

Contract No.....



(i)

Tender #.....

CONTRACT No.

**FOR THE PREPRATORY WORK OF IRRIGATION REHABILITATION
WORKS**

Within the framework of

.....

BETWEEN

**THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED
NATIONS**

&

M/S.....

Contract No..... (ii)

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THIS CONTRACT FOR THE provision of works & Services within the framework of: OSRO/PAK/502/JPN.....

BETWEEN:

The Food and Agriculture Organization of the United Nations (“FAO”), an intergovernmental organization established on 16 October 1945 as a Specialized Agency of the United Nations, having its headquarters in Rome, Italy, and having an office in (Pakistan);

AND: M/s

....., a corporation organized and existing under the laws of (Pakistan) and having its principal offices at (Peshawar, Pakistan) (the “Contractor”);

FAO and the Contractor / Consultant are hereinafter collectively referred to as the “Parties”;

WHEREAS:

A. FAO, in accordance with its Constitution, cooperates with governments, civil society organizations and other partners, to alleviate poverty and hunger by promoting agricultural development, improved nutrition and the pursuit of food security.

B. FAO wishes to procure the works within the framework of the

In support of project as described in the Contract.

C. By Invitation to Bid (ITB) No. dated, FAO invited proposals for the provision of services works for the rehabilitation of irrigation channels and water control and harvesting structures in Bara, Khyber Agency, FATA

By bid received on, the Contractor responded to ITB No., representing that it is qualified, capable and willing to provide the required works.

D. FAO wishes to engage the Contractor / Consultant to undertake the works, all on the terms and conditions set forth in this Contract; and the Contractor / Consultant represents that it is willing to carry out the works on the same terms and conditions.

NOW, THEREFORE, the Parties hereto mutually agree as follows:

SECTION I: SPECIAL PROVISIONS

ARTICLE 1 – CONTRACTOR’S PERFORMANCE

- 1.1 The Contractor / Company shall provide the ~~construction works, hereinafter referred to as the “Works”, and perform the~~ services as set out in the “**Statement of Works, Terms of Reference Services and Specifications**” and “**Bill of Quantities**”, attached hereto as **Annex I**, and **Annex II** respectively, it being understood that such works, services ~~and technical specifications~~ are deemed to include those which, while not specifically provided for in the said **Annexes I** and **II**, are implied by generally accepted usages and standards of the trade and industry.
- 1.2 The Contractor / Company is responsible, for the purpose of carrying out its obligations set out in paragraph 1.1 above, for providing at its own cost at the site(s) specified in **Annex I**, all necessary, plans, machinery, equipment, supplies, parts, tools, building materials, and employees, ~~and for executing all necessary construction, erection and installation, except for such designs, drawings, plans, machinery, equipment, supplies, parts, tools, building materials, employees, construction, erection and/or installation which may be provided and/or executed by FAO as set out in Article 3 below.~~
- 1.3 The Contractor / Company is also responsible for obtaining at its own cost all authorizations, licenses and permits which are required to perform this Contract according to the laws, decrees or regulations of the country (FATA) , by the deadline(s) for the activity specified in the Schedule of Contract Performance mentioned in Article 2 below.

ARTICLE 2 – SCHEDULE OF CONTRACT PERFORMANCE

- 2.1 This Contract becomes effective upon its signature by both Parties.
- 2.2 The Contractor / Company shall execute this Contract in accordance with the “**Schedule of Contract Performance**”, attached hereto as **Annex III**.
- 2.3 The Contractor shall commence the Works on the site(s) mentioned in **Annex I** within the period specified in the written order to this effect of FAO’s ~~Irrigation Engineer Resident Engineer, hereinafter referred to as the “Resident Engineer”~~, subject to receipt by the Contractor of the relevant authorizations, licenses and permits mentioned in Article 1.3 above if required.
- 2.4 The Contractor / Company shall submit to ~~the Site Engineer Irrigation Department and copy to~~ the FAO Irrigation Engineer / Water Management Expert for his/her approval within a week of the date of signature of this Contract by both Parties a detailed work programme showing the planning of the execution of the Works by the deadlines specified for them in **Annex III**, together with full details of the employees and labourers and of the equipment, materials and supplies the Contractor / Company intends to assign to the execution of the Services Works.
- 2.5 The FAO Irrigation Engineer / Water Management Expert is authorized to approve extensions of any of the deadlines mentioned in **Annex III** except if they are caused by circumstances for which, in his/her opinion, the Contractor / Company is responsible.

ARTICLE 3 – PARTICIPATION OF FAO

3.1 ~~The Contractor has entered into this Contract in reliance upon FAO’s undertaking to provide certain services and facilities as set out in Annex IV: “Services and Facilities provided by FAO”.~~

~~3.2 In the event that for any reason the services and facilities set out in Annex IV are not made available, the Contractor shall immediately advise the Contract Managers mentioned in Article 21 below and notify the FAO Representative, it being understood that the Contractor shall not incur expenditures beyond those authorized in this Contract to obtain the said services and facilities without the written approval of the latter. ARTICLE 4 – FAO’S FINANCIAL LIABILITY~~

4.1 FAO’s financial liability under this Contract is limited to a lump sum amount of:

USD (137,257.....)

~~Being the total amount of the “Bill of Quantities”, attached hereto as Annex II.~~

4.2 It is understood that in calculating the amount mentioned in Article 4.1 above the Contractor exercised appropriate professional judgement and has given full consideration to working conditions in the area countries of Contract execution, including the conditions of the construction site(s), to the participation in the performance of this Contract by FAO, as specified in Article 3 above, as well as to the availability of all relevant information and data required for the execution of this Contract. Therefore, the Contractor shall under no circumstances be entitled to any payments in excess of the total amount of FAO’s financial liability as determined in Article 4..

~~NA NA4.4 FAO and the Contractor agree that the prices set out in Annex II of this Contract are firm and will not be increased under any circumstances except as provided for in Article 4.2 above.~~

ARTICLE 5 – SCHEDULE AND METHOD OF PAYMENT

5.1 In full consideration of the Works executed by the Contractor, FAO will effect payments to the Contractor, subject to the deduction of the Liquidated Damages mentioned in Article 6 below, if any, in accordance with the provisions of the “Schedule and Method of Payment”, attached hereto as Annex V.

5.2 Any payment by FAO is subject to receipt at the Office of the FAO Representation of the following documents:

5.2.1 one (1) copy of this Contract, duly signed by the Contractor;

5.2.2 Original invoices corresponding to the works provided by the Contractor under this Contract as per conditions set out in Annex V.

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Comment [F1]: NA

Comment [F2]: NA

5.3 The Contractor / Company shall reimburse FAO in the currency of original payment or in a mutually agreed currency:

5.3.1 Overpayments made by FAO;

5.3.2 Costs incurred by FAO for the procurement of alternative services due to the Contractor's default.

5.4 The Contractor / Company shall be liable for any changes occurring in the cost of materials and labor during the contracted period.

5.5 The Organization will endeavor to effect payment of the invoices submitted in accordance with Annex V, within thirty (30) calendar days of the date of their receipt. ~~(After deduction of 10% retention from each invoice which will be paid finally after rendering of the work concerning liability period of the contract) but shall under no circumstances be liable to pay interest on amounts not paid within such period. 50% will be released at the signature (without reservations) of the DLP Certificate after rendering of the work concerning liability period of the contract stating the quantity of Works completed, accepted and duly certified by the FAO Water Expert and FAO's Contract Manager mentioned in Article 20.1 of Section I and/or FAO Representative or Authorized FAO Officer, at the office mentioned in paragraph 5 below, up to a total amount not exceeding:~~

USD ~~(137,257.....)~~

ARTICLE 6 — LIQUIDATED DAMAGES

~~As provided for in Section II, Article 6.5, the Parties agree that FAO may withhold from any payments due to the Contractor an amount equal to two point five percent (2.5%) of the amount specified in Article 4.1, above as liquidated damages for each week of delay in the completion of part or all of the Works, as certified by the Resident Engineer, beyond the deadlines specified for them in Annex III, provided however, that such liquidated damages shall not in any case exceed ten percent(10%) of the total Contract amount and it being understood that the withholding by FAO of the said amount(s) does not in any way constitute a waiver by FAO of its rights under Section II, Article 6 of this Contract.~~

Comment [F3]: NA

ARTICLE 7 — INSURANCE

~~7.1 — Before commencing the execution of the Works and without prejudice to the relevant provisions of Section II of this Contract, the Contractor shall insure against its liability for any material or physical damage, loss or injury from whatever cause which may occur to any property, including that of FAO as well as the Works themselves, or to any person, including any employee of FAO arising from the execution of this Contract.~~

~~7.2 — If the Contractor fails to effect and keep in force the insurances referred to in Article 8.1 above, FAO may effect and keep in force any such insurance and pay such premium or~~

~~premiums as may be necessary for that purpose and from time to time deduct the amount so paid by FAO from any moneys due or which may become due to the Contractor or recover the same as a debt from the Contractor.~~

~~7.3 The Contractor shall immediately notify the Resident Engineer of any accident arising from the execution of the Contract and shall provide full particulars thereof, it being understood that the Contractor shall be solely responsible for lodging claims with the insurance company (ies) concerned.~~

~~7.4 The Contractor shall submit to the Resident Engineer the receipts of paid premiums whenever so requested during the period of construction and shall forward, prior to taking possession of the construction site(s), the policy (ies) of the insurance(s) required by this Article for approval to:~~

.....
Food and Agriculture Organization of the United Nations

Comment [F4]: NA

ARTICLE 8 – CONTRACTOR’S / Company RESPONSIBILITY FOR EMPLOYEES

8.1 The Contractor / Company shall provide all necessary employees and shall be fully responsible for their employment, work permits, payment and administration in strict conformity with all relevant laws and regulations, including laws relating to their employment, health, safety, welfare, immigration and emigration, and shall allow them all their legal rights.

8.2 The Contractor / Company shall be responsible for the professional and technical competence of its employees and will select reliable individuals who will perform effectively in the Contract’s implementation, respect the local customs, and conform to a high standard of moral and ethical conduct. The Contractor’s employees working on FAO’s premises / sites will comply with FAO’s rules, policies, and procedures regarding conduct, and security.

ARTICLE 9 –SUPERVISION OF THE EXECUTION OF THE WORKS

9.1 Supervision of the execution of the Works ~~to be done by a separate Contractor~~ under this Contract ~~will be is~~ the responsibility of the ~~Contrator / Company~~Irrigation Department FATA and overall supervision of FAO Irrigation Engineer / Water Expert or his/her duly authorized representative. The Irrigation Engineer / Water Expert shall generally carry out such duties in issuing decisions, certificates and orders as are required for the satisfactory execution of the Works and services. It is understood, however, that the Work Execution Contractor shall promptly request the ~~Company~~Irrigation Department Site Engineer and FAO Irrigation Engineer / Water Expert to provide such instructions or guidance as may be necessary or lacking and that failure to seek such instructions or guidance does not constitute a valid reason for delays in the execution of the Works or for an execution not in accordance with the Contract specifications or the standards of the trade and industry.

9.2 The duties and powers of the FAO Irrigation Engineer / Water Expert are set out in the

“Statement of Duties and Powers of the ~~Irrigation Resident~~ Engineer”, attached hereto as Annex VI, it being understood that any modification of the specifications of the Works or of approved final designs or drawings or plans related thereto, or any modifications of the provisions of this Contract which may result in additional costs to FAO, do not commit FAO without the written approval of the FAO Representative to increase FAO’s financial liability as determined in Article 4.1 above.

ARTICLE 10- WORK QUALITY

- 10.1 The Contractor / Company –shall guarantee the quality of work and services its workmanship–and follow all instructions given by the ~~Site Engineer Irrigation Department its staff and~~FAO Irrigation Engineer /–Water Expert, shall select qualified skilled persons and personnel with competence and experience, shall make use of required engineering tools and equipments for ensuring work quality and services. construction materials of quality in accordance with the technical specifications.
- 10.2 ~~The Water Expert/and Site Engineer Irrigation department or its staff has the right to order the Contractor to remove or demolish any elements which fail to meet required standard or which the Contractor has concealed or covered before inspection. Cost for demolition and reconstruction shall be borne by the Contractor.~~

Comment [F5]: NA

ARTICLE 11 –INSPECTION OF THE CONSTRUCTION SITE

- 11.1 The Contractor’s bid is deemed to have been formulated after having inspected the site(s) and having obtained all necessary information as to risks, contingencies and other circumstances which may influence or affect the execution of this Contract.
- 11.2 In particular, and without limiting the generality of the foregoing, the Contractor is deemed to have taken full account of the following:
 - 11.2.1 Existing buildings, construction works, cables, pipes, trees, plants, shrubs, etc.;
 - 11.2.2 Surface and sub-surface conditions, load-bearing capacity of the soil, the existence of rocks, etc.;
 - 11.2.3 The presence and nature of surface and subsurface water and modification of such hydrological conditions which might result from construction works;
 - 11.2.4 Drops or gradients and slopes;
 - 11.2.5 Meteorological and climatic conditions;
 - 11.2.6 means of access to the site;
 - 11.2.7 Availability of necessary water and electricity;
 - 11.2.8 Availability of adequate space for the storage of construction materials.

Comment [F6]: NA

ARTICLE 12 – ORGANIZATION OF THE CONSTRUCTION SITE

12.1 The Contractor shall take all measures necessary for FAO of the construction site(s), at its own cost, including, but not necessarily limited to, the following:

12.1.1 the establishment of footpaths and builders’ roads, which may be freely used by the Resident Engineer and his/her authorized agents or assistants and such other enterprises or firms as may be called upon to assist in construction works on the same site;

12.1.2 The setting out of the channels which entails the use of alignments and levelling;

12.1.3 The availability of water for construction works, drinking water, and electricity for the construction works;

12.1.4 The provision of fencing, lighting, signposts, cleaning, night-watchman services and repairs of the construction site;

12.1.5 The renting of additional space for the storage of construction equipment, materials and related implements for the Works if the construction site is inadequate for such purposes.

12.2 The Contractor shall take all such measures as are necessary to prevent the occurrence of accidents caused or occasioned by the execution of the Works. The Contractor is responsible for any accident or damage caused to persons, property, public and private roads and highways and constructional work arising from the transport of machinery or equipment, building materials and supplies.

12.3 For the duration of the construction works, the Contractor shall ensure that no unnecessary interference with traffic is caused by operations necessary for the execution of the Works.

12.4 The construction site shall be adequately provided with signposts and warning signals, both by day and by night. The plan of signs and signals envisaged for the site requires the prior approval of the Resident Engineer before their installation.

12.5 Such costs as may be incurred by the Contractor in implementing the provisions of this Article are borne by the Contractor.

12.6 The Contractor shall permanently keep on each site, all such instruments, tools and equipment as may be required by the Supervision staff for the testing of materials and samples at the cost of the Contractor.

12.7 Failure by the Contractor to observe the provisions of Article 13.6 above shall entitle the Site Engineer or FAO Water Expert to purchase such instruments or equipment as may be necessary and the cost thereof shall be deducted from sums due to the Contractor.

Comment [F7]: NA

ARTICLE 13 – PRESENCE OF THE CONTRACTOR ON THE CONSTRUCTION SITE

- 13.1 Within 7 days of signature of this Contract by the Parties, the Contractor shall submit to the ~~Site Engineer~~ Irrigation ~~Engineer~~ FAO -Department/ FAO Water Expert, for approval, the designation of its representative who shall be empowered to conduct the execution of the Works and represent the Contractor in relations with the FAO and Site Contractor~~Water Expert/Irrigation Supervision Staff~~. The designation of a representative by the Contractor shall not relieve the Contractor of its obligations under the present Contract.
- 13.2 The Contractor or its representative shall attend all meetings convened by ~~the Department Site Engineer or its staff~~/FAO Irrigation Engineer Water Expert on the construction site. The Contractor’s representative shall be empowered to provide the necessary instructions forthwith to the Contractor’s employees.

ARTICLE 14 – CONSTRUCTION SITE LOGBOOK

- 14.1 On each construction site, the Contractor shall maintain a logbook for the recording, upon each visit to the site, and at least on a biweekly basis, of the following:
 - 14.1.1 Deliveries to the construction site of machinery, equipment, consntruction materials and supplies;
 - 14.1.2 Quantities of work executed and quantities of materials and supplies employed therefore;
 - 14.1.3 Decisions, instructions, observations and recommendations of the Resident Engineer;
 - 14.1.4 Important facts or events which are likely to influence the progress of the Works;
 - 14.1.5 Presence of construction equipment, tools, vehicles and labor.
- 14.2 The Resident Engineer shall provide the Contractor with the necessary guidance for maintaining the logbook which should have two detachable copies for each original page.
- 14.3 The site logbook shall be made available to the Resident Engineer upon his/her request and should, therefore, be kept permanently on the site. Upon completion of the Works the logbook shall be handed over to the Resident Engineer.

ARTICLE 15 –CERTIFICATE OF COMPLETION OF WORKSAND PROVISIONAL ACCEPTANCE

- I. 15.1 When the whole of the Works is substantially completed in accordance with the provisions of this Contract, the Contractor may give notice to that effect in writing to the Department Site Engineer/FAO Water Expert. Within 7 days of the receipt of such notice, the FAO Water Expert shall either issue a Certificate of Completion of Works, stating the date on which the Works were so completed, or give the Contractor instructions in writing stating all Works which, in the opinion of the Site Engineer/ FAO Water Expert , have to be completed by the Contractor before the issuance of such Certificate, according to the

conditions set forth in **Annex VII: “Draft Certificate of Completion of Works”**.

15.2 The date of completion of the Works stated in the Certificate of Completion of Works is the operative date for the computation of delays and liquidated damages where necessary and of the beginning of the Defects Liability Period mentioned in Article 18 below.

ARTICLE 16 – CLEARANCE OF SITE ON COMPLETION OF WORKS

Within 7 days of completion of the works, the Contractor shall clear away and remove from the site(s) all surplus materials, rubbish and temporary works of every kind and leave the whole of the site(s) and works clean and in a workmanlike condition to the satisfaction of the Site Engineer/FAO Water Expert. Failure by the Contractor to clean the site will cause FAO to do so at the expense of the Contractor.

ARTICLE 17 – HANDOVER CERTIFICATE

Upon satisfactory acceptance of the execution and completion of the works referred to in Article 16 above, FAO relinquishes control of the site and returns all responsibilities to the (*Name of government entity receiving the works*) by means of the signature of the Handover Certificate which should be drafted in accordance with the text of **Annex VIII: “Draft Handover Certificate”**.

ARTICLE 18 – CERTIFICATE OF DEFECTS LIABILITY PERIOD AND FINAL ACCEPTANCE

18.1 For the purpose of this Contract, “Defects Liability Period” means a period of 3 months (90 days) as from the date of completion of the Works stated in the Certificate of Completion of Works mentioned in Article 16 above.

18.2 During the Defects Liability Period the Contractor shall execute, at its own cost, all repairs, reconstructions, rectifications and/or make good all defects of the Works, fair wear and tear excepted, which are required in writing by the Resident Engineer and are, in his/her opinion, attributable to circumstances for which the Contractor is responsible.

18.3 Upon completion of the Defects Liability Period, the FAO Water Expert issues a Certificate of Defects Liability Period on the recommendation of the irrigation supervision staff stating that the Works, except for fair wear and tear, have been completed and repaired to his/her satisfaction. If the Water Expert decides that he/she is unable to issue the Certificate of Defects Liability Period, the Contractor shall complete, as soon as possible and at its own cost, all such repairs as may be required in writing by the Resident Engineer. If repairs are carried out by the Contractor during the Defects Liability Period the Water Expert on the recommendation of the irrigation supervision staff decides whether a new Defects Liability Period of (2 months if required) days shall commence as from the date of completion of such repairs as certified by the irrigation supervision staff and Water Expert.

18.4 “Defects” as used in this Article shall mean any deficiency, omission, imperfection, error, flaw, shrinkage or other fault in the quality of the Works, fair wear and tear excepted.

18.5 The Certificate of Defects Liability Period shall generally follow the text of the “**Draft**

Certificate of Defects Liability Period” attached hereto as **Annex IX**.

ARTICLE 19 – SUBCONTRACTORS

19.1 The Contractor shall not subcontract part of the Works to other companies except in special cases where the particular work requires expertise and technical skills, which cannot be performed by the Contractor. In this case, the Contractor shall submit the names and profile (or past experiences) of the subcontracted company, indicated in **Annex X: “Statement of Subcontractors”**, to the FAO Water Expert for consideration and final approval by FAO. FAO shall approve only if the said company meets requirements for subcontracting the particular work.

19.2 The Contractor shall perform its obligation to FAO and be responsible for the quality of the work assigned including all negligence, which may be caused by the subcontractor due to its misbehaviour or by that of its employees.

Comment [F8]: NA

ARTICLE 20–DESIGNATION OF THE CONTRACT MANAGERS

For the purpose of the performance of this Contract, the following persons have been designated by the Parties to represent them as far as their own individual competence and qualifications are concerned. It is understood that any decisions by such Contract Managers which would increase or decrease FAO’s financial liability as set out in Article 4.1 above will only be binding on FAO if they are the subject of a formal amendment to this Contract, duly signed by the FAO Representative.

20.1 FAO has designated as its Contract Manager the following person/s:

Mian Ziauddin, Water Expert FAO Peshawar Office.....

20.2 The Contractor has designated as its Contract Manager the following person/s:

.....

ARTICLE 21 – PUBLICATION OF CONTRACT AWARDS

FAO reserves the right to publish the Contractor’s name and country, the total Contract value and a brief description of the works or services provided under this Contract.

ARTICLE 22– CONTRACT DOCUMENTS

Only and exclusively the documents set out below are considered to be an integral part of this Contract:

22.1 Sections **I** and **II** consisting of pages 1 through 32; *and*

22.2 **Annexes I** through **XI**.

SECTION II – STANDARD PROVISIONS

ARTICLE 1 – LEGAL STATUS OF THE PARTIES

- 1.1 Pursuant, *inter alia*, to the FAO Constitution and the Convention on the Privileges and Immunities of the Specialized Agencies, FAO has full juridical personality and enjoys such privileges and immunities as are necessary for the independent fulfillment of its purposes.
- 1.2 The Contractor shall have the legal status of an independent contractor *vis-à-vis* FAO, and it shall be fully responsible, in particular, for the acts or omissions of its personnel, agents, or other representatives. Nothing contained in or relating to the Contract shall be construed as establishing or creating between the Parties the relationship of employer and employee or of principal and agent. The officials, representatives, employees, or subcontractors of each of the Parties shall not be considered in any respect as being the employees or agents of the other Party.

ARTICLE 2 – RESPONSIBILITY FOR EMPLOYEES

To the extent that the Contract involves the provision of any services to FAO by the Contractor’s officials, employees, agents, servants, subcontractors and other representatives (collectively, the Contractor’s “personnel”), the following provisions shall apply:

- 2.1 The Contractor shall be responsible for the professional and technical competence of the personnel it assigns to perform work under the Contract and will select reliable and competent individuals who will be able to effectively perform the obligations under the Contract and who, while doing so, will respect the local laws and customs and conform to a high standard of moral and ethical conduct.
- 2.2 Such Contractor personnel shall be professionally qualified and, if required to work with officials or staff of FAO, shall be able to do so effectively. The qualifications of any personnel whom the Contractor may assign or may propose to assign to perform any obligations under the Contract shall be substantially the same, or better, as the qualifications of any personnel originally proposed by the Contractor.
- 2.3 At the option of and in the sole discretion of FAO:
 - 2.3.1 The qualifications of personnel proposed by the Contractor (*e.g.*, curriculum vitae) may be reviewed by FAO prior to such personnel’s performing any obligations under the Contract;
 - 2.3.2 Any personnel proposed by the Contractor to perform obligations under the Contract may be interviewed by qualified staff or officials of FAO prior to such personnel’s performing any obligations under the Contract; *and*,
 - 2.3.3 In cases in which, pursuant to Articles 2.3.1 or 2.3.2, above, FAO has reviewed the qualifications of such Contractor’s personnel, FAO may reasonably refuse to accept any such personnel.

- 2.4 Requirements specified in the Contract regarding the number or qualifications of the Contractor’s personnel may change during the course of performance of the Contract. Any such change shall be made only following written notice of such proposed change and upon written agreement between the Parties regarding such change, subject to the following:
 - 2.4.1 FAO may, at any time, request, in writing, the withdrawal or replacement of any of the Contractor’s personnel, and such request shall not be unreasonably refused by the Contractor.
 - 2.4.2 Any of the Contractor’s personnel assigned to perform obligations under the Contract shall not be withdrawn or replaced without the prior written consent of FAO, which shall not be unreasonably withheld.
 - 2.4.3 The withdrawal or replacement of the Contractor’s personnel shall be carried out as quickly as possible and in a manner that will not adversely affect the performance of obligations under the Contract.
 - 2.4.4 All expenses related to the withdrawal or replacement of the Contractor’s personnel shall, in all cases, be borne exclusively by the Contractor.
 - 2.4.5 Any request by FAO for the withdrawal or replacement of the Contractor’s personnel shall not be considered to be a termination, in whole or in part, of the Contract, and FAO shall not bear any liability in respect of such withdrawn or replaced personnel.
- 2.5 Nothing in Articles 2.2, 2.3 and 2.4above, shall be construed to create any obligations on the part of FAO with respect to the Contractor’s personnel assigned to perform work under the Contract, and such personnel shall remain the sole responsibility of the Contractor.
- 2.6 The Contractor shall be responsible for requiring that all personnel assigned by it to perform any obligations under the Contract and who may have access to any premises or other property of FAO shall:
 - 2.6.1 Undergo or comply with security screening requirements made known to the Contractor by FAO, including but not limited to, a review of any criminal history;
 - 2.6.2 When, within FAO premises or on FAO property, display such identification as may be approved and furnished by FAO security officials, and that upon the withdrawal or replacement of any such personnel or upon termination or completion of the Contract, such personnel shall immediately return any such identification to FAO for cancellation.
- 2.7 Within one (1) working day after learning that any of Contractor’s personnel who have access to any FAO premises have been charged by law enforcement authorities with an offense other than a minor traffic offense, the Contractor shall provide written notice to inform FAO about the particulars of the charges then known and shall continue to inform FAO concerning all substantial developments regarding the disposition of such charges.

2.8 All operations of the Contractor, including without limitation, storage of equipment, materials, supplies and parts, within FAO premises or on FAO property shall be confined to areas authorized or approved by FAO. The Contractor’s personnel shall not enter or pass through and shall not store or dispose of any of its equipment or materials in any areas within FAO premises or on FAO property without appropriate authorization from FAO.

ARTICLE 3 –ASSIGNMENT

3.1 The Contractor may not assign, transfer, pledge or make any other disposition of the Contract, of any part of the Contract, or of any of the rights, claims or obligations under the Contract except as may be provided for in this Contract or with the prior written authorization of FAO. Any such unauthorized assignment, transfer, pledge or other disposition, or any attempt to do so, shall not be binding on FAO. Any assignment by the Contractor which is not authorized by FAO will be void and FAO reserves the right in such case, without prejudice to other rights or remedies, to terminate the Contract without liability effective upon the Contractor’s receipt of notification of termination. Except as permitted with respect to any approved subcontractors, the Contractor shall not delegate any of its obligations under this Contract, except with the prior written consent of FAO. Any such unauthorized delegation, or attempt to do so, shall not be binding on FAO.

3.2 The Contractor agrees that FAO may, at its discretion, assign, transfer, pledge, or make other disposition of this Contract or any part hereof, or any of FAO’s rights or obligations under this Contract upon written notification within a reasonable period of time either prior to or following such assignment, transfer, pledge or subcontracting arrangement.

ARTICLE 4 – SUBCONTRACTING

In the event that the Contractor requires the services of subcontractors to perform any obligations under the Contract, and except as may be provided for in this Contract, the Contractor shall obtain the prior written approval of FAO. FAO shall be entitled, in its sole discretion, to review the qualifications of any subcontractors and to reject any proposed subcontractor that FAO reasonably considers is not qualified to perform obligations under the Contract. The approval by FAO of a subcontractor shall not relieve the Contractor of any of its obligations under this Contract. FAO shall have the right to require any subcontractor’s removal from FAO premises without having to give any justification therefor. Any such rejection or request for removal shall not, in and of itself, entitle the Contractor to claim any delays in the performance, or to assert any excuses for the non-performance, of any of its obligations under the Contract, and the Contractor shall be solely responsible for all services and obligations performed by its subcontractors. The terms of any subcontract shall be subject to, and shall be construed in a manner that is fully in accordance with, all of the terms and conditions of the Contract. The essential terms set out in Article 26 below shall be included in all subcontracting arrangements entered into under this Contract.

ARTICLE 5 –EXAMINATION AND ACCEPTANCE

5.1 FAO reserves the right to examine the equipment, materials and supplies and/or assess the services provided under this Contract, at any time prior to the expiry of this Contract. Without any additional charge, the Contractor shall provide all facilities for the

examination and all necessary support to ensure that examinations can be performed in such a manner as not to unduly delay delivery.

- 5.2 In case of rejection by FAO of the equipment, materials, supplies and/or services provided, a new review may be carried out by the representatives of both FAO and the Contractor, if promptly requested by the Contractor and before FAO exercises any legal remedies. The Contractor shall bear the expenses of such a review.
- 5.3 If this Contract specifically requires the Contractor to procure equipment, materials or supplies on behalf of FAO, such procurement shall be of new equipment, materials or supplies unless procurement of used equipment, materials or supplies is approved in advance in writing by FAO.

ARTICLE 6 – DELAYS AND DEFAULTS

- 6.1 If there should be any delay in the performance of this Contract or any part thereof, the Contractor shall notify FAO in writing giving the cause, such notification to reach FAO no later than ten (10) days after the date on which the delay is known by the Contractor.
- 6.2 If the Contractor is unable to obtain any materials or services necessary for the performance of the Contract from its normal sources of supply, it shall remain liable for any delays when equivalent materials or services can be obtained from other sources in good time.
- 6.3 In any event, if the Contractor fails to make delivery of the materials or to complete items or services required within the time specified in the Contract, or within any extension that may be granted, FAO may, without prejudice to any further rights it may have under this Contract and in particular under Article 17 below:
 - 6.3.1 Suspend or cancel the right of the Contractor to proceed further with any items or services - or part thereof - in which there has been a delay;
 - 6.3.2 Obtain elsewhere upon such terms and conditions as may be deemed appropriate, replacement items or services similar to those which the Contractor failed to provide;
 - 6.3.3 Make a corresponding adjustment to the consideration payable to the Contractor; provided, however, that the Contractor shall continue performance of this Contract to the extent not suspended or cancelled under the provisions of this paragraph.
- 6.4 The Contractor shall be liable for any excess costs or damages caused to FAO by a failure or delay on the part of the Contractor in the performance of its obligations under this Contract, except where such failure or delay is due to:
 - 6.4.1 Causes which are attributable to FAO;
 - 6.4.2 Force Majeure, as defined in Article 16 below.
- 6.5 If, in the event of a default by the Contractor or a delay attributable to it, FAO is of the

opinion that the determination of actual excess costs or damages, or any part thereof, incurred by FAO is not practicable, FAO may require the Contractor to pay, in lieu of or in addition to actual damages, as the case may be, the amount specified in, or to be calculated in accordance with, the relevant provision of this Contract, as fixed, agreed and liquidated damages for the duration of the delay or default.

Comment [F9]: NA

6.6. FAO shall determine the effects of any delay or default particularly in regard to an adjustment of the consideration due to the Contractor and to excess costs or damages caused to FAO and its findings shall be binding, provided always that the Contractor shall have the right to avail itself of the provisions of Article 20 below.

6.7. FAO shall not be liable to pay interest on the amount(s) not paid to the Contractor within the payment schedule foreseen under the Contract, irrespective of the cause of such delay.

ARTICLE 7 – TITLE

The Contractor warrants and represents that the goods delivered under the Contract are unencumbered by any third party’s title or other property rights, including, but not limited to, any liens or security interests. Unless otherwise expressly provided in the Contract, title in and to the goods shall pass from the Contractor to FAO upon delivery of the goods and their acceptance by FAO in accordance with the requirements of the Contract.

Comment [F10]: NA

ARTICLE 8 – EXPORT LICENSING

The Contractor shall be responsible for obtaining any export license required with respect to the goods, products, or technologies, including software, sold, delivered, licensed or otherwise provided to FAO under the Contract. The Contractor shall procure any such export license in an expeditious manner. Subject to and without any waiver of the privileges and immunities of FAO, FAO shall lend the Contractor all reasonable assistance required for obtaining any such export license. Should any governmental entity refuse, delay or hinder the Contractor’s ability to obtain any such export license, the Contractor shall promptly consult with FAO to enable FAO to take appropriate measures to resolve the matter.

Comment [F11]: NA

ARTICLE 9 – INDEMNIFICATION

9.1 The Contractor shall indemnify, defend, and hold and save harmless, FAO, and its officials, agents and employees, and any of its member nations or member organizations (“Members”) or other ultimate beneficiaries, from and against all suits, proceedings, claims, demands, losses and liability of any kind or nature brought by any third party against FAO, including, but not limited to, all litigation costs and expenses, attorney’s fees, settlement payments and damages, based on, arising from, or relating to:

9.1.1 allegations or claims that the possession of or use by FAO of any patented device, any copyrighted material, or any other goods, property or services provided or licensed to FAO under the terms of the Contract, in whole or in part, separately or in a combination contemplated by the Contractor’s published specifications therefor, or otherwise specifically approved by the Contractor, constitutes an infringement of any patent, copyright, trademark, or other intellectual property

right of any third party; *or*,

- 9.1.2 any acts or omissions of the Contractor, or of any subcontractor or anyone directly or indirectly employed by them in the performance of the Contract, which give rise to legal liability to anyone not a party to the Contract, including, without limitation, claims and liability in the nature of a claim for workers' compensation.
- 9.2 FAO may, where in its opinion, the successful implementation of the Contract or the reputation of FAO, might be prejudiced, withhold or deduct from the payments due to the Contractor under this Contract such amounts as may be required to honour third party claims brought against the Contractor if these claims are connected with the supplies or services to be provided under this Contract and if, after consultation with the Contractor, FAO is satisfied that such claims have been or may become the subject of a judgement, injunction or similar court order.
- 9.3 In addition to the indemnity obligations set forth in this Article 9, the Contractor shall be obligated, at its sole expense, to defend FAO and its officials, agents and employees, pursuant to this Article 9, regardless of whether the suits, proceedings, claims and demands in question actually give rise to or otherwise result in any loss or liability.
- 9.4 FAO shall advise the Contractor about any such suits, proceedings, claims, demands, losses or liability within a reasonable period of time after having received actual notice thereof. The Contractor shall have sole control of the defence of any such suit, proceeding, claim or demand and of all negotiations in connection with the settlement or compromise thereof, except with respect to the assertion or defence of the privileges and immunities of FAO or any matter relating thereto, for which only FAO itself is authorized to assert and maintain. FAO shall have the right, at its own expense, to be represented in any such suit, proceeding, claim or demand by independent counsel of its own choosing.
- 9.5 In the event the use by FAO of any goods, property or services provided or licensed to FAO by the Contractor, in whole or in part, in any suit or proceeding, is for any reason enjoined, temporarily or permanently, or is found to infringe any patent, copyright, trademark or other intellectual property right, or in the event of a settlement, is enjoined, limited or otherwise interfered with, then the Contractor, at its sole cost and expense, shall, promptly, either:
 - 9.5.1 Procure for FAO the unrestricted right to continue using such goods or services provided to FAO;
 - 9.5.2 Replace or modify the goods or services provided to FAO, or part thereof, with the equivalent or better goods or services, or part thereof, that is non-infringing;
or,
 - 9.5.3 Refund to FAO the full price paid by FAO for the right to have or use such goods, property or services, or part thereof.
- 9.6 For the purposes of this Article, the term "third party" shall be deemed to include, *inter alia*, officials, employees and other representatives of the United Nations, FAO, and other Specialized Agencies participating in the implementation of this Contract as well as

any person or entity employed by the Contractor or otherwise performing services for, or supplying goods to, the Contractor.

ARTICLE 10 –INSURANCE AND LIABILITY

- 10.1 The Contractor shall pay FAO promptly for all loss, destruction, or damage to the property of FAO caused by the Contractor’s personnel or by any of its subcontractors or anyone else directly or indirectly employed by the Contractor or any of its subcontractors in the performance of the Contract.
- 10.2 Unless otherwise provided in the Contract, prior to commencement of performance of any other obligations under the Contract, and subject to any limits set forth in the Contract, the Contractor shall take out and shall maintain for the entire term of the Contract, for any extension thereof, and for a period following any termination of the Contract reasonably adequate to deal with losses:
 - 10.2.1 Insurance against all risks in respect of its property and any equipment used for the performance of the Contract;
 - 10.2.2 Workers’ compensation insurance, or its equivalent, or employer’s liability insurance, or its equivalent, with respect to the Contractor’s personnel sufficient to cover all claims for injury, death and disability, or any other benefits required to be paid by law, in connection with the performance of the Contract;
 - 10.2.3 Liability insurance in an adequate amount to cover all claims, including, but not limited to, claims for death and bodily injury, products and completed operations liability, loss of or damage to property, and personal and advertising injury, arising from or in connection with the Contractor’s performance under the Contract, including, but not limited to, liability arising out of or in connection with the acts or omissions of the Contractor, its personnel, agents, or invitees, or the use, during the performance of the Contract, of any vehicles, boats, airplanes or other transportation vehicles and equipment, whether or not owned by the Contractor; *and*,
 - 10.2.4 Such other insurance as may be agreed upon in writing between FAO and the Contractor.
- 10.3 The Contractor’s liability policies shall also cover subcontractors and all defense costs and shall contain a standard “cross liability” clause.
- 10.4 The Contractor acknowledges and agrees that FAO accepts no responsibility for providing life, health, accident, travel or any other insurance coverage which may be necessary or desirable in respect of any personnel performing services for the Contractor in connection with the Contract.
- 10.5 Except for the workers’ compensation insurance or any self-insurance program maintained by the Contractor and approved by FAO, in its sole discretion, for purposes of fulfilling the Contractor’s requirements for providing insurance under the Contract, the insurance policies required under the Contract shall:

10.5.1 Name FAO as an additional insured under the liability policies, including, if required, as a separate endorsement under the policy;

10.5.2 Include a waiver of subrogation of the Contractor’s insurance carrier’s rights against FAO;

10.5.3 Provide that FAO shall receive written notice from the Contractor’s insurance carrier not less than thirty (30) days prior to any cancellation or material change of coverage; *and*,

10.5.4 Include a provision for response on a primary and non-contributing basis with respect to any other insurance that may be available to FAO.

10.6 The Contractor shall be responsible to fund all amounts within any policy deductible or retention.

10.7 Except for any self-insurance program maintained by the Contractor and approved by FAO for purposes of fulfilling the Contractor’s requirements for maintaining insurance under the Contract, the Contractor shall maintain the insurance taken out under the Contract with reputable insurers that are in good financial standing and that are acceptable to FAO. Prior to the commencement of any obligations under the Contract, the Contractor shall provide FAO with evidence, in the form of certificate of insurance or such other form as FAO may reasonably require, that demonstrates that the Contractor has taken out insurance in accordance with the requirements of the Contract. FAO reserves the right, upon written notice to the Contractor, to obtain copies of any insurance policies or insurance program descriptions required to be maintained by the Contractor under the Contract. Notwithstanding the provisions of Article 10.5.3, above, the Contractor shall promptly notify FAO concerning any cancellation or material change of insurance coverage required under the Contract.

10.8 The Contractor acknowledges and agrees that neither the requirement for taking out and maintaining insurance as set forth in the Contract nor the amount of any such insurance, including, but not limited to, any deductible or retention relating thereto, shall in any way be construed as limiting the Contractor’s liability arising under or relating to the Contract.

ARTICLE 11 –ENCUMBRANCES AND LIENS

The Contractor shall not cause or permit any lien, attachment or other encumbrance by any person to be placed on file or to remain on file in any public office or on file with FAO against any monies due to the Contractor or that may become due for any work done or against any goods supplied or materials furnished under the Contract, or by reason of any other claim or demand against the Contractor or FAO.

ARTICLE 12 –EQUIPMENT FURNISHED BY FAO TO THE CONTRACTOR

Title to any equipment and supplies that may be furnished by FAO to the Contractor for the performance of any obligations under the Contract shall rest with FAO, and any such equipment

shall be returned to FAO at the conclusion of the Contract or when no longer needed by the Contractor. Such equipment, when returned to FAO, shall be in the same condition as when delivered to the Contractor, subject to normal wear and tear, and the Contractor shall be liable to compensate FAO for the actual costs of any loss of, damage to, or degradation of the equipment that is beyond normal wear and tear.

Comment [F12]: NA

ARTICLE 13 – COPYRIGHT, PATENTS AND OTHER PROPRIETARY RIGHTS

13.1 Except as is otherwise expressly provided in writing in the Contract, FAO shall be entitled to all intellectual property and other proprietary rights including, but not limited to, patents, copyrights, and trademarks, with regard to products, processes, inventions, ideas, know-how, or documents and other materials which the Contractor has developed for FAO under the Contract and which bear a direct relation to or are produced or prepared or collected in consequence of, or during the course of, the performance of the Contract. The Contractor acknowledges and agrees that such products, documents and other materials constitute works made for hire for FAO.

13.2 To the extent that any such intellectual property or other proprietary rights consist of any intellectual property or other proprietary rights of the Contractor:

13.2.1 That pre-existed the performance by the Contractor of its obligations under the Contract, *or*

13.2.2 that the Contractor may develop or acquire, or may have developed or acquired, independently of the performance of its obligations under the Contract, FAO does not and shall not claim any ownership interest thereto, and the Contractor grants to FAO a perpetual license to use such intellectual property or other proprietary right solely for the purposes of and in accordance with the requirements of the Contract.

13.3 At the request of FAO, the Contractor shall take all necessary steps, execute all necessary documents and generally assist in securing such proprietary rights and transferring or licensing them to FAO in compliance with the requirements of the applicable law and of the Contract.

13.4 Subject to the foregoing provisions, all maps, drawings, photographs, mosaics, plans, reports, estimates, recommendations, documents, and all other data compiled by or received by the Contractor under the Contract shall be the property of FAO, shall be made available for use or inspection by FAO at reasonable times and in reasonable places, shall be treated as confidential, and shall be delivered only to FAO authorized officials on completion of work under the Contract.

ARTICLE 14 – PUBLICITY, AND USE OF THE NAME, EMBLEM OR OFFICIAL SEAL OF FAO

The Contractor shall not advertise or otherwise make public for purposes of commercial advantage or goodwill that it has a contractual relationship with FAO, nor shall the Contractor, in any manner whatsoever use the name, emblem or official seal of FAO, or any abbreviation of the name of FAO in connection with its business or otherwise without the written permission FAO.

ARTICLE 15 – CONFIDENTIAL NATURE OF DOCUMENTS AND INFORMATION

All designs, drawings, specifications, reports, data, computer programs, and other technical or proprietary information compiled or developed by the Irrigation Department furnished or disclosed to the Contractor by FAO under this Contract (“Information”) shall be the property of FAO and shall be treated as confidential and safeguarded by the Contractor, its employees, agents and representatives. Unless otherwise authorized in writing by FAO, the Contractor shall use such Information only in the performance of this Contract. Upon completion or termination of this Contract, the Contractor shall return such Information to FAO.

- 15.1 The Contractor may disclose Information to the extent required by law, provided that, subject to and without any waiver of the privileges and immunities of FAO, the Contractor will give FAO sufficient prior notice of a request for the disclosure of Information in order to allow FAO to have a reasonable opportunity to take protective measures or such other action as may be appropriate before any such disclosure is made.
- 15.2 FAO reserves the right to publish the Contractor’s name and country, the Contract value and a brief description of the goods or services provided under the Contract. FAO may also disclose Information to the extent as required pursuant to the FAO Constitution or consistent with or pursuant to resolutions or regulations of the Conference of FAO or rules promulgated thereunder.
- 15.3 A Party shall not be precluded from disclosing Information that is obtained by that Party from a third party without restriction, is disclosed by the other Party to a third party without any obligation of confidentiality, is previously known by the Party who has received the Information, or at any time is developed by the Party completely independently of any disclosures hereunder.
- 15.4 These obligations and restrictions of confidentiality shall be effective during the term of the Contract, including any extension thereof, and, unless otherwise provided in the Contract, shall remain effective following any termination of the Contract.

ARTICLE 16 – FORCE MAJEURE; OTHER CHANGES IN CONDITIONS

- 16.1 In the event of and as soon as possible after the occurrence of any cause constituting *force majeure*, the affected Party shall give notice and full particulars in writing to the other Party, of such occurrence or cause if the affected Party is thereby rendered unable, wholly or in part, to perform its obligations and meet its responsibilities under the Contract. The affected Party shall also notify the other Party of any other changes in condition or the occurrence of any event which interferes or threatens to interfere with its performance of the Contract. Not more than fifteen (15) days following the provision of such notice of *force majeure* or other changes in condition or occurrence, the affected Party shall also submit a statement to the other Party of estimated expenditures that will likely be incurred for the duration of the change in condition or the event of *force majeure*. On receipt of the notice or notices required hereunder, the Party not affected by the occurrence of a cause constituting *force majeure* shall take such action as it reasonably considers to be appropriate or necessary in the circumstances, including the

granting to the affected Party of a reasonable extension of time in which to perform any obligations under the Contract or termination under Article 17 below. The Contractor shall be liable for any damages resulting from lack of notice of the *force majeure* event.

- 16.2 If the Contractor is rendered unable, wholly or in part, by reason of *force majeure* to perform its obligations and meet its responsibilities under the Contract, FAO shall have the right to suspend or terminate the Contract on the same terms and conditions as are provided for in Article 17 below, except that the period of notice shall be seven (7) days instead of thirty (30) days. In any case, FAO shall be entitled to consider the Contractor permanently unable to perform its obligations under the Contract in case the Contractor is unable to perform its obligations, wholly or in part, by reason of *force majeure* for any period in excess of ninety (90) days.
- 16.3 *Force majeure* as used herein means any unforeseeable and irresistible act of nature, any act of war (whether declared or not), invasion, revolution, insurrection, terrorism, or any other acts of a similar nature or force, *provided that* such acts arise from causes beyond the control and without the fault or negligence of the Contractor (or on the part of its personnel, agents, other representatives, or authorized subcontractors), and proves insurmountable in spite of all due diligence. Defects in equipment, material or supplies, or delays in their availability (unless due to *force majeure*), labour disputes, strikes or financial difficulties shall not constitute an event of *force majeure*. Notwithstanding anything to the contrary herein in this Contract, the Contractor recognizes that the provision of goods and services may from time to time be performed under harsh or hostile conditions, including civil unrest. Consequently, delays or failure to perform caused by events arising out of, or in connection with, such difficult conditions shall not, in and of itself, constitute *force majeure* under this Contract. The Contractor therefore acknowledges and agrees that, with respect to any obligations under the Contract that the Contractor must perform in areas in which FAO is engaged in, preparing to engage in, or disengaging from any humanitarian or similar operations, any delays or failure to perform such obligations arising from or relating to harsh conditions within such areas, or to any incidents of civil unrest occurring in such areas, shall not, in and of itself, constitute *force majeure* under the Contract.

ARTICLE 17 – TERMINATION

- 17.1 Either Party may terminate the Contract for cause, in whole or in part, upon thirty (30) day's notice, in writing, to the other Party. The initiation of conciliation or arbitral proceedings in accordance with Article 20 below, shall not be deemed to be a "cause" for or otherwise to be in itself a termination of the Contract.
- 17.2 For the purposes of this Article 17, a "cause" include, without being limited to:
- 17.2.1 Unforeseen causes beyond the control of FAO;
 - 17.2.2 Repeated and/or serious noncompliance with laws and regulations related to social contribution, safety measures, pollution, prevention of injuries in the work place;
 - 17.2.3 Serious contractual breaches compromising the normal performance of the

services under this Contract;

17.2.4 Transfer to third parties, either directly or indirectly through an intermediary, of all or part of the rights and obligations pertaining to the services under this Contract, except for subcontracts duly authorized by FAO;

17.2.5 Gross negligence;

17.2.6 Unjustified delay in the execution of the services, so as to substantially prejudice the achievement of FAO’s objectives under this Contract;

17.2.7 Default in the submission of the performance bond as required, if applicable.

Comment [F13]: NA

17.3 FAO may terminate the Contract at any time by providing written notice to the Contractor in any case in which the mandate of FAO applicable to the performance of the Contract or the funding of FAO applicable to the Contract is curtailed or terminated, whether in whole or in part. In addition, unless otherwise provided by the Contract, upon sixty (60) day’s advance written notice to the Contractor, FAO may terminate the Contract without having to provide any justification therefor.

17.4 In the event of any termination of the Contract, upon receipt of notice of termination that has been issued by FAO, the Contractor shall, except as may be directed by FAO in the notice of termination or otherwise in writing:

17.4.1 Take immediate steps to bring the performance of any obligations under the Contract to a close in a prompt and orderly manner, and in doing so, reduce expenses to a minimum;

17.4.2 Refrain from undertaking any further or additional commitments under the Contract as of and following the date of receipt of such notice;

17.4.3 place no further subcontracts or orders for materials, services, or facilities, except as FAO and the Contractor agree in writing are necessary to complete any portion of the Contract that is not terminated;

17.4.4 Terminate all subcontracts or orders to the extent they relate to the portion of the Contract terminated;

17.4.5 transfer title and deliver to FAO the fabricated or un fabricated parts, work in process, completed work, supplies, and other material produced or acquired for the portion of the Contract terminated;

17.4.6 deliver all completed or partially completed plans, drawings, information, and other property that, if the Contract had been completed, would be required to be furnished to FAO thereunder;

17.4.7 Complete performance of the work not terminated; *and*,

17.4.8 Take any other action that may be necessary or that FAO may direct in writing, for the minimization of losses and for the protection and preservation of any

property, whether tangible or intangible, related to the Contract that is in the possession of the Contractor and in which FAO has or may be reasonably expected to acquire an interest.

- 17.5 In the event of any termination of the Contract, FAO shall be entitled to obtain reasonable written accountings from the Contractor concerning all obligations performed or pending in accordance with the Contract. In addition, FAO shall not be liable to pay the Contractor except for those goods delivered and services provided to FAO in accordance with the requirements of the Contract, but only if such goods or services were ordered, requested or otherwise provided prior to the Contractor's receipt of notice of termination from FAO or prior to the Contractor's tendering of notice of termination to FAO.
- 17.6 The Contractor shall immediately report any change in its legal status or control to FAO. FAO may, without prejudice to any other right or remedy available to it, terminate the Contract forthwith in the event that:
 - 17.6.1 The Contractor is adjudged bankrupt, or is liquidated, or becomes insolvent, or applies for a moratorium or stay on any payment or repayment obligations, or applies to be declared insolvent;
 - 17.6.2 The Contractor is granted a moratorium or a stay, or is declared insolvent;
 - 17.6.3 The Contractor makes an assignment for the benefit of one or more of its creditors;
 - 17.6.4 A receiver is appointed on account of the insolvency of the Contractor;
 - 17.6.5 The Contractor offers a settlement in lieu of bankruptcy or receivership; *or*,
 - 17.6.6 FAO reasonably determines that the Contractor has become subject to a materially adverse change in its financial condition that threatens to substantially affect the ability of the Contractor to perform any of its obligations under the Contract.
- 17.7 Except as prohibited by law, the Contractor shall be bound to compensate FAO for all damages and costs, including, but not limited to, all costs incurred by FAO in any legal or non-legal proceedings, as a result of any of the events specified in Article 17.6, above, and resulting from or relating to a termination of the Contract, even if the Contractor is adjudged bankrupt, or is granted a moratorium or stay or is declared insolvent. The Contractor shall immediately inform FAO of the occurrence of any of the events specified in Article 17.6, above, and shall provide FAO with any information pertinent thereto.
- 17.8 The provisions of this Article 17 are without prejudice to any other rights or remedies of FAO under the Contract or otherwise.

ARTICLE 18 – NON-WAIVER OF RIGHTS

The failure by either Party to exercise any rights available to it, whether under the Contract or

otherwise, shall not be deemed for any purposes to constitute a waiver by the other Party of any such right or any remedy associated therewith, and shall not relieve the Parties of any of their obligations under the Contract.

ARTICLE 19 – NON-EXCLUSIVITY

Unless otherwise specified in the Contract, FAO shall have no obligation to purchase any minimum quantities of goods or services from the Contractor and FAO shall have no limitation on its right to obtain goods or services of the same kind, quality and quantity described in the Contract, from any other source at any time.

ARTICLE 20 – SETTLEMENT OF DISPUTES, CONCILIATION AND ARBITRATION

- 20.1 Any dispute between the Parties concerning the interpretation and the execution of the Contract will be settled by negotiation or, if not settled by negotiation between the Parties or by another agreed mode of settlement shall, at the request of either Party, be submitted to one conciliator. Should the Parties fail to reach agreement on the name of a sole conciliator, each Party shall appoint one conciliator. The conciliation shall be carried out in accordance with the Conciliation Rules of the United Nations Commission on International Trade Law (“UNCITRAL”), as at present in force.
- 20.2 Any dispute between the Parties concerning the interpretation and the execution of the Contract that is unresolved after conciliation shall, at the request of either Party be settled by arbitration in accordance with the UNCITRAL Arbitration Rules, as at present in force. Arbitrations under this provision shall be administered by the International Bureau of the Permanent Court of Arbitration.
- 20.3 The conciliation or the arbitration proceedings shall be conducted in any of the six (6) official languages of FAO (Arabic, Chinese, English, French, Spanish and Russian) in which the Contract is drafted. In cases in which the language of the Contract is not an official language of FAO, the conciliation or the arbitration proceedings shall be conducted in English.
- 20.4 The Parties may request conciliation during the execution of the Contract or within a period not to exceed twelve (12) months after the expiry or the termination of the Contract. The Parties may request arbitration not later than ninety (90) days after the termination of the conciliation proceedings.
- 20.5 Decisions of the arbitral tribunal shall be final and binding to the Parties. The arbitral tribunal shall have no authority to award punitive damages or, unless otherwise expressly provided in this Contract, to award interest in which case such interest shall not be in excess of the London Inter-Bank Offered Rate (“LIBOR”) then prevailing, and any such interest shall be simple interest only.

ARTICLE 21 – PRIVILEGES AND IMMUNITIES AND APPLICABLE LAW

- 21.1 Nothing contained in or relating to this Contract shall be deemed a waiver, express or implied, of the privileges and immunities of FAO, nor as conferring any privileges or

immunities of FAO on the Contractor or its employees, nor as acceptance by FAO of the jurisdiction of the courts of any country over disputes arising out of this Contract.

- 21.2 Notwithstanding any specific provision herein, this Contract and any dispute arising therefrom shall be governed by general principles of law to the exclusion of any single national system of law. General principles of law shall be deemed to include the UNIDROIT Principles of International Commercial Contracts 2010.

ARTICLE 22 – TAX EXEMPTION

- 22.1 Article III Section 9, of the Convention on the Privileges and Immunities of the Specialized Agencies provides, *inter alia*, that FAO is exempt from all direct taxes, except charges for public utility services, and is exempt from customs restrictions, duties and charges of a similar nature in respect of articles imported or exported for its official use. In the event any governmental authority refuses to recognize the exemptions of FAO from such taxes, restrictions, duties, or charges, the Contractor shall immediately consult with FAO to determine a mutually acceptable procedure.
- 22.2 The Contractor authorizes FAO to deduct from the Contractor’s invoices any amount representing such taxes, duties or charges, unless the Contractor has consulted with FAO before the payment thereof and FAO has, in each instance, specifically authorized the Contractor to pay such taxes, duties, or charges under written protest. In that event, the Contractor shall provide FAO with written evidence that payment of such taxes, duties or charges has been made and appropriately authorized, and FAO shall reimburse the Contractor for any such taxes, duties, or charges so authorized by FAO and paid by the Contractor under written protest.

ARTICLE 23 – MODIFICATIONS

- 23.1 FAO may at any time by written instructions make changes within the general scope of this Contract and the Contractor shall be obliged to implement such changes in a timely manner. If any such change causes an increase or decrease in the quantities of goods and/or services or the time required for performance of this Contract, an equitable adjustment shall be made in the order price or delivery schedule, or both, and the Contract shall be amended, terminated or reissued accordingly.
- 23.2 Any claim by the Contractor for adjustment under this Article must be asserted within thirty (30) days from the date of receipt by the Contractor of the notification of change; provided, however, that FAO may, at its sole discretion, receive and act upon any such claim asserted at any time prior to final payment under this Contract. A dispute arising from failure to agree to any adjustments shall be subject to the provisions of Article 20 above of this Contract. However, nothing in this Article shall relieve the Contractor from its obligation to proceed with the performance of the Contract as changed.
- 23.3 No modification of or change in the terms of this Contract shall be valid or enforceable against FAO unless it is in writing and signed by a duly authorized officer.
- 23.4 Any modification of this Contract other than the changes provided for under Articles 23.1 to 23.3, above shall be effected by an amendment to this Contract to be mutually agreed

between the Parties hereto.

ARTICLE 24 – AUDITS AND INVESTIGATIONS

- 24.1 Each invoice paid by FAO shall be subject to a post-payment audit by auditors, whether internal or external, of FAO or by other authorized and qualified agents of FAO at any time during the term of the Contract and for a period of two (2) years following the expiration or prior termination of the Contract. FAO shall be entitled to a refund from the Contractor for any amounts shown by such audits to have been paid by FAO other than in accordance with the terms and conditions of the Contract.
- 24.2 The Contractor acknowledges and agrees that, from time to time, FAO may conduct investigations relating to any aspect of the Contract or the award thereof, the obligations performed under the Contract, and the operations of the Contractor generally relating to performance of the Contract. The right of FAO to conduct an investigation and the Contractor’s obligation to comply with such an investigation shall not lapse upon expiration or prior termination of the Contract.
- 24.3 The Contractor shall provide its full and timely cooperation with any such inspections, post-payment audits or investigations. Such cooperation shall include, but shall not be limited to, the Contractor’s obligation to make available its personnel and any relevant documentation for such purposes at reasonable times and on reasonable conditions and to grant to FAO access to the Contractor’s premises at reasonable times and on reasonable conditions in connection with such access to the Contractor’s personnel and relevant documentation. The Contractor shall require its agents, including, but not limited to, the Contractor’s attorneys, accountants or other advisers, to reasonably cooperate with any inspections, post-payment audits or investigations carried out by FAO hereunder.

ARTICLE 25 – LIMITATION ON ACTIONS

- 25.1 Except with respect to any indemnification obligations in Article 6, above, or as are otherwise set forth in the Contract, any conciliation proceedings in accordance with Article 20 above, arising out of the Contract must be commenced within twelve (12) months after the cause of action has accrued.
- 25.2 The Parties further acknowledge and agree that, for these purposes, a cause of action shall accrue when the breach actually occurs, or, in the case of latent defects, when the injured Party knew or should have known all of the essential elements of the cause of action, or in the case of a breach of warranty, when tender of delivery is made, except that, if a warranty extends to future performance of the goods or any process or system and the discovery of the breach consequently must await the time when such goods or other process or system is ready to perform in accordance with the requirements of the Contract, the cause of action accrues when such time of future performance actually begins.

ARTICLE 26 – ESSENTIAL TERMS

The Contractor acknowledges and agrees that each of the provisions in Articles 27 to 35 hereof constitutes an essential term of the Contract and that any breach of any of these provisions shall

entitle FAO to terminate the Contract or any other contract with FAO immediately upon notice to the Contractor, without any liability for termination charges or any other liability of any kind.

ARTICLE 27 – SOURCE OF INSTRUCTIONS

The Contractor shall neither seek nor accept instructions from any authority external to FAO in connection with the performance of its obligations under the Contract except the Irrigation Department FATA staff deputed by FAO for this ~~purpose~~purpose. Should any authority external to FAO ~~other than Irrigation Department~~ staff seek to impose any instructions concerning or restrictions on the Contractor’s performance under the Contract, the Contractor shall promptly notify FAO and provide all reasonable assistance required by FAO. The Contractor shall not take any action in respect of the performance of its obligations under the Contract that may adversely affect the interests of FAO, and the Contractor shall perform its obligations under the Contract with the fullest regard to the interests of the FAO.

ARTICLE 28 – OFFICIALS NOT TO BENEFIT

The Contractor warrants that it has not and shall not offer to any representative, official, employee, or other agent of FAO any direct or indirect benefit arising from or related to the performance of the Contract or of any other contract with FAO or the award thereof or for any other purpose intended to gain an advantage for the Contractor.

ARTICLE 29 – OBSERVANCE OF THE LAW

The Contractor shall comply with all laws, ordinances, rules, and regulations bearing upon the performance of its obligations under the Contract. The Contractor shall promptly correct any violations thereof and shall keep the irrigation department FATA and FAO informed of any conflict or problem arising in relation to national authorities. In addition, the Contractor shall maintain compliance with all obligations relating to its registration as a qualified vendor of goods or services to FAO, as such obligations are set forth in FAO vendor registration procedures.

ARTICLE 30 – LABOR

30.1 The Contractor shall:

- 30.1.1 Respect the prohibition of forced or compulsory labor in all its forms;
- 30.1.2 Respect the freely exercised right of workers, without distinction, to organize, to further and defend their interest as well as the protection of those workers who exercise their right to organize;
- 30.1.3 Ensure equality of opportunity and treatment in respect of employment and occupation; *and*
- 30.1.4 Ensure fair and reasonable conditions of safety, health and welfare.

30.2 The Contractor represents and warrants that neither it, its parent entities (if any), nor any

of the Contractor's subsidiary or affiliated entities (if any) is engaged in any practice inconsistent with the rights set forth in the Convention on the Rights of the Child, including Article 32 thereof, which *inter alia*, requires that a child shall be protected from performing any work that is likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral or social development.

ARTICLE 31 – MINES

The Contractor represents and warrants that neither it, its parent entities (if any), nor any of the Contractor's subsidiaries or affiliated entities (if any) is engaged in the sale or manufacture of anti-personnel mines or components utilized in the manufacture of anti-personnel mines.

ARTICLE 32 – SEXUAL EXPLOITATION

The Contractor shall take all appropriate measures to prevent sexual exploitation or abuse of any direct beneficiary of the FAO projects or programmes receiving the goods or services provided under this Contract, or to any persons related to such beneficiaries, by its employees or any other persons engaged and controlled by the Contractor to perform any services under the Contract. For these purposes, sexual activity with any person less than eighteen years of age, regardless of any laws relating to consent, shall constitute the sexual exploitation and abuse of such person. In addition, the Contractor shall refrain from, and shall take all reasonable and appropriate measures to prohibit its employees or other persons engaged and controlled by it from exchanging any money, goods, services, or other things of value, for sexual favors or activities, or from engaging in any sexual activities that are exploitive or degrading to any direct beneficiary of the FAO projects or programmes receiving the goods or services provided under this Contract, or to any persons related to such beneficiaries.

ARTICLE 33 – TERRORISM

The Contractor agrees to undertake all reasonable efforts to ensure that none of the funds received from FAO under this Contract are used to provide support to individuals or entities:

- 33.1 Associated with terrorism, as included in the list maintained by the Security Council Committee established pursuant to Resolution 1267 (1999) (<http://www.un.org/sc/committees/1267/pdf/consolidatedlist.pdf>); or
- 33.2 That is the subject of sanctions or other enforcement measures promulgated by the United Nations Security Council.

ARTICLE 34 – PROHIBITED PRACTICES

- 34.1 The Contractor shall observe the highest standard of ethics during the procurement and execution of this Contract and will not engage in any corrupt, fraudulent, collusive or coercive practices, and agrees to adhere to the UN Supplier Code of Conduct.
- 34.2 FAO, without prejudice to any other rights or remedies it may possess, may terminate the Contract forthwith if the Contractor, in the judgment of FAO, has engaged in corrupt, fraudulent, collusive or coercive practices in competing for or in executing this Contract, and as appropriate, request full or partial restitution of sums previously paid by FAO

under this Contract.

- 34.3 For the purpose of this Article, the following terms shall have the following meanings: “Fraudulent practice” is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain, financial and/or other benefit and/or to avoid an obligation. “Coercive practice” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party. “Collusive practice” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party. “Corrupt practice” is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value whether tangible or intangible to improperly influence the actions of another party.

ARTICLE 35 – DISCLOSURE OF SANCTIONS OR TEMPORARY SUSPENSION

The Contractor should not be suspended, debarred, or otherwise identified as ineligible by any International or UN Organization. The Contractor is therefore required to disclose to FAO whether its company, or any of its affiliates, is subject to any sanction or temporary suspension imposed by any International or UN Organization at the time of execution of this Contract and throughout its duration. The Contractor recognizes that a breach of this provision will entitle FAO to terminate its Contract with the Contractor.

ARTICLE 36 – COLLABORATION WITH CERTAIN COUNTRIES

FAO reserves the right to communicate in writing to the Contractor, countries from which no goods or services shall be purchased directly or indirectly for purposes of delivery, distribution, installation, or use under this Contract. These communications shall be deemed a condition of this Contract and be incorporated by the Contractor in any contracts with authorized subcontractors. ARTICLE 37 – INTERPRETATION OF THE CONTRACT

In the event of a conflict or inconsistency between the provisions of Section I and Section II of this Contract, the former shall prevail.

ARTICLE 38 – NOTICES AND COMMUNICATIONS

- 38.1 All notices and other binding communications shall be in English, or the language of the Contract, and shall be deemed to be validly given if sent by registered mail, by fax or by email with return receipt to the other Party at the address or numbers of either Party as indicated in the Contract.

- 38.2 Any notice affecting the rights or obligations of either party to this Contract shall be given in writing and delivered in person or by registered mail to the addresses given below:

- 38.2.1 To FAO:

Contract No.

.....
38.2.2 To the Contractor:

.....
At the Contractor's address shown in the Preamble to this Contract.

38.3 Notice shall be considered as effected on the date of delivery to the addressee.
Signed on behalf of:

THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS:

Name:

Title: FAO Representative in Date:

Signed on behalf of:

THE CONTRACTOR:

Name:

Title: Date:

ANNEXES I-XI

STATEMENT OF WORKS, SERVICES AND SPECIFICATIONS

Comment [F14]: NA

PART 1

GENERAL

Sub project:

Site Name and Location:

Scope of works:

1.01 Temporary Works and Care during Construction

The contractor shall construct and maintain all necessary channels, diversions and other temporary works necessary to ensure that irrigation water supplies are not interrupted during rehabilitation construction works; shall furnish all materials required therefore; and shall furnish, install, maintain and operate all necessary pumping and other equipment (if necessary) for maintaining water supplies around the rehabilitation works.

After having served their purpose, all temporary works at the construction site shall be removed in a manner approved by the Engineer, and such areas after those are removed shall be levelled and graded to the extent required to prevent obstruction in any degree whatever and maintaining the designed function of the structure.

The contractor shall be responsible for and shall repair at his expense any damage to the foundations, structures, or any other part of the works caused by floods, water or failure of any part of the temporary diversion or protective works.

1.02 Transportation of Plant and Equipment

All cost incurred by the Contractor of transportation and subsequent removal of the construction plant and equipment shall be deemed to be included in the unit prices.

1.03 Dewatering

The Contractor shall take all risks regarding surface and sub soil water from whatever source and shall so deal with and dispose of such water in a manner approved by the Engineer to ensure that the excavations are kept dry. The Contractor shall provide all necessary plant, labour and materials required and all costs incurred shall be deemed to be included in his rates.

The Contractor shall be responsible for damage to the Works or other property arising from insufficient or excessive dewatering and shall make good the same as soon as possible to the complete satisfaction of the Engineer and other relevant authorities at his own expense.

1.04 Contractor's Offices

The Contractor shall make his own arrangements, at his own expense, for all local accommodation he may require for offices, yards stores labour camps etc. and all buildings and all services in connection therewith which are required for the efficient execution of the Works.

1.05 Preamble

The general Specifications shall form a part of the contract and shall be read in conjunction with the other contracts. At the time of issuing the contract, the Engineer may issue Special Specifications modifying, amending supplementing the requirements spelt out in the general specifications. In such a case, in case of conflict, the provisions in the Special Specifications shall prevail over those in the general Specifications. Any clause in this specification which relates to work or materials not required by the Bills of Quantities or subsequently by a variation or extra works order shall be deemed not to apply. The SI system shall be the official system of units.

1.06 Workmanship and Materials

All workmanship shall be of the best quality appropriate to each category of work. Except where otherwise stated or approved by the Engineer, all materials used in the Works shall be of the best quality of their respective kinds as specified or described in the Specification, Drawings and Bills of Quantities and shall comply wherever possible with the current issue of the appropriate standard published by the British Standards Institution, or other equivalent national standard proposed by the Contractor and approved by the Engineer.

The Contractor shall use locally produced materials in preference to imported materials provided that they comply with the Specification and are available in sufficient and timely quantities

1.07 Temporary Works and Care during Construction

The contractor shall construct and maintain all necessary channels, diversions and other temporary works necessary to ensure that irrigation water supplies are not interrupted during rehabilitation construction works; shall furnish all materials required therefore; and shall furnish, install, maintain and operate all necessary pumping and other equipment (if necessary) for maintaining water supplies around the rehabilitation works.

After having served their purpose, all temporary works at the construction site shall be removed in a manner approved by the Engineer, and such areas after those are removed shall be levelled and graded to the extent required to prevent obstruction in any degree whatever and maintaining the designed function of the structure.

The contractor shall be responsible for and shall repair at his expense any damage to the foundations, structures, or any other part of the works caused by floods, water or failure of any part of the temporary diversion or protective works.

1.08 Survey Datum

The levels shown on the Drawings are with reference to a specific benchmark in the project area, and whose location and value are shown on the Drawings. It shall be the Contractor's responsibility before commencing the Contract to confirm with the Engineer, the location and value of the established benchmarks. The Contractor shall establish within the project area benchmark and reference points for use during the construction work. The Engineer shall approve the location of each benchmarks and reference point.

1.09 Setting Out of the Work

The contractor shall be entirely responsible for accurate setting out of the works including staking of canal centre lines and reference pegs based on the information supplied from the drawings and the instruction given by the Engineer. For such parts of the Works where no setting out details are given in the drawings, the Engineer will supply setting out data or show the exact location on site during the course of the Contract.

1.10 Cleaning and Grubbing

Site clearance shall be carried out only over the minimum area required by the Contractor to carry out the works and the extent of all clearing, whether to be paid for under items in the bill of quantities or not, shall be agreed with the Engineer before the work is commenced. The Contractor shall give written notice to the Engineer at least ten days in advance, of his intention to commence site clearance to enable arrangement to be reached, and for the engineer to ensure that any compensation arrangements are completed. Work shall commence only with the written authority of the Engineer.

The Contractor shall remove buildings, walls, gates, fences and other structures and obstructions, grub up and remove trees, hedges, bushes and shrubs and clear the size of the works at such time and to the extent required by the Engineer. The materials so obtained shall so far as suitable be reserved and stacked for further use. All rubbish and material unsuitable for use shall be destroyed or removed from the site. In areas of bulk excavation where top soil has to be excavated this shall be removed and stacked on site. After completion of construction, it shall be spread over the disturbed ground; any surplus being disposed of as directed by the Engineer.

No allowance will be made for cutting and removal of crops, grass, weeds and similar vegetation. The cost of all such works will be held to be included in rates entered in the Bills of Quantities for site clearance.

During the Contractor's operations, the removal of certain trees and shrubs may be required, in which case, the Contractor shall remove such trees and shrubs to remain after seeking prior approval from the Engineer. All trees and shrubs to remain in place shall be protected from damage. Where clearing is required, all combustible materials from clearing operations shall be burned or removed from the Site for otherwise disposed off as directed by the Engineer. The Contractor shall at all times take special precautions to prevent fire from spreading.

1.11 Safety of Adjacent Structures or Works

The Contractor shall at his own expense provide and erect to the approval of the Engineer such supports as may be required to protect efficiently all structures or works which may be endangered by the execution of the Works and shall remove such supports on completion of the Works or otherwise take such permanent measures as may be required by the Engineer to protect the structures or works.

1.12 Work Programme

The Contractor shall submit to the Engineer a work programme showing how he proposes to carry out the Works by the intended Completion Date. The programme shall show the start and completion dates of the various activities, in order to complete the entire project by the Intended Completion Date. The Contractor will not start any activity, or part thereof, until and unless the Engineer has given his written approval. The Contractor shall submit a written request at least 48 hrs before concrete pour.

If the Contractor falls behind the Contractual Programme he shall, within 14 days of the date of such default, submit for approval a revision of the programme showing the proposed measures, including plant, labour and material resources, to complete the Permanent Works on time.

1.13 Medical Arrangements

The Contractor shall make arrangements for treatment on the Site of casualties and sick persons in first-aid units or in such other wards as may be necessary in accordance with the appropriate Regulations.

Notwithstanding the minimum requirements prescribed above, the Contractor shall be responsible for the adequacy of all the arrangements made.

1.14 Transportation of Plant and Equipment

All cost incurred by the Contractor of transportation and subsequent removal of the construction plant and equipment shall be deemed to be included in the unit prices.

1.15 Reports and Photographs

No separate payment shall be made for preparation of all documents, correspondence, returns and reports, photographs, etc. to be prepared by the Contractor and submitted to the Engineer in accordance with the provisions of the contract. The Contractor will be required to provide the Engineer with photographs of the various stages of the work, particularly those relating to approval of the works. These photographs should be taken at the same location and from the same angle for different stages of the same work and scale rules (staff gauge) should be used to indicate depths where required.

1.16 Maintenance of Flow

The Contractor shall at his own expense maintain the flow in all canals, drains, streams, water courses and rivers which may be encountered during the construction of the works.

1.17 Dewatering

The Contractor shall take all risks regarding surface and sub soil water from whatever source and shall so deal with and dispose of such water in a manner approved by the Engineer to ensure that the excavations are kept dry. The Contractor shall provide all necessary plant, labour and materials required and all costs incurred shall be deemed to be included in his rates.

The Contractor shall be responsible for damage to the Works or other property arising from insufficient or excessive dewatering and shall make good the same as soon as possible to the complete satisfaction of the Engineer and other relevant authorities at his own expense.

1.18 Units of Measurement

Unless specifically stated to the contrary, the units of measurement to be used throughout the Contract shall be based on the SI. System Abbreviations, whether singular or plural, shall be as follows:

Kilometre	km
Metre	m
Millimetre	mm
HeOICre	ha
Square meter	m ²
Cubic metre	m ³
Litre	l
Millilitre	ml
Tonne	t
Kilogram	kg
Gram	g

1.19 Method of Measurement

All measurements shall be made according to the description of the methods of measurement contained in the FAO GCP/PAK//JPN standard documents relating to the preparation of Bills of Quantities.

1.20 Survey of Completed Structures

The Contractor in conjunction with the Engineer shall carry out survey of all completed structures to determine their final location for the purpose of preparing “as-built” drawings.

1.21 Contractor's Offices

The Contractor shall make his own arrangements, at his own expense, for all local accommodation he may require for offices, yards stores labour camps etc. and all buildings and all services in connection therewith which are required for the efficient execution of the Works

PART 2

2.0 EARTHWORKS

Definitions

The following definitions of earthworks materials shall apply to this and other clauses of the Specification in which reference is made to the defined materials:

"**Suitable material**" shall comprise all material which arises from excavations within the Site and which is approved by the Engineer as acceptable for use in the Works.

"**Unsuitable material**" shall mean other than suitable material and shall comprise:

- Material from swamps, marshes and bogs;
- Logs, stumps and perishable materials;
- Material susceptible to spontaneous combustion; and
- Clay of liquid limit exceeding ninety (90) and/or plasticity index exceeding sixty five (65)

"**Common**" material shall mean all material other than that defined as "rock".

"**Rock**" shall mean any hard natural or artificial material requiring the use of approved pneumatic or hydraulic breakers and tools for its removal but excluding individual masses less than 0.5 m³.

Classification of Excavation

Following classes of excavation shall apply:

Common excavation: this comprises all excavation made in all kinds of soil or soil and sand mixed with pebbles, boulders in the river/seasonal stream bed or banks or canal profiles.

Rock Excavation: Rock will include any hard material complying, in the opinion of the Engineer, with the definition given in Clause 2.01.

Borrow Excavation: shall be limited to excavation taken from borrow pits and cut areas.

2,01 Excavation

All excavation shall be carried out to the lines and levels shown on the drawings or to such lines and levels as the Engineer may direct. The Contractor shall trim all permanent excavation to the lines and levels shown on the drawings. Excavation shall generally be executed in such a manner as to ensure that the side slopes, as shown on the drawings, are not in any way endangered by undercutting.

As far as practicable, all suitable materials from the excavations shall be used in embankment and backfill for structures. The Contractor shall dispose of unsuitable or excess soil of the excavated materials in a place that is acceptable to the local community and so that they do not interfere with proper functioning of the works.

All necessary precautions shall be taken to preserve the material below and beyond the lines of all excavation in the soundest possible condition. Any damage to the work due to the

Contractor's operations, including shuttering to the material beyond the required excavation lines, shall be repaired at the expense of and by the Contractor. Any and all excess excavation or over excavation performed by the Contractor for any purpose or reason, except as may be directed in writing by the Engineer, and whether or not due to fault of the Contractor, shall be at the expense of the Contractor. Excavation taken out to a greater depth than is necessary shall be filled to the required level with concrete of appropriate class or other material approved by the Engineer. All such excess excavation and over excavation shall be filled at the expense of and by the Contractor.

The bottom and side slopes of excavation against which concrete is to be placed shall be finished accurately to the dimension shown on the drawings or as prescribed by the Engineer and the surface so prepared shall be moistened with water and tamped or rolled with suitable tools or equipment for the purpose of securing a firm foundation. If at any point the natural foundation material is disturbed during the excavation process or otherwise, it shall be compacted in place, or it shall be removed and replaced with suitable earth materials or concrete at the expense of the Contractor.

2.02 Removal of topsoil

Immediately after clearing operations and before excavation commences, topsoil shall be removed, where and to such depth as directed, from the surfaces of borrow area, the stockpile sites, the areas to be back-filled and the areas of the Works where surface excavation is required. Removal of topsoil from disposal areas will not be required. Topsoil shall be removed within 2m outside the limits of required excavation and the surface shall not be disturbed beyond these limits. Topsoil is defined as the surface or top layer of soil, including find roots, the herbaceous vegetation and overlying grass and is characterised by the presence of organic matter.

2.03 Embankment Earth-filling

Material for filling shall be obtained from approved sources or selected from excavations and shall contain no organic, plastic or undesired perishable matter. It shall be graded to ensure a dense, stable and homogeneous fill when compacted. All embankments shall be constructed to the lines and levels shown on the drawings or as directed by the Engineer.

During placing and spreading, the materials should be thoroughly compacted by hand tampers or mechanical compactors. The distribution of the materials shall be such that the tamped materials will be homogenous and free from lenses, pockets, streaks or other discontinuities.

2.04 Trench Excavation

Trenches for all pipe lines and culverts shall be excavated to required lines and bottoms taken out to the exact gradients using profiles and boning rods or other suitable devices. The trench shall be of sufficient width to enable the pipes to be properly laid and jointed. No excavation shall be filled in or covered with concrete until the Engineer has inspected it and the Contractor has been authorised to proceed with the works. All surplus excavated materials from such excavation not required for refilling shall be carted away to tips or otherwise disposed of, as directed. All excavations shall be kept dry and all bating and pumping timbering shoring and

supporting of sides that may be required, and any refilling, ramming and disposal of surplus materials necessary in carrying out the excavations and back filling of trenches shall be included in the prices of excavations. Special care shall be taken to provide a solid bed for the barrels of the pipes and where a concrete bed is not specified, the floor of the trench shall be properly shaped to receive the socket. The length of the trench open ahead of pipe laying shall not exceed 200 m.

Trenches shall have a width not less than that shown on the drawings and shall have vertical sides unless the Engineer has approved the use of sloping sides in lieu of timbering. The bottom 50 mm of trench shall be left undisturbed until immediately before the pipe is to be laid when it shall be trimmed accurately by hand to the correct grade. If no bedding is required joint holes shall be formed as necessary so that the pipe, when laid is bedded on the entire length of its barrel on the firm and undisturbed bottom of the trench.

2.05 Rock cutting in trenches for pipes

Where solid rock is met within trenches, it shall be cut up to a depth of 150 mm below the intended levels of the bottom of the pipes and replaced with 150 mm of concrete of the appropriate class or suitable bedding material as specified or otherwise directed by the Engineer. In measuring such rock excavation, the contractor will be allowed a width of 300 mm more than the external diameter of the pipes to a level of 150 mm below the bottom of the pipes. The prices inserted in Bills of Quantities shall be held to cover all expenses in connection with excavating the rock, back filling after lying of pipes and disposing of surplus materials as directed by the Engineer.

2.06 Refilling of slips, over excavation, etc.

The Contractor shall fill with approved material and consolidate all voids formed by over excavation, slips, rain, flooding or any other cause whatsoever at his own expense and to the satisfaction of the Engineer.

2.07 Back filling

In all excavations where the excavated material is required to be returned to the excavation as backfill, suitable material shall be set aside during excavation and shall be kept free from contamination with top soil, vegetable matter or other unsuitable material, failing which the Contractor shall at his own expense import suitable material from elsewhere. Back filling shall not be placed in waterlogged excavations. Backfill material which is in the opinion of the Engineer too wet shall be used until it has dried out sufficiently. Excessively dry backfill material shall be watered during backfill. The Contractor's rates shall allow for any additional costs these measures may entail.

No back filling shall be carried out without the permission of the Engineer that will normally only be given when the Work has been inspected, tested and approved. After such permission has been given back filling shall be carried out as soon as possible. The utmost care shall be taken to ensure that no damage occurs to the Works and compaction methods employed shall be

approved by the Engineer and shall ensure that excessive loads are not placed on pipes or structures upon or around which the backfill is being placed.

Unless specified otherwise all back filling shall be carried out in layers not exceeding 200 mm, such layers being brought up evenly around and above the work and well consolidated before the next layer is placed. Where compaction is carried out by hand, rammers of not less than 4 kg in weight shall be used and the ratio of men employed in ramming and filling shall be two to one.

2.07 Back filling of trenches

Back filling of trenches up to a level of 200 mm above the pipe shall be carried out with suitable fine material with a maximum particle size of 20 mm and shall be placed in layers not exceeding half the diameter of the pipe, kept at the same level on each side of the pipe, and carefully rammed under and around it to a density of 90% Modified AASHTO.

Where embankments are required to ensure sufficient cover to the pipes they shall be constructed to the dimensions shown on the drawings or indicated by the Engineer. They shall be built up evenly over their full width in layers not exceeding 200 mm and consolidated using tampers or mechanical compacting equipment. The cost of trimming the sides to shape and forming drainage ditches at the toe shall be included in the rates.

2.08 Borrow Pits

If because of an insufficiency of suitable material for use in back filling of trenches, road formation or if because of other circumstances the Engineer so agrees or orders, the Contractor shall supply such materials from borrow pits. The Contractor shall obtain the approval of the Engineer to the location of borrow pits and shall adhere to instructions in regard to the area, width, depth and slope of the borrow pits and also to the depth of overburden if any, which has to be removed. Prior to excavating materials from borrow pits, the Contractor shall strip all unsuitable overburden and lay it aside. The use as fill of this and other unsuitable material will not be permitted.

After the use of a borrow pit has been finally discontinued, the overburden and any other unsuitable material previously laid aside shall be replaced in the pits, spread and levelled as required. The sides of the borrow pits shall be graded and the whole area shall be left in a tidy, regular and self-draining state, all to satisfaction of the Engineer. In case of payment for imported fill such fill will be measured solid, after compaction net as shown on Drawings. Supply of material from borrow pits shall, except where otherwise specified, be deemed to cover supply, spreading and compaction of the fill in the works and any other costs the Contractor might have including negotiations with owners, stripping and handling of overburden and the satisfactory reinstatement after completion.

2.09 Disposal of Surplus Material

The Contractor shall not, during the construction of the works, allow any accumulation of surplus earth, rock, clay or other material removed from the excavations and not required for refilling. As trenches are refilled or work is completed the surplus material from excavations,

bricks and other rubbish or waste matter shall at once be removed, the surface properly restored and sites, roadways and footways left clear.

In general and if approved of by the Engineer surplus soil, but not rubbish or rock, from excavations shall, without extra cost over schedule rates, be spread evenly over areas adjacent to such excavations to form a layer not exceeding 100 mm thick, provided always that such spreading does not interfere with other work under this Contract, the work of other Contractors, with the natural flow of storm water, or with the cultivation or other use of the land.

On no account shall the Contractor start making dumps of surplus materials except at places approved of by the Engineer.

2.10 Compaction

Compaction shall be carried out using suitable equipment or hand rammers. Earth shall be slightly moist at the time of compaction and compacted in layers not exceeding 200 mm thick where machinery is used and 100 mm thick where hand-held equipment is used. Granular fill shall be compacted to ensure that it has reached minimum volume. Filling around structures shall be carried out carefully to avoid damage.

2.11 Random backfill at 90%

Random backfill at 90% shall be deposited in horizontal layers not more than 150 mm thick after being compacted, and shall be brought to the moisture content required for the purpose of compaction as instructed by the Engineer and the moisture content shall be uniform throughout each layer. The density of compacted random backfill shall not be less than 90 per cent of the maximum dry density obtained by compaction or, where the backfill is a cohesion less, granular material to a field dry density not less than 1950 kg/m³. Random backfill shall be placed carefully in the vicinity of any structure so as not to damage the structure.

2.12 Measurement of and Payment for Earthworks

The tendered prices for earthworks shall include for all associated work such as setting out in plan and in level, side sloping, timbering, shoring strutting, storm water protection, dewatering, draining, trimming to line and level or grade, removing tree roots and obstructions as specified disposal of soil and surplus material, testing to confirm compliance with the specification and all other contingent works not billed specifically.

All excavations shall be measured net to the lines and levels specified on the drawings or otherwise by the Engineer. Where not specified by the Engineer to the contrary sides of excavations shall be taken as vertical. The depth of excavation shall be taken as the depth from the actual cleared ground level to the formation level specified by the Engineer or, in the case of trench excavation for sewer, water, drainage or other pipes or culverts to the invert level specified by the Engineer. The Contractor shall be deemed to have allowed in his rates for any additional excavation:

Necessary to accommodate the thickness of pipes or culverts and the specified bedding.

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Annex I

Necessary to accommodate the joints of pipes or culverts

Due to inadvertent over break.

Due to over break in rock specified elsewhere for trench excavations for pipelines.

PART 3

CONCRETE WORKS

3.1 Concrete General:

Concrete shall consist of cement, graded aggregate and water thoroughly mixed, placed and compacted as specified.

Before starting concreting the Contractor shall obtain formal written permission for concreting from the Engineer or his representative on site. The Engineer or his representative shall allow concreting after ascertaining the required lines and levels, suitability of formwork, availability of required plant and labour, proper fabrication and spacing of the steel bars and quality and quantity of cement and aggregates.

3.02 Cement

All cement shall be from reputable manufacturers and conform to international standards. Cement shall be stored where it cannot be damaged by rain or moisture and shall be free of lumps when used. Sulphate-resisting cement shall be used for foundations and ordinary Portland cement for other works or as directed by Engineer or his representative.

3.03 Concrete Aggregates

All concrete aggregates (sand & gravel) shall be furnished by the Contractor from any source approved by the Engineer. They shall be free from organic material, lumps of soft material, clay, chalk, lime, peat, loam, soft clayey shale or decomposed stone, vegetable and other impurities that may be harmful to concrete.

Sand for concrete shall be free of stones larger than 2 mm and not include significant amounts of silt and clay. If sand, when dried after wetting, adheres together then it shall be considered unsuitable.

Gravel for concrete shall be uniformly graded and consist of hard and dense rock. The gravel shall be free of materials finer than 5 mm and the surface shall be clean. Gravel for use in reinforced concrete shall be crushed rock. Generally, crushed rock particles shall be spherical or cubical in shape. The maximum nominal size of the gravel shall be (30) mm in mass concrete, forty (20) mm in structural concrete and twenty (20) mm in other thin concrete structures like slabs.

3.04 Water for Concrete

Clean fresh water is to be used for the mixing of all concrete and mortar. Water that is safe to drink shall be considered suitable for making concrete.

3.06 Steel Reinforcing Bars

Steel reinforcement shall be steel bars manufactured to international standards with a minimum yield stress of 250N/mm² or high yield steel grade 4501425 as indicated in the Drawings and Bill of Quantities or as directed and must comply with BS 4449, BS 4461 or another approved standard. Steel fabrics shall comply with BS 4483.

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The Contractor shall be responsible for the accuracy of the cutting, bending and placing of the reinforcement. Reinforcement will be inspected for compliance with the requirements as to grade, size, shape, length, splicing locations, position and amount after it has been placed.

Reinforcing bars or fabric shall be accurately placed and secured in position so that there will be a clear distance of at least 25 mm between the bars or fabric and any adjacent embedded metal work and so that the bars and fabric will not be displaced during the placing of concrete, and the Contractor shall ensure that there is no disturbance of the reinforcing bars or fabric in concrete that has already been placed.

Chairs, hangers, spacers and other acceptable metal, plastic or concrete supports may be furnished and used by the Contractor for supporting reinforcing bars or fabric.

All reinforcement bars shall, immediately prior to placing, be free from loose mill scale, loose rust, oil, grease, dirt or other foreign matter. Reinforcement is to be placed and secured in the exact position as indicated on the drawings and kept in the correct position in the forms without displacement during the process of vibrating, tamping and ramming the concrete in place. All free ends of the plain round bars shall have hook as shown on the drawings or as directed by the Engineer. Bars shall be bound together with best mild steel wire which shall be twisted tight with proper pliers. The free ends of the binding wire shall be bent inward.

Minimum concrete cover to reinforcement should be 50 mm measured from the outside of the bar, unless shown on the drawings or directed by the Engineer.

The Contractor must inform the Engineer of the completion of any reinforcement in time, in order to facilitate its inspection and check of conformity with the Working Drawings well before the concrete is placed. Relevant formalities shall be agreed upon between the Contractor and the Engineer at the appropriate time.

3.07 Drawings and Bar Lists

Steel reinforcing bars or fabric shall be placed in concrete where shown on the Drawings or directed.

A bar bending schedule may be provided for the Contractor's convenience, but does not constitute a Contract Document. The Contractor shall prepare for additional structures, in an approved manner, reinforcement detail drawings showing reinforcement bar lists, bar placement details and bar bending details for each structure, if not provided by the Engineer.

All reinforcing bars shown on the reinforcement detail drawings shall be identified on the bar lists in accordance with the standard reinforcing bar shapes as shown on the Drawings.

All bar lists shall be identified with the relevant reinforcement detail drawing and all bars scheduled on the bar lists shall be defined and dimensioned in a manner approved by the Engineer.

3.08 Concrete Classes

The classes of concrete to be used in the Works shall be as shown on the Drawings, Bills of Quantities or as directed by the Engineer. The concrete is classified on the basis of its compressive strength at twenty eight (28) days as well as the maximum size of the aggregate as shown below and nominal mix proportions shall be used only as a guide.

Concrete Max Slump(mm)	Concrete Class	Characteristic Cube Strength at 28 days (kg/cm ²)	Maximum Aggregate size(mm)	Maximum water/cement ratio(%)	Approx. cement content	Nominal Mix proportions (Kg/m ³)
75	M25	250	20	45	400	1 : 1 : 2
75	M20	200	20	45	400	1 : 1.5 : 3
75	M15	150	30	50	310	1 : 2 : 4
100	M10	100	30	55	220	1 : 3 : 6
100	M5	50	20	60	170	1 : 4 : 8

Type	Description
M25	Reinforced concrete for superstructure of bridge, flume, pre-cast concrete slab, etc.
M20	
M15	Reinforced concrete for various types of concrete structures and concrete lining.
M10	Plain concrete for mass concrete
M5	Plain concrete for foundation and filling purpose (blinding).

3.09 Consistency

The concrete shall be of such consistency that it can be readily transported, placed and compacted in the Works without segregation of the materials. The resulting concrete shall be uniform and free from honey-combing. The consistency of the concrete as determined by the slump test shall be within the range of 5 cm to 10 cm. Samples for slump determination will be taken from the concrete during placing in the formwork.

3.10 Mixing Concrete by Machine

Unless otherwise authorized by the Engineer, concrete shall be machine mixed at site.

Where the concrete is to be mixed in machines, these shall be of the batch mixing or other approved type. The machines shall ensure that all the concreting materials including the water are thoroughly mixed together before any portion of the mixture is discharged. The machines must be capable of discharging their contents while running.

All classes of concrete shall be mixed for a period not less than 1½ minutes after all materials, including water, are in the mixer. All mixing water shall be introduced before one-fourth of the mixing time has elapsed. The mixers shall not be loaded beyond their rated capacity, nor be operated at a speed in excess of that recommend by the manufacturer, generally between 15 to 20

revolutions per minute. The mixer shall produce a concrete of uniform consistency and appearance. All mixing equipments shall be cleaned before commencing mixing and shall be kept free from set concrete.

3.11 Mixing Concrete by Hand

Where concrete is mixed by hand, this shall be done as near as practicable to the site where it is to be deposited. Clean mixing bankers of platforms of sufficient areas for the proper execution of the work shall be provided. These platforms if constructed of timber shall consist of planks closely jointed so as to avoid the loss of any grout or liquid from the wet concrete. The whole of the aggregate and cement shall be turned over on the banker in a dry state at least three (3) times. The water shall then be added gradually through a rose head, after which the materials shall again be entirely turned over in a wet state at least three (3) times before leaving the banker.

3.12 Foundation Preparation for Concrete

Before placing concrete on foundations, the Contractor shall remove from all such surface oil, objectionable coatings, loose or unsound fragment of earth mud, debris and standing water, to the satisfaction of the Engineer and he shall keep such surfaces clean and free from standing water during concreting operations. Where new concrete is to be deposited on or against rock, the surface of the rock shall be toothed to form an adequate bond

3.13 Placing of Concrete

The arrangements for placing concrete are to be such that in all cases the material may be conveniently handled and placed in the required position without re-handling or segregation. Except where otherwise directed, concrete shall not be placed unless the Engineer or his representative is present and has previously examined and approved the positioning, fixing and condition of reinforcement and any other items to be embedded and the cleanliness, alignment and suitability of the containing surfaces or formwork.

In placing concrete through reinforcement, care shall be taken that no segregation of the coarse aggregate occurs. On the bottom of beams or slabs, where the congestion of steel near the forms makes placing difficult, a layer of mortar of a composition compatible with the required concrete strength as directed shall be first deposited to cover the surface to a depth of approximately 3 cm.

Concrete shall not be placed in or in contact with standing or running water unless so specified or approved. Concrete shall not be placed against placed concrete which has been in position for more than 30 minutes unless a construction joint is formed as hereafter specified. When stoppage of concreting operations occurs for any reason, construction joints shall be placed. Before concreting operations are resumed, the surface of the concrete shall be cut or chipped to remove all laitance and to expose the aggregate. The surface of the concrete shall be thoroughly saturated and coated with a proportion of weight of 1:2 cement mortars one (1) cm thick before the placing of the concrete is resumed.

Concrete as reinforced concrete work shall be deposited in small quantities in a plastic state with a water cement ratio such to give the specified strength. The depositing of concrete in individual

members shall be continued without stoppage up to an approved pre-arranged construction joint or until the member is completed and shall be finished off in such a manner that the junction of members shall be monolithic unless otherwise specified.

3.14 Concreting in High or Low Ambient Temperature

Where the ambient temperature exceeds thirty two degrees Celsius (32°C), the Contractor shall take special measures in the mixing, placing and curing of concrete. The temperature of the concrete when deposited shall not exceed thirty degrees Celsius (30°C). The Contractor shall carry out all necessary special measures to ensure that the maximum concrete temperature after placing shall not exceed thirty degrees Celsius (30°C) at the time of placing. During placing suitable means shall be provided to prevent premature stiffening of the concrete placed in contact with hot surfaces. The Contractor shall not mix and place concrete when the ambient temperature falls below three degrees Celsius (3°C).

3.15 Concreting in Adverse Weather

No concreting will be allowed to take place in the open during storms or heavy rains/ snowfall. Where strong winds are likely to be experienced additional precautions to ensure protection from driving rain and dust shall also be taken. The Engineer may withhold approval of commencement of concreting until he is satisfied that full and adequate arrangements have been made.

3.16 Vibration of Concrete

Except where otherwise permitted by the Engineer, concrete shall be fully compacted throughout the full extent of the layer and shall be brought up in level layers of such depth that each layer is readily and properly incorporated with the layer below with the use of internal vibrators or by spading, slicing or ramming. It shall be thoroughly worked against formwork and around any reinforcement or embedded items without displacement. The internal concrete vibrator will either be arranged by FAO or by Contractor himself.

The duration of vibration shall be limited to that required to produce satisfactory consolidation, without causing segregation. Vibration shall, on no account, be continued after water or excess grout (if any) appears on the surface.

3.16 Curing and Protection

The Contractor shall take adequate measures to ensure that the concrete shall be kept damp continuously for a minimum of three (3) days after casting or for such other time as the Engineer may direct. After removal of this covering (layer of sacking, canvas, Hessian, straw mats or similar absorbent material or a layer of sand), the concrete shall then be sprayed with water for minimum period of a further fourteen (14) days.

All concrete liable to be affected by running water or wave action shall be adequately protected from damage during the setting period and all temporary protection works shall be to the satisfaction of the Engineer.

3.17 Joints in Concrete

Joints in concrete shall be provided in manner and position as shown on contract drawings. In the case of water retaining structures, joints shall be made water-tight by the provision of a continuous water stop, with suitable water resistant filler material and sealant as approved by the Engineer.

Joints required by the Contractor but not intended by the Exhibited Design are in principle subject to the Engineer's approval. The location and design of such joints are to be depicted in the Drawings that are then to be submitted to the Engineer in sufficient time. In determining the location of joints, the Contractor must consider the static requirements of the respective structural member, as well as the special local and climatic conditions.

3.18 Construction Joints

Definition: Concrete surfaces, upon or against which concrete is to be placed and to which new concrete is to adhere, that have become so rigid that the new concrete cannot be incorporated integrally with that previously placed, are defined as construction joints.

Location of Construction Joints: The Contractor shall submit for approval, drawings showing his proposed location of construction joints not less than 30 days before placing concrete.

Forming Construction Joints: Construction joints shall be approximately horizontal or vertical unless otherwise shown on the Drawings or directed and shall be given the prescribed shape by the use of forms, where required, or by other means that will ensure suitable jointing with subsequent work; provided that unless otherwise shown on the Drawings, key-ways will not be required at construction joints. All intersections of construction joints with concrete surfaces which will be exposed to view shall be made straight and level or plumb.

3.19 Joint Sealer

The joint sealing material must be resistant to oil, the most common chemicals and sunlight. It shall be of permanent elasticity, be suitable to carry the structural deformations and must possess an outstanding adhesion to the concrete. The elastic extension must be at least 150 % and the resistance to heat shall be between 50 degrees Centigrade and +120 degrees. Centigrade, which are to be confirmed by submission of verified test certificates.

Joint sealer shall be the make of a recognised manufacturer, such as THIPFLEX 600 of EXPANDITE or equivalent approved. Joint sealer shall be supplied with primer coats, backing material and/or bond breakers to the joint fitter, as required by the manufactures recommendations.

The Contractor shall submit to the Engineer a statement from the manufacturer(s) of the joint filler and sealing materials, that these materials are suitable under the prevailing local and structural conditions.

3.21 Waters toppers

Size and Material: Water stops, nominally 225 mm wide, shall be placed in joints of concrete structures as shown on the Drawings or as directed. The water stops shall be of extruded polyvinyl chloride complying with BS 2571: Class 3, Compound Type G4. The water stops shall be of sufficient stiffness so that they remain in their correct position during concreting. The type shall suit the particular location in the structure in which the water stop is to be placed and the pattern shall be such that concrete can be placed all around it with complete consolidation and no voids or crevices.

Water stops used in each location shall include at least on approved nailing strip so located that the efficiency of the water stop is not impaired, shall have a minimum thickness of 4 mm and shall be as approved. The width of the water stop shall be within a tolerance of 10 mm of the nominal width exclusive during storage. The Contractor shall store the water stops in such a way that the material does not deteriorate during storage.

Joints: The number of joints in the water stops shall be the minimum practicable and all joints and bends shall be made as approved by the Engineer. The number of straight field joints shall be kept to a minimum and all 'Tee' and 'Cross' joints shall be factory produced. The Contractor shall protect the water stops against perforation or damage during the progress of the work. All joints shall be made in such a manner as to ensure:

That the material is not damaged by heat, searing or by the application of cementing materials:

That the splices have a tensile strength not less than 80 per cent of that required of the specified material;

That the splice is watertight and free of air bubbles, and that the ribs and central bulb, where applicable, match up exactly and are continuous.

3.22 Form Work

Formworks for concrete shall be constructed from materials of sufficient strength and supported to ensure that there is no deflection when concrete is placed. The formwork shall conform to the shapes, lines and dimensions of structures shown on the drawings. Where the concrete finished surface is exposed, the formwork shall be of good quality and free of gaps. Formwork shall not be removed until the concrete has obtained sufficient strength. Normally, formwork can be removed from walls after 2 days and from beneath slabs after 2 weeks.

The minimum periods between concreting and the removal of forms shall be as follows:

Sides of beams, walls, columns and piles	24 hours
Soffits of secondary slabs (props left in)	4 days
Soffits of main slabs (props left in)	8 days
Soffits of beams (props left in)	8 days
Removal of props - secondary slabs	10 days
Removal of props - beams and main slabs	21 days
Arch centres, wedges eased	8 days
Arch centres, struck	21 days

The times in the above table are given as a guide and are based on average weather conditions and the use of Ordinary Cement. They may be changed if other types of cement are used, subject to the Engineer's agreement. Formwork shall be constructed so that it can be removed without undue shock or vibration and so that side shutters of members can be removed without disturbing the soffit shutters; if the contractor wishes to leave some of the props in place when the soffit shutters are removed, these props shall not be disturbed during the striking. The detailed arrangements of the props shall be submitted in advance to the Engineer. In the case of heavy loading, folding wedges shall be provided. For pre-stressed units the side shutters shall be eased as early as possible and the soffit shutters shall permit movement of the units when the pre-stress is applied. All formwork must be removed without damage to the concrete.

3.23 Concrete Surface Finish

The concrete surface shall be thoroughly worked during the operation of placing by means of a broad tined fork or concrete spade of an approved type. The working shall be such as to force all coarse aggregate from the surface by screeding and trowelling with a wood float to produce a smooth finish free from water and air pockets or honey comb. Screeding shall be carried out, following compaction of the concrete, by the slicing and tamping action of a screed board running on the top edges of the formwork or screeding guides to give a dense concrete skin true to line and level. Wood float trowelling shall be carried out after the concrete has stiffened and the film moisture has disappeared.

3.24 Pre-Cast Concrete

With the approval of the Engineer the Contractor may pre-cast members which were specified to be constructed in-situ. Pre-cast concrete units shall be of concrete strength as indicated on contract drawings or as indicated by the Engineer. The concrete pre-cast units shall be cast in horizontal position, unless otherwise directed by the Engineer. In general same concrete quality measures should be applied as for other concrete component. Generally members which are structurally dependent on a rigid fixing with adjoining structures will not be permitted to be constructed by pre-casting.

Pre-cast units shall be jointed with cement mortar as specified or other jointing system as shown on the Drawings, or as directed by the Engineer. The mortar shall be packed in layers between the units with steel tools until the whole of the joint is solidly filled and the exposed surfaces of the joint shall be raked out to a depth of 6 mm and flush pointed with similar mortar, but of pointing consistency.

3.25 Cement Mortar

Cement mortar shall be machine mixed and unless otherwise specified, consist of three (3) parts of sand to one (1) part of Ordinary Portland cement mixed and thoroughly incorporated together. Just enough water will be added to give workability appropriate to its use. The above proportions are by volume. Mortar shall be used whilst freshly mixed and no softening or re-tempering will be allowed.

3.26 Concrete Pipe Culverts

General: The Contractor shall construct concrete pipe culverts under access roads as shown on the Drawings or as directed. Concrete pipes for culverts shall be between 450 mm and 600 mm in diameter or as directed by the Engineer shall conform to the requirements of standards approved by the Engineer and shall be standard grade reinforced pipes with spigot and socket joints. All joints in concrete pipes shall be sealed with cement mortar as directed.

Installation: Pipes shall be laid in trenches in solid ground or in drainage depressions in locations approved by the Engineer. Compressible and other unsatisfactory material on the bottom of the trenches shall be removed as directed before laying the pipes.

Unless otherwise shown on the Drawings or directed by the Engineer, all pipes for concrete pipe culverts shall be laid on a 150 mm thick layer of selected fine granular bedding material and properly jointed. The bedding material shall not contain stones or rock fragments having a maximum dimension greater than 10 mm and shall be obtained from sources approved by the Engineer. Bedding materials shall be compacted by approved equipment to provide a firm and uniform bed for approximately one third of the circumference of the pipe as directed.

For concrete pipe culverts over which a roadway fill is to be placed, the Contractor shall ensure that the length of the culvert is sufficient to support the specified width of roadway at the batter slopes shown on the Drawings or directed.

After the pipes have been bedded, laid and jointed and approved by the Engineer, backfill material shall be placed about the pipes and compacted by approved equipment for a height of at least 300 mm above the top of the pipes, unless otherwise shown on the Drawings or directed. Backfill material placed within 300 mm of any pipe shall not contain stone or rock fragments having a maximum dimension greater than 80 mm. Insofar as it is practicable, backfill material shall be obtained from excavations in the vicinity of the pipe being backfilled and additional material which may be required shall be obtained from approved sources.

Headwalls, Wing Walls and Sumps: For road construction and elsewhere as shown on the Drawings or directed, stone pitched headwalls and wing walls shall be constructed at the end of pipe culverts, as directed. Culvert headwalls, wing walls and inlet sumps shall be constructed to the lines, grades and dimensions shown on the Drawings or directed.

3.27 Measurement and Payment of Concrete Pipe Culverts

Measurement, for payment, of concrete pipe culverts will be made of the length of pipe measured along the centreline of the pipes in place, with no allowance for tap at joints. Payment for furnishing and installing concrete pipe culverts will be made at the applicable rate per linear metre tendered in the priced Bill of Quantities. These rates shall include the cost of furnishing and placing of backfill materials. Payment for excavation of trenches will be made in accordance with the specifications for excavations. Payment for stone pitching in the headwalls, wing walls and sumps will be made in accordance with Clause 4.12

PART 4

4.00 STONE WORKS

4.01 Stone

Stone for all purposes shall be the best of its kind, sound and durable, free from flaws and from soft, weathered or decomposed parts. In general the stones should be of uniform size to avoid voids between stones. The stone and the quarry from which it is obtained shall be subject to the approval of the Engineer before being used or placed. All the stone shall have a specific gravity of not less than 2.5.

Rock used for stone pitching shall be sound durable rock selected from the harder rock from the required excavations or other approved sources. The rock shall not be less than 150 mm thick and shall be properly bedded to a uniform surface on an approved bedding material. The exposed surface of each stone shall be approximately flat and of an area not less than 0.03 m².

4.02 Masonry

Stone used in masonry shall be regular field, river or quarry stone of approved quality, free from seams and other defect. All masonry stone shall be kept slightly moist at the time of use. Stone used for masonry shall be two-thirds of the wall thickness. Round stone will be permitted only in limited amount in combination with angular stone and shall not be used in walls having a thickness less than forty (40) cm.

4.03 Types of Masonry

The stone masonry will be divided into two (2) types, Type A and Type B, according to cement mortar used for jointing. The cement-sand ratio by volume is given in the following table:

Type of stone masonry	Ratio of cement-sand
Type A	One part of Portland cement to three sand (1:3)
Type B	One part of Portland cement to four sand (1:4)

Type A stone masonry shall be used for protection work against abrasion and attack by boulder and gravel. Type B stone masonry shall be used for all stone masonry structure such as flumes, walls, piers, transition of canal structures, etc.

4.04 Laying of Stones

In laying the first course a full mortar bed shall be placed on the foundation to the full thickness of the wall. The stones shall be laid by hand with specified mix of mortar in between two stones and a 12 cm layer of mortar on the bottom of the new layer. The finished surface of the masonry shall be made as the shape and size of the stones will permit varying not more than 4 cm from the required contour. Each course is carefully plumbed and checked for vertical alignment. All alignment and plumbing of each unit to final position must be done while the mortar is soft.

4.05 Surfacing and Pointing

Joints on the face of all stone masonry exposed to view shall be neatly finished. The mortar in the joints of the stone masonry shall first be removed to a depth of three (3) cm. The joint shall then be cleaned thoroughly with a wire brush of all loose materials and filled with cement mortar with a mix proportion of one port-land cement and two part of sand by volume (1:2). The surface of the face stone shall be cleaned of all mortar upon completion of the finishing operation.

4.06 Contraction Joints

Contraction joints shall be provided at intervals of twenty (20) meters or less except as otherwise mentioned on the drawings or as directed by the Engineer. The contraction joint shall be a straight line perpendicular to the flow direction and, where it is necessary on such horizontal surfaces as floors, shall be parallel to the flow direction.

4.07 Weep Holes

Weep holes of sizes 150 mm x 150 mm are to be left in the body of masonry walls if shown on the drawings. These weep (drainage) holes are to be covered with inverted filters on the backfill side in an area of 400 mm x 400 mm with a thickness of 400 mm. They are to be located at 1m intervals both vertically and horizontally in a staggered way

4.08 Riprap / Stone Pitching Protection

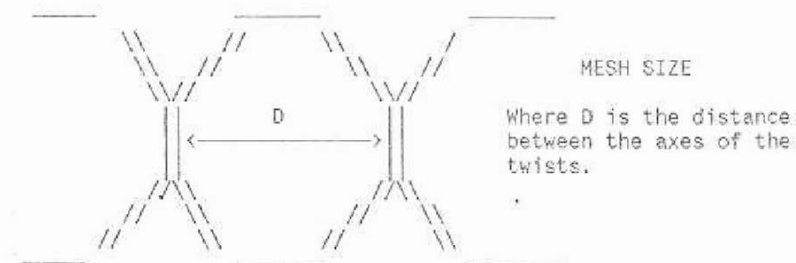
The quality of stone shall be as specified in Clause 4.01. The stones for rip-rap shall be a natural, big size, of irregular shape having a minimum weight of 30 kg each and minimum thickness of 20 cm when measured at the thinnest section. At least 60% of the stones shall have a minimum weight of 40 kg each, with minimum volume of 0.03 m³.

The stone shall be laid by hand, to the required lines and grades and to the thickness shown on the Drawings and placed so that it will thoroughly tamped, or driven into place. The space between the larger stone shall be filled with spalls of suitable size driven to face, varying not more than 60 mm from the required contour. Before placing riprap rocks, the bedding which consists of well-graded sand shall be provided with the required thickness shown on the drawings or as directed by the Engineer. Such sand bedding shall be compacted thoroughly by mechanical tampers. The rocks in the riprap shall then be dumped and graded off on such sand bedding.

Pitching will be used where a finished horizontal or inclined surface is required. It shall consist of hand placed stones, with spalls wedged into the interstices to produce an even surface, without projection above the neat lines shown on the Drawings. Care shall be taken to ensure that the stones are well bedded and the percentage of spalls shall not exceed forty percent (40%) of the total rock volume. Pitching on slopes shall be built upwards from the toe, unless otherwise directed by the Engineer. A coping consisting of large flat stones shall be laid along the top of stone pitching on slopes to produce a firm edge.

4.09 Gabion Works

The quality of stone for gabion shall be as specified in Clause 4.01. The stone size ranges from 200 mm to 350 mm. Small stones should be avoided. The stones used should have a minimum size of not less than "D" (mesh width) and not greater than 3.5 times "D", where D is the specified mesh width as given below. Larger stones can be used provided that their total volume does not exceed 5% of the cell volume.



Gabions shall be of the types and sizes shown on the Drawings. The cages shall be constructed from mild steel wire complying with BS 1052, "Specification for mild steel wire for general engineering purposes", galvanised in accordance with BS 443, "Specification for testing zinc coatings on steel wire and for quality requirements". Wire used for the formation of the mesh panel will have a diameter of 3.0 mm.

4.10 Filling and Placement

The foundation for each gabion and mattress shall be prepared by the Contractor to the satisfaction of the Engineer. Irregularities in the foundation shall be excavated or tightly filled with gravel to produce a surface which has no protrusions or cavities in excess of 100 mm.

The gabions and mattresses shall be flexible galvanised gabions of the size shown on the Drawings and shall be fabricated from wire mesh. Each gabion and mattress shall be divided by diaphragms into cells, whose length shall not be greater than the width of the gabions or mattresses plus 100 mm. The gabion and mattress boxes shall be fabricated 'Maccaferri' type or equivalent supplied by an approved manufacturer.

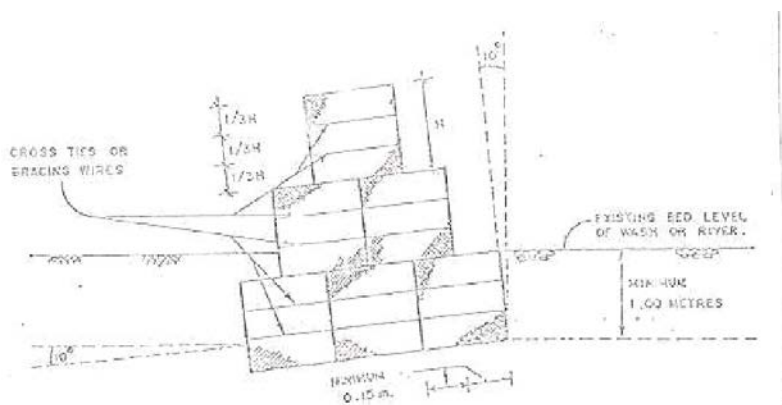
The prefabricated gabions and mattresses shall be obtained complete with sufficient suitable galvanised wire for completing the wiring of the gabions and mattresses on Site.

The wire in the gabions and mattresses shall be galvanised similar to or stronger than that used in 'Maccaferri' galvanised gabions. The wires in the gabions and mattresses shall be arranged so that the spacing between the wires is similar to or smaller than in 'Maccaferri' gabions and mattresses.

The empty gabions shall be placed to line and level as shown on the Drawings or as directed by the Engineer and then stretched so that the gabions regain their shape on being filled. Diaphragms shall be provided at not more than one metre (1 m) intervals for baskets and not

more than 1.2 metre intervals for mattresses. A gabion shall not be completely filled until the adjacent basket or mattress has been half filled, unless otherwise directed, in order not to cause displacements from bulging during filling.

Because of small horizontal movements associated with the settlement or consolidation, gabion walls must not be constructed with a vertical front face as it subsequently tilts forward slightly. All gabion walls must be constructed with the front face at the slight angle to the vertical (10:1 – vertical: Horizontal). This should be achieved by sloping the foundation accordingly as shown in the diagram below:



Before filling, adjacent baskets should be secured together using steel lacing wire provided for the purpose and conforming to the specification. The sides must be secured in straight lines with no gaps left between the sides of adjacent baskets. Where more than one layer of baskets is laid, they must be placed as shown on the Drawings or as directed by the Engineer with a minimum step of 0.15 m between the faces of the lower and upper gabion boxes.

All gabions must be connected to each other along corners with the same lacing operation. For correct lacing operation, the wire should be passed through each mesh, making a double twist every other mesh.

Careful attention must be given to the filling operation to ensure that the stones are placed evenly in the baskets with minimum voids in between. Smaller stones can be used to fill the central voids of the boxes, but all external stones must be at least 1.5 D where D is the diameter of the mesh.

The stones selected for the top layer of gabion baskets must have a flat surface to ensure that the wire that does not rest on sharp corners. They must have a minimum dimension of 1.5 D in all directions and be placed to ensure a minimum number of voids.

Bracing wires must be fixed at depths of 1/3H where “H” is the height of the gabion box. The horizontal distance between the bracing wires should also be 1/3H thus for a gabion basket of 2m x 1m x 1m dimension, eight bracing wires are provided. For the gabion boxes used on the project the bracing wires should be placed at the following depths and spacing.

Gabion Dimensions			Depth of Bracing Wire from bottom of gabion		Horizontal Distance Between Bracing (meters)		
Length (m)	Width (m)	Depth (m)	1 st Brace	2 nd Brace			
2.00	1.00	1.00	0.35	0.70	0.40	0.80	1.20
					1.60		
1.00	1.00	1.00	0.35	0.70	0.35	0.70	-
2.00	1.00	0.50	0.25	-	0.40	0.80	1.20
1.00	1.00	0.50	0.25	-	1.60		
					0.35	0.70	-
					-		

Stones should be filled to the depth of the first brace and then the bracing wires placed directly above the level of the stone making sure the wire passes around at least two mesh widths. The procedure should then be followed for the next layer.

In aprons downstream of weirs and similar places where water falls directly on to the gabions, vertical bracing wires between the top and bottom mesh must be provided. Additional horizontal bracing must be used at the corners of structure.

4.11 Gabion Wire Protection

A concrete layer will be provided on the crest of wires as shown in the Drawings or directed by the Engineer to protect the gabion mesh against damage. This should be of minimum thickness of 0.10 meter and should be provided once the structure has been completed and any initial settlement has taken place. Construction joints should be provided at regular intervals, which should not exceed 3 meters.

A rigid capping of concrete to gabions walls is not to be provided as this restricts the flexibility of the gabion structure. When the Engineer recommends protection of such walls, as in the case of protection of theft of wire, a thickness of 0.05 m should be provided. Where greater thickness is recommended, a flexible protection material must be used.

Contract No.

Annex I

4.12 Measurement and payment of Pitching and Gabions

Stone Pitching: Measurement, for payment, of constructing stone pitching will be made of the actual area of stone pitching in place to the lines, grades and dimensions shown on the Drawings or directed. Payment for constructing stone pitch will be made at the rate per square metre tendered in the priced Bill of Quantities.

Gabions and Mattresses: Measurement, for payment, of furnishing and placing gabions and mattresses will be made of the volume of completed gabions and mattresses in place to the lines, grades and dimensions shown on the Drawings or as directed. Payment for furnishing and placing gabions and mattresses will be made at the applicable rate tendered thereof in the priced Bill of Quantities. These rates shall include the cost of all freight, labour, fabrication, erection, filling and placing of gabions and mattresses required to complete the work

Bill of Quantity
For ITB#
ToRs for the Executing Firm for Implementation of Irrigation Improvement Works

Main ToRs for the consultancy firm will be as follows:

- i) Will assist in the formation of (60) Water User's Associations and carrying out their necessary capacity development / trainings in O & M of the rehabilitated infrastructure and improved on farm water management related activities
- ii) Will conduct complete topographical and profile survey, preparation of designs, cost estimates and BoQs of all the selected (60) schemes including (30) irrigation watercourses and (30) water control & harvesting structures along with their allied component works.
- iii) Construction supervision, as per design and specifications and rectification of sub-standard works ensuring work quality of all the schemes
- iv) Identification and recommendation of Agency based local contractors to compete in tendering process for the construction of these schemes.
- v) Site measurements, verification and recommendation of contractor's bill for payment
- vi) Preparation and timely submission of project monthly, interim and completion reports and success stories
- vii) Calculating the scope of work and bill of quantities (BoQs) to be done under cash for work program, identification of beneficiaries, preparation and recording of muster rolls
- viii) Signing terms of partnerships (ToPs) during work execution with the WUAs, according to template provided by FAO
- ix) Implementation and completion of activities according to Project Work Plan
- x) Ensuring proper visibility actions are implemented throughout the project implementation

Contract No.

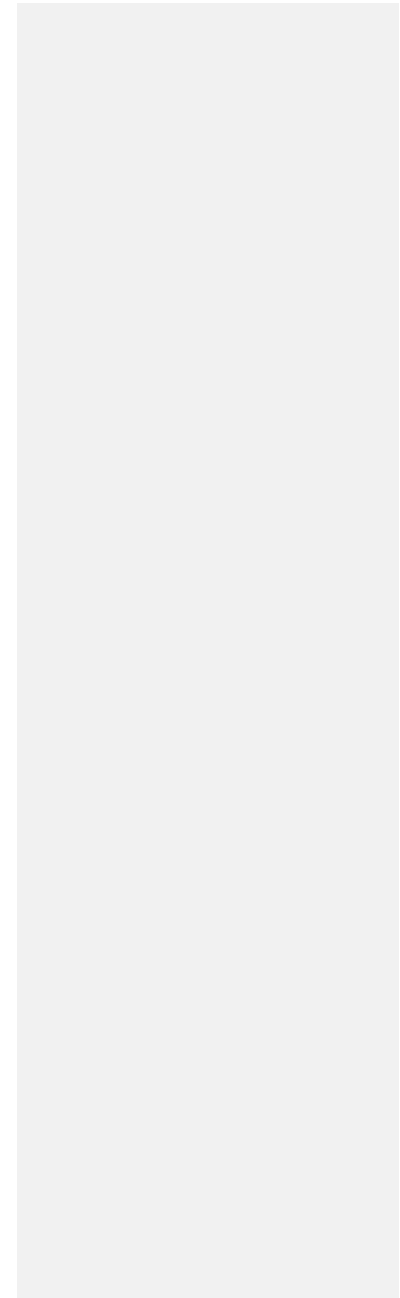
Annex III

SCHEDULE OF CONTRACT PERFORMANCE

The Contractor's performance is ordered Months as from the date of signature of the Contract (~~..... Months for works and
.....Months for Defects Liability Period~~).

3. Receipt of the detailed work plan by the ~~Site Engineer of Irrigation~~Irrigation Engineer ~~Department FATA/FAO~~ / Water Expert is a must within two (2) weeks of the date of entry into force of the Contract, according to Article 2.4 of Section I.

The said work plan is to furnish information on details and sequence of work execution ~~of construction material~~ provision and manpower allocation.

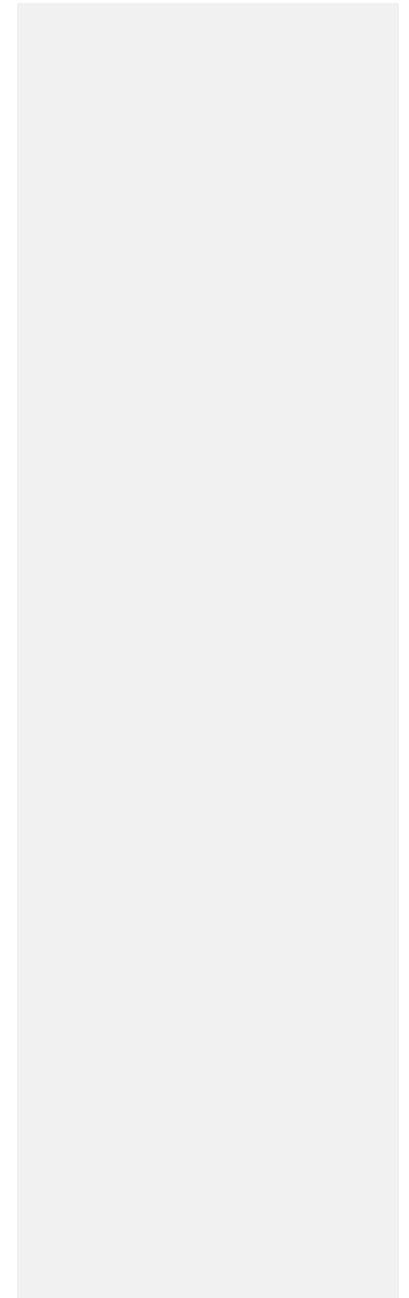


Contract No.

Annex III

Schedule of ~~Implementation~~ ~~construction~~ works

This is the work plan submitted by the contractor at the time of bidding; the actual work plan will follow after signature of the contract and will be an integral part of the contract.



Contract No.....

Annex IV

SERVICES AND FACILITIES PROVIDED BY FAO

FAO has undertaken to provide the following: Not Applicable.

Comment [F15]: NA

SCHEDULE AND METHOD OF PAYMENT

1. FAO shall effect the payments subject to the provisions of Article 5 and 6 of Section I and upon receipt, at the FAO Office mentioned in paragraph 5 below, of one (1) copy of the Contract duly signed by the Contractor.

The payment schedule for the contract is as per below:

~~First Payment will be effected upon completion of 25-30% of works/services under this contract and upon invoice acceptance by the Water Expert and FAO's Contract Manager mentioned in Article 20.1 of Section I and/or FAO Representative or Authorized FAO Officer. The 10% of the invoiced amount will be withheld by FAO and represent the retention amount;~~

~~Second Payment will be effected upon completion of 60-70% of works/services under this contract and upon invoice acceptance by the Water Expert and FAO's Contract Manager mentioned in Article 20.1 of Section I and/or FAO Representative or Authorized FAO Officer. The 10% of the invoiced amount will be withheld by FAO and represent the retention amount;~~

~~Third payment will be effected upon completion of 100% of works/services and upon signature of Certificate of Completion by FAO and provision of a Handover Certificate by the Contractor. This payment will include the amount payable for actual works performed and 50% of the retention amount withheld by FAO during previous payments;~~

~~Final payment representing 50% of the retention amount withheld by FAO during previous payments will be effected upon signature of the Defects Liability Period (DLP) Certificate, completion of all responsibilities of the Contractor in respect of DLP and upon expiration of the DLP, and, where applicable, after rendering of the works concerning liability period of the contract stating the quantity of works completed, accepted and duly certified by the Water Expert and FAO's Contract Manager mentioned in Article 20.1 of Section I and/or FAO Representative or Authorized FAO Officer.~~

Comment [F16]: NA

- i) First instalment of PKR (20 %) upon signing of this Agreement by both Parties;

- ii) Second instalment of PKR (30 %) on identification of schemes, formation of water user associations (WUAs), survey, design, drawings, cost estimation, bill of quantities of all the (60) schemes and signing of all the "Terms of Partnership" with WUAs to be summarised and submitted in the first monthly report.

Contract No.....

Annex V

iii) Third instalment of PKR (30 %) upon submission of interim report stating that 50% of construction work on all the schemes is completed by the construction Contractor

iv) Final instalment of PKR (20 %) upon acceptance by FAO responsible Officer of final report and statement of expenditure (SOE) certified by the Executive Officer, Chief Financial Officer and Chief Accountant or similar of Service Provider (SP)

2. Total FAO's liability against aforementioned payment schedule shall not exceed:
3. USD (~~137,257~~ PKR ~~14,385,201~~.....)

3. The Contractor shall indicate clear payment/banking instructions on all invoices which shall bear a consecutive number and indicate:

3.1. Contract No.....

3.2. Any supporting documents attached;

3.3. The certification by the Irrigation Engineer / WM Expert~~Resident Engineer~~ mentioned in Article 10 of Section I, if required by the provisions of the present Annex.

4. The Contractor shall submit the invoices mentioned above and duly certified by the Irrigation Engineer~~FAO Resident Engineer~~, for approval to the FAO Representative to the following address:

FAO of the United Nations Pakistan
NARC, Premesis Chak Shehzad Islamabad

through

.....

Islamabad, Pakistan
Food and Agriculture Organization of the United Nations
GCP/PAK/113/USA and OSRO/PAK/502/JPN Project..... projects

5. FAO will make payment to a bank account indicated by the Contractor in its invoice, providing that the bank account is in the name of the Contractor and located in the country of residence of the Contractor. Any request for payment to a bank account other than that of the Contractor or to a bank other than one located in the Contractor's country of residence should be specified in a written notice with the reasons for such deviation from standard payment terms, and authorized by FAO's Contract Manager mentioned in Article 20.1 of Section I.

STATEMENT OF DUTIES AND POWERS OF THE FAO Irrigation Engineer WM EXPERT

FAO's Irrigation Engineer / Water Expert, hereinafter the Resident Engineer, shall supervise the execution of this Contract from the day it is signed by FAO until the completion of the Defects Liability Period in collaboration with the Contractor irrigation department of FATA hired for the supervision of work and the signature of the Certificate of Defects Liability Period.

The duties and powers of the Irrigation Engineer / WM Expert are the following:

1. The Water expert shall in general carry out such duties as issuing instructions, decisions, certificates and orders as are required for the satisfactory execution of the Contract.
2. The Water Expert is, in particular, empowered to:
 - 2.1. Carry out tests of samples of materials and supplies and verify workmanship, as he/she may consider necessary at the cost of the Contractor in order to ensure their compliance with the relevant specifications and standards of **Annex I**;
 - 2.2. Approve in writing extensions of the times for completion of the Works as set out in **Annex III** except if they are caused by circumstances for which, in the opinion of the Resident Engineer, the Contractor is responsible;
 - 2.3. Explain, adjust and modify in case of ambiguities or discrepancies the specifications of **Annex I** and the relevant drawings of the Works, provided always that this shall not result in any additional costs to FAO beyond the amount specified in Article 4.1 of Section I;
 - 2.4. Measure quantities of work completed and approve or reject invoices submitted by the Contractor for such quantities;
 - 2.5. Determine the amount(s) of liquidated damages and deduct them from any of the Contractor's invoices due for payment;
 - 2.6. Issue and sign the Certificates of Completion of Works and Defects Liability Period;
 - 2.7. Authorize the execution of additional works by the Contractor, including the delivery of goods, materials and services not listed in **Annex I**.
3. The Irrigation Resident Engineer shall immediately notify the FAO Representative and Project Coordinator of any accident arising from the execution of the Contract and shall provide full particulars thereof.
4. The Irrigation Resident Engineer in the project country is:

.....
Food and Agriculture Organization of the United Nations,
OSROGCP/PAK/502/JPN..... project

Contract No.

Annex VII

DRAFT CERTIFICATE OF COMPLETION OF WORKS

WHEREAS

The Food and Agriculture Organization of the United Nations, hereinafter referred to as the "Organization" or "FAO", has awarded to the firm

, hereinafter referred to as the "Contractor", a Contract bearing number, hereinafter referred to as the "Contract", and

The Contractor has completed all of the construction works as set out in detail in the Contract and hereinafter referred to as the "Works" in accordance with the specifications and at the sites set out therein,

NOW THEREFORE

I the undersigned, in my capacity as FAO's Resident Engineer mentioned in Article 10 of Section I of the Contract, having supervised the construction of the Works and having duly undertaken all necessary inspections and verifications of such Works in accordance with the rules and regulations of my profession, confirm that the Works mentioned below have been completed in full compliance with the relevant specifications, plans and drawings of the Contract and the laws and regulations of the country where such Works have been constructed, on the date of signature of this certificate, except for the reservations set out below, if any. This date being the date of commencement of the Defects Liability Period of such Works which will continue for the period of time mentioned in Article 19 of Section I of the Contract.

The Works completed are the following:

.....
.....

The reservations are the following: (*)

.....
.....

(*) (if not applicable please indicate "NONE")

1. Signature: Name:(Place and date of issue)

Title: Resident Engineer of the Food and Agriculture Organization of the United Nations

Signed in :.....(Place of issue) On.....(Date of issue)

2. Signature:.....Name:

Title: FAO Representative or his Authorized Agent

Signed in :.....(Place of issue) On.....(Date of issue)

3. Signature:.....Name:

Title: The Contractor

Signed in :.....(Place of issue) On.....(Date of issue)

Contract No.

Annex VIII

DRAFT HANDOVER CERTIFICATE

WHEREAS

The Food and Agriculture Organization of the United Nations hereinafter referred to as the "Organization" or "FAO" has awarded to the firm

, hereinafter referred to as the "Contractor", a Contract bearing the numberhereinafter referred to as the "Contract", and the Contractor has delivered and installed the equipment and materials as detailed in the Contract and hereinafter referred to as the "equipment" in accordance with the specifications and at the sites and/or locations set out therein,

NOW THEREFORE

We the undersigned, representing FAO and

Have visited the site and have accepted the works executed in accordance with the relevant specifications of the Contract except for the:

Reservations set out below, if any (if not applicable please indicate "NONE"):

.....
.....

CONSEQUENTLY

FAO relinquishes control of the site and returns all responsibilities to the (*Name of Government entity to receive the finished works*) hereby relieves FAO from all responsibilities upon signature of this certificate.

Signed:

FOR FAO:

Signed in: On: (*Place and date of the handover*)

Signature:

Name

Title: The Resident Engineer /Water Expert of the Food and Agriculture Organization of the United Nations or his/her authorized representative

FOR THE CONTRACTOR:

Contractor's name:

Signed in: On:

Signature:

Title:

Contract No.

Annex VIII

FOR THE GOVERNMENT ENTITY:

Signed in: On: *(Place and date of issue)*

Signature:

Name

Title:

Contract No.

Annex X

DRAFT CERTIFICATE OF DEFECTS LIABILITY PERIOD

Comment [F17]: NA

WHEREAS

The Food and Agriculture Organization of the United Nations, hereinafter referred to as the “Organization” or “FAO”, has awarded to the firm

, hereinafter referred to as the “Contractor”, a Contract bearing the number, hereinafter referred to as the “Contract”, and

The Contractor has completed all of the construction works as set out in detail in the Contract and hereinafter referred to as the “Works” in accordance with the specifications and at the sites set out therein and has repaired such Works to the satisfaction of FAO’s Water Expert/Resident Engineer and in compliance with the relevant provisions of the Contract and the laws, regulations and customs of the country where such Works have been constructed,

NOW THEREFORE

I the undersigned, in my capacity as FAO’s Resident Engineer mentioned in Article 10 of Section I of the Contract, having supervised the construction of the Works and having duly undertaken all necessary inspections and verifications of such Works as required by the rules and regulations of my profession, confirm that the Works mentioned below have been repaired to my satisfaction for the prescribed period of time in full compliance with the relevant provisions and specifications of the Contract until the date of signature of this certificate. This date being the end of the Defects Liability Period of such Works mentioned in Article 19 of Section I of the Contract.

The Works which have been repaired are the following:

.....
.....

1. Signature: Name:(Place and date of issue)

Title: Resident Engineer of the Food and Agriculture Organization of the United Nations

Signed in :.....(Place of issue) On.....(Date of issue)

2. Signature:.....Name:

Title: FAO Representative or his authorized agent

Signed in :.....(Place of issue) On.....(Date of issue)

3. Signature:.....Name:

Title: The Contractor

Signed in :.....(Place of issue) On.....(Date of issue)

Contract No.

Annex X

STATEMENT OF SUBCONTRACTORS

FAO authorizes the Contractor to have the following work and services executed by its subcontractors as mentioned below:

1. (Works) by (Subcontractor) Not Applicable.

Contract No.

Annex X

DRAWINGS

Comment [F18]: NA

The drawings have been already provided to the Contractor in the set of documents pertaining to the ITB No: and are enclosed to this contract on the CD drive or as separate print-out. There are no deviations between the drawings provided at the time of ITB solicitation and as enclosed to the Contract on the CD drive or as separate print-out.