



NATIONAL COMPETITIVE BIDDING

Bidding Documents

for

**PROVIDING UNDERGROUND SEWERAGE SCHEME TO THE LEFTOUT AREAS
AND ADDED AREAS OF KARUR CORPORATION WITH OPERATION AND
MAINTENANCE FOR THE PERIOD OF 5 YEARS - PACKAGE I**

Volume I

Invitation for Bids

India

Project Title: **Providing Underground Sewerage Scheme To The Leftout Areas And Added Areas Of Karur Corporation With Operation And Maintenance For The Period Of 5 Years - Package I**

09.07.2026

NCB No. 6052/2025/E5

The **Karur City Municipal Corporation** intends to finance from KfW towards the cost of the **Providing Underground Sewerage Scheme To The Leftout Areas And Added Areas Of Karur Corporation With Operation And Maintenance For The Period Of 5 Years - Package I** and intends to apply part of the proceeds toward payments under this contract. This contract will be jointly financed by Government of Tamil Nadu (GoTN)/ Government of India (GoI).

The **Karur City Municipal Corporation** now invites Bids from eligible Bidders for **Providing Underground Sewerage Scheme To The Leftout Areas And Added Areas Of Karur Corporation With Operation And Maintenance For The Period Of 5 Years - Package I**.

Bidding will be conducted by means of the National Competitive Bidding procedure with qualification as specified in the KfW Guidelines for Guidelines for Procurement of Goods, Works and associated Services in Financial Cooperation with Partner Countries ("KfW Guidelines") along with Tamil Nadu Transparency in Tenders (TNTIT) Act, 1998 and Tamil Nadu Transparency in Tenders Rules, 2000 and amendments to TNTIT Act/ rules issued by GoTN up to 2025

Interested eligible Bidders may obtain further information from <https://tntenders.gov.in/nicgep/app>

A complete set of bidding documents is available to interested Bidders at <https://tntenders.gov.in/nicgep/app>.

Bids must be submitted as per the instructions given in this link <https://etenders.gov.in/eprocure/app?page=HelpForContractors&service=page> and also to refer ITB 21 of the bidding document for submission of bids. Bids shall be submitted on or before 15.00 hrs IST on 24.08.2026. Bids will be opened through e-procurement portal.

All Bids must be accompanied by a Bid Security.

German Financial Cooperation with India

Bidding Documents

For

**Providing Underground Sewerage Scheme To The Leftout Areas And Added Areas
Of Karur Corporation With Operation And Maintenance For The Period Of 5 Years -
Package I**

Employer

The Commissioner,

Karur City Municipal Corporation,

Azad Road, Karur, Tamil Nadu 639 001

E-mail: commr.karur@tn.gov.in

09.07.2026

NCB No. 6052/2025/E5

Table of Contents

PART 1 – Bidding Procedures	4
Section I. Instructions to Bidders.....	7
Section II. Bid Data Sheet.....	27
Section III. Evaluation Criteria.....	37
Section IV. Bidding Forms	46
Section V. Eligibility Criteria	87
Section VI. KfW Policy – Sanctionable Practice – Social and Environmental Responsibility	89
PART 2 – Works Requirements	91
Section VII. Works Requirements	92
PART 3 – Conditions of Contract (CC) and Contract Forms	192
Section VIII. General Conditions (GC)	197
Section IX. Particular Conditions (PC)	293
Section X. Contract Forms.....	306
Section XI. Scope of Operation and Maintenance	344
Section XII. Emergency Respose Plan.....	367
Section XIII. Performance Targets.....	372
Section XIV. Contractor Payment.....	374

PART 1 – BIDDING PROCEDURES

Section I. Instructions to Bidders

Table of Contents

A. General	7
1. <i>Scope of Bid</i>	7
2. <i>Source of Funds</i>	7
3. <i>Corrupt and Fraudulent Practices</i>	7
4. <i>Eligible Bidders</i>	8
5. <i>Eligible Materials, Equipment, and Services</i>	9
B. Contents of Bidding Documents	9
6. <i>Sections of Bidding Documents</i>	9
7. <i>Clarification of Bidding Documents, Site Visit, Pre-Bid Meeting</i>	10
8. <i>Amendment of Bidding Documents</i>	11
C. PREPARATION OF BIDS	12
9. <i>Cost of Bidding</i>	12
10. <i>Language of Document and Bid</i>	12
11. <i>Documents Comprising the The Bid</i>	12
12. <i>Letter of Qualification, Declaration of Undertaking, Qualification Forms, Letter of Bid, Bidding Forms and Schedules</i>	12
13. <i>Alternative Bids</i>	13
14. <i>Bid Prices and Discounts</i>	13
15. <i>Currencies of Bid and Payment</i>	14
16. <i>Documents Establishing the Qualifications of the Bidder</i>	15
17. <i>Documents Comprising the Technical Proposal</i>	15
18. <i>Period of Validity of Bids</i>	15
19. <i>Bid Security</i>	15
20. <i>Format and Signing of Bid</i>	16
D. Submission and Opening of Qualification Documents and Bids	17
21. <i>Sealing and Marking of Qualification Documents and Bids</i>	17
22. <i>Deadline for Submission of Qualification Documents and Bids</i>	18
23. <i>Late Submissions</i>	19
24. <i>Withdrawal, Substitution, and Modification of Bids</i>	19
25. <i>Opening of Qualification Documents and Bids</i>	19
E. Evaluation of Qualification Documents	20
26. <i>Qualification Responsiveness, Evaluation of Qualification</i>	20
F. Evaluation and Comparison of Bids	20
27. <i>Confidentiality</i>	20
28. <i>Clarification of Bids</i>	20
29. <i>Deviations, Reservations, and Omissions</i>	21
30. <i>Determination of Responsiveness</i>	21
31. <i>Nonmaterial Nonconformities</i>	22
32. <i>Correction of Arithmetical Errors</i>	22
33. <i>Conversion to Single Currency</i>	23
34. <i>Margin of Preference</i>	23
35. <i>Subcontractors</i>	23

Section I. Instruction to Bidders

36. <i>Evaluation of Bids</i>	23
37. <i>Comparison of Bids</i>	24
38. <i>Employer's Right to Reject All Bids</i>	24
G. Award of Contract	24
39. <i>Award Criteria</i>	24
40. <i>Notification of Award</i>	24
41. <i>Signing of Contract</i>	25
42. <i>Performance Security</i>	25

Section I. Instruction to Bidders

Section I. Instructions to Bidders

A. GENERAL

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| 1. Scope of Bid | <p>1.1 In connection with the Invitation for Bids specified in the Bid Data Sheet (BDS), the Employer, as specified in the BDS, issues these Bidding Documents ("Bidding Documents") to Bidders ("Bidders") interested in submitting bids ("Bids") for the Works described in Section VII, Works Requirements. In case the Works are to be bid as individual contracts (i.e. the slice and package procedure), these are listed in the BDS. The National Competitive Bidding ("NCB") number corresponding to this bidding process is also provided in the BDS.</p> <p>1.2 Throughout these Bidding Documents:</p> <ul style="list-style-type: none">(a) The term "in writing" means communicated in written form and delivered against receipt;(b) Except where the context requires otherwise, words indicating the singular also include the plural and words indicating the plural also include the singular; and(c) "Day" means calendar day. |
| 2. Source of Funds | <p>2.1 The Employer as indicated in the BDS has applied or received financing (hereinafter called "funds") from KfW Development Bank (hereinafter called "KfW") towards the cost of the project named in the BDS. The Employer intends to apply a portion of the funds to eligible payments under the contract(s) resulting from this bidding process.</p> |
| 3. Corrupt and Fraudulent Practices | <p>3.1 KfW requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Section VI.</p> <p>3.2 In further pursuance of this policy, Bidders shall permit and shall cause its agents to provide information and permit KfW or an agent appointed by KfW to inspect on site all accounts, records and other documents relating to bid submission and contract performance (in the case of award), and to have them audited by auditors or agents appointed by KfW.</p> |

Section I. Instruction to Bidders

4. Eligible Bidders

- 4.1 A Bidder may be a firm that is a private entity, a government-owned entity — subject to ITB 4.3 — or a combination of such entities in the form of a joint venture (“JV”) under an existing JV Agreement or with the intent to enter into such an agreement supported by a Letter of Intent to execute a JV Agreement, in accordance with ITB 11.2. In the case of a JV, all members shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms. The Bidder shall nominate an authorized representative who shall have the authority to conduct all business for and on behalf of the Bidder and any and all its members, if the Bidder is a JV, during bidding and contract execution (in the event the Bidder is awarded the Contract). Unless specified in the **BDS**, there is no limit on the number of members in a JV.
- 4.2 A Bidder shall not have a conflict of interest. Any Bidder found to have a conflict of interest shall be disqualified. A Bidder may be considered to have a conflict of interest for the purpose of this procurement process, if the Bidder:
- (a) Directly or indirectly controls, is controlled by or is under common control with another Bidder; or
 - (b) Receives or has received any direct or indirect subsidy from another Bidder; or
 - (c) Has the same legal representative as another Bidder; or
 - (d) Has a relationship with another Bidder, directly or through common third parties, that puts it in a position to influence the bid of another Bidder, or influence the decisions of the Employer regarding this bidding process; or
 - (e) Participates in more than one bid in this bidding process, both as an individual firm and as a JV member. Participation by a Bidder in more than one Bid will result in the disqualification of all Bids in which such Bidder is involved. However, this does not limit the inclusion of the same subcontractor in more than one Bid; or
 - (f) Any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the works that are the subject of the Bid; or

Section I. Instruction to Bidders

- (g) Any of its affiliates has been hired (or is proposed to be hired) by the Employer as Engineer for the Contract implementation; or
- (h) Has a close business or family relationship with a professional staff of the Employer (or of the project implementing agency, or of a recipient of a part of the funds) who: (i) are directly or indirectly involved in the preparation of the bidding documents or specifications of the contract, and/or the bid evaluation process of such contract; or (ii) would be involved in the implementation or supervision of such contract unless the conflict stemming from such relationship has been resolved in a manner acceptable to the KfW throughout the procurement process and execution of the contract.

4.3 The KfW's eligibility criteria to bid are described in Section V, Eligibility Criteria.

4.4 A Bidder shall not be under suspension from bidding by the Employer as the result of the execution of a Bid-Securing Declaration.

4.5 This bidding is open only to eligible Bidders, who will be subject to qualification.

4.6 A Bidder shall provide such evidence of eligibility satisfactory to the Employer, as specified in ITB 17.1 or as the Employer shall reasonably request.

5. Eligible Materials, Equipment, and Services

5.1 The materials, equipment and services to be supplied under the Contract and financed by the KfW may have their origin in any country subject to the restrictions specified in Section V, Eligibility Criteria, and all expenditures under the Contract will not contravene such restrictions. At the Employer's request, Bidders may be required to provide evidence of the origin of materials, equipment and services.

B. CONTENTS OF BIDDING DOCUMENTS

6. Sections of Bidding Documents

6.1 The Bidding Documents consist of Parts 1, 2, and 3, which include all the Sections specified below, and which should be read in conjunction with any Addenda issued in accordance with ITB 8.

PART 1 Bidding Procedures

- (a) Section I. Instructions to Bidders (ITB);
- (b) Section II. Bid Data Sheet (BDS);
- (c) Section III. Evaluation Criteria;
- (d) Section IV. Bidding Forms;

Section I. Instruction to Bidders

(e) Section V. Eligibility Criteria;

(f) Section VI. KfW Policy - Corrupt and Fraudulent Practices - Social and Environmental Responsibility;

PART 2 Works Requirements

(g) Section VII. Works Requirements;

PART 3 Conditions of Contract and Contract Forms

(h) Section VIII. General Conditions (GC);

(i) Section IX. Particular Conditions (PC);

(j) Section X. Contract Forms.

6.2 The Invitation for Bids issued by the Employer is not part of the Bidding Documents.

6.3 Unless obtained directly from the Employer, the Employer is not responsible for the completeness of the Bidding Documents, responses to requests for clarification, minutes of the pre-Bid meeting (if any), or Addenda in accordance with ITB 8. In case of any contradiction, documents obtained directly from the Employer shall prevail.

6.4 The Bidder is expected to examine all instructions, forms, terms, and specifications in the Bidding Documents and to furnish with its Bid all information and documentation as is required by the Bidding Documents.

7. Clarification of Bidding Documents, Site Visit, Pre-Bid Meeting

7.1 A Bidder requiring any clarification of the Bidding Documents shall contact the Employer in writing at the Employer's address specified in the **BDS** or raise its enquiries during the pre-bid meeting if provided for in accordance with ITB 7.4. The Employer will respond in writing to any request for clarification, provided that such request is received no later than fourteen (14) days prior to the deadline for submission of Bids. The Employer shall forward copies of its response to all Bidders who have acquired the Bidding Documents in accordance with ITB 6.3, including a description of the inquiry but without identifying its source. If so indicated in the **BDS**, the Employer shall also promptly publish its response at the web page identified in the **BDS**. Should the Employer deem it necessary to amend the Bidding Documents as a result of a clarification, it shall do so following the procedure under ITB 8 and ITB 22.2.

7.2 The Bidder is advised to visit and examine the Site of Works and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the Bid and entering into a contract for

Section I. Instruction to Bidders

construction of the Works. The costs of visiting the Site shall be at the Bidder's own expense.

- 7.3 The Bidder and any of its personnel or agents will be granted permission by the Employer to enter upon its premises and lands for the purpose of such visit, but only upon the express condition that the Bidder, its personnel, and agents will release and indemnify the Employer and its 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 the inspection.
- 7.4 If so specified in the **BDS**, the Bidder's designated representative is invited to attend a pre-bid meeting. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.
- 7.5 Minutes of the pre-bid meeting, if applicable, including the text of the questions asked by Bidders, without identifying the source, and the responses given, together with any responses prepared after the meeting, will be transmitted promptly to all Bidders who have acquired the Bidding Documents in accordance with ITB 6.3. Any modification to the Bidding Documents that 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 ITB 8 and not through the minutes of the pre-bid meeting. Unless otherwise specified in the **BDS** nonattendance at the pre-bid meeting will not be a cause for disqualification of a Bidder.

8. Amendment of Bidding Documents

- 8.1 At any time prior to the deadline for submission of Bids, the Employer may amend the Bidding Documents by issuing an Addendum.
- 8.2 Any Addendum issued shall be part of the Bidding Documents and shall be communicated in writing to all who have obtained the Bidding Documents from the Employer in accordance with ITB 6.3. The Employer shall also promptly publish the Addendum on the Employer's web page in accordance with ITB 7.1.
- 8.3 To give Bidders reasonable time in which to take an Addendum into account in preparing their Bids, the Employer may, at its discretion, extend the deadline for the submission of Bids in accordance with ITB 22.2

C. PREPARATION OF BIDS

9. Cost of Bidding

9.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the Employer will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

10. Language of Document and Bid

10.1 The Bid, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Employer, shall be written in the language specified in the **BDS**. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant passages in the language specified in the **BDS**, in which case, for purposes of interpretation of the Bid, such translation shall govern.

11. Documents Comprising the Bid

11.1 The Bid shall comprise the following:

- (i) Letter of Bid and the Bidding Forms in accordance with ITB 12;
- (ii) Completed schedules as required, including Price Schedules in accordance with ITB 12 and ITB 14 as indicated in the BDS
- (iii) Bid security in accordance with ITB 19.1
- (iv) Alternative bids, if permissible in accordance with ITB 13;
- (v) Technical Proposal in accordance with ITB 16;
- (vi) Any other documents required in the BDS.

11.2 In addition to the requirements under ITB 11.1(a), Bids submitted by a JV shall include a copy of the Joint Venture Agreement entered into by all members. Alternatively, a letter of intent to execute a Joint Venture Agreement in the event of a successful Bid shall be signed by all members and submitted with the Bid, together with a copy of the proposed Agreement.

11.3 The Bidder shall furnish information on commissions and gratuities, if any, paid or to be paid to agents or any other party relating to this Bid.

12. Declaration of Undertaking, Letter of Bid, Bidding Forms and Schedules

12.1 The Declaration of Undertaking and the Qualification Forms shall be prepared using the relevant forms furnished in Section IV, Bidding Forms. The Letter of Qualification and the Declaration of Undertaking must be

Section I. Instruction to Bidders

completed without any alterations to the text, and no substitutes shall be accepted except as provided under ITB 20.4. All blank spaces shall be filled in with the information requested.

- 12.2 The Letter of Bid, the Bidding Forms and Schedules, including the Bill of Quantities for unit price contracts or the Schedule of Prices in case of lump sum contracts, shall be prepared using the relevant forms furnished in Section IV, Bidding Forms. The Letter of Bid must be completed without any alterations to the text, and no substitutes shall be accepted except as provided under ITB 20.4. All blank spaces shall be filled in with the information requested.

13. Alternative Bids

- 13.1 Unless otherwise specified in the **BDS**, alternative Bids shall not be considered.
- 13.2 When alternative times for completion are explicitly invited, a statement to that effect will be included in the **BDS**, and the method of evaluation shall be included in Section III, Evaluation Criteria.
- 13.3 Except as provided under ITB 13.4 below, Bidders wishing to offer technical alternatives to the requirements of the Bidding Documents must first price the Employer's design as described in the Bidding Documents and shall further provide all information necessary for a complete evaluation of the alternative by the Employer, including drawings, design calculations, technical specifications, breakdown of prices, and proposed construction methodology and other relevant details. Only the technical alternatives, if any, of the lowest evaluated Bidder conforming to the Employer's design of the Bidding Documents shall be considered by the Employer.
- 13.4 When specified in the **BDS**, Bidders are permitted to submit alternative technical solutions for specified parts of the Works, and such parts will be identified in Section VII, Works Requirements. The methods for their evaluation shall be described in Section III, Evaluation Criteria.

14. Bid Prices and Discounts

- 14.1 The prices and discounts quoted by the Bidder in the Letter of Bid and in the Schedules shall conform to the requirements specified below.
- 14.2 The Bidder shall submit a Bid for the whole of the Works described in ITB 1.1, by filling in price(s) for all items of the Works, as identified in Section IV, Bidding Forms. The Bidder 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 the Bidder shall be deemed covered by the rates for other items in the Bill of Quantities and will not be paid for separately by the

Section I. Instruction to Bidders

Employer. An item not listed in the priced Bill of Quantities shall be assumed to be not included in the Bid, and provided that the Bid is determined substantially responsive notwithstanding this omission, the highest price of the item quoted by substantially responsive Bidders will be added to the Bid price and the equivalent total cost of the Bid so determined will be used for price comparison.

- 14.3 The price to be quoted in the Letter of Bid shall be the total price of the Bid, excluding any discounts offered.
- 14.4 The Bidder shall quote any discounts and the methodology for their application in the Letter of Bid.
- 14.5 Unless otherwise specified in the **BDS** and the Contract, the rate(s) and price(s) quoted by the Bidder are not subject to adjustment during the performance of the Contract in accordance with the provisions of the Conditions of Contract. In such a case, the Bidder shall furnish the indices and weightings for the price adjustment formulae in the Schedule of Adjustment Data and the Employer may require the Bidder to justify its proposed indices and weightings.
- 14.6 If so specified in ITB 1.1, Bids are being invited for individual lots (contracts) or for any combination of lots (packages). Bidders wishing to offer discounts for the award of more than one Contract shall specify in their Bid the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Discounts shall be submitted in accordance with ITB 14.4, provided the Bids for all lots (contracts) are opened at the same time.
- 14.7 Unless otherwise specified in the **BDS**, the Bid price shall estimate, as separate amounts, (a) import duties and (b) taxes, fees, levies and other charges, which shall apply, in terms of the Applicable Law, to the Contractor and its sub-Contractors, including their personnel, other than nationals or permanent residents in the Employer's country as of the date 28 days prior to the deadline for submission of Bids. Unless otherwise stated in the **BDS**, the Contractor and its sub-Contractors are responsible for meeting all tax liabilities arising out of the Contract.

15. Currencies of Bid and Payment

- 15.1 The currency(ies) of the Bid and the currency(ies) of payments shall be as specified in the **BDS**.
- 15.2 Bidders may be required by the Employer to justify, to the Employer's satisfaction, their local and foreign currency requirements, and to substantiate that the amounts included in the prices shown in the Schedule of Adjustment Data in the Appendix to Bid are reasonable,

Section I. Instruction to Bidders

in which case a detailed breakdown of the foreign currency requirements shall be provided by Bidders.

16. Documents Establishing the Qualifications of the Bidder

16.1 In accordance with Section III, Evaluation Criteria, qualification applies as specified in ITB 4.5 and the Bidder shall provide the information requested in the corresponding information sheets included in Section IV, Bidding Forms.

17. Documents Comprising the Technical Proposal

17.1 The Bidder shall furnish a Technical Proposal including a statement of work methods, equipment, personnel, Schedules and any other information as stipulated in Section IV, Bidding Forms, in sufficient detail to demonstrate the adequacy of the Bidder's proposal to meet the Work requirements and the completion time.

18. Period of Validity of Bids

18.1 Bids shall remain valid for the period specified in the **BDS** after the Bid submission deadline date prescribed by the Employer in accordance with ITB 22.1. A Bid valid for a shorter period shall be rejected by the Employer as non-responsive.

18.2 In exceptional circumstances, prior to the expiration of the Bid validity period, the Employer may request Bidders to extend the period of validity of their Bids. The request and the responses shall be made in writing. If a Bid Security is requested in accordance with ITB 19, it shall also be extended for forty-two (42) days beyond the deadline of the extended validity period. A Bidder may refuse the request without forfeiting its Bid Security. A Bidder granting the request shall not be required or permitted to modify its Bid.

19. Bid Security

19.1 The Bidder shall furnish as part of its Bid a Bid Security as specified in the **BDS**, in original form and in the amount and currency specified in the **BDS**.

19.2 Reserved.

19.3 The Bid Security shall be a demand guarantee in the form of an unconditional guarantee issued by a bank or financial institution (such as an insurance, bonding or surety company) from a reputable source from an eligible country as specified in Section V, Eligibility Criteria. The Bid Security shall be submitted either using the Bid Security Form included in Section IV, Bidding Forms, or in another substantially similar format approved by the Employer prior to bid submission. The Bid Security shall be valid for forty-two (42) days beyond the original validity period of the Bid, or beyond any period of extension if requested under ITB 18.2.

Section I. Instruction to Bidders

- 19.4 Any Bid not accompanied by a substantially responsive Bid Security shall be rejected by the Employer as non-responsive.
- 19.5 The Bid Security of unsuccessful Bidders shall be returned as promptly as possible upon the successful Bidder's signing the Contract and furnishing the Performance Security pursuant to ITB 42.
- 19.6 The Bid Security of the successful Bidder shall be returned as promptly as possible once the successful Bidder has signed the Contract and furnished the required Performance Security.
- 19.7 The Bid Security may be forfeited:
- (a) If a Bidder withdraws its Bid during the period of bid validity specified by the Bidder on the Letter of Bid, or any extension thereto provided by the Bidder; or
 - (b) If the successful Bidder fails to:
 - (i) Sign the Contract in accordance with ITB 41; or
 - (ii) Furnish a Performance Security in accordance with ITB 42.
- 19.8 The Bid Security of a JV shall be in the name of the JV that submits the Bid. If the JV has not been legally constituted into a legally enforceable JV at the time of bidding, the Bid Security shall be in the names of all future members as named in the letter of intent referred to in ITB 4.1 and ITB 11.2.

20. Format and Signing of Bid

- 20.1 The Bidder shall prepare one original each of the Bid comprising the documents as described in ITB 11 and clearly mark them "Original." Alternative bids, if permitted in accordance with ITB 13, shall be clearly marked "Alternative." In addition, the Bidder shall submit copies of the Bid, in the number specified in the **BDS** and clearly mark them "Copy." In the event of any discrepancy between the original and the copies, the original shall prevail.
- 20.2 The original and all copies of the Bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation as specified in the **BDS** and shall be attached to the Qualification Document. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the Bid where entries or amendments have been made shall be signed or initialled by the person signing the Bid. If the person signing on behalf of the Bidder is the owner, member, or director of the Bidder, if the Bidder is a single

Section I. Instruction to Bidders

entity, or of the Bidder's Lead Member, if the Bidder is a JV, as demonstrated in the Bidder's Application, then no authorization shall be required.

- 20.3 In case the Bidder is a JV, Bid shall be signed by an authorized representative of the JV on behalf of the JV, and so as to be legally binding on all the members as evidenced by a power of attorney signed by their legally authorized representatives. If the JV has not been legally constituted into a legally enforceable JV at the time of bidding, then the Qualification Document and Bid shall be signed by every member of the proposed JV.
- 20.4 Any inter-lineation, erasures, or overwriting shall be valid only if they are signed or initialled by the person signing the Bid.

D. SUBMISSION AND OPENING OF BIDS

21. Submission of Bid

21.1 No manual Bids shall be made available or accepted for submission (except for originals of scanned copies as per sub-clause 5 below). In the case of download documents, Bidders must not make any changes to the content of the documents while uploading except for filling the required information – otherwise, the Bid shall be rejected as nonresponsive.

21.2 Bids shall be received only online on or before the deadline for the bid submission as notified in ITB.

21.3 Only one copy of the Bid can be uploaded, and bidder shall digitally signed all the statements, documents, certificates uploaded by him, owning soul and complete responsibility for the correctness/ authenticity as per provision of the IT Act 2000 as amended from time to time.

21.4 Bidder must upload scanned copies of originals (or self attested copies of original – as specified). Uploaded pdf document should not be password protected. Bidder should ensure the clarity/ legibility of the scanned documents uploaded by him.

21.5 If stipulated in the bid document, copies/ originals of such specified uploaded scanned documents must also be physically submitted sealed in double cover and acknowledgement be obtained before the deadline for the bid submission at the venue mentioned. Failure to do so is likely to result in the bid being rejected as non-responsive. If the office is closed on the deadline for physical submission of originals, it shall stand extended to the next working day at the same time and venue. The Procuring Entity reserves its right to call for verification originals of all such self-certified documents from the Bidders at any stage of evaluation, especially from the successful Bidder(s) before the issue of Letter of Award (LoA).

Section I. Instruction to Bidders

21.6 Regarding the protected price schedule (excel format, cover-2), Bidder shall write his name in the space provided in the specified location only. Bidder shall type rates in figures only in the rate column of respective service(s) without any blank cell are Zero value in the rate column, without any alteration/ deletion/ modification of the other portions of the excel sheet. If the space inadequate, bidder may upload additional documents under "Additional documents" in the Bid cover content.

21.7 The date and time of deadline for the Bid submission shall remain unaltered even if the specified date is declared holiday for the Tender Inviting Officer.

21.8 The date and time of the e-Procurement server clock, which is also displayed on the dashboard of the bidders, shall be taken as the reference time for deciding the closing time of bid submission. Bidders are advised to ensure they submit their bid within the deadline and time of bid submission, taking the server clock as a reference, failing which the portal shall not accept the Bids. No request on the account that the server clock was not showing the correct time and that a particular bidder could not submit their bid because of this shall be entertained. Failure or defects on the internet or heavy traffic at the server shall not be accepted as a reason for a complaint. The Procuring Entity shall not be responsible for any failure, malfunction or breakdown of the electronic system used during the e-Tender Process.

21.9 All Bids uploaded by bidder to the portal shall get automatically encrypted. The encrypted bid can only be decrypted/ opened by the authorized persons on or after the due date and time. The bidder should ensure the correctness of the bid before uploading and take a printout of the system generated submission summary to confirm successful bid upload.

21.10 The procuring entity may extend the deadline for the bid submission by issuing an amendment, in which case all rights and obligations of the procuring entity and the bidders subject to the Original deadline shall then be subject to the new deadline for the Bid submission.

21.11 Bid submitted through modalities other than those stipulated in the bid document shall be liable to be rejected as nonresponsive.

22. Deadline for Submission of Bids

22.1 Bids must be received by the Employer in accordance with the instructions, including the address and deadline, specified in the **BDS**.

Section I. Instruction to Bidders

- 22.2 The Employer may, at its discretion, extend the deadline for the submission of Bids by amending the Bidding Documents in accordance with ITB 8, in which case all rights and obligations of the Employer and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.
- 23. Late Submissions** 23.1 The bidder shall not be able to submit his bid after the expiry of the deadline for the bid submission (as per server time). Therefore, in eProcurement, a situation of Late Tender does not arise.
- 24. Withdrawal, Substitution, and Modification of Bids** 24.1 A Bidder may withdraw, substitute, or modify its Bid after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITB 20.2. The corresponding substitution or modification of the Bid must accompany the respective written notice. All notices must be:
- (a) Prepared and submitted in accordance with ITB 20 and ITB 21 (except that withdrawals notices do not require copies), and in addition, the respective envelopes shall be clearly marked "Withdrawal", "Substitution", "Modification"; and
 - (b) Received by the Employer prior to the deadline prescribed for submission of Bids, in accordance with ITB 22.
- 24.2 Bids requested to be withdrawn in accordance with ITB 24.1 shall be returned unopened to the Bidders.
- 24.3 No Bid may be withdrawn, substituted, or modified in the interval between the deadline for submission of Bids and the expiration of the period of bid validity specified by the Bidder on the Letter of Bid or any extension thereof.
- 25. Opening of Bids** 25.1 The date & time of the opening bid is as stipulated in ITB 25.1. Bids cannot be opened before the specified date & time by the employer. If the specified date of tender opening falls on is subsequently declared a holiday or closed day for the employer, the Bids shall be opened at the appointed time on the next working day.
- 25.2 The Employer shall prepare a record of the bid opening that shall include, as a minimum: the name of the bidder and whether there is a withdrawal, substitution, or modification; the Bid price, per lot (contract) if applicable, including any discounts and alternative Bids; the presence or absence of any bid security, signed letter of Bid, Power of Attorney, nominating the Bidder's authorized representative, and Declaration of Undertaking. The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not

Section I. Instruction to Bidders

invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders.

E. EVALUATION OF QUALIFICATION DOCUMENTS

26. Qualification Responsiveness, Evaluation of Qualification

Not applicable

F. EVALUATION AND COMPARISON OF BIDS

27. Confidentiality

27.1 Information relating to the examination, evaluation, and comparison of the Bids, and recommendation of contract award shall not be disclosed to Bidders or any other persons not officially concerned with the bidding process until information on Contract award is communicated to all Bidders in accordance with ITB 40.

27.2 Any attempt by a Bidder to influence the Employer in the examination, evaluation, and comparison of the Bids, and qualification of the Bidders, or Contract award decisions may result in the rejection of its Bid.

27.3 Notwithstanding ITB 27.2, from the time of Bid opening to the time of Contract award, if a Bidder wishes to contact the Employer on any matter related to the bidding process, it shall do so in writing.

28. Clarification of Bids

28.1 To assist in the examination, evaluation, and comparison of the Bids, and qualification of the Bidders, the Employer may, at its discretion, ask any Bidder for a clarification of its Bid, given a reasonable time for a response. Any clarification submitted by a Bidder that is not in response to a request by the Employer shall not be considered. The Employer's request for clarification and the response shall be in writing. No change, including any voluntary increase or decrease, in the prices or substance of the Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Bids, in accordance with ITB 32.

28.2 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.

28.3 The Employer reserves its right to, but without any obligation to do so, to seek any shortfall information/

Section I. Instruction to Bidders

documents only in case of historical documents which pre-existed at the time of the tender opening, and which have not undergone change since then and does not grant any undue advantage to any bidder. There is a provision on the portal for requesting shortfall documents from the bidders. The system allows taking the shortfall documents from any bidders only once after the Technical BID opening.

29. Deviations, Reservations, and Omissions

29.1 During the evaluation of Bids, the following definitions apply:

- (a) "Deviation" is a departure from the requirements specified in the Bidding Documents;
- (b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Documents; and
- (c) "Omission" is the failure to submit part or all of the information or documentation required in the Bidding Documents.

30. Determination of Responsiveness

30.1 The Employer's determination of a Bid's responsiveness is to be based on the contents of the Bid itself, as defined in ITB11.

30.2 A substantially responsive Bid is one that meets the requirements of the Bidding Documents without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that,

- (a) If accepted, would:
 - (i) Affect in any substantial way the scope, quality, or performance of the Works specified in the Contract; or
 - (ii) Limit in any substantial way, inconsistent with the Bidding Documents, the Employer's rights or the Bidder's obligations under the proposed Contract; or
- (b) If rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive Bids.

30.3 The Employer shall examine the technical aspects of the Bid submitted in accordance with ITB 17, in particular, to confirm that all requirements of Section VII, Works Requirements have been met without any material deviation, reservation or omission.

30.4 If a Bid is not substantially responsive to the requirements of the Bidding Documents, it shall be rejected by the Employer and may not subsequently be

Section I. Instruction to Bidders

made responsive by correction of the material deviation, reservation, or omission.

31. Nonmaterial Nonconformities

- 31.1 Provided that a Bid is substantially responsive, the Employer may waive any nonmaterial nonconformities in the Bid.
- 31.2 Provided that a Bid is substantially responsive, the Employer may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities in the Bid related to documentation requirements. Requesting information or documentation on such nonconformities shall not be related to any aspect of the price of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.
- 31.3 Provided that a Bid is substantially responsive, the Employer shall rectify quantifiable nonmaterial nonconformities related to the Bid Price. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component.

32. Correction of Arithmetical Errors

- 32.1 Provided that the Bid is substantially responsive, the Employer shall correct arithmetical errors on the following basis:
- (a) If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the Employer there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected;
 - (b) If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
 - (c) If there is a discrepancy between words and figures, the amount in words shall prevail, unless, only for admeasurement contracts, the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.
- 32.2 Bidders shall be requested to accept correction of arithmetical errors. Failure to accept the correction in accordance with ITB 32.1 shall result in the rejection of the Bid.

Section I. Instruction to Bidders

- 33. Conversion to Single Currency** 33.1 For evaluation and comparison purposes, the currency(ies) of the Bid shall be converted into a single currency as specified in the **BDS**.
- 34. Margin of Preference** 34.1 Unless otherwise specified in the **BDS**, a margin of preference for domestic Bidders shall not apply.
- 35. Subcontractors** 35.1 Unless otherwise stated in the **BDS**, the Employer does not intend to execute any specific elements of the Works by sub-contractors selected in advance by the Employer (nominated sub-contractors).
- 36. Evaluation of Bids** 36.1 The Employer shall use the criteria and methodologies listed in this Clause. No other evaluation criteria or methodologies shall be permitted.
- 36.2 To evaluate a Bid, the Employer shall consider the following:
- (a) The Bid price, excluding Provisional Sums unless priced competitively and the provision, if any, for contingencies in the Schedules, but including Daywork items, where priced competitively;
 - (b) Price adjustment for correction of arithmetic errors in accordance with ITB 32.1;
 - (c) Price adjustment due to missing items, missing rates, or discounts offered in accordance with ITB 14.2 and 14.4;
 - (d) Price adjustment due to quantifiable nonmaterial nonconformities in accordance with ITB 31.3;
 - (e) Converting the amount resulting from applying (a) to (d) above, if relevant, to a single currency in accordance with ITB 33;
 - (f) The additional evaluation factors as specified in Section III, Qualification and Evaluation Criteria.
 - (g) Negotiations shall be carried out inline with the TNTIT Act 1998 and rules 2000 and any amendments made time to time.
- 36.3 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.
- 36.4 If these Bidding Documents allow Bidders to quote separate prices for different lots (contracts), the methodology to determine the lowest evaluated price of the lot (contract) combinations, including any discounts

Section I. Instruction to Bidders

offered in the Letter of Bid, is specified in Section III, Qualification and Evaluation Criteria.

- 36.5 If the Bid, which results in the lowest Evaluated Bid Price, is significantly lower than the Employer's estimate, the Employer shall require the Bidder to produce detailed price analyses for any or all items of the Schedules, to demonstrate the internal consistency of those prices with the construction methods, resources and schedule proposed. Notwithstanding the provisions of ITB 14.2 which shall not be applicable, if one or several inconsistencies are evidenced, the Bid shall be declared non-compliant and rejected. If the Bid is seriously unbalanced or front loaded in the opinion of the Employer and after evaluation of the price analyses, taking into consideration the schedule of estimated Contract payments, the Employer may require that the amount of the performance security be increased at the expense of the Bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract.

37. Comparison of Bids

- 37.1 The Employer shall compare the evaluated prices of all substantially responsive Bids established in accordance with ITB 36.2 to determine the lowest evaluated Bid.

38. Employer's Right to Reject All Bids

- 38.1 The Employer reserves the right to annul the bidding process and reject all Bids at any time prior to contract award, without thereby incurring any liability to Bidders. In case of annulment, all Bids submitted and specifically, bid securities, shall be promptly returned to the Bidders.

G. AWARD OF CONTRACT

39. Award Criteria

- 39.1 Subject to ITB 38.1, the Employer shall award the Contract to the Bidder whose Bid has been determined to be the lowest evaluated Bid and is substantially responsive to the Bidding Documents, provided further that the Bidder is determined to be eligible and qualified to perform the Contract satisfactorily.

40. Notification of Award

- 40.1 Prior to the expiration of the period of Bid validity, the Employer shall notify the successful Bidder, in writing, that its Bid has been accepted. The notification letter (hereinafter and in the Conditions of Contract and Contract Forms called the "Letter of Acceptance") shall specify the sum that the Employer will pay the Contractor in consideration of the execution and completion of the Works and the requirement for the Contractor to remedy any defects therein (hereinafter and in the Conditions of Contract and Contract Forms called "the Contract

Section I. Instruction to Bidders

Price”). Subsequently, the Employer shall also notify all other Bidders of the results of the bidding.

40.2 Until a formal contract is prepared and executed, the Letter of Acceptance shall constitute a binding Contract.

40.3 The Employer shall promptly respond in writing to any unsuccessful Bidder who, after notification of award in accordance with ITB 40.1, requests in writing the grounds on which its Bid was not selected.

40.4 In exceptional circumstances, the Employer may need to communicate with the successful Bidder, established in terms of ITB 39.1, certain aspects of Contract performance prior to sending the Letter of Acceptance. Should such a need arise, this communication shall be limited to the following topics, as identified in the evaluation report,

- (a) coordination of mobilization timing;
- (b) coordination of actions or inputs involving the Employer and the Engineer;
- (c) technical alternatives offered by the successful Bidder.

Any such discussions and agreements as there shall occur between the Employer and the successful Bidder, (1) may not be interpreted as having the same legal effect as the Letter of Acceptance, (2) shall be summarized in Minutes, which shall be attached to the Letter of Acceptance.

41. Signing of Contract

41.1 Promptly upon notification, the Employer shall send the successful Bidder the Contract Agreement.

41.2 Within twenty-eight (28) days of receipt of the Contract Agreement, the successful Bidder shall sign, date, and return it to the Employer.

42. Performance Security

42.1 Within twenty-eight (28) days of the receipt of the Letter of Acceptance from the Employer, the successful Bidder shall furnish the performance security in accordance with the General Conditions of Contract, subject to ITB 36.5, using for that purpose the Performance Security Form included in Section X, Contract Forms, or another form acceptable to the Employer. If the performance security furnished by the successful Bidder is in the form of a bond, it shall be issued by a bonding or insurance company that has been determined by the successful Bidder to be acceptable to the Employer. A foreign institution providing a bond shall have a correspondent financial institution located in the Employer's Country.

Section I. Instruction to Bidders

- 42.2 Failure of the successful Bidder to submit the above-mentioned Performance Security or sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security. In that event the Employer may award the Contract to the next lowest evaluated Bidder whose offer is substantially responsive and is determined by the Employer to be qualified to perform the Contract satisfactorily.

Section II. Bid Data Sheet

A. Introduction	
ITB 1.1	The Employer is: Karur City Municipal Corporation
ITB 1.1	The name of the NCB is: Providing Underground Sewerage Scheme To The Leftout Areas And Added Areas Of Karur Corporation With Operation And Maintenance For The Period Of 5 Years - Package I The identification number of the NCB is: 6052/2025/E5 The number and identification of lots (contracts) comprising this NCB is: Package 1
ITB 2.1	The name of the Project is: : Providing Underground Sewerage Scheme To The Leftout Areas And Added Areas Of Karur Corporation With Operation And Maintenance For The Period Of 5 Years - Package I
ITB 4.1	Maximum number of members in the JV shall be: 3
B. Qualification and Bidding Documents	
ITB 7.1	For <u>clarification purposes</u> only, the Employer's address is: Azad Road, Karur, Tamil Nadu – 639 001 Attention: Commissioner, Karur City Municipal Corporation Municipal Corporation Address: Karur City Municipal Corporation, Azad Road, Karur, Tamil Nadu – 639 001 Fax: Not Applicable Electronic mail address: commr.karur@tn.gov.in
ITB 7.1	Web page: https://tntenders.gov.in
ITB 7.4	A Pre-Bid meeting shall take place at the following date, time and place: Date: 24.07.2026 Time: Place: Karur City Municipal Corporation Municipal Corporation Address: Karur City Municipal Corporation, Azad Road, Karur, Tamil Nadu – 639 001 A site visit shall not be organized by the Employer. Bidders are advised to visit the site on their own expenses.
ITB 8.2	Web page: https://tntenders.gov.in
C. Preparation Of Qualification Documents and Bids	

Section II. Bid Data Sheet

ITB 10.1	The language of the Qualification document and Bid is English. All correspondence exchange shall be in the English language. Language for translation of supporting documents and printed literature is English.
ITB 11.1 (a) (vi)	Not Applicable
ITB11.1 (b) (ii)	The following schedules shall be submitted with the Bid: Bill of Quantities
ITB 11.1 (b) (vi)	The Bidder shall submit with its Bid the following additional documents: i. Covering letter ii. Performance Certificate obtained from the clients as per Qualification Information iii. The Bid Security iv. Letter of Bid / Contractor's Bid with digitally signed using DSC token. v. Declaration by the Bidder that his Bid is without any technical and commercial deviations in the format of the letter enclosed with the Bid. vi. Certified Power of Attorney authorizing a representative or representatives of the firm to sign the Bid and all subsequent communication vii. Documentary evidence of unambiguous fulfilment of eligibility criteria for Bidding viii. Latest Income Tax Clearance Certificate and GST Certificate. ix. Bid document shall be with digitally signed using DSC token. x. Full technical description of the items and services proposed by the Bidder including makes. xi. Details of Construction Equipment proposed for the execution of the works and makes. xii. Details of manpower proposed for the Project Management and Site Management including qualification and experience of the personnel. xiii. Work methodology and plan. xiv. Bar Chart and PERT charts for the execution of the works xv. There shall be no reference to the price. xvi. List of concurrent commitments including a schedule of contracts under execution including values, percentage of works completed and the schedule date of completion of the work. xvii. The Technical Bid shall include an environmental, social, health and safety (ESHS) methodology meeting the requirements of the ESHS Specifications. The Bidder shall use the ESHS Methodology provided for this purpose in Section VII – Works Requirements – b) Specifications for Environmental, Social, Health and Safety Management (ESHS). A Bid not comprising an ESHS Methodology shall be rejected. - xviii. Any other technical details
ITB 13.1	Alternative Bids shall not be permitted
ITB 13.2 Alternative times for completion	Alternative times for completion shall not be permitted.

ITB 14.5	The prices quoted by the Bidder shall be: Adjustable The price adjustment shall be calculated based on the Provision of G.O Ms.No.227/ MA&WS (MA3) Department/ Dated: 23.11.2009 will be followed; The price adjustment shall be calculated based on the Departmental value of the work (For minus tender, the value of work done will be adopted), which is abbreviated as - —R in the formula. Price variation will be calculated once in a quarter (i) in respect of cement and steel for the works with contract period upto 12 months and (ii) in respect of all components except bitumen and Petroleum, Oil & Lubricants (POL), for the works with contract period of more than 12 months, as per the specified formula from the last date of submission of bid, upto the end of agreement period provided, if the agreement is signed within the specified time, failing which, the price variation will be applicable from the date of agreement only, based on the wholesale price indices of RBI. The quarter would be reckoned with reference to the quarter of the calendar year in which the last date on bid submission is fixed. In case of delayed agreement, the quarter in which the agreement is signed will be reckoned for the purpose of calculation of price adjustments. i). Adjustment for cement Price adjustment for increase or decrease in the cost of cement procured by the Contractor shall be paid in accordance with the following formula. $V_c = 0.85 \times P_c / 100 \times R (C_1 - C_0) / C_0$ Vc = Increase or decrease in the cost of work during the period under consideration due to changes in the rates for cement. Co = The All India Average whole sale price index for cement (grey cement/Ordinary Portland cement) for the quarter of the calendar year in which the last date of submission of bids / signing of the agreement (as the case may be) as published by RBI/ Office of the Economic Advisor, Ministry of Commerce and Industry, Government of India, New Delhi. C1= The All India Average whole sale price index for cement (grey cement/Ordinary Portland cement) for the quarter under consideration to which a particular Interim Payment Certificate is related as published by RBI/Office of the Economic Adviser, Ministry of Commerce and Industry, Government of India, New Delhi.

	Pc =Percentage of Cement component of the item, stipulated in the Table 49.2. ii) Adjustment for steel reinforcement/structural steel Price adjustment for increase or decrease in the cost of steel procured by the Contractor shall be paid in accordance with the following formula. $Vs = 0.85 \times Psr / 100 \times R (S1-S0) / S0$ Vs = Increase or decrease in the cost of work during the period under consideration due to changes in the rates for steel. So = The All India Average whole sale price index for MS bar and rounds / MS long product for steel reinforcement as applicable for the items for the quarter of the calendar year in which the last date of submission of bids / signing of the agreement (as the case may be) as published by RBI / Office of the Economic Advisor, Ministry of Commerce and Industry, Government of India, New Delhi. S1 = The All India Average whole sale price indices for MS bar and rounds / MS long product for steel reinforcement for the quarter under consideration to which a particular Interim Payment Certificate is related as published by RBI/Office of the Economic Adviser, Ministry of Commerce and Industry, Government of India, New Delhi. Psr = Percentage of component of steel reinforcement or structural steel in the item, stipulated in the Table 49.2. SS1= The All India Average whole sale price indices for steel sheets, plates and strips (HRC) for the quarter under consideration to which a particular Interim Payment Certificate is related as published by RBI/ Office of the Economic Adviser, Ministry of Commerce and Industry, Government of India, New Delhi. Psp = Percentage of components of MS pipes in the work in the item stipulated in the Table 49.2 iv) Adjustment for Cast Iron/ Ductile Iron pipes and specials Price adjustment for increase or decrease in the cost of Cast Iron / Ductile Iron pipes and specials procured by the Contractor shall be paid in accordance with the following formula. $Vip = 0.85 \times Pip / 100 \times R (IP1-IPo) / Ipo$
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	Vip = Increase or decrease in the cost of work during the period under consideration due to changes in the rates for Cast Iron / Ductile Iron pipes and specials. IPo = The All India Average whole sale price index for grade pig iron for the quarter of the calendar year in which the last date of submission of bids / signing of the agreement (as the case may be) as published by RBI / Office of the Economic Advisor, Ministry of Commerce and Industry, Government of India, New Delhi. IP1= The All India Average whole sale price indices for pig iron for the quarter under consideration to which a particular Interim Payment Certificate is related as published by RBI/Office of the Economic Adviser, Ministry of Commerce and Industry, Government of India, New Delhi. Pip = Percentage of components of Cast Iron/ Ductile Iron pipes in the work in the item stipulated in the table 49.2. v) a) Adjustment for PVC pipes and specials: Price adjustment for increase or decrease in the cost of PVC Pipes and specials shall be paid in accordance with the following formula. $VPv = 0.85 \times PPv / 100 \times R \times (PV1 - PVo) / PVo$ VPv = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates for PVC Pipes and specials. PVo = The All India Average whole sale price index for PVC / Poly vinyl Chloride for the quarter of the calendar year in which the last date of submission of bids / signing of the agreement (as the case may be) as published by RBI / Office of the Economic Advisor, Ministry of Commerce and Industry, government of India, New Delhi. PV1= The All India Average whole sale price indices for PVC / Poly vinyl Chloride for the quarter under consideration to which a particular Interim Payment Certificate is related as published by RBI/Office of the Economic Adviser, Ministry of Commerce and Industry, Government of India, New Delhi. PPv = Percentage of PVC Pipes and specials component of the work in the item stipulated in the table 49.2 v) b) Adjustment for HDPE Pipes and Specials
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	Price adjustment for increase or decrease in the cost of HDPE Pipes and specials shall be paid in accordance with the following formula. $VPP = 0.85 \times PPP / 100 \times R \times (HP1 - HPO) / HPO$ VPP = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates for HDPE Pipes and specials. HPO = The all India average wholesale price index for for HDPE / Poly Ethylene for the quarter of the calendar year in which the last date of submission of bids / signing of the agreement (as the case may be) as published by RBI / Office of the Economic Advisor, Ministry of Commerce and Industry, government of India, New Delhi. HP1= The All India Average whole sale price price index for HDPE / Density Poly Ethylene for the quarter under consideration to which a particular Interim Payment Certificate is related as published by RBI/Office of the Economic Adviser, Ministry of Commerce and Industry, Government of India, New Delhi. PPP = Percentage of component of HDPE Pipes and specials in the work in the item stipulated in the table 49.2 vi) Adjustment for Labour cost Price adjustment for increase or decrease in the cost of labour procured by the Contractor shall be paid in accordance with the following formula. $VL = 0.85 \times PL / 100 \times R (CPI1 - CPI0) / CPI0$ VL = Increase or decrease in the cost of work during the period under consideration due to changes in the cost of labour. CPI0 = The Average consumer price index (CPI) for the industrial workers for Tirunelveli Centre for the quarter of the calendar year in which the last date of submission of bids / signing of the agreement (as the case may be) as published by RBI / Labour Bureau, Ministry of Labour and Employment, Government of India. CPI1= The Average consumer price index for industrial workers for Tirunelveli centre for the quarter under consideration to which a particular interim payment certificate is related as published by RBI /
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	Labour Bureau, Ministry of Labour and Employment Government of India. PL = Percentage of components of labour in the work in the item stipulated in the table 49.2 vii) Adjustment for Electrical Machinery and equipment Price adjustment for increase or decrease in the cost of Electrical equipments and machinery procured by the contractor shall be paid in accordance with the following formula $VE = 0.85 \times PE/100 \times R \times (E1 - EO) / EO$ VE = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates for Electrical equipments and machinery Eo = The All India Average whole sale price index for Electrical Machinery and Equipment/ Manufacture of Electrical Equipment for the quarter of the calendar year in which the last date of submission of bids / signing of the agreement (as the case may be) as published by RBI / Office of the Economic Advisor, Ministry of Commerce and Industry, Government of India, New Delhi. E1= The All India Average whole sale price indices for Electrical Machinery and Equipment/ Manufacture of Electrical Equipment for the quarter under consideration to which a particular Interim Payment Certificate is related as published by RBI/Office of the Economic Adviser, Ministry of Commerce and Industry, Government of India, New Delhi. PE = Percentage of Electrical machinery and equipments of the work in the item stipulated in the table 49.2 . Note: For the application of this clause, index of Heavy Machinery and Parts has been chosen to represent the Plant and Machinery Spares group. viii) Adjustment of Local materials Price adjustment for increase or decrease in cost of local materials other than cement, steel, bitumen and POL procured by the contractor shall be paid in accordance with the following formula: $Vm = 0.85 \times Pm/100 \times R \times (Mi - Mo)/Mo$
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	Vm =Increase or decrease in the cost of work during the quarter under consideration due to changes in rates for local materials other than cement, steel, bitumen and POL. Mo = The All India Average wholesale price index for (all commodities) for the quarter of the calendar year in which the last date of submission of bids/ signing of the agreement (as the case may be) as published by RBI / Office of the Economic Advisor, Ministry of Commerce and Industry, Government of India, New Delhi. M1 = The All India Average wholesale price index for (all commodities) for the quarter under consideration to which a particular Interim Payment Certificate is related as published by RBI/ Office of the Economic Adviser, Ministry of Commerce and Industry, Government of India, New Delhi. Pm =Percentage of local material component (other than cement, steel, bitumen and POL) of the work in the item stipulated in the table 49.2 The following percentage of components of input to be utilized in the work in each quarter is as follows: <table><tr><th>S . N</th><th>Component of Work</th><th>6 month hs %</th><th>12 month s %</th><th>18 month s %</th><th>24 month s %</th><th>30 month hs %</th><th>36 month s %</th></tr><tr><td>1</td><td>Labour - Pl</td><td>56.0</td><td>50.0</td><td>44.0</td><td>42.0</td><td>39.0</td><td>45.0</td></tr><tr><td>2</td><td>Cement - Pc</td><td>6.0</td><td>4.0</td><td>3.0</td><td>4.0</td><td>2.0</td><td>3.0</td></tr><tr><td>3</td><td>Steel - Ps</td><td>7.0</td><td>4.0</td><td>3.0</td><td>3.0</td><td>2.0</td><td>1.0</td></tr><tr><td>4</td><td>Plant & Machinery Spares - PP</td><td>0.0</td><td>2.0</td><td>3.0</td><td>4.0</td><td>5.0</td><td>3.0</td></tr><tr><td>5</td><td>CI Pipes & Specials - PD</td><td>2.0</td><td>13.0</td><td>23.0</td><td>22.0</td><td>29.0</td><td>21.0</td></tr><tr><td>6</td><td>DWC pipes</td><td>7.0</td><td>5.0</td><td>3.0</td><td>3.0</td><td>3.0</td><td>4.0</td></tr><tr><td>7</td><td>Other materials - Pm</td><td>22.0</td><td>22.0</td><td>21.0</td><td>22.0</td><td>20.0</td><td>23.0</td></tr><tr><td></td><td>Total</td><td>100</td><td>100</td><td>100</td><td>100</td><td>100</td><td>100</td></tr></table>	S . N	Component of Work	6 month hs %	12 month s %	18 month s %	24 month s %	30 month hs %	36 month s %	1	Labour - Pl	56.0	50.0	44.0	42.0	39.0	45.0	2	Cement - Pc	6.0	4.0	3.0	4.0	2.0	3.0	3	Steel - Ps	7.0	4.0	3.0	3.0	2.0	1.0	4	Plant & Machinery Spares - PP	0.0	2.0	3.0	4.0	5.0	3.0	5	CI Pipes & Specials - PD	2.0	13.0	23.0	22.0	29.0	21.0	6	DWC pipes	7.0	5.0	3.0	3.0	3.0	4.0	7	Other materials - Pm	22.0	22.0	21.0	22.0	20.0	23.0		Total	100	100	100	100	100	100
S . N	Component of Work	6 month hs %	12 month s %	18 month s %	24 month s %	30 month hs %	36 month s %																																																																		
1	Labour - Pl	56.0	50.0	44.0	42.0	39.0	45.0																																																																		
2	Cement - Pc	6.0	4.0	3.0	4.0	2.0	3.0																																																																		
3	Steel - Ps	7.0	4.0	3.0	3.0	2.0	1.0																																																																		
4	Plant & Machinery Spares - PP	0.0	2.0	3.0	4.0	5.0	3.0																																																																		
5	CI Pipes & Specials - PD	2.0	13.0	23.0	22.0	29.0	21.0																																																																		
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7	Other materials - Pm	22.0	22.0	21.0	22.0	20.0	23.0																																																																		
	Total	100	100	100	100	100	100																																																																		
ITB 14.7	Not Applicable																																																																								
ITB 15.1	The currency(ies) of the Bid and the payment currency(ies) shall be in accordance with Option A as described below: Option A (Bidders to quote entirely in in local currency): (a) The unit rates and the prices shall be quoted by the Bidder in the Schedules, entirely in Indian Rupees (₹) further referred to as “the local currency”.																																																																								

Section II. Bid Data Sheet

ITB 17	The Technical Proposal shall include an environmental, social, health and safety (ESHS) Methodology meeting the requirements of the ESHS Specifications. The Bidder shall use the ESHS Methodology Form provided for this purpose in Section IV – Technical Proposal. A Bid not comprising an ESHS Methodology shall be rejected.
ITB 18.1	The bid validity period shall be 120 days.
ITB 19.1	The amount and currency of the Bid Security shall be: ₹. 113.84 Lakhs
ITB 20.1	Bidders to submit the bids as mentioned in ITB 21
ITB 20.2	The written confirmation of authorization to sign on behalf of the Bidder shall consist of: "A power of attorney established in the name of the signatory of the Bid. If the Bidder is a JV, the power of attorney shall be issued by the Lead Member of the JV."
D. Submission and Opening of Qualification Documents and Bids	
ITB 22.1	The Original Bid shall be submitted not later than Date: 24.08.2026 Time: 15.00 hrs IST Through online in the webpage mentioned in ITB 7.1
ITB 25.1	The Bid opening shall take place through online Date: 24.08.2026 Time: 15.30 hrs IST No minimum number of Bids is required in order to proceed to bid opening.
E. Evaluation of Qualification Documents	
ITB 26.1	Not applicable
ITB 26.2	Not applicable
F. Evaluation and Comparison of Bids	
ITB 30	Compliance of the ESHS Methodology (as specified in BDS 17) with the ESHS Specifications (Section VII - Works Requirements) shall be determined by using the method specified in Section III Clause 1.2. A Bid for which the ESHS Methodology is not substantially responsive (i.e. without material deviation, reservation or omission) shall be rejected.
ITB 33.1	The currency that shall be used for bid evaluation and comparison purposes to convert all Bid price(s) expressed in various currencies into a single currency is: INR The source of exchange rate shall be: Not Applicable The currency(ies) of the Bid shall be converted into a single currency in accordance with the procedure under Option A that follows: Option A: Bidders quote entirely in local currency:

Section II. Bid Data Sheet

	For comparison of Bids, the Bid Price, corrected pursuant to Clause 32, shall first be broken down into the respective amounts payable in various currencies by using the exchange rates specified by the Bidder in accordance with Sub-Clause 15.1. In the second step, the Employer will convert the amounts in various currencies in which the Bid Price is payable (excluding Provisional Sums but including Daywork where priced competitively) to the single currency identified above at the selling rates established for similar transactions by the authority specified and on the date stipulated above.
ITB 34.1	A margin of preference shall not apply If a margin of preference applies, the application methodology shall be defined in Section III, Qualification and Evaluation Criteria
ITB 35.1	At this time the Employer does not intend to execute certain specific parts of the Works by sub-contractors selected in advance (nominated subcontractors).

Section III. Evaluation Criteria

This Section contains all the criteria that the Employer shall use to determine the qualification of Bidders and to evaluate the Bids. In accordance with ITB 26 and ITB 36, no other factors, methods or criteria shall be used. The Bidder shall provide all the information requested in the forms included in Section IV, Qualification and Bidding Forms.

Wherever a Bidder is required to state a monetary amount, Bidders should indicate in INR only.

1. Evaluation of Eligibility and Qualification

The following table contains all criteria and requirements the Bidders shall meet to be considered as eligible and qualified for the execution of the works:

Section III. Evaluation Criteria

Criteria			Requirements				Documentation on Requirement s / Forms
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			
				All Parties Combined	Each Member	One Member	
1. Eligibility							
1.1	Nationality	Nationality in accordance with ITB 4.3	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Forms ELI-1.1, 1.2(a) and 1.2(b), with attachments
1.2	Conflict of Interest	No conflicts of interest in accordance with ITB 4.4	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Application Submission Form
1.3	KfW Eligibility	Not being ineligible for KfW financing, as described in ITB 4.3	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Declaration of Undertaking
1.4	Government-Owned Entity	Meet conditions of ITB 4.3	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Forms ELI-1.1, 1.2(a) and 1.2(b), with attachments
2. Historical Contract Non-Performance							
2.1	History of Non-Performing Contracts	Termination of a contract did not occur as a result of contractor’s default in the past five (5) years	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Form CON-2
2.2	Suspension Based on Execution of Bid Securing Declaration by the Employer	Not under suspension based on execution of a Bid Securing Declaration pursuant to ITB 4.5	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Application Submission Form
2.3	Pending Litigation	All pending litigation shall in total not represent more than one	Must meet requirement	N/A	Must meet requirement	N/A	Form CON-2

Section III. Evaluation Criteria

Criteria			Requirements				Documentation on Requirements / Forms
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			
				All Parties Combined	Each Member	One Member	
		hundred percent (100%) of the Bidder's net worth and shall be treated as resolved against the Bidder					
3. Financial Situation and Performance							
3.1	Financial Capabilities: Liquidity	(i) The Bidder shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet the construction cash flow requirements estimated as INR ₹. 918 lakhs for the subject contract(s) net of the Bidders other commitments	Must meet requirement	Must meet requirement	N/A	N/A	Form FIN–3.1 with attachments and FIN-3.3
3.2	Financial Capabilities: Other Sources of Finance	(ii) The Bidder shall also demonstrate, to the satisfaction of the Employer, that it has adequate sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments.	Must meet requirement	Must meet requirement	N/A	N/A	Forms FIN–3.1 and FIN-3.4
3.3	Financial Capabilities: Financial Position	(iii) The audited balance sheets for the last 5 years (1 st April 2021 to 31 st March 2026) shall be submitted and must demonstrate the current soundness of the	Must meet requirement	N/A	Must meet requirement	N/A	Form FIN–3.1 with attachments

Section III. Evaluation Criteria

Criteria			Requirements				Documentation on Requirement s / Forms
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			
				All Parties Combined	Each Member	One Member	
		Bidder's financial position based on the following criteria: a) Liquidity ratio ≥ 1.1 $\frac{Current\ Assets}{Current\ Liabilities} \geq 1.1$ b) Indebtedness ratio $\leq 80\%$ $\frac{Total\ Liabilities * 100}{Total\ Assets} \leq 80\%$					
3.4	Average Annual Construction Turnover	Minimum annual construction turnover of ₹. 5508 Lakhs, for the last 5 years (1 st April 2021 to 31 st March 2026), calculated as total certified annual payments received for contracts in progress and/or completed	Must meet requirement	Must meet requirement	Must meet 25% of the requirement	Must meet 50% of the requirement	Form FIN-3.2
3.5	Bid Capacity	Assessed available bid capacity ¹ should not be less than ₹ 113.84 Cr	Must meet requirement	Must meet requirement	Must meet 25% of the requirement	Must meet 50% of the requirement	Form FIN-3.5

¹ Bidders who meet the minimum qualification criteria will be qualified only if their available bid capacity is more than the value put to Tender. The available bid capacity will be assessed at the time of Technical evaluation of Bids itself with reference to value put to Tender. In case of the Bidders who do not satisfy the requirement of the Bid Capacity, their bids will be treated as non-responsive and their price bids will not be opened.

Similarly, The available bid capacity will be assessed during Financial evaluation of Bids with reference to the quoted value of the bidders. The available bid capacity of the lowest responsive bidder should be more than their quoted value. If not this will be treated as non-responsive and the next lowest responsive bidder will be considered for the price evaluation and so on.

$$\text{Assessed Available Bid capacity} = (A * N * 1.5 - B)$$

where

A = Maximum value of engineering works executed in any one year during the last five years (updated to **2026-27** price level at 5% per annum) taking into account the completed as well as works in progress.

N = Number of years prescribed for completion of the works for which bids are invited (example 12/12 years)

Section III. Evaluation Criteria

Criteria			Requirements				Documentation on Requirement s / Forms
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			
				All Parties Combined	Each Member	One Member	
4. Construction Experience							
4.1	General Construction Experience	Experience under construction contracts in the role of prime contractor, JV member, subcontractor, or management contractor for at least the last 5 years (1 st April 2021 to 31 st March 2026)	Must meet requirement	N/A	Must meet requirement	N/A	Form EXP–4.1
4.2 (a)	Specific Construction & Contract Management Experience	Similar ² contracts, satisfactorily and substantially ³ completed as a prime contractor, joint venture member ⁴ , management contractor between 1 st April 2021 and 31 st March 2026application submission deadline of minimum value ₹. 5508 Lakhs	Must meet requirement	Must meet requirements	N/A	N/A	Form EXP-4.2
4.2 (b)	Construction Experience in key activities	For the above or any other contracts completed and under implementation as prime contractor, joint venture member, management contractor or subcontractor ⁸ during the period	Must meet requirements	Must meet requirements	N/A	Must meet the following requirements	Form EXP–4.2 (b)

B = Value at 2026-27 price level (updated to 2026-27 price level at 5% per annum), of existing commitments and on-going works to be completed during the next 36 months.

The statement showing the value of existing commitments and on-going works as well as the stipulated period of completion remaining for each of the works listed should be furnished.

² The similarity shall be based on the physical size, complexity, methods/technology and/or other characteristics described in Section VII, Scope of Works. Summation of number of small value contracts (less than the value specified under requirement) to meet the overall requirement will not be accepted.

³ Substantial completion shall be based on 80% or more works completed under the contract.

⁴ For contracts under which the Applicant participated as a joint venture member or sub-contractor, only the Applicant's share, by value, shall be considered to meet this requirement.

Section III. Evaluation Criteria

Criteria			Requirements			Documentation on Requirements / Forms	
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			
				All Parties Combined	Each Member		One Member
		stipulated in 4.2(a) above, a minimum construction experience in the following key activities successfully completed⁵ i. Supplied, laid, jointed & tested and successfully completed DWC/ HDPE/CI gravity sewer pipes of size 150mm and above to a minimum length of 31660 m. ii. Supplied, laid, jointed & tested and successfully completed CI / DI Pumping Main pipes of size 150mm and above to a minimum length of 3915 m iii. Satisfactorily, completed at least one pumping station with well dia of 3 m and depth of 5 m. iv. Should have supplied, erected and commissioned at least					

⁵ Volume, number or rate of production of any key activity can be demonstrated in one or more contracts combined if executed during same time period. The rate of production shall be the annual production rate for the key construction activity (or activities)

Section III. Evaluation Criteria

Criteria			Requirements				Documentation on Requirement s / Forms
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			
				All Parties Combined	Each Member	One Member	
		one pump set capacity of 37 HP v. Should have provided House Service Connections (HSC) not less than 1820 numbers using U-PVC pipe with dia 110 mm and construction of Inspection Chambers.					
5. Environmental and Social and Health and Safety (ESHS) Experience and Capacity							
5.1	Environmental, Social, Health & Safety Requirements	The bidder should submit an ESHS Methodology with his bid in form of a Draft PA-ESMP as per ESHS Methodology in Section VII – W o r k s Requirements – Specifications for Environmental, Social, Health and Safety Management (ESHS) of the works under consideration of the project-specific generic ESMP that has been prepared by the ULB during the ESIA phase	Must meet requirement	Must meet requirement	N/A	Must meet requirement	Bidders to refer Section VII for submission of this requirement

Note: Financial Turnover and cost of completed works of previous years shall be given weightage of 5% per year to bring them to 2025-2026 price level and that will be considered for the evaluation.

2. Domestic Preference : Not applicable

3. Evaluation of Bids

In addition to the criteria listed in ITB 36.2 (a) – (e) the following criteria shall apply:

3.1 Assessment of adequacy of Technical Proposal with Requirements

The assessment of the Technical Proposal submitted by a Bidder shall comprise (a) evaluation of the Bidder's plan to mobilize key equipment and key personnel to carry out the works, (b) construction method, (c) construction schedule and (d) sufficiently detailed supply sources, in accordance with requirements specified in Section III, Works Requirements. A Bid not comprising Technical Proposal or a Bid for which the Technical Proposal is not substantially responsive (i.e. with material deviation, reservation or omission) shall be rejected.

3.2 Assessment of adequacy of the Environmental, Social, Health and Safety (ESHS) Methodology

The ESHS Methodology submitted by the Bidder shall be evaluated to determine whether it is substantially responsive (i.e. without material deviation, reservation or omission) to the requirements specified in Section VII, Works Requirements - ESHS Specifications. The Bidder shall use the ESHS Methodology Form provided for this purpose in Section IV, Bidding Forms - Technical Proposal. A Bid not comprising an ESHS Methodology or a Bid for which the ESHS Methodology is not substantially responsive (i.e. with material deviation, reservation or omission) shall be rejected.

3.3 Multiple Contracts: Not applicable

3.4 Alternative Completion Times: Not applicable

3.5 Technical alternatives: Not applicable

3.6 Personnel

The Bidder's personnel shall be evaluated to determine whether it is substantially responsive (i.e. without material deviation, reservation or omission) to the requirements specified in Section VII, Works Requirements – Personnel Requirements. The Bidder shall use the Forms PER-1 and PER-2 provided for this purpose in Section IV, Bidding Forms - Technical Proposal. A Bid not including proposed personnel or a Bid for which the proposed personnel is not substantially responsive (i.e. with material deviation, reservation or omission) shall be rejected.

3.7 Equipment

The Bidder's equipment shall be evaluated to determine whether it is substantially responsive (i.e. without material deviation, reservation or omission) to the requirements specified in Section VII, Works Requirements – Equipment Requirements. The Bidder shall use the Form EQU provided for this purpose in Section IV, Bidding Forms - Technical Proposal. A Bid not including proposed equipment or a Bid for which the proposed equipment is not substantially responsive (i.e. with material deviation, reservation or omission) shall be rejected.

Section IV. Bidding Forms

Table of Forms

QUALIFICATION FORMS

Declaration of Undertaking.....	Error! Bookmark not defined.
Form ELI-1.1 Bidder Information Form	53
Form ELI-1.2 (a) Bidder's JV Information Form.....	54
Form ELI-1.2 (b) Declaration of Association	55
Form CON-2 Historical Contract Non-Performance, Pending Litigation and Litigation History	56
Form FIN-3.1 Financial Situation and Performance	58
Form FIN-3.2 Average Annual Construction Turnover	60
Form FIN-3.3 Sources of Finance	61
Form FIN-3.4 Current Contract Commitments / Works in Progress.....	62
Form EXP-4.1 General Construction Experience	64
Form EXP-4.2 (a) Specific Construction and Contract Management Experience	65
Form EXP-4.2 (b) Construction Experience in Key Activities	67
Optional: Form EQP-4.3 Specific Construction Equipment.....	69
Form PR-5.7 List of Available ESHS and Construction Personnel	Error! Bookmark not defined.

BIDDING FORMS

Letter of Bid	70
Appendix to Bid.....	72
<i>Schedule of Adjustment Data</i>	<i>72</i>
<i>Summary of Payment Currencies</i>	<i>74</i>
Schedules	75
Environmental, Social, Health and Safety (ESHS) Cost Schedule	77
<i>Bill No. 1: General Items – ESHS Cost Schedule.....</i>	<i>77</i>
Technical Proposal	79
<i>Environmental, Social, Health and Safety (ESHS) Methodology.....</i>	<i>80</i>

Section IV. Bidding Forms

<i>Site Organization and Method Statement</i>	<i>81</i>
<i>Construction Schedule.....</i>	<i>82</i>
Personnel.....	83
<i>Form PER-1: Proposed Personnel.....</i>	<i>83</i>
<i>Form PER-2: Resume of Proposed Personnel.....</i>	<i>84</i>
<i>Form EQU: Equipment.....</i>	<i>85</i>
Bid Security	86

Declaration of Undertaking

Reference name of the Application/Offer/Contract: ("Contract")⁶

To: ("Project Executing Agency")

1. We recognise and accept that KfW only finances projects of the Project Executing Agency ("PEA")⁷ subject to its own conditions which are set out in the Funding Agreement it has entered into with the PEA. As a matter of consequence, no legal relationship exists between KfW and our company, our Joint Venture or our Subcontractors under the Contract. The PEA retains exclusive responsibility for the preparation and implementation of the Tender Process and the performance of the Contract.
2. We hereby certify that neither we nor any of our board members or legal representatives nor any other member of our Joint Venture including Subcontractors under the Contract are in any of the following situations:
 - 2.1) being bankrupt, wound up or ceasing our activities, having our activities administered by courts, having entered into receivership, reorganisation or being in any analogous situation;
 - 2.2) having been convicted by a final judgment or a final administrative decision or a preliminary investigation/charge is pending against us for involvement in a criminal organisation, money laundering, terrorist-related offences, child labour or trafficking in human beings, or have been subject to (financial) sanctions and/or embargo provisions by the United Nations, the European Union or the Federal Republic of Germany. This exclusion criterion is also applicable to legal persons whose shares (or the majority thereof) are owned or de facto controlled by natural or legal persons against whom such judgments, administrative decisions, (financial) sanctions and/or embargoes have been imposed and – in the case of (financial) sanctions and/or embargoes – these restrictive measures continue to apply;
 - 2.3) having been convicted by a final court decision or a final administrative decision by a court, the European Union, national authorities in the Partner Country or in Germany for Sanctionable Practice in connection with a Tender Process or the performance of a Contract or for an irregularity affecting the EU's financial interests (*in the event of such a conviction, the Applicant or Bidder shall attach to this Declaration of Undertaking supporting information showing that this conviction is not relevant in the context of this Contract and that adequate compliance measures have been taken in reaction*);
 - 2.4) having been subject, within the past five years to a contract termination fully settled against us for significant or persistent failure to comply with our contractual obligations during such Contract performance, unless this termination was challenged and dispute resolution is still pending or has not confirmed a full settlement against us;
 - 2.5) not having fulfilled the applicable fiscal obligations with regard to the payment of taxes at the respective tax residence and in the country of origin of the PEA (*contractors based in Annex 1 countries*)

⁶ Capitalised terms used, but not otherwise defined in this Declaration of Undertaking have the meaning given to such term in KfW's "Guidelines for the Procurement of Consulting Services, Works, Goods, Plant and Non-Consulting Services in Financial Cooperation with Partner Countries".

⁷ The PEA means the purchaser, the employer, the client, as the case may be, for the procurement of Consulting Services, Works, Plant, Goods or Non-Consulting Services.

Section IV. Bidding Forms

(<https://www.consilium.europa.eu/de/policies/eu-list-of-non-cooperative-jurisdictions/>) must submit a fully completed and legally countersigned declaration of tax conformity (Appendix 1 to the Declaration of Undertaking) in addition to the Declaration of Undertaking at the time of award of the contract/contract review. This shall become an integral part of the contract. Failure to submit may result in exclusion from the awarding procedure. For contractors based in countries not listed as Annex I countries, only the Declaration of Undertaking must be submitted, and not the declaration of tax conformity;

2.6) being subject to an exclusion decision of the World Bank or any other multilateral development bank and being listed on the website <http://www.worldbank.org/debarr> or respectively on the relevant list of any other multilateral development bank *(in the event of such exclusion, the Applicant or Bidder shall attach to this Declaration of Undertaking supporting information showing that this exclusion is not relevant in the context of this Contract and that adequate compliance measures have been taken in reaction); or*

2.7) being guilty of misrepresentation in supplying the information required as condition to participation in this Tender Procedure.

3. We hereby certify that neither we, nor any of the members of our Joint Venture or any of our Subcontractors under the Contract are in any of the following situations of conflict of interest:

3.1) being an affiliate controlled by the PEA or a shareholder controlling the PEA, unless the stemming conflict of interest has been brought to the attention of KfW and resolved to its satisfaction;

3.2) having a business or family relationship with a PEA's staff involved in the Tender Process or the supervision of the resulting Contract, unless the stemming conflict of interest has been brought to the attention of KfW and resolved to its satisfaction;

3.3) being controlled by or controlling another Applicant or Bidder, or being under common control with another Applicant or Bidder, or receiving from or granting subsidies directly or indirectly to another Applicant or Bidder, having the same legal representative as another Applicant or Bidder, maintaining direct or indirect contacts with another Applicant or Bidder which allows us to have or give access to information contained in the respective Applications or Offers, influencing them or influencing decisions of the PEA;

3.4) being engaged in a Consulting Services activity, which, by its nature, may be in conflict with the assignments that we would carry out for the PEA;

3.5) in the case of procurement of Works, Plant or Goods:

- i. having prepared or having been associated with a Person who prepared specifications, drawings, calculations and other documentation to be used in the Tender Process of this Contract;
- ii. having been recruited (or being proposed to be recruited) ourselves or any of our affiliates, to carry out works supervision or inspection for this Contract;

4. If we are a state-owned entity, and compete in a Tender Process, we certify that we have legal and financial autonomy and that we operate under commercial laws and regulations.

5. We undertake to bring to the attention of the PEA, which will inform KfW, any change in situation with regard to points 2 to 4 here above.

Section IV. Bidding Forms

6. In the context of the Tender Process and performance of the corresponding Contract:

6.1) neither we nor any of the members of our Joint Venture nor any of our Subcontractors under the Contract have engaged or will engage in any Sanctionable Practice or violate the Guidelines during the Tender Process and in the case of being awarded a Contract will engage in any Sanctionable Practice during the performance of the Contract;

6.2) neither we nor any of the members of our Joint Venture or any of our Subcontractors under the Contract shall acquire or supply any equipment nor operate in any sectors under an embargo of the United Nations, the European Union or Germany; and

6.3) we commit ourselves to complying with and ensuring that our Subcontractors and major suppliers under the Contract comply with international environmental and labour standards, consistent with laws and regulations applicable in the country of implementation of the Contract and the fundamental conventions of the International Labour Organisation⁸ (ILO) and international environmental treaties. Moreover, we shall implement environmental and social risks mitigation measures when specified in the relevant environmental and social management plans or other similar documents provided by the PEA and, in any case, implement measures to prevent sexual exploitation and abuse and gender based violence.

7. In the case of being awarded a Contract, we, as well as all members of our Joint Venture partners and Subcontractors under the Contract will, (i) upon request, provide information relating to the Tender Process and the performance of the Contract and (ii) permit the PEA and KfW or an auditor appointed by either of them, and in the case of financing by the European Union also to European institutions having competence under European Union law, to inspect the respective accounts, records and documents, to permit on the spot checks and to ensure access to sites and the respective project.

8. In the case of being awarded a Contract, we, as well as all our Joint Venture partners and Subcontractors under the Contract undertake to preserve above mentioned records and documents in accordance with applicable law, but in any case for at least six years from the date of fulfillment or termination of the Contract. Our financial transactions and financial statements shall be subject to auditing procedures in accordance with applicable law. Furthermore, we accept that our data (including personal data) generated in connection with the preparation and implementation of the Tender Process and the performance of the Contract are stored and processed according to the applicable law by the PEA and KfW.

Name: _____ In the capacity of: _____

Duly empowered to sign in the name and on behalf of⁹: _____

Signature:

Dated:

⁸ In case ILO conventions have not been fully ratified or implemented in the Employer's country the Applicant/Bidder/Contractor shall, to the satisfaction of the Employer and KfW, propose and implement appropriate measures in the spirit of the said ILO conventions with respect to a) workers grievances on working conditions and terms of employment, b) child labour, c) forced labour, d) worker's organisations and e) non-discrimination.

⁹ In the case of a JV, insert the name of the JV. The person who will sign the application, bid or proposal on behalf of the Applicant/Bidder shall attach a power of attorney from the Applicant/Bidder.

Appendix 1
Declaration of tax conformity – binding confirmation for legal persons

Name of company

I hereby confirm with my signature that:

1. I am authorised to make this declaration on behalf of the above company;
2. the company properly pays all taxes in accordance with the tax laws of the country in which the company is domiciled;
3. the company is not currently nor has been in the past involved in any legal proceedings concerning the taxation of the company;
4. the company will duly pay taxes that may arise from the provision of contracted services as a service;
5. all information and statements provided in advance are complete, accurate in terms of content and currently correct.

.....
(Place)

.....
(Date)

.....
(Name of the consultant)

.....
(Signature(s))

Appendix 1
Declaration of tax conformity – binding confirmation for natural persons

I hereby confirm with my signature that:

1. I make this declaration in my name/on my own account;
2. I duly pay taxes that I am obliged to pay under the tax law of my country of residence;
3. I am not currently involved in tax law court proceedings, nor have I been in the past;
4. I will duly pay taxes that may arise from the provision of contracted services;
5. I have filled in all the information and statements of this confirmation in full, accurately in terms of content and that they are up to date at this time.

.....

(Place)

.....

(Date)

.....

(Name of the person)

.....

(Signature)

Form ELI-1.1
Bidder Information Form

Date: _____
NCB No. and title: _____
Page _____ of _____ pages

Bidder's name <i>[insert full name]</i>
In case of Joint Venture (JV), name of each member: <i>[insert full name of each member in JV]</i>
Bidder's actual or intended country of registration: <i>[indicate country of Constitution]</i>
Bidder's actual or intended year of constitution: <i>[indicate year of Constitution]</i>
Bidder's legal address [in country of registration]: <i>[insert street/ number/ town or city/ country]</i>
Bidder's legal structure and ownership structure Legal structure: <i>[provide details]</i> Ownership structure: <i>[provide details of direct and indirect ownership]</i>
Bidder's authorized representative information Name: <i>[insert full name]</i> Address: <i>[insert street/ number/ town or city/ country]</i> Telephone/Fax numbers: <i>[insert telephone/fax numbers, including country and city codes]</i> E-mail address: <i>[indicate e-mail address]</i>
1. General Presentation of the Bidder (name, legal structure, business areas, subsidiaries and shareholdings, number of staff, etc.) 2. Attached are copies of original documents of ☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or documents of registration of the legal entity named above, in accordance with ITB 4.1. ☐ In case of JV, JV agreement, in accordance with ITB 4.1 or Declaration of Association as per ELI 1.2(b). ☐ In case of Government-owned enterprise or institution, in accordance with ITB 4.3 documents establishing: - Legal and financial autonomy - Operation under commercial law - Establishing that the Bidder is not a dependent agency of the Employer. 3. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.

Section IV. Bidding Forms

Form ELI-1.2 (a)
Bidder's JV Information Form

[The following table shall be filled by each member of a JV and, if applicable, by any specialized subcontractor]

Date: _____
NCB No. and title: _____
Page _____ of _____ pages

Each Bidder that is a JV Party and each nominated subcontractor in accordance with ITB 35 must submit this information.

Bidder name: <i>[insert full name]</i>
Bidder's JV Member's name: <i>[insert full name of Bidder's JV Member]</i>
Bidder's JV Member's country of registration: <i>[indicate country of registration]</i>
Bidder JV Member's year of constitution: <i>[indicate year of constitution]</i>
Bidder JV Member's legal address in country of constitution: <i>[insert street/ number/ town or city/ country]</i>
Bidder JV Member's legal structure and ownership structure: Legal structure: <i>[provide details]</i> Ownership structure: <i>[provide details of direct and indirect ownership]</i>
Bidder JV Member's authorized representative information Name: <i>[insert full name]</i> Address: <i>[insert street/ number/ town or city/ country]</i> Telephone/Fax numbers: <i>[insert telephone/fax numbers, including country and city codes]</i> E-mail address: <i>[indicate e-mail address]</i>
1. General Presentation of the Bidder JV Member (name, legal structure, business areas, subsidiaries and shareholdings, number of staff, etc.) 2. Attached are copies of original documents of ☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or documents of registration of the legal entity named above, in accordance with ITB 4.1. ☐ In case of JV, JV agreement, in accordance with ITB 4.1 or Declaration of Association as per ELI 1.2(b). ☐ In case of Government-owned enterprise or institution, in accordance with ITB 4.3 documents establishing: - Legal and financial autonomy - Operation under commercial law - Establishing that the Bidder is not a dependent agency of the Employer. 3. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.

Form ELI-1.2 (b)
Declaration of Association

[The following form shall be provided by each member of a Joint Venture and, if applicable, by any specialized subcontractor, nominated in accordance with ITB 35]

Date: _____
NCB No. and title: _____
Page _____ of _____ pages

We hereby declare our intent to associate with the following firms for the purpose of forming a *[insert here "joint venture"]*:

[Insert the names of the other JV Members here]

[Insert the name of the Lead Member] shall be the Lead Member.

We hereby confirm that we have not associated with any other firms for the purposes of this assignment and that we will not submit an Application separately from the firms listed above. Further, we understand that if one of the above JV Members appears as a member in more than one Application, all Applications in which the Member appears shall be disqualified.

In the event that this JV is awarded a Contract, we shall perform the works in the composition and in the form of cooperation described above.

[Signature of the authorised representative of the Member]

Form CON-2
Historical Contract Non-Performance, Pending Litigation and
Litigation History

[The following table shall be filled in for the Bidder and for each member of a Joint Venture]

Bidder's Name: *[insert full name]*

Date: *[insert day, month, year]*

Joint Venture Member Name: *[insert full name]*

NCB No. and title: *[insert NCB number and title]*

Page *[insert page number]* of *[insert total number]* pages

Non-Performed Contracts in accordance with Section III, Qualification Criteria and Requirements			
☐ Contract non-performance did not occur since 1 st January <i>[insert current year number less 5]</i> specified in Section III, Qualification Criteria and Requirements, Sub-Factor 2.1.			
☐ Contract(s) not performed since 1 st January <i>[insert current year number less 5]</i> specified in Section III, Qualification Criteria and Requirements, requirement 2.1			
Year	Non-performed portion of contract	Contract Identification	Total Contract Amount
<i>[insert year]</i>	<i>[insert amount and percentage]</i>	Contract Identification: <i>[indicate complete contract name/ number, and any other identification]</i> Name of Employer: <i>[insert full name]</i> Address of Employer: <i>[insert street/city/country]</i> Reason(s) for non-performance: <i>[indicate main reason(s)]</i>	<i>[insert amount]</i>

Section IV. Bidding Forms

Pending Litigation, in accordance with Section III, Qualification Criteria and Requirements			
☐ No pending litigation in accordance with Section III, Qualification Criteria and Requirements, Sub-Factor 2.3.			
☐ Pending litigation in accordance with Section III, Qualification Criteria and Requirements, Sub-Factor 2.3 as indicated below.			
Year of dispute	Amount in dispute (currency)	Contract Identification	Total Contract Amount (currency)
<i>[insert year]</i>	<i>[insert amount]</i>	Contract Identification: [indicate complete contract name, number, and any other identification] Name of Employer: <i>[insert full name]</i> Address of Employer: <i>[insert street/city/country]</i> Matter in dispute: <i>[indicate main issues in dispute]</i> Party who initiated the dispute: <i>[indicate "Employer" or "Contractor"]</i> Status of dispute: <i>[Indicate if it is being treated by the Adjudicator, under Arbitration or being dealt with by the Judiciary]</i>	<i>[insert amount]</i>

Section IV. Bidding Forms

Form FIN-3.1
Financial Situation and Performance

[The following table shall be filled in for the Bidder and for each JV Member]

Bidder's Name: *[insert full name]*

Date: *[insert day, month, year]*

Joint Venture Member Name: *[insert full name]*

NCB No. and title: *[insert NCB number and title]*

Page *[insert page number]* of *[insert total number]* pages

1. Financial data

Type of Financial information in (currency)	Historic information for previous <i>[insert number]</i> years, <i>[insert in words]</i> (amount in currency, currency)				
	Year 1	Year 2	Year 3	Year 4	Year 5
Statement of Financial Position (Information from Balance Sheet)					
Total Assets (TA)					
Total Liabilities (TL)					
Total Equity/Net Worth (NW)					
Current Assets (CA)					
Current Liabilities (CL)					
Working Capital (WC)					
Information from Income Statement					
Total Revenue (TR)					
Profits Before Taxes (PBT)					
Cash Flow Information					
Cash Flow from Operating Activities					

2. Financial documents

The Bidder and its parties shall provide copies of financial statements for *[number]* years pursuant Section III, Qualifications Criteria and Requirements, Sub-factor 3.1. The financial statements shall:

- (a) reflect the financial situation of the Bidder or JV member , and not an affiliated entity (such as parent company or subsidiary).
 - (b) be independently audited or certified in accordance with local legislation.
 - (c) be complete, including all notes to the financial statements.
 - (d) correspond to accounting periods already completed and audited.
- ☐ Attached are copies of financial statements¹⁰ for the *[number]* years required above; and complying with the requirements

¹⁰ If the most recent set of financial statements is for a period earlier than 12 months from the date of application, the reason for this should be justified.

Section IV. Bidding Forms

Form FIN-3.2
Average Annual Construction Turnover

[The following table shall be filled in for the Bidder and for each member of a Joint Venture]

Bidder's Name: *[insert full name]*

Date: *[insert day, month, year]*

Joint Venture Member Name: *[insert full name]*

NCB No. and title: *[insert NCB number and title]*

Page *[insert page number]* of *[insert total number]* pages

Annual turnover data (construction only)			
Year	Amount Currency		
		Average Annual Construction Turnover *	

- * Total INR for all years divided by the total number of years. See Section III, Qualification Criteria and Requirements, Clause 3.2.

Section IV. Bidding Forms

Form FIN-3.3
Sources of Finance

[The following table shall be filled in for the Bidder and all members combined in case of a Joint Venture]

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 or contracts as specified in Section III, Evaluation and Qualification Criteria.

Financial Resources		
No.	Source of financing	Amount
1		
2		
3		

Form FIN-3.4
Current Contract Commitments / Works in Progress

[The following table shall be filled in for the Bidder and all members combined in case of a Joint Venture]

Bidders and each member to a JV 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.

Current Contract Commitments					
No.	Name of Contract	Employer's Contact Address, Tel, Fax	Value of Outstanding Work	Estimated Completi on Date	Average Monthly Invoicing Over Last Six Months [INR / month]
1					
2					
3					
4					
5					

Form FIN-3.5

Information on Bid Capacity (works for which Bids have been submitted and works which are yet to be completed) as on the date of this Bid.

A) Existing commitments and on-going works

Description of work	Place and state	Contract No. & Date	Name and Address of the Employer	Value of Contract (INR)	Stipulated period of completion	Value of works remaining to be completed (INR)	Anticipated date of completion.

B) Works for which Bids already submitted

Description of work	Place and State	Name & Address of Employer	Estimated Value of works (INR)	Stipulated period of completion	Date when decision is expected	Remarks if any

Form EXP-4.1
General Construction Experience

[The following table shall be filled in for the Bidder and in the case of a JV Bidder, each Member]

Bidder's Name: *[insert full name]*

Date: *[insert day, month, year]*

Joint Venture Member Name: *[insert full name]*

NCB No. and title: *[insert NCB number and title]*

Page *[insert page number]* of *[insert total number]* pages

[Identify contracts that demonstrate continuous construction work over the past [number] years pursuant to Section III, Qualification Criteria and Requirements, Sub-Factor 4.1. List contracts chronologically, according to their commencement (starting) dates.]

Starting Year	Ending Year	Contract Identification	Role of Bidder
<i>[indicate year]</i>	<i>[indicate year]</i>	Contract name: <i>[insert full name]</i> Brief Description of the Works performed by the Bidder: <i>[describe works performed briefly]</i> Amount of contract: <i>[insert amount in currency, mention currency used,</i> Name of Employer: <i>[indicate full name]</i> Address: <i>[indicate street/number/city/country]</i>	<i>[insert "Prime Contractor" or "JV Member" or "Subcontractor" or "Management Contractor"]</i>
		Contract name: <i>[insert full name]</i> Brief Description of the Works performed by the Bidder: <i>[describe works performed briefly]</i> Amount of contract: <i>[insert amount in currency, mention currency used,]</i> Name of Employer: <i>[indicate full name]</i> Address: <i>[indicate street/number/city/country]</i>	<i>[insert "Prime Contractor" or "JV Member" or "Subcontractor" or "Management Contractor"]</i>
		Contract name: <i>[insert full name]</i> Brief Description of the Works performed by the Bidder: <i>[describe works performed briefly]</i> Amount of contract: <i>[insert amount in currency, mention currency used,]</i> Name of Employer: <i>[indicate full name]</i> Address: <i>[indicate street/number/city/country]</i>	<i>[insert "Prime Contractor" or "JV Member" or "Subcontractor" or "Management Contractor"]</i>

Form EXP-4.2 (a)
Specific Construction and Contract Management Experience

[The following table shall be filled in separately for contracts performed by the Bidder or each member of a Joint Venture]

Bidder's Name: *[insert full name]*

Date: *[insert day, month, year]*

Joint Venture Member's Name: *[insert full name]*

NCB No. and title: *[insert NCB number and title]*

Page *[insert page number]* of *[insert total number]* pages

Similar Contract No. <i>[insert number] of [insert number of similar contracts required]</i>	Information			
Contract Identification	<i>[insert contract name and number, if applicable]</i>			
Award date	<i>[insert day, month, year, i.e., 15 June, 2015]</i>			
Completion date	<i>[insert day, month, year, i.e., 03 October, 2017]</i>			
Role in Contract <i>[check the appropriate box]</i>	Prime Contractor ☐	Member in JV ☐	Management Contractor ☐	Sub-contractor ☐
Total Contract Amount	<i>[insert total contract amount in local currency]</i>			
If member in a JV or subcontractor, specify participation in total Contract amount	<i>[insert a percentage amount]</i>	<i>[insert total contract amount in local currency]</i>	[	
Employer's Name:	<i>[insert full name]</i>			
Address:	<i>[indicate street / number / town or city / country]</i>			
Telephone/fax number	<i>[insert telephone/fax numbers, incl. country/city area codes]</i>			
E-mail:	<i>[insert e-mail address, if available]</i>			

Section IV. Bidding Forms

Similar Contract No. <i>[insert number] of [insert number of similar contracts required]</i>	Information
Description of the similarity in accordance with Sub-Criterion 4.2 of Section III:	
1. Physical size of required works items	<i>[insert physical size of items]</i>
2. Complexity	<i>[insert description of complexity]</i>
3. Methods/Technology	<i>[insert specific aspects of the methods/technology involved in the contract]</i>
4. Construction rate for key activities	<i>[insert yearly rates and items]</i>
5. Other Characteristics	<i>[insert other characteristics as described in Section VII, Scope of Works]</i>

Form EXP-4.2 (b)
Construction Experience in Key Activities

Bidder's Name: *[insert full name]*Date: *[insert day, month, year]*Bidder's JV Member's Name: *[insert full name]*Subcontractor's Name¹¹ (as per ITB 35): *[insert full name]*NCB No. and title: *[insert NCB number and title]*Page *[insert page number]* of *[insert total number]* pages

1. Key Activity No. One: *[insert brief description of the Activity, emphasizing its specificity]*

Information				
Contract Identification	<i>[insert contract name and number, if applicable]</i>			
Award date	<i>[insert day, month, year, i.e., 15 June, 2015]</i>			
Completion date	<i>[insert day, month, year, i.e., 03 October, 2017]</i>			
Role in Contract <i>[check the appropriate box]</i>	Prime Contractor ☐	Member in JV ☐	Management Contractor ☐	Sub-contractor ☐
Total Contract Amount	<i>[insert total contract amount in contract currency(ies)]</i>			
Quantity (Volume, number or rate of production, as applicable) performed under the contract per year or part of the year <i>[Insert extent of participation indicating actual quantity of key activity successfully completed in the role performed]</i>	Total quantity in the contract (i)	Percentage participation (ii)		Actual Quantity Performed (i) x (ii)
Year 1				
Year 2				
Year 3				
Year 4				
Employer's Name:	<i>[insert full name]</i>			
Address:	<i>[indicate street / number / town or city / country]</i>			
Telephone/fax number	<i>[insert telephone/fax numbers, including country and city area codes]</i>			
E-mail:	<i>[insert e-mail address, if available]</i>			

¹¹ If applicable

Section IV. Bidding Forms

	Information
Description of the key activities in accordance with Sub-Factor 4.2(b) of Section III:	
	<i>[insert response to inquiry indicated in left column]</i>

2. Key Activity No. Two

3. Key Activity No. Three

Optional: Form EQP-4.3
Specific Construction Equipment

[The project specific requirement of equipments is given in section d) Equipment Requirements of PART 2 – Works Requirements.

Bidder's Legal Name: *[insert full name]*

Date: *[insert day, month, year]*

NCB No.: *[insert NCB number]*

Description	Information
List of utilized specific construction equipment	<i>___[based on the specific construction experience in Forms 4.2 (a or b) the Bidder shall provide a list of specific construction equipment, utilized for the execution of the works. The list shall not specify commonly used equipment (ordinary cement mixers or cranes, etc.) but specific equipment related to the specific characteristics of the project as per the form below. For each item one form.]_</i>

Item number:	<i>___[insert consecutive number]_</i>
Denomination:	<i>___[insert technical name of the item]_</i>
Purpose:	<i>___[describe the use of the item in relation to the specific work requirements of the project]___</i>
Capacity / power rating / quantities, etc.	<i>___[give details of the capacity / power rating / quantities in relation to the work description]___</i>

Form PR-5.7

List of Available Construction ESHS and Personnel

Complete the list below to demonstrate the extent to which you have access (internally / externally) to ESHS and Construction expertise required for personnel profiles described in Section VII; Scope of Works. Do not attach CVs as no personnel evaluation is carried out at the evaluation stage.

Name	Designation, in accordance with Section VII, Scope of Works	Education/ Degree	Years of Professional Experience	Relationship with / Years within the Bidder ¹²	Country/ Regional Experience	Relevant Project References (Description of project-related experience)	Languages

BIDDING FORMS

LETTER OF BID

[The Bidder shall prepare his Letter of Bid on a Letterhead paper specifying his name and address]

Date: _____
NCB No.: _____

To: _____

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (ITB 8) _____;
- (b) We have no conflict of interest in accordance with ITB 4;
- (c) We have not been suspended nor declared ineligible by the Employer based on execution of a Bid Securing Declaration in the Employer's country in accordance with ITB 4.4;
- (d) We offer to execute in conformity with the Bidding Documents the following Works: _____;

¹² For freelance experts (e.g. with retainer contracts or formal agreements) indicate "FE" and how long the expert has been associated with the Applicant. For sub-consultant staff indicate "Sub". Staff from affiliated firms of the Applicant shall be considered as sub-consultant staff.

Section IV. Bidding Forms

- (e) 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;
- (f) If our Bid is accepted, we commit to obtain a performance security in accordance with ITB 42 of the Bidding Documents;
- (g) We are not participating, as a Bidder, in more than one Bid in this bidding process in accordance with ITB 4.2(e), other than alternative Bids submitted in accordance with ITB 13;
- (h) We understand that this Bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed; and
- (i) We acknowledge and agree that the Employer reserves the right to annul the bidding process and reject all Bids at any time prior to contract award without thereby incurring any liability to us;
- (j) We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in any type of fraud and corruption.
- (k) We undertake that in competing for (and, if the award is made to us, in executing) the above contract, we will strictly observe the laws against fraud and corruption in force in India namely, "Prevention of Corruption Act, 1988) and Commissions or gratuities, if any, paid or to be paid by us to agents relating to this Bid, and to contract execution if we are awarded the contract, are listed below:

Name and address of agent	Amount	Purpose of Commission or gratuity
_____	_____	_____
_____	_____	_____
(if none, state "none")		

We hereby confirm that this Bid complies with the Bid Validity and Bid Security required by the Bidding documents.

We attach herewith our current income tax and GST certificates.

Name of the Bidder* _____

Name of the person duly authorized to sign the Bid on behalf of the Bidder** _____

Title of the person signing the Bid _____

Signature of the person named above _____

Date signed _____ day of _____, _____

*: In the case of the Bid submitted by a JV specify the name of the JV as Bidder

** : Person signing the Bid shall have the power of attorney given by the Bidder to be attached with the Bid

APPENDIX TO BID

Schedule of Adjustment Data

[Note: this schedule should be inserted in the Bidding Documents when prices are to be adjustable – refer to BDS ITB 14.5; it must be deleted for a fixed price Contract]

Section(s) of Works: *[the insertion of various sections and separate tables will be necessary when sections of works (or the Bill of Quantities) have very different currency contents]*

Table of Weightings

Factor and description	Range of Values permitted (1)	Weightings for each payment currency (2)		Totals (3)
		(national currency)		
X Non Adjustable				
(a) Labour				
(b)				
(c)				
etc.				
Total				1.00

The Employer shall indicate (i) the value of the fixed element X in the price adjustment formula in Columns (1) and (3), and (ii) acceptable ranges for the weightings (a), (b), (c) of the adjustment factors in the formula.

The Bidder shall indicate in Columns (2) the specific weightings for each factor and bid currency, and in Column (3) the sub-totals for each factor, which must be within the range specified by the Employer in Column (1), respectively; furthermore, the sum of the sub-totals in Column (3) must be equal to 1 (one).

A formula shall be used for each payment currency, to be derived from the above Table as follows: the weightings to be used in each formula will be derived from the values in each currency column, respectively, by dividing each individual value by the sum of the values in the given column.

Table A: National Currency

Index Code	Index Description/ identification	Publication Source for the Index	Base Value in [month] ⁽¹³⁾
(T)			
(S)			
()			

¹³ Insert the month of the Base Date, i.e. the month of the Deadline for Bid Submission in accordance with ITB Clause 22.

Section IV. Bidding Forms
Table B: Foreign Currency

The Bidder shall fill a table similar to the following one for each foreign currency of payment, as appropriate.

Index Code	Index Description/identification	Publication Source for the Index	Base Value in [month] ⁽¹⁴⁾
(T)			
(S)			
()			

Bidder's Signature

Example

The following example shows a table of weightings and the corresponding price adjustment formula which are derived from it, on the basis of the following assumptions:

- Three weightings/factors are shown in this example: X is the non-adjustable portion and two adjustment factors (a and b) contribute to price adjustment through the variation of Indices T and S respectively, for which the respective ranges permitted by the Employer and values selected by the Bidder are shown in the table; these values are to be used in the price adjustment formula.
- Two payment currencies are shown in this example: the national currency (l) and a foreign currency (f), the indices T and S are the respective indices in the country of the currency.
- The data in bold are those specified by the Employer in the Bidding Documents, whereas the other data are provided either by the Bidder in its Bid or by the Contractor in the payment requests

Table of Weightings:

Factor and description	Range of Values permitted	Weightings for each payment currency		Totals
		l	f	
X	0,15	0,05	0,10	0,15
a	0,30 - 0,50	0,15	0,25	0,40
b	0,25 - 0,45	0,20	0,25	0,45
Totals		0,40	0,60	1,00

Formula to be used for calculation of adjustment of payments:

$$\text{Payments in national currency (n): } P_{ln} = \frac{0,05}{0,40} + \frac{0,15 T_{ln}}{0,40 T_{lo}} + \frac{0,20 S_{ln}}{0,40 S_{lo}}$$

$$\text{Payments in foreign currency (f): } P_{fn} = \frac{0,10}{0,60} + \frac{0,25 T_{fn}}{0,60 T_{fo}} + \frac{0,25 S_{fn}}{0,60 S_{fo}}$$

¹⁴ Insert the month of the Base Date, i.e. the month of the Deadline for Bid Submission in accordance with ITB Clause 22.

Summary of Payment Currencies

Table C2: Option A – Local Currency

Name of payment currency	A Amount of currency (INR)	B Rate of exchange (Not Applicable)	C Local currency (INR)	D Percentage of Total Bid Price (TBP) $\frac{100 \times C}{TBP}$
Local currency: INR _____				
Total Bid Price in: INR _____				

SCHEDULES

Rates and prices shall exclude taxes and the Schedules shall identify the (a) import duties and (b) taxes, fees, levies and other charges estimated in accordance with ITB 14.7, as separate amounts. Information on applicable tax exemptions is provided in Sub-Clause 14.1 (b) of the Particular Conditions of Contract.

The Schedules must be prepared in accordance with the currency alternative retained in BDS – ITB 15.1.

Preamble

1. The Bill of Quantities shall be read in conjunction with the Instructions to Bidders, General and Special Conditions of Contract, Technical Specifications, and Drawings.
2. The quantities given in the Bill of Quantities are estimated and provisional, and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of work ordered and carried out, as measured by the Contractor and verified by the Engineer and valued at the rates and prices bid in the priced Bill of Quantities, where applicable, and otherwise at such rates and prices as the Engineer may fix within the terms of the Contract.
3. The rates and prices bid in the priced Bill of Quantities shall, except insofar as it is otherwise provided under the Contract, include all Constructional Plant, labour, supervision, materials, erection, maintenance, insurance, profit, taxes, and duties, together with all general risks, liabilities, and obligations set out or implied in the Contract.
4. A rate or price shall be entered against each item in the priced Bill of Quantities, whether quantities are stated or not. The cost of Items against which the Contractor has failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bill of Quantities.
5. The whole cost of complying with the provisions of the Contract shall be included in the Items provided in the priced Bill of Quantities, and where no Items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related Items of Work.
6. General directions and descriptions of work and materials are not necessarily repeated nor summarised in the Bill of Quantities. References to the relevant sections of the Contract documentation shall be made before entering prices against each item in the priced Bill of Quantities.
7. Provisional Sums included and so designated in the Bill of Quantities shall be expended in whole or in part at the direction and discretion of the Engineer in accordance with Sub-Clause 13.5 and Clause 13.6 of the General Conditions.
8. The payment shall be in accordance with measurements recorded at various stages of the Work. The Contractor or his authorised agent, or representative shall be present at the time of recording of each set of measurements and sign the measurement book or level/field book in token of their acceptance.

Section IV. Bidding Forms

9. Any arithmetic errors in computation or summation will be corrected by the Employer as follows:
 - (a) where there is a discrepancy between 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 total amount derived from the multiplication of the unit price and 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 price, in which event the total amount as quoted will govern and the unit rate will be corrected.
10. Rock is defined as all materials that, in the opinion of the Engineer, require blasting, or the use of metal wedges and sledgehammers, or the use of compressed air drilling for their removal, and that cannot be extracted by ripping with a tractor of at least 150 brake hp with a single, rear-mounted, heavy-duty ripper.
11. The detailed bill of quantities has been included in volume – III. The bidder shall use volume – III to quote their prices

ENVIRONMENTAL, SOCIAL, HEALTH AND SAFETY (ESHS) COST SCHEDULE

[Before preparing and adapting the requirements or specifications listed hereafter the explanations to Section VII, 1 b) - Specifications for Environmental, Social, Health and Safety Management (ESHS) of the Works should be duly considered.]

[This Cost Schedule should be inserted into the Bill of Quantities under the Bill “General Items”. Amendments to the ESHS Specifications, if any, may require adjustment of the ESHS Cost Schedule]

Bill No. 1: General Items – ESHS Cost Schedule

Item N°	Description	ESHS Specifications Clause N°	Unit	Amount [specify currency]
ESHS 1	Resources allocated to ESHS management	Clause 4	Lump sum	
ESHS 2	Drafting and updating the ESHS documentation, reporting, inspections	Clauses 1, 2, 3, 5, 6, 7, 9	Lump sum	<i>[Cost ESHS 1 should exclude all or part of the costs of those tasks]</i>
ESHS 3	Implementation of the Health and Safety Plan: Meetings, health care centre, medical check-ups, emergencies and evacuations, safety protective equipment, hygiene	Clauses 1, 9, 21 to 25, 27 to 35, 37, 38	Lump sum	<i>[Cost ESHS 1 should exclude all or part of the costs of those tasks]</i>
ESHS 4	Accommodation, drinking water, meals and transportation of staff(*) (*) : The Bidder shall detail the financial conditions of the supply of accommodation, meals and transport to its staff: – Accommodation – Meals – Transport	Clauses 36, 40, 41	Lump sum Lump sum Lump sum Lump sum	<i>[The cost for “site mobilization” should exclude all or part of the costs of those tasks]</i>
ESHS 5	Training and local recruitment management costs	Clauses 8, 39	Lump sum	<i>[Cost ESHS 1 should exclude all or part of the costs associated to those tasks]</i>

Section IV. Bidding Forms

Item N°	Description	ESHS Specifications Clause N°	Unit	Amount [specify currency]
ESHS 6	Protection of adjacent areas, biodiversity, prevention of erosion and wastewater management	Clauses 10, 11, 12, 17, 18	Lump sum	
ESHS 7	Traffic, noise and atmospheric emissions management, land take	Clauses 13, 14, 42, 43, 44	Lump sum	
ESHS 8	Waste and hazardous products management	Clauses 15, 26	Lump sum	
ESHS 9	Vegetation clearing and site rehabilitation	Clauses 16, 19, 20	Lump sum	<i>[The cost for "site mobilization" should exclude all or part of the costs associated to those tasks]</i>
Total for Bill ESHS				_____
ESHS costs are deemed to cover operations on all Sites (as defined in Clause 1.3 of ESHS Specifications) Interim payment certificates shall include the portion of each ESHS cost amounting to the percentage of the actual progress achieved in executing the ESHS measures in compliance with the ESHS Specifications and approved by the Engineer.				

Section IV. Bidding Forms

TECHNICAL PROPOSAL

- Environmental, Social, Health and Safety (ESHS) Methodology
- Site Organization and Method Statement
- Construction Schedule
- Personnel proposed (forms PER-1 and PER-2)
- Equipment proposed (form EQU)

Environmental, Social, Health and Safety (ESHS) Methodology

[Before preparing and adapting the requirements or specifications listed hereafter the explanations to Section VII, 1 b) - Specifications for Environmental, Social, Health and Safety Management (ESHS) of the Works should be duly considered.]

The Bidder shall provide an ESHS Methodology providing information on how the Bidder shall meet those requirements and objectives, which are specified in Section VII, Works Requirements - ESHS Specifications.

The ESHS Methodology submitted shall be in the form of a preliminary draft of the Project Area Environmental and Social Management Plan (PA-ESMP), the content of which is detailed in Appendix 1 to ESHS Specifications.

Information should be provided on all items of the above mentioned table of contents.

In order to address the highly sensitive ESHS issues highlighted during the project's environmental and social impact assessment, the ESHS Methodology shall provide detailed information on the management of the following items: *[Delete items if not relevant and add sensitive issues with regards to the Project Area management and resulting from the project's ESIA, ESMP or Environmental and Social Commitment Plan (ESCP) if any]*

- (a) ESHS resources and facilities and ESHS monitoring organization;
- (b) Project Areas description (base camps, quarries, borrow pits, storage areas);
- (c) Health & Safety on Project Areas;
- (d) Local recruitment and ESHS trainings of local staff (capacity building), ESHS trainings of subcontractors and local partners (transfer of knowledge);
- (e) Relations with stakeholders, information and consultation of local communities and authorities;
- (f) Traffic management;
- (g) Hazardous products;
- (h) Wastewater (effluents);
- (i) Protection of water resources;
- (j) Atmospheric emissions, noise and vibrations;
- (k) Waste management;
- (l) Biodiversity : protection of fauna and flora;
- (m) Site rehabilitation and revegetation;
- (n) Erosion and sedimentation;
- (o) Control of infectious and communicable diseases (HIV/AIDS, malaria...).

A Bid for which the ESHS Methodology is evaluated as non-substantially responsive (i.e. with material deviation, reservation or omission) to the ESHS Specifications shall be rejected.

Site Organization and Method Statement

Each Bidder shall set out details of the Site Organization and Method Statement for the Works to demonstrate how it will meet the Employer's objective and requirements. As a minimum, the Method Statement shall address the following:

- (a) Details of the arrangements and methods which the Bidder proposes to implement for the construction of the Works, in sufficient detail to demonstrate their adequacy to achieve the requirements of the Contract including completion within the Time for Completion stated in the Particular Conditions of Contract;
- (b) Outline of the arrangements of the Bidder to manage coordination of Site access;
- (c) Comments on the geotechnical and subsurface aspects of the Works including materials, material sources and any constraints;
- (d) Comments on any offshore or waterfront aspects of the Works (if relevant);
- (e) Comments on logistics and traffic management *[as may be appropriate]*;
- (f) Outline of the arrangements and organisation of the Bidder to ensure compliance with the Works Requirements;
- (g) Outline of the arrangements of the Bidder to carry out testing upon completion as specified in the Works Requirements;
- (h) Other details as required

Construction Schedule

Each Bidder shall set out a detailed Program and Schedule for mobilisation and construction of the Works to be performed, including estimated starting and finishing dates for individual components and identification of major milestones and critical path. The proposed Program and Schedule shall be developed according to Works Requirements and shall address the following:

- (a) Details of the proposed schedule for obtaining permits that may be necessary in order to commence the Works, including the preparation of required studies, supporting information, and applications;
- (b) Details of the proposed timeline for carrying out the Works within the Time for Completion, in the form of a bar chart showing notably the critical path;
- (c) Details of the proposed timeline for the testing, commissioning and handing over of the completed Works;
- (d) Other proposed measures as may be appropriate.

PERSONNEL

Form PER-1: Proposed Personnel

Bidders should provide the names of suitably qualified personnel to meet the specified requirements stated in Section III, Evaluation and Qualification Criteria. 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

*As listed in c) *Personnel Requirements of PART 2 – Works Requirements.*

Form PER-2: Resume of Proposed Personnel

Name of Bidder		
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 over the last 20 years, in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

From	To	Company / Project / Position / Relevant technical and management experience

Section IV. Bidding Forms

Form EQU: Equipment

The Bidder shall provide adequate information to demonstrate clearly that it has the capability to meet the requirements for the key equipment listed in Section III, Evaluation and Qualification Criteria. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder.

Item of equipment		
Equipment information	Name of manufacturer	Model and power rating
	Capacity	Year of manufacture
Current status	Current location	
	Details of current commitments	
Source	Indicate source of the equipment ☐ Owned ☐ Rented ☐ Leased ☐ Specially manufactured	

Omit the following information for equipment owned by the Bidder.

Owner	Name of owner	
	Address of owner	
	Telephone	Contact name and title
	Fax	Telex
Agreements	Details of rental / lease / manufacture agreements specific to the project	

BID SECURITY

Beneficiary: *[Insert name and Address of Purchaser]*

Date: *[Insert date of issue]*

BID GUARANTEE No.: *[Insert guarantee reference number]*

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that *[Insert name and address of the bidder, which in the case of a joint venture shall be the name and address of the joint venture]* (hereinafter called "the Applicant") has submitted or will submit to the Beneficiary its bid (hereinafter called "the Bid") for the execution of *[Insert project, object of the contract/brief description of the works]* under Invitation for Bids No. *[Insert tender number]* ("the IFB").

Waiving all objections and defences, we, as Guarantor, hereby irrevocably and independently undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of *[Insert guarantee amount and currency in words and figures]* upon receipt by us of the Beneficiary's first demand, supported by the Beneficiary's statement, whether in the demand itself or a separate signed document accompanying or identifying the demand, stating that either the Applicant:

- (a) Has withdrawn its Bid during the period of bid validity set forth in the Applicant's Bid Submission Form (the Bid Validity Period"); or
- (b) Having been notified of the acceptance of its Bid by the Beneficiary during the Bid Validity Period, (i) has failed to sign the contract agreement, or (ii) has failed to furnish the performance security, in accordance with the Instructions to Bidders ("ITB") of the Beneficiary's bidding document.

This guarantee shall expire not later than *[Insert expiry date]*¹⁵.

By this date we must have received any claims for payment by letter or encoded telecommunication.

It is understood that you will return this guarantee to us on expiry or after payment of the total amount to be claimed hereunder.

*[As preferred option regarding guarantee rules insert*¹⁶*: This guarantee is subject to the Uniform Rule for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758.]*

Place, date

Guarantor's authorized signature(s)

¹⁵Pursuant to ITB Clause 19.3 the guarantee must be valid for at least 42 days beyond the bid validity.

¹⁶ In the case the issuing bank will not add the preferred option, the following must be added instead: This guarantee is governed by the laws of *[Insert country of jurisdiction]*. Note: the country of jurisdiction shall be the country where the bank's branch issuing the guarantee is physically located.

Section V. Eligibility Criteria

Eligibility in KfW-Financed Procurement

1. Consulting Services, Works, Goods, Plant and Non-Consulting Services are eligible for KfW financing regardless of the country of origin of the Contractors (including Subcontractors and suppliers for the execution of the Contract), except where an international embargo or sanction by the United Nations, the European Union or the German Government applies.
2. Applicants/Bidders (including all members of a Joint Venture and proposed or engaged Subcontractors) shall not be awarded a KfW-financed Contract if, on the date of submission of their Application/Offer or on the intended date of Award of a Contract, they:
 - 2.1 are bankrupt or being wound up or ceasing their activities, are having their activities administered by courts, have entered into receivership, or are in any analogous situation;
 - 2.2 have been
 - (a) convicted by a final judgement or a final administrative decision or subject to financial sanctions by the United Nations, the European Union and/or the German Government for involvement in a criminal organisation, money laundering, terrorist-related offences, child labour or trafficking in human beings; this criterion of exclusion is also applicable to legal Persons, whose majority of shares are held or factually controlled by natural or legal Persons which themselves are subject to such convictions or sanctions;
 - (b) convicted by a final court decision or a final administrative decision by a court, the European Union or national authorities in the Partner Country or in Germany for Sanctionable Practice during any Tender Process or the performance of a Contract or for an irregularity affecting the EU's financial interests, unless they provide supporting information together with their Declaration of Undertaking (Form available as Appendix to the Application/Offer which shows that this conviction is not relevant in the context of this Contract and that adequate compliance measures have been taken in reaction;
 - 2.3 have been subject within the past five years to a Contract termination fully settled against them for significant or persistent failure to comply with their contractual obligations during Contract performance, unless this termination was challenged and the dispute resolution is still pending or has not confirmed a full settlement against them;
 - 2.4 have not fulfilled applicable fiscal obligations regarding payments of taxes either in the country where they are constituted or the PEA's country;
 - 2.5 are subject to an exclusion decision of the World Bank or any other multilateral development bank and are listed in the respective table with debarred and cross-debarred firms and individual available on the World Bank's website or any other multilateral development bank unless they provide supporting information together with their Declaration of Undertaking which shows that this exclusion is not relevant in the context of this Contract or
 - 2.6 have given misrepresentation in documentation requested by the PEA as part of the Tender Process of the relevant Contract.

Section V. Eligibility Criteria

3. State-owned entities may compete only if they can establish that they (i) are legally and financially autonomous, and (ii) operate under commercial law. To be eligible, a state-owned entity shall establish to KfW's satisfaction, through all relevant documents, including its charter and other information KfW may request, that it: (i) is a legal entity separate from their state (ii) does not currently receive substantial subsidies or budget support; (iii) operates like any commercial enterprise, and, inter alia, is not obliged to pass on its surplus to their state, can acquire rights and liabilities, borrow funds and be liable for repayment of its debts, and can be declared bankrupt.

Section VI. KfW Policy – Sanctionable Practice – Social and Environmental
Responsibility

1. Sanctionable Practice

The PEA and the Contractors (including all members of a Joint Venture and proposed or engaged Subcontractors) must observe the highest standard of ethics during the Tender Process and performance of the Contract.

By signing the Declaration of Undertaking the Contractors declare that (i) they did not and will not engage in any Sanctionable Practice likely to influence the Tender Process and the corresponding Award of Contract to the PEA's detriment, and that (ii) in case of being awarded a Contract they will not engage in any Sanctionable Practice.

Moreover, KfW requires to include in the Contracts a provision pursuant to which Contractors must permit KfW and in case of financing by the European Union also to European institutions having competence under European law to inspect the respective accounts, records and documents relating to the Tender Process and the performance of the Contract, and to have them audited by auditors appointed by KfW.

KfW reserves the right to take any action it deems appropriate to check that these ethics rules are observed and reserves, in particular, the rights to:

- (a) reject an Offer for Award of Contract if during the Tender Process the Bidder who is recommended for the Award of Contract has engaged in Sanctionable Practice, directly or by means of an agent in view of being awarded the Contract;
- (b) declare mis procurement and exercise its rights on the ground of the Funding Agreement with the PEA relating to suspension of disbursements, early repayment and termination if, at any time, the PEA, Contractors or their legal representatives or Subcontractors have engaged in Sanctionable Practice during the Tender Process or performance of the Contract without the PEA having taken appropriate action in due time satisfactory to KfW to remedy the situation, including by failing to inform KfW at the time they knew of such practices.

KfW defines, for the purposes of this provision, the terms set forth below as follows:

Coercive Practice	The impairing or harming, or threatening to impair or harm, directly or indirectly, any person or the property of the person with a view to influencing improperly the actions of a person.
Collusive Practice	An arrangement between two or more persons designed to achieve an improper purpose, including influencing improperly the actions of another person.
Corrupt Practice	The promising, offering, giving, making, insisting on, receiving, accepting or soliciting, directly or indirectly, of any illegal payment or undue advantage of any nature, to or by any person, with the intention of influencing the actions of any person or causing any person to refrain from any action.
Fraudulent Practice	Any action or omission, including misrepresentation that knowingly or recklessly misleads, or attempts to mislead, a person to obtain a financial benefit or to avoid an obligation.

Obstructive Practice Means (i) deliberately destroying, falsifying, altering or concealing evidence material to the investigation or the making of false statements to investigators, in order to materially impede an official investigation into allegations of a Corrupt Practice, Fraudulent Practice, Coercive Practice or Collusive Practice, or threatening, harassing or intimidating any Person to prevent them from disclosing their knowledge of matters relevant to the investigation or from pursuing the investigation, or (ii) any act intended to materially impede the exercise of KfW's access to contractually required information in connection with an official investigation into allegations of a Corrupt Practice, Fraudulent Practice, Coercive Practice or Collusive Practice.

Sanctionable Practice Any Coercive Practice, Collusive Practice, Corrupt Practice, Fraudulent Practice or Obstructive Practice (as such terms are defined herein) which is unlawful under the Financing Agreement.

2. Social and Environmental Responsibility

Projects financed in whole or partly in the framework of Financial Cooperation have to ensure compliance with international Environmental, Social, Health and Safety (ESHS) standards (including issues of sexual exploitation and abuse and gender based violence) Contractors in KfW-financed projects shall consequently undertake in the respective Contracts to:

- (a) comply with and ensure that all their Subcontractors and major suppliers, i.e. for major supply items comply with international environmental and labour standards, consistent with applicable law and regulations in the country of implementation of the respective Contract and the fundamental conventions of the International Labour Organisation¹⁷ (ILO) and international environmental treaties and;
- (b) implement any environmental and social risks mitigation measures, as identified in the environmental and social impact assessment (ESIA) and further detailed in the environmental and social management plan (ESMP) as far as these measures are relevant to the Contract and implement measures for the prevention of sexual exploitation and abuse and gender-based violence.

¹⁷ In case ILO conventions have not been fully ratified or implemented in the Employer's country the Applicant/Bidder/Contractor shall, to the satisfaction of the Employer and KfW, propose and implement appropriate measures in the spirit of the said ILO conventions with respect to a) workers grievances on working conditions and terms of employment, b) child labour, c) forced labour, d) worker's organisations and e) non-discrimination.

PART 2 – WORKS REQUIREMENTS

Section VII. Works Requirements

Contents

1. Specifications

Major components of this package are

S.No.	Description	Unit
1	Collection system	105.53 Km
2	House service connection	6038 Nos
4	Pumping Main	10.80 Km
5	Lift station	7 Nos
6	Pumping station	1 No

For other information please refer

- a) Technical Specifications Please refer volume-II**
- b) Specifications for Project Area Environmental, Social, Health and Safety Management (ESHS)
- c) Personnel Requirements
- d) Equipment Requirements

3. BoQ: Please refer volume- III

4. Drawings Please refer volume-IV

Section VII. Works Requirements

1. Specifications

a) Technical Specifications

Please refer volume-II

b) Specifications for Environmental, Social, Health and Safety Management (ESHS) of the Works

Throughout the ESHS Specifications, a reference to the Conditions of Contract (CC) means a reference to both the General Conditions of Contract and the Particular Conditions of Contract. Readers should apply due care, when referring to a specific Clause or Sub-Clause, and:

- (a) Read first the Clause or Sub-Clause text from the General Conditions of Contract;
- (b) Then check whether this text has been amended by the Particular Conditions of Contract, and if so, to which extent.

As per CC Sub-Clause 1.5, when interpreting the Contract, the terms of the Particular Conditions of Contract prevail over those found in the General Conditions of Contract.

Any term in these ESHS Specifications which is identical to a term in the Conditions of Contract shall have the same meaning as the one defined in the Conditions of Contract.

Any term in capital letters in these ESHS Specifications is defined in CC Sub-Clause 1.1 – Definitions.

Table of Contents

A.	<i>Environmental, Social, Health and Safety Management</i>	97
1.	<i>Responsibilities and liabilities</i>	97
2.	<i>ESHS Planning Documents</i>	98
3.	<i>Management of Non-Conformities</i>	100
4.	<i>Resources allocated to ESHS management</i>	101
5.	<i>Inspections</i>	103
6.	<i>Reporting</i>	103
7.	<i>Code of Conduct</i>	104
8.	<i>ESHS Training</i>	105
9.	<i>Standards</i>	107
B.	<i>Protection of the Environment and People</i>	108
10.	<i>Protection of adjacent areas</i>	108
11.	<i>Selection of borrow areas, backfill material stockpile sites and access road</i>	109
12.	<i>Pollution prevention</i>	110
13.	<i>Effluents</i>	110
14.	<i>Atmospheric emissions and dust</i>	112
15.	<i>Noise and vibration</i>	113
16.	<i>Waste</i>	114
17.	<i>Vegetation clearing</i>	118
18.	<i>Biodiversity</i>	119
19.	<i>Erosion and sediment transport</i>	122
20.	<i>Site rehabilitation</i>	125
21.	<i>Documentation on site conditions</i>	126
C.	<i>Health and Safety</i>	127
22.	<i>Health and Safety Plan</i>	127
23.	<i>Health and Safety Reporting</i>	127
24.	<i>Accident reporting procedure</i>	128
25.	<i>Health and Safety meetings</i>	129
26.	<i>Security</i>	129
27.	<i>Equipment and operating standards</i>	130
28.	<i>Work permit</i>	130
29.	<i>Personal protective equipment</i>	130
30.	<i>Dangerous substances</i>	131
32.	<i>Medical check-ups</i>	134
33.	<i>First-aid</i>	134
34.	<i>Medical Services and Personnel</i>	134
35.	<i>Health care</i>	135
36.	<i>Emergency medical evacuations</i>	135
37.	<i>Access to health care and training</i>	135
38.	<i>Health monitoring</i>	136
39.	<i>Sanitary repatriation</i>	137
40.	<i>Hygiene, accommodation and food</i>	137
41.	<i>Substance abuse</i>	139
D.	<i>Local labour and relations with local communities</i>	139
42.	<i>Labour conditions</i>	139
43.	<i>Local recruitment</i>	140
44.	<i>Transport</i>	141
45.	<i>Workers' accommodation</i>	142
46.	<i>Meals</i>	143
47.	<i>Community Interaction</i>	143
48.	<i>Damage to people and property</i>	144
49.	<i>Land acquisition and land take</i>	145
50.	<i>Traffic management</i>	145
51.	<i>Fossils/ Archaeological Chance Finds</i>	147

Section VII. Works Requirements

<i>Appendix 1 Example for the Contents of a PA-ESMP</i>	<i>148</i>
<i>Appendix 2 - Properties rendering a product dangerous</i>	<i>185</i>

A. Environmental, Social, Health and Safety Management

1. Responsibilities and liabilities

- 1.1. In conjunction with his obligations defined under the Contract, the Contractor will plan, execute and document construction works pursuant to the present Environment, Social, Health and Safety specifications (ESHS).
- 1.2. The Contractor is liable for all damages to the environment and people caused by the execution of the works or the methods used for execution, unless it is established that the execution or methods were necessary, according to the provisions of the Contract or an Engineer's instruction.
- 1.3. Under the Contract and as introduced by the present ESHS Specifications, the term "Project Area" means:
 - a) The land where work will be carried out; or
 - b) The land necessary for the implantation of construction facilities (work camp, workshops, offices, storage areas, concrete production plants) and including special access roads; or
 - c) Quarries for aggregates, rock material and riprap; or
 - d) Borrow areas for sand and other selected material; or
 - e) Stockpiling areas for backfill material or other demolition rubble; or
 - f) Any other location, specifically designated in the Contract as a Project Area.

The term "Project Area" encompasses any individual Project Area or all Project Areas.

For the sake of clarity, Project Area is a different concept than Site under CC Sub-Clause 1.1.6.7.

Project Area defines an area within which the Contractor is to comply with environmental, social, health and safety obligations defined in the present ESHS Specifications.

Site is the places where the Permanent Works are to be executed and to which Plant and Materials are to be delivered, and where right of access to, and possession of, is to be given by the Employer to the Contractor. The Employer is under no similar obligation for any area located outside the Site, even if within the Project Area, where access is at Contractor's risk.

In term of physical footprint, the CC Sub-Clause 1.1.6.7 Site is included in the Project Area. The Project Area is then of greater geographical extent than the Site.

- 1.4. The ESHS Specifications refer to:

- a) Protection of the natural environment (water, air, soil, vegetation, biological diversity) in areas within any Project Area and its surroundings, i.e. including but not limited to access roads, quarries, borrow areas, stockpiling of backfill material, camps or storage areas;
- b) Health and safety conditions to be maintained for the Contractor's personnel and any other person present on the Project Areas, or along access routes;
- c) Working practices and the protection of people and populations living near the Project Area, but exposed to the general disturbance caused by works.

1.5. Subcontractors

The Contractor shall ensure that all Subcontractors and Suppliers (in particular those for major supply items) are familiar with the ESHS requirements and guidelines valid on Site and Project Area.

1.6. Applicable regulations

The Contractor must identify all applicable laws, permits and regulations in relation to the protection of the environment (water, air, soils, noise, vibration, vegetation, fauna, flora, waste, groundwater) and, pursuant to Clauses 4 and 6 of the CC, the protection of people (labour law, indigenous populations, standards on occupational exposure, other). The Contractor must list all texts, standards and other regulatory limitations in its Project Area Environmental and Social Management Plan (PA-ESMP as specified in ESHS Specifications Sub-Clause 2.1) and specify the means taken for compliance.

2. ESHS Planning Documents

- 2.1. The Contractor prepares and ensures prior validation by the Engineer, implementation and regular update of the Project Area Environmental and Social Management Plan (PA-ESMP), which includes Health and Safety aspects.
- 2.2. The PA-ESMP represents the unique reference document in which the Contractor defines in detail all organisational and technical provisions implemented to satisfy the obligations of the present ESHS Specifications.
- 2.3. The Contractor defines in the PA-ESMP the number, the locations and the type of Project Area as defined in ESHS Specifications Sub-Clause 1.3. For each Project Area, unless otherwise agreed by the Engineer, the Contractor establishes site specific management strategies and implementation and monitoring plans

Section VII. Works Requirements

(Site-ESMP) to manage and monitor Environmental, Social, Health and Safety (ESHS) risks, depending on the type, scope and risks of the project and as assessed in the project's Environmental and Social Impact Assessment (ESIA). These sub-plans shall be included in the PA-ESMP and include:

- e.g. Health and Safety Plan
- e.g. Traffic Management Plan (to ensure safety of local communities from construction traffic)
- e.g. Water Resource Protection Plan (to prevent contamination of drinking water)
- e.g. Boundary Marking and Protection Strategy (for mobilization and construction to prevent offsite adverse impacts)
- e.g. Biodiversity Action Plan
- e.g. Worksite Management Plan
- e.g. Site Emergency Plan
- e.g. Accommodation Plan
- e.g. Waste Management Plan
- e.g. Hazardous Materials Management Plan
- e.g. Specific mitigation plan for endangered species in the wider area
- e.g. Emergency plan
- e.g. Community Interaction plan

- 2.4. The PA-ESMP (and the sub-plans) are structured according to the plan specified in Appendix 1 of the present ESHS Specifications.
- 2.5. PA-ESMP covers the entire period from the Contract Agreement signature date to the date of issue of the Performance Certificate by the Engineer.
- 2.6. Unless agreed otherwise by the Engineer, the PA-ESMP is written in the language of communication defined under Sub-Clause 1.4 of the CC.
- 2.7. The first draft version of the PA-ESMP is to be provided by the Contractor to the Engineer within 28 days from the date of execution of the Contract Agreement.
- 2.8. The Contractor shall proceed in accordance with the programme, subject to the Engineer's approval of the PA-ESMP. The Employer's Personnel shall be entitled to rely upon the programme when planning their activities.
- 2.9. No physical work or activity shall commence on any Project Area until such time when the PA-ESMP, and

the annexed Site ESMP corresponding to the Project Area, are approved by the Engineer.

- 2.10. During the execution of the works, whenever instructed by the Engineer, the PA-ESMP will be updated by the Contractor and reissued to the Engineer. The revised version shall highlight the new elements incorporated in the document. Such approval shall only be withheld if the PA-ESMP shows substantial deficits.
- 2.11. Related to the PA-ESMP, the Contractor will be responsible for:
 - a) communicating the contents of the ESMPs to their Subcontractors and Suppliers (in particular those for major supply items) and workers and training them to ensure that they understand their respective responsibilities
 - b) ensuring that adequate resources are mobilised to implement the specific Plans, including input from any specialist resources necessary to ensure effective planning and implementation of measures
 - c) ensuring that the procedures established in the PA-ESMPs are complied with by their workers and Suppliers (in particular those for major supply items)
 - d) implementing effective monitoring measures listed in the PA-ESMP to ensure that the effectiveness of the activities are assessed and any issues are promptly detected and addressed
 - e) ensuring that lessons are learned and corrective actions are taken
 - f) keeping the Engineer fully informed of any Project Area ESHS issues.

3. Management of Non-Conformities

- 3.1. In application of Clause 5, non-conformities detected during inspections carried out by the Engineer are subject to a process adapted to the severity of the situation. The non-conformities will be defined as deviations from the requirements of the applicable regulations, the present ESHS Specifications, the ESMP, and the Worksite - ESMP. Non-conformities are divided into 4 categories as follows:
 - a) Notification of observation of minor non-conformities. The non-conformity results in a notification to the Contractor's Representative, followed-up by a signed notification of observation prepared by the Engineer. The multiplication of notifications of observation at the Project Area, or absence of corrective actions by the Contractor, can result in the severity of the non-conformity being raised to that of level 1.

Section VII. Works Requirements

- b) Level 1 non-conformity: Non-conformities that do not represent a serious immediate risk for health, environment, social or safety. The non-conformity is the subject of a report addressed to the Contractor and which shall be resolved within five (5) days. The Contractor addresses to the Engineer a report explaining how the non-conformity has been corrected. Further to an inspection and a favourable evaluation of effectiveness of the corrective action, the Engineer signs a close-out report for the non-conformity. In all cases where a non-conformity of level 1 is not resolved within one (1) month, the severity of the non-conformity is raised to level 2.
- c) Level 2 non-conformities: applies to all non-conformities that represent a risk with major consequences to health and/or the environment, social or safety. The same procedure as for level 1 non-conformities is applied. Corrective action shall be taken by the Contractor within three (3) days. The Contractor addresses a report explaining the corrective actions implemented. All level 2 non-conformities which are not resolved within one (1) month, are raised to level 3.
- d) Level 3 non-conformities: applies to all non-conformities that have resulted in damage to health or the environment, or which represent a high safety hazard or high social risk. The highest levels of the Contractor's and Engineer's hierarchies present in the Employer's country are informed immediately and the Contractor has twenty-four (24) hours to bring the situation under control. Pursuant to Clause 14.6 of the Particular Conditions of Contract (PC), a level 3 non-conformity results in the staged reduction of interim payments until the non-conformity has been resolved. Following the resolution of the Level 3 Non-Conformity the reduction(s) will be included in the next Interim Payment Certificate for payment. No interest will be paid on any reductions or suspended payment amounts. If the situation requires, and in pursuance to Clause 8.8 of the PC, the Engineer can order the suspension of work until the resolution of the non-conformity.

4. Resources allocated to ESHS management 4.1. ESHS supervisors and managers

- a) Pursuant to Sub-Section Specifications (c) Personnel Requirements, Sub-Clause 4.18 of the CC and in addition to the provisions of Sub-Clause 6.7 of the CC, the Contractor appoints at one or several competent Environment, Social,

Health and Safety manager in charge of implementing the present ESHS Specifications.

- b) The appointment of the ESHS Manager shall include specific instruction to enforce regulations and delegated authority to take any action, measure or to issue instructions regarding their enforcement. All staff and labour within the Project Area shall be made aware of the name and authority of the ESHS managers and supervisors.
- c) The ESHS manager holds the power within the Contractor's organisation to suspend the works if considered necessary in the event of severe non-conformities, and allocate all resources, personnel and equipment required to take any corrective action considered necessary. The ESHS Manager speaks fluently the language of communication of the Contract, and the official language of the Employer's country, if the language of communication of the Contract is not the official language.
- d) If so required in accordance with Sub-Section Specifications (c) Personnel Requirements, ESHS supervisors represent the ESHS Manager within work teams. Their role is to ensure that the works are carried out pursuant to the present ESHS Specifications and notify the ESHS Manager of any detected non-conformities.

4.2. Personnel in charge of relations with external stakeholders

- a) If so required in accordance with Sub-Section Specifications (c) Personnel Requirements, the Contractor appoints an External Stakeholders Relations Manager responsible for relations local communities, administrative authorities, and representatives of economic activities located within one hour travel from the Project Area. In smaller projects, the person responsible for relations with external stakeholders can also be the ESHS Manager appointed under Sub-Clause 4.1.1 of the ESHS Specifications, providing that the latter speaks the local population language fluently.
- b) If so required in accordance with Sub-Section Specifications (c) Personnel Requirements, the Contractor shall appoint several subject specific Community Liaison Officers.
- c) Personnel in charge of relations with external stakeholders will be based on or near the Project Area on a permanent basis.

Section VII. Works Requirements

- d) Administrations and local authorities will be informed of the existence of this person as of the start of works and will be provided with telephone contact details so as to be able to contact this person if a problem arises during the execution of works, or concerning the behaviour of the Contractor's Personnel, inside or outside the Project Area.
- 4.3. The team, including the ESHS supervisors and manager, and the person in charge of relations with external stakeholders, will be equipped with the necessary resources to operate independently and get to all location of the Project Area without delay. Commensurate with the size and location of the project, this may include:
- a) A 4WD vehicle (unless otherwise instructed by the Engineer) and the necessary operating budget;
 - b) A complete IT workstation: computer, printer, Internet access;
 - c) Field equipment: GPS, digital camera;
 - d) One communication equipment per person adapted to the context (mobile phone, satellite phone, or, should coverage not be adequate, a long-range two-way radio).
 - e) Lists of equipment will be maintained on site for inspection by Employer.

5. Inspections

- 5.1. The ESHS Manager will carry out an ESHS inspection of the facilities and Project Area on a weekly basis. A written report of reasonable length will be drafted for each weekly inspection, in a format approved by the Engineer, addressing non-conformities detected on the Project Area as specified in the present ESHS Specifications.
- 5.2. Any non-conformity shall be immediately addressed by corrective actions, which will be mentioned in the reports to the Engineer.
- 5.3. Each non-conformity will be documented by a digital photograph with captions to provide a visual illustration, explicitly indicating the location, date of inspection and the non-conformity in question.

6. Reporting

- 6.1. The Contractor includes a summary of ESHS activities implemented in relation to the execution of the works during the reporting period in the monthly Progress Report (as specified in Sub-Clause 4.21 of the CC) to the Engineer. The Contractor shall report on compliance with applicable laws, permits and regulations and the project related ESHS requirements. E.G. key issues shall include: monitoring results,

covering amongst other issues, safety issues, incidents/accidents, need for corrective measures, conflicts amongst construction workforce or with local residents, grievances of workforce or stakeholders, any other details related to the social and environmental management and performance. Issues related to Subcontractors and Suppliers (in particular those for major supply items) shall also be included.

- 6.2. The ESHS progress report is written exclusively in the language of communication defined under Sub-Clause 1.4 of the CC.
- 6.3. Specific reporting requirements related to Health and Safety are detailed in Section (e.g. Health and Safety, accident reporting)

7. Code of Conduct

- 7.1. A Code of Conduct is established by the Contractor for the Project Areas, addressing the following: safety rules, zero tolerance for substance abuse (as defined in Clause 41 of these ESHS specifications), environmental sensitivity of areas around the Project Areas, the dangers of STDs and HIV/AIDS, gender issues (in particular sexual harassment) and respect for the beliefs and customs of the populations and community relations in general (drawing special attention to the risks of prostitution and human trafficking).
- 7.2. The rules are clearly displayed at the different Project Areas and posted in the Contractor's vehicles and machinery driving cabs.
- 7.3. The rules confirm the Contractor's commitment to implementing the ESHS provisions provided for in the Contract.
- 7.4. New Contractor's Personnel and existing Contractor's Personnel are made aware and acknowledge their understanding of the rules of procedure and the associated provisions. Rules of procedure document are initialled by all Contractors' Personnel prior to the start of any physical work at any Project Area.
- 7.5. Pursuant to Sub-Clauses 6.9 and 6.11 of the CC, the rules of procedure include a list of acts considered as serious misconduct and which must result in dismissal from any Project Area by the Contractor, or by the Engineer if the Contractor is not acting in due course, should a Contractor's Personnel repeatedly commit an offence of serious misconduct despite awareness of the rules of procedure, and this is without prejudice to any legal action by any public authority for non-compliance with applicable regulations:
 - e) Drunkenness during working hours, leading to risks for the safety of local inhabitants, customers, users and personnel;

Section VII. Works Requirements

- f) Punishable statements or attitudes, and sexual harassment in particular;
- g) Violent behaviour;
- h) Intentional damage to the assets and interests of others, or the environment;
- i) Repeated negligence or imprudence leading to damage or prejudice to the environment, the population or properties, particularly breaching provisions intended to prevent the spreading of STD and AIDS;
- j) Drug use;
- k) Possession and/or consumption of meat or any other part of an endangered animal or plant as defined in the Washington convention (CITES) and national regulations.
- l) Entering property of neighbouring people without permission of the landowners or those cultivating/renting the land.

7.6. Serious misconduct, such as organization of sex trade (pimping), committing paedophilia, physical aggression, drug trafficking, deliberate and severe pollution, trading and/or trafficking in all or part of protected species, shall lead to immediate dismissal as of the first report of misconduct is detected, in application of the rules of procedure and labour laws.

7.7. The Contractor establishes a record for each case of serious misconduct, and a copy will be provided to the Contractor's Personnel in question, indicating all action taken to terminate the misconduct by the Contractor's Personnel in question and to bring the attention of other Contractor's Personnel to the type of incident detected. This record will be provided to the Engineer as an attachment to the ESHS progress report (see ESHS Specifications Sub-Clause 6.1.).

7.8. The Contractor shall without delay inform the Engineer who in case of serious misconduct shall immediately inform the Employer.

8. ESHS Training

8.1. The Contractor prepares a training programme adequate for the works to be performed within the Project Areas and the personnel engaged in the works.

8.2. The Contractor ensures that Employees with direct responsibility for activities relevant to the Project's ESHS performance are adequately qualified and trained so that they have the knowledge and skills necessary to perform their work.

8.3. Training sessions are two-fold: introductory sessions for starting work at the Project Area, and technical

training as required in relation to the execution of the works.

8.3.1. Starting work sessions are organised for each Contractor's Personnel and shall cover as a minimum:

- a) Rules of procedure;
- b) Safety rules on Project Areas;
- c) Protection of areas adjacent to Project Area;
- d) Risks relating to sexually transmitted diseases (Sub-Clause 6.7 of the CC), prostitution, human trafficking, and sexual harassment;
- e) Basic health: combating malaria (if prevalent) and waterborne diseases, improving hygiene;
- f) HIV/AIDS sensitization training,
- g) Gender sensitization;
- h) Emergency response procedures or evacuation;
- i) Community relations training for workers interacting with local communities;
- j) Communication of the contents of the Employment, Training and Worksite Management Plans to workers and all Subcontractors and Suppliers (in particular those for major supply items) and training them to ensure they understand their responsibilities with respect to employment, training and worksite management, incident reporting and response.
- k) Health and Safety awareness training
- l) The Contractor shall be responsible for informing all workers of the Worker Grievance Mechanism at the time of hiring

8.4. The Contractor shall ensure that adequate resources are mobilised for these trainings, including input from any specialist resources necessary to ensure effective planning and implementation of measures and that trainings are delivered in a timely manner.

8.5. Technical training:

- a) Training in the skills needed for tasks requiring a work permit (see ESHS Specifications Clause 27)
- b) Training in first aid and transporting the injured

Section VII. Works Requirements

- c) If applicable: appropriate driving skills
 - d) If applicable: the Contractor establishes and implements a transparent and binding Local Workforce and Supplier Training plan to enhance the capabilities of local people and companies, with a view to increasing local content
 - e) a matrix of training requirements showing the training frequency and interval between refresher courses and covering:
- 8.6. The Contractor details in the training programme the actions and ESHS training for all Subcontractors and Suppliers (in particular those for major supply items) or personnel of a joint venture when applicable.
 - 8.7. The Contractor prepares an awareness program for local communities on the risks of prostitution, human trafficking and other forms of illegal trafficking.
 - 8.8. The Contractor shall develop means of confirming that the training system is effective.

9. Standards

- 9.1. The Contractor complies with all applicable norms, standards and discharge limit values defined in the national regulations of the Employer's country regulations and pursuant to Sub-Clause 1.6 of the present ESHS Specifications.
- 9.2. The Contractor complies with norms, standards and discharge limit values recommended by the specialised international organisations affiliated to the United Nations, as described in ESHS Specifications 9.3 below. In the event of discrepancies in between international standards and national regulations, the Contractor shall comply with the most stringent requirements.
- 9.3. The specialised international organisations affiliated to the United Nations referred to in ESHS Specifications Sub-Clause 9.2 include:
 - a) World Bank, including the IFC and its Environmental, Health and Safety guidelines available from <http://www.ifc.org/ehsguidelines>;

For matters not addressed in the above mentioned IFC document, the most stringent of the norms, standards and discharge limit values of the following institutions shall apply:

- a) World Health Organization (WHO);
- b) International Labour Organization (ILO) (in particular in pursuance to Clauses 6.20, 6.21, 6.23 and 6.24 of the CC);
- c) International Maritime Organization (IMO).

B. Protection of the Environment and People

10. Protection of adjacent areas

- 10.1. The Contractor shall be responsible for any foreseeable adverse environmental and social impacts arising from its activities and operations and for putting in place any necessary measures to avoid or if not possible mitigate them.
- 10.2. Pursuant to Sub-Clause 4.18 of the CC, and unless instructed otherwise by the Engineer, the Contractor uses construction methods and means of protection in order to avoid or minimize adverse effects that are incurred on vegetation, soils, groundwater and surface water, biodiversity, natural drainage and the water quality in areas within any Project Area and its surroundings for the entire duration of the works.
- 10.3. Prior to the start of Project activities, the Contractor will stake out the alignments, boundaries and limits of Project sites in accordance with plan(s) agreed upon in advance with the Engineer. Contractor will establish the working strip to restrict the area of impacts to within the working corridor and limit personnel and vehicle movements to only within working areas.
- 10.4. All Project work activities will stay within the staked out alignments and boundaries, and outside the designated ecologically and archaeologically sensitive areas unless specifically authorised by the Employer as part of the Project.
- 10.5. Prior to construction, the Contractor shall place signs with environmental protection information in areas identified as environmentally sensitive, and other areas where sensitive flora and fauna species are situated immediately adjacent to construction areas and that may be inadvertently disturbed or damaged during construction. Sensitive areas may include, but are not limited to, nest sites, plant and wildlife species of high conservation value, site-specific habitat features to be protected.
- 10.6. Wetland areas include marshes, fens, mires or natural or artificial bodies of water, whether permanent or temporary, where water is stagnant or flowing, fresh, saline or briny, including seawater with a low-tide depth of six metres or less. Filling of all or part of a wetland area is not permitted, unless the works are necessary according to the provisions of the Contract or the instructions of the Engineer.
- 10.7. With the exception of access roads, or unless instructed otherwise by the Engineer, the entire perimeter of land sites with a surface area of less than 2 hectares is physically demarcated with a fence or tape. For Project Area with a surface area of more than 2 hectares, the perimeter will be physically

Section VII. Works Requirements

demarcated by a perimeter track, road, signs or any other means leaving no possible ambiguity as to the location of the Project Area perimeter.

10.8. Unless otherwise specified, the perimeter of the Project Area is at a distance of at least:

- a) 50 m from any permanent water course and outside of floodable areas;
- b) 300 m from sensitive urban services and buildings (health centre, school, water supply for populations);
- c) 200 m from any housing; and
- d) 300 m from housing in the specific case of work requiring the use of explosives.

10.9. If the footprint of the works are located in the situations a) to d) of the ESHS Specifications Sub-Clause 10.8 above, and unless agreed upon otherwise by the Engineer, the Contractor will contract a bailiff to make a sworn statement regarding the existence and conditions of residential buildings situated around the site with a distance specified in Sub-Clause 10.8 above.

10.10. The Contractor shall perform a topographic survey of all additional areas and facilities, including ground elevations in order to reinstate the land after termination of the works; this includes recording all perimeter GPS coordinates; and ensuring that the entire area proposed for land take or temporary usage is included in the survey and recorded via photographs. Access roads shall be identified as new, upgraded or existing. All data, including GPS coordinates, shall be provided electronically to the Engineer.

10.11. The bailiff's sworn statement is prepared and provided to the Engineer with the Site-ESMP.

11. **Selection of borrow areas, backfill material stockpile sites and access road**

11.1. The Contractor will submit to the Engineer for prior approval, including but not limited to (i) the location of proposed borrow areas or areas to be excavated, or (ii) proposed backfill material stockpile locations or zones designated for the rubble from demolition works; maintenance facilities, storage areas, batch plants, etc.

11.2. This requirement also applies to the side casting during the construction of linear infrastructure (roads, pipelines, transport routes) and which are included in the category of stockpiling of waste material.

11.3. The opening or rehabilitation of all access routes between Project Areas will be shown on a map and approved by the Engineer prior to the start of the corresponding works.

12. Pollution prevention

- 12.1. The Contractor shall take the necessary measures to ensure that pollution to air, water or land is prevented or, where this is not possible, reduced and mitigated as far as practicable during the construction phase. If required in the PA-ESMP the Contractor will develop a pollution prevention Plan for managing e.g. atmospheric emissions and dust, e.g noise and vibrations, e.g waste (specified in ESHS Specifications 13, 14 and 15 below):
- a) liquid effluents (see Clause 15 of these ESHS specifications)
 - b) air emissions
 - c) noise and vibration management
 - d) vehicle and equipment maintenance and selection
 - e) fuel, oil and chemical storage and handling.
- 12.2. Environmental and/or occupational health and safety regulators will be notified and informed as required by applicable laws about any Environmental pollution. The Contractor shall ensure that all appropriate environmental protection measures are adopted during the clean-up process after termination of works and that clean-up activities are appropriately documented

13. Effluents

- 13.1. Effluents consist of liquid discharges, including infiltration, from Project Area, transporting a pollutant (dissolved, colloidal or particles).
- 13.2. A pollutant is a given chemical compound that is at a concentration greater than the limit value established for that compound according to the Clause 9 of the present ESHS Specifications.
- 13.3. If no recognized threshold exists for a chemical compound pursuant to ESHS Specifications Sub-Clause 12.2, the Contractor provides proof that the concentrations of the chemical in effluents released (discharged) to the environment are harmless to it and human beings.
- 13.4. No effluent is discharged by the Contractor neither into water courses or bodies including marine environment nor to ground surface or infiltrated into subsoils, without prior treatment and without monitoring quality of the treatment's performance to guarantee the absence of pollution in the effluent. Effluent discharge and flow rates into natural water bodies will be managed to control erosion/sediment freight.
- 13.5. The Contractor is responsible for carrying out or contracting the monitoring of the effluent quality pursuant to Sub-Clause 12.4 of the present ESHS

Section VII. Works Requirements

Specifications by in situ measurements, and sampling and laboratory analysis. In the first case, the Contractor provides the ESHS manager with the resources, equipment and skills to carry out in-situ monitoring and laboratory analysis of the performance indicators. In the second case, the Contractor establishes a contract with a specialised laboratory, accredited with the Employer's country authorities for this activity.

- 13.6. The physical and chemical parameters of an effluent that require quantity and quality monitoring are those listed in the Employer's country environmental regulations or in additional international standards or guidelines, or if these do not exist, the parameters are based on the recommendations of specialised international organisations pursuant to Clause 9 of the present ESHS Specifications. The list of monitoring parameters requires approval from the Engineer.
- 13.7. The Contractor will list, locate, and characterise (flow, expected quality, discharge frequency) all sources of effluents and outlets to the natural environment in the Site Environment Management Plan(s).
- 13.8. The Contractor will submit to the Engineer an Effluent Quality Monitoring Report on a monthly basis, including documentation for the following for each effluent discharge point: (i) average flow rates of discharged effluents, (ii) discharge frequencies and durations over the month, and (iii) the physical and chemical quality of the effluent discharged, for the conformity with parameters listed in ESHS Specifications Sub-Clause 12.1above.
- 13.9. Wastewater run-off
 - 13.9.1. The Contractor will take appropriate measures to ensure that discharges of process wastewater, sanitary wastewater, wastewater from utility operations or stormwater to surface water will not result in contaminant concentrations in excess of local ambient water quality criteria or, in the absence of local criteria, other sources of ambient water quality.
- 13.10. Rainwater run-off
 - 13.10.1. Run-off consists of the rainwater flow on the surface or the soil and other technical surfaces at Project Areas.
 - 13.10.2. In the context of the Contract, surface run-off is considered as an effluent unless demonstrated otherwise, as documented and substantiated by the Contractor, and approved by the Engineer.

13.10.3. All platforms where generators, hydrocarbon storage tanks and refuelling stations are installed have impervious and chemical resistant surfaces are drained separately and equipped with an oil removal treatment (oil-water-separator) to prevent pollution pursuant to ESHS Specifications Sub-Clause 12.4 above. For concrete batching plants, run-off will be drained to settling basin, where the pH will be buffered.

13.11. Contractors shall prohibit its workers and its subcontractors from bathing or washing clothes and vehicles/equipment in rivers or watercourses.

14. Atmospheric emissions and dust

14.1. Emissions refer to any discharge into the air of solid substances, aerosols, gases, radiation, or energy, whether point sources (e.g. incineration stack) or diffuse (e.g. fugitive dust emissions from road use by trucks).

14.2. The Contractor will use equipment and adopt construction and transport methods with atmospheric emissions which are not in excess of the threshold emission values recommended by the Employer's country standards, or the organisations mentioned in Clause 9.

14.3. Once having received the agreement from the Engineer, the Contractor will document the maintenance records for its fleet of vehicles, machinery and equipment. The records will be in the language of communication defined under CC Sub-Clause 1.4, or any other language approved by the Engineer, and will be at the disposal of the Engineer.

14.4. The fleet of vehicles or equipment emitting combustion gases will be maintained at the intervals and according to the methods specified by the manufacturer.

14.5. The Contractor shall exercise care to minimize emissions of dust from its activities, including traffic, at work sites, in residential areas and on access roads. Where it is deemed that dust is impacting or may have an impact on human, plant or animal receptors or where dust may cause sedimentation of watercourses/water bodies or unacceptable levels of soil loss, the Contractor shall apply water to the area creating the dust and consider implementing other dust control measures such as using windbreaks, netting screens or semi-permeable fences; controlling vehicle speeds to reduce traffic-induced dust dispersion and resuspension by setting and enforcing speed limits (Contractor vehicle speed

Section VII. Works Requirements

limits are specified in ESHS Specifications Sub-Clause 50.10).

- 14.6. This shall include: posting speed limit signs in sensitive areas; ensuring trucks hauling sand, dirt or other loose materials are covered (sheeting trucks); suspending topsoil stripping and replacement during strong winds; using a dust collection system for bulk materials unloading; wet suppression (as needed, depending on the soil type) in the dry season, where unpaved roads and/or the working strip is located <200 m from settlements taking appropriate abatement measures.
- 14.7. The Contractor describes in the PA-ESMP the road sections designated for the application of dust suppression agents and the methods and frequencies programmed. The Contractor will implement the measures approved by the Engineer.
 - 14.7.1. Where applicable, visual inspections of atmospheric emissions shall be conducted, especially dust and emissions from vehicles and machinery as agreed with the Engineer. The inspections shall identify areas where the implementation of dust reduction measures is required,
 - 14.7.2. When storage, transport and handling of bulk materials is made in the open air and exposed to the wind, the Contractor implements the necessary dust abatement measures.

15. Noise and vibration

- 15.1. The Contractor uses equipment and adopts construction and transport methods so not to generate noise levels in excess of values recommended by the Employer's country regulations and organisations mentioned in Clause 9.
- 15.2. The Contractor will plan high noise generating works (e.g. pile driving, blasting, rock clearing, drilling, percussion drilling) in line with national regulations and respect maximum ambient noise-levels and night time rest hours at the nearest receptor area. A receptor is defined as an area used for nocturnal socioeconomic activities (e.g. accommodation camps, residential areas, hotels, health centres).
- 15.3. The Contractor shall locate stationary equipment (such as power generators and compressors) as far as possible from nearby receptors (e.g. worker resting areas, populated areas and environmentally sensitive areas). Equipment known to emit noise strongly in one direction, whenever possible, will be orientated so that the noise is directed away from sensitive receptors
- 15.4. The use of heavy vehicles at night is specified in ESHS Specifications Sub-Clause 50.9.

15.5. Standard noise abatement equipment shall be fitted to equipment by the Contractor, used and maintained in accordance with manufacturers' instructions.

16. Waste

16.1. The Contractor is responsible for identifying, collecting, transporting and treating all waste produced on the Project Areas.

16.2. The Contractor shall minimize the generation of waste and reuse, recycle and recover waste in a manner that is safe for human health and the environment.

16.3. The Contractor shall establish a Waste Management Plan which details a concept to manage non-hazardous and hazardous waste in line with the local legislations and adapted to the level of danger for human health or the natural environment. In absence of adequate legislation, waste shall be managed according to the guidance provided in the respective sections of the General World Bank Group EHS Guidelines with the objective of protecting soil and water resources. The Waste Management Plan shall include provisions for the training of workers.

16.4. Waste register and categorization:

16.4.1. The Contractor establishes and maintains a waste register which is at the disposal of the Engineer. This register will record all waste management operations: production, collection, transport, treatment. It will be available as of the Contractors mobilisation to any Project Area. Waste shall be categorized according to the following definitions:

- a) Non-hazardous solid waste generated at construction and decommissioning sites includes excess fill materials from grading and excavation activities, scrap wood and metals, and small concrete spills. Other non-hazardous solid wastes include office, kitchen, and dormitory wastes when these types of operations are part of construction project activities.
- b) Hazardous solid waste includes contaminated soils, which could potentially be encountered on-site due to previous land use activities, or small amounts of machinery maintenance materials, such as oily rags, used oil filters, and used oil, as well as spill cleanup materials from oil and fuel spills.
- c) Hazardous liquid waste includes effluents and waste material containing "free liquids" (e.g used cutting oil or wastewater mixed with oil after cleaning machinery).

Section VII. Works Requirements

16.5. The following aspects are documented in this register:

- a) Type of waste, using the nomenclature specified in Sub-Clause 16.3.1 above;
- b) Waste quantities;
- c) Name and address of the third party waste management facilities receiving waste or parties taking possession of the substances no longer considered as waste;
- d) Name and address of waste transport Contractors;
- e) Planned waste treatment.

16.6. In accordance with national regulations, the Contractor files and maintains at the disposition of the Engineer the waste manifests for the collection, transport, treatment and/or elimination of waste.

16.7. The Contractor assesses, document and effectively implements any local recycling or re-use options for its waste.

16.8. Waste is stored separately prior to removal from the Project Areas, depending on the level of danger, phase (liquid, solid or gas), the waste management solution to be applied and its potential in terms of recycling or reuse.

16.9. Waste is collected from each Project Area at the same rate that it is produced and is placed in temporary locations meeting the following criteria:

It shall be located at a distance of over 100 m from any natural sensitive area and over 500 m from any socioeconomic sensitive area (school, market, healthcare centre, water well or catchment area), with the exception of waste storage area in camps; and on a flat impervious surface to prevent infiltrations.

16.10. Unless otherwise specified in the Contract or instructed by the Engineer, waste incineration is prohibited on Project Areas. Two exceptions are medical waste and green waste, which unless instructed to the contrary by the Engineer, are managed pursuant to Clause 16.3 of the present ESHS Specifications.

16.11. The use of third party waste management services is subject to a documented prior audit of the treatment, storage and recycling facilities by the Contractor, to guarantee the conformity with the provisions of the present ESHS Specifications on waste.

16.12. Pursuant to Sub-Clause 1.5 of the present ESHS Specifications, the provisions applicable to the Contractor regarding waste management also apply to any third party waste management Subcontractor.

The Engineer reserves its right to inspect third party waste management facilities and prohibit the Contractor from using the facilities if considered unacceptable.

16.13. Non-hazardous waste management

16.13.1. The management of non-hazardous waste shall comply with the following conditions:

- i. The Employer will communicate information to the Contractor about the location of and distance to the nearest landfill area and the disposal conditions.
- ii. If no landfill area exists nearby, the Employer will communicate to the Contractor where the Contractor shall establish a temporary landfill area. The Employer is responsible for obtaining the respective permits.

16.14. Hazardous waste management

16.14.1. The Contractor shall develop a Hazardous Materials Management Plan for those hazardous materials the Contractor is directly responsible for, and detailed procedures for working with chemical products and hazardous materials and handling hazardous waste.

16.14.2. Hazardous materials are those that pose a potential risk to human health or the environment and include cleaning chemicals, solvents and fuels.

16.14.3. Fuel and hazardous chemicals/materials shall be stored in designated areas, pursuant to Sub-Clause 26.8 of the present ESHS Specifications, except for quantities generated or required for the daily construction activities. Fuel, oil or hazardous materials required to be temporarily stored onsite shall be stored within secondary containment located greater than 100m from a watercourse or water body.

16.14.4. Fuel and hazardous chemical storage areas shall not be allowed within 30m of a minor watercourse, within 100m of a major watercourse, within a floodplain or where there is the potential for spilled fuel to enter groundwater.

16.14.5. All fuel and hazardous chemical storage facilities shall be located on flat or gently sloping ground and shall be contained

Section VII. Works Requirements

within a bund designed to contain at least 110% of the total capacity of the storage containers plus 10% of the aggregate tank volume within the containment area or as otherwise specified by regulatory requirements. The bund walls and floor shall be constructed of concrete or other suitably impermeable material. The filling connection must be within the bund. No drain valves or other connections through the bund walls shall be permitted. Tanks shall be fitted with a gauge to allow the fill level to be monitored during refilling and preferably with a high-level alarm.

- 16.14.6. When the Contractor's hazardous waste management is conducted by third parties, they must be reputable and accredited in the Employer's country for this activity.
- 16.15. If applicable and in the absence of an existing waste management solution for hazardous waste, the Contractor takes the following action:
 - 16.15.1. Medical waste is incinerated in a specific facility constructed and accredited for this purpose. The Contractor will submit the technical specifications of the facility to the Engineer before importing or procuring the equipment.
 - 16.15.2. Hydrocarbons, lubricants, paints, solvents and batteries are transported in drums to suitable waste management facilities available, if available.
 - 16.15.3. If not otherwise instructed by the Engineer, contaminated soils from construction/demolition and drilling muds shall be treated, stabilized and disposed of to landfill. Prior approval is required from the Engineer regarding the method and site location. The Employer obtains authorization from the competent local authorities prior to any disposal to landfill.
 - 16.15.4. Prior approval from the Engineer is required before implementing waste management solutions on any other hazardous waste.
 - 16.15.5. Prior to the issue of the Taking Over Certificate for the Works, the Contractor provides documentation on hazardous waste, produced by the Contractor's works, landfilled at other sites than accredited third party waste management facilities. The documentation includes a plan showing the location of landfill sites. The document is

provided to the competent local authorities whose jurisdiction covers the landfill sites.

- 17. Vegetation clearing**
- 17.1. The works, including the opening up of the right of way and other worksites (e.g. camps, access roads, storage yards) may require vegetation clearance in work areas. Vegetation includes crops, trees, shrubs, bushes, grasses and other minor vegetation. Supervisors shall be trained in the controlled felling of trees to prevent impacts beyond worksites. They shall also be trained on the importance of identification and preservation of wild fauna encountered and disturbed during the stripping operation.
- 17.2. The Contractor describes in the PA-ESMP the planned methods and schedule for vegetation clearing. Specific agreement from the Engineer is obtained prior to any clearing works.
- 17.3. Vegetation clearing using chemicals is not permitted. Vegetation clearing using bulldozer is not permitted in zones less than 30 m from areas designated as sensitive by the Engineer, where only manual clearing is authorised.
- 17.3.2. Where it is not possible to restrict the timing of construction practices, vegetation shall be removed outside the breeding period so that works can carry on into this period unhindered.
- 17.3.3. The felling of trees shall be avoided where possible. Felled trees may be used for building gabions if required for land stabilization. Vegetative material (slash) is not to be used for construction purposes and shall be stockpiled at the edge of worksites. Areas of gathered plant material shall be separated to prevent flames spreading in the event of a fire.
- 17.3.4. Unless otherwise specified in the Contract or if otherwise instructed by the Engineer, burning vegetation is not permitted. Green waste can be burnt with prior approval from the Engineer regarding the location, method and schedule.
- 17.3.5. The collection of wild plants is prohibited.
- 17.3.6. Lighting fires in work areas is prohibited unless specifically authorised by the Employer.
- 17.3.7. It is prohibited to introduce foreign/non-adapted vegetation to the worksites.
- 17.3.8. Removed vegetation will be placed far from surface water. Large woody debris

Section VII. Works Requirements

will be stored along the outside edge of worksites in clear areas. Small twigs, branches and pieces of vegetation shall be used for composting along with biodegradable waste generated in the camp and work areas.

17.3.9. Clearing of vegetation shall be limited to that which is strictly necessary.

17.3.10. Where possible, cutting of vegetation on steep hillsides will be minimal.

17.4. Areas cleared prior to undertaking earthworks are shown on a plan with a minimum scale of 1/10,000. Plans are submitted to the Engineer, for validation prior to starting clearing works.

17.5. The Contractor undertakes physical demarcation of zones to be cleared using a method approved by the Engineer.

17.6. The characteristics (location, species, diameter at chest height) of trees not to be cut down are defined by the Engineer in coordination with the Employer. Such trees are marked with paint and protected against clearing machinery using a method approved by the Engineer.

17.7. Trees and areas to be cleared are to be marked precisely so that clearing is undertaken without damage to adjacent non-cleared areas. Topsoil is stored within the cleared areas at the edge of the cleared zone. Clearing is undertaken working from the edge of the zone inwards.

17.7.1 During clearing, the Contractor stockpiles separately:

(i) tree trunks with a diameter at chest height greater than the size defined by the Engineer, and

(ii) trunks with a smaller diameter, branches, leaves, stumps and roots.

17.7.2 Unless instructed otherwise by the Engineer the trunks of trees exceeding the diameter defined by the Engineer are the property of the Contractor.

18. Biodiversity

18.1. The Contractor shall ensure that all personnel are informed and aware of the importance to protect species, habitats, fauna and flora and are informed about wildlife encounter procedures. Information and awareness training is documented.

18.2. If applicable, the Employer will provide to the Contractor a range of ecological surveys prior to the start of construction, conducted by the Employer. These will include but not be limited to the type and

location of identified species and habitats of conservation interest within the Project Area, and any resulting measures that are required by Contractor.

- 18.3. The Employer will provide to the Contractor a constraints map, showing the areas where sensitive, endangered or breeding species are known to occur, including protected areas, sites of importance for nature conservation, wildlife refuges, nature and national parks, important bird areas.
- 18.4. The Employer will inform the Contractor about seasons for the protection of birds and wildlife. If applicable, the Employer will inform the Contractor if, as a result of protecting birds and wildlife, construction is restricted during a certain period and/or the Contractor must take precautionary measures in compliance with respective national laws and/or as stipulated by the respective local authorities.
- 18.5. The Employer may update information on the presence of wildlife or sensitive or endangered species' in the Project Area following any additional wildlife/endangered species' survey. If any are identified, the Employer will notify the Contractor who will ensure that all personnel are informed and aware of the required mitigation procedures as communicated by the Employer.
- 18.6. The Contractor shall apply the Contracting Authority's procedures with regards to fauna and flora management prior to clearing activities.
- 18.7. The Employer will communicate to Contractor his specific responsibilities related to protecting endangered species, biodiversity and wildlife, present within the Project Area. Responsibilities may include but not be limited to the following measures:
 - a) The Contractor's personnel shall not approach, injure, hunt, capture, possess, feed, transport, rear or trade wild animals and/or collect birds' eggs on the Project Areas
 - b) The Contractor's personnel shall avoid where possible breeding, feeding and nesting sites of endangered species, as identified by the Employer's environmental experts and as communicated to the Contractor by the Employer.
 - c) The Contractor personnel shall not collect flora or fauna species on the Project Areas.
 - d) The Contractor shall report any sighting or finding of dead wildlife killed by the works to the Engineer immediately.

Section VII. Works Requirements

- e) The Contractor shall protect excavations with temporary fencing to prevent injury to animals.
- f) The Contractor shall release any trapped uninjured animals immediately.
- g) The Contractor shall report injured endangered and/or larger animals to the Engineer who will inform the appropriate Environmental Authority.
- h) The Contractor shall not disturb natural habitats outside the Project Areas.
- i) The Contractor shall only use designated roads or paths and abide by speed limits.
- j) The Contractor shall not start forest fires.
- k) The Contractor shall not introduce Invasive Alien Species (IAS)
- l) All construction machinery imported from overseas shall be inspected to detect IAS and washed before dispatching to the Project Areas.
- m) Where necessary, the Contractor shall develop IAS control procedures (e.g. physical removal, slashing, mulching, herbicides, etc.). Methods used to control or prevent such species shall not cause adverse impacts on the environment or communities.
- n) To limit the risk of introducing marine invasive species, the Contractor shall control the ballast water and anti-fouling systems of vessels arriving from other bioregions in accordance with International Maritime Organization (IMO) conventions and guidelines.

18.8. For impacts to biological resources:

- a) development of a specific mitigation plan for endangered species in the wider area
- b) trenches or holes created during site works must be covered at night

18.9. Regarding habitat loss/degradation and habitat fragmentation Contractor will:

- a) site permanent infrastructure on unused land of no particular ecological value
- b) take no construction materials from the surrounding environment unless otherwise specified in the respective management plan
- c) monitor the impacts on flora and fauna at sensitive locations

18.10. The Contractor will adopt best construction site practices to minimize the risks of adverse effects on

neighbouring habitats/species from construction activities (dust, noise, waste disposal etc.). This will include appropriate toilet and litter collection facilities as inspected by the environmental coordinator.

19. Erosion and sediment transport

- 19.1. Erosion and sediment control shall be taken into consideration from the beginning of the construction phase, i.e. from site clearance.
- 19.2. The Contractor plans earthworks and optimises the management of space to ensure that all cleared surfaces and areas exposed to soil erosion are minimised on all Project Areas and erosion is minimised as far as practical.
- 19.3. The Contractor shall determine the appropriate locations and the type of erosion control measures required, to be agreed with the Engineer.
- 19.4. If not instructed otherwise by the Employer, the Contractor shall install erosion matting to provide an immediate protection for slopes against erosion, prevent the washing-out of seeds and enhance the micro-climatic conditions in the soil for plant growth. Erosion matting is used to provide temporary protection of the soil surface until sufficient natural vegetation cover has been established.

19.5. Topsoil

- 19.5.1. Topsoil is the uppermost and most fertile portion of the soil (unless indicated otherwise, the top 25 centimetres), containing organic matter, seeds and nutrients that promote vegetation growth. Its presence is a key factor in promoting revegetation success. Consequently, preserving topsoil is a key component of revegetating worksites and restoring the soil's ability to protect itself against erosion. Contractor shall observe the following basic principles of good topsoil management:
- 19.5.2. Topsoil shall be removed from working areas only when absolutely necessary and in accordance with Project guidelines. Areas subject to topsoil stripping will be identified prior to grading activities.
- 19.5.3. Any plant, turf layer or root mass will be stripped together with the topsoil, except in wetlands where the turf will be stripped separately from the topsoil layer where practical. Topsoil will be removed using backhoes only.

Section VII. Works Requirements

- 19.5.4. Topsoil is stored according to the provisions approved by the Engineer to enable reuse during Project Area rehabilitation.

19.6. Draining rainwater run-off

- 19.6.1. Run-off from the working corridor will be intercepted. Surface water run-off will not be permitted to enter surface watercourses. Contractor will take appropriate measures.
- 19.6.2. The gradient of Project Areas allows the collection and drainage of rainwater from the entire surface area to one or several discharge points. No pools of water are created.
- 19.6.3. Suspended solids in rainwater are removed using sediment traps / settling ponds. Rainwater from vehicle parking areas, machinery areas, workshops is subject to treatment with oily water separators.
- 19.6.4. Rainwater pre-treatment units are sized, cleaned, maintained and accessible to ensure compliance with the effluent quality criteria defined in ESHS Specifications Sub-Clause 12.9 and to allow monitoring of performance.

19.7. Sediment control

- 19.7.1. The Contractor installs sediment control barriers to slow the flow of water and control sediment transport at Project Areas with (i) a gradient of more than 20%, and (ii) where land is disturbed by the works or where stockpiled mineral material exposed to sheet or rill erosion.
- 19.7.2. Sediment control barriers are installed on the slope or at the base of the slope to protect the natural drainage system from sediment accumulation at levels higher than the natural situation. These barriers comply with the following principles:
 - a) Made with geotextiles or straw bales or any other means pre-approved by the Engineer;
 - b) Deployed before the start of works and removal of topsoil. Barriers

can be used for the physical demarcation of working areas;

- c) Installed, cleaned, maintained and replaced according to manufacturer recommendations;
- d) If applicable, drainage surface area does not exceed 1,000 m² per 30 m of barrier. The length of the slope behind the barrier is less than 30 m, and is not used for flows in excess of 30 l/s.

19.7.3. For the dredging of marine sediments, if applicable and unless specified otherwise in the Contract, or instructed otherwise by the Engineer, and particularly if the working area is exposed to currents, the Contractor will install a geotextile silt curtain, or any other technique approved by the Engineer to control turbidity clouds.

19.8. Backfilling and stockpiling of backfill materials

19.8.1. In case mineral material stockpiles do exceed a height of 6 m, with a maximum slope of 3:2 (height: volume), the slope has to be crossed at a height of 3 m by a berm with a minimum width of 2 m and with a peripheral drainage trench, to ensure stability and resistance to rainwater runoff erosion.

19.8.2. For permanent backfill material stockpiles, the stockpile is shaped and compacted every 30 cm to ensure long-term stability.

19.8.3. Temporary stockpiles in place for more than 60 days are protected against runoff erosion by (i) revegetation using fast-growing grass species, either by direct seeding or by hydro-seeding, or (ii) using other natural anti-erosion cover with prior approval from the Engineer.

19.9. Side casting during the construction of linear structures (roads, pipelines, transport lines), will be permitted in the following conditions:

19.9.1. For natural gradients with a slope <40%, the side cast materials are piled to create a slope of less than 2H:1V.

Section VII. Works Requirements

19.9.2. For natural gradients with a slope >40%, to ensure stability 3m wide berms will be installed perpendicular to the slope and onto which the side cast material is deposited. Regular earthworks to maintain the form of the side case and long term stability of the side cast is carried out. The slope of the side cast in general does not exceed 3H:2V.

19.9.3. The provisions of Clauses 10 and 19.6 for the protection of water courses exposed to erosion induced by the works apply.

20. Site rehabilitation

20.1. Unless instructed otherwise by the Engineer, the Contractor will rehabilitate all Project Areas and landscapes disturbed by the works, to their original condition where possible upon completion of construction and prior to the provisional acceptance of the works. Close collaboration with all statutory stakeholders will be conducted in cooperation with the Employer during the reinstatement.

20.2. The Contractor describes in the PA-ESMP the planned revegetation works to ensure sustainable Project Area rehabilitation: methods, plant species to be used and their origins, activity schedule based on a progressive taking over of Project Areas.

20.3. As a minimum, the Contractor shall carry out the following reinstatement activities:

20.3.1. If not otherwise instructed by the Engineer, all buildings, campsites and free standing and underground structures (e.g. piping, underground tanks, sumps and basins) are removed pursuant to the provisions of Sub-Clause 4.23 of the CC. All waste and rubble is removed in accordance to the provisions of Clause 16 of the present ESHS Specifications. After removal of buildings structures and rubble, the Contractor returns Project Areas to their original condition, according to the following provisions.

20.3.2. Land is levelled to ensure that run-off water drains without eroding soil or stagnating in pools.

20.3.3. Rehabilitated Project Areas do not represent hazards for people. Areas near steep drops at quarries are fenced off and indicated with permanent concrete warning signs. Holes are refilled. Sharp or unstable items are rendered inoffensive.

20.3.4. Unless specified otherwise in the Contract, or instructed otherwise by the Engineer, the

Contractor undertakes revegetation of all Project Areas disturbed by the works and bears the cost of such work.

- 20.4. Fertiliser application shall be limited to areas where it is necessary to establish a rapid vegetative cover for erosion control purposes in areas of high risk. Any fertiliser applications must be formulated and performed so that natural nutrient balances in adjacent ecosystems are not altered, particularly where there are nearby water bodies.
- 20.5. The Contractor shall perform routine maintenance of revegetated areas until such time that occupation of the land is officially handed back to the Employer or third parties.
- 20.6. The Contractor shall control noxious weeds and invasive species within revegetated areas.
- 20.7. Prior approval by the Engineer is required regarding the origin of seeds and plants proposed by the Contractor. The species used for revegetation must be suitable for the local environmental conditions, and selected according to the rehabilitation programme: stabilisation of backfill, landscaping, drainage, prevention of erosion, etc.
- 20.8. Revegetation is undertaken throughout the duration of construction works, and is not limited to the rehabilitation of Project Areas at completion of the works.
- 20.9. The present Clause applies to the side casting of waste mineral materials generated during the construction of linear structures (roads, pipelines, transport lines).

21. Documentation on site conditions

- 21.1. The Constructor documents changes in condition of all Project Areas from the start of works until the Performance Certificate is issued. Documentation comprises dated and geo-referenced colour photographs taken from a constant angle and viewpoint.
- 21.2. The Project Area condition is documented as a minimum for the following stages:
 - a) Before any Project Area disturbance at the start of works;
 - b) On completion of works, but prior to starting rehabilitation;
 - c) On completion of rehabilitation and revegetation, if necessary, but prior to the Taking Over Certificate issuing;
 - d) After the end of the Defects Notification Period and prior to the Performance Certificate issuing.

Section VII. Works Requirements

- 21.3. The Contractor specifies in the PA-ESMP (i) the list of viewpoints to be used, (ii) areas to be photographed, and (iii) methods used for taking and archiving photographs, according to industry photographing and archiving standards.
- 21.4. Adjacent areas (100 m from the perimeter of the Project Area) are included in photographic documentation.

C. Health and Safety

22. Health and Safety Plan

- 22.1. In application of Clauses 4 and 6 of the CC, the Contractor shall develop a Health and Safety Plan (HS Plan) section of the PA-ESMP, its organization for managing health and safety, pursuant to its Health and Safety Management system (HSMS).
- 22.2. Pursuant to Clause 6 of the CC, the HS plan identifies and specifies:
 - a) That Contractor understands and manages all health and safety risks relating to the execution of the works, including gender-specific risks;
 - b) Prevention and protection measures to control risks related to the execution of the works, by differentiating, where necessary, measures concerning the protection of women and men;
 - c) Human and material resources involved;
 - d) Works requiring a permit (e.g. blasting, butting of trees);
 - e) Emergency plans to be implemented in the case of an accident.
- 22.3. The Contractor implements prevention, protection and monitoring measures, as described in the health and safety plan.
- 22.4. The Contractor shall have in place a Behavioural Safety Based Programme and actively train and encourage Personnel to intervene on unsafe behaviours and situations and report on deviations.

23. Health and Safety Reporting

- 23.1. The Contractor shall document in a structured system (e.g. a Site Accident record sheet) all accidents, dangerous occurrences and investigations which shall be available at all times for inspection by the Engineer.
- 23.2. The Contractor shall investigate any incident and record and report systematic follow-up of relevant findings and recommendations. Problem areas related to HS shall be recorded with information about status, responsible person(s) and alternative solutions.

24. Accident reporting procedure

- 23.3. As specified in Sub-Clause 4.21 of the CC, the Contractor includes in the Progress Report to the Engineer a monthly HS Performance Report. The format and content of the HS Performance Report shall be agreed with the Engineer prior to the commencement of the works and report them to the Engineer.
- 23.4. In pursuance to clauses 4 and 6 of the CC, this report shall contain the following data, as related to the works:
- a) Progress against implementation of the Contractor's HS Plan
 - b) A list, including a brief description, of all incidents and dangerous occurrences
 - c) Number of fatalities
 - d) Number of serious incident frequency
 - e) Total Recordable injury frequency
 - f) Number and type of accidents with and without lost-time
 - g) Serious illness
 - h) Total number of 'near miss events;
 - i) Number of theft incidents;
 - j) Number of security and number and type of other incidents;
- 23.5. In the event that the Contractor receives communication from the Engineer on HS under-performance, the Contractor shall prepare and implement an HS Improvement Plan to rectify such.
- 24.1. The Engineer is informed within one hour day/night of any accident involving serious bodily injury to a member of personnel, a visitor or any other third party, caused by the execution of the works or the behaviour of the personnel of the Contractor.
- 24.2. The Engineer is informed as soon as possible of any near-accident (near misses) relating to the execution of the works which, in slightly different conditions, could have led to bodily injury to people, or damage to private property or the environment.
- 24.3. The Contractor shall prepare a report on each accident or dangerous occurrence and a copy of the report, together with witness statements and any other relevant information, shall be submitted to the Engineer as soon as possible.
- 24.4. A reportable accident shall include any accident to any person on Site requiring medical attention or resulting in the loss of working hours or any incident that resulted,

Section VII. Works Requirements

or could have resulted in injury, damage or a danger to the Works, persons, property or the environment. Contractors will also notify and report of incidents of Subcontractors and Suppliers (in particular those for major supply items) and their Contractors Sites.

- 24.5. The Contractor shall report any HS accident, related to Contractor activities or personnel, to national or local authorities as required by relevant legislation. A copy of all such reports shall be provided to the Engineer.
- 24.6. The Contractor shall not notify or give any information to the media or other units or people without the employer's consent.
- 24.7. The Contractor shall immediately rectify any situation or condition that could result in injury or a danger to the Works, person, property or the environment. If the situation or condition cannot be corrected immediately, the Contractor shall provide temporary barriers and appropriate warning signs and devices and/or take other appropriate action necessary for the protection of persons, property and the environment.

25. Health and Safety meetings

- 25.1. Contractor shall ensure efficient and effective HS communication and consultation with all Personnel involved in the Work. This includes but is not limited to toolbox meetings prior to the start of the Work, worksite HS meetings on a regular basis with all parties involved (including Subcontractors, the Engineer and third parties). It may also comprise other forms of communication.
- 25.2. Contractor shall ensure that supervision, directly in charge of construction activities, fully brief and discuss with Personnel at HS Tool Box Talks at the start of each work day and prior to commencing new activities. These talks shall be conducted in a language understood by the workforce. A checklist shall be utilised for this purpose. At a minimum it shall include the following;
 - a) Nature of the job
 - b) Associated hazards
 - c) Safe working methods to be adopted
 - d) Requirements of the Permit to Work

- 25.3. The Contractor shall convene weekly team talks, extended to Subcontractors if applicable.

26. Security

- 26.1. The Contractor shall evaluate the security strategy and arrangements required for all worksites including transport. This evaluation shall be performed by qualified security experts and shall form the basis for the Worksite Security Strategy and Plan which shall be submitted and approved by the Engineer as part of the

	PA-ESMP. The Security Strategy and Plan shall describe:
	• Security risks and the identified mitigation / management measures • Roles and responsibilities including details of the Contractor and Subcontractors • Detection, monitoring and management procedures • Escalation plans including resources
27. Equipment and operating standards	27.1. The facilities and equipment used by the Contractor are installed, maintained, revised, inspected and tested pursuant to the manufacturer's recommendations. The recommendations are available in the language of communication defined under CC Sub-Clause 1.4 (or any other language approved by the Engineer).
28. Work permit	28.1. The Contractor puts in place a work permit procedure, prior to the starting of the works. The procedures define the approval process between the person qualified to issue the work permit and the personnel (or Subcontractors) carrying out the work. 28.2. Permits are issued in writing. Unless specified otherwise in the Contract, or instructed otherwise by the Engineer, works which require a work permit are defined in the health and safety plan. All other work permits required by the Engineer will be implemented by the Contractor.
29. Personal protective equipment	29.1. The Contractor ensures that all personnel, visitors or third parties entering a Project Area are equipped with Personal Protection Equipment (PPE) pursuant to the practices and standards specified in Clause 9. 29.2. Where appropriate, PPE must be worn by women as well as by men. 29.3. The Contractor describes in the PA-ESMP the PPE to be used per Project Area and per activity. 29.4. Personnel and visitors to Project Areas are equipped with a safety helmet, safety shoes and a reflective jacket as a minimum. 29.5. Adequate quantities of PPE are available on the Project Areas. Storage conditions must be compatible with usage pursuant to the provisions of ESHS Specifications Clause 30. 29.6. Contractor personnel are trained in how to use and care for PPE and the Engineer has access to training certificates. 29.7. When handling acids, caustics, and chemicals with corrosive or toxic properties, suitable protection shall be worn to prevent accidental contact with the substance.

30. Dangerous substances

- 30.1. A substance is considered dangerous if one or several of its properties render it dangerous, as defined in Appendix 2 of the present ESHS Specifications. The Contractor identifies and manages dangerous substances planned for use on the Project Area in the manner described in the present Clause.
- 30.2. The assessment of the impact of the toxicity of dangerous substances on the reproductive functions of women and men must be taken into account.
- 30.3. The transport to the Project Area and use of dangerous substances requires prior authorisation from the Engineer.
- 30.4. Details of risks and related prevention and protection measures are included in the health and safety plan.
- 30.5. The Contractor obtains all necessary authorisations and/or licenses for the storage and use of dangerous substances from local authorities. A copy of the authorisations is provided to the Engineer.
- 30.6. For each dangerous substance used, the Contractor will implement the recommendations described (i) in the Material Safety Data Sheets (MSDS), and (ii) by the Globally Harmonized System of Classification and Labelling of Chemicals established by the United Nations for hazardous chemicals.
- 30.7. Copies of MSDSs are kept on the Project Area, and made available to personnel. The Contractor provides the Engineer with copies of all MSDSs.
- 30.8. Storage of dangerous substances
 - 30.8.1 Storage areas are designed and equipped by the Contractor based on the chemical and physical properties of the substances, on the types of containers stored, the number of people requiring access, the ventilation requirements, the quantities of the substance used and potential chemical reaction with other substances (see ESHS Specifications Sub-Clause 30.8.5 below).
 - 30.8.2 Pursuant to ESHS Specifications in Clause 16.12, the Contractor anticipates and plans for the storage and management of hazardous waste.
 - 30.8.3 Storage areas for dangerous substances are subject to strict rules, which are regularly checked by the ESHS manager. The rules include the following as a minimum:
 - a) Access to the storage area is limited to trained and authorised individuals;
 - b) An inventory is maintained up-to-date;

- c) MSDSs must be available for all stored dangerous substances, and the substances must be clearly labelled;
 - d) A strict and methodical storage system is implemented (storage plan posted, large or heavy packaging may not be stored at heights, equipment and tools may not be stored in the dangerous substance storage room);
 - e) Compliance with product expiry dates and implementation of a disposal procedure for substances which are not needed or which have expired;
 - f) Entrances, exits and access to emergency equipment are kept clear at all times.
- 30.8.4 Storage areas are clearly identified with warning signs at the entrance. The Contractor displays the storage plan (location of the different products, maximum inventory), a summary of labelling system and information on chemical incompatibilities.
- 30.8.5 Chemicals which could react together (leading to explosions, fire, projections or the emission of dangerous gases) are physically separated.
- 30.8.6 Products that react violently with water are stored so as to prevent contact with water, even in the event of flooding.
- 30.8.7 Inflammable products are stored separately in a dedicated area with adequate ventilation at all times.
- 30.8.8 Buildings used to store large quantities of dangerous substances are isolated from other buildings to avoid the spreading of fire. Such buildings are constructed using solid and non-combustible building materials, and are equipped with evacuation systems and the appropriate firefighting equipment. Access to the buildings is clear, allowing for rapid evacuation in the event of an accident. The electrical systems are reduced to the essential minimum, and access points are equipped with adequate lighting (300 lux).
- 30.8.9 All storage areas are equipped with secondary retentions. Each storage area acts as a general secondary retention. Suitable absorbents (neutralising and non-combustible) are available in the storage area to clean up any spills and leaks.
- 30.8.10 The Contractor maintains the storage area at a suitable temperature for dangerous substances to prevent overpressure and bursting of containers.

31. Planning for emergency situations

- 31.1. The Contractor shall establish an emergency plan as a section of the PA-ESMP. It covers the following emergency situations as a minimum:
 - a) e.g. Fire or explosion;
 - b) e.g. Collapse of structures, or scaffolding;
 - c) e.g. Loss of the containment of dangerous substances;
 - d) e.g. Safety incident or malicious act.
- 31.2. The Contractor shall maintain fit-for-purpose Emergency Response Capability, which shall be clearly documented.
- 31.3. At a minimum, the Contractor shall make contingency arrangements for calling a Doctor and transporting injured persons to hospital. The telephone numbers of the emergency services and the name, address and telephone number of the Doctor and the nearest hospital shall be prominently displayed in the Contractor's office.
- 31.4. The Contractor ensures that all personnel are informed and aware of how to react in an emergency situation, and responsibilities are defined. Information and awareness training is documented, and available on all Project Areas.
- 31.5. The Contractor organises and documents emergency simulation exercises within 3 months of the physical start of the works, and subsequently once every 12 months up to the issue of the Taking-Over Certificate. The Engineer is invited to participate in each of these exercises.
- 31.6. Fire protection
 - 31.6.1. Based on a fire safety risk assessment, the Contractor will ensure that adequate and appropriate fire safety measures are in place to minimise the risk of injury or loss of life in the event of a fire. Appropriate actions include: Keeping sources of ignition and flammable substances apart; Avoiding accidental fires; Ensuring good housekeeping at all times, e.g. avoiding build-up of rubbish that could burn; Installing smoke alarms and fire alarms or bells; Installing fire warning systems; Having correct fire-fighting equipment; Keeping fire exits and escape routes clearly marked and unobstructed at all times; Ensuring workers receive appropriate training on procedures they need to follow, including fire drills.
 - 31.6.2. Fire will not be used as a method of forest or vegetation clearance.

31.6.3. Fire extinguishers are made available in each building at clearly identified locations, and fires are strictly forbidden outside of the cooking area.

31.6.4. If applicable, the Contractor makes arrangements with local fire-brigades for emergencies

32. Medical check-ups

32.1. The Contractor organises medical check-ups carried out by a doctor or an appropriately qualified nurse for all Contractor's Personnel prior to the initial mobilisation to the Project Area to check aptitude for the work. Medical check-ups are adapted to the anticipated occupied positions and carried out pursuant to the recommendations of the International Labour Organization. Subsequent to the check-up, a written medical certificate is issued declaring the aptitude of the worker for the allocated tasks.

32.2. Hearing tests are conducted for the Contractor's personnel exposed to noise levels above 80 dB(A) in order to establish initial audiograms. Annual tests are carried out to monitor any changes and detect any deterioration.

32.3. The Engineer can request additional medical examinations for the Contractor's Personnel if considered necessary, all costs to be borne by the Contractor.

32.4. A medical examination is carried out on any Contractor's Personnel returning to work after leave caused by a work related accident. A written medical certificate is issued confirming the Contractor's Personnel's aptitude to return to work at the designated workstation.

32.5. The Contractor can produce a copy of its Contractor's Personnel's work aptitude certificates at the request of the Engineer or any competent authority.

32.6. Specific arrangements for tasks' assignments or workstations shall be made for pregnant Personnel.

33. First-aid

33.1. The Contractor ensures a minimum of first-aid provisions on any work site, including: suitably stocked first-aid kits; a person, respectively an adequate number of staff appointed and trained to take charge of first-aid arrangements and ensure that staff and workers are informed about first-aid arrangements. .

33.2. The Contractor equips the Project Area with a communication system exclusively for the purposes of communication with the first aid services. Information on how to communicate with the first aid services is clearly indicated near the communications equipment.

34. Medical Services

34.1. The Employer will inform the Contractor about the presence and number of medical personnel in the

Section VII. Works Requirements

and Personnel	Project Area. If not otherwise instructed by the Engineer, in application of clause CC 6.7, the Contractor shall collaborate with local health authorities and make arrangement with an appropriate number of local doctors, and/or nurses, hospitals and ambulance services to ensure that medical staff, first aid facilities, sick bay and ambulance service are available at a minimum within 45 minutes at the Site, and at any accommodation for Contractor's and Employer's Personnel or if appropriate, be based in the Project Area.
35. Health care	35.1. The Contractor guarantees access to health care for all personnel in case of accident or illness occurring during the execution of the works. 35.2. In absence of a health or health post in the vicinity, or within the Project Area, the Contractor shall make contingency arrangement for transporting injured persons to a hospital in application of ESHS specification Clause 36.
36. Emergency medical evacuations	36.1. The Contractor allocates rapid emergency transportation for first aid purposes to the first aid station pursuant to standard NF EN 1789:2007. 36.2. In cases where there is no first aid emergency vehicle available to evacuate severely ill or injured personnel, the Contractor establishes an agreement with a specialised company for the handling of personnel in the event of a serious accident requiring an emergency medical evacuation and ensures that transport is guaranteed any time and as fast as possible. The Contractor will provide a copy of the agreement to the Engineer within one month of the physical start of works. 36.3. The agreement includes a convention with a referring hospital where the member of personnel evacuated in emergency conditions will be treated. 36.4. In highly remote areas or in demonstrably life threatening cases, the agreement may cover the use of air transportation (if available) in order to evacuate the injured patient(s) to the referring hospital. 36.5. The telephone numbers of the emergency services and the name of the service providers and the doctors shall be prominently displayed in the Contractor's site office
37. Access to health care and training	37.1. The Contractor guarantees access to health care as defined in Clause 34 for all personnel in case of accident or illness occurring during the execution of the works, i.e.: a) Medical check-ups: initial (recruitment), annual and upon returning to work after sick leave; b) Screening, vaccinations and preventive healthcare; c) General healthcare during the execution of the works;

- d) Medical assistance in the event of an accident and assistance for emergency evacuations.
- 37.2. Subcontractor's personnel, other contractors, the Employer or the Engineer, present at the Project Area, must never be refused medical assistance, under the pretext that they are not directly employed by the Contractor. The Contractor may however define a unit rate cost per medical act for personnel, other than its own Contractor's Personnel, display this rate in the healthcare centre and forward the information to the Engineer.
- 37.3. In the event of accident or serious illness, medical personnel must be trained, available and equipped with the necessary material, medicines and consumables to provide first aid for the patient, stabilise their condition, until the patient is:
- a) Either treated or discharged; or
 - b) Hospitalized at the camp or in a larger hospital; or
 - c) Evacuated to a medical centre which is well equipped for intensive care, if necessary.
- 38. Health monitoring**
- 38.1. The Contractor cannot recruit workers in poor health.
- 38.2. The initial pre-recruitment examination must confirm that applicants are physically able to carry out the tasks required for the position.
- 38.3. The detection of pregnancy during the initial pre-recruitment examination of female applicants shall not constitute grounds for declining recruitment, unless medical risk is proven.
- 38.4. The Contractor organises annual medical check-ups for its Contractor's Personnel and keeps up to date a medical record for each Contractor's Personnel. The presence of Contractor's Personnel for medical check-ups, treatment and hospitalisation is incorporated into the Contractors planning.
- 38.5. If applicable and as recommended by a doctor or instructed by the Engineer, the Contractor provides the Contractor's Personnel with prophylaxis and vaccinations against local diseases and vectors. In particular, the Contractor will promote the use of impregnated mosquito nets by its Contractor's Personnel in camps or offsite lodging, and distributes these nets appropriately.
- 38.6. The health and safety plan includes a Contractor's Personnel health risk assessment based on exposure to dangerous substances and describes the medical monitoring implemented.

Section VII. Works Requirements

39. Sanitary repatriation

39.1. The Contractor is responsible for the sanitary repatriation of Contractor's Personnel in the event of a serious injury or illness, based on a diligent examination and a statement of the doctor in charge. The Contractor will take out the necessary insurance to cover the cost of the sanitary repatriation of its Contractor's Personnel.

40. Hygiene, accommodation and food

40.1. Drinking water

40.1.1. Pursuant to Sub-Clause 6.14 of the CC, the Contractor provides personnel with drinking water at all Project Areas. The quantity and quality of this water complies with the standards of the World Health Organization at supply points.

40.1.2. Unless the supply of drinking water is provided by a certified supplier, the quality of the drinking water provided to workers is tested at least at the start of the works and then on a monthly basis. The protocol for taking and analysing samples is based on the recommendations of the World Health Organization. The results shall be documented and made available on the Project Areas.

40.2. Accommodation conditions

40.2.1. The accommodation provided for non-resident Personnel in a camp or an alternative structure outside of the Project Areas, such as a hotel or rented house, will comply with the conditions of the present ESHS Sub-Clause in pursuance of Sub-Clause 6.6 of the CC.

40.2.2. The person in charge of managing the accommodation has a specific duty to report to the ESHS manager or if existent, the HS manager, the outbreak of any contagious diseases, food poisoning and other important casualties. The ESHS Manager in turn will inform the appropriate health authorities.

40.2.3. Rooms are lit and equipped with power sockets, beds and windows fitted with mosquito nets. Flooring is of a hard and impervious material.

40.2.4. The temperature in rooms and common areas shall be kept at an appropriate level during occupied hours (20 degrees in moderate to cold zones and providing adequate ventilation in hot zones).

40.2.5. The Contractor provides one drinking water tap per 10 Contractor's Personnel, one shower per 10 Contractor's Personnel as a minimum, one individual toilet for 15 Contractor's Personnel as a minimum, and one urinal per 25 Contractor's Personnel at accommodation camps. Separate showers and toilets must be made available for women.

40.3. Hygiene in shared areas

- 40.3.1. Sanitary areas (showers, sinks, urinals, toilets) are cleaned and disinfected by the Contractor's cleaning service at least once every 24 hours. Cleaning operations are documented.
 - 40.3.2. The canteen, kitchen and kitchen utensils are cleaned after each meal service.
 - 40.3.3. The number and location of toilets on Project Areas shall be adapted to the number of employees and the configuration of the Project Areas (distance, isolated area, etc.). For urinals and toilets, usual standards are 1 unit to max15 persons.
 - 40.3.4. Toilet facilities are conveniently located and easily accessible. In addition, all toilet rooms shall be well-lit, have good ventilation or external windows, have sufficient hand wash basins and be conveniently located.
- 40.4. Food
- 40.4.1. In application of Sub-Clause 6.13 of the CC and ESHS Specifications Sub-Clause 46.1 of the present ESHS specification, the Contractor provides meals at a reasonable cost or free of charge to its Contractor's Personnel per shift in a canteen area and according to a procurement system which complies with the provisions of this ESHS Specifications Sub-Clause.
 - 40.4.2. The Contractor defines and implements actions in order to guarantee (i) the quality and quantities of food stuffs, (ii) compliance with health rules when preparing meals, (iii) fitting out and servicing premises and equipment, both in the kitchen and food storage areas.
 - 40.4.3. The Contractor inspects the cleanliness of food transport vehicles, temperature control and the cold chain, as well as best-before dates, and takes the necessary corrective actions. The temperatures of chillers are regularly checked.
 - 40.4.4. The Contractor checks that health requirements are met for food storage conditions in the kitchen or other locations, food cooking times and temperatures, and the conditions in which prepared products are left prior to consumption, to ensure no health risks. Prepared food is eaten or thrown away, no food remains are reused.
 - 40.4.5. The Contractor recruits trained canteen personnel and ensures that supervisors monitor compliance with sanitary instructions. The Contractor ensures that canteen personnel have means of ensuring compliance with health rules (changing rooms, linen, hand washers, the condition of flooring and paint, and the existence of a cleaning plan).

Section VII. Works Requirements

- 40.5. At the request of the Engineer, the doctor at the health centre specified in Clause 35.2.2. of the present ESHS Specifications, carries out an audit on all Project Areas every 3 months, and documents the results, and includes the conditions of hygiene in which meals are prepared and food conserved. The results of this audit are provided to the Engineer.
- 40.6. The Contractor, on the basis of the advice of the doctor at the health centre, informs Contractor's Personnel on appropriate behaviour in terms of workplace hygiene. The occasional distribution of information is not sufficient, the Contractor regularly reiterates the importance of hygiene, documents these reminders, and ensures that the information is understood, easy to apply and scrupulously complied with.

41. Substance abuse

- 41.1. Pursuant to Sub-Clause 6.16 of the CC, the use, possession, distribution or sale of illegal drugs, controlled substances (as per local regulations) and alcohol is totally prohibited on the Project Areas. The Contractor implements a zero tolerance policy for the consumption of these substances.
- 41.2. Any person suspected by the Engineer to be under the influence of alcohol or controlled substances on any Project Area is immediately suspended from his position by the Contractor, pending the results of medical tests.

D. Local labour and relations with local communities

42. Labour conditions

- 42.1. The Contractor shall ensure decent labour conditions for workers and notably compliance with applicable law and regulations in the country of implementation of the contract, and with the fundamental conventions of the International Labour Organisation (ILO). This includes workers' rights related to wages, working hours, rest and leave, overtime, minimum age, regular payment, compensation and benefits, equal opportunities, a non-discriminatory workplace, best practice on human resource management and occupational health and safety. Wages, benefits and conditions of work will be comparable to employers in the relevant region of that country/region and sector concerned.
- 42.2. The Contractor shall respect and facilitate workers' rights to organize and provide a Worker Grievance Mechanism for all workers, including the workers of subcontractors, shall receive an induction on their rights and on the Worker Grievance Mechanism. The Contractor will display the contact details of the Worker Grievance Mechanism at well visible places in all camps and work sides.
- 42.3. The Contractor shall issue and implement internal policies and procedures to assure that no employee or job applicant will be subject to discrimination and/or harassment.
- 42.4. The Contractor shall establish for their personnel and those of their main contractors a system to monitor hours worked

on the Project and seek to identify and remedy any practices which lead to long working hours in excess of national legislation.

43. Local recruitment

- 43.1. Local recruitment is defined as the number of positions actually allocated to people residing in the region of the Works (less than two hours by land transport to the Project Area) for more than one year and citizen of the Employer's country.
- 43.2. Pursuant to Sub-Clause 6.1 of the CC, and if requested by the Employer, the Contractor, and/or respectively the Subcontractor hiring local workers, establishes and initiates a local recruitment policy and a procurement plan to ensure that recruitment procurement procedures are transparent and disseminated to the project affected communities for the duration of the Works.
- 43.3. The policy and plan shall be enforced by the Subcontractors and suppliers of major supply items, responsible for hiring local workers.
- 43.4. The Contractor demonstrates the effective implementation of this policy to the Engineer in its monthly activity report as defined in Sub-Clause 6.1 of the present ESHS Specifications.
- 43.5. Pursuant to Clause 8 of the present ESHS Specifications and if requested by the Employer, the Contractor develops a training programme aiming to support the local recruitment policy.
- 43.6. This training programme must be available to women and adjusted to their level of education.
- 43.7. An incentive mechanism to increase the share of women recruited by the Contractor and the Subcontractors may be established.
- 43.8. Local labour needs are estimated prior to the start of works and described in the PA-ESMP with the following information:
 - a) Identification of positions that could be filled by local staff and the level of qualification required;
 - b) Definition of the planned procedure for the effective recruitment of these members of staff;
 - c) Establishment of mechanisms to ensure non-discrimination of women in accessing recruitment procedures;
 - d) Deployment schedule for these positions;
 - e) Initial training to be provided by the Contractor for each job description.
- 43.9. In order to prevent outsiders from entering the Project Area, local recruitment at the Project Area, including at the entrance, is prohibited.

Section VII. Works Requirements

43.10. Local recruitment office

43.10.1. One month prior to the start of Works, the Contractor establishes a local recruitment office in the district where the main Project Area is located, at a location pre-approved by the Engineer.

43.10.2. A representative of the Contractor is present in this office at least two mornings each week, from the start of the works to a date pre-approved by the Engineer.

43.10.3. The representative provides information on job vacancies with the Contractor for the execution of the works (required qualifications, duration, and location) and on the information to be provided in applications.

43.10.4. Lists of local candidates are drafted by the representative allocated to the office and forwarded to the Contractor's Humans Resources manager on a weekly basis.

43.11. The Contractor's Human Resources manager selects candidates listed by the local recruitment office based on requirements for the Works and the Contractor's recruitment procedures. A written contract between the Contractor and the local Contractor's Personnel is drafted, signed and archived by the Contractor.

43.12. If the Project Areas are located near to several different communities, the Human Resources manager ensures a fair distribution of local recruitment between the different communities.

43.13. The Human Resources manager will ensure that recruitment campaigns in local communities have been spread to women and that the latter have not been discriminated in recruitments.

43.14. Pursuant to Sub-Clause 6.22 of the CC, the Contractor maintains one record per local Contractor's Personnel indicating the hours worked per person allocated to the works, the type of tasks carried out, the wages paid and any training provided. Records are available at the main Project Area at all times, so the Engineer and the authorised representatives of the government can assess the content.

44. Transport

44.1. Unless specified otherwise in the Contract, or instructed otherwise by the Engineer, the Contractor provides or enables access to daily transport for Contractor's Personnel not housed in the camps managed by the Contractor and living more than 15 minutes' walk from the Project Area and less than one hour by land transport.

44.2. The transport is organised under conditions which comply with local regulations and which ensure the safety of the people transported.

- 43.3. The Contractor organises collective transport: pick-up times and locations are defined and services organised appropriately.
- 43.4. Transport from the living facilities to his wages worksite is safe and free. If the Project Area is moved during the working season and if the Contractor retains the local personnel trained at the start of the works, the accommodation of the Contractor's Personnel is managed by the Contractor:
 - a) Within a mobile camp with the other non-local Contractor's Personnel; or
 - b) In villages located near to the mobile Project Area, in this case, each local Contractor's Personnel will receive a housing allowance in addition areas within each camp and a sports field for use by Personnel.
- 45. **Workers' accommodation**
 - 45.1. Living facilities are located to avoid flooding and other natural hazards.
 - 45.2. Living facilities are located to avoid flooding and other natural hazards.
 - 45.3. Where possible, living facilities are located within a reasonable distance from the worksite.
 - 45.4. The living facilities are built with adequate materials, the sites are adequately drained to avoid the accumulation of stagnant water, kept in good repair and kept clean and free from rubbish and other refuse.
 - 45.5. Rooms shall not be mixed: separate rooms must be made available for both men and women.
 - 45.6. Separate toilets and locker rooms shall be provided for women and men.
 - 45.7. The Contractor constructs and maintains a range of recreational facilities and shared leisure
 - 45.8. The Contractor ensures that at campsites:
 - a) Workers have access to an adequate and convenient supply of free potable water,
 - b) that drinking water meets national/local or WHO drinking water standards,
 - c) that all tanks used for the storage of drinking water are constructed and covered as to prevent water stored therein from becoming polluted or contaminated,
 - d) that drinking water quality is regularly monitored.
 - 45.9. Dormitories
 - 45.9.1. A separate bed for each worker is provided. The practice of "hot-bedding" shall be avoided. Rooms shall not host more than 8 individuals.

Section VII. Works Requirements

- a) There is a minimum space between beds of 1 metre.
 - b) Double deck bunks are not advisable for fire safety and hygiene reasons, and their use is minimised. Where they are used, there must be enough clear space between the lower and upper bunk of the bed. Standards range from 0.7 to 1.10 metres.
 - c) Triple deck bunks are prohibited.
 - d) Each worker is provided with a comfortable mattress, pillow, cover and clean bedding.
 - e) Bed linen is washed frequently and applied with repellents and disinfectants where conditions warrant (malaria).
 - f) Facilities for the storage of personal belongings for workers are provided, including 0,5 m³ and 1 meter of shelf unit.
- 45.10. The Contractor shall mitigate impacts of activities (e.g. those that create noise or light) at worksites in order to avoid any public disturbance or disturbance of camp residents.
- 46. Meals**
- 46.1. Food supplies for the meals of the Contractor personnel will exclude any meat obtained from hunting or poaching, with the exception of fish.
- 46.2. The Contractor provides for at least two meals per shift to local Contractor's Personnel pursuant to the hygiene conditions specified in Clause 40 of the present ESHS Specifications, at reasonable price for the Contractor's Personnel. If no canteen is available, the Contractor at least pays for a minimum of 2 meals per day per shift.
- 46.3. The Contractor shall avoid any local disputes through respecting local culture and values. The Contractor shall ensure that workers are aware of local issues and sensitivities, and respect local culture and values in order to avoid any local disputes and crime.
- 47. Community Interaction**
- 47.1. Commensurate with the size of Construction activities and unsolved potential disturbances of the community and risks to public health and safety, the Contractor shall produce an Implementation Plan related to Community Interaction and submit it to the Engineer for review and acceptance prior the commencement of any works or traffic related to works.
- 47.2. The plan shall include a schedule of planned work activities which may impact a neighbouring community and describe (i) the activities per task and phase which may impact the neighbouring communities (ii) the approach to engage and communicate with stakeholders related to the works defined in (i); (iii) responsibilities for community interaction per task and phase.
- 47.3. When meeting stakeholders in neighbouring communities, minutes of meetings shall be produced and recorded as by Employer's guidelines;

- 47.4. The Contractor shall disclose relevant information related to the involved impacts and risks to communities (e.g. related to Traffic Management or e.g. to entering of private property for surveys) in local language and at a level of complexity that is commensurate with local realities to ensure that stakeholders fully understand the content.
- 47.5. The Contractor shall include information about the Employer's grievance mechanism and the contact details in all community communication materials.
- 48. Damage to people and property**
- 48.1. The Contractor shall implement a worker's Code of Conduct and not disturb or interfere with the inhabitants of local communities close to or in the Project Area, and shall respect their houses, cultures, animals, properties, customs and practices.
- 48.2. The Contractor's personnel shall be trained to understand the requirements about use of unapproved land and the need to stay strictly within site boundaries and within the working areas, using only approved access and service roads.
- 48.3. Pursuant to Clauses 4.14 and 17.1 of the CC, the Contractor is responsible for damages to people and property caused by the execution of the works or the procedures used for execution (e.g. project vehicles demolishing local fences or houses, driving accidentally over crops or causing any other material grievances).
- 48.4. Access to the Project Areas is prohibited to unauthorized persons. The Contractor is responsible for the security and access control of the Project Areas.
- 48.5. The Engineer is informed of any damage caused to people, or the property of individuals, other than the Contractor's personnel, within 6 hours of the event, regardless of the value of the prejudice.
- 48.6. The Contractor shall establish procedures to manage and rectify and record incidents related to community disturbances.
- 48.7. Blasting
- 48.7.1. Housing existing before the start of the works, located within a minimum radius of 800 m around the perimeter of the quarries and within a minimum radius of 500 m around the other Project Areas that will be subject to blasting, will be examined by a bailiff unless agreed upon otherwise with the Engineer.
- 48.7.2. The bailiff's sworn statement is prepared and provided to the Engineer with the Site-ESMP.
- 48.7.3. Should any problems be detected due to the intensity of blasting, the Engineer is entitled to request that the Contractor carry out seismic

Section VII. Works Requirements

measurements of the intensity of the vibrations induced by the blasting, at variable distances from the blasting points, under the supervision of the Engineer, and at the cost of the Contractor.

49. Land acquisition and land take

- 49.1. Pursuant to Sub-Clause 7.8 of the CC, the Contractor will cover (i) occupancy indemnities for the extraction or use of construction materials and (ii) the cost of acquiring the necessary land to stockpile excess backfill material.
- 49.2. The Contractor provides compensation for any prejudice suffered by the owners of the land mentioned in Sub-Clause 48.1 of the present ESHS Specifications, but also for any prejudice incurred by users of this land, if these users are not the same parties as the owners.
- 49.3. If not otherwise instructed by the Employer, the Contractor demonstrates to the Engineer (i) who are the owner and the users, if different parties have been identified, and (ii) a written agreement governing the temporary occupancy or acquisition of this land has been negotiated and duly paid up to the two parties, if different.

50. Traffic management

- 50.1. The Contractor defines the characteristics of its fleet of vehicles and site machinery in the PA-ESMP, in the form of a traffic management plan with the aim to prevent construction site vehicle incidents by the effective management of transport operations throughout the construction process.
- 50.2. The Contractor defines in the traffic management plan the itineraries used on a map for each route between the different Project Areas and for each phase of the construction works, and obtains the validation of the Engineer. The Contractor requests that the Employer obtain the authorisations of the competent administrative authorities if public roads are used. Any Engineer's instruction to update the traffic management plan shall be implemented.
- 50.3. The Contractor defines in the traffic management plan the itineraries used on a map for each route between the different Project Areas and for each phase of the construction works, and obtains the validation of the Engineer. The Contractor requests that the Employer obtain the authorisations of the competent administrative authorities if public roads are used. Any Engineer's instruction to update the traffic management plan shall be implemented.
- 50.4. To reduce accidents, the Contractor will ensure that:
 - a) Pedestrians and vehicles are kept apart (e.g. through providing separate entrances, walkways, signals)
 - b) Vehicle movements are minimized
 - c) Drivers are adequately trained and have the appropriate permits for driving vehicles

- d) Turning circles for turning vehicles are installed.
- 50.5. Within one month of the physical start of works, the Contractor informs the administrative authorities of areas crossed by the Contractor's vehicles, of the itinerary and characteristics (frequency of passing, size and weight of trucks, materials carried) of the Contractor's fleet of vehicles.
- 50.6. If public roads are used, and unless approved otherwise by the Engineer, the Contractor mandates a bailiff to make a sworn report regarding the state of the road prior to use by the Contractor's vehicles. The report is annexed to the PA-ESMP.
- 50.7. The Contractor describes in the traffic management plan the expected traffic created by its fleet of vehicles (frequency of trips between Project Areas, working hours, convoys).
- 50.8. The Contractor also describes the number and positioning of flagmen.
- 50.9. Unless specified otherwise in the Contract or instructed otherwise by the Engineer, heavy vehicles (i.e. with a GVWR of more than 3.5 tons) may not be used at night between 22:00 and 06:00.
- 50.10. Speed limits
 - 50.10.1. The Contractor takes action to limit and check the speed of all vehicles and machinery used to execute the works at an appropriate level.
 - 50.10.2. The maximum speed of all machinery and vehicles of the Contractor comply with the lowest of the following: the speed limit defined according to the Employer's country regulations or the following limits.
 - 50.10.3. 20 km/h within the Project Areas;
 - 50.10.4. 30 km/h in villages or hamlets, in towns, from 100m before the first house;
 - 50.10.5. 80 km/h on unpaved roads outside of towns, villages, hamlets and camps.
 - 50.10.6. Pursuant to Sub-Clause 4.15 of the CC, and in coordination with the competent Employer's country authorities, the Contractor provides and installs signs for the fleet of vehicles along public roads, when public signs are inadequate.
 - 50.10.7. The Contractor provides each of its drivers with a map at the appropriate scale of the roads authorised for the execution of the works, clearly indicating the maximum speeds authorised, and ensures their understanding.

Section VII. Works Requirements

- 50.11. It is strictly prohibited to transport people, equipment or products other than those required for the Works and the management of Project Areas, on board any of the Contractor's vehicles. This provision also applies to the transport of live animals and meat obtained from hunting, fishing or poaching.
 - 50.12. The trailers and skips used to carry materials which could be projected (sand, crushed material, aggregates, selected materials) are covered with a tarpaulin for the entire itinerary between two Project Areas.
- 51. Fossils/
Archaeological
Chance
Finds**
- 51.1. The Contractor shall establish specific procedures to manage the protection of archaeological and historical sites, chance finds and fossils as stipulated in Sub-Clause 4.24 of CC.

Environmental Social Management Plan (ESMP)

The ESMP is developed to mitigate the adverse E&S risks and impacts of sub-project area. It explains the mitigation measures, responsibility, implementation phase, monitoring method, monitoring indicators and frequency during pre-construction, construction, operation and decommissioning phases. The Contractor supervised by the PIU is mainly responsible for the implementation of plans during the project life cycle. The contractor also prepare contract specific ESMP. This sub- project specific ESMP is provided in below the tables.

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
I. Pre-construction phase							
1.1	Engineering design and alternative analysis	Ensure that the investigation and analysis of alternative engineering design and technologies, and the route location of the proposed sewer line network (the project) cause minimum environmental and social risk and impact during the project cycle; Ensure the activities like trenching, excavation, pipes joint welding result into minimum or no loss to terrestrial ecosystem; and Alternatives in terms of cost effectiveness, low maintenance, minimum and area for pipeline route selected along the existing roads for the project will cause minimum E&S impact.	PIU/ PMC/ Contractor.	Design/Pre-construction	Review the performance of design and technology and route decided for the project; and Consultant the experts and learn from the experiences gained from such projects elsewhere	Minimum E&S risk and impact; Minimum or no impact on local ecology, water bodies and forest; Minimum impact on land and livelihood of local communities; and cost effective and O&M efficient.	On regular basis

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
1.2	Utility relocation	Identify the common utilities to be affected such as telephone cables, electric cables, electric poles, water pipelines, public water taps, etc; and Seek prior approval and inform the concerned agencies for utilities shifting before construction starts.	PIU /PMC, Contractor/ Authority of concerned utilities	Pre construction phase	Review detailed layout plan and site inspection	Utilities shifted in time where necessary	Continuous
1.3	Permits and approvals	Obtain all permits and approvals required for E&S aspects during pre-construction, construction, operation and decommissioning phases. These shall be made available from the NHAI, State highways, WRD, Traffic Police, Telecom, Electricity and other departments and regulators of the State and Central governments as applicable. Ensure that all necessary approvals for construction to be obtained by contractor like labour licence / labour insurance are obtained before start of construction.	PIU /PMC, Contractor Contractor	Before construction commences	Keep record of all permit, approvals and authorizations	Permits and approvals are available	One time/ Continuous
1.4	Source of Materials	Obtain construction materials only from government approved quarries with prior approval of PIU.	PIU /PMC, Contractor	Pre-Construction and	Records, approvals	Approvals documents	Periodically

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
		The contractor has to obtain approvals for all construction materials. PIU to review, and ensure that proposed quarry sources have all necessary clearances/permissions in place prior to approval. Contractor to submit to PIU on a monthly basis documentation on material obtained from each sources (quarry/ borrow pit) No new borrow areas, quarries etc., shall be developed for the project;		Construction Phase			
1.5	Material storage and portable office cabin	Storing the pipeline fittings and associated materials supplied at the stock yard. Necessary stacking procedures to be followed. Safety precautions including Fire & safety. Establish a suitable portable cabin for site staffs.	Contractor/ ULB / PMC	Pre-construction	Site inspection	Location and its access; and Basic facilities and civic amenities.	Semi-annually
1.6	Labour accommodation and facilities	Identify the suitable building in terms of location, sufficient area, access, security, basic amenities, etc.	Contractor	During Pre-construction	Visual inspection; Consultations with labour, and local	All the facilities available as per law and standards;	Everyday

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
		Follow all relevant provisions of the Contract Labour (Regulation and Abolition) Act, 1970, IFC guidelines, the building and other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996, ILO convention 62-Safety provisions (Building) Convention and applicable laws for rented labour accommodation; The location, layout and basic facility provision for labour accommodation will be reviewed by the Convenor and suggestions to be communicated to the contractor prior to the construction; Maintain necessary living accommodation and ancillary facilities in functional and hygienic conditions; Provide adequate number of toilets, bathing area, kitchen, safe fuel/ LPG for cooking and uncontaminated water for drinking, cooking and washing; Prohibit employees from cutting of trees for firewood; fire wood not			communities nearby; Site inspection; Facilities made available; Type of illness and its causes; and Discussions about the level of health awareness and safety precautions taken by the workers while working on the work site.	Assess the satisfaction level of labourers; Cordial relation between labour and local communities; Easy access of first-aid box with required medicine and accessories at each working site, labour accommodation, labour and office to workers all the time; and Arrangement made with the Doctors	

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
		allowed; Labour accommodation and temporary shade near work sites shall provide protection from heat, rain, flooding, insects, snakes and mosquitoes. It should have adequate provisions for emergency such as fire safety, security, etc; Adequate healthcare is to be provided for the workforce; Ensure adequate water supply in all toilets and urinals; Provide separate toilets/ bathrooms for women laborers and shall be screened from those for men (marked in vernacular language. Provide first aid medical kit at labour accommodation, temporary labour shed and working site; train the labour for usage of items in injury, emergency, coordinate with nearest government and private medical centers for the medical services, display the contact number of medical doctor(s) and keep a vehicle for emergency travel all the time;				at nearest government health and medical center/ private clinic.	

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
		As per provisions of WHO and MOHFW guidelines of Covid-19, sanitizer, soap, mask, etc. should be made available in sufficient quantity and its use by the workers mandatorily and maintain social distancing all the time; The contractor will provide garbage bins in the camps and ensure that these are regularly emptied and disposed off in co-ordination with the ULB. Ensure medical tests and treatment of Covid-19 positive cases immediately; and any emergency medical Maintain the required data and documents at site and regularly submit the compliance report to the PIU.					
1.7	Public disclosure & Stakeholders Consultation	Ensure timely and fully project information dissemination through distribution of prior notice, pamphlet in local language, oral communication, meetings, websites, etc.	PIU/PMC, Contractor	Pre-construction phase	Issue of Project information Pamphlets to the Public. Advance notice about	Methods used for public disclosure; and Project awareness. (Number of	Continuous

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
		Under take detailed mapping and analysis of key stakeholders. Based on the stakeholder analysis, stakeholder engagement plan is prepared that will be updated as required; Ensure that stakeholder including impacted persons are consulted and made aware about the project's purpose, risks/ impacts, mitigation measures and time- frame; and Maintain the records and documentation of the procedure followed and the output of stakeholder engagement.			Roadcut to the residents. Awareness about the project to the Beneficiaries. (FGD's with RWA, Awareness meeting with school students.etc.,) Consultations with local communities, beneficiaries, temporary economic impacts and other stakeholders.	Participants with Male, Female details.) Awareness level of stake holders, particularly the local communities, beneficiaries of the proposed sewage line.	
1.8	Grievances redressal system	Establish the efficient grievance redressal mechanism and accordingly constitute the grievance redressal committee (GRC) as outlined in the ESIA project level with representatives of all the stakeholders as members, including women and vulnerable groups of local communities;	ULB/PMC, Contractor	Project life cycle	Review the proceedings and minutes of meetings; and Consultations with the members of GRC.	GRC established. Number of Grievances received and number of grievances resolved.	Monthly or as required

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
		Ensure the wider publicity of procedure, functioning and availability of GRC since the inception of the project; All the grievances received shall be acknowledged and proper recording and tracking should be carried out; GRC will adjudicate the complaints in 6-8 weeks depending upon the severity of case; Convenor will be the coordinator for organizing GRC meetings as required, writing the proceedings, minutes of meeting, informing the aggrieved party about the decision of GRC, etc;			Disclosure of GRM in the all the work sites.	Number of GRC meetings held. Decision taken with in a timeframe. Time taken for resolving the grievances.	
1.9	Sensitive Areas	The sensitive areas like Schools, hospitals to be provided with suitable noise barriers and safety measures, prior to the start of work in order to minimize the dust and noise impacts due to vehicle movement during construction and their effectiveness to be checked.	PIU /PMC, Contractor	Pre-construction phase	Site inspection	Location and its access; and Basic facilities and civic amenities.	Periodically

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
1.10	Construction material storage	Ready mix concrete (RMC) will be outsourced and contractor shall identify designated covered area for storage of construction material such as pipeline fittings, etc. with proper marking and measures to avoid dust emissions; Construction material stored in open shall be covered in order to avoid wind-blown dust emissions; Ensure and maintain record of proper stacking, loading and unloading of material and provide sufficient space for the movement of heavy vehicles inside the yard; Ensure handling the construction material safely by the labour;	Contractor, PIU/PMC	Construction phase	Site inspection; and Review the material record maintained.	Clean and organized storage site; and Incidence of injury in loading, unloading and handling the material.	Periodically
2. Construction and operation phases							
2.1.	Labour mobilization	Contractor to submit labor management plan (LMP). LMP includes Camp layouts, facilities (Water & Sanitation, Storm water drains, septic tank, SWM, lighting, Health Clinic, etc.) First Aid kit, Fire Safety, Emergency response Plan, Security Arrangements, etc., Disclosure of nearest hospitals, Bus	Contractor, PMC/PIU	Construction phase	Review site management and labour plan; and Site inspection	Number and date of labour mobilization; and Date of starting works.	Periodically

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
		stations, Police stations, etc., with Location and contact details. Contractor to prepare a Labour Management Plan including the above & approval from the project Engineer in charge of PIU and approved.					
	Appointment and Mobilization of Environment & Safety Officer	The contractor to appoint Environment, Safety, social Experts as per the ESHS in the contract documents. The experts will be mobilized prior to start work. ESO will dedicatedly work and ensure implementation of Environmental Management Plan including Occupational, Health and Safety measures during the project implementation.	Contractor / PMC	Pre-Construction Phase	Review reports and records	No compliance at site	Mobilized and to be available throughout the contract period.
2.2.	Site clearance and tree cutting	Site to be cleared prior to initiating works. If necessary the top soil to be carved out and stored in a separate place. Avoid tree cutting and loss of vegetation, shrubs, grasses, etc. to the maximum extent possible; There are 12 trees to be affected in this project. Prior permission from the District Green Committee approval to be	Contractor, PIU/PMC/	Construction phase	Review site management and labour plan; and Site Inspection.	No tree cutting Minimum vegetation loss; Number and species of trees cut and	Monthly

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
		obtained. Compensatory plantation for every tree cut by way of re-plantation at ten times the trees cut; Growth and survival of trees planted shall be ensured and monitoring should be conducted at least for construction period. Survival rate of plants shall be reported to the ULB on monthly basis; Greenbelt will be developed around the 16 lifting station sites. Contractor shall develop plantation program for the site;				replanted; and Survival of number and species of trees planted.	
2.3.	Site preparation	• Disturbance to land surface contours to be kept to minimum; • Maintaining the natural drainage pattern existing onsite; • Adequate drains and slopes to be laid across the proposed project site prior to start of excavation work to ensure adequate cross drainage; and	Contractor, PIU/PMC	Beginning of construction	Site inspection	Natural drainage maintained; and Minimum excavation for drainage and levelling	One time and periodically

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
		• Ensure that the earmarked operational area for laying of pipeline and pumping house is barricaded with specific access (entry and exit) points. • Barricading of the earmarked sites, besides the safety, will limit the disturbances or construction impacts to the adjacent areas within the premises. • Necessary precautions such as bracing / shoring in the trench will be provided for trenches of more than 1.2 m deep or as required based on site conditions.					
2.4.	Site Camp	Locate the suitable place for site camp at the start of civil works for the labours constructing sewer line/ approved by the PIU; Provide water and other facilities at the site camp; Establish a suitable site office in portable cabin at the start of the civil work. Designate the area beyond the boundary of the site as No-Go areas	Contractor, PIU/PMC	Prior to start of construction	Review approved site camp and site office layout; and Site inspection	Approved site plan layout; and Area outside the site camp and site office designated as No-go area.	Once

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
		for all personnel on site. No vehicles, machinery, materials and people shall be permitted in the No-Go area at any time without the permission.					
2.5.	Barricading working site	Ensure that the construction site should be barricaded at all time with adequate marking, flags, reflectors etc. to isolate it from other operating areas; and Barricade the pipeline route and in all the construction sites at prior to construction activities.	Contractor	Prior to start of construction	Site inspection	Proper barricading in place; and Accident or casualty reported	One time
2.6	Sewer lines	Adequate precautions should be taken while laying the sewer line to avoid the possibility of damage of existing water supply lines; and Avoid any damage to storm water drains & other public utilities.	Contractor	During construction	Site inspection, No of Grievances received relating to utility severance.	Leakage of water, grievance regarding utility severance.	Regularly
2.7	Traffic management	Contractor will prepare the traffic management plan. Route for use by construction traffic with in site to be planned with proper signage, flagman, barriers and safety to minimize encountering of workers with vehicles as per	Contractor, PIU/ PMC	Construction phases	Review traffic management plan; and Site inspection	Implementation of traffic management plan adequately; Number of complaints	

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
		National Road Safety Policy 2010. Route for movement of heavy machinery shall be designated to avoid the soil compaction in other areas; All vehicles deployed at site shall be certified for pollution under control (PUC), undertake regular maintenance of vehicles; Transportation of construction material will be generally scheduled in night when the traffic is minimum; Holding area shall be provided within the site for vehicles waiting to deliver loads at site to avoid queuing outside the site; Ensure that the vehicles follow speed norms of the traffic department; and Investigate and respond to complaints about traffic.				received; and Incidence of accidents	
2.8	Construction machinery	Modern machineries such as JCBs, proclain, road roller, etc. shall be used to increase work efficiency and minimize the construction period;	Contractor, PIU/ PMC	Construction phase	Review the vehicle details TPI	Noise level and working of heavy machinery in order	Continues, as required

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
		Ensure that material transported is properly covered with Tarpaulin, etc. Schedule material deliveries after daylight hours; and Identify and repair minor leaks and prevent machineries/equipment failures. All the vehicle will have pollution control certificate					
2.9.	Construction works (concrete, Cement, etc.)	Use ready-mix concrete outsourced for the works on pumping station and lift station site and construction of machine holes and chambers to the maximum extent possible; and If required, ensure that cement is mixed on mortar boards and not directly on the ground unless unavoidable.	Contractor	Construction phase	Site inspection	Incidence of mixing concrete on working site; Visible concrete on site; and Contamination of water and soil.	Regularly
2.10	Top soil protection	Topsoil removed prior to commencement of construction activities shall be stored (stockpile no higher than 2 meter) separately and reused for backfilling and landscape development within the project area;	Contractor, PIU/PMC	Construction phase	Site inspection; and Assessment of disturbed (project components	Incidence of erosion; Storage and uses of topsoil; and	Regularly

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
		Keep topsoil stockpiles in an area protected from the wind and water; Land disturbance shall be restricted to the footprint of the project components and remaining area will be kept undisturbed to the extent possible; Ensure suitable control of run-off during the construction phase to prevent erosion of topsoil on adjacent land and undeveloped portions of the site; and All excavations should be closed at the earliest before the start of rainy season.			construction area) and undisturbed area.	Topsoil erosion on adjacent land.	
2.1 1	Noise from vehicles and machineries	Servicing of all vehicles, machinery, power generating equipment shall be done regularly as per the manufacturer's guidelines and during routine servicing operations, the effectiveness of exhaust silencers will be checked and if found defective will be replaced; All machines to be used shall conform to the relevant Indian Standards (IS), will be free from patent defect, kept in good working	Contractor, PIU/PMC	Construction phases	Review of monitoring records Random Noise measurement s	Level of noise generated; and Number of registered complaints	Regularly

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
		order, properly maintained and inspected regularly; Acoustic enclosure measures will be provided during operation to reduce noise level of machinery and DG set; Construction activities shall be carried out in a planned manner restricting high noise generating construction activities only during daytime; Contractor will maintain the proper record for all the construction vehicles which shall have the valid fitness certificate, NOC, insurance, etc. Ensure noise level in the residential and industrial areas with in the permissible limit; Regular monitoring of noise shall be conducted at site during the operations of machines and equipment; and Technicians/mechanics working on noise generating machineries will use PPEs such as ear plug, muffler, etc.					
2.1 2	Dust emissions	Avoid clearing of vegetation until absolutely necessary;	Contractor	Construction phase	Site inspection;	Emission from	Regularly

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
		Trucks carrying construction material shall be adequately covered with tarpaulin sheet to avoid the dust pollution and the material spillage; DG set shall have adequate stack height as per TNPCB requirement; Dust levels will be controlled, through spraying of water from water tankers fitted with pressurized fine spray; Maintain all generators, vehicles, vessels and other equipment in good working order to minimise exhaust fumes; and Locate soil stockpiles in sheltered areas where they are not exposed to the erosive effects of wind.			Incidence of dust plumes; and Review of dust emission control measures.	construction site; Incidence of dust plumes observed; Dust mitigation measures followed; and Number of complaints received.	
2.13	Air quality	Maintain all vehicles, DG sets/generator and other equipment in good working condition to minimize GHG emission, exhaust fumes, etc.; Wherever possible to use energy efficiency equipments. Avoid excavation, handling and transport of materials which may	Contractor	Construction phases	Site inspection; Incidence of air pollution; and Review of fuel emission	Fuel emission from vehicles; Air pollution mitigation measures followed; and	Regularly

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
		generate dust under high wind conditions or when a visible dust plume is present; Water sprinkling, cover dumping and stockpiles of loose material with plastic sheets or nets, particularly in windy conditions should be used to reduce airborne dust at construction sites; and Prevent burning, fire, use of wood for cooking in the project sites to avoid air contamination.			control measures.	Number of complaints received.	
2.14	Ground water	Contractor shall ensure that all vehicle / machinery and equipment operation, maintenance and refueling will be carried out in such a manner that spillage of fuels and lubricants will not contaminate the ground water. Workforce will be trained in the environmental pollution aspect and activities should stop immediately and resume only when problem is resolved; and Faulty equipment, vehicles and other source of possible oil and lubricant contamination should be	Contractor	Construction & operation phases	Site inspection; and Review of spillage control measures.	Fuel or lubricant spillage; and Underground water pollution mitigation measures followed.	Regularly

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
		repaired on priority and must be kept in good condition all the time.					
2.1 5	Protection of lakes/ water bodies/ Surface water	Contractor shall ensure that all vehicle / machinery and equipment operation, maintenance and refueling will be carried out in such a manner that spillage of fuels and lubricants will not contaminate the water bodies and construction of pipe carrying bridges across Buckingham canal; Water bodies need to be cordoned off by using protective barriers such as green cloth and subsequently plantation; and In case of water logging, water will be pumped out during the construction PS and LS.	Contractor	Construction phases	Site inspection; and Review of spillage control measures.	Fuel or lubricant spillage; and water pollution mitigation measures followed.	Regularly
2.1 6	Protection of archaeological and heritage Monuments.	Conduct training to impart knowledge and create awareness among the workers about the significance of archaeological, paleontological and geological aspects and the applicable Indian Treasure Trove Act, 1878; The fossils, coins, articles of value of antiquity, human skeletal and other	Contractor, PIU /PMC	Construction phases	Site inspection; and Actions taken by the workers, PIU.	Discovery of archaeological/ paleontological material; Level of awareness among workers; and	When occurrence of chance finding

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
		remains or things might be exposed during construction activities. In such situation, stop the work, do not remove and damage any article; Inform the Convenor and concerned authority(Archaeological Survey of India) immediately to take-action per referred Act and recommence the work after receiving written permission; and also, prevent any type of impact on the cultural heritage, monument, etc.				Protection and reporting of identified material when discovered.	
2.1 7	Safety of workforce	Adequate precautions shall be taken to prevent the accidents from the machineries. All machines shall confirm to the relevant Indian Standards Code and shall be regularly inspected for its working condition; Where loose soil is met with, shoring and strutting shall be provided to avoid collapse of soil. Provide job specific safety induction training, including environmental awareness and ensure daily toolbox talk to workers at the working area; Ensure availability and mandatory use of PPEs at the site;	Contractor, PIU/PMC	Construction phases	Site inspection; and Observation of workers with PPE and safety measures while working on work site.	Quantity and timely supply of PPEs; Awareness level about the use of PPEs; and Incidence of injury, accident, infirmity.	Everyday

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
		Use of protective footwear and protective goggles by the workers involved in mixing of materials like cement, concrete etc. at pumping station; Use of earplugs by the workers exposed to loud noise, and those engaged in crushing, compaction, concrete mixing operations; Ensure sufficient quantity of all PPEs, necessary safety appliances such as safety goggles, helmets, boots, safety belts, ear plugs, mask, etc. to workers and staffs; Adequate measures and care to be taken while approaching any open water bodies for construction for the pipe carrying bridges. Ensure railing around such sites are intact and in good condition; and The contractor will comply with all the precautions as required for ensuring the safety of the workmen as per the International Labor Organization (ILO)and					

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
		applicable laws of India and Tamil Nadu state as applicable.					
2.1 8	Work-zone safety Management	Temporary barricades shall be provided to delineate construction zone as well material stacking areas. The construction site and the labour facility shall be appropriately barricaded to prevent entry and accidental trespassing of workers, staff and others into the construction sites. All operational areas shall be access controlled. Watch and ward facilities at all times shall be provided by the contractor. Proper retro reflective warning signage will be installed on the access road next to the construction site about movement of construction machinery and vehicles. In excavations for longitudinal surface road drains, culverts etc., a high visibility warning and retro reflective signage shall be displayed in vernacular language and English. Entry of unauthorized persons should be prevented.	Contractor, PIU/PMC	Construction phase	Site inspection	Availability of safety measures Absence of safety Incidents	Everyday

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
		Excavations will be adequately barricaded and well lit – with signages /info boards. There shall be adequate lighting arrangement at night and adequate barricading to prevent mishaps after construction activity ceases for the day. A readily available first aid unit with necessary supplies, drinking water, resting shed, sanitation etc shall be made available in every work zone.					
2.19	Exposure to electrical equipment	The Contractor shall take all required precautions to prevent danger from electrical equipment at pumping room, etc. and ensure that: No material will be so stacked or placed as to cause danger or inconvenience to any person or the public; All necessary fencing and lights will be provided in construction area; Deactivation and proper grounding of live power equipment and sewer lines to be ensured before initiating	Contractor, PIU/PMC	Construction phase	Site inspection; Observation of power supply system; and Electricity safety precaution taken by workers while working on work site.	Incidence of current shock, injury, electrocution	Daily

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
		work; All energized electrical devices to be marked with warning signs. Use the symbol of danger as warning of high electricity voltage or current flow on cable boxes or where required to avoid any incidence of current shock or electrocution; and Provision of specialized electrical safety training to those workers working with or around exposed components of electric circuits.					
2.20	Fire Safety	Ensure that no fires are permitted on or adjacent to site; Ensure that no smoking is permitted on the working site; Ensure that sufficient and certified fire fighting equipment are placed and maintained on the site; Equip all fuel stores and waste storage areas with fire extinguishers; Ensure that all workforce and staff on site are aware of the location of fire fighting equipment on the site; and	Contractor	Project life cycle	Inspect Attendance register for fire fighting training conducted; and Observation of fire extinguishers and certificate at the sites.	Number of Fire incidents; Certified extinguishers in appropriate locations; and Workers knowledge to operate the fire extinguisher	When required

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
		Conduct training program on use of extinguishers, sand, etc for fire-fighting and ensure that they are trained in its operations.					
2.2 1	Emergency response to manage cyclone and other disaster conditions	Contractor shall ensure efficient communication system in place which will be required during occurrence of any natural hazard; Evacuation plan shall be in place for the site; Evacuation plan or route is displayed clearly through signs or picture at prominent places within the sites; Ensure effective coordination within the workforce and concerned departments and display contact number of concerned persons at prominent places; and Conduct training program and mock drills to workers to deal with the disaster situations due to occurrence of cyclones and tsunami.	Contractor, PIU/ PMC	Project life cycle	Inspect attendance register for training program; and Inspect fire extinguishers and certificate	DMP in place; Communication system in existence; Display of evacuation route; Capacity of workers to manage; and Disaster and emergency situations	When required
2.2 2	Demolition of existing structures from	Prior to carrying out any building demolition, detailed building appraisal by means of surveys and appropriate assessments shall be	Contractor, PIU/PMC	Construction phases	Site Inspection; Review of waste	Air quality, noise level;	When required

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
	proposed PS site(if required)	carried out. In case of asbestos present in the buildings, specific measures for removal and disposal have to be taken and included in the site specific ESMPs Hoarding and covered walkway is to be provided for protection of the public during the demolition of buildings since hoarding isolates the demolition site from the public, thus preventing unauthorized access and trespassing. Metal scaffolds shall be used for top down demolition. Both bamboo scaffolds and metal scaffolds are considered acceptable provided that they are erected according to the Construction Sites (Safety) Regulations and the codes of practices on scaffolding safety. Concrete breaking, handling of debris and hauling process are main sources of dust from building demolition. Dust mitigation measures complying with the Air Pollution Control (Construction Dust)			management plan; disposal registers		

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
		Regulations shall be adopted to minimize dust emissions. Silent type power mechanical equipment shall be used to reduce noise impact as much as practicable or possibilities of engaging man power with light dismantling tools with PPE are studied and engaged. Debris waste and other materials shall not be thrown, tipped or shot down from a height where they are liable to cause injury to any person on or near the site. Disposal of debris has to be controlled and to be reused in filling of low ground with due permissions from local authority. Wasted reinforcement will be handled as per the departmental procedure.					
2.23	Submission of updated environmental & social management plan (ESMP) / site environmental plan (SEP); ESMP	Supervisor to ensure ESMP implementation. Submission of updated ESMP/ SEP Timely submission of monthly monitoring reports including documentary evidence on ESMP implementation such as photographs.	Contactor/ PMC	Project cycle	Review of reports and records	Compliance at the site	One-time / As and when need arises

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
	implementation and reporting						
2.2 4	Scaffolding	Mild steel scaffolding with adequate harness with double hook hanging safety belt will be provided in the working of construction of STP in the project area	Contractor	Construction Phase	Site inspection	Availability of safety measures Absence of safety Incidents	Regular inspection of safety equipment and awareness through tool box talk (TBT)
2.2 5	Mechanical Lifts	Adequate use of chain blocks and cranes which are used in the lifting of equipment with the safe handling of materials in the pumping station and lifting station. Fallen materials should be avoided during construction by using appropriate mechanical equipment.	Contractor	Construction phase	Site inspection; and Observation of workers with PPE and safety measures while working on work site.	Quantity and timely supply of PPEs; Awareness level about the use of PPEs; and Incidence of injury, accident, infirmity.	Everyday
Social aspect							
2.2 6	Compensation and Assistances to potential temporary economic impacts	Provide compensation and assistance to potential temporary economic impacts; Employ people of local communities for project works with a priority to	Contractor, PIU/PMC	Construction Phase	Verify the disbursement of compensation and assistance; and Conduct	Potential temporary economic impacts were compensated at	One time

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
		potential temporary economic impacts based on their skills; Employ the potential temporary economic impacts, particularly willing women on priority in project related unskilled, semi-skilled and skilled works as applicable;			consultation with local communities	replacement cost against the income loss	
2.2 7	Loss of access	The contractor shall ensure that access to connecting roads; market, residence and other places should not be blocked. In case, it is unavoidable, then alternate route should be provided to people. The community should be made aware about the diversion plan along with expected deadline for the completion of work. After completion of the work, the access should be restored as per original condition. The contractor is required to provide notice to the shop owners of the need to shift kiosk/wares displayed on ROW as soon as the work plan is ready with minimum 7 working days.	Contractor	Construction	Visual inspection	Crossing/ access closed	Regularly

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
		No works can be commenced unless 100% shifted in sections ready for implementation.					
3.Decommissioning phase							
3.1	Site clearance and rehabilitation/ Post-construction clean-up	Remove all construction equipment, vehicles, surplus materials, site office facilities, temporary fencing, structures and other items from the project site including pumping stations and lifting stations; Clean up and remove any spills and contaminated soil in the appropriate manner; Do not bury discarded materials on site or on any other land not designated for this purpose; The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. Level the disturbed area and restore	Contractor	After completion of construction phase and operation phase	Site inspection; and Review of record of activities upon completion of construction phase and commissioning phase	Restoration of construction sites in original condition; and Sites are fully rehabilitated prior to commissioning of project	Weekly

Section VII. Works Requirements

S. No.	Aspect	Mitigation measures	Responsibility	Implementation phase	Monitoring method	Monitoring indicator	Frequency
		to a condition resembling its natural profile; and Ensure site is fully clean and tidy before the exit and prior to its handover to the officer of ULB and other authorized persons.					
4. Operation and Maintenance phase							
4.1	Odour nuisance during operation of Sewage lifting and pumping stations	Strictly follow standard operating procedures / operational manual for operation and maintenance Ensure that pumping cycles are properly followed; and there is no build-up of sewage beyond design volume in the wells Conduct monitoring (periodically at all operational pumping stations and lifting stations	ULB	Operation and Maintenance phase	Odour control measures; monitoring of H ₂ S and ammonia; site inspection	No odour is experienced around the pumping station	Periodical
4.2	Workers exposure to toxic gases in sewers and hazardous material during sewer maintenance work	During cleaning/ maintenance operation, the sewer line will be adequately vented to ensure that no toxic or hazardous gases are present in the line. Ensure availability of PPE for maintenance workers. Follow safety and Emergency preparedness plan	ULB	Operation and Maintenance phase	Site inspection	Nil grievances/incidents	Regularly

Appendix 1

Example for the Contents of a PA-ESMP

1.	Environmental policy	➤ Declaration of ESHS policy signed by the Managing director of the Contractor and clearly defining the commitment of the Contractor in terms of (i) ESHS management for its construction sites and (ii) compliance with the ESHS Specifications of the Contract.
2.	PA-ESMP	➤ Target and content of the Project Area Environmental and Social Management Plan (including Health and Safety) ➤ Preparation and updating schedule ➤ Quality assurance and validation
3.	ESHS resources	➤ Human resources: – ESHS manager – ESHS supervisors – Person in charge of relations with stakeholders – Medical personnel ➤ Logistics & communications: – ESHS vehicles – IT stations – In situ noise, air and water measuring equipment – Analysis laboratory used ➤ Reporting: – Weekly inspections – Monthly – Accident/ Incident
4.	ESHS regulations	➤ Definition of standards for the applicable national ESHS regulations and the ESHS recommendations of institutions affiliated to the United Nations (WHO, ILO, IMO, IFC), applicable to the execution of works: – Environment. – Noise and Vibration Soil Erosion – Air Quality – Solid Waste – Hazardous Materials – Wastewater Discharges – Contaminated Land – Occupational Health and Safety

Section VII. Works Requirements

		– Community Health and Safety – General Site Hazards – Disease Prevention – Traffic Safety – Discharge standards – Minimum wage – Day and/or night traffic restrictions – Other ➤ Definition of ESHS standards for the industry applied
5.	ESHS operational inspection resources	➤ Site tracking procedure: – Frequency – Personnel – Assessment criteria ➤ Non-conformity handling and detection procedure: – Distribution of information – Notification depending on the level of importance allocated to non-conformities – Tracking of the closing of the non-conformity ➤ Management of data on tracking and non-conformities : – Archiving – Use as a performance indicator
6.	Project Areas	➤ Description of Project Areas (as per definition in ESHS Specifications Sub-Clause 1.3: – Number – Location on a topographical map – Activities – Opening & closing schedule – Access ➤ Reference to the Appendix: a Site-ESMP for each Project Area.
7.	Health and safety plan	➤ Identification and characterisation of health and safety risks, including the exposure of personnel to chemicals, biological hazards and radiation. ➤ Description of working methods to minimise hazards and control risks. ➤ List of the types of work for which a work permit is required

Section VII. Works Requirements

		➤ Personal protection equipment ➤ Presentation of the medical facilities at Project Areas: – Healthcare centre, medical equipment and allocation of medical staff – Medical treatments that can be carried out on-site – Ambulance, communications – Referring hospital ➤ Evacuation procedure for medical emergencies ➤ Description of the internal organisation and action to be taken in the event of an accident or incident
8.	Training plan	➤ Basic training for non-qualified staff ➤ Health and Safety inductions ➤ Health & safety training
9.	Labour Conditions	➤ Description of Human Resource Policy for construction works of direct and indirect workers
10.	Local Recruitment	➤ Local labour requirements: – Job descriptions and the levels of qualifications required – Recruitment procedure and deployment schedule – Initial training to be provided by the Contractor for each job description ➤ Location and management of the local recruitment office(s)
11.	Project machinery and vehicle traffic	➤ Description of the fleet of vehicles/machinery used for the execution of the works and emission levels and safety requirements ➤ Deployment (Project Area & schedule) and maintenance sites for each vehicle and machine ➤ Mapping of itineraries, travel times, and areas where speeds are limited ➤ Dust suppression: – Mapping or road sections where dust reduction initiatives apply – Water points identified or to be created for refuelling tanker trucks – Capacity of the tanker trucks used and calculation of the number of trucks required – Width of the track to determine if one watering run or equivalent is adequate (narrow track) or if two runs are required (wide track) – Number of watering or equivalent operations proposed per day depending on the climate

Section VII. Works Requirements

12.	Dangerous substances	➤ Inventory of dangerous substances per Project Area and per period ➤ Transport and storage conditions and chemical incompatibility
13.	Effluents	➤ Characterisation of effluents discharged to the receiving environment ➤ Facilities for the treatment or pre-treatment of effluents including sufficient run-off ➤ Measures for reducing the sediment content of rainwater runoff ➤ Measures for monitoring the efficiency and performance of facilities for reducing sediment content of rainwater runoff ➤ Resources and methods for monitoring effluent and rainwater runoff quality
14.	Noise and vibrations	➤ Estimation of the frequencies, duration, days of the week and noise levels per Project Area
15.	Waste	➤ Inventory of waste per Project Area and per period ➤ Collection, intermediate storage, handling and treatment methods for ordinary or inert waste ➤ Storage and handling methods for dangerous waste
16.	Clearing and revegetation	➤ Methods & schedule for clearing vegetation and earthwork activities ➤ Methods, species and schedule for the revegetation of Project Areas disturbed by the works
17.	Biodiversity	➤ Schedule for adequate fauna and flora management ➤ Measures for minimizing impact on fauna and flora species based on the Contracting Authority procedures ➤ Measures for monitoring the efficiency and performance of the plan in place ➤ Measures for limiting IAS ➤ Measures for monitoring the efficiency and performance of the plan in place
18.	Prevention of erosion	➤ Location of zones suffering from erosion ➤ Methods and schedule for the implementation of anti-erosive actions, including topsoil storage
19.	Documentation of site condition	➤ List and cover of viewpoints ➤ Imaging method ➤ Archiving photographs
20.	Rehabilitation	➤ Method and schedule for Project Area rehabilitation
21.	Appendices	➤ Site-ESMP (number and location specified in Section 6 "Project Areas" above): – Marking out of the Project Area perimeter on a map

Section VII. Works Requirements

		– Definition of zones for vegetation clearing, zones for the storage of usable timber, zones for burning of green waste – Definition of on-site activities: construction, storage areas, accommodation areas, offices, workshops, concrete making units – Layout of activity areas on the Project Area: construction works, production/operation areas, rehabilitation and closure – Zones for the storage of topsoil, spoil from earthworks, materials – Access routes and checkpoints – Project Area occupancy schedule – Organisation of Project Area preparation – Liquid discharge outlet points – Proposed sampling points for monitoring water quality – Atmospheric emission outlet points – Location of the storage site for dangerous products – Location and mapping of waste treatment facilities when handled by an external service provider – Any other information relating to the environmental management of the Project Area ➤ Emergency plan – Description of facilities – Characterisation of hazards – Emergency situations – Organisation structure - roles and responsibilities – Emergency procedures – Human and material resources – Triggering of the plan – Reporting
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Appendix 2 - Properties rendering a product dangerous

1. **Explosive** substances and preparations which could explode in the presence of a flame or which are more sensitive to impacts and friction than dinitrobenzene.
2. **Combustive** substances and preparations which, when in contact with other substances, particularly inflammable substances, undergo strongly exothermic reactions.
3. **Easily inflammable** substances and preparations (i) in liquid phase (including extremely inflammable liquids), with a flash point below 21°C, or which can heat up to the extent of spontaneous combustion in ambient air; or (ii) in solid phase, which can burst into flames easily in the brief presence of a source of inflammation and which will continue to burn after the removal of the source of inflammation or (iii) in gaseous phase, which are inflammable in air at normal pressure; or (iv) – which, when in contact with moist air or water, produce dangerous quantities of gases which are easily inflammable.
4. **Inflammable** liquid substances and preparations, with a flash point equal to or above 21°C and less than or equal to 55°C.
5. **Irritant** non-corrosive substances and preparations which, when in immediate, extended or repeated contact with the skin and mucosa, can cause inflammation.
6. **Harmful** substances and preparations which, in case of inhaling, swallowing or cutaneous penetration, can lead to risks of limited severity.
7. **Toxic** substances and preparations (including highly toxic substances and preparations), which, in case of inhaling, swallowing or cutaneous penetration, can lead to serious, acute or chronic risks, and even death.
8. **Carcinogenic** substances and preparations which, in case of inhaling, swallowing or cutaneous penetration, can lead to or increase the frequency of cancer.
9. **Corrosive** substances and preparations which, in case of contact with living tissues, can destroy the latter.
10. **Infectious** substances containing viable micro-organisms or their toxins, for which it is known or we have good reasons to believe that they cause disease in humans or other living organisms.
11. **Harmful to reproduction** substances and preparations which, in case of inhaling, swallowing or cutaneous penetration, can induce or increase the frequency of undesirable non-hereditary effects in offspring or have a negative effect on reproductive functions and abilities.
12. **Mutagenic** substances and preparations which, in case of inhaling, swallowing or cutaneous penetration, can lead to hereditary genetic disorders or increase the frequency of these disorders.
13. **React with water** substances and preparations which, in case of contact with water, air or an acid, release a toxic or highly toxic gas.

Section VII. Works Requirements

- 14. Sensitising** substances and preparations which, in case of inhaling or cutaneous penetration, can lead to a hypersensitisation, so that renewed exposure to the substance or preparation will cause characteristic harmful effects. This property can only be considered if test methods are available.
- 15. Ecotoxic** substances and preparations with inherent or potential immediate or deferred risks for one or several environmental components.
- 16. Dangerous for the environment** substances and preparations which are likely, after elimination, to lead to another substance, by any means, e.g. a lixiviation product, with one of the above characteristics.

c) Personnel Requirements

The Bidder must demonstrate that it has the personnel for the key positions that meet the following requirements:

Construction Phase:

No.	Position	Total Work Experience [years]
1	Project Manager – 1 No. Graduate in Civil Engineering/ Project Management/ Construction Management	15
2	Sewerage Expert – 2 Nos.	10
3	Quality Control Engineer – 7 Nos. Graduate Civil Engineer	8
4	SCADA / Instrumentation Specialist – 1 No.	15
5	Environmental Expert – 1 No. Graduate in civil/ Environmental Science, Engineering/ Planning and related field with EHS Certification	8
6	Social Safeguard Officer – 1 No Post Graduate in Sociology / Social Work / Economics / Development Studies.	3
6	Safety / Accident Prevention Officer – 1 Nos. Graduate and suitably qualified to ensure safety and accident prevention at works	5
7	Quantity surveyor Diploma / Graduate in Civil Engineering 2 Nos	5
8	CAD Draughtsman Diploma / Graduate in Civil Engineering 1 No	5

The persons mentioned in Sl. No. 2 to 8 should also have “Similar Work Experience” – As Underground sewerage System implementation and installation of related mechanical, electrical, instrumentation works.

(a) Personnel requirements for Operation and maintenance Phase:

Sl.No	Details	Number of Persons required
	Collection System	
1	Maintenance Engineer	1
2	Technical Assistant	2
3	Sewer Inspector	2
4	Sewer Cleaner	3
5	HSC Cleaners -1No / 4000 Connections	3
	Pumping Stations - 5 Nos	
6	Electrician Grade - II/ pump operator	5
7	Maintenance Assistant	12

Section VII. Works Requirements

	Lift stations - 12 Nos	
8	Maintenance Assistant	12

d) Equipment Requirements

The Bidder must demonstrate that it can obtain (purchase, lease or rent) the key equipment listed hereafter:

- (a) Availability (either owned or leased or by procurement against mobilization advances) of the at least following key and critical equipment for this work:

Section VII. Works Requirements

Civil		
Concrete mixture with hopper	8 nos	10 Cu.ft.capacity each
Needle vibrators	4 nos	20-50mm needle each
Earth mover (J.C.B.)	4 nos	0.5 Cu.M.each
Trucks/tippers/dumpers	4 nos	6-10 Tonnes,each
Dewatering pumps	100HP	Various capacity
Mobile DG set	4 nos	10KVA
DG set	6 Nos	63 KVA
Mechanical		
Hydraulic mobile crane	5 nos	Boom height 6 m (20 T)
Chain Pulley Block	5 nos	5 T capacity
Tools and plants for jointing pipes	5 nos	
Pipe cutting machinery	4 nos	
Welding Transformers for Structural Steel work welding.	3 nos	
Drilling machine	4 nos	Upto 16 mm drill size
Pipe bending machine	4 nos	
Mechanical wrenches	4 nos	
Set of torque wrenches for tightening flange joints up to 1600 NB	4 sets	
Electrical		
Earth Tester	4nos	500V
Megger	4nos	500V
Soil resistivity measurement kit	1no	Four peg method
Multimeter	4nos	0-500 VAC
		0-100 AAC
		0-20 ADC
		0-2000ADC
Set of Crimping Tool for all sizes of cables(Copper&Aluminium)	4sets	
Tong tester	4nos	0-500A
Tester	4nos	2KVHV
Clip on type Ammeter	4nos	0-500A

(b) Equipment requirements for Operation and Maintenance Phase:

No.	Equipment Type and Characteristics	Minimum Number Required
1	Excavators	1 No.
2	Trucks/tractors with Trolly	1 No.
3.	Hook Lifter	1 No.
4.	Equipment's related to Jointing for DWC Pipe	3Nos.
5	Dewatering Pumps	8 Nos.

Section VII. Works Requirements

6	Small 4 KL trailer mounted sewer jetting machine and Big 10 KL sewer jetting machine	2 Nos.
7	Silt grab bucket machine. Robot for sewer machine hole cleaning	4 nos.

(c) LIST OF SAFETY EQUIPMENTS TO BE PROVIDED BY CONTRACTOR IN EACH PUMPING STATION AND STP

Sl. No.	Name of Equipment	LT/HT Station
1	Safety belt with rope	2 Sets
2	Gas Mask	2 Sets
3	Shock proof hand gloves. (11 KV grade gloves)	1 Pair
4	Disposable hand gloves	2 Pairs
5	Gum Boot	2 Pairs
6	Electrical line tester	1 No.
7	Earth discharge rod	1 No.
8	First Aid Box	1 No.
9	Emergency light	1 No.

Note : The above is only an illustrative minimum list. The contractor must note that it is their responsibility to ensure the lives and safety of the workers employed by them. Towards this end, all the equipment of appropriate specifications should be procured and made available to the workers in usable conditions throughout the period of contract. Responsibility for any health problem or death will solely rest with contractor.

The Bidder shall provide further details of proposed items of equipment using Form EQU in Section IV, Bidding Forms.

Section VII. Works Requirements

2. Drawings

Please refer Volume-IV

PART 3 – CONDITIONS OF CONTRACT (CC) AND CONTRACT FORMS

Section VIII. General Conditions (GC)

1.	General Provisions	198
1.1	Definitions	198
1.2	Interpretation	203
1.4	Law and Language	204
1.5	Priority of Documents	204
1.6	Contract Agreement	205
1.7	Assignment	205
1.8	Care and Supply of Documents	205
1.9	Delayed Drawings or Instructions	205
1.10	Employer's Use of Contractor's Documents	206
1.11	Contractor's Use of Employer's Documents	206
1.12	Confidential Details	207
1.13	Compliance with Laws	207
1.14	Joint and Several Liability	207
1.15	Inspections and Audit by the Bank	208
2.	The Employer	208
2.1	Right of Access to the Site	208
2.2	Permits, Licences or Approvals	208
2.3	Employer's Personnel	209
2.4	Employer's Financial Arrangements	209
2.5	Employer's Claims	209
3.	The Engineer	210
3.1	Engineer's Duties and Authority	210
3.2	Delegation by the Engineer	211
3.3	Instructions of the Engineer	212
3.4	Replacement of the Engineer	212
3.5	Determinations	213
4.	The Contractor	213
4.1	Contractor's General Obligations	213
4.2	Performance Security	214
4.3	Contractor's Representative	215
4.4	Subcontractors	216
4.5	Assignment of Benefit of Subcontract	216
4.6	Co-operation	216
4.7	Setting Out	217
4.8	Safety Procedures	217
4.9	Quality Assurance	218
4.10	Site Data	218
4.11	Sufficiency of the Accepted Contract Amount	219
4.12	Unforeseeable Physical Conditions	219
4.13	Rights of Way and Facilities	220
4.14	Avoidance of Interference	220
4.15	Access Route	220
4.16	Transport of Goods	221
4.18	Protection of the Environment	221
4.19	Electricity, Water and Gas	221
4.22	Security of the Site	223
4.23	Contractor's Operations on Site	224

Section VIII. General Conditions (GC)

4.24	Fossils.....	224
5.	Nominated Subcontractors	225
5.1	Definition of “nominated Subcontractor”	225
5.2	Objection to Nomination	225
5.3	Payments to nominated Subcontractors.....	225
5.4	Evidence of Payments.....	226
6.	Staff and Labour	226
6.1	Engagement of Staff and Labour.....	226
6.2	Rates of Wages and Conditions of Labour	226
6.3	Persons in the Service of Employer.....	227
6.4	Labour Laws	227
6.5	Working Hours	227
6.6	Facilities for Staff and Labour.....	227
6.7	Health and Safety.....	227
6.8	Contractor’s Superintendence.....	229
6.9	Contractor’s Personnel.....	229
6.10	Records of Contractor’s Personnel and Equipment	229
6.11	Disorderly Conduct.....	229
6.12	Foreign Personnel.....	229
6.13	Supply of Foodstuffs	230
6.14	Supply of Water.....	230
6.15	Measures against Insect and Pest Nuisance.....	230
6.16	Alcoholic Liquor or Drugs	230
6.17	Arms and Ammunition	230
6.18	Festivals and Religious Customs	230
6.19	Funeral Arrangements.....	230
6.20	Prohibition of Forced or Compulsory Labour	230
6.21	Prohibition of Harmful Child Labour.....	230
6.22	Employment Records of Workers	231
6.23	Workers’ Organi-sations.....	231
6.24	Non-Discrimination and Equal Opportunity.....	231
7.	Plant, Materials and Workmanship.....	231
7.1	Manner of Execution	231
7.2	Samples.....	232
7.3	Inspection.....	232
7.4	Testing	232
7.5	Rejection	233
7.6	Remedial Work.....	233
7.7	Ownership of Plant and Materials.....	234
7.8	Royalties	234
8.	Commencement, Delays and Suspension	234
8.1	Commencement of Works.....	234
8.2	Time for Completion	235
8.3	Programme	235
8.4	Extension of Time for Completion	236
8.5	Delays Caused by Authorities	237
8.6	Rate of Progress	237
8.7	Delay Damages.....	237
8.8	Suspension of Work	238
8.9	Consequences of Suspension.....	238
8.10	Payment for Plant and Materials in Event of Suspension	238

Section VIII. General Conditions (GC)

8.11	Prolonged Suspension	239
8.12	Resumption of Work.....	239
9.	Tests on Completion	239
9.1	Contractor's Obligations	239
9.2	Delayed Tests	239
9.3	Retesting.....	240
9.4	Failure to Pass Tests on Completion.....	240
10.	Employer's Taking Over	240
10.1	Taking Over of the Works and Sections	240
10.2	Taking Over of Parts of the Works.....	241
10.3	Interference with Tests on Completion	242
11.	Defects Liability	242
11.1	Completion of Outstanding Work and Remedying Defects	243
11.2	Cost of Remedying Defects.....	243
11.3	Extension of Defects Notification Period.....	243
11.4	Failure to Remedy Defects.....	243
11.5	Removal of Defective Work.....	244
11.6	Further Tests.....	244
11.7	Right of Access	244
11.8	Contractor to Search	245
11.9	Performance Certificate.....	245
11.10	Unfulfilled Obligations.....	245
11.11	Clearance of Site.....	245
12.	Measurement and Evaluation	245
12.1	Works to be Measured	245
12.2	Method of Measurement	246
12.3	Evaluation	246
12.4	Omissions	247
13.	Variations and Adjustments.....	248
13.1	Right to Vary	248
13.2	Value Engineering.....	249
13.3	Variation Procedure	249
13.4	Payment in Applicable Currencies.....	250
13.5	Provisional Sums	250
13.6	Daywork	250
13.7	Adjustments for Changes in Legislation.....	251
13.8	Adjustments for Changes in Cost	252
14.	Contract Price and Payment	253
14.1	The Contract Price	253
14.2	Advance Payment	254
14.3	Application for Interim Payment Certificates	255
14.4	Schedule of Payments	256
14.5	Plant and Materials intended for the Works	256
14.6	Issue of Interim Payment Certificates	257
14.7	Payment.....	258
14.8	Delayed Payment.....	258
14.9	Payment of Retention Money	259
14.10	Statement at Completion.....	260
14.11	Application for Final Payment Certificate	260

Section VIII. General Conditions (GC)

14.12	Discharge	261
14.13	Issue of Final Payment Certificate	261
14.14	Cessation of Employer's Liability	261
14.15	Currencies of Payment	262
15.	Termination by Employer	262
15.1	Notice to Correct	262
15.2	Termination by Employer	262
15.3	Valuation at Date of Termination	264
15.4	Payment after Termination	264
15.5	Employer's Entitlement to Termination for Convenience	264
15.6	Corrupt or Fraudulent Practices	265
16.	Suspension and Termination by Contractor	265
16.1	Contractor's Entitlement to Suspend Work	266
16.2	Termination by Contractor	266
16.3	Cessation of Work and Removal of Contractor's Equipment	267
16.4	Payment on Termination	268
17.	Risk and Responsibility	268
17.1	Indemnities	268
17.2	Contractor's Care of the Works	269
17.3	Employer's Risks	269
17.4	Consequences of Employer's Risks	270
17.5	Intellectual and Industrial Property Rights	270
17.6	Limitation of Liability	271
17.7	Use of Employer's Accommodation / Facilities	271
18.	Insurance	272
18.1	General Requirements for Insurances	272
18.2	Insurance for Works and Contractor's Equipment	273
18.3	Insurance against Injury to Persons and Damage to Property	275
18.4	Insurance for Contractor's Personnel	275
19.	Force Majeure	276
19.1	Definition of Force Majeure	276
19.3	Duty to Minimise Delay	277
19.4	Consequences of Force Majeure	277
19.5	Force Majeure Affecting Subcontractor	277
19.6	Optional Termination, Payment and Release	277
19.7	Release from Performance	278
20.	Claims, Disputes and Arbitration	278
20.1	Contractor's Claims	278
20.2	Appointment of the Dispute Board	280
20.3	Failure to Agree on the Composition of the Dispute Board	281
20.4	Obtaining Dispute Board's Decision	281
20.5	Amicable Settlement	282
20.6	Arbitration	282
20.7	Failure to Comply with Dispute Board's Decision	283
20.8	Expiry of Dispute Board's Appointment	283

Section VIII. General Conditions (GC)

[Name of Employer]

[Name of Contract]

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General Conditions

1. General Provisions

1.1 Definitions

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

1.1.1 The Contract

1.1.1.1 “Contract” means the Contract Agreement, the Letter of Acceptance, the Letter of Tender, these Conditions, the Specification, the Drawings, the Schedules, and the further documents (if any) which are listed in the Contract Agreement or in the Letter of Acceptance.

1.1.1.2 “Contract Agreement” means the contract agreement referred to in Sub-Clause 1.6 [Contract Agreement].

1.1.1.3 “Letter of Acceptance” means the letter of formal acceptance, signed by the Employer, of the Letter of Tender, including any annexed memoranda comprising agreements between and signed by both Parties. If there is no such letter of acceptance, the expression “Letter of Acceptance” means the Contract Agreement and the date of issuing or receiving the Letter of Acceptance means the date of signing the Contract Agreement.

1.1.1.4 “Letter of Tender” means the document entitled letter of tender or letter of Bid, which was completed by the Contractor and includes the signed offer to the Employer for the Works.

1.1.1.5 “Specification” means the document entitled specification, as included in the Contract, and any additions and modifications to the specification in accordance with the Contract. Such document specifies the Works.

1.1.1.6 “Drawings” means the drawings of the Works, as included in the Contract, and any additional and modified drawings issued by (or on behalf of) the Employer in accordance with the Contract.

1.1.1.7 “Schedules” means the document(s) entitled schedules, completed by the Contractor and submitted with the Letter of Tender, as included in the Contract. Such document may include the Bill of Quantities, data, lists, and schedules of rates and/or prices.

1.1.1.8 “Tender” means the Letter of Tender and all other documents which the Contractor submitted with the Letter of Tender, as included in the Contract.

Section VIII. General Conditions (GC)

- 1.1.1.9 “Bill of Quantities”, “Daywork Schedule” and “Schedule of Payment Currencies” mean the documents so named (if any) which are comprised in the Schedules.
- 1.1.1.10 “Contract Data” means the pages completed by the Employer entitled contract data which constitute Part A of the Particular Conditions.
- 1.1.2 Parties and Persons**
- 1.1.2.1 “Party” means the Employer or the Contractor, as the context requires.
- 1.1.2.2 “Employer” means the person named as employer in the Contract Data and the legal successors in title to this person.
- 1.1.2.3 “Contractor” means the person(s) named as contractor in the Letter of Tender accepted by the Employer and the legal successors in title to this person(s).
- 1.1.2.4 “Engineer” means the person appointed by the Employer to act as the Engineer for the purposes of the Contract and named in the Contract Data, or other person appointed from time to time by the Employer and notified to the Contractor under Sub-Clause 3.4 [Replacement of the Engineer].
- 1.1.2.5 “Contractor’s Representative” means the person named by the Contractor in the Contract or appointed from time to time by the Contractor under Sub-Clause 4.3 [Contractor’s Representative], who acts on behalf of the Contractor.
- 1.1.2.6 “Employer’s Personnel” means the Engineer, the assistants referred to in Sub-Clause 3.2 [Delegation by the Engineer] and all other staff, labour and other employees of the Engineer and of the Employer; and any other personnel notified to the Contractor, by the Employer or the Engineer, as Employer’s Personnel.
- 1.1.2.7 “Contractor’s Personnel” means the Contractor’s Representative and all personnel whom the Contractor utilises on Site, who may include the staff, labour and other employees of the Contractor and of each Subcontractor; and any other personnel assisting the Contractor in the execution of the Works.
- 1.1.2.8 “Subcontractor” means any person named in the Contract as a subcontractor, or any person appointed as a subcontractor, for a part of the Works; and the legal successors in title to each of these persons.
- 1.1.2.9 “DB” means the person or three persons appointed under Sub-Clause 20.2 [Appointment of the Dispute Board] or Sub-Clause 20.3 [Failure to Agree on the Composition of the Dispute Board]

Section VIII. General Conditions (GC)

- 1.1.2.10 “FIDIC” means the Fédération Internationale des Ingénieurs-Conseils, the international federation of consulting engineers.
- 1.1.2.11 “Bank” means the financing institution (if any) named in the Contract Data.
- 1.1.2.12 “Borrower” means the person (if any) named as the borrower in the Contract Data.
- 1.1.3 Dates, Tests, Periods and Completion**
- 1.1.3.1 “Base Date” means the date 28 days prior to the latest date for submission of the Tender.
- 1.1.3.2 “Commencement Date” means the date notified under Sub-Clause 8.1 [Commencement of Works].
- 1.1.3.3 “Time for Completion” means the time for completing the Works or a Section (as the case may be) under Sub-Clause 8.2 [Time for Completion], as stated in the Contract Data (with any extension under Sub-Clause 8.4 [Extension of Time for Completion]), calculated from the Commencement Date.
- 1.1.3.4 “Tests on Completion” means the tests which are specified in the Contract or agreed by both Parties or instructed as a Variation, and which are carried out under Clause 9 [Tests on Completion] before the Works or a Section (as the case may be) are taken over by the Employer.
- 1.1.3.5 “Taking-Over Certificate” means a certificate issued under Clause 10 [Employer’s Taking Over].
- 1.1.3.6 “Tests after Completion” means the tests (if any) which are specified in the Contract and which are carried out in accordance with the Specification after the Works or a Section (as the case may be) are taken over by the Employer.
- 1.1.3.7 “Defects Notification Period” means the period for notifying defects in the Works or a Section (as the case may be) under Sub-Clause 11.1 [Completion of Outstanding Work and Remedying Defects], which extends over 365 days except if otherwise stated in the Contract Data (with any extension under Sub-Clause 11.3 [Extension of Defects Notification Period]), calculated from the date on which the Works or Section is completed as certified under Sub-Clause 10.1 [Taking Over of the Works and Sections].
- 1.1.3.8 “Performance Certificate” means the certificate issued under Sub-Clause 11.9 [Performance Certificate].
- 1.1.3.9 “Day” means a calendar day and “year” means 365 days.
- 1.1.4 Money and Payments**
- 1.1.4.1 “Accepted Contract Amount” means the amount accepted in the Letter of Acceptance for the execution

and completion of the Works and the remedying of any defects.

1.1.4.2 "Contract Price" means the price defined in Sub-Clause 14.1 [The Contract Price], and includes adjustments in accordance with the Contract.

1.1.4.3 "Cost" means all expenditure reasonably incurred (or to be incurred) by the Contractor, whether on or off the Site, including overhead and similar charges, but does not include profit.

1.1.4.4 "Final Payment Certificate" means the payment certificate issued under Sub-Clause 14.13 [Issue of Final Payment Certificate].

1.1.4.5 "Final Statement" means the statement defined in Sub-Clause 14.11 [Application for Final Payment Certificate].

1.1.4.6 "Foreign Currency" means a currency in which part (or all) of the Contract Price is payable, but not the Local Currency.

1.1.4.7 "Interim Payment Certificate" means a payment certificate issued under Clause 14 [Contract Price and Payment], other than the Final Payment Certificate.

1.1.4.8 "Local Currency" means the currency of the Country.

1.1.4.9 "Payment Certificate" means a payment certificate issued under Clause 14 [Contract Price and Payment].

1.1.4.10 "Provisional Sum" means a sum (if any) which is specified in the Contract as a provisional sum, for the execution of any part of the Works or for the supply of Plant, Materials or services under Sub-Clause 13.5 [Provisional Sums].

1.1.4.11 "Retention Money" means the accumulated retention moneys which the Employer retains under Sub-Clause 14.3 [Application for Interim Payment Certificates] and pays under Sub-Clause 14.9 [Payment of Retention Money].

1.1.4.12 "Statement" means a statement submitted by the Contractor as part of an application, under Clause 14 [Contract Price and Payment], for a payment certificate.

1.1.5 Works and Goods

1.1.5.1 "Contractor's Equipment" means all apparatus, machinery, vehicles and other things required for the execution and completion of the Works and the remedying of any defects. However, Contractor's Equipment excludes Temporary Works, Employer's Equipment (if any), Plant, Materials and any other things intended to form or forming part of the Permanent Works.

Section VIII. General Conditions (GC)

- 1.1.5.2 “Goods” means Contractor’s Equipment, Materials, Plant and Temporary Works, or any of them as appropriate.
- 1.1.5.3 “Materials” means things of all kinds (other than Plant) intended to form or forming part of the Permanent Works, including the supply-only materials (if any) to be supplied by the Contractor under the Contract.
- 1.1.5.4 “Permanent Works” means the permanent works to be executed by the Contractor under the Contract.
- 1.1.5.5 “Plant” means the apparatus, machinery and other equipment intended to form or forming part of the Permanent Works, including vehicles purchased for the Employer and relating to the construction or operation of the Works.
- 1.1.5.6 “Section” means a part of the Works specified in the Contract Data as a Section (if any).
- 1.1.5.7 “Temporary Works” means all temporary works of every kind (other than Contractor’s Equipment) required on Site for the execution and completion of the Permanent Works and the remedying of any defects.
- 1.1.5.8 “Works” mean the Permanent Works and the Temporary Works, or either of them as appropriate.
- 1.1.6 Other Definitions**
 - 1.1.6.1 “Contractor’s Documents” means the calculations, computer programs and other software, drawings, manuals, models and other documents of a technical nature (if any) supplied by the Contractor under the Contract.
 - 1.1.6.2 “Country” means the country in which the Site (or most of it) is located, where the Permanent Works are to be executed.
 - 1.1.6.3 “Employer’s Equipment” means the apparatus, machinery and vehicles (if any) made available by the Employer for the use of the Contractor in the execution of the Works, as stated in the Specification; but does not include Plant which has not been taken over by the Employer.
 - 1.1.6.4 “Force Majeure” is defined in Clause 19 [Force Majeure].
 - 1.1.6.5 “Laws” means all national (or state) legislation, statutes, ordinances and other laws, and regulations and by-laws of any legally constituted public authority.
 - 1.1.6.6 “Performance Security” means the security (or securities, if any) under Sub-Clause 4.2 [Performance Security].
 - 1.1.6.7 “Site” means the places where the Permanent Works are to be executed, including storage and working

Section VIII. General Conditions (GC)

areas, and to which Plant and Materials are to be delivered, and any other places as may be specified in the Contract as forming part of the Site.

1.1.6.8 "Unforeseeable" means not reasonably foreseeable by an experienced contractor by the Base Date.

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

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

1.2

Interpretation

In the Contract, except where the context requires otherwise:

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

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

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

1.3

Communications

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

- (a) In writing and delivered by hand (against receipt), sent by mail or courier, or transmitted using any of the agreed systems of electronic transmission as stated in the Contract Data; and
- (b) Delivered, sent or transmitted to the address for the recipient's communications as stated in the Contract Data. However:

Section VIII. General Conditions (GC)

- (i) If the recipient gives notice of another address, communications shall thereafter be delivered accordingly; and
- (ii) If the recipient has not stated otherwise when requesting an approval or consent, it may be sent to the address from which the request was issued.

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

1.4 Law and Language

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

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

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

1.5 Priority of Documents

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

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

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

Section VIII. General Conditions (GC)

- 1.6 Contract Agreement** The Parties shall enter into a Contract Agreement within 28 days after the Contractor receives the Letter of Acceptance, unless the Particular Conditions establish otherwise. The Contract Agreement shall be based upon the form annexed to the Particular Conditions. The costs of stamp duties and similar charges (if any) imposed by law in connection with entry into the Contract Agreement shall be borne by the Employer.
- 1.7 Assignment** Neither Party shall assign the whole or any part of the Contract or any benefit or interest in or under the Contract. However, either Party:
- (a) May assign the whole or any part with the prior agreement of the other Party, at the sole discretion of such other Party, and
 - (b) May, as security in favour of a bank or financial institution, assign its right to any moneys due, or to become due, under the Contract.
- 1.8 Care and Supply of Documents** The Specification and Drawings shall be in the custody and care of the Employer. Unless otherwise stated in the Contract, two copies of the Contract and of each subsequent Drawing shall be supplied to the Contractor, who may make or request further copies at the cost of the Contractor.
- Each of the Contractor's Documents shall be in the custody and care of the Contractor, unless and until taken over by the Employer. Unless otherwise stated in the Contract, the Contractor shall supply to the Engineer six copies of each of the Contractor's Documents.
- The Contractor shall keep, on the Site, a copy of the Contract, publications named in the Specification, the Contractor's Documents (if any), the Drawings and Variations and other communications given under the Contract. The Employer's Personnel shall have the right of access to all these documents at all reasonable times.
- If a Party becomes aware of an error or defect in a document which was prepared for use in executing the Works, the Party shall promptly give notice to the other Party of such error or defect.
- 1.9 Delayed Drawings or Instructions** The Contractor shall give notice to the Engineer whenever the Works are likely to be delayed or disrupted if any necessary drawing or instruction is not issued to the Contractor within a particular time, which shall be reasonable. The notice shall include details of the necessary drawing or instruction, details of why and by when it should be issued, and the nature and amount of the delay or disruption likely to be suffered if it is late.
- If the Contractor suffers delay and/or incurs Cost as a result of a failure of the Engineer to issue the notified drawing or instruction within a time which is reasonable and is specified in the notice with supporting details, the Contractor shall give a further notice

to the Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

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

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

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

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

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

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

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

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

**1.11 Contractor's
Use of**

As between the Parties, the Employer shall retain the copyright and other intellectual property rights in the Specification, the Drawings and other documents made by (or on behalf of) the Employer. The Contractor may, at his cost, copy, use, and obtain

Section VIII. General Conditions (GC)

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|---|--|
| Employer's Documents | communication of these documents for the purposes of the Contract. They shall not, without the Employer's consent, be copied, used or communicated to a third party by the Contractor, except as necessary for the purposes of the Contract. |
| 1.12 Confidential Details | <p>The Contractor's and the Employer's Personnel shall disclose all such confidential and other information as may be reasonably required in order to verify compliance with the Contract and allow its proper implementation.</p> <p>Each of them shall treat the details of the Contract as private and confidential, except to the extent necessary to carry out their respective obligations under the Contract or to comply with applicable Laws. Each of them shall not publish or disclose any particulars of the Works prepared by the other Party without the previous agreement of the other Party. However, the Contractor shall be permitted to disclose any publicly available information, or information otherwise required to establish his qualifications to compete for other projects.</p> |
| 1.13 Compliance with Laws | <p>The Contractor shall, in performing the Contract, comply with applicable Laws. Unless otherwise stated in the Particular Conditions:</p> <ul style="list-style-type: none">(a) The Employer shall have obtained (or shall obtain) the planning, zoning, building permit or similar permission for the Permanent Works, and any other permissions described in the Specification as having been (or to be) obtained by the Employer; and the Employer shall indemnify and hold the Contractor harmless against and from the consequences of any failure to do so; and(b) The Contractor shall give all notices, pay all taxes, duties and fees, and obtain all permits, licences and approvals, as required by the Laws in relation to the execution and completion of the Works and the remedying of any defects; and the Contractor shall indemnify and hold the Employer harmless against and from the consequences of any failure to do so, unless the Contractor is impeded to accomplish these actions and shows evidence of its diligence. |
| 1.14 Joint and Several Liability | <p>If the Contractor constitutes (under applicable Laws) a joint venture, consortium or other unincorporated grouping of two or more persons:</p> <ul style="list-style-type: none">(a) These persons shall be deemed to be jointly and severally liable to the Employer for the performance of the Contract;(b) These persons shall notify the Employer of their leader who shall have authority to bind the Contractor and each of these persons; and(c) The Contractor shall not alter its composition or legal status without the prior consent of the Employer. |

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

2. The Employer

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

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

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

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

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

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

- 2.2 Permits, Licences or Approvals** The Employer shall provide, at the request of the Contractor, such reasonable assistance as to allow the Contractor to obtain properly:
- (a) Copies of the Laws of the Country which are relevant to the Contract but are not readily available, and
 - (b) Any permits, licences or approvals required by the Laws of the Country:

Section VIII. General Conditions (GC)

- (i) Which the Contractor is required to obtain under Sub-Clause 1.13 [Compliance with Laws];
 - (ii) For the delivery of Goods, including clearance through customs, and
 - (iii) For the export of Contractor's Equipment when it is removed from the Site.
- 2.3 Employer's Personnel**

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

 - (a) Co-operate with the Contractor's efforts under Sub-Clause 4.6 [Co-operation]; and
 - (b) Take actions similar to those which the Contractor is required to take under sub-paragraphs (a), (b) and (c) of Sub-Clause 4.8 [Safety Procedures] and under Sub-Clause 4.18 [Protection of the Environment].
- 2.4 Employer's Financial Arrangements**

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

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

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

The notice shall be given as soon as practicable and no longer than 28 days after the Employer became aware, or should have become aware, of the event or circumstances giving rise to the

claim. A notice relating to any extension of the Defects Notification Period shall be given before the expiry of such period.

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

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

3. The Engineer

3.1 Engineer's Duties and Authority

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

The Engineer shall have no authority to amend the Contract.

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

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

Except as otherwise stated in these Conditions:

- (a) Whenever carrying out duties or exercising authority, specified in or implied by the Contract, the Engineer shall be deemed to act for the Employer;
- (b) The Engineer has no authority to relieve either Party of any duties, obligations or responsibilities under the Contract;
- (c) Any approval, check, certificate, consent, examination, inspection, instruction, notice, proposal, request, test, or similar act by the Engineer (including absence of disapproval) shall not relieve the Contractor from any responsibility he has under the Contract, including

Section VIII. General Conditions (GC)

responsibility for errors, omissions, discrepancies and non-compliances; and

- (d) Any act by the Engineer in response to a Contractor's request except as otherwise expressly specified shall be notified in writing to the Contractor within 28 days of receipt.

The following provisions shall apply:

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

- (a) Sub-Clause 4.12: agreeing or determining an extension of time and/or additional cost;
- (b) Sub-Clause 13.1: instructing a Variation, except;
 - (i) In an emergency situation as determined by the Engineer, or
 - (ii) If such a Variation would increase the Accepted Contract Amount by less than the percentage specified in the Contract Data;
- (c) Sub-Clause 13.3: Approving a proposal for Variation submitted by the Contractor in accordance with Sub Clause 13.1 or 13.2;
- (d) Sub-Clause 13.4: Specifying the amount payable in each of the applicable currencies

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

3.2 Delegation by the Engineer

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

authority to determine any matter in accordance with Sub-Clause 3.5 [Determinations].

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

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

3.3 Instructions of the Engineer

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

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

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

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

3.4 Replacement of the Engineer

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

3.5 Determinations

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

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

4. The Contractor

4.1 Contractor's General Obligations

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

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

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

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

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

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

- (a) The Contractor shall submit to the Engineer the Contractor's Documents for this part in accordance with the procedures specified in the Contract;

Section VIII. General Conditions (GC)

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

4.2 Performance Security

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

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

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

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

The Employer shall indemnify and hold the Contractor harmless against and from all damages, losses and expenses (including legal fees and expenses) resulting from a claim under the

Performance Security to the extent to which the Employer was not entitled to make the claim.

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

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

4.3 Contractor's Representative

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

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

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

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

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

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

The Contractor's Representative shall be fluent in the language for communications defined in Sub-Clause 1.4 [Law and Language]. If the Contractor's Representative's delegates are not

fluent in the said language, the Contractor shall make competent interpreters available during all working hours in a number deemed sufficient by the Engineer.

4.4 Subcontractors

The Contractor shall not subcontract the whole of the Works.

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

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

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

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

4.5 Assignment of Benefit of Subcontract

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

4.6 Co-operation

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

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

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

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

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

4.7 Setting Out

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

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

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

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

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

4.8 Safety Procedures

The Contractor shall:

- (a) Comply with all applicable safety regulations;
- (b) Take care for the safety of all persons entitled to be on the Site;
- (c) Use reasonable efforts to keep the Site and Works clear of unnecessary obstruction so as to avoid danger to these persons;

- (d) Provide fencing, lighting, guarding and watching of the Works until completion and taking over under Clause 10 [Employer's Taking Over]; and
- (e) Provide any Temporary Works (including roadways, footways, guards and fences) which may be necessary, because of the execution of the Works, for the use and protection of the public and of owners and occupiers of adjacent land.

4.9 Quality Assurance

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

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

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

4.10 Site Data

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

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

- (a) The form and nature of the Site, including sub-surface conditions;
- (b) The hydrological and climatic conditions;
- (c) The extent and nature of the work and Goods necessary for the execution and completion of the Works and the remedying of any defects;

Section VIII. General Conditions (GC)

- (d) The Laws, procedures and labour practices of the Country; and
- (e) The Contractor's requirements for access, accommodation, facilities, personnel, power, transport, water and other services.

4.11 Sufficiency of the Accepted Contract Amount

The Contractor shall be deemed to:

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

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

4.12 Unforeseeable Physical Conditions

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

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

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

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

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

Upon receiving such notice and inspecting and/or investigating these physical conditions, the Engineer shall proceed in

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

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

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

**4.13 Rights of
Way and
Facilities**

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

**4.14 Avoidance
of
Interference**

The Contractor shall not interfere unnecessarily or improperly with:

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

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

**4.15 Access
Route**

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

Except as otherwise stated in these Conditions:

Section VIII. General Conditions (GC)

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

4.16 Transport of Goods

Unless otherwise stated in the Particular Conditions:

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

4.17 Contractor's Equipment

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

4.18 Protection of the Environment

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

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

4.19 Electricity, Water and Gas

The Contractor shall, except as stated below, be responsible for the provision of all power, water and other services he may require

for his construction activities and to the extent defined in the Specifications, for the tests.

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

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

4.20 Employer's Equipment and Free-Issue Materials

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

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

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

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

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

4.21 Progress Reports

Unless otherwise stated in the Particular Conditions, monthly progress reports shall be prepared by the Contractor and submitted to the Engineer in six copies. The first report shall cover the period up to the end of the first calendar month following the

Section VIII. General Conditions (GC)

Commencement Date. Reports shall be submitted monthly thereafter, each within 7 days after the last day of the period to which it relates.

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

Each report shall include:

- (a) Charts and detailed descriptions of progress, including each stage of design (if any), Contractor's Documents, procurement, manufacture, delivery to Site, construction, erection and testing; and including these stages for work by each nominated Subcontractor (as defined in Clause 5 [Nominated Subcontractors]);
- (b) Photographs showing the status of manufacture and of progress on the Site;
- (c) For the manufacture of each main item of Plant and Materials, the name of the manufacturer, manufacture location, percentage progress, and the actual or expected dates of:
 - (i) Commencement of manufacture;
 - (ii) Contractor's inspections;
 - (iii) Tests; and
 - (iv) Shipment and arrival at the Site;
- (d) The details described in Sub-Clause 6.10 [Records of Contractor's Personnel and Equipment];
- (e) Copies of quality assurance documents, test results and certificates of Materials;
- (f) List of notices given under Sub-Clause 2.5 [Employer's Claims] and notices given under Sub-Clause 20.1 [Contractor's Claims];
- (g) Safety statistics, including details of any hazardous incidents and activities relating to environmental aspects and public relations; and
- (h) Comparisons of actual and planned progress, with details of any events or circumstances which may jeopardise the completion in accordance with the Contract, and the measures being (or to be) adopted to overcome delays.

4.22 Security of the Site

Unless otherwise stated in the Particular Conditions:

Section VIII. General Conditions (GC)

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

4.23 Contractor's Operations on Site

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

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

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

4.24 Fossils

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

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

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

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

5. Nominated Subcontractors

- 5.1 Definition of “nominated Subcontractor”**
- In the Contract, “nominated Subcontractor” means a Subcontractor:
- (a) Who is stated in the Contract as being a nominated Subcontractor; or
 - (b) Whom the Engineer, under Clause 13 [Variations and Adjustments], instructs the Contractor to employ as a Subcontractor subject to Sub-Clause 5.2 [Objection to Notification].
- 5.2 Objection to Nomination**
- The Contractor shall not be under any obligation to employ a nominated Subcontractor against whom the Contractor raises reasonable objection by notice to the Engineer as soon as practicable, with supporting particulars. An objection shall be deemed reasonable if it arises from (among other things) any of the following matters, unless the Employer agrees in writing to indemnify the Contractor against and from the consequences of the matter:
- (a) There are reasons to believe that the Subcontractor does not have sufficient competence, resources or financial strength;
 - (b) The nominated Subcontractor does not accept to indemnify the Contractor against and from any negligence or misuse of Goods by the nominated Subcontractor, his agents and employees; or
 - (c) The nominated Subcontractor does not accept to enter into a subcontract which specifies that, for the subcontracted work (including design, if any), the nominated Subcontractor shall:
 - (i) Undertake to the Contractor such obligations and liabilities as will enable the Contractor to discharge his obligations and liabilities under the Contract;
 - (ii) Indemnify the Contractor against and from all obligations and liabilities arising under or in connection with the Contract and from the consequences of any failure by the Subcontractor to perform these obligations or to fulfil these liabilities; and
 - (iii) Be paid only if and when the Contractor has received from the Employer payments for sums due under the Subcontract referred to under Sub-Clause 5.3 [Payment to nominated Subcontractors].
- 5.3 Payments to nominated**
- The Contractor shall pay to the nominated Subcontractor the amounts shown on the nominated Subcontractor's invoices approved by the Contractor which the Engineer certifies to be due in accordance with the subcontract. These amounts plus other

- Subcontractors** charges shall be included in the Contract Price in accordance with sub-paragraph (b) of Sub-Clause 13.5 [Provisional Sums], except as stated in Sub-Clause 5.4 [Evidence of Payments].
- 5.4 Evidence of Payments** Before issuing a Payment Certificate which includes an amount payable to a nominated Subcontractor, the Engineer may request the Contractor to supply reasonable evidence that the nominated Subcontractor has received all amounts due in accordance with previous Payment Certificates, less applicable deductions for retention or otherwise. Unless the Contractor:
- (a) Submits this reasonable evidence to the Engineer, or
 - (b)
 - (i) Satisfies the Engineer in writing that the Contractor is reasonably entitled to withhold or refuse to pay these amounts; and
 - (ii) Submits to the Engineer reasonable evidence that the nominated Subcontractor has been notified of the Contractor's entitlement,
- then the Employer may (at his sole discretion) pay, direct to the nominated Subcontractor, part or all of such amounts previously certified (less applicable deductions) as are due to the nominated Subcontractor and for which the Contractor has failed to submit the evidence described in sub-paragraphs (a) or (b) above. The Contractor shall then repay, to the Employer, the amount which the nominated Subcontractor was directly paid by the Employer.

6. Staff and Labour

- 6.1 Engagement of Staff and Labour** Except as otherwise stated in the Specification, the Contractor shall make arrangements for the engagement of all staff and labour, local or otherwise, and for their payment, feeding, transport, and, when appropriate, housing.
- The Contractor is encouraged, to the extent practicable and reasonable, to employ staff and labour with appropriate qualifications and experience from sources within the Country.
- 6.2 Rates of Wages and Conditions of Labour** The Contractor shall pay rates of wages, and observe conditions of labour, which are not lower than those established for the trade or industry where the work is carried out. If no established rates or conditions are applicable, the Contractor shall pay rates of wages and observe conditions which are not lower than the general level of wages and conditions observed locally by employers whose trade or industry is similar to that of the Contractor.
- The Contractor shall inform the Contractor's Personnel about their liability to pay personal income taxes in the Country in respect of such of their salaries, wages, allowances and any benefits as are subject to tax under the Laws of the Country for the time being in

Section VIII. General Conditions (GC)

- force, and the Contractor shall perform such duties in regard to such deductions thereof as may be imposed on him by such Laws.
- 6.3 Persons in the Service of Employer** The Contractor shall not recruit, or attempt to recruit, staff and labour from amongst the Employer's Personnel.
- 6.4 Labour Laws** The Contractor shall comply with all the relevant labour Laws applicable to the Contractor's Personnel, including Laws relating to their employment, health, safety, welfare, immigration and emigration, and shall allow them all their legal rights.
- The Contractor shall require his employees to obey all applicable Laws, including those concerning safety at work.
- 6.5 Working Hours** No work shall be carried out on the Site on locally recognised days of rest, or outside the normal working hours stated in the Contract Data, unless:
- (a) Otherwise stated in the Contract;
 - (b) The Engineer gives consent; or
 - (c) The work is unavoidable, or necessary for the protection of life or property or for the safety of the Works, in which case the Contractor shall immediately advise the Engineer.
- 6.6 Facilities for Staff and Labour** Except as otherwise stated in the Specification, the Contractor shall provide and maintain all necessary accommodation and welfare facilities for the Contractor's Personnel. The Contractor shall also provide facilities for the Employer's Personnel as stated in the Specification.
- The Contractor shall not permit any of the Contractor's Personnel to maintain any temporary or permanent living quarters within the structures forming part of the Permanent Works.
- 6.7 Health and Safety** The Contractor shall at all times take all reasonable precautions to maintain the health and safety of the Contractor's Personnel. In collaboration with local health authorities, the Contractor shall ensure that medical staff, first aid facilities, sick bay and ambulance service are available at all times at the Site and at any accommodation for Contractor's and Employer's Personnel, and that suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics.
- The Contractor shall appoint an accident prevention officer at the Site, responsible for maintaining safety and protection against accidents. This person shall be qualified for this responsibility, and shall have the authority to issue instructions and take protective measures to prevent accidents. Throughout the execution of the Works, the Contractor shall provide whatever is required by this person to exercise this responsibility and authority.

Section VIII. General Conditions (GC)

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

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

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

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

- 6.8 Contractor's Superintendence** Throughout the execution of the Works, and as long thereafter as is necessary to fulfil the Contractor's obligations, the Contractor shall provide all necessary superintendence to plan, arrange, direct, manage, inspect and test the work.
- Superintendence shall be given by a sufficient number of persons having adequate knowledge of the language for communications (defined in Sub-Clause 1.4 [Law and Language]) and of the operations to be carried out (including the methods and techniques required, the hazards likely to be encountered and methods of preventing accidents), for the satisfactory and safe execution of the Works.
- 6.9 Contractor's Personnel** The Contractor's Personnel shall be appropriately qualified, skilled and experienced in their respective trades or occupations. The Engineer may require the Contractor to remove (or cause to be removed) any person employed on the Site or Works, including the Contractor's Representative if applicable, who:
- (a) Persists in any misconduct or lack of care;
 - (b) Carries out duties incompetently or negligently;
 - (c) Fails to conform with any provisions of the Contract; or
 - (d) Persists in any conduct which is prejudicial to safety, health, or the protection of the environment.
- If appropriate, the Contractor shall then appoint (or cause to be appointed) a suitable replacement person.
- 6.10 Records of Contractor's Personnel and Equipment** The Contractor shall submit, to the Engineer, details showing the number of each class of Contractor's Personnel and of each type of Contractor's Equipment on the Site. Details shall be submitted each calendar month, in a form approved by the Engineer, until the Contractor has completed all work which is known to be outstanding at the completion date stated in the Taking-Over Certificate for the Works.
- 6.11 Disorderly Conduct** The Contractor shall at all times take all reasonable precautions to prevent any unlawful, riotous or disorderly conduct by or amongst the Contractor's Personnel, and to preserve peace and protection of persons and property on and near the Site.
- 6.12 Foreign Personnel** The Contractor may bring in to the Country any foreign personnel who are necessary for the execution of the Works to the extent allowed by the applicable Laws. The Contractor shall ensure that these personnel are provided with the required residence visas and work permits. The Employer will, if requested by the Contractor, use his best endeavours in a timely and expeditious manner to assist the Contractor in obtaining any local, state, national or government permission required for bringing in the Contractor's personnel.
- The Contractor shall be responsible for the return of these personnel to the place where they were recruited or to their

- domicile. In the event of the death in the Country of any of these personnel or members of their families, the Contractor shall similarly be responsible for making the appropriate arrangements for their return or burial.
- 6.13 Supply of Foodstuffs** The Contractor shall arrange for the provision of a sufficient supply of suitable food as may be stated in the Specification at reasonable prices for the Contractor's Personnel for the purposes of or in connection with the Contract.
- 6.14 Supply of Water** The Contractor shall, having regard to local conditions, provide on the Site an adequate supply of drinking and other water for the use of the Contractor's Personnel.
- 6.15 Measures against Insect and Pest Nuisance** The Contractor shall at all times take the necessary precautions to protect the Contractor's Personnel employed on the Site from insect and pest nuisance, and to reduce the danger to their health. The Contractor shall comply with all the regulations of the local health authorities, including use of appropriate insecticide.
- 6.16 Alcoholic Liquor or Drugs** The Contractor shall not, otherwise than in accordance with the Laws of the Country, import, sell, give, barter or otherwise dispose of any alcoholic liquor or drugs, or permit or allow importation, sale, gift, barter or disposal thereof by Contractor's Personnel.
- 6.17 Arms and Ammunition** The Contractor shall not give, barter, or otherwise dispose of, to any person, any arms or ammunition of any kind, or allow Contractor's Personnel to do so.
- 6.18 Festivals and Religious Customs** The Contractor shall respect the Country's recognized festivals, days of rest and religious or other customs.
- 6.19 Funeral Arrangements** The Contractor shall be responsible, to the extent required by local regulations, for making any funeral arrangements for any of his local employees who may die while engaged upon the Works.
- 6.20 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.
- 6.21 Prohibition of Harmful Child Labour** The Contractor shall not employ children in a manner that is economically exploitative, or is likely to be hazardous, or to interfere with, the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development. Where the relevant labour laws of the Country have provisions for employment of minors, the Contractor shall follow those laws applicable to the Contractor. Children below the age of 18 years shall not be employed in dangerous work.

- 6.22 Employment Records of Workers** The Contractor shall keep complete and accurate records of the employment of labour at the Site. The records shall include the names, ages, genders, hours worked and wages paid to all workers. These records shall be summarized on a monthly basis and submitted to the Engineer. These records shall be included in the details to be submitted by the Contractor under Sub-Clause 6.10 [Records of Contractor's Personnel and Equipment].
- 6.23 Workers' Organisations** In countries where the relevant labour laws recognise workers' rights to form and to join workers' organisations of their choosing without interference and to bargain collectively, the Contractor shall comply with such laws. Where the relevant labour laws substantially restrict workers' organisations, the Contractor shall enable alternative means for the Contractor's Personnel to express their grievances and protect their rights regarding working conditions and terms of employment. In either case described above, and where the relevant labour laws are silent, the Contractor shall not discourage the Contractor's Personnel from forming or joining workers' organisations of their choosing or from bargaining collectively, and shall not discriminate or retaliate against the Contractor's Personnel who participate, or seek to participate, in such organisations and bargain collectively. The Contractor shall engage with such workers' representatives. Workers' organisations are expected to fairly represent the workers in the workforce.
- 6.24 Non-Discrimination and Equal Opportunity** The Contractor shall not make employment decisions on the basis of personal characteristics unrelated to inherent job requirements. The Contractor shall base the employment relationship on the principle of equal opportunity and fair treatment, and shall not discriminate with respect to aspects of the employment relationship, including recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, promotion, termination of employment or retirement, and discipline. In countries where the relevant labour laws provide for non-discrimination in employment, the Contractor shall comply with such laws. When the relevant labour laws are silent on non-discrimination in employment, the Contractor shall meet this Sub-Clause's requirements. Special measures of protection or assistance to remedy past discrimination or selection for a particular job based on the inherent requirements of the job shall not be deemed discrimination.
- 7. Plant, Materials and Workmanship**
- 7.1 Manner of Execution** The Contractor shall carry out the manufacture of Plant, the production and manufacture of Materials, and all other execution of the Works:
- (a) In the manner (if any) specified in the Contract;
 - (b) In a proper workmanlike and careful manner, in accordance with recognised good practice; and

- (c) With properly equipped facilities and non-hazardous Materials, except as otherwise specified in the Contract.

7.2 Samples

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

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

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

7.3 Inspection

The Employer's Personnel shall at all reasonable times:

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

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

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

7.4 Testing

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

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

The Engineer may, under Clause 13 [Variations and Adjustments], vary the location or details of specified tests, or instruct the Contractor to carry out additional tests. If these varied or additional tests show that the tested Plant, Materials or workmanship is not

in accordance with the Contract, the cost of carrying out this Variation shall be borne by the Contractor, notwithstanding other provisions of the Contract.

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

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

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

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

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

7.5 Rejection

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

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

7.6 Remedial Work

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

- (a) Remove from the Site and replace any Plant or Materials which is not in accordance with the Contract;

- (b) Remove and re-execute any other work which is not in accordance with the Contract; and
- (c) Execute any work which is urgently required for the safety of the Works, whether because of an accident, unforeseeable event or otherwise.

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

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

7.7 Ownership of Plant and Materials

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

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

7.8 Royalties

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

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

8. Commencement, Delays and Suspension

8.1 Commencement of Works

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

- (a) Signature of the Contract Agreement by both Parties, and if required, approval of the Contract by relevant authorities of the Country;

Section VIII. General Conditions (GC)

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

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

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

8.2 Time for Completion

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

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

8.3 Programme

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

- (a) The order in which the Contractor intends to carry out the Works, including the anticipated timing of each stage of design (if any), Contractor's Documents, procurement, manufacture of Plant, delivery to Site, construction, erection and testing;
- (b) Each of these stages for work by each nominated Subcontractor (as defined in Clause 5 [Nominated Subcontractors]);
- (c) The sequence and timing of inspections and tests specified in the Contract; and

- (d) A supporting report which includes:
 - (i) A general description of the methods which the Contractor intends to adopt, and of the major stages, in the execution of the Works; and
 - (ii) Details showing the Contractor's reasonable estimate of the number of each class of Contractor's Personnel and of each type of Contractor's Equipment, required on the Site for each major stage.

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

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

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

8.4 Extension of Time for Completion

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

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

If the Contractor considers himself to be entitled to an extension of the Time for Completion, the Contractor shall give notice to the

Engineer in accordance with Sub-Clause 20.1 [Contractor's Claims]. When determining each extension of time under Sub-Clause 20.1, the Engineer shall review previous determinations and may increase, but shall not decrease, the total extension of time.

**8.5 Delays
Caused by
Authorities**

If the following conditions apply, namely:

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

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

**8.6 Rate of
Progress**

If, at any time:

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

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

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

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

**8.7 Delay
Damages**

If the Contractor fails to comply with Sub-Clause 8.2 [Time for Completion], the Contractor shall subject to notice under Sub-Clause 2.5 [Employer's Claims] pay delay damages to the Employer for this default. These delay damages shall be the sum stated in the Contract Data, which shall be paid for every day

which shall elapse between the relevant Time for Completion and the date stated in the Taking-Over Certificate. However, the total amount due under this Sub-Clause shall not exceed the maximum amount of delay damages (if any) stated in the Contract Data.

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

8.8 Suspension of Work

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

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

8.9 Consequences of Suspension

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

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

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

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

8.10 Payment for Plant and Materials in Event of Suspension

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

- (a) The work on Plant or delivery of Plant and/or Materials has been suspended for more than 28 days; and

- (b) The Contractor has marked the Plant and/or Materials as the Employer's property in accordance with the Engineer's instructions.

8.11 Prolonged Suspension

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

8.12 Resumption of Work

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

9. Tests on Completion

9.1 Contractor's Obligations

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

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

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

9.2 Delayed Tests

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

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

If the Contractor fails to carry out the Tests on Completion within the period of 21 days, the Employer's Personnel may proceed

with the Tests at the risk and cost of the Contractor. The Tests on Completion shall then be deemed to have been carried out in the presence of the Contractor and the results of the Tests shall be accepted as accurate.

9.3 Retesting

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

9.4 Failure to Pass Tests on Completion

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

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

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

10. Employer's Taking Over

10.1 Taking Over of the Works and Sections

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

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

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

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

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

10.2 Taking Over of Parts of the Works

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

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

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

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

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

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

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

**10.3 Interference
with Tests
on
Completion**

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

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

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

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

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

**10.4 Surfaces
Requiring
Reinstatement**

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

11. Defects Liability

- 11.1 Completion of Outstanding Work and Remedying Defects**
- In order that the Works and Contractor's Documents, and each Section, shall be in the condition required by the Contract (fair wear and tear excepted) by the expiry date of the relevant Defects Notification Period or as soon as practicable thereafter, the Contractor shall:
- (a) Complete any work which is outstanding on the date stated in a Taking-Over Certificate, within such reasonable time as is instructed by the Engineer; and
 - (b) Execute all work required to remedy defects or damage, as may be notified by (or on behalf of) the Employer on or before the expiry date of the Defects Notification Period for the Works or Section (as the case may be).
- If a defect appears or damage occurs, the Contractor shall be notified accordingly, by (or on behalf of) the Employer.
- 11.2 Cost of Remedying Defects**
- All work referred to in sub-paragraph (b) of Sub-Clause 11.1 [Completion of Outstanding Work and Remedying Defects] shall be executed at the risk and cost of the Contractor, if and to the extent that the work is attributable to:
- (a) Any design for which the Contractor is responsible;
 - (b) Plant, Materials or workmanship not being in accordance with the Contract; or
 - (c) Failure by the Contractor to comply with any other obligation.
- If and to the extent that such work is attributable to any other cause, the Contractor shall be notified promptly by (or on behalf of) the Employer, and Sub-Clause 13.3 [Variation Procedure] shall apply.
- 11.3 Extension of Defects Notification Period**
- The Employer shall be entitled subject to Sub-Clause 2.5 [Employer's Claims] to an extension of the Defects Notification Period for the Works or a Section if and to the extent that the Works, Section or a major item of Plant (as the case may be, and after taking over) cannot be used for the purposes for which they are intended by reason of a defect or by reason of damage attributable to the Contractor. However, a Defects Notification Period shall not be extended by more than two years.
- If delivery and/or erection of Plant and/or Materials was suspended under Sub-Clause 8.8 [Suspension of Work] or Sub-Clause 16.1 [Contractor's Entitlement to Suspend Work], the Contractor's obligations under this Clause shall not apply to any defects or damage occurring more than two years after the Defects Notification Period for the Plant and/or Materials would otherwise have expired.
- 11.4 Failure to Remedy Defects**
- If the Contractor fails to remedy any defect or damage within a reasonable time, a date may be fixed by (or on behalf of) the

Section VIII. General Conditions (GC)

Employer, on or by which the defect or damage is to be remedied. The Contractor shall be given reasonable notice of this date.

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

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

11.5 Removal of Defective Work

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

11.6 Further Tests

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

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

11.7 Right of Access

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

Section VIII. General Conditions (GC)

- 11.8 Contractor to Search** The Contractor shall, if required by the Engineer, search for the cause of any defect, under the direction of the Engineer. Unless the defect is to be remedied at the cost of the Contractor under Sub-Clause 11.2 [Cost of Remedying Defects], the Cost of the search plus profit shall be agreed or determined by the Engineer in accordance with Sub-Clause 3.5 [Determinations] and shall be included in the Contract Price.
- 11.9 Performance Certificate** Performance of the Contractor's obligations shall not be considered to have been completed until the Engineer has issued the Performance Certificate to the Contractor, stating the date on which the Contractor completed his obligations under the Contract.
- The Engineer shall issue the Performance Certificate within 28 days after the latest of the expiry dates of the Defects Notification Periods, or as soon thereafter as the Contractor has supplied all the Contractor's Documents and completed and tested all the Works, including remedying any defects. A copy of the Performance Certificate shall be issued to the Employer.
- Only the Performance Certificate shall be deemed to constitute acceptance of the Works.
- 11.10 Unfulfilled Obligations** After the Performance Certificate has been issued, each Party shall remain liable for the fulfilment of any obligation which remains unperformed at that time. For the purposes of determining the nature and extent of unperformed obligations, the Contract shall be deemed to remain in force.
- 11.11 Clearance of Site** Upon receiving the Performance Certificate, the Contractor shall remove any remaining Contractor's Equipment, surplus material, wreckage, rubbish and Temporary Works from the Site.
- If all these items have not been removed within 28 days after receipt by the Contractor of the Performance Certificate, the Employer may sell or otherwise dispose of any remaining items. The Employer shall be entitled to be paid the costs incurred in connection with, or attributable to, such sale or disposal and restoring the Site.
- Any balance of the moneys from the sale shall be paid to the Contractor. If these moneys are less than the Employer's costs, the Contractor shall pay the outstanding balance to the Employer.

12. Measurement and Evaluation

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

Section VIII. General Conditions (GC)

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

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

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

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

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

12.2 Method of Measurement

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

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

12.3 Evaluation

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

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

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

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

(a)

- (i) The measured quantity of the item is changed by more than 25% from the quantity of this item in the Bill of Quantities or other Schedule;
- (ii) This change in quantity multiplied by such specified rate for this item exceeds 0.25% of the Accepted Contract Amount;
- (iii) This change in quantity directly changes the Cost per unit quantity of this item by more than 1%; and
- (iv) This item is not specified in the Contract as a "fixed rate item";

or

(b)

- (i) The work is instructed under Clause 13 [Variations and Adjustments];
- (ii) No rate or price is specified in the Contract for this item; and
- (iii) No specified rate or price is appropriate because the item of work is not of similar character, or is not executed under similar conditions, as any item in the Contract.

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

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

12.4 Omissions

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

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

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

13. Variations and Adjustments

13.1 Right to Vary

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

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

Each Variation may include:

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

**13.2 Value
Engineering**

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

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

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

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

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

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

**13.3 Variation
Procedure**

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

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

Section VIII. General Conditions (GC)

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

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

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

13.4 Payment in Applicable Currencies

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

13.5 Provisional Sums

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

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

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

13.6 Daywork

For work of a minor or incidental nature, the Engineer may instruct that a Variation shall be executed on a daywork basis. The work shall then be valued in accordance with the Daywork Schedule included in the Contract, and the following procedure shall apply.

Section VIII. General Conditions (GC)

If a Daywork Schedule is not included in the Contract, this Sub-Clause shall not apply.

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

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

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

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

13.7

Adjustments for Changes in Legislation

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

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

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

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

Notwithstanding the foregoing, the Contractor shall not be entitled to an extension of time if the relevant delay has already been taken into account in the determination of a previous extension of time and such Cost shall not be separately paid if the same shall already

13.8
Adjustments for Changes in Cost

have been taken into account in the indexing of any inputs to the table of adjustment data in accordance with the provisions of Sub-Clause 13.8 [Adjustments for Changes in Cost].

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

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

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

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

“ P_n ” is the adjustment multiplier to be applied to the estimated contract value in the relevant currency of the work carried out in period “ n ”, this period being a month unless otherwise stated in the Contract Data ;

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

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

“ L_n ”, “ E_n ”, “ M_n ”, ... are the current cost indices or reference prices for period “ n ”, expressed in the relevant currency of payment, each of which is applicable to the relevant tabulated cost element on the date 49 days prior to the last day of the period (to which the particular Payment Certificate relates); and

“ L_o ”, “ E_o ”, “ M_o ”, ... are the base cost indices or reference prices, expressed in the relevant currency of payment, each of which is applicable to the relevant tabulated cost element on the Base Date.

The cost indices or reference prices stated in the table of adjustment data shall be used. If their source is in doubt, it shall be determined by the Engineer. For this purpose, reference shall be made to the values of the indices at stated dates for the purposes

of clarification of the source; although these dates (and thus these values) may not correspond to the base cost indices.

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

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

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

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

14. Contract Price and Payment

14.1 The Contract Price

Unless otherwise stated in the Particular Conditions:

- (a) The Contract Price shall be agreed or determined under Sub-Clause 12.3 [Evaluation] and be subject to adjustments in accordance with the Contract;
- (b) The Contractor shall pay all taxes, duties and fees required to be paid by him under the Contract, and the Contract Price shall not be adjusted for any of these costs except as stated in Sub-Clause 13.7 [Adjustments for Changes in Legislation];
- (c) Any quantities which may be set out in the Bill of Quantities or other Schedule are estimated quantities and are not to be taken as the actual and correct quantities:
 - (i) Of the Works which the Contractor is required to execute, or
 - (ii) For the purposes of Clause 12 [Measurement and Evaluation]; and
- (d) The Contractor shall submit to the Engineer, within 28 days after the Commencement Date, a proposed breakdown of each lump sum price in the Schedules. The Engineer may take account of the breakdown when preparing Payment Certificates, but shall not be bound by it.

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

14.2 Advance Payment

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

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

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

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

Unless stated otherwise in the Contract Data, the advance payment shall be repaid through percentage deductions from the interim payments determined by the Engineer in accordance with Sub-Clause 14.6 [Issue of Interim Payment Certificates], as follows:

- (a) Deductions shall commence in the next interim Payment Certificate following that in which the total of all certified interim payments (excluding the advance payment and deductions and repayments of retention) exceeds 30 percent (30%) of the Accepted Contract Amount less Provisional Sums; and
- (b) Deductions shall be made at the amortisation rate stated in the Contract Data of the amount of each Interim Payment Certificate (excluding the advance payment and deductions for its repayments as well as deductions for retention money) in the currencies and proportions of the advance payment until such time as the advance payment has been repaid; provided that the advance payment shall be completely repaid prior to

the time when 90 percent (90%) of the Accepted Contract Amount less Provisional Sums has been certified for payment.

If the advance payment has not been repaid prior to the issue of the Taking-Over Certificate for the Works or prior to termination under Clause 15 [Termination by Employer], Clause 16 [Suspension and Termination by Contractor] or Clause 19 [Force Majeure] (as the case may be), the whole of the balance then outstanding shall immediately become due and in case of termination under Clause 15 [Termination by Employer], except for Sub-Clause 15.5 [Employer's Entitlement to Termination for Convenience], payable by the Contractor to the Employer.

14.3
Application for Interim Payment Certificate

The Contractor shall submit a Statement in six copies to the Engineer after the end of each month, in a form approved by the Engineer, showing in detail the amounts to which the Contractor considers himself to be entitled, together with supporting documents which shall include the report on the progress during this month in accordance with Sub-Clause 4.21 [Progress Reports].

The Statement shall include the following items, as applicable, which shall be expressed in the various currencies in which the Contract Price is payable, in the sequence listed:

- (a) The estimated contract value of the Works executed and the Contractor's Documents produced up to the end of the month (including Variations but excluding items described in subparagraphs (b) to (g) below);
- (b) Any amounts to be added and deducted for changes in legislation and changes in cost, in accordance with Sub-Clause 13.7 [Adjustments for Changes in Legislation] and Sub-Clause 13.8 [Adjustments for Changes in Cost];
- (c) Any amount to be deducted for retention, calculated by applying the percentage of retention stated in the Contract Data to the total of the above amounts, until the amount so retained by the Employer reaches the limit of Retention Money (if any) stated in the Contract Data;
- (d) Any amounts to be added for the advance payment and (if more than one instalment) and to be deducted for its repayments in accordance with Sub-Clause 14.2 [Advance Payment];
- (e) Any amounts to be added and deducted for Plant and Materials in accordance with Sub-Clause 14.5 [Plant and Materials intended for the Works];
- (f) Any other additions or deductions which may have become due under the Contract or otherwise, including those under Clause 20 [Claims, Disputes and Arbitration]; and
- (g) The deduction of amounts certified in all previous Payment Certificates.

14.4 Schedule of Payments

If the Contract includes a schedule of payments specifying the instalments in which the Contract Price will be paid, then unless otherwise stated in this schedule:

- (a) The instalments quoted in this schedule of payments shall be the estimated contract values for the purposes of sub-paragraph (a) of Sub-Clause 14.3 [Application for Interim Payment Certificates];
- (b) Sub-Clause 14.5 [Plant and Materials intended for the Works] shall not apply; and
- (c) If these instalments are not defined by reference to the actual progress achieved in executing the Works, and if actual progress is found to be less or more than that on which this schedule of payments was based, then the Engineer may proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine revised instalments, which shall take account of the extent to which progress is less or more than that on which the instalments were previously based.

If the Contract does not include a schedule of payments, the Contractor shall submit non-binding estimates of the payments which he expects to become due during each quarterly period. The first estimate shall be submitted within 42 days after the Commencement Date. Revised estimates shall be submitted at quarterly intervals, until the Taking-Over Certificate has been issued for the Works.

14.5 Plant and Materials intended for the Works

If this Sub-Clause applies, Interim Payment Certificates shall include, under sub-paragraph (e) of Sub-Clause 14.3, (i) an amount for Plant and Materials which have been sent to the Site for incorporation in the Permanent Works, and (ii) a reduction when the contract value of such Plant and Materials is included as part of the Permanent Works under sub-paragraph (a) of Sub-Clause 14.3 [Application for Interim Payment Certificates].

If the lists referred to in sub-paragraphs (b)(i) or (c)(i) below are not included in the Schedules, this Sub-Clause shall not apply.

The Engineer shall determine and certify each addition if the following conditions are satisfied:

- (a) The Contractor has:
 - (i) Kept satisfactory records (including the orders, receipts, Costs and use of Plant and Materials) which are available for inspection; and
 - (ii) Submitted a statement of the Cost of acquiring and delivering the Plant and Materials to the Site, supported by satisfactory evidence;

and either:

- (b) The relevant Plant and Materials:

Section VIII. General Conditions (GC)

- (i) Are those listed in the Schedules for payment when shipped;
- (ii) Have been shipped to the Country, en route to the Site, in accordance with the Contract; and
- (iii) Are described in a clean shipped bill of lading or other evidence of shipment, which has been submitted to the Engineer together with evidence of payment of freight and insurance, any other documents reasonably required, and a bank guarantee in a form and issued by an entity approved by the Employer in amounts and currencies equal to the amount due under this Sub-Clause: this guarantee may be in a similar form to the form referred to in Sub-Clause 14.2 [Advance Payment] and shall be valid until the Plant and Materials are properly stored on Site and protected against loss, damage or deterioration;

or

(c) The relevant Plant and Materials:

- (i) Are those listed in the Schedules for payment when delivered to the Site; and
- (ii) Have been delivered to and are properly stored on the Site, are protected against loss, damage or deterioration, and appear to be in accordance with the Contract.

The additional amount to be certified shall be the equivalent of eighty percent (80%) of the Engineer's determination of the cost of the Plant and Materials (including delivery to Site), taking account of the documents mentioned in this Sub-Clause and of the contract value of the Plant and Materials.

The currencies for this additional amount shall be the same as those in which payment will become due when the contract value is included under sub-paragraph (a) of Sub-Clause 14.3 [Application for Interim Payment Certificates]. At that time, the Payment Certificate shall include the applicable reduction which shall be equivalent to, and in the same currencies and proportions as, this additional amount for the relevant Plant and Materials.

14.6 Issue of Interim Payment Certificates

No amount will be certified or paid until the Employer has received and approved the Performance Security. Thereafter, the Engineer shall, within 28 days after receiving a Statement and supporting documents, deliver to the Employer and to the Contractor an Interim Payment Certificate which shall state the amount which the Engineer fairly determines to be due, with all supporting particulars for any reduction or withholding made by the Engineer on the Statement if any.

However, prior to issuing the Taking-Over Certificate for the Works, the Engineer shall not be bound to issue an Interim Payment Certificate in an amount which would (after retention and other deductions) be less than the minimum amount of Interim Payment

Section VIII. General Conditions (GC)

Certificates (if any) stated in the Contract Data. In this event, the Engineer shall give notice to the Contractor accordingly.

An Interim Payment Certificate shall not be withheld for any other reason, although:

- (a) If anything supplied or work done by the Contractor is not in accordance with the Contract, the cost of rectification or replacement may be withheld until rectification or replacement has been completed; and/or
- (b) If the Contractor was or is failing to perform any work or obligation in accordance with the Contract, and had been so notified by the Engineer, the value of this work or obligation may be withheld until the work or obligation has been performed.

The Engineer may in any Payment Certificate make any correction or modification that should properly be made to any previous Payment Certificate. A Payment Certificate shall not be deemed to indicate the Engineer's acceptance, approval, consent or satisfaction.

14.7 Payment

The Employer shall pay to the Contractor:

- (a) The first instalment of the advance payment within 42 days after issuing the Letter of Acceptance or within 21 days after receiving the documents in accordance with Sub-Clause 4.2 [Performance Security] and Sub-Clause 14.2 [Advance Payment], whichever is later;
- (b) The amount certified in each Interim Payment Certificate within 56 days after the Engineer receives the Statement and supporting documents; or, at a time when the Bank's loan or credit (from which part of the payments to the Contractor is being made) is suspended, the amount shown on any statement submitted by the Contractor within 14 days after such statement is submitted, any discrepancy being rectified in the next payment to the Contractor; and
- (c) The amount certified in the Final Payment Certificate within 56 days after the Employer receives this Payment Certificate; or, at a time when the Bank's loan or credit (from which part of the payments to the Contractor is being made) is suspended, the undisputed amount shown in the Final Statement within 56 days after the date of notification of the suspension in accordance with Sub-Clause 16.2 [Termination by Contractor].

Payment of the amount due in each currency shall be made into the bank account, nominated by the Contractor, in the payment country (for this currency) specified in the Contract.

14.8 Delayed Payment

If the Contractor does not receive payment in accordance with Sub-Clause 14.7 [Payment], the Contractor shall be entitled to receive financing charges compounded monthly on the amount unpaid

during the period of delay. This period shall be deemed to commence on the date for payment specified in Sub-Clause 14.7 [Payment], irrespective (in the case of its sub-paragraph (b)) of the date on which any Interim Payment Certificate is issued.

Unless otherwise stated in the Particular Conditions, these financing charges shall be calculated at the annual rate of three percentage points above the discount rate of the central bank in the country of the currency of payment, or if not available, the interbank offered rate, and shall be paid in such currency.

The Contractor shall be entitled to this payment without formal notice or certification, and without prejudice to any other right or remedy.

14.9 Payment of Retention Money

When the Taking-Over Certificate has been issued for the Works, the first half of the Retention Money shall be certified by the Engineer for payment to the Contractor. If a Taking-Over Certificate is issued for a Section or part of the Works, a proportion of the Retention Money shall be certified and paid. This proportion shall be half (50%) of the proportion calculated by dividing the estimated contract value of the Section or part, by the estimated final Contract Price.

Promptly after the latest of the expiry dates of the Defects Notification Periods, the outstanding balance of the Retention Money shall be certified by the Engineer for payment to the Contractor. If a Taking-Over Certificate was issued for a Section, a proportion of the second half of the Retention Money shall be certified and paid promptly after the expiry date of the Defects Notification Period for the Section. This proportion shall be half (50%) of the proportion calculated by dividing the estimated contract value of the Section by the estimated final Contract Price.

However, if any work remains to be executed under Clause 11 [Defects Liability], the Engineer shall be entitled to withhold certification of the estimated cost of this work until it has been executed.

When calculating these proportions, no account shall be taken of any adjustments under Sub-Clause 13.7 [Adjustments for Changes in Legislation] and Sub-Clause 13.8 [Adjustments for Changes in Cost].

Unless otherwise stated in the Particular Conditions, when the Taking-Over Certificate has been issued for the Works and the first half of the Retention Money has been certified for payment by the Engineer, the Contractor shall be entitled to substitute a guarantee, in the form annexed to the Particular Conditions or in another form approved by the Employer and issued by a reputable bank or financial institution selected by the Contractor, for the second half of the Retention Money. The Contractor shall ensure that the guarantee is in the amounts and currencies of the second half of the Retention Money and is valid and enforceable until the Contractor has executed and completed the Works and remedied any defects, as specified for the Performance Security in Sub-

Clause 4.2. On receipt by the Employer of the required guarantee, the Engineer shall certify and the Employer shall pay the second half of the Retention Money. The release of the second half of the Retention Money against a guarantee shall then be in lieu of the release under the second paragraph of this Sub-Clause. The Employer shall return the guarantee to the Contractor within 21 days after receiving a copy of the Performance Certificate.

If the Performance Security required under Sub-Clause 4.2 is in the form of a demand guarantee, and the amount guaranteed under it when the Taking-Over Certificate is issued is more than half of the Retention Money, then the Retention Money guarantee will not be required. If the amount guaranteed under the Performance Security when the Taking-Over Certificate is issued is less than half of the Retention Money, the Retention Money guarantee will only be required for the difference between half of the Retention Money and the amount guaranteed under the Performance Security.

**14.10 Statement
at
Completion**

Within 84 days after receiving the Taking-Over Certificate for the Works, the Contractor shall submit to the Engineer six copies of a Statement at completion with supporting documents, in accordance with Sub-Clause 14.3 [Application for Interim Payment Certificates], showing:

- (a) The value of all work done in accordance with the Contract up to the date stated in the Taking-Over Certificate for the Works;
- (b) Any further sums which the Contractor considers to be due; and
- (c) An estimate of any other amounts which the Contractor considers will become due to him under the Contract. Estimated amounts shall be shown separately in this Statement at completion.

The Engineer shall then certify in accordance with Sub-Clause 14.6 [Issue of Interim Payment Certificates].

**14.11
Application for
Final
Payment
Certificate**

Within 56 days after receiving the Performance Certificate, the Contractor shall submit, to the Engineer, six copies of a draft final statement with supporting documents showing in detail in a form approved by the Engineer:

- (a) The value of all work done in accordance with the Contract; and
- (b) Any further sums which the Contractor considers to be due to him under the Contract or otherwise.

If the Engineer disagrees with or cannot verify any part of the draft final statement, the Contractor shall submit such further information as the Engineer may reasonably require within 28 days from receipt of said draft and shall make such changes in the draft as may be agreed between them. The Contractor shall then prepare and submit to the Engineer the final statement as agreed. This agreed

statement is referred to in these Conditions as the “Final Statement”.

However if, following discussions between the Engineer and the Contractor and any changes to the draft final statement which are agreed, it becomes evident that a dispute exists, the Engineer shall deliver to the Employer (with a copy to the Contractor) an Interim Payment Certificate for the agreed parts of the draft final statement. Thereafter, if the dispute is finally resolved under Sub-Clause 20.4 [Obtaining Dispute Board’s Decision] or Sub-Clause 20.5 [Amicable Settlement], the Contractor shall then prepare and submit to the Employer (with a copy to the Engineer) a Final Statement.

14.12 Discharge

When submitting the Final Statement, the Contractor shall submit a discharge which confirms that the total of the Final Statement represents full and final settlement of all moneys due to the Contractor under or in connection with the Contract. This discharge may state that it becomes effective when the Contractor has received the Performance Security and the outstanding balance of this total, in which event the discharge shall be effective on such date.

14.13 Issue of Final Payment Certificate

Within 28 days after receiving the Final Statement and discharge in accordance with Sub-Clause 14.11 [Application for Final Payment Certificate] and Sub-Clause 14.12 [Discharge], the Engineer shall deliver, to the Employer and to the Contractor, the Final Payment Certificate which shall state:

- (a) The amount which he fairly determines is finally due; and
- (b) After giving credit to the Employer for all amounts previously paid by the Employer and for all sums to which the Employer is entitled, the balance (if any) due from the Employer to the Contractor or from the Contractor to the Employer, as the case may be.

If the Contractor has not applied for a Final Payment Certificate in accordance with Sub-Clause 14.11 [Application for Final Payment Certificate] and Sub-Clause 14.12 [Discharge], the Engineer shall request the Contractor to do so. If the Contractor fails to submit an application within a period of 28 days, the Engineer shall issue the Final Payment Certificate for such amount as he fairly determines to be due.

14.14 Cessation of Employer’s Liability

The Employer shall not be liable to the Contractor for any matter or thing under or in connection with the Contract or execution of the Works, except to the extent that the Contractor shall have included an amount expressly for it:

- (a) In the Final Statement; and also
- (b) (Except for matters or things arising after the issue of the Taking-Over Certificate for the Works) in the Statement at completion described in Sub-Clause 14.10 [Statement at Completion].

However, this Sub-Clause shall not limit the Employer's liability under his indemnification obligations, or the Employer's liability in any case of fraud, deliberate default or reckless misconduct by the Employer.

14.15 Currencies of Payment

The Contract Price shall be paid in the currency or currencies named in the Schedule of Payment Currencies. If more than one currency is so named, payments shall be made as follows:

- (a) If the Accepted Contract Amount was expressed in Local Currency only:
 - (i) The proportions or amounts of the Local and Foreign Currencies, and the fixed rates of exchange to be used for calculating the payments, shall be as stated in the Schedule of Payment Currencies, except as otherwise agreed by both Parties;
 - (ii) Payments and deductions under Sub-Clause 13.5 [Provisional Sums] and Sub-Clause 13.7 [Adjustments for Changes in Legislation] shall be made in the applicable currencies and proportions; and
 - (iii) Other payments and deductions under sub-paragraphs (a) to (d) of Sub-Clause 14.3 [Application for Interim Payment Certificates] shall be made in the currencies and proportions specified in sub-paragraph (a)(i) above;
- (b) Payment of the damages specified in the Contract Data, shall be made in the currencies and proportions specified in the Schedule of Payment Currencies;
- (c) Other payments to the Employer by the Contractor shall be made in the currency in which the sum was expended by the Employer, or in such currency as may be agreed by both Parties;
- (d) If any amount payable by the Contractor to the Employer in a particular currency exceeds the sum payable by the Employer to the Contractor in that currency, the Employer may recover the balance of this amount from the sums otherwise payable to the Contractor in other currencies; and
- (e) If no rates of exchange are stated in the Schedule of Payment Currencies, they shall be those prevailing on the Base Date and determined by the central bank of the Country.

15. Termination by Employer

15.1 Notice to Correct

If the Contractor fails to carry out any obligation under the Contract, the Engineer may by notice require the Contractor to make good the failure and to remedy it within a specified reasonable time.

15.2 Termination

The Employer shall be entitled to terminate the Contract if the Contractor:

Section VIII. General Conditions (GC)

**on by
Employer**

- (a) Fails to comply with Sub-Clause 4.2 [Performance Security] or with a notice under Sub-Clause 15.1 [Notice to Correct];
- (b) Abandons the Works or otherwise plainly demonstrates the intention not to continue performance of his obligations under the Contract;
- (c) Without reasonable excuse fails:
 - (i) To proceed with the Works in accordance with Clause 8 [Commencement, Delays and Suspension]; or
 - (ii) To comply with a notice issued under Sub-Clause 7.5 [Rejection] or Sub-Clause 7.6 [Remedial Work], within 28 days after receiving it;
- (d) Subcontracts the whole of the Works or assigns the Contract without the required agreement;
- (e) Becomes bankrupt or insolvent, goes into liquidation, has a receiving or administration order made against him, compounds with his creditors, or carries on business under a receiver, trustee or manager for the benefit of his creditors, or if any act is done or event occurs which (under applicable Laws) has a similar effect to any of these acts or events; or
- (f) Gives or offers to give (directly or indirectly) to any person any bribe, gift, gratuity, commission or other thing of value, as an inducement or reward:
 - (i) For doing or forbearing to do any action in relation to the Contract; or
 - (ii) For showing or forbearing to show favour or disfavour to any person in relation to the Contract,

or if any of the Contractor's Personnel, agents or Subcontractors gives or offers to give (directly or indirectly) to any person any such inducement or reward as is described in this sub-paragraph (f). However, lawful inducements and rewards to Contractor's Personnel shall not entitle termination.

In any of these events or circumstances, the Employer may, upon giving 14 days' notice to the Contractor, terminate the Contract and expel the Contractor from the Site. However, in the case of sub-paragraph (e) or (f), the Employer may by notice terminate the Contract immediately.

The Employer's election to terminate the Contract shall not prejudice any other rights of the Employer, under the Contract or otherwise.

The Contractor shall then leave the Site and deliver any required Goods, all Contractor's Documents, and other design documents made by or for him, to the Engineer. However, the Contractor shall use his best efforts to comply immediately with any reasonable instructions included in the notice (i) for the assignment of any

subcontract, and (ii) for the protection of life or property or for the safety of the Works.

After termination, the Employer may complete the Works and/or arrange for any other entities to do so. The Employer and these entities may then use any Goods, Contractor's Documents and other design documents made by or on behalf of the Contractor.

The Employer shall then give notice that the Contractor's Equipment and Temporary Works will be released to the Contractor at or near the Site. The Contractor shall promptly arrange their removal, at the risk and cost of the Contractor. However, if by this time the Contractor has failed to make a payment due to the Employer, these items may be sold by the Employer in order to recover this payment. Any balance of the proceeds shall then be paid to the Contractor.

**15.3 Valuation
at Date of
Termination**

As soon as practicable after a notice of termination under Sub-Clause 15.2 [Termination by Employer] has taken effect, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine the value of the Works, Goods and Contractor's Documents, and any other sums due to the Contractor for work executed in accordance with the Contract.

**15.4 Payment
after
Termination**

After a notice of termination under Sub-Clause 15.2 [Termination by Employer] has taken effect, the Employer may:

- (a) Proceed in accordance with Sub-Clause 2.5 [Employer's Claims];
- (b) Withhold further payments to the Contractor until the costs of execution, completion and remedying of any defects, damages for delay in completion (if any), and all other costs incurred by the Employer, have been established; and/or
- (c) Recover from the Contractor any losses and damages incurred by the Employer and any extra costs of completing the Works, after allowing for any sum due to the Contractor under Sub-Clause 15.3 [Valuation at Date of Termination]. After recovering any such losses, damages and extra costs, the Employer shall pay any balance to the Contractor.

**15.5 Employer's
Entitlement
to
Termination
for
Convenience**

The Employer shall be entitled to terminate the Contract, at any time for the Employer's convenience, by giving notice of such termination to the Contractor. The termination shall take effect 28 days after the later of the dates on which the Contractor receives this notice or the Employer returns the Performance Security. The Employer shall not terminate the Contract under this Sub-Clause in order to execute the Works himself or to arrange for the Works to be executed by another contractor or to avoid a termination of the Contract by the Contractor under Clause 16.2 [Termination by Contractor].

After this termination, the Contractor shall proceed in accordance with Sub-Clause 16.3 [Cessation of Work and Removal of Contractor's Equipment] and shall be paid in accordance with Sub-Clause 16.4 [Payment on Termination].

15.6 Corrupt or Fraudulent Practices

If the Employer determines, based on reasonable evidence, that the Contractor has engaged in corrupt, fraudulent, collusive or coercive practices, in competing for or in executing the Contract, then the Employer may, after giving 14 days notice to the Contractor, terminate the Contract and expel him from the Site, and the provisions of Clause 15 shall apply as if such termination had been made under Sub-Clause 15.2 [Termination by Employer].

Should any employee of the Contractor be determined, based on reasonable evidence, to have engaged in corrupt, fraudulent or coercive practice during the execution of the work then that employee shall be removed in accordance with Sub-Clause 6.9 [Contractor's Personnel].

For the purposes of this Sub-Clause:

- (i) "Corrupt practice" is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
- (ii) "Fraudulent practice" is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;
- (iii) "Collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
- (iv) "Coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
- (v) "Obstructive practice" is
 - (i) Deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or
 - (ii) Acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under Sub-Clause 1.15 [Inspections and Audits by the Bank].

16. Suspension and Termination by Contractor

16.1 Contractor's Entitlement to Suspend Work

If the Engineer fails to certify in accordance with Sub-Clause 14.6 [Issue of Interim Payment Certificates] or the Employer fails to comply with Sub-Clause 2.4 [Employer's Financial Arrangements] or Sub-Clause 14.7 [Payment], the Contractor may, after giving not less than 21 days' notice to the Employer, suspend work (or reduce the rate of work) unless and until the Contractor has received the Payment Certificate, reasonable evidence or payment, as the case may be and as described in the notice.

Notwithstanding the above, if the Bank has suspended disbursements under the loan or credit from which payments to the Contractor are being made, in whole or in part, for the execution of the Works, and no alternative funds are available as provided for in Sub-Clause 2.4 [Employer's Financial Arrangements], the Contractor may by notice suspend work or reduce the rate of work at any time, but not less than 7 days after the Borrower having received the suspension notification from the Bank.

The Contractor's action shall not prejudice his entitlements to financing charges under Sub-Clause 14.8 [Delayed Payment] and to termination under Sub-Clause 16.2 [Termination by Contractor].

If the Contractor subsequently receives such Payment Certificate, evidence or payment (as described in the relevant Sub-Clause and in the above notice) before giving a notice of termination, the Contractor shall resume normal working as soon as is reasonably practicable.

If the Contractor suffers delay and/or incurs Cost as a result of suspending work (or reducing the rate of work) in accordance with this Sub-Clause, the Contractor shall give notice to the Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

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

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

16.2 Termination by Contractor

The Contractor shall be entitled to terminate the Contract if:

- (a) The Contractor does not receive the reasonable evidence within 42 days after giving notice under Sub-Clause 16.1 [Contractor's Entitlement to Suspend Work] in respect of a failure to comply with Sub-Clause 2.4 [Employer's Financial Arrangements];
- (b) The Engineer fails, within 56 days after receiving a Statement and supporting documents, to issue the relevant Payment Certificate;

- (c) The Contractor does not receive the amount due under an Interim Payment Certificate within 42 days after the expiry of the time stated in Sub-Clause 14.7 [Payment] within which payment is to be made (except for deductions in accordance with Sub-Clause 2.5 [Employer's Claims]);
- (d) The Employer substantially fails to perform his obligations under the Contract in such manner as to materially and adversely affect the economic balance of the Contract and/or the ability of the Contractor to perform the Contract;
- (e) The Employer fails to comply with Sub-Clause 1.6 [Contract Agreement] or Sub-Clause 1.7 [Assignment];
- (f) A prolonged suspension affects the whole of the Works as described in Sub-Clause 8.11 [Prolonged Suspension]; or
- (g) The Employer becomes bankrupt or insolvent, goes into liquidation, has a receiving or administration order made against him, compounds with his creditors, or carries on business under a receiver, trustee or manager for the benefit of his creditors, or if any act is done or event occurs which (under applicable Laws) has a similar effect to any of these acts or events;
- (h) The Contractor does not receive the Engineer's instruction recording the agreement of both Parties on the fulfilment of the conditions for the Commencement of Works under Sub-Clause 8.1 [Commencement of Works].

In any of these events or circumstances, the Contractor may, upon giving 14 days' notice to the Employer, terminate the Contract. However, in the case of sub-paragraph (f) or (g), the Contractor may by notice terminate the Contract immediately.

In the event the Bank suspends the loan or credit from which part or whole of the payments to the Contractor are being made, if the Contractor has not received the sums due to him upon expiration of the 14 days referred to in Sub-Clause 14.7 [Payment] for payments under Interim Payment Certificates, the Contractor may, without prejudice to the Contractor's entitlement to financing charges under Sub-Clause 14.8 [Delayed Payment], take one of the following actions, namely (i) suspend work or reduce the rate of work under Sub-Clause 16.1 above, or (ii) terminate the Contract by giving notice to the Employer, with a copy to the Engineer, such termination to take effect 14 days after the giving of the notice.

The Contractor's election to terminate the Contract shall not prejudice any other rights of the Contractor, under the Contract or otherwise.

**16.3 Cessation
of Work
and Re-
moval of
Contr-**

After a notice of termination under Sub-Clause 15.5 [Employer's Entitlement to Termination for Convenience], Sub-Clause 16.2 [Termination by Contractor] or Sub-Clause 19.6 [Optional Termination, Payment and Release] has taken effect, the Contractor shall promptly:

- Contractor's Equipment**
- (a) Cease all further work, except for such work as may have been instructed by the Engineer for the protection of life or property or for the safety of the Works;
 - (b) Hand over Contractor's Documents, Plant, Materials and other work, for which the Contractor has received payment; and
 - (c) Remove all other Goods from the Site, except as necessary for safety, and leave the Site.

16.4 Payment on Termination

After a notice of termination under Sub-Clause 16.2 [Termination by Contractor] has taken effect, the Employer shall promptly:

- (a) Return the Performance Security to the Contractor;
- (b) Pay the Contractor in accordance with Sub-Clause 19.6 [Optional Termination, Payment and Release]; and
- (c) Pay to the Contractor the amount of any loss or damage sustained by the Contractor as a result of this termination.

17. Risk and Responsibility

17.1 Indemnities

The Contractor shall indemnify and hold harmless the Employer, the Employer's Personnel, and their respective agents, against and from all claims, damages, losses and expenses (including legal fees and expenses) in respect of:

- (a) Bodily injury, sickness, disease or death, of any person whatsoever arising out of or in the course of or by reason of the Contractor's design (if any), the execution and completion of the Works and the remedying of any defects, unless attributable to any negligence, wilful act or breach of the Contract by the Employer, the Employer's Personnel, or any of their respective agents; and
- (b) Damage to or loss of any property, real or personal (other than the Works), to the extent that such damage or loss arises out of or in the course of or by reason of the Contractor's design (if any), the execution and completion of the Works and the remedying of any defects, unless and to the extent that any such damage or loss is attributable to any negligence, wilful act or breach of the Contract by the Employer, the Employer's Personnel, their respective agents, or anyone directly or indirectly employed by any of them.

The Employer shall indemnify and hold harmless the Contractor, the Contractor's Personnel, and their respective agents, against and from all claims, damages, losses and expenses (including legal fees and expenses) in respect of (1) bodily injury, sickness, disease or death, which is attributable to any negligence, wilful act or breach of the Contract by the Employer, the Employer's Personnel, or any of their respective agents, and (2) the matters for which liability may be excluded from insurance cover, as described in sub-paragraphs (d)(i), (ii) and (iii) of Sub-Clause 18.3 [Insurance Against Injury to Persons and Damage to Property].

17.2

Contractor's Care of the Works

The Contractor shall take full responsibility for the care of the Works and Goods from the Commencement Date until the Taking-Over Certificate is issued (or is deemed to be issued under Sub-Clause 10.1 [Taking Over of the Works and Sections]) for the Works, when responsibility for the care of the Works shall pass to the Employer. If a Taking-Over Certificate is issued (or is so deemed to be issued) for any Section or part of the Works, responsibility for the care of the Section or part shall then pass to the Employer.

After responsibility has accordingly passed to the Employer, the Contractor shall take responsibility for the care of any work which is outstanding on the date stated in a Taking-Over Certificate, until this outstanding work has been completed.

If any loss or damage happens to the Works, Goods or Contractor's Documents during the period when the Contractor is responsible for their care, from any cause not listed in Sub-Clause 17.3 [Employer's Risks], the Contractor shall rectify the loss or damage at the Contractor's risk and cost, so that the Works, Goods and Contractor's Documents conform to the Contract.

The Contractor shall be liable for any loss or damage caused by any actions performed by the Contractor after a Taking-Over Certificate has been issued. The Contractor shall also be liable for any loss or damage which occurs after a Taking-Over Certificate has been issued and which arose from a previous event for which the Contractor was liable.

17.3 Employer's Risks

The risks referred to in Sub-Clause 17.4 [Consequences of Employer's Risks] below, insofar as they directly affect the execution of the Works in the Country, are:

- (a) War, hostilities (whether war be declared or not), invasion, act of foreign enemies;
- (b) Rebellion, terrorism, sabotage by persons other than the Contractor's Personnel, revolution, insurrection, military or usurped power, or civil war, within the Country;
- (c) Riot, commotion or disorder within the Country by persons other than the Contractor's Personnel;
- (d) Munitions of war, explosive materials, ionising radiation or contamination by radio-activity, within the Country, except as may be attributable to the Contractor's use of such munitions, explosives, radiation or radio-activity;
- (e) Pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds;
- (f) Use or occupation by the Employer of any part of the Permanent Works, except as may be specified in the Contract;
- (g) Design of any part of the Works by the Employer's Personnel or by others for whom the Employer is responsible; and

- (h) Any operation of the forces of nature which is Unforeseeable or against which an experienced contractor could not reasonably have been expected to have taken adequate preventive precautions.

17.4 Consequences of Employer's Risks

If and to the extent that any of the risks listed in Sub-Clause 17.3 above results in loss or damage to the Works, Goods or Contractor's Documents, the Contractor shall promptly give notice to the Engineer and shall rectify this loss or damage to the extent required by the Engineer.

If the Contractor suffers delay and/or incurs Cost from rectifying this loss or damage, the Contractor shall give a further notice to the Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

- (a) An extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion]; and
- (b) Payment of any such Cost, which shall be included in the Contract Price. In the case of sub-paragraphs (f) and (g) of Sub-Clause 17.3 [Employer's Risks], Cost plus profit shall be payable.

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

17.5 Intellectual and Industrial Property Rights

In this Sub-Clause, "infringement" means an infringement (or alleged infringement) of any patent, registered design, copyright, trade mark, trade name, trade secret or other intellectual or industrial property right relating to the Works; and "claim" means a claim (or proceedings pursuing a claim) alleging an infringement.

Whenever a Party does not give notice to the other Party of any claim within 28 days of receiving the claim, the first Party shall be deemed to have waived any right to indemnity under this Sub-Clause.

The Employer shall indemnify and hold the Contractor harmless against and from any claim alleging an infringement which is or was:

- (a) An unavoidable result of the Contractor's compliance with the Contract; or
- (b) A result of any Works being used by the Employer:
 - (i) For a purpose other than that indicated by, or reasonably to be inferred from, the Contract; or
 - (ii) In conjunction with anything not supplied by the Contractor, unless such use was disclosed to the Contractor prior to the Base Date or is stated in the Contract.

The Contractor shall indemnify and hold the Employer harmless against and from any other claim which arises out of or in relation to (i) the manufacture, use, sale or import of any Goods, or (ii) any design for which the Contractor is responsible.

If a Party is entitled to be indemnified under this Sub-Clause, the indemnifying Party may (at its cost) conduct negotiations for the settlement of the claim, and any litigation or arbitration which may arise from it. The other Party shall, at the request and cost of the indemnifying Party, assist in contesting the claim. This other Party (and its Personnel) shall not make any admission which might be prejudicial to the indemnifying Party, unless the indemnifying Party failed to take over the conduct of any negotiations, litigation or arbitration upon being requested to do so by such other Party.

**17.6 Limitation
of Liability**

Neither Party shall be liable to the other Party for loss of use of any Works, loss of profit, loss of any contract or for any indirect or consequential loss or damage which may be suffered by the other Party in connection with the Contract, other than as specifically provided in Sub-Clause 8.7 [Delay Damages]; Sub-Clause 11.2 [Cost of Remedying Defects]; Sub-Clause 15.4 [Payment after Termination]; Sub-Clause 16.4 [Payment on Termination]; Sub-Clause 17.1 [Indemnities]; Sub-Clause 17.4(b) [Consequences of Employer's Risks] and Sub-Clause 17.5 [Intellectual and Industrial Property Rights].

The total liability of the Contractor to the Employer, under or in connection with the Contract other than under Sub-Clause 4.19 [Electricity, Water and Gas], Sub-Clause 4.20 [Employer's Equipment and Free-Issue Materials], Sub-Clause 17.1 [Indemnities] and Sub-Clause 17.5 [Intellectual and Industrial Property Rights], shall not exceed the sum resulting from the application of a multiplier (less or greater than one) to the Accepted Contract Amount, as stated in the Contract Data, or (if such multiplier or other sum is not so stated) the Accepted Contract Amount.

This Sub-Clause shall not limit liability in any case of fraud, deliberate default or reckless misconduct by the defaulting Party.

**17.7 Use of
Employer's
Accommo-
dation /
Facilities**

The Contractor shall take full responsibility for the care of the Employer provided accommodation and facilities, if any, as detailed in the Specification, from the respective dates of hand-over to the Contractor until cessation of occupation (where hand-over or cessation of occupation may take place after the date stated in the Taking-Over Certificate for the Works).

If any loss or damage happens to any of the above items while the Contractor is responsible for their care arising from any cause whatsoever other than those for which the Employer is liable, the Contractor shall, at his own cost, rectify the loss or damage to the satisfaction of the Engineer.

18. Insurance

18.1 General Requirements for Insurances

In this Clause, “insuring Party” means, for each type of insurance, the Party responsible for effecting and maintaining the insurance specified in the relevant Sub-Clause.

Wherever the Contractor is the insuring Party, each insurance shall be effected with insurers and in terms approved by the Employer. These terms shall be consistent with any terms agreed by both Parties before the date of the Letter of Acceptance. This agreement of terms shall take precedence over the provisions of this Clause.

Wherever the Employer is the insuring Party, each insurance shall be effected with insurers and in terms acceptable to the Contractor. These terms shall be consistent with any terms agreed by both Parties before the date of the Letter of Acceptance. This agreement of terms shall take precedence over the provisions of this Clause.

If a policy is required to indemnify joint insured, the cover shall apply separately to each insured as though a separate policy had been issued for each of the joint insured. If a policy indemnifies additional joint insured, namely in addition to the insured specified in this Clause, (i) the Contractor shall act under the policy on behalf of these additional joint insured except that the Employer shall act for Employer's Personnel, (ii) additional joint insured shall not be entitled to receive payments directly from the insurer or to have any other direct dealings with the insurer, and (iii) the insuring Party shall require all additional joint insured to comply with the conditions stipulated in the policy.

Each policy insuring against loss or damage shall provide for payments to be made in the currencies required to rectify the loss or damage. Payments received from insurers shall be used for the rectification of the loss or damage.

The relevant insuring Party shall, within the respective periods stated in the Contract Data (calculated from the Commencement Date), submit to the other Party:

- (a) Evidence that the insurances described in this Clause have been effected; and
- (b) Copies of the policies for the insurances described in Sub-Clause 18.2 [Insurance for Works and Contractor's Equipment] and Sub-Clause 18.3 [Insurance against Injury to Persons and Damage to Property].

When each premium is paid, the insuring Party shall submit evidence of payment to the other Party. Whenever evidence or policies are submitted, the insuring Party shall also give notice to the Engineer.

Each Party shall comply with the conditions stipulated in each of the insurance policies. The insuring Party shall keep the insurers informed of any relevant changes to the execution of the Works and ensure that insurance is maintained in accordance with this Clause.

Neither Party shall make any material alteration to the terms of any insurance without the prior approval of the other Party. If an insurer makes (or attempts to make) any alteration, the Party first notified by the insurer shall promptly give notice to the other Party.

If the insuring Party fails to effect and keep in force any of the insurances it is required to effect and maintain under the Contract, or fails to provide satisfactory evidence and copies of policies in accordance with this Sub-Clause, the other Party may (at its option and without prejudice to any other right or remedy) effect insurance for the relevant coverage and pay the premiums due. The insuring Party shall pay the amount of these premiums to the other Party, and the Contract Price shall be adjusted accordingly.

Nothing in this Clause limits the obligations, liabilities or responsibilities of the Contractor or the Employer, under the other terms of the Contract or otherwise. Any amounts not insured or not recovered from the insurers shall be borne by the Contractor and/or the Employer in accordance with these obligations, liabilities or responsibilities. However, if the insuring Party fails to effect and keep in force an insurance which is available and which it is required to effect and maintain under the Contract, and the other Party neither approves the omission nor effects insurance for the coverage relevant to this default, any moneys which should have been recoverable under this insurance shall be paid by the insuring Party.

Payments by one Party to the other Party shall be subject to Sub-Clause 2.5 [Employer's Claims] or Sub-Clause 20.1 [Contractor's Claims], as applicable.

The Contractor shall be entitled to place all insurance relating to the Contract (including, but not limited to the insurance referred to Clause 18) with insurers from any eligible source country.

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

The insuring Party shall insure the Works, Plant, Materials and Contractor's Documents for not less than the full reinstatement cost including the costs of demolition, removal of debris and professional fees and profit. This insurance shall be effective from the date by which the evidence is to be submitted under sub-paragraph (a) of Sub-Clause 18.1 [General Requirements for Insurances], until the date of issue of the Taking-Over Certificate for the Works.

The insuring Party shall maintain this insurance to provide cover until the date of issue of the Performance Certificate, for loss or damage for which the Contractor is liable arising from a cause occurring prior to the issue of the Taking-Over Certificate, and for loss or damage caused by the Contractor in the course of any other operations (including those under Clause 11 [Defects Liability]).

The insuring Party shall insure the Contractor's Equipment for not less than the full replacement value, including delivery to Site. For each item of Contractor's Equipment, the insurance shall be effective while it is being transported to the Site and until it is no longer required as Contractor's Equipment.

Section VIII. General Conditions (GC)

Unless otherwise stated in the Particular Conditions, insurances under this Sub-Clause:

- (a) Shall be effected and maintained by the Contractor as insuring Party;
- (b) Shall be in the joint names of the Parties, who shall be jointly entitled to receive payments from the insurers, payments being held or allocated to the Party actually bearing the costs of rectifying the loss or damage,
- (c) Shall cover all loss and damage from any cause not listed in Sub-Clause 17.3 [Employer's Risks];
- (d) Shall also cover, to the extent specifically required in the bidding documents of the Contract, loss or damage to a part of the Works which is attributable to the use or occupation by the Employer of another part of the Works, and loss or damage from the risks listed in sub-paragraphs (c), (g) and (h) of Sub-Clause 17.3 [Employer's Risks], excluding (in each case) risks which are not insurable at commercially reasonable terms, with deductibles per occurrence of not more than the amount stated in the Contract Data (if an amount is not so stated, this sub-paragraph (d) shall not apply); and
- (e) May however exclude loss of, damage to, and reinstatement of:
 - (i) A part of the Works which is in a defective condition due to a defect in its design, materials or workmanship (but cover shall include any other parts which are lost or damaged as a direct result of this defective condition and not as described in sub-paragraph (ii) below);
 - (ii) A part of the Works which is lost or damaged in order to reinstate any other part of the Works if this other part is in a defective condition due to a defect in its design, materials or workmanship;
 - (iii) A part of the Works which has been taken over by the Employer, except to the extent that the Contractor is liable for the loss or damage; and
 - (iv) Goods while they are not in the Country, subject to Sub-Clause 14.5 [Plant and Materials intended for the Works].

If, more than one year after the Base Date, the cover described in sub-paragraph (d) above ceases to be available at commercially reasonable terms, the Contractor shall (as insuring Party) give notice to the Employer, with supporting particulars. The Employer shall then (i) be entitled subject to Sub-Clause 2.5 [Employer's Claims] to payment of an amount equivalent to such commercially reasonable terms as the Contractor should have expected to have paid for such cover, and (ii) be deemed, unless he obtains the cover

at commercially reasonable terms, to have approved the omission under Sub-Clause 18.1 [General Requirements for Insurances].

18.3 Insurance against Injury to Persons and Damage to Property

The insuring Party shall insure against each Party's liability for any loss, damage, death or bodily injury which may occur to any physical property (except things insured under Sub-Clause 18.2 [Insurance for Works and Contractor's Equipment]) or to any person (except persons insured under Sub-Clause 18.4 [Insurance for Contractor's Personnel]), which may arise out of the Contractor's performance of the Contract and occurring before the issue of the Performance Certificate.

This insurance shall be for a limit per occurrence of not less than the amount stated in the Contract Data, with no limit on the number of occurrences. If an amount is not stated in the Contract Data, this Sub-Clause shall not apply.

Unless otherwise stated in the Particular Conditions, the insurances specified in this Sub-Clause:

- (a) Shall be effected and maintained by the Contractor as insuring Party;
- (b) Shall be in the joint names of the Parties;
- (c) Shall be extended to cover liability for all loss and damage to the Employer's property (except things insured under Sub-Clause 18.2) arising out of the Contractor's performance of the Contract; and
- (d) May however exclude liability to the extent that it arises from:
 - (i) The Employer's right to have the Permanent Works executed on, over, under, in or through any land, and to occupy this land for the Permanent Works;
 - (ii) Damage which is an unavoidable result of the Contractor's obligations to execute the Works and remedy any defects; and
 - (iii) A cause listed in Sub-Clause 17.3 [Employer's Risks], except to the extent that cover is available at commercially reasonable terms.

18.4 Insurance for Contractor's Personnel

The Contractor shall effect and maintain insurance against liability for claims, damages, losses and expenses (including legal fees and expenses) arising from injury, sickness, disease or death of any person employed by the Contractor or any other of the Contractor's Personnel.

The insurance shall cover the Employer and the Engineer against liability for claims, damages, losses and expenses (including legal fees and expenses) arising from injury, sickness, disease or death of any person employed by the Contractor or any other of the Contractor's Personnel, except that this insurance may exclude

losses and claims to the extent that they arise from any act or neglect of the Employer or of the Employer's Personnel.

The insurance shall be maintained in full force and effect during the whole time that these personnel are assisting in the execution of the Works. For a Subcontractor's employees, the insurance may be effected by the Subcontractor, but the Contractor shall be responsible for compliance with this Clause.

19. Force Majeure

19.1 Definition of Force Majeure

In this Clause, "Force Majeure" means an exceptional event or circumstance:

- (a) Which is beyond a Party's control;
- (b) Which such Party could not reasonably have provided against before entering into the Contract
- (c) Which, having arisen, such Party could not reasonably have avoided or overcome; and
- (d) Which is not substantially attributable to the other Party.

Force Majeure may include, but is not limited to, exceptional events or circumstances of the kind listed below, so long as conditions (a) to (d) above are satisfied:

- (i) War, hostilities (whether war be declared or not), invasion, act of foreign enemies;
- (ii) Rebellion, terrorism, sabotage by persons other than the Contractor's Personnel, revolution, insurrection, military or usurped power, or civil war;
- (iii) Riot, commotion, disorder, strike or lockout by persons other than the Contractor's Personnel;
- (iv) Munitions of war, explosive materials, ionising radiation or contamination by radio-activity, except as may be attributable to the Contractor's use of such munitions, explosives, radiation or radio-activity; and
- (v) Natural catastrophes such as earthquake, hurricane, typhoon or volcanic activity.

19.2 Notice of Force Majeure

If a Party is or will be prevented from performing its substantial obligations under the Contract by Force Majeure, then it shall give notice to the other Party of the event or circumstances constituting the Force Majeure and shall specify the obligations, the performance of which is or will be prevented. The notice shall be given within 14 days after the Party became aware, or should have become aware, of the relevant event or circumstance constituting Force Majeure.

- The Party shall, having given notice, be excused performance of its obligations for so long as such Force Majeure prevents it from performing them.
- Notwithstanding any other provision of this Clause, Force Majeure shall not apply to obligations of either Party to make payments to the other Party under the Contract.
- 19.3 Duty to Minimise Delay**
- Each Party shall at all times use all reasonable endeavours to minimise any delay in the performance of the Contract as a result of Force Majeure.
- A Party shall give notice to the other Party when it ceases to be affected by the Force Majeure.
- 19.4 Consequences of Force Majeure**
- If the Contractor is prevented from performing his substantial obligations under the Contract by Force Majeure of which notice has been given under Sub-Clause 19.2 [Notice of Force Majeure], and suffers delay and/or incurs Cost by reason of such Force Majeure, the Contractor shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:
- (a) An extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion]; and
 - (b) If the event or circumstance is of the kind described in sub-paragraphs (i) to (iv) of Sub-Clause 19.1 [Definition of Force Majeure] and, in sub-paragraphs (ii) to (iv), occurs in the Country, payment of any such Cost, including the costs of rectifying or replacing the Works and/or Goods damaged or destroyed by Force Majeure, to the extent they are not indemnified through the insurance policy referred to in Sub-Clause 18.2 [Insurance for Works and Contractor's Equipment].
- After receiving this notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.
- 19.5 Force Majeure Affecting Subcontractor**
- If any Subcontractor is entitled under any contract or agreement relating to the Works to relief from force majeure on terms additional to or broader than those specified in this Clause, such additional or broader force majeure events or circumstances shall not excuse the Contractor's non-performance or entitle him to relief under this Clause.
- 19.6 Optional Termination, Payment and Release**
- If the execution of substantially all the Works in progress is prevented for a continuous period of 84 days by reason of Force Majeure of which notice has been given under Sub-Clause 19.2 [Notice of Force Majeure], or for multiple periods which total more than 140 days due to the same notified Force Majeure, then either Party may give to the other Party a notice of termination of the Contract. In this event, the termination shall take effect 7 days after the notice is given, and the Contractor shall proceed in accordance

Section VIII. General Conditions (GC)

with Sub-Clause 16.3 [Cessation of Work and Removal of Contractor's Equipment].

Upon such termination, the Engineer shall determine the value of the work done and issue a Payment Certificate which shall include:

- (a) The amounts payable for any work carried out for which a price is stated in the Contract;
- (b) The Cost of Plant and Materials ordered for the Works which have been delivered to the Contractor, or of which the Contractor is liable to accept delivery: this Plant and Materials shall become the property of (and be at the risk of) the Employer when paid for by the Employer, and the Contractor shall place the same at the Employer's disposal;
- (c) Other Cost or liabilities which in the circumstances were reasonably and necessarily incurred by the Contractor in the expectation of completing the Works;
- (d) The Cost of removal of Temporary Works and Contractor's Equipment from the Site and the return of these items to the Contractor's works in his country (or to any other destination at no greater cost); and
- (e) The Cost of repatriation of the Contractor's staff and labour employed wholly in connection with the Works at the date of termination.

19.7 Release from Performance

Notwithstanding any other provision of this Clause, if any event or circumstance outside the control of the Parties (including, but not limited to, Force Majeure) arises which makes it impossible or unlawful for either or both Parties to fulfil its or their contractual obligations or which, under the law governing the Contract, entitles the Parties to be released from further performance of the Contract, then upon notice by either Party to the other Party of such event or circumstance:

- (a) The Parties shall be discharged from further performance, without prejudice to the rights of either Party in respect of any previous breach of the Contract; and
- (b) The sum payable by the Employer to the Contractor shall be the same as would have been payable under Sub-Clause 19.6 [Optional Termination, Payment and Release] if the Contract had been terminated under Sub-Clause 19.6.

20. Claims, Disputes and Arbitration

20.1 Contractor's Claims

If the Contractor considers himself to be entitled to any extension of the Time for Completion and/or any additional payment, under any Clause of these Conditions or otherwise in connection with the Contract, the Contractor shall give notice to the Engineer, describing the event or circumstance giving rise to the claim. The notice shall be given as soon as practicable, and not later than 28

Section VIII. General Conditions (GC)

days after the Contractor became aware, or should have become aware, of the event or circumstance.

If the Contractor fails to give notice of a claim within such period of 28 days, the Time for Completion shall not be extended, the Contractor shall not be entitled to additional payment, and the Employer shall be discharged from all liability in connection with the claim. Otherwise, the following provisions of this Sub-Clause shall apply.

The Contractor shall also submit any other notices which are required by the Contract, and supporting particulars for the claim, all as relevant to such event or circumstance.

The Contractor shall keep such contemporary records as may be necessary to substantiate any claim, either on the Site or at another location acceptable to the Engineer. Without admitting the Employer's liability, the Engineer may, after receiving any notice under this Sub-Clause, monitor the record-keeping and/or instruct the Contractor to keep further contemporary records. The Contractor shall permit the Engineer to inspect all these records, and shall (if instructed) submit copies to the Engineer.

Within 42 days after the Contractor became aware (or should have become aware) of the event or circumstance giving rise to the claim, or within such other period as may be proposed by the Contractor and approved by the Engineer, the Contractor shall send to the Engineer a fully detailed claim which includes full supporting particulars of the basis of the claim and of the extension of time and/or additional payment claimed. If the event or circumstance giving rise to the claim has a continuing effect:

- (a) This fully detailed claim shall be considered as interim;
- (b) The Contractor shall send further interim claims at monthly intervals, giving the accumulated delay and/or amount claimed, and such further particulars as the Engineer may reasonably require; and
- (c) The Contractor shall send a final claim within 28 days after the end of the effects resulting from the event or circumstance, or within such other period as may be proposed by the Contractor and approved by the Engineer.

Within 42 days after receiving a claim or any further particulars supporting a previous claim, or within such other period as may be proposed by the Engineer and approved by the Contractor, the Engineer shall respond with approval, or with disapproval and detailed comments. He may also request any necessary further particulars, but shall nevertheless give his response on the principles of the claim within the above defined time period.

Within the above defined period of 42 days, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) the extension (if any) of the Time for Completion (before or after its expiry) in accordance with Sub-Clause 8.4 [Extension of Time for Completion], and/or (ii) the

additional payment (if any) to which the Contractor is entitled under the Contract.

Each Payment Certificate shall include such additional payment for any claim as has been reasonably substantiated as due under the relevant provision of the Contract. Unless and until the particulars supplied are sufficient to substantiate the whole of the claim, the Contractor shall only be entitled to payment for such part of the claim as he has been able to substantiate.

If the Engineer does not respond within the timeframe defined in this Clause, either Party may consider that the claim is rejected by the Engineer and any of the Parties may refer to the Dispute Board in accordance with Sub-Clause 20.4 [Obtaining Dispute Board's Decision].

The requirements of this Sub-Clause are in addition to those of any other Sub-Clause which may apply to a claim. If the Contractor fails to comply with this or another Sub-Clause in relation to any claim, any extension of time and/or additional payment shall take account of the extent (if any) to which the failure has prevented or prejudiced proper investigation of the claim, unless the claim is excluded under the second paragraph of this Sub-Clause.

**20.2 Appoint-
ment of the
Dispute
Board**

Disputes shall be referred to a DB for decision in accordance with Sub-Clause 20.4 [Obtaining Dispute Board's Decision]. The Parties shall appoint a DB by the date stated in the Contract Data.

The DB shall comprise, as stated in the Contract Data, either one or three suitably qualified persons ("the members"), each of whom shall be fluent in the language for communication defined in the Contract and shall be a professional experienced in the type of construction involved in the Works and with the interpretation of contractual documents. If the number is not so stated and the Parties do not agree otherwise, the DB shall comprise three persons.

If the Parties have not jointly appointed the DB 21 days before the date stated in the Contract Data and the DB is to comprise three persons, each Party shall nominate one member for the approval of the other Party. The first two members shall recommend and the Parties shall agree upon the third member, who shall act as chairman.

However, if a list of potential members has been agreed by the Parties and is included in the Contract, the members shall be selected from those on the list, other than anyone who is unable or unwilling to accept appointment to the DB.

The agreement between the Parties and either the sole member or each of the three members shall incorporate by reference the General Conditions of Dispute Board Agreement contained in the Appendix to these General Conditions, with such amendments as are agreed between them.

The terms of the remuneration of either the sole member or each of the three members, including the remuneration of any expert whom the DB consults, shall be mutually agreed upon by the Parties when agreeing the terms of appointment. Each Party shall be responsible for paying one-half of this remuneration.

If at any time the Parties so agree, they may jointly refer a matter to the DB for it to give its opinion. Neither Party shall consult the DB on any matter without the agreement of the other Party.

If a member declines to act or is unable to act as a result of death, disability, resignation or termination of appointment, a replacement shall be appointed in the same manner as the replaced person was required to have been nominated or agreed upon, as described in this Sub-Clause.

The appointment of any member may be terminated by mutual agreement of both Parties, but not by the Employer or the Contractor acting alone. Unless otherwise agreed by both Parties, the appointment of the DB (including each member) shall expire when the discharge referred to in Sub-Clause 14.12 [Discharge] shall have become effective.

20.3 Failure to Agree on the Composition of the Dispute Board

If any of the following conditions apply, namely:

- (a) The Parties fail to agree upon the appointment of the sole member of the DB by the date stated in the first paragraph of Sub-Clause 20.2 [Appointment of the Dispute Board];
- (b) Either Party fails to nominate a member (for approval by the other Party), or fails to approve a member nominated by the other Party, of a DB of three persons by such date;
- (c) The Parties fail to agree upon the appointment of the third member (to act as chairman) of the DB by such date; or
- (d) The Parties fail to agree upon the appointment of a replacement person within 42 days after the date on which the sole member or one of the three members declines to act or is unable to act as a result of death, disability, resignation or termination of appointment;

then the appointing entity or official named in the Contract Data shall, upon the request of either or both of the Parties and after due consultation with both Parties, appoint this member of the DB. This appointment shall be final and conclusive. Each Party shall be responsible for paying one-half of the remuneration of the appointing entity or official.

20.4 Obtaining Dispute Board's Decision

If a dispute (of any kind whatsoever) arises between the Parties in connection with, or arising out of, the Contract or the execution of the Works, including any dispute as to any certificate, determination, instruction, opinion or valuation of the Engineer, either Party may refer the dispute in writing to the DB for its decision, with copies to the other Party and the Engineer. Such reference shall state that it is given under this Sub-Clause.

Section VIII. General Conditions (GC)

For a DB of three persons, the DB shall be deemed to have received such reference on the date when it is received by the chairman of the DB.

Both Parties shall promptly make available to the DB all such additional information, further access to the Site, and appropriate facilities, as the DB may require for the purposes of making a decision on such dispute. The DB shall be deemed to be not acting as arbitrator(s).

Within 84 days after receiving such reference, or within such other period as may be proposed by the DB and approved by both Parties, the DB shall give its decision, which shall be reasoned and shall state that it is given under this Sub-Clause. The decision shall be binding on both Parties, who shall promptly give effect to it unless and until it shall be revised in an amicable settlement or an arbitral award as described below. Unless the Contract has already been abandoned, repudiated or terminated, the Contractor shall continue to proceed with the Works in accordance with the Contract.

If either Party is dissatisfied with the DB's decision, then either Party may, within 28 days after receiving the decision, give a Notice of Dissatisfaction to the other Party indicating its dissatisfaction and intention to commence arbitration. If the DB fails to give its decision within the period of 84 days (or as otherwise approved) after receiving such reference, then either Party may, within 28 days after this period has expired, give a Notice of Dissatisfaction to the other Party.

In either event, this Notice of Dissatisfaction shall state that it is given under this Sub-Clause, and shall set out the matter in dispute and the reason(s) for dissatisfaction. Except as stated in Sub-Clause 20.7 [Failure to Comply with Dispute Board's Decision] and Sub-Clause 20.8 [Expiry of Dispute Board's Appointment], neither Party shall be entitled to commence arbitration of a dispute unless a Notice of Dissatisfaction has been given in accordance with this Sub-Clause.

If the DB has given its decision as to a matter in dispute to both Parties, and no Notice of Dissatisfaction has been given by either Party within 28 days after it received the DB's decision, then the decision shall become final and binding upon both Parties.

20.5 Amicable Settlement

Where a Notice of Dissatisfaction has been given under Sub-Clause 20.4 above, both Parties shall attempt to settle the dispute amicably before the commencement of arbitration. However, unless both Parties agree otherwise, the Party giving a Notice of Dissatisfaction in accordance with Sub-Clause 20.4 above should move to commence arbitration after the fifty-sixth day from the day on which a Notice of Dissatisfaction was given, even if no attempt at an amicable settlement has been made.

20.6 Arbitration

Any dispute between the Parties arising out of or in connection with the Contract not settled amicably in accordance with Sub-Clause 20.5 above and in respect of which the DB's decision (if any) has

Section VIII. General Conditions (GC)

not become final and binding shall be finally settled by arbitration. Arbitration shall be conducted as follows:

(a) If the contract is with foreign contractors,

International arbitration (1) with proceedings administered by the arbitration institution designated in the Contract Data, and conducted under the rules of arbitration of such institution; or, if so specified in the Contract Data, (2) international arbitration in accordance with the arbitration rules of the United Nations Commission on International Trade Law (UNCITRAL); or (3) if neither an arbitration institution nor UNCITRAL arbitration rules are specified in the Contract Data, with proceedings administered by the International Chamber of Commerce (ICC) and conducted under the ICC Rules of Arbitration; by one or more arbitrators appointed in accordance with said arbitration rules;

(b) If the Contract is with domestic contractors, arbitration with proceedings conducted in accordance with the laws of the Employer's country.

The place of arbitration shall be the neutral location specified in the Contract Data; and the arbitration shall be conducted in the language for communications defined in Sub-Clause 1.4 [Law and Language].

The arbitrators shall have full power to open up, review and revise any certificate, determination, instruction, opinion or valuation of the Engineer, and any decision of the DB, relevant to the dispute. Nothing shall disqualify representatives of the Parties and the Engineer from being called as a witness and giving evidence before the arbitrators on any matter whatsoever relevant to the dispute.

Neither Party shall be limited in the proceedings before the arbitrators to the evidence or arguments previously put before the DB to obtain its decision, or to the reasons for dissatisfaction given in its Notice of Dissatisfaction. Any decision of the DB shall be admissible in evidence in the arbitration.

Arbitration may be commenced prior to or after completion of the Works. The obligations of the Parties, the Engineer and the DB shall not be altered by reason of any arbitration being conducted during the progress of the Works.

20.7 Failure to Comply with Dispute Board's Decision

In the event that a Party fails to comply with a final and binding DB decision, then the other Party may, without prejudice to any other rights it may have, refer the failure itself to arbitration under Sub-Clause 20.6 [Arbitration]. Sub-Clause 20.4 [Obtaining Dispute Board's Decision] and Sub-Clause 20.5 [Amicable Settlement] shall not apply to this reference.

20.8 Expiry of Dispute Board's

If a dispute arises between the Parties in connection with, or arising out of, the Contract or the execution of the Works and there is no

Section VIII. General Conditions (GC)

Appointment

DB in place, whether by reason of the expiry of the DB's appointment or otherwise:

- (a) Sub-Clause 20.4 [Obtaining Dispute Board's Decision] and Sub-Clause 20.5 [Amicable Settlement] shall not apply; and
- (b) The dispute may be referred directly to arbitration under Sub-Clause 20.6 [Arbitration].

APPENDIX

A General Conditions of Dispute Board Agreement

1. Definitions

Each "Dispute Board Agreement" is a tripartite agreement by and between:

- (a) The "Employer";
- (b) The "Contractor"; and
- (c) The "Member" who is defined in the Dispute Board Agreement as being:
 - (i) The sole member of the "DB" and, where this is the case, all references to the "Other Members" do not apply, or
 - (ii) One of the three persons who are jointly called the "DB" (or "Dispute Board") and, where this is the case, the other two persons are called the "Other Members".

The Employer and the Contractor have entered (or intend to enter) into a contract, which is called the "Contract" and is defined in the Dispute Board Agreement, which incorporates this Appendix. In the Dispute Board Agreement, words and expressions which are not otherwise defined shall have the meanings assigned to them in the Contract.

2. General Provisions

Unless otherwise stated in the Dispute Board Agreement, it shall take effect on the latest of the following dates:

- (a) The Commencement Date defined in the Contract;
- (b) When the Employer, the Contractor and the Member have each signed the Dispute Board Agreement; or
- (c) When the Employer, the Contractor and each of the Other Members (if any) have respectively each signed a dispute board agreement.

This employment of the Member is a personal appointment. At any time, the Member may give not less than 70 days' notice of resignation to the Employer and to the Contractor, and the Dispute Board Agreement shall terminate upon the expiry of this period.

3. Warranties

The Member warrants and agrees that he/she is and shall be impartial and independent of the Employer, the Contractor and the Engineer. The Member shall promptly disclose, to each of them and to the Other Members (if any), any fact or circumstance which might appear inconsistent with his/her warranty and agreement of impartiality and independence.

When appointing the Member, the Employer and the Contractor relied upon the Member's representations that he/she is:

Section VIII. General Conditions (GC)

- (a) Experienced in the work which the Contractor is to carry out under the Contract;
- (b) Experienced in the interpretation of contract documentation; and
- (c) Fluent in the language for communications defined in the Contract.

4. General Obligations of the Member

The Member shall:

- (a) Have no interest financial or otherwise in the Employer, the Contractor or Engineer, nor any financial interest in the Contract except for payment under the Dispute Board Agreement;
- (b) Not previously have been employed as a consultant or otherwise by the Employer, the Contractor or the Engineer, except in such circumstances as were disclosed in writing to the Employer and the Contractor before they signed the Dispute Board Agreement;
- (c) Have disclosed in writing to the Employer, the Contractor and the Other Members (if any), before entering into the Dispute Board Agreement and to his/her best knowledge and recollection, any professional or personal relationships with any director, officer or employee of the Employer, the Contractor or the Engineer, and any previous involvement in the overall project of which the Contract forms part;
- (d) Not, for the duration of the Dispute Board Agreement, be employed as a consultant or otherwise by the Employer, the Contractor or the Engineer, except as may be agreed in writing by the Employer, the Contractor and the Other Members (if any);
- (e) Comply with the annexed procedural rules and with Sub-Clause 20.4 of the Conditions of Contract;
- (f) Not give advice to the Employer, the Contractor, the Employer's Personnel or the Contractor's Personnel concerning the conduct of the Contract, other than in accordance with the annexed procedural rules;
- (g) Not while a Member enter into discussions or make any agreement with the Employer, the Contractor or the Engineer regarding employment by any of them, whether as a consultant or otherwise, after ceasing to act under the Dispute Board Agreement;
- (h) Ensure his/her availability for all site visits and hearings as are necessary;
- (i) Become conversant with the Contract and with the progress of the Works (and of any other parts of the project of which the Contract forms part) by studying all

Section VIII. General Conditions (GC)

documents received which shall be maintained in a current working file;

- (j) Treat the details of the Contract and all the DB's activities and hearings as private and confidential, and not publish or disclose them without the prior written consent of the Employer, the Contractor and the Other Members (if any); and
- (k) Be available to give advice and opinions, on any matter relevant to the Contract when requested by both the Employer and the Contractor, subject to the agreement of the Other Members (if any).

5. General Obligations of the Employer and the Contractor

The Employer, the Contractor, the Employer's Personnel and the Contractor's Personnel shall not request advice from or consultation with the Member regarding the Contract, otherwise than in the normal course of the DB's activities under the Contract and the Dispute Board Agreement. The Employer and the Contractor shall be responsible for compliance with this provision, by the Employer's Personnel and the Contractor's Personnel respectively.

The Employer and the Contractor undertake to each other and to the Member that the Member shall not, except as otherwise agreed in writing by the Employer, the Contractor, the Member and the Other Members (if any):

- (a) Be appointed as an arbitrator in any arbitration under the Contract;
- (b) Be called as a witness to give evidence concerning any dispute before arbitrator(s) appointed for any arbitration under the Contract; or
- (c) Be liable for any claims for anything done or omitted in the discharge or purported discharge of the Member's functions, unless the act or omission is shown to have been in bad faith.

The Employer and the Contractor hereby jointly and severally indemnify and hold the Member harmless against and from claims from which he is relieved from liability under the preceding paragraph.

Whenever the Employer or the Contractor refers a dispute to the DB under Sub-Clause 20.4 of the Conditions of Contract, which will require the Member to make a site visit and attend a hearing, the Employer or the Contractor shall provide appropriate security for a sum equivalent to the reasonable expenses to be incurred by the Member. No account shall be taken of any other payments due or paid to the Member.

6. Payment

The Member shall be paid as follows, in the currency named in the Dispute Board Agreement:

Section VIII. General Conditions (GC)

- (a) A retainer fee per calendar month, which shall be considered as payment in full for:
 - (i) Being available on 28 days' notice for all site visits and hearings;
 - (ii) Becoming and remaining conversant with all project developments and maintaining relevant files;
 - (iii) All office and overhead expenses including secretarial services, photocopying and office supplies incurred in connection with his duties; and
 - (iv) All services performed hereunder except those referred to in sub-paragraphs (b) and (c) of this Clause.

The retainer fee shall be paid with effect from the last day of the calendar month in which the Dispute Board Agreement becomes effective; until the last day of the calendar month in which the Taking-Over Certificate is issued for the whole of the Works.

With effect from the first day of the calendar month following the month in which the Taking-Over Certificate is issued for the whole of the Works, the retainer fee shall be reduced by one third. This reduced fee shall be paid until the first day of the calendar month in which the Member resigns or the Dispute Board Agreement is otherwise terminated.

- (b) A daily fee which shall be considered as payment in full for:
 - (i) Each day or part of a day up to a maximum of two days' travel time in each direction for the journey between the Member's home and the Site, or another location of a meeting with the Other Members (if any);
 - (ii) Each working day on Site visits, hearings or preparing decisions; and
 - (iii) Each day spent reading submissions in preparation for a hearing;
- (c) All reasonable expenses including necessary travel expenses (air fare in less than first class, hotel and subsistence and other direct travel expenses) incurred in connection with the Member's duties, as well as the cost of telephone calls, courier charges, faxes and telexes: a receipt shall be required for each item in excess of five percent of the daily fee referred to in sub-paragraph (b) of this Clause;
- (d) Any taxes properly levied in the Country on payments made to the Member (unless a national or permanent resident of the Country) under this Clause 6.

Section VIII. General Conditions (GC)

The retainer and daily fees shall be as specified in the Dispute Board Agreement. Unless it specifies otherwise, these fees shall remain fixed for the first 24 calendar months, and shall thereafter be adjusted by agreement between the Employer, the Contractor and the Member, at each anniversary of the date on which the Dispute Board Agreement became effective.

If the parties fail to agree on the retainer fee or the daily fee, the appointing entity or official named in the Contract Data shall determine the amount of the fees to be used.

The Member shall submit invoices for payment of the monthly retainer and air fares quarterly in advance. Invoices for other expenses and for daily fees shall be submitted following the conclusion of a Site visit or hearing. All invoices shall be accompanied by a brief description of activities performed during the relevant period and shall be addressed to the Contractor.

The Contractor shall pay each of the Member's invoices in full within 56 calendar days after receiving each invoice and shall apply to the Employer (in the Statements under the Contract) for reimbursement of one-half of the amounts of these invoices. The Employer shall then pay the Contractor in accordance with the Contract.

If the Contractor fails to pay to the Member the amount to which he/she is entitled under the Dispute Board Agreement, the Employer shall pay the amount due to the Member and any other amount which may be required to maintain the operation of the DB; and without prejudice to the Employer's rights or remedies. In addition to all other rights arising from this default, the Employer shall be entitled to reimbursement of all sums paid in excess of one-half of these payments, plus all costs of recovering these sums and financing charges calculated at the rate specified in Sub-Clause 14.8 of the Conditions of Contract.

If the Member does not receive payment of the amount due within 70 days after submitting a valid invoice, the Member may (i) suspend his/her services (without notice) until the payment is received, and/or (ii) resign his/her appointment by giving notice under Clause 7.

7. Termination

At any time: (i) the Employer and the Contractor may jointly terminate the Dispute Board Agreement by giving 42 days' notice to the Member; or (ii) the Member may resign as provided for in Clause 2.

If the Member fails to comply with the Dispute Board Agreement, the Employer and the Contractor may, without prejudice to their other rights, terminate it by notice to the Member. The notice shall take effect when received by the Member.

If the Employer or the Contractor fails to comply with the Dispute Board Agreement, the Member may, without prejudice

Section VIII. General Conditions (GC)

to his other rights, terminate it by notice to the Employer and the Contractor. The notice shall take effect when received by them both.

Any such notice, resignation and termination shall be final and binding on the Employer, the Contractor and the Member. However, a notice by the Employer or the Contractor, but not by both, shall be of no effect.

8. Default of the Member

If the Member fails to comply with any of his obligations under Clause 4 (a) - (d) above, he shall not be entitled to any fees or expenses hereunder and shall, without prejudice to their other rights, reimburse each of the Employer and the Contractor for any fees and expenses received by the Member and the Other Members (if any), for proceedings or decisions (if any) of the DB which are rendered void or ineffective by the said failure to comply.

If the Member fails to comply with any of his obligations under Clause 4 (e) - (k) above, he shall not be entitled to any fees or expenses hereunder from the date and to the extent of the non-compliance and shall, without prejudice to their other rights, reimburse each of the Employer and the Contractor for any fees and expenses already received by the Member, for proceedings or decisions (if any) of the DB which are rendered void or ineffective by the said failure to comply.

9. Disputes

Any dispute or claim arising out of or in connection with this Dispute Board Agreement, or the breach, termination or invalidity thereof, shall be finally settled by institutional arbitration. If no other arbitration institute is agreed, the arbitration shall be conducted under the Rules of Arbitration of the International Chamber of Commerce by one arbitrator appointed in accordance with these Rules of Arbitration.

PROCEDURAL RULES

Unless otherwise agreed by the Employer and the Contractor, the DB shall visit the Site at intervals of not more than 140 days, including times of critical construction events, at the request of either the Employer or the Contractor. Unless otherwise agreed by the Employer, the Contractor and the DB, the period between consecutive visits shall not be less than 70 days, except as required to convene a hearing as described below.

The timing of and agenda for each Site visit shall be as agreed jointly by the DB, the Employer and the Contractor, or in the absence of agreement, shall be decided by the DB. The purpose of Site visits is to enable the DB to become and remain acquainted with the progress of the Works and of any actual or potential problems or claims, and, as far as reasonable, to endeavour to prevent potential problems or claims from becoming disputes.

Site visits shall be attended by the Employer, the Contractor and the Engineer and shall be co-ordinated by the Employer in co-operation with the Contractor. The Employer shall ensure the provision of appropriate conference facilities and secretarial and copying services. At the conclusion of each Site visit and before leaving the site, the DB shall prepare a report on its activities during the visit and shall send copies to the Employer and the Contractor.

The Employer and the Contractor shall furnish to the DB one copy of all documents which the DB may request, including Contract documents, progress reports, variation instructions, certificates and other documents pertinent to the performance of the Contract. All communications between the DB and the Employer or the Contractor shall be copied to the other Party. If the DB comprises three persons, the Employer and the Contractor shall send copies of these requested documents and these communications to each of these persons.

If any dispute is referred to the DB in accordance with Sub-Clause 20.4 of the Conditions of Contract, the DB shall proceed in accordance with Sub-Clause 20.4 and these Rules. Subject to the time allowed to give notice of a decision and other relevant factors, the DB shall:

- (a) Act fairly and impartially as between the Employer and the Contractor, giving each of them a reasonable opportunity of putting his case and responding to the other's case; and
- (b) Adopt procedures suitable to the dispute, avoiding unnecessary delay or expense.

The DB may conduct a hearing on the dispute, in which event it will decide on the date and place for the hearing and may request that written documentation and arguments from the Employer and the Contractor be presented to it prior to or at the hearing.

Except as otherwise agreed in writing by the Employer and the Contractor, the DB shall have power to adopt an inquisitorial procedure, to refuse admission to hearings or audience at hearings to any persons other than representatives of the Employer, the Contractor and the Engineer, and to proceed in the absence of any party who the DB is satisfied received notice of the hearing; but shall have discretion to decide whether and to what extent this power may be exercised.

The Employer and the Contractor empower the DB, among other things, to:

- (a) Establish the procedure to be applied in deciding a dispute;

Section VIII. General Conditions (GC)

- (b) Decide upon the DB's own jurisdiction, and as to the scope of any dispute referred to it;
- (c) Conduct any hearing as it thinks fit, not being bound by any rules or procedures other than those contained in the Contract and these Rules;
- (d) Take the initiative in ascertaining the facts and matters required for a decision;
- (e) Make use of its own specialist knowledge, if any;
- (f) Decide upon the payment of financing charges in accordance with the Contract;
- (g) Decide upon any provisional relief such as interim or conservatory measures; and
- (h) Open up, review and revise any certificate, decision, determination, instruction, opinion or valuation of the Engineer, relevant to the dispute.

The DB shall not express any opinions during any hearing concerning the merits of any arguments advanced by the Parties. Thereafter, the DB shall make and give its decision in accordance with Sub-Clause 20.4, or as otherwise agreed by the Employer and the Contractor in writing. If the DB comprises three persons:

- (a) It shall convene in private after a hearing, in order to have discussions and prepare its decision;
- (b) It shall endeavour to reach a unanimous decision: if this proves impossible the applicable decision shall be made by a majority of the Members, who may require the minority Member to prepare a written report for submission to the Employer and the Contractor; and
- (c) If a Member fails to attend a meeting or hearing, or to fulfil any required function, the other two Members may nevertheless proceed to make a decision; unless:
 - (i) Either the Employer or the Contractor does not agree that they do so; or
 - (ii) The absent Member is the chairman and he/she instructs the other Members not to make a decision.

Section IX. Particular Conditions (PC)

Section IX. Particular Conditions (PC)

The following Particular Conditions shall supplement the GC. Whenever there is a conflict, the provisions herein shall prevail over those in the GC.

Part A - Contract Data

Conditions	Sub-Clause	Data
Employer's name and address	1.1.2.2 & 1.3	Commissioner, Karur City Municipal corporation, Azad Road, Karur, Tamil Nadu 639 001
Engineer's name and address	1.1.2.4 & 1.3	Executive Engineer, Karur City Municipal Corporation
Bank's name	1.1.2.11	KfW Development Bank ("KfW")
Borrower's name	1.1.2.12	State of Tamil Nadu through Government of India
Time for Completion of the Works	1.1.3.3	36 months for construction followed by Trial Run and commissioning for 6 months and 60 months of Operation & Maintenance
Defects Notification Period	1.1.3.7	2 years.
Contractor's name and address	1.3	_____
Governing Law	1.4	Applicable laws in India
Ruling language	1.4	English
Language for communications	1.4	English
Time for the Parties entering into a Contract Agreement	1.6	Within 28 days after issuance of LoA
Care and Supply of Documents No. of copies of Contractor's Documents	1.8	One (1) soft (digital) copy(ies) and One (1) hard (paper) copy(ies)
Time for Access to the Site	2.1	07 Days after Commencement Date
Engineer's Duties and Authority	3.1 (B)(ii)	Variations resulting in an increase of the Accepted Contract Amount in excess of 10% shall require approval of the Employer. However, the contractor should intimate the employer in writing if the quantities mentioned in the BOQ exceeds and approval to be obtained from the employer before executing any additional quantities.
Performance Security	4.2	The Performance Security will be in the form of an unconditional bank guarantee in the amount(s) of 5% of the Contract Price ("Performance Bond").
Progress reports	4.21	Frequency of progress reports: Monthly
Normal working hours	6.5	8 working hours

Section IX. Particular Conditions (PC)

Conditions		Sub-Clause	Data											
Time for Completion		8.2	Construction period of 36 months followed by Trial Run and commissioning for 6 months and commissioning including 60 months (5years) operation and maintenance period. Following milestones shall be monitored by employer to review the progress. At the end of every milestone period in months, Contractor is expected to complete minimum quantity of work as mentioned against each works to the satisfaction of Engineer.											
Sl. No	Activities	Works Completion												
		3	9	15	21	27	36	42	54	66	78	90	102	
1	Completion of works as per BOQ including commissioning													
	Design Review (%)	100												
a	Providing collection system (depth up to 3.5m) in km		14	14	19	19	28.34							
b	Providing collection system (depth above 3.5m) in km		2	2	2	2	3.2							
c	Construction of Lift stations (Civil works) in %		10	20	20	20	30							
d	Construction of Pumping Stations (Civil works) in %		10	20	20	20	30							
e	Supply & erection of mechanical/electrical/instrumentation works in %		10	20	20	20	30							
f	Providing Pumping mains in km		1.5	2.5	2.5	2.5	4.05							
g	Testing and commissioning (%)							100						
2	Operation and Maintenance													
Note: construction of pumping stations and construction of lift stations are provided in %														
Delay damages for the Works		8.7 & 14.15(b)	0.05 % of the Contract Price per day											
Maximum amount of delay damages		8.7	10 % of the final Contract Price.											

Section IX. Particular Conditions (PC)

Conditions	Sub-Clause	Data
Total advance payment	14.2	1. The Employer shall make advance payment to the Contractor subject to a maximum of 10% of the contract value, against provision by the Contractor of an irrevocable Bank Guarantee in a form and by a bank acceptable to the Employer in amounts and currencies equal to the advance payment. The guarantee shall remain effective until the advance payment has been repaid, but the amount of the guarantee shall be progressively reduced by the amounts repaid by the Contractor. On submission of irrevocable Bank Guarantee (to be drawn within 20% of the contract period from the commencement date of the Project). Interest will be charged on the advance payment at 10% rate of interest. The advance payment shall be governed by Tamil Nadu Transparency in Tenders Act 1998 and Rules 2000. The bank guarantee shall be in the name of Joint Venture. 2. The Contractor is to use the advance payment only to pay for Equipment, Plant and Mobilization expenses required specifically for execution of the Works. The Contractor shall demonstrate that advance payment has been used in this way by supplying copies of invoices or other documents to the Engineer. 3. The advance payment shall be repaid by deducting proportionate amounts from payments otherwise due to the Contractor, following the schedule of completed percentages of the Works on a payment basis. No account shall be taken of the advance payment or its repayment in assessing valuations of work done, Variations, Compensation Events, or Liquidated Damages. 4. The mobilization advance shall be repaid with an interest of 10% per annum for the outstanding amount with percentage deductions from the interim payments certified by the Engineer under the Contract. Deductions shall commence in the next Interim Payment Certificate following that in which the total of all such payments to the Contractor has reached not less than 15 percent of the Contract Price or 1 months from the date of payment of first instalment of advance, whichever period concludes earlier, and shall be made at the rate of 20 percent of the amounts of all Interim Payment Certificates until such time as the loan has been repaid, always provided that the loan shall be completely repaid prior to the expiry of the original time for completion
Application for Interim Payment Certificates Copies of Statement	14.3	One (1) soft (digital) copy(ies) and One (1) hard (paper) copy(ies)
Percentage of Retention	14.3(c)	5 % in running bills
Limit of Retention Money	14.3(c)	5 % of the Accepted Contract Amount
Minimum Amount of Interim Payment Certificates	14.6	5% of the Contract Amount

Section IX. Particular Conditions (PC)

Conditions	Sub-Clause	Data
Time for Payment of Interim Payment Certificates	14.7	56 days
Contractor's Bank Account	14.7	_____ [insert bank account details at the time of contract signing]
Publishing source of commercial interest rates for financial charges in case of delayed payment	14.8	<u>Reserve bank of India index, Indian Rupees</u> This clause is not required
Statement at Completion No. of Copies	14.10	One (1) soft (digital) copy(ies) and One (1) hard (paper) copy(ies)
Application for Final Payment Certificate No. of Copies	14.11	One (1) soft (digital) copy(ies) and One (1) hard (paper) copy(ies)
Periods for submission of insurance: a. evidence of insurance b. relevant policies	18.1	28 days from the date of award of contract 28 days from the date of award of contract
Maximum amount of deductibles for insurance of the Employer's risks	18.2(d)	₹ 10 Lakhs
Minimum amount of third party insurance per occurrence	18.3	₹ 100 Lakhs
Date by which the DB shall be appointed	20.2	28 days after the Commencement date
The DB shall be comprised of	20.2	Three Members, to be appointed from Institute of Engineers
List of potential DB sole members	20.2	NA

Section IX. Particular Conditions (PC)

Conditions	Sub-Clause	Data
Appointment (if not agreed) to be made by	20.3	Jointly by Employer and the Contractor
Arbitration institution	20.6(a)	Institute of Engineer
Arbitration rules	20.6(a)	Laws of India
Place of arbitration	20.6	Karur, Tamil Nadu, India

Part B - Specific Provisions

Conditions	Sub-Clause	Specific Provisions
Contract	1.1.1	<i>Add under 1.1.1.1 "Contract" the sentence: "The Contract requires the non-objection by the Bank for becoming eligible for any disbursement under the Bank's loan."</i>
Defects Notification Period	1.1.3.7	Add, at the end of the Sub-Clause "or taken over under Sub-Clause 10.2 [Taking Over of Parts of the Works]"
Exceptionally Adverse Climatic Conditions	1.1.6.11	<i>Additional Sub-Clause</i> "Exceptionally Adverse Climatic Conditions" means: Daily rainfall which occurs statistically once in every 10 years.
Communications	1.3	<i>Add the following at the end of item (a), after "Contract Data" and before ":",</i> "In case of electronic transmission, these communications shall be in the form of an un-editable record attached to an electronic mail, such as a PDF document for instance, and any other communication transmitted in a different manner, such as the email body text, shall not be construed as communication under the Contract".
Inspections and Audit by KfW	1.15	<i>This Sub-Clause is deleted in its entirety and replaced by:</i> "The Contractor shall permit, and shall cause its agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers and any personnel thereof, to permit, KfW and/or persons appointed by the KfW to inspect the Site and all accounts and records relating to the performance of the Contract and the submission of the Bid, and to have such accounts and records audited by auditors appointed by KfW if requested by KfW. The Contractor's attention is drawn to Sub-Clause 15.6 [Corrupt or Fraudulent Practices] which provides, inter alia, that acts intended to materially impede the exercise of KfW's inspection and audit rights provided for under Sub-Clause 1.15 constitute a prohibited practice subject to contract termination."
The Employer's Claims	2.5	<i>In the first line of the second paragraph delete the words: "28 days" and replace with the words "42 days".</i>
Replacement of the Engineer	3.4	Not applicable

Section IX. Particular Conditions (PC)

Conditions	Sub-Clause	Specific Provisions
Contractor's General Obligations	4.1	<i>Insert the following at the end of the 2nd paragraph:</i> "Goods and services from countries under embargo from Germany the European Union or the United Nations are not eligible and shall not be used by the Contractor."
Performance Security	4.2	<i>Delete last sentence of second paragraph and replace by the sentence:</i> "The Performance Security shall be issued by a reputable nationalised bank and shall be in the form annexed to the Particular Conditions."
Subcontractors	4.4	Add the following at the end of the Sub-Clause: "Unless explicitly agreed to by the Engineer, the ESHS Specifications apply to all Subcontractors and Suppliers used for the execution of the Works. The Contractor is fully liable for all actions, non-compliance and negligence by Subcontractors and Suppliers their representatives, employees and workers, to the same degree as it would be held liable for its own actions, non-compliance or negligence or that of its own representatives, employees or workers."
Safety Procedures	4.8	<i>Add the following at the end of the Sub-Clause:</i> f) The Contractor shall ensure compliance with the ESHS Specifications.
Protection of the Environment	4.18	<i>Add the following after the last paragraph:</i> "These provisions are complemented by those listed under the ESHS Specifications which the Contractor must ensure compliance with."
Progress reports	4.21	<i>Add the following new item at the end of the Sub-Clause:</i> "(i) matters requested under the ESHS Specifications."
Facilities for Staff and Labour	6.6	<i>The last paragraph is deleted in its entirety and replaced by the following:</i> "The Contractor shall not permit any of the Contractor's Personnel to maintain any temporary or permanent living quarters within the Site, except with the prior and express Engineer's consent after consultation with the Employer. The Employer and/or the Engineer may inspect the living quarters from time to time in order to verify their compliance with the Laws and the Contract. The Contractor shall accordingly grant the Employer and/or the Engineer full access to the living quarters as and when they require."

Section IX. Particular Conditions (PC)

Conditions	Sub-Clause	Specific Provisions
Health and Safety	6.7	<i>Add the following at the end of the Sub-Clause:</i> “These provisions are complemented by those listed under the ESHS Specifications which the Contractor must ensure compliance with.”
Commencement of Works	8.1	<i>Add the following at the end of the Sub-Clause:</i> “As defined in the ESHS Specifications, no physical work may commence on any Project Area until such time the Contractor has prepared and submitted to the Engineer the PA-ESMP and the Engineer has approved this.”
Suspension of Work	8.8	<i>Add the following after the last sentence of the Sub-Clause:</i> “As an example, and without limitation to other possible causes, any suspension of work caused by any failure from the Contractor to comply with the obligations stated : (a) Under the ESHS Specifications (if any), in the event of a level 3 non-compliance; (b) Under Sub-Clause 4.8 as to safety procedures; (c) Under Sub-Clause 4.9 as to the quality assurance; (d) Under Sub-Clause 4.18 as to the protection of the environment; or (e) Under Sub-Clause 6.7 as to health and safety; shall be considered as cause of suspension which is the responsibility of the Contractor”.
Advance Payment	14.2	<i>Delete last sentence of third paragraph and replace by the sentence:</i> "This guarantee shall be issued by a reputable Indian Nationalised bank and requiring the Bank's nonobjection, and shall be in the form annexed to the Particular Conditions." <i>At the end of the third paragraph add the sentence</i> "Guarantees are to be made payable to the Employer's account at the Bank as listed in the annexed form."
Application for Interim Payment Certificates	14.3	<i>In the 1st sentence of the 1st paragraph, replace “six copies” by “in the number of copies specified in the Contract Data”</i>

Section IX. Particular Conditions (PC)

Conditions	Sub-Clause	Specific Provisions
Issue of Interim Payment Certificates	14.6 (c)	<i>After paragraph (b) add paragraph (c) as follows:</i> In the event of an unresolved level 3 non-compliance specified in the ESHS Specifications, the Engineer shall reduce the value of the Interim Payment Certificates as follows: (i) If Level 3 Non-conformity not resolved after the first occurrence: 33,3% for the first Interim Payment Certificate (ii) If Level 3 Non-conformity still not resolved: 66,6% for the second Interim Payment Certificate (iii) If Level 3 Non-conformity still not resolved: 100% for the third Interim Payment Certificate If the Level 3 Non-conformity is still not resolved after the last Interim Payment Certificate in (iii) above then payments will be suspended indefinitely until such time as the Level 3 Non-conformity has been resolved. Following the resolution of the Level 3 Non-Conformity the reduction(s) will be included in the next Interim Payment Certificate for payment. No interest will be paid on any reductions or suspended payment amounts.
Time for Payment of Interim Payment Certificates	14.7	<i>In (b) after "56 days" insert:</i> <i>"or such time as may be stated in the Contract Data"</i>
Contractor's Bank Account	14.7	<i>In the last sentence after "Contractor" insert:</i> <i>"and as stated in the Contract Data"</i>
Delayed Payment Interest – local currency	14.8	<i>In the second paragraph after "Conditions," add:</i> <i>"for local currency payments only"</i>
Payment of Retention Money	14.9	<i>In the fifth paragraph, delete first sentence and replace by the sentence "Unless otherwise stated in the Particular Conditions, when the Taking-Over Certificate has been issued for the Works, and the first half of the Retention Money has been certified for payment by the Engineer, the Contractor may substitute a guarantee issued by a reputable bank or financial institution selected by the Contractor and requiring the Bank's non-objection, for the second half of the Retention Money. The guarantee for the release of the Retention Money has to be acceptable in form and substance to the Bank."</i>

Section IX. Particular Conditions (PC)

Conditions	Sub-Clause	Specific Provisions
Statement at Completion	14.10	<i>In the 1st paragraph, replace “six copies” by “the number of copies stated in the Contract Data”</i>
Application for Final Payment Certificate	14.11	<i>In the 1st paragraph, replace “six copies” by “the number of copies stated in the Contract Data”</i>
Currencies of Payment	14.15	<i>In the first sentence replace “Schedule of Payment Currencies” by “Summary of Payment Currencies of the Contract”</i>
Corrupt or Fraudulent Practices	15.6	<i>Add the following at the end of the Sub-Clause:</i> “In addition to the provisions of this Sub-Clause, the Contractor is also bound by the provisions found under Appendix 1 to the Particular Conditions of Contract, named “Corrupt and Fraudulent Practices Policy – Social and Environmental Responsibility”.”

Appendix 1 to Particular Conditions of Contract
KfW Policy – Sanctionable Practice – Social and Environmental Responsibility

1. Sanctionable Practice

The PEA and the Contractors (including all members of a Joint Venture and proposed or engaged Subcontractors) must observe the highest standard of ethics during the Tender Process and performance of the Contract.

By signing the Declaration of Undertaking the Contractors declare that (i) they did not and will not engage in any Sanctionable Practice likely to influence the Tender Process and the corresponding Award of Contract to the PEA's detriment, and that (ii) in case of being awarded a Contract they will not engage in any Sanctionable Practice.

Moreover, KfW requires to include in the Contracts a provision pursuant to which Contractors must permit KfW and in case of financing by the European Union also to European institutions having competence under European law to inspect the respective accounts, records and documents relating to the Tender Process and the performance of the Contract , and to have them audited by auditors appointed by KfW.

KfW reserves the right to take any action it deems appropriate to check that these ethics rules are observed and reserves, in particular, the rights to:

- (a) reject an Offer for Award of Contract if during the Tender Process the Bidder who is recommended for the Award of Contract has engaged in Sanctionable Practice, directly or by means of an agent in view of being awarded the Contract;
- (b) declare misprocurement and exercise its rights on the ground of the Funding Agreement with the PEA relating to suspension of disbursements, early repayment and termination if, at any time, the PEA, Contractors or their legal representatives or Subcontractors have engaged in Sanctionable Practice during the Tender Process or performance of the Contract without the PEA having taken appropriate action in due time satisfactory to KfW to remedy the situation, including by failing to inform KfW at the time they knew of such practices.

KfW defines, for the purposes of this provision, the terms set forth below as follows:

Coercive Practice	The impairing or harming, or threatening to impair or harm, directly or indirectly, any person or the property of the person with a view to influencing improperly the actions of a person.
Collusive Practice	An arrangement between two or more persons designed to achieve an improper purpose, including influencing improperly the actions of another person.
Corrupt Practice	The promising, offering, giving, making, insisting on, receiving, accepting or soliciting, directly or indirectly, of any illegal payment or undue advantage of any nature, to or by any person, with the intention of influencing the actions of any person or causing any person to refrain from any action.
Fraudulent Practice	Any action or omission, including misrepresentation that knowingly or recklessly misleads, or attempts to mislead, a person to obtain a financial benefit or to avoid an obligation.
Obstructive Practice	Means (i) deliberately destroying, falsifying, altering or concealing evidence material to the investigation or the making of false

statements to investigators, in order to materially impede an official investigation into allegations of a Corrupt Practice, Fraudulent Practice, Coercive Practice or Collusive Practice, or threatening, harassing or intimidating any Person to prevent them from disclosing their knowledge of matters relevant to the investigation or from pursuing the investigation, or (ii) any act intended to materially impede the exercise of KfW's access to contractually required information in connection with an official investigation into allegations of a Corrupt Practice, Fraudulent Practice, Coercive Practice or Collusive Practice.

Sanctionable Practice Any Coercive Practice, Collusive Practice, Corrupt Practice, Fraudulent Practice or Obstructive Practice (as such terms are defined herein) which is unlawful under the Financing Agreement.

2. Social and Environmental Responsibility

Projects financed in whole or partly in the framework of Financial Cooperation have to ensure compliance with international Environmental, Social, Health and Safety (ESHS) standards (including issues of sexual exploitation and abuse and gender based violence) Contractors in KfW-financed projects shall consequently undertake in the respective Contracts to:

- (a) comply with and ensure that all their Subcontractors and major suppliers, i.e. for major supply items comply with international environmental and labour standards, consistent with applicable law and regulations in the country of implementation of the respective Contract and the fundamental conventions of the International Labour Organisation¹⁸ (ILO) and international environmental treaties and;
- (b) implement any environmental and social risks mitigation measures, as identified in the environmental and social impact assessment (ESIA) and further detailed in the environmental and social management plan (ESMP) as far as these measures are relevant to the Contract and implement measures for the prevention of sexual exploitation and abuse and gender-based violence.

¹⁸ In case ILO conventions have not been fully ratified or implemented in the Employer's country the Applicant/Bidder/Contractor shall, to the satisfaction of the Employer and KfW, propose and implement appropriate measures in the spirit of the said ILO conventions with respect to a) workers grievances on working conditions and terms of employment, b) child labour, c) forced labour, d) worker's organisations and e) non-discrimination.

Section X. Contract Forms

Section X. Contract Forms

Table of Forms

Notification of Award	307
Contract Agreement.....	308
Performance Security	310
Advance Payment Security.....	311
Retention Money Security.....	313

Section X. Contract Forms

Notification of Award

Letter of Acceptance

[Letterhead paper of the Employer]

[Date]

To: *[name and address of the Contractor]*

This is to notify you that your Bid dated *[date]* for execution of the *[name of the Contract and identification number, as given in the Contract Data]* for the Contract Price *[amount in numbers and words] [name of currency]*, as corrected and modified in accordance with the Instructions to Bidders, is hereby accepted by our institution.

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

Authorized Signature: _____

Name and Title of Signatory: _____

Name of institution: _____

Attachment: Contract Agreement

Section X. Contract Forms

Contract Agreement

THIS AGREEMENT made the _____ day of _____, _____, between _____ of _____ (hereinafter "the Employer"), of the one part, and _____ of _____ (hereinafter "the Contractor"), of the other part:

WHEREAS the Employer desires that the Works known as _____ should be executed by the Contractor, and has accepted a Bid by the Contractor for the execution and completion of these Works and the remedying of any defects therein, in the sum of [*insert Contract Price or Ceiling in words and figures, expressed in the Contract currency(ies)*] (hereafter called "the Contract Price").

The Employer and the Contractor agree as follows:

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

- (i) The Letter of Acceptance;
- (ii) The Letter of Bid and Appendix to Bid (including the signed Declaration of Undertaking);
- (iii) The addenda Nos _____ (if any);
- (iv) The Particular Conditions including Appendix 1;
- (v) The General Conditions;
- (vi) The Specifications;
- (vii) The Drawings;
- (viii) The completed Schedules; and
- (ix) The Contractor's Bid and any other documents forming part of the contract.

3. In consideration of the payments to be made by the Employer to the Contractor as specified in this Agreement, the Contractor hereby covenants with the Employer to execute the Works and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of _____ on the day, month and year specified above.

Signed by _____ (for the Employer)

Signed by _____ (for the Contractor)

Section X. Contract Forms

Performance Security

Beneficiary: *[Insert name and Address of Purchaser]*

Date: *[Insert date of issue]*

PERFORMANCE GUARANTEE No.: *[Insert guarantee reference number]*

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that *[Insert name and address of contractor, which in the case of a joint venture shall be the name and address of the joint venture]* (hereinafter called “the Applicant”) has entered into Contract No. *[Insert reference number of the contract]* dated *[Insert contract date]* with the Beneficiary, for the execution of *[Insert object of the contract and brief description of Works]* (hereinafter called “the Contract”). Furthermore we understand that, according to the conditions of the Contract, a performance guarantee is required for *[Insert percentage in words and figures]* % of the contract price.

Waiving all objections and defences, we, as Guarantor, hereby irrevocably and independently undertake to pay the Beneficiary, any sum or sums not exceeding in total an amount of *[Insert guarantee amount and currency in words and figures]*¹⁹ upon receipt by us of the Beneficiary’s first demand, supported by the Beneficiary’s statement, whether in the demand itself or a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract, without the Beneficiary needing to prove or to show grounds for the demand or the sum specified therein.

In the event of any claim under this guarantee, payment shall be effected to *[Insert the account on which payments are to be made]*, for the account of *[Insert name of the Purchaser and the Purchaser’s country]*.

This guarantee shall expire not later than *[Insert expiry date]*²⁰.

By this date we must have received any claims for payment by letter or encoded telecommunication.

It is understood that you will return this guarantee to us on expiry or after payment of the total amount to be claimed hereunder.

[As preferred option regarding guarantee rules insert²¹: This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.]

Place, date

Guarantor’s authorized signature(s)

¹⁹ This guarantee shall be issued in the contract currency only.

²⁰ The guarantee shall be valid for at least 28 days from the date of contractual contract completion (including warranty obligations).

²¹ In the case the issuing bank will not add the preferred option, the following must be added instead: This guarantee is governed by the laws of *[Insert country of jurisdiction]*. Note: the country of jurisdiction shall be the country where the bank’s branch issuing the guarantee is physically located.

Advance Payment Security

Beneficiary: *[Insert name and Address of Purchaser]*

Date: *[Insert date of issue]*

ADVANCE PAYMENT GUARANTEE No.: *[Insert guarantee reference number]*

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that *[Insert name and address of contractor, which in the case of a joint venture shall be the name and address of the joint venture]* (hereinafter called "the Applicant") has entered into Contract No. *[Insert reference number of the contract]* dated *[Insert contract date]* with the Beneficiary, for the execution of *[Insert object of the contract and brief description of Works]* (hereinafter called "the Contract"). Furthermore we understand that, according to the conditions of the Contract, an advance payment in the sum of *[Insert amount and currency in words and figures]*²², representing *[Insert percentage in words and figures]* % of the contract price, is to be made against an advance payment guarantee.

Waiving all objections and defences, we, as Guarantor, hereby irrevocably and independently undertake to pay the Beneficiary, any sum or sums not exceeding in total an amount of *[Insert guarantee amount and currency in words and figures]* upon receipt by us of the Beneficiary's first demand, supported by the Beneficiary's statement, whether in the demand itself or a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract, without the Beneficiary needing to prove or to show grounds for the demand or the sum specified therein.

The advance payment guarantee shall come into force and effect as soon as the advance payment has been credited to the Applicant on its account. Minor deductions of the above mentioned amount notably due to bank fees shall have no effect on the entry into force.

In the event of any claim under this guarantee, payment shall be effected to *[Insert the account on which payments are to be made]*, for the account of *[Insert name of the Purchaser and the Purchaser's country]*.

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Applicant as specified in copies of interim statements or payment certificates which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of a copy of the interim payment certificate indicating that ninety (90) per cent of the Accepted Contract Amount, less provisional sums, has been certified for payment, or on the *[Insert date]*, whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date, by letter or encoded telecommunication.

It is understood that you will return this guarantee to us on expiry or after payment of the total amount to be claimed hereunder.

[As preferred option regarding guarantee rules insert²³: This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.]

²² This guarantee must be issued in the contract currency only.

²³ In the case the issuing bank will not add the preferred option, the following must be added instead:

This guarantee is governed by the laws of *[Insert country of jurisdiction]*. Note: the country of jurisdiction shall be the country where the bank's branch issuing the guarantee is physically located.

Section X. Contract Forms

Place, date

Guarantor's authorized signature(s)

Retention Money Security

Beneficiary: *[Insert name and Address of Purchaser]*

Date: *[Insert date of issue]*

RETENTION MONEY GUARANTEE No.: *[Insert guarantee reference number]*

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that *[Insert name and address of contractor, which in the case of a joint venture shall be the name and address of the joint venture]* (hereinafter called “the Applicant”) has entered into Contract No. *[Insert reference number of the contract]* dated *[Insert contract date]* with the Beneficiary, for the execution of *[Insert object of the contract and brief description of Works]* (hereinafter called “the Contract”).

Furthermore we understand that, according to the conditions of the Contract, the Beneficiary retains moneys up to the limit set forth in the Contract (“the Retention Money”), and that when the Taking-Over Certificate has been issued under the Contract and the first half of the Retention Money has been certified for payment, payment of *[insert the second half of the Retention Money or if the amount guaranteed under the Performance Guarantee when the Taking-Over Certificate is issued is less than half of the Retention Money, the difference between half of the Retention Money and the amount guaranteed under the Performance Security]* is to be made against a Retention Money guarantee.

Waiving all objections and defences, we, as Guarantor, hereby irrevocably and independently undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of *[insert guarantee amount and currency in words and figures]*²⁴ upon receipt by us of the Beneficiary’s first demand supported by the Beneficiary’s statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract, without the Beneficiary needing to prove or show grounds for the demand or the sum specified therein.

The retention money guarantee shall come into force and effect as soon as the second half of the Retention Money has been credited to the Applicant on its account. Minor deductions of the above mentioned amount notably due to bank fees shall have no effect on the entry into force.

In the event of any claim under this guarantee, payment shall be effected to *[Insert the account on which payments are to be made]*, for the account of *[Insert name of the Purchaser and the Purchaser’s country]*.

This guarantee shall expire not later than *[Insert expiry date]*²⁵.

²⁴The Guarantor shall insert an amount representing the amount of the second half of the Retention Money or if the amount guaranteed under the Performance Guarantee when the Taking-Over Certificate is issued is less than half of the Retention Money, the difference between half of the Retention Money and the amount guaranteed under the Performance Security and denominated in the contract currency(ies) only.

²⁵Insert the same expiry date as set forth in the performance security, representing the date twenty-eight days after the completion date described in the Appendix to Bid. The Employer should note that in the event of an extension of this date for completion of the Contract, the Employer would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Employer might consider adding the following text to the form, at the end of the penultimate paragraph: “The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Beneficiary’s written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee.”

Section X. Contract Forms

By this date we must have received any claims for payment by letter or encoded telecommunication.

It is understood that you will return this guarantee to us on expiry or after payment of the total amount to be claimed hereunder.

[As preferred option regarding guarantee rules insert²⁶: This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.]

Place, date

Guarantor's authorized signature(s)

²⁶In the case the issuing bank will not add the preferred option, the following must be added instead:
This guarantee is governed by the laws of *[Insert country of jurisdiction]*. Note: the country of jurisdiction shall be the country where the bank's branch issuing the guarantee is physically located.

Form of Surety Bond [Bid Security]

S.Bo. No. Dated:

.....

1. In consideration of you,[*Name of the Executing Agency*], having its office at....., (hereinafter referred to as the “Owner”, which expression shall unless it be repugnant to the subject or context thereof include its, successors and assigns) having agreed to receive the Bid of[*Name of the Bidder, including names of all Joint Venture Participants/ Lead Partner*] and having its registered office at (hereinafter referred to as the “Bidder” which expression shall unless it be repugnant to the subject or context thereof include its/their executors, administrators, successors and assigns), for the Project (hereinafter referred to as “the Project”) pursuant to the tender document dated issued in respect of the Project and other related documents including without limitation the draft contract agreement (hereinafter collectively referred to as “Bidding Documents”), we [*Name of the Surety Insurer*] having our registered office at and one of its branches at (hereinafter referred to as the “Surety Insurer”), at the request of the Bidder, do hereby in terms of Clause 3.4 of the Bidding Documents, irrevocably, unconditionally and without reservation guarantee the due and faithful fulfilment and compliance of the terms and conditions of the Bidding Documents (including the RFP document) by the said Bidder and unconditionally and irrevocably undertake to pay forthwith to the Owner and amount of Rs. (Rupees only) (hereinafter referred to as the “Surety Bond”) as our primary obligation without any demur, reservation, recourse, contest or protest and without reference to the Bidder, if the Bidder shall fail to fulfil or comply with all or any of the terms and conditions contained in the said Bidding Documents.
2. Any such written demand made by the Owner stating that the Bidder is in default of the due and faithful fulfilment and compliance with the terms and conditions contained in the Bidding Documents shall be final, conclusive and binding on the Surety Insurer.
3. We, the Surety Insurer, do hereby unconditionally undertake to pay the amounts due and payable under this Surety Bond without any demur, reservation, recourse, contest or protest and without any reference to the Bidder or any other person and irrespective of whether the claim of the Owner is disputed by the Bidder or not, merely on the first demand from the Owner stating that the amount claimed is due to the Owner by reason of failure of the Bidder to fulfil and comply with the terms and conditions contained in the Bidding Documents including the following:
 - a. failure of the said Bidder to keep its Bid open during the Bid validity period as set forth in the said Bidding Documents for any reason whatsoever.
 - b. if the said Bidder, having been notified of the acceptance on its Bid by the Owner during the period of Bid Validity;
 - i. fails to sign the Form of Contract in accordance with and when required by ITB; or

Section X. Contract Forms

- ii. fails to provide the performance security to the Owner in accordance with and when required by ITB

Any such demand made on the Bank shall be conclusive as regards amount due and payable by the Surety Insurer under this Surety Bond. However, our liability under this Surety Bond shall be restricted to an amount not exceeding Rs..... (Rupees..... only).

- 4. This Surety Bond shall be irrevocable and remain in full force for a period of 45 (forty-five) days beyond the Bid Validity Period and a claim period of 60 (sixty) days or for such extended period as may be mutually agreed between the Owner and the Bidder, and agreed to by the Surety Insurer, and shall continue to be enforceable till all amount under this Surety Bond have been paid.
- 5. We, the Surety Insurer, further agree that the Owner shall be the sole judge to decide as to whether the Bidder is in default of due and faithful fulfilment and compliance with the terms and conditions contained in the Bidding Documents including, inter alia, the failure of the Bidder to keep its Bid open during the Bid validity period set forth in the said Bidding Documents, and the decision of the Owner that the Bidder is in default as aforesaid shall be final and binding on us, notwithstanding any differences between the Owner and the Bidder or any dispute pending before any Court, Tribunal, Arbitrator or any other Owner.
- 6. The Surety Bond shall not be affected by any change in the constitution or winding up of the Bidder or the Surety Insurer or any absorption, merger or amalgamation or the Bidder or the Surety Insurer with any other person.
- 7. In order to give full effect to this Surety Bond, the Owner shall be entitled to treat the Surety Insurer as the principal debtor. The Owner shall have the fullest liberty without affecting in any way the liability of the Surety Insurer under this Surety Bond from time to time to vary any of the terms and conditions contained in the said Bidding Documents or to extend time for submission of the Bids or the Bid Validity period or the period for conveying acceptance of Letter of Award by the Bidder or the period for fulfillment and compliance with all or any of the terms and conditions contained in the said Bidding Documents by the said Bidder or to postpone for any time and from time to time any of the powers exercisable by it against the said Bidder and either to enforce or forbear from enforcing any of the terms and conditions contained in the said Bidding Documents or the securities available to the Owner, and the Surety Insurer shall not be released from its liability under these presents by any exercise by the Owner of the liberty with reference to the matters aforesaid or by reason of time being given to the said Bidder or any other forbearance, act or omission on the part of the Owner or any indulgence by the Owner to the said Bidder or by any change in the constitution of the Owner or its absorption, merger or amalgamation with any other person or any other matter or thing whatsoever which under the law relating to sureties would but for this provision have the effect of releasing the Surety Insurer from its such liability.
- 8. Any notice by way of request, demand or otherwise hereunder shall be sufficiently given in writing or made if addressed to the Surety Insurer and sent by courier or by registered post or by certified e-mail to the Surety Insurer at the address or e-mail set forth herein.

Section X. Contract Forms

9. We undertake to make the payment on receipt of your notice of claim on us addressed to name of Surety Insurer along with branch address and delivered at our above branch who shall be deemed to have been duly authorized to receive the said notice of claim.
10. It shall not be necessary for the Owner to proceed against the said Bidder before proceeding against the Surety Insurer and the Surety Bond herein contained shall be enforceable against the Surety Insurer, notwithstanding any other security which the Owner may have obtained from the said Bidder or any other person and which shall, at the time when proceedings are taken against the Surety Insurer hereunder, be outstanding or unrealised.
11. We, the Surety Insurer, further undertake not to revoke this Surety Bond during its currency except with the previous express consent of the Owner in writing.
12. The Surety Insurer declares that it has power to issue this Surety Bond and discharge the obligations contemplated herein, the undersigned is duly authorized and has full power to execute this Surety Bond for and on behalf of the Surety Insurer.
13. For the avoidance of doubt, the Surety Insurer's liability under this Surety Bond shall be restricted to Rs..... (Rupees..... only). The Surety Insurer shall be liable to pay the said amount or any part thereof only if the Owner serves a written claim on the Surety Insurer in accordance with paragraph 9 hereof, on or before..... *[indicate date falling 45 days beyond the bid validity period]*.
14. This Surety Bond shall also be operatable at our, branch at, from whom, confirmation regarding the issue of this Surety Bond or extension/renewal thereof shall be made available on demand. In the contingency of this Surety Bond being invoked and payment hereunder claimed, the said branch shall accept such invocation letter and make payment of amounts so demanded under the said invocation.
15. The Insurance Surety Bond shall be verified from the specific portal created for this purpose (portal address).

Signed Delivered by Company

By the hand of Mr./Ms....., its and authorised official.

(Signature of the Authorised Signatory) (Official
Seal)

Notes:

- (i) *The Insurance Surety Bond should contain the name, designation and code number of the Authorised Signatory signing the Insurance Surety Bond.*
- (ii) *The Address, telephone number, email ID and other details of the head office of the Insurance Company as well as issuing branch should be mentioned on the covering letter of issuing branch.*

Section X. Contract Forms

Form of Surety Bond

[Performance Security/ Additional Performance Security]

S.B.No.

Dated:

To,

_____ Name of the Owner

_____ Address of Owner

WHEREAS _____ *[Name and address of contractor]* (hereinafter called the "Operator/Contractor") has undertaken, in pursuance of Letter of Award (LoA) No..... dated for construction of *[Name of the Project]* (hereinafter called the "Contract").

AND WHEREAS the Contract requires the Contractor to furnish an *[Performance Security/Additional Performance Security]* for due and faithful performance of its obligations, under and in accordance with the Contract, during the *[Construction Period/Operation and Maintenance Period]* in a sum of Rs..... (Rupees.....) (the "Surety Bond Amount").

AND WHEREAS, we, through our branch at (the "Surety Insurer"), have agreed to furnish this Surety Bond by way of Performance Security.

NOW, THEREFORE, the Surety Insurer hereby, unconditionally and irrevocably, guarantees and affirms as follows:

1. The Surety Insurer hereby unconditionally and irrevocably guarantees the due and faithful performance of the Contractor's obligations during the *[Construction Period/Operation and Maintenance Period]* under and in accordance with the Contract, and agrees and undertakes to pay the Owner, upon its mere first written demand, and without any demur, reservation, recourse, contest or protest, and without any reference to the Contractor, such sum or sums up to an aggregate sum of the Surety Bond Amount as the Owner shall claim without the Owner being required to prove or to show grounds or reasons for its demand and/or for the sum specified therein.
2. A letter from the Owner, under the hand of an officer not below the rank of [.....], that the Contractor has committed default in the due and faithful performance of all or any of its obligations under and in accordance with the Contract shall be conclusive, final and binding on the Surety Insurer. The Surety Insurer further agrees that the Owner shall be the sole judge as to whether the Contractor is in default in due and faithful performance of its obligations during and under the Contract and its decision that the Contractor is in default shall be final and binding on the Surety Insurer, notwithstanding any differences between the Owner and the Contractor, or any dispute between them pending before any

Section X. Contract Forms

Court, Tribunal, Arbitrators or any other Owner or body, or by the discharge of the Contractor for any reason whatsoever.

3. In order to give effect to this Surety Bond, the Owner shall be entitled to act as if the Surety Insurer were the principal debtor and any change in the constitution of the Contractor and/or the Surety Insurer, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the Surety Insurer under this Surety Bond.
4. It shall not be necessary, and the Surety Insurer hereby waives any necessity, for the Owner to proceed against the Contractor before presenting to the Surety Insurer its demand under this Surety Bond.
5. The Owner shall have the liberty, without affecting in any manner the liability of the Surety Insurer under this Surety Bond, to vary at any time, the terms and conditions of the Contract or to extend the time or period for the compliance with, fulfillment and/or performance of all or any of the obligations of the Contractor contained in the Contract or to postpone for any time, and from time to time, any of the rights and powers exercisable by the Owner against the Contractor, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Contract and/or the securities available to the Owner, and the Surety Insurer shall not be released from its liability and obligation under these presents by any exercise by the Owner of the liberty with reference to the matters aforesaid or by reason of time being given to the Contractor or any other forbearance, indulgence, act or omission on the part of the Owner or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for this provision have the effect of releasing the Surety Insurer from its liability and obligation under this Surety Bond and the Surety Insurer hereby waives all of its rights under any such law.
6. This Surety Bond is in addition to and not in substitution of any other Surety Bond or security now or which may hereafter be held by the Owner in respect of or relating to the Contract or for the fulfillment, compliance and/ or performance of all or any of the obligations of the Contractor under the Contract.
7. Notwithstanding anything contained hereinbefore, the liability of the Surety Insurer under this Surety Bond is restricted to the Surety Bond Amount and this Surety Bond will remain in force for the period specified in paragraph 8 below and unless a demand or claim in writing is made by the Owner on the Surety Insurer under this Surety Bond all rights of the Owner under this Surety Bond shall be forfeited and the Surety Insurer shall be relieved from its liabilities hereunder.
8. The Surety Bond shall cease to be in force and effect on..... Unless a demand or claim under this Surety Bond is made in writing before expiry of the Surety Bond, the Surety Insurer shall be discharged from its liabilities hereunder.
9. The Surety Insurer undertakes not to revoke this Surety Bond during its currency, except with the previous express consent of the Owner in writing, and declares and warrants that it has the power to issue this Surety Bond and the undersigned has full powers to do so on behalf of the Surety Insurer.

Section X. Contract Forms

10. Any notice by way of request, demand or otherwise hereunder may be sent by post or email addressed to the Surety Insurer at its above referred branch, which shall be deemed to have been duly authorized to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been given at that time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of the Owner that the envelope was so posted shall be conclusive.
11. This Surety Bond shall come into force with immediate effect and shall remain in force and effect for up to the date specified in paragraph 8 above or until it is released earlier by the Owner pursuant to the provisions of the Contract.
12. This Surety Bond is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No.758, except that the supporting statement under Article 15(a) is hereby excluded.

Signed and sealed this day of, 20..... at

SIGNED, SEALED AND DELIVERED

For and on behalf of the bank by:

(Signature)
(Name)
(Designation)
(Code Number)
(Address)
(Email)

Notes:

- (i) *The Insurance Surety Bond should contain the name, designation and code number of the Authorised Signatory signing the Insurance Surety Bond.*
- (ii) *The Address, telephone number, email ID and other details of the head office of the Insurance Company as well as issuing branch should be mentioned on the covering letter of issuing branch.*

Form of Insurance Surety Bond [Advance Payment]

S.B. No.

Dated:

To,

_____ Name of the Owner

_____ Address of Owner

WHEREAS:

- (A)[Name and address of contractor] (hereinafter called the "Operator/Contractor") has executed an agreement (hereinafter called the "Contract") with the[name and address of the Executing Agency], (hereinafter called the "Owner") for the construction of the..... on Design, Build, Operate and Transfer (the "DBOT") basis, subject to and in accordance with the provisions of the Agreement.
- (B) In accordance with Clause 1.1 of Schedule 6 of the Contract, the Owner shall make to the Contractor an interest free advance payment (hereinafter called "Advance Payment") equal to 10% (ten percent) of the Contract for Design-Build Price; and that the Advance Payment shall be made in two equal installments subject to the Contractor furnishing an irrevocable and unconditional Insurance Surety Bond by Insurance Company for an amount equivalent to such installment to remain effective till the complete and full repayment of the installment of the Advance Payment as security for compliance with its obligations in accordance with the Contract. The amount of {first/second} installment of the Advance Payment is Rs..... (Rupees.....) and the amount of this Insurance Surety Bond is Rs..... (Rupees.....) (the "Guarantee Amount").
- (C) We,, through our branch at..... (the "Insurance Company"), have agreed to furnish this Insurance Surety Bond (hereinafter called the "Guarantee") for the Guarantee Amount.

NOW, THEREFORE, the Insurance Company hereby, unconditionally and irrevocably guarantees and affirms as follows:

1. The Insurance Company hereby unconditionally and irrevocably guarantees the due and faithful repayment on time of the aforesaid instalment of the Advance Payment under and in accordance with the Contract, and agrees and undertakes to pay to the Owner, upon its mere first written demand, and without any demur, reservation, recourse, contest or protest, and without any reference to the Contractor, such sum or sums up to an aggregate sum of the Guarantee Amount as the Owner shall claim, without the Owner being required to prove or to show

Section X. Contract Forms

grounds or reasons for its demand and/or for the sum specified therein.

A letter from the Owner, under the hand of an officer not below the rank of [.....], that the Contractor has committed default in the due and faithful performance of all or any of its obligations for the repayment of the instalment of the Advance Payment under and in accordance with the Contract shall be conclusive, final and binding on the Insurance Company. The Insurance Company further agrees that the Owner shall be the sole judge as to whether the Contractor is in default in due and faithful performance of its obligations during and under the Contract and its decision that the Contractor is in default shall be final and binding on the Insurance Company, notwithstanding any differences between the Owner and the Contractor, or any dispute between them pending before any Court, Tribunal, Arbitrators or any other Owner or body, or by the discharge of the Contractor for any reason whatsoever.

2. In order to give effect to this Insurance Surety Bond, the Owner shall be entitled to act as if the Insurance Company were the principal debtor and any change in the constitution of the Contractor and/or the Insurance Company, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the Insurance Company under this Guarantee.
3. It shall not be necessary, and the Insurance Company hereby waives any necessity, for the Owner to proceed against the Contractor before presenting to the Insurance Company its demand under this Guarantee.
4. The Owner shall have the liberty, without affecting in any manner the liability of the Insurance Company under this Guarantee, to vary at any time, the terms and conditions of the Advance Payment or to extend the time or period of its repayment or to postpone for any time, and from time to time, any of the rights and powers exercisable by the Owner against the Contractor, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Contract and/or the securities available to the Owner, and the Insurance Company shall not be released from its liability and obligation under these presents by any exercise by the Owner of the liberty with reference to the matters aforesaid or by reason of time being given to the Contractor or any other forbearance, indulgence, act or omission on the part of the Owner or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for this provision have the effect of releasing the Insurance Surety Bond from its liability and obligation under this Guarantee and the Insurance Company hereby waives all of its rights under any such law.
5. This Insurance Surety Bond is in addition to and not in substitution of any other guarantee or security now or which may hereafter be held by the Owner in respect of or relating to the Advance Payment.
6. Notwithstanding anything contained herein before, the liability of the Insurance Company under this Guarantee is restricted to the Guarantee Amount and this Guarantee will remain in force for the period specified in paragraph 8 below and

Section X. Contract Forms

unless a demand or claim in writing is made by the Owner on the Insurance Company under this Guarantee, all rights of the Owner under this Insurance Surety Bond shall be forfeited and the Insurance Company shall be relieved from its liabilities hereunder.

7. The Insurance Surety Bond shall cease to be in force and effect on..... Unless a demand or claim under this Guarantee is made in writing on or before the aforesaid date, the Insurance Company shall be discharged from its liabilities hereunder.
8. The Insurance Company undertakes not to revoke this Guarantee during its currency, except with the previous express consent of the Owner in writing, and declares and warrants that it has the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Insurance Company.
9. Any notice by way of request, demand or otherwise hereunder may be sent by post or email addressed to the Insurance Company at its above referred branch, which shall be deemed to have been duly authorized to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been given at that time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of the Owner that the envelope was so posted shall be conclusive.
10. This Insurance Surety Bond shall come into force with immediate effect and shall remain in force and effect for up to the date specified in paragraph 7 above or until it is released earlier by the Owner pursuant to the provisions of the Contract.

Signed and sealed this day of, 20..... at

SIGNED, SEALED AND DELIVERED

For and on behalf of Insurance Company by:

(Signature)

(Name)

(Designation)

(Code Number)

(Address)

(Email)

Notes:

- (i) *The Insurance Surety Bond should contain the name, designation and code number of the officer(s) signing the Insurance Surety Bond.*
- (ii) *The Address, telephone number, email ID and other detail of the head of the Insurance Company as well as issuing branch should be mentioned on the covering letter of issuing branch.*

Section XI: Scope of Operation and Maintenance

Scope of Operation and Maintenance

1. General Scope

1 The facilities under the scope are including but not limited to below:

- a. Collection System including house service connections and Machine holes**
- b. Pumping Stations**
- c. Pumping Mains**
- d. Lift Stations**

2 During the O&M period contractor shall ensure that

- i. All new household sewer connections are functional and connected to relevant New / existing STP can accomplish efficiently its intended purpose of collection and transmission to existing STP
- ii. Contractor prepares a O&M plan and EPRP (Emergency Preparedness and Response Plan) for Collection system and adopts the same after approval by employer.
- iii. Compliance is achieved by using BIS Code 12615 -2011 Efficiency class IE 3 for energy efficiency of motors for new electromechanical components.

3 Preparation of a plan for operation and maintenance: Based on guidelines in Gol MOUD Manual on Sewerage Part B for O&M, and as per the recommendations of manufacturers whose equipment has been installed in the system, Contractor has to prepare and submit for approval a ULB specific O&M plan for all existing and new sewerage facilities including network and STP. A plan has to be prepared for O&M of every major unit to be specifically written for that particular unit. This plan has to contain procedures for routine tasks, checks and inspections at intervals viz. daily, weekly, quarterly, semi-annually or annually. Each unit must have a plan to fix responsibility, timing of action, ways and means of achieving the completion of action and contain what objectives are meant to be achieved by this action. After approval by employer contractor has to follow the O&M plan which will be also the basis for supervision and inspection and also can be used for evaluation of the status of operation and maintenance. The contractor has to Provide required skilled personnel to operate and maintain and ensure availability of spares and tools for ensuring maintenance.

4 Preventive maintenance Scheduling: Scheduling preventive maintenance activities ensures to prevent any breakdown of the system and to avoid emergency operations to deal with clogged sewer lines or over flowing machine holes or backing up of sewage into a house or structural failure of the system. Proper inspection and preventive maintenance is a necessity. The primary effort is to maintain sewers free flowing and unobstructed. The present regulations require that manual contact with sewage is prohibited. Hence appropriate sewer cleaning and Machine hole cleaning devices have to be used for maintenance. Emergency Maintenance is performed as a result of system breakdown.

5 Community awareness: Sewer Overflow Protection is a shared responsibility. Everyone can be a potential contributor to sewer problems and a potential victim of those problems. To help keep the environment clean for the health and enjoyment of

all, residents, employees, and ULB s must do their part to prevent and reduce the risk of a sewer overflow. Residents have to be motivated not to dispose any solids including food wastes into the sewers. Roof water / rain water from the residential and commercial premises shall not be connected to the sewers. The fats, oils and grease used in cooking regularly get washed down kitchen drains and build up in sewer pipes over time and create blockages. Over time, clogs and blockages may cause severe sewage backups, machine hole overflows, and damage to sewage pumping stations, potentially resulting in costly repairs and harm to local waterways and the environment. Contractor has to undertake a community awareness program among residents, hotels, hostels and Hospitals etc and to prevent misuse/abuse of sewers with the help of ULB.

6 The equipment recommended for the maintaining

- a. Silt grab bucket machine mounted in ACE
- b. Small trailer mounted sewer jetting machine 4000 ltrs
- c. Big Suction cum Jetting machine truck chassis mounted 10,000 ltrs
- d. Bandicoot -A Robotic machine that is used for cleaning any type of sewer machine holes.

- 7 Performance Standards:** Service level bench marks set to be achieved is Efficiency in redressal of customer complains - 80% The detailed Key Performance Indicators are shown in Section 14.
- 8 Safety while working in Sewers:** The following safety instructions are designed to help site managers, engineers, supervisors and workers to ensure safety while working in confined areas such as inoperation/construction of sewers including entry into sewers, machine holes, pumping stations and other sewerage structures which are either in operation or construction.
- a. Sewer hazards: Personnel engaged in O&M of sewers and sewage pumping stations (SPS) or in cleaning the construction debris from newly constructed sewers/ pumping stations are exposed to different types of hazards like physical injuries, infections caused due to pathogenic organisms or dangers inherent with explosive or noxious vapors/ gasses.
 - b. 10 Common sewer hazards: Sewer hazards in O&M of sewers and cleaning the construction debris from newly constructed or under usage sewers/ pumping stations
 - (i) Oxygen deficiency which will cause asphyxia,
 - (ii) Hydrogen sulphide which is anexplosive and poisonous gas,
 - (iii) Carbon monoxide which is explosive and deadly poison,
 - (iv) Methane which is an explosive gas and also causes asphyxia.
 - c. Precautions:
 - Place easily readable warning signs ahead of the work area subject to hazards.
 - Fence off adequate space around the machine hole for placing the equipment and deposition of debris.
 - Place barricades or signs to channelize the traffic and flagman at the two ends to control the flow of traffic.
 - d. Machine hole safety: Procedures for entering the machine holes and sewers which are under operation or construction. A team shall be formed with one person leading the operations from the surface and flagmen controlling traffic.
 - i. Use safety harness and lifeline before entering the sewer line
 - ii. Two helpers should be provided at top for each person in the sewer
 - iii. The person standing at top must send signals every few minutes interval to the person in the machine hole to ensure their safety.
 - iv. Fence off adequate space around the machine hole
 - v. Ventilate the sewer line by opening two or three machine holes at both sides of the machine hole through which workers propose to enter- machine holes should be opened at-least one hour before start of operations/ entering the machine hole.

Section XI. Scope of Operation and Maintenance

- vi. The opened machine holes should be properly fenced to prevent accidental or incidental entry especially children or animals.
 - vii. Dummy covers with BRC welded fabric can be used to cover the open machine holes.
 - viii. Check for oxygen deficiency and presence of other gasses before allowing the workers to enter the machine holes.
 - ix. Use gas masks and breathing apparatus depending on oxygen deficiency or presence of gasses. Air should contain between 19.5 and 23 percent of oxygen (by volume).
 - x. When it is necessary to use the blowers; operate the blowers for at least 30 minutes before start of operation or entry into machine hole.
- e. Pre entry checks:
- i. Test machine hole steps for safety before using
 - ii. Use portable ladders with properly seated
 - iii. No materials or tools shall be kept near the edge which can fall into the machine hole and injure the workman
 - iv. Lower all tools to the workman in a bucket
- f. Safety equipment:
- i. Gas meters for measurement of oxygen deficiency and hydrogen sulphide, carbon monoxide and methane.
 - ii. Breathing apparatus
 - iii. Gas Masks
 - iv. Safety belt with harness
 - v. Portable Lightning equipment explosion and fireproof
 - vi. Non sparking tools
- g. Personal protective equipment:
- i. Personal Protective Equipment (PPE): Wear your PPE at all times. When you enter the site, make sure you have the PPE you need. PPE is important, it's your last line of defence should you come into contact with a hazard onsite.
 - ii. High Visibility Jackets (Hi-viz)
 - iii. Safety boots give you grip and protect your feet.
 - iv. Hard hats.
 - v. Appropriate clothing and shoes respective to your job.
 - vi. Use a back brace if you're lifting heavy objects or you've got a sensitive back. A hard hat will protect you if there's a risk of falling objects, as well steel-toed boots.
 - vii. Safety Gloves
 - viii. Safety goggles
 - ix. Safety harnesses
 - x. Wear non-skid footwear
 - xi. Breathing Masks
 - xii. Seat belts as applicable
 - xiii. Safe alignment of the body: wrists and arms in neutral to avoid mild or severe symptoms of carpal tunnel syndrome

- xiv. Safety glasses
- xv. A small and handy tool belt that balance the body with small adjustments.
- xvi. Opt to sit (instead of squatting or kneeling) if working at lower levels, to avoid straining your lower body—knees, waist, and back.
- xvii. Reduce and eliminate back aches and strains by lifting properly by using the knees instead of your back; avoid twisting your body when picking, carrying, or releasing a heavy load; place one foot slightly in front of the other to promote better balance.
- xviii. Major equipment: Portable Blower and Generator set

h. Disease hazards: Workers have to follow safe work practices such as cleaning and washing their bodies including feet, arms, hands and face with disinfectant after coming out of sewers. However, there is possibility for illness from contact with viral, bacteria, or parasitic micro-organisms while working in environment of sewage. For those workers exposed to sewage, the most serious viral risk is hepatitis and the most serious bacterial risk is tetanus. Hence the site managers have to consult the local doctors and provide appropriate immunization against any diseases to the workers prior to their entry into sewers / machine holes.

i. Insurance against accidents: Site managers have to identify the team to be deployed for working in confined sewers and machine holes and provide appropriate insurance coverage to them.

j. Check list for Planning Sewer Safety in times of emergencies

- i. A safety team shall be formed and trained in the organization under the leadership of a safety manager.
- ii. Procure Personnel protection equipment and safety equipment such as Portable Blower and Generator set, Gas meters for measurement of oxygen deficiency and hydrogen sulphide, carbon monoxide and methane. Breathing apparatus Gas Masks Safety belt with harness, Portable Lightning equipment explosion and fireproof, non-sparking tools.
- iii. Decide if sewer entry is absolutely necessary
- iv. Before entering the sewer, Air in the sewer must be tested for carbon monoxide, hydrogen sulphide, and explosive gases before allowing entry to workers. Check for oxygen deficiency and presence of other gasses before allowing the workers to enter the machine holes.
- v. Use gas masks and breathing apparatus depending on oxygen deficiency or presence of gasses. Air should contain between 19.5 and 23 percent of oxygen (by volume).
- vi. When it is necessary to use the blowers; operate the blowers for at least 30 minutes before start of operation or entry into machine hole.

k. Rescue procedure while working in Sewers

- i. The rescue procedures shall be written down and informed to workers, rescue workers and supervisors at the work place.

Section XI. Scope of Operation and Maintenance

- ii. Rescue team shall be trained in bringing out the trapped workers and providing first aid to them and in use of breathing apparatus, gas masks etc and in providing first aid.
- iii. Notification of emergency and alerting for medical support
- iv. Rescue equipment contains, breathing apparatus, gas masks, first aid equipment etc as noted above.
- v. Number of ambulance service to be prominently displayed - deploy Ambulance for ferrying the rescued workers to receive medical aid.
- vi. Insurance coverage to the team: All the teams to be deployed for working in confined sewers and machine holes shall be provided appropriate insurance coverage.

2. Detailed Scope of work

- a. Flow meter performance to be checked each day.
- b. All division chambers, flow distribution chambers and exposed pipes to be inspected and checked for satisfactory functioning regularly.
- c. Screen chamber shall be raked once during each shift. It shall be ensured that there is free flow through the screens and there is no over flow from the unit.
- d. Grit shall be removed from each grit channel at the STP once in 3 days or such intervals as directed by the Commissioner.
- e. The screenings and the grit removed shall be disposed off satisfactorily at approved location within the STP site. The screenings and grit shall not be allowed to accumulate at the screen and grit channel locations.
- f. All sluice valves, stop plates and sluice gates at the Sewage Treatment Plant shall be trial operated and leakages at gland packing's, etc rectified on a monthly basis.
- g. Housekeeping of buildings.
- h. Deweeding and cleaning of the entire STP site
- i. Scum in the ponds shall be broken up and allowed to sink into the ponds on a daily basis.
- j. The turfing of the pond embankment shall be mowed on a regular basis covering each point once monthly. No wild bushes or weeds shall be allowed to develop on the embankments. Damage to bunds by rodents and other burrowing animals be watched for and rectified then and there.
- k. Preventing entry of unauthorized persons, cattle etc into the STP site so as to avoid accidents.
- l. Inspect the lining provided for the inner faces of embankments and repair when required.
- m. Special watch shall be kept of pond embankments during monsoon season and any erosion or other damage to the bunds by rain shall be rectified then and there.
- n. Fencing to be inspected on a weekly basis and rectified then and there.
- o. Electrical and Mechanical

The Contractor should carry out minor Mechanical and Electrical works listed in Section II Part III and in the event of the cost of such works exceeds Rs.25,000/- per month, prior approval from City Engineer shall be obtained by the Contractor. The payment towards such minor repairs will be paid based on vouchers produced by the Contractor and after verifying the works carried out. The necessary entries have to be made in the Log Book / Minor Repair Register for the works carried out. Any work other than Minor

works will be considered as major works and require approval of the City Engineer. In addition, the Operator shall be required to conduct emergency works and upon such works, the Operator shall inform the concerned Engineer on the completion of said works. All bills of minor or major or emergency works shall be claimed with bills or log-book for the same.

p. ELECTRICAL WIRING AND INSTALLATION OF FITTINGS

1. The materials used shall conform to the relevant I.S.S. wherever applicable. The make and other details of material to be used should be furnished along with the tender.
2. Continuous earth connections are to be made with 14 SWG TC Wire.
3. The wiring work done shall be neat, true to line level etc. and in such a way that it gives an impressive and aesthetical appearance to the building.
4. The actual location and number of points of lights, fans, power plugs etc., may be altered at the time of execution by the Engineer.
5. The wiring and cabling work should be done as per I.E rules.
6. Any damages or breakage, Chipping etc. caused by the electrification works to the structure have to be rectified by the Contractor at his cost to the satisfaction of the Engineer.
7. The Contractor has to test each and every point after completion of wiring to the entire satisfaction of the Engineer by taking temporary supply from the existing service.
8. Wiring to light points (both internal and external) and fan points will be treated as complete only when supply as well as connection upto the ceiling rose is completed.
9. Whenever conduit pipe wiring is done, cover for switchboards containing switches, plugs etc., and should be of hylam sheet or other specified sheet only.

q. MACHINERY AND OTHER EQUIPMENTS

1. All the materials used shall conform to the relevant I.S.S. wherever applicable and should be delivered at site of work. The Contractor is responsible for safe custody of materials and equipment under this contract till handing over to the Municipality.
2. The Contractor should do all necessary civil works for erection of all equipment and accessories offered by the Contractor under this contract.
3. Test certificates for machinery and equipment should be produced along with the supply.
4. The Contractor should maintain one set of tools for the proper maintenance of the machinery and equipment supplied by them under this contract.

r. ELECTRICAL & MECHANICAL WORKS:

1. For H.T. Pumping Stations
 - a. Replacement of H.G. Fuses
 - b. Replacement of Lightning arrestor -- anyone of the phases
 - c. Replacement of jumpers
 - d. Replacement of insulator (porcelain) -- one phase
 - e. Replacement of A-B switch -- one phase
2. For H.T. & L.T. Pumping Stations
 - f. Replacement of no-volt coil for A.C.B. and O.C.B. *

Section XI. Scope of Operation and Maintenance

- g. Replacement of jumper with socket inside the panel
 - h. Replacement of cable lugs including terminations
 - i. Replacement of burnt-out H.R.C. fuses *
 - j. Replacement of moving and fixed contacts or contactors *
 - k. Replacement of coupling bolt & nuts including rubber bushes
 - l. Replacement of worn-out impeller nut
 - m. Replacement of spindle nut in the sluice valve
 - n. Replacement of terminal plate in the motor
 - o. Replacement of carbon brushes and brush holder
 - p. Replacement of bulb, choke, starter, etc.
 - q. Replacement of defective capacitor and allied works for P.F. improvement.
 - r. Any other minor electrical / mechanical / civil works (repair works / additional works) as directed at site mutually agreed by the City Engineer in charge and Contractor.
 - s. Arrangement of sand bags as and when required as directed at site.
3. FOR D.G. SET AND BATTERY
- a. Replacement of burnt-out spares in the battery charger of D.G. *
 - b. Rewinding of self-starter, in the case of D.G.
 - c. Replacement of generator lubricating oil.
 - d. Replacement of Generator air filter, fuel filter and oil filter etc.,
 - e. Replacement of Battery, cable, lugs and studs etc.
 - f. Charging of battery including replacing of battery acid, distilled water.

Note: Payment for the replacement of items under minor repair will be made based on the prevailing settled ARC rates or market rates whichever is applicable.

4. REGULAR MAINTENANCE TO BE CARRIED-OUT BY THE CONTRACTORS

- a. De-weeding and cleaning of the Transformer yard.
 - b. Drying and refilling of Silica-jel in the Breather of the transformer.
 - c. Regular watering of the earth-pits.
 - d. Check for any oil leak in the transformer and intimating to Corporation.
 - e. Check for any loose connection in all Electrical equipment.
 - f. Provide Gland packing for the pumps, sluice valve etc. whenever required.
 - g. Greasing of bearings and lubricating all moving parts once in a week.
 - h. Check for loosening of coupling bolt nuts and all other fasteners.
 - i. Check for oil level in D.G. Set.
 - j. Air blowing of motors, L.T. Panel etc.
 - k. Cleaning of screens with regular intervals.
 - l. Lubricating and test operating of the valves.
 - m. Test running of D.G. Set on Load for one hour once in a week.
 - n. General cleaning of all equipment and buildings.
 - o. The General Maintenance schedule for the various treatment units shall be as detailed in the annexes/appendices enclosed.
 - p. Check Radiator water level and battery distilled water level and top up as and when required.
5. GENERAL MAINTENANCE
- a. Monitoring of in-flow.

Section XI. Scope of Operation and Maintenance

- b. Regular removing and disposal of rags from screens.
 - c. Regular removing and disposal of accumulated grit.
 - d. Continuous operation of all units as required.
 - e. Carting of Diesel for D.G. Set and Vehicles
 - f. Monitoring of Energy meter reading, power factor reading.
- s. Additional measures to be taken by the Contractor:
- 1. The Contractor shall take in to account frequent festivals and other public functions including visit by VVIPs in the Town, which may require frequent disruptions to the work undertaken by the Contractor. In the event of any such events, the Contractor shall stop the work, upon request from the authorities, and proceed with the work once the programs completed.
 - 2. The Contractor shall take appropriate insurance coverage for the employees working at the site which shall be inspected by the Municipal authorized persons.
 - 3. The Contractor shall also take periodic samples of the sewerage and conduct analysis as per the norms of the State Pollution Control Board.
 - 4. All the equipment even standby supplied, installed and commissioned by the Contractor should be in operational/ functional condition throughout the O & M period. The Contractor shall take all preventive measures to maintain them in working condition.
 - 5. The frequency of break downs of various equipment shall be the least as far as possible. The total number of such re-occurrences shall not exceed three times per annum otherwise penalty shall be levied on the Contractor at the discretion of Engineer-in-charge.

t. OBLIGATION OF CONTRACTOR TOWARDS EMPLOYERS ENGAGED IN THECLENING OF SEWER LINE

- 1. No person shall be allowed to clean sewer manually with the protectivegear and safety devices under these rules except; -
 - a. For the removal of concrete or FRP (Fibre Reinforced Plastic) damaged machine hole door where mechanical equipments cannot be put in to operation.
 - b. For inter-linking the newly laid sewer main with the existing sewer main, in case of sewer of size of more than 300mm diameter.
 - c. For the reconstruction of the machine hole or rectification of the sewer main.
 - d. Any circumstance, when it is absolutely necessary to have manual sewage cleaning after recording in writing and get permission from the commissioner with specified Valid reasons for allowing such cleaning.
- 2. Any person engaged to clean a sewer line shall be provided by the contractor protective gear and safety devices including but not limited to the following;-
- 3. All protective gear and safety devices shall be checked every six months and necessary repair or replacements shall be made by the contractor who engages a person for cleaning a sewer line. The Contractor shall obtain written

approval from the City Engineer for the procurement of the safety equipment and the cost for the same shall be reimbursed against submission of the bills. The equipment, safety tools shall be conforming the safety clauses stipulated in clause w below.

u. MANDATORY DUTIES OF THE CONTRACTOR

1. GENERAL:

- a. To collect the entire sewage generated in the area of jurisdiction through the house service connection conveyed through the collection system to the sewage pumping station, pumping the sewage by operating the existing sewage pumping machinery's to the existing treatment plant of Mangadu Municipality.
- b. In the wells of the pumping station, the minimum level has to be maintained within the prescribed levels of 0.5 m to minus 1.5m from invert to achieve free fall of sewage from incoming sewers.
- c. The house sewer obstruction and main sewer obstruction or any other related complaints has to be attended within the stipulated period as prescribed in the by the City Engineer.
- d. The Leakages in the Collection system / sewer line leaks and burst complaints are to be attended within the stipulated period as prescribed in the by the City Engineer.
- e. The screens of the wells are to be cleaned at regular intervals to ensure free flow to prevent back flow and accumulation of sewage in the upstream side and to prevent pump failure. For any major cleaning drive an estimate shall be prepared and submitted for the approval of the City Engineer.
- f. Lifting and Lowering of Submersible pump sets once in fortnight for proper operation and seating.
- g. In order to maintain the sewer system in better manner de-silting of machine holes to be done by the following methods prior and after the monsoon by identifying the locations where de-silting is to be done in the appropriate method furnished below after analyzing the system,
 1. By drag bucket machine and
 2. By Jet Rodding Machine.
- h. The Contractor should maintain the Jet Rodding machine and de-silting machine day by day and fuel should be filled by him. Payment towards the fuel shall be reimbursed as stated in this agreement.
- i. The location to remove the silt / the contractor will remove the clog, using the Drag Bucket machine.
- j. Operation of specified shifts / day and ensuring that back up teams would be available to take over during Sundays, Holidays and in the event of regular Operator / Labour absence including watch and ward.
- k. To operate the generators available at pumping station at the time of power failure, in view of non-stop pumping, by having fuel and lubricants.
- l. To ensuring the adequate man power availability to have round the clock Operating & maintenance System and to prevent entry of unauthorized persons.
- m. To provide required tools & equipment for maintaining the pumping station during normal course of pumping and pumping during flood period.

- n. As a mandate to adhere the Government policy, the Contractor should not engage the manual labour to remove the silt and clog in the machine hole strictly.
- o. Power consumption charges will be paid by the Mangadu Municipality to TNEB for the entire operation of sewage pumping stations or of any etc. (Only used for sewage purposes)
- p. Ensuring that all equipment and wells are in good working condition duly taking into account normal wear and tear, before handing over the site back to Mangadu Municipality on completion of the contract period. This could be decided by a joint inspection.
- q. Ensuring that all minor repairs are carried out swiftly and correctly.
- r. Furnishing monthly visit reports to the Municipal office / City Engineer. The parameters to be monitored like number of complaints attended, complaints received, number of new connections sanctioned, number of connections disconnected, number of pumps in working condition, total quantity of sewage pumped etc. will be finalized by mutual discussions.
- s. Monthly statement regarding the number of complaints received/attended, adherence to maintenance schedule, repairs noticed in the installations and remedial action taken etc. should be furnished before 15th of every succeeding month.
- t. The basic records and register such as log book for all electrical and mechanical equipment, Maintenance Schedule Register, Asset Register, Inspection Register, work book, Connection Register, Disconnection Register, or all other records as directed by the Engineer in charge should be maintained in Pumping Stations.
- u. The name and qualifications of the personnel engaged in each Sewage pumping station should be predominantly displayed in the pumping station.
- v. Prescribing of preventive maintenance schedule for adoption at different time intervals by the contractor.
- w. The contractor should make necessary mobile phone arrangements at his own cost for communication purposes. The Contractor shall submit an estimate for setting up a customer redressal cell in the Corporation Office and upon approval shall operate the same during the duration of the contract.
- x. Supply of diesel and engine oil etc for DG set, and frames and covers of machine holes including fixing and curing charges. The cost of the items will be reimbursed by Corporation as per actuals.
- y. Making sure that sewage levels are maintained between safe and low levels, as specified at all times ensuring that fall below the incoming sewer whenever possible.
- z. Ensuring that silt will not be deposited in the wet well by various methods like agitation by chains, or any mechanical agitation etc so that there is no chance for overflow during morning and evening peak flow.
- aa. Operate and maintain equipment with technical staff so as to safeguard the equipment against single phasing, earth fault phase reverse etc. in power supply.

- bb. Maintaining all equipment within the station as recommended by the manufacturers, with proper Logs and Records of the work carried out, as prescribed by Municipality.
- cc. Operate and maintain capacitor and allied switch gear so as to maintain a power factor of not less than 0.90 lagging prescribed by TNEB. If any penalty is levied by the TNEB for low power factor, the penalty sum will be recovered from the Contractor.
- dd. The power factor will not decrease or increase suddenly and if the contractor observes daily and finds any decrease in the power factor, it should be informed to the Department Engineer in charge. The Department Engineers will take immediate Steps in rectifying this. Modifications, if any on the existing electrical system shall be carried out by the Contractor after obtaining approval from the City Engineer for the estimate.
- ee. Test run of D.G. sets should be carried out for a minimum of 30 minutes per week in idle condition or as recommended by the manufacturer/ directed by Site City Engineer. The Contractor shall arrange to purchase the required diesel / lub oil and the related cost will be paid based on actual on production of bills.
- ff. Keeping all wells, kiosk sheds free from dirt and dust.
- gg. Ensuring that premises are kept clean and tidy.
- hh. Inspection Register to be available at the Station.
- ii. Mandatory Regulations prescribed by CEIG and Inspector of Factories shall be followed without any lapse.
- jj. Carrying out all operations at intervals specified shown on attached sheets for each station.
- kk. Any repair and replacement works of the HT system should be carried out by the authorized persons as prescribed by CEIG.
- ll. Each station should be provided with complete set of tools and equipment required for maintaining the station.
- mm. The following regular equipment maintenance and general maintenance have to be carried out along with those as per preventive maintenance schedule.
 - 1. De-weeding and cleaning the transformer yard.
 - 2. Drying and refilling of silica jell in the breather of the transformer.
 - 3. Regular watering of the earth pits in the transformer yard and maintaining proper earth resistance.
 - 4. Check for any oil leak in the transformer and top up of oil (transformer oil will be supplied departmentally).
 - 5. All electrical connections have to be checked.
- nn. Provide gland packing for the pumps, sluice valve etc. whenever required to avoid leakage of water.
- oo. Greasing of bearings and lubricating all moving parts minimum once a week (grease has to be provided by the Contractor).
- pp. Check for tightness of coupling bolts-nuts and all other fasteners.
- qq. Check for functioning of pumps.
- rr. Cleaning of motors, L.T. panel etc. minimum once in a week using air blower.

- ss. Lubricating and test operating of the penstock valves for proper seating minimum once in week.
- tt. Watering of plants and trees.
- uu. Check for charging battery including the acidity in cells once in a week so as to start and operate the DG sets in any emergency requirements.
- vv. Replacement of the HT fuse if required.
- ww. Replacement of fused out bulbs, choke, starters etc.
- xx. Water service and oil service to Jet Rodding machines and Desilting machines periodically.
- yy. The Contractor should furnish his local office and residential address along with Telephone Nos.
- zz. Attendance should be maintained in all the locations maintained by the contractor and the employees sign it in every shift.
- aaa. Spare (Reliever) Operator / labourers should be employed to work in a particular station when the person in that station goes on leave, as a substitute.
- bbb. The contractor has to fix leave regulation for the employees and submit a copy to City Engineer.
- ccc. In case of absence of the B.E. holder, operator (or) Thozhilali or anybody as envisaged the specified amount for that particular shift will be recovered in the monthly bill.
- ddd. The contractor has to provide decent uniform with name badge to their staff.
- eee. The contractor has to operate the machineries according to the operating schedule fixed for that particular station and to maintain low-level. The level should not be more or less than that of the operating level fixed during that time of inspecting officials prescribed in the operating schedule. However tolerance of $\pm 5\%$ can be allowed. Maintenance of plant and machineries should be as per the chart given.
- fff. Whenever an employee of the contractor leaves the job and new person with the same qualification is employed or transferred between stations maintained by the same contractor it should be informed in writing and with the approval of City Engineer and also see that the new persons so employed also have insurance cover.
- ggg. The maintenance gang should possess a register to record their activity in a particular station in a particular day and certified by the Municipalofficials in-charge of that particular station in that book.
- hhh. The contractors are required to operate and maintain the sewage pumping stations continuously during the rainy season by providing additional shifts and man power for the pumping stations operated as per City EngineerIn charge instruction.
- iii. The Contractor/maintenance gang should possess a register to record their activity in a particular day and certified by the Municipalofficials in-charge of that book.
- jjj. The contractor should maintain a complaint register in the Stations of Each Zones and also at Municipal office Engineering Section and rectify the complaints immediately within the 24 hours of receipt of complaints received from public as well as officials.

Section XI. Scope of Operation and Maintenance

kkk. The Following statutory Laws shall be adhered to by the contractor wherever applicable

- a) Workmen Compensation Act, 1923
- b) Payment of Wages Act, 1936
- c) Industrial Disputes Act, 1947
- d) Minimum Wages Act, -1948
- e) Factories Act, 1948
- f) Employees PF and Miscellaneous Act, 1952
- g) Payment of Bonus Act, 1966
- h) Payment of Gratuity Act, 1972
- i) Equal Remuneration Act, 1979
- j) Maternity Benefit Act 1951
- k) Contract Labour (Regulation & Abolition) Act 1970
- l) Industrial Employment (Standing Orders) Act 1946
- m) Trade Unions Act 1926
- n) Child Labour (Prohibition & Regulation) Act 1986
- o) Inter-State Migrant workmen's (Regulation of Employment & Conditions of Service) Act 1979
- p) The Building and Other Construction workers (Regulation of Employment and Conditions of Service) Act 1996 and the Cess Act of 1996
- q) Employee State Insurance Act, 1948
- r) The Tamil Nadu Manual Workers (F-1egulationof Employment and Conditions of Work) Act, 1982.
- s) The Bonded Labour System (Abolition) Act, 1976
- t) The Employer's Liability Act, 1938

v. ELEMINATION OF CHILD LABOUR

1. Attention of all contractor are invited to the Child Labour (Prohibition and Regulations) Act 1986, which prohibits employment of children below 14 years of age in certain occupations and process and provides for regulations of employment of children in all other occupations and progress. Employment of child labour is prohibited in building and construction industry.

2. Hence all the contractors are requested to adhere to the provisions in the above Act and see that engagement of child labour in the operational activities of the Mangadu Municipality are completely prohibited. Any violation of the provision will lead to penal action and removing of the contractor from the list of registered contractors.

w. SAFETY MEASURES

1. All the work to be carried out in and around the pumping station, like electrical faults (or) attending to maintenance work in collection, suction and screen wells and also in collection system, it must be under the contractor's supervision with their supervisor, at their own risk and cost.

2. The contractor should procure in accordance with this contract rubber gloves, gum boots, safety belt, helmet, rope, gas mask, torch light, emergency light, rubber sheet in front of such equipment etc. as safety equipment in good condition.

3. Each and every employee of the contractor should have insurance cover under workmen compensation act.

4. The contractor has to carry out any minor maintenance work only after informing and getting concurrence of the Municipal official's in-charge of that particular pumping station.

5. The contractor's labour while entering the wells for carrying out O&M work, the contractor, should close the penstock valve in the well and pump the sewage from the well should check the gas present in the well with gas monitor available at Area Offices and make sure it is not dangerous for their staff and allow the men with safety equipments to enter the empty well for de-silting the wells. There should be no contact between human body and sewage and in roadside pumping station where there is no penstock arrangements, men while entering the well should wear proper diving suit with mask, boot and airline supply apparatus which will be provided by the respective Area City Engineers.

x. PROCEDURE FOR CARRYING OUT MINOR REPAIRS

1. Minor repairs noticed in the equipment should be reported in writing to Engineer in charge of the pumping station without any time lapse. The rectification works have to be carried out immediately as per the direction of the Junior Engineer in charge. Necessary entry for the repairs carried out has to be made in the Log Book.

y. NON-COMPLIANCE TO SCHEDULE OF WORK / MANDATORY DUTIES

If the contractor fails to carry out any work or part of work/mandatory duties, the Corporation shall have the power to carry out such parts of work by engaging private agency and recover such amount including 5 (five) percent of the amount incurred from the progressive bills.

Photo Identify Cards have to be issued to the personnel and one set of these Identity cards should be furnished to the Corporation and one set displayed in the Pumping station.

It is the responsibility of the contractor to take insurance policy under Workmen's Act 1923 for each labour and a copy of insurance policy should be furnished to the Corporation. This policy should be kept alive till completion of the contract period.

The name and qualifications of the personnel engaged in each Sewage Pumping Station should be prominently displayed in the Pumping Station.

z. DUTIES AND RESPONSIBILITIES OF THE SUPERVISOR OF PUMPING STATION

- 1) He should be present between 8.30 A.M. and 5.30 P.M as same as department Junior Engineer or Assistant Executive Engineer / City Engineer of pumping station with one hour lunch intervals.
- 2) He shall hold full responsibility of maintaining levels as prescribed by the Corporation.
- 3) Daily report on flow chart should be sent to office with all activities of the previous day.
- 4) Inform minor/major/repairs immediately and should be present at site until completion of repair works.
- 5) He shall have full responsibility for maintaining maintenance schedule such as daily, weekly and monthly programmes.
- 6) He should organize the silt removal programmed and to follow as per safety rules.

Section XI. Scope of Operation and Maintenance

- 7) He shall keep safety belt, gas mask, gas monitor and First Aid box to his custody and utilize whenever requires.
- 8) He shall be responsible for overall cleaning and keeping the station neat and tidy.
- 9) To approach TNEB authority when powers fail in TNEB structure/ Municipal 6 pole structure and ascertain early supply resumption.
- 10) He shall checkup Power Factor every day and to maintain a minimum 0.90 as prescribed by TNEB.
- 11) In charge shall be sole responsible for carryout mandatory duties of contractor in the individual pumping station and to organize the maintenance gang for routine maintenance work.
- 12) Up keeping the pumping station such as air blowing motors, control panels, gland packing, changing Engine Oil and maintenance of battery.
- 13) Care has to be taken for workers to avoid double/triple duties as per workmen compensation Act and arrange to renewal of Insurance policy.

aa. DUTIES AND RESPONSIBILITIES OF THE OPERATOR OF THE PUMPING STATION

- 1) Operating the pump set as per the operating rules and maintaining low levels.
- 2) Recording Log Book for every hour and including starting/stopping times of the pump sets.
- 3) Check the temperature/Noise of Running units and control panel
- 4) Record daily shift activity in Log Book
- 5) Follow the instruction if any by Junior Engineer or City Engineer of the pumping station regarding pumping.
- 6) Go through previous shift activities and explain the shift activities to the reliever.
- 7) Arrange removing of rubbish in the screen well once in the shift with safety precautions
- 8) Draw flow chart as per log book in his shift
- 9) Operating D.G. Set when power fails.

bb. DUTIES TO BE ATTENDED BY FIELD WORKER

- 1). Ensuring that the screens are cleaned daily in every shift at regular intervals to ensure free flow and to prevent pump failure.
- 2) Keeping of all wells, kiosk sheds free from dirt and dust
- 3) Ensuring that premises are kept clean and tidy
- 4) Ensuring that adequate man power is available round the clock to carryout out the above task and to prevent entry of unauthorized persons.
- 5) Provide gland packing for the pumps, sluice valve etc. whenever required to avoid leakage of water.
- 6) General cleaning of all equipments buildings and the yard.
- 7) Watering of plant and trees.
- 8) To assist the operators to carry out the breakdown maintenance to avoid dislocation of pumping operation.
- 9) Operating of sluice valves and penstock valves

cc. GENERAL MAINTENANCE TO BE DONE

- 1) De-silting of Wells by Drag Bucket Machine
- 2) Lifting and lowering of submersible pump sets
- 3) Drying and refilling of silicon, oil in the breather of the transformer
- 4) Check for any oil leak in the transformer and top up oil if necessary

Section XI. Scope of Operation and Maintenance

- 5) Greasing of bearings and lubricating all moving parts once in a week
- 6) Cleaning of motors and lubricating all moving parts once in a week by using air blower.
- 7) Regular watering of the earth pit in the transformer yard and maintaining proper earth resistance
- 8) All electrical connections have to be checked
- 9) Lubricating and test operating of the penstock valves for proper seating every week
- 10) Check conditions at cabling, motor and pumps etc.
- 11) De-weeding and clearing the transformer yard
- 12) Check for tightness of coupling, bolts and nuts and all other fasteners
- 13) Screening and grit removal from the inlet unit at Sewage Treatment Plant of 58 Mld Capacity (Waste Stabilization Pond Technology)

dd. GENERAL NOTES FOR OPERATIONAL LUBRICATION

Operational practices should include any lubrication of Fixed Plant that is required on a more regular basis than planned preventive maintenance (i.e.Daily, Weekly, Monthly).On Sewage Treatment Plant these include:

ee. GEAR BOXES

- Oil levels should be checked weekly and filled to the high level mark, excessive oil requirements probably indicate an oil leak.
- Grease points should be checked and greased every week.

Note: Do not overfill with oil as this will cause pressure build up and damages seals.

ff. GENERAL

Any lubrication points that are damaged or blocked should be reported to the A.E / J.E. immediately.

Note:

1. The Contractor shall submit proper bills for all above works under the head Minor/ Major or Emergency Works.

2. Care must be taken of moving parts when lubricating.

gg. SAFETY MEASURE & TO BE ADHERED TO.

1. All electrical safety equipment like hand gloves, testers and other electrical needs are to be provided by the contractor.
2. Only experienced, skilled people have to be employed by the contractor.
3. Safety belts, ropes, Gas mask, Torch lights, are to be provided by the contractor for laborers who get into wells.
4. All personnel should be covered by insurance under workmen compensation act.
5. All labour act provisions has to be met with.
6. Those get into wells should do so after verifying the presence of gas with the help of the gas monitor in order to avoid any mishaps.
7. Exhibit labels of "SAFETY FIRST".

hh. SPECIAL CONDITIONS

1. The power factor will not decrease or increase suddenly and if the contractor observes daily and finds any decrease in the power factor, it should be informed to the Department City Engineer's In charge. The Department City Engineer'sIn charge will

take immediate steps in rectifying this. The power factor observed should be recorded in the log book every day.

2. The Contractors shall strictly abide by the directions of the Hon'ble High Court of Madras in its order dated 20.11.2008 in W.P. No. 24403/2008 and the orders of the Government of Tamil Nadu G.O. (MS) No. 293, MA&WS (MW) Dept. dated 26.11.2010 regarding the ban on manual scavenging and on the entry on sanitary workers into the sewerage system or septic tank. All cleaning and maintenance operations shall be done only through mechanical devices.

3. *The Contractor shall not allow sanitary workers to enter into the sewerage systems / septic tank for cleaning and maintenance operations except in the 4 circumstances permitted in the orders of the High court. In W.P. No.24403 dated 20.11.2008 as stated in clause 4 below:*

For the removal of concrete / FRP machine hole door which gets damaged due to the heavy vehicular traffic and often falls inside the machine hole causing obstructions / blocks in the sewer and which results in the blockage of sewerage system and where mechanical equipment cannot be put into operation.

- i. For the purpose interlinking the newly laid sewer main with the existing sewer main, where it will be wholly necessary to block the main sewer in the servicing machine hole. Entry of sanitary workers on such occasions has to be necessarily permitted, in as much as it is stated that large size sewer i.e., where the diameter is more than 300mm, blocking the sewer main from the top of the machine hole is not possible and only the sanitary worker has to enter the machine hole and that too with necessary safety gadgets for blocking the sewer temporarily.
- ii. For the removal of submersible pump sets fixed at the bottom of the suction wells, which goes out of order, for which the sanitary workers has to enter the well again with necessary safety gadgets after emptying the sewage from the well in order to remove the pump set. It is made clear that before allowing any sanitary worker to enter on such occasions, steps should be taken to see that the sewage totally emptied and thereby further ensure that no poisonous gas remains in the sewage line.
- iv. For the construction of the machine hole of rectification of the sewer main due to any damage caused by sinking of machine hole covers / sewer main due to any damage caused by sinking of machine hole covers / sewer line when the sewage pipe line gets blocked or gets obstructed, which results in the system getting surcharged. Here again, before allowing any sanitary worker to enter the sewer line, it is essential that sewage line is emptied by blocking the main holes in the system on either side of the sinking machine holes / damaged machine holes.
Even in the above four instances, the contractor should allow the workers to enter only with adequate safety gadgets and under the supervision of a qualified staff, and only after duly observing all safety precautions including testing for the presence of toxic

Section XI. Scope of Operation and Maintenance

gases with a gas detector. Naked flame method of testing the presence of poisonous gases is hazardous and should be strictly avoided.

1. Even in the non-exceptional circumstances, consideration of safety of the workers shall be paramount and the contractor shall ensure the same.
2. The contractor should indemnify the employer for any loss or damage caused by this negligence or by his non-observance / violations of any labour laws.
3. The contractor should take out insurance policies under the Workmen's Compensation Act, 1923 for all the workers engaged by him and a photocopy of the insurance policy should be furnished to the employer. The policy should be kept alive till completion of the contract.
4. The contractor should impart safety education to all his workers and train them in the use of safety gears.

ii. MACHINERY AND OTHER EQUIPMENTS

1. All the materials used shall conform to the relevant I.S.S. wherever applicable and should be delivered at site of work. The Contractor is responsible for safe custody of materials and equipment under this contract till handing over the Municipality.
2. The Contractor should do all necessary civil works for erection of all equipment and accessories offered by the Contractor under this contract.
3. Test certificates for machinery and equipment should be produced along with the supply.

jj. SCHEDULE OF WORK ON SPECIFIED INTERVALS

ITEM NO.	DESCRIPTION OF WORK	FREQUENCY					
		DAILY	WEEKLY	Monthly	Bi monthly	Half-yearly	yearly
1.0	CHECK PUMP IS OPERATIONAL	*					
1.1	CHANGE OVER PUMPS	*					
1.2	PUMPOUT WET WELL	*					
1.3	RECORD HOURS RUN	*					
1.4	WHILE PUMP OPERATION CHECK						
1.4.1	PIPE WORK FOR LEAKS OR VIBRATION	*					
1.4.2	OIL (OR) FLUID LEAKS	*					
1.4.3	BEARING TEMPERATURE	*					
1.5	CHECK GLANDS/SEAL AND	*					

Section XI. Scope of Operation and Maintenance

	ADJUST/REPACK AS REQUIRED						
1.6.1	CHECK OPERATION OF AIR RELEASE PIPES	*					
1.6.2	CLEAN OUT AIR RELEASE PIPES		*				
1.7	CHECK LLUBRICATION POINT AND LUBRICATE AS REQUIRED	*					
1.8	CHECK NON- RETURN VALUES FOR OPERATIONAL	*					
1.9	CHECK UNITS SECURITY, FIXING BOLTS		*				
1.10	CHECK ALL GUARDS AND OPERATIONAL		*				
2.0	WHILE PUMP OPERATING CHECK						
2.0.1	MOTOR FOR NOISE OR VIBRATING	*					
2.0.2	BRUSH SPARKING	*					
2.0.3	SECURITY OF COOLING FAN	*					
2.0.4	SECURITY OF TERMINAL BOX	*					
2.0.5	SECURITY OF COMPUTING GU	*					
2..1	SPOT MOTOR & SWITCH OFF ISOLATOR	*					
2.1.1	SUCK OUT DUST AND DIRT				*		
2.1.2	TOPUP OIL				*		
2.2	CHECK CONDITION OF CABLING CONDUIT AND EARTH BONDING				*		
3.0	INSPECT AND CHECK THE FOLLOWING						
3.0.1	ALL AUXILLARY EQUIPMENT					*	
3.0.2	ALL TERMINALS					*	
3.0.3	PANEL ENCLOSURES AND INSTALLATIONS					*	
3.1	CARRY OUT ALL REQUIRED TESTS						

Section XI. Scope of Operation and Maintenance

3.1.1	TO EARTHING / LOOPS					*	
3.1.2	CONTROL TRANSFORMERS					*	
3.1.3	POWER INDICATORS					*	
3.1.4	POWER SUPPLY PROTECTIVE DEVICES					*	
4.0	GENERATOR SET						
4.0.1	CHECK FUEL LEVEL TOP UP		*				
4.0.2	CHECK OIL LEVEL		*				
4.0.3	RUN GENERATOR FOR 1 1/2 HOURS		*				
4.1	SERVICE GENERATOR AS PER MANUFACTURES GUIDELINES						
5.0	STARTERS						
5.1	TOP UP OIL DASH POT					*	
5.2	CHECK SECURITY OF CONNECTION					*	
5.3	CHECK FOR OVER HEATING/ DETERIOATION					*	
5.4	CHECK CONTACTS AND ARC SHIELDS					*	
5.5	CHECK OPERATION OF EMERGENCY STOPS AND SAFETY DEVICES					*	
6.0	STRUCTURE AND EXTERIOR WORK						
6.1	RAKE SCREENS AND DISPOSAL OF WASTE	*					
6.2	DESILT WELLS IF EQUIPMENTS AVAILABLE	*					
6.3	MANUALLY DESILT WELLS NO EQUIPMENTS		*				
6.4	OPERATED PENSTOCKS FULLY		*				
6.5	CLEAN OUT PUMP HOUSE		*				
6.6	CLEAN WINDOWS		*				
6.7	OPERATE ALL VERTICALLY HUND			*			

Section XI. Scope of Operation and Maintenance

	DOOR AND LUBRICATE						
6.8	SWEEP AND TIDY UP GROUNDS ROOF WEED AS REQUIRED		*				
6.9	WATER EARTH PITS		*				
*INDICATES PERFORMANCE OF ACTIVITY							

kk. H.T. / L.T. SEWAGE PUMPING STATIONS - SCHEDULE OF MAINTENANCE

Item No.	Description of work	Daily	Weekly	Fort Nightly	Monthly	Attended / Not attended / O.K.	If not attended, reason
1.0	Pump house						
1.1	Cleaning of site	*					
1.2	Cleaning of pump house	*					
1.3	Cleaning of Panel Room, D. G. room etc.	*					
1.4	Check pump is operational	*					
1.5	Changeover of pumps	*					
1.6	Record hours run	*					
1.7	Check operation of air release pipe	*					
1.8	Clean windows	*					
1.9	Operate vertically hung door and lubricate	*					
1.10	Sweep and tidy up ground, roof, remove cob webs etc.	*					
2.0	H.T. structure, Transformer yard and transformers						
2.1	Cleaning of transformer yard, removal of grass and plants	*					
2.2	Check up and water the earth pits		*				
2.3	Meggar the earth resistance in the earth pits				*		
2.4	Check and operate the AB switch in the structure for its smooth operation and		*				

Section XI. Scope of Operation and Maintenance

	replace contacts of necessary						
2.5	Check up dropout fuses and H. G. fuses and replace if necessary.	*					
2.6	Check up insulators and lightning arrestor in the structure and replace if necessary			*			
2.7	Check the transformer for any leakage of oil and top up if necessary		*				
2.8	Check the temperature of transformer oil from dial thermometer and record						
3.0	H.T. Panel						
3.1	Clean the panel externally and internally using blower	*					
3.2	Carryout visual check of observe over all condition of the breakers and clean the breakers thoroughly	*					
3.3	Grease/Oil joints and sliding surfaces			*			
3.4	Check the internal connections				*		
3.5	Check the operations of doors and conditions of door gasket						
3.6	Check Volt Meter Ammeter etc. in the panel for its replace if necessary	*					
3.7	Check all the indicator lamp and control fuses and replace if necessary	*					
3.8	Check the operation of relays				*		
4.0	LT Panel						
4.1	Clean the panel externally and internally using blower	*					

Section XI. Scope of Operation and Maintenance

4.2	Check all the connections for tightness			*			
4.3	Check the contacts switches for tightness and apply petroleum jelly if necessary			*			
4.4	Check Volt Meter Ammeter and respective P. T. and CTS for its working and connection	*					
4.5	Check all the indicator lamp bulbs and fuses and replace if necessary	*					
4.6	Check operation of all switches and bush buttons		*				
5	CAPACITORS						
5.1	Check all the capacitors for oil leakage if any	*					
5.2	Clean the insulator with dry cloth and check the connections for tightness			*			
5.3	Check the fuses and meggar the units				*		
6.0	MOTORS						
6.1	Clean the motor terminal box, check the cable connection to tightness	*					
6.2	Check body of the motor for firm connection			*			
6.3	Check the foundation bolt and nut for tightness	*					
6.4	Check normal sound and vibration	*					
6.5	Check the bearing grease and replace if necessary			*			
6.6	Check air cooling fan for vibration and noise			*			
6.7	Check meggar test for windings and earth			*			
6.8	Cleaning of motor slip ring, carbon brush,		*				

Section XI. Scope of Operation and Maintenance

	contacts and replace if necessary						
7.0	STARTERS AND OCB						
7.1	Clean the starter and check up the cable connection	*					
7.2	Check contacts and replace if necessary		*				
7.3	Check for cable connection		*				
7.4	Check for OLR and No volt coil		*				
7.5	Check the level of transformer oil in the OCB and top up if necessary			*			
8.0	MAIN PUMPS						
8.1	Outside Cleaning	*					
8.2	Check Bearing Temperature	*					
8.3	Check & Top up Bearing grease or replace grease	*					
8.4	Check gland for leak and add gland layer if required	*					
8.5	Replace gland packing completely			*			
8.6	Check foundation nuts and bolts for tightness and rusting		*				
8.7	Check inspection covers and check condition of impeller			*			
8.8	Check the pressure and pressure gauges on suction and delivery side	*					
8.9	Clean the pump pit and pump floor	*					
8.10	Check for coupling Bolts and nuts, coupling tyre and replace the tyre if required			*			
8.11	Check for vibration and noise of the pump	*					
8.12	Pump out leak water from the pump pit	*					
8.13	Check the condition of bearing oil and replace if required			*			

Section XI. Scope of Operation and Maintenance

8.14	Clean the suspended particles around the sub. motor and its lifting chains in motor well	*					
9.0	SUMP PUMP						
9.1	Check the pump for operation	*					
9.2	Check the coupling and replace if necessary			*			
9.3	Clean the starter panel externally and internally	*					
9.4	Check the fuses and contacts, apply petroleum jelly if necessary		*				
9.5	Check the foot valve and replace if necessary	*					
10.0	DIESEL GENERATOR SET, BATTERY AND EMERGENCY LIGHT						
10.1	Clean the battery, top up, distilled water in the battery if necessary	*					
10.2	Remove the connection of battery terminals, clean thoroughly and reconnect after applying petroleum jelly		*				
10.3	Clean the emergency lights internally and externally	*					
10.4	Check the light, indicator lamp for its proper working and attend if necessary		*				
10.5	Check fuel level in the day tank of DG set and top up if necessary		*				
10.6	Check engine oil level in the D.G. set and add if necessary			*			
11.0	OHT CRANES						

Section XI. Scope of Operation and Maintenance

11.1	Carry out thorough leaning of crane including girders, trolley, platform other equipments and control panels	*					
11.2	Check all the cable connections for tightness			*			
11.3	Check contacts and fuses and replace if necessary			*			
11.4	Inspect gearbox for any leak of oil				*		
11.5	Check the connection of limit switch				*		
11.6	Check panels internally and externally and apply petroleum jelly if required	*					
11.7	Check the rope and apply grease if required				*		
12.0	SUCTION & DELIVERY VALVES AND ACTUATOR						
12.1	Check the condition of gland packing and tighten or replace if necessary	*					
12.2	Check actuator gear box for leakage		*				
12.3	Check the condition of limit switches				*		
12.4	Check the condition of oil and grease, replace if necessary			*			
12.5	Check the bolts and nuts for tightness			*			
12.6	Check cable terminals at motor terminal box of actuator				*		
12.7	Check clutch and gear arrangement for manual operation				*		
12.8	Apply grease to the spindle if necessary				*		

Section XI. Scope of Operation and Maintenance

12.9	Check for free movement			*			
13.0	NRV (NON RETURN VALVE)						
13.1	Check the operation and non-return valve		*				
13.2	Check the disc for its smooth opening and closing operation		*				
14.0	SEWAGE WELLS						
14.1	Clean the suction, screen and collection	*					
14.2	Check up the operation and penstock valves in the wells	*					
14.3	Apply grease to vertical shaft of penstock valve for smooth operation			*			
14.4	Rake the screen and disposal waste	*					
14.5	De-silt wells if equipment is available	*					
14.6	Manually de-silt of wells (no equipment)		*				

***INDICATES PERFORMANCE OF ACTIVITY**

3. TERMS AND CONDITIONS

1. Contractor shall engage staff in O&M with sufficient experience in Collection system and PS and LS.

2. Daily log book. The logbook should contain daily flow of influent, treated effluent, amount of chemicals consumed per day, Number of energy units consumed daily. Test report of samples. This needs to be submitted to the Engineer daily.

3. Maintenance record of all sewage pumping stations (SPS) machinery and sewer cleaning equipment equipment's on the proforma as per directions of Engineer-in-charge.

i. Oil refilling schedule.

ii. Inventory of Chemicals.

iii. Inventory of spares.

iv. Inventory of Laboratory chemicals and glassware.

v. Flow meter reading at end of outfall sewer (inlet to STP).

4. Energy audit: The energy charges for operation of plant /equipment in network will be borne by the employer. However, energy audit will be conducted monthly to assess the total energy consumed at KWH per KL of sewage.

Section XI. Scope of Operation and Maintenance

5. The Contractor will be responsible for maintaining the newly laid sewer lines under the scope of this project. Any required repairs and rectification of the leakages and chocking in the Sewerage Network, if any, will be the responsibility of the contractor. The department will take care of all permissions, if any, required for undertaking the repair from any department / agency, on the written request of the contractor.
6. In case, if there is any disruption in the functioning of network and functioning of the sewerage system, the contractor will be solely responsible. The contractor will ensure to remove/ rectify the defects on priority and make the system functional. If he fails to do so, the department will have the liberty to rectify the defects and make the system functional at Contractor's risk & cost. An inconvenience charge of Rs. 10,000/- per day shall be levied for such intervention in addition to the cost borne by the ULB to rectify the defect.
7. The contractor shall setup a 24 hours complaint redressal system with at least 1 dedicated landline telephone/mobile for attending of Consumer Complaints. Every complaint registered by the customer should be allotted with complaint Number for easy tracking, monitoring and for future reference.
8. The contractor shall maintain the register of daily complaints which should indicate name of complainant, complaint No, nature of complaint, location/area in respect of leakages, choking, overflow from machine hole etc. or other related components of network. The daily report of the complaints shall be intimated to the Engineer-in-charge at 10.00 AM through mail, failing which a penalty @ Rs.100/- per day shall be imposed on the contractor. If the complaint lodged is not attended within 24 hours of the receipt, Inconvenience charges @ Rs. 1000/- per day shall be charged from the contractor, if the complaint remains unattended and the same shall be rectified at the risk and cost of the contractor.
9. The contractor shall have to provide safety protective gear like gloves and gum boots, masks etc. to the worker deployed for sewerage network & necessary uniform and badges should be provided to the worker for their identification.
10. Wear & tear of all mechanical and electrical equipment, burning of motor, repair of pump and motor including allied accessories, civil structure and pipe lines during the contract period to be borne by the firm/contractor and nothing extra shall be paid on this account including those pointed in inspection note of inspection officers.
11. The Contractor shall be responsible for undertaking all kinds of repairs, if any to electrical and mechanical equipment and structures including preventive maintenance during the contract period. The contractor shall engage experienced vendor for maintenance of equipment and shall get the vendor approved from the department before undertaking repairs in writing.
12. Weekly report on the performance of SPS machinery and machinery deployed for sewer/ machine hole cleaning in the proforma supplied by the ULB to the concerned Engineer.
13. Monthly payment for O&M will be made to the Contractor within 15 days after submission of bill by the Contractor subject to successful performance/ desired results of treated effluent failing which no payment shall be admissible.
14. The PS plant & equipment shall be operated strictly as per approved O&M manual supplied by the ULB and as per the direction of Engineer-in-charge. The O&M manual shall always be readily available in the plant & made available to the officials & public for viewing.
15. The Contractor shall be responsible for the gardening and maintaining the plants/trees and nothing extra shall be payable for the same. Fresh plantation consultation with department shall be appreciated. The Contractor shall keep the premises neat and Tidy.

4. TERMS AND CONDITIONS FOR HANDING OVER

The Collection Network, Pumping Stations (PS), Lift Stations (LS), Rising Mains, and all appurtenant structures and allied works will be taken over by the Employer on satisfactory completion of the Operation & Maintenance period, provided that

- i. The collection network pipelines, machine holes, chambers, pumping stations, lift stations, rising mains, and all associated mechanical and electrical equipment are in good, clean, and smooth running condition, free from blockages, leakages, or structural defects.
- i. The results of flow monitoring, pumping efficiency, and wastewater conveyance performance for the last three months of operation are within the limits and parameters specified in the contract.
- ii. In case of major repairs or replacement of pumps, motors, valves, control panels, rising main segments, or any other critical equipment, the performance guarantee shall be extended by six months from the date of putting back the said unit/equipment into satisfactory operation, particularly if such restoration occurs near the end of the Operation & Maintenance period.
- iii. All records of operation and maintenance — including pump run-hours, breakdowns, maintenance logs, inspection reports, cleaning records, and energy consumption data — are handed over to the Employer in proper and organized condition.
- iv. Third Party Inspection of the Collection Network, Pumping Stations, Lift Stations, Rising Mains, and all appurtenant structures and allied works — viz., Civil units (machine holes, chambers, wet wells, valve chambers), Mechanical units/equipment (pumps, motors, valves, non-return valves, sluice gates), Electrical units/equipment (panels, starters, cables, instrumentation), flow meters, level sensors, SCADA/telemetry systems, and all other major and minor units/machines — shall be carried out, and any defects or unsatisfactory performance identified shall be rectified by the Operator at his own cost.

Section XII: Emergency Response plan (ERP)

Section XII: Emergency Response plan (ERP)

Emergency - unforeseen or uncommon sudden incidents may affect water quality or availability and/or affect personal safety. Effects of: flooding, wind damage, earthquake and tsunamis, fire, vandalism and break-in, contamination of the water source, sudden major failure in pipelines or water storage, Sudden major failure in treatment, prolonged power failure.

The particular effect of each event on the supply of sufficient safe drinking-water needs to be considered. The O&M plan would describe the responsibilities of staff, actions that need to be taken to make the supply safe, the resources that are available to cope with the emergency (and how to obtain them), and when and how the public are to be notified.

Alternative methods of communication may be needed in an emergency, and transport may be difficult. The aim is to resolve as many of the issues as possible ahead of time and ensure that the level of preparation is appropriate to the level of risk.

These points will guide an operator through a specific contingency plan. If steps need to be taken in a specific order, this should be made clear, such as "this needs to be done in the following order:"

Safety Practices: Identify any safety precautions that may be required to complete the contingency.

Notes: To include key contact information if assistance is required during the activity.

In an emergency, the Utility must

- Be able to identify an emergency quickly and initiate timely and effective response action
- Be able to notify local, state, and federal agencies quickly so they can assist in the response, if necessary.
- Protect public health by quickly being able to determine whether the water is unsafe to drink or use, notify customers of the situation immediately and effectively, and advise them of appropriate protective action.
- Quickly respond and repair damages to minimize system down time.

In any emergency, a water system should always follow these four steps: 1. Confirm and analyze the type and severity of the emergency. 2. Take immediate action to save lives, reduce injuries, and prevent system damage. 3. Make repairs based on service area priority. 4. Return the system to normal operation.

ERP to contain a Basic description and location of system facilities.

- Unique circumstances including a detailed map of the distribution system.
- A plan for communicating if phones don't work and identify a place to meet.
- Name, title, and contact information of person responsible for implementing the emergency plan.
- Chain of Command and Lines of Authority When an emergency occurs. Having a chain of command that defines clear lines of authority and responsibilities for system personnel during an emergency speed up response time and helps eliminate confusion.
- Timely and effective response can minimize the effects of an emergency.
- Often, the initial response sets the tone for the entire emergency.

Section XII: Emergency Response plan (ERP)

System personnel need to know:

- Who to report an emergency to.
- Who will make decisions during the emergency.
- Their own responsibilities.

The first step in any emergency is to notify the person at the top of the chain of command—the person responsible for managing the emergency and making key decisions. This lead person will assess the situation and initiate a series of response actions based on the type and severity of emergency.

ERP should assign the following key responsibilities to system personnel:

- Handle incoming phone calls and provide administrative support.
- Provide information to the public and media.
- Contact customers.
- Assess your system's facilities and operations in the field.
- Organize and carry out repairs.

Chain of command and lines of authority

Officer for System Manager Phone:xxx . Responsible for overall water system management and decision-making. • Manages the emergency • Provides information to regulatory agencies, the public, and news media • Approves all communications to external parties.

Officer In charge of operating the water system: Phone xxx• Performs inspections, maintenance and sampling • Relays critical information • Assesses facilities • Provides recommendations to the water system.

Officer in charge of Water Treatment Plant Operations: In charge of running the water treatment plant • Performs inspections, maintenance and sampling

- Relays critical information
- Assesses facilities
- Provides recommendations to the water system manager.

Office Administrator: Responsible for administrative functions in the office

- Receives phone calls and keeps a log of events
- Provides a standard, carefully pre-scripted message to those who call with general questions (The water system manager decides if and when to release additional information)

Events that Cause Emergencies:

Emergencies happen for many reasons, including:

- Natural disasters
- Accidents
- Deliberate vandalism or terrorism
- System neglect or deferred maintenance. Events that Cause Emergencies.

Evaluate a variety of events and the damage they may cause to the water system and its infrastructure. Each type of event can cause different damage to system components or contamination resulting in a service disruption. You should reflect these evaluations in your

Section XII: Emergency Response plan (ERP)

water system's vulnerability assessment and procedures for responding to specific events discussed later in this document.

Natural Disasters: Consider common natural disasters when developing an emergency response plan. An emergency may affect isolated sections or your entire water system. You should evaluate a variety of events and the damage they may cause to your water system and its infrastructure.

Each type of event can cause different damage to system components or contamination resulting in a service disruption. You should reflect these evaluations in your water system's vulnerability assessment and procedures for responding to specific events discussed later in this document. Natural Disasters Consider common natural disasters when developing an emergency response plan.

Earthquake: Emergency response plans should evaluate what facilities are at risk during an earthquake, what can be done to minimize damage and actions the system can take to respond to such an event. It is also important to have backup communication plans, because radios and cell phones may not work after an earthquake.

Floods: Floods can cause widespread contamination as turbid waters carry bacteria that can overflow sources, transmission lines, treatment facilities, and pumping facilities. Floods can also ruin electrical components and telemetry systems. Consider damage to roads and bridges where distribution or transmission lines are located. Washout of roads or bridges not only damage pipes but can also interfere with repair. If the risk for a flood is high, the water system should plan for and consider mitigating actions to protect facilities and equipment.

High winds: Storms often generate winds in excess of 80 Km/hour and hurricane wind speeds. These storms often disrupt power and damage water system facilities.

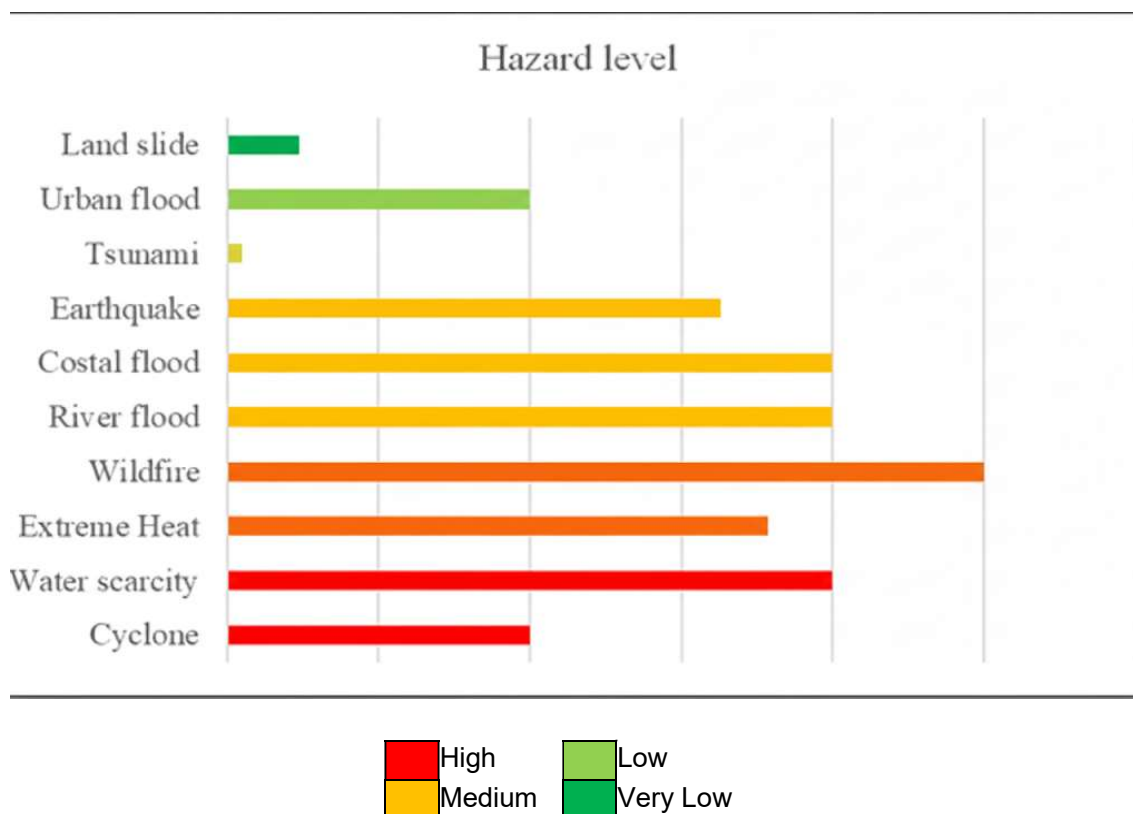
Waterborne diseases: Organisms can contaminate water supplies and cause waterborne diseases. Proper operations, management, and planning are essential to prevent diseases.

Human-caused events

Human-caused events that can result in a water system emergency include vandalism, terrorism, fires, construction accidents, and basic neglect of maintaining the system. Backflow usually occurs when pressure loss somewhere in the system causes water flow to reverse which also leads to cross connections and can cause waterborne disease outbreaks.

Vandalism: Most vandalism is spontaneous rather than pre planned or premeditated. Using materials at hand, vandals often break into systems and damage facilities. Such incidents can be prevented by enhancing security, increasing lighting, installing locks on doors and putting up security fencing.

Example: Events that cause emergencies



Severity of emergency:

The severity of an emergency can vary widely. Knowing the severity of the emergency and being able to communicate it to others will help system personnel keep their response balanced and effective.

Level 1: Routine Emergency: The system experiences a routine emergency, such as Distribution line breaks, short power outage or Minor mechanical problems in pump houses, System personnel can handle the problem with minimal outside assistance. Although it is important to begin responding, system personnel should remain calm and thoroughly work through the situation. Routine emergencies can usually be resolved within 24 hours. If they determine it will take longer than 24 hours to resolve the problem and storage is likely to draw down below a safe operating level, they elevate the situation to level 2.

Level 2. Minor Emergency (Alert Status): Supply disruption, such as a transmission main-line break, pump failure with a potential for backflow, and loss of pressure.

- Storage is not adequate to handle disruption in supply.
- Bacteriological analysis suggesting an initial positive coliform or *E. coli* sample.
- A reduction in residual chlorine at consumer end
- A minor act of vandalism.

Minor emergencies can usually be resolved within 72 hours.

Level 3: Significant Emergency: The system experiences significant mechanical or contamination problems and a supply disruption is inevitable. It is important to issue a health advisory to protect public health. Bacteriological analysis suggesting an initial positive coliform or *E. coli* sample requires immediate consideration of a health advisory notice to customers. An advisory is required when : (i) a loss or complete malfunction of the source treatment facilities including chlorination occurs, (ii) a major pipeline break or other system failure that

Section XII: Emergency Response plan (ERP)

results in water shortage or requires system shutdown, (iii) vandalism such as intrusion or damage to any system

Level 4: Disastrous emergency : When system source is no longer able to provide water leading to shutdown.

Shortage and the need for water-use restrictions. To distribute the water shortage notification:

1. Field staff will place "water shortage notices" on doors and along travel routes.
2. Staff will place signs on main travel routes into the community.
3. Water system manager will ask local Audio/ Video/ printmedia to issue the water shortage notice and a request to curtail water use.
4. Administrative support person will provide a pre-scripted message to phone callers and log in each phone call.

Water system operator continuously updates the water system manager on water shortage.

Water system manager and staff re-notify customers when water shortage is resolved.

Emergency in Distribution System

The free chlorine residual in the distribution system should be maintained at no less than 1.0 mg/l never to fall below 0.2 mg/l. If this happens

Dead-end lines should be flushed as needed to maintain the required free chlorine residual.

Required samples should be taken in accordance with the bacteriological sampling plan.

Search and report any cross-connections found to the operator in direct charge of the distribution system.

Newly constructed or repaired water mains in the distribution system should be disinfected.

If a repair requires that the main be dewatered the following steps should be followed:

Turn off all customer connections served by the line, Disinfect the main with a 300 mg/l chlorine dosage for 15 minutes and Restore customer service.

The pressure in the distribution system should always be maintained at a minimum of 1.4 KSC.

Dead-end lines may need to be flushed monthly or more often to maintain adequate free chlorine residuals.

While making New connections: Mains shall be flushed and the free chlorine residual measured before connecting the service line

Chlorine leak

when a cylinder is ruptured or the valve is broken during handling.

immediately call the chlorine supplier at _____.

Leave the room and shut off the ventilation equipment to contain the leak

Call the Fire Department at _____ to advise them of a chlorine leak and that assistance may be required and for them to come to the site.

If there are three people or more on site, advise the Fire department that you currently have:

- 1 contained the chlorine leak
- 2 an adequate number of trained staff available
- 3 self-contained breathing apparatus (SCBA) for everyone needing to enter the leak area
- 4 an approved repair kit

Ensure they are aware of the correct address and on-site location of the chlorine room and that they need to come to the site

Section XII: Emergency Response plan (ERP)

The third person is to have a telephone and position themselves in a safe location but be within eye contact at all times with the two staff members in the chlorine room

If the leak is liquid and not gas an attempt must be made to position the cylinder in a manner that the rupture is leaking chlorine gas only

Contact the facility manager and report the major leak and proceed under their advisement to either follow the rest of this procedure or in another manner identified by them

If approved by the manager, a minimum of two staff must don/ wear a SCBA, ensuring proper fit and enter the room taking the repair kit with them (the kit is located beside the eye wash station)

Both people must leave the room immediately if:

Apply the proper repair part from the kit and secure the cylinder to limit further movement

The cylinder has been secured and no further leaks need to be addressed

Either of the SCBAs has sounded an alarm indicating a low supply of oxygen

If staff have left the room to replace oxygen cylinders, they can both re-enter together to complete the repair

Only ventilate the room under the direction of the Fire Department

Continue to follow all directions given by the person in charge from the Fire Department

Call the chlorine supplier and request immediate pickup of the cylinder

Document communication with the supplier and get a confirmation number from them

All staff involved in the major leak are to document the incident after the Fire Department has determined the area to be safe

Continue to monitor and document the leak conditions until the faulty cylinder has been removed from site

Safety Practices: Only enter leak area when wearing SCBA, Wear protective clothing, Use only the repair tools and equipment from the kit

Notes: If a shift change occurs during the emergency, all staff involved will remain on site and continue to assist with the emergency and only leave if directed by management

Section XIII: PERFORMANCE TARGETS

Key Performance Targets

1. **Construction Period**
 - a. The contractor shall perform the activities as per the bill of quantities and as per the specifications.
 - b. **Phase I (Construction Phase)** is Thirty-Six (18) months including Three (3) months of design review and Thirty-three (15) months of construction, unless extended by the Employer in accordance with the terms of this Contract, between the Start Date and the Commencement of Phase II including monsoon season
2. **Operation and maintenance Period**
 - A. **Definition and measurement of Performance Targets**
 - a. Phase II (Operation and Maintenance) is Sixty (60) months, unless extended by the Employer in accordance with the terms of this Contract, between the Start Date and the completion date including monsoon season
 - b. UGSS works shall include but not limited to, the maintenance of all new assets created for the system from house service connections to the Treatment Plant inlet. This involves operation & maintenance of Machine holes, pipe lines, House service connections, Pumping Stations, lift stations, Pumping mains, all allied electro-mechanical components including computerized billing and Collection of the monthly UGSS Charges.
3. **Key Performance Indicators**

The Contractor has to achieve minimum performance standards as detailed here in below:

In the event the Contractor achieves exceptional service levels, a mechanism has been provided to remunerate these exceptional services. Similarly, for poor performances below the minimum performance standards will attract penalties.

A. **Minimum performance standards to be maintained:** Complaint Redressal

B. **Methodology for Measurement of Performance**

The Contractor shall develop a robust methodology and framework for measurement and monitoring of Performance Standards stipulated under this clause and proposed as part of the Operation and Maintenance Plan. The Employer shall review the same and upon agreement between the Parties, the agreed methodology shall form the basis for monitoring the performance of the Contractor and apply the Performance Payment.

C. The Contractor shall achieve and maintain the Required Service Levels stipulated in Table below:

Sl.No.	Description	Details
KPI -1	Complaint Redressal	Complaints to be resolved within 24 hours: all collection system pipe lines, Valves and appurtenances within the project area from HSC entry point to Treatment plant inlet Complaints to be resolved within 48 hours: all Pumping main pipe lines within the project area from Pumping or lifting stations outlet to destination locations and related valves and appurtenances. Complaints to be resolved within 7 days: Complaints related to delay in providing connection, change in customer database, reconnection, temporary disconnection, other complaints connected to customer database. In the event a complaint is not redressed within twice the time period provided for such redressal period, the same shall be considered as an additional complaint by the same Complainant. The accumulation of complaints shall continue till it has been resolved.
	Measured By	Percentage of total number of complaints resolved during the billing month under review over the total number of complaints received during that quarter $\frac{\text{No. of complaints attended and completed satisfactorily} \times 100}{\text{Total number of complaints received}}$
	Monitored by	Until electronic registry is established, manual record to be established. An electronic registry maintained by the Contractor, the registry shall include detailed database and summary tables including: ▪ Time and date ▪ Complaint number ▪ Name ▪ User identification number ▪ Sewerage Zone ▪ Nature of complaint ▪ Time and date at which complaint is resolved ▪ Action taken report
	Allowable exclusions	The Contractor shall be excused from meeting this KPI in the following cases: • The complaint resolution targets of the Contractor shall not include complaints pertaining to rainfall / flood. • Delays due to situations beyond the contractor's control
	Damages	• Above and equal to 80%: - No penalties • Above and equal to 50% and up to 80%: Proportionate penalty on the payment for this stipulated KPI • Below 50% :- 100% penalty on the payment for this stipulated KPI

Section XIV: Contractor Payment

1. **The total Contractor Payments comprises two components:**
 - a. Payment for Construction; and
 - b. Payments for Operation Services.
 - c. Payment for Operation Service is based on the Key Performance Indicator. The payment shall be made in the ratio of 70:30. It means 70% of the Operation Service cost will be paid as monthly fixed payment and 30% shall be variable Operation Service monthly payment and will be paid on performance basis
2. **Payments for Construction:**

The eligibility of payment shall be as follows:

 - a. For water supply distribution system including all pipeline accessories Zone wise
 - i. 60% of the cost of pipeline on supply and stacking of material at site
 - ii. 20% of the cost of pipeline on laying, jointing, sectional hydro testing of pipes and road restoration
 - iii. 20% on commissioning
 - b. For Mechanical/ Electrical, Instrumentation and other items
 - i. 60% of the quoted price, against supply and storage of material at Site;
 - ii. 30% on installation of the equipment; testing and trial run completed successfully; and
 - iii. 10% on commissioning of the equipment.
 - c. For civil works and other items: Progressive payment as per progress of work
3. **Payment on Operation and Maintenance Services**

Payment for the Operation and Maintenance Services would comprise two components, namely Fixed payment and Performance payment, as follows:

 - i. Fixed Payment equal to % of the eligible Total Payment for Operation Services;
 - ii. Performance Payment equal to % of the eligible Total Payment for Operation Services as per Section13: Performance Target and Measurement

1. **Fixed Payment**

Employer shall pay the fixed Payment to the Contractor within 15 days of raising the monthly bills. The monthly payment bills will be reviewed and certified by the Employer's representative/ Auditing Body/ Technical Auditor within 7 days of submission by the Contractor. Eligible performance Payment and other charges if any will be paid on certification within 7 days of recommendation by the Employer's representative/ Technical Auditor along with a certificate regarding fulfilment of the performance conditions and the Technical Auditor's report.

The Fixed Payment shall be paid to the Contractor on monthly basis subject to fulfilment of the following conditions:

- i. Maintaining the minimum personnel as specified in contract during the previous month.
- ii. Compliance with the obligations under the Contract.
- iii. Providing proper Under Ground Sewerage service to the citizens in the service area

The essence of the contract is achieving superior performance in service delivery to the end user. Towards achieving this, deductions as proposed below shall be made from the fixed Payment in case of below satisfactory or inferior performance in achieving the performance indicators.

In case the Contractor fails to achieve the performance Indicator, then the deductions at the following rates shall be made from the Fixed Payment

Achievement of KPI during the billing period	Eligible O&M cost
Equal to and above 80%	No deductions
Equal to and above 50% - up to 79%	Proportionate deductions (from 50% to 79%)
Below 50%	No Payment (100% deduction)

2. Performance payment and damages

A maximum of 30% of the total agreed Payment for Operation Services will be based on achieving performance as shown in **Section 13: Performance Targets** during Operation Services under the contract.

Contractor is eligible to get performance payment i.e., 30% if he meets the threshold limits of all the performance indicator. The breakdown of performance payment related to performance indicators are listed below.

3. Performance based payment for Under Ground Sewerage System

Breakup for various criteria in water supply system is as given below:

S.No.	Parameter & reference	% of eligible monthly Operation Service payment
1	KPI – 1: Complaint Redressal	30%
	TOTAL	30% s