

**SECTION 3**

**CONDITIONS OF CONTRACT**

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#### **A. General**

#### **1. Definitions**

**1.1** Boldface type used to identify defined terms.

**The Adjudicator** is the person appointed jointly by the Employer and the Contractor to resolve disputes in the first instance, as provided for in Clauses 24 and 25 hereunder.

**Bill of Quantities** means the priced and completed bill of quantities forming part of the Bid.

**Compensation Events** are those defined in Clause 44 hereunder.

**The Completion Date** is the date of completion of the Works as certified by the Project manager, in accordance with Sub-Clause 55.1.

**The Contract** is the contract between the Employer and the Contractor to execute, complete, and maintain the Works. It consists of the documents listed in Clause 2.3 below.

**The Contractor** is a person or corporate body whose Bid to carry out the Works has been accepted by the Employer.

**The Contractor's Bid** is the completed bidding document submitted by the Contractor to the Employer.

**The Contract Price** is the price stated in the letter of Acceptance and thereafter as adjusted in accordance with the provisions of the Contract.

**Days** are calendar days : months are calendar months.

**Day Works** are varied work inputs subject to payment on a time basis for the Contractor's employees and Equipment, in addition to payments for associated Materials and Plant.

**A Defect** is any part of the Works not completed in accordance with the Contract.

**The Defects Liability Certificate** is the certificate issued by Project Manager upon correction of defects by the Contractor.

**The Defects Liability Period** is the period named in the Contract Data and calculated from the completion Date.

**Drawings** include calculation and other information provided or approved by the Project Manager for the execution of the Contract.

**The Employer** is the party who employs the Contractor to carry out the Works.

**Equipment** is the Contractor's machinery and vehicles brought temporarily on the site to construct the Works.

**The Initial Contract Price** is the Contract Price listed in the Employer's Letter of Acceptance.

**The Intended Completion Date** is the date on which it is intended that the Contractor shall complete the Works. The intended Completion Date is specified in the Contract Data. The Intended Completion Date may be revised only by the Project Manager by issuing an extension of time or an acceleration order.

**Materials** are all supplies, including consumables, used by  
The Contractor for incorporation in the Works.

**Plant** is any integral part of the Works that shall have a mechanical, electrical, chemical, or biological function.

**The Project Manager** is the person named in the Contract data (or any other competent person appointed by the Employer and notified to the Contractor, to act in replacement of the Project Manager) who is responsible for supervising the execution of the Works and administering The Contract.

**The Site** is the area defined as such in the Contract Data.

**Site Investigation Reports** are those that were included in the bidding documents and are factual and interpretative reports about the surface and subsurface conditions at the site.

**Specification** means the specification of the Works included in the Contract and any modification or addition made or approved by the Project Manager.

**The Start Date** is given in the Contract Data. It is the latest date when the Contractor shall commence execution of the Works. It does not necessarily coincide with any of the Site Possession dates.

A **Subcontractor** is a person or corporate body who has a contract with the Contractor to carry out a part of the work in the Contract, which includes work on the site.

**Temporary Works** are works designed, constructed, installed, and removed by the Contractor that are needed for construction or installation of the Works.

A **Variation** is an instruction given by the Project Manager which Varies the Works.

**The Works** are what the Contract requires the Contractor to construct, install, and turn over to the Employer, as defined in the Contract Data.

## **2. Interpretation**

2.1 In interpreting these Conditions of Contract, singular also means plural, male also means female or neuter, and the other way round. Headings have so significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Project Manager will provide instructions clarifying queries about these Conditions of Contract.

2.2 If sectional completion is specified in the Contract Data, references in the Conditions of Contract to the Works, the Completion Date, and the Intended Completion date apply to any section of the Works (other than references to the Completion date and Intended Completion Date for the whole of the Works).

2.3 The documents forming the Contract shall be interpreted in the following order or priority :

Agreement,

(1) Letter of Acceptance,

(2) Contractor's Bid,

(3) Contract data,

(4) Condition of Contract,

(5) Specification,

(6) Drawings,

(7) Bill of Quantities, and

(8) Any other document listed in the Contract Data as forming part of the Contract

## **3. Language and Law**

3.1 The language of the Contract and the law governing the Contract are stated in the Contract Data.

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| <b>4. Project Manager's Decisions</b>        | 4.1  | Except where otherwise specifically stated, the Project Manager will decide contractual matters between the Employer and the Contractor in the role representing the Employer.   |
| <b>5. Delegation</b>                         | 5.1  | The Project Manager may delegate any of this duties and responsibilities to other people, except to the Adjudicator, after notifying the Contractor, and may cancel any delegation after notifying the Contractor.   |
| <b>6. Communications</b>                     | 6.1  | Communications between parties that are referred to in the conditions shall be effective only when in writing. A notice shall be effective only when it is delivered.  |
| <b>7. Subcontracting</b>                     | 7.1  | The Contractor may subcontract with the approval of the Project Manager, but may not assign the Contract without the approval of the Employer in writing. Subcontracting shall not alter the Contractor's obligations.   |
| <b>8. Other Contractors</b>                  | 8.1  | The Contractor shall cooperate and share the site with other contractors, public authorities, and the Employer between the dates given in the schedule of other Contractors, as referred to in the Contract Data. The Contractor shall also provide facilities and services for them as described in the schedule. The Employer may modify the schedule of other contractors, and shall notify the Contractor of any such modification.                  |
| <b>9. Personnel</b>                          | 9.1  | The Contractor shall employ the key personnel named in the schedule of key Personnel, as referred to in the Contract Data, to carry out the functions stated in the Schedule or other personnel approved by the Project Manager. The Project Manager will approve any proposed replacement of key personnel only if their relevant qualifications and abilities are substantially equal to or better than those of the personnel listed in the schedule. |
|  | 9.2  | If the Project Manager asks the Contractor to remove a person who is a member of the Contractor's staff or work force, stating the reasons, the Contractor shall ensure that the person leaves the site within seven days and has no further connection with the work in the Contract.   |
| <b>10. Employer's and Contractor's Risks</b> | 10.1 | The Employer carries the risks which this Contract states are Employer's risks, and the Contractor carries the risks which this Contract states are Contractor's risks.  |
| <b>11. Employer's Risks</b>                  | 11.1 | From the Start Date until the Defects Correction Certificate has been issued, the following are Employer's risks :<br>(a) the risks of personal injury, death, or loss of or damage  |

to property (excluding the Works, Plant, Materials, and Equipment), which are due to

(i) use or occupation of the Site by the Works or for the purpose of the Works, which is the unavoidable result of the Works or

(ii) negligence, breach of statutory duty, or interference with any legal right by the Employer or by any person employed by their contract to him except the Contractor.

(b) The risk of damage to the Works, Plant, Materials, and Equipment to the extent that it is due to a fault of the Employer or in the Employer's design, or due to war or radioactive contamination directly affecting the country where the Works are to be executed.

11.2 From the Completion Date until the Defects Liability Certificate has been issued, the risk of loss of or damage to the Works, Plant, and Materials is an Employer's risk except loss or damage due to

(a) a Defect which existed on the Completion Date,

(b) an event occurring before the Completion Date, which was not itself an Employer's risks, or

(c) the activities of the Contractor on the site after the completion Date.

## 12. Contractor's Risks

12.1 From the starting Date until the Defects Liability Certificate has been issued, the risks of personal injury, death, and loss of or damage to property (including, without limitation, the Works, Plant, Materials, and Equipment) which are not Employer's risks are Contractor's risks.

## 13. Insurance

13.1 The Contractor shall provide, in the joint names of the Employer and the Contractor, insurance cover from the Start Date to the end of the Defects Liability Period, in the amounts and deductibles stated in the Contract Data for the following events which are due to the Contractor's risks :

(a) loss of or damage to the Works, Plant, and Materials;

(b) loss of or damage to Equipment;

(c) loss of or damage to property (except the Works, Plant, Materials, and Equipment) in connection with the Contract; and

(d) personal injury or death.

- 13.2 Policies and certificates for insurance shall be delivered by the Contractor to the Project Manager for the Project Manager's approval before the Start Date. All such insurance shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred.
- 13.3 If the Contractor does not provide any of the policies and certificates required, the Employer may effect the insurance which the Contractor should have provided and recover the premiums the Employer had paid from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due.
- 13.4 Alterations to the terms of an insurance shall not be made without the approval of the Project Manager.
- 13.5 Both parties shall comply with any conditions of the insurance policies.
- 14. Site Investigation Reports** 14.1 The Contractor, in preparing the Bid, shall rely on any site Investigation Reports referred to in the Contract Data supplemented by any information available to the Bidder.
- 15. Queries about the Contract Data** 15.1 The Project Manager will clarify queries on the Contract Data.
- 16. Contractor to Construct the Works** 16.1 The Contractor shall construct and install the Works in accordance with the Specifications and Drawings.
- 17. The Works to be Complete by the Intended Completion Date** 17.1 The Contractor may commence execution of the Works on the Start Date and shall carry out the Works in accordance with the program submitted by the Contractor, as updated with the approval of the Project Manager, and complete them by the Intended Completion Date.
- 18. Approval by the Project Manager** 18.1 The Contractor shall submit specifications and Drawings showing the proposed Temporary Works to the Project Manager, who is to approve them if they comply with the Specifications and Drawings.
- 18.2 The Contractor shall be responsible for design of Temporary Works.
- 18.3 The Project Manager's approval shall not alter the Contract's responsibility for design of the Temporary Works.
- 18.4 The Contractor shall obtain approval of third parties for the design of the Temporary Works, where required.

- 18.5 All Drawings prepared by the Contractor for the execution of the Temporary or permanent Works, are subject to prior approval by the Project Manager before their use.
- 19. Safety** 19.1 The Contractor shall be responsible for the safety of all activities on the site.
- 20. Discoveries** 20.1 Anything of historical or other interest or of significant value unexpectedly discovered on the Site shall be the property of the Employer. The Contractor shall notify the Project Manager of such discoveries and carry out the Project Manager's instruction for dealing with them.
- 21. Possession of the site** 21.1 The Employer shall give possession of all parts of the Site to the Contractor. If possession of a part is not given by the date stated in the Contract Data, the Employer will be deemed to have delayed the start of the relevant activities, and this will be a Compensation Event.
- 22. Access to the Site** 22.1 The Contractor shall allow the Project Manager and any person authorized by the Project Manager access to the site and to any places where work in connection with the Contract is being carried out or is intended to be carried out.
- 23. Instructions, Inspections and Audits** 23.1 The Contractor shall carry out all instructions of the Project Manager which comply with the applicable laws where the Site is located.
- 23.2 The Contractor shall permit the Bank to inspect the Contractor's accounts and records relating to the performance of the Contractor and to have them audited by auditor appointed by the Bank if so required by the Bank.
- 24. Disputes** 24.1 If the Contractor believes that a decision taken by the Project Manager was either outside the authority given to the Project Manager by the Contract or that the decision was wrongly taken, the decision shall be referred to the Adjudicator within fourteen (14) days of the notification of the Project Manager's decision.
- 25. Procedure for Disputes** 25.1 The Adjudicator shall give a decision in writing within twenty-eight (28) days of receipt of a notification of a dispute.



25.2 The Adjudicator shall be paid by the hour at the rate specified in the Bidding Data and Contract Data, together with reimbursable expenses of the types specified in the Contract Data, and the cost shall be divided equally between the Employer and Contractor, whatever decision is reached by the Adjudicator. If either party does not accept the Adjudicator's decision, the matter shall be referred to an Arbitrator within twenty-eight (28) days of the Adjudicator's written decision. If neither party refers the dispute to arbitration within the above twenty-eight (28) days, the Adjudicator's decision will be final and binding.

25.3 The Arbitration shall be conducted in accordance with the arbitration procedure published by the institution named and in the place shown in the Contract Data.

**26. Replacement of  
Adjudicator**

26.1 Should the Adjudicator resign or die, or should the Employer and the Contractor agree that the Adjudicator is not functioning in accordance with the provisions of the Contract, a new Adjudicator will be jointly appointed by the Employer and the Contractor. In case of disagreement between the Employer and the Contractor, within thirty (30) days, the Adjudicator shall be designated by the appointing authority designated in the Contract data at the request of either party, within fourteen (14) days of receipt of such request.

## B. Time Control

### 27. Program

- 27.1 Within the time stated in the Contract Data, the Contractor shall submit to the Project Manager for approval a Program showing the general methods, arrangements, order, and timing for all the activities in the Works.
- 27.2 An update of the Program shall be a program showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work, including any changes to the sequence of the activities.
- 27.3 The Contractor shall submit to the Project Manager for approval an updated Program at intervals no longer than the period stated in the Contract Data. If the Contractor does not submit an update Program within this period, the Project Manager may withhold the amount stated in the Contract Data from the next payment certificate and continue to with hold this amount until the next payment after the date on which the overdue Program has been submitted.
- 27.4 The Project Manager's approval of the Program shall not alter the Contractor's obligations. The Contractor may revise the Program and submit it to the Project Manager again at any time. A revised Program shall show the effect of Variations and Compensation Events.

### 28. Extensions of the Intended Completion Date

- 28.1 The Project Manager shall extend the intended Completion Date if a Compensation Event occurs or a Variation is issued which makes it impossible for completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining work, which would cause the Contractor to incur additional cost.
- 28.2 The Project Manager shall decide whether and by how much to extend the Intended Completion Date within twenty-one (21) days of the Contractor asking the Project Manager for a decision upon the affect of a Compensation Event or Variation and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.

### 29. Acceleration

- 29.1 When the Employer wants the Contractor to finish before the Intended Completion Date, the Project Manager will obtain priced proposals for achieving the necessary acceleration from the Contractor. If the Employer accepts these proposals, the Intended Completion Date will be

adjusted accordingly and confirmed by both the Employer and the Contractor.

29.2 If the Contractor's priced proposals for an acceleration are accepted by Employer, they are incorporated in the Contract Price and treated as a Variation.

**30. Delays Ordered by the Project Manager**

30.1 The Project Manager may instruct the Contractor to delay the start or progress of any activity within the Works.

**31. Management Meeting**

31.1 Either the Project Manager or the Contractor may require the other to attend a management meeting. The business of a management meeting shall be to review the plans for remaining work and to deal with matters raised in accordance with the early warning procedure.

31.2 The Project Manager shall record the business of management meetings and provide copies of the record to those attending the meeting and the Employer. The responsibility of the parties for actions to be taken shall be decided by the Project Manager either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.

**32. Early Warning**

32.1 The Contractor shall warn the Project Manager at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of work, increase the Contract Price or delay the execution of the Works. The Project Manager may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the Contract Price and Completion Date. The estimate shall be provided by the Contractor as soon as reasonably possible.

32.2 The Contractor shall cooperate with the Project Manager in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the work and in carrying out any resulting instruction of the Project Manager.

## C. Quality Control

- 33. Defects Identifying** 33.1 The Project Manager shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking shall not effect the Contractor's responsibilities. The Project Manager may instruct the Contractor to search for a Defect and uncover and test any work that the Project Manager considers may have a Defect.
- 34. Tests** 34.1 If the Project Manager instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and the test shows that it does, the Contractor shall pay for the test and any samples. If there is no Defect, the test shall be a Compensation Event.
- 35. Correction of Defects** 35.1 The Project Manager shall give notice to the Contract of any Defects before the end of the Defect Liability Period, which begins at Completion, and is defined in the Contract Data. The Defects Liability Period shall be extended for as long as defects remain to be corrected.
- 35.2 Every time notice of a Defect is given, the Contractor shall correct the notified Defect within the length of time specified by the Project Manager's notice.
- 36. Uncorrected Defects** 36.1 If the Contractor has not corrected a Defect within the time specified in the Project Manager's notice, the Project Manager will assess the cost of having the defect corrected, and the Contractor will pay this amount.

## D. Cost Control

- 37. Bill of Quantities**
- 37.1 The Bill of Quantities shall contain items for the construction, installation, testing, and commissioning work to be done by the Contractor.
- 37.2 The Bill of Quantities is used to calculate the Contract Price. The Contractor is paid for the quantity of the work done at the rate in the Bill of Quantities for each item.
- 38. Change in Quantities**
- 38.1 If the final quantity of the work done differs from the quantity in the Bill of Quantities for the particular item by more than 25 percent, provided the change exceeds 1 percent of the Initial Contract Price, the Project Manager shall adjust the rate to allow for the change.
- 38.2 The Project Manager shall not adjust rates from changes in quantities if thereby the initial Contract Price is exceeded by more than 15 percent, except with the prior approval of the Employer.
- 38.3 If requested by the Project Manager, the Contractor shall provide the Project Manager with a detailed cost breakdown of any rate in the Bill of Quantities.
- 39. Variation**
- 39.1 All Variations shall be included in updated Programs produced by the Contractor.
- 40. Payments for Variation**
- 40.1 The Contractor shall provide the Project Manager with a quotation for carrying out the Variation when requested to do so by the Project Manager. The Project Manager shall assess the quotation, which shall be given within seven days of the request or within any longer period stated by the Project Manager and before the Variation is ordered.
- 40.2 If the work in the Variation corresponds with an item description in the Bill of Quantities and if, in the opinion of the Project Manager, the quantity of work above the limit stated in Sub-Clause 38.1 or the timing of its execution do not cause the cost per unit of quantity to change, the rate in the Bill of Quantities shall be used to calculate the value of the Variation. If the cost per unit of quantity changes, or if the nature of timing of the work in the Variation does not correspond with items in the Bill of Quantities, the quotation by the Contractor shall be in the form of new rates for the relevant items of work.
- 40.3 If the Contractor's quotation is unreasonable, the Project Manager may order the Variation and make a change to the Contract Price, which shall be based on the Project

Manager's own forecast of the effects of the Variation on the Contractor's cost.

40.4 If the Project Manager decides that the urgency of varying the work would prevent a quotation being given and considered without delaying the work, no quotation shall be given and the Variation shall be treated as a Compensation Event.

40.5 The Contractor shall not be entitled to additional payment for cost that could have been avoided by given early warning.

#### 41. Cash Flow Forecasts

41.1 When the Program is updated, the Contractor shall provide the Project Manager with an updated cash flow forecast. The cash flow forecast shall include different currencies, as defined in the Contract, converted as necessary using the Contract exchange rates.

#### 42. Payment Certificates

42.1 The Contractor shall submit to the Project Manager monthly statement of the estimated value of the work executed less the cumulative amount certified previously.

42.2 The Project Manager shall check the Contractor's monthly statement and certify the amount to be paid to the Contractor.

42.3 The Value of work executed shall be determined by the Project Manager.

42.4 The Value of work executed shall comprise the value of quantities of the items in the Bill of Quantities completed.

42.5 The Value of work executed shall include the valuation of Variations and Compensation Events.

42.6 The Project Manager may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of late information.

#### 43. Payments

43.1 Payments shall be adjusted for deductions for advance payments and retention. The Employer shall pay the Contractor the amounts certified by the Project Manager within twenty-eight (28) days of the date of each certificate. If the Employer makes a late payment, the Contractor shall be paid interest on the late payment in the next payment. Interest shall be calculated from the date by which the payment should have been made up to the date when the late payment is made at the prevailing rate of interest for commercial borrowing for each of the

currencies in which payments are made.

43.2 Unless otherwise stated, all payments and deductions will be paid or charged in the proportions of currencies comprising the Contract Price.

43.3 Items of the Works for which no rate or price has been entered will not be paid for by the Employer and shall be deemed covered by other rates and prices in the Contract.

#### 44. Compensation Events

44.1 The following shall be Compensation Event;

- (a) The Employer does not give access to a part of the site by the site possession date stated in the Contract Data.
- (b) The Employer modifies the schedule of other Contractors in a way that affects the work of the Contractor under the Contract.
- (c) The Project Manager orders a delay or does not issue Drawings, Specifications, or Instructions required for execution of the Works on time.
- (d) The Project Manager instructs the Contractor to uncover or to carry out additional test upon work, which is then found to have no Defects.
- (e) The Project manager unreasonably does not approve a subcontract to be let.
- (f) Ground conditions are substantially more adverse than could reasonably have been assumed before issuance of the letter of Acceptance from the information issue to bidders (including the Investigation reports), from information available publicly and from a visual inspection of the site.
- (g) The Project Manager gives an instruction for dealing with an unforeseen condition, caused by the Employer, or additional work required for safety or other reasons.
- (h) Other Contractors, public authorities, utilities, or the Employer does not work within the dates and the other constraints stated in the Contract, and they cause delay or extra cost to the Contractor.
- (i) The Advance payment is delayed.
- (j) The effects on the Contractor of any of the Employer's risks.
- (k) The Project Manager unreasonably delays issuing a certificate of the completion.
- (l) Other Compensation events described in the Contract or determined by the Project Manager shall apply.

44.2 If a Compensation event would cause additional cost or would prevent the work being completed before the Intended Completion Date, the Contract Price shall be increased and/or the Intended Completion Date shall be extended.

44.3 As soon as information demonstrating the effect of each Compensation Event upon the Contractor's forecast cost has been provided by the Contractor, it shall be assessed by the Project Manager, and the Contract Price shall be adjusted accordingly. If the Contractor's forecast is deemed unreasonable, the Project Manager shall adjust the Contract Price based on the Project Manager's own forecast. The Project Manager will assume that the Contractor will react competently and properly to the event.

44.4 The Contractor shall not be entitled to compensation if he fails to act promptly to the extent that the Employer's interests are adversely affected by the Contractor's not having given early warning or not having cooperated with the Project Manager.

#### 45. Tax

45.1 The Project Manager shall adjust the Contract Price if taxes, duties, and other levies are changed between the date twenty-eight (28) days before the submission of bids for the Contract and the date of the last completion certificate. The adjustment shall be for the changes which are not already reflected in the Contract Price or are result of Clause 47.

#### 46. Currencies

46.1 Where payments are made in currencies other than the currency of the Employer's country, the exchange rates used for calculating the amounts to be paid shall be the exchange rates stated in the Contractor's Bid.

#### 47. Price Adjustment

47.1 Prices shall be adjusted for fluctuations in the cost of inputs only if provided for in the Contract Data. If so provided, the amounts certified in each payment certificate, after deducting for advance Payment, shall be adjusted by applying the respective price adjustment factor to the payment amounts due in each currency. A separate formula of the type indicated below applies to each Contract currency :

$$P_c = A_c + B_c I_{mc} / I_{oc}$$

Where

$P_c$  is the adjustment factor for the portion of the Contract Price payable in a specific currency "c".

$A_c$  and  $B_c$  are coefficients specified in the Contract Data, representing the nonadjustable and adjustable portions, respectively, of Contract Price payable in that specific currency "c"; and  $I_{mc}$  is the index prevailing at the end of the month being invoiced and  $I_{oc}$  is the index prevailing 28 days before Bid opening for inputs payable; both in the specific currency "c".



47.2 If value of the index is changed after it has been used in a calculation, the calculation shall be corrected and an adjustment made in the next payment certificate. The index value shall be deemed to take account of all changes in cost due to fluctuations in cost.

#### 48. Retention

48.1 The Employer shall retain from each payment due to the Contractor the proportion stated in the Contract data until Completion of the whole of the Works.

48.2 On Completion of the whole of the Works, half the total amount retained shall be repaid to the Contractor and half when the Defects Liability Period has passed and the Project Manager has certified that all Defects notified by the Project Manager to the Contractor before the end of this period have been corrected.

48.3 On Completion of the whole Works, the Contractor may substitute retention money with an "on demand" Bank Guarantee.

#### 49. Liquidated Damages

49.1 The Contractor shall pay liquidated damages to the Employer at the rate per day stated in the Contract Data for each day that the Completion Date is later than the Intended Completion Date. Such liquidated damages shall not exceed the amount defined in the Contract Data. The Employer may deduct liquidated damages from payment due to the Contractor. Payment of liquidated damages shall not affect the Contractor's liabilities.

49.2 If the Intended Completion Date is extended after liquidated damages have been paid, the Project Manager shall correct any overpayment of liquidated damages by repaying such amounts to the Contractor. The Contractor shall be paid interest on the overpayment, calculate from the date of payment to the date of repayment, at the rates specified in Sub-Clause 43.1.

#### 50. Bonus

50.1 The Contractor shall be paid a Bonus calculated at the rate per calendar day stated in the Contract Data for each day (less any days for which the Contractor is paid for acceleration) that the Completion is earlier than the Intended Completion Date. The Project Manager shall certify that the works are complete, although they may not be due to be completed.

#### 51. Advance Payment

51.1 The Employer shall make advance payment to the Contractor of the amounts stated in the Contract Data by the Date stated in the Contract Data, against provision by the Contractor of an Unconditional Bank guarantee in a form and by a bank acceptable to the Employer in amounts

and currencies equal to the advance payment. The guarantee shall remain effective until the advance payment has been repaid but the amount of the guarantee may be reduced by the amount of the advance payment repaid by the Contractor. Interest will not be charged on advance payment.

51.2 The Contractor is to use the advance payment only to pay for Equipment, Plant, Materials, and mobilization expenses required specifically for execution of the Contract. The Contractor shall demonstrate that advance payment has been used in this way by supplying copies of invoices or other documents to the Project Manager.

51.3 The advance payment shall be repaid by deducting proportionate amounts from payment otherwise due to the Contractor, following the schedule of completed percentages of the Works on a payment basis. No account shall be taken of the advance payment or its repayment in assessing valuations of work done, Variations, price adjustments, Compensation Events, Bonuses, or Liquidated Damages.

## 52. Securities

52.1 The performance security shall be provided to the Employer no later than the date specified in the Letter of Acceptance and shall be issued in an amount and form and by a bank or surety acceptable to the Employer, and denominated in the types and proportions of the currencies in which the Contract Price is payable. The Performance security shall be valid until one year from the date of issue of the Completion certificate in the case of a Performance bond.

## 53. Day Works

53.1 If applicable, the Day Works rates in the Contractor's Bid shall be used for small additional amounts of work only when the Project Manager has given written instructions in advance for additional work to be paid for in that way.

53.2 All work to be paid for as Day Works shall be recorded by the Contractor on forms approved by the Project Manager.

53.3 The Contractor shall to be paid for Day Works subject to obtaining signed Day Works forms.

## 54. Cost of Repairs

54.1 Loss or damage to the Works or materials to be incorporated in the Works between the Start Date and the end of the Defects Liability Period shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the Contractor's acts or omissions.

## **E. Finishing The Contract**

- 55. Completion** 55.1 The Contractor shall request the Project Manager to issue a certificate of Completion of the Works, and the Project Manager will do so upon deciding that the Works are completed.
- 56. Taking Over** 56.1 The Employer shall take over the site and the Works within seven days of the Project Manager's issuing a Certificate of Completion.
- 57. Final Account** 57.1 The Contractor shall supply the Project Manager with a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Project Manager shall issue a Defects Liability Certificate and certify any final payment that is due to the Contractor within fifty-six (56) days of receiving the Contractor's account if it is correct and complete. If it is not, the Project Manager shall issue within fifty-six (56) days a schedule that states the scope of the corrections or additions that are necessary. If the final account is still unsatisfactory after it has been resubmitted, the Project Manager shall decide on the amount payable to the Contractor and issue a payment certificate.
- 58. Operating and Maintenance Manuals** 58.1 If "as built" Drawing and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates stated in the Contract Data.
- 58.2 If the Contractor does not supply the Drawing and/or manuals by the dates stated in the Contract Data, or they do not receive the Project Manager's Approval, the Project Manager shall withhold the amount stated in the Contract Data from payments due to the Contractor.
- 59. Termination** 59.1 The Employer or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract.
- 59.2 Fundamental breaches of contract shall include, but shall not be limited to, the following :
- (a) the Contractor stops work for twenty-eight (28) days when no stoppage of work is shown on the current Program and the stoppage has not been authorized by the Project manager,
  - (b) the Project Manager instructs the Contractor to delay the progress of the Works, and the instruction is not withdrawn within twenty-eight (28) days,
  - (c) the Employer or the Contractor is made bankrupt or

goes into liquidation other than for a reconstruction or amalgamation,

- (d) a payment certified by the Project Manager is not paid by the Employer to the Contractor within eighty-four (84) days of the date of the Project Manager's certificate,
- (e) The Project Manager gives notice that failure to correct a particular Defects is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Project Manager.
- (f) The Contractor does not maintain security, which is required, and
- (g) The Contractor has delayed the completion of the Works by the number of days for which the maximum amount of liquidated damages can be paid, as defined in the Contract Data.
- (h) If the Contractor, in the judgement of Employer has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.

For the purpose of this paragraph:

"corrupt practice" means the offering, giving, receiving or soliciting of any thing of value to influence the action of a public official in the procurement process or in contract execution.

"Fraudulent practice" means a misrepresentation of fact in order to influence a procurement process or the execution of Contract to the detriment of the Borrower, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial noncompetitive levels and to deprive the Borrower of the benefits of free and open competition."

59.3 When either party to the Contract gives notice of a breach of Contract to the Project Manager for a cause other than those listed under Sub- Clause 59.2 above, the Project Manager shall decide whether the breach is fundamental or not.

59.4 Notwithstanding the above, the Employer may terminate the Contract for convenience.

59.5 If the Contract is terminated, the Contractor shall stop work immediately, make the site safe and secure, and leave the site as soon as reasonably possible.

#### **60. Payment upon Termination**

60.1 If the Contract is terminated because of a fundamental breach of contract by the Contractor, the Project Manager shall issue a certificate for the value of the work done and Materials ordered less advance payment received up to

the date of the issue of the certificate. Additional liquidated damages shall not apply. If the total amount due to the Employer exceeds any payment due to the Contractor, the difference shall be a debt payable to Employer.

60.1 If the Contract is terminated for the Employer's convenience or because of a fundamental breach of Contract by Employer, the Project Manager shall issue a certificate for the value of the work done, Materials ordered, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and Contractor's cost of protecting and securing the Works, and less advance payments received up to the date of the certificate.

**61. Property**

61.1 All materials on the Site, Plant, Equipment, Temporary Works shall be deemed to be the property of the Employer if the Contract is terminated because of the Contractor's default.

**62. Release from Performance**

62.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either the Employer or the Contractor, the Project Manager shall certify that the Contract has been frustrated. The Contractor shall make the site safe and stop works as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which a commitment was made.

**63. Suspension of Fund. Agency Loan or Credit**

63.1 In the event that the Funding Agency suspends the loan or credit to the Employer, from which part of payments to the Contractor are being made :

- (a) The Employer is obligated to notify the Contractor of such suspension within seven (7) days of having received the Funding Agency's suspension notice.
- (b) If the Contractor has not received sums due it within the twenty-eight (28) days for payment provided for in Sub-Clause 43.1, the Contractor may immediately issue a fourteen (14)-day termination notice.

**SECTION 4**  
**CONTRACT DATA**

## SECTION 4 Contract Data

The following documents are also part of the Contract :

Contract Reference	Clause
* Schedule of Operating and Maintenance Manuals	[ 58 ]
* Schedule of Other Contractors	[ 8 ]
* The Schedule of Key Personnel	[ 9 ]
* Site Investigation Reports	[ 14 ]

The Borrower is the Government of the Republic of Indonesia [ 1.1 ]

The OECF means Overseas Economic Cooperation Fund of Japan [ 1.1 ]

a "loan/grant" refers to a FA Loan

The Employer is [ 1.1 ]

Name : The Directorate General of Water Resources Development  
of the Ministry of Public Works representing the Government of the  
Republic of Indonesia

Address : JRATUNSELUNA River Basin Development Project,  
Jln. Brigen Sudiarto No 375, Semarang 50191, Central Java, Indonesia

Name of authorized Representative: .....

The Project Manager is [ 1.1 ]

Name : .....

Address : JRATUNSELUNA River Basin Development Project,  
Jln. Brigen Sudiarto No 375, Semarang 50191, Central Java, Indonesia

Name of authorized Representative : .....

The name and identification number of the Contract is .....

The Works consist of the construction of flood control works in the West Floodway and in the Garang River in Semarang, comprising river improvement works including excavation of waterway channel, construction dikes, raising of the height of existing dikes, revetments, protection works and associated works more particularly described in the Drawings and Specifications.

The relationship of this contract package with others is described in clause 1.2 of the General Specification. [ 1.1 ]

The Start Date shall be ..... [ 1.1 ]

During the construction of the Works other contractors will be involved in works for package 2 : Reconstruction of Simongan Weir and Package 3 : Raising of Railway Bridge over West Floodway. [ 8.1 ]

The key personnel are .....	[ 9.1 ]
The Intended Completion Date for whole of the Works shall be .....	[ 17,28 ]
The following documents also form part of the Contract :	
• General Time Schedule	
• Unit Price Analysis	
• Basic Prices	
• List of Bid Enclosures	
• Execution Plan	
The institution is Badan Arbitrasi Nasional Indonesia	[ 25.3 ]
The Contractor shall submit a revised Program for the works within 60 Days of delivery of the Letter of Acceptance	[ 27 ]
The Site possession date shall be .....	[ 21 ]
The site is located at West Floodway and Garang River, Semarang City, Central Java, Republic of Indonesia and is defined in drawing no .....	[ 1 ]
The Defect Liability Period is 365 days	[ 35 ]
The minimum insurance covers shall be :	[ 13 ]
* The maximum deductible for insurance of the Works and of plant and materials in respect of the Contractor's faulty design is .....	
* The maximum deductible for insurance of Equipment is .....	
* The minimum cover for loss or damage to equipment is .....	
* The maximum deductible for insurance of other property is .....	
* The minimum for insurance of other property is .....	
* The minimum cover for personal injury or death insurance	
# for the Contractor's employees is .....	
# and for other people .....	
Add the following clause	
43.2 If an amount certified is increased in a later certificate or as result of an award by the Adjudicator or an Arbitrator, the Contractor shall be paid interest upon the delayed payment as set out in the clause 43.1. Compensations shall be calculated from the date upon which the increased amount would have certified in the absence of dispute.	
Price adjustment shall only be applicable to the local currency portion of major pay items.	[ 47 ]
The coefficients for adjustment of prices are :	
15% percent nonadjustable element (coefficient A)	
85% percent adjustable element (coefficient B)	
The Index I for local currency will be .....	



The portion of payment retained is 5% (five percent) [ 48 ]

The liquidated damages for the whole of the Works are 0.10% (one-tenth of one percent) per day [ 49 ]

The maximum amount of liquidated damages for the whole of the Works is five percent (5%) of the final Contract Price [ 49 ]

The bonus for the whole of the works is not applicable [ 50 ]

The Advance Payment will be ..... [insert amount] and will be paid to the Contractor no later than ..... [insert date]

The performance security shall be for the following minimum amount equivalent as a percentage of the Contract Price :

- (a) Bank Guarantee : ten percent (10 %)
- (b) Performance Bond : ten percent (10 %)

The standard form(s) of Performance Security acceptable to the Employer shall be an Unconditional Bank Guarantee, or a Performance Bond of the type presented in Section 8 of the Bidding Documents. [ 52 ]

The date by which operating and maintenance manuals are required is 30 days after the Completion date. [ 58 ]

The date by which "as built" drawings are required is 30 days after the Completion date. [ 58 ]

The amount to be withheld for failing to procedure "as built" drawings and/or operating and maintenance manuals by the date required is one half of one percent (0.5%) of the Contract Price. [ 58 ]

The percentage to apply to the value of the work not completed, representing the Employer's additional cost for completing the Works, is fifteen percent (15%) percent of the value of the non-completed portion of the Works. [ 60 ]

**SECTION 5**  
**SPECIFICATION**

(Refer to Volume 2)

**SECTION 6**  
**DRAWINGS**

( Refer to Volume 3 )

**SECTION 7**  
**BILL OF QUANTITIES**

## SECTION 7 Bill Of Quantities

### PREAMBLE TO THE BILL OF QUANTITIES

- 1) The Bill of Quantities shall be read in conjunction with this Preamble, the Instructions to Bidders, the General Conditions of Contract, the Specifications, and the Drawings.
- 2) The quantities given in the Bill of Quantities are estimated and provisional, and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of work ordered and carried out, as measured by the Contractor and verified by the Engineer and valued at the rates and prices bid in the priced Bill of Quantities, where applicable, and otherwise at such rates and prices as the Engineer may fix within the terms of the Contract.
- 3) For the purpose of ascertaining the value and amount of work done, the Works shall be measured at such frequency as may be necessary for the purpose of payment under Clause 42 (Payment Certificates) of the Conditions of Contract. Permanent Works shall be measured net, notwithstanding any general or local custom, except where otherwise specifically described or prescribed in the Contract.
- 4) Quantities of items in the Bill of Quantities shall be measured in accordance with the method of measurement described in Clause 9 of this Preamble.
- 5) The rates and prices bid in the priced Bill of Quantities shall, except insofar as it is otherwise provided under the Contract, include all Equipment, labour, supervision, materials, erection, maintenance, insurance, profit, taxes, and duties, together with all general risks, liabilities, and obligations set out or implied in the Contract.
- 6) A rate or price shall be entered against each item in the priced Bill of Quantities, whether quantities are stated or not. The cost of Items against which the Contractor has failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bill of Quantities.
- 7) The whole cost of complying with the provisions of the Contract shall be included in the items provided in the priced Bill of Quantities, and where no items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related items of work.
- 8) General directions and descriptions of work and materials are not necessarily repeated nor summarised in the Bill of Quantities. References to the relevant sections of the contract documentation shall be made before entering prices against each item in the priced Bill of Quantities.
- 9) The method of measurement of completed work for payment shall be in accordance with Clause 1.21 of the General Specification and the relevant measurement and payment clause for each pay item in the Technical Specification.
- 10) Errors will be corrected by the Employer for any arithmetic errors in computation or summation as follows:
  - (a) Where there is a discrepancy between amounts in figures and in words, the amount in words will govern; and
  - (b) Where there is a discrepancy between the unit rate and the total amount derived from the multiplication of the unit rate and the quantity, the unit rate as quoted will

govern, unless in the opinion of the Employer, there is an obviously gross misplacement of the decimal point in the unit rate, in which event the total amount as quoted will govern and the unit rate will be corrected.

- 11) Except where otherwise specified or detailed in the Bill of Quantities labour, including the supervision thereof, materials, construction plant and equipment, temporary works, transport to and from the Site and in and about the Works and all other resources of any kind required for the execution, completion and rectification of defects of the Works shall not be measured and the cost thereof shall be deemed to be included in the prices of other items in the Bill Quantities.
- 12) Where the Contract provides for part of the Contract Price to be payable in a Foreign portion Currency and part in a local portion, the total price shall be the sum the of the Foreign Currency portion and local currency portions plus an enhancement of 10% for Indonesian value-added tax (VAT).
- 13) Where reference is made in the Bill of Quantities to specific Drawings or parts of the Specification or Conditions of Contract, unless otherwise stated, such references shall not limit general requirements stated elsewhere in the Contract.

**PACKAGE 1: WEST FLOODWAY AND GARANG RIVER IMPROVEMENT WORKS**

**SUMMARY OF BILL OF QUANTITIES**

Bill No.	General Summary	Amount	
		Foreign Portion Rp	Local Portion Rp
A	General		
B	Channel and Dike Works		
C	Raising the Existing Floodwall		
D	Protection Works for Riverbank and Riverbed		
E	Ground Sills		
F	Drainage Sluiceway at WF172R+15m		
G	Drainage Outlet Works		
H	River Amenity and Maintenance Facilities		
I	Waterlevel Gauging Station		
J	Supplying Maintenance Equipment		
<b>Total of Bills</b>			

Sum of Foreign and Local Portions

Value-added Tax

Bid Price

Exchange Rate(s) used by Bidder in determining foreign portion of bid price:

1 Japanese Yen = Indonesian Rupiah

1 US dollar = Indonesian Rupiah

*Note:*

*Bidders shall quote applicable exchange rate(s) if different to rate determined in clause 14.1 of the Instructions to Bidders (i.e. rates prevailing 28 days prior to the deadline for submission of bids.*

**Package-1 : West Floodway and Garang River Improvement Works**  
**BILL OF QUANTITIES**

Item No.	BQ Item	Unit	Quantity	Unit Rate (rupiah)		Amount (rupiah)			Payment Clause
				F/C	L/C	F/C	L/C	Total	
<b>A</b>	<b>General</b>								
A.1	Mobilization and Demobilization	L.S.	1						GS.1.7.4
A.2	Establishment								
A.2.1	Temporary Construction Road and Bridge	L.S.	1						GS.1.8.5.1
A.2.2	Contractor's Site Office and Facilities	L.S.	1						GS.1.8.5.2
A.2.3	Engineer's Site Office and Facilities	L.S.	1						GS.1.8.5.3
A.3	Drawings	L.S.	1						GS.1.4.6
A.4	Surveying	L.S.	1						GS.1.17.5
A.5	Geological Investigation								
A.5.1	Auger Boring	m	57						GS.1.19.5.1
A.5.2	Rotary Boring	m	378						GS.1.19.5.2
A.5.3	Exploratory Excavation	m <sup>3</sup>	90						GS.1.19.5.3
<b>Sub total for Bill A. General :</b>									
<b>B</b>	<b>Channel and Dike Works</b>								
B.1	Preparatory Works								
B.1.1	Coffering and Dewatering	L.S.	1						TS.1.5.1
B.1.2	Clearing and Grubbing	m <sup>2</sup>	133,800						TS.1.5.2
B.1.3	Demolition of Existing Concrete Sheet Pile Wall Type Revetment	L.S.	1						TS.1.5.3
B.1.4	Demolition of Existing Concrete/Masonry Structures in River Channel	m <sup>3</sup>	210						TS.1.5.3
B.2	Channel Excavation for West Floodway including Drainage By-pass Channel								
B.2.1	Excavation below Water Level (Low Water level shown on the cross sections)	m <sup>3</sup>	651,700						TS.2.7.2
B.2.2	Excavation above Water Level (Low Water level shown on the cross sections)	m <sup>3</sup>	277,000						TS.2.7.2.2
B.2.3	Soft Rock Excavation	m <sup>3</sup>	700						TS.2.7.2.3
B.3	Channel Excavation for Garang River								
B.3.1	Excavation below Water Level (Low Water level shown on the cross sections)	m <sup>3</sup>	148,400						TS.2.7.2
B.3.2	Excavation above Water Level (Low Water level shown on the cross sections)	m <sup>3</sup>	284,000						TS.2.7.2.2
B.3.3	Soft Rock Excavation	m <sup>3</sup>	2,400						TS.2.7.2.3
B.4	Earth Dike								
B.4.1	Stripping of Top Soil, 250mm thick	m <sup>3</sup>	6,200						TS.2.7.1
B.4.2	Embankment	m <sup>3</sup>	15,300						TS.2.7.3.1
B.4.3	Solid Sodding	m <sup>2</sup>	10,700						TS.2.7.4
B.4.4	Gravel Pavement, 200mm thick	m <sup>2</sup>	697						TS.15.5.1
B.5	Floodwall/Parapet Wall (Wet Stone Masonry Type)								
B.5.1	Structural Excavation	m <sup>3</sup>	1,060						TS.2.7.2.4
B.5.2	Backfill with Selected Soil	m <sup>3</sup>	720						TS.2.7.3.3
B.5.3	Gravel Bedding	m <sup>3</sup>	40						TS.2.7.3.4
B.5.4	Wet Stone Masonry	m <sup>3</sup>	310						TS.12.4
B.5.5	Joint Filler, 10mm thick (Elastic Material)	m <sup>2</sup>	30						TS.3.6.3
B.5.6	Water Stop, 200mm wide	m	41						TS.3.6.6
B.5.7	Masonry	m <sup>2</sup>	383						TS.12.4
B.6	Filling on Riverbed, River Bank and Flood Plain								
B.6.1	Stripping of Top Soil, 250mm thick	m <sup>3</sup>	15,500						TS.2.7.1
B.6.2	Earth Fill	m <sup>3</sup>	46,400						TS.2.7.3.1
B.7	Miscellaneous Work								
D.7.1	Maintenance Marker Post, 500m interval on Right and Left River Banks	nos.	36						
<b>Sub total for Bill B. Channel and Dike Works :</b>									
<b>C</b>	<b>Raising the Existing Floodwall</b>								
C.1	Preparatory Works								
C.1.1	Coffering and Dewatering	L.S.	1						TS.1.5.1
C.1.2	Clearing and Grubbing	m <sup>2</sup>	22,200						TS.1.5.2
C.1.3	Demolition of Existing Buttress Wall (Wet Stone Masonry)	m <sup>3</sup>	172						TS.1.5.3
C.2	Raising Works								
C.2.1	Structural Excavation	m <sup>3</sup>	6,670						TS.2.7.2.4
C.2.2	Stripping of Top Soil, 250mm thick	m <sup>3</sup>	5,600						TS.2.7.1
C.2.3	Embankment at the River Side Front of Floodwall	m <sup>3</sup>	15,500						TS.2.7.3.1
C.2.4	Solid Sodding	m <sup>2</sup>	44,000						TS.2.7.4
C.2.5	Backfill with Selected Soil	m <sup>3</sup>	1,700						TS.2.7.3.3
C.2.6	Gravel Bedding	m <sup>3</sup>	400						TS.2.7.3.4
C.2.7	Chipping on Existing Floodwall Surface	m <sup>2</sup>	16,789						TS.3.6.4
C.2.8	Concrete, Type C1 including Formwork	m <sup>3</sup>	5,056						TS.3.6.1
C.2.9	Deformed Reinforcing Bars for C.2.8	kg	221,410						TS.3.6.2
C.2.10	Furnishing and Driving Log Pile, Dia. 150mm, L=2.0m	m	5,373						TS.11.6.3



**Package-1 : West Floodway and Garang River Improvement Works**  
**BILL OF QUANTITIES**

Item No.	BQ Item	Unit	Quantity	Unit Rate (rupiah)		Amount (rupiah)			Payment Clause
				F/C	L/C	F.C	L/C	Total	
C.2.11	Drilling, Anchoring Steel Bars in Existing Floodwall and Filling the Hole with Non-shrinkage Mortar	nos.	44,163						TS.3.6.3
C.2.12	Joint Filler, 10mm thick (Elastic Material)	m <sup>2</sup>	530						TS.3.6.3
C.2.13	Water Stop, 200mm wide	m	1,363						TS.3.6.6
C.2.14	Cement Mortar Plastering on Roadside Surface of Floodwall	m <sup>2</sup>	5,171						TS.12.4
<b>Sub total for Bill C. Raising the Existing Floodwall:</b>									
<b>D.</b>	<b>Protection Works for Riverbank and Riverbed</b>								
D.1	Preparatory Works								
D.1.1	Coffering and Dewatering	L.S.	1						TS.1.5.1
D.1.2	Clearing and Grubbing	m <sup>2</sup>	23,100						TS.1.5.2
D.1.3	Demolition of Existing Wet Masonry Wall	m <sup>3</sup>	420						TS.1.5.3
D.2	Revetment for Side Slope of 1:2 and 1:1.5 (Wet Stone Masonry Type)								
D.2.1	Structural Excavation	m <sup>3</sup>	34,220						TS.2.7.2.4
D.2.2	Backfill with Selected Soil	m <sup>3</sup>	5,740						TS.2.7.3.3
D.2.3	Gravel Bedding	m <sup>3</sup>	9,500						TS.2.7.3.4
D.2.4	Wet Stone Masonry	m <sup>3</sup>	9,080						TS.12.4
D.2.5	Masonry	m <sup>2</sup>	28,386						TS.12.4
D.2.6	Concrete, Type C1 including Formwork	m <sup>3</sup>	1,928						TS.3.6.1
D.2.7	Deformed Reinforcing Bars for Item D.2.6	kg	97,720						TS.3.6.2
D.2.8	Furnishing and Driving Log Pile, Dia. 150mm, L=2.0m, 3.0m	m	2,450						TS.11.6.3
D.2.9	Joint Filler, 10mm thick (Elastic Material)	m <sup>2</sup>	1,871						TS.3.6.3
D.2.10	Weep Hole, Dia. 50mm including Filter Cloth	nos.	3,010						TS.14.4
D.2.11	Gabion Cylinder Dia 500mm (Galvanized and Coated with PVC)	m <sup>3</sup>	1,645						TS.13.4
D.2.12	Soil Filling	m <sup>3</sup>	480						TS.2.7.3.2
D.2.13	Gabion Mattress t=500mm (Galvanized)	m <sup>3</sup>	4,914						TS.13.4
D.2.14	Rubble Stone Filling	m <sup>3</sup>	917						TS.2.7.3.4
D.3	Revetment for Side Slope of 1:2 (Stone Facing Type)								
D.3.1	Structural Excavation	m <sup>3</sup>	5,110						TS.2.7.2.4
D.3.2	Rubble Stone Bedding	m <sup>3</sup>	2,373						TS.2.7.3.4
D.3.3	Stone Facing (Dia. 250 to 400mm)	m <sup>3</sup>	5,005						TS.12.4
D.4	PC (Prestressed Concrete) Sheet Pile Wall Type Revetment								
D.4.1	Structural Excavation	m <sup>3</sup>	440						TS.2.7.2.4
D.4.2	Backfill with Selected Soil	m <sup>3</sup>	6,660						TS.2.7.3.3
D.4.3	Gravel Bedding	m <sup>3</sup>	29						TS.2.7.3.4
D.4.4	Furnishing and Driving PC Sheet Pile (K-500, t=220mm,	m	15,050						TS.11.6.1
D.4.5	Fixing Steel Tie Rod, Steel Cannel and Steel Plate to PC Sheet Pile	kg	13,580						TS.11.6.1
D.4.6	Concrete, Type C1 including Formwork	m <sup>3</sup>	325						TS.3.6.1
D.4.7	Deformed Reinforcing Bars for D.4.6	kg	10,650						TS.3.6.2
D.4.8	Joint Filler, 10mm thick (Elastic Material)	m <sup>2</sup>	29						TS.3.6.3
D.4.9	Gabion Mattress (Galvanized) t=300mm with Soil Covering	m <sup>3</sup>	434						TS.13.4
D.4.10	Riprap Mound (Dia. 250 to 400mm)	m <sup>3</sup>	6,641						TS.12.4
D.5	Leaning Wall (Concrete Type)								
D.5.1	Structural Excavation	m <sup>3</sup>	6,340						TS.2.7.2.4
D.5.2	Backfill with Selected Soil	m <sup>3</sup>	1,430						TS.2.7.3.3
D.5.3	Backfill with Gravel	m <sup>3</sup>	1,530						TS.2.7.3.3
D.5.4	Rubble Stone Bedding	m <sup>3</sup>	260						TS.2.7.3.4
D.5.5	Concrete, Type D including Formwork	m <sup>3</sup>	3,847						TS.3.6.1
D.5.6	Deformed Reinforcing Bars for Item D.5.5	kg	3,000						TS.3.6.2
D.5.7	Joint Filler, 10mm thick (Elastic Material)	m <sup>2</sup>	272						TS.3.6.3
D.5.8	Weep Hole, Dia. 50mm including Filter Cloth	nos.	491						TS.14.4
D.5.9	Steel Fence (with Anti-corrosion Painting), H=1,100mm	m	630						TS.18.6.1
D.6	Leaning Wall (Wet Stone Masonry Type)								
D.6.1	Structural Excavation	m <sup>3</sup>	11,960						TS.2.7.2.4
D.6.2	Backfill with Selected Soil	m <sup>3</sup>	3,140						TS.2.7.3.3
D.6.3	Backfill with Gravel	m <sup>3</sup>	2,746						TS.2.7.3.3
D.6.4	Rubble Stone Bedding	m <sup>3</sup>	347						TS.2.7.3.4
D.6.5	Wet Stone Masonry	m <sup>3</sup>	4,520						TS.12.4
D.6.6	Masonry	m <sup>2</sup>	5,152						TS.12.4
D.6.7	Covering Concrete, Type D	m <sup>2</sup>	91						TS.3.6.1
D.6.8	Joint Filler, 10mm thick (Elastic Material)	m <sup>2</sup>	423						TS.3.6.3
D.6.9	Weep Hole, Dia. 50mm including Filter Cloth	nos.	1,803						TS.14.4
D.6.10	Steel Fence (with Anti-corrosion Painting), H=1,100mm	m	1,240						TS.18.6.1
D.7	Earth Retaining Wall (Wet Stone Masonry Type)								
D.7.1	Structural Excavation	m <sup>3</sup>	200						TS.2.7.2.4
D.7.2	Backfill with Selected Soil	m <sup>3</sup>	92						TS.2.7.3.3
D.7.3	Gravel Bedding	m <sup>3</sup>	28						TS.2.7.3.4
D.7.4	Wet Stone Masonry	m <sup>3</sup>	320						TS.12.4

**Package-1 : West Floodway and Garang River Improvement Works**

**BILL OF QUANTITIES**

Item No.	BQ Item	Unit	Quantity	Unit Rate (rupiah)		Amount (rupiah)			Payment Clause
				F/C	L/C	F/C	L/C	Total	
D.7.5	Masonry	m <sup>2</sup>	388						TS.12.4
D.7.6	Joint Filler, 10mm thick (Elastic Material)	m <sup>2</sup>	29						TS.3.6.3
D.8	Pile Type Groin								
D.8.1	Structural Excavation	m <sup>3</sup>	10						TS.2.7.2.4
D.8.2	Reinforced Concrete Pile, Concrete Type A3, Section 200x200	m	1,603						TS.11.6.2
D.8.3	Test Piling for D.8.2	m	63						TS.11.6.2
D.8.4	Driving RC Pile	m	682						TS.11.6.2
D.8.5	Cutting Pile Head	m <sup>3</sup>	16						TS.11.6.2
D.8.6	Concrete Type C1 for Beam including Formwork	m <sup>3</sup>	34						TS.3.6.1
D.8.7	Deformed Reinforcing Bars for Beam	kg	4,130						TS.3.6.2
D.8.8	Stone Facing (Dia 250 to 400mm)	m <sup>3</sup>	479						TS.12.4
D.9	Riverbed Protection around Bridge Piers								
D.9.1	Structural Excavation	m <sup>3</sup>	830						TS.2.7.2.4
D.9.2	Backfill with Selected Soil	m <sup>3</sup>	180						TS.2.7.3.3
D.9.3	Rubble Stone Filling	m <sup>3</sup>	91						TS.2.7.3.4
D.9.4	Placing Filter Cloth (Geotextile sheet)	m <sup>2</sup>	261						TS.13.4
D.9.5	Gabion Mattress (Galvanized) t=500mm	m <sup>3</sup>	471						TS.13.4
D.9.6	Placing Palm Fiber Filter under Gabion Mattress	m <sup>2</sup>	648						TS.13.4
D.9.7	Riprap Mound (Dia. 250 to 400)	m <sup>3</sup>	430						TS.12.4
D.9.8	Gravel Bedding	m <sup>3</sup>	28						TS.2.7.3.4
D.9.9	Precast Concrete Block (2.0u/piece), Concrete Type-D	nos.	116						TS.4.15.2
D.10	Sodding								
D.10.1	Solid Sodding	m <sup>2</sup>	70,350						TS.2.7.4
Sub total for Bill D. Protection Works for Riverbank and Riverbed :									
E.	Ground Sills								
E.1	Preparatory Works								
E.1.1	Coffering and Dewatering	U.S.	1						TS.1.5.1
E.1.2	Clearing and Grubbing	m <sup>2</sup>	1,599						TS.1.5.2
E.2	Ground Sill with Head at WF124								
E.2.1	Structural Excavation	m <sup>3</sup>	380						TS.2.7.2.4
E.2.2	Backfill with Selected Soil	m <sup>3</sup>	630						TS.2.7.3.3
E.2.3	Replacement of Base Soil under the Ground Sill by Selected Material	m <sup>3</sup>	620						TS.2.7.3.3
E.2.4	Furnishing and Driving Concrete PC Pile (K-500, t=220mm, w=500mm)	m	833						TS.11.6.1
E.2.5	Leveling Concrete, Type E including Formwork	m <sup>3</sup>	52						TS.3.6.1
E.2.6	Concrete for Main Body, Type D including Formwork	m <sup>3</sup>	580						TS.3.6.1
E.2.7	Concrete for Side Wall, Type C1 including Formwork	m <sup>3</sup>	67						TS.3.6.1
E.2.8	Deformed Reinforcing Bars for Side Wall	kg	4,370						TS.3.6.2
E.2.9	Water Stop, 200mm wide	m	14						TS.3.6.6
E.2.10	Joint Filler, 10mm thick (Elastic Material)	m <sup>2</sup>	161						TS.3.6.3
E.2.11	Wet Stone Masonry for Revetment	m <sup>3</sup>	350						TS.12.4
E.2.12	Masonry	m <sup>2</sup>	1,216						TS.12.4
E.2.13	Concrete, Type C1 for Revetment including Formwork	m <sup>3</sup>	69						TS.3.6.1
E.2.14	Deformed Reinforcing Bars for Revetment	kg	3,840						TS.3.6.2
E.2.15	Gabion Mattress t=500mm (Galvanized) on Riverbed	m <sup>3</sup>	693						TS.13.4
E.2.16	Placing Palm Fiber Filter under Gabion Mattress	m <sup>2</sup>	1,196						TS.13.4
E.2.17	Gabion Cylinder Dia. 500mm (Galvanized and coated with PVC) on Side Slope	m <sup>3</sup>	72						TS.13.4
E.2.18	Soil Filling	m <sup>3</sup>	30						TS.2.7.3.2
E.2.19	Gravel Bedding	m <sup>3</sup>	392						TS.2.7.3.4
E.2.20	Rubble Stone Bedding	m <sup>3</sup>	55						TS.2.7.3.4
E.3	Ground Sill without Head at WF173								
E.3.1	Structural Excavation	m <sup>3</sup>	1,240						TS.2.7.2.4
E.3.2	Soft Rock Excavation	m <sup>3</sup>	660						TS.2.7.2.3
E.3.3	Backfill with Selected Soil	m <sup>3</sup>	540						TS.2.7.3.3
E.3.4	Gravel Bedding for Main Body and Side Wall	m <sup>3</sup>	33						TS.2.7.3.4
E.3.5	Wet Stone Masonry for Main Body and Side Wall	m <sup>3</sup>	240						TS.12.4
E.3.6	Gravel Bedding for Revetment	m <sup>3</sup>	153						TS.2.7.3.4
E.3.7	Wet Stone Masonry for Revetment	m <sup>3</sup>	140						TS.12.4
E.3.8	Masonry	m <sup>2</sup>	521						TS.12.4
E.3.9	Concrete Type C1 including Formwork for Revetment	m <sup>3</sup>	21						TS.3.6.1
E.3.10	Deformed Reinforcing Bars for Revetment	kg	1,090						TS.3.6.2
E.3.11	Joint Filler, 10mm thick (Elastic Material)	m <sup>2</sup>	47						TS.3.6.3
E.3.12	Gabion Mattress t=500mm (Galvanized) on Riverbed	m <sup>3</sup>	693						TS.13.4
E.3.13	Placing Palm Fiber Filter under Gabion Mattress	m <sup>2</sup>	1,239						TS.13.4
E.3.14	Gabion Cylinder Dia. 500mm (Galvanized and Coated with PVC) on Side Slope	m <sup>3</sup>	59						TS.13.4
E.3.15	Soil Filling	m <sup>3</sup>	20						TS.2.7.3.2

**Package-1 : West Floodway and Garang River Improvement Works**  
**BILL OF QUANTITIES**

Item No.	BQ Item	Unit	Quantity	Unit Rate (rupiah)		Amount (rupiah)			Payment Clause
				F/C	L/C	F/C	L/C	Total	
E.3.16	Rubble Stone Bedding	m <sup>3</sup>	20						TS.2.7.3.4
<b>Sub total for Bill E. Ground Sills :</b>									
<b>F.</b>	<b>Drainage Sluiceway at WF172R+15m</b>								
F.1	Preparatory Works								
F.1.1	Coffering and Dewatering	L.S.	1						TS.1.5.1
F.1.2	Clearing and Grubbing	m <sup>2</sup>	560						TS.1.5.2
F.1.3	Demolition and Removal of Existing Concrete and Masonry Structures	m <sup>3</sup>	170						TS.1.5.3
F.2	Main Structures and Steel Slide Gate								
F.2.1	Structural Excavation	m <sup>3</sup>	970						TS.2.7.2.4
F.2.2	Backfill with Selected Soil	m <sup>3</sup>	340						TS.2.7.3.3
F.2.3	Embankment for Dike	m <sup>3</sup>	150						TS.2.7.3.1
F.2.4	Solid Sodding	m <sup>2</sup>	30						TS.2.7.4
F.2.5	Furnishing and Driving PC Sheet Pile (K-500, t=220mm.	m	68						TS.11.6.1
F.2.6	Leveling Concrete, Type E including Formwork	m <sup>3</sup>	9						TS.3.6.1
F.2.7	Concrete for Structure, Type C1 including Formwork	m <sup>3</sup>	83						TS.3.6.1
F.2.8	Concrete for Blockout, Type C2 including Formwork	m <sup>3</sup>	2						TS.3.6.1
F.2.9	Deformed Reinforcing Bars for Item F.2.7	kg	5,650						TS.3.6.2
F.2.10	Water Stop, 200 mm wide	m	16						TS.3.6.6
F.2.11	Joint Filler, 10mm thick (Elastic Material)	m <sup>2</sup>	10						TS.3.6.3
F.2.12	Furnishing and Installing Slide Gate, H=1.6m x W=1.6m	L.S.	1						TS.21.9.1
F.2.13	Furnishing and Installing Hoist	L.S.	1						TS.21.9.1
F.2.14	Furnishing and Installing Anchor Bars and Metal Guide Frames	kg	40						TS.21.9.1
F.2.15	Furnishing and Installing Hand Rail and Ladder (with Anti-corrosion Painting)	kg	190						TS.21.9.1
F.3	Riverside Open Channel and Revetment								
F.3.1	Structural Excavation	m <sup>3</sup>	320						TS.2.7.2.4
F.3.2	Backfill with Selected Soil	m <sup>3</sup>	40						TS.2.7.3.3
F.3.3	Filling Existing Open Channel	m <sup>3</sup>	30						TS.2.7.3.1
F.3.4	Gravel Bedding	m <sup>3</sup>	81						TS.2.7.3.4
F.3.5	Wet Stone Masonry	m <sup>3</sup>	90						TS.12.4
F.3.6	Masonry	m <sup>2</sup>	217						TS.12.4
F.3.7	Concrete, Type C1 including Formwork	m <sup>3</sup>	24						TS.3.6.1
F.3.8	Deformed Reinforcing Bars for F.3.7	kg	1,010						TS.3.6.2
F.3.9	Concrete Type D including Formwork	m <sup>3</sup>	3						TS.3.6.1
F.3.10	Joint Filler, 10mm thick (Elastic Material)	m <sup>2</sup>	19						TS.3.6.3
F.3.11	Gabion Cylinder Dia. 500mm (Galvanized and Coated with PVC)	m <sup>3</sup>	66						TS.13.4
F.3.12	Soil Filling	m <sup>3</sup>	20						TS.2.7.3.2
F.3.13	Gabion Mattress t=500mm (Galvanized)	m <sup>3</sup>	29						TS.13.4
F.3.14	Rubble Stone Filling	m <sup>3</sup>	9						TS.2.7.3.4
F.4	Connecting Channel and Drainage Pipe								
F.4.1	Structural Excavation	m <sup>3</sup>	630						TS.2.7.2.4
F.4.2	Backfill with Selected Soil	m <sup>3</sup>	390						TS.2.7.3.3
F.4.3	Gravel Bedding	m <sup>3</sup>	16						TS.2.7.3.4
F.4.4	Wet Stone Masonry	m <sup>3</sup>	100						TS.12.4
F.4.5	Mortar Plastering on Surface of Wet Stone Masonry	m <sup>2</sup>	208						TS.12.4
F.4.6	Furnishing and Installing RC Pipe, Dia.600mm	m	16						TS.12.14
F.4.7	Concrete, Type D including Formwork	m <sup>3</sup>	17						TS.3.6.1
F.4.8	Concrete, Type C1 including Formwork	m <sup>3</sup>	13						TS.3.6.1
F.4.9	Deformed Reinforcing Bars for Item F.4.7 and F.4.8	kg	1,440						TS.3.6.2
F.5	Reinforcement of Existing Dike								
F.5.1	Structural Excavation	m <sup>3</sup>	130						TS.2.7.2.4
F.5.2	Embankment for Dike	m <sup>3</sup>	120						TS.2.7.3.1
F.5.3	Solid Sodding	m <sup>2</sup>	40						TS.2.7.4
F.5.4	Gravel Bedding	m <sup>3</sup>	3						TS.2.7.3.4
F.5.5	Wet Stone Masonry	m <sup>3</sup>	30						TS.12.4
F.5.6	Cement Mortar Pointing on Surface of Wet Stone Masonry	m <sup>2</sup>	32						TS.12.4
F.5.7	Backfill with Selected Soil	m <sup>3</sup>	80						TS.2.7.3.3
<b>Sub total for Bill F. Drainage Sluiceway at WF172R+15m :</b>									
<b>G.</b>	<b>Drainage Outlet Works</b>								
G.1	Preparatory Works								
G.1.1	Coffering and Dewatering	L.S.	1						TS.1.5.1
G.1.2	Clearing and Grubbing	m <sup>2</sup>	580						TS.1.5.2
G.1.3	Demolition of Existing Structure (Concrete and Wet Masonry)	m <sup>3</sup>	20						TS.1.5.3
G.2	Outlet Structures								
G.2.1	Structural Excavation	m <sup>3</sup>	1,570						TS.2.7.2.4
G.2.2	Backfill with Selected Soil	m <sup>3</sup>	460						TS.2.7.3.3
G.2.3	Furnishing and Driving Log Pile, Dia. 150mm, L=2.0m	m	25						TS.11.6.3

**Package-1 : West Floodway and Garang River Improvement Works**  
**BILL OF QUANTITIES**

Item No.	BQ Item	Unit	Quantity	Unit Rate (rupiah)		Amount (rupiah)			Payment Clause
				F/C	L/C	F/C	L/C	Total	
G.2.4	Gravel Bedding	m <sup>3</sup>	39						TS.2.7.3.4
G.2.5	Chipping on Existing Structure	m <sup>2</sup>	30						TS.3.6.4
G.2.6	Concrete, Type E including Formwork	m <sup>3</sup>	4						TS.3.6.1
G.2.7	Concrete, Type-C1 including Formwork	m <sup>3</sup>	49						TS.3.6.1
G.2.8	Concrete, Type-C2 including Formwork	m <sup>3</sup>	2						TS.3.6.1
G.2.9	Concrete, Type-D including Formwork	m <sup>3</sup>	3						TS.3.6.1
G.2.10	RC Concrete Pipe, Dia.600mm	m	5						TS.3.6.1
G.2.11	Deformed Reinforcing Bars for G.2.7	kg	1,940						TS.3.6.2
G.2.12	Wet Stone Masonry	m <sup>3</sup>	380						TS.12.4
G.2.13	Masonry	m <sup>2</sup>	176						TS.12.4
G.2.14	Joint Filler, 10mm thick (Elastic Material)	m <sup>2</sup>	24						TS.3.6.3
G.2.15	Drilling, Anchoring Steel Bars in Existing Floodwall and Filling the Hole with Non-shrinkage Mortar	nos.	113						TS.3.6.5
G.2.16	Plastering on Surface of Wet Masonry	m <sup>2</sup>	26						TS.12.4
G.2.17	Gabion Mattress t=500mm (Galvanized)	m <sup>3</sup>	24						TS.13.4
G.2.18	Gabion Cylinder Dia. 500mm (Galvanized and Coated with PVC)	m <sup>3</sup>	70						TS.13.4
G.2.19	Rubble Stone Filling	m <sup>3</sup>	5						TS.2.7.3.4
G.2.20	Soil Filling	m <sup>3</sup>	30						TS.2.7.3.2
O.3	Gate Works								
G.3.1	Furnishing and Installing Steel Flap Gate (H=0.7m x W=1.1m)	nos.	1						TS.21.9.2
G.3.2	Furnishing and Installing Steel Flap Gate (H=0.8m x W=1.4m)	nos.	1						TS.21.9.2
G.3.3	Furnishing and Installing Steel Flap Gate (H=1.0m x W=1.0m)	nos.	1						TS.21.9.2
G.3.4	Furnishing and Installing Steel Flap Gate (H=1.0m x W=1.0m)	nos.	1						TS.21.9.2
G.3.5	Furnishing and Installing Steel Flap Gate (H=0.9m x W=1.1m)	nos.	1						TS.21.9.2
G.3.6	Furnishing and Installing Steel Flap Gate (H=2.2m x W=1.6m)	nos.	1						TS.21.9.2
G.3.7	Furnishing Stop Log (H=2.6m x W=1.2m)	nos.	1						TS.21.9.2
Sub total for Bill G. Drainage Outlet Works :									
H.	River Amenity and Maintenance Facilities								
H.1	Preparatory Works								
H.1.1	Coffering and Dewatering	L.S.	1						TS.1.5.1
H.1.2	Clearing and Grubbing	m <sup>2</sup>	610						TS.1.5.2
H.2	Approach Steps, Type-W.A ( 18 places)								
H.2.1	Structural Excavation	m <sup>3</sup>	230						TS.2.7.2.4
H.2.2	Backfill with Selected Soil	m <sup>3</sup>	90						
H.2.3	Wet Stone Masonry	m <sup>3</sup>	90						TS.12.4
H.2.4	Gravel Bedding	m <sup>3</sup>	51						TS.2.7.3.4
H.2.5	Cement Mortar Plastering	m <sup>2</sup>	131						TS.12.4
H.2.6	Masonry	m <sup>2</sup>	89						TS.12.4
H.2.7	Joint Filler, 10mm thick (Elastic Material)	m <sup>2</sup>	152						TS.3.6.3
H.2.8	Drilling, Anchoring Steel Bars in Existing Floodwall and Filling the Hole with Non-shrinkage Mortar	nos.	278						TS.3.6.5
H.2.9	Concrete Type D including Formwork	m <sup>3</sup>	19						TS.3.6.1
H.2.10	Concrete Type C1 including Formwork	m <sup>3</sup>	31						TS.3.6.1
H.2.11	Deformed Reinforcing Bar for Item H.2.10	kg	2,020						TS.3.6.2
H.3	Approach Steps, Type-W.B ( 6 places)								
H.3.1	Structural Excavation	m <sup>3</sup>	150						TS.2.7.2.4
H.3.2	Backfill with Selected Soil	m <sup>3</sup>	20						TS.2.7.3.3
H.3.3	Furnishing and Driving Log Pile, Dia. 150mm, L=2.0m	m	38						TS.11.6.3
H.3.4	Gravel Bedding	m <sup>3</sup>	26						TS.2.7.3.4
H.3.5	Rubble Stone Filling	m <sup>3</sup>	19						TS.2.7.3.4
H.3.6	Concrete, Type C1 including Formwork	m <sup>3</sup>	19						TS.3.6.1
H.3.7	Concrete, Type D including Formwork	m <sup>3</sup>	16						TS.3.6.1
H.3.8	Deformed Reinforcing Bars for Item H.3.6 and H.3.7	kg	1,230						TS.3.6.2
H.3.9	Gabion Cylinder Dia. 500mm (Galvanized and PVC Coated)	m <sup>3</sup>	38						TS.13.4
H.3.10	Joint Filler, 10mm thick (Elastic Material)	m <sup>2</sup>	21						TS.3.6.3
H.3.11	Soil Filling	m <sup>3</sup>	20						TS.2.7.3.2
H.4	Approach Steps, Type-G.A ( 7 places)								
H.4.1	Structural Excavation	m <sup>3</sup>	150						TS.2.7.2.4
H.4.2	Backfill with Selected Soil	m <sup>3</sup>	40						TS.2.7.3.3
H.4.3	Gravel Bedding	m <sup>3</sup>	34						TS.2.7.3.4
H.4.4	Concrete, Type C1 including Formwork	m <sup>3</sup>	37						TS.3.6.1
H.4.5	Concrete, Type D including Formwork	m <sup>3</sup>	18						TS.3.6.1
H.4.6	Deformed Reinforcing Bars for Item H.4.4 and H.4.5	kg	1,430						TS.3.6.2
H.4.7	Gabion Cylinder Dia. 500mm (Galvanized and Coated with PVC)	m <sup>3</sup>	42						TS.13.4
H.4.8	Joint Filler, 10mm thick (Elastic Material)	m <sup>2</sup>	71						TS.3.6.3
H.4.9	Soil Filling	m <sup>3</sup>	20						TS.2.7.3.2
H.5	Approach Steps, Type-O.B ( 9 places)								
H.5.1	Structural Excavation	m <sup>3</sup>	400						TS.2.7.2.4
H.5.2	Backfill with Selected Soil	m <sup>3</sup>	60						TS.2.7.3.3

**Package-1 : West Floodway and Garang River Improvement Works**

**BILL OF QUANTITIES**

Item No.	BQ Item	Unit	Quantity	Unit Rate (rupiah)		Amount (rupiah)			Payment Clause
				F/C	L/C	F/C	L/C	Total	
H.5.3	Furnishing and Driving Log Pile, Dia. 150mm, L=2.0m	m	13						TS.11.6.3
H.5.4	Gravel Bedding	m <sup>3</sup>	213						TS.2.7.3.4
H.5.5	Concrete, Type C1 including Formwork	m <sup>3</sup>	40						TS.3.6.1
H.5.6	Concrete, Type D including Formwork	m <sup>3</sup>	78						TS.3.6.1
H.5.7	Deformed Reinforcing Bars for Item H.5.5 and H.5.6	kg	4,550						TS.3.6.2
H.5.8	Gabion Cylinder Dia. 500mm (Galvanized and Coated with PVC)	m <sup>3</sup>	160						TS.13.4
H.5.9	Soil Filling	m <sup>3</sup>	50						TS.2.7.3.2
H.5.10	Joint Filler, 10mm thick (Elastic Material)	m <sup>3</sup>	75						TS.3.6.3
H.5.11	Gabion Mattress t=500mm (Galvanized) on Riverbed	m <sup>3</sup>	50						TS.13.4
H.5.12	Rubble Stone Filling	m <sup>3</sup>	18						TS.2.7.3.4
H.6	Mooring Facilities								
H.6.1	Structural Excavation	m <sup>3</sup>	1,780						TS.2.7.2.4
H.6.2	Backfill with Selected Soil	m <sup>3</sup>	40						TS.2.7.3.3
H.6.3	Furnishing and Driving PC Sheet Pile (K-500, t=220mm,	m	816						TS.11.6.1
H.6.4	Gravel Bedding	m <sup>3</sup>	61						TS.2.7.3.4
H.6.5	Rubble Stone Bedding	m <sup>3</sup>	201						TS.2.7.3.4
H.6.6	Stone Facing (Dia. 250 to 400mm)	m <sup>3</sup>	298						TS.12.4
H.6.7	Concrete, Type C1 including Formwork	m <sup>3</sup>	26						TS.3.6.1
H.6.8	Concrete, Type D including Formwork	m <sup>3</sup>	94						TS.3.6.1
H.6.9	Deformed Reinforcing Bars for Item H.6.7 and H.6.8	kg	2,150						TS.3.6.2
H.6.10	Joint Filler, 10mm thick (Elastic Material)	m <sup>3</sup>	16						TS.3.6.3
H.6.11	Gabion Mattress t=500mm (Galvanized) on Riverbed	m <sup>3</sup>	43						TS.13.4
H.6.12	Rubble Stone Filling	m <sup>3</sup>	7						TS.2.7.3.4
H.6.13	Furnishing and Driving Log Pile, Dia. 150mm, L=2.0m	m	31						TS.11.6.3
H.7	Walkway along Riverbank (3.0m wide)								
H.7.1	Structural Excavation	m <sup>3</sup>	12,230						TS.2.7.2.4
H.7.2	Embankment	m <sup>3</sup>	1,230						TS.2.7.3.1
H.7.3	Gravel Pavement, 200mm thick	m <sup>2</sup>	55,858						TS.15.5.1
H.7.4	Penetration Macadam Pavement 200mm thick	m <sup>2</sup>	5,271						TS.15.5.2
H.7.5	Solid Sodding	m <sup>2</sup>	76,840						TS.2.7.4
H.8	Approach Road for Maintenance (4.0m wide)								
H.8.1	Structural Excavation	m <sup>3</sup>	660						TS.2.7.2.4
H.8.2	Embankment	m <sup>3</sup>	270						TS.2.7.3.1
H.8.3	Penetration Macadam Pavement 200mm thick	m <sup>2</sup>	132						TS.15.5.2
H.8.4	Solid Sodding	m <sup>2</sup>	220						TS.2.7.4
H.9	Tree Planting and Relocation of Existing Tree								
H.9.1	Tree Planting (Angsana, Goldogan, Flamboyant)	nos.	630						TS.16.5.1
H.9.2	Relocation of Existing Trees (Rare species such as Trembesi, Flamboyant, Dadap and Pines)	nos.	32						TS.16.5.2
<b>Sub total for Bill H. River Amenity and Maintenance Facilities :</b>									
I	<b>Waterlevel Gauging Station</b>								
I.1	Preparatory Work								
I.1.1	Offering and Dewatering	L.S.	1						TS.1.5.1
I.1.2	Clearing and Grubbing	m <sup>2</sup>	330						TS.1.5.2
I.2	Well Type Water Level Gauging Station								
I.2.1	Structural Excavation	m <sup>3</sup>	2,050						TS.2.7.2.4
I.2.2	Backfill with Selected Soil	m <sup>3</sup>	1,960						TS.2.7.3.3
I.2.3	Gravel Bedding	m <sup>3</sup>	1						TS.2.7.3.4
I.2.4	Concrete, Type E including Formwork	m <sup>3</sup>	2						TS.3.6.1
I.2.5	Concrete, Type C1 including Formwork	m <sup>3</sup>	29						TS.3.6.1
I.2.6	Concrete Type D including Formwork	m <sup>3</sup>	1						TS.3.6.1
I.2.7	Deformed Reinforcing Bars including Anchor bars for Gauging House	kg	1,660						TS.3.6.2
I.2.8	Furnishing and Placing Concrete Pipe, Dia 600mm, L=10.2m	m	14						TS.17.14
I.2.9	Furnishing and Placing Concrete Pipe, Dia 300mm, L=6.6m	m	8						TS.17.14
I.2.10	Gabion Mattress t=500mm (Galvanized)	m <sup>3</sup>	43						TS.13.4
I.2.11	Rubble Stone Filling	m <sup>3</sup>	1						TS.2.7.3.4
I.2.12	Steel Maintenance Steps (with Anti-corrosion Painting)	kg	280						TS.18.6.2
I.2.13	Steel Hand Rail (with Anti-corrosion Painting)	kg	80						TS.18.6.2
I.2.14	Steel Ladder (with Anti-corrosion Painting)	kg	90						TS.18.6.2
I.2.15	Gauging House (including Reinforced Concrete, Hollow Concrete Block, Plastering, Roofing, Steel Door)	L.S.	1						TS.19.6.2
I.2.16	Installation of Water Level Gage and Related Apparatus and Calibration	L.S.	1						TS.19.6.2
I.2.17	Setting Bench Mark	L.S.	1						TS.19.6.2
<b>Sub total for Bill I. Waterlevel Gauging Station :</b>									
J	<b>Supplying Maintenance Equipment</b>								
J.1									
J.1.1	Backhoe, 0.35m <sup>3</sup>	nos.	1						TS.22.4

**Package-1 : West Floodway and Garang River Improvement Works**  
**BILL OF QUANTITIES**

Item No.	BQ Item	Unit	Quantity	Unit Rate (rupiah)		Amount (rupiah)			Payment Clause
				F/C	L/C	F/C	L/C	Total	
J.1.2	Truck, 8t	nos.	1						TS.22.4
J.1.3	Bulldozer, 11t	nos.	1						TS.22.4
J.1.4	Patrol Car, 4WD	nos.	1						TS.22.4
J.1.5	Outboard Motor Boat	nos.	1						TS.22.4
<b>Sub total for Bill J, Supplying Maintenance Equipment :</b>									
<b>Total</b>									

**SECTION 8**  
**SECURITY FORMS**

## BID SECURITY (BANK GUARANTEE)

WHEREAS, .....  
[name of Bidder] (hereinafter called "the Bidder") has submitted his Bid dated .....  
..... [date] for the construction of .....  
.....  
[name of Contract] (hereinafter called "the Bid").

KNOW ALL PEOPLE by these presents that we ..... [name of Bank]  
of ..... [name of country] having our registered office at (hereinafter  
called "the bank") are bound into ..... [name of Employer]  
(hereinafter called "the Employer") in the sum of ..... <sup>68</sup> for which payment  
well and truly to be made to the said Employer, the Bank binds itself, its successors, and  
assigns by these presents.

Sealed with the Common seal of the said Bank this ..... day of ..... 19

The conditions of this obligation are :

If, after Bid opening, the Bidder withdraws his Bid during the period of Bid validity  
specified in the Form of Bid;

or

If the Bidder having been notified of the acceptance of his Bid by the Employer during the  
period of Bid Validity :

- fails or refuses to execute the Form of Agreement in accordance with the Instructions  
to Bidders, if required; or
- fails or refuses to furnish the Performance Security, in accordance with the Instruction  
to Bidders; or
- does not accept the correction of the Bid Price pursuant to Clause 27,

we undertake to pay to the Employer up to the above amount upon receipt of his first  
written demand, without the Employer's having to substantiate his demand, provided that in  
his demand the Employer will note that the amount claimed by him is due to him owing to  
the occurrence of one or any of the there conditions, specifying the occurred condition or  
conditions.

<sup>68</sup> The Bidder should insert the amount of the Guarantee in words and figures denominated in the  
currency of the Employer's country or an equivalent amount in a freely convertible currency. This  
figure should be the same as shown in Clause 16.1 of the Instructions to Bidders.



This Guarantee will remain in force up and including the date .....<sup>69</sup> days after the deadline for submission of bids as such deadline is stated in the Instructions to Bidders or as it may be extended by the Employer, notice of which extensions(s) to the Blank is hereby waived.

Any demand in respect of this Guarantee should reach the Bank not later than the above date.

With reference to Clause 1832 of the Indonesian Civil Law (Kitab Undang-undang Hukum Perdata), the Bank shall relinquish the special rights of claim on assets belonging to the Contractor and for the seizure and sale of such assets for the discharge of his debts as required in Clause 1831 of the Indonesian Civil Law.

As a declaration of good faith for this Guarantee, we the underwriters, the legal representative of the Bank, hereby sign and seal this Guarantee on the date of .....  
.....

BANK

SEAL

\_\_\_\_\_  
(Witness)

\_\_\_\_\_  
(Guarantor)

<sup>69</sup> Usually 28 days after the end of the validity period of the Bid. The date should be inserted by the Employer before the bidding document are issued.

## FORM OF BID SECURITY (BOND)

Bond No. : \_\_\_\_\_

Amount : \_\_\_\_\_

**KNOW ALL MEN BY THESE PRESENTS, THAT WE.....2)**  
As Bidder, hereinafter called "the Principal" and \_\_\_\_\_ 3) as Surety,  
hereinafter called "the Surety", are held and firmly bound unto \_\_\_\_\_  
4)  
as Employer, hereinafter called "the Oblige", in the amount of \_\_\_\_\_

1) ( say : \_\_\_\_\_ )

for the payment of which sum, well and truly to be made, we the Principal and the Surety bind ourselves, our successors and assignees, jointly and severally, firmly by this presents that if the Principal fails to fulfil his obligation as specified in the Bidding Documents for \_\_\_\_\_ 5) for which the tender is to be held by the Oblige on \_\_\_\_\_ 6)

**NOW, THEREFORE, the conditions of this obligation are :**

If the Principal withdraws his bid during the period of bid validity specified in the Form of Bid, or.

(2) If the Principal, having been notified of the acceptance of his Bid by the Oblige during the period of Bid validity :

fails or refuses to execute the Form of Contract Agreement in accordance with the Instructions to Bidders, if required; or

fails or refuses to furnish the Performance Security in accordance with the Instructions to Bidders.

Then this obligation shall remain in full force and effect as from \_\_\_\_\_ up to \_\_\_\_\_, otherwise it shall be null and void.

Any claim on this Bond as a result of the default by the Principal from the Bidding Documents shall be made in written application by the Oblige promptly after such default arises, but not later than 3 (three) months after the Bond expires.

The Surety shall pay to the Oblige the full amount of this Bid Bond within 30 (thirty) calendar days after having received a written claim based on the Oblige's Decree concerning the default by the Principal.

With reference to Clause 1832 of the Indonesian Civil Law (Kitab Undang-undang Hukum Perdata) herewith we reaffirm that Guarantee shall relinquish the special rights of claim on assets belonging to the Principal and for seizure and sale of such assets for the discharge of his debts as required in Clause 1831 of the Indonesian Civil Law.

Signed and sealed in ....., dated .....

Principal,

Surety,

(.....)

(.....)

**Note :**

- 1) = Amount of the Bond in Rupiah and/or other currency(ies) as specified in the Bidding Documents.
- 2) = Name and address of the Bidder.
- 3) = Name and address of the Insurance or Bonding Company.
- 4) = Name of the Employer.
- 5) = Brief description of the Works.
- 6) = Date of the Bid.

**FORM OF PERFORMANCE SECURITY  
BANK GUARANTEE**

1. WHEREAS .....  
*(Name of Employer)*  
(hereinafter called the "Employer")  
has awarded a contract to .....  
*(Name of Contract)*  
.....*(Address of*  
*Contractor)*  
(hereinafter called the "Contractor")  
to bid for .....  
*(Brief description of the Works)*

2. AND WHEREAS the Contractor is bound by the said Contract to provide to the Employer as Performance Guarantee in amount of .....  
( ..... ), *(Percentage as specified in the Instruction to Bidders, in words ..... and in figure)* percent of the Contract Price.

3. NOW WE THE UNDERWRITERS responsible and representative of .....  
*(Name of Bank)*  
having our registered office at .....  
*(Address of Bank)*  
(hereinafter called the "Bank"),

and fully authorized to sign and incur obligations in the name of the Bank, hereby declare that the Bank guarantees the Employer the full amount of  
( ..... ) *{in Rupiahs and/or other Currency(ies) as specified in the Contract Documents, in words and in figure}* equal to  
( ..... ) *{in percentage of the Contract Price, in figure and in the words}* percent of the Contract Price.

4. NOW THE CONDITIONS of this obligation are :

4.1 After the Contractor has signed the aforementioned Contract with the Employer, the Bank is engaged to pay the Employer any amount up to inclusive of the aforementioned full amount upon written order from the Employer to indemnify the Employer for any liability or damage resulting from the defects or shortcomings of the Contractor of his failure to perform as required by the Contract mentioned above.

4.2 The Bank shall deliver money required by the Employer upon Employer's first demand without delay within seven (7) calendar days and without the necessity of a previous notice of judicial or administrative procedures and without it being necessary to prove to the Bank the defects or shortcomings or failure to perform on the part of the Contractor.

5. This guarantee is valid for the period from the date of signing of the Contract to (.....) *[Tendering Committee should specify as appropriate]* days after the date

of issue of the Certificate of Satisfaction for the Works under the Contract or until the Employer has issued an instruction to the Bank to the affect that this Guarantee may be released.

6. Any demand in respect hereof should reach the Bank not later than thirty (30) calendar days after this Bank Guarantee expiry given in item 5.
7. The Bank undertakes to extend the validity of this Guarantee under the same conditions as aforementioned to any and all modifications, alternations, variations, and extensions of time of the Contract as they may hereafter be made in accordance with the provisions of the Contract. The Bank agrees to waive consent and notification of such modifications, alternations, variations, and extension of time of the Contract.
8. With reference to Clause 1832 of the Indonesian Civil Law (Kitab Undang-Undang Hukum Perdata), the Bank shall relinquish the special rights of claim on assets belonging to the Contractor and for the seizure and sale of such assets for the discharge of his debts as required in Clause 1831 of the Indonesian Civil Law.

As a declaration of good faith for this Guarantee, we the underwriters, the legal representative of the Bank, hereby sign and seal this Guarantee on the date of.

Bank Seal

(.....)  
{Witness}

(.....)  
{Guarantee}

**FORM OF PERFORMANCE SECURITY BOND**

Bond No ..... Amount : ..... *..[in Rupiahs and/or other Currency(ies)]*

KNOW ALL MEN BY THIS PRESENT, that we.....  
..... *{Name and Address of Contractor}*  
as Contractor hereinafter called "the Principal" and ..... *{Name and Address of the Insurance or Bonding Company}* as "the Surety hereinafter called "the Surety",  
are held and firmly bound unto ..... *{Name of Employer}*  
as Employer hereinafter called "the Obligee", ..... in the maximum amount of ..... *(.....)*  
*{Amount of Bond in Rupiahs and/or other Currency(ies), in words and in figure}*  
is to be paid to the said Obligee, for which payment we the Principal and the Surety to bind ourselves, our successors and assignees, jointly and severally firmly by this presents that if the Principal fails to fulfil his Obligation in the performance of the Contract which has been awarded to him under the Obligee's Letter of Acceptance No. .... *{Number of Letter of Acceptance}* dated ..... and which is to be later confirmed by a Contract for *{Brief description of the words}* between the Obligee and the Principal which Contract is inherent within this Bond.

NOW THEREFORE THE CONDITION OF THIS BOND is such that, if the Principal shall promptly and faithfully perform said Contract, or shall indemnify, make good and reimburse to the Obligee, all loss and damage which Obligee may sustain by reason of failure or default on the part of the Principal so to do, then this obligation shall be void; otherwise to remain in full force and effect as from ..... up to.....*(.....)* and can be extended by the application of the Principal until the completion of the works. Any claim on this Bond shall be made in written application by the Obligee to Surety promptly after the Principal fails to fulfill his obligation, but not later than three (3) months after the Bond expires, as specified in the above Contract and is not caused by a force majeure. The Surety shall pay to the Obligee in the same amount of this Bond thirty (30) calendar days after having received a written claim based on the Obligee's decree concerning the default by the Principal.

With reference to Clause 1832 of the Indonesian Civil Law (Kitab Undang-Undang Hukum Perdata) herewith we reaffirm that the Surety shall relinquish the special rights of claim on assets belonging to the Principal and for the seizure and sale of such assets for the discharge of his debts as required in Clause 1831 of the Indonesian Civil Law.

Signed and sealed in ..... dated  
Principal, Surety,  
(.....) (.....)

# FORM OF ADVANCE PAYMENT SECURITY BANK GUARANTEE

1. WHEREAS ..... *{Name of Employer}*  
(hereinafter called the "Employer")  
  
has awarded a contract to ..... *{Name of Contract}*  
..... *{Address of Contractor}*  
(hereinafter called the "Contractor")  
  
to Bid for..... *{Brief description of the Works}*  
on ..... number ..... *{date and number of the Contract}*
2. AND WHEREAS according to said Contract, an Advance Payment of not more than (.....) (.....) *{Percentage as mentioned in Clause 60 (7) of the Conditions of Particular Application, in words and in figure}* percent of the Contract Price may be paid by the Employer to the Contractor.
3. NOW WE THE UNDERWRITERS responsible and representative of .....  
*{Name of Bank}*  
having our registered office at : .....  
..... *{Address of Bank}*  
(hereinafter called the "Bank"), and fully authorized to sign and incur obligations in the name of the Bank, hereby declare that the Bank guarantees the Employer the full amount of ..... (.....) *{amount of the Guarantee in Rupiahs and/or other currency(ies) as specified in the Contract Documents, in words and in figure}*.
4. NOW THE CONDITIONS of this obligation are :
  - 4.1 The Bank is engaged to refund the Advance Payment or the remaining Advance Payment if the Contractor after receiving the Advance Payment should fail to commence or continue the Works, whatsoever the reason, and the Bank shall forthwith return to the Employer the whole or the outstanding repayment value of the Advance Payment.
  - 4.2 The Bank shall deliver money required by the Employer upon Employer's first demand without delay within seven (7) calendar days and without the necessity of a previous notice of judicial or administrative procedures and without it being necessary to prove to the Bank the shortcomings of the Contractor.
5. This guarantee is valid for the duration of the Contract or until the date that the Advance Payment is fully repaid.
6. Any demand in respect hereof should reach the Bank not later than thirty (30) calendar days after this Bank Guarantee expiry given in item 5.

7. With reference to Clause 1832 of the Indonesian Civil Law (Kitab Undang-Undang Hukum Perdata), the Bank shall relinquish the special rights of claim on assets belonging to the Contractor and for the seizure and sale of such assets for the discharge of his debts as required in Clause 1831 of the Indonesian Civil Law.

) As a declaration of good faith for this Guarantee, we the underwriters, the legal representative of the Bank, hereby sign and seal this Guarantee on the date of.

Bank Seal

(.....)  
{Witness}

(.....)  
{Guarantee}



## FORM OF ADVANCE PAYMENT SECURITY BOND

Bond No ..... Amount : ..... *{in Rupiahs and/or other Currency(ies)}*

KNOW ALL MEN BY THIS PRESENT, that we .....  
..... *{Name and Address of Contractor}*  
as Contractor hereinafter called "the Principal"

and.....  
*{Name and Address of the Insurance or Bonding Company}* as "the Surety hereinafter  
called "the Surety",

are held and firmly bound unto ..... *{Name of Employer}*  
as Employer hereinafter called "the Obligee",

in the maximum amount of .....  
( ..... ) *{Amount of Bond in Rupiahs and/or other Currency(ies), in words and in  
figure}*  
is to be paid to the said Obligee, for which payment we the Principal and the Surety  
to bind ourselves, our successors and assignees, jointly and severally firmly by this  
presents.

WHEREAS the Principal has by written agreement dated .....  
*{Date of the Contract}* entered into a Contract with the Obligee to  
..... *{Brief description of the works}*

at an agreed Contract Price of.....  
( ..... ) *{Contract Price in Rupiahs and/or other Currency(ies) as specified in the  
Contract Documents, in words and in figure}* which Contract is inherent within this  
Bond.

WHEREAS the Obligee has agreed to advance to the Principal that sum amounting to  
..... (.....) *{Amount of Bond in Rupiahs and/or Currency(ies) as specified in the  
Contract Documents, , in words and in figure}* as an Advance Payment under said  
Contract.

If the Principal repays in full amount of the Advance Payment due under said  
Contract or the remaining Advance Payment, then this Bond shall be null and void;  
otherwise to remain in full force and effect as for the duration of the Contract or until  
the date the Advance Payment is fully repaid.

Any claim on this Bond shall be made in written application by the Obligee to Surety  
promptly after the Principal fails to repay the Advance Payments or the remaining  
Advance Payments under the conditions of said Contract, but not later than three (3)  
months after the Bond expires.

The Surety shall pay the Obligee in the same amount of this Bond thirty (30) calendar  
days after having received a written claim based from the Obligee.  
With reference to Clause 1832 of the Indonesian Civil Lay (Kitab Undang-Undang  
Hukum Perdata) herewith we reaffirm that the Surety shall relinquish the special  
rights of claim on assets belonging to the Principal and for the seizure and sale of such

assets for the discharge of his debts as required in Clause 1831 of the Indonesian Civil Law.

Signed and sealed in ..... dated

Principal,

Surety,

(.....)

(.....)







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