

### **1.5.8 Other Submittals**

During the course of the Works the Contractor shall submit to the Engineer for approval construction programmes, design computations, financial schedules, construction plans, various plans of work, survey, tests and operation, reports on the results of survey, test and inspection, written description of equipment to be used, pamphlets, brochures and samples of materials and equipment, and other required documents and good as prescribed in this Specification and as directed by the Engineer. Such submittal of documents and good shall be made in advance to avoid causing any delay to the field works. The procedure for submittal and approval shall be in the same manner as specified in Sub-Clause 1.4.5.

### **1.5.9 Payment**

Except as otherwise specified, separate payment will not be made for complying with the requirements of Clause 1.5 and all costs shall be deemed to be included in the rates and lump sum prices tendered in the Bill of Quantities.

## **1.6 STANDARDS AND TESTS**

### **1.6.1 Standards and Specifications**

All materials and equipment to be furnished and installed for the Works and all construction works to be executed under the Contract shall conform to the respective standards and specifications stated in the Specification. Where applicable standards and specifications for any material, equipment and construction are not stated in the Specification, they shall conform to the latest edition of the relevant standards of the following organisations:

JIS	: Japanese Industrial Standard
AASHTO	: American Association of State Highways and Transportation Officials
JCEA	: Japan Civil Engineers Association
ACI	: American Concrete Institute
AISI	: American Iron and Steel Institute
ASTM	: American Society for Testing and Materials
AWS	: American Welding Society
USBR	: Water and Power Resource Service, United States Department of the Interior (formerly United States Bureau of Reclamation)
SSPC	: Steel Structures Painting Council
HGPS	: Hydraulic Gate and Penstock Association, Japan
JRA	: Japan Road Association
SII	: Standard Industri Indonesia (Indonesian Industrial Standard)
PBI	: Peraturan Beton Indonesia (Indonesian Concrete Code)
PKKI	: Peraturan Konstruksi Kayu Indonesia (Indonesian Wood Construction Code)

If the Contractor proposes equivalent standards or specifications for materials and equipment, he shall state the exact nature of the proposed change and shall submit complete standards and specifications in English, including information and data on such materials and equipment, for approval of the Engineer. Such submittal shall be made in sufficient time for approval by the Engineer and failure to do so the purchase of any proposed equivalent materials and equipment prior to the approval of the Engineer shall be at the Contractor's risk.

The Contractor shall have available in his site office at all times at least one (1) copy of every standard referred to in this Specification or necessary for the execution of the Works.

#### **1.6.2 Inspection, Examination and Testing of Materials and Equipment**

Materials and equipment furnished by the Contractor, which will be incorporated in the Permanent Works, shall be subject to inspection, examination and test as provided in the Contract. To allow sufficient time to provide for inspection, examination and testing, the Contractor shall submit to the Engineer at the time of issue, copies in duplicate of all orders, including drawings and other pertinent information covering the materials and equipment to be furnished by the Contractor, or shall submit other evidence in the event of such orders being issued verbally or by letter. The inspection, examination and testing of materials and equipment or the waiving of inspection, examination and testing thereof shall in no way relieve the Contractor of the responsibility for furnishing materials and equipment meeting the requirements of this Specification.

All examinations and tests shall be carried out by the Contractor in the presence of the Engineer in accordance with the normal practice for such examination and tests. The Contractor may carry out the examinations and tests with his staff and equipment available at the Site. Examinations and tests carried out off the site shall be made at a laboratory approved by the Engineer.

The Engineer shall be at liberty to reject any material or equipment that does not comply with the requirements of the Contract notwithstanding any previous approval thereof. The Contractor shall not be entitled to any extra payment or extension of time for completion of the Works on account of the rejection of materials due to their non-compliance with the requirements of the Contract, or of the waiting time required for carrying out the examinations and tests.

The Contractor shall furnish test samples as requested and shall provide reasonable assistance and co-operation as necessary to permit tests to be performed on materials or work in place, including reasonable stoppage of work during testing.

The Contractor shall co-operate in all manners required with the independent testing team authorised under Keputusan Menteri Pekerjaan Umum, Nomor 22/229/KPTS/1999, dated 13 July 1999.

#### **1.6.3 Testing Laboratory and Testing**

The Contractor shall construct a laboratory building which shall be of sufficient size to accommodate all equipment and undertake all testing required under the Contract and shall include office and storage space. The laboratory building shall include an office of at least 15 m<sup>2</sup> within the laboratory for the sole use of the Engineer.

The Contractor shall provide the laboratory with all of the necessary testing equipment and apparatus. The Contractor shall provide his own qualified staff and laboratory assistants capable of carrying out all of the laboratory testing required for all the materials to be used for the Works including physical and/or mechanical properties of soil, aggregate, concrete, asphalt, their products and so on, as specified in the Specification. All testing equipment and apparatus provided by the Contractor in accordance with this Clause shall remain the property of the Contractor on completion of the Works.

The Contractor shall carry out all field tests such as compaction tests, concrete workability tests and so on in accordance with the manner and frequency prescribed in the Specification and shall provide the testing equipment and apparatus, testing staff, labour and consumables necessary for carrying out his field testing. The Contractor shall prepare schedules of his field and laboratory testing taking into account the work progress schedule and shall submit them to the Engineer for approval.

The Engineer will supervise the Contractor's testing for the purpose of adequate and sufficient quality control of the Works during its execution. The laboratory and equipment shall be made available and accessible to the Engineer at all times.

The Contractor shall identify specific locations of tests directed by the Engineer, by survey if necessary, and include such information in all test reports.

All test reports shall be submitted to the Engineer as soon as possible and within 24 hours of their completion.

#### **1.6.4 Payment**

Separate payment will not be made for complying with the requirements of this Clause 1.6. The cost of the laboratory shall be deemed to be included in the lump sum for Establishment tendered in the Bill of Quantities and all other costs shall be deemed to be included in the rates and lump sum prices tendered in the Bill of Quantities for the items to which the standards and tests apply.

### **1.7 SURVEY AND MEASUREMENT OF THE WORKS**

#### **1.7.1 Bench Mark and Reference Point**

Reference points for horizontal and vertical control have been established on the Site by the Employer as shown on the Drawings or as advised by the Engineer. The Contractor shall use the co-ordinates and elevations of such reference points in setting out the Works. Any reference points damaged as the result of action by the Contractor shall be replaced by the Contractor at his own expense.

The Contractor may establish temporary reference points for his own convenience but each point shall be of a design and at a location approved by the Engineer. Each point shall be accurately related to the points established by the Employer.

#### **1.7.2 Responsibility for Setting Out**

The Contractor shall be solely responsible for the correct setting out of the Works and shall employ experienced and qualified surveyors approved by the Engineer.

The Contractor shall furnish all materials, labour and equipment including stakes, templates, patterns, platforms and special labour that may be required by the Contractor in setting out any part of the Works. The Contractor shall use survey equipment of the type and accuracy to permit correct setting out and control of the Works.

The Contractor's obligations for surveying shall include the surveying of the original surface levels where works are to be performed. The method used and spacing of cross-sections shall be agreed by the Engineer prior to commencement of the survey.

Before surveying the original surface levels to be plotted in the working drawings as described in Sub-Clause 1.4.4, the Contractor shall give the Engineer at least 7 days notice before commencing such survey in order that the Engineer or his representative can witness and verify levels so determined. The original surface level determined shall be subject to the Engineer's approval.

The Contractor shall co-operate with the Engineer in checking the setting-out and in performing the measurement surveys for record and payment purposes. The Contractor shall render all necessary assistance to the Engineer and shall provide, as required for the use of the Engineer, sufficient quantities of pegs, poles, straight edges, stagings, mounds, templates, profiles, survey assistants, labourers and transport for checking the Contractor's setting-out and measurement of the Works.

### **1.7.3 Survey Data and Calculations**

The Contractor shall submit all survey data, information, calculations, results and records to the Engineer as soon as they are available.

#### **1.7.3.1 Payment**

Payment for surveying shall be made at the lump sum entered in the Bill of Quantities. Monthly progress payments shall be made in proportion to the progress of the Work.

## **1.8 MOBILISATION AND DEMOBILISATION**

### **1.8.1 General**

Mobilisation shall refer to the transportation of Contractor's Equipment, based on the construction programme submitted by the Contractor in accordance with Sub-Clause 14.1 of the Conditions of Contract and Sub-Clause 1.5 hereof, from the place of origin to the Site where they are to be used. When the mobilisation has been substantially completed to the extent the Works can be effectively performed and obtain the scheduled progress, the Contractor shall submit the required documentation for the Engineer's approval and certification. Subject to the authorisation of the Engineer the Contractor may at any time during the execution of the Works, make alteration, reduction and/or improvement to the Equipment.

Demobilisation shall be made after the written approval of the Engineer and include the removal of the Contractor's Equipment from the Site.

### **1.8.2 Contractor's Equipment**

The Contractor shall furnish the necessary Contractor's Equipment, required for the execution of the Works. The Engineer may, if he consider it

necessary for the execution of the Works in accordance with the Contract, instruct the Contractor to furnish additional Contractor's Equipment. All equipment to be furnished by the Contractor shall be complete with all spare parts and the Contractor shall maintain a sufficient stock of such spare parts to ensure the efficient execution of the Works.

### **1.8.3 Programme and Notice of Transportation**

Concurrently with the submittal of programme in accordance with Sub-Clause 14.1 of the Conditions of Contract, the Contractor shall furnish the Engineer with a complete transportation programme for Contractor's Equipment, showing in detail the sequence of transportation and delivery on the Site to comply with his proposed construction programme.

The Contractor shall keep the Engineer informed of the arrival of plant, materials and Equipment at the Site.

### **1.8.4 Payment**

Payment for mobilisation and demobilisation will be made at the lump sum price tendered therefor in the Bill of Quantities (Item A.1). Progress payment will be made in the following manner :

- a. Seventy percent (70 %) of each approved sub-item of the lump sum price tendered in the Bill of Quantities will be paid upon certification by the Engineer that mobilisation has been substantially completed for each item of Contractor's Equipment shown in the Contractor's breakdown submitted in accordance with Sub-Clause 57.2 of the General Conditions of Contract.
- b. The remaining thirty percent (30 %) of each approved Sub-item of the lump sum price tendered in the price Bill of Quantities will be paid upon certification by the Engineer that the demobilisation of concerned Contractor's Equipment has been completed for each of the items of plant or Contractor's Equipment mentioned above.

Monthly estimates of progress for payments of mobilisation and demobilisation shall be supported with appropriate records and documents showing that mobilisation or demobilisation for each item of plant or Contractor's Equipment as mentioned above has been completed during the month for which the estimate is prepared.

## **1.9 TEMPORARY WORKS**

### **1.9.1 General**

#### **1.9.1.1 Extent of Temporary Works**

Temporary Works shall have the meaning as defined in the General Conditions of Contract Sub-Clause 1.1 f (iii) .

All Temporary Works shall be provided, installed, operated, maintained and subsequently removed by the Contractor, except as otherwise provided in the Contract.

#### **1.9.1.2 Approval of Temporary Works**

The Contractor's proposal for the erection of all Temporary Works shall be in accordance with the proposals submitted with his Bid or with such modifications as approved by the Engineer from time to time.

The Contractor shall submit to the Engineer for approval, within thirty (30) days from the receipt of the Letter of Acceptance, the revised general plan of Temporary Works, based on the proposals in the Bid including scale, capacity, layout, dimension, installation programme and schedule, and foundations. The Engineer may direct the Contractor to modify or change the proposals, if in the opinion of the Engineer it is deemed necessary. Such direction of the Engineer shall not relieve the Contractor from any of his obligations and responsibilities under the Contract.

Before starting any part of Temporary Works the Contractor shall, at least thirty (30) days before starting construction, submit to the Engineer for the approval the detailed proposal for such part of the Temporary Works including plans, drawings, schedules, and other information as specified in Clauses 1.4 and 1.5 of the General Specification which will supplement or modify the general plan of the Temporary Works already submitted by him.

#### **1.9.1.3 Removal of Temporary Works**

Unless otherwise directed or approved by the Engineer, all Temporary Works constructed by the Contractor shall be removed and the area made safe, vegetation and natural drainage reinstated all to the satisfaction of the Engineer prior to the end of the Defects Liability Period.

#### **1.9.1.4 Payment**

Separate payment will not be made for Temporary Works and all the costs thereof shall be deemed to be included in the lump sum prices tendered in the Bill of Quantities for Establishment.

### **1.9.2 Use of Construction Facilities and Work Areas**

#### **1.9.2.1 Location of Temporary Works**

The Contractor shall, as far as practicable, lay out the Temporary Works within the Site.

#### **1.9.2.2 Damage to Crops and Property**

The Contractor shall limit the movement of his crew and Contractor's Equipment so as to minimise damage to crops and property. Before acceptance of the Works by the Employer the Contractor shall restore the land occupied by the Temporary Works as nearly as practicable to its original condition.

#### **1.9.2.3 Indemnity against damage or injury**

The Contractor shall be directly responsible to the Employer for any damage or injury to crops or land whether in the possession of the Employer or any other person, resulting from his operations and shall indemnify and keep indemnified the Employer against all losses and claims for such damage and injuries which may arise in connection with the risk as provided for in Clause 12 of the Conditions of Contract.

#### **1.9.2.4 Rights of Others to Use Construction Facilities**

Other contractors employed by the Employer and their workmen and workmen of the Employer and of other Government authorities who will be carrying out work on or near the Site of the Works shall have the right to use, without charge, the access facilities, including bridges and roads, of

which the Employer has given possession to the Contractor or which have been constructed or acquired by the Contractor for use in constructing the Works.

#### **1.9.2.5 Facilities to be made available by the Contractor**

Reticulated water, drainage systems and any other such facilities, constructed or acquired by the Contractor for use in carrying out the Works, which are available without entailing any appreciable increase in cost to the Contractor as determined by the Engineer shall be made available without charge to the Employer and any other contractors employed by the Employer at mutually convenient times.

#### **1.9.2.6 Temporary Works by Others**

- a. In the event that other contractors employed by the Employer have constructed temporary works in the vicinity of the Works covered by the Contract, the Contractor shall have free and unrestricted use of all temporary roads constructed by other contractors but shall not cause any obstruction on such roads.
- b. Before the completion of other contracts, the Contractor shall notify the Engineer of the temporary roads constructed by other contractors and areas of land utilised by temporary works of other contractors that he proposes to use for the remaining period of such temporary roads and areas, as approved by the Engineer, and they shall be deemed to form part of Contractor's obligations under this Clause as if constructed by him.
- c. The Contractor shall maintain such roads and areas from the date of possession in accordance with the requirement for all items provided under Establishment. On the completion of the Works, such roads and areas, unless otherwise approved by the Engineer, shall be removed and the land restored to its original condition prior to commencement of the other contracts to the satisfaction of the Engineer.
- d. Separate payment will not be made for maintenance, improvement, removal and reinstatement of these roads and areas, where required, and the cost of all works required by this Clause shall be deemed to be included in the various items in the Bill of Quantities.

### **1.9.3 Establishment**

#### **1.9.3.1 General**

An item has been included in the Bill of Quantities for Establishment which item shall be deemed to include the cost of provision, erection and removal if required, of all Temporary Works at the Site including the Engineer's site office, the Contractor's site office, buildings, temporary fences, sanitary facilities, medical facilities, explosives magazine, fixed construction facilities including but not limited to workshops, electric power supply, water supply, telecommunications, temporary roads and bridges, traffic control and other temporary facilities required for the execution of the works and cleaning-up and restoration of the Site on completion.

#### **1.9.3.2 Payment**

The Contractor shall provide a breakdown of the lump sum for Establishment in accordance with Sub-Clause 57.2 of the General Conditions of Contract. The breakdown shall be arranged such that it

includes not more than ten (10) sub-items which can be readily recognised and measured for payment purposes.

Payment for Establishment will be made at the lump sum price tendered therefor in the Bill of Quantities (Item A.2). Progress payments for work under each sub-item will be made as follows:

- a. Sixty percent upon certification by the Engineer that work under each sub-item is substantially complete.
- b. Ten percent upon certification by the Engineer that the facility under each sub-item has been removed.
- c. Thirty percent to be distributed uniformly over the duration of the Contract.

#### **1.9.4 Utilities**

##### **1.9.4.1 Water Supply System**

The Contractor shall install, operate and maintain and subsequently demolish a clean-water supply and drainage system to the Engineer's Site Office and Facilities as specified in Sub-Clause 1.9.7, his offices, laboratory, canteen, labour quarters, workshops, gravel washing facilities, batching plant and other places on the Site where water is required in accordance with the Contractor's proposal in his Tender and approved in the Letter of Acceptance or as otherwise approved by the approved by the Engineer. Water for the human use shall be of a standard equal to the domestic town water supply in Semarang.

The Contractor shall supply to the Engineer's Site Office and Facilities, and to all work areas, an adequate supply of purified, bottled water.

##### **1.9.4.2 Electric Power Supply**

The Contractor shall be responsible for providing at the Site, including that portion of the Site at the quarry area, all electric power required for his construction activities, his site office, his labour camps, the Engineer's site office and any other areas where electric power is required. The power supply shall be adequate for all activities including testing and commissioning of mechanical and electrical Plant.

The method of supplying such electrical power to the various parts of the site shall be as proposed by the Contractor in his Tender and approved in the Letter of Acceptance or as otherwise approved by the Engineer.

The Contractor shall design and install the electrical power supply system in accordance with the requirements of the relevant Indonesian codes of practice and the requirements of the power supply authority (PLN).

##### **1.9.4.3 Telecommunication System**

###### **a. General**

The Contractor design, supply install, operate and maintain a telecommunications system which will enable clear communications between the various parts of the site where construction activities are taking place and with external lines which permit international communication. The system shall be as proposed by the Contractor in his Bid and as approved in the Letter of Acceptance. On completion the telecommunications system shall be demolished and removed from the site. The design of the system shall be subject to the Engineer's approval.



**b. On-Site System**

The on-site system shall enable communications between the Engineer's Site office and vehicles and Contractor's Site Office and work site offices, laboratory, batching plant and other work areas is available. For this purpose the Contractor shall provide a fixed line on-site telephone system and shall install mobile radio transceivers in each vehicle provided for the Engineer's use under the Contract and an equivalent number of hand-held radio transceivers.

Sirens and loudspeaker systems shall be provided by the Contractor within the Site as are deemed necessary by the Engineer for safety requirements.

**c. Telephone Requirements for Engineer's Office**

Three external lines shall be provided to the Engineer's site office for the exclusive use of the Engineer. All external lines shall be capable of international direct dialling (IDD). Internal extensions shall be provided to at least 12 areas within the Engineer's office and in all other building to be provided under Sub-Clause 1.9.7.

Separate metering shall be provided for the external lines and the Contractor may charge the Employer for international call but not for calls made within Indonesia or within the Site.

**d. Telephone Requirements for the Contractor's Site Office**

The Contractor shall provide the quantity and type of communications facilities he deems necessary for the execution of the Works which shall not be less than three external telephone lines.

**e. Payment**

Separate payment will not be made for complying with the requirements of this Sub-Clause and all costs shall be deemed to be included in the lump sum price for Establishment in the Bill of Quantities.

**1.9.5 Temporary Roads and Bridges**

**1.9.5.1 General**

The Contractor shall construct and maintain temporary construction roads, including haul and access roads, bridges, and the associated drainage and stream crossing facilities necessary for the execution of the Works.

The Contractor shall make the necessary arrangements with the appropriate Local Government Authorities and private landowners where new temporary access and haul roads are required through private land.

Not less than thirty (30) days before the Contractor intends to commence construction of any part of the temporary construction roads, the Contractor shall submit to the Engineer for approval a detailed construction plan including:

- a. The location and design of the temporary construction roads, including the associated drainage and stream crossing facilities; and
- b. The construction method and construction time schedule of such temporary construction roads,

The location of these roads shall be in accordance with the Contractor's proposals submitted with his Bid and approved in the Letter of Acceptance or as otherwise approved by the Engineer.

### **1.9.5.2 Design Requirements for Temporary Roads and Bridges**

The temporary construction roads shall be designed so as to generally have a driveway width of not less than 6.0 m, where practicable to do so and not less than 4.0 m, and a longitudinal slope of less than 15 %. The roads shall be provided with areas for shunting vehicles at appropriate intervals.

The Contractor shall execute the required clearing and grubbing and construct the temporary construction roads in accordance with the approved drawings and construction programme. Topsoil shall be stripped and stockpiled for restoration purposes. Surplus material from required excavation may be allowed as construction material for the construction roads. The Contractor shall provide a gravel pavement or other measures in stretches where trafficability is in the opinion of the Engineer, not sufficient for the efficient transportation of Contractor's Equipment and materials.

Where the temporary construction roads cross existing stream flow such as a river, drainage channel or irrigation channel, the Constructor shall provide an appropriate section of concrete or steel pipe or other means to allow water discharge. All crossings damaged or destroyed by heavy rainfall shall be restored by the Contractor at his cost if, in the opinion of the Engineer, such restoration is necessary.

The Contractor shall be responsible for the repair at his own expense of any damage to the temporary construction roads caused by the passage of heavy equipment and trucks used by the Contractor or his subcontractors for the execution of the Works or caused by other contractors employed on the site by the Employer or by the public, where applicable. On the completion of the Works, such temporary construction roads, except those which are directed to be left on the Site, shall be removed and the land restored to its original condition to the satisfaction of the Engineer.

### **1.9.5.3 Use of Roads by Others**

During the period of the Contract, the Employer and other contractors employed by the Employer will be engaged on other works in the vicinity of the Works, and the Contractor shall allow the Employer and such other contractors free and unrestricted use of all temporary roads. Public roads shall remain open to the public at all times.

## **1.9.6 Contractor's Site Office and Facilities**

### **1.9.6.1 General**

The Contractor shall provide, maintain and operate the Contractor's Site office and construction facilities which include, among other things, staff quarters, warehouse, workshop, laboratory, labour camp and other temporary buildings and facilities necessary for the execution of the Works, and shall remove them upon the completion of the Works except as otherwise specified in the Contract or directed by the Engineer.

The Contractor shall submit revised layout plans and general particulars of such temporary buildings and facilities to the Engineer for his approval. The construction of any buildings or facility shall not be started until the Contractor's proposals have been finally approved by the Engineer.

### **1.9.6.2 Construction Camp**

The Contractors shall construct his construction camp within the designated area shown in the Drawings, as proposed in his Tender and approved in the

Letter of Acceptance. It shall include housing camps and other facilities and amenities for his employees and for the employees of his subcontractors.

The Contractor's staff quarters and labour camp shall be provided with all the necessary services for drainage, electricity, lighting, roads, paths, parking spaces, fencing, sanitation including sewage treatment, water supply, cookhouse, fire prevention and fire fighting equipment.

#### **1.9.6.3 Contractor's Site Office**

The Contractor shall provide the Site office as soon as the preparatory work at the Site takes place. The Site office shall be constructed within the designated area shown on the Drawings and approved by the Engineer with all the necessary facilities for drainage, lighting, sanitation, parking spaces, etc.

#### **1.9.6.4 Completion of Contractor's Site Office and Construction Facilities**

The Contractor shall notify the Engineer in writing as soon as the temporary buildings and facilities have been constructed and are ready for operation. The Engineer shall certify that such buildings and facilities have been constructed in accordance with the approved plans.

### **1.9.7 Engineer's Site Office and Facilities**

#### **1.9.7.1 General**

The Contractor shall design, construct, operate, maintain and demolish after completion of the Works, facilities for the Engineer and his consultant staff as listed in Table 1.9.7(1).

The buildings shall be provided with the utility services as specified in Sub-Clause 1.9.4. and with the furniture listed in Tables 1.9.7(2) and 1.9.7(3).

The facilities shall be located in the location as shown in the Drawings

The Contractor shall make available to the Employer, the Engineer and his staff and the Consultant's staff, catering facilities which may be in a designated part of his canteen. Meals shall be provided at cost.

**TABLE 1.9.7(1): ENGINEER'S SITE OFFICE AND FACILITIES**

<b>FACILITY</b>	<b>GENERAL DETAILS</b>
1 No. Office Building	Gross plan area 260 m <sup>2</sup>
1 No. Dormitory Building	175 m <sup>2</sup>
1 No. Garage	For 6 cars and 6 motor bikes
1 No. Warehouse	90 m <sup>2</sup>
1 No. Tennis Court	Standard size
1 No. Volley Ball Court	Standard size
External Works for the above buildings and facilities.	Roads, paving, fencing, landscaping as required to suite layout.

**TABLE 1.9.7(2): FURNITURE FOR DORMITORY**

ITEM OF FURNITURE TO BE PROVIDED	QUANTITY
Bed complete with mattress	5
Desk	5
Wardrobe (lockable)	5
Desk Lamp	5
Lounge Suite (to seat 6 persons)	1
Chairs	5
Coffee Table	1
Refrigerator	1

**TABLE 1.9.7(3): FURNITURE FOR ENGINEER'S SITE OFFICE**

ITEM OF FURNITURE TO BE PROVIDED	QUANTITY
Desks (1.5 m x 0.75 m) with three drawers and lockable cupboard complete with chairs with arm rests	21
Desk lamps	19
Conference Table (1.5 m x 2.4 m)	2
Layout Table	2
Chairs for Conference and Layout Tables	17
Drafting Table and Stool complete with drawing instruments	2
Vertical plan hanging rack	4
Lockable 4-drawer filing cabinet	23
Lockable cupboard 2 m high x 1.5 m x 0.5	23
White Board (1.0 x 1.5)	1

**1.9.7.2 Technical Requirements and Standards**

Technical requirements for the facilities to be provided under this Sub-Clause and standards of workmanship are included in Section 17, Appendix EO-1.

**1.9.7.3 Submissions**

The Contractor shall make detailed proposals for the provision of the facilities included in this Sub-Clause 1.9.7 in the form of detailed design Drawings, schedules of finishes, materials lists, construction programmes and specifications, all of which shall be subject to the Engineers approval. Procedures shall be in accordance with Sub-Clause 1.4.

**1.9.7.4 Time for Completion**

The Engineer's Site Office shall be completed within 6 months of the Commencement Date

All other facilities shall be completed within 9 months of the Commencement Date.

#### **1.9.7.5 Maintenance and Operation**

The Contractor shall ensure that the Engineer's Site Office and Facilities are at all times maintained in good order and provided with the utility services specified in Sub-Clause 1.9.4.

#### **1.9.7.6 Removal and Hand-over**

At the conclusion of the Contract the Contractor shall remove all of the buildings and facilities provided under this Clause and reinstate the area to the satisfaction of the Engineer and all items of furniture and equipment shall be handed over to the Employer.

#### **1.9.7.7 Payment**

Separate payment will not be made for complying with the requirements of this Sub-Clause and all costs shall be deemed to be included in the lump sum price for Establishment in the Bill of Quantities.

### **1.9.8 Transport Facilities**

#### **1.9.8.1 General**

The Contractor shall provide transport facilities as specified hereunder for use by the Engineer for the purpose of construction supervision throughout the duration of the Contract commencing within 60 days of the issue of the Letter of Acceptance.

The transport facilities shall include the following:

- a. 4 No. New, four-door four-wheel drive vehicles (Jeep, Land Rover, Toyota Land Cruiser or equivalent) including drivers;
- b. 2 No. New two-wheel drive station wagons (Kijang or equivalent)
- c. 6 No. New motor cycles with engine capacity greater than 100 cc.

The Contractor shall arrange for payment of all vehicle registration and insurance fees for each vehicle.

In the event that the above facilities cannot be provided within the said 60 days, the Contractor shall arrange temporary vehicles for the Engineer's use for interim period until the specified facilities have been provided.

#### **1.9.8.2 Maintenance of Transport Facilities**

The Contractor shall arrange to service and repair vehicles at regular intervals in accordance with the manufacturers' recommendations and to provide all necessary spare parts to maintain the vehicles in a proper and safe running condition.

All consumables, including fuel, oil, filters, etc., required for the vehicles shall be provided by the Contractor.

If any vehicle requires maintenance for a period exceeding 2 days, the Contractor shall provide an alternative vehicle to the vehicle being repaired for the use of the Engineer.

#### **1.9.8.3 Measurement and Payment**

Measurement, for payment, for the provision of transport shall be made for each month for each type of vehicle provided.

Measurement for less than one month shall be proportioned on the basis of calendar days each vehicle is actually provided, except that normal maintenance of up to one (1) day's duration shall not be deducted.

Payment for Supply, operate and maintain new four-door, four-wheel drive Station Jeep shall be made at the rate per month entered in the Bill of Quantities. (Item A.4.1)

Payment for Supply, operate and maintain new two-wheel drive station wagon shall be made at the rate per month entered in the Bill of Quantities. (Item A.4.2)

Payment for Supply, operate and maintain new motor cycle with capacity greater than 100 cc shall be made at the rate per month entered in the Bill of Quantities. (Item A.4.3)

The above rates shall include all costs of repair, maintenance, fuel, oil, insurance and registration and provision of drivers and the provision of temporary vehicles if necessary.

#### **1.9.9 Temporary Traffic Control**

##### **1.9.9.1 Scope**

To facilitate traffic through or around the Works, or wherever ordered by the Engineer, the Contractor shall install and maintain at prescribed points on the Site and at the approaches to the Site, traffic signs, lights, barricades and other facilities as required by the Engineer for the direction and control of traffic. The wordings on all signs shall be in the Indonesian language. The size, colour, lettering and location of all signs shall be subject to the Engineers approval. Attention shall be paid to the international system of traffic sign or as applicable in Indonesia.

Where required, or on when directed by the Engineer, the Contractor shall furnish and station competent flagmen whose sole duty shall be to direct the movement of the traffic through or around the Site.

In addition to the requirements of the above Sub-Clauses, the Contractor shall furnish and erect, within or in public areas in the vicinity of the Site, such warning and guide signs as may be ordered by the Engineer.

##### **1.9.9.2 Payment**

Separate payment will not be made for complying with the provisions of this Clause 1.9 and the cost of all works required by this Clause shall be deemed to be included in the rates and lump sum prices of the various items in the Bill of Quantities.

#### **1.9.10 Garbage Disposal**

##### **1.9.10.1 Scope**

The Contractor shall undertake the collection of and disposal of all garbage from within the Site, the Contractor's Site office, the Contractor's Temporary Works, the Engineer's Site office and other areas used in connection with the Works. Garbage collections shall be made at least twice each week and

shall continue until completion of the Works.

Garbage shall be disposed of in a properly constructed incinerator followed by burial of the residue in an approved location. The Contractor shall submit the proposed design and layout of garbage disposal facilities for approval. Where available, garbage collection by local authorities shall be used in preference to disposal as noted above.

#### **1.9.10.2 Payment**

Separate payment will not be made for the provision for garbage disposal and the cost of this work shall be deemed to be included in the lump sum price entered in the Bill of Quantities for Establishment.

#### **1.9.11 Maintenance of Existing Public Roads**

##### **1.9.11.1 General**

The Contractor shall maintain all roads within the vicinity which he uses for purposes of carrying out the Works required by this Contract

##### **1.9.11.2 Contractor's Operations**

If the Contractor's operations obstruct or hinder the passage of traffic on the roads described in this Clause, the Contractor shall provide and maintain for the duration of such disruption an alternative route, approved by the Engineer, of a standard not less than that of the road so affected.

Existing roads and bridges have load limits which the Contractor shall be responsible for determining. Before moving any heavy construction traffic into highways, roads, and bridges, the Contractor shall make suitable arrangements with the relevant authorities and obtain their approval for the passage of such traffic.

The Contractor shall not travel tracked vehicles or equipment on any bituminous sealed road surface. Rubber-tired vehicles conforming to applicable load restrictions will be permitted to use bituminous sealed road surfaces.

All the work of improvements or modifications on the existing public roads made by the Contractor for his own convenience shall be at the Contractor's own risk and expense.

##### **1.9.11.3 Maintenance of Roads**

###### **a. Public Roads**

The Contractor shall nominate public roads to be used by him during the execution of the Works in his construction plan. Prior to the commencement of the use of such roads, a joint inspection shall be carried out by the Engineer and the Contractor to document their conditions.

All damage caused by the Contractor's operations to the nominated roads shall be promptly repaired by the Contractor. At the end of the use by the Contractor of any particular section of public road, or completion of the Contract, whichever is the earlier, the Contractor shall ensure that the nominated roads used by him are reinstated to a condition equal to or better than the condition documented in the pre-commencement joint inspection referred to above. All expenses relating to the maintenance of public roads shall be borne by the Contractor.

**b. Dam Management Complex Access Road**

The Contractor is required to construct the access road to the Dam Management Complex under this Contract and to complete the works within the time specified in the appendix to the bid. A Taking Over Certificate is expected to be issued for this section of the Works, following which the Contractor's obligations for maintenance of roads under this Sub-Clause 1.9.11.3 shall include the access road to the Dam Management Complex.

In fulfilling his obligation for maintaining roads the Contractor shall:

- (i) reinforce to pass his traffic, if necessary, and keep in good working condition at all times all road structures, bridges, culverts, drains and other waterways;
- (ii) patch potholes with approved materials, keep the road surfaces in good repair, and perform all grading and necessary resurfacing;
- (iii) maintain all fenders, posts, guideposts, guard posts, rails, fencing, signs, signposts and other roadside structures;
- (iv) keep road surfaces and shoulders free from all earth, mud, stones, timber, rubbish, and other debris and materials removed from the Works;
- (v) adequately maintain cut-slopes and fill-slopes of the roads and appurtenant drainage ditches; and
- (vi) keep the road surface watered where dust is likely to be a safety or health problem.

**1.9.11.4 Payment**

Separate payment will not be made for complying with the requirements of this Clause, and the cost of this work shall be deemed to be included in the various rates and lump sum prices entered in the Bill of Quantities.

**1.10 PLANT AND MATERIALS TO BE FURNISHED BY THE CONTRACTOR**

**1.10.1 General**

**1.10.1.1 Plant and Materials to be Furnished by The Contractor**

The Contractor shall furnish all items of Plant and materials required for the execution of the Works except as otherwise provided for in the Contract.

**1.10.1.2 Trades Names and Catalogue Numbers**

Unless specifically stated otherwise, any reference in this Specification or on the Drawings to trade names or catalogue numbers or to a particular manufactured product does not imply that article or product so mentioned is the only one that may be supplied or used. Any reference so made is purely given as to the standard of the quality, class, type and finish of the items specified to be used. Articles or products of similar type and quality produced by other manufactures shall be submitted by the Contractor to the Engineer for approval for use in the Works.



#### **1.10.1.3 Conformity of Plant, Equipment and Materials with Specification.**

All plant, equipment and materials which form part of the permanent Works shall be new and shall conform to the standards provided in the Specification. Where the requirements for any plant, equipment and materials are not stated in this Specification, the plant, equipment and materials shall conform with the appropriate and most recent Indonesian, Japanese or American Standard or such other standard as the Engineer may approve.

The Contractor shall make diligent effort to procure the specified materials but where, because of priorities or other causes, materials required by the Specification are not available, substitutes may be used with the prior approval of the Engineer. The approval will state the amount of price adjustment, if any, to be made. The Engineer's decision as to whether substitution will be permitted and as to what substitute materials may be used will be final, binding and conclusive.

#### **1.10.1.4 Payment**

When a separate item, which includes the furnishing of any plant, equipment or materials, is provided in the Bill of Quantities, the cost of furnishing, transporting, storing and handling such plant, equipment or materials shall be deemed to be included in the rate or lump sum price entered for that item in the Bill of Quantities.

Where no separate item is provided in the Bill of Quantities for furnishing any plant, equipment or materials required to be furnished by the Contractor, the cost of furnishing, transporting, storing and handling such plant, equipment or materials shall be deemed to be included in the rates or lump sum prices entered in the Bill of Quantities for the items for which plant, equipment or materials are required.

#### **1.10.2 Inspection of Plant, Equipment and Materials**

Plant, equipment and materials furnished by the Contractor shall be subject to inspection in accordance with the Contract at any one or more of the following locations as determined by the Engineer:

- a. The place of production or manufacture.
- b. The shipping point.
- c. The Site.

The Contractor shall furnish without additional charge all facilities, labour and materials reasonably needed for performing the inspections, examinations and tests as may be required by the Engineer.

The Contractor shall submit the Engineer all information covering the plant, equipment and materials required by the Engineer for the purpose of inspection which shall in no way relieve the Contractor from his responsibility for furnishing plant, equipment and materials in compliance with the Specifications.

Separate payment will not be made for complying with the requirements of this Clause and all costs shall be deemed to be included in the rates and lump sums entered in the Bill of Quantities.

## **1.11 SAFETY, HEALTH CONTROL AND SECURITY**

### **1.11.1 General**

The Contractor shall be responsible for all safety, health controls and security and shall submit to the Engineer details of the organisation and regulations for these purposes.

### **1.11.2 Safety Precautions**

#### **1.11.2.1 General**

The Contractor shall comply with any safety instruction given by the Engineer. In the performance of the Works, the Contractor shall exercise every reasonable precaution to protect from injury persons or property. The Contractor shall erect and maintain all necessary temporary fencing, barricades, barriers, signs and lights and provide fire alarm, fire extinguishing and fire fighting services at strategic points on the Site and adequate ventilation, lighting and safe working conditions for his workmen engaged in the performance of the Works. The Contractor shall adopt and enforce such rules and regulations as may be necessary and desirable in the work and in its supervision. Safety measures shall include but shall not be limited to those measures mentioned in this Clause.

#### **1.11.2.2 Safety Officer**

The Contractor shall constantly employ during the progress of the Works an employee qualified in safety, and familiar with the type of work being performed, whose assignment shall include initiation of measures for the protection of health and the prevention of accidents and who shall see, by personal inspection, that all safety rules and regulations are enforced. The Contractor shall hold regularly scheduled safety meetings at least once each month with his Engineers, supervisors and foremen and, when directed, with the Engineer. The Contractor shall keep the Engineer advised as to when these meetings are to be held and shall provide the Engineer with a copy of the proposed agenda.

#### **1.11.2.3 Temporary Fencing**

The Contractor shall erect, maintain and remove suitable and approved temporary fencing to enclose such areas of the Permanent Works and areas of land occupied by the Contractor within the Site as may be necessary to implement his obligations under the Contract in approved manner. Where any temporary fence has to be erected alongside a road, footpath, or other public thoroughfare, it shall be of the type required by and shall be erected to the satisfaction of the Government authority concerned.

#### **1.11.2.4 Lighting**

In the event of night work being carried out, the Contractor shall provide sufficient lighting to ensure that in all places where work is in progress :

- a. safe working conditions are provided for the Contractor's personnel and the Engineer;
- b. the Works can be constructed in complete compliance with the Contract; and
- c. a complete inspection of all Works in progress can be made by the Engineer.

Unless otherwise directed by the Engineer, the minimum service illuminance on ground or working surfaces to be provided for the various operations or work areas shall be as tabulated below :

ILLUMINANCE		
OPERATION OR AREA	Design Value (Lux)	Minimum Measured Value (Lux)
Earthworks and Excavation	50	20
Temporary Bridge	20	10
Access and haul roads where cross traffic or other hazardous conditions exist	20	10
Building Construction Site	50	20
Concrete placing	100	50
Maintenance shops and Auxiliary Buildings	300	200
Underground Works	100	50

All moving equipment or plant used during night operations or in tunnels shall be equipped with sufficient lights and reflectors.

Not less than fourteen (14) days before the start of any night operations, the Contractor shall submit to the Engineer his proposals for lighting in the areas in which he proposes to work at night. The Contractor shall modify the proposals if directed and shall not begin operations at night, until the proposals for lighting have been approved.

The submission to or approval by the Engineer of the Contractor's proposals for lighting shall not relieve the Contractor of any of his liabilities or obligations under the Contract.

#### 1.11.2.5 Signs

The Contractor shall provide all necessary signs for the Works. These shall include, but not be limited to

- standard road signs;
- warning signs;
- danger signs;
- control signs;
- safety signs; and
- direction signs.

Wording on all signs shall be in the Indonesian language. The size, colour, lettering and location of all signs will be subject to approval, and attention shall be paid to international system of signs.

The Contractor shall maintain all signs placed by himself as well as those placed by the Employer.

If the Engineer considers that the system of signs provided by the Contractor is inadequate to ensure safety, or unsatisfactory in other respects, the Contractor shall add to, amend, or otherwise change the system to the satisfaction of the Engineer.

#### 1.11.2.6 Other Safety Measures

When working in the vicinity of electrical equipment and in the interest of safety and security, the Contractor shall complete the erection of any safety fencing around electrical and mechanical equipment by the time that the said apparatus is connected to any electrical supply.

- a. Explosives - in the use, handling and storage of explosives, the Contractor shall comply with the guidelines given in Clause 1.16.4 and with all statutory regulations of Indonesia, and the 'Safety Regulations for Sensitised Ammonium Nitrate Blasting Agents' (United States Department of the Interior, Bureau of Mines). The handling or use of explosives shall be discontinued during the approach and progress of a thunderstorm. All persons shall be removed from danger areas to a place of safety during such periods. The Contractor shall supply and install a suitable approved instrument to continuously measure atmospheric electric activity during blasting operation and to sound an alarm when such activity reaches danger levels.
- b. Use of Lasers - The use of lasers on the Site shall be done with due regard to eye hazard and all personnel working on the site shall be warned accordingly.
- c. Safety instructions - Within sixty (60) days of receiving the Letter of Acceptance, the Contractor shall, at his own cost, supply and issue to his employees, those of his subcontractors and the Engineer, in English, Bahasa Indonesia and in other languages used by his employees at the Site, a booklet containing safety regulations based on good practice. The booklet shall be pocket size and issued to each person employed at the Site. Proof copies of the booklet shall be submitted to the Engineer for approval before printing and amendments shall be made to the booklet to his entire satisfaction. The Contractor shall issue the booklet immediately after printing as required by this Clause and ensure that all employees are fully conversant with the instructions. Safety instructions shall deal with all safety including but not limited to the following items where relevant to the Works :
  - (i) protective clothing, headgear and footwear;
  - (ii) use of lifting equipment;
  - (iii) use and storage of explosives;
  - (iv) earthmoving;
  - (v) formwork and reinforcement erection;
  - (vi) concreting;
  - (vii) structural steelwork;
  - (viii) compressed air;
  - (ix) welding and painting;
  - (x) routine for accidents or fires; and
  - (xi) watchman, warning notices and barriers

(xii) electrical safety

The Contractors shall allow for ten (10) booklets in the English language for the use of the Engineer.

- d. Accident Report - The Contractor shall promptly report to the Engineer, in a form to be prescribed, all accidents involving death or serious injury to staff or workmen, and shall furnish monthly reports of all accidents to staff or workmen involving loss of time, giving such information as may be directed.

#### **1.11.2.7 Provision of Safety Equipment**

All persons employed on the Works are to be provided with safety equipment appropriate to the tasks upon which they are engaged such as helmets and safety equipment shall be compulsory as deemed necessary by the Engineer.

#### **1.11.2.8 Payment**

Separate payment will not be made for complying with the provisions of this Clause and all costs shall be deemed to be included in the rates and lump sum prices entered in the Bill of Quantities.

### **1.11.3 Sanitary Arrangements**

#### **1.11.3.1 Scope of Work**

The Contractor shall keep the Site in a clean and hygienic condition, and shall provide and maintain sanitary conveniences for use of the persons employed in the Works to the extent, in the manner and at such places as approved by the Engineer and by any Government health authority concerned. All persons connected with the Works shall be enjoined to use these conveniences.

The Contractor shall install, operate and maintain an adequate treatment process for disposal of sewage from all temporary buildings including houses, offices, camps, etc., to be constructed by the Contractor, and from all temporary toilet facilities at the Site. Sewage shall be disposed of in a hygienic manner. The Contractor shall post notices and take such other necessary precautions as may be necessary to keep the Site clean. The sewage treatment plant shall be subsequently removed upon completion of the Contract.

#### **1.11.3.2 Payment**

Separate payment will not be made for complying with the requirements of this Clause and all costs shall be deemed to be included in the item in the Bill of Quantities for Establishment.

### **1.11.4 Explosives and Fuels**

#### **1.11.4.1 General**

The Contractor shall make arrangement for the transportation, storage and handling of explosives and fuels in a safe manner to protect the public in accordance with the laws and security regulations of Republic of Indonesia.

The Contractor shall obtain all necessary licences and shall pay all fees and charges as may be necessary for moving explosives and fuels from place to

place and storing at the same. The Contractor shall prepare and file all applications and obtain the approvals from the authorities of the Government of Indonesia concerned.

The Contractor shall furnish and install an efficient warning system, such as, but not limited to sirens and signs, so that adequate warning may be given to all workers and the public endangered by the charging or firing the explosives. The Contractor shall ensure, prior the discharging an explosive, that the area to be blasted is clear of all residents, pedestrians, and vehicular traffic. In addition, he shall post all flagmen on each of the roads leading to the areas so as to stop and prevent any traffic and person from entering the area until the "all clear" notice is given.

Explosives shall be stored at a safe distance from the public areas, work areas and living quarters. The location of explosives magazines compound shall be as approved by the Engineer. The compound shall be surrounded with barbed wire and the magazine shall be protected by safety locks, shall be well-ventilated, and shall be fitted with lightning arresters. The explosive magazine shall be surrounded by earth dikes, if so required by safety regulations or directed by the Engineer, according to the location of the Site of the magazine. Adequate air space shall be provided between the ceiling and the roof to prevent internal room temperatures rising to dangerous levels. The Contractor shall not make use of any explosive without the approval of the Engineer. Approval by the Engineer shall not relieve the Contractor from any of his obligations and responsibilities for all blasting operations.

The Contractor shall keep a record of use of each kind of explosive, detonator and lead wire by preparing a daily record of warehousing, delivery and in-stock quantities, and shall report periodically to the Engineer as directed.

If electrical blasting is used, possible electric discharge in the ground due to thunderstorm, electric lines, electric motors, etc., shall be carefully observed. As soon as a discharge which could affect the safety level of detonators is noted or anticipated, electrical blasting operation shall be interrupted.

Above-ground gasoline and liquefied petroleum gas storage tanks shall not be located within the limits of the camp Site or closer than 1,000 meters to any building in the Site.

#### **1.11.4.2 Payment**

Separate payment will not be made for complying with the requirements of this Clause and all costs shall be deemed to be included in the item in the Bill of Quantities for Establishment.

#### **1.11.5 Fire Prevention**

##### **1.11.5.1 General**

The Contractor shall take every precaution to prevent fire occurring on or about the Site. The Contractor shall comply with the laws and regulations of the appropriate Government authority relating to fires and shall provide fire fighting equipment, which the Engineer considers to be suitable and adequate, ready to use in all structures, buildings or the works under construction, including his labour camps and ancillary buildings. The Contractor shall maintain such equipment and such additional fire fighting equipment as may be required, in good working condition until the Works are accepted by the Employer.

The Contractor shall extinguish promptly any fire which may occur on the Site wherever the fire may originate. In this regard, he shall employ all requisite equipment and manpower for fire fighting up to the limits of his equipment and manpower employed at the Site including the equipment and manpower of his subcontractors.

#### **1.11.5.2 Payment**

Separate payment will not be made for complying with the requirements of this Clause and all costs shall be deemed to be included in the various rates and lump sums entered in the Bill of Quantities.

#### **1.11.6 Earthing**

##### **1.11.6.1 General**

All appliance and facilities which are possibly subject to lightning strikes shall be electrically grounded and the effectiveness of such grounding shall be periodically checked by the Contractor.

##### **1.11.6.2 Payment**

Separate payment will not be made for complying with the requirements of this Clause and all costs shall be deemed to be included in the various lump sums and rates entered in the Bill of Quantities.

#### **1.11.7 Medical and Health Services**

##### **1.11.7.1 General**

- a. The Contractor shall make his own arrangement on the Site for treatment of casualties in a first aid unit in conformity with the requirement of all duly constituted medical and health authorities. The Contractor shall provide such first aid units and shall be responsible for and bear all costs in connection with the first aid services including removal by ambulance of injured or sick employees to hospital in Semarang or other places.
- b. The Contractor shall provide first aid services for the Employer's and Engineer's staff and the Consultant's staff working on the Site.

##### **1.11.7.2 Payment**

Separate payment will not be made for medical and health facilities provided by the Contractor for his employees, for his subcontractors and the Employer's and Engineer's staff, as required by this Clause, and all costs shall be deemed to be included in the various rates and lump sums entered in the Bill of Quantities.

#### **1.11.8 Security**

##### **1.11.8.1 Responsibility of the Contractor**

The Contractor shall be responsible for the security of the Works and the and shall provide and maintain continuously and adequate security force to fulfil these obligations. The duties of the Contractor's security force shall include, but not be limited to, maintenance of order on the Site, provision of all lighting, fencing, guards, flagmen, all other measures necessary for the protection of the Works within the Site, all material delivered to the Site, the

public, and all persons employed in connection with the Works, continuously throughout working and non-working periods, including nights, Sundays and holiday, for the duration of the Contract.

#### **1.11.8.2 Payment**

Separate payment will not be made for the provisions of security services and all costs shall be deemed to be included in the various rates and lump sum prices entered in the Bill of Quantities.

### **1.12 OTHER ITEMS**

#### **1.12.1 Information Board**

The Contractor shall provide a free-standing board for the purpose of providing information about the project to the public. The board shall be not less than 2 m x 1.5 m. The information to be displayed and the location shall be directed by the Engineer. The design of the display and the supporting structure shall be subject to the Engineer's approval.

#### **1.12.2 Securities and Insurance**

##### **1.12.2.1 Performance Security and Advance Payment Security**

The Contractor shall furnish an Advance Payment Security and a Performance Security and in accordance with Sub-Clauses 60.7 and 10.1 of the Conditions of Contract to ensure the refund of the Advance Payment and for the due performance of the Contract respectively.

##### **1.12.2.2 Insurance**

The Contractor shall effect certain insurances relating to the Contract in accordance with the Conditions of Contract. In handling compensation to workmen under the above Clauses, the Contractor shall arrange that any compensation amount determined shall be paid without delay by the Contractor to the workmen entitled to such compensation irrespective of the time for payment of insured amount from the Insurance company to the Contractor.

##### **1.12.2.3 Payment**

Separate payment will not be made for complying with this Clause and the Conditions of Contract and all costs shall be deemed to be included in the rates and lump sums for the various items entered in the Bill of Quantities.

#### **1.12.3 Audits by the Employer**

##### **1.12.3.1 General**

The Employer shall be entitled at his discretion to conduct audits as necessary for his own investigation in connection with :

Costs incurred in the event of termination of the Contract as provided in Clause 66 and 67 of the Conditions of Contract;



Other costs that the Contractor may claim to the Employer, which are not specifically covered by the terms of the Contract; and

Technical audits as referred to in sub Clause 1.6.2 in connection with the right of the Employer to conduct independent testing authorised under Keputusan Menteri Pekerjaan Umum, Nomor 22/229/KPTS/1999, dated 13 July 1999.

#### **1.12.3.2 Records**

The Contractor is obligated to keep accurate and up-to-date accounts and records concerning the above items.

#### **1.12.3.3 Payment**

Separate payment will not be made for complying with the requirements of this Clause and all costs shall be deemed to be included in the rates and lump sums entered in the Bill of Quantities.

#### **1.12.4 Liquidated Damages**

##### **1.12.4.1 Amount of Liquidated Damages**

If the Contractor should fail to complete the Works within the Time of Completion as stated in the Appendix to Bid, the Contractor shall pay to the Employer liquidated damages pursuant to Clause 47 of the Conditions of Contract.

##### **1.12.4.2 Maximum Damages**

The maximum amount of liquidated damages payable or allowable to the Employer will be limited to the amount stated in the Appendix to Bid.

##### **1.12.4.3 Other Rights of the Employer**

Nothing contained in this Clause shall prejudice or affect any other rights of the Employer under the Contract.

#### **1.12.5 Monthly Statement**

##### **1.12.5.1 General**

The Contractor shall submit a monthly statement in accordance with the requirements of Clause 42 of the Conditions of Contract. The monthly statement shall be accompanied by copies of all survey notes, records of measurements and calculation which the Engineer has directed to be prepared by the Contractor in support of the amounts claimed for the claimed for the work executed.

##### **1.12.5.2 Payment**

All costs associated with the submission of the monthly statement shall be deemed to be included in the rates and lump sum prices entered in the Bill of Quantities.

#### **1.12.6 Hours and Days of Working**

Before commencement of work on the Contract, the Contractor shall notify the Engineer, in writing, of the days, hours and of the number of shifts that

he proposes to work and shall give at least 48 hours notice to the Engineer of any changes to such hours of working and/or number of shifts that may be necessary during the currency of the Contract.

The Contractor shall not carry out blasting work at the quarry site between sunset and sunrise without the prior written approval of the Engineer.

### **1.12.7 Prevention of Water Pollution**

#### **1.12.7.1 Scope**

The Contractor's construction activities shall be performed by methods that prevent entrance or accidental spillage of solid matter, contaminants, debris and other objectionable pollutants and wastes into streams, flowing or dry water courses and underground water sources. Such pollutants and wastes include but not restricted to refuse, garbage, cement, concrete, sewage effluent, industrial waste, oil and other petroleum products. The Contractor shall submit his plan showing the location and design of the water pollution prevention systems and facilities to the Engineer for approval.

#### **1.12.7.2 Payment**

Separate payment will not be made for complying with the provisions of this Clause, and the costs shall be deemed to be included in the rates and lump sum prices entered in the Bill of Quantities.

### **1.12.8 Soil Conservation**

#### **1.12.8.1 Prevention of Erosion**

The Contractor shall take all necessary precautions to prevent the erosion of soil from any lands used or occupied by him of the bed or banks of any river or stream and the deposition of excavated or eroded material in any river or stream that may result from the execution of the Works.

#### **1.12.8.2 Payment**

Separate payment will not be made for complying with the provisions of this Clause, and the costs shall be deemed to be included in the rates and lump sum prices tendered in the Bill of Quantities.

### **1.12.9 Noise Control**

#### **1.12.9.1 Noise Level Limitations**

The Contractor shall conduct all his operations such that noise levels created are within the limits stated in the decree of the State Minister of Environment Nomor : Kep – 48/Men LH/1996, dated 25/10/96.

#### **1.12.9.2 Payment**

Separate payment will not made for complying with the provisions of this Clause, and the costs shall be deemed to be included in the rates and lump sum prices entered in the Bill of Quantities.

## **1.12.10 Royalties**

### **1.12.10.1 General**

The Contractor shall be required pay for royalties to the land owner for all material removed from the designated quarry site.

The Contractor shall not be required to pay royalties on materials excavated from any area within the Site, except for the quarry as noted above.

If the Contractor proposes to use alternative sources of rock and earth materials he shall ascertain whether royalties are payable before submitting his proposal for approval and, if applicable, pay royalties to the local authority, land owner or other person as the case may be.

### **1.12.10.2 Payment**

Separate payment will not made for complying with the provisions of this Clause, and all costs of royalties shall be deemed to be included in the rates and lump sum prices in the Bill of Quantities.