

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 [Delay Damages] 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 be 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 [Consequences of Suspension], 8.10 [Payment for Plant and Materials in Event of Suspension] and 8.11 [Prolonged Suspension] shall not apply.

#### 8.9 Consequences of Suspension

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

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

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

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

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

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

- (a) the work on Plant or delivery of Plant and/or Materials has been



suspended for more than 28 days, and

- (b) the Contractor has marked the Plant and/or Materials as the Employer's property in accordance with the Engineer's instructions.

**8.11 Prolonged Suspension**

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

**8.12 Resumption of Work**

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

**9. Tests on Completion**

**9.1 Contractor's Obligations**

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

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

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

**9.2 Delayed Tests**

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

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

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

**9.3 Retesting**

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

**9.4 Failure to Pass Tests on Completion**

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

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



- (c) issue a Taking-Over Certificate, if the Employer so requests.

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

## 10. Employer's Taking Over

### 10.1 Taking Over of the Works and Sections

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

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

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

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

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

### 10.2 Taking Over of Parts of the Works

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

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

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

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





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

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 a damage attributable to the Contractor. However, a Defects Notification Period shall not be extended by more than two years.
- If delivery and/or erection of Plant and/or Materials was suspended under Sub-Clause 8.8 [Suspension of Work] or Sub-Clause 16.1 [Contractor's Entitlement to Suspend Work], the Contractor's obligations under this Clause shall not apply to any defects or damage occurring more than two years after the Defects Notification Period for the Plant and/or Materials would otherwise have expired.
- 11.4 Failure to Remedy Defects** If the Contractor fails to remedy any defect or damage within a reasonable time, a date may be fixed by (or on behalf of) the Employer, on or by which the defect or damage is to be remedied. The Contractor shall be given reasonable notice of this date.
- If the Contractor fails to remedy the defect or damage by this notified date and this remedial work was to be executed at the cost of the Contractor under Sub-Clause 11.2 [Cost of Remedying Defects], the Employer may (at his option):
- (a) carry out the work himself or by others, in a reasonable manner and at the Contractor's cost, but the Contractor shall have no responsibility for this work; and the Contractor shall subject to Sub-Clause 2.5 [Employer's Claims] pay to the Employer the costs reasonably incurred by the Employer in remedying the defect or damage;
  - (b) require the Engineer to agree or determine a reasonable reduction in the Contract Price in accordance with Sub-Clause 3.5 [Determinations]; or
  - (c) if the defect or damage deprives the Employer of substantially the whole benefit of the Works or any major part of the Works, terminate the Contract as a whole, or in respect of such major part which cannot be put to the intended use. Without prejudice to any other rights, under the Contract or otherwise, the Employer shall then be entitled to recover all sums paid for the Works or for such part (as the case may be), plus financing costs and the cost of dismantling the same, clearing the Site and returning Plant and Materials to the Contractor.
- 11.5 Removal of Defective Work** If the defect or damage cannot be remedied expeditiously on the Site and the Employer gives consent, the Contractor may remove from the Site for the purposes of repair such items of Plant as are defective or damaged. This consent may require the Contractor to increase the amount of the Performance Security by the full replacement cost of these items, or to provide other appropriate security.
- 11.6 Further Tests** If the work of remedying of any defect or damage may affect the performance of the Works, the Engineer may require the repetition of any of the tests described in the Contract. The requirement shall be made by notice within 28 days after the defect or damage is remedied.
- These tests shall be carried out in accordance with the terms

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

- 11.7 Right of Access** Until the Performance Certificate has been issued, the Contractor shall have such right of access to the Works as is reasonably required in order to comply with this Clause, except as may be inconsistent with the Employer's reasonable security restrictions.
- 11.8 Contractor to Search** The Contractor shall, if required by the Engineer, search for the cause of any defect, under the direction of the Engineer. Unless the defect is to be remedied at the cost of the Contractor under Sub-Clause 11.2 [Cost of Remedying Defects], the Cost of the search plus profit shall be agreed or determined by the Engineer in accordance with Sub-Clause 3.5 [Determinations] and shall be included in the Contract Price.
- 11.9 Performance Certificate** Performance of the Contractor's obligations shall not be considered to have been completed until the Engineer has issued the Performance Certificate to the Contractor, stating the date on which the Contractor completed his obligations under the Contract.
- The Engineer shall issue the Performance Certificate within 28 days after the latest of the expiry dates of the Defects Notification Periods, or as soon thereafter as the Contractor has supplied all the Contractor's Documents and completed and tested all the Works, including remedying any defects. A copy of the Performance Certificate shall be issued to the Employer.
- Only the Performance Certificate shall be deemed to constitute acceptance of the Works.
- 11.10 Unfulfilled Obligations** After the Performance Certificate has been issued, each Party shall remain liable for the fulfilment of any obligation which remains unperformed at that time. For the purposes of determining the nature and extent of unperformed obligations, the Contract shall be deemed to remain in force.
- 11.11 Clearance of Site** Upon receiving the Performance Certificate, the Contractor shall remove any remaining Contractor's Equipment, surplus material, wreckage, rubbish and Temporary Works from the Site.
- If all these items have not been removed within 28 days after receipt by the Contractor of the Performance Certificate, the Employer may sell or otherwise dispose of any remaining items. The Employer shall be entitled to be paid the costs incurred in connection with, or attributable to, such sale or disposal and restoring the Site.
- Any balance of the moneys from the sale shall be paid to the Contractor. If these moneys are less than the Employer's costs, the Contractor shall pay the outstanding balance to the Employer.

## 12. Measurement and Evaluation

- 12.1 Works to be Measured** The Works shall be measured, and valued for payment, in accordance with this Clause. The Contractor shall show in each application under Sub-Clauses 14.3 [Application for Interim Payment Certificates], 14.10 [Statement at Completion], and 14.11 [Application for Final Payment Certificate] the quantities and other particulars detailing the amounts which he considers to be entitled under the Contract.
- Whenever the Engineer requires any part of the Works to be measured, reasonable notice shall be given to the Contractor's Representative, who shall:
- promptly either attend or send another qualified representative to assist the Engineer in making the measurement, and
  - 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 [Works to be Measured] and 12.2 [Method of Measurement] 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.

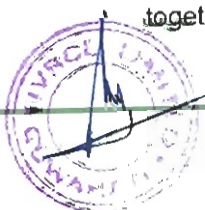
However, a new rate or price shall be appropriate for an item of work if:

- (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 Works 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.

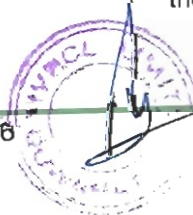
The Contractor shall not make any alteration and/or modification of the Permanent Works, unless and until the Engineer instructs or approves a Variation.

#### 13.2 Value Engineering

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

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

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





agreed by both Parties:

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

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

### 13.3 Variation Procedure

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

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

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

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

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

### 13.4 Payment in Applicable Currencies

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

### 13.5 Provisional Sums

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

- (a) work to be executed (including Plant, Materials or services to be supplied) by the Contractor and valued under Sub-Clause 13.3 [Variation Procedure]; and/or
- (b) Plant, Materials or services to be purchased by the Contractor, from a nominated Subcontractor (as defined in Clause 5 [Nominated Subcontractors]) or otherwise; and for which there shall be included in the Contract Price:
  - (i) the actual amounts paid (or ~~due~~ to be paid) by the



Contractor, and

- (ii) a sum for overhead charges and profit, calculated as a percentage of these actual amounts by applying the relevant percentage rate (if any) stated in the appropriate Schedule. If there is no such rate, the percentage rate stated in the Contract Data shall be applied.

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

### 13.6 Daywork

For work of a minor or incidental nature, the Engineer may instruct that a Variation shall be executed on a daywork basis. The work shall then be valued in accordance with the Daywork Schedule included in the Contract, and the following procedure shall apply. 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:

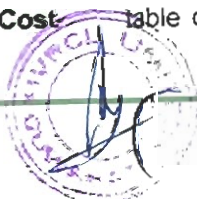
- (a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
- (b) payment of any such Cost, which shall be included in the Contract Price.

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

### 13.8 Adjustments for Changes in Cost

In this Sub-Clause, "table of adjustment data" means the completed table of adjustment data for local and foreign currencies included in



the Schedules. If there is no such table of adjustment data, this Sub-Clause shall not apply.

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

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

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

where:

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

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

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

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

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

The cost indices or reference prices stated in the table of adjustment data shall be used. If their source is in doubt, it shall be determined by the Engineer. For this purpose, reference shall be made to the values of the indices at stated dates (quoted in the fourth and fifth columns respectively of the table) 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" (stated in the table) 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.
- (e) 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 an entity and from within a country (or other jurisdiction) approved by the Employer, 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 per cent (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] and Sub-Clause 19.6 [Optional Termination, Payment and Release], payable by the Contractor to the Employer.

#### 14.3 Application for Interim Payment Certificates

The Contractor shall submit a Statement in six copies to the Engineer after the end of each month, in a form approved by the Engineer, showing in detail the amounts to which the Contractor considers himself to be entitled, together with supporting documents which shall include the report on the progress during this month in accordance with Sub-Clause 4.21 [Progress Reports].

The Statement shall include the following items, as applicable, which shall be expressed in the various currencies in which the Contract Price is payable, in the sequence listed:

- (a) the estimated contract value of the Works executed and the Contractor's Documents produced up to the end of the month (including Variations but excluding items described in sub-paragraphs (b) to (g) below);
- (b) any amounts to be added and deducted for changes in legislation and changes in cost, in accordance with Sub-Clause 13.7 [Adjustments for Changes in Legislation] and Sub-Clause 13.8 [Adjustments for Changes in Cost];
- (c) any amount to be deducted for retention, calculated by applying the percentage of retention stated in the Contract Data to the total of the above amounts, until the amount so retained by the Employer reaches the limit of Retention Money (if any) stated in the Contract Data;
- (d) any amounts to be added for the advance payment 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:
- (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 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 Certificates (if any) stated in the Contract Data. In this event, the Engineer shall give notice to the Contractor accordingly.

An Interim Payment Certificate shall not be withheld for any other reason, although:

- (a) if any thing supplied or work done by the Contractor is not in accordance with the Contract, the cost of rectification or replacement may be withheld until rectification or replacement has been completed; and/or
- (b) if the Contractor was or is failing to perform any work or obligation in accordance with the Contract, and had been so notified by the Engineer, the value of this work or obligation may be withheld until the work or obligation has been performed.

The Engineer may in any Payment Certificate make any correction or modification that should properly be made to any previous Payment Certificate. A Payment Certificate shall not be deemed to indicate the Engineer's acceptance, approval, consent or satisfaction.

#### 14.7 Payment

The Employer shall pay to the Contractor:

- (a) the first instalment of the advance payment within 42 days after issuing the Letter of Acceptance or within 21 days after receiving the documents in accordance with Sub-Clause 4.2 [Performance Security] and Sub-Clause 14.2 [Advance Payment], whichever is later;
- (b) the amount certified in each Interim Payment Certificate within 56 days after the Engineer receives the Statement and supporting documents or, at a time when the Bank's loan or credit (from which part of the payments to the Contractor is being made) is suspended, the amount shown on any statement submitted by the Contractor, within 14 days after such statement is submitted, any discrepancy being rectified in the next payment to the Contractor; and
- (c) the amount certified in the Final Payment Certificate within 56 days after the Employer receives this Payment Certificate or, at a time when the Bank's loan or credit (from which part of the payments to the Contractor is being made) is suspended, the undisputed amount shown in the Final Statement, within 56 days after the date of notification of the suspension in accordance with Sub-Clause 16.2.

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].

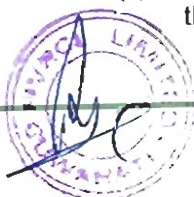
Unless otherwise stated in the Particular Conditions, when the Taking-Over Certificate has been issued for the Works and the first half of the Retention Money has been certified for payment by the Engineer, the Contractor shall be entitled to substitute a guarantee, in the form annexed to the Particular Conditions or in another form approved by the Employer and provided by an entity approved by the Employer, 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 the 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

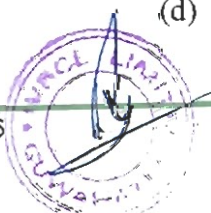
#### 15.1 Notice to Correct

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 by Employer

The Employer shall be entitled to terminate the Contract if the Contractor:

- (a) fails to comply with Sub-Clause 4.2 [Performance Security] or with a notice under Sub-Clause 15.1 [Notice to Correct],
- (b) abandons the Works or otherwise plainly demonstrates the intention not to continue performance of his obligations under the Contract,
- (c) without reasonable excuse fails:
  - (i) to proceed with the Works in accordance with Clause 8 [Commencement, Delays and Suspension], or
  - (ii) to comply with a notice issued under Sub-Clause 7.5 [Rejection] or Sub-Clause 7.6 [Remedial Work], within 28 days after receiving it,
- (d) subcontracts the whole of the Works or assigns the Contract



without the required agreement,

- (e) becomes bankrupt or insolvent, goes into liquidation, has a receiving or administration order made against him, compounds with his creditors, or carries on business under a receiver, trustee or manager for the benefit of his creditors, or if any act is done or event occurs which (under applicable Laws) has a similar effect to any of these acts or events, or
- (f) gives or offers to give (directly or indirectly) to any person any bribe, gift, gratuity, commission or other thing of value, as an inducement or reward:
  - (i) for doing or forbearing to do any action in relation to the Contract, or
  - (ii) for showing or forbearing to show favour or disfavour to any person in relation to the Contract,

or if any of the Contractor's Personnel, agents or Subcontractors gives or offers to give (directly or indirectly) to any person any such inducement or reward as is described in this sub-paragraph (f). However, lawful inducements and rewards to Contractor's Personnel shall not entitle termination.

In any of these events or circumstances, the Employer may, upon giving 14 days' notice to the Contractor, terminate the Contract and expel the Contractor from the Site. However, in the case of sub-paragraph (e) or (f), the Employer may by notice terminate the Contract immediately.

The Employer's election to terminate the Contract shall not prejudice any other rights of the Employer, under the Contract or otherwise.

The Contractor shall then leave the Site and deliver any required Goods, all Contractor's Documents, and other design documents made by or for him, to the Engineer. However, the Contractor shall use his best efforts to comply immediately with any reasonable instructions included in the notice (i) for the assignment of any subcontract, and (ii) for the protection of life or property or for the safety of the Works.

After termination, the Employer may complete the Works and/or arrange for any other entities to do so. The Employer and these entities may then use any Goods, Contractor's Documents and other design documents made by or on behalf of the Contractor.

The Employer shall then give notice that the Contractor's Equipment and Temporary Works will be released to the Contractor at or near the Site. The Contractor shall promptly arrange their removal, at the risk and cost of the Contractor. However, if by this time the Contractor has failed to make a payment due to the Employer, these items may be sold by the Employer in order to recover this payment. Any balance of the proceeds shall then be paid to the Contractor.

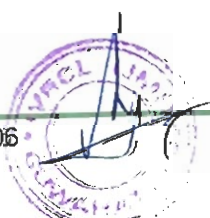
### 15.3 Valuation at Date of Termination

As soon as practicable after a notice of termination under Sub-Clause 15.2 [Termination by Employer] has taken effect, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine the value of the Works, Goods and Contractor's Documents, and any other sums due to the Contractor 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 Sub-Clause 16.4 [Payment on Termination].

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 19.6 [Optional Termination, Payment and Release].

**15.6 Corrupt or Fraudulent Practices**

If the Employer determines that the Contractor has engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices, in competing for or in executing the Contract, then the Employer may, after giving 14 days notice to the Contractor, terminate the Contractor's employment under the Contract and expel him from the Site, and the provisions of Clause 15 shall apply as if such expulsion had been made under Sub-Clause 15.2 [Termination by Employer].

Should any employee of the Contractor be determined to have engaged in corrupt, fraudulent, collusive, coercive, or obstructive practice during the execution of the Works, then that employee shall be removed in accordance with Sub-Clause 6.9 [Contractor's Personnel].

**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.



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**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) In the event the Bank suspends the loan or credit from which part 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 or both of the following actions, namely (i) suspend work or reduce the rate of work, and (ii) terminate his employment under 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.
- (i) 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].

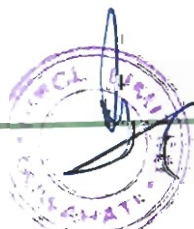
In any of these events or circumstances, the Contractor may, upon giving 14 days' notice to the Employer, terminate the Contract. However, in the case of sub-paragraph (f) or (g), the Contractor may by notice terminate the Contract immediately.

The Contractor's election to terminate the Contract shall not prejudice any other rights of the Contractor, under the Contract or otherwise.

**16.3 Cessation of Work and Removal of Contractor's Equipment**

After a notice of termination under Sub-Clause 15.5 [Employer's Entitlement to Termination for Convenience], Sub-Clause 16.2 [Termination by Contractor] or Sub-Clause 19.6 [Optional Termination, Payment and Release] has taken effect, the Contractor shall promptly:

- (a) cease all further work, except for such work as may have been instructed by the Engineer for the protection of life or property or for the safety of the Works,
- (b) hand over Contractor's Documents, Plant, Materials and other work, for which the Contractor has received payment, and



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Guwahati Metropolitan Dev. Authority

- (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 with the Contract.

The Contractor shall be liable for any loss or damage caused by any actions performed by the Contractor after a Taking-Over Certificate has been issued. The Contractor shall also be liable for any loss or damage which occurs after a Taking-Over Certificate has been issued



and which arose from a previous event for which the Contractor was liable.

### 17.3 Employer's Risks

The risks referred to in Sub-Clause 17.4 [Consequences of Employer's Risks] below, insofar as they directly affect the execution of the Works in the Country, are:

- (a) war, hostilities (whether war be declared or not), invasion, act of foreign enemies,
- (b) rebellion, terrorism, sabotage by persons other than the Contractor's Personnel, revolution, insurrection, military or usurped power, or civil war, within the Country,
- (c) riot, commotion or disorder within the Country by persons other than the Contractor's Personnel,
- (d) munitions of war, explosive materials, ionising radiation or contamination by radio-activity, within the Country, except as may be attributable to the Contractor's use of such munitions, explosives, radiation or radio-activity,
- (e) pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds,
- (f) use or occupation by the Employer of any part of the Permanent Works, except as may be specified in the Contract,
- (g) design of any part of the Works by the Employer's Personnel or by others for whom the Employer is responsible, and
- (h) any operation of the forces of nature which is Unforeseeable or against which an experienced contractor could not reasonably have been expected to have taken adequate preventative precautions.

### 17.4 Consequences of Employer's Risks

If and to the extent that any of the risks listed in Sub-Clause 17.3 above results in loss or damage to the Works, Goods or Contractor's Documents, the Contractor shall promptly give notice to the Engineer and shall rectify this loss or damage to the extent required by the Engineer.

If the Contractor suffers delay and/or incurs Cost from rectifying this loss or damage, the Contractor shall give a further notice to the Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

- (a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
- (b) payment of any such Cost, which shall be included in the Contract Price. In the case of sub-paragraphs (f) and (g) of Sub-Clause 17.3 [Employer's Risks], Cost plus profit shall be payable.

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

### 17.5 Intellectual and Industrial Property Rights

In this Sub-Clause, "infringement" means an infringement (or alleged infringement) of any patent, registered design, copyright, trade mark, trade name, trade secret or other intellectual or industrial property right relating to the Works; and "claim" means a claim (or proceedings pursuing a claim) alleging an infringement.

Whenever a Party does not give notice to the other Party of any claim within 28 days of receiving the claim, the first Party shall be deemed to have waived any right to indemnity under this Sub-Clause.

The Employer shall indemnify and hold the Contractor harmless against and from any claim alleging an infringement which is or was:

- (a) an unavoidable result of the Contractor's compliance with the Contract, or
- (b) a result of any Works being used by the Employer:
  - (i) for a purpose other than that indicated by, or reasonably





to be inferred from, the Contract, or

- (ii) in conjunction with any thing not supplied by the Contractor, unless such use was disclosed to the Contractor prior to the Base Date or is stated in the Contract.

The Contractor shall indemnify and hold the Employer harmless against and from any other claim which arises out of or in relation to (i) the manufacture, use, sale or import of any Goods, or (ii) any design for which the Contractor is responsible.

If a Party is entitled to be indemnified under this Sub-Clause, the indemnifying Party may (at its cost) conduct negotiations for the settlement of the claim, and any litigation or arbitration which may arise from it. The other Party shall, at the request and cost of the indemnifying Party, assist in contesting the claim. This other Party (and its Personnel) shall not make any admission which might be prejudicial to the indemnifying Party, unless the indemnifying Party failed to take over the conduct of any negotiations, litigation or arbitration upon being requested to do so by such other Party.

#### 17.6 Limitation of Liability

Neither Party shall be liable to the other Party for loss of use of any Works, loss of profit, loss of any contract or for any indirect or consequential loss or damage which may be suffered by the other Party in connection with the Contract, other than as specifically provided in Sub-Clause 8.7 [Delay Damages]; Sub-Clause 11.2 [Cost of Remedying Defects]; Sub-Clause 15.4 [Payment after Termination]; Sub-Clause 16.4 [Payment on Termination]; Sub-Clause 17.1 [Indemnities]; Sub-Clause 17.4 (b) [Consequences of Employer's Risks] and Sub-Clause 17.5 [Intellectual and Industrial Property Rights].

The total liability of the Contractor to the Employer, under or in connection with the Contract other than under Sub-Clause 4.19 [Electricity, Water and Gas], Sub-Clause 4.20 [Employer's Equipment and Free-Issue Material], Sub-Clause 17.1 [Indemnities] and Sub-Clause 17.5 [Intellectual and Industrial Property Rights], shall not exceed the sum resulting from the application of a multiplier (less or greater than one) to the Accepted Contract Amount, as stated in the Contract Data, or (if such multiplier or other sum is not so stated), the Accepted Contract Amount.

This Sub-Clause shall not limit liability in any case of fraud, deliberate default or reckless misconduct by the defaulting Party.

#### 17.7 Use of Employer's Accommodation/Facilities

The Contractor shall take full responsibility for the care of the Employer provided accommodation and facilities, if any, as detailed in the Specification, from the respective dates of hand-over to the Contractor until cessation of occupation (where hand-over or cessation of occupation may take place after the date stated in the Taking-Over Certificate for the Works).

If any loss or damage happens to any of the above items while the Contractor is responsible for their care arising from any cause whatsoever other than those for which the Employer is liable, the Contractor shall, at his own cost, rectify the loss or damage to the satisfaction of the Engineer.

### 18. Insurance

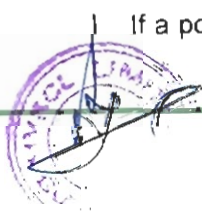
#### 18.1 General Requirements for Insurances

In this Clause, "insuring Party" means, for each type of insurance, the Party responsible for effecting and maintaining the insurance specified in the relevant Sub-Clause.

Wherever the Contractor is the insuring Party, each insurance shall be effected with insurers and in terms 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.

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.

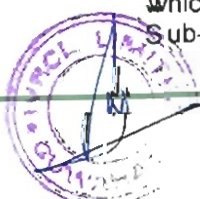
Nothing in this Clause limits the obligations, liabilities or responsibilities of the Contractor or the Employer, under the other terms of the Contract or otherwise. Any amounts not insured or not recovered from the insurers shall be borne by the Contractor and/or the Employer in accordance with these 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.

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

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





**Property**

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.

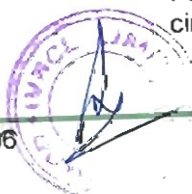
The insurance shall be maintained in full force and effect during the whole time that these personnel are assisting in the execution of the Works. For a Subcontractor's employees, the insurance may be effected by the Subcontractor, but the Contractor shall be responsible for compliance with this Clause.

**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 its 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 the case of 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**

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



**Release**

Majeure], or for multiple periods which total more than 140 days due to the same notified Force Majeure, then either Party may give to the other Party a notice of termination of the Contract. In this event, the termination shall take effect 7 days after the notice is given, and the Contractor shall proceed in accordance with Sub-Clause 16.3 [Cessation of Work and Removal of Contractor's Equipment].

Upon such termination, the Engineer shall determine the value of the work done and issue a Payment Certificate which shall include:

- (a) the amounts payable for any work carried out for which a price is stated in the Contract;
- (b) the Cost of Plant and Materials ordered for the Works which have been delivered to the Contractor, or of which the Contractor is liable to accept delivery: this Plant and Materials shall become the property of (and be at the risk of) the Employer when paid for by the Employer, and the Contractor shall place the same at the Employer's disposal;
- (c) other Costs 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.

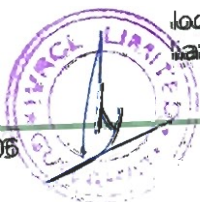
**20. Claims, Disputes and Arbitration****20.1 Contractor's Claims**

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 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 have 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 it to the Dispute Board in accordance with Sub-Clause 20.4 [Obtaining Dispute Board's Decision].

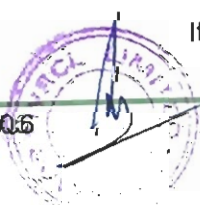
The requirements of this Sub-Clause are in addition to those of any other Sub-Clause which may apply to a claim. If the Contractor fails to comply with this or another Sub-Clause in relation to any claim, any extension of time and/or additional payment shall take account of the extent (if any) to which the failure has prevented or prejudiced proper investigation of the claim, unless the claim is excluded under the second paragraph of this Sub-Clause.

## 20.2 Appointment of the Dispute Board

Disputes shall be referred to a DB for decision in accordance with Sub-Clause 20.4 [Obtaining Dispute Board's Decision]. The Parties shall appoint a DB by the date stated in the Contract Data.

The DB shall comprise, as stated in the Contract Data, either one or three suitably qualified persons ("the members"), each of whom shall be fluent in the language for communication defined in the Contract and shall be a professional experienced in the type of construction involved in the Works and with the interpretation of contractual documents. If the number is not so stated and the Parties do not agree otherwise, the DB shall comprise three persons.

If the Parties have not jointly appointed the DB 21 days before the



date stated in the Contract Data and the DB is to comprise three persons, each Party shall nominate one member for the approval of the other Party. The first two members shall recommend and the Parties shall agree upon the third member, who shall act as chairman.

However, if a list of potential members has been agreed by the Parties and is included in the Contract, the members shall be selected from those on the list, other than anyone who is unable or unwilling to accept appointment to the DB.

The agreement between the Parties and either the sole member or each of the three members shall incorporate by reference the General Conditions of Dispute Board Agreement contained in the Appendix to these General Conditions, with such amendments as are agreed between them.

The terms of the remuneration of either the sole member or each of the three members, including the remuneration of any expert whom the DB consults, shall be mutually agreed upon by the Parties when agreeing the terms of appointment. Each Party shall be responsible for paying one-half of this remuneration.

If at any time the Parties so agree, they may jointly refer a matter to the DB for it to give its opinion. Neither Party shall consult the DB on any matter without the agreement of the other Party.

If a member declines to act or is unable to act as a result of death, disability, resignation or termination of appointment, a replacement shall be appointed in the same manner as the replaced person was required to have been nominated or agreed upon, as described in this Sub-Clause.

The appointment of any member may be terminated by mutual agreement of both Parties, but not by the Employer or the Contractor acting alone. Unless otherwise agreed by both Parties, the appointment of the DB (including each member) shall expire when the discharge referred to in Sub-Clause 14.12 [Discharge] shall have become effective.

**20.3 Failure to Agree on the Composition of the Dispute Board**

If any of the following conditions apply, namely:

- (a) the Parties fail to agree upon the appointment of the sole member of the DB by the date stated in the first paragraph of Sub-Clause 20.2, [Appointment of the Dispute Board],
- (b) either Party fails to nominate a member (for approval by the other Party), or fails to approve a member nominated by the other Party, of a DB of three persons by such date,
- (c) the Parties fail to agree upon the appointment of the third member (to act as chairman) of the DB by such date, or
- (d) the Parties fail to agree upon the appointment of a replacement person within 42 days after the date on which the sole member or one of the three members declines to act or is unable to act as a result of death, disability, resignation or termination of appointment,

then the appointing entity or official named in the Contract Data shall, upon the request of either or both of the Parties and after due consultation with both Parties, appoint this member of the DB. This appointment shall be final and conclusive. Each Party shall be responsible for paying one-half of the remuneration of the appointing entity or official.

**20.4 Obtaining Dispute Board's Decision**

If a dispute (of any kind whatsoever) arises between the Parties in connection with, or arising out of, the Contract or the execution of the Works, including any dispute as to any certificate, determination, instruction, opinion or valuation of the Engineer, either Party may refer the dispute in writing to the DB for its decision, with copies to the other Party and the Engineer. Such reference shall state that it is given under this Sub-Clause.

For a DB of three persons, the DB shall be deemed to have received such reference on the date when it is received by the chairman of the DB.

Both Parties shall promptly make available to the DB all such



additional information, further access to the Site, and appropriate facilities, as the DB may require for the purposes of making a decision on such dispute. The DB shall be deemed to be not acting as arbitrator(s).

Within 84 days after receiving such reference, or within such other period as may be proposed by the DB and approved by both Parties, the DB shall give its decision, which shall be reasoned and shall state that it is given under this Sub-Clause. The decision shall be binding on both Parties, who shall promptly give effect to it unless and until it shall be revised in an amicable settlement or an arbitral award as described below. Unless the Contract has already been abandoned, repudiated or terminated, the Contractor shall continue to proceed with the Works in accordance with the Contract.

If either Party is dissatisfied with the DB's decision, then either Party may, within 28 days after receiving the decision, give notice to the other Party of 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 notice to the other Party of its dissatisfaction and intention to commence arbitration.

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 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, arbitration may be commenced on or after the fifty-sixth day after the day on which a notice of dissatisfaction and intention to commence arbitration was given, even if no attempt at amicable settlement has been made.

#### 20.6 Arbitration

Unless indicated otherwise in the Particular Conditions, any dispute not settled amicably and in respect of which the DB's decision (if any) has not become final and binding shall be finally settled by arbitration. Unless otherwise agreed by both Parties:

- (a) For contracts with foreign contractors, international arbitration with proceedings administered by the international arbitration institution appointed in the Contract Data, conducted in accordance with the rules of arbitration of the appointed institution, if any, or in accordance with UNCITRAL arbitration rules, at the choice of the appointed institution,
- (b) the place of arbitration shall be the city where the headquarters of the appointed arbitration institution is located,
- (c) the arbitration shall be conducted in the language for communications defined in Sub-Clause 1.4 [Law and Language], and
- (d) For contracts with domestic contractors, arbitration with proceedings conducted in accordance with the laws of the Employer's country.

The arbitrators shall have full power to open up, review and revise any certificate, determination, instruction, opinion or valuation of the Engineer, and any decision of the DB, relevant to the dispute. Nothing shall disqualify representatives of the Parties and the Engineer from being called as a witness and giving evidence before the arbitrators on any matter whatsoever relevant to the dispute.





Neither Party shall be limited in the proceedings before the arbitrators to the evidence or arguments previously put before the DB to obtain its decision, or to the reasons for dissatisfaction given in its notice of dissatisfaction. Any decision of the DB shall be admissible in evidence in the arbitration.

Arbitration may be commenced prior to or after completion of the Works. The obligations of the Parties, the Engineer and the DB shall not be altered by reason of any arbitration being conducted during the progress of the Works.

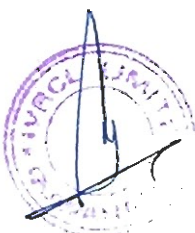
**20.7 Failure to Comply with Dispute Board's Decision**

In the event that a Party fails to comply with a final and binding DB decision, then the other Party may, without prejudice to any other rights it may have, refer the failure itself to arbitration under Sub-Clause 20.6 [Arbitration]. Sub-Clause 20.4 [Obtaining Dispute Board's Decision] and Sub-Clause 20.5 [Amicable Settlement] shall not apply to this reference.

**20.8 Expiry of Dispute Board's Appointment**

If a dispute arises between the Parties in connection with, or arising out of, the Contract or the execution of the Works and there is no DB in place, whether by reason of the expiry of the DB's appointment or otherwise:

- (a) Sub-Clause 20.4 [Obtaining Dispute Board's Decision] and Sub-Clause 20.5 [Amicable Settlement] shall not apply, and
- (b) the dispute may be referred directly to arbitration under Sub-Clause 20.6 [Arbitration].



  
**Chief Executive Officer**  
**Guwahati Metropolitan Dev. Authority**

**APPENDIX: DISPUTE BOARD****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.

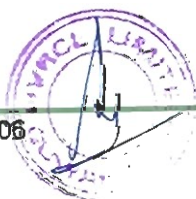
This employment of the Member is a personal appointment. At any time, the Member may give not less than 70 days' notice of resignation to the Employer and to the Contractor, and the Dispute Agreement shall terminate upon the expiry of this period.

- 3. Warranties** The Member warrants and agrees that he/she is and shall be impartial and independent of the Employer, the Contractor and the Engineer. The Member shall promptly disclose, to each of them and to the Other Members (if any), any fact or circumstance which might appear inconsistent with his/her warranty and agreement of impartiality and independence.

When appointing the Member, the Employer and the Contractor relied upon the Member's representations that he/she is:

- (a) experienced in the work which the Contractor is to carry out under the Contract,
- (b) experienced in the interpretation of contract documentation, and
- (c) fluent in the language for communications defined in the Contract.

- 4. General Obligations of the Member** The Member shall:
- (a) have no interest financial or otherwise in the Employer, the Contractor or Engineer, nor any financial interest in the Contract except for payment under the Dispute Board Agreement;
  - (b) not previously have been employed as a consultant or otherwise by the Employer, the Contractor or the Engineer, except in such circumstances as were disclosed in writing to the Employer and the Contractor before they signed the Dispute Board Agreement;
  - (c) have disclosed in writing to the Employer, the Contractor and the Other Members (if any), before entering into the Dispute Board Agreement and to his/her best knowledge and recollection, any professional or personal relationships with any director, officer or employee of the Employer, the Contractor or the Engineer, and any previous involvement in the overall project of which the Contract forms part;



- (d) not, for the duration of the Dispute Board Agreement, be employed as a consultant or otherwise by the Employer, the Contractor or the Engineer, except as may be agreed in writing by the Employer, the Contractor and the Other Members (if any);
- (e) comply with the annexed procedural rules and with Sub-Clause 20.4 of the Conditions of Contract;
- (f) not give advice to the Employer, the Contractor, the Employer's Personnel or the Contractor's Personnel concerning the conduct of the Contract, other than in accordance with the annexed procedural rules;
- (g) not while a Member enter into discussions or make any agreement with the Employer, the Contractor or the Engineer regarding employment by any of them, whether as a consultant or otherwise, after ceasing to act under the Dispute Board Agreement;
- (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 documents received which shall be maintained in a current working file;
- (j) treat the details of the Contract and all the DB's activities and hearings as private and confidential, and not publish or disclose them without the prior written consent of the Employer, the Contractor and the Other Members (if any); and
- (k) be available to give advice and opinions, on any matter relevant to the Contract when requested by both the Employer and the Contractor, subject to the agreement of the Other Members (if any).

#### 5. General Obligations of the Employer and the Contractor

The Employer, the Contractor, the Employer's Personnel and the Contractor's Personnel shall not request advice from or consultation with the Member regarding the Contract, otherwise than in the normal course of the DB's activities under the Contract and the Dispute Board Agreement. The Employer and the Contractor shall be responsible for compliance with this provision, by the Employer's Personnel and the Contractor's Personnel respectively.

The Employer and the Contractor undertake to each other and to the Member that the Member shall not, except as otherwise agreed in writing by the Employer, the Contractor, the Member and the Other Members (if any):

- (a) be appointed as an arbitrator in any arbitration under the Contract;
- (b) be called as a witness to give evidence concerning any dispute before arbitrator(s) appointed for any arbitration under the Contract; or
- (c) be liable for any claims for anything done or omitted in the discharge or purported discharge of the Member's functions, unless the act or omission is shown to have been in bad faith.

The Employer and the Contractor hereby jointly and severally indemnify and hold the Member harmless against and from claims from which he is relieved from liability under the preceding paragraph.

Whenever the Employer or the Contractor refers a dispute to the DB under Sub-Clause 20.4 of the Conditions of Contract, which will require the Member to make a site visit and attend a hearing, the Employer or the Contractor shall provide appropriate security for a sum equivalent to the reasonable expenses to be incurred by the Member. No account shall be taken of any other payments due or paid to the Member.

#### 6. Payment

The Member shall be paid as follows, in the currency named in the Dispute Board Agreement:

- (a) a retainer fee per calendar month, which shall be considered as payment in full for:
  - (i) being available on 28 days' notice for all site visits and hearings;





- (ii) becoming and remaining conversant with all project developments and maintaining relevant files;
- (iii) all office and overhead expenses including secretarial services, photocopying and office supplies incurred in connection with his duties; and
- (iv) all services performed hereunder except those referred to in sub-paragraphs (b) and (c) of this Clause.

The retainer fee shall be paid with effect from the last day of the calendar month in which the Dispute Board Agreement becomes effective; until the last day of the calendar month in which the Taking-Over Certificate is issued for the whole of the Works.

With effect from the first day of the calendar month following the month in which the Taking-Over Certificate is issued for the whole of the Works, the retainer fee shall be reduced by one third. This reduced fee shall be paid until the first day of the calendar month in which the Member resigns or the Dispute Board Agreement is otherwise terminated.

- (b) a daily fee which shall be considered as payment in full for:
  - (i) each day or part of a day up to a maximum of two days' travel time in each direction for the journey between the Member's home and the site, or another location of a meeting with the Other Members (if any);
  - (ii) each working day on Site visits, hearings or preparing decisions; and
  - (iii) each day spent reading submissions in preparation for a hearing.
- (c) all reasonable expenses including necessary travel expenses (air fare in less than first class, hotel and subsistence and other direct travel expenses) incurred in connection with the Member's duties, as well as the cost of telephone calls, courier charges, faxes and telexes: a receipt shall be required for each item in excess of five percent of the daily fee referred to in sub-paragraph (b) of this Clause;
- (d) any taxes properly levied in the Country on payments made to the Member (unless a national or permanent resident of the Country) under this Clause 6.

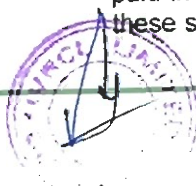
The retainer and daily fees shall be as specified in the Dispute Board Agreement. Unless it specifies otherwise, these fees shall remain fixed for the first 24 calendar months, and shall thereafter be adjusted by agreement between the Employer, the Contractor and the Member, at each anniversary of the date on which the Dispute Board Agreement became effective.

If the parties fail to agree on the retainer fee or the daily fee, the appointing entity or official named in the Contract Data shall determine the amount of the fees to be used.

The Member shall submit invoices for payment of the monthly retainer and air fares quarterly in advance. Invoices for other expenses and for daily fees shall be submitted following the conclusion of a site visit or hearing. All invoices shall be accompanied by a brief description of activities performed during the relevant period and shall be addressed to the Contractor.

The Contractor shall pay each of the Member's invoices in full within 56 calendar days after receiving each invoice and shall apply to the Employer (in the Statements under the Contract) for reimbursement of one-half of the amounts of these invoices. The Employer shall then pay the Contractor in accordance with the Contract.

If the Contractor fails to pay to the Member the amount to which he/she is entitled under the Dispute Board Agreement, the Employer shall pay the amount due to the Member and any other amount which may be required to maintain the operation of the DB; and without prejudice to the Employer's rights or remedies. In addition to all other rights arising from this default, the Employer shall be entitled to reimbursement of all sums paid in excess of one-half of these payments, plus all costs of recovering these sums and financing charges calculated at the rate specified in Sub-



Clause 14.8 of the Conditions of Contract.

If the Member does not receive payment of the amount due within 70 days after submitting a valid invoice, the Member may (i) suspend his/her services (without notice) until the payment is received, and/or (ii) resign his/her appointment by giving notice under Clause 7.

#### 7. Termination

At any time: (i) the Employer and the Contractor may jointly terminate the Dispute Board Agreement by giving 42 days' notice to the Member; or (ii) the Member may resign as provided for in Clause 2.

If the Member fails to comply with the Dispute Board Agreement, the Employer and the Contractor may, without prejudice to their other rights, terminate it by notice to the Member. The notice shall take effect when received by the Member.

If the Employer or the Contractor fails to comply with the Dispute Board Agreement, the Member may, without prejudice to his other rights, terminate it by notice to the Employer and the Contractor. The notice shall take effect when received by them both.

Any such notice, resignation and termination shall be final and binding on the Employer, the Contractor and the Member. However, a notice by the Employer or the Contractor, but not by both, shall be of no effect.

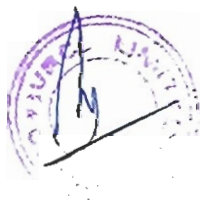
#### 8. Default of the Member

If the Member fails to comply with any of his obligations under Clause 4 (a) - (d) above, he shall not be entitled to any fees or expenses hereunder and shall, without prejudice to their other rights, reimburse each of the Employer and the Contractor for any fees and expenses received by the Member and the Other Members (if any), for proceedings or decisions (if any) of the DB which are rendered void or ineffective by the said failure to comply.

If the Member fails to comply with any of his obligations under Clause 4 (e) - (k) above, he shall not be entitled to any fees or expenses hereunder from the date and to the extent of the non-compliance and shall, without prejudice to their other rights, reimburse each of the Employer and the Contractor for any fees and expenses already received by the Member, for proceedings or decisions (if any) of the DB which are rendered void or ineffective by the said failure to comply.

#### 9. Disputes

Any dispute or claim arising out of or in connection with this Dispute Board Agreement, or the breach, termination or invalidity thereof, shall be finally settled by institutional arbitration. If no other arbitration institute is agreed, the arbitration shall be conducted under the Rules of Arbitration of the International Chamber of Commerce by one arbitrator appointed in accordance with these Rules of Arbitration.



  
Chief Executive Officer  
Guwahati Metropolitan Dev. Authority

### Annex: 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,
- (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.



*Chief Executive Officer*  
Guwahati Metropolitan Dev. Authority



**Form FIN – 5: Acknowledgment of Compliance with Guidelines for Procurement under Japanese ODA Loans\***

- A I, **Dilip Gogoi, General Manager** duly authorized by **IVRCL LIMITED** hereby certify on behalf of the Bidder and myself that information provided in the Bid submitted by the Bidder for (Loan No. ID – P 201, Guwahati Water Supply Project) is true, correct and accurate to the best of my knowledge and belief. I further certify that on behalf of the Bidder that;
- (i) the Bid has been prepared and submitted in compliance with the terms and conditions set forth in Guidelines for Procurement under Japanese ODA Loans ("Guidelines"); and
  - (ii) the Bidder has not taken any action which is or constitutes a corrupt, fraudulent, collusive or coercive practice and is not subject to any conflict of interest as stipulated in the relevant section of the Guidelines.
- B I certify that neither the Bidder nor any subcontractor, or expert nominated by the Bidder in the Bid has been sanctioned by any development assistance organizations.
- C I further certify on behalf of the Bidder that, if selected to undertake services in connection with the Project, we shall carry out such services in continuing compliance with the terms and conditions of the Guidelines.

  
Authorized SIGNATORY  
For and on behalf of **IVRCL LIMITED**

Date : 20/6/11

**IVRCL LIMITED**

Guwahati Sub-Regional Office : H. No. 3, Rupkumar Path, Chitochal, VIP Road, Guwahati - 781022  
Tel: 0361-213785, e-mail: guwahatloffice@ivrinfra.com

Kolkata Regional Office : Akash Tower, Unit 3-A, 3rd Floor, 781 - Anandapur, Kolkata - 700 107  
Tel: 033-30131600, e-mail: ivrkolkata@ivrinfra.com

Hyderabad Office : "MIR" B-2-350/5/A/24/1-3&2, Road# 2, Panchavati Colony, Banjara Hills, Hyderabad - 500 034. A.P  
Phone : 040-2335 6613/15/18/21/51 to 55, 30931111/1444 (60 line). Fax : 040-2335 6693



  
Chief Executive Officer  
Guwahati Metropolitan Dev. Authority

# Performance Security

## Bank Guarantee

[insert Bank's Name, and Address of Issuing Branch or Office]

**Beneficiary:** The Chief Executive Officer (CEO),  
JICA ODA Loan Project,  
Guwahati Metropolitan Development Authority,  
3<sup>rd</sup> Floor, STATFED Building,  
G.M.C.H Road, Bhangagarh,  
Guwahati-781005, Assam, India.  
Tel.: +91 361 2529650, Fax: +91 361 2529991

**Date:** \_\_\_\_\_

**PERFORMANCE GUARANTEE No.:** \_\_\_\_\_

We have been informed that [insert name of Contractor] (hereinafter called "the Contractor") has entered into Contract No. [insert reference number of the contract] dated [insert date of the contract] with you, for the execution of [insert name of 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.

At the request of the Contractor, we [insert name of Bank] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of [insert amount in figures] ([amount in words]),<sup>1</sup> such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by our office/branch [Name of Issuing Bank of Guwahati, Assam, India where this guarantee is encashable/payable, of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation(s) under the Contract, without your needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire, no later than the .... Day of ....., 2...<sup>2</sup>, and any demand for payment under it must be received by us at this office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458, except that subparagraph (ii) of Sub-article 20(a) is hereby excluded.

\_\_\_\_\_  
[signature(s)]

[Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.]



*Chief Executive Officer*  
Guwahati Metropolitan Dev. Authority

- <sup>1</sup> The Guarantor shall insert an amount representing the percentage of the Contract Price specified in the Contract and denominated either in the currency(cies) of the Contract or a freely convertible currency acceptable to the Employer.
- <sup>2</sup> Insert the date twenty-eight days after the expected date of receiving Performance Certificate. The Employer should note that in the event of an extension of the Time for Completion and/or Defects Notification Period, 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 Employer's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."



# Advance Payment Security

## Demand Guarantee

[insert Bank's Name, and Address of Issuing Branch or Office]

**Beneficiary:** The Chief Executive Officer (CEO),  
JICA ODA Loan Project,  
Guwahati Metropolitan Development Authority,  
3<sup>rd</sup> Floor, STAFED Building,  
G.M.C.H Road, Bhangagarh,  
Guwahati-781005, Assam, India.  
Tel.: +91 361 2529650, Fax: +91 361 2529991

**Date:** \_\_\_\_\_

**ADVANCE PAYMENT GUARANTEE No.:** \_\_\_\_\_

We have been informed that [insert name of Contractor] (hereinafter called "the Contractor") has entered into Contract No. [insert reference number of the contract] dated [insert date of the contract] with you, for the execution of [insert name of contract and brief description of Works] (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum [insert amount in figures] ([amount in words]) is to be made against an advance payment guarantee.

At the request of the Contractor, we [insert name of Bank] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of [insert amount in figures] ([amount in words])<sup>1</sup> upon receipt by our office/branch [Name of Issuing Bank of Guwahati, Assam, India where this guarantee is encashable/payable, of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation under the Contract.

It is a condition for any claim and payment under this guarantee to be made that the advance payment referred to above must have been received by the Contractor on its account number [insert account number] at [insert name and address of Bank].

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Contractor as indicated in copies of interim statements or payment certificates which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of a copy of the interim payment certificate indicating that ninety (90) percent of the Contract Price has been certified for payment, or on the \_\_\_ day of \_\_\_\_, 2\_\_\_<sup>2</sup>,

whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458.

\_\_\_\_\_  
[signature(s)]

[Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product



*Chief Executive Officer*  
Guwahati Metropolitan Dev. Authority

- <sup>1</sup> The Guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency(ies) of the advance payment as specified in the Contract, or in a freely convertible currency acceptable to the Employer.
- <sup>2</sup> Insert the expected expiration date of the Time for Completion. The Employer should note that in the event of an extension of the Time for Completion, 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 Employer's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."

# Retention Money Security

## Demand Guarantee

[insert Bank's Name, and Address of Issuing Branch or Office]

**Beneficiary:** The Chief Executive Officer (CEO),  
JICA ODA Loan Project,  
Guwahati Metropolitan Development Authority,  
3<sup>rd</sup> Floor, STAFED Building,  
G.M.C.H Road, Bhangagarh,  
Guwahati-781005, Assam, India.  
Tel.: +91 361 2529650, Fax: +91 361 2529991

**Date:** \_\_\_\_\_

**RETENTION MONEY GUARANTEE No.:** \_\_\_\_\_

We have been informed that [insert name of Contractor] (hereinafter called "the Contractor") has entered into Contract No. [insert reference number of the contract] dated [insert date of the contract] with you, for the execution of [insert name of contract and brief description of Works] (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, when the Taking-Over Certificate has been issued for the Works 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.

At the request of the Contractor, we [insert name of Bank] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of [insert amount in figures] ([amount in words]) upon receipt by our office/branch [Name of Issuing Bank of Guwahati, Assam, India where this guarantee is encashable/payable, of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation under the Contract.

It is a condition for any claim and payment under this guarantee to be made that the payment of the second half of the Retention Money referred to above must have been received by the Contractor on its account number [insert account number] at [insert name and address of Bank].

This guarantee shall expire, at the latest, 21 days after the date when the Employer has received a copy of the Performance Certificate issued by the Engineer. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458.

\_\_\_\_\_  
[signature(s)]

[Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.]



  
Chief Executive Officer  
Guwahati Metropolitan Dev. Authority

<sup>1</sup> The 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 either in the currency(ies) of the second half of the Retention Money as specified in the Contract, or in a freely convertible currency acceptable to the Employer.

## Reply to Queries on Bidding Documents for Contract C#06, held on 21 May 2011, at PIU Office, Guwahati, Assam

Sl. No.	Volume / Section / Sub-section	Clause No. / Page No.	Subject / Item	Query raised by the Pre-qualified Bidders	Clarification by GMDA
	<b>BIDDER A</b>				
A1			Topography Survey	In the BOQ it is indicated that the Topography Survey (Item No. 1.1) is for 60 km whereas the Pipe Length is about 407 km. Also in the Scope of Work (Item No. 2.3.2.i) it is mentioned, "Topography survey of a part of project area". Please clarify whether the area for Topography survey is different from the rest of the pipeline or within it.	The portion of the package area which was not surveyed and was left out by employer is given under the scope of contractor. So the scope of topography survey by the contractor becomes the part of the total package area. Area to be surveyed (BOQ Item 1.1) will be shown to successful bidder. It shall be the responsibility of the Contractor to propose pipeline alignments and exact pipe locations and to complete the survey along the pipeline routes. Based on the approval of the above, the Contractor shall submit shop drawings.
A2			Dismantling of Asphalt & Concrete Roads	Dismantling of Asphalt & Concrete Roads: This item is included along with Excavation of Pipe Trenches (BOQ Item No. 2.2). Generally this should be measured separately and considered as a separate BOQ item. Please clarify.	As per bid document. Dismantling (demolishing) of the existing road structures shall be included in the cost for excavation.
A3			Pipe store yard	Please provide the distance of Employer's D.I. Pipe store from the proposed project sites.	Maximum 15 km from the package boundary. Refer Addendum No.-01.
A4			Disposal	Please provide the distance of the disposal site for disposal of excavated soil from the proposed site.	The distance is within 10 km (refer to Addendum No. 1).
A5			Retention money	Please allow Retention Money to be	As per bid document.



Sl. No.	Volume / Section / Sub-section	Clause No. / Page No.	Subject / Item	Query raised by the Pre-qualified Bidders	Clarification by GMDA
				deposited in the form of Bank Guarantee of an equivalent amount instead of cash retention from the R.A. Bills.	
A6			Excise duty	Please confirm whether the Excise Duty Exemption has been considered for this project.	Yes, as mentioned in the bid document.
A7			Service tax	As the D.I. pipe is provided by the Employer, please confirm that there is no service tax to be considered for the same.	No service tax is applicable for DI pipes which are to be supplied by employer.
A8			Bid validity period	Please confirm that Bid Validity Period is 120 days from deadline of submission of bid.	Yes, as per bid document. Refer to clause ITB 18.1.
A9			Soft copy of tender document	We request you to provide soft copy of the Tender documents.	Soft copy of BOQ will be provided.
	<b>BIDDER B</b>				
B1			Pipe store yard	Kindly provided us the location of store yard from where the pipes are issued and approx. distance to the laying site.	Maximum 15 km from the package boundary. Refer Addendum 1.
B2			Lining & Coating	Kindly confirm the mix proportion for Cement mortar to be used for Internal and external lining of MS Pipes.	As per specification lining and coating is epoxy based. Refer clause 4.3 of Technical specification.
B3			Gasket	Kindly confirm whether EDPM rubber gasket and flange gaskets for D.I. Pipes are issued by Employer or in contractor's scope.	As per clause 1.7.3 Gaskets for Spigot & socket pipes will be supplied by employer. Contractor has to procure required socketed and flanges specials (which includes flanged pipes as per 4.2.3) required for bends, specials and other appurtenances.

Sl. No.	Volume / Section / Sub-section	Clause No. / Page No.	Subject / Item	Query raised by the Pre-qualified Bidders	Clarification by GMDA
B4			Lining	As the diameters of M.S. Pipes are small, we request you to kindly allow for inside painting instead of inlining.	As per specification.
B5			M.S. Pipes fabrication	Kindly accept for M.S. Pipes fabricated by ERW process instead of spirally welded.	As per specification.
B6			ROU clearance	Kindly provide the details of ROU clearance for the project. Whether in Contractor's scope or Employer's Scope.	Preparation of Working drawing (BOQ item 1.2) is contractor's scope. Based on this ROU clearance is under Employer's scope, assisted by the Contractor.
B7			Service tax	As the D.I. Pipes supply is in Employer's scope, kindly confirm whether service tax to be considered on the free issue materials or not.	No service tax is applicable for DI pipes which are to be supplied by employer.
	<b>BIDDER C</b>				
C1	Section VI A, Sub section I	1.7.3 Page 4 of 17	Employer supplied DI Pipes	Please provide the maximum distance of the Employer's store yard/yards, from where DI pipes are to be issued for laying and jointing work.	Maximum 15 km from the package boundary. Refer Addendum No.-01.
C2	Section II Bid Data Sheet	ITB 14.7	Excise duty exemption	Since this is JICA assisted Project and tenders are invited under Local Competitive Bidding, we presume that excise duty exemption is available for finished material/raw material/ valves/pipes/special procured under this project, please confirm.	Yes.
C3	Part I		Service Tax	Since DI pipes supply is in Employer's scope, kindly confirm whether service tax is applicable on freely issued	No service tax is applicable for DI pipes which are to be supplied by employer.

Sl. No.	Volume / Section / Sub-section	Clause No. / Page No.	Subject / Item	Query raised by the Pre-qualified Bidders	Clarification by GMDA
				material. If so, it may please be reimbursed as per actuals.	
C4			Approved vendor list	As there is no approved vendors list for supply of cement/steel/ valves/ MS pipes& specials etc. we presume that they can be procured from reputed manufacturers, as per the corresponding specification, please confirm.	As per specification in the Bid document.
C5	BOQ Pipeline	Item No. 2.02 & Item No. 8	Removal of asphalt road and concrete road surfacing; Road Restoration	The total quantity of earthwork excavation in ordinary rock including removal of asphalt and concrete road surfacing 0.0m to 1.50m below GL is given as 74,300 Cum; Whereas the total quantity of road restoration for GSB+ WMM+DBM+SDBC +BM+concrete roads is given as 1,43,100 Cum. Since the quantities given for road restoration are more than the excavated quantities, kindly reconfirm the quantities to be executed for Item No. 2.02& Item No. 8	The quantities are per the BOQ.  The 74,300 Cum is only a portion of the total excavation in the BOQ. The total excavation quantity exceeds the restoration quantity.
C6	Section VI A Sub section 10	10.2.2 Page 4 of 16	Disposal of surplus excavated material	Kindly inform the lands available with GMDA for disposal for surplus earth and provide the lead details for the same.	The distance is within 10 km (refer to Addendum No. 1).



Sl. No.	Volume / Section / Sub-section	Clause No. / Page No.	As per Original Bidding Document	Revised Version (to be read as)
1	Part -2 Section VIA Subsection 4	Clause 4.8.3 Pg. 27 Of 29	"Disposal of building/construction rubbish by mechanical transportation up to 1 km including loading and unloading complete work."	"Disposal of building/construction rubbish by mechanical transport up to <b>10 Km.</b> including loading and unloading complete work."
2	Part -2 Section VIA Subsection 4	Clause 4.1, Third paragraph, Pg. 1 of 25	-	Add to last line : "Maximum distance of the Departmental Stores from where DI Pipes are to be lifted by the contractor from the proposed distribution network site is 15 km from package boundary."
3	Part -2 Section VIA Subsection 6	Clause 6.7.4.1, Pg. 7 of 22		Add to last line : "In the opinion of Engineer if the bed level (or bedding level) is not suitable for pipe laying due to presence of unsuitable material or earth, the contractor shall remove that material or earth upto maximum depth of 750mm beyond the bedding level and replace it by filling as per specification with selected fill material as directed by Engineer. No payment will be made for removing the unsuitable material and is deemed to be included in contract amount. Filling by suitable filling material will be paid as per Backfilling item of BOQ."
4	Part -2 Section VIA Subsection 12	Clause 12.2.2, Pg. 4 of 16	Last paragraph : "The Contractor shall identify disposal area(s) for surplus excavated material and dispose of materials in compliance with the ESMAP and shall avoid haphazard or scattered dumping of debris."	Last paragraph : "The Contractor shall identify disposal area(s), duly approved by Employer, for surplus excavated material and dispose of materials in compliance with the ESMAP and shall avoid haphazard or scattered dumping of debris within 10 Km of the excavation site."
5.	Part -1 Section	ITB 7.1 Pg.	The Employer will respond in writing to any request for clarification, provided that such request is received no later than <b>twenty- eight (28) days</b> prior to the deadline for submission of bids.	The Employer will respond in writing to any request for clarification, provided that such request is received no later than <b>fourteen (14) days</b> prior to the deadline for submission of bids.
6.	Part -1 Section IV A Bidding Forms	Form PER 1 & 2		Add: Accident Prevention Officer
7.a	Part 1 Section VIII PC	Price Adjustment Sample Price	-	Refer to attachment-1

Sl. No.	Volume / Section / Sub-section	Clause No. / Page No.	As per Original Bidding Document	Revised Version (to be read as)
	Annexure 2	Adjustment Formula and Adjustment Data		
7.b	Part 1 Section VIII PC Annexure 2	Price Adjustment Schedule of Adjustment Data	-	Refer to attachment -2
8.a	Part 1 Section IV B Bidding Forms	Bill of Quantities Item No. 3.1	Supplying spirally welded MS pipe with internal lining and external coating as per the specification of the following <b>internal diameters</b> and .....	Internal diameters shall be read as <b>nominal diameters</b>  Size of pipes indicated as <b>ID</b> shall be read as <b>ND</b>
8.b	Part 1 Section IV B Bidding Forms	Bill of Quantities Item No. 3.3, 3.5,		Size of pipes indicated as <b>ID</b> shall be read as <b>ND</b>

**Part -1, section VIII PC**  
**Annexure 2, Price Adjustment**  
**Sample Price Adjustment Formula and Data**

Clauses	Original	Addendum
Section VIII PC Annexure 2 Price Adjustment Sample Price Adjustment Formula	Price .....following formula $PI =$ In which: $P_1 = \text{adjustment amount payable to the Contractor}$	Price .....following formula $PI =$ In which” $P_1 = \text{adjustment amount made every six (6) months, or part thereof, payable to the Contractor}$
Section VIII PC Annexure 2 Price Adjustment Schedule of Adjustment Data	For costs incurred in India and/or paid in Indian Rupees: <ul style="list-style-type: none"> <li>• Cost Index for Materials, other than steel</li> </ul> M/A: The average wholesale price index <b>for all commodities</b> for the month in which the adjustment data falls, as published by the Reserve Bank of India for India (Base year: 1993-94 = 100)	For costs incurred in India and/or paid in Indian Rupees: <ul style="list-style-type: none"> <li>• Cost Index for Materials, other than steel</li> </ul> M/A: The average wholesale price indexes <b>for the following major materials</b> for the month in which the adjustment data falls, as published by the Reserve Bank of India for India (Base year: 1993-94 = 100): <b>Concrete Work: Cement, Stone Aggregate</b> <b>Road Work: Stone Aggregate, Bitumen</b> <b>Masonry work: Brick</b> <b>Plastic Pipes: HDPE</b>



**Part -1, section VIII PC**  
**Annexure 2, Price Adjustment**  
**Schedule of Adjustment Factor**

1) Schedule of Adjustment Factor

Replace Schedule of Data form (Table A. Local Currency) of Section IVB: Bidding Forms with the attached form.

2) Non Adjustable Schedules

No price adjustment is applied for the following schedules of BOQ:

Schedule 1: Survey and Investigation Work

Schedule 9: Testing, Trial Run and Commissioning

**Part -1, Section VIII PC, Annexure 2, Price Adjustment, Schedule of Adjustment Factors**

Bill of Quantities -Pipeline							
Item No.	Description	Basic Amount in INR	Non-adjustable	Labour portion (L)	Steel (MS)	Other Materials (MA)	Equipment operation (E)
			a	b	c1	c2	d
<b>2.0</b>	<b>EARTHWORK</b>						
2.1	Earth work for excavation of foundations, pipe trenches, valve chambers, thrust blocks, etc. in all kinds of ordinary soils such as murum, sand, sandy silt, clay, kankar etc. or in combination. Excavation shall include the removal of WBM roadway surfaces, brick surfacing, including dressing, compaction of the bottoms of the excavation, shoring and strutting wherever required, dewatering whenever required, removal of the excavated soil, stockpiling and disposal of surplus excavated soil off-site as directed by the Employer's Representative.						
	Excavation will be paid for in the following segments:						
(a)	0 to 1.5 m from GL		25%	20%		40%	15%
(b)	above 1.5 m to 3.0 m depth from GL		25%	20%		40%	15%
(c)	above 3.0 m to 4.5 m depth from GL		25%	20%		40%	15%
2.2	Earth work for excavation of foundations, pipe trenches, valve chambers, thrust blocks, masonry work, etc. in all kinds of ordinary rock, Excavation shall include the removal of asphalt and concrete road surfacing, including dressing, compaction of the bottoms, shoring and strutting wherever required, dewatering whenever required, removal of the excavated rock, stockpiling and disposal of surplus excavated rock off-site as directed by the Employer's Representative.						
	Excavation will be paid for in the following segments:						
(a)	0 to 1.5 m from GL		25%	20%		40%	15%
(b)	above 1.5m to 3.0 m depth from GL		25%	20%		40%	15%
(c)	above 3.0 m to 4.5 m depth from GL		25%	20%		40%	15%

Weight of non-adjustable portion (a) is fixed by the Employer. Weight of other adjustment factors are shown as example and purely indicative, which are to be set by the bidder

Bill of Quantities -Pipeline							
Item No.	Description	Basic Amount in INR	Non-adjustable	Labour portion (L)	Steel (MS)	Other Materials (MA)	Equipment operation (E)
			a	b	c1	c2	d
2.3	Earth work for excavation of foundations, pipe trenches, valve chambers, thrust blocks, etc. in all kinds of hard rock requiring blasting, Excavation shall include dressing, compaction of the bottoms, shoring and strutting wherever required, dewatering whenever required, removal of the excavated rock, stockpiling and disposal of surplus excavated rock off-site as directed by the Employer's Representative.						
	Excavation will be paid for in the following segments:						
(a)	0 to 1.5 m from GL		25%	20%		40%	15%
(b)	above 1.5m to 3.0 m depth from GL		25%	20%		40%	15%
(c)	above 3.0 m to 4.5 m depth from GL		25%	20%		40%	15%
2.4	Earth work for excavation of foundations, pipe trenches, valve chambers, thrust blocks, etc. in all kinds of hard rock (blasting prohibited), Excavation shall include dressing, compaction of the bottoms, shoring and strutting wherever required, dewatering whenever required, removal of the excavated rock, stockpiling and disposal of surplus excavated rock off-site as directed by the Employer's Representative.						
	Excavation will be paid for in the following segments:						
(a)	0 to 1.5 m from GL		25%	20%		40%	15%
(b)	above 1.5m to 3.0 m depth from GL		25%	20%		40%	15%
(c)	above 3.0 m to 4.5 m depth from GL		25%	20%		40%	15%
2.5	Backfilling of pipe trenches, foundations, etc. with approved graded excavated soil (excluding rock), including placing in layers not exceeding 20 cm in depth each, and compacting each layer, complete as per the specification and as directed by the Employer's Representative.		25%	20%		40%	15%
2.6	Backfilling of pipe trenches, foundations, etc. with approved graded sand, including placing in layers not exceeding 20 cm in depth each, and compacting each layer, complete as per the specification and as directed by the Employer's Representative.		25%	20%		40%	15%

Weight of non-adjustable portion (a) is fixed by the Employer. Weight of other adjustment factors are shown as example and purely indicative, which are to be set by the bidder



Bill of Quantities -Pipeline							
Item No.	Description	Basic Amount in INR	Non-adjustable	Labour portion (L)	Steel (MS)	Other Materials (MA)	Equipment operation (E)
			a	b	c1	c2	d
2.7	Backfilling of pipe trenches, foundations, etc. with approved graded gravel, including placing in layers not exceeding 20 cm in depth each, and compacting each layer, complete as per the specification and standard drawings and as directed by the Employer's Representative.		25%	20%		40%	15%
<b>Subtotal</b>							
<b>3.0</b>	<b>PIPELINES, SPECIALS AND APPURTENANCES</b>						
3.1	Supplying spirally welded MS pipe with internal lining and external						
(a)	300 mm ND 6 mm thick (at NH crossing)		25%	3.75%	63.75%	0%	7.5%
(b)	700 mm ND 6 mm thick		25%	3.75%	63.75%	0%	7.5%
(c)	700 mm ND 20 mm thick (t NH crossing)		25%	3.75%	63.75%	0%	7.5%
(d)	1000 mm ND 8 mm thick		25%	3.75%	63.75%	0%	7.5%
3.2	Supplying all types of MS Specials plain ended, socket ended and flanged as required with internal lining and external coating as per the specification, such as bends, tees, tapers, spool pieces, blind flanges, pieces for pipe connection, valve connections, dismantling joints, anchor bolts, straps, air vent pipe, etc. of different diameters, manufactured from Fe 410 grade steel. This item includes loading, transportation to the project site, unloading and stacking, etc. complete with cost of third party inspection, material, labor, taxes and duties.		25%	3.75%	63.75%	0%	7.5%

Weight of non-adjustable portion (a) is fixed by the Employer. Weight of other adjustment factors are shown as example and purely indicative, which are to be set by the bidder

Bill of Quantities -Pipeline							
Item No.	Description	Basic Amount in INR	Non-adjustable	Labour portion (L)	Steel (MS)	Other Materials (MA)	Equipment operation (E)
			a	b	c1	c2	d
3.3	Handling, aligning, laying and jointing MS pipes and specials to correct line and level in trenches. The item includes transportation of pipes and specials from the storeyard to the project site, stacking of pipe as per BIS requirements, loading, unloading, hoisting, lowering, marginal cutting and grinding wherever necessary, assembling, jointing, providing temporary supports, lining and coating at joints etc. for pipe of the following diameters and thicknesses. The rate also shall include radiography of field joints, field testing, etc. as specified and shown on the drawings and specification.						
(a)	300 mm ID 6 mm thick (at NH crossing)		25%	20%		40%	15%
(b)	700 mm ID 6 mm thick		25%	20%		40%	15%
(c)	700 mm ID 20 mm thick (at NH crossing)		25%	20%		40%	15%
(d)	1000 mm ID 8 mm thick		25%	20%		40%	15%
3.4	Supplying DI Specials and fittings with plain, double socket, socket & flanged and double flanged end connections as required, with lining and coating as per the specification, and IS 9523 with EPDM rubber gaskets as per IS 5382 as required for successful completion of the work. This item includes third party inspection, transportation, freight, loading and unloading, stacking etc. all complete for various sizes of DI specials and fittings as noted with the following end connections.						
(a)	Tee's, Socket, collar, tail pieces, flanged tapers, socketed tapers, flanged spigot short pipes, flanged socket short piece, all bends, end caps, barrel piece, dismantling joints etc. required for suitable completion of the works.		25%	3.75%	63.75%	0%	7.5%
(b)	Double flanged pipe pieces, required for suitable completion of works.		25%	3.75%	63.75%	0%	7.5%

Weight of non-adjustable portion (a) is fixed by the Employer. Weight of other adjustment factors are shown as example and purely indicative, which are to be set by the bidder

Bill of Quantities -Pipeline							
Item No.	Description	Basic Amount in INR	Non-adjustable	Labour portion (L)	Steel (MS)	Other Materials (MA)	Equipment operation (E)
			a	b	c1	c2	d
3.5	Handling, aligning, laying and jointing of K-9 DI pipe (Push-on Joint) to other pipe ato fittings and specials, with EPDM rubber O-rings (as per IS 5382) and flange gaskets (as per IS 12288) as per specifications. This item includes transportation of pipes, specials and fittings from the storeyard to the project site, stacking of pipe and fittings as per BIS requirements, loading, unloading, hoisting, lowering, marginal cutting and grinding wherever necessary, assembling, jointing, providing temporary supports etc., all complete with approved equipment, for pipe of the following diameters.						
(a)	100 mm DN DI - K9 pipe		25%	20%		40%	15%
(b)	150 mm DN DI - K9 pipe		25%	20%		40%	15%
(c)	200 mm DN DI - K9 pipe		25%	20%		40%	15%
(d)	250 mm DN DI - K9 pipe		25%	20%		40%	15%
(e)	300 mm DN DI - K9 pipe		25%	20%		40%	15%
(f)	400 mm DN DI - K9 pipe		25%	20%		40%	15%
(g)	500 mm DN DI - K9 pipe		25%	20%		40%	15%
(h)	600 mm DN DI - K9 pipe		25%	20%		40%	15%
3.6	Supplying of PN10 HDPE (PE80) pipe including all specials confirming to IS 4984 and the specifications, including third party inspection, all taxes and duties, transportation, freight charges, loading and unloading, conveyance to the project site and stacking with cost of all labor and material for following pipe diameters.						
(a)	110 mm OD HDPE PE-80		25%	3.75%	0%	63.75%	7.5%
(b)	125 mm OD HDPE PE-80		25%	3.75%	0%	63.75%	7.5%
(c)	160 mm OD HDPE PE-80		25%	3.75%	0%	63.75%	7.5%
(d)	200 mm OD HDPE PE-80		25%	3.75%	0%	63.75%	7.5%
(e)	250 mm OD HDPE PE-80		25%	3.75%	0%	63.75%	7.5%
(f)	315 mm OD HDPE PE-80		25%	3.75%	0%	63.75%	7.5%
(g)	355 mm OD HDPE PE-80		25%	3.75%	0%	63.75%	7.5%

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Bill of Quantities -Pipeline							
Item No.	Description	Basic Amount in INR	Non-adjustable	Labour portion (L)	Steel (MS)	Other Materials (MA)	Equipment operation (E)
			a	b	c1	c2	d
3.7	Handling, aligning, laying and jointing of HDPE (PE80) pipes with specials by butt welding / spigot joints confirming to IS and specifications. The item includes transportation of pipes and specials from store yard to site, stacking of pipe as per BIS, loading, unloading, hoisting, lowering, cutting and grinding wherever necessary, assembling, jointing, providing temporary supports etc., all complete with approved equipment, for pipes of following diameters.						
(a)	110 mm OD HDPE PE-80 PN6		25%	20%		40%	15%
(b)	160 mm OD HDPE PE-80 PN6		25%	20%		40%	15%
(c)	110 mm OD HDPE PE-80 PN10		25%	20%		40%	15%
(d)	160 mm OD HDPE PE-80 PN10		25%	20%		40%	15%
(e)	225 mm OD HDPE PE-80 PN10		25%	20%		40%	15%
<b>Subtotal</b>							
<b>4.0</b>	<b>PIPE JACKING</b>						
4.1	Pipe jack for railway crossing with Jacking and Pushing metod. The item include pushing jointing following daimeter MS pipe of required length, construction of Receiving and Jacking pit with suitable shoring and strutting (if required), including instllation of jacking platform, thrust resistant arrangement of required capacity including, hydraulic jacking with required accessories, required excavation inside the jacking pipe and disposal the same, etc. all complete as per drawing, specifiction and as directed.						
(a)	Jacking and pushing of 700 mm ID 20 mm thick MS pipe		25%	20.00%		40%	15.0%
<b>Subtotal</b>							

Weight of non-adjustable portion (a) is fixed by the Employer. Weight of other adjustment factors are shown as example and purely indicative, which are to be set by the bidder



Bill of Quantities -Pipeline							
Item No.	Description	Basic Amount in INR	Non-adjustable	Labour portion (L)	Steel (MS)	Other Materials (MA)	Equipment operation (E)
			a	b	c1	c2	d
<b>5.0</b>	<b>VALVES AND APPURTENANCES</b>						
5.1	Providing and supplying of following diameters Cast iron double flanged ends Sluice valve <b>PN 1.6</b> as per IS 14864 with end cap and all accessories required for fixing and jointing, and shall include anti-corrosive painting etc. all complete. The rate shall include all local and central taxes, third party inspection, transportation, freight charges, loading and unloading, conveyance to storeyard and stacking the same, with cost of all labour and material. The item shall be as per specification, drawing and as directed.						
(a)	80 mm dia (for Fire hydrant)		25%	3.75%	63.75%	0%	7.5%
(b)	100 mm dia		25%	3.75%	63.75%	0%	7.5%
(c)	150 mm dia		25%	3.75%	63.75%	0%	7.5%
(d)	200 mm dia		25%	3.75%	63.75%	0%	7.5%
(e)	250 mm dia		25%	3.75%	63.75%	0%	7.5%
(f)	300 mm dia		25%	3.75%	63.75%	0%	7.5%
5.2	Handling, aligning and installing in true to line and level cast iron double flanged Sluice Valves (IS 14864) of the following diameters. This item includes transportation of valves and accessories from the storeyard to the project site, loading, unloading, hoisting, lowering, assembling and jointing including the cost of all jointing materials such as rubber gaskets, nuts, bolts, etc., and providing temporary supports, as per the specifications and drawings.						
(a)	80 mm dia (for Fire hydrant) PN1.0		25%	20%		40%	15%
(b)	100 mm dia PN1.0		25%	20%		40%	15%
(c)	150 mm dia PN1.0		25%	20%		40%	15%
(d)	200 mm dia PN1.0		25%	20%		40%	15%
(e)	250 mm dia PN1.0		25%	20%		40%	15%
(f)	300 mm dia PN1.0		25%	20%		40%	15%
(g)	80 mm dia (for Fire hydrant) PN1.6		25%	20%		40%	15%
(h)	100 mm dia PN1.6		25%	20%		40%	15%
(i)	150 mm dia PN1.6		25%	20%		40%	15%
(j)	200 mm dia PN1.6		25%	20%		40%	15%
(k)	250 mm dia PN1.6		25%	20%		40%	15%
(l)	300 mm dia PN1.6		25%	20%		40%	15%

Weight of non-adjustable portion (a) is fixed by the Employer. Weight of other adjustment factors are shown as example and purely indicative, which are to be set by the bidder

Bill of Quantities -Pipeline							
Item No.	Description	Basic Amount in INR	Non-adjustable	Labour portion (L)	Steel (MS)	Other Materials (MA)	Equipment operation (E)
			a	b	c1	c2	d
5.3	Providing and supplying of following diameters double flanged Butterfly valves <b>PN 1.6</b> (manually operated) as per IS 13095 with all accessories, including approved anti-corrosive painting. The rate shall include all local and central taxes, third party inspection, transportation, freight charges, loading, unloading, conveyance to storeyard and stacking the same, with cost of all labour, and material. The item shall be as per specification, drawing and as directed.						
(a)	400 mm dia		25%	3.75%	63.75%	0%	7.5%
(b)	500 mm dia		25%	3.75%	63.75%	0%	7.5%
(c)	600 mm dia		25%	3.75%	63.75%	0%	7.5%
5.4	Handling, aligning, and fixing in true to line and level following diameters and rating double flanged Butterfly valves <b>PN 1.6</b> (manually operated as per IS 13095) including cost of required jointing material such as rubber packing, nuts bolts etc. The item includes transportation of valves and accessories from store yard to site, loading, unloading, hoisting, lowering, grinding wherever necessary, assembling and jointing, providing temporary supports etc., all complete with approved equipment, for valves of following diameters, for all lead and lift. The item shall be as per specification, drawing and as directed.						
(a)	400 mm diameter PN1.0		25%	20%		40%	15%
(b)	500 mm diameter PN1.0		25%	20%		40%	15%
(c)	400 mm diameter PN1.6		25%	20%		40%	15%
(d)	500 mm diameter PN1.6		25%	20%		40%	15%

Weight of non-adjustable portion (a) is fixed by the Employer. Weight of other adjustment factors are shown as example and purely indicative, which are to be set by the bidder

Bill of Quantities -Pipeline							
Item No.	Description	Basic Amount in INR	Non-adjustable	Labour portion (L)	Steel (MS)	Other Materials (MA)	Equipment operation (E)
			a	b	c1	c2	d
5.5	Providing and supplying of following diameters of Double chamber Air valves with in built sluice valve PN 1.6 rating with flanged ends as per IS 14845, with all accessories required, including anti-corrosive painting etc. all complete. The rate shall include all local and central taxes, third party inspection, transportation, freight charges, loading and unloading, conveyance to store yard and stacking the same, with cost of all labour, and material. The item shall be as per specification, drawing and as directed.						
(a)	80 mm dia		25%	3.75%	63.75%	0%	7.5%
(b)	100 mm dia		25%	3.75%	63.75%	0%	7.5%
(c)	150 mm dia		25%	3.75%	63.75%	0%	7.5%
5.6	Handling, <b>aligning, and installing</b> in true to line and level following diameters <b>Double chamber Air valves with in built sluice valve</b> with all accessories and as per specifications and drawings. This item includes transportation of valves and accessories from the storeyard to the project site, loading, unloading, hoisting, assembling and jointing, including the cost of jointing materials such as rubber packing, nuts, bolts, etc., as per the specifications and drawings.						
(a)	80 mm diameter PN1.0		25%	20%		40%	15%
(b)	100 mm diameter PN1.0		25%	20%		40%	15%
(c)	150 mm diameter PN1.0		25%	20%		40%	15%
(d)	80 mm diameter PN1.6		25%	20%		40%	15%
(e)	100 mm diameter PN1.6		25%	20%		40%	15%
(f)	150 mm diameter PN1.6		25%	20%		40%	15%

Weight of non-adjustable portion (a) is fixed by the Employer. Weight of other adjustment factors are shown as example and purely indicative, which are to be set by the bidder

Bill of Quantities -Pipeline							
Item No.	Description	Basic Amount in INR	Non-adjustable	Labour portion (L)	Steel (MS)	Other Materials (MA)	Equipment operation (E)
			a	b	c1	c2	d
5.7	Providing and supplying of following diameters <b>Pressure Reducing valve with double flanged ends</b> and shall including anti-corrosive painting etc. all complete. The rate shall include all local and central taxes, third party inspection, transportation, freight charges, loading and unloading, conveyance to storeyard and stacking the same, with cost of all labour, and material. The item shall be as per specification, drawing and as directed.						
	100mm dia		25%	3.75%	63.75%	0%	7.5%
	150mm dia		25%	3.75%	63.75%	0%	7.5%
	200mm dia		25%	3.75%	63.75%	0%	7.5%
	250mm dia		25%	3.75%	63.75%	0%	7.5%
	300mm dia		25%	3.75%	63.75%	0%	7.5%
5.8	Handling, aligning, and fixing in true to line and level following diameters <b>Pressure Reducing valve double flanged ends</b> . The item includes transportation of valves and accessories from store yard to site, loading, unloading, hoisting, lowering, grinding wherever necessary, assembling and jointing, including cost of jointing materials such as rubber packing, nuts bolts etc., providing temporary supports, all complete with approved equipment, for all leads and lifts. The item shall be as per specification, drawing and as directed.						
(a)	100mm dia PN1.0		25%	20%		40%	15%
(b)	150mm dia PN1.0		25%	20%		40%	15%
(c)	200mm dia PN1.0		25%	20%		40%	15%
(d)	250mm dia PN1.0		25%	20%		40%	15%
(e)	300mm dia PN1.0		25%	20%		40%	15%
(f)	400mm dia PN1.0		25%	20%		40%	15%
(g)	300mm dia PN1.6		25%	20%		40%	15%
(h)	400mm dia PN1.6		25%	20%		40%	15%
5.9	Providing and supplying <b>Fire hydrants</b> of 80mm diameter as per IS 909, consisting single flanged outlet oblique type hydrant valve, and shall include cost of anti-corrosive painting etc. all complete. The rate shall include all local and central taxes, third party inspection, transportation, freight charges, loading and unloading, conveyance to site and stacking the same, with cost of all labour, and material. The item shall be as per specification, drawing and as directed.		25%	3.75%	63.75%	0%	7.5%

Weight of non-adjustable portion (a) is fixed by the Employer. Weight of other adjustment factors are shown as example and purely indicative, which are to be set by the bidder



Bill of Quantities -Pipeline							
Item No.	Description	Basic Amount in INR	Non-adjustable	Labour portion (L)	Steel (MS)	Other Materials (MA)	Equipment operation (E)
			a	b	c1	c2	d
5.10	Handling, aligning, and fixing <b>Fire hydrants</b> true to line and level. The item includes transportation of valves and accessories from store yard to site, loading, unloading, hoisting, lowering, grinding wherever necessary, assembling and jointing with cost of jointing material such as rubber packing, nuts bolts, providing temporary supports etc., all complete with approved equipment, for all leads and lifts. The item shall be as per specification, drawing and as directed.						
(a)	80 mm dia PN1.0		25%	20%		40%	15%
(b)	80 mm dia PN1.6		25%	20%		40%	15%
	<b>Subtotal</b>						

Weight of non-adjustable portion (a) is fixed by the Employer. Weight of other adjustment factors are shown as example and purely indicative, which are to be set by the bidder

Bill of Quantities -Pipeline							
Item No.	Description	Basic Amount in INR	Non-adjustable	Labour portion (L)	Steel (MS)	Other Materials (MA)	Equipment operation (E)
			a	b	c1	c2	d
<b>6.0</b>	<b>VALVE CHAMBERS</b>						
6.1	Construction of RCC and Brick masonry chambers for valves, hydrants, flow meters etc. including cost of PCC and RCC work, cost of supply and bending and binding of steel with required shuttering, cost of brick work with plaster from inside and outside, cost of precast slabs and supply and installation of SFRC frame and covers wherever required, including all the miscellaneous items of work, but excluding the supply and installation of pipes and specials, valves etc. The item shall be as per specification, drawing and as directed.						
(a)	Chamber for <b>Sluice valve TYPE S1</b>		25%	20%	20%	20%	15%
(b)	Chamber for <b>Sluice valve TYPE S2</b>		25%	20%	20%	20%	15%
(c)	Chamber for <b>Wash out valve TYPE W1</b>		25%	20%	20%	20%	15%
(d)	Chamber for <b>Wash out valve TYPE W2</b>		25%	20%	20%	20%	15%
(e)	Chamber for <b>Butterfly valve TYPE B1</b>		25%	20%	20%	20%	15%
(f)	Chamber for <b>Butterfly valve TYPE B2</b>		25%	20%	20%	20%	15%
(g)	Chamber for <b>Butterfly valve TYPE B3</b>						
(h)	Chamber for <b>Air valve TYPE A1</b>		25%	20%	20%	20%	15%
(i)	Chamber for <b>Air valve TYPE A2</b>		25%	20%	20%	20%	15%
(j)	Chamber for <b>Air valve TYPE A3</b>		25%	20%	20%	20%	15%
(k)	Chamber for <b>Fire hydrant TYPE F1</b>		25%	20%	20%	20%	15%
(l)	Chamber for <b>Pressure reducing valve/ Flowmeter TYPE P1</b>		25%	20%	20%	20%	15%
(m)	Chamber for <b>Pressure reducing valve/ Flowmeter TYPE P2</b>		25%	20%	20%	20%	15%
(n)	Chamber for <b>Pressure reducing valve/ Flowmeter TYPE P3</b>		25%	20%	20%	20%	15%
(o)	Chamber for Pressure reducing valve and flow meter TYPE <b>P4</b>		25%	20%	20%	20%	15%
(p)	Chamber for Pressure reducing valve and flow meter TYPE <b>P5</b>		25%	20%	20%	20%	15%
(q)	Chamber for Pressure reducing valve and flow meter TYPE <b>P6</b>		25%	20%	20%	20%	15%
	<b>Subtotal</b>						

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Bill of Quantities -Pipeline							
Item No.	Description	Basic Amount in INR	Non-adjustable	Labour portion (L)	Steel (MS)	Other Materials (MA)	Equipment operation (E)
			a	b	c1	c2	d
<b>7.0</b>	<b>MISCELLENEOUS CIVIL WORK</b>						
7.1	<b>Plain Cement Concrete Work</b>						
	Providing and placing plain cement concrete (PCC) of one of the following grades for thrust blocks, anchor blocks, floatation blocks, etc. with 20-40mm stone aggregate (crusher broken) including finishing the surface, shuttering and staging, curing etc. as per the specifications and drawings and as directed by the Employer's Representative. This is Work not included in Item 6.						
(a)	Grade M15 concrete		25%	20%	0%	40%	15%
(b)	Grade M20 concrete		25%	20%	0%	40%	15%
7.2	<b>Reinforced Cement Concrete Work</b>						
	Providing and placing reinforced cement concrete (RCC) of one of the following grades with 10-20 mm stone aggregate (crusher broken) including shuttering and staging, curing etc. as per the specifications and drawings and as directed by the Employer's Representative. This is Work not included in Item 6.						
(a)	Grade M20 concrete		25%	20%	0%	40%	15%
(b)	Grade M25 concrete		25%	20%	0%	40%	15%
7.3	<b>Concrete Reinforcement</b>						
	Providing and fabricating steel reinforcement with Fe 415 grade steel for RCC work including straightening, cutting, bending, placing in position and tying (including cost of tie wire) ,taxes and duties, transportation etc. all complete, as per specifications and drawings and as directed by the Employer's Representative. This is Work not included in Item 6.		25%	20%	40%	0%	15%
7.4	<b>Brick Masonry Work</b>						
	Construction of Brick Masonry for sub/superstructure of 230/350 mm thick walls using cement mortar with a cement to sand ratio of 1:6. This item includes the cost of transportation of all materials, labor, scaffolding, curing etc. as per specifications and drawings and as directed by the Employer's Representative. This is Work not included in Item 6.		25%	20%	0%	40%	15%

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Bill of Quantities -Pipeline							
Item No.	Description	Basic Amount in INR	Non-adjustable	Labour portion (L)	Steel (MS)	Other Materials (MA)	Equipment operation (E)
			a	b	c1	c2	d
7.5	<b>Plastering Work</b>						
(a)	Providing and applying cement sand plaster 12 mm thick in a single coat using cement mortar with a cement to sand ratio of 1:4 without neeru finish to concrete or brick surfaces including scaffolding and curing as directed by the Employer's Representative. This is Work not included in Item 6.		25%	20%	0%	40%	15%
(b)	Providing and applying cement sand plaster 20 mm thick in a single coat using cement mortar with a cement to sand ratio of 1:4 without neeru finish to concrete or brick surfaces including scaffolding and curing as directed by the Employer's Representative. This is Work not included in Item 6.		25%	20%	0%	40%	15%
7.6	Providing and laying boulder soling with boulders 100-200mm size in foundation, packing with locally available mooram and sand, including watering, dressing and leveling, all complete as per drawing and specification and as directed.		25%	20%	0%	40%	15%
7.7	Providing and laying 100 mm thick brick soling for foundations and under flooring with best quality jhama brick, sand packed and laid to level after preparing the subgrade including all labor and materials and dewatering if necessary, complete and as per the specifications and drawings and as directed by the Employer's Representative. This is Work not included in Item 6.		25%	20%	0%	40%	15%
7.8	<b>Structural Steel Work</b>						
	Providing and fabricating structural steel work in rolled sections including joists, channels, angles, beams, etc. including cutting, fabricating, grinding, hoisting, erecting, fixing in position making bolted/welded connections, applying coatings etc., as per the specifications and drawings and as directed by the Employer's Representative.		25%	20%	40%	0%	15%
<b>Subtotal</b>							

Weight of non-adjustable portion (a) is fixed by the Employer. Weight of other adjustment factors are shown as example and purely indicative, which are to be set by the bidder



Bill of Quantities -Pipeline							
Item No.	Description	Basic Amount in INR	Non-adjustable	Labour portion (L)	Steel (MS)	Other Materials (MA)	Equipment operation (E)
			a	b	c1	c2	d
<b>8.0</b>	<b>ROAD RESTORATION</b>						
8.1	<b>Reconstruction of Bituminous Asphalt Roads</b>						
a)	Providing and laying of Granular sub base (GSB), as per specification drawing and as directed		25%	20%	0%	40%	15%
b)	Providing and laying of Prime coat, as per specification drawing and as directed		25%	20%	0%	40%	15%
c)	Providing and laying of Wet mix macadam (WMM) , as per specification drawing and as directed		25%	20%	0%	40%	15%
d)	Providing and laying of Dense graded bituminous macadam (DBM), as per specification drawing and as directed		25%	20%	0%	40%	15%
e)	Providing and laying of Semi dense bituminous concrete (SDBC), as per specification drawing and as directed		25%	20%	0%	40%	15%
f)	Providing and laying of Tack coat (TC), as per specification drawing and as directed		25%	20%	0%	40%	15%
g)	Providing and laying of Bituminous macadam (BM), as per specification drawing and as directed		25%	20%	0%	40%	15%
h)	Providing and laying of Premix carpet (PC), as per specification drawing and as directed		25%	20%	0%	40%	15%
8.2	<b>Reconstruction of WBM Roads</b>						
a)	Providing , laying ,spreading and compacting stone aggregates of specific sizes as per specification and drawing to water bound macadam including spreading in uniform thickness, hand packing, rolling with vibratory roller 8-10 tonnes in stages to proper grade and camber, applying and brooming requisite type of stone screenings & binding material, and completer as per specification drawing and as directed		25%	20%	0%	40%	15%
8.3	<b>Reconstruction of Concrete Roads</b>						
	Providing, placing and finishing Cement Concrete roads to match the existing roadway which was removed, if directed by the Employer's Representative . Grade M20 concrete shall be used and placed to the same depth as the existing roadway surface. A screeded finish shall be applied.		25%	20%	0%	40%	15%

Weight of non-adjustable portion (a) is fixed by the Employer. Weight of other adjustment factors are shown as example and purely indicative, which are to be set by the bidder

Bill of Quantities -Pipeline							
Item No.	Description	Basic Amount in INR	Non-adjustable	Labour portion (L)	Steel (MS)	Other Materials (MA)	Equipment operation (E)
			a	b	c1	c2	d
8.4	<b>Reconstruction of Brick Roads</b>						
	Providing and laying of bricks on edge for road restoration on earth subgrade. The bricks shall be on edge, diagonally placed, and gap filled up with sand, all complete, as per specification and drawings.		25%	20%	0%	40%	15%
	<b>Subtotal</b>						
	<b>TOTAL</b>						

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**Part -1, Section VIII PC, Annexure 2, Price Adjustment, Schedule of Adjustment Factors**

Bill of Quantities - Pipeline (Pumping Station)							
Item No.	Description	Basic Amount in INR	Non-adjustable	Labour portion (L)	Steel (MS)	Other Materials (MA)	Equipment operation (E)
			a	b	c1	c2	d
<b>1. CIVIL WORKS</b>							
1.01	Site clearance by cleaning and grubbing Reservoir area including uprooting rank vegetation including grass, shrubs, bushes, removing temporary structure, removing all trees coming in the alignment with all contractor's machinery, labour, tools & plants, including obtaining permission from concerned departments with all lead and lift complete as directed by Engineer and as per standard specification in the entire proposed area.		25%	20%		40%	15%
1.02	Excavation for foundation / pipe trenches in earth, soils of all types, sand, gravel and soft murum, including removing the excavated material from the site and stacking and spreading as directed, including dewatering where necessary, preparing the bed for foundation etc. complete.						
a	Upto all lift		25%	20%		40%	15%
1.03	Excavation for foundation / pipe trenches in soft rock or rippable rock at all levels and depth below ground including removing the excavated materials from the site and stacking and spreading as directed, including dewatering where necessary, preparing the bed for foundation etc. complete.						
a	Upto all lift		25%	20%		40%	15%
1.04	Excavation for foundation / pipe trenches in hard rock or non rippable rock at all levels and depth below ground including removing the excavated materials from the site and stacking and spreading as directed including dewatering where necessary, preparing the bed for foundation etc. complete.						
a	Upto all lift		25%	20%		40%	15%

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Bill of Quantities - Pipeline (Pumping Station)							
Item No.	Description	Basic Amount in INR	Non-adjustable	Labour portion (L)	Steel (MS)	Other Materials (MA)	Equipment operation (E)
			a	b	c1	c2	d
1.05	Providing and laying cement concrete (M-20) including curing, compaction etc. using hard broken stone aggregate 20 mm nominal size under the foundation and plinth, including cost of shuttering, complete. (For all Non structural Concrete)		25%	20%		40%	15%
1.06	Providing and laying in position compacted gravel bedding All work up to plinth level for Reservoir and Service building as per drawing and specifications.						
1.07	Filling with excavated soil including watering, ramming, consolidating and dressing complete and disposal of surplus excavated materials to a place identified by the Contractor and approved by the Engineer including loading, unloading, stacking etc complete as per drawing and specifications.		25%	20%		40%	15%
1.08	Providing and laying in position machine batched, machine mixed and machine vibrated design mix cement concrete of specified grade for reinforced cement concrete structural elements, including the cost of centering, Shuttering, including curing, compaction, finishing and making good the joints and admixtures in recommended proportions as per IS 9103. M-30grade reinforced cement concrete. (For all structural Concrete)						
i	<b>Foundaton base slab, Sump Walls upto base slab of reservoir</b>						
a	For Reservoir		25%	20%		40%	15%
b	For Control Room		25%	20%		40%	15%
ii	<b>In walls, columns, roof slab, beams, lintels, chhajjas, ventilators and stair etc.</b>						
a	For Reservoir		25%	20%		40%	15%
b	For Control Room		25%	20%		40%	15%

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Bill of Quantities - Pipeline (Pumping Station)							
Item No.	Description	Basic Amount in INR	Non-adjustable	Labour portion (L)	Steel (MS)	Other Materials (MA)	Equipment operation (E)
			a	b	c1	c2	d
1.09	Providing and fixing in position steel bar reinforcement (Tor Steel Fe-415 Grade) of various diameters for RCC footings, foundations, slabs, beams, columns, Retaining wall, newels, chajjas, lintels, copings, chairs and accessories, rebars in service building, Brick work etc. as per specification and drawings; including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc. complete. (including cost of binding wire).						
a	For Reservoir		25%	20%		40%	15%
b	For Control Room		25%	20%		40%	15%
1.10	<b>B/W in Control room</b>						
	Providing & Construction of Brick masonry for super structure of 300 mm thick walls in CM (1:6) prop. using first class best quality table moulded bricks including cost and conveyance of all materials, labour, scaffolding, Curing etc., complete for finished item of work as per specification and drawing and as directed by the Engineer-in-Charge						
	For Control Room		25%	20%		40%	15%
1.11	<b>Plastering work</b>						
	Providing and applying plaster of 12mm thick in CM(1:4) prop. to ceiling, internal and external walls of control building, including cost and conveyance of all materials to site, scaffolding, screening of sand curing and labour charges etc, complete for finished item of work as per specification and drawing and as directed by the Engineer-in-charge.		25%	20%		40%	15%
1.12	Providing and placing in position suitable PVC water Stops conforming to IS:12200 for construction joints between two RCC members.		25%	20%		40%	15%

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Bill of Quantities - Pipeline (Pumping Station)							
Item No.	Description	Basic Amount in INR	Non-adjustable	Labour portion (L)	Steel (MS)	Other Materials (MA)	Equipment operation (E)
			a	b	c1	c2	d
1.13	<b>Flooring</b>						
a	Providing and laying ceramic tile over concrete flooring with M:30 concrete laid to proper level and slope including compacting, finishing smooth and curing complete as per specification and drawing and as directed by the Engineer-in-charge.		25%	20%		40%	15%
1.14	Providing and fixing steel frame 14 inch Roof ventilator including complete in all respect including welding, painting, finishing etc. complete and as per specification and as directed by the Engineer-in-charge.		25%	20%		40%	15%
1.15	Providing and erecting 3.0 m. high chain link fencing with chain link having hole size 65 mm x 65 mm supported on M.S.angle post of size 50 mm x 50 mm x 6 mm at 2.40 m c/c including excavating pits for foundation fixing post in M 20 concrete of size 45 cm x 45 cm x 45 cm fixing chain link with 3.25 mm ( 10 guage ) G.I. wire at top and bottom and with oil paint etc. complete and Providing and fixing steel frame 4.0 m wide Double leaf Entrance gate (exterior) complete in all respect including welding, painting, finishing etc. complete and as per drawings and specification..		25%	20%		40%	15%
1.16	<b>Water proofing on Roof</b>						
	Providing and laying three layers of cold bituminous paint with two layers of polyester felt and gravel to roof and parapet walls for water proofing.						
a	For Reservoir		25%	20%		40%	15%
b	For Control Room		25%	20%		40%	15%

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Bill of Quantities - Pipeline (Pumping Station)							
Item No.	Description	Basic Amount in INR	Non-adjustable	Labour portion (L)	Steel (MS)	Other Materials (MA)	Equipment operation (E)
			a	b	c1	c2	d
1.17	<b>Painting</b>						
a	Providing and applying priming coat on concrete/masonry/ surfaces including scaffolding if necessary, preparing the surface by thoroughly cleaning oil, grease, dirt and other foreign matter and sand papering as required as per specification.		25%	20%		40%	15%
b	Providing and applying Two coat waterproof cement based paint of approved make and shade over primer coat external surface to give an uniform shade including scaffolding, etc. complete.		25%	20%		40%	15%
c	Providing and applying Two coat Oil bond distamper of approved make and shade over primer coat internal surface to give an uniform shade including scaffolding, etc. complete.		25%	20%		40%	15%
d	Providing painting two coats over a primary coat with synthetic enamel paint of first quality of approved make to iron work including cost and conveyance of all materials like primer, synthetic enamel paint, sand paper, brushes etc, to site including all taxes, all labour charges for preparation of the surface, painting etc., complete for finished item of work and as directed by the Engineer-in-charge.		25%	20%		40%	15%
1.18	<b>Door and Window</b>						
a	Providing and fixing steel frame 4.0 m wide Double leaf Entrance gate (exterior) complete in all respect including welding, painting, finishing etc. complete and as per drawings and specification..		25%	20%		40%	15%
b	Providing and fixing steel frame of door (Internal like Bathroom ) including complete in all respect and size as per drawings and specification .		25%	20%		40%	15%
c	a) Providing and fixing in position steel windows with openable / sliding aluminium frame, 5 mm thick plain sheet glass shutter, glazing clips / neoprene / rubber / PVC Gasket of approved quality, chromium plated brass wigs, other aluminium fixture and fastenings,handle, stopper etc. complete and as per drawings and specification.		25%	20%		40%	15%

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Item No.	Description	Basic Amount in INR	Non-adjustable	Labour portion (L)	Steel (MS)	Other Materials (MA)	Equipment operation (E)
			a	b	c1	c2	d
1.19	<b>Ladder and Hand rail</b>						
a	Providing, fabricating and fixing in position Stainless Steel ladder inside the reservoir including cost of material and labour involved, welding, cages, anchoring and applying with 2 coats of enamel paint over a cost of primer complete and as per drawings and specification and as directed by engineer- in-charge.		25%	20%		40%	15%
b	Providing, fabricating and fixing in position stainless Hand rail (Horizontal as well as vertical poles) as per drawings and specification, fabricating and welding, grinding corners, fixing in position by making holes in the concreting and grouting in position with cement concrete M20 as per drawing and finishing for the exposed face with 2 coats of enamel paint over a cost of primer.		25%	20%		40%	15%
1.20	<b>Paved area</b>						
a	Providing, Laying, compacting Subgrade with selected job excavated material in paved area and access road within the fence line from existing subgrade to the underside of the base course as per drawings and specification.		25%	20%		40%	15%
b	Providing, Laying, compacting Base course 500 mm thick in paved area and access road within fence line as per drawings and specification.		25%	20%		40%	15%
c	Providing, Laying, compacting asphalt concrete binder course 50 mm thick of paved area as per drawings and specification.		25%	20%		40%	15%
d	Providing, Laying, compacting Asphalt concrete surface course 30 mm thick of paved area as per drawings and specification.		25%	20%		40%	15%

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Item No.	Description	Basic Amount in INR	Non-adjustable	Labour portion (L)	Steel (MS)	Other Materials (MA)	Equipment operation (E)
			a	b	c1	c2	d
1.21	Providing, Fixing and installation of all sanitary fixtures related Plumbing for the bath room / sanitation facilities with all accessories ISI marked fittings and Connections including cost of labour and material and preparation of plumbing shop drawings as per specification.		25%	20%		40%	15%
1.22	Providing, Fixing and installation of local water supply from the inlet valve chamber for the bathroom and reservoir cleaning . Inlet to Reservoir will be established on site.		25%	20%		40%	15%
1.23	Providing, Fixing and installation of Waste water pipe and manholes from the bathroom to the septic tank including cost of labour and material as per drawings and specifications.		25%	20%		40%	15%

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Bill of Quantities - Pipeline (Pumping Station)							
Item No.	Description	Basic Amount in INR	Non-adjustable	Labour portion (L)	Steel (MS)	Other Materials (MA)	Equipment operation (E)
			a	b	c1	c2	d
1.24	Providing, Fixing and installation of Septic tank and absorption pit as per drawings and specification including cost of labour and material.		25%	20%		40%	15%
1.25	Providing and laying Storm water / roof drain system of the reservoir including Manholes. Rates also include excavation, concreting, shuttering, steel, specials, pipes, fittings, etc complete in all respect as per drawings and specification .		25%	20%		40%	15%
1.26	Providing and laying 300 mm dia Pipe to washout and headwall including labour, material etc complete in all respect as per drawings and specification.		25%	20%		40%	15%
1.27	To Clean reservoir, supply Potable water, including Transportation, Equipment, Manpower, Level measuring device fill reservoir and perform leakage testing of Reservoir (Hydro test) as per specification for water tightness including cleaning Reservoir full after disinfection.						
a	Reservoir		25%	20%		40%	15%
b	All yard piping		25%	20%		40%	15%
1.28	To supply manpower, equipment, chemicals, testing and disinfect the reservoir including all inlet, outlet, piping according as per specification.						
a	Reservoir		25%	20%		40%	15%
b	All yard piping		25%	20%		40%	15%
1.29	Supplying all materials etc. and constructing culvert crossing including boulders at inlet and outlet but excluding asphalt surface per drawing and specification and as directed by Engineer- in-charge.		25%	20%		40%	15%
1.30	Supply and install polyethylene sheeting between gravel and PCC under reservoir (sump) and control building.		25%	20%		40%	15%

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Bill of Quantities - Pipeline (Pumping Station)							
Item No.	Description	Basic Amount in INR	Non-adjustable	Labour portion (L)	Steel (MS)	Other Materials (MA)	Equipment operation (E)
			a	b	c1	c2	d
1.31	Supply and install building paper/bomd breaker between reservoir (sump) and service building		25%	20%		40%	15%
1.32	Supply and install Type A traffic barrier		25%	20%		40%	15%
1.33	Supply and install poluurethane joint sealant between reservoir (sump) and control building.		25%	20%		40%	15%
1.34	Supply and install external access ladder (steel) pre standard drawings, with two coats (minimum) anticorrosion paint and final deorative coat – color to be agreed with client.		25%	20%		40%	15%
1.35	Supply and install roof vent per standard drawings		25%	20%		40%	15%
1.36	Supply and install 6mm steel plate bolted in place over slots for future pumps						
1.37	Supply and install access hatch to sump per standard drawings						
	<b>SUB TOTAL</b>						

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Bill of Quantities - Pipeline (Pumping Station)							
Item No.	Description	Basic Amount in INR	Non-adjustable	Labour portion (L)	Steel (MS)	Other Materials (MA)	Equipment operation (E)
			a	b	c1	c2	d
<b>2.0 MECHANICAL WORKS</b>							
	Supplying & installing Mechanical Equipment including, but no limited to, safe storage, protection, erection, installation, pre-commissioning & commissioning testing as per specification and drawing for following items.						
2.01	<b>Pump &amp; Motor</b>						
	Providing, Fixing, installation and comissioning & third party inspection of Vertical Turbine pump including Motor in all respect as per specification and drawings.		25%	3.75%	63.75%	0%	7.5%
2.02	<b>Inlet pipes</b>						
	Supplying, installing, commissioning & third party inspection of 300ø DI inlet pipe from fence line to the bell mouth inside the Reservoir , Butterfly valve, pipe supports, bell mouth, sleeve coupling etc complete in all respect and as per specification and Drawings.		25%	3.75%	63.75%	0%	7.5%
2.03	<b>Out let pipes</b>						
	supplying, installing, commissioning & third party inspection of 300ø DI Outlet pipe from bell mouth in Reservoir to fence line including fittings, Butterfly valve, specials like EMF Meter, Wall piece, Well mouth,Tee, pipe support , Reducer Sleeve coupling etc complete in all respect and as per specification and drawings.		25%	3.75%	63.75%	0%	7.5%
2.04	<b>Wash out pipes</b>						
	supplying, installing, commissioning of Wash out pipe from Washout sump in the Reservoir to Washout manhole including all fittings, conc. encasement etc complete in all respect and as per specification and drawings.		25%	3.75%	63.75%	0%	7.5%

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Item No.	Description	Basic Amount in INR	Non-adjustable	Labour portion (L)	Steel (MS)	Other Materials (MA)	Equipment operation (E)
			a	b	c1	c2	d
2.05	<b>Over Flow</b>						
	supplying, installing, commissioning of Reservoir over flow from inside Reservoir to Manhole including all fittings etc complete in all respect and as per specification and drawings.		25%	3.75%	63.75%	0%	7.5%
2.06	<b>Inlet valve chamber</b>						
	Supplying , fixing and installation in position true to line and level, inlet valve chamber and its contents and related fitting and associated valves, ball valve, sleeve couplings, excavation, concreting, shuttering, steel and specials and pipe support , rungs, etc complete in all respect and as per drawing and specification.		25%	3.75%	63.75%	0%	7.5%
2.07	Supplying, installing, commissioning of Wash out/Overflow/Storm water pipe from fenceline to offsite disposal point including all fittings, conc. encasement etc complete in all respect and as per specification. (See site plan for pipe size)		25%	3.75%	63.75%	0%	7.5%
<b>SUB TOTAL</b>							
<b>3. ELECTRICAL SYSTEM</b>							
<b>Service Buildings Internal Lighting System</b>							
3.01	Manufacturing, inspection, delivery, installation, testing, commissioning of Lighting Distribution Board (DB)						
a	4 Way		25%	3.75%	63.75%	0%	7.5%
b	12 Way		25%	3.75%	63.75%	0%	7.5%



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Item No.	Description	Basic Amount in INR	Non-adjustable	Labour portion (L)	Steel (MS)	Other Materials (MA)	Equipment operation (E)
			a	b	c1	c2	d
3.02	Providing & Fixing , Testing and comissioning of industrial fluourescent tube fitting with reflector fabricated from CRCA sheet and finished with powder coating / stove enamelled paint complete with accessories like Electronic Ballast, starter, terminal block duly prewired with copper conductor including making connection, testing etc. as required.						
a	2 X 28 Watts T5 lamp		25%	3.75%	63.75%	0%	7.5%
b	1 X 28 Watts T5 lamp		25%	3.75%	63.75%	0%	7.5%
c	Providing & Fixing , Testing and comissioning of Bulk Head fittings along with 100 W lamp		25%	3.75%	63.75%	0%	7.5%
d	Providing & Fixing , Testing and comissioning of Switches, Junction boxes, Ceiling rose, modular fittings for switches & sockets, Receptacles etc on as required basis		25%	3.75%	63.75%	0%	7.5%
3.03	Providing & Fixing , Testing and comissioning of double ball bearing capacitor start ceiling fan of approved make complete with regulator and other accessories as required.						
a	1200 mm sweep		25%	3.75%	63.75%	0%	7.5%
b	1400 mm sweep		25%	3.75%	63.75%	0%	7.5%
3.04	Point Wiring along with heavy duty PVC conduit complete with fittings, clasmps, nut bolts, etc.						
a	(a) Short point (upto 3m)		25%	3.75%	63.75%	0%	7.5%
b	(b) Medium point (upto 6m)		25%	3.75%	63.75%	0%	7.5%
3.05	Pipe Earthing for SB's as per IS:3043 with perforated 3.0 Mtr. Long, 40 mm dia. ' B ' class G.I. Pipe including all accessories like nut, bolts, reducer, nipple, wire meshed funnel, and C.C. finished chamber covered with hinged type with locking arrangement C.I. Cover, C.I. Frame of size 300mm x 300 mm and embodying the pipe complete with alternate layers salt and coke/ charcoal, testing of earth resistance as required.		25%	3.75%	63.75%	0%	7.5%

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			a	b	c1	c2	d
3.06	Supply & Laying following size earth wire/strip in horizontal or vertical run in ground/surface/recess including riveting, soldering, saddles, making connection etc. as required.						
a	8 SWG G.I. Wire		25%	3.75%	63.75%	0%	7.5%
3.07	Providing & Fixing , Testing and comissioning of metal clad industrial plug top & socket unit with pin and sleeve type contact on porcelain/ Bakelite base in sheet steel enclosure with MCB including making connections with lugs, testing etc.as required for use as welding socket.						
a	Three phase (Five pin) 20A		25%	3.75%	63.75%	0%	7.5%
<b>Service Buildings Out-Side Lighting System</b>							
3.08	Supply, erection, Testing and comissioning of 7 mtr high Mild steel swaged tubular pole conforming to IS: 2713-1980 (part I to II) with galvanised base plate of size 400mm x 400mm x 7mm in position including excavation of the pit and filling the same with C.C. of M-10 grade (1:3:6) from base plate to 50cm above ground level, with the help of steel frame not less than 40 cm dia up to 114.3mm outer dia and 50 cm beyond 114.3mm outer dia around the pole. Duly finished with cement plaster, earthing terminals , cable entry, GI cable sleeve complete as required. The pole shall be galvanised using ISI mark seamless tube for structural purpose.		25%	3.75%	63.75%	0%	7.5%

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			a	b	c1	c2	d
3.09	Supply, erection, Testing and comissioning of IP-54 protected street light luminaire suitable for HPSV/ MH lamp, made out from powder coated single piece die cast aluminium housing, electrochemically brightened and anodized POT optics aluminium reflector, UV stabilised acrylic bowl cover/toughened glass cover and accessories like copper ballast, electronic ignitor, capacitor, holder prewired up to terminal block etc. as required including making connection testing etc. as required.						
a	70 Watt HPSV		25%	3.75%	63.75%	0%	7.5%
b	150 Watt HPSV		25%	3.75%	63.75%	0%	7.5%
3.10	Supply, erection, Testing and comissioning IP65 protected decorative lighting luminaire Post top suitable for following lamps, made of powder coated cast aluminium housing, moulded acrylic lamp compartment with built in anodized aluminium louvers for lamp shielding and glare control, metallic lid top cover, including the cost of control gear complete in all respect. Bollards are including cost of decorative base pipe/ plate.						
a	70 Watt HPSV		25%	3.75%	63.75%	0%	7.5%
3.11	Supply & Laying XLPE insulated & P.V.C. sheathed cable of 1.1 KV grade with aluminium conductor armoured of IS:7098-I approved make in ground as per IS:1255 including excavation of 30cmx75cm size trench, 25 cm thick under layer of sand, IInd class bricks covering, refilling earth, compaction of earth, making necessary connection, testing etc. as required of size						
a	4/CX 25 mm <sup>2</sup>		25%	3.75%	63.75%	0%	7.5%
b	4/CX 16 mm <sup>2</sup>		25%	3.75%	63.75%	0%	7.5%

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			a	b	c1	c2	d
3.12	Supplying and making end terminations with heavy duty single compression brass gland SIBG type, aluminium lugs duly crimped with crimping tool, PVC tape etc for following size of Armoured PVC insulated & PVC sheathed/ XLPE aluminium conductor cable of 1100 volt grade as required of size.						
a	4/CX 25 mm <sup>2</sup>		25%	3.75%	63.75%	0%	7.5%
b	4/CX 16 mm <sup>2</sup>		25%	3.75%	63.75%	0%	7.5%
3.13	Feeder Pillar		25%	3.75%	63.75%	0%	7.5%
	<b>SUB TOTAL</b>						
	<b>GRAND TOTAL</b>						