Station Design) NGC and Chief Engineer
 (Civil) NGC

Or

Any person nominated by the Employer

or any other competent person appointed by the Employer, "except for any of the Employer's personnel". The Engineer must be independent and not an officer or employee of the Employer, to ensure fairness, efficiency and quality in implementation of the project and notified to the Contractor, to act in replacement of the Engineer. Provided always that except in cases of professional misconduct, the outgoing Engineers is to formulate his certifications/recommendations in relation to all outstanding matters, disputes and claims relating to the execution of the Works during his tenure.

The following paragraph is added:

- (a)(vi) "Bidder or Tenderer" means any person or persons, company, corporation, firm submitting a Bid or Tender.

- (b)(v) The following is added at the end of the paragraph:

The word "Tender" is synonymous with "Bid" and the word "Tender Documents" with "Bidding Documents".

The following paragraph is added:

- (b)(ix) "Programme" means the programme to be submitted by the Contractor in accordance with Sub-Clause 14.1 and any approved revisions thereto.

- (e)(i) The text is deleted and substituted with the following:

"Contract Price" means the sum stated in the Letter of Acceptance as payable to the Contractor for the execution and completion of the Works subject to such additions thereto or deductions there from as may be made and remedying of any defects therein in accordance with the provisions of the Contract.

The following definitions are added

- (h)(i) "Environmental Management Plan" or EMP means the environmental management plan for the site, including any update thereto, incorporated in the environmental audit (EA). "Environmental Audit" or EA means the environmental audit for the sites, including any

update thereto, prepared and submitted by the Employer.

- (h)(ii) “Semi-annual environmental safeguards monitoring report” or SAESMR means the report prepared by Employer on a bi-annual basis and verified by an external monitoring expert to provide an update on overall progress in environmental safeguards implementation at the project level, including the status of environmental safeguards implementation progress, site handover status and need for corrective actions (if any).

2.1 Engineer's Duties and Authority

With reference to Sub-Clause 2.1(b), the following provisions shall also apply;

The Engineer shall obtain the specific approval of the Employer before carrying out his duties in accordance with the following Clauses:

- (i) Consenting to the sub-letting of any part of the Works under Sub-Clause 4.1 “Subcontracting”.
- (ii) Certifying additional cost determined under Sub-Clause 12.2 “Not Foreseeable Physical Obstructions or Conditions”.
- (iii) Any action under Clause 10 “Performance Security” and Clauses 21,23,24 & 25 “Insurance” of sorts.
- (iv) Any action under Clause 40 “Suspension”.
- (v) Any action under Clause 44 “Extension of Time for Completion”.
- (vi) Any action under Clause 47 “Liquidated Damages for Delay” or Payment of Bonus for Early Completion of Works (PCC Sub-Clause 47.3).
- (vii) Issuance of “Taking over Certificate” under Clause 48.
- (viii) Issuing a Variation Order under Clause 51, except:
 - a) in an emergency* situation, as stated here below, or
 - b) if such variation would increase the Contract Price by less than the amount stated in the Appendix-A to Bid.
- (ix) Fixing rates or prices under Clause 52.
- (x) Extra payment as a result of Contractor’s claims under Clause 53.
- (xi) Release of Retention Money to the Contractor under Sub-Clause 60.3 “Payment of Retention Money”.
- (xii) Issuance of “Final Payment Certificate” under Sub-Clause 60.8.
- (xiii) Issuance of “Defect Liability Certificate” under Sub-Clause 62.1.

- (xiv) Any change in the ratios of Contract currency proportions and payments thereof under Clause 72 “Currency and Rate of Exchange”.

(Note: Employer may further vary according to need of the project)

* (If in the opinion of the Engineer an emergency occurs affecting the safety of life or of the Works or of adjoining property, the Engineer may, without relieving the Contractor of any of his duties and responsibilities 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 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 52 and shall notify the Contractor accordingly, with a copy to the Employer.)

2.3 Engineer’s Authority to delegate:

The following paragraph is added:

Chief Engineer (Sub Station Design) or his representative, shall act as representative of Engineer for providing in house Engineering Services including but not limited to the following:

- a) Review & approval of technical data/ drawings/design
- b) Interpretation of the bidding documents
- c) Review & approval of profile/plan tabling/route plan
- d) Site visits for attending any technical problem if necessary
- e) Resolution of disputes
- f) Review & approval of all technical matters

The following Sub-Clauses 2.7 and 2.8 are added:

2.7 Engineer Not Liable

Approval, reviews and inspection by the Engineer of any part of the Works does not relieve the Contractor from his sole responsibility and liability for the supply of materials, plant and equipment for construction of the Works and their parts in accordance with the Contract and neither the Engineer's authority to act nor any decision made by him in good faith as provided for under the Contract whether to exercise or not to exercise such authority shall give rise to any duty or responsibility of the Engineer to the Contractor, any Subcontractor, any of their representatives or employees or any other person performing any portion of the Works.

2.8 Replacement of the Engineer

If the Employer intends to replace the Engineer, the Employer shall, not less than 14 days before the intended date of replacement, give notice to the Contractor, of the name, address and relevant experience of the intended replacement Engineer. The Employer shall not replace the Engineer with a person against whom the Contractor raises reasonable objection by notice to the Employer, with supporting particulars.

5.1 Language(s) and Law

- (a) Contract Documents shall be drawn up in the English language.
- (b) Contract shall be subject to the Laws of Islamic Republic of Pakistan.

5.2 Priority of Contract Documents

The documents listed at (1) to (6) of the Sub-Clause are deleted and substituted with the following:

- (1) The Contract Agreement (if completed);
- (2) The Letter of Acceptance;
- (3) Minutes of Pre-Award Meeting (if any);
- (4) The completed Form of Bid;
- (5) Special Stipulations (Appendix-A to Bid);
- (6) The Particular Conditions of Contract;
- (7) The General Conditions;
- (8) The priced Bill of Quantities;
- (9) The completed Appendices to Bid;
- (10) The Specifications
- (11) The Drawings;

All Drawings and Specifications shall be interpreted in conformity with the Contract and these Conditions. Addendum, if any, shall be deemed to have been incorporated at the appropriate places in the documents forming the Contract. If any ambiguity or discrepancy is found in the documents, the Engineer shall issue any necessary clarification or instruction which shall be binding.

6.1 Custody and supply of Drawings & Documents

The contractor shall supply a soft copy of such drawings in source file and any other format specified by the Engineer.

The following Sub-Clauses 6.6 and 6.7 are added:

6.6 Shop Drawings

The Contractor shall submit to the Engineer for review 3 copies of all shop and erection drawings applicable to this Contract as per provision of relevant Sub-Clause of the Contract.

Review and approval by the Engineer shall not be construed as a complete check but will indicate only that the general method of construction and detailing is satisfactory and that the Engineer's review or approval shall not relieve the Contractor of any of his responsibilities under the Contract.

6.7 As-Built Drawings

At the completion of the Works under the Contract, the Contractor shall furnish to the Engineer 6 copies and one reproducible of all drawings amended to conform to the Works as built. The price of such Drawings shall be deemed to be included in the Contract Price.

10.1 Performance Security

The text is deleted and substituted with the following:

The Contractor shall provide Performance Security to the Employer in the prescribed form. The said Security shall be furnished or caused to be furnished by the Contractor within 14 days after the receipt of the Letter of Acceptance. The Performance Security shall be of an amount equal to 10% of the Contract Price stated in the Letter of Acceptance. Such Security shall, at the option of the bidder, be in the form of either (a) bank guarantee from any Scheduled Bank in Pakistan or (b) bank guarantee from a bank located outside Pakistan duly counter-guaranteed by a Scheduled Bank in Pakistan. The cost of complying with requirements of this Sub-Clause shall be borne by the Contractor or (c) insurance guarantee from an insurance company having AA⁺ PACRA Rating or acceptable to employer.

The following Sub-Clause 10.4 is added:

10.4 Performance Security Binding on Variations and Changes

The Performance Security shall be binding irrespective of changes in the quantities or variations in the Works or extensions in Time for Completion of the Works which are granted or agreed upon under the provisions of the Contract.

11.1 Inspection of Site

Bidder shall inspect the site, examine and obtain all information required and satisfy himself regarding matters and things such as access to site, communication, transport, right of way, the type and number of equipment and facilities required for the satisfactory completion of work, the quantity of various sections of the work, the availability of local labour, availability and rates of materials, local working conditions, uncertainties of weather, obstructions and hindrances that may arise etc., which may affect the work or cost thereof, before submission of his bid. Ignorance of site conditions shall not be accepted by the owner as basis for any claim for compensation. The submission of a bid by the bidder will be construed as evidence that such an examination was made and any later claims/disputes in regard to rates quoted shall not be entertained or considered by the owner.

If any temporary feeder road within site is considered essential for the proper execution of the work this shall have to be formed by the Contractor at his own cost with the prior approval of the Engineer. The Contractor shall organize his own arrangement to transport his equipment, men and materials in such a manner that the completion period will not be exceeded on any account.

The rates quoted by Bidder shall be based on his own knowledge and judgement of the conditions and hazards involved and shall not be based on any representations to the Engineer.

12.3 Unforeseeable environment risks or impacts

In addition to any of the not foreseeable physical obstructions or conditions noted in Sub-Clause 12.2, the Contractor shall provide the Engineer with a written notice of any unanticipated environmental risks or impacts that arise during construction, implementation or operation of the Plant or the Works, which were not considered in the environmental audit, the environmental management plan attached hereto as Appendix [to be attached by the bidder].

- 12.4** The Contractor shall comply with (i) the measures and requirements relevant to the Contractor which are set forth in the EA and EMP hereto as Appendix [to be attached by the bidder], and (ii) 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 safeguards measures.

14.1 Programme to be Submitted

The Contractor shall submit a detailed time programme to the Engineer within 14 days after receipt of Letter of Acceptance.

The Contractor shall also submit a revised programme whenever the previous programme is inconsistent with actual progress or with the Contractor's obligations.

Each programme shall be in the form of bar chart or a CPM chart identifying the critical activities and 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, delivery to Site, construction, erection and testing.
- b) Each of these stages for work by each nominated subcontractor
- c) The sequence and timing of site inspections and tests specified in the Contract, and 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 14 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.

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.

The period between the Program updates will be 15days. If the contractor fails to submit an updated program in time, any payment due for his current bills will be withheld till the submission of such programme.

14.3 Cash Flow Estimate to be Submitted

The detailed Cash Flow Estimate shall be submitted within 21 days from the date of receipt of Letter of Acceptance

The following Sub-Clause 14.5 is added:

14.5 Monthly Progress Report

During the period of the Contract, the Contractor shall submit to the Engineer not later than the 8th day of the following month, copies of Monthly Progress Reports covering:

- (1) A Construction Schedule indicating the monthly progress in percentage;
- (2) Description of all work carried out since the last report;
- (3) Description of the work planned for the next 30 days sufficiently detailed to enable the Engineer to determine his programme of inspection and testing;
- (4) Monthly summary of daily job record;
- (5) Photographs to illustrate the status of progress on the Site.
- (6) Information about problems and difficulties encountered, if any, and proposals to overcome the same.
- (7) Charts and detailed descriptions of progress, including each stage of design (if any), Contractor's Documents, delivery of material to Site, construction, erection and testing; and including these stages for work by each nominated Subcontractor.
- (8) The details described in Sub-Clause 35.1 [Return of labor & Contractor's Equipment]
- (9) Copies of quality assurance documents, test results and certificates of Materials.
- (10) List of notices given under Sub-Clause 68.1[Notice to Contractor] and notices given under Sub-Clause 68.2[Notice to Employer & Engineer].
- (11) Safety statistics, including details of any hazardous incidents and activities relating to environmental aspects and public relations.
- (12) Comparisons of actual and planned progress, with details of any events or circumstances which may jeopardize the completion in accordance with the Contract, and the measures being (or to be) adopted to overcome delays.
- (13) Safeguards related reporting requirement, including semiannual safeguards monitoring reports

These progress reports will be submitted as per the following distribution list:

- (1) G.M. (PD/GSC) South, NGC Hyderabad.
- (2) CE(PD/GSC) EHV-II South, NGC Hyderabad.
- (3) PD (EHV-II), NGC Hyderabad.
- (4) XEN (S&I) Division (EHV-II), NGC Rahim Yar Khan

During the period of the Contract, the Contractor shall keep a daily record of the work progress, which shall be made available to the Engineer as and when requested. The daily record shall include particulars of weather conditions, number of men working, deliveries of materials, quantity, location and assignment of Contractor's equipment.

14.6 Contract Management Plan

For contract management plan is as follows:

“The detailed reporting requirements are presented in the Contract Management Plan (CMP) template, in Appendix [M]. The Contractor, the Project Manager and Supervision Consultant will use a dedicated web-based dashboard system for reporting, which will be based on the CMP structure. The system is provided free of charge by the Employer.” The Contractor will submit a monthly report to the Employer using web-based project monitoring software to create & submit the monthly report through the web-based dashboard system.”

15.1 Contractor’s Superintendence

The Contractor’s authorised representative and his other professional engineers working at Site shall register themselves with the Pakistan Engineering Council.

The Contractor’s authorised representative at Site shall be authorised to exercise adequate administrative and financial powers on behalf of the Contractor so as to achieve completion of the Works as per the Contract.

The following Sub-Clauses 15.2 is added:

15.2 Language Ability of Contractor’s Representative

The Contractor’s authorized representative shall be fluent in the English language. Alternately an interpreter with ability of English language shall be provided by the Contractor on full time basis.

The following Sub-Clauses 16.3 and 16.4 are added:

16.3 Language Ability of Superintending Staff of Contractor

A reasonable proportion of the Contractor's superintending staff shall have a working knowledge of the English language. If the Contractor’s superintending staffs is not fluent in English language, the Contractor shall make competent interpreters available during all working hours in a number deemed sufficient by the Engineer.

16.4 Employment of Local Personnel

The Contractor is encouraged, to the extent practicable and reasonable, to employ staff and labour from sources within Pakistan.

The following Sub-Clauses 19.3 and 19.4 are added:

19.3 Safety Precautions

In order to provide for the safety, health and welfare of persons, and for prevention of damage of any kind, all operations for the purposes of or in connection with the Contract shall be carried out in compliance with the Safety Requirements of the Government of Pakistan with such modifications thereto as the Engineer may authorise or direct and the Contractor shall take or cause to be taken such further measures and comply with such further requirements as the Engineer may determine to be reasonably necessary for such purpose.

The Contractor shall make, maintain and submit reports to the Engineer concerning safety, health and welfare of persons and damage to property, as the Engineer may

from time to time prescribe.

19.4 Lighting Work at Night

In the event of work being carried out at night, the Contractor shall at his own cost, provide and maintain such good and sufficient light as will enable the work to proceed satisfactorily and without danger. The approaches to the Site and the Works where the night-work is being carried out shall be sufficiently lighted. All arrangement adopted for such lighting shall be to the satisfaction of the Engineer's Representative.

19.5 Protection of the Environment

The Contractor shall comply with all applicable national, provincial, and local environmental laws and regulations. The Contractor shall (a) establish an operational system for managing environmental impacts, (b) carry out all of the monitoring and mitigation measures relevant to the Contractor set forth in the Audit, the Environmental Management Plan, attached hereto as Appendix [N] and (c) allocate a budget to ensure that such measures are carried out. The Contractor shall submit quarterly reports on the carrying out of such measures to the Employer.

More particularly, the Contractor shall comply with (i) the measures and requirements set forth in the EA, and the EMP attached hereto as Appendix [N]; 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 EA and the EMP. The Contractor shall allocate a budget for compliance with these measures, requirements and actions.

19.6 Environmental Safeguards

Contractor(s) shall ensure that:

- (a) A Site Environment Specialist is appointed with relevant educational background and experience within 28 days of the Effective Date. The CVs of the applicants for the position should be shared with the Employer for approval*
- (b) Site Specific EMP, Waste Management Plan and Environmental Management & Monitoring Plan (EMMP) implementation plan shall be submitted to the Employer for approval before mobilization to Site.*
- (c) The EMP is implemented in all aspects;*
- (d) All mitigation and monitoring measures identified in the EA, and EMMP are incorporated in detailed design and implemented during construction/operation of the Project Facilities;*
- (e) All subcontracts under the project shall contain provisions complying with this paragraph (d)*
- (f) Sufficient budget is made available for all such environmental and social measures mentioned in this paragraph (d);*
- (g) The Employer is provided with a written notice of any unanticipated environmental, risks or impacts that arise during construction, implementation or operation of project that were not considered in the EA or the EMP.*
- (h) All invoices/amounts claimed by contractor(s) in lieu of Environment & Social Safeguards Management would be sent to the Employer for verification.*
- (i) Monthly and quarterly monitoring & implementation reports are submitted to the Employer in the form agreed with the Employer*
- (j) Personal protective equipment (safety helmets, hard helmets, safety gloves, safety shoes, safety glasses, safety vests etc.) are provided by the Contractor to all the workers at Site before commencement of the relevant works.*

- (k) *Safety signs and awareness material printed in Urdu & English languages (4 x 6 feet Panaflexes) are placed & visible at project Site.*
- (l) *Pathways, other local infrastructure (sewerage line, water transporting system/pipes, rainwater drainage system etc.) damaged due to construction activity at the project site and agricultural land are fully restored to at least pre-project condition upon the completion of construction works.*
- (m) *Proper sanitation facilities and clean drinking water are provided to anyone working on Site.*
- (n) *Water tests, air quality monitoring, noise measurement are conducted on quarterly basis by EPA approved lab (NOC for selected lab must be issued by the Employer before conducting tests) and records provided to the Employer.*
- (o) All conditions set forth in an Environmental approval/NOC issued by respective environmental protection agency (EPA) are complied with.
- (p) Upon completion of construction works, the Contractor shall restore all affected lands to its pre-work conditions or better, before returning lands to affected persons to be verified by a project completion/safeguard monitoring reports.

19.7 Safeguards

- (a) Information at worksites on risks of sexually transmitted diseases and HIV/AIDS is disseminated for those employed during construction, and take measures to protect workers from protect workers from potential exposure to sexually transmitted diseases;
- (b) There is no differentiation between men and women wages or benefits for work of equal value; and
- (c) It abstains from child labor;

20.4 Employer's Risks

The Employer's risks are:

Notwithstanding anything contained (in GCC 20.4), the Employer shall not be responsible, compensate or bear any kind of risk/liability whatsoever in nature.

21.1 Insurance of Works and Contractor's Equipment

The minimum insurance amounts and deductibles shall be:

- (a) For the Works and Materials: Full value of material.
- (b) For loss or damage to Equipment: Full value of the loss/damage.
- (c) For loss or damage to property (except the Works, Materials, and Equipment) in connection with Contract: Full value of loss/damage to property
- (d) For personal injury or death:
 - i) of the Contractor's employees: In accordance with such applicable laws in Pakistan
 - ii) of other people: In accordance with such applicable laws in Pakistan

21.4 Exclusions

The text is deleted and substituted with the following:

There shall be no obligation for the insurances in Sub-Clause 21.1 to include loss or damage caused by the risks listed under Sub-Clause 20.4 sub paragraph (a) to (h).

25.3 Remedy on Contractor Failure to Insure

Delete the text and substitute with the following:

The Contractor shall affect and keep in force all insurances required under the contract. The Employer shall not affect any kind of insurance on behalf of this project.

25.4 Compliance with Policy Conditions

Delete the text and substitute with the following:

“In the event that the Contractor fails to comply with conditions imposed by the insurance policies affected pursuant to the contract, the Contractor shall indemnify the employer against all losses and claims arising from such failure.”

The following Sub-Clause 25.5 is added:

25.5 Insurance Company

The Contractor shall be obliged to place all insurances relating to the Contract (including, but not limited to, the insurances referred to in Clauses 21, 23 and 24) with either National Insurance Company of Pakistan or any other insurance company operating in Pakistan and acceptable to the Engineer.

Costs of such insurances shall be borne by the Contractor.

The following Sub-Clause 31.3 is added:

31.3 Co-operation with other Contractors

During the execution of the Works, the Contractor shall co-operate fully with other contractors working for the Employer at and in the vicinity of the Site and also shall provide adequate precautionary facilities not to make himself a nuisance to local residents and other contractors.

The following Sub-Clauses 34.2 to 34.12 are added:

34.2 Rates of Wages and Conditions of Labour

The Contractor shall pay rates of wages and observe conditions of labour not less favourable than those established for the trade or industry where the work is carried out. In the absence of any rates of wages or conditions of labour so established, the Contractor shall pay rates of wages and observe conditions of labour which are not less favourable than the general level of wages and conditions observed by other employers whose general circumstances in the trade or in industry in which the Contractor is engaged are similar.

34.3 Employment of Persons in the Service of Others

The Contractor shall not recruit his staff and labour from amongst the persons in the services of the Employer or the Engineer; except with the prior written consent of the Employer or the Engineer, as the case may be.

34.4 Housing for Labour

Save insofar as the Contract otherwise provides, the Contractor shall provide and maintain such housing accommodation and amenities as he may consider necessary for all his supervisory staff and labour, employed for the purposes of or in connection with the Contract including all fencing, electricity supply, sanitation, cookhouses, fire prevention, water supply and other requirements in connection with such housing accommodation or amenities. On completion of the Contract, these facilities shall be handed over to the Employer or if the Employer so desires, the temporary camps or housing provided by the Contractor shall be removed and the Site reinstated to its original condition, all to the approval of the Engineer.

34.5 Health and Safety

Due precautions shall be taken by the Contractor, and at his own cost, to ensure the health and safety of his staff and labour at all times throughout the period of the Contract. The Contractor shall further ensure that suitable arrangements are made for the prevention of epidemics and for all necessary welfare and hygiene requirements and to provide a safe work environment. The Contractor shall conduct health and safety programs for workers employed under the project and shall include information on the trafficking of women and the risk of sexually transmitted diseases, including HIV/AIDs in such programs.

34.6 Epidemics

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 medical or sanitary authorities, for purpose of dealing with and overcoming the same.

34.7 Supply of Water

The Contractor shall, so far as is reasonably practicable, having regard to local conditions, provide on the Site, to the satisfaction of the Engineer or his representative, adequate supply of drinking and other water for the use of his staff and labour.

34.8 Alcoholic Liquor or Drugs

The Contractor shall not, otherwise than in accordance with the Statutes, Ordinances and Government Regulations or Orders for the time being in force, import, sell, give, barter or otherwise dispose of any alcoholic liquor or drugs, or permit or suffer any such importation, sale, gift, barter or disposal by his Subcontractors, agents, staff or labour.

34.9 Arms and Ammunition

The Contractor shall not give, or otherwise dispose of to any person or persons, any arms or ammunition of any kind or permit or suffer the same as aforesaid.

34.10 Festivals and Religious Customs

The Contractor shall in all dealings with his staff and labour have due regard to all

recognised festivals, days of rest and religious and other customs.

34.11 Disorderly Conduct

The Contractor shall at all times take all reasonable precautions to prevent any unlawful, riotous or disorderly conduct by or amongst staff and labour and for the preservation of peace and protection of persons and property in the neighbourhood of the Works against the same.

34.12 Compliance by Subcontractors

The Contractor shall be responsible for compliance by his Subcontractors of the provisions of this Clause.

34.13 Prohibition of Harmful Child Labour

The Contractor shall not employ any child to perform any work, including work that is economically exploitative, or is likely to be hazardous to, or 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 14 specified under the laws of Pakistan.

34.14 Prohibition of Forced or Compulsory 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

34.15 Labour Laws

The Contractor shall not make employment decisions based upon personal characteristics unrelated to job requirements. The Contractor shall base the employment relationship upon 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 or retirement and discipline. Where 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.

34.16 Workers' Organizations

In countries where the relevant labour laws recognize 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 staff, consultants, contractors and agents (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.

34.17 Holidays and local laws

The Contractor shall, in all dealings with its labour and the labour of its Sub-Contractors currently employed on or connected with the Contract, pay due regard to all recognized festivals, official holidays, religious or other customs and all local laws and regulations pertaining to the employment of labour.

35.1 Returns of Labour and Contractor's 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.

The following Sub-Clauses 35.2 and 35.3 are added:

35.2 Records of Safety and Health

The Contractor shall maintain such records and make such reports concerning safety, health and welfare of persons and damage to property as the Engineer may from time to time prescribe.

35.3 Reporting of Accidents

The Contractor shall report to the Engineer details of any accident as soon as possible after its occurrence. In the case of any fatality or serious accident, the Contractor shall, in addition, notify the Engineer immediately by the quickest available means.

The following Sub-Clause 36.6 is added:

36.6 Use of Pakistani Materials and Services

The Contractor shall, so far as may be consistent with the Contract, make the maximum use of materials, supplies, plant and equipment indigenous to or produced or fabricated in Pakistan and services, available in Pakistan provided such materials, supplies, plant, equipment and services shall be of required standard.

41.1 Commencement of Works

The text is deleted and substituted with the following:

The Contractor shall commence the Works on Site within the period named in Appendix-A to Bid. Thereafter, the Contractor shall proceed with the Works with due expedition and without delay.

The following Sub-Clause 47.3 is added:

47.3 Bonus for Early Completion of Works

No bonus is admissible for the project.

48.2 Taking Over of Sections or Parts

For the purposes of para (a) of this Sub-Clause, separate Times for Completion shall be provided in the Appendix-A to Bid “Special Stipulations”.

The following Sub-Clause 49.5 is added:

49.5 Extensions of Defects Liability Period

The provisions of this Sub-Clause shall apply to all replacements or renewals of plant and equipment carried out by the Contractor to remedy defects and damage as if the replacements and renewals had been taken over on the date they were completed. The Defects Liability Period for the Works shall be extended by a period equal to the period during which the Works cannot be used by reason of a defect or damage. If only a part of the Works is affected the Defects Liability Period shall be extended only for that part. In neither case shall the Defects Liability Period extend beyond two (2) years from the date of taking over.

51.2 Instructions for Variations

At the end of the first sentence, after the word “Engineer”, the words “in writing” are added.

52.1 Valuation of Variations

In the tenth line, after the words “Engineer shall” the following is added:

Within a period not exceeding one-eighth of the completion time subject to a minimum of 56 days from the date of disagreement whichever is later.

53.4 Failure to Comply

This Sub-Clause is deleted in its entirety.

54.5 Conditions of Hire of Contractor’s Equipment

The following paragraph is added:

The Contractor shall, upon request by the Engineer at any time in relation to any item of hired Contractor’s Equipment, forthwith notify the Engineer in writing the name and address of the Owner of the equipment and shall certify that the agreement for the hire thereof contains a provision in accordance with the requirements set forth above. The following Sub-Clauses 59.4 & 59.5 are added:

59.4 Payments to Nominated Subcontractors

The Contractor shall pay to the nominated Subcontractor the amounts 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 Clause 58 [Provisional Sums], except as stated in Sub-Clause 59.5 [Certification of Payments].

59.5 Certification of Payments & Nominated Subcontractors

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.

60.1 Monthly Statements

In the first line after the word "shall", the following is added:

"on the basis of the joint measurement of work done under Clause 56.1,"

In Para (c) the words "the Appendix to Tender" are deleted and substituted with the words "Sub-Clause 60.11 (a)(6) hereof".
(in case Clause 60.11 is applicable)

60.10 Time for Payment

No interest is applicable on any delay at the part of the employer. Second Para starting from "In the event of failure" and ending on "under clause 69 otherwise" is deleted.

63.1 Default of Contractor

The following para is added at the end of the Sub-Clause:

Provided further that in addition to the action taken by the Employer against the Contractor under this Clause, the Employer may also refer the case of default of the Contractor to Pakistan Engineering Council for punitive action under the Construction and Operation of Engineering Works Bye-Laws 1987, as amended from time to time.

65.2 Special Risks

The text is deleted and substituted with the following:

The Special Risks are the risks defined under Sub-Clause 20.4 sub paragraphs (a) (i) to (a) (v).

67.1 Engineer's Decision

Chief Engineer (Sub Station Design NGC) or any person nominated by the Employer will act as Engineer for resolution of Disputes.

67.2 Amicable Settlement

Replace fifty sixth with thirtieth in the fourth line of Para 1 of this clause.

67.3 Arbitration

In the sixth to eight lines, the words “shall be finally settled.....appointed under such Rules” are deleted and substituted with the following:

shall be finally settled under the provisions of the Arbitration Act, 1940 as amended or any statutory modification or re-enactment thereof for the time being in force.

The following paragraphs added:

The place of arbitration shall be Lahore, Pakistan.

68.1 Notices to Contractor

The following paragraph is added:

For the purposes of this Sub-Clause, the Contractor shall, immediately after receipt of Letter of Acceptance, intimate in writing to the Employer and the Engineer by registered post, the address of his principal place of business or any change in such address during the period of the Contract.

68.2 Notices to Employer and Engineer

For the purposes of this Sub-Clause, the respective addresses are:

- a) The Employer: National Grid Company of Pakistan (NGC)
Executive Engineer EHV-II
S&I Division NGC 132 KV Grid
Station Shahbazpur Road Rahim Yar Khan
Telephone No. 068-9330007
- b) The Engineer: Chief Engineer (Sub Station Design) NGC and Chief Engineer (Civil) NGC Or
Any person nominated by the Employer

69.0 Default of Employer

This clause with all sub clauses is deleted in its entirety.

73.1 Payment of Income Tax

The Contractor, Subcontractors and their employees shall be responsible for payment of all their income tax, super tax and other taxes on income arising out of the Contract and the rates and prices stated in the Contract shall be deemed to cover all such taxes.

73.2 Customs Duty & Taxes

(Employer may incorporate provisions where applicable)

74.1 Integrity Pact

If the Contractor or any of his Subcontractors, agents or servants is found to have violated or involved in violation of the Integrity Pact signed by the Contractor as Appendix-L to his Bid, then the Employer shall be entitled to:

- (a) recover from the Contractor an amount equivalent to ten times the sum of any commission, gratification, bribe, finder's fee or kickback given by the Contractor or any of his Subcontractors, agents or servants;
- (b) terminate the Contract; and
- (c) recover from the Contractor any loss or damage to the Employer as a result of such termination or of any other corrupt business practices of the Contractor or any of his Subcontractors, agents or servants.

The termination under Sub-Para (b) of this Sub-Clause shall proceed in the manner prescribed under Sub-Clauses 63.1 to 63.4 and the payment under Sub-Clause 63.3 shall be made after having deducted the amounts due to the Employer under Sub-Para (a) and (c) of this Sub-Clause.

75.1 Termination of Contract for Employer's Convenience

The Employer shall be entitled to terminate the Contract at any time for the Employer's convenience after giving 14 days prior notice to the Contractor, with a copy to the Engineer. In the event of such termination, the Contractor:

- (a) shall proceed as provided in Sub-Clause 65.7 hereof; and
- (b) shall be paid by the Employer as provided in Sub-Clause 65.8 hereof.

76.1 Liability of Contractor

The Contractor or his Subcontractors or assigns shall follow strictly, all relevant labour laws including the Workmen's Compensation Act and the Employer shall be fully indemnified for all claims, damages etc. arising out of any dispute between the Contractor, his Subcontractors or assigns and the labour employed by them.

78.1 Details to be Confidential

The Contractor shall treat the details of the Contract as private and confidential, save in so far as may be necessary for the purposes thereof, and shall not publish or disclose the same or any particulars thereof in any trade or technical paper or elsewhere without the prior consent in writing of the Employer or the Engineer. If any

dispute arises as to the necessity of any publication or disclosure for the purpose of the Contract, the same shall be referred to the decision of the Engineer whose award shall be final.

Section VII - Specifications (Technical Provisions & Special Provisions)

Section 6 - Specifications (Technical Provisions & Special Provisions)

This Section contains the Specifications, the Drawings, Supplementary Information that describe the Works to be procured, Personnel Requirements and Equipment Requirements.

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Specifications

(Please refer to Annexure-A of this document, provided as soft copy in CD attached to this bidding document)

Drawings

(Please refer to Annexure-B of this document provided as soft copy in CD attached to this bidding document)

Supplementary Information Regarding Works To Be Procured

1 ACQUAINTANCE WITH SITE

The Contractor shall be deemed to have inspected and examined the substation Sites and its surroundings and information available in connection therewith before submitting his Bid, as to the form and nature thereof, including the subsurface conditions, the hydrological and climatic conditions, the extent and nature of work, goods and materials necessary for the completion of the Work, the means of access to the Site and the accommodation he may require and, in general, shall be deemed to have obtained all necessary information, subject as above mentioned, as to risks, contingencies and all other circumstances which may influence or affect his Bid.

2 DESCRIPTION OF PROJECT

Complete Civil Works, Transportation, Erection/Installation, Testing and Commissioning of following works in accordance with the Contract Documents and Drawings under NGC Own Resources:

1. Addition of 02 Nos. 220kV Line Bays at Existing 220/132kV Grid Station Daharki

2.1 POSSESSION OF SITE

Save, in so far as the Contract may prescribe, the extent of portions of the Site of which, the Contractor is to be given possession from time to time and the order in which such portions shall be made available to him and subject to any requirement in the Contract as to the order in which work shall be executed, NGC shall, give to the Contractor possession of so much of the Site as may be required to enable the Contractor to commence and proceed in accordance with the program referred to in Clause 35 of General Conditions of Contract and otherwise in accordance with such reasonable proposals of the Contractor as he shall, by notice in writing to the Employer, make and will, from time to time as work proceeds, give to the Contractor possession of such further portions of the Site as may be required to enable the Contractor to proceed with due dispatch in accordance- with the said programme or proposals (as the case may be). If the Contractor suffers delay or incurs expense from failure on the part of Employer to give possession in accordance with the terms of this Clause the Employer shall grant an extension of time for the completion of the Work and certify such sum as, in his opinion, shall be fair to cover the expense incurred which sum shall be paid by NGC.

3 SITE CONDITIONS

- (1) The Sites are subject to dust, wind, thunder and insects & vermin are prevalent. Particular care in design and packing of Goods must therefore, be taken to prevent ingress and effect of wind, dust, insects and vermin and to ensure resistance to attack by insects and vermin.
- (2) NGC does not guarantee the correctness of any data provided herein nor any interpretations, deductions or conclusions relative to subsurface conditions at Site. The Contractor must form his own opinion of the character of the work and of the materials to be excavated. He must make his own interpretations, and satisfy himself by his own investigations and research regarding all conditions affecting the work to be done. The Contractor must assume all responsibility for deductions and conclusions as to the nature or conditions of the materials to be excavated and of doing other work affected by the geology at the Site.

4 MATERIAL AND WORKMANSHIP

4.1 Material and Workmanship

- (1) All material, manufacture, testing and workmanship of material and Work, shall comply with the requirements of the Contract Documents. Material, Work or parts which are not covered by the Specifications given herein, shall comply with the applicable standards, rules, codes and regulations of the Internationally approved standardizing bodies as indicated in these Contract Documents.
- (2) The intent of these Specifications is that the materials and workmanship of Work under this Contract should be equal to or superior than those actually described herein. Reference to a brand or manufacture, if made, is only for the sake of comparison as to type, design, character or quality of the Goods or parts and materials described and not be interpreted as eliminating other Goods and materials of equal performance, quality and durability.
- (3) In choosing materials and their finishes due regard shall be given to the conditions prevailing at Site.
- (4) All matters relating as to the acceptability or otherwise of the Goods, Work and materials offered under this Contract shall be decided by the Employer whose decision shall be final.

4.2 Extent of Specifications

The extent of the Contract Documents is to provide for the Work herein specified to be fully complete in every detail for the function designated. All Goods, materials, fittings, accessories, apparatus, labour or services which are not specifically mentioned in the Contract Documents, but which, in the opinion of the Employer, are usual or necessary for the satisfactory completion of the Work shall be deemed to be included in the Contract Documents and shall be provided by the Contractor without extra cost to NGC. Where standard is specified other than national or international standards, which promise to confer equal or better quality, will also be acceptable providing that the copies of such standards and the English Translation are submitted with the bid.

The information pertaining to details of installation at Substation provided with these documents are for the general guidance of the Contractor only and any errors or omissions in this information shall neither absolve the Contractor from his responsibility of providing a functional and operative system fully conforming to the technical requirements of the system as specified or as can be reasonably inferred from the specifications, nor entitle him to claim by adjustments in prices or schedule on this account.

5 WORK BY CONTRACTOR (SCOPE)

5.1 Scope of Work

Complete Civil Works, Transportation, Erection/Installation, Testing and Commissioning of following works in accordance with the Contract Documents, BoQ and Drawings under NGC Own Resources:

2. Addition of of 02 Nos. 220kV Line Bays at Existing 220/132kV Grid Station Daharki

The scope of the work to be executed under this Contract comprises of but not limited to following:

1. Construction of equipment foundations, switchyard paths, transformer ways, trenches along with covers, draw pits, culverts and associated Civil Works etc., shifting of plant and equipment from NGC warehouses to the site of work(s), erection, testing and commissioning of equipment at site(s) in accordance with the Contract Documents, BoQ and Drawings.
2. The main electrical equipment, included but not limited to that given at Clause 08 herein to be installed, tested and commissioned at the grid station will be provided by NGC, however, it will be the responsibility of the Contractor to transport the equipment from NGC Warehouses situated at Lahore and/or Multan and/or Faisalabad and/or Jamshoro and/or Hyderabad to the project site and store the same in a safe environment / custody till completion / installation of it and successful testing / commissioning of the project.

3. Erection and installation of the grid station hardware/equipment comprising of but not necessarily limited to the following:
 - a. Overhead strain/rigid bus work, transformer take-off conductors and shield wires.
 - b. Conductor/Rigid tubular equipment interconnection work.
 - c. Switchyard Lightning protection
 - d. Substation underground earthing system and its connection with equipment.
4. Providing and laying of gravel in switchyard.
5. Design, supply, installation testing and commissioning of switchyard lighting system as per tender specification and approved drawings/data. In this respect contractor will supply all material/equipment including but not limited to lights (Philips or equivalent make), cables, switches, sockets, circuit breakers, relays, boxes, sensors, control equipment, pipes/conduits, all fixture & fittings etc.
6. Any type of necessary extensions in existing trenches, control house building etc. (if required).
7. Any other work not mentioned above but deemed necessary by the Contractor or Employer for the completion of the work and its successful/smooth operation will be considered a part of the scope of work under the Contract.
8. For all kinds of civil works the Contractor shall follow specifications revised, up to date referred in technical provisions of this tender but not limited to it.
9. Design (civil works) of the project is not a part of the scope. As such all the relevant civil work, drawings have been made a part of the bidding document. Any drawing missing will be provided to the successful bidder on if and when required basis.
10. The quantities mentioned in the BoQ are estimated quantities and are to be used for bid evaluation purpose only. The actual quantities can vary depending upon the approved design and soil bearing capacity. However, the unit rates for material and services quoted in the offer shall remain firm and final.
11. All necessary provisions in context of civil works shall be made/ carried out for ready connection of SCADA and Remote-control system if required.
12. To provide technical staff, labour, contractor's equipment and consumables in testing and commissioning of all Plant and accessories for satisfactory operation.

Installation, wiring/cabling, testing and commissioning of all secondary equipment alongwith their schemes including Marshaling Kiosks, Control Panels, Protection Panels, Synchronizing Panel, Event Recorder Panel, Fault Recorder, AC/DC Auxiliary supply panels, parallel operation of transformers, 11kV incoming/outgoing panels, Battery Chargers & all related protection/control schemes of switchyard equipment are not included in the scope of work. In the said context following works are **not included in scope** of this tender:

- a. Installation, wiring, testing and commissioning of control panels, relay panels, metering panels, marshaling Kiosk, AC/ DC Auxiliary Panels, event fault recorders, etc.
- b. Laying and connection of all cables for A.C. and D.C. distribution systems for auxiliaries of AIS plants except switchyard lighting system involved in the scope of work.
- c. Laying in trenches and connection & termination of all control cables, for control and protection systems.
- d. Necessary interconnection/interfacing wiring of all switchyard equipment and indoors panels.

The Contractor of the secondary equipment will be responsible for installation testing and commissioning of the same within the completion period of this Contract. However, timely installation, wiring, testing and commissioning of primary equipment ready for wiring/interconnection with secondary equipment, construction of trenches etc. and necessary coordination with Contractor responsible for the secondary work, is the responsibility of Contractor under this Contract. Any delay in this respect will be treated on the part of Contractor under this Contract.

5.2 Erection Equipment to be provided by NGC

No erection equipment or tool(s) shall be provided to the contractor by NGC for the works.

5.3 Relation of the Works to Existing Equipment

Except as otherwise specified or as constrained by the Contractor's standard design, the Works shall generally conform to equipment in layout, control functions and any other feature intrinsic to the orderly and safe operation of the substations as to which requirements the Contractor shall be responsible for satisfying himself. Prior to commencement of Works the Contractor shall visit the Site(s) to be knowledgeable of the detailed requirements.

6 DRAWINGS

6.1 Drawings in Contract

6.1.1 Specification Drawings

The specification drawings contained in the Bidding Document show the scope of Work to be performed by the Contractor. These are only reference drawings.

6.1.2 Tender Drawings

The drawings provided in the tender shall not be used for execution of the Work unless the Employer gives specific instructions/approval for such use.

The drawings provided with the bidding document are the reference drawings, to be used for filling of BOQ only.

6.1.3 Construction Drawings

The Work shall be performed in accordance with the detailed construction drawings.

The actual construction / work drawings will be issued by the Engineer (Design office, NGC) to the successful bidder on, "if and when required" basis.

6.1.4 Detail Drawings

All the basic/scope drawings, specifications, schemes and any other information shall be provided by the Employer to the successful Contractor on "if and when required" basis in due time and in logical order to facilitate proper coordination. However, allied engineering drawings (electrical/mechanical), required for the successful completion of the project shall be responsibility of the Contractor, but the Contractor will be liable for the Employer's approval before the implementation of such drawings.

6.1.5 Drawings, Data and Instruction Manuals

The following working drawings shall be provided by Employer.

- i. Switch Yard Layout
- ii. Foundation Plan
- iii. Switch Yard Earthing Plan

- iv. Constructional details regarding civil works of all electrical and mechanical equipment
- v. Structural and architectural drawings of all civil works
- vi. Such other drawings as are required by the Employer to demonstrate that all parts of the Plant being erected conform to the requirements of the Specifications.

6.2 SUBMISSION AND APPROVALS

6.2.1 Drawings for Approval

Drawings for approval shall be distributed through international/national couriers to addresses and in number as specified in Clause 6.2.6 hereof.

All drawings submitted for approval shall be provided with a blank white space, approximately 90 mm in height by 120 mm in width, near the lower right-hand corner to be used for notations by the Engineer.

6.2.2 Approval of Drawings

- (1) If the drawing provided by the Employer to the Contractor stamped "APPROVED" he may immediately proceed with the Work. Any drawing marked "APPROVED" by the Employer shall be known as an "Approved Drawing".
- (2) If the drawing is returned to the Contractor stamped "APPROVED EXCEPT AS NOTED" he may proceed with the Work taking into account the corrections and comments noted on the drawing.
- (3) If the Contractor does not agree with exceptions taken by the Engineer, the Contractor shall state in his letter of re-submission his reasons for not complying with the Engineer's exceptions. Revision number and date and description of change shall be shown on all drawings or calculations revised.

6.2.3 Work Prior to Provision of Drawings by NGC

Any work done prior to the supply of detailed work drawings by the Contractor and approval of the same by Engineer/Employer, shall be at the Contractor's risk. The Employer shall have the right to request additional details and to require the Contractor to make any change in the design, which are necessary to conform to the provisions and intent of these Specifications and such changes shall be made without additional cost to NGC. The supply of drawings by the Employer shall not be construed as a complete check but will indicate only that the general method of construction and detailing is satisfactory. These drawings shall not be held to relieve the Contractor of the obligations to meet all the requirements of these Specifications or of the responsibility for the correctness of the drawings or for correct fit of assembled Goods furnished by the NGC.

6.2.4 Sequence of Submission

The sequence of submission of all drawings shall be such that all information is available for checking each drawing when it is received.

6.2.5 Drawings and Revisions

All issued drawings and data shall form a part of the Contract. If revisions are made after a drawing has been issued, the revised drawing shall be considered final and become a part of the contract.

6.2.6 Distribution of Drawings and Documents

The distribution of drawings and documents to be maintained by the contractor shall be as follows.

Documents	Employer		NGC/ Project Director	Total
	Head Office	Site Office:		
Construction schedules made in MS- Project.	2	1	1	4
Record (As-Built) Drawings	2	2	2	6
Reproducible transparency Record (As-Built) Drawings	2	1	1	4
Record (As-Built) Drawings on computer compact diskette (CD) using AutoCAD software	2	1	1	4
Codes and Standards	1	1	1	3
Approved test procedure	1	1	2	4
Insurance Certificates	1	1	2	4
Receiving reports	1	1	2	4
Damage reports	1	1	2	4
Progress Reports	1	1	2	4
List of Construction and Erection Equipment	-	1	1	2
Operation & Maintenance Manual of Air Conditioning Plant /Units	1	1	2	4
Project Completion Reports	1	1	2	4
Correspondence to any NGC Office	1	1	1	3

6.2.7 OWNERSHIP OF DRAWINGS AND DATA ETC

All the drawings, details, bill of materials and any other information or documents furnished by the Contractor shall become the property of NGC and shall be non-returnable. NGC will have the right to use this property.

7 STANDARDS AND TYPICAL DESIGN

7.1 General

The Specifications cite or imply International Standards and typical design for Work, Goods and

materials. Other equivalent Standards and typical designs are equally acceptable provided that they in no way detract from the quality, safety, operability of the Work, Goods and materials furnished. However, when standards or typical design other than those cited or implied are offered by a bidder, he shall set forth in his bid the alternative standards proposed so that a direct comparison can be made before Contract Award. Each specific difference from the Specifications shall be clearly indicated by the bidder. If the bidder sets no alternatives forth, it will be assumed that Work, Goods and material will be in accordance with the International Standards and typical design as cited or implied in the Specifications.

Where the documents provide requirements for material or Goods or Work by specifying a standard such as, for example, one of the international standard organizations, which has its origin in one country, it is not the intention to restrict the requirements solely to that standard and that country. Other standards, including standards of other countries will be accepted provided the requirements thereof in the sole opinion of the Engineer are at least equal to the requirements of the standards specified. The Bidder may propose to the Employer an equivalent standard other than that specified, in which case he shall submit the proposed standard and all other information required by the Employer and shall submit written demonstration that his proposed standard is equivalent to or superior to the one specified herein. The submission must be made in English language. Moreover, the bidder shall also supply copy of the latest revision of the standards used in his design.

7.2 Applicable Standards and Codes

- (1) All Goods, materials, Work and design shall be generally in accordance with latest revision of the standards specified in the Technical Provisions except where specifically directed otherwise. If these Specifications conflict with any or all the standards stated in the Technical Provisions, these Specifications shall have precedence and shall govern.
- (2) In case deviation from the above standards is minor, the approval of the Employer may be given to the use of other national standards prevalent in the country of manufacture. No departure from the standard specified will be considered after the Contract has been awarded unless specific authorization is requested in writing from the Engineer.

8 ELECTRICAL EQUIPMENT TO BE SUPPLIED BY NGC

The substation equipment as per Contract Scope/BoQ/Schedule of Prices shall be supplied to the Contractor by NGC subject to its requirement as per scope.

9 TRANSPORTATION AND PACKING

9.1 Packing

- (1) The Contractor shall pack all parts of the Goods / material (to be supplied by NGC) for transportation in accordance with the requirements of the Contract Documents and in the best possible manner to withstand damage or loss from repeated handling and extremes of climate during transport and storage at Site. All parts of the Goods and material shall be packed so as to guarantee safe transportation of the Goods and material from NGC stores to the Site under any conditions and limitations that may be encountered. The manner of packing shall be such that it protects the Goods, and other material against breakages, damages and losses from the factory until its arrival at its final destination at the Site.
- (2) The final packing shall be such that the weight and dimensions of packages are within reasonable limits in order to facilitate handling, storage and transportation.

9.2 Lifting

The method of lifting, type of equipment and type of slings, used for handling the conductor reels are

subject to approval by the Engineer. The wooden reels are so constructed as to be supported either on an axle through the arbor hole or by the reel flange. When an axle supported from above lifts the reels, a spreader bar must be employed to prevent reel damage by inward pressure on reel flange. In no case shall metallic slings or other metallic equipment shall come in contact with conductor or overhead shield wire or ground wire.

9.3 Slings

If the use of slings is necessary, these shall be of a flexible type and preferably manila rope or other non-metallic materials. The use of steel wire, mesh or chain link slings is prohibited unless they are covered with rubber hose or some similar material.

9.4 Cost of Transportation

- (1) The Contractor shall be responsible (bear the cost) for the transportation of goods/equipment being supplied by NGC from its warehouses to the site. Majority of the said goods/equipment being supplied by NGC will be from Lahore and/or Multan and/or Faisalabad and/or Jamshoro and/or Hyderabad Warehouses but not limited to them. The Contractor shall insure this goods/equipment from NGC Warehouse to the site at the rate of 110% of the equipment cost.
- (2) The Contractor shall insure and transport the Goods, materials and his Equipment from its place of manufacture or origin to the Site and shall be solely responsible for selection of routes and carriers, and expediting in order that all shipments are safely and expeditiously transported to the Site.
- (3) The Contractor shall be solely responsible for satisfying himself at the time of transportation as to the adequacy of the road surfaces and structures. All costs related with reinforcement of roads, structures, diversions and the like, if any, should be borne by the Contractor. The Contractor shall advise the concerned authorities in advance of the proposed transit of the heaviest and largest items of Goods and Equipment and shall comply with instructions given by said authorities.
- (4) Within the limits imposed by law, the Contractor shall be entitled to utilize all the roads and other communication facilities existing in the country, to the same extent as any other user.

9.5 Unloading and Storage at the Site

- (1) The Contractor shall unload all Goods and other material (except Spare Parts) at the Site. Items for permanent installations shall be properly stored and shall be protected as required to prevent damage or deterioration of any type. Storage/Stacking methods shall be such as to cause minimum inconvenience to others and shall be arranged to facilitate inspection.
- (2) All Goods and other material storage shall comply with the requirements of the Specifications or to the approval of the Engineer.
- (3) The Contractor shall be held responsible for all costs of damage to the steel structures (including replacement) after they are handed over to him at the NGC Stores. Before accepting material at the Store the Contractor shall ensure himself as to its acceptable condition, if, in the contractor's opinion some material is unacceptable, he shall so inform the Project Director.
- (4) Lifting of pieces, which are galvanized or painted, shall be by hand or by hemp rope on as approved by the Engineer, or by wire rope which is suitable covered with rubber or similar material lifting by steel chains is prohibited. Steel pieces shall not be dropped, thrown, or skidded over steel, concrete or rock surfaces.
- (5) When steel components are stored temporarily, they shall be blocked on wood & separated to prevent damage.

9.6 Ownership of Packing Materials

All packing boxes, reels, shipping containers except those containers, which are not the property of the Contractor, planking covers, etc, shall become the property of NGC. All the packing materials shall be handed over to NGC immediately after storage requirements of the Goods or part thereof and other materials are over.

9.7 Receiving Reports and/ or Damage Reports

- (1) The Contractor shall prepare and submit receiving reports to NGC and the Employer to cover shipments received and checked at the job Site and/or storage area. Shipment on arrival at the job Site and/or storage area shall be unloaded, opened, and carefully checked by the Contractor in the presence of a designated representative of the Engineer/NGC for any loss and damages in transit. In the event of loss and/or damage, the Contractor shall immediately report to NGC/Engineer. Prompt action shall be taken by the Contractor with intimation to Engineer/NGC, to record and remedy the damaged or missing item(s) and it shall be ensured that the deliveries meet the final delivery dates and/or commissioning dates.
- (2) In all cases of irreparable damage, the Contractor shall immediately notify the original manufacturer(s) for re-manufacture and supply of the damaged part(s).

10 SCHEDULE, PROGRESS REPORTS AND MEETINGS

10.1 Schedule

The Contractor shall carry out the Work in accordance with the dates/period specified in Schedule provided by the Contractor and approved by the Employer. The Contractor shall regularly review the Schedule and notify the Employer promptly of any revisions, which in his view may be required from time to time.

10.2 Form of Schedule

The Schedule shall be a detailed CPM (critical path method) type, time scaled according to calendar dates and Project month numbers. The CPM for planning, scheduling, and controlling will be used for the Contract. The Contractor shall submit a schedule showing the logical sequence in which the Work will be carried out in sufficient detail to satisfy the Employer that the Work is thoroughly planned and meets all the requirements of the Contract Documents. In preparing the Schedule, the Contractor shall fully take into account the requirements (and possibilities) for inland transportation.

10.3 Erection/Construction

- (1) The delivery of components and parts of the Goods/Material should be so estimated so as to permit erection work and construction work to proceed in an orderly manner so that the required Commissioning Dates can complete the Work. The Contractor in preparing and regularly reviewing the Schedule in respect of the erection work shall comply with the requirements of the Contract.
- (2) The Contractor shall promptly bring to the attention of the Employer any amendment to the Schedule, which in his view may at any time be required to ensure that the Commissioning Date/ Period will be met.
- (3) Prior to steel erection, the Contractor shall examine the existing work on which this work is in any way dependent (that is, verify elevations & dimensions of foundations including anchor bolts & embedded angles) & report to the Site Engineer any errors or discrepancies that may affect the Contractor's work.
- (4) Should the Contractor encounter any foundation surfaces or anchor bolts & embedded parts, which do not match the structural steel he shall immediately notify the Site Engineer. If in the opinion of the Site Engineer the discrepancy is due to misplacement of the concrete, anchor bolts or embedded parts, the Contractor will be required to rectify the defect, all at his own expense & to the satisfaction of the Engineer. If in the opinion of the Engineer, the discrepancy is due to faulty fabrication of the structural

steel, then the rectification of the defect shall be the responsibility of the Manufacturer(s) of the Plant.

- (5) Unless otherwise specified, the Contractor shall assemble & erect the switchyard structures to the tolerance dictated by ASTM or equivalent DIN Standards.
- (6) The erection tolerance on a post insulator support structure & a lightning arrestor support structure shall be such that a plumb line passing through the centre of the bolt circle on the top plate of the structure shall pass within ± 6 mm of the location lines shown on the drawings. The anchor bolts in the structural foundation shall be located to within ± 6 mm of the location lines shown on the drawings.
- (7) The top plate of the Post Insulator support structures shall be aligned so that the center line of the plate shall be parallel to the longitudinal axis of the bus it is supporting, to a tolerance of 3 mm over the length of the plate.
- (8) The top plate of the bus support structure shall be level within 3 mm
- (9) All other structures shall be erected-plumb or level within plus or minus a tolerance of 1 in 1000 & according to ASTM OR EQUIVALENT DIN Standards.
- (10) The structural steel shall be assembled and erected in such a manner as to ensure that members are not subjected to any damage or undue stress.
- (11) Sections or portions of the structure shall be assembled and bolted on the ground so that they can readily be lifted in consecutive manner & connected together in the air to form a complete structure. Care shall be taken to prevent damage to the steel pieces or galvanizing thereof. The tools & method of assembly shall be subject to the approval of the Engineer but generally only flat non-adjustable or socket type wrenches shall be used.
- (12) During assembly & erection, reaming or holes is prohibited unless the Engineer gives his approval, which shall be based solely on deviations in the fabrication of the steel. The non alignment of holes in connecting members if due to faulty erection procedures shall be corrected by the Contractor at his own expense.
- (13) Driving of pins through the bolt holes for the purpose of enlarging the holes is prohibited.
- (14) Structures shall be erected in accordance with the erection drawings, plumb and true in all respects. Bolts shall be of the length specified & shall ensure that members rest on the shank of bolt.
- (15) The legs & principal bracings of all panels of the structure shall be erected & bolted at a lower elevation before proceeding to a higher level.
- (16) Members of each panel shall be installed as erection procedure. The Engineer must approve any deviation from this procedure in writing.
- (17) Punching: when instructed by the Site Engineer, bolt threads shall be punched with steel point or chisel at the surface of the tightened nut. Where lock nuts or lock washers are provided punching will not be required but the nuts shall be properly tightened.
- (18) Step Bolts: These shall be installed in each tower as it is erected.
- (19) Drifting/Filling: Holes shall not be enlarged by drifting/Filling

- (20) Installation of Bolts: Head of bolts shall be installed at the outside face of the structure whenever possible. Lock washers shall be used with all bolts. Bolts shall not be tightened with adjustable wrenches.
- (21) Nuts & bolts shall be tightened to an amount corresponding to the full effort of a man using a 300 mm ratchet wrench, or & instructed by Site Engineer.

10.4 Progress Reports

- (1) The Contractor within 15 days from the date of the Letter of Acceptance shall submit in writing for the approval of Employer a Schedule for the erection, testing and commissioning of the Goods/Material and construction of the associated civil work.
- (2) The submission to or approval by the Engineer/NGC of such Schedule etc. shall not relieve the Contractor of any of his duties or responsibilities under the Contract.
- (3) At monthly intervals after submission of the Schedule, the Contractor shall submit to the Employer up to four (4) copies of a written detailed progress report in an approved form together with copies of the above-mentioned Schedule indicating the stage reached, in percentage terms. Such monthly reports shall show the actual progress plotted against the scheduled progress. These reports shall be accompanied by such photographs, diagrams, bar charts, and curves in approved standard form, as may be required by the Engineer. The reports shall be forwarded not later than the 8th of the subsequent month. The numbers of copies shall be as stipulated in the Specifications or as instructed by the Engineer.
- (4) The Employer shall at all reasonable times be afforded access to the Contractor and any Sub-Contractor's premises for the purpose of ascertaining progress.

10.5 Meetings

- (1) Soon after the date of signing of Contract, the Employer will, with the approval of NGC require a conference with NGC and the Contractor at a place mutually agreed upon, to discuss scheduling of drawings, and other similar problems, which may be pertinent to the completion of the Project.
- (2) At monthly intervals or from time to time during the execution of the Contract, the Employer may call meetings, either in his Offices or at the Contractor's Offices in Pakistan or NGC's office as is deemed necessary for the purpose of progress monitoring and proper execution of the Contract.
- (3) As required by the Engineer, responsible representatives of Contractor shall attend such meetings.
- (4) All expenses incurred by the Contractor for attending such meetings shall be borne by the Contractor and shall not be reimbursable.

11. SITE FACILITIES AND SERVICES

Attention is drawn to the obligations of the Contractor to make his own arrangements at his own expense for Services or facilities provided to his employees. Any cost incurred by the Contractor in respect of any of such Site facilities or services under the Contract shall be deemed to be included in the rates and prices in the Price Schedule and no separate payment, therefore, will be made to the Contractor.

11.1 Accommodation

- (1) The Contractor shall provide and maintain at his cost residential accommodation and transportation facilities for his own use.
- (2) The Contractor shall provide and maintain such housing accommodation and amenities as he may consider necessary for all of his supervisory staff and labor employed for the purposes of or in connection with this Contract including all fencing, electricity, supply, sanitation, cook houses, fire

prevention, water supply and other requirements in connection with such housing accommodation or amenities.

11.2 Site Offices

- (1) The Contractor shall carry out investigation, design and construction of the Site office required for execution of the work and submit such design in writing to the Employer and obtain his approval.
- (2) The location of the site office will also be submitted to the Employer for approval prior to the construction of the same.
- (3) The Contractor shall, at his expense, carry out maintenance and management of the above office.
- (4) After completion of the work, the Contractor shall dismantle or leave the above office intact subject to the approval of the Engineer.

11.3 Work yards and Storage Areas

- (1) No storage site shall be provided by NGC to store Goods, materials or equipment. The Contractor shall procure, furnish, provide and arrange for all the necessary services and be responsible for the construction and maintenance of the necessary construction campus, offices and warehouses; and perform all other work necessary for completion of the Work described herein in strict conformance with these Specifications.
- (2) The Contractor shall provide his own watchman service to ensure security and safety of the Goods, materials and Work prior to NGC taking over the Work.

11.4 Temporary Buildings

- (1) The Contractor shall provide and maintain all temporary structures required including warehouses, changes, change houses for workmen, sheds, etc. He shall also provide his own field office complete with telephone so that he or his official representative can be contacted by NGC and/or Employer at all times.
- (2) Such temporary buildings and/or utilities shall remain the property of the Contractor and shall be removed by him at his expense upon the completion of the Work and the Site reinstated to its original condition, all to the approval of the Engineer.

12 MEASUREMENTS AND PAYMENTS

The measurement for payment and payment for the various price schedule items will be as follows:

- 12.1 The cost of furnishing all materials (except NGC furnished plants & equipment) & performing all Work described in the Bid schedule shall be included in the applicable schedule of prices.
- 12.2 Ten (10%) of the Contract price upon signing of the Contract and furnishing a Performance Security and Advance Payment Guarantee (Bank Guarantee) acceptable to NGC. The Advance Payment Guarantee shall be for the full amount of advance and will remain in force until the Advance Payment is fully adjusted against Monthly Progress Payments of the Contractor. This advance shall be free of interest.
- 12.3 Eighty (80%) percent of the Contract Price against Monthly Progress Payment, certified by the site Engineer, of Work completed. Retainage from monthly progress payments will be deducted until an amount equal to ten percent (10%) of the Contract Price is reached. Thereafter no further deductions will be made.

- 12.4 The retained five (5%) of the Contract Price upon completion of all the Work required by this Contract Document & acceptance in writing by NGC. Final payment cannot be made until the Contractor clears & finalizes all accounts of plant furnished by NGC & equipment furnished by NGC.
- 12.5 The Site Employer will release the balance 5% to the Contractor after “Defect Liability Period” on verification.
- 12.6 The detail payment procedure is described in Annexure-B to this bidding document

13 EXPEDITING

The Contractor shall provide the Employer with un-priced copies of the Contractor's Purchase Orders for material or approved Subcontracted Work at the time any such orders are placed. The Contractor shall also provide the Employer with any other relevant information requested to ensure proper expediting and scheduling of the Work.

14 PAYMENT FOR WORK REQUIRED BY SPECIAL PROVISIONS

Unless expressly excluded, the cost of all work required by the "Special Provisions" shall be considered to be included in the price and amounts quoted in the "Price Schedule".

15 COMMUNICATIONS TO THE ENGINEER

Pursuant to the definition of Engineer, the Employer has established a Project Office at Lahore to which the Contractor shall address all communications for the approval of designs and drawings etc., as follows:

Director General (Substation Engineering) (NGC)
143 – WAPDA House,
Lahore - Pakistan.

Tel: +92-42-99202190
Fax: +92-42-99202502

Or

An Engineer (individual or firm) designated by the Employer.

The Employer will establish a Site Office to supervise the Site activities. The address of the Engineer's Office at Site shall be communicated to the Contractor at that stage.

16 TROPICALIZATION

General

In choosing materials and their finishes due regard shall be given to the weather conditions under which material may be called upon to work. Requirements are detailed below and in the technical provisions.

Metal

Iron and steel shall in general be painted or galvanized as appropriate. Painting shall be in accordance with the technical provisions. Indoor parts may alternatively have chromium or copper-nickel plating or other approved protective finish. Small-iron and steel parts (other than stainless steel) of all instruments and electrical equipment, the cores of electro-magnets, and the metal parts of the relays and mechanism shall be treated in approved manner to prevent rust, cores etc. which are built up of lamination or cannot for any other reason be anti-rust treated, shall have all exposed parts thoroughly cleaned and heavily enameled, lacquered or compounded. When it is necessary to use dissimilar metal in Contact, these shall be so selected

that the potential difference between them in the electro-chemical series is no greater than 0.5 volt. If this is not possible the contact surfaces of one or both of the metal shall be electro-plated or otherwise finished in such a manner that the potential difference is reduced to within the required limits, or, alternatively, the two metal shall be insulated from each other by an approved insulating material or a coating or approved varnish compound.

Screw, Nuts, Springs, Pivots etc.

The use of iron and steel shall be avoided in instruments and electrical relays wherever possible steel screws, when used, shall be zinc, cadmium or chromium plated or may be of corrosion resisting steel when plating is not possible owing to tolerance limitations. All wood screws shall be dull nickel plated brass or other approved finish. Instruments screws (except those forming part of a magnetic circuit) shall be of brass bronze. Springs shall be non-rusting material, e.g. phosphor bronze shall be silver, as far as possible. Pivots and other parts for which nonferrous material is unsuitable shall be of an approved stainless steel, where possible.

Fabrics, Cork, Paper etc.

Fabrics, cork, paper and similar materials, which are not subsequently to be protected by impregnation, shall be adequately treated with an approved fungicide. Sleaving and fabrics treated with linseed oil, linseed oil varnishes shall not be used.

Wood

The use of wood in material shall be avoided. When used, wood work shall be of thoroughly seasoned teak or other approved wood which is resistant to fungal decay and free from shakes and warp, sap and wane, knots faults and other blemishes. All wood work shall be treated in approved manner to protect it against the ingress of moisture and from the growth of fungus and termite attack, unless it is naturally resistant to those causes of deterioration. All joints in wood work shall be dovetailed or tongued and pinned, if practicable. Metal fittings where used shall be of non-ferrous material.

Adhesives

Adhesives shall be specially selected to ensure the use of type, which are impervious to moisture, resistant to mould growth, and not subject to the ravages of insects. Synthetic resin cement only shall be used for jointing wood. Casein cement shall not be used.

Annexure-D: NGC SOP for Blacklisting of Contractors

SOP FOR BLACKLISTING OF CONTRACTORS



**NATIONAL TRANSMISSION
AND DESPATCH COMPANY
LIMITED (NTDC)**

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CHAPTER NO.1

1.1 INTRODUCTION

The blacklisting is one of the considered instruments which are used in the struggle against the corruption in connection with the public procurement. The main objectives of any procurement process are transparency, economy, fairness and efficiency so that public money is spent on welfare of the public. Hence, blacklisting is an instrument, which may lead to the decrease of the potential corruption risks and also inculcate protection of public means and increase of effectiveness of allocation of the limited resources.

Rule-19 "Blacklisting of suppliers and contractors" of the Public Procurement Rules, 2004 (hereinafter "PPRA Rules") stipulates that;

"The procuring agencies shall specify a mechanism and manner to permanently or temporarily bar, from participating in their respective procurement proceedings, suppliers and contractors who either consistently fail to provide satisfactory performances or are found to be indulging in corrupt or fraudulent practices. Such barring action shall be duly publicized and communicated to the Authority: Provided that any supplier or contractor who is to be blacklisted shall be accorded adequate opportunity of being heard."

In the light of the above said Clause, this SOP has been drafted for procurements made in NTDC.

Any capitalized terms and abbreviations used in this SOP which are not defined therein shall have the meanings given to them in Public Procurement Regulatory Authority Ordinance, 2002 (hereinafter "PPRA Ordinance") and PPRA Rules.

1.2 EXTENT OF APPLICATION

- i. The procedure shall be applicable and remain in force, alongwith any amendments thereto, within NTDC until any clear instructions or guidelines are not imparted by the Government through PPRA, PEC or any other competent forum.
- ii. The procedure shall also be applicable on the pre- qualified firms.
- iii. The procedure shall be applicable for suppliers / bidders/contractors / local agents / representatives /consultants / firms / individual / organization transacting business with NTDC.
- iv. Wherever any provision of this SOP shall be in conflict with provisions of any applicable guidelines of donor agencies, or any other applicable Statute / Law or Rule enforced at the time in Pakistan, the provisions of the such Statute / Law or Rule shall prevail.



- v. This SOP will become the part of future Bidding Documents and bidder will submit an Undertaking along with his bid that he has read and accepts the provisions of this SOP. Non-submission of an Undertaking may result in rejection of his bid. The said Undertaking will subsequently become part of the Contract Agreement as well.

A handwritten signature in black ink, appearing to be 'S. K. A.', followed by a horizontal line extending to the right.

CHAPTER NO. 2

2. REASONS OF BLACKLISTING

2.1 The causes and reasons to be taken into consideration for Debarment / Blacklisting of any firm/ supplier/ contractor/ consultant /individual / firm/ bidder are given as under:-

2.1.1 Competitive Bidding Stage

The following shall be considered the causes / reasons at pre-award stage:-

- i. Indulging in Corrupt, Fraudulent as well as Collusive practices.
- ii. Submission of false and spurious documents, making false statements and allegations to gain undue advantage.
- iii. Commission of embezzlement, criminal breach of trust, theft, cheating, forgery, bribery, falsification or destruction of records, receiving stolen property, false use of trademark, securing fraudulent registration, giving false evidence, furnishing of false information.
- iv. Submission of false bid security or infringement of documents to get undue monetary advantage.
- v. Breach of confidentiality of evaluation process as mentioned in Appendix-1 based on illegal access or in any way to get undue benefit or to provide benefit or to frustrate any other bidder. This will also include attempts to sabotage the bidding process directly or indirectly.

2.1.2 Contract Implementation Stage

The following shall be considered the major causes / reasons at post-award stage:-

- i. Extra-ordinary delay in signing or refusal to accept the procurement contract without any cogent reason or pre-award Force Majeure, when the bid has been evaluated and accepted by the Project authority.
- ii. Misconduct i.e. failure to proceed with the signed procurement contract, withdrawal of the commitment, quoting an unreasonably and unfairly low financial offer and subsequently withdrawing such an offer, and not responding to written communication.
- iii. Causes already mentioned in Clause 2.1.1 (i, ii & iii) above.
- iv. Submission of fake / frivolous Performance Guarantee or Advance Payment Guarantee etc.



- v. Non-satisfactory performance as mentioned in Appendix-2 during the execution of the contract and failure to perform a procurement contract(s) satisfactorily in accordance with the contractual obligations which in the opinion of project authority was due to exclusive fault of the supplier.
- vi. Breach of provisions / clauses of the contract agreement.
- vii. Failure to honour obligations within Warranty period or Defect Liability Period as defined in the procurement contract.

2.1.3 Other Causes

- i. The firm / supplier / contractor is blacklisted by any Government department in Pakistan, or it is established that the firm is involved in any kind of corruption or corrupt practices anywhere in the world.
- ii. Violations of provisions / instructions set down in the Bidding Documents.
- iii. Any attempt / activity to malign or bring NTDC into disrepute and harm its interest(s).
- iv. Any other cause deemed just and appropriate by the NTDC.

Note:

- (1) If above mentioned causes occur either on part of the principal bidder or the local agent, both shall be considered for blacklisting / debarment. The authorization of the foreign bidder to local agent shall contain his complete particulars including the name of the company, name of the owner, National Tax number (NTN), NIC (National Identity Card) No. etc. In case, the said information is found to be missing, the authority letter shall not be accepted.
- (2) The Bidding Documents shall be issued against original authority letter or in case of scanned copy, the email of the foreign bidder shall be enclosed. However, at the time of bidding, the original authority letter shall be attached with the bid. In the absence of the same, the bid may be rejected.
- (3) Firms blacklisted by donor agencies against any project / contract of NTDC will be blacklisted after receipt of confirmation from the donor agencies without any further proceeding.



CHAPTER NO. 3

3. FORMULATION OF "NTDC'S RIGHTS PROTECTION COMMITTEE"

- 3.1 A permanent committee namely "NTDC's Rights Protection Committee (RPC)" comprising of the following members shall examine the justification of the reasons given by the Project Authority prior to blacklisting / debarment of any firm/supplier/contractor/ individual.

General Manager (Performance Assessment) NTDC	Convener
Chief Engineer (Reliability Assessment) NTDC	Member
Representative of the Legal Advisor's Office	Member

Depending upon the nature of the case, the committee may consult or appoint / nominate any additional member from within NTDC with the approval of Managing Director (NTDC), provided that the Committee consists of an odd number of individuals as per spirit of Rule 48(I) of the PPRA Rules. Independence of any additional member shall be ensured while making the selection of such additional members. Furthermore, the aforementioned RPC shall also be authorized to seek external expert advice as and when required.

The committee shall finalize its recommendations within the time specified in Clause-4.3(i) of this SOP.



CHAPTER NO. 4

4.1 PROCEDURE FOR BLACKLISTING

Upon obtaining information and /or knowledge that the firms, suppliers, local agents, contractors or their representatives, consultants, individuals, bidders involved in practices mentioned in Chapter-2 earlier, the concerned Project Authority / formation shall promptly formulate its recommendations and submit through MD NTDC to NTDC RPC along with its findings, details of charges and documentary evidences to initiate proceedings.

4.2 INITIATION OF AN ACTION

- (i) Within a period of 7 days after receiving the recommendations of Blacklisting / Debarment from the concerned Project Authority, the Convener of the Committee shall issue a Show Cause Notice ("Notice") thereby informing the individual or organization about charges in detail and shall provide an opportunity to the defend said charges within a specific time period of 15 (fifteen) days.
- (ii) The firm / individual / organization shall be accorded adequate opportunity of hearing in order to defend the charges within the given timelines.
- (iii) The non-receipt of the Notice due to incorrect / change in mailing address shall not be attributable to NTDC. Moreover, in case of non-receipt of any reply from the defendant, the Committee shall have the right to proceed on Ex-parte basis.

4.3 DECISION

- i. The committee shall hold an independent investigation and which may include site visits and interviews with the parties concerned. The committee shall complete the entire investigation within a period of 30 days after receipt of response from the alleged firm / organization/ person and will present the report to the MD NTDC.
- ii. If required the committee can report the case to other national agencies such as National Accountability Bureau, FIA etc. for detailed investigations with the prior approval of Managing Director (NTDC).
- iii. The alleged party shall not proceed for arbitration / litigation during the proceedings for blacklisting.



4.4 COMMUNICATION OF DECISION

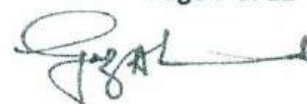
After recommendation for blacklisting by "NTDC's Rights Protection Committee (RPC)", the bidder / contractor / supplier concerned shall be informed within 10 days of such decision. The decision of the Committee will be notified on NTDC, PPRA's websites and shall also be conveyed to Pakistan Engineering Council. Blacklisting of firms shall also be conveyed by circular to other Government Departments. All other purchasing agencies including PEPCO, DISCOs, and WAPDA etc will also be informed simultaneously.

4.5 PERIOD OF DEBARMENT FOR BLACKLISTED FIRMS

The Blacklisting shall be for a reasonable specified period of time and as a general rule of prudence, the period may not exceed three years. The following time periods shall be considered for debarment on account of blacklisting:-

Causes of Blacklisting	Time For Debarment
Corrupt & fraudulent & collusive practices, criminal breach of trust	3 years
Submission of fake documents including financial instruments like securities & guarantees, submission of false Financial statements / Audit reports etc.	3 years
Making false statement and allegation to gain undue advantage	2 years
Commission of embezzlement, theft, cheating, forgery, bribery, falsification or destruction of records, receiving stolen property, false use of trademark, securing fraudulent registration, giving false evidence, furnishing false information.	3 years
Breach of confidentiality of evaluation process as mentioned in Appendix I hereto	6 months to 2 years as mentioned in Appendix-1
Extraordinary delay in signing or refusal to accept a procurement contract without cogent reasons, when the bid has been accepted by NTDC	6 months to 2 years as determined by the Committee
Non-satisfactory performance as mentioned in Appendix-2	2 years
The contractor was blacklisted by the government or the donor agency and subsequently adopted by NTDC	3 years or the time period for which the concerned agency debarred the contractor, whichever is higher

Note: All the penalties given herein above will be in addition to the consequences already agreed by the parties in the contract or any other document.



4.6 ACTION AFTER FIRMS ARE PLACED ON BLACKLIST

- i. The decision of blacklisting will be immediately circulated to all concerned as mentioned at Clause 4.4 above.
- ii. In case of a contract already awarded to a firm / contractor which has been blacklisted and termination is either not possible or not feasible, the concerned Project Authority may proceed in this case to complete the contract with the approval of Competent Authority.
- iii. The blacklisted firms / contractors shall stand disqualified from bidding from the date of decision against them. Any pending bids shall also stand rejected. If a contract has already been awarded to such a firm / contractor, it shall be voidable at the option of NTDC as per 4.6 (ii) above.
- iv. A separate register or data base will be maintained for blacklisted firms indicating reasons and period.

4.7 EFFECTIVENESS

These guidelines / SOP or any amendments thereof shall take effect immediately after its approval from Board of Directors of NTDC.

APPENDIX-1

PROCESS TO DEAL WITH COMPLAINTS

It has been frequently observed that after opening of tenders, the bidders start to influence the evaluation process. Such mis-leading attempts result in delay in finalizing of award of contract and cause financial loss to the National organization and stain its sanctity. The evaluation process is confidential till publication of award of contract process.

Provision of guidelines of international donor agencies and PPRA provides sufficient opportunity to bidders for redressal of their grievances. Hence, the attempts made by the bidders during evaluation process to influence the contract award decisions fall under the definition of corrupt and fraudulent practices. Therefore, during bidding stage, the following mechanism shall be adopted in case of receipt of any complaint from the bidder.

- i. Anonymous complaints shall not be entertained.
- ii. The notice of displeasure and explanation will be immediately sent to those firms who lodge the complaint during the evaluation process.
- iii. If the firm does not refrain from making complaints in the same tender, the official warning will be sent and their case will be sent to "NTDC's Rights Protection Committee" which may analyse the situation and suggest action including the rejection of the bid of the complainant. However, Project Authority with prior approval of MD (NTDC) may reject the bid even in first instance depending upon nature of the case or provision of the Bidding Documents.
- iv. If the same bidder itself or through its agent or any third party lodges complaint in another tender floating in parallel before decision of the committee, its bid will straight forwardly be rejected by the project authority. It may also be debarred to participate in the next tender for six months under intimation to the Committee and MD NTDC.
- v. If the same bidder itself or through its agent or any third party lodges complaint third time in the same or any other tender within a period of one year, its bid will be rejected and bid security will be forfeited by the project authority. It may also be debarred to participate in the next tender for one year under intimation to the Committee and MD NTDC.
- vi. In order to monitor the record of the bidders, a data base will be maintained at NTDC's website and the offices of the project authorities regarding firms / suppliers/contractors who consistently lodge complaints during the evaluation process by making clandestine access to confidential record and hamper the award of contract process.



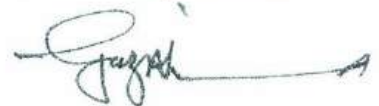
- vii. Any bidder feeling aggrieved by any act of the procuring agency after the submission of his bid may lodge a written complaint concerning his grievances not later than fifteen days after the announcement of the bid evaluation report under rule 35. The committee shall investigate and decide upon the complaint within fifteen days of the receipt of the complaint.

A handwritten signature in black ink, appearing to be "J. J. [unclear]", with a long horizontal line extending to the right.

APPENDIX-2

GUIDELINES FOR EVALUATION OF PERFORMANCE OF CONTRACTORS

- i. After signing of the contract, the Project authority (or the Consultant / Engineer) must monitor and control the Contractor's performance, that is, whether the Contractor is fulfilling his obligations based on the terms of the contract and plans that were developed and agreed upon with the Project authority at the time of signing of contract or during kick-off meetings. In case of breach of Contract or consistent non-performance shall tantamount to termination of the Contract, encashment of performance security or debarment / blacklisting.
- ii. Though the Contractor's performance evaluation is an on-going process, which takes place throughout the duration of the contract and also during the Defect Liability / Warranty Period, hence, a Contractor's Performance Evaluation Report shall be drafted by the project authority once all of the contractual obligations of the latter have been completed so that the Project authority have gained a more complete picture that will help it in formulating a more objective judgement.
- iii. The report may be prepared for all contracts of more than Rs. 100 million. When based on the Evaluation Report the performance of the Contractor is deemed as non-satisfactory in consecutive 02 No. EPC contracts (or the contractor receives 02 No. Notices of Default against consecutive contracts within a period of 2 years) and 03 No. supply contracts awarded within a period of 2 years, the procuring agency may initiate the case for blacklisting of the contractors.
- iv. In case of an extra-ordinary delay in performance of a single contract of vital and critical importance, the procuring agency shall have the right to terminate the contract, recover its loss and debar the contractor for participation in future tenders. The procuring agency shall be the sole judge to determine the importance of the project.
- v. The above said assessment will be in addition to the provisions already agreed by the parties in the contract or any other document.



SPECIFICATION P-



CIVIL WORKS

NATIONAL TRANSMISSION AND DISPATCH COMPANY
DESIGN DEPARTMENT (NTDC)

CIVIL WORKS

1. INTRODUCTION

1.1 General

This section comprises the Standards and Specifications pertaining to the fundamental requirements of design, material, workmanship, construction, testing, inspection and maintenance of the Civil Works required or specified under the Contract. The Contractor shall perform the work in accordance with these specifications and other specifications supplemental to these specifications as may be specified by the Engineer from time to time. Should the Contractor follow other specifications, the Engineer prior to carrying out these works must approve these.

1.1.1 Scope

The civil engineering work to be done under this contract shall consist of design, construction, testing, supply, delivery, supervision, installation, commissioning and guaranteeing of all works shown on the drawings and specified and implied herein.

The material and workmanship shall be the best of their respective kinds and to a standard not less than specified herein.

1.1.2 Works

The Contractor shall carry out all the works required for the design, construction, completion and maintenance of the Civil Works required under the Contract including foundations, cable trenches, pavements, roads, buildings, drainage and other allied works as required or specified in the Contract and as shown in the drawings.

The prices of all additional works, which are not shown in "Price Schedule" but specified in the Contract Documents, shall be included in the prices of other items of "Prices Schedule". The Contractor shall not claim additional cost for any item, which is required to be executed as per Contract Documents but not specially mentioned in the "Price Schedule".

1.1.3 Extent of Work

Reference should be made to the tender layouts and other tender drawings in Volume (VOL-II).

The details shown on the drawings shall be used for the purpose of tendering. The Contractor shall note that he is responsible for submitting all designs and drawings for all elements of the works as required and specified, in accordance with the actual soil conditions and design data that prevail at each Substation site and as instructed by the Engineer.

The Contractor is bound to provide complete works, even if the constructions, equipment or services to be provided are not specifically mentioned in the specification.

The Contractor shall be responsible for, but not be limited by, the following for all substation civil works:

- Site surveys and soil investigations
- Testing of soils, water and materials used
- Earthworks, grading and landscaping
- Temporary and permanent access roads to the substation from public roads
- Substation buildings to accommodate the 220 kV and the 132 kV switchgear
- New Control Building for and associated control and protection equipment
- 220/132 kV Transformer foundations, bunds, oil containment and fire walls
- Mechanical Workshop, Metering and Guard House buildings
- Cable trenches and ducts
- Boundary wall and main and personnel gates
- Structure and plant foundations
- Transformer roads, walkways and parking lot and surface chippings
- Foul and surface water drainage systems, septic tank and disposal arrangements.
- Heating, Ventilation and Air Conditioning

- Building Services - plumbing, water, small power and lighting, telephones, fire detection, etc
- Intruder alarms
- Water tanks
- Fire hydrants/fire fighting equipments
- Temporary works
- Design, preparation of detailed construction drawings and bending schedules,
- completion and maintenance of works,
- Preparation of As-built documentation.

1.2

Materials:

- i) The Contractor shall furnish all materials and equipments for the performance of civil work.
- ii) Materials to be used for civil work shall conform to the relevant ASTM standards and specifications. However in case of using other standards, the Contractor shall obtain prior approval of the Engineer.
- iii) In all matters relating to the acceptance or otherwise of the equipment and offered under this contract the decision of the Engineer shall be final.

The Engineer shall have the right to reject any material and/or equipment, which do not meet the requirements of the Contract Documents. All rejected material or equipment shall be removed from the Site as soon as possible.

The Engineer reserves the right to witness any test on material if necessary. The Contractor shall provide proper facilities to witness tests and shall also bear all the expenses on this account. Should the Engineer require the detailed data on material, the Contractor shall furnish the same in writing to the Engineer.

2.0

DESIGN CONDITIONS

2.1

General

All drawings and statements shall be in the English language and metric system of measurements shall be used.

The following design conditions shall be used for the design of civil work and shall not be deviated unless approved by Engineer.

2.2

Design Condition

The values used in this project are as follows:

i) Seismic Coefficient:

Vertical $K_v = \text{As per UBC / Pakistan Building Code}$

Horizontal $K_h = \text{As per UBC / Pakistan Building Code}$

ii) Wind Load:

Wind pressure $F_w = C_x q$

Where $q = 1/2 \rho V^2$

$\rho = \text{Air density/acc.}(0.125 \text{ kg sec}^2/\text{m}^4)$

$V = \text{Wind velocity}$
(45m/sec)

c = Shape factor
(for circular equipment 0.8
(for Angular equipment 1.2)

2.3 **Design of Foundations:**

1) Geotechnical Investigations

The Contractor shall carry out the Geotechnical investigations at Site just after award of the Contract under the supervision of the Engineer to design the foundations. For this purpose the Contractor shall submit his proposal regarding the type of tests and their locations at Site for review/approval of the Engineer. After performing Geotechnical investigations, the Contractor shall submit Geotechnical investigation report and his recommendations for design of civil works for review/approval of the Engineer.

2) Foundations

All foundations shall be designed upto 200 mm or as shown in the drawings from top of gravel level, appropriate slope shall be provided on the top end of the foundation in order to ensure sufficient drainage. The load for design of foundation shall be taken from the foundation reactions calculated in the design of gantries and respective equipments after applying appropriate load factors.

The Contractor shall submit to the Engineer for his approval calculations and load analysis used for design of gantries, equipment foundations and building works.

The size and type of foundations i.e. spread footing, mat footing or pile foundations including soil replacement if any shall be based on Geotechnical Investigation Report.

The gantry stubs and anchor bolts shall be available at Site before pouring of concrete for gantry and equipment foundations. If block outs are to be provided in the foundations due to any constraint, pre-mixed non-shrink grout shall be used for the embedment of stubs and anchor bolts as per approval of the Engineer.

3) Leveling Concrete

A leveling concrete shall be placed in thickness of 100mm or as shown in drawings.

2.4 **Design Standard and Code**

For foundations and building designs, the Contractor shall conform to the applicable requirements of the latest revisions of following standards and publications, in principle.

- 1) ASTM (American Society for Testing and Material)
- 2) ACI (American Concrete Institute)
- 3) BS (British Standards) – where specified only

2.5 **Testing**

In addition to following tests on coarse and fine aggregate to be used for constructions;

- i) Specific gravity of aggregates
 - Coarse grading
 - Fine grading
- ii) Unit weight

- iii) Gradation analysis
- iv) Flakiness and elongation indices
- v) Log Angle Abrasion:
 - Coarse grading
 - Fine grading
- vi) Soundness
- vii) Crushing
- viii) Water absorption
- ix) Aggregate impact value
- x) ASR test for aggregates
- xi) Petrographic test:
 - Fine aggregates
 - Coarse aggregates

The following chemical analysis shall be carried out for water to be used in concrete, ground water and for soils which are to come in contact with concrete:

- pH
- Chloride mg/litre
- Magnesium, mg/litre
- Ammonium, mg/litre
- Sulphate. mg/litre
- Potassium permanganate, mg/litre
- Total hardness milli equivalent/litre
- Non carbonates
- Carbonic acid

Cement to be used shall have an alkali content less than 0.5% of soda equivalent. Test reports for the tests carried out to verify the alkali contents shall be submitted to the Engineer for review and approvals.

The Contractor shall compare chemicals found in water, soil and construction material with those values allowable in design code and submit report for Engineer's approval. The Contractor shall take precautions in designing civil works and shall add admixture in concrete and take remedial measures to prevent structure from any expected attack from chemicals observed.

3.0 **TEMPORARY WORK**

3.1 **General**

- 1) This clause covers the furnishing of all appliances, labour, materials tools, transportation and services required to perform and complete all preliminary work and temporary construction.
- 2) Immediately after award of the Contract, the Contractor shall submit to the Engineer in writing the schedules for machinery and equipment to be supplied and temporary work to be constructed by the Contractor in connection with the execution of the permanent work.

Even though such schedules have been submitted to the Engineer, by no means the Contractor shall be relieved from any liabilities and responsibility to be borne by him in accordance with the Contract.

However, the schedules for minor and simple work may not be submitted if allowed by the Engineer.

- 4) Any drawing and design calculation sheets for the equipment to be used and for the temporary work specified in the specifications shall be submitted to the Engineer for his approval.

3.2 **Scaffoldings and Path**

In order to complete the construction, the Contractor shall furnish and maintain all required scaffolding, stairways, platforms and other necessary pertinents.

3.3 **Temporary Transportation Road**

- 1) The Contractor shall carry out investigation, design and construction of the temporary transportation road required for execution of the work at his expense, and submit such design in writing to the Engineer and obtain his approval.
- 2) The Contractor shall, at his expense, carry out maintenance and management of the temporary transportation road.
- 3) After completion of the work, the Contractor shall dismantle or leave the temporary transportation road as mutually agreed by the concerned parties subject to the approval of the Engineer.

3.4 **Site office**

- 1) The Contractor shall carry out investigation, design and construction of the Site office required for execution of the work including fully furnished office for Project Director and his staff at his expense, and submit such design in writing to the Engineer and obtain his approval.
- 2) The location of the site office will also be submitted to the Engineer for approval prior to the construction of the same.
- 3) The Contractor shall, at his expense, carry out maintenance and management of the above office.
- 4) After completion of the work, the Contractor shall dismantle or leave the above office intact subject to the approval of the Engineer.

4 **EARTH WORK**

4.1 **General**

This clause covers the performance of all works in connection with the required cutting, filling, leveling and compaction of site area, excavation for the various type of foundations as shown in the drawings, or any other excavation and banking that may be necessary during the progress of works including the removal, use or disposal of all excavated material.

4.2 **Clearing and Grubbing**

- 1) Clearing and grubbing shall include dismantling and removal of structures, removal of trees and shrubs, stumps and other obstacles from the area necessary for the execution of work. The Contractor shall cut and remove all such objects from the project area upto any lead as approved by the Engineer.

- 2) The Contractor shall not cut any tree outside the premises of the construction site without permission of the parties concerned.
- 3) Clearing and Grubbing shall also include removal of unwanted top layer upto 150 mm, if required.

4.3 **Excavation**

- 1) Excavation under this section shall consist of the removal, hauling dumping, and satisfactory disposal of all materials from required excavations for leveling the site area and construction of civil works. Excavation in rock by means of drilling, blasting, chemicals etc. shall also be done by the contractor wherever required.
- 2) The excavated slope surface shall be protected against any erosion due to heavy rains during construction period. Should any damage be caused on any face of slope, the Contractor shall immediately repair any such damage at his expense.
- 3) Excavation shall be carried out by adopting a suitable method for excavation of the ground so as not to loosen the ground outside the excavation. If necessary, temporary sheeting shall be constructed.
- 5) During excavation, work shall be performed carefully so as not to cause any damage to adjacent structures and buried structures owned by the public or third party. The execution of work in such areas shall be carried out following instructions of the Engineer
- 6) If the excavated material is to be temporarily stockpiled, designated spaces shall be kept at suitable distance from the shoulder of the road while considering the earth pressure at the excavated surface and the working space. Temporary sheeting or other such structures, if necessary, shall be constructed so that the stockpile can be protected from damage or being washed away
- 7) After completion of excavation, excavated widths and bottoms shall be subject to inspection by the Engineer.
- 8) Any and all excess excavation for the convenience of the Contractor or over-excavation performed by the Contractor for any purpose or reason, except as may be ordered in writing by the Engineer, and whether or not due to fault of the Contractor, shall be at the expense of the Contractor. All such excess excavation shall be filled at the expense of the Contractor with materials as approved by the Engineer. However, for the switchyard equipment, gantry and building foundations, excess excavation underneath the foundations if any done, shall be filled with lean concrete at the expense of the Contractor.
- 9) The Contractor may request the Engineer in writing to change the excavation line as required according to the soil conditions of the foundation during the progress of excavation line, the Contractor shall prepare the revised design of the said foundation and submit it to the Engineer for his approval.
- 10) The Contractor will carry out dewatering of structural and equipment foundations if required to maintain excavations free of water as required for proper construction of the works. Dewatering shall be accomplished in a manner that will prevent the loss of fines from the foundations, will maintain stability of excavated slopes, will result in all construction operations being performed free from standing water, and will result in all foundations being sufficiently dry for proper bonding of the backfill material with the foundations and proper compaction of the material placed.
- 11) If at any point, in any excavation, material unsuitable for foundation is encountered, as determined by the Engineer, the engineer shall order, in writing, removal of all such materials and refilling with selected materials thoroughly compacted by tamping or rolling in layer not more than 150mm thick

4.4 **Filling and Back Filling**

- 1) Filling and back-filling shall be executed as construction proceeds alongwith the removal of shoring and other materials at the filling and back-filling site.

When sheeting is to be let and buried in order to prevent shear failure of soil or due to some other inevitable reasons, it shall be done according to the direction of the Engineer.

- 2) Except as noted otherwise in the specifications or the drawings, all the materials for filling and back-filling shall comply with the following requirements.
 - a) Material shall not include any harmful materials, such as fertile soil or pieces of wood, slurry mud organic and other unsuitable material.
 - b) Material shall not be of an extreme swelling nature.
 - c) The gradation of the general fill material (except the fill material to be used to raise the switchyard area which shall be approved by the Engineer separately) shall conform to the following limits:

<u>Material Size, U.S. Shieve Series</u>		<u>Percent Finer Than, by Weight</u>
No.	10	100
No.	50	70-95
No.	100	25-75
No.	200	0-15

However, for the engineered fill under the light structures i.e. foundations, proposal of well graded gravelly sand shall be submitted by the Contractor for approval of the Engineer.

- d) No stones or the like shall be used for filling and back-filling.
 - e) After the foundation structural works within excavations have been inspected and approved, the excavations shall be refilled with selected material taken from excavation, if so authorized by the Engineer. Impermeable clay shall not be used for back-filling of a structure which is susceptible to earth pressure. Material shall be placed with care around pipes to avoid damage.

Location of borrow pits and method of obtaining materials for banking shall be reported to the engineer in advance for the approval.

- 3) If the inflow of water exists at the site of filling and back-filling, it shall be appropriately handled at the expense of the Contractor.
- 4) The compaction shall be made in the filed by ramping machines or other mechanical means as approved by the Engineer. The layer of compacted earth filling shall not be more than 15 cm per lift, and it shall be graded at horizontally as possible, and shall be sufficiently compacted to produce not less than 95% o laboratory maximum dry density as determined by ASTM Designation D1557-00 "Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort". Field dry density shall be measured according to ASTM D-1556-00 – Standard Test Method for Density and Unit Weight of Soil in Place for Sand – Cone Method or ASTM D-2937-00 "Standard Test Method for Density of Soil in Place by the Drive – Cylinder Method" or other methods as approved by the Engineer.
- 5) If there is any surface or buried structure owned by the public or the third party at the site of filling and back-filling, care shall be taken so as to cause no harmful effect to them and the execution of the work shall be carried out following instructions by the Engineer.
- 6) For back-filling adjacent to a structure, compaction and back-filling shall be carried out in such a manner that will prevent damage to the structure.

4.5 **Disposal of Excavated Materials**

- 1) Spoils produced by excavation shall be piled, graded, sloped or disposed of at the locations as directed by the Engineer.
- 2) In transporting the spoils, care shall be taken so as to neither hamper traffic nor cause trouble to the third party by scattering the spoil over the road.

4.6 **Inspection:**

The instructions and tests specified herein shall include the following:

- 1) Volume of work executed
- 2) Inspection of test of construction materials
- 3) Inspection of excavation (including bed surface)
- 4) Inspection of disposal of excavated materials
- 5) Inspection of compaction test of back-filling
- 6) Other tests and inspections which the Engineer deems necessary
- 7) Other tests and inspections required according to pertinent regulations, codes and standards

The works for which the Engineer deems inspection necessary, shall be executed in the presence of the Engineer.

5. **REINFORCED CONCRETE WORK**

5.1 **General**

- 1) This clause covers the performance of all reinforced concrete work for permanent structures in accordance with the drawings and these specifications.
- 2) The Contractor shall furnish all materials and equipment for the performance of concrete work.
- 3) Reinforced concrete work and plain concrete work shall comply with all requirements of ACI 318-02 (latest revision). Also test on material shall, in principle, follow relevant ASTM Standard or equivalent approved by the Engineer.
- 4) Concrete shall have the uniform quality with the required strength, durability water lightness etc.
- 5) Strength:

a) The strength of concrete shall generally be based on 28 days compressive cylinder strength

b) Compression tests for concrete shall be performed in accordance with relevant ASTM standards or approved equivalent.

o28 = 350 kg/cm² For grouting under base plate of equipment steel structure with mixing of non-shrinking agent.

o28 = 280 kg/cm² For water retaining structures.

o28 = 211 kg/cm² For foundation of each equipment gantry towers, cable trenches, buildings and other structures as specified.

The minimum cement contents shall be 350 kg per cubic meter of concrete.

$\sigma_{28} = 71 \text{ kg/cm}^2$ For leveling concrete.

Where σ_{28} means concrete compressive cylinder strength at the age of 28 days.

Table-1 – Basic Mix Data

Design Strength $\sigma_{28} \text{ kg/cm}^2$	Max Size of Aggregate (mm)	Slump (cm)	Air Content (%)	Description
350	As per Table-3	4 ± 2	-	Grouting under base plates of equipment steel structure.
280	As per Table-3	10 ± 2	4 ± 1	Water retaining structures.
210	As per Table-3	6 ± 2	4 ± 1	Foundation, buildings and other structures.
140	As per Table-3	10 ± 2	4 ± 1	Leveling concrete.

- Note:
- Specific gravity in design
Cement – 3.15, Fine Aggregate – 2.62, Coarse Aggregate and Crushed Stones – 2.62.
 - The Contractor shall submit proposal of mix design for approval of the Engineer.
 - Maximum size of coarse aggregate may be reduced for columns, beams and slabs etc. as directed by the Engineer.

5.2

Material

1) Material for Reinforced Concrete

a) Cement

Classification shall be Ordinary Portland Cement to be complied with British Standard 12:1971 "Specifications for Ordinary and Rapid Hardening Portland Cement" or to ASTM Designation C150-99a Standard Specification for Portland Cement for Type-I", or equivalent and Sulphate Resistant (SR) cement shall be used in water logged area and as per requirements of Geotechnical investigations and this shall be according to ASTM C150-99a Type-V.

b) Water

- Water shall be clean and free from injurious amounts of oils, acids, alkalis, salts, organic materials or other substances deleterious to concrete or reinforcement.
- Sea, river or canal water shall not be used in mixing concrete for reinforced or plain concrete.
- Test as described in clause 2.5 shall be within acceptable limits.
- Non-potable water shall not be used in concrete unless specifically approved by the Engineer.

c) Fine Aggregate

i) **General**

Fine aggregate shall be clean, strong, hard, durable, suitably graded and free from injurious amounts of dust, mud, organic impurities, salts etc.

Beach sand shall not be used for concrete.

ii) **Grading**

Fine aggregate shall consists of large and small particles suitably mixed, and its grading shall, as a standard, be within the range shown in Table-2.

Table - 2 - Standard Grading of Fine Aggregate

Sieve Designation <u>U.S. Standard Square Mesh</u>	Percent <u>Passing</u>
0.375 in (9.5 mm)	100
No. 4 (4.75 mm)	95 to 100
No. 8 (2.36 mm)	80 to 100
No. 16 (1.18 mm)	50 to 85
No. 30 (600 mm)	25 to 60
No. 50 (300 mm)	10 to 30
No. 100 (150 mm)	02 to 10

The sand equivalent value of the fine aggregate, as determined by ASTM Designation D-2419-02 "Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate", shall not be less than 75. The Fitness Modules shall range between 2.3 to 3.1.

d) **Coarse Aggregate**

i) **General**

Coarse aggregate shall be clear, strong, hard, durable, suitable graded and free from injurious amount of flakes, elongated pieces, organic impurities, salts etc.

ii) **Crushed Stones**

Coarse aggregate shall consist of large and small particles suitably mixed and its grading shall be within the range shown in Table-3 as a standard.

Sieve analysis shall be performed in accordance with ASTM Designation C33-02a, or equivalent.

Table - 2a - Standard Grading of Coarse Aggregate

Percent by weight finer than each laboratory sieve			
<u>US Standard</u> <u>Sieve Size</u>	<u>1.5 in. to</u> <u>0.75 in.</u>	<u>0.75 in.</u> <u>to No. 4</u>	<u>0.5 in.</u> <u>to No. 4</u>

2	in.	100	-	-
1.5	in.	90 to 100	-	-
1	in.	20 to 55	100	-
0.75	in.	0 to 15	90 to 100	100
0.5	in.	-	-	90 to 100
0.375	in.	0 to 10	20 to 55	40 to 70
No. 4		-	0 to 10	0 to 15
No. 8		-	0 to 5	0 to 5

e) **Reinforcement**

Steel bar reinforcement, shall be deformed bars conforming to the provisions of ASTM Designation A615/A615M-01b, "Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement" and shall have a minimum yield stress of 40,000 psi. Steel bar reinforcement in the openings to be filled with second stage concrete shall be of mild steel. At least 45 days prior to issuing each order for reinforcing steel, the Contractor shall notify the Engineer in writing of the Contractor's proposed sources of supply so that the Engineer may make arrangements for plant examination, testing and inspection. A similar notification shall be given prior to each shipment to the Site. The Contractor shall provide such assistance, instruments, machines, labour and materials as are required for examining, measuring and testing the quality, weight or quantity of steel at the mill and at the Site. If and when required Contractor shall provide all necessary facilities to Engineer for the selection of test pieces and shall prepare these to the required shape and length and submit it to the laboratory where directed for tests at Contractor's cost. No steel shall be incorporated in the Works without prior approval of the Engineer.

f) **Admixture**

- i) The Engineer shall select the source and brand of air-entraining admixture, if required. The air-entraining admixture will be an approved substance or compound conforming to the requirements of ASTM Designation C260-01, "Standard Specification for Air-entraining Admixtures for Concrete", which will produce entrained air in the concrete as hereinafter specified. The air-entraining admixture shall be added to the batch in solution in a portion of the mixing water. This solution shall be batched by means of mechanical batcher capable of accurate measurement and in such a manner as to ensure uniform distribution of the admixture throughout the batch during the specified mixing period.
- ii) The source, brand and types of suitable water-reducing cement-dispersing admixtures, if required, shall be selected by the Engineer. The water-reducing admixture will be compatible with the air-entraining admixture specified above and shall be batched and added to the concrete in the manner specified for the addition of air-entraining admixture but separate from the portion of the mixing water containing the air-entraining admixture. The quantities of water-reducing cement-dispersing admixture to be used shall be in accordance with the instructions of the Manufacturer, as approved by the Engineer. Water-reducing admixture will conform to the requirements of ASTM Designation C494-99a "Standard Specification for Chemical Admixtures for Concrete". Water-reducing admixtures shall be sampled at the source of supply and tested at the expense of the Contractor. Additional tests if deemed necessary shall also

be arranged by the Contractor without any claim of cost under the supervision of the Engineer.

- iii) Admixture for non-shrinking of concrete shall be used for grouting wherever required.

g) **Mortar**

Before placing the fresh concrete a mortar coat, approximately two cm thick, shall be placed on construction joint. The proportion of the mortar mix shall be one part of cement to two parts of sand of fineness of between No. 100 and No. 4 sieves, with a consistency which allows spreading it over the surface and completely filling of all irregularities in the old concrete. Before concrete is placed over a construction joint, the joint shall be thoroughly cleaned and wetted. Any excess water shall be removed prior to concreting.

2) **Storage of Materials**

a) **Storage of Cement**

- i) Cement shall be stored separately for each type in either silos or damp-proof warehouses.
- ii) Silos to store cement shall be built or equipped with suitable means so that cement will not be retained at the bottom without being conveyed out.

In case of sacked cement, it shall be stacked on the floor rising atleast 30 cm from the surface of the ground, and shall be stored in such a manner as to facilitate conveyance and inspection. Height of each stack shall be at most 13 sacks.
- iii) Any bag for which portion of cement has hardened during its storage shall not be used at all. Cement stored for long period shall be tested for its quality prior to its use.
- iv) Cement with excessively high temperature shall be used only after lowering the temperature.

b) **Storage of Aggregate**

- i) Fine aggregate, coarse aggregate and other aggregate of different type and grading shall be separately stored with dividers between each.
- ii) When receiving, storing and handling aggregate, facilities shall be well maintained and handling shall be carefully performed so that no segregation of large particles from small ones may occur, no foreign materials may become mixed, or in case of coarse aggregate, no particles may be crushed.
- iii) Storage facility of aggregate shall be equipped with a suitable drainage system, and shall have a suitable capacity so that the aggregate with uniform surface water may be used separately and the aggregate received may be used after being tested.
- iv) In hot weather, aggregate shall be stored in a place with a facility to avoid direct exposure to the sun etc. so that extreme drying or temperature rise in the aggregate does not occur.

c) **Storage of Reinforcement**

Reinforcement shall not be directly placed on the ground, and it shall be stored in a warehouse or a place with suitable cover.

d) **Storage of Admixture**

- i) Admixture shall be stored so as to be free from dusts and other impurities. Admixture in powder form shall be stored in such a manner that absorption of water and hardening are prevented and admixture in liquid form shall be stored in such a manner that segregation and change in quality are prevented.
- ii) Admixture material shall be carefully handled.
- iii) Admixture material shall be stored in silos or warehouses which are damp-proof and shall be used in the same order as they are received.
- iv) Admixture stored for a long period or found to have changed shall be tested prior to its use. Should it be found in the test that admixture does not possess the required characteristics, its use shall not be allowed.

5.3 **Mix Proportions**

- 1) Mix proportion for concrete shall be determined in such a manner that the unit quantity of water is minimized while the required strength, uniformity, durability, water tightness and the workability suitable for the work are secured.
- 2) As there is a wide difference between the concrete test sample preparation methods used in the Laboratory and the actual practices used in the field for batching, mixing, placing, compacting and curing of concrete, the initial Mix Proportions shall be decided by the Engineer keeping in view the Mix Proportions already being used at different similar projects.
- 3) Keeping in view the Mix Proportions already being used for the similar projects, the scheme of mix proportion shall be submitted to the Engineer for approval. The form of submission as per Table-4 shall be used. The design strengths of the concrete shall be the classes indicated below.

o28 = 350 kg/cm² For grouting under base plate of equipment steel structure
o28 = 280 kg/cm² For water retaining structures.
o28 = 211 kg/cm² For foundation and buildings
o28 = 71 kg/cm² For leveling concrete.

Where o28 means concrete compressive cylinder strength at the age of 28 days.

The Contractor shall prepare concrete mix design according to basic design data for mixing as indicated in the Table-1 herein.

Table-4 (Concrete Mix Design Report)

Mix Size of Aggregate	Slump (cm)	Air-Entrainment (%)	Max Water/Cement w/c (%)	Sand percent s/a (%)	Quantity (per Mixed 1m ³)				
					Water (W)	Cement (C)	Fine Aggregate (S)	Coarse Aggregate	Admixture
					kg	kg	kg	kg	gm/cm ³

Note: The quantity of admixture shall be indicated in cm³ or gram without solution or dilution.

5.4 **Batching**

Each material to be used in concrete shall be obtained through batching.

1) **Batching Equipments**

- a) Batching method and batching equipment for each material shall be subject to the approval of the Engineer in advance.
- b) Batching equipment for each material shall be inspected and adjusted if necessary, prior to the commencement of the construction work and periodically during the construction.

2) **Batching of Materials**

- a) Batching shall be made in accordance with the mix design approved by the Engineer. Test for surface water of the aggregate shall be in accordance with relevant ASTM Designation of equivalent or as directed by the Engineer. Test for the quantity of the effective absorption of water, in case of dried aggregate, shall be as directed by the Engineer.
- b) Volume of one batch shall be determined as directed by the Engineer.
- c) Each material shall be batched by weight and/or by volume as approved by Engineer except the water and the solution of admixture, which may be measured by only volume.
- d) Error in the measurement in each batch shall be within the permissible error range given in Table-5.

Table-5 Permissible Error in Measurement

<u>Type of Materials</u>	<u>Permissible Error (%)</u>
Water	± 1
Cement & admixture material	± 2
Aggregate	± 3
Solution of admixture agent	± 3

5.5 **Mixing**

Materials for concrete shall be thoroughly mixed until the mixed concrete becomes uniform in quality.

1) **Mixers**

- a) Mixers shall be either tilting batch mixers or forced batch mixers
- b) Any concrete mixers to be used under this project shall be subject to approval of the Engineer.
- c) Mixers shall be such that they will not cause any separation of materials at the time of discharging.

2) **Mixing**

- a) When charging a mixer, all the materials shall be charged uniformly and simultaneously in principle.
- b) Mixer shall be rotated at a speed recommended by the manufacturer.

- c) Mixing time shall, in principle, be determined based on tests. As a standard, it shall be at least 1 minute and 30 seconds for tilting type mixers and 1 minute for forced mixers.
- d) Mixing shall not be continued for more than three times the specified mixing time.
- e) Materials for new batch shall not be charged into the mixer until all the concrete in the mixer is discharged.
- f) Mixers shall be thoroughly cleared before and after their use.
- g) Concrete which is left mixed and has commenced setting shall not be used after re-tempering.
- h) Hand mixing shall not be allowed

5.6

Conveying and Placing

1) **General**

- a) Prior to the commencement of the construction work, a plan of conveying and placing shall be made, and this shall be subject to the approval of the Engineer.
- b) Concrete shall be conveyed by methods which will prevent separation and loss of materials, shall be placed immediately and then, shall be thoroughly compacted. Even when it is impossible to place the concrete immediately due to some special reasons, the time between mixing and the completion of placing shall not exceed 30 minutes.
- c) When segregation is observed in concrete during its delivery or placement, it shall be made uniform in quality by remixing.

2) **Conveying Equipment**

Equipments to be used in conveying concrete shall be those which can easily deliver the concrete to its required place. Should the delivery distance be long, they shall be equipped with such facility as an agitator.

3) **Buckets**

Structure of buckets shall be such that they will not cause any separation of materials when charging or discharging concrete, and that the concrete can be easily and swiftly deposited from them.

4) **Conveyer Belts**

Should conveyer belts be used, they shall be suitably located so that they will not impair the quality of the concrete and the end of the line shall be provided with baffle plates and an elephant trunk so that the segregation of concrete can be prevented.

5) **Buggies and Trolleys**

Should buggies or trolleys be used, a level runway or path shall be constructed so that separation of material will not occur in conveying concrete.

6) **Chutes**

- a) Should any chute be used, it shall be drop-chute in principle. The drop chute shall be connected to an elephant trunk so that the separation of materials is minimized.
- b) Open chutes may be used, only when approved by the Engineer. Each open chute shall be inclined at uniform angle all along its length and the slope shall be such that it will not cause any separation of materials of the concrete to be placed. The distance between the bottom end of the chute and the surface on which concrete is to be deposited, shall be at most 1.5 m. The discharging end shall be equipped with a suitable elephant trunk.

7) Preparation of Placing

- a) Prior to the placement, the arrangement of reinforcement, forms etc. shall be approved by the Engineer.
- b) Prior to the commencement of the placement, it shall be certified that conveying equipments and placing equipments are in conformance to the plan of placing specified in clause.....
- c) Prior to the placement, conveying equipments, placing equipments and the inside of forms shall be thoroughly cleaned to prevent foreign materials from being mixed into the concrete. Portions expected to face concrete and to absorb water shall be moistened in advance.
- d) Water in pits and sumps shall be removed prior to the placement of the concrete. Suitable protective measures shall be taken so that water running into these pits and sumps will not wash the concrete just placed.

8) Placing

- a) Concrete shall be placed in accordance with the plan of placing specified in clause should it be inevitable to change the placing method, it shall be so done as directed by the Engineer.
- b) When concreting is done in hot weather, special attention may absorb the water in concrete shall be given to the materials, placement, curing etc.
- c) Portions such as the ground and foundations which may absorb the water in concrete shall be thoroughly wetted prior to the placement of concrete.
- d) Temperature in concrete at the time of placing shall be at most 25 deg. C for gantry foundations and 32 deg. C for equipment foundations and other structures. If the temperature goes up, precautionary measures approved by the Engineer have to be taken.
- e) Conveying equipments for concrete shall be such that they will protect concrete from being dried or heated.
- f) Concrete shall be protected as soon as the placement is completed or interrupted. Special care shall be exercised to keep the surface of the concrete moist.
- g) During the concreting operation, attention shall be paid not to disturb the arrangement of the reinforcement.
- h) Concrete shall be placed in such a manner that it will not be required to be moved after being deposited.
- i) Should any notable separation of materials be observed during concreting, the concrete shall be remixed to obtain the uniform quality and necessary measures to prevent separation shall be taken before the placing operation is resumed.
- j) Concrete for one section shall be placed continuously until it is complete.

- k) Concrete shall, in principle, be placed in such a manner that the surface of the placed concrete will be horizontal within the section. One lift in placement shall be at most 30 cm, in principle, if the length of the vibratory rod is larger than the concrete lift.
- l) Should concrete be placed in layers, each succeeding layer shall be placed while the one below it is still plastic. Should it become necessary to place concrete on top of layer which has started setting, it shall be done in accordance with clause.
- m) When height of the form work is great, it shall be provided with openings for concrete placing or the placement shall be done using droop chutes in order to prevent the concrete from being segregated or from adhering to the reinforcement or to the forms above the layer to be placed.
- n) The height of the end of buckets and hoppers shall be at most 1.0 m above the level of placement.
- o) Should there be any water coming out and accumulated during the placement, the concrete shall not be placed further until the water is removed by suitable means.
- p) When concreting high structures such as walls and columns continuously, the consistency of the concrete and the rate of lifting shall be controlled, in such a manner that separation of materials during the placement and the compaction is minimized.

5.7 **Compaction**

- 1) In principle, internal vibrators shall be used to compact the concrete. When it is difficult to use internal vibrators in the case of thin walls suitable means shall be adopted. Vibrators to be used shall be subject to the approval of the Engineer.
- 2) Concrete, shall be thoroughly compacted immediately after placement, and shall be thoroughly worked around the reinforcement and into the corners of the form. Where conditions make compaction difficult, batches of mortar containing the same proportions of cement, sand and water as used in the concrete shall first be deposited to ensure the compaction.
- 3) When compaction is achieved by vibrators, it shall be inserted into the layer below the one just placed by about 10 cm. The vibrators shall be pulled out very slowly so that no hole will form in the concrete.
- 4) When concreting is to be compacted by internal vibrators the spacing and the time of their application shall be as directed by the Engineer.

5.8 **Additional Placing**

Should additional placing be made on top of a layer which has already started to harden, it shall be thoroughly and carefully worked on as directed by the Engineer so that the top and the lower layer becomes monolithic.

5.9 **Curing**

1) **General**

- a) Concrete, after being placed, shall be sufficiently cured without being subjected to injurious effects caused by low temperature, drying, sudden change in temperature etc.

The Contractor shall report the said method to the Engineer and obtain his approval

- b) Concrete shall be protected from vibrators, impacts and loads while it is hardening.

2) **Wet Curing**

- a) Concrete being placed and compacted shall be protected from the sun, wind, showers etc. until it starts hardening.
- b) Any exposed surface of concrete which has hardened to a degree that works can be done without impairing it shall be either covered with wet mats, canvas, sand etc. or directly watered and shall be kept moistened continuously for at least seven (7) days after the placement in case Ordinary Portland Cement is used.
- c) When sheathing boards are expected to become dry, they shall be watered.

5.10

Joints
General

1)

- a) Location and structure of joints including expansion joints shall be as per relevant standards and codes and shall be shown and specified in the drawings.
- b) Should any joint not specified in the design be made, its location, direction and method of construction shall be determined in the plan of construction so that it will not impair the strength and the appearance of the structure, and this shall be subject to the approval of the Engineer.

2) **Construction Joints**

- a) Construction joints shall be located where the shear forces are minimum and with their faces in perpendicular, in principle, to the direction of compression in the member as approved by the Engineer.
- b) Should it be unavoidable to make a construction joint at a location where large shear is acting, it shall be reinforced by forming tendons or grooves, or embedding suitable steel as approved by the Engineer.

3) **Construction of Horizontal Construction Joints**

- a) Sides of the surface of a horizontal construction joint intersecting the forms shall be kept as horizontal and straight as possible.
- b) When new concrete is placed, the surface of the old concrete shall be removed of all laitance, interior concrete, loosened aggregate etc. and shall be thoroughly wetted.
- c) Prior to the placement of new concrete, the forms shall be tightened, standing water removed and either cement paste or mortar with the same mix proportion as in concrete shall be applied on the surface of the old concrete.

4) **Construction Method for Vertical Construction Joints**

- a) When a vertical construction joint is to be made, the forms at the joint shall be rigidly supported and the concrete in the vicinity of the joint shall be thoroughly compacted by vibrators.
- b) Fresh concrete shall be placed after the surface of the aged concrete at the joint is removed of the surface film or is roughened and thoroughly wetted or after the surface is treated as directed by the Engineer.
- c) Fresh concrete shall be thoroughly compacted at the time of placement so that the fresh and aged concrete is in tight contact with each other.

5.11

Reinforcement Work

1) **Processing of Reinforcement**

- a) Reinforcement shall be processed to the shape and the dimensions as shown in the drawings by a method which will not impair the quality of the material.
- b) Reinforcement shall be processed in ordinary temperature. When it is unavoidable to heat for processing, the whole process shall be subject to the approval of the Engineer.

2) **Placing of Reinforcement**

- a) Prior to fabrication and at time concrete is placed, reinforcement shall be thoroughly cleaned and free from must, oil, loose rust and any other non-metallic coatings which may impair the bond between the reinforcement and the concrete.
- b) Reinforcement shall be accurately placed to the designated position, and shall firmly be supported so that it will not be dislocated during the placement of concrete. Erection bars, if required, shall be used for this purpose.

Important crossing of reinforcement shall be fastened by either annealed wire of at least 0.9 mm in diameter or binding wire.

- c) Clearance between reinforcement and sheathing board shall be maintained correctly by use of spacers.
- d) Reinforcement shall always be inspected by the Engineer before placing of concrete.

3) **Covering of Concrete**

- a) The covering shall be at least one diameter of the reinforcement.
- b) In general, the minimum covering shall be as shown in Table-6, unless otherwise noted on the drawings.

Table – 6 Minimum Covering (cm)

<u>Conditions</u>	<u>Slabs, Walls</u>	<u>Beams, Columns</u>
When not directly exposed to severe weather or ground	2.0	4.0
When effective coating is not applied on the portion which may be subjected to injurious chemical reaction due to smoke, acid, alkali, oil, deicing salts, brackish water etc.	5.0	6.5

- c) In case of footings and important members of a structure, it is recommended that the covering be at least 7.5 cm when concrete is placed directly facing the ground, and at least 5 cm for bars with diameter or more than 19 mm and 4 cm for bars with the diameter of less than 19 mm when the concrete is buried and directly facing the ground or when it is subjected to severe weather conditions. However, the covering at the bottom side of slabs may be at least 2.5 cm even if the portion of it is subjected to extreme weather conditions.
- d) The covering in structures which are required to be specially fireproof shall be determined based on the temperature of the fire, duration, characteristics of aggregate to be used etc.

4) **Joints of Reinforcement**

- a) Lap joints of reinforcement shall be made by lapping the required lengths and fastening them together at several points with annealed wire of at least 0.9 mm in diameter. Lap length shall be according to ASTM Designations.
- b) Reinforcement projecting from the structure and exposed for future jointing shall be protected from damage, corrosion, etc.

5.12 **Forms and Timbering**

Forms and timbering shall be so designed and constructed as to have the required strength and rigidity, to secure correct position, shape, lines dimensions of the structure and to secure the satisfactory quality in concrete.

1) **Design of Forms**

- a) Forms shall be those which can easily be fabricated and stripped; joints of sheathing boards and panels shall be forced in parallel with or perpendicular to the axis of the member so that it will have to structure which is tight against mortar.
- b) The structure form shall be such that the corners of concrete can be mould even hen it is not particularly specified.
- c) Temporary openings, if necessary, shall be made at suitable locations to facilitate cleaning and inspection of the forms and the placing of concrete.

2) **Design of Timbering**

- a) Suitable type of timbering shall be selected and the load carried by them shall be correctly transferred to the foundation by appropriate means.
- b) As design of timbering for important structures is concerned they shall be subjected to the approval of the Engineer.

3) **Construction of Forms**

Stripping agents shall be applied on the inside of the sheathing board.

4) **Construction of Timbering**

- a) Timbering shall be constructed so as to have sufficient strength and stability.
- b) An amount of the settlement of the form works due to the weight of the placed concrete shall be estimated and a camber shall be introduced, if necessary, in the shoring.

5) **Removal of Forms and Timbering**

- a) Forms and timbering shall not be removed until the concrete reaches a strength required to carry the concrete weight and the load applied during the construction work.
- b) Time and sequence of the removal of the forms and timbering shall be subject to the approval of the Engineer.

Loading on a structure immediately after the removal of the forms and timbering shall be subject to the approval of the Engineer.

5.13 **Finishing**

1) **General**

When the uniform appearance should be obtained on the exposed surface, special attention shall be given to place the concrete for the predetermined section continuously without changing the materials, proportions and the method of the placement.

2) **Surface Note Facing Sheathing Boards**

- a) Surface of the concrete compact and approximately leveled to the required level and shape shall not be finished until the water coming out ceases and is removed.
- b) Cracks formed after finishing but before hardening shall be removed by tamping or re-finishing.

3) **Surface Facing Sheathing Boards**

- a) Concrete which will be exposed shall be placed and compacted in such a manner that the surface solely composed of mortar will be secured.
- b) Projections and lines formed on the surface of concrete shall be removed to ensure surface flatness. Honeycombs and chipped places shall be removed and the surface shall be moistened and patched with appropriately proportioned concrete or mortar to be finished flat.
- c) Cracks formed after the removal of the forms due to temperature stress, drying, shrinkage, etc. shall be repaired as directed by the Engineer.

5.14 **Tests**

Contractor shall submit to the Engineer six copies of reports as directed by the Engineer.

1) **Test of Material**

- a) All the materials (cement, water, fine aggregate, coarse aggregate, reinforcement, admixture, etc.) to be used shall be approved by the Engineer after the Contractor submits the test results.
- b) The testing method shall comply with relevant ASTM Designation or equivalent.

2) **Tests of Concrete**

Materials of concrete, reinforcement, equipments, and workmanship shall be controlled to produce reinforced concrete of the required quality economically.

- a) During construction the following tests shall be carried out as directed by the Engineer.
 - i) Slump test
 - ii) Temperature test
 - iii) Compression test of concrete

Samples for compression tests of each class of concrete placed each day shall be taken not less than once a day, nor less than once for each 100m³ of concrete, nor less than once for each 450m² of surface area for slabs or wall.

- b) In order to determine the suitability of the curing method and the time to remove the forms, and in order to certify the safety for early loading, strength tests shall be performed on specimens cured under the conditions as similar as possible to those of the concrete at the site. Should the result of the test indicate that the obtained strength of the specimen is much smaller than that of the specimens cured under the control condition, the method of curing at the site shall be changed as directed by the Engineer.

- c) For compression test of concrete, minimum six (6) test specimens shall be required with a minimum of one set of sample per concrete, pour from a randomly selected batch of concrete, taken at point of discharge from mixer or truck, cured under standard conditions.

Three (3) specimens shall be tested for seven (7) or fourteen (14) days strength, the remained three (3) specimens shall be tested for twenty eight (28) days strength.

- d) Should it become necessary after the completion of the work, non destructive test of concrete or tests on concrete specimens cut out from the structure shall be carried out.

The expenses for the above tests shall be included in the unit prices.

3) **Control of Concrete by Compressive Strength**

- a) Control of concrete by compressive strength shall be based on 28 days compressive strength. Specimens, in this case, shall be taken in such a manner that they will represent the concrete of the structure for at least each separate pour.
- b) Test results of compressive strength to be used for the control of concrete shall generally be considered satisfactory if arithmetic average of strength tests for specimens taken from the same batch, equals or exceeds specified compressive strength and not individual strength test falls below specified compressive by more than, 35 kg/cm².

4) **Inspection of Quality of Concrete**

- a) The Contractor shall submit to the Engineer the results of the tests of concrete obtained according to the quality control test in the preceding paragraph 4.05.14. and obtained approval of the Engineer.
- b) When the results of tests show that the strength of any concrete is below the minimum specified, Engineer may give instructions for the whole or part of the work concerned to be removed and be replaced at the expense of Contractor. The Contractor's Works which has to be removed and replaced as a result of the defective concrete. If any concrete is held failed, Engineer may order the proportions of that class of concrete to be changed in order to provide the specified strength.

5) **Test of Reinforcement Bars**

In the case where there is no test certificate of reinforcement bars (mill sheet) or in case the Engineer deems necessary, the Contractor shall carry out the characteristics and strength test of reinforcement bars and obtained approval from the Engineer for its use.

a) **Test Method**

Test method shall conform to the relevant ASTM Designation or equivalent, unless directed otherwise by the Engineer.

b) **Report**

The result of the tests shall be reported to the Engineer without delay.

5.15 **General**

The inspection and tests specified herein shall include the following:-

- a) Volume of work executed
b) Inspection and test of construction materials
c) Inspection of reinforcement bar assembly
d) Inspection of forms

- e) Inspection of the lines, grades and dimensions of the structures
 - f) Identification test of the quality of concrete at site (cast-in-place concrete).
 - g) Other tests and inspections required according to pertinent regulations, codes and standards or as deemed necessary by the Engineer.
- 1) The following tests and inspections shall be executed in the presence of the Engineer.
- i) Strength test of reinforcement steel
 - ii) Compression test of concrete
 - iii) Other tests and inspections the Engineer deems necessary.
- 2) **Inspection of Reinforcement Bar Assembly**
- Prior to placement of concrete, the Engineer shall inspect reinforcement bar assembly to confirm the classification and diameter of reinforcement bar, space between reinforcement, length of lap joint and covering etc. are according to the Drawings.
- 3) **Inspection of Forms**
- Prior to placement of concrete, the Engineer shall inspect the form work and shall give approval for concreting.
- 4) **Inspection of the Dimensions of the Structure**
- Inspection of the dimensions of the structures shall be made as required by the Drawings.

Concrete work shall not exceed, in general, the tolerance limits specified below:

- a) Variation from plumb or specified batter for surface of stems and lines.
 - i) In any 3.0 m of length 5 mm
 - ii) Maximum for the entire length 15 mm
- b) Variation from the level for slabs
 - i) In any 3.0 m of length 5 mm
 - ii) In any 6.0 m of length 8 mm
 - iii) Maximum for the entire length 15 mm
- c) Variation in cross sectional dimensions of stems and thickness of slabs.
 - i) Minus 5 mm
 - ii) Plus 10 mm
- d) Variation and level specified at tope of foundations.
 - i) Minus 10 mm
 - ii) Plus 10 mm
- e) Variation in protective covering of reinforcement steel.
 - i) With cover of 40 mm or less -5 mm
 - ii) With cover more than 40 mm -10 mm
- f) Variation from effective depth of reinforcement steel. 20 mm

5.16 CABLE TRENCH WORK

5.16.1 General

The Contractor shall provide all cable trenches leading from the outdoor equipment in the switchyard to the indoor equipment in the buildings as shown in the Drawings.

The design shall cover the following requirement.

- 1) The design of cable trenches shall be similar to the design shown in bidding documents and with draining system.
- 2) Cable trenches shall be made of complete monolithically reinforced concrete work. Each type of cable trench shall be provided with expansion joint at intervals of max. 20 linear meter.
- 3) All trench covers shall be of reinforced concrete to withstand a load of 300 kg at the centre except those at road crossing which should withstand a load of 5 tons at the centre.
- 4) The trench covers shall be of such size as to facilitate their handling by manual labour.
- 5) Trenches in substation will be built with the top of the trench cover 150 mm above the gravel level or as shown in the bid drawings.
- 6) The trenches shall be connected to a drainage system, designed and constructed by the Contractor in such a manner that sub-oil water due to water logging can not enter the trenches and rain water collecting in trenches is drained out efficiently. The drainage system for trenches shall be designed with proper slope for flow of water, entering the trenches.
- 7) All cable trenches shall set on a layer or leveling concrete of thickness 100 mm.
- 8) Cable trays shall be provided in trenches at adequate intervals horizontally and with sufficient vertical spacing between trays to freely accommodate the cables, Plenty of working space shall be provided for handling the cable during installation and maintenance.
- 9) Each trench shall have two sections, one to accommodate cables for primary and other for secondary protection system. The later shall also accommodate power cables.
- 10) Trench-road & trench-trench crossings shall be culvert type and so designed that plenty of space is available for handling the cables during installation, future requirements of bays and maintenance at these crossings. Proper water drainage system shall also be designed on these crossings.
- 11) Trench entrances into the buildings shall be designed to seal off entry of any water or vermins and pests into the building through these entrances.
- 12) The trench covers shall be upper covers type for trench-road-crossings where embedded covers shall be used.
- 13) Small openings shall be provided in the walls of cable trenches as required for entry of cable carrying pipes during construction stage which shall be sealed later with appropriate sealing compound as approved by the engineer. The appropriate measures shall be adopted to protect these pipes against corrosion and damages. All joints of these pipes shall be properly sealed to prevent/ingress of subsurface water.

5.16.2 **Inspection**

The Engineer shall inspect the cable trenches as for the compliance of the specifications and drawings approved by the Engineer.

5.17 **OIL CONTAINMENT FOR TRANSFORMER, BUNDS, AND FIREWALLS**

- 5.17.1 The Contractor shall provide all Transformer Foundations having provision to contain spillage/leakage oil and its drainage through steel pipe to the Oil and Water

Separation Tank for disposal. Steel Grating and a layer of Gravel should also be provided under the Transformer for fire protection purpose.

- 5.17.2 Firewalls shall be provided in-between Transformers to save the Transformers from spreading fire.

5.18 OUTDOOR STEEL STRUCTURES AND FOUNDATION BOLTS

The Contractor shall provide all Outdoor Steel Structures and Bolts as per following WAPDA/NTDC Specifications attached;

Steel Supporting Structures -	P-182; 91
Fabrication of Steel Structures-	P-139; 80
Steel Nuts & Bolts-	P-19; 83
11kV Structure-	P-34; 68

6. GRAVEL PAVEMENT WORK

The Contractor shall provide a blanket of river run gravel in the switchyard area along equipments foundation and as shown in the drawings.

A 200 mm layer of hard, durable, gravel shall be provided by the Contractor in the switchyard area around the equipments above the reference ground level. The size of gravel shall generally vary from 20 to 75 m. The material shall be placed to its full thickness of 200 mm in one layer and in such manner as to avoid displacing the under laying material. The material shall not be compacted.

The gravel shall conform to the following gradation limits, unless otherwise specified.

<u>U.S. Standards Sieve Designation</u>	<u>Percentage Passing by Weight</u>
(3 inch) 75 mm	100
(2 inch) 50 mm	85-100
(3/4 inch) 20 mm	0-100

Crushed rock shall not be allowed, the gravel which shows any sort of chemical reaction as per site conditions shall also be not allowed. Contractor shall get the approval of the source of supply from the Engineer prior to placement of gravel.

7. ROAD WORK

The Contractor shall prepare roads in the substation as shown on the drawings. Proper slopes shall be maintained.

7.1 Foundation for Road

- 1) **Sub-Grade Work:** Any excavation required for sub-grade construction shall be carried out in accordance with the respective provisions in the clause of earth work.

The materials required for banking and displacement shall be so placed that the finished thickness of one layer after compaction will become 20 cm or less.

- 2) **Sub-Base Course Work** The material to be used for sub-base course shall be as approved by the Engineer. The Contractor shall submit a report concerning the quality of materials and the method of sampling to the Engineer for approval.

- 3) **Testing:** The sub-grade surface shall be finished by proof rolling in order to obtain the contract pressure sufficient to permit smooth traffic of vehicles of 8 tons or over.

Should any defects be detected as a result of proof rolling, such defective sub-grade surface shall be finished again to the satisfaction of the Engineer.

4) **Inspection**

- a) **Sub-grade:** The finished sub-grade surface shall be within ± 5 cm of the design elevation.
- b) **Sub-base:** The finished sub-base course shall be within -10 mm and $+ 5$ mm of the design elevation.

7.2 **Asphalt Concrete Pavement**

1) **Material**

a) **Asphalt**

Bituminous material shall be used in the design of Asphalt Concrete Pavement Work.

The asphalt material shall conform to the requirements of AASHTO M-20, M-81, M-82 and M-40. The type shall be as directed by the Engineer.

b) **Fine Aggregate**

Fine aggregate passed a 2.5 mm sieve and shall be clean, strong, hard, durable, suitable graded and free from injurious amounts of dust, mud organic impurities, salts etc.

c) **Coarse Aggregate**

Coarse aggregate which retained on a 2.5 mm sieve, and shall be clear, strong, hard, durable, suitably graded and free from injurious amount of flakes, elongated pieces, organic impurities, salts etc.

Coarse aggregate for pavement shall comply with the following requirements.

i)	Specific gravity	more than 2.5
ii)	Absorption value	less than 3.0%
iii)	Percentage wear	less than 35.0%
iv)	Soundness test	less than 12.0%
v)	Content of shale and soft fragment of stone	less than 5.0%
vi)	Content of slender and thin fragment of stone	less than 25.0%

Note: Ratio of longer width and the other is more than three times, and on thin fragment ratio of thickness and width is more than three times.

d) **Filler**

Particles of stone means the material which was crushed a limestone or igneous rock and water content of filler shall be less than 1%.

Grading range of the filler shall comply with the following requirements.

<u>Sieve</u>	<u>Percentage Passing</u>
0.6 mm	100%
0.15 mm	90-100%
0.074 mm	70-100%

2) **Storage of Material**

a) **Asphalt**

Asphalt shall be stored in exclusive tank.

b) **Aggregate**

- i) Storage facility of aggregate shall be equipped with a suitable drainage system
- ii) Fine aggregate, coarse aggregate and other aggregate of different type and grading shall be separately stored with divides between each.
- iii) When receiving, storing and handling aggregate facilities shall be well maintained and handling shall be carefully performed so that no segregation of large particles from small ones may occur, no foreign materials may become mixed, or in case of coarse aggregate, no particles may be crushed.
- iv) During storage of fine aggregate, water contents should not change rapidly.

3) **Mix Proportions:** Mix proportions for the dense grade asphalt concrete shall be determined in such a manner that the test piece which conform stability flow value, percentage of void and degree of saturation by marshal testing of the asphalt volume at intervals of five percentage and submit such data in writing to the Engineer for approval.

Material for dense grade asphalt concrete, shall in principle, comply with the following requirements .

- a) Thickness of surface shall be 5 cm
- b) Maximum size of aggregate shall be 20 mm:

<u>Material Size</u>	<u>% age Passing</u>
25	100
20	90 - 100
13	75 - 90

- c) Weight percentage of those passing a sieve:

<u>Material Size</u>	<u>% age Passing</u>
5	45 - 65
2.5	35 - 50
0.6	18 - 29
0.3	10 - 21
0.15	6 - 16
0.075	4 - 8

- d) The volume of asphalt 5 – 7 %
- e) Penetration test 80 - 100

Percentage of passing weight:
(on permissible error)

5 mm	+ 5 %
2.5 mm	+ 4 %
0.56 mm, 0.3 mm, 0.15 mm	+ 3 %
0.075 mm	+ 1.5 %

Percentage of asphalt volume + 0.3 %

- 4) **Working:** Asphalt concrete shall be placed on the clean and completely dry base course. The temperature in the working area shall not be less than 20 deg. C for at least one hour prior to the commencement of operations.

Asphalt concrete layer shall be compacted upto 95% maximum dry density. Curing period shall be minimum 24 hours and during this period no traffic shall be allowed to move on the road.

- 5) **Testing:** The marshal test shall be observed in the dense grade asphalt concrete for surface.

On standard values of marshal testing.

Soundness more than 600

Value of flow 20 – 40%

Porosity 75 – 85%

Submerged marshal retained soundness more than 75%

- 6) **Inspection:** Inspection of surface shall comply with following requirements.

Thickness of surface 10 – 15 %

Profile index part of each work less than 5%

The mixture shall be spread uniformly, rolled and finished into the specified thickness. Then the finished surface shall be measured in parallel to the center.

7.3 Reinforced Concrete Pavement/Service Road

1) Material

- a) Cement, water, fine aggregate and coarse aggregate shall be in accordance with the clause “Material for Reinforced Concrete”.
- b) Water reducing agent shall conform to the standards for water reducing agent by relevant ASTM Designation or approved equivalent.
- c) Reinforcement steel shall be deformed bars conforming to ASTM 615-96a grade –40 or equivalent as approved by the Engineer.
- d) The Contractor shall submit the report of tests for quality of the materials as directed by the Engineer for his approval.
- e) If on receipt of tests from laboratory any change is observed in material, the matter shall be referred to the Engineer for his approval.

2) Concrete Mix: The following requirements shall be observed in concrete pavement.

- a) The bending strength at 28 days of concrete is 45 kg/cm² and this test shall, in principle, be performed in accordance with relevant ASTM Designation or approved equivalent.
- b) Maximum size of coarse aggregate shall be 40 mm.
- c) Consistency in concrete shall be less than 2.5 cm by slump test and initial setting time is 30 sec.
- d) Air content shall be between 3 to 6 percent.

- 3) **Form Work** Form material shall be straight and have width for designed thickness of pavement which is more than 3m in length, and it shall be fixed on the position in accordance with the drawings.
- 4) **Detachment of Form:** It shall not be detached within 20 hours after concrete placing. However, if increase in concrete strength delays under certain conditions, approval of removing forms shall be given by the Engineer.
- 5) **Joint:**
 - a) The joints shall be provided at appropriate locations as per relevant standards
 - b) Flouting of joint shall be done after form is cleaned up and dried sufficiently.
- 6) **Placing:** Placing for concrete pavement shall, in principle, be in accordance with clause....."Conveying and Placing of Reinforced Concrete".
- 7) **Installation of Reinforcement:** Mesh and reinforcement bar shall be set correctly at a position designated as shown I the drawings.
- 8) **Finishing:** Finishing of surface shall be done after leveling and compaction of concrete.
- 9) **Curing:** Curing of concrete pavement shall, in principle, be in accordance with clause....."Curing" of Reinforced Concrete Work.
- 10) **Testing:** The Contractor shall submit to the Engineer six copies of report on these tests.
 - a) During placing of concrete following tests shall be carried out as directed by the Engineer.
 - i) Slump test
 - ii) Temperature of concrete
 - iii) Compression/bending test

The test of concrete shall be executed not less than once for each one hundred (100) cubic-meters of concrete to be poured on the same day with a minimum of one set of sample per concrete pour.
 - b) **Test of Material**

Coarse aggregate shall provide limit of wear reduction maximum 30 by Loss Angeles test of ASTM Designation.
- 11) **Inspection:** Finishing of concrete pavement shall meet the following requirements.

Profile index	Less than 10
Different from maximum height	Less than 3 cm
Difference at two points picked up arbitrarily at intervals of 20 cm.	Less than 1 cm

Joints shall not have the difference of more than 3 mm between adjoining pavement slab by measurement rectangularly against inclination with a 3 m ruler and the depth of any section shall not exceed 5 mm.

8.

BRICK WORK

- 1) Prior to commencing the brick masonry work, the surface of brick shall thoroughly be cleaned and sufficiently moistened in order to ensure smooth adherence of mortar to

the brick surface. 1st class bricks shall be used which shall be approved by the Engineer.

- 2) The masonry joints shall in principle be 10 mm in thickness and mortar (1:3 c/s ratio or as shown in drawings) shall be filled sufficiently between each masonry joint in order to eliminate any void between brick and mortar.

9. **DRAINAGE WORK**

- 1) The drainage work shall be as described in the drawings and carried out in accordance with general provisions section "Earth Work" and Section "Reinforced Concrete Work".
- 2) The water-plumbing facility for drainage shall be of such a system as not to cause any trouble against the surrounding area and structures. The Contractor shall submit the design and execution schedule for the water plumbing work to the Engineer for approval.

10. **FENCE WORK**

- 1) The design of fence shall conform to the drawing included in Volume-III of Bidding Documents.
- 2) The galvanized iron shall be used in accordance with ASTM Designation or equivalent.
- 3) Construction of fence, welding shall comply with ASTM Designation or equivalent.

11. **BUILDINGS**

The scope of work under this Contract includes all civil works of control house building and GIS halls including all its services and electrical equipment's requirements. Complete design and construction of buildings, construction of trenches in relay room, entry of cable trenches coming from switchyard, providing openings in RCC slab, providing supports for new panels, providing foundation channels for diesel generator and any other work necessary for meeting the specified requirements shall be the Contractor's responsibility. Buildings shall be designed according to Architectural Specifications and Structural Specifications.

11.1 **ARCHITECTURAL SPECIFICATION**

11.1.1 **GENERAL**

All the design and construction shall follow the Architectural Specifications and the space requirements for Relay Room, Control Room, Battery Room, Workshop, Lab; Office, Kitchen, Store etc. for Control House Building and GIS Halls as given in layout drawings. All building external walls shall be cavity walls having 50mm cavity between 230mm masonry & 115mm fair face masonry work for the purpose of heat proofing.

11.1.2 **SCOPE OF WORK**

The scope of work includes all the Architectural design and construction of control house building and GIS halls including all the facilities and EOT crane in the GIS halls.

11.1.3 **MATERIALS**

Concrete of different strength as specified for different works, Bricks, Fair Face Bricks, Ceramic Tiles, Rubber Tiles, Galvanized angle iron, steel gratings, trench cover plates, steel brackets, weather shield paints and all fixtures etc. shall include in the building materials.

11.1.4 **CEMENT RENDERING**

Cement Rendering of 1:4 externally and 1:5 internally shall be used wherever required.

11.1.5 **ROOFING**

Roofing for the buildings shall consists of 38mm thick brick tiles grouted in 1:2 cement sand mortar over
100mm thick well compacted mud laid to slope including 25mm thick mud mortar for pasting the brick tiles over
38mm thick closed cell polystyrene board (Jambolon board or equivalent) over
0.2mm thick polythene sheet over
2 coats of hot bitumen BP3 or BP4 over
RCC Slab.

Terrace at First Floor

Porceline matt tiles over PCC over insulation over water proofing treatment shall be used as Terrace floor.

11.1.6 **REINFORCED CONCRETE WORK**

All exposed Concrete (RCC & PCC) surfaces shall be fair faced without plaster.

11.1.7 **ALUMINIUM WINDOWS**

Windows (sliding) to be of colored anodized aluminium using prime/delux sections (wall thickness 2mm). All accessories to be of imported highest quality. Clear glass 5mm thick best quality local make shall be used.

11.1.8 **MAIN ACCESS DOORS TO SWITCHGEAR ROOM**

Steel sliding doors M.S. angle frame with folded M.S. sheet heavy duty shall be used.

11.1.9 **METAL DOORS AND FRAMES**

Aluminium door frames (prime/deluxe sections wall thickness 2mm) with Aluminium or Tempered glass panels to be used.

11.1.10 **DOOR HARDWARES**

Imported door closers, locks and accessories (best quality) shall be used.

11.1.11 **TILE WORK**

Ceramic glazed tiles (min. size 250mm x 330mm (10"x13")) on walls and matt ceramic tiles on floors (best quality local make) shall be used.

11.1.12 **RUBBER FLOOR TILES**

Rubber tiles 500mm x 500mm x 5mm local best quality shall be laid with acid proofing imported adhesive (best quality).

11.1.13 **ACOUSTIC CEILINGS**

Imported water resistant (12mm thick) mineral fiber board Acoustic ceiling with standard suspension system.

11.1.14 **MISCELLANEOUS METAL**

Heavy gauge M.S. cable ladder with cable hangers, trench cover grills, roof access ladder etc.

11.1.15 BRONZE PLAQUE

Bronze Plaque bearing NTDC insignia including painting and fixing.

11.1.16 PAINTING

- Interior finish, 3 coats (ICI Dulux or equivalent) best quality local paint over properly prepared surface.
- Exterior finish all fair face & plastered surfaces to be provided with 2 coats of weather shield ICI (Dulux or equivalent) best quality local weather resistant.
- All exposed metal work to be provided with a coat of Red Oxide (ICI Dulux or equivalent) prior to two coats of enamel paint (ICI Dulux or equivalent best quality local make).
- Acid resistant paint in Battery Room & Exhaust Fans in battery room (ICI Dulux or equivalent best quality local make).

11.1.17 FACING BRICK WORK

- Facing Brick Work (if provided) 75mm x 50mm x 230mm (3" x 2" x 9") brick tiles with appropriate masonry tiles laid with horizontal grooves 6mm thick, and without vertical grooves.

11.1.18 BATH ROOM ACCESSARIES

- Bath Room Accessories Fittings chromium plated best quality local make.
- Bath Room Fixtures, large size best quality local make.

11.1.19 FLOORING

- General flooring, Terrazzo finish.
- Steps, 25mm thick local marble.
- Bath Room Walls, glazed ceramic tiles.
- Bath room Floor, matt ceramic tiles.

11.2 STRUCTURAL SPECIFICATION

All the buildings should be of RCC frame structure buildings having specified concrete and reinforcement strengths and other concrete work specifications.

12. PREPARATION OF SITE AREA AND DISMANTLING WORK

A number of partially constructed foundations are existing in the 500 kV switchyard area and area in which new 220 kV bays are to be constructed under this Project. The Contractor shall investigate if these partially constructed foundations can be used and submit detailed report in this regard. However, the Contract Price shall be deemed to include the cost of complete dismantling of existing of civil works and construction of new foundations. Use of existing civil works or part thereof by the Contractor will be subject to approval of the Engineer and in such case the Contract Price will be adjusted appropriately.

The Contractor shall also dismantle the concrete structures/foundations inside the outside the foundation area which are not required, cut the projecting reinforcing bars and fill up the excavated pits to level the area.

Sample

MONTHLY PROGRESS REPORT

May 2024



1. Project Key Data

FORMAL PROJECT NAME	
PROJECT SUMMARY	
CONTRACT SCOPE	
CONTRACT TYPE	
EXICUTING AGENCY	
MAIN CONTRACTOR / SUPPLIER	
PROJECT MANAGEMENT COMPANY	
CONTRACT AMOUNT	
COMPLETION DATE	
CONTRACT SIGNING DATE	
COMMENCEMENT DATE	

2. Executive Summary

4. Contract Start-up Activities and Submittals

4.2 Residual Tender Stage Actions

Clause (*)	Description	Responsible Party	Planned Date	Actual Date	Comments
ITB 42.1	Issuance of Letter of Acceptance (LoA)				
ITB 19.6	Return Bid Security to Contractor				
ITB 43.2	Contract Agreement Signature				

4.3 Contract Requirements

Clause (*)	Description	Responsible Party	Planned Date	Actual Date	Comments
GCC 4.2	Provision of Performance Security				

4.4 Contract Activities Required Within 30 Days of Commencement Date

Clause (*)	Description	Responsible Party	Planned Date	Actual Date	Comments

5. Risk Management

Ref	Description	Impact Rating	Likelihood Rating	Risk Level	Mitigation Measure	Responsible Party	Comments

6. Project Monitoring

6.1 Project status as of September 27, 2023:

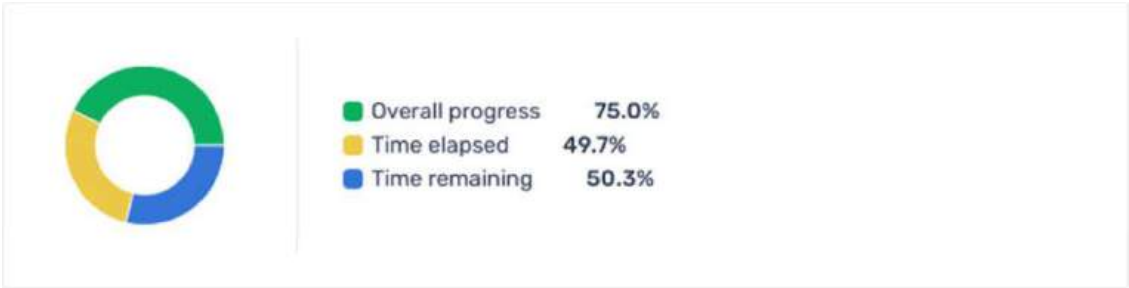
Project Status as of Date	
Commencement Date	
Completion Date	
Time Elapsed	
Planned Progress	
Actual Progress	
Expected Completion Date	
Variance to Completion	

6.2 Level 2 Program

Ref	Description	Original Program Milestone	Updated Completion Date	Variance
1				
2				
3				

6.3 Program Progress

6.4 Program Overview



Critical Path Forward

Target Description	Planned Date	Completion Date	Completed

7. Variations and Claims

7.1 Summary

Total Estimated Variations Cost	
Total Approved Variations Cost	
Total Variations Pending Approval Cost	
Total Claims Submitted Amount	
Total Claims Certified Amount	
Total Claims Pending Certification Amount	
Total Estimated Contract Cost Changes	
Total Approved Contract Cost Changes	
Total Pending Contract Cost Changes	
Prior Contract Price	
Estimated Revised Contract Cost	
Approved Revised Contract Cost	

7.2 Variation Register

Ref	Variation Description	Date Instruction Issued	Estimated Variation Cost	Approved Variance Cost	Current Status
1					
2					

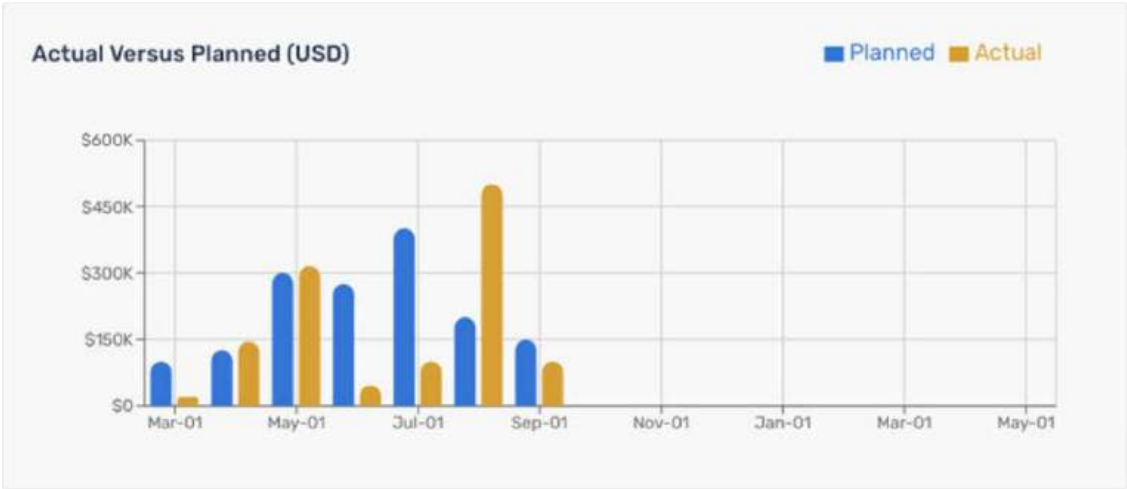
7.3 Claim Register

Ref	Description	Submission of Notice of Claim	Submission of Fully Detailed Claim	Claimed Amount	Amount Certified	Current Status
1						

8.1 Actual Project Payments

Description	Date	Cost
Total		1,225,000

8.2 Actual Versus Planned Project Payments



9. Disputes

Dispute Description	Dispute Status

10. Goods / Equipment

10.1 Goods / Equipment Packages Status

Description	FAT Status	Custom Clearance Status	Planned Delivery Date	Actual Delivery Date	Cost	Invoiced

11. Engineering / Design Documents

11.1 Engineering

Description	Percentage Complete	Name of Approver	Approval Stage	Design Document Cost	Invoiced

12. Environment, Social Health & Safety, and Security Related Obligations

12.6 Complaints (Grievances)

Name of Complainant	Complaint Description	Date Filed	Effected Person(s)	Responsible Party	Complaint Status

13. Site Photographs

14. Completion of Work and Contract Closure Activities

Completion Activity Description	Planned Date	Achieved Date	Activity Completed

15. Contract Details

15.1 Contract Details & Key Dates

Contract Title	
Contract Number	
Contract Type	
Contract Scope	
Location	
Original Contract Amount	
Date of Issuance of Letter of Acceptance	
Contract Signing Date	
Contract Commencement Date	
Contract Effective Date	
Contract Project Start Date	
Contract Time for Completion (days)	
Original Contract Completion Date	
Financer	
Executing Agency	
Contractor / Supplier	
Design Consultant (if applicable)	
Project Manager	
Defects Liability Period / warranty	
ADB Loan Effectiveness Date	
ADB Loan Closing Date	

16. Communications and Reporting

16.1 Contact Details

Ref	Entity	Name	Title	Position	Phone	Email
Executing Agency		ORO				
Implementing Agency						
Contractor / Supplier						
Engineer / PMC						
Financer						
Dispute Board Members						
Other						

