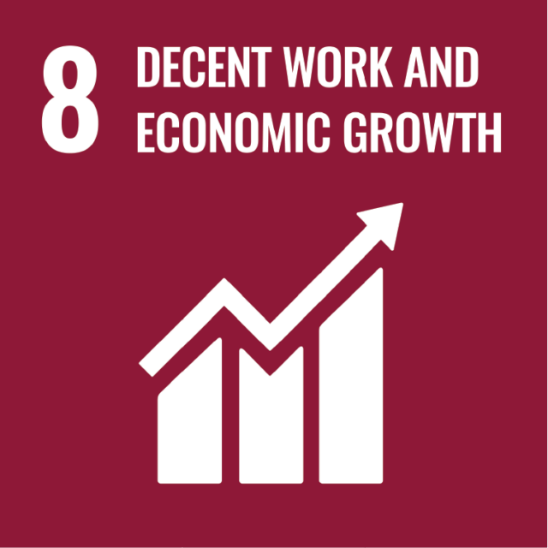


[](https://www.undp.org/sustainable-development-goals#no-poverty)[](https://www.undp.org/sustainable-development-goals#decent-work-and-economic-growth)

**INVITATION TO BID**

**Construction of Pressurized Irrigation System for Kozcuğaz in Center District of Sinop Province**

ITB No.: UNDP-TUR-ITB(UR)-2022-143

Project: Uplands Rural Development Project

Country: Turkey

Issued on: 21 November 2022

Contents

[Section 1. Letter of Invitation 4](#_Toc115042452)

[Section 2. Instruction to Bidders 6](#_Toc115042453)

[GENERAL PROVISIONS 6](#_Toc115042454)

[1. Introduction 6](#_Toc115042455)

[2. Fraud & Corruption, Gifts and Hospitality 6](#_Toc115042456)

[3. Eligibility 6](#_Toc115042457)

[4. Conflict of Interests 7](#_Toc115042458)

[B. PREPARATION OF BIDS 7](#_Toc115042459)

[5. General Considerations 7](#_Toc115042460)

[6. Cost of Preparation of Bid 7](#_Toc115042461)

[7. Language 7](#_Toc115042462)

[8. Documents Comprising the Bid 7](#_Toc115042463)

[9. Documents Establishing the Eligibility and Qualifications of the Bidder 8](#_Toc115042464)

[10. Technical Bid Format and Content 8](#_Toc115042465)

[11. Price Schedule 8](#_Toc115042466)

[12. Bid Security 8](#_Toc115042467)

[13. Currencies 8](#_Toc115042468)

[14. Joint Venture, Consortium or Association 9](#_Toc115042469)

[15. Only One Bid 9](#_Toc115042470)

[16. Bid Validity Period 10](#_Toc115042471)

[17. Extension of Bid Validity Period 10](#_Toc115042472)

[18. Clarification of Bid (from the Bidders) 10](#_Toc115042473)

[19. Amendment of Bids 10](#_Toc115042474)

[20. Alternative Bids 10](#_Toc115042475)

[21. Pre-Bid Conference 11](#_Toc115042476)

[C. SUBMISSION AND OPENING OF BIDS 11](#_Toc115042477)

[22. Submission 11](#_Toc115042478)

[Hard copy (manual) submission 11](#_Toc115042479)

[Email and eTendering submissions 11](#_Toc115042480)

[23. Deadline for Submission of Bids and Late Bids 12](#_Toc115042481)

[24. Withdrawal, Substitution, and Modification of Bids 12](#_Toc115042482)

[25. Bid Opening 12](#_Toc115042483)

[D. EVALUATION OF BIDS 12](#_Toc115042484)

[26. Confidentiality 12](#_Toc115042485)

[27. Evaluation of Bids 12](#_Toc115042486)

[28. Preliminary Examination 13](#_Toc115042487)

[29. Evaluation of Eligibility and Qualification 13](#_Toc115042488)

[30. Evaluation of Technical Bid and prices 13](#_Toc115042489)

[31. Due diligence 13](#_Toc115042490)

[32. Clarification of Bids 13](#_Toc115042491)

[33. Responsiveness of Bid 14](#_Toc115042492)

[34. Nonconformities, Reparable Errors and Omissions 14](#_Toc115042493)

[E. AWARD OF CONTRACT 14](#_Toc115042494)

[35. Right to Accept, Reject, Any or All Bids 14](#_Toc115042495)

[36. Award Criteria 14](#_Toc115042496)

[37. Debriefing 14](#_Toc115042497)

[38. Right to Vary Requirements at the Time of Award 15](#_Toc115042498)

[39. Contract Signature 15](#_Toc115042499)

[40. Contract Type and General Terms and Conditions 15](#_Toc115042500)

[41. Performance Security 15](#_Toc115042501)

[42. Bank Guarantee for Advanced Payment 15](#_Toc115042502)

[43. Liquidated Damages 15](#_Toc115042503)

[44. Payment Provisions 15](#_Toc115042504)

[45. Vendor Protest 15](#_Toc115042505)

[46. Other Provisions 15](#_Toc115042506)

[Section 3. Bid Data Sheet 17](#_Toc115042507)

[Section 4. Evaluation Criteria 24](#_Toc115042508)

[Section 5a: Schedule of Requirements and Technical Specifications 26](#_Toc115042509)

[Site Installation and Preparatory Works 31](#_Toc115042520)

[SECTION 5a.1 SPECIFICATIONS FOR ITEMS/POSE DEFINITIONS 89](#_Toc115042642)

[SECTION 5A.2 DESIGN DRAWINGS 117](#_Toc115042643)

[Section 5b: Other Related Requirements 118](#_Toc115042644)

[Section 6: Returnable Bidding Forms / Checklist 119](#_Toc115042645)

[Form A: Bid Submission Form 120](#_Toc115042646)

[Form B: Bidder Information Form 121](#_Toc115042647)

[Form C: Joint Venture/Consortium/Association Information Form 123](#_Toc115042648)

[Form D: Eligibility and Qualification Form 124](#_Toc115042649)

[Form E: Format of Technical Bid 127](#_Toc115042650)

[FORM F: Price Schedule Form/Bill of Quantities 129](#_Toc115042651)

[FORM G: Form of Bid Security 131](#_Toc115042652)

# Section 1. Letter of Invitation

The United Nations Development Programme (UNDP) hereby invites you to submit a Bid to this Invitation to Bid (ITB) for the above-referenced subject.

This ITB includes the following documents and the General Terms and Conditions of Contract which is inserted in the Bid Data Sheet:

Section 1: This Letter of Invitation

Section 2: Instruction to Bidders

Section 3: Bid Data Sheet (BDS)

Section 4: Evaluation Criteria

Section 5: Schedule of Requirements and Technical Specifications

Section 6: Returnable Bidding Forms

* Form A: Bid Submission Form
* Form B: Bidder Information Form
* Form C: Joint Venture/Consortium/Association Information Form
* Form D: Qualification Form
* Form E: Format of Technical Bid
* Form F: Price Schedule/Bill of Quantities
* Form G: Form of Bid Security

Please be informed that this procurement process is being conducted through the online tendering system of UNDP. Bidders who wish to submit an offer must be registered in the system.

* Visit this page for system user guides and videos in different languages: <https://www.undp.org/content/undp/en/home/procurement/business/resources-for-bidders.html>
* If already registered, go to <https://etendering.partneragencies.org> and sign in using your username and password.
* Use “Forgotten password” link if you do not remember your password. Do not create a new profile.
* If you have never registered in the system before, you can register by visiting the link below and follow the instructions in the user guide (attached): <https://etendering.partneragencies.org>
  + Username: event.guest
  + Password: why2change
* It is strongly recommended to create a username with two parts: your first name and last name separated by a “.”, (similar to the one shown above). Once registered you will receive a valid password to the registered email address which you can use for signing in and changing your password.
* Please note that your new password should meet the following criteria:
  + Minimum 8 characters
  + At least one UPPERCASE LETTER
  + At least one lowercase letter
  + At least one number

You can view and download tender documents with the guest account as per the above username and password, However, if you are interested to participate, you must register in the system and subscribe to this tender to be notified when amendments are made.

**E-Mail and Hard Copy Submissions are not accepted. Bids shall be submitted through e-tendering only**. However, **Original Bid Security** shall be delivered to the below address within 7 days after submission deadline indicated in e-tendering system, with a PDF copy submitted as part of the electronic submission.

*Focal Point: Ömer Tugrul ZOR, Procurement Specialist*

*Mustafa Fehmi Gerçeker Sokak No:12 Oran, Çankaya, Ankara, Türkiye*

If you are interested in submitting a Bid in response to this ITB, please prepare your Bid in accordance with the requirements and procedure as set out in this ITB and submit it by the Deadline for Submission of Bids set out in the eTendering System. Note that e-tendering system time zone is in **EST/EDT (New York)** time zone.

Please acknowledge receipt of this ITB by utilizing the “Accept Invitation” function in eTendering system. This will enable you to receive amendments or updates to the ITB. Should you require further clarifications, kindly communicate with the contact person/s identified in the attached Data Sheet as the focal point for queries on this ITB.

UNDP looks forward to receiving your Bid and thank you in advance for your interest in UNDP procurement opportunities.

Sincerely;

UNDP Türkiye Country Office

# Section 2. Instruction to Bidders

|  |  |
| --- | --- |
| GENERAL PROVISIONS | |
| Introduction | * 1. Bidders shall adhere to all the requirements of this ITB, including any amendments made in writing by UNDP. This ITB is conducted in accordance with the UNDP Programme and Operations Policies and Procedures (POPP) on Contracts and Procurement which can be accessed at <https://popp.undp.org/SitePages/POPPBSUnit.aspx?TermID=254a9f96-b883-476a-8ef8-e81f93a2b38d>   2. Any Bid submitted will be regarded as an offer by the Bidder and does not constitute or imply the acceptance of the Bid by UNDP. UNDP is under no obligation to award a contract to any Bidder as a result of this ITB.   3. UNDP reserves the right to cancel the procurement process at any stage without any liability of any kind for UNDP, upon notice to the bidders or publication of cancellation notice on UNDP website.   4. As part of the bid, it is desired that the Bidder registers at the United Nations Global Marketplace (UNGM) website ([www.ungm.org](http://www.ungm.org)). The Bidder may still submit a bid even if not registered with the UNGM. However, if the Bidder is selected for contract award, the Bidder must register on the UNGM prior to contract signature. |
| Fraud & Corruption,  Gifts and Hospitality | * 1. UNDP strictly enforces a policy of zero tolerance on proscribed practices, including fraud, corruption, collusion, unethical or unprofessional practices, and obstruction of UNDP vendors and requires all bidders/vendors observe the highest standard of ethics during the procurement process and contract implementation. UNDP’s Anti-Fraud Policy can be found at <http://www.undp.org/content/undp/en/home/operations/accountability/audit/office_of_audit_andinvestigation.html#anti>   2. Bidders/vendors shall not offer gifts or hospitality of any kind to UNDP staff members including recreational trips to sporting or cultural events, theme parks or offers of holidays, transportation, or invitations to extravagant lunches or dinners.   3. In pursuance of this policy, UNDP:   (a) Shall reject a bid if it determines that the selected bidder has engaged in any corrupt or fraudulent practices in competing for the contract in question; (b) Shall declare a vendor ineligible, either indefinitely or for a stated period, to be awarded a contract if at any time it determines that the vendor has engaged in any corrupt or fraudulent practices in competing for, or in executing a UNDP contract.   * 1. All Bidders must adhere to the UN Supplier Code of Conduct, which may be found at <http://www.un.org/depts/ptd/pdf/conduct_english.pdf> |
| Eligibility | * 1. A vendor should not be suspended, debarred, or otherwise identified as ineligible by any UN Organization or the World Bank Group or any other international Organization. Vendors are therefore required to disclose to UNDP whether they are subject to any sanction or temporary suspension imposed by these organizations.   2. It is the Bidder’s responsibility to ensure that its employees, joint venture members, sub-contractors, service providers, suppliers and/or their employees meet the eligibility requirements as established by UNDP. |
| Conflict of Interests | * 1. Bidders must strictly avoid conflicts with other assignments or their own interests, and act without consideration for future work. Bidders found to have a conflict of interest shall be disqualified. Without limitation on the generality of the above, Bidders, and any of their affiliates, shall be considered to have a conflict of interest with one or more parties in this solicitation process, if they:   2. Are or have been associated in the past, with a firm or any of its affiliates which have been engaged by UNDP to provide services for the preparation of the design, specifications, Terms of Reference, cost analysis/estimation, and other documents to be used for the procurement of the goods and services in this selection process;   3. Were involved in the preparation and/or design of the programme/project related to the goods and/or services requested under this ITB; or   4. Are found to be in conflict for any other reason, as may be established by, or at the discretion of UNDP.   5. In the event of any uncertainty in the interpretation of a potential conflict of interest, Bidders must disclose to UNDP, and seek UNDP’s confirmation on whether or not such conflict exists.   6. Similarly, the Bidders must disclose in their Bid their knowledge of the following:   7. If the owners, part-owners, officers, directors, controlling shareholders, of the bidding entity or key personnel who are family members of UNDP staff involved in the procurement functions and/or the Government of the country or any Implementing Partner receiving goods and/or services under this ITB; and   8. All other circumstances that could potentially lead to actual or perceived conflict of interest, collusion or unfair competition practices.   Failure to disclose such information may result in the rejection of the Bid or Bids affected by the non-disclosure.   * 1. The eligibility of Bidders that are wholly or partly owned by the Government shall be subject to UNDP’s further evaluation and review of various factors such as being registered, operated and managed as an independent business entity, the extent of Government ownership/share, receipt of subsidies, mandate and access to information in relation to this ITB, among others. Conditions that may lead to undue advantage against other Bidders may result in the eventual rejection of the Bid. |
| PREPARATION OF BIDS | |
| General Considerations | * 1. In preparing the Bid, the Bidder is expected to examine the ITB in detail. Material deficiencies in providing the information requested in the ITB may result in rejection of the Bid.   2. The Bidder will not be permitted to take advantage of any errors or omissions in the ITB. Should such errors or omissions be discovered, the Bidder must notify the UNDP accordingly. |
| Cost of Preparation of Bid | * 1. The Bidder shall bear all costs related to the preparation and/or submission of the Bid, regardless of whether its Bid is selected or not. UNDP shall not be responsible or liable for those costs, regardless of the conduct or outcome of the procurement process. |
| Language | * 1. The Bid, as well as any and all related correspondence exchanged by the Bidder and UNDP, shall be written in the language (s) specified in the BDS. |
| Documents Comprising the Bid | * 1. The Bid shall comprise of the following documents and related forms which details are provided in the BDS:  1. Documents Establishing the Eligibility and Qualifications of the Bidder; 2. Technical Bid; 3. Price Schedule; 4. Bid Security, if required by BDS; 5. Any attachments and/or appendices to the Bid. |
| Documents Establishing the Eligibility and Qualifications of the Bidder | * 1. The Bidder shall furnish documentary evidence of its status as an eligible and qualified vendor, using the Forms provided under Section 6 and providing documents required in those forms. In order to award a contract to a Bidder, its qualifications must be documented to UNDP’s satisfaction. |
| Technical Bid Format and Content | * 1. The Bidder is required to submit a Technical Bid using the Standard Forms and templates provided in Section 6 of the ITB.   2. Samples of items, when required as per Section 5, shall be provided within the time specified and unless otherwise specified by the Purchaser, at no expense to the UNDP. If not destroyed by testing, samples will be returned at Bidder’s request and expense, unless otherwise specified.   3. When applicable and required as per Section 5, the Bidder shall describe the necessary training programme available for the maintenance and operation of the equipment offered as well as the cost to the UNDP. Unless otherwise specified, such training as well as training materials shall be provided in the language of the Bid as specified in the BDS.   4. When applicable and required as per Section 5, the Bidder shall certify the availability of spare parts for a period of at least five (5) years from date of delivery, or as otherwise specified in this ITB. |
| Price Schedule | * 1. The Price Schedule shall be prepared using the Form provided in Section 6 of the ITB and taking into consideration the requirements in the ITB.   2. Any requirement described in the Technical Bid but not priced in the Price Schedule, shall be assumed to be included in the prices of other activities or items, as well as in the final total price. |
| Bid Security | * 1. A Bid Security, if required by BDS, shall be provided in the amount and form indicated in the BDS. The Bid Security shall be valid for a minimum of thirty (30) days after the final date of validity of the Bid.   2. The Bid Security shall be included along with the Bid. If Bid Security is required by the ITB but is not found in the Bid, the offer shall be rejected.   3. If the Bid Security amount or its validity period is found to be less than what is required by UNDP, UNDP shall reject the Bid.   4. In the event an electronic submission is allowed in the BDS, Bidders shall include a copy of the Bid Security in their bid and the original of the Bid Security must be sent via courier or hand delivery as per the instructions in BDS.   5. The Bid Security may be forfeited by UNDP, and the Bid rejected, in the event of any, or combination, of the following conditions:      1. If the Bidder withdraws its offer during the period of the Bid Validity specified in the BDS, or;      2. In the event the successful Bidder fails:      3. to sign the Contract after UNDP has issued an award; or      4. to furnish the Performance Security, insurances, or other documents that UNDP may require as a condition precedent to the effectivity of the contract that may be awarded to the Bidder. |
| Currencies | * 1. All prices shall be quoted in the currency or currencies indicated in the BDS. Where Bids are quoted in different currencies, for the purposes of comparison of all Bids:  1. UNDP will convert the currency quoted in the Bid into the UNDP preferred currency, in accordance with the prevailing UN operational rate of exchange on the last day of submission of Bids; and 2. In the event that UNDP selects a Bid for award that is quoted in a currency different from the preferred currency in the BDS, UNDP shall reserve the right to award the contract in the currency of UNDP’s preference, using the conversion method specified above. |
| Joint Venture, Consortium or Association | * 1. If the Bidder is a group of legal entities that will form or have formed a Joint Venture (JV), Consortium or Association for the Bid, they shall confirm in their Bid that : (i) they have designated one party to act as a lead entity, duly vested with authority to legally bind the members of the JV, Consortium or Association jointly and severally, which shall be evidenced by a duly notarized Agreement among the legal entities, and submitted with the Bid; and (ii) if they are awarded the contract, the contract shall be entered into, by and between UNDP and the designated lead entity, who shall be acting for and on behalf of all the member entities comprising the joint venture.   2. After the Deadline for Submission of Bid, the lead entity identified to represent the JV, Consortium or Association shall not be altered without the prior written consent of UNDP.   3. The lead entity and the member entities of the JV, Consortium or Association shall abide by the provisions of Clause 9 herein in respect of submitting only one Bid.   4. The description of the organization of the JV, Consortium or Association must clearly define the expected role of each of the entities in the joint venture in delivering the requirements of the ITB, both in the Bid and the JV, Consortium or Association Agreement. All entities that comprise the JV, Consortium or Association shall be subject to the eligibility and qualification assessment by UNDP.   5. A JV, Consortium or Association in presenting its track record and experience should clearly differentiate between:  1. Those that were undertaken together by the JV, Consortium or Association; and 2. Those that were undertaken by the individual entities of the JV, Consortium or Association.    1. Previous contracts completed by individual experts working privately but who are permanently or were temporarily associated with any of the member firms cannot be claimed as the experience of the JV, Consortium or Association or those of its members, but should only be claimed by the individual experts themselves in their presentation of their individual credentials    2. JV, Consortium or Associations are encouraged for high value, multi-sectoral requirements when the spectrum of expertise and resources required may not be available within one firm. |
| Only One Bid | * 1. The Bidder (including the individual members of any Joint Venture) shall submit only one Bid, either in its own name or as part of a Joint Venture.   2. Bids submitted by two (2) or more Bidders shall all be rejected if they are found to have any of the following:   3. they have at least one controlling partner, director or shareholder in common; or   4. any one of them receive or have received any direct or indirect subsidy from the other/s; or   5. they have the same legal representative for purposes of this ITB; or   6. they have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about, or influence on the Bid of another Bidder regarding this ITB process;   7. they are subcontractors to each other’s Bid, or a subcontractor to one Bid also submits another Bid under its name as lead Bidder; or some key personnel proposed to be in the team of one Bidder participates in more than one Bid received for this ITB process. This condition relating to the personnel, does not apply to subcontractors being included in more than one Bid. |
| Bid Validity Period | * 1. Bids shall remain valid for the period specified in the BDS, commencing on the Deadline for Submission of Bids. A Bid valid for a shorter period may be rejected by UNDP and rendered non-responsive.   2. During the Bid validity period, the Bidder shall maintain its original Bid without any change, including the availability of the Key Personnel, the proposed rates and the total price. |
| Extension of Bid Validity Period | * 1. In exceptional circumstances, prior to the expiration of the Bid validity period, UNDP may request Bidders to extend the period of validity of their Bids. The request and the responses shall be made in writing and shall be considered integral to the Bid.   2. If the Bidder agrees to extend the validity of its Bid, it shall be done without any change to the original Bid.   3. The Bidder has the right to refuse to extend the validity of its Bid, in which case, the Bid shall not be further evaluated. |
| Clarification of Bid (from the Bidders) | * 1. Bidders may request clarifications on any of the ITB documents no later than the date indicated in the BDS. Any request for clarification must be sent in writing in the manner indicated in the BDS. If inquiries are sent other than specified channel, even if they are sent to a UNDP staff member, UNDP shall have no obligation to respond or confirm that the query was officially received.   2. UNDP will provide the responses to clarifications through the method specified in the BDS.   3. UNDP shall endeavour to provide responses to clarifications in an expeditious manner, but any delay in such response shall not cause an obligation on the part of UNDP to extend the submission date of the Bids, unless UNDP deems that such an extension is justified and necessary. |
| Amendment of Bids | * 1. At any time prior to the deadline of Bid submission, UNDP may for any reason, such as in response to a clarification requested by a Bidder, modify the ITB in the form of an amendment to the ITB. Amendments will be made available to all prospective bidders.   2. If the amendment is substantial, UNDP may extend the Deadline for submission of Bid to give the Bidders reasonable time to incorporate the amendment into their Bids. |
| Alternative Bids | * 1. Unless otherwise specified in the BDS, alternative Bids shall not be considered. If submission of alternative Bid is allowed by BDS, a Bidder may submit an alternative Bid, but only if it also submits a Bid conforming to the ITB requirements. Where the conditions for its acceptance are met, or justifications are clearly established, UNDP reserves the right to award a contract based on an alternative Bid.   2. If multiple/alternative bids are being submitted, they must be clearly marked as “Main Bid” and “Alternative Bid” |
| Pre-Bid Conference | * 1. When appropriate, a pre-bid conference will be conducted at the date, time and location specified in the BDS. All Bidders are encouraged to attend. Non-attendance, however, shall not result in disqualification of an interested Bidder. Minutes of the Bidder’s conference will be disseminated on the procurement website and shared by email or on the e-Tendering platform as specified in the BDS. No verbal statement made during the conference shall modify the terms and conditions of the ITB, unless specifically incorporated in the Minutes of the Bidder’s Conference or issued/posted as an amendment to ITB. |
| SUBMISSION AND OPENING OF BIDS | |
| Submission | * 1. The Bidder shall submit a duly signed and complete Bid comprising the documents and forms in accordance with requirements in the BDS. The Price Schedule shall be submitted together with the Technical Bid. Bid can be delivered either personally, by courier, or by electronic method of transmission as specified in the BDS.   2. The Bid shall be signed by the Bidder or person(s) duly authorized to commit the Bidder. The authorization shall be communicated through a document evidencing such authorization issued by the legal representative of the bidding entity, or a Power of Attorney, accompanying the Bid.   3. Bidders must be aware that the mere act of submission of a Bid, in and of itself, implies that the Bidder fully accepts the UNDP General Contract Terms and Conditions. |
| Hard copy (manual) submission | * 1. Hard copy (manual) submission by courier or hand delivery allowed or specified in the BDS shall be governed as follows:   a) The signed Bid shall be marked “Original”, and its copies marked “Copy” as appropriate. The number of copies is indicated in the BDS. All copies shall be made from the signed original only. If there are discrepancies between the original and the copies, the original shall prevail.  (b) The Technical Bid and Price Schedule must be sealed and submitted together in an envelope, which shall:   1. Bear the name of the Bidder; 2. Be addressed to UNDP as specified in the BDS; and 3. Bear a warning not to open before the time and date for Bid opening as specified in the BDS.   If the envelope with the Bid is not sealed and marked as required, UNDP shall assume no responsibility for the misplacement, loss, or premature opening of the Bid. |
| Email and eTendering submissions | * 1. Electronic submission through email or eTendering, if allowed as specified in the BDS, shall be governed as follows:  1. Electronic files that form part of the Bid must be in accordance with the format and requirements indicated in BDS; 2. Documents which are required to be in original form (e.g. Bid Security, etc.) must be sent via courier or hand delivered as per the instructions in BDS.    1. Detailed instructions on how to submit, modify or cancel a bid in the eTendering system are provided in the eTendering system Bidder User Guide and Instructional videos available on this link: <https://www.undp.org/content/undp/en/home/procurement/business/resources-for-bidders.html> |
| Deadline for Submission of Bids and Late Bids | * 1. Complete Bids must be received by UNDP in the manner, and no later than the date and time, specified in the BDS. UNDP shall only recognise the actual date and time that the bid was received by UNDP   2. UNDP shall not consider any Bid that is received after the deadline for the submission of Bids. |
| Withdrawal, Substitution, and Modification of Bids | * 1. A Bidder may withdraw, substitute or modify its Bid after it has been submitted at any time prior to the deadline for submission.   2. Manual and Email submissions: A bidder may withdraw, substitute or modify its Bid by sending a written notice to UNDP, duly signed by an authorized representative, and shall include a copy of the authorization (or a Power of Attorney). The corresponding substitution or modification of the Bid, if any, must accompany the respective written notice. All notices must be submitted in the same manner as specified for submission of Bids, by clearly marking them as “WITHDRAWAL” “SUBSTITUTION,” or “MODIFICATION”   3. eTendering: A Bidder may withdraw, substitute or modify its Bid by Cancelling, Editing, and re-submitting the Bid directly in the system. It is the responsibility of the Bidder to properly follow the system instructions, duly edit and submit a substitution or modification of the Bid as needed. Detailed instructions on how to cancel or modify a Bid directly in the system are provided in the Bidder User Guide and Instructional videos.   4. Bids requested to be withdrawn shall be returned unopened to the Bidders (only for manual submissions), except if the bid is withdrawn after the bid has been opened. |
| Bid Opening | * 1. UNDP will open the Bid in the presence of an ad-hoc committee formed by UNDP of at least two (2) members.   2. The Bidders’ names, modifications, withdrawals, the condition of the envelope labels/seals, the number of folders/files and all other such other details as UNDP may consider appropriate, will be announced at the opening. No Bid shall be rejected at the opening stage, except for late submissions, in which case, the Bid shall be returned unopened to the Bidders.   3. In the case of e-Tendering submission, bidders will receive an automatic notification once the Bid is opened. |
| EVALUATION OF BIDS | |
| Confidentiality | * 1. Information relating to the examination, evaluation, and comparison of Bids, and the recommendation of contract award, shall not be disclosed to Bidders or any other persons not officially concerned with such process, even after publication of the contract award.   2. Any effort by a Bidder or anyone on behalf of the Bidder to influence UNDP in the examination, evaluation and comparison of the Bids or contract award decisions may, at UNDP’s decision, result in the rejection of its Bid and may subsequently be subject to the application of prevailing UNDP’s vendor sanctions procedures. |
| Evaluation of Bids | * 1. UNDP will conduct the evaluation solely on the basis of the Bids received.   2. Evaluation of Bids shall be undertaken in the following steps:   3. Preliminary Examination including Eligibility   4. Arithmetical check and ranking of bidders who passed preliminary examination by price.   5. Qualification assessment (if pre-qualification was not done)   6. Evaluation of Technical Bids   7. Evaluation of prices   Detailed evaluation will be focussed on the 3 - 5 lowest priced bids. Further higher priced bids shall be added for evaluation if necessary |
| Preliminary Examination | * 1. UNDP shall examine the Bids to determine whether they are complete with respect to minimum documentary requirements, whether the documents have been properly signed, and whether the Bids are generally in order, among other indicators that may be used at this stage. UNDP reserves the right to reject any Bid at this stage. |
| Evaluation of Eligibility and Qualification | * 1. Eligibility and Qualification of the Bidder will be evaluated against the Minimum Eligibility/Qualification requirements specified in the Section 4 (Evaluation Criteria).   2. In general terms, vendors that meet the following criteria may be considered qualified:   3. They are not included in the UN Security Council 1267/1989 Committee's list of terrorists and terrorist financiers, and in UNDP’s ineligible vendors’ list;   4. They have a good financial standing and have access to adequate financial resources to perform the contract and all existing commercial commitments,   5. They have the necessary similar experience, technical expertise, production capacity, quality certifications, quality assurance procedures and other resources applicable to the supply of goods and/or services required;   6. They are able to comply fully with the UNDP General Terms and Conditions of Contract;   7. They do not have a consistent history of court/arbitral award decisions against the Bidder; and   8. They have a record of timely and satisfactory performance with their clients. |
| Evaluation of Technical Bid and prices | * 1. The evaluation team shall review and evaluate the Technical Bids on the basis of their responsiveness to the Schedule of Requirements and Technical Specifications and other documentation provided, applying the procedure indicated in the BDS and other ITB documents. When necessary, and if stated in the BDS, UNDP may invite technically responsive bidders for a presentation related to their technical Bids. The conditions for the presentation shall be provided in the bid document where required. |
| Due diligence | * 1. UNDP reserves the right to undertake a due diligence exercise, aimed at determining to its satisfaction, the validity of the information provided by the Bidder. Such exercise shall be fully documented and may include, but need not be limited to, all or any combination of the following:   2. Verification of accuracy, correctness and authenticity of information provided by the Bidder;   3. Validation of extent of compliance to the ITB requirements and evaluation criteria based on what has so far been found by the evaluation team;   4. Inquiry and reference checking with Government entities with jurisdiction on the Bidder, or with previous clients, or any other entity that may have done business with the Bidder;   5. Inquiry and reference checking with previous clients on the performance on on-going or completed contracts, including physical inspections of previous works, as deemed necessary;   6. Physical inspection of the Bidder’s offices, branches or other places where business transpires, with or without notice to the Bidder;   7. Other means that UNDP may deem appropriate, at any stage within the selection process, prior to awarding the contract. |
| Clarification of Bids | * 1. To assist in the examination, evaluation and comparison of Bids, UNDP may, at its discretion, request any Bidder for a clarification of its Bid.   2. UNDP’s request for clarification and the response shall be in writing and no change in the prices or substance of the Bid shall be sought, offered, or permitted, except to provide clarification, and confirm the correction of any arithmetic errors discovered by UNDP in the evaluation of the Bids, in accordance with the ITB.   3. Any unsolicited clarification submitted by a Bidder in respect to its Bid, which is not a response to a request by UNDP, shall not be considered during the review and evaluation of the Bids. |
| Responsiveness of Bid | * 1. UNDP’s determination of a Bid’s responsiveness will be based on the contents of the bid itself. A substantially responsive Bid is one that conforms to all the terms, conditions, specifications and other requirements of the ITB without material deviation, reservation, or omission.   2. If a bid is not substantially responsive, it shall be rejected by UNDP and may not subsequently be made responsive by the Bidder by correction of the material deviation, reservation, or omission. |
| Nonconformities, Reparable Errors and Omissions | * 1. Provided that a Bid is substantially responsive, UNDP may waive any non-conformities or omissions in the Bid that, in the opinion of UNDP, do not constitute a material deviation.   2. UNDP may request the Bidder to submit the necessary information or documentation, within a reasonable period, to rectify nonmaterial nonconformities or omissions in the Bid related to documentation requirements. Such omission shall not be related to any aspect of the price of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.   3. For the bids that have passed the preliminary examination, UNDP shall check and correct arithmetical errors as follows:  1. if there is a discrepancy between the unit price and the line item total that is obtained by multiplying the unit price by the quantity, the unit price shall prevail and the line item total shall be corrected, unless in the opinion of UNDP there is an obvious misplacement of the decimal point in the unit price; in which case, the line item total as quoted shall govern and the unit price shall be corrected; 2. if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail, and the total shall be corrected; and 3. if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail.    1. If the Bidder does not accept the correction of errors made by UNDP, its Bid shall be rejected. |
| AWARD OF CONTRACT | |
| Right to Accept, Reject, Any or All Bids | * 1. UNDP reserves the right to accept or reject any bid, to render any or all of the bids as non-responsive, and to reject all Bids at any time prior to award of contract, without incurring any liability, or obligation to inform the affected Bidder(s) of the grounds for UNDP’s action. UNDP shall not be obliged to award the contract to the lowest priced offer. |
| Award Criteria | * 1. Prior to expiration of the period of Bid validity, UNDP shall award the contract to the qualified and eligible Bidder that is found to be responsive to the requirements of the Schedule of Requirements and Technical Specification and has offered the lowest price. |
| Debriefing | * 1. In the event that a Bidder is unsuccessful, the Bidder may request for a debriefing from UNDP. The purpose of the debriefing is to discuss the strengths and weaknesses of the Bidder’s submission, in order to assist the Bidder in improving its future Bids for UNDP procurement opportunities. The content of other Bids and how they compare to the Bidder’s submission shall not be discussed. |
| Right to Vary Requirements at the Time of Award | * 1. At the time of award of Contract, UNDP reserves the right to vary the quantity of goods and/or services, by up to a maximum twenty-five per cent (25%) of the total offer, without any change in the unit price or other terms and conditions. |
| Contract Signature | * 1. Within fifteen (15) days from the date of receipt of the award letter, the successful Bidder shall sign the Contract. Failure to do so may constitute sufficient grounds for the annulment of the award, and forfeiture of the Bid Security, if any, and on which event, UNDP may award the Contract to the Second highest rated or call for new Bids. |
| Contract Type and General Terms and Conditions | * 1. The types of Contract to be signed and the applicable UNDP Contract General Terms and Conditions, as specified in BDS, can be accessed at <http://www.undp.org/content/undp/en/home/procurement/business/how-we-buy.html> |
| Performance Security | * 1. A performance security, if required in the BDS, shall be provided in the amount specified in BDS and form available at   <https://popp.undp.org/_layouts/15/WopiFrame.aspx?sourcedoc=/UNDP_POPP_DOCUMENT_LIBRARY/Public/PSU_Solicitation_Performance%20Guarantee%20Form.docx&action=default> within a maximum of fifteen (15) days of the contract signature by both parties. Where a performance security is required, the receipt of the performance security by UNDP shall be a condition for rendering the contract effective. |
| Bank Guarantee for Advanced Payment | * 1. Except when the interests of UNDP so require, it is UNDP’s standard practice to not make advance payment(s) (i.e., payments without having received any outputs). If an advance payment is allowed as per the BDS, and exceeds 20% of the total contract price, or USD 30,000, whichever is less, the Bidder shall submit a Bank Guarantee in the full amount of the advance payment in the form available at   <https://popp.undp.org/_layouts/15/WopiFrame.aspx?sourcedoc=/UNDP_POPP_DOCUMENT_LIBRARY/Public/PSU_Contract%20Management%20Payment%20and%20Taxes_Advanced%20Payment%20Guarantee%20Form.docx&action=default> |
| Liquidated Damages | * 1. If specified in the BDS, UNDP shall apply Liquidated Damages for the damages and/or risks caused to UNDP resulting from the Contractor’s delays or breach of its obligations as per Contract. |
| Payment Provisions | * 1. Payment will be made only upon UNDP's acceptance of the goods and/or services performed. The terms of payment shall be within thirty (30) days, after receipt of invoice and certification of acceptance of goods and/or services issued by the proper authority in UNDP with direct supervision of the Contractor. Payment will be affected by bank transfer in the currency of the contract. |
| Vendor Protest | * 1. UNDP’s vendor protest procedure provides an opportunity for appeal to those persons or firms not awarded a contract through a competitive procurement process. In the event that a Bidder believes that it was not treated fairly, the following link provides further details regarding UNDP vendor protest procedures: <http://www.undp.org/content/undp/en/home/procurement/business/protest-and-sanctions.html> |
| Other Provisions | * 1. In the event that the Bidder offers a lower price to the host Government (e.g. General Services Administration (GSA) of the federal government of the United States of America) for similar goods and/or services, UNDP shall be entitled to the same lower price. The UNDP General Terms and Conditions shall have precedence.   2. UNDP is entitled to receive the same pricing offered by the same Contractor in contracts with the United Nations and/or its Agencies. The UNDP General Terms and Conditions shall have precedence.   3. The United Nations has established restrictions on employment of (former) UN staff who have been involved in the procurement process as per bulletin ST/SGB/2006/15 <http://www.un.org/en/ga/search/view_doc.asp?symbol=ST/SGB/2006/15&referer> |

# Section 3. Bid Data Sheet

The following data for the civil works to be procured shall complement, supplement, or amend the provisions in the Invitation to Bid. In the case of a conflict between the Instructions to Bidders, the Bid Data Sheet, and other annexes or references attached to the Bid Data Sheet, the provisions in the Bid Data Sheet shall prevail**.**

|  |  |  |  |
| --- | --- | --- | --- |
| **BDS No.** | **Ref. to Section.2** | **Data** | **Specific Instructions / Requirements** |
| 1 | 7 | Language of the Bid | English  **Please be informed that Turkish translation of this ITB is given only for information purpose and in case of any discrepancy between Turkish and English versions, the English version shall prevail. Bidders shall prepare their bids in English.** |
| 2 |  | Submitting Bids for Parts or sub-parts of the Schedule of Requirements (partial bids) | Shall not be considered |
| 3 | 20 | Alternative Bids | Shall not be considered |
| 4 | 21 | Pre-Bid conference | Will not be conducted. |
| 5 |  | Site Visit | Will be conducted as per the following schedule:  Date: 05 December 2022  Time: 14:00 hrs. Türkiye Time  Address: Exact address will be provided to the prospective bidders who communicate interest for participation by sending and e-mail to [tr.procurement@undp.org](mailto:tr.procurement@undp.org) latest by 04 November 2022, 14:00 hrs. Türkiye Time. |
| 6 | 16 | Bid Validity Period | 90 days starting from the submission deadline |
| 7 | 12 | Bid Security | **Required in the amount of USD 7.000**  Acceptable Forms of Bid Security:  Bank Guarantee (See Section 6; Form G for template)  Bid Securities will be returned to all bidders upon signature of contract with the successful Bidder. Bid Security shall be valid up to 30 days after the final date of validity of bids. (i.e. 120 days after bid submission deadline)  ▪ Bid Security shall be in English as per the template  ▪ Currency of the Bid Security shall be in USD as per the amount indicated above.  ▪ No change shall be made to the template except for fields indicated in the template  **PDF copy of the Bid Security shall be submitted as part of e-tendering submission.**  **Additionally, original Bid Security shall be delivered to the below address within 7 days after bid submission deadline.**  *Focal Point: Ömer Tugrul ZOR, Procurement Specialist Mustafa Fehmi Gerçeker Sokak No:12 Oran, Çankaya, Ankara, Türkiye* |
| 8 | 42 | Advanced Payment upon signing of contract | Allowed up to a maximum of 20% of contract value  **In case of an advance payment request, after contract signature, the Contractor shall submit a bank guarantee (valid for the duration of the contract) for advance payment in the format given in below link, before the payment can be released by UNDP:**  [**Format of Advance Payment Guarantee**](https://popp.undp.org/_layouts/15/WopiFrame.aspx?sourcedoc=/UNDP_POPP_DOCUMENT_LIBRARY/Public/PSU_Contract%20Management%20Payment%20and%20Taxes_Advanced%20Payment%20Guarantee%20Form.docx&action=default) |
| 9 | 43 | Liquidated Damages | Will be imposed as follows:  Percentage of contract price per week (7 calendar days) of delay beyond 210 days after site delivery by UNDP: 2%  Max. number of weeks (7 calendar days) of delay is 5, after which UNDP may terminate the contract. |
| 10 | 41 | Performance Security | **Required in the amount of 10% of the total contract amount**  The Performance Security must be issued by an accredited bank, in the format included in Appendix I to UNDP General Conditions of Contract for Civil Works and must be valid up to twenty-eight days after issuance of the Certificate of Final Completion. The Performance Security will only be released upon the issuance of Certificate of Final Completion in accordance with the Clause 10 of the UNDP General Conditions of Contract for Civil Works. |
| 11 | 13 | Currency of Bid | United States Dollar |
| 12 | 32 | Deadline for submitting requests for clarifications/ questions | 5 days before the submission deadline |
| 13 | 32 | Contact Details for submitting clarifications/questions | Focal Person in UNDP: Ömer Tugrul ZOR  Mustafa Fehmi Gerçeker Sokak No:12 Oran, Çankaya, Ankara, Türkiye  E-mail address: [tr.procurement@undp.org](mailto:tr.procurement@undp.org) |
| 14 | 18, 19  and 21 | Manner of Disseminating Supplemental Information to the ITB and responses/clarifications to queries | Posted directly to eTendering and published on the following websites:  [www.undp.org](http://www.undp.org)  [www.ungm.org](http://www.ungm.org)  [www.devbusiness.com](http://www.devbusiness.com)  <https://www.tr.undp.org> |
| 15 | 23 | Deadline for Submission of Bids | **Deadline for submission of bids is indicated in the e-tendering System.**  Please note that system will not accept any bids after the closing date/time. Bidders shall ensure that the bids are submitted before the indicated deadline.  UNDP highly encourages bidders not to wait for the last minute for the submission of bids and ensure that there is sufficient time for addressing any issues or challenges bidder may encounter with the system during bid submission.  Note that system time zone is in **EST/EDT (New York) time zone** |
| 16 | 22 | Allowable Manner of Submitting Bids | **E-Tendering only**  Any submission by other means such as e-mail or hard copy will  be rejected.  **EVENT ID: ITB-22-143**  This procurement process is being conducted through the online tendering system of UNDP. Bidders who wish to submit an offer must be registered in the system.  Visit this page for system user guides and videos in different languages:  <https://www.undp.org/content/undp/en/home/procurement/business/resources-for-bidders.html>  If already registered, go to <https://etendering.partneragencies.org> and sign in using your username and password.  Use “Forgotten password” link if you do not remember your password. Do not create a new profile.  If you have never registered in the system before, you can register by visiting the link below and follow the instructions in the user guide (attached):  <https://etendering.partneragencies.org>  •Username: event.guest  •Password: why2change  It is strongly recommended to create a username with two parts: your first name and last name separated by a “.”, (similar to the one shown above). Once registered you will receive a valid password to the registered email address which you can use for signing in and changing your password.  Please note that your new password should meet the following criteria:  • Minimum 8 characters  • At least one UPPERCASE LETTER  • At least one lowercase letter  • At least one number  You can view and download tender documents with the guest account as per the above username and password, However, if you are interested to participate, you must register in the system and subscribe to this tender to be notified when amendments are made. |
| 17 | 22 | Bid Submission Address | Bids shall be submitted through e-tendering.  **Link to e-tendering System:**  <https://etendering.partneragencies.org>  **EVENT ID: ITB-22-143** |
| 18 | 22 | Electronic submission (eTendering) requirements | * File names must be maximum 60 characters long and must not contain any letter or special/Turkish character other than from Latin alphabet/keyboard. * All files must be free of viruses and not corrupted*.* * Max. File Size per transmission:45MB |
| 19 | 25 | Date, time and venue for the opening of bid | No Public Opening will be conducted. Bidders will receive notification through e-tendering when bids are opened. |
| 20 | 27 - 36 | Evaluation Method for the Award of Contract | Lowest priced technically responsive, eligible and qualified bid. |
| 21 |  | Expected date for commencement of Contract | January 2023 |
| 22 |  | Maximum expected duration of contract | 210 calendar days, starting from the date on which the Contractor is given access to the Site and receive a notice from the UNDP Engineer to commence the Works and ending on the date of substantial completion of Works stated in the Certificate of Substantial Completion.  As stated in the General Conditions of Contract for Civil Works, clause 47.1; “Defects Liability Period” is 12 months calculated from the date of completion of the Works stated in the Certificate of Substantial Completion issued by the UNDP Engineer. |
| 23 | 35 | UNDP will award the contract to: | One Bidder Only |
| 24 | 40 | Type of Contract | Contract for Civil Work  <http://www.undp.org/content/undp/en/home/procurement/business/how-we-buy.html> |
| 25 | 40 | UNDP Contract Terms and Conditions that will apply | UNDP General Terms and Conditions for Works  <http://www.undp.org/content/undp/en/home/procurement/business/how-we-buy.html> |
| 26 | 44 | Payment Provisions | **Pricing Structure;**  The contract is based on unit price, and the final price of the Contract will be determined on the basis of actual quantities of work and materials utilized in the complete and satisfactory performance of the Works as certified by the Engineer and the unit prices contained in the Contractor's financial proposal. Such unit prices are fixed and are not subject to any variation whatsoever.  Unless the technical specifications or the Bill of Quantities specifically and expressly state otherwise, only permanent works are to be measured and paid for by UNDP.  Advance payment of up to a maximum of 20 % of contract value is allowed following contract signature. However, the Contractor will be required to submit an advance payment bank guarantee in the format given in above sections, for the amount of advance payment in order to claim for the amount.  **Payment Terms;**  The Contractor shall submit monthly invoices (reflecting the monthly work performed and materials utilized every month as accepted by UNDP through the “Monthly Progress Reports”) and a final invoice within 30 days from the issuance of the Certificate of Substantial Completion by the Engineer.  UNDP shall affect payment of the invoices after receipt of the certificate of payment issued by the Engineer, approving the amount contained in the invoice. The Engineer may make corrections to that amount, in which case UNDP may affect payment for the corrected amount. The Engineer may also withhold invoices if the work is not performed at any time in accordance with the terms of the Contract or if the necessary insurance policies or performance security are not valid and/or in order. The Engineer shall process the invoices submitted by the Contractor within 15 days of their receipt.  Invoices will be paid within thirty (30) days of the date of their receipt and acceptance by UNDP. |
| 27 |  | Currency of Payment | If the Contractor is registered and operating in Türkiye, the payment shall be realized in Turkish Liras (TRY).  Payment amount will be converted from United States Dollar (USD) to Turkish Liras (TRY) by the UN operational rate of exchange valid on “the date of UNDP’s official written acceptance of goods/services/works”, when the Contractor shall issue the invoice to UNDP. If the Contractor is not registered and operating in Turkey, the payments shall be effected in United States Dollar.  UN Operational Exchange rates can be accessed through [https://treasury.un.org/operationalrates/OperationalRates.php](https://eur03.safelinks.protection.outlook.com/?url=https%3A%2F%2Ftreasury.un.org%2Foperationalrates%2FOperationalRates.php&data=05%7C01%7Cmurat.ozerden%40undp.org%7C237a921271274163815208da68c7db48%7Cb3e5db5e2944483799f57488ace54319%7C0%7C0%7C637937504827317826%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=KubFUqxw%2F8Ws0RbWJByB6%2BZqY7hNU%2BNbXDeRi%2B%2BXf5o%3D&reserved=0) |
| 28 |  | Taxation | UN and its subsidiary organs are exempt from all taxes. Therefore, bidders shall prepare their Bids excluding Value Added Tax (VAT). It is the Bidder’s responsibility to learn from relevant authorities (Ministry of Finance) and/or to review/confirm published procedures and to consult with a certified financial consultant as needed to confirm the scope and procedures of VAT exemption application as per VAT Law, Ministry of Finance’s General Communiqués. The Contractor to be selected shall not be entitled to receive any amount over its Bid price in relation to VAT, Special Consumption Tax and any other applicable taxes. |
| 29 | 14 | Joint Venture, Consortium or  Association | Allowed |
| 30 |  | Covid-19 Specific Measures | The Bidders shall review all local regulations, as well as that of UN and UNDP concerning the measures, they must take during performance of the contract in the context of COVID-19, before they submit their bids and factor relevant costs, if any, to their bids.  The Contractor shall take all measures against COVID-19 imposed by local regulations as well as by UN and UNDP during performance of the contract to protect health and social rights of its own personnel, as well as UNDP personnel, Project Stakeholders and third parties.  Pursuant to “Clause 12- Indemnification” of UNDP General Terms and Conditions for Contracts (given in Clause Number 24 of Bid Data Sheet), the Contractor shall indemnify, defend, and hold and save harmless, UNDP, and its officials, agents and employees, from and against all suits, proceedings, claims, demands, losses and liability of any kind or nature brought by any third party against UNDP, including, but not limited to, all litigation costs and expenses, attorney’s fees, settlement payments and damages, based on, arising from, or relating to COVID-19 measures that must be taken by the Contractor in the context of the contract.  UNDP shall not be held accountable for any Covid-19 related health risks or events that are caused by negligence of the Contractor and/or any other third party. |
| 31 |  | Contingency and  variations | The contingency allowance to manage variations for the unforeseen and unknown additional components of Works within the overall general scope is maximum 15% of the contract price. However, it shall only be accessed by the Contractor upon the approval by the UNDP Engineer, who will obtain prior approval from UNDP as the Employer.  The project engineer (employer’s representative) may use this contingency with no additional procurement process to manage variations with the approval of UNDP. Any variation that utilizes the contingency but is not covered by rates in the BOQ or schedule of rates shall be subject to a value for money analysis by the Engineer and UNDP.  The contingency allowance shall not be used to compensate the Contractor for its fault to include required items in the Bill of Quantities as per Schedule of Requirements/Technical Specifications or unreasonably low unit prices of one or more of the items included in the submitted Bill of Quantities. |
| 32 |  | Other Information | 1. Women owned, and managed businesses are especially encouraged to apply to this ITB.  2. The documents that will be attached to Form B: Bidder Information Form (such as Certificate of Incorporation/Business Registration and Power of Attorney) can be submitted in local languages in the case that they are provided only in the local language by issuing authorities. In that case, the English translations of these documents shall be submitted by Bidders along with original documents in the local language. UNDP reserves the right to request notarized versions of these translations any time during the evaluation. |

# 

# Section 4. Evaluation Criteria

**Preliminary Examination Criteria**

Bids will be examined to determine whether they are complete and submitted in accordance with ITB requirements as per below criteria on a Yes/No basis:

* Appropriate signatures
* Power of Attorney
* Minimum Bid documents provided
* Bid Validity
* Bid Security submitted as per ITB requirements with compliant validity period

**Minimum Eligibility and Qualification Criteria**

Eligibility and Qualification will be evaluated on a Pass/Fail basis.

In case the bid is submitted as a Joint Venture/ Consortium/Association, each member should meet the minimum criteria, unless otherwise specified. Joint Venture/Consortium/Association is limited to maximum 3 members including Lead Entity.

|  |  |  |
| --- | --- | --- |
| **Subject** | **Criteria** | **Document Submission requirement** |
| **ELIGIBILITY** |  |  |
| **Legal Status** | Vendor is a legally registered entity established in or before December 2019. | Form B: Bidder Information Form |
| **Eligibility** | Vendor is not suspended, nor debarred, nor otherwise identified as ineligible by any UN Organization or the World Bank Group or any other international Organization in accordance with ITB clause 3. | Form A: Bid Submission Form |
| **Conflict of Interest** | No conflicts of interest in accordance with ITB clause 4. | Form A: Bid Submission Form |
| **Bankruptcy** | Has not declared bankruptcy, is not involved in bankruptcy or receivership proceedings, and there is no judgment or pending legal action against the vendor that could impair its operations in the foreseeable future. | Form A: Bid Submission Form |
| **Certificates and Licenses** | * Official appointment as local representative, if Bidder is submitting a Bid on behalf of an entity located outside the country * Certificate of Incorporation/ Business Registration * Trade name registration papers, if applicable * Signature Circular/Power of Attorney demonstrating authorization of the individual signing the Bid documents. | Form B: Bidder Information Form |
| **QUALIFICATION** |  |  |
| **History of Non-Performing Contracts[[1]](#footnote-2)** | Non-performance of a contract did not occur as a result of contractor default for the last 3 years. | Form D: Qualification Form |
| **Litigation History** | No consistent history of court/arbitral award decisions against the Bidder for the last 3 years. | Form D: Qualification Form |
| **Previous Experience** | Minimum three years of experience in the construction field. | Form D: Qualification Form |
| The Bidder must have successfully implemented, **as the prime contractor**, minimum one contract for construction of similar structures (i.e. construction of infrastructure such as Irrigation schemes, pipelines, water structures, water storage structures) at a minimum value of **USD 300,000.00** over the last five years counting back from the bid submission deadline.  **Important Notes:**   * Renovation, rehabilitation and restoration works will not be considered as similar experience. * Graduation Diploma will not be excepted as Previous Experience. * In case the bid is submitted as a Joint Venture/ Consortium/Association, requirement shall be individually met by the Lead Entity.   Bidders shall submit Statements of Satisfactory Performance officially issued by their previous employers (i.e. Reference Letters, Work Completion Certificates) along with their bids. | Form D: Qualification Form |
| **Financial Standing** | Minimum average annual turnover of **USD 400,000.00** for the last 3 years. (2019, 2020, 2021)  Bidders shall submit copies of the audited financial statements (balance sheets, including all related notes, and income statements) for the years required above.  Important Note:   * In case the bid is submitted as a Joint Venture/ Consortium/Association, lead entity shall meet more than 50% of the requirement with a minimum average annual turnover not less than USD 100,001 | Form D: Qualification Form |
| Bidder must demonstrate the current soundness of its financial standing and indicate its prospective long-term profitability by submitting its “audited financial statement” and “decleration of its financial status” along with the bid. | Form D: Qualification Form |
| **Technical Evaluation** | The technical bids shall be evaluated on a pass/fail basis for compliance or non-compliance with the technical requirements identified in the bid document. | Form E: Technical Bid Form |
| **Financial Evaluation** | Detailed analysis of the price schedule based on requirements listed in Section 5 and quoted for by the bidders in Form F.  Price comparison shall be based on the total estimated price for all the quantities set out in the Bill of Quantities. | Form F: Price Schedule Form |

# 

# Section 5a: Schedule of Requirements and Technical Specifications

**TECHNICAL SPECIFICATIONS FOR CONSTRUCTION OF PRESSURIZED IRRIGATION SYSTEM FOR KOZCUĞAZ IN CENTER DISTRICT OF SINOP PROVINCE**

1. **EXPLANATION OF THE WORK**
   1. **BACKGROUND**

Uplands Rural Development Project has been implemented by the Republic of Turkey Ministry of Agriculture and Forestry since 2018 with the technical support of the United Nations Development Program. It is carried out with the financial agreement signed between the International Fund for Agricultural Development (IFAD) and the Republic of Turkey.

In the first phase, the Program will be implemented in six provinces and two regions, namely Eastern Mediterranean (Sinop, Mersin, Osmaniye) and Western Black Sea (Bartın, Kastamonu, and Sinop), covering 35 districts and targeting 30,000 households. In the second phase, the program will assess the feasibility of including two more provinces: Kahramanaş (Eastern Mediterranean) and Çankırı (Western Black Sea), reaching a total of 30,000 more households. The program is implemented by the General Directorate of Agricultural Reform (GDAR) under the Republic of Turkey - Ministry of Agriculture and Forestry and the Central Program Management Unit is settled within this unit and the regional program coordination units (RPMUs) are located in Sinop and Kastamonu and there is a provincial support team in each of the initial six provinces, all of which are under the Provincial Directorates of Agriculture and Forestry.

Within the scope of the Public Economic Infrastructure Investment activities of the project, the construction of the construction of pressureized irrigation system, which is planned to be established in the Center district of Sinop province, will be carried out.

* 1. **ABBREVIATIONS**

|  |  |  |
| --- | --- | --- |
|  |  |  |
| **URDP** | **:** | Uplands Rural Development Project, |
| **ADMINISTRATION-EMPLOYER** | **:** | United Nations Development Program (UNDP), |
| **IFAD** | **:** | International Fund for Agriculture Development, |
| **ENGINEER** | **:** | Technical personnel representing the Administration, |
| **CONTRACTOR** | **:** | The tenderer on whom the contract has been signed. |

* 1. **DESCRIPTION OF WORK**

The location of work is Kozcuğaz Village in Center District of Sinop Province in Turkey.

* 1. **SCOPE OF THE WORK**
* Excavation and filling works of all structures designed according to the excavation plan,
* Construction of work the Irrigation System, works detailed with drawings and technical specifications,
* Construction of Water intake and storage structures
* Consatruction of Energy Transmission Lines (ENH)
* Preparation of As-Built drawings at the end of the work, submission of material test reports,
* Completion of temporary acceptance deficiencies, completion of all repair, correction and reconstruction works that arise after the provisional acceptance until the final acceptance date and deemed necessary by the Engineer.
* Obtaining the necessary permits, documents and licenses for construction work.
  1. **GENERAL PRINCIPLES**

It shall be deemed that the Contractor, prior to submitting the bid and signing the contract, has visited the site and its surroundings, have knowledge of the land and sub-soil structure, the form and nature of the site, the details and levels of existing pipelines and other existing structures, the quantities and types of work and materials required to complete the work, access roads to the site and all aspects of shelter that may be required, that also he/she has obtained all necessary information on other circumstances that may affect its offer, and he/she shall not make any claims against the Administration regarding these matters.

The contractor will carry out studies related to level controls, road-structure level status, building settlements, site slopes, infrastructure connection levels within 7 working days from the site delivery, and in case of any discrepancy between the project and the site, it will share it with the Administration during this period.

During the execution of the relevant stages of the works, the Contractor shall prepare the shop drawings and the finished manufacturing drawings (As-Built) for the approval of the Engineer. The Engineer may request revisions and/or additional works to be designed by the Contractor, changes or new design studies shall be carried out in accordance with the provisions of the Technical Specification and subject to the approval of the Engineer.

The Contractor shall be responsible for the actual and proper commencement of the Works with regard to the original points, lines and reference levels given in writing by the Engineer, and for the correctness of the location, levels, dimensions and alignment of all parts of the Works and the provision of all necessary instruments, assemblies and manpower thereon. In the event that any error with respect to the location, levels, dimensions and alignment of any part of the Works occurs at any time during the performance of the Works, the Contractor shall, upon request by the Employer, correct such defect to the Engineer's satisfaction, at its own cost.

The Contractor shall be obliged to take all necessary health and safety measures in accordance with the relevant legislation until the works are taken over by the Employer.

The Contractor shall carry out all the productions to be implemented under the Contract as detailed in the Technical Specifications and drawings.

The Contractor shall check all the dimensions given in the drawings on site, prepare the manufacturing projects accordingly, and obtain the Engineer's approval before installation/assembly for all materials/manufacturing before starting the construction.

The Engineer reserves the right to object to any person assigned by the Contractor who is incompetent, negligent in the performance of his/her duties, or whose employment is found reasonably inappropriate by the Engineer, and to request that such person be removed from work under the Contract. Any person dismissed from the works in this way shall not be re-employed at the site without the written consent of the Engineer. All costs and expenses related to the withdrawal of personnel shall be under the responsibility of the Contractor.

The Engineer has the right to give instructions to the Contractor through "Change Orders" to make changes in the quantity and quality of all or part of the works, when necessary, during the continuation of the work.

Within the scope of the Agreement, Change Orders may involve;

* Exclusion of a job out of scope,
* Changing the nature or quality or type of work,
* Changing the levels, lines, positions and dimensions of any part of the works,
* Performing any type of additional work necessary to complete the work.

Such changes shall not break or invalidate the Agreement. The cost comparison to occur due to the change orders shall be prepared by the Contractor immediately and shared with the Engineer, and the transactions shall be started after the approval.

The Engineer shall have the authority to refuse work that does not comply with the Contract documents. The Engineer may request a special examination or testing of the work where, in his/her opinion, he/she deems necessary or advisable for the implementation of the purposes of the Contract documents, this is equally true whether the work is manufactured, installed or completed at the factory.

No additional payment shall be made for transportation costs (transports to be made for material supply and horizontal or vertical transportation within the facility) and transportation difficulties for any manufacturing within the scope of the contract, transportation costs are included in the offered unit prices.

The amounts specified in the Contract regarding the works to be performed are estimates. Quantities may vary due to the nature of the business. The amounts subject to payment shall be determined by measuring the actual amounts of the works carried out.

The unit prices to be offered shall include any temporary work or facility that may be required for the construction of the works specified in the item descriptions as well as transportation, costs and expenses, risks, insurances, liabilities, material workmanship and equipment costs. It shall be assumed that all expenses are equally distributed in the unit prices offered by the contractor.

**Rules and Regulations**

The Contractor shall provide a billboard (on free of charge basis) mentioning the project and partners to ensure visibility of the project. The billboard shall be constructed in accordance with these specifications and as shown on the detail drawings.

Unless otherwise is confirmed by the engineer, ready-mixed concrete shall be used.

**General Statements**

Standard construction details approved by the Authority shall be followed unless specific deviation there from is authorized, in writing, by the UNDP.

The fact that any construction works carried out under the supervision and approval of the engineer does not relieve the contractor from the responsibility of completing the work in full compliance with the project, contract, statement of works and general rules for construction works.

**Requirement for Irrigation System**

All irrigation system with all pipes, water intake structures, valve chambers, air relief valve and discharge structures and similar facilities has to be satisfied the requirements of all regulations and specifications which are not mentioned in this document.

**Curvilinear Alignment of Pipes**

Curvature of irrigation pipes is allowed for all diameters. Alignments must follow the general alignment of streets. Only a simple curve design is acceptable. Compression type pipe joints are required. Maximum joint deflection shall not exceed the manufacturer’s recommendations.

**Depth of Pipe Cover**

All pipes shall be laid to a minimum depth of 80 cm measured from the proposed ground surface to the top of the pipe, unless specifically allowed otherwise in special circumstances by the ENGINEER. If allowed irrigation pipelines and services with ground cover less than 80 cm or more than 750 cm must be constructed of ductile iron class 50 pipes with polywrap.

**Minimum Width of Trench**

The width of the trench shall be ample to permit the pipe to be laid and joined properly, and the backfill to be placed and compacted as specified hereinafter. Minimum width of trench is outside diameter of the pipe barrel plus 40cm, i.e., 20cm each side as indicated in the Technical Drawings.

**Stream Crossings**

Where stream crossings are required in irrigation line construction, the pipe shall be ductile iron push-on joint pipe of the same size inside diameter as the pertinent pipeline or the next size larger ductile iron if equal size is not available. Pipelines entering or crossing under streams shall be constructed of watertight pipe pressure tested in place to 50 psi without leakage. Pipelines laid on piers across ravines or streams shall be allowed only when it can be demonstrated that no other feasible alternative exists. Such pipelines on piers shall be constructed in accordance with the water tightness requirements for s entering or crossing under streams. Construction methods and materials of construction shall be such that pipeline will remain watertight and free from change in alignment or grade. All changes in pipe material shall be made at chambers. Crossings which are less than 60 cm below the bottom of the stream shall be encased in concrete.

**Construction Requirements**

Prior to commencement of work the Contractor shall be responsible for setting out the Works in accordance with the approved Drawings and shall maintain and re-establish all permanent and temporary survey marks for the duration of the Contract and to the satisfaction of the UNDP.

The Contractor shall obtain all relevant approvals for planning, building, drainage and any other permits as required for the Works and shall comply with all inspection and testing requirements of all statutory authorities. All the materials that are used in the construction of the irrigation line shall be in accordance with Turkish Standards.

The fact that any construction works carried out under the supervision and approval of the engineer does not relieve the contractor from the responsibility of completing the work in full compliance with the project, contract, statement of works and general rules for construction works.

* All construction works should be done in accordance with the approved projects, Technical Specifications and all laws and regulations in effect.
* The costs of building the service roads from the quarry of materials to the workplace and the transportation of materials are included in the offer made by the bidder.
* All the temporary roads in the construction site will be built by the contractor. No additional payments will be made.
* All the materials have to be examined and approved by the UNDP. The samples and materials will be in accordance with the specifications.
* The minimum amount of machinery and equipment that should be present in the work place is stated in the administrative specifications.
* The amount of ready-mixed concrete that is specified in technical drawings will be used. If not specified in the drawings for reinforced concrete C25 class concrete shall be used.
* During the excavation, the contractor is responsible for securing and supporting the excavation area, keeping the excavation site dry, transportation of materials excavated, storage and safety of materials excavated with any kind of safety precautions approved by UNDP.
* The sites that are specified in the project will be cleaned of plants and roots. The excavation will start after the completion of the cleaning process (e.g. uprooting the trees).
* The irregularities and problems that may occur because of cleaning procedures (e.g. uprooting a tree) will be fixed by the contractor
* The ground that the construction will be built on has to be safe and suitable. The unsuitable ground should be excavated for a depth that will be decided, no less than 30 cm, by the UNDP.
* If the riverbed is appropriate, open derivation will be applied to keep the excavation site dry.
* For the drainage of ground water, the excavation will start from downstream.
* The excavation methods and program necessary for the amendment of the riverbed will be prepared by the contractor.
* Before the concrete is poured, the inspection engineer will examine and approve the reinforcement that is placed and anchored. The supervision engineer can ask to remove the concrete if not examined and approved.
* The contractor has to make available enough number of vibrators in the construction site, to be able to immediately compression and the vibration of the concrete that is poured.
* The experiments on the concrete will be made on a calendar depending on the classifications and amount of concrete. If the experiments do not satisfy necessary specifications, the contactor will, by consulting UNDP, take the immediate actions to adjust the concrete mix, improve the quality control and make a study of relevant methods in order to guarantee the necessary level of quality. The daily concrete amounts and samples, specimens and other samples will be kept by the contractor.
* The concrete can only be poured with the presence of the supervision engineer
* If not stated in the drawings and technical specifications, the rules of following specifications will regulate the construction:
  + The Ministry of Public Works and Settlement’s and General Directorate of State Hydraulic Work’s
  + General Technical Specifications for Iron Works and Reinforcement
  + General Technical Specifications for Concrete Works (TS.802)
  + General Technical Specifications for Aggregates of Concrete
  + General Technical Specifications for Cement (TS EN 206+A2)
  + General Technical Specifications for Excavation Works
  + General Technical Specifications for Transportation
  + Rules and Regulations of Designing the Concrete Structures (TS 500)

**General Quality Assurance**

The Contractor shall provide and maintain a quality assurance and control system, which will provide objective evidence that the work under the Contract meets the quality requirements of the Technical and Performance Requirements.

Tests and inspections shall be in accordance with Turkish Standards or other acceptable standards. The Contractor shall arrange for all inspections and testing by statutory authorities.

Contractor is deemed to have made adequate provisions in the Contract price for all testing and quality control activities required achieving the quality standard stipulated in the Contract for the Works.

The Contractor shall attend progress and other meetings on Site as requested by the UNDP.

The Contractor shall submit at the end of each month to the UNDP a narrative report summarizing significant progress or problems encountered during the preceding month in respect to all parts of the work under the Contract and, without restricting the generality of the foregoing, shall include reasoned and detailed comments in respect to:

* Activities or items completed during the month, including dates of completion.
* Activities or items scheduled for completion during the month but not completed (showing details of intended remedial action and comments as to likely effects on the Date of Practical Completion);
* Changes to the critical path;

**Demolition and Reinstatement of Works**

Reinstatement of roads and streets shall be undertaken in accordance with the relevant local standards and according to the existing grade.

The Contractor will not receive payment for over break of “Demolition and Reinstatement Works” or measures necessary as a consequence of such over break. Over break means a demolition, removal and reinstatement of paved surface carried out outside the designated lines.

If the works of reinstatement, as carried out by the Contractor, are not satisfaction of the UNDP, the Contractor shall carry out remedial works. If the Contractor is not able or willing to perform remedial works as instructed by the UNDP, the UNDP shall have the right to employ another Contractor for these works. The costs thereof shall be borne by the defaulting Contractor or may be deducted from his payment claim.

Site Installation and Preparatory Works

**Site Installation**

Site Installation and Mobilization

The site installation shall include all site infrastructure, temporary site offices and yards, safety provisions, accommodation and sanitary facilities, provisions for water, energy and access and the installation of signboards in accordance to the requirements of the General and Particular Specifications and the Price Schedule. The costs of the site facilities shall be included in the corresponding unit prices.

The location of all site installations shall be agreed beforehand with the Engineer. The Contractor shall prepare drawings of all sites selected for the site installation showing the location of all buildings, stores, offices, temporary roads, etc. The drawings shall be submitted for approval by the Engineer.

Mobilization at site shall include all site works, the erection of all site facilities and the mobilization of all equipment and materials as necessary to carry out the Works under this Contract.

Special attention shall be paid to the safe storage of fuel and lubricants in tanks and safety catchment basins in order to avoid the contamination of soils, subsoil and groundwater. This applies also for the installation of any workshop or other repair facilities.

The Contractor shall give strict instructions to all persons employed by him to comply with the regulations for groundwater protection. If the Contractor fails to arrange for adequate precautions to avoid any contamination, he shall exchange soils contaminated by him at his own cost and bear full responsibility for any groundwater pollution.

The Mobilization shall consist of preparatory work and operations, including, but not limited to the following:

* The movement of personnel, equipment, operating supplies, and incidentals to the project site.
* The establishment of the Contractor’s offices, buildings, and other facilities to work on the project including rental of village houses at the construction sites as needed.
* Other work and operations that must be performed.
* Deployment of machinery and Equipment at site
* Deployment of staff (Construction) at site and/or HQ.
* Expenses incurred, prior to beginning work on the various contract items on the project site.

Engineer shall certify the progress on mobilization.

**Maintenance of Site Installation**

The maintenance of site installation shall comprise the maintaining of all site facilities for the execution of the Works including water and energy supply, the operation and cleaning of site offices, accommodation and sanitary facilities and all temporary works as necessary to ensure access to and proper protection of construction sites including security, lighting and traffic control during the construction period.

**Demobilization from Site**

The demobilization includes the removal of all site facilities and temporary installations, the removal of all equipment from Site, the removal of all surplus materials, the reinstatement of all damaged or worn access roads and facilities used by the Contractor and the cleaning up of the construction site after completion of the Works.

**Site Facilities**

**Safety and Accommodation**

The Contractor shall ensure that all safety and welfare measures strictly comply with the provisions of the regulations in force for health, environment, welfare, safety and groundwater protection.

The Contractor shall provide, at his own expense, for temporary fencing to all parts of the works and sufficient protection of all open excavations to ensure the safety of workpeople, for suitable shelters and/or mess rooms for his workpeople and supervisory staff and for adequate sanitation facilities.

The Site shall be equipped with sufficient closets which comply with the regulations for groundwater protection. If the Contractor fails to arrange for adequate precautions and sanitation facilities, the Supervisor shall instruct a third party to provide them at the cost of the Contractor.

The Contractor shall have particular regard to the safety of persons and livestock and shall ensure that all open excavations, access routes and steep or loose slopes arising from the Contractor’s operations are adequately fenced and protected.

The Contractor shall be held responsible for all necessary safety measures during the duration of the Contract and shall strictly follow the safety regulations in order to prevent accidents.

Proper strutting, sheeting and bracing, protection of slopes, methods of excavation to reduce risks of slides, etc. shall be deemed to be included in the rates and prices entered in the Price Schedule. In the event of soil slides occurring during earthwork, all damage and making good of works shall be at the expense of the Contractor.

If there is an intensive human existence around the working area safety barriers and portable bridges (for crossing purposes) shall be located along and over excavations/ditches to prevent any accident or injury.

The Contractor shall take all precautions against the contamination of the Works.

**Safety of Personnel and Visitors**

The Contractor shall observe and cause his staff to observe standards commensurate with the nature of the Works. To this end the Contractor shall provide and ensure his employees wear:

* overalls,
* boots or shoes with reinforced toe caps,
* helmets suitable for construction sites,
* other protective equipment such as gloves, ear muffs, goggles, etc., as are necessary for any particular work.

The Contractor shall further provide helmets and shoes for the UNDP, GDAR and their staff and for the use of site visitors up to ten in number.

No work shall be permitted to be executed unless the Engineer is satisfied that appropriate safety measures are in place and that the Contractor’s employees are wearing suitable safety gear.

**First Aid Outfits**

The Contractor shall, at his own cost, provide and maintain for the duration of the Contract adequate first aid outfits at all construction sites.

**Cleanliness on Site**

The Contractor shall make every effort to keep the Site tidy and in orderly manner and to take at all times every possible precaution against the contamination of subsoil and groundwater. The Contractor shall be responsible for making all arrangements for the disposal of solid and liquid wastes from the Site at his own expense. Furthermore, he shall give strict instructions to all persons employed by him to use the sanitary facilities provided at Site.

If the Contractor fails to keep the Site clean, the Engineer shall instruct a third party to carry out the work at the cost of the Contractor.

**Water and Energy Supply**

The Contractor shall be responsible for and shall make all arrangements for adequate supply of water and energy to the construction Site. He shall also supply safe drinking water for the workmen on Site. The Contractor shall be responsible for the supply of all water required for mixing and curing of concrete and for testing of pipelines and structures.

**Maintenance of Traffic**

The Contractor shall provide, erect and maintain on the Site and the locations on the access to the Site all traffic signs and traffic control signals and all measures for protection of the public, as necessary and/or may be locally required by the relevant local bodies for the safe direction and control of the traffic during execution of the Works.

The location and size of all such signs and the lettering thereon shall be approved by the Engineer before installation.

The Contractor shall relocate, cover or remove signs as required during the progress of the Works.

**Use of Public Roads and Temporary Roads**

The Contractor shall, at his own expense, carry out all protective works and strengthening of public roads used by him as necessary to avoid damage from heavy loads and plant moved to the Site. The Contractor shall also construct, maintain and remove temporary access roads as he may require for carrying out the works at his own expense.

The Contractor shall observe all restrictions, which apply to public roads, and he shall comply with all reasonable restrictions which may be imposed by the Engineer, the Employer or other competent local bodies. This includes safe and secure fencing of the respective site, temporary traffic lights and security guards.

The Contractor shall not run tracked vehicles or tracked plant on any public or private road without the written approval of the responsible Authority and subject to such conditions as those may require.

Public and private roads and other surfaces used by the Contractor shall be kept free from dirt and rubbish and shall be cleaned with adequate equipment as directed by the Supervisor. If the Contractor fails to do so the Supervisor can order a third party to do the cleaning on the account of the Contractor.

Immediately after ceasing the use of any temporary road the Contractor shall restore the road to the satisfaction of the Supervisor and the responsible Authority. These provisions shall apply also to the shoulders, footpaths, drains, etc. of any existing sealed road used by the Contractor or affected by his operations.

**Temporary Approaches, Bridges, Gangways etc.**

Where any road, path, or right of way is affected by the construction of the Works, and as in the opinion of the Engineer may from time to time be necessary for safe and expeditious access to different parts of the Works, the Contractor shall provide suitable temporary approaches, bridges, gangways, and roads. Particularly, the Contractor shall provide means of access to adjacent occupiers of the land to carry on their normal occupations and shall indemnify the Employer against any claim for loss of business or amenities.

All such approaches, bridges, gangways and roads shall be maintained in service until all requirements of the Specifications have been fully complied with.

All costs of constructing, maintaining and removing all temporary approaches, bridges, gangways, etc., under this sub-clause shall be deemed to be included pro rata in the related pay items of the Schedule of Payments.

**Work in Existing Roads and Footpaths**

Where existing roads shall be crossed or works are performed in existing roads, the Contractor shall obtain instructions from the Engineer as to the date and hour for the breaking up of the road and the manner in which traffic is to be diverted to other roads. Such deviations shall be provided and maintained by the Contractor at his expense.

All roads used shall be kept free from dust and mud, and unless permission to close certain roads is obtained by the Contractor from the Engineer, at least one half the width of each road (if possible) shall be kept open to traffic.

Men and apparatus shall be provided by the Contractor for pedestrian and for vehicular traffic control when working along or crossing roads. Lamps shall be lighted and warning signboards put up where necessary to ensure, during the progress of work, the safety of traffic using the road, and to prevent unauthorized persons, animals, etc., from straying on to the work.

The Contractor shall be responsible for liaison, co-ordination and arrangements with the relevant authority in the obtaining of consents, payment of fees and all manner of things necessary to comply with the lawful orders of the relevant authorities and the Contractor shall allow for the same in his rates.

All roads, including shoulders and various kind of drains, ditches and footpaths shall be restored to their original condition and carried out to the requirements of the relevant authority as soon as the work along or at the crossing has been completed. All restoration works, such as backfilling and road base course and surfacing, shall be performed to the requirements of the Specifications.

**Precautions**

The Contractor shall take all precautions to avoid damage to any structure owned by third parties. If damage occurs, the Contractor and the Engineer shall contact UNDP of the damaged structure immediately, jointly, and all necessary repairs shall be made by the Contractor at his own expense, under the direction and to the satisfaction of the Engineer.

**Sign Boards**

The contractor shall provide, erect and maintain 2 (two) weather resistant signboards/display panels for each site at the locations to be approved by the Engineer. The signs shall be a minimum of 3m wide by 2 m high and give information (name of the project, logos of the project parties, contractor, contract period etc.) to be provided by the Engineer.

Signboards shall be of mobile type and suitable for continuous transportation to locations/sections where the actual works are taking place. After completion of all the works, the signboards shall be transformed into the commemorative plaques. The commemorative plaques shall be installed as stationary on the approved locations by UNDP.

**Contractor's Facilities**

**Site Office**

The Contractor shall propose uncovered areas to the approval by the Employer/Engineer for the establishment of the site office. Within the proposed area the Contractor shall provide and maintain offices appropriate to the efficient management and control of the project by his own staff.

Storage Areas and Yards

The Contractor shall propose uncovered areas to the approval by the Employer/Supervisor for the storage of plant, equipment and materials during the execution of the Contract.

The Contractor shall be responsible for the off-loading, transporting and handling of all the plant and equipment and materials needed for the purpose of the Contract.

The handling and storage of all plant and equipment at the site shall be to the risk of the Contractor and without responsibility of the Employer.

The Contractor shall protect all material against corrosion, mechanical damage or deterioration during storage and erection on site. The protection shall be to the approval of the Engineer.

**Staff Facilities**

The Contractor shall provide for and maintain temporary sanitary facilities on the site for the use of all persons connected with the works. The Contractor shall at all times keep the facilities in a clean and sanitary condition and shall post notices and take such precautions as may be necessary to keep the site clean. The Contractor shall carry out any cleaning whatsoever as may be directed by the Engineer to maintain such sanitary conditions.

The Contractor shall provide for and maintain an adequate supply of potable water for his and his subcontractor's use. The water supply shall be used for construction purposes and for consumption in the temporary facilities. The water supply system including the connection to the public system shall be approved by the Engineer.

All electrical power required by the Contractor shall be provided by him at his own expense. All temporary connections and installations for electricity shall be subject to the approval of the Engineer. All temporary electrical installations shall be provided, connected, and maintained by the Contractor in accordance with local by-laws and regulations and to the satisfaction of the Engineer.

The Contractor shall not use any part of the permanent works for temporary power supply, illumination, or equal purposes, unless agreed with the Supervisor on a case-by-case basis.

**Equipment**

For satisfactory quality of work and a rate of progress which will ensure the completion of the works within the time stipulated in the Tender. If at any time such equipment appears to be inefficient, inappropriate, or insufficient for securing the quality of work required or for the rate of progress, the Supervisor may order the Contractor to increase the efficiency, change the character or hire additional equipment, and the Contractor shall conform to such order. Failure of the Engineer to give such order shall in no way relieve the Contractor of his obligations to secure the quality of the works and rate of progress required.

**Preparatory Works**

**Review of Technical Documents**

The Contractor shall carefully review all technical documents included in the Contract before the start of the Works and the ordering of the required goods.

The Contractor shall amend such technical documents as may be required and submit three copies to the Engineer.

**Contractor’s Design**

The Contractor shall prepare all required design works of all permanent and temporary works and respect the local and international regulations.

The Contractor shall submit for approval to the Engineer, all calculations, drawings, mechanical properties of materials, manufacturer’s specifications justifying the quality and structural design of materials, equipment and structures. He shall also submit to the Engineer a copy of the standards and methods used for the calculations.

**As-Built Drawings**

As the work proceeds, the Contractor shall prepare, at his own expense, record drawings as to portray the Works actually executed. These record drawings shall become As-Built Drawings upon Completion of the Works. These drawings shall clearly show all portions of the Works, in plan, profile and sections and also all deviations from the original drawings.

Draft versions of the record drawings shall be submitted to the Engineer for approval and then be completed with any amendments requested by him. On Completion of Works the Contractor shall supply to the Engineer the complete set of originals and 3 (three) copies of the As-Built Drawings.

**Notices before Starting Excavation**

The Contractor shall, before starting excavation in any portion of the Works, give all necessary notices and make timely and reasonable arrangements with:

* The relevant bodies responsible for public roads (approvals for opening, agreements on resurfacing) and the Police (traffic arrangements), where applicable.
* The relevant bodies for water and energy supply and telecommunications (dealing with crossing of, maintaining and reinstatement of the respective services).
* The concerned landowners (approvals of access, reinstatement of surfaces).

**Site Inspections before Starting Excavation**

Before carrying out any excavation, the Site shall be inspected jointly by the Contractor and the Engineer in order to verify site conditions, to establish the directions for site clearance and to clarify the further proceedings.

Before commencing any site clearance and excavation in private property, the Contractor shall prepare and agree with the owner or occupier of such property a record of the state of the surface with particular reference to any features that may require special care, conservation and reinstatement.

Pre-construction photos shall be taken of the original Site by the Contractor and be submitted to the Engineer in two (2) copies together with the respective digital files. By that way after construction the conserved and reinstated parts can be compared with the original status. The Contractor shall prepare an inspection report which shall describe the conditions of the buildings, roads, footpaths, etc., in question and shall submit such report to the Engineer.

Any damage caused by the Contractor to third parties during excavation or other works shall be repaired and maintained by the Contractor at his own expense without any delay.

**Technical Documentation of Manufactured Goods**

The Contractor shall provide to the Engineer for approval a complete set of technical documents of all goods that shall be supplied from Manufacturers (pipes, valves, fittings, etc.) to be incorporated into the Permanent Works. The document shall further detail the documentation included in the tender.

Only goods figuring in the technical documentation and approved by the Engineer shall be supplied.

The documentation of goods shall use the ID-system as set forth in the Particular Specifications.

**Construction Methods**

The Contractor shall submit details of the plant, equipment and labor force, which he proposes to use and employ and shall describe in detail the proposed construction methods. The details on construction plant shall include the make, type, capacity or rating and the number of units which the Contractor envisages to employ throughout the duration of the Contract.

Special attention shall be paid to the (1) procedure of concrete mixing, transporting, vibrating and curing and whether the concrete is prepared at the Site or elsewhere, (2) on-site coating, painting and other works serving for corrosion protection.

The Contractor shall furnish to the Engineer the formal approval of working methods he may be required to obtain from relevant authorities prior to the commencement of any new section of works. Such approval of working methods shall in no way relieve the Contractor from his obligations.

Such approvals of working methods shall be obtained, as applicable, e.g. for the maintaining of public traffic, the dealing with/crossing of other services, the diversion of flow and discharge of water from excavations, the reinstatement of excavated areas and the provisions to ensure public safety.

**Approval of Materials and Workmanship**

The supply of all materials, items and accessories shall be subject to the approval of the Engineer.

The Contractor shall provide such samples as the Engineer may require in advance of the execution of Works for approval and, when approved, the quality of materials shall be at least equal to that of the approved samples. This includes also the testing and quality control of aggregates, cement and concrete and other building materials.

The Contractor shall furthermore provide sample areas and items of finished workmanship for approval by the Engineer as required by him. All workmanship shall be equal to the approved samples.

For the approval of materials standard institution certificates of the related materials from the country of production shall be submitted.

**Testing of Materials**

The Contractor shall provide material test results and certification by Independent Testing Laboratory approved by the Engineer showing that the materials meet the specified requirements. The testing of materials and goods shall be performed well in advance of the time they will be required for use.

The Contractor shall not be entitled to any compensation or claim for delays, inconveniences, damage, standing time or any other cause whatsoever, arising from the late submission of testing results or the rejection of materials and articles.

**Setting-Out of Works**

Prior to the Commencement of the Works the Engineer shall provide a number of benchmarks on Site.

Before starting any work, the Contractor shall verify the levels of the benchmarks in the presence of the Engineer and shall request the Engineer to correct any omission or error which may be discovered during verification.

After the benchmarks and markers have thus been consolidated, the Contractor shall certify their acceptance in writing to the Engineer. The Contractor shall then establish, in locations and at levels approved by the Engineer steel datum pegs which shall be securely concreted in. The levels of these pegs shall be used as reference datum during construction.

The Contractor shall be responsible for accurate setting-out the Works, temporary benchmarks and shall carefully protect and preserve all benchmarks, sight-rails, pegs and other things used in setting-out the Works.

**Survey Staff**

The Contractor shall also provide all staff, labor, instruments and materials as may be required by the Supervisor for survey work and measurements in connection with the Works.

**Concrete Works**

**General**

Plain and Reinforced concrete shall be accomplished in accordance with these specifications and as shown on the detail drawings.

All concrete construction shall conform to all applicable requirements of the Technical Specifications for Concrete Works (TS 802), TS 500, TS 498, TS EN 206+A2.

Reinforcing steel bars shall be placed and tied according to the detail projects. For the reinforced concrete, steel bars shall conform St III and Public Works Standards (23.014, 23.015, Technical Specifications for Steel Works)

All of the Formworks, scaffolding, supports, reinforcing steel bars shall be prepared according to the detail projects. And after the approval by the ENGINEER, concrete shall be placed. Concrete shall be placed only in the presence of the ENGINEER.

Concrete shall be thoroughly and uniformly compacted by means of internal mechanical vibration with internal vibrator.

**Curing of Concrete**

All concrete shall be water cured for a minimum of 7 of 24-hour days. It is the Contractor’s responsibility to rig up all necessary equipment to conduct this task correctly and effectively.

**Sampling and Testing Generally- Concrete**

The Contractor shall make available on site throughout the period of the Contract equipment and facilities for the performance of slump tests and the manufacture of concrete test cylinders.

**Rejection Criteria – Concrete**

Concrete which has any of the following defects shall be liable to rejection:

* It is porous, segregated or honeycombed.
* A construction joint has been made at a location or in a manner not acceptable to the UNDP.
* The reinforcement has been displaced from its correct locations.
* The concrete is shown by the UNDP to be otherwise defective.
* Cold formed joints.

**Records - Concrete**

Day to day records of all concreting shall be kept by the Contractor. The records shall clearly show dates, times, temperature and weather conditions as well as test references or test results and the place of concreting. These records shall be submitted to the UNDP once a week or as often as he directs.

**Surface Protection – Concrete**

All finished concrete surfaces shall be protected from damage, staining or contamination from any cause such as construction equipment, materials or methods, and by rain, running water or wind.

**Construction Joints - Concrete**

The Contractor shall submit procedures and drawings to the UNDP clearly showing its proposals for concrete placing in each component of the Works together with construction joints and lifts.

**Repair Procedures for New Concrete**

Any making good of defective concrete will be subject to the approval of the UNDP who may alternatively require the complete removal and replacement of the defective concrete.

**Materials**

**General**

Materials used in the works shall be new, good and of the qualities and kinds specified herein and equal to approved samples. Delivery shall be made sufficiently in advance to enable further samples to be taken and tested if required. Materials not approved shall be immediately removed from the works at the Contractor's cost.

All specified properties of the concrete-making materials shall be tested with a frequency to ensure continuous compliance with the requirements, and whenever new materials are to be used.

Materials shall be transported, handled and stored on the site or elsewhere in such a manner as to prevent damage, deterioration, or contamination.

**Cement**

Cement shall be from an approved source and shall be low alkali cement and sulphate-resistant or ordinary Portland cement complying with EN197.

Low alkali cement to be used in the works shall contain less than 0.6% alkali (expressed as Na2O + 0.658K2O).

Cement shall be delivered in sealed manufacturer's branded bags or barrels, each consignment accompanied by the manufacturer's test certificates. Damaged bags or barrels and any cement the Engineer considers unsatisfactory shall be rejected. Each bag shall be used on the day of opening; bags opened on the previous day shall be rejected.

All rejected cement including that which has become affected by damp conditions is to be removed from site within 48 hours. High alumina cement or blast-furnace slag cement shall not be used. Cement stored on site shall be protected from the weather and raised from the ground. Cement shall be used in the order in which it is delivered. Cement temperature shall not exceed 60C when used.

Cement shall not be used after 6 months from its manufacture date or after it has been held in store for 3 months, unless it is tested and satisfies the relevant EN Standards. Each re-test certificate shall be valid for a period of 6 months. Each consignment of cement delivered to the site shall be accompanied by a certificate showing the place and date of manufacture and the results of standard tests carried out on the bulk supply from which the cement was manufactured.

Notwithstanding the above requirements and tests, the Engineer may reject any cement which in his opinion is unsatisfactory for any reason whatsoever.

**Water**

Water for use in concrete, mortar mixing, and curing shall be obtained from an approved source and shall be of a quality as not to affect the setting time, strength, durability of the concrete or mortar, or the appearance of hardened concrete or mortar by discoloration or efflorescence, nor the reinforcement at any age of the concrete or mortar.

Water shall be clean, potable, blended or unblended, with a pH between 5.0 and 9.0 and shall be tested in accordance with EN 1008. The following limits shall not be exceeded:

* Total dissolved solids (TDS) not greater than 2000 ppm
* Suspended solids not greater than 2000 ppm
* Chlorides (Cl) not greater than 500 ppm
* Sulphates (SO3) not greater than 1000 ppm
* Alkali (HCO3/CO3) not greater than 1000 ppm

Water shall be stored in approved, clean containers which are protected from sun, wind, dust, organic contamination or from contamination by any other source.

**Aggregates**

Materials used as aggregates shall be obtained from a source known to produce aggregates satisfactory for concrete and shall be chemically inert, strong, hard, durable, of limited porosity and free from adhering coatings, clay lumps, coal and coal residues and organic or other impurities that may cause corrosion of the reinforcement or may impair the strength or durability of the concrete. Aggregates shall be natural gravels or crushed stone complying with EN 12620.

The aggregates used in the concrete mix shall not cause damage or weakening of the concrete. Aggregates shall be stored and handled only on approved impervious free draining platforms with concrete block walls separating different grades. Stock piles shall be built in 1.50 m (maximum) layers and segregation of the aggregates shall be prevented. All aggregates which have become segregated shall be removed. All aggregates stored on site shall be covered with approved sheeting until required for mixing. Aggregates which have become contaminated whilst stored on site shall be removed.

**Fine Aggregates**

Sand for concrete shall comply with EN 12620. It shall not contain more than 3% voided shells (as determined by direct visual separation).

Artificial or manufactured sand will not be acceptable. The maximum permitted concentration of chlorides and sulphates expressed as percentage by weight of dry sand are 0.06% (as acid soluble Cl-) and 0.4% (as acid soluble SO3) respectively.

The blending of crushed stone fines may be permitted provided that the blended product meets all the requirements for fine aggregates. Materials finer than 75 micron size - ISO 3310 test - shall not exceed 5% by weight. If the materials finer than 75 microns - according to ISO 3310 test - consist of the dust of fracture, essentially free of clay or shale, the limit can be increased to 7% by weight.

Absorption shall not exceed 5%. Magnesium sulphate soundness weight loss shall not exceed 10% after five cycles (ASTM C88 or equivalent). When tested for organic impurities the color shall be lighter than the reference standard color (ASTM C40 or equivalent).

When tested for potential alkali reactivity (ASTM C 227 or equivalent) the expansion shall be less than 0.05% at 3 months. Alternatively, the potential alkali reactivity can be tested in accordance with ASTM C 289 or equivalent and the evaluation done in accordance with ASTM C 33, Appendix XI or equivalent.

**Coarse Aggregates**

Coarse aggregates for concrete shall be hard and durable stone, produced by mechanical crushing, e.g. by jaw, impact or cone crushers or other mechanical means to the approval of the Engineer.

The maximum permitted content of chlorides and sulphates by weight of dry aggregates are 0.03% (as acid soluble Cl-) and 0.4% (as acid soluble SO3) respectively.

Unless otherwise approved by the Engineer, coarse aggregate for use in all classes of concrete shall be provided for batching as single sized aggregates of 40 mm, 20 mm and 10 mm nominal size proportioned in such ratio as to give a uniform gradation.

Absorption shall not exceed 2.5% (EN 12620). Flakiness index and elongation index shall not exceed 25% (EN 12620). Coarse aggregate shall not contain more than 5% soft fragments (ASTM C 235 or equivalent). Magnesium sulphate soundness weight loss shall not exceed 10% after five cycles (ASTM C88 or equivalent).

When tested for potential alkali reactivity (ASTM C 227 or equivalent) the expansion shall be less than 0.05% at 3 months. Alternatively, the potential alkali reactivity can be tested in accordance with ASTM C 289 or equivalent and the evaluation done in accordance with ASTM C 33 or equivalent, Appendix XI.

**Admixtures**

Any use of admixtures and additives shall comply with EN 934 and shall be approved by the Engineer.

Approved admixtures shall be used in accordance with the manufacturer's recommendations, shall be dispensed by approved equipment, which provides a visible means of checking each dose, and shall comply with the relevant EN standards. The proposed dosages, the manufacturer's technical information and the results of trial mixes shall be submitted to the Engineer before approval is given. When more than one admixture is to be used in a concrete, the compatibility of the various admixtures shall have been ascertained by standard tests and certified by the manufacturer(s). No admixture containing chloride or nitrate shall be used.

**Total Chloride and Sulphate Contents**

The total acid soluble chloride content of the concrete mix shall be determined in accordance with EN 12350. Chlorides from all sources shall be included.

For concrete made with sulphate-resistant cement the maximum total acid soluble chloride content expressed as % of chloride ion by weight of cement shall be 0.200%.

The maximum total acid soluble sulphate content of the concrete mix from whatever source expressed as % SO3 by weight of cement shall be 4.0.

**Reinforcement**

Reinforcement shall comply with EN10080. Reinforcement bars shall have strength equal to high yield steel bars and shall be profiled. The characteristic yield stress shall be at least 550 N/mm2.

The Contractor shall furnish the Engineer with copies of the manufacturer's certificates of tests for the steel reinforcement to be supplied. If required by the Engineer, the Contractor shall submit samples to, and obtain test certificates from, a recognized testing laboratory approved by the Engineer. All reinforcement shall be clean and free from pit corrosion, loose rust, mill scale, paint, oil, grease, adhering earth, or any other material that may impair the bond between the concrete and the reinforcement or that which may cause corrosion of the reinforcement or may be detrimental to the quality of the concrete.

**Liquid Membrane - Curing Compound**

Liquid membrane - curing compound shall comply with ASTM C 309 or equivalent, Type 1, unless another type is accepted by the Engineer.

Water stops shall be used in all construction joints. Web thickness shall not be less than 5 mm. Water stops shall be either rubber or polyvinyl chloride (PVC).

Spacers shall be made of concrete of same grade as the structure, for which they are to be used.

**Requirements / Workmanship**

**Formwork for Design and Construction**

Formwork for concrete shall be rigidly constructed of approved materials and shall be true to the shape and dimensions. Formwork shall be constructed of material or lined with materials as may be necessary to achieve the finishes specified in this section. The formwork design shall be submitted to the Engineer for approval before construction commences.

All material brought on the site as forms, struts or braces shall be new materials.

Faces in contact with concrete shall be free from adhering grout, projecting nails, splits, or other defects.

Joints shall be sufficiently tight to prevent the leakage of cement grout and to avoid the formation of fins or other blemishes. Faulty joints shall be caulked. 20 mm by 20 mm chamfers shall be formed on the external corners of concrete members, unless otherwise specified. Internal corners shall similarly be provided with 20 mm fillets.

Formworks for exposed surfaces shall be laid out in a regular and uniform pattern with the long dimension of panels vertical and all joints aligned.

If openings of the formwork for the escape of water used for washing out are made, they shall be formed so that they can be conveniently closed before placing the concrete. Connections shall be constructed to permit easy removal of the formwork and shall be strong enough to retain the correct shape during consolidation of the concrete.

Metal ties or anchors within the form shall be so constructed as to permit their removal to a depth of at least 50 mm from the face without injury to the concrete. All fittings for metal ties shall be of such design that upon their removal the cavities which are left will be of the smallest possible size. Spreader cones or ties shall not exceed 25 mm diameter. The cavities shall be filled with cement mortar and the surface left sound, smooth, even and uniform in color. Formwork shall be true to line and braced and strutted to prevent deformation under the weight and pressure of the unset concrete, constructional loads, wind, and other forces. Beams spanning more than 3 meters shall have an upward camber of 1½ mm per m of span. Concrete shall normally not be placed in lifts deeper than 3 m. For lifts higher than 3 m openings for placing the concrete shall be provided in order to avoid segregation of the concrete.

Approved mould oil or other material shall be applied to faces of formwork to prevent adherence of the concrete. Such coatings shall be insoluble in water, non-staining, and non-injurious to the concrete. Liquids that retard the setting of concrete shall be used only when approved. Mould oil, retarding liquid, and similar coatings shall be kept from contact with the reinforcement or previously cast concrete.

Before any concrete is placed, forms shall be properly cleaned by washing out with water and/or air under pressure to remove sawdust, shavings, metal and other foreign matter. All water shall then be drained and mopped out from the formwork. In no case shall concrete be placed in the forms until such forms have been approved by the Engineer. Such approval shall not relieve the Contractor of his responsibility for the formwork.

Details of any fixtures to be cast into the concrete shall be to the approval of the Engineer. No fixtures shall be attached to the concrete by shot-firing without prior permission of the Engineer. Notwithstanding any such authorization, the Contractor shall take full responsibility for any damage caused to the structure and make good to the satisfaction of the Engineer.

**Removal of Formwork**

Formwork shall be removed by gradual easing without jarring. Before removal of the formwork the concrete shall be examined and removal shall proceed only in the presence of a competent supervisor and only if the concrete has attained sufficient strength to support its own weight and any load likely to be imposed upon it.

The following striking time given in maturity days are the absolute minimum that will be permitted:

* Soffits 14 days
* Sides 4 days

Loads shall not be placed on concrete before the following periods after casting:

* Columns, walls, beams, slabs, etc. 14 days
* Foundations 10 days

The Contractor shall record the date upon which the concrete is placed in each part of the work, and the date on which the formwork is removed from there. The assessment of the period elapsing between placing the concrete and removing the formwork and consequences arising there from shall be entirely the Contractor's responsibility.

**Reinforcement**

**General**

The Contractor shall ensure that all reinforcement is checked by a competent person. The Contractor shall notify the Engineer well in advance about portions of reinforcement work ready for inspection and shall keep a detailed record of the planning and control of the reinforcement work.

**Storage of Reinforcement**

Reinforcement shall be stored on properly constructed racks at least 150 mm above ground level. The storage, cutting and bending of steel reinforcement shall be carried out under cover on an approved, free draining concrete platform. The method of storing shall be such as to prevent contamination or damage by weather or accident. Steel shall be protected from humidity when stored.

**Handling of Reinforcement**

Sheets of mesh fabric shall be flat unless specified as bent and any tendency to curve or twist shall be corrected by the Contractor before fixing. Mesh fabric shall not be supplied in rolls.

**Cutting and Bending**

Dirt, rust, concrete, scale, paint, oil, grease, salts, etc. shall be removed from the reinforcement by sand blasting. Reinforcement shall be bent when cold by hand or by using an approved hand or power operated bending machine. When bending, the reinforcement should be subjected to a constant even load and not an impact load.

Welding of reinforcement will only be allowed with the specific written permission of the Engineer. Bars incorrectly bent shall be used only if the means used for straightening and re-bending be such as not to damage the steel. No reinforcement shall be bent when in position in the works without approval, whether or not it is partially embedded in hardened concrete. Bending dimensions shall be in accordance with TS 500.

**Fixing Reinforcement**

Bars in contact shall be firmly secured to each other with approved binding wire or proprietary clips of a type approved by the Engineer. Binding wire shall be 16-18 gauge soft iron wire free from rust or other contaminants. The reinforcement shall be fixed accurately in position so that the reinforcement is in the correct position in relation to the formwork to give the specified concrete cover. The reinforcement shall be securely fixed in position so that it will not be displaced during the passage of the Contractor's traffic, the placing and compaction of the concrete or any related operations.

The correct cover shall be maintained by the use of plastic spacers or other approved means. If approved for use, concrete spacing blocks shall be machine pressed, or, if manufactured on site, shall be made from a mix of one part cement and two parts of sand. Site manufactured blocks shall be well compacted and water cured for a minimum of 7 days after casting and shall have a 10 minute absorption of less than 3.2% by weight.

Concrete spacers shall be comparable in strength, durability and appearance to the surrounding concrete. Any wire cast into the spacer blocks shall be positioned well away from the exposed surface and shall be galvanized. Spacers fixed to parallel reinforcement bars shall not be located in a line across a section. Timber, stone or metal spacers shall not be used. The top reinforcement in slabs shall be rigidly supported by mild steel chairs from the bottom reinforcement.

Plastic coated or galvanized steel chairs shall be used where in contact with exposed concrete surfaces. Chair spacing shall be at maximum 1.50 m centers in both directions.

Starter bars to walls shall be securely fixed to the reinforcement in the parent concrete and accurately located to maintain the specified cover. Reinforcement embedded in hardened concrete shall not be bent. Reinforcement cages assembled before fixing shall be protected against the weather and shall be stored and transported carefully so that no distortion or contamination may occur. Concrete shall be placed within 3 days of fixing reinforcement.

**Laps and Joints**

Laps are to be staggered in such a manner that maximum one third of the bars are lapped in the same section, otherwise the lap length shall be increased by 50%.

**Water stops**

When water stops are placed for water tightness the water stops shall be made PVC-type resistant to chlorides, sulphates, chemicals and the like. The width of the water stops shall be according to the manufacturers’ specifications.

All water stops shall be made continuous and shall be welded at all connections. Overlap is not allowed. All joints in water stops shall be made by the manufacturer of the water stop. If a joint ends at another part of the structure e.g. the connection between a wall and a bottom slab, the water stop should also be placed at least 30 cm inside the adjacent part of the structure.

Water stops shall be placed in accordance with the manufacturers specifications.

The Contractor shall submit type of water stops including a description of installation of water stops to the Engineer for his approval at least one month before.

**Excavation Works (Trench Excavation)**

**General Requirements**

The Contractor shall submit plan of operation to UNDP’s approval with complete details of the method of excavation, any necessary site drainage, safety measures, list of equipment and all other items of interest for the particular work at least 3 working days prior to starting excavation.

The Contractor shall set-out structures as shown on the Drawings, utilized survey points, bench marks and coordinates given. The Contractor is responsible for the correct setting-out of all structures. Upon the request by UNDP, any lacking or defective item, shall be corrected by the Contractor without any payment.

The Contractor is responsible for all necessary safety measures. From the commencement of work until its final acceptance, the Contractor shall strictly follow safety regulations in order to prevent accidents.

All damage caused by slides occurring during the excavation work will be fixed by the Contractor. Disposal of material resulting from such damage, as well as any necessary back-filling, will be carried out by the Contractor.

Special attention shall be paid to the proper bonding of foundation concrete or filling concrete with the underlying material. Immediately prior to the placing of concrete, the excavated bottom shall be thoroughly cleaned and all loose or broken material shall be completely removed.

Excavated material which has been approved by UNDP as fill material or as material for re-use shall be stocked as directed by UNDP.

Excavated materials, that is not suitable or not required for filling or for other use, shall be disposed of in designated disposal area(s). The Contractor shall trim and regulate the area to stable lines and grades.

Trenching shall be accomplished in accordance with these specifications and as shown on the detail drawings.

Unless otherwise shown on the plans or directed by the ENGINEER, trenches in which pipes are to be laid shall be excavated by open cut method to the depths shown on the plans, the cut sheets, or as specified by the Engineer. In general this shall be interpreted to mean that machine excavation shall not extend below an elevation permitting the pipe to be bedded as required by Bedding and Backfilling section.

Care of Surface Material for Reuse - All surface materials that, in the opinion of the ENGINEER, are suitable for reuse in restoring the surface shall be kept separate from the general excavation material, as directed by the ENGINEER.

There shall be no extra payment for excavation, no matter what soil types or conditions are encountered (no extra payment for rock excavation, pumping of groundwater, drainage, bracing and sheeting etc.). If soil boring information is not included in the bid documents, the CONTRACTOR shall make his own subsurface investigations as necessary prior to submitting a bid to determine soil and groundwater conditions.

The excavated material that is not suitable for back-fill or the excess excavated material shall be transported to the stock area which will be shown by the ENGINEER.

**Excavation and Preparation of Trench**

**Description**

The trench shall be dug so that the pipe can be laid to the alignment and depth required, and it shall be excavated only so far in advance of pipe laying as is necessary to maintain continuous work by the laying crew through the working day. Open trench ahead of pipe laying shall be kept to a minimum and shall not be in excess of 10m at the end of the working day or at time of ceasing work due to weather or other foreseeable causes. The trench shall be so braced and drained that the workmen may work in it safely and efficiently. It is essential that the discharge of the trench dewatering pumps be conducted to natural drainage channels or drains. The trench shall be accomplished in accordance with the detail drawings.

Important Notice: There is a need of manpower according to ENGINEER decision for excavation in this project. The all expenses about this item shall be at the CONTRACTOR's expense.

**Width of Trench**

The width of the trench shall be ample to permit the pipe to be laid and joined properly, and the backfill to be placed and compacted as specified hereinafter. Trenches shall be of such extra width, when required, as will permit the convenient placing of timber supports, sheeting and bracing, trench boxes, and handling of specials. Minimum: Outside diameter of the pipe barrel plus 40cm, i.e., 20cm each side as indicated in the Technical Drawings.

The trench shall be straight and uniform so as to permit laying pipe to lines and grades given by the ENGINEER. It shall be kept free of water during the laying of the pipe and until the pipeline has been backfilled. Removal of water shall be at the CONTRACTOR's expense.

**Bell Holes**

Bell holes shall be provided at each joint to permit the joint to be made properly, and the pipe to be supported along its full length by the trench bottom. Allowing the pipe to be “bridged” by the bell is not acceptable.

**Pipe Clearance in Rocks**

Ledge rock, boulders, and large stones shall be removed to provide a clearance of at least 15cm on all sides of all pipe, valves, and fittings for pipes 60cm in diameter or less, and 25cm for pipes larger than 60 cm in diameter. The specified minimum clearances are the minimum clear distance that will be permitted between any part of the pipe and appurtenances being laid and any part, projection, and point of such rock, boulder, or stone.

**Excavation Below Grade**

Where the trench must be excavated to 15cm below the specified grade, and before the pipe is laid, the sub grade shall be made by placing bedding as per Bedding and Backfilling section. The layers shall be thoroughly tamped as directed by the ENGINEER so as to provide a uniform and continuous bearing and support for the pipe at every point between pipe bells. Unauthorized excavation below the trench bottom shall be filled with compacted crushed stone or crushed gravel at no cost to the UNDP.

**Excavation in Poor Soil and Refilling to Grade**

In wet, yielding mucky locations or other locations where the bottom of the trench at sub grade is found to be unstable or to include ashes, cinders, refuse, vegetable or other organic material, or large pieces or fragments of inorganic material that in the judgments of the ENGINEER should be removed, the CONTRACTOR shall excavate, remove and dispose of such unsuitable material to the width and depth ordered by the ENGINEER. The excavated unsuitable material shall be replaced with Foundation Aggregate, to a level that is 30cm below the bottom of the pipe barrel in order to form a suitable foundation for the pipe bedding material. Before the pipe is laid, granular bedding shall be placed as specified.

**Special Foundation in Poor Soil**

Where the bottom of the trench at sub grade is found to consist of material that is unstable to such a degree that, in the opinion of the ENGINEER, it cannot be removed and replaced with an approved material thoroughly compacted in place to support the pipe properly, the CONTRACTOR shall construct a foundation for the pipe.

**Sub grade in Rock Trenches**

Where excavation is made in rock or boulders and the clearance specified in Paragraph above is provided; the sub grade shall be made as specified in Paragraph above before the pipe is laid.

**Blasting**

Blasting for excavation will be permitted only after securing the approval of the ENGINEER and only when proper precautions are taken for the protection of persons or property. The hours of blasting shall be fixed by the ENGINEER. Any damage caused by blasting shall be repaired by the CONTRACTOR at his expense. The CONTRACTOR’S methods of procedure in blasting shall conform to state laws and municipal ordinances.

**Trenching by Hand or Machine**

Hand methods for excavation shall be employed in locations shown on the drawings. In other locations the CONTRACTOR may use trench digging machinery or employ hand methods.

**Depth**

The trench shall be excavated to a point not less than 15cm or more than 30cm below the barrel of the pipe. All loose material shall be removed from the trench bottom. No pipe shall be laid directly on rock. The trench shall be accomplished in accordance with the detail drawings.

The CONTRACTOR shall verify alignment, elevations, and grades prior to proceeding. The CONTRACTOR will be responsible for any necessary relaying and/or relocating of the pipe if the pipe is laid before verifying locations and elevations of known potential obstructions.

All the excess excavated material shall be transported to the stock area which will be shown by the ENGINEER.

**Safety and Utility Provisions**

**Braced and Sheeted Trenches**

Open cut trenches shall be sheeted and braced as required by governing state laws and municipal ordinances, and as may be necessary to protect life, property, the work, or as ordered by the ENGINEER. If necessary bracing and sheeting shall be prepared according to DIN 4124, TS 2519.

**Piling of Excavated Material**

All excavated material shall be piled in a manner that will not endanger the work and that will avoid obstructing sidewalks and driveways. Hydrants under pressure, valve pit covers, valve boxes, curb stop boxes, fire and police call boxes, or other utility controls shall be left unobstructed and accessible until during the work. Gutters shall be kept clear or other satisfactory provision made for street drainage, and natural watercourses shall not be obstructed.

**Barricades, Guards and Safety Provisions**

To protect persons from injury and to avoid property damage, adequate barricades, construction signs, torches, red lanterns, and guards as required shall be placed and maintained during the progress of the construction work and until it is safe for traffic to use the highway.

All material piles, equipment, and pipe that may be obstructions to traffic shall be enclosed by fences or barricades and shall be protected by proper lights when the visibility is poor. Safety rules and regulations of local authorities shall be observed.

**Structure Protection**

Temporary support, adequate protection and maintenance of all underground and surface structures, drains, and other obstructions encountered in the progress of the work shall be furnished by the CONTRACTOR at his expense and under the direction of the ENGINEER. Any structures that have been disturbed shall be restored upon completion of the work.

**Protection and Surface Structures**

Trees, shrubbery, fences, poles, and all other property and surface structures shall be protected unless their removal is shown on the drawings or authorized by the ENGINEER. When it is necessary to cut roots and tree branches, such cutting shall be done under the supervision and direction of the ENGINEER.

All excavated materials shall be placed a minimum of 60cm back from the edge of the trench.

**Bedding and Backfilling**

**General Requirements**

Backfilling of pipeline trenches shall be accomplished in accordance with these specifications and as shown on the detail drawings.

In all cases walking or working on the completed pipelines except as may be necessary in tamping or backfilling will not be permitted until the trench has been backfilled to a point 30 cm above the top of the pipe. The filling of the trench and the tamping of the backfill shall be carried on simultaneously on both sides of the pipe in such a manner that the completed pipeline will not be disturbed and injurious side pressures do not occur.

Before final acceptance, the CONTRACTOR will be required to level off all trenches or to bring up to grade. The CONTRACTOR shall also remove from roadways, rights-of-way and/or private property all excess earth or other materials resulting from construction.

In the event that pavement is not placed immediately following trench backfilling in streets and highways, the CONTRACTOR shall be responsible for maintaining the trench surface in a level condition at proper pavement grade at all times.

**Bedding and Backfilling**

**Bedding Material:**

All bedding material shall be free from cinders, ashes, refuse, vegetable or organic material, boulders, rocks or stones, or other material that in the opinion of the ENGINEER is unsuitable. No stones or rock may be placed directly on the pipe. All pipelines and drains shall be protected from lateral displacement and possible damage resulting from impact or unbalanced loading during backfilling operations by being adequately bedded. A groove shall be excavated in the bottom of the trench to receive the bottom quadrant of the pipe. Before preparing the groove, the trench bottom shall be excavated or filled and compacted to an elevation sufficiently above the grade of the pipe so that, when completed, the pipe will be true to line and grade. Bell holes shall be excavated so that only the barrel of the pipe receives bearing from the trench bottom.

Pipe bedding materials placed at any point below the mid-point of the pipe shall be deposited and compacted in layers not to exceed 15cm in uncompacted depth. Deposition and compaction of bedding materials shall be done simultaneously and uniformly on both sides of the pipe. Compaction shall be accomplished with hand or mechanical compactors. All bedding materials shall be placed in the trench with hand tools or other approved method in such a manner that they will be scattered alongside the pipe and not dropped into the trench in compact masses. Bedding materials shall be free from lumps, sand or gravel, free from rocks larger than three-inch diameter; with all materials free from roots, sod, or other organic matter.

In the event trench materials are not satisfactory for pipe bedding, modified bedding will be required. Modified bedding shall consist of placing compacted granular material on each side of and to the level of 15cm above the top of the pipe. Modified bedding material shall be graded as follows: 100% passing a one-inch screen and no more than 5% passing a No. 4 sieve.

**Special Pipe Bedding (Foundation Aggregate)**

In wet, yielding mucky locations where pipe is in danger of sinking below grade or floating out of line or grade, or where backfill materials are of such a fluid nature that such movements of the pipe might take place during the placing of the backfill, the pipe must be weighted or secured permanently in place by such means as will prove effective. When ordered by the ENGINEER, yielding and mucky material in sub grades shall be removed below ordinary trench depth in order to prepare a proper bed for the pipe. Foundation Aggregate, where required, shall be installed accordingly.

**Bedding Under Pipe and Backfilling around Pipe:**

For pipe up to 40 cm nominal diameters:

Pipe shall generally be bedded on undisturbed ground. From the bottom of the pipe, fittings and appurtenances to a depth of 15 cm above the top of the pipe, backfill shall be placed and lightly consolidated by hand or by approved mechanical methods. Backfill material shall be deposited in the trench for its full width on each side of the pipe, fitting, and appurtenance simultaneously. The CONTRACTOR shall use special care in placing this portion of the backfill so as to avoid injuring or moving the pipe. The method of placing and consolidation shall be approved by the ENGINEER.

If, in the opinion of the ENGINEER, the existing trench material is of suitable quality, the pipeline main may be bedded on and backfilled with existing trench material. However, when, in the opinion of the ENGINEER, the pipe, fittings, and appurtenances are laid at sub grade in rock or in poor soil in they shall be bedded by hand or approved mechanical methods from 15cm below the pipe to 30cm above the pipe with granular material placed in layers of 10cm and compacted by tamping. No separate payment shall be made for bedding when granular material is used.

**Backfilling to Grade:**

From 20cm above the pipe to the grade shown on the drawings or specified herein, excavated trench material containing stones up to 15cm in the greatest dimension may be used as backfill material, unless otherwise specified. No material shall be used for backfill that contains frozen earth, debris, or earth with an exceptionally high void content. The CONTRACTOR shall use mechanical equipment to place and compact the backfill. The backfill material shall be placed in 15cm loose layers and each layer shall be compacted to not less than 95% of maximum dry density. The moisture content shall be not greater than 3 percentage points above optimum as determined by relevant Turkish Standards. No compacting of the backfill with mechanical equipment, such as wheeled vehicles, will be permitted unless sufficient cover is provided over the pipe to prevent damage to the pipe.

**Bedding and Backfilling in Freezing Weather:**

Bedding and backfilling shall not be done in freezing weather except by permission of the ENGINEER, and no bedding or backfill shall be made with frozen material. No fill shall be made where the material already in the trench is frozen.

**Granular Material Bedding and/or Backfill:**

All granular material used for bedding or backfill shall conform to the following specifications. Granular material shall be gravel, crushed gravel, or crushed stone meeting the following grading requirements:

|  |  |
| --- | --- |
| Sieve Total | Percent Passing |
| 2 1/2 | 100 |
| 1 inch | 70-100 |
| No. 4 (3/16) | 25-100 |
| No. 40 | 10-50 |
| No. 200 | 5-15 |

The fraction passing a No. 40 sieve shall have a liquid limit not greater than 30 and a plasticity index not greater than 6.

**Granular Material Backfill:**

Granular material shall consist of a reasonably clean pit run or bank run sand or gravel free from excessive silt, clay, or clay balls Full-depth granular backfill shall be placed where excavated trench material is unsatisfactory for backfill, where the roadside edge of the trench is less than 150cm from the edge of pavement, or where otherwise directed by the ENGINEER, and shall be in accordance with relevant specifications. Material used for backfilling shall be placed immediately after placing bedding around pipe unless otherwise ordered by the ENGINEER.

**Settlement of Trenches:**

The CONTRACTOR shall be responsible for any trench settlement that occurs within one year from the time of final acceptance of the work. If paving or other restoration shall require replacement because of trench settlement within this time, it shall be replaced by the CONTRACTOR at no extra cost to UNDP.

**Installing High Density Polyethylene (HDPE) Irrigation Pipe System**

**General**

**Description**

The Contractor shall furnish all labor, material, tools, and equipment required for the complete construction of pipelines, structures, clean-outs, and other allied structures and appurtenances as stated on the Bidding Sheets, shown on the Contract Drawings, and specified herein, all within the time as stated in the Contract Documents.

HDPE pipe may only be used where indicated on plans approved by the Engineer. No service laterals shall be directly connected to the irrigation pipes main. As shown in the drawings HDPE pipes and the fittings for the pipes shall conform to all related standarts.

Prior to the construction of any irrigation pipeline, the UNDP’s or Developer’s Engineer shall place adequate line and grade stakes and shall also set stakes and furnish grades so that all structure tops can be set to finish grade, all in accordance with the approved plans. The Engineer shall then prepare suitable cut sheets in a clear and legible manner giving all necessary construction data.

Construction of irrigation pipelines and appurtenances shall be in accordance with plans and cut sheets approved therefore and the specifications herein. The Authority shall insist that good workmanship and standard irrigation pipeline construction principles apply in the work in order that the finished project may qualify for final inspection and acceptance into the overall system.

**Records**

A true and accurate record of all "as built" conditions shall be furnished to the Engineer prior to, or immediately upon, completion of the work.

**Care & Handling**

Pipe shall be stored at the jobsite in unit packages provided by the manufacturer. Caution shall be exercised to avoid compression, damage or deformation to bell ends of the pipe. If pipe is to be exposed to direct sunlight for more than 14 days, pipe must be covered with an opaque material while permitting adequate air circulation above and around the pipe to prevent excessive heat accumulation.

If pipe is strung along trench prior to installation, string only pipe to be used within a 24-hour period; all pipe is to be laid on a flat surface. The interior as well as sealing surfaces of pipe, fittings, and other accessories shall be kept free from dirt and foreign matter. Gaskets shall be protected from excessive exposure to heat, direct sunlight, ozone, oil and grease.

**Job Conditions**

The Contractor shall familiarize himself and comply with all applicable state, county and municipal rules and regulations pertaining to sanitation, fire protection and safety, and all provisions of the Contract Documents.

**Guarantee**

All work, materials, and equipment shall be guaranteed as per the General Condition for Works given in Annex II.

**Execution**

**Installation of Pipe**

Installation of pipe shall start at the low end of each section and proceed upgrade. All bell and spigot pipe shall be laid with the bell end upgrade. Assembly of all types of pipe shall be done in strict conformance with the requirements of the pipe manufacturer.

The trenches in which the pipe is to be laid shall be opened in accordance with the lines and grades on the approved plans and as designated in the field by the developer’s or UNDP’s Engineer. All excavation except where indicated on approved plans or required by the ENGINEER, shall be open cut from the surface and shall be excavated to a width sufficient to enable the work of properly laying and jointing of pipes. The excavation of trenches shall be fully completed a sufficient distance in advance of the laying of the irrigation pipeline, and the exposed end of all pipes shall be fully closed by means of an approved stopper to prevent earth or other substances from entering the pipe. All lines shall be laid true to line and grade with bells upstream. The sections of pipe shall be so laid and fitted together than, when complete, the irrigation pipelines will have a smooth and uniform invert. The pipe shall be kept thoroughly clean so that jointing compounds will adhere. All trenches shall be kept free of water as may be necessary for good workmanship. Not more than 500 m of trench shall be opened in advance of the completed pipeline.

If any deviation is contemplated in location, line or grade of any irrigation line, masonry structure, or accessory from that shown on the plans approved by the Authority, details of the proposed deviation shall be submitted to the Authority for their review and approval before the changes are constructed.

Where rock is encountered in trench excavation, whether solid or in the form of loose rock, shale, or large boulders, it shall be removed by blasting or other approved method to the extent that no projection of rock shall be nearer than 15 cm to any part of the irrigation pipe when laid, nor to project beyond the lines and grades of masonry structures. No blasting shall be done within 150 cm of any completed work or adjacent to other structures unless proper precautions are taken. End of line adjacent to blasting shall be covered to avoid receiving debris.

Where excavation has been carried too deep, the Authority shall require sand or gravel refill. No pipe shall be laid upon a foundation in which frost exists or at any time that there is danger of the formation of ice or penetration of frost at the bottom of the excavation.

Only bedding shown on the standard details shall be used. Foundation may consist of sand, gravel cradle, concrete cradle, or concrete encasement, as directed. Where the concrete cradle or concrete encasement is required to be installed, it shall be proportioned and sized in accordance with the Turkish Standards.

Pipe shall be placed in the trench with any elongation oriented vertically. For pipe sizes larger than 90 cm in diameter, struts must be provided and installed per the manufacturer's recommendations. However, the struts shall not cause more than 1½% vertical elongation; in no case will horizontal elongation be permitted.

Pipe shall be accurately laid to alignment and grade shown on the drawings or established by the Engineer. Damaged pipe must be removed and not reused.

**Bedding**

All pipes shall be laid in a bed prepared by hand work, dug true to line and grade, to furnish a true and firm bearing for the pipe throughout its entire length. Adjustment of pipes to lines and grade shall be made by scraping away or filling in and tamping material under the body of the pipe throughout its entire length, and not by blocking or wedging. All bedding materials must be mechanically compacted/consolidated to a minimum of 90% standard proctor or as required by the Engineer.

Bedding shall be per the bedding details shown on the plans. Crushed rock shall be placed in the pipe zone in equal lifts of one foot on both sides of the pipe. The bedding operation shall not cause the pipe to have a vertical elongation of more than 1½%. If the Engineer determines that ground water will be encountered or that the ground water is anticipated to exceed the spring line of the pipe during the service life of the line, the backfill material within the pipe zone shall be approved by the Engineer and be installed at no extra cost to the District.

The flexibility of plastic pipe may cause a possible problem in maintaining line and grade. Therefore, special care must be taken in the preparation of the sub grade and in the placement of bedding to ensure that the pipe is laid true to line and grade as required in this specification.

**Shoring, sheeting, or trench shields**

Shoring, sheeting, or trench shields shall be utilized in such a manner as to minimize disturbance of the backfill material beneath the pipe crown. Trench sheeting that extends below the crown should either be left permanently in place or consist of adequately supported steel sheets 3cm thick or less which can be extracted with minimal disturbance to the pipe embedment. Where moveable trench shields are used, the following steps shall be followed unless an alternate technique that does not disturb the pipe embedment can be demonstrated:

* Excavation of the trench below the elevation of the pipe crown shall be done from inside of the trench shield to prevent the accumulation of loose or sloughed material along the outside of the shield. Excavation of the trench ahead of the shield at an elevation below the pipe crown is not permitted unless approved by the Engineer.
* After laying the pipe in the trench, bedding and pipe embedment shall be placed in lifts and the shield must be lifted in steps. As the shield is lifted, embedment material shall be shoveled under the shield so as to fill all voids left by the removal of the shield.
* Backfill material placed under the pipe haunches shall be thoroughly shovel sliced along the length of the pipe. Where compaction/consolidation of bedding and backfill materials is required, it shall be compacted by mechanical means. Suitable mechanical means includes vibratory sleds, gasoline driven impact tampers, and air driven impact tampers or other approved means. Compact to a minimum of 90% Standard Proctor or as required by the Engineer.
* Pipe shall not be subject to a roller or wheel loads until a minimum of one diameter or 30cm (whichever is larger) of backfill has been placed over the top of the pipe and a hydro hammer shall not be used until a minimum depth of one diameter or 30cm (whichever is larger) of backfill has been placed over the top of the pipe.

**Alignment**

Pipes shall be laid in accurate conformity with the prescribed lines and grades, which alignment shall be obtained by plumbing and measuring from a tightly stretched wire or line running parallel with the flow line grade and supported over the centerline of the irrigation pipeline by batter boards or bars accurately placed and firmly fastened in place across the trench; or by some other comparable method acceptable to the Engineer.

Pipe alignment shall not deviate from that shown on the plans by more than 5 cm in 5m. After each length of pipe has been laid to line and grade, it shall be jointed to the preceding section as hereinafter specified, and after said jointing procedure has commenced, there shall be no movement of the pipe whatsoever in subsequent operations.

**Pipe Cleaning**

Before each new length of pipe is placed, the interior of the preceding pipe shall be carefully cleaned of all dirt and debris. At all times when the work of installing pipe is not in progress, all openings into the pipe and the ends of the pipe in the trench shall be tightly closed to prevent entrance of animals and foreign materials.

The Contractor shall take all necessary precautions to prevent the pipe from floating due to water entering the trench from any source, shall assume full responsibility for any damage due to this cause and shall at his own expense restore and replace the pipe to its specified condition and grade if it is displaced due to floating.

**Application:**

Transmission lines and routes of pipelines shall be marked with lime or equivalent materials provided by the contractor in the construction area. No excavation shall start without the approval of the Engineer.

**Trench Base Preparation:**

After excavation, base of the trench shall be prepared for laying of the HDPE pipes.

**Laying of pipes:**

Before laying PE 100 pipe 15 cm. of sand shall be placed under. Inside and outside of the pipes shall be cleaned before laying. Axes of the pipes will be laid flat as possible. In case of the change of the direction of the pipelines, additional butt welding/electro fusion welding shall be made. Trim the ends of open tubes in the process of interruption will be closed with blind plug.

**Testing of pipes:**

Throughout the Pipe laying process, after receiving the approval of every 500 m of a PE 100 pipes operating pressure test will be done. Filled water will be held 24 hours. Water that is used in the experiment will be supplied by contractor. 24-hour change in the pressure shall not exceed 0.1 kg / cm². Any damage occurs during the experiment. Shall be fixed by the contractor,

High density PE 100 pipes and fittings shall be in compliance with TS 418-2 EN 12201-2 and pipe design stress will 8N/mm2.

The pipes and joint components shall be strong enough to successfully operate min. 50 years, with temperature 20oC and nominal internal pressure water.

Pipe and fittings must have a high resistance against chemicals. Pipes shall be suitable for Butt welding.

**Minimum requirements and technical standards for PE 100 pipes:**

**General**

PE 100 pipe manufacturers should have ISO 9001 quality assurance system, and this must be documented.

**Standards**

PE 100 pipes should comply with TS EN 12201-2+A1, or ISO 4427 standards, PE 100 pipe fittings must comply with TS EN 12201-3+A1 standards.

**Pressure**

Classification of polyethylene pipes according to TS EN 12201-2+A1:   
Relation between PN, S and SDR values ​​of MRS Class material at 20oC,

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | **PN ( Bar)** |  |  |  |
|  |  |  | Material | Class |  |  |
| **SDR** | **S** | **PE 32** | **PE 40** | **PE 63** | **PE 80** | **PE 100** |
| 41 | 20 | - | - | 2.5 | 3.2 | 4 |
| 33 | 16 | - | - | 3.2 | 4 | 5 |
| 27.6 | 13.3 | - | - | - | - | 6 |
| 26 | 12.5 | - | 2.5 | 4 | 5 | - |
| 22 | 10.5 | - | - | - | 6 | - |
| 21 | 10 | 2.5 | 3.2 | 5 | - | 8 |
| 17.6 | 8.3 | - | - | 6 | - | - |
| 17 | 8 | 3.2 | 4 | - | 8 | 10 |
| 13.6 | 6.3 | 4 | 5 | 8 | 10 | 12.5 |
| 11.6 | 5.3 | - | 6 | - | - | - |
| 11 | 5 | 5 | - | 10 | 12.5 | 16 |
| 9.4 | 4.2 | 6 | - | - | - | - |
| 9 | 4 | - | 8 | 12.5 | 16 | 20 |
| 7.4 | 3.2 | 8 | 10 | 16 | 20 | 25 |
| 6 | 2.5 | 10 | 12.5 | 20 | 25 | 32 |

**General and Technical Specifications**

* Density of the raw material must be greater than 0.940 gr/cm3 PE 100. (ISO 1183)
* The value of MFR at 190oC, under 5 kg of weight should be 0.2 ~ 0.35 gr/10min. (ISO 1133) MFR testing of raw materials and the pipe should be carried out separately and the difference between the two results should not exceed + / - 20%.
* Oxidation (OIT) at 200oC, should be minimum 20 minutes.
* Pigment (ISO 13949) and carbon black (ISO 11420) should be homogeneous distribution.
* The color should be black and blue stripes on the pipe.
* Carbon black content should be between 2 ~ 2.5%. (ISO 6964)
* Strain failure ([elongation at rupture](http://tureng.com/search/elongation%20at%20rupture)) must be 600% min.

**POLYETHYLENE PIPE WELDING**

The Engineer must approve the test weld results before commencement of further welding or any pipe installation can occur. Acceptance or rejection of the weld test results will be available within 3 working days of the results being given to the Engineer. Polyethylene pipes must be jointed to the manufacturer’s recommendations, in compliance with ISO 21307:2011 Plastics pipes and fittings -- Butt fusion jointing procedures for polyethylene (PE) pipes and fittings used in the construction of water distribution system and as specified below.

Butt-fusion welding is the primary methodology and must be used to join polyethylene pipes. In some situations the Engineer will approve the Contractor to use Electro fusion welding to join polyethylene pipes. The Contractor must have the Engineer’s approval before using Electro fusion welding.

Only automatic or semi-automatic butt-welding machines will be acceptable for this work. Manually operated welding machines are not permitted. All butt welds must be performed by equipment that is specifically designed for welding a range of pipe sizes.

Experienced and suitably qualified personnel must undertake the welding procedure. It is required that the pipe welder will have a recognized PE welding certificate obtained in compliance with the requirements of the relevant standard. A copy of the certificate is to be provided to the Engineer before any welds are made.

A methodology stating the times, pressures and temperatures that are to be used for each diameter of pipe welded must be submitted to the Engineer prior to welding commencing on site. These will generally be consistent with the manufacturer’s recommendations but may be modified to achieve consistently good welds.

**All Structures**

Unless otherwise shown on the drawings, the pipe shall be laid continuously through the location of the structures. After the structure has been constructed, the open channel shall be formed by cutting the pipe and removing the top half. If the open channel cannot be formed in this manner, it shall be formed of concrete with the depth equal to the diameter of the pipe.

When completed, the top of the all structures cover shall be accurately brought to the elevation called for on the drawings, or if no elevation is indicated, it shall be brought flush with the surface of the surrounding ground or pavement.

**Cleaning Lines**

All irrigation line mains shall be flushed with water and "balled" or cleaned by acceptable method prior to testing to ensure that all dirt, debris, and obstructions are removed. This work must be performed in the presence of and to the satisfaction of the Engineer, and the Contractor shall notify the Engineer at least one (1) working day in advance of starting the cleaning work.

**Leakage Tests**

All lines shall be tested for tightness after they and all appurtenances have been completed, backfilled (except for test tees) and compacted, and are ready for service. Tests shall be made on each section, including structures, from one structure or test tee to the next, unless grades are flat enough to permit testing two or more sections at one time. The method of required test (water test or air test) shall be determined by the Engineer.

**Preparation for Tests**

Each section of irrigation lines between successive structures shall be tested by closing the lower end of the section to be tested, the inlet structures of the upper structures, and filling the pipe and manhole with water to a level of 5cm above the soffit of the open line in the upper terminal. After the section has been filled, it shall be allowed to stand for a sufficient length of time to allow what water it will, prior to making the leakage test described in the following paragraphs (Water Test and Air Test). This period of time for absorption of water shall not be less than 15 minutes nor greater than 24 hours.

**Test Procedure and Allowable Leakage.**

Water Test

The leakage test shall consist of measuring the quantity of water required to maintain the water level at the elevation prescribed in the above paragraph for a period of 15 minutes. The water used in the test shall be measured through a meter or by other means satisfactory to the Engineer. The allowable leakage shall be computed from the T.S.E 821. If the leakage during the test period exceeds the allowable leakage, the line shall be removed and new pipes shall be laid.

* 1. **STANDARDS**

In the design, implementation, testing, acceptance and operation of all works within the scope of the tender, the Contractor shall comply with the latest updated versions of the following standards in order of priority. In cases where there is no definition in the following standards, the latest updated editions of other national and international standards shall be allowed to be used, provided that the Engineer agrees.

* Turkish Standards (TS),
* European Norm (EN),
* International Standards Organization (ISO).

The Contractor shall carry out and complete the construction works covered by the Contract in full compliance with the latest relevant versions of the below mentioned specifications;

* Republic of Turkey Ministry of Environment and Urbanization "General Technical Specifications for Civil Works, Construction Works, Mechanical Works and Electrical Works".
* Republic of Turkey General Directorate of Highways "Highways Technical Specifications".
* The Bank of Provinces Technical Specifications,
* Technical Specifications of the Ministry of National Defence,
* TEDAŞ Technical Specifications,
* DSI Technical Specifications etc.
  1. **ARRANGEMENT OF THE SITE**

The ground levels of the construction site shall not be altered without the Engineer's permission and no infrastructure, structures or trees shall be removed or permanent structures constructed without the Engineer's prior approval.

With the Engineer's approval, the Contractor may construct temporary parking areas, loading and unloading areas, open storage areas, approach and interior roads, temporary facilities to facilitate the construction layout and methodology of the Works.

It shall be under the Contractor's responsibility to provide all usage needs on site such as electricity, water, internet etc. required during the execution of the works.

Subscription application to the relevant authorities for the provision of facility connections shall be under the responsibility of the Contractor. All costs of consumption on site shall be borne by the Contractor.

Any temporary fence used by the contractor to protect works shall be fit for its duty to keep the public out of danger and protect workers.

As soon as the Contractor owns the relevant part of the Site, he/she shall install the said fences and take the relevant security measures.

The Contractor shall regularly inspect and maintain all such fences and any defects shall be corrected without delay.

Access to temporary site fences shall be provided as needed for use by residents of adjacent properties.

The Contractor shall provide offices, dining halls and accommodation for its own personnel, subcontractors, and furnish and maintain these places.

The contractor shall supply water for the construction work. It is the Contractor's responsibility to provide all necessary backup, maintenance and repair works for the uninterrupted supply of water sufficient for the construction of the works.

The Contractor shall clean the construction site in a way that maintains it in a hygienic condition when necessary and shall comply with the relevant law and the instructions of the Engineer.

The Contractor shall set up a temporary WC at the construction site to meet the needs of the working personnel. Sewerage outlets shall be connected to the sewerage network to the extent possible. If this is not possible, connection shall be made to septic tanks built in accordance with national specifications. Septic tanks shall be emptied at appropriate intervals.

The Contractor, at his/her own cost, shall erect and maintain 2 signboards (1.25 m x 2.25 m), the location and content information of which shall be communicated by the Engineer. The design of the sign shall be made in accordance with the approval of the Engineer.

Ownership of all structures, materials, tools, equipment and tools supplied and installed by the Contractor for the performance of the Work belongs to the Contractor.

Temporary facilities shall be removed, and their places shall be cleaned in a time and method to be determined by the Engineer after temporary acceptance. Temporarily removed fences, billboards, etc. if any, shall be reinstated.

* 1. **PROTECTION OF EXISTING FACILITIES AND BUILDINGS**

The contractor shall be fully responsible for the protection of all public or private buildings, structures and roads in the construction site, whether shown in the drawings or not. Any damage caused by the contractor's activities shall be repaired at his/her own expense.

The Contractor shall take all necessary measures to avoid damage to roads, lands, properties, trees and other structures, and shall promptly deal with complaints from owners during the Contract.

If any damage is found, the Contractor shall promptly notify the Employer and the Legal Contractor, the Municipality or the relevant owner of the situation and the Contractor shall provide every means for repair or replacement of the affected part.

The Contractor shall adequately protect the buildings affected by the works from damage and theft.

All electrical installations shall comply with relevant national regulations and be safe for the Contractor and the public. In cases where daylight is insufficient, the site shall be illuminated.

Before starting the works, pre-construction photographs shall be taken near the existing structures.

* 1. **KEY TECHNICAL STAFF**

In accordance with the Work Program, the Contractor shall employ the following key personnel with the following qualifications at the site.

**Project Manager:** Civil engineer who has at least 10 years of experience in the construction of superstructures/buildings. The Project Manager/Construction Manager shall be on site full time from the date the Engineer gives Site Access to the Contractor until the provisional acceptance date.

**Electrical Engineer:** Electrical engineer with at least 3 years of experience in the construction of superstructures/buildings.

**Survey Engineer / Surveyor:** A Survey Engineer (or equivalent) with at least 3 years of experience in the construction of superstructures/buildings or a Survey Technician with at least 5 years of experience in the construction of superstructures/buildings

* 1. **APPLICATION WORKS**

The Contractor shall prepare the application drawings showing the layout of the structures at the construction site based on the reference points and levels given in the drawings and submit them to the Engineer's approval. The correctness of the arrangement shall be the sole responsibility of the Contractor.

For application and measurement processes; the contractor:

* Shall employ qualified and experienced land surveyors,
* Shall use modern type and quality topography devices suitable for the job.
  1. **ENGINEER'S OFFICE**

Before starting the contract, the Contractor shall procure and install a room of at least 10 m2 on site for the exclusive use of the Engineer at a location agreed with the Engineer. This office shall be provided during the entire construction period.

The toiletry shall have hot and coldwater system and a WC with a siphon connected to the existing sewer. The Contractor shall be responsible for the safety of all equipment inside the Engineer's office during the contract period.

The Contractor shall maintain, illuminate, heat/cool and clean the office for the duration of the contract. The contractor shall be responsible for the insurance of the workplace for the duration of the contract. The Contractor shall insure the office and the content provided by it against fire, theft and other risks for the duration of the Contract.

|  |  |
| --- | --- |
| **Material** | **Quantity** |
| Work desk | 1 |
| Executive Chair | 2 |
| Guest Chair | 5 |
| Whiteboard | 1 |

Electricity, water supply and maintenance expenses of this office shall be borne by the Contractor until the Works are complete.

The Contractor shall ensure that all equipment is kept in good condition and shall repair or replace any equipment that has become out of service, as directed by the Engineer.

* 1. **COORDINATION**

The Contractor is responsible for providing all necessary coordination for the execution of the work in accordance with the quality, cost and timing targets set by the Employer at the beginning of the work.

The Contractor shall prepare a Critical Path Method (CPM) worksheet, review the worksheet against the project timeframe, check the integrity of the worksheets between infrastructure, superstructure construction, electrical and mechanical works, combine the worksheets and submit to the Engineer for approval.

The contractor is obliged to provide administrative and technical coordination with the employer, Engineer and other parties that may directly affect the works and the following parties that may have an indirect effect:

* Relevant official institutions and organizations,
* Other authorized persons, institutions and organizations.
  1. **MATERIAL AND EQUIPMENT INSPECTION AND INSPECTION, CERTIFICATION AND APPROVAL**

In case the engineer requests, it reserves the right to visit the contractor's project offices, factories and subcontractors' factories in order to observe the project design and production works for the technical control and inspection of materials and equipment.

As a result of the control and counting of the material, the materials that are found not to comply with the quality specified in the specification, to be defective, missing or incorrectly sent, shall be exchanged and delivered within 14 days at the Contractor's expense (this period is mutually determined when special manufacturing is required). Otherwise, the Employer shall procure them on behalf of the Contractor and collect all expenses from the receivables from the Employer or the performance bond.

The Contractor shall obtain all relevant approvals and certificates from the local Authorities regarding the construction and operation of the Facilities on site.

It is the Contractor's responsibility to pay the permit, license (including construction license) and approval fees required by Turkish laws/regulations and determined by the relevant local authorities.

* 1. **AS-BUILT DRAWINGS, USER AND MAINTENANCE MANUALS**

The “As-Built” project to be prepared by the contractor shall also include the operation and maintenance manuals of the facility.

5 (five) complete draft print sets of “As-Built” drawings showing all the works as they are done shall be submitted to the Engineer for approval within one month following the provisional acceptance of the work.

The Contractor shall record all necessary information to prepare “As-Built” drawings during the execution of the Works at the site. Properly specified drawings and other documents covering permanent works completed shall be submitted to the Engineer prior to progress payment during construction.

These drawings covering permanent works shall be kept up to date and submitted to the Engineer's approval after the works are completed.

The Contractor shall submit the "As-Built Drawings" together with the complete set of instructions and manuals of the installed plant to the Engineer for approval to facilitate operation and maintenance. Documentation shall include, but is not limited to:

* Layout drawings,
* Schematic wiring diagrams,
* Special operating instructions
* Special maintenance instructions,
* Detailed record of all kinds of tests,
* Delivery of all materials finished drawings, all warranties and certificates used in the contract, depending on the contract, by the Contractor before final progress payment is made.

All information in these manuals shall apply specifically to the equipment supplied and shall be free from irrelevant matters that may appear in the manufacturer's general literature.

As-Built documents shall include all architectural and engineering disciplines, including architectural/structural, electrical and mechanical drawings, and operation and maintenance manuals. Except for the As-Built drawings, the final version of each document in two hard copy and one electronic (Microsoft Word, Excel, etc.) copy, including the Engineer's comments and information including all changes/revisions made during construction, shall be submitted. Usage and maintenance manuals shall be presented in Turkish.

All documents except drawings shall be in A4 size. Drawings shall be on international A-size pages and shall be marked "AS-BUILT".

* 1. **FINAL BENEFICIARY**

The Contractor shall coordinate with the District Municipality, which is the final beneficiary. If deemed necessary by the employer, representatives of the final beneficiary may attend the meetings, material tests, acceptance and inspection of materials and equipment, etc.

The representatives of the final beneficiary have the right to access the site to monitor the progress of the work, the compliance of the work with the contractual requirements. The Contractor shall provide representatives with access to the site at any time requested. However, representatives have no legal authority in terms of contract terms and conditions.

1. **PROJECT DOCUMENTS**
   1. **PROJECT MANAGEMENT** 
      1. **Project Management Responsibility**

The Contractor shall be responsible for the management, execution, monitoring and coordination of the entire project to meet all the requirements set out in the Contract and Technical Specification.

The Contractor shall carry out the planning in collaboration with the Employer's designated representatives to ensure the visibility of the progress of the project and the timely completion of the works.

* + 1. **General Conditions**

The Contractor shall establish a project organization with the necessary resources, qualifications and experience to fulfil all its obligations, in accordance with the requirements contained herein.

The contractor shall clearly define the duties, responsibilities and authorities of each role within the organization, at least at the management level.

The contractor shall define the organizational interfaces for any subcontractors and suppliers to be found within or outside the project organization. Such interfaces shall provide a clear reference between the level of project management within the Contractor and subcontractor/Supplier organizations.

The Contractor shall appoint key staff members and they shall remain unchanged by the Contractor for the entire project for the longest period of time possible.

Any subsequent changes in such assignments shall be notified to the Engineer and approved by the Engineer and shall be consulted with the Contractor for the Engineer to evaluate the reasons and possible impact of such change.

Unless within the Contractor's mandate, the Contractor shall ensure that existing personnel remain until suitable and acceptable substitutes are found.

* + 1. **Work Schedule**

The work program to be submitted within 1 week following the signing of the contract shall include at least the following:

* Suggested office location on site, stations (steel/concrete structures), warehouses, accommodation etc. (sketches shall be added as needed).
* A brief outline of the construction method of how things will be run so that the work can be completed in the relevant time,
* A critical milestone bar chart (Gantt chart) representing the construction schedule and detailing related activities, dates, allocation of workforce and facility resources, etc.

If the bidder plans to subcontract some of the works, he/she must provide the following details:

* Details of the work to be assigned to the subcontractor,
* Name and details of subcontractors,
* Personnel lists of subcontractors,
* Subcontracting value,
* Similar work experience documents of the subcontractor.
  + 1. **Project Manager’s Responsibilities**

The contractor shall define a project management team and appoint a Project Manager responsible for the entire project.

The Contractor shall empower the Project Manager to make decisions regarding all aspects of the day-to-day management of the project.

Any restrictions on the Project Manager's rights in this regard must be clearly identified and defined. Possible restrictions must not impose management difficulties on the project.

All formal communication between the Engineer/Employer and the Contractor shall be through the Contractor's Project Manager.

* + 1. **Engineer's Involvement**

For the execution of this project, the Engineer reserves the right to receive assistance from other institutions in technical, operational and contractual matters.

The Contractor shall establish a close coordination with the Engineer for the development of the planning activities of all applications related to the project, and submit the documents such as the relevant plans, procedures, etc., for review and approval before putting this plan or procedures into effect.

The duties and responsibilities of the engineer are defined in the UNDP Civil Works Contract General Conditions.

* + 1. **Project Plans**

The Contractor shall prepare the following Project plans which will be reviewed and approved by the Engineer:

* Quality Control and Quality Assurance Plan,
* Safety Management Plan,
* Method Statement,

The Contractor shall prepare method statements (Method Statements) for each activity, and shall start the approved field activities (excavation, filling etc.) after the method statements are approved by the Engineer. Quality Control and Quality Assurance Plan and Safety Management Plan shall be prepared before the first progress payment and submitted to the Engineer for approval.

* + 1. **Reports and Reporting**

The Contractor shall ensure that the Engineer and the Employer are aware of the status of all areas within the project and that the Engineer has complete and detailed information about the project as a whole.

Daily site reports shall be prepared and shared daily in the format to be shared by the Engineer, including photographs showing the productions made during the day.

The contractor shall provide the Engineer with progress reports describing, but not limited to, achievements, problems, risks and including updated schedules, cost/program control reports, status of contract change proposals, and other data necessary for efficient management.

Contractor shall accept Employer’s due dates for submission of Monthly Progress Reports. These reports shall normally be submitted no later than 7 business days after the completion of each month.

These reports shall provide information on the steps recommended by the Contractor to address such issues on any matter that may prevent the timely performance of any part and/or the entire Agreement. The progress report shall have the following content as a minimum:

* Project progress,
* Project management overview: Explains the significant results achieved, the problems that occurred and the corrective actions taken or planned to solve the problems.
* Technical condition: Describes the detailed status, including requirements definition status, design and development progress, issues encountered, corrective actions taken, and a summary of pending and approved change items over the period.
* Quality tracking: Explain the activities of the quality assurance program.
* Project calendars: It shows completed activities (e.g. milestones and deliveries), status of ongoing activities, program changes (if any). This section also defines planning for the next month with an assessment of key activity completion dates.
* Action status: Explains the pending action items and action items that were settled during the reporting period.
* Risk assessment: The assessment presents current critical paths, critical activities, and technical risk, including impact and containment plans.
  + 1. **Meetings**
       1. **Progress Meetings**

Progress meetings shall be held at the times specified in the progress schedule (at least once a month unless otherwise agreed) and shall be held at a location proposed by the Contractor and approved by the Engineer.

The following people shall be present at the progress meetings:

* Contractor's representative (project manager)
* Representatives of the Employer, the Engineer and, if applicable, the Implementing Partner.
* Other persons considered by the above representatives must be present as assistants/advisors.

The main topics to be discussed at the progress meetings are those determined for the progress reports and other items deemed necessary by the Engineer or the Contractor.

The Contractor shall prepare an agenda and forward it to the Engineer for review and approval at least 1 week before each meeting.

The Contractor shall prepare and submit the minutes. Draft minutes shall be ready at the end of the meetings and reviews. The minutes signed by the Engineer and the Contractor shall be attached to the contract file and shall be binding on both parties. All these processes regarding progress meetings shall be carried out by the Contractor under the direction of the Engineer.

* + - 1. **Weekly Construction Site Meetings**

Site Meetings (SMs) shall be convened by the Contractor to enable discussion on specific aspects of the execution, orientation, future arrangement and coordination of the works during the project as mutually agreed between the Contractor and the Engineer.

In general, SMs can be held to formalize important technical issues prior to Progress Meetings and to record the information and suggestions arising from these meetings. The decision shall normally be taken at the Progress Meeting.

The SMs shall be made in places mutually agreed between the Contractor and the Engineer. The Contractor shall provide the SMs with documents documenting the technical elements for discussion and advice.

The agenda of the SMs shall be determined jointly by the Engineer and the Contractor.

In addition to Engineers, Employers and Contractors, suppliers, manufacturers, subcontractors and other institutions and organizations related to the works can join the STs when necessary.

Meeting minutes shall be recorded by the Contractor, carefully kept and distributed to the Employer and the Engineer, the participants and other persons, institutions and organizations deemed necessary by the Engineer as STs. The minutes signed by the Engineer and the Contractor shall be attached to the contract file and shall be binding on both parties. The minutes shall be forwarded to the Employer for consideration at the next Progress Meeting.

All these transactions regarding the STs shall be carried out by the Contractor under the direction of the Engineer.

The Contractor is also responsible for organizing additional meetings at the instruction of the Employer or the Engineer.

* + 1. **Subcontractor’s Participation**

Subcontractors are required to follow the same standards applied by the Contractor as they are subject to the same Project Management procedures as the Contractor. It is the Contractor's responsibility for the subcontractors to perform the work in accordance with the rules specified in the contract between the Employer and the Contractor.

The Engineer has the same rights against the Contractor as against any subcontractor, but this does not relieve the Contractor from its responsibility for the work performed by the subcontractors.

In order to complete the approval procedure for the sub-contractors involved by the Contractor within the scope of the Project, the Contractor shall provide the Engineer with the specified documents for each sub-contractor (meaning the sub-contractor and sub-designer) as specified below.

* Registration with the chamber of commerce,
* Trade registry gazette,
* Criminal records of subcontractors,
* Delivery statement of the previous project completed by the subcontractor,
* Authorized signature list,
* “No bankruptcy” declaration issued by the commercial registry authorities,
* A summary of the subcontractor's status with monthly vesting payments that must be rolled over to maintain the overview. (This is a prerequisite for payment for work done by subcontractors)

The Engineer reserves the right not to approve a proposed subcontractor if there is objective evidence that the subcontractor has not complied with the terms of this contract regarding the delivery of works or Project Management and Quality Assurance.

The Contractor shall keep a list of all subcontractors and suppliers used or planned to be used in the project and forward this list to the Engineer whenever it is updated.

The list shall contain a precise description of what parts or components that subcontractor or supplier shall deliver to the Contractor.

The Contractor shall be fully responsible for work performed by any subcontractor, as well as for work performed by the Contractor himself.

* 1. **SPECIAL ON-SITE WORKS**
     1. **Management and Planning**

The Contractor shall have full responsibility for the construction, erection and installation of the Works.

Planning of the construction, installation and erection of the Works shall be made in close cooperation with the Engineer.

The contractor shall be responsible for the maintenance and operation of the system during installation and installation.

* + 1. **Installation Plan**

At each site where installation shall take place, the Contractor shall prepare an installation plan that includes:

* Engineer's activities,
* Relevant subcontractors,
* Tasks to be performed and who is responsible for each task,
* Timing of tasks,
* Installation documentation (instructions, specifications, and drawings) and other information important to final installation.

The installation plan shall be approved by the Engineer in time before the final installation.

* + 1. **Installation**

At an appropriate time prior to installation, the contractor shall provide instructions and specifications with detailed information on:

* Interior space,
* Installation,
* Wiring, routing, grounding, power, communication,
* Other issues that are important for the installation of works.

As an example, the installation shall consider local laws, rules and procedures regarding wiring, power connection and operating conditions.

The Contractor shall supply and have others supplied installation and all consumables and non-consumables required for installation.

* + 1. **Commissioning**

Commissioning covers the activities such as adjusting and adapting system parameters, fine tuning, etc. to make the system 100% operational after physical installation.

The Contractor shall determine what procedures shall be used to commission the Works.

* 1. **SECURITY**

The contractor is responsible for taking all necessary safety measures regarding the works, materials, equipment, tools and existing facilities, people in the site and the neighbouring environment. All expenses, including compensations that may occur due to security weakness, shall be under the responsibility of the Contractor.

* + 1. **Construction Site and Environmental Safety**
       1. **Security Fence**

The Contractor shall determine the extent of the construction site boundary fences necessary to protect the site, works, materials, equipment and facilities from unauthorized access and to ensure public safety, control entrances and exits and prevent unauthorized entry.

A sufficient number of security guards shall be provided by the Contractor at the entrance-exit gates and where deemed necessary. Along the fence, there shall be sufficient night lighting to provide surveillance by security guards.

* + - 1. **Fire Protection**

The Contractor is obliged to take the necessary measures for the protection of the Works, temporary Works and all kinds of goods and persons during the performance. All measures, including raising awareness of personnel, and actions to be taken in case of fire shall be determined in close cooperation with the Fire Brigade.

During the study, special additional measures that may be needed in the following situations shall be taken and applied:

* Storage of easily flammable materials,
* Collection, storage and disposal of combustible waste,
* Operations with electric arc welding and oxyacetylene cutting machines,
* In case of fire, the Contractor shall provide and prepare the following equipment:
* Dry chemical powder type fire extinguishers that can be mounted on the walls and carried by hand, with nitrogen pressure in certain places,
* Special extinguishing systems in sections where the fire brigade cannot enter or enter easily.
  + - 1. **Warning Signs and Lighting**

All open excavations, material piles, structures, facilities and equipment that may pose a hazard shall be barricaded with appropriate signs to protect workers and other persons.

Likewise, roads and crossings closed to traffic due to the works shall be protected by barricades.

Such areas shall be marked with warning signs placed at appropriate distances and shall attract people's attention. All barricades, obstacles and signs shall be illuminated from dusk until sunrise.

* + 1. **Occupational Safety**

It is the Contractor's responsibility to take the necessary measures to prevent accidents that may cause damage to persons, materials, equipment and facilities during the work.

The Contractor shall assign a Security Team under the leadership of an experienced Security Manager for all kinds of work related to occupational safety. The main tasks of this team shall include, but are not limited to:

* Training the employees on actions and practices that may cause accidents or damage, taking measures to ensure at least the conditions in "TS 8983 General Safety Precautions to be Taken During Construction in Buildings" at the construction site, monitoring whether the precautions are taken, whether the warnings are complied with,
* Taking additional precautions, giving verbal warnings, applying penalties in case of malfunction,
* To intervene in the event of a harmful event and to implement the relevant procedures.

The Contractor shall perform the work and operations in accordance with the applicable Occupational Health and Safety law.

* + - 1. **First aid**

It shall be carried out in accordance with the applicable Occupational Health and Safety law.

* + - 1. **Hazardous Substances**

Works are stopped in the section where the event occurred when the following situations are encountered:

* Known or unknown toxic substances embedded,
* Unnaturally colored groundwater or soil,
* Asbestos,
* Volatile organic compounds measured by photoionization detector,
* Chemicals or petroleum products or similar spills and spreads on the site.

Cleaning the area in a way that will not harm the employees and removing the dangerous substance shall be done by a trained and equipped expert team for this type of work.

* 1. **QUALITY CONTROL AND QUALITY ASSURANCE**
     1. **Quality Responsibility**

All Work shall be performed in accordance with the most appropriate engineering practices and standards in terms of construction, materials, equipment and workmanship.

It is the Contractor's responsibility, at his/her own expense, to control the quality of the work, take samples and perform the necessary tests to ensure compliance with specifications and approved materials. A Quality Control and Quality Assurance Manager to be appointed by the Contractor shall be responsible for all stages of quality control and shall maintain an effective communication with the Engineer.

* + 1. **Material Quality and Equivalent Materials**

All materials and equipment provided for permanent use within the scope of the works shall comply with the current standards and specifications. Instead of the specified materials and equipment, other Manufacturers' products shall be accepted, provided that their equivalence is approved by the Engineer. In such cases, the Contractor shall submit to the Engineer all evidence of equivalence of the new product.

* + 1. **Quality Control and Quality Assurance Plan**

After signing the contract, the Contractor shall submit a detailed Quality Control and Quality Assurance Plan to the Engineer within 14 days for approval. The plan shall cover quality control and assurance of all phases of work on site.

The Plan shall cover the quality assurance of all aspects of the Works, include as a minimum the following items and be supplemented with additional information as may be required by the Engineer:

* Organization chart for quality control and quality assurance,
* List of Contractor personnel who will perform quality control and material testing, with details of their relevant experience,
* The list of facilities to be inspected and tested at stages during the execution of the Works as part of the quality control by the Contractor, together with the inspection procedures and types of tests;
* Material certificates,
* Equipment and job characteristics,
* Tests,
* Certificates related to the supplied materials,
* Detailed checklist for all installations. The checklist shall be for the Contractor's own use, documenting the Contractor's own quality control of the installation.

The Plan may be supplemented from time to time with additional items as requested by the Engineer.

The approved Quality Plan shall be followed throughout the performance of the Contract unless the Engineer provides specific approvals or instructions unless otherwise specified. Any approval by the Engineer does not relieve the Contractor of its obligation to ensure that the Works conform to the requirements of the Contract.

During the works, quality assurance records, test certificates, reports and log records of on-site testing and inspection shall be kept in place and the results shall be approved by the responsible member of the Contractor's staff.

The Quality Control and Assurance Plan shall come into effect after the Engineer's approval.

* + 1. **Test Specimens, Materials and Equipment**

The Contractor shall provide all samples related to quality control and testing, including storage, packaging and transportation. The materials represented by these samples shall not be produced, carried out or used in any work without the approval of the Engineer.

Approved samples of materials and equipment to be used on site shall be carefully stored within the scope of those allowed to be used by the Engineer.

* + 1. **Test Laboratory Services**

Quality Control tests shall be carried out in a laboratory accredited by the Ministry of Environment and Urbanization of the Republic of Turkey and the costs shall be borne by the Contractor.

The Contractor shall ensure that the laboratory performs and finalizes the requested material inspection, sampling and testing processes as quickly as possible.

The test results shall be immediately available to the Engineer. In case of detection of defects or deficiencies that may affect the work, the Contractor shall immediately take any corrective action.

The laboratory is not authorized to change, expand or override the terms of the Agreement.

* + 1. **Inspections and Manufacturer Tests**

The contractor is obliged to ensure that quality control and all related inspections and tests are duly performed, regardless of whether it is on site or elsewhere, and to take corrective measures when necessary.

The engineer may also supervise the works performed at the manufacturer's facilities and the tests related to these works. The Contractor shall timely inform the Engineer so that this can be done as requested.

The products and materials delivered to the construction site shall be inspected by the Contractor upon their arrival at the site and any malfunctions shall be reported to the Engineer. Products with significant defects shall be returned to the manufacturer to be corrected or replaced.

Inspections and tests performed by or on behalf of the Engineer do not exempt the Contractor from its obligations regarding quality control.

* + 1. **Construction Site Records and Tests Certificates**

Quality Control records, test certificates, daily reports, site tests and inspection records shall be kept in forms approved by the Engineer.

All test certificates and inspection records, including those in the manufacturer and other test institutions, shall be kept in their respective sections. The processes shall be under the responsibility of the Contractor's qualified personnel, and the Contractor shall also establish a comprehensive archive and library on quality control.

The contractor shall prepare detailed lists containing tests, approvals, orders and delivery information for other materials and products, subject to quality control and approval. These lists shall be made available to the Engineer as they are updated, on a monthly basis under any circumstances.

The test results shall be sent to the Engineer at the end of the test in order to determine the necessary precautions, if any.

* In any case, at the latest 7 days before the production starts, for those products which need to be used at work,
* In order not to interrupt the productions after the test, if it is necessary to start and continue the work with the approval of the Engineer, within 7 days at the latest following the test.

1. **ENVIRONMENTAL MANAGEMENT**

The Contractor shall comply with the provisions of the Turkish legislation (Environmental Obligations) in force regarding the protection of the environment in cases that may affect the project. This shall be carried out in particular on the basis of the most up-to-date version of the following laws and regulations.

* Environmental law,
* Occupational Health and Safety Law,
* Air Pollution Evaluation and Control Regulation,
* Regulation on Assessment and Management of Environmental Noise,
* Regulation on Preventing Water Pollution,
* Solid Waste Control Regulation,
* Hazardous Waste Control Regulation,
* Law on the Protection of Cultural and Natural Assets,
* Waste Oil Management Regulation,
* Regulation on Preventing the Excavation Earth Construction and Demolition Waste,
* Regulation on Preventing Soil Pollution.

The Contractor shall take all measures and measures to prevent any environmental problem or disturbance arising from the execution of the Project Activities. Wherever possible, this shall ensure that discomfort is resolved at the source, rather than reduced discomfort once created. The contractor shall also be required to compensate for any damage, loss, deterioration or inconvenience to the property and health of the persons affected by the project during construction. In accordance with the Contract specifications of which these environmental obligations are a part, the Employer reserves the right to withhold payments and/or stop construction in case of serious or repeated violations of the conditions specified herein.

The Contractor shall obtain, at its own expense, keep in force and renew as necessary all Permits required in terms of environmental obligations in order to fulfil its obligations to implement the project and construct the facility.

1. **SPECIAL TECHNICAL SPECIFICATION**

Unless otherwise specified in the technical specifications, the Contractor shall carry out and complete the productions of the item numbers specified in the contract regarding the Works in accordance with the latest updated versions of the specifications stated below;

* Republic of Turkey Ministry of Environment and Urbanization "General Technical Specifications for Construction Works, Mechanical Works and Electrical Works".
* Republic of Turkey General Directorate of Highways "Highways Technical Specifications",
* The Bank of Provinces Technical Specifications,
* Technical Specifications of the Ministry of National Defence,
* TEDAŞ Technical Specifications,
* DSI Technical Specifications etc.

Whether or not in the survey chart; it is the Contractor's responsibility to complete the works specified in the project, detail and site list in accordance with the rules of science and art.

* 1. **CIVIL WORKS SPECIAL TECHNICAL SPECIFICATIONS**
     1. **EXCAVATION AND FILLING WORKS**

**General**

This specification covers excavation for all structures described in the excavation plans; backfill, compaction of backfill and transportation of excavation material under the conditions written in this document and according to the drawings or according to the Engineer's instructions.

All excavation, fill and earth embankment works must comply with the instructions specified in the drawings, slopes and elevations or Engineer's directives.

In case the amount of excavation exceeds the amount calculated in the excavation plan approved by the Engineer, the Contractor is financially responsible. In addition, the excess excavation sites shall be filled by the Contractor with compressed earth, crushed stone or concrete according to the needs of the Engineer, without any additional payment.

Before starting the earthworks, the Contractor must examine the site plan, elevation plan and topographic map of the area given by the Employer and make all the controls. The Contractor must prepare excavation plans, sections and calculations for all structures to be checked and investigated by the Engineer.

Shrubs and other plants to be removed from the construction site shall be cut at or below ground level. This process shall be done with the Engineer's directives and the plants shall be cut carefully.

Removal involves trees larger than 7.5 cm in diameter and whose roots are interconnected and wire-like. All wastes, organic and non-organic wastes shall be removed from the site by the Contractor.

The contractor shall clear the area and ground surface, trees and roots before beginning earthworks. Cleaning up includes all organic waste and other debris to be removed from the site. No additional payment shall be made to the Contractor for dismantling, cleaning and removal from the site.

**Definitions**

* Proper Materials**;** are the materials classified in TS 1500 as GW, GP, SW, GM, GC, SP, SM and SC.
* Improper Materials are the materials classified in TS 1500 as PT, OH, ML, MH and OL. In case such materials are discovered during the excavation, removal of the materials shall be under the responsibility of the Contractor.
* Cohesionless materials: are the materials classified as GW, GP, SW and SP in TS 1500. Cohesive materials are the materials classified as GC, SC, ML, CL, MH and CH. The materials classified as GM and SM shall be defined as cohesionless material only if the fine grains are not plastic.
* Degree of compression shall be expressed as the desired Modified Proctor Test compaction degree; a percentage of maximum dry density. (TS 1900)
* Suspended water level; is the groundwater that is temporarily or permanently retained above the groundwater level and separated from the existing water table by a waterproof layer.
* Backwater; is an underground water pond in the granular fill between the foundation walls, in the fine-grained soil with relatively less water permeability, showing the character of suspended water.

**Materials**

* Selected filling material: Selected filling material shall consist of suitable material that does not contain roots and similar organic matter, garbage, rubble and stones larger than 7.5 cm, to be used around foundations and under structures, except for the bottom of the structural foundations. The material must be compressible and qualified to pass less than 10% of No.200 mesh (0.075 mm) and have a plastic index of 12 or less.
* The capillary water barrier shall be used under the floors resting on the ground and shall consist of crushed stone and crushed or natural gravel. Maximum grain size shall be 4 cm and not more than 2% by weight of No 4 sieve.
* In case there are soft soil pockets under the foundations, 200 doses of lean concrete or compressed stabilized filling material shall be used as filling material in these areas with the instruction of the Engineer.

**Excavation**

The Contractor is required to have the Engineer survey the site before revealing the excavation base for the foundations and covering it with the first layer of concrete. If the ground is determined to be insufficient to adequately support the foundation without unexpected settlement, the Engineer shall instruct the Contractor to dig up to a firmer layer and backfill with bulk concrete or take other measures necessary to provide adequate bearing strength.

Areas outside each building/structure shall be sloped to provide drainage from the building/structure and shall be free of garbage and debris until the temporary acceptance is completed and final acceptance is made. In addition, topsoil contaminated with substances such as cement, lime, etc., and which are negatively affected and compressed by the activities of construction machinery, shall also be plowed, cleaned and levelled. The stocked topsoil shall be spread evenly over the plowed, cleared and levelled surface.

If pockets of soft material or loose stones or cracks are found at the bottom of the excavations, they shall be manually removed and the gaps filled with suitable material.

Class determination shall not be made for the excavation area. For excavations to be made on all types of soils and depths, the only pose specified in the contract shall be valid.

**Starting the Foundation Excavation**

The contractor shall make the application of the structures according to the plans and projects given to him and check the accuracy.

Following the approval of the excavation plan by the Engineer, the topsoil shall first be removed according to the excavation plan and stored in a suitable place within the site. Later, this stored material shall be used by the Contractor for landscaping purposes. Foundation excavation shall be carried out in accordance with the Engineer's directives and the relevant excavation plans.

**Foundation Opening Method**

Excavation work shall be carried out in accordance with the dimensions and elevations specified in the drawings for the structures. The excavation area shall contain sufficient distance from the walls and foundation piers to allow the placement and removal of formwork, the establishment of services and inspection without incurring a cost to the Administration. The only exception to this condition is the share of lean concrete and gravel-sand filling material poured directly adjacent to the excavation surfaces. No excavation shall be carried out below the determined levels. In excavations made without the instruction of the Engineer, the additional cost shall not be charged to the Employer and the selected filling material shall be used for recompression and filled. Areas outside each building shall be sloped to divert water away from the building and shall be free of trash and debris until the work is accepted. In addition, topsoil contaminated with substances such as cement, lime, etc., and which are negatively affected and compressed by the activities of construction machinery, shall also be plowed, cleaned and levelled.

Excavation slopes shall be protected against slope disturbances (e.g. with plastic covers during rainy periods) in accordance with the Engineer's instructions.

**Suitable Excavation Material**

The appropriate material removed during the excavation shall be stored on site regularly and shall be used for backfilling in the project after obtaining the opinion of the Engineer. In the event that suitable material is removed to exceed the need for backfill material, this excess shall be transferred by the Contractor to a place in the Construction Site to be used in field works, in accordance with the instruction of the Engineer, without reflecting the financial burden on the Administration. In case the amount of material exceeds the need, the surplus shall be removed from the site as unsuitable material.

**Final Levelling of the Floor for Concrete and Protection of the Base**

Large-scale excavation for the foundation shall only be allowed up to 20-30 cm above the specified base elevations. The last 20-30 cm of the natural ground shall be excavated in accordance with the Engineer's instructions and special care shall be taken not to disturb the ground. The floor surface shall be protected from wetting and drying. All completed and compacted surfaces falling under the foundation piers shall be approved by the Engineer before concrete is poured. When the required level for the building foundations is reached, a layer of lean concrete of 10 cm to cover the foundation shall be poured immediately, covering the surface under the foundation base and overflowing the base of the foundations by 15 cm from the outer edges to both sides.

**Preparation of the Foundation Ground**

The foundation ground shall be prepared by water levelling and if necessary, the soft ground parts shall be excavated and filled with suitable material.

The difference in height between two points on the Foundation Ground shall not exceed 1.5 cm when measured with a 5 m horizontal gauge and the foundation elevations shall not deviate more than 2 cm from those specified in the drawings.

The bottom of the excavation area shall be carefully levelled within the tolerances specified in this section. Areas where the level difference is more than 2 cm shall be excavated or filled by compaction as specified in the Filling and Compaction paragraph. All such work shall be part of the Contractor's responsibility at no additional cost.

After the excavation is completed to the final levels, before starting any foundation work, the Engineer shall be informed to check and approve the works and to record the data for measurement if necessary. Except from this case, the Engineer shall have the authority to control the works at any time.

**Removing Soft Parts**

Although the procedures are followed, if there are still soft parts or cracks in the excavation floor, these parts shall be manually excavated and filled with suitable material by the Contractor.

Removing Soft Parts under Foundations:

150 kg/m3 lean concrete or compressed stabilized filling material shall be used as suitable material for filling the soft parts under the foundations. The engineer must approve the selected material. The preparation, pouring, compaction, curing and testing of the concrete fill shall be done according to the concrete specification and Engineer's instructions.

Removal of Soft Parts under Non-Structural Sections:

The selected fill material shall be used as suitable fill material for excavated soft parts under non-structural sections. The arrangement, position, compression and test procedure must be done as described below.

Filling and Compression

The filling material shall be placed in horizontal layers and in a loose state, with a thickness not exceeding 20 cm, and then compacted. No material shall be placed on muddy surfaces. In order to prevent shear forces adjacent to the structures or eccentric loading on the structures, the fill shall be smooth and evenly compacted. Sloping surfaces shall be set or terraced to prevent the filling from slipping. During the backfilling operations and in the formation of the embankments, the machines that will put too much load on the structure shall not be used during the compression of these fillings.

Subject to the approval of the Consultant Officer, compaction shall be carried out with vibratory rollers, rubber tire rollers, steel wheel rollers or other machinery suitable and approved for soil compaction. If necessary, the material shall be moistened or aerated to create the humidity that will provide the desired degree of compaction. Each layer shall be compressed in such a way that it does not fall below the maximum density ratio percentage specified below.

|  |  |  |
| --- | --- | --- |
| Layer to be Compressed | % of maximum dry density according to Modified Proctor Test | |
|  | Cohesive Materials | Cohesionless Materials |
| Filling and backfilling under building floors under buildings | 90 | 95 |
| Filling under footpaths and open spaces | 85 | 90 |
| Under the pavements, for the top 30 m | 90 | 95 |

**Support**

No additional payment shall be made to the contractor for support work items.

Whenever necessary; shoring shall be made for the safety of workers and for the protection of adjacent embankments and structures, installations and the like. Retaining curtains, supports and slabs shall be removed as the excavations are refilled so as not to cause dents.

The Contractor shall be responsible for all kinds of accidents that may happen to the workers and damage to the works as a result of the formation of dents on the edges of the excavation made for foundation or other reasons. In order to prevent such dents, the Contractor shall either make appropriate slopes to the edges of the excavation area or strengthen the edges by supporting them. Shoring and supporting operations shall be made in accordance with the condition of the ground.

The method of reinforcing the edges of the excavation area must be approved by the Engineer. However, this approval does not relieve the Contractor from liability. If the Engineer requests the bearings to be left in place for safety reasons during the refilling phase after the foundation excavation or piping works, the Contractor shall implement these instructions without any charge.

Reorganizations or any changes in the support system made by the Contractor directly or with the Engineer's directives shall not have any cost impact for the Employer.

**Drainage**

Since these works are included in the excavation item, no additional payment shall be made for drainage.

Excavation works shall be continued with effective and continuous drainage. No water shall be allowed to accumulate on the site for any reason. Until the concrete and filling works are completed, the water and runoff accumulating in the foundation or plumbing holes shall be temporarily discharged by pumping, drainage or other approved methods.

Drainage in earthworks shall be done by the Contractor within the scope of the Contract. Excavations shall be carried out in such a way as to ensure continuous and effective drainage of the area immediately surrounding the site, which may affect the area of the site and the work on the site. No water shall be allowed to accumulate in the excavation area.

Foundations of structures and auxiliary trenches shall be kept stable and free of surface water at all times by pumping, dumping or other approved means until concreting and backfilling is complete. Where pumping is used, a backup excavation, site drainage and subsoil protection plan shall be approved by the Engineer prior to commencing construction. The plan shall include recommended measures to keep concrete curing water out of the fill and subfloor areas.

**Removal of Excavation Material**

Excess excavation material, which the Engineer decides to transport from the construction site, shall be transported to an adequate area agreed by the Contractor, the Engineer and the local administration. It is the Contractor's responsibility to allow materials to be transported from the construction site to the selected area. It is the Contractor's responsibility to obtain the necessary permission from the local authorities for the dumping area of the excess excavation and the dumping fees. Since it is assumed that the contractor has explored the possible dumping sites during the tender preparation period, no additional cost shall be paid due to any distance change, including the change in the transfer site.

After all excavations are completed, all temporary storage and stowage areas must be cleared, drainage slopes must be determined and the site must be left in good condition according to local government rules.

Transportation and unloading shall be done without harming the environment. Trucks shall be prepared as covered to prevent debris from spilling in accordance with traffic rules.

Some trees may not be suitable for transportation in the site. In this case, they shall be stacked in a suitable place to be indicated by the Engineer.

**Imported Compressed Stabilized Fill**

Compacted stabilized fill shall be used between the foundations. The filling materials shall be as defined in the Capillary Water Barrier paragraph.

The creation of the stabilized fill shall be carried out in accordance with the drawings.

Stabilized backfill material shall be placed directly on the foundation ground that has taken its final shape as described in the Foundation Ground Preparation paragraph above or corrected as specified in the Foundation Bases and Levelling Reorganization paragraph, in order to provide levelling between foundations and to create a capillary water barrier as stated above. Capillary water barrier shall be compacted until the Engineer's approval is obtained by passing over each layer of the with a hand-operated compression vibrator several times, and a solid ground shall be prepared for the floor to be dumped on it.

Loan materials shall be selected to meet the rules and conditions applicable to the stabilized filling material to be used, with or without a capillary water barrier. The loan material shall be procured from private sources outside the construction site, shall be selected by the Contractor, but shall be subject to the approval of the Engineer. No additional cost shall be paid for the supply, transportation and similar costs of the stabilized filling material.

Sieve analysis of compressed stabilized filler:

Size of Grains Passing the Sieve (% Percentage)

Type-1 Type-2

50 mm 100 100

37.5 mm 85-100 85-100

10 mm 40-70 40-100

5 mm 25-45 25-85

600 microns 8-22 8-40

75 microns 0-10 0-10

The stabilized material shall be natural sand, gravel, crushed stone, crushed slag and crushed concrete or uniform grade well-burned non-plastic shale. The material may be compacted to produce a well-laid dense layer and shall remain within the above rating limits unless specified elsewhere in the Contract. Rocks larger than 100 mm shall be removed.

Natural sand and gravel shall only be allowed in Type 2 material.

The sub-base material shall be spread evenly in layers with a compacted thickness of not more than 200 mm and compacted to obtain a smooth surface finish.

**Backfill**

Backfilling shall not begin before construction below the final level has been approved, underground plumbing systems have been checked and tested, formwork has been removed, and the excavation site cleared of rubbish and debris.

The construction below the final level mentioned above shall include, but shall not be limited to, the waterproofing and protection wall to be applied to the outer surfaces of the basement perimeter walls.

Backfill shall not be placed on wet floors. The backfill material shall be placed and compacted as described in the Fill and Foundation Ground Preparation paragraph.

­Filling and compaction shall not be made on the foundation or retaining walls by heavy-duty machinery at distances smaller than the height between the upper level of the foundation structure and the filling level; the compaction process in this region shall be carried out in layers whose compacted thickness cannot exceed 20 cm and with motorized hand compactors suitable for the quality of the compressed material. The filling material shall be placed carefully around the pipes in a way that will not damage the coatings and windings. It shall be expected that 7 days have passed since the completion of the curtains in order to place the filling material around the foundation curtains. To the extent possible, the backfill shall be made at equal levels on both sides of the bulkheads and shall be raised and a surface slope shall be given to ensure that the waters are removed from the wall.

Maximum attention shall be paid to the compaction of the filling that corresponds to the building entrance floor and under the pavement. Compression tests shall be carried out according to the Tests paragraph.

**Rock Excavation**

If a rock is encountered during excavation, no additional payment shall be made and the current excavation pose shall be valid.

Appropriate machinery shall be used for rock excavations, but explosives shall not be allowed.

**Preservation of Existing Service Lines and Structures**

The Contractor shall be responsible for protecting the existing service lines and structures within the construction site against damage and restoring them if they are damaged during construction. Like the existing installation lines and cables, the lines manufactured under this Contract shall also be protected and if damaged, they shall be repaired within the scope of the Contractor's financial responsibility. In the event that the Contractor damages any existing plumbing lines or cables, the incident shall be reported to the Engineer immediately.

**Levelling**

The areas outside the building shall be levelled in accordance with the project elevations, shall be removed from the building with a smooth slope to provide drainage and shall be kept clean until the final inspection is completed and the work is accepted.

In addition to these, the top layer of the ground which is contaminated by the materials such as cement, lime, etc., which is stuck and affected due to the operation of construction equipment shall be ventilated, cleaned and re-levelled.

The stored topsoil shall be placed in equal layers in a ventilated, cleaned and levelled manner.

**Earthworks Transportation**

No additional or direct payment shall be made for transportation on any part of the work, transportation shall be included in the bid.

* + 1. **CONCRETE WORKS**

**Concrete**

Concrete Works specified herein shall include material procurement, mixing of concrete, formwork, reinforcement, placing, compaction and curing of concrete, and cleaning of the site after completion of works. In general, TS 1247 or DIN 1045 must be followed when mixing, placing and curing concrete.

The prices entered in the quotation shall fully cover all labour, collapse, travelling, materials, additives, temporary works, on-site stocking, sampling and testing and all other costs, all risks, and work described in the obligations and obligations set out or implied in the Contract Documents.

**Concrete Casting Record**

The contractor shall keep accurate and up-to-date concrete records for each day that parts of the works are concreted:

* Date, time, weather and temperature;
* The results of all concrete tests, including determining which part of the works the sampled material represents;
* Concrete class, volume of concrete placed and number of batches used for each location.

The laboratory where the concrete test must be performed shall be approved by the Engineer and shall be accessible to him/her at any time.

**Concrete Production Organization at the Construction Site**

At the beginning of the contract, the Contractor shall submit to the Engineer a Method Statement detailing his/her proposals for the organization of the concreting activities at the site. The concrete to be used in the works must be ready.

The Method Statement shall contain the following items:

* The proposed plant, including the plant capacity and the capacity to continuously supply concrete.
* Quality control procedures for concrete pouring by the contractor.
* Transport and placing of concrete.
* Formwork details, including the times and procedure for installing/removing formwork to temporarily support beams and slabs.
* Protection and curing.

**Ready-mixed concrete**

Concrete supplied from the ready mixed concrete supplier can be used in the Works subject to the written approval of the Engineer. It may allow the use of ready mixed concrete, provided that the mixing ratios and full details of workability are submitted for preliminary approval.

This approval shall not be granted until the Engineer is satisfied that the organization and control of the manufacture and delivery of all ready mixed concrete is satisfactory. Ready mixed concrete shall comply with TS EN 206+A2.

The engineer shall request a slump (conical collapse) test before the concrete pouring works and may request a test cylinder be taken from each truck. Performing the slump test is under the responsibility of the Contractor, no additional payment shall be made for this.

Each shipment shall be accompanied by a transportation compass showing the mixing time, the destination and the water additive and concrete class of each material.

**Placing and Compacting Concrete**

Preparation Studies:

Written approval of the Engineer shall always be obtained before the concrete is placed in any part of the work. All construction tools required or may be required during concrete works and for curing shall be in place and the Contractor shall be fully prepared for the work. The Engineer's approval for concrete placement shall be granted only after such preparations and other relevant requirements of the Technical Specification have been carried out and adhered to.

If necessary and/or directed by the Engineer, the Contractor shall cool any mould that has overheated or exceptionally dried out due to prolonged exposure to the sun. The contractor shall ensure that all moulds retain sufficient moisture and do not shrink or warp. Wetting or spraying of all moulds shall be done with potable water.

While pouring concrete in hot weather, the conditions specified under the title of "Concrete Casting in Hot Weather" shall be complied with. The Engineer may outright prohibit the placing of concrete in any formwork that he/she believes has become excessive and/or dry and whose condition may damage the quality and strength of the concrete. No additional payment shall be made for cooling or soaking the mould. All formwork, pavement, reinforcement and exposed surfaces of the adjacent concrete surface shall be thoroughly cleaned and free of dust, debris, oil that may be harmful to the fresh concrete.

Pouring Concrete:

Concrete transportation and pouring methods shall be such as to prevent segregation and shall be approved by the Engineer before concreting begins. The placing and compaction of concrete shall be carried out under the direct supervision of a competent member of the Contractor's staff.

The concrete shall be poured directly into the mould as soon as possible without the need for rework and after mixing, and in any case not more than 45 minutes before it sets for the first time. If there is any delay after mixing and the concrete has started to set, it shall not be used in the works and shall be removed from the site. Concrete shall not be dropped from a height exceeding 1.5 metres, unless otherwise agreed by the Engineer on the basis of satisfactory on-site trials.

Concreting of any section or unit shall be done in a continuous process up to the construction joints. Concreting shall not be interrupted without the approval of the engineer. Where concrete deposition needs to be interrupted, measures shall be taken to ensure that subsequent sections of concrete adhere satisfactorily to that previously placed.

When delays of more than one hour occur between concreting operations on a workpiece or work unit, concreting shall, in the Engineer's view, be resumed when sufficient time remains for the previously placed concrete to cure and the resulting joint filled. Any time the concrete is placed, a competent steel anchor shall always be available to adjust and correct the position of any reinforcements that may be displaced.

Transport of concrete directly over the fixed rebar steel during concreting shall not be permitted unless appropriate measures are taken to prevent displacement or damage to the reinforcement.

Casting as a Layer:

Concrete shall be poured in approved quantities and in horizontal layers at a depth to allow it to fully coalesce with the following layers by vibration, bottling, compaction and ramming. If for unforeseen reasons, concreting must be stopped before the completion of a section, construction joints shall be created as specified and further concreting shall be stopped for at least 24 hours.

Pouring Concrete in Hot Weather:

The Contractor shall carry out "Concrete Casting in Hot Weather" operations in accordance with TS 1248 or ACI 305. The contractor's methods shall comply with the recommendations in this document as amended and added below.

The contractor shall take great care to prevent cracking of concrete or surface cracks in hot weather. The Contractor shall ensure that the concrete is placed early in the morning or late in the evening, according to the Engineer's instruction.

The Contractor shall pay particular attention to the conditions specified here for curing. The formwork shall be shaded so that it is not exposed to direct sun both before the concrete is placed and during its setting. The Contractor shall take appropriate measures to ensure that the reinforcement in the section to be concreted is kept at the lowest possible temperature.

The concrete at the time of placement shall have a temperature of not more than 32°C. If necessary, the Contractor shall cool the aggregates and mixing water by methods approved by the Engineer.

When required, the Contractor shall design, install and operate a cooling system in which cooling water is pumped through a piping system to reduce the heat of hydration during concrete pouring. The proposal for such a cooling system shall be submitted to the Engineer's approval long before the concreting works.

The ambient air, concrete at various levels and intervals not exceeding 5 meters, and the temperatures of the cooling water, if any, shall be measured and recorded by means of thermocouples.

Concrete Casting in Cold Weather:

Cold weather is defined as the condition present in Works where one or both of the following conditions are present:

* The air temperature being below 2°C at the time in question;
* Average daily air temperature below 5°C for three or more consecutive days.

Under no circumstances must concrete be placed in contact with frozen ground or formwork, or in contact with ice, snow or frost on the ground or on formwork or reinforcement. Concrete shall not be made with frozen materials.

Concrete pouring can continue in cold weather, provided that special precautions are taken to ensure that the surface temperature of the concrete during placement is not less than 5°C for at least the following period:

4 days when the cement used in concrete is ordinary Portland cement;

2 days when fast-setting Portland cement.

Such measures may include:

* Heating of aggregates and water, provided that the temperature of each does not exceed 60°C. The water and aggregates shall be mixed long enough to achieve a uniform temperature before the cement is added.
* Heating the indoor air that needs to be kept moist by completely surrounding the freshly poured concrete with a blanket. Hot or dry air currents must not be directed to surfaces.
* Sealing formwork and finished concrete surfaces.
* Providing curtains to protect concrete from air currents.

The Contractor shall provide the Engineer with details of the measures he/she proposes to take to protect the concrete from the effects of low temperatures and the methods he/she proposes to use to evaluate the correct timing at which this protection can be removed. Concreting shall not be made in cold weather without the approval of the Engineer for the suggested measures.

Concreting in Adverse Weather:

Concrete pouring shall not be allowed during heavy rain or snowfall or when the air temperature drops below 2°C or when the concrete temperature rises above 32°C.

When the air temperature exceeds 25°C, concrete pouring shall be allowed to be undertaken only after special measures approved by the Engineer are taken, such as cooling the aggregates and moulds with a cooling system that provides continuous spraying of water to reduce the temperature of the water to be used in the mixture or to prevent premature setting of the concrete, and installing temporary awnings on the work area. During the concreting processes, the temperature of the placed concrete shall be recorded.

Compaction of Concrete:

The Contractor shall attach utmost importance to the compaction of concrete for the structures to be produced. At the end of compaction, a waterproof concrete with maximum density and strength must be obtained.

The concrete shall be well compacted during the placing process and thoroughly machined around the reinforcement and embedded fixtures, into the insides and corners of the formwork.

Mechanical vibrators shall be of the immersion type with a frequency of not less than 8000 vibrations per minute approved by the Engineer. A sufficient number of vibrators shall be used to process the maximum concrete pouring rate with 50% share for spare units at any period of concreting. All operators using vibrators shall be trained in their use.

Vibrators shall be placed vertically and at regular intervals into the uncompacted concrete. In case the uncompacted concrete is in one layer above the freshly compacted concrete, the vibrator must be allowed to penetrate the previous layer approximately 100 mm vertically. Vibrators shall be pulled slowly from the concrete mass so that there are no voids. Internal type vibrators shall not be placed in the concrete randomly or by rote, and concrete shall not be transported from one part of the work to another by means of vibrators. Vibration must not be applied directly or through reinforcement to sections or layers of hardened concrete at distances large enough to cause segregation of the concrete in the formwork.

Care shall be taken not to damage the reinforcement and fasteners attached to the formwork with immersion vibrators, and not to cause any damage to the set concrete or the inner surface of the formwork. In congested reinforcement areas, it may be necessary to use small diameter vibrators and the Contractor shall supply vibrators of appropriate sizes for each part of the work. Vibration of concrete by beating with hand tools is not allowed.

When placing concrete on the horizontal or inclined members of the waterstop, they shall be lifted and placed and compacted slightly higher than the bottom of the waterstop before releasing the waterstop to allow the concrete to be fully compacted around the waterstop.

Vibration time shall be limited to the time required to achieve satisfactory compression without causing segregation. Vibration shall not be continued after water or excess sherbet appears on the surface.

Concrete shall not deteriorate after compaction and placing in its final position. Partially cured concrete shall not be used and shall be removed from the site prior to final placement.

Placing Concrete on the Previous Work:

If concrete is to be poured next to or over previously completed work, the surface of the old concrete shall be completely wire brushed, the weak parts shall be broken off, and it must be cleaned under pressure with water and air to reveal the surface of the aggregate and remove all weaknesses. Special care must be taken to ensure that the new concrete is fully compacted and adhered to the old concrete.

Protection and Curing of Concrete:

The water used for curing shall comply with the conditions in TS 1247 and TS 1248. Concrete shall be protected from climatic conditions (direct sunlight, rain, snow or frost), running water or mechanical damage during curing. All methods to be used for the curing and preservation of freshly poured concrete shall be subject to the prior approval of the Engineer.

Maximum and minimum ambient temperatures and humidity shall be measured and recorded daily by the Contractor. The records shall be processed into daily reports and made available for the Engineer's review.

All exposed surfaces shall be covered with a wet burlap as finishing followed by a reflective polyethylene sheet. These shall be securely fixed and supported from the edges to avoid damaging the finished concrete surface. As soon as possible, the hemp and polyethylene shall be lowered in close contact with the concrete and securely weighted or fixed to prevent wind blowing from below. The hemp sheet shall be kept moist at all times and checked at intervals not exceeding 6 hours. Concrete shall be kept moist on exposed surfaces for not less than 72 hours or as approved by the Engineer.

Alternative concrete protection and curing methods such as ponding where water shall be kept at a depth of at least 50 mm can be approved by the Engineer. In any event, liquid curing membranes shall not be used on exposed surfaces or where the screed will be removed and aggregate exposed to provide a satisfactory bond to accommodate more concrete or mortar screeds. Liquid-cured membranes shall not be used in areas where mortar, resin mortar or joint filling shall be made.

Adequate methods shall be available at the workplace to provide full protection to a concrete pour before concreting begins.

In very hot weather, the Contractor may be requested to cool the mould containing concrete by spraying water. This shall be done when instructed, regardless of any other measures the Contractor may have taken to cure the concrete. All material spraying equipment and sufficient water for curing shall be available on site before any concrete casting begins.

Faulty Working:

Segregated or poor-quality concrete shall be broken down immediately upon Engineer's written instruction and reconstructed in an approved manner at no extra cost. Imperfect works shall not be allowed to be plastered. Any leaks or cracks shall be sealed by injection with synthetic resin or other suitable methods approved by the Engineer.

Gro Concrete (Sub-base):

A blanking layer consisting of at least 100 mm lean concrete shall be placed under the foundations that are shown in the drawings or are requested by the Engineer. The blanking layer shall be allowed to cure prior to placing the structural concrete for the flooring.

Blinding smoothed surfaces in excavations and trenches includes placing, compacting and scanning the surfaces specified in the Technical Specification.

Blanking shall be measured in square metres, net based on the minimum trench width specified for earthworks and the size of structures shown in the approved Drawings.

Loads on Concrete Structures:

No external load of any kind shall be applied to any part of the concrete structure before the 7-day sample strengths are finalized and approved by the Engineer.

* + 1. **MOULD AND CONCRETE FINISHES**

Formwork works shall include all temporary forms to form the concrete and any necessary temporary structures to support these forms.

Formworks shall be of suitable design and of sufficient construction to carry loads without excessive bulging, distortion or deflection. The formwork shall be constructed in such a way as to prevent the loss of water or grout from the concrete. Particular attention must be paid to the formwork where joint or external vibrators are used to compact the concrete.

**Materials for Mould**

The mouldings shall be made of quality plywood free of loose knots, ripples and warped surfaces. The thickness of the formwork plywood shall not be less than 17.5 mm, the plywood shall be resistant to deterioration by water, fixed and joined to give a perfectly smooth and uniform finish to the concrete. Alternatively, with the Engineer's approval, the shutter can be made from:

* Metal mould with correctly aligned and tight-fitting connections,
* Wooden formwork of plywood or chipboard with a thickness of 5 mm.

**Fixing the Moulds**

Formwork shall be fixed to a perfect line and flatness, perfectly flat with no cracks in the joints, and securely supported and fixed in such a way that it holds its position without displacement or deflection during placing and compaction of the concrete. All joints shall be horizontal or vertical in the same way.

**Coating to Prevent Sticking**

All formwork to be done under the contract shall be treated with an approved formwork oil or solution prior to use to prevent concrete from sticking. This oil or solution shall be carefully applied so that the reinforcement or pre-placed concrete is not contaminated by the oil or solution. No material shall be used that will stick to the concrete or discolour it.

**Cleaning and Reusing Moulds**

Before any concrete is poured, the moulds must be properly cleaned and flushed with water and compressed air to remove sawdust and all other foreign matter. Then all the water shall be drained and wiped from the moulds. Residues from the previous concrete shall be carefully cleaned with a scraper and a smooth surface shall be formed.

Under no circumstances shall concrete be poured into the formwork before the formwork has been approved by the Engineer. If the moulds are to be reused, all surfaces shall be cleaned and completely free of any concrete or mortar residue. If, in the Engineer's opinion, the moulds are not acceptable for reuse, they shall either be properly repaired or replaced with suitable new moulds.

**Removing Moulds**

The formwork shall be designed to allow easy removal without hammering or the application of leverage against the surface.

The time elapsed between placing the concrete and removing the formwork shall be as approved by the Engineer and in any case shall not be less than the time specified in TS 500 or DIN 1045, and the slab edge formwork times shall be at least 3 days.

The Contractor has the right at any time to delay the removal of the formwork if, in the Engineer's opinion, the contained concrete has not reached sufficient hardness.

In cases where the average temperatures are below 4°C, the removal period is extended by the number of days the temperature drops below 4°C. The times given as days are 24 hour days.

Alternatively, the removal of formwork shall be determined by the demanded compressive strength of the concrete. In case of a negative situation in the concrete productions related to the moulds that are dismantled prematurely, the Contractor shall re-make the relevant production without demanding any additional cost.

**Finishing Concrete Surfaces**

There shall be no cracks, sand flows, segregation, porosity and mortar/mould loss on all surfaces.

**In-situ Concrete Dimensions and Surfaces**

Formwork and concreting work shall be such that the concrete normally does not require trimming, the surfaces are perfectly compacted, smooth and uneven. Concrete surfaces for various finishes may in no case exceed ±12 mm tolerance in terms of size and level.

**Healing Treatments on Concrete Surfaces**

Any improvement to concrete surfaces shall be agreed with the Engineer and carried out without delay, following the inspection to be made immediately after the formwork has been dismantled.

Any concrete surface found to have been treated prior to inspection by the Engineer shall be rejected.

Any minor surface defects shall be repaired to the Engineer's satisfaction immediately upon completion of curing. Remedial measures may include, but are not limited to:

* The holes left for the formwork supports shall be thoroughly cleaned to remove all loose material and the edges shall be roughened if necessary to ensure a satisfactory joint. It shall then be filled with dry mortar.
* Pinhole bubbles, surface discoloration and minor imperfections can be rubbed with bagging and cement immediately after the mould is removed.
* Sudden and gradual irregularities can be rubbed with carborundum and water after the concrete has completely cured, and curing is applied according to the principles specified in the "Concrete Protection and Curing" section.
* Minor imperfections and minor segregations shall be chipped to a depth of at least 25 mm perpendicular to the concrete surface and filled with dry mortar.
* Cracks shall be repaired using epoxy-based materials or materials approved by the Engineer.

All other defects shall be deemed too extensive to allow for satisfactory repair and the concrete containing the defect shall be broken and replaced.

* + 1. **STEEL WORKS**

**Reinforcement Types, Quality and Storage**

Steel reinforcement for concrete shall consist of ribbed steel bars or steel mesh. Steel bars shall consist of deformable bars suitable for ST III type (S420a (with characteristic tensile strength of 420 MPa)) as specified in TS 500 and TS 708. Wire mesh reinforcement shall comply with TS 4559 or DIN 488.

If deemed necessary by the Engineer, the Contractor shall submit the detailed drawings and calculations of the reinforcement to the approval of the Engineer. Paint colour of steel, various iron works and sheet metal fabrications shall be determined by the Engineer.

The Contractor shall prepare the steel reinforcement test samples to be used in the Works. Test specimens shall be randomly taken from each lot shipment in the presence of the Engineer and shall be of sufficient size to perform the tests described below. The samples shall be tested in an approved laboratory and certified copies of the results of the tests shall be submitted to the Engineer. The samples shall be tested for bending and tensile properties and the wire mesh is also to be tested for weld shear strength. No additional payment shall be made to the Contractor for these tests, they are included in the offered unit price.

Test methods and requirements shall be made according to TS 4559, or DIN 488 T3, 488 T5 and 488 T6. No steel reinforcement shall be used in the Works until the test results are approved by the Engineer. If ordered by the Engineer, the testing procedures shall be repeated at the Contractor's expense for the supply of any new equipment during the Works.

Storage of reinforcement shall be on racks or supports away from the floor. Reinforcements of different types and sizes shall be kept separate.

The Contractor shall fix the reinforcement according to the Drawings and/or the issues specified in TS 500.

Transports for steel reinforcement, structural steel and various iron works shall be included in the offered unit price.

**Protection and Cleaning**

The reinforcement shall at all times be protected from damage and be free of dirt, loose mill scale, rust deposits, paint, oil or other foreign matter when placed in the structure. All reinforcing steel shall be carefully cleaned of any frozen or partially set concrete, form oil or paint that may have accumulated during the construction of adjacent works.

**Bending Rods**

Steel reinforcement shall be cut from flat bars free from crushing, bending or other damage and shall be cold bent by experienced, competent workers. Bars with a diameter greater than 16 mm shall be bent on a bending machine designed for this purpose and approved by the Engineer. Any reinforcing bar that has already been bent shall not be re-bent at the location of the previous bend.

**Cutting of Steel Mesh**

Wire mesh reinforcements shall be cut straight from mesh plates. The use of wicker plates and small pieces that are not cut properly shall not be allowed.

**Overlap of Ribbed Bars and Wire Mesh**

Lapping operation on ribbed bars and steel mesh is permitted by the Engineer, provided that it is in accordance with the technique. Reinforcement welding shall not be performed unless authorized by the engineer, welding and tests for reinforcement shall be in accordance with the definitions specified in TS 500.

Unless otherwise specified, the overlap length of the rebars shall be at least forty (40) times the diameter of the larger bar and laps shall be applied in stages.

The overlapping length of the steel mesh shall be applied as specified in TS 500, with at least 3 meshes in the running direction and at least 1 mesh in the distribution direction.

**Fixing the Rebar**

All reinforcing steels shall be correctly placed and fixed during the placing of the concrete, and shall be held in a fixed position during the concrete pouring.

To protect the reinforcement from contact with moulds or adjacent reinforcement, the spacers shall be of dense precast concrete blocks or rigid plastic material in shapes and sizes approved by the Engineer. The use of pebbles, broken stone chips or bricks or other materials shall not be permitted. The reinforcements shall be tied and fixed in the correct position using steel binding wire. Except for any other requirement, the reinforcement shall be fixed in such a way that the reinforcing steel supports its own weight and any load that may come upon it during construction, without any displacement, bending or movement.

In floors with two or more layers of reinforcement, parallel steel rebars shall be supported in situ using steel stands. To support the lean concrete or formwork reinforcement layers, a spacer shall be placed on each stand.

The distance between any two parallel steel bars, excluding laps, shall not be less than the nominal aggregate size of 5 mm.

All reinforcements exposed to weather conditions for a long time before starting concrete shall be covered with polyethylene holding tape, cement grout or other materials to the surrounding concrete. If rust stains occur on permanently visible surfaces despite these precautions, it shall be removed immediately upon the Engineer's directive.

**Spacer Distances**

The spacer distance shall be 50 mm for reinforced concrete foundations and 25 mm for beams and columns.

**Tolerances**

Reinforcement placement tolerances shall be +/- 10 mm.

**Pre-Concrete Approval**

After all the reinforcement is fixed in place, it shall be checked and approved by the Engineer before any concrete is poured. Any concrete placed in violation of this requirement shall be removed together with the reinforcement and remanufactured by the Contractor at his/her own expense, if instructed by the Engineer.

* 1. **SPECIAL TECHNICAL SPECIFICATIONS FOR ELECTRICAL AND MECHANICAL WORKS**

The contractor is responsible for the materials and installations within the work until the final acceptance of the work. The Contractor is also obliged to install all systems in the building and other structures in a complete and working condition and to promptly repair any faults, excluding usage faults, free of charge, during the 12-month defect liability period between temporary acceptance and final acceptance. In case the necessary repair works cannot be completed within one month, the parts not repaired within this period shall be repaired by the Employer on behalf of the Contractor and shall be deducted from the Contractor's Performance Guarantee.

**Visual Inspection**

All materials to be used in mechanical installations shall be subjected to a visual examination by the Engineer to verify that the materials are not broken, rusty, cracked or old.

**Functioning Inspection**

All materials to be used in mechanical installations shall be subjected to functional examination with tests without any cost impact to the Employer.

**Warranty Period**

All materials to be used in mechanical installations shall have a commercial warranty of two (2) years from the manufacturers as of the temporary acceptance of the work.

# SECTION 5a.1 SPECIFICATIONS FOR ITEMS/POSE DEFINITIONS

The works described in this section include all the necessary materials and losses, loading, horizontal and vertical transportation, unloading, workmanship, **transportation of material to the site**, contractor’s profit and general expenses for the successful completion of the specified items.

**Whenever item/pose is related to an item/pose number from the official books[[2]](#footnote-3) published by Turkish public institutes, the definition in this specification shall prevail for any inconsistency. In case of vagueness/absence of an issue in the item definition in this specification, the official definition shall prevail for only the vagueness/absence.**

The units of measurement used in the items/pose definitions are those of the International System of Units (SI). No other units may be used for measurements, pricing, detail drawings etc. (Any units not mentioned in the technical documentation must also be expressed in terms of the SI.) Abbreviations used are to be interpreted as follows:

mm means millimetre

m means metre

da means decare

mm² means square millimetre

m² means square metre

m³ means cubic metre

kg means kilogram

ton means tonne (1000 kg)

pcs means pieces

h means hour

L.s. means Lump sum

km means kilometre

l means litre

kVAR means kilovolt ampere reactive

% means per cent

**Civil Works**

|  |  |  |  |
| --- | --- | --- | --- |
| **SINOP KOZUCAĞIZ VILLAGE WATER TRANSMISSION LINE**  **CONSTRUCTION WORKS** | | | |
|  | | | |
| **Item** | **Pose No** | **Type of Manufacture** | **Unit** |
|  |
| Civ01 | 40.145.1142 | Diameter 40 mm, 10-16 atu, PE100 ball valve | Pcs |
| Civ02 | 25.142.1103 | 40 Ø mm (1 1/2") screw Cold water meters, Cold water meters: Supply and installation in the workplace | Pcs |
|  | Technical Description: WATER METERS (In Compliance with TS EN ISO 4064-1) (Measurement: Pieces) Supply and on-site installation of meters with CE conformity mark in accordance with the Measuring Instruments Regulation (2004/22/AT). | | |
| Civ03 | 25.142.1105 | 80 Ø mm Flange Cold water meters, Cold water meters: Supply and installation in the workplace | Pcs |
|  | Technical Description: WATER METERS (In Compliance with TS EN ISO 4064-1) (Measurement: Pieces) Supply and on-site installation of meters with CE conformity mark in accordance with the Measuring Instruments Regulation (2004/22/AT). | | |
| Civ04 | 43.565.1057 | Placing the prefabricated stormwater box culvert element (W: 2.00 m, L: 1.50 m, H: 2.00 m, W: 0.25 m) (500-dose, steam cure, joints between manhole elements with 600-dose mortar) | Pcs |
|  | Technical Description: This is the price of 1 (one) unit of steam cured, 500-dose, prefabricated rainwater culvert elements made of C40/50 concrete, which is TSE certified, supplied by the Contractor firm in accordance with the specifications of İller Bankası A.Ş. and its project, with the tests and controls made and brought to the work place, lowered to the ditch; with the size: 43.565.1051 :W:1.00 m, L:0.50 m, H:2.00 m, e:0.20 m, 43.565.1052 :W:1.00 m, L:1.00 m, H:2.00 m, e:0.20 m, 43.565.1053 :W:1.20 m, L:1.00 m, H:2.00 m, e:0.20 m, 43.565.1054 : W:1.30 m, L:1.00 m, H:2.00 m, e:0.20 m, 43.565.1055 :W:1.50 m, L:1.00 m, H:2, 00 m, e:0.20 m, 43.565.1056 :W:2.00 m, L:1.00 m, H:2.00 m, e:0.25 m, 43.565.1057 :W:2, 00 m, L:1.50 m, H:2.00 m, e:0.25 m, 43.565.1058 :W:2.50 m, L:1.00 m, H:2.00 m, e :0.25, steam cured, with 500 doses, making the prefabricated rainwater culvert element made of C40/50 concrete ready at the edge of the excavation pit, checking the inner and outer surfaces (for damages that may occur during loading, transport and unloading), not using the damaged ones, cleaning the surfaces to be joined, lowering it into the ditch with an excavator of suitable capacity in accordance with the specifications of the İller Bankası A.Ş. and its project; providing 600-dose thin mortar ready at work during the laying and connection of manhole elements, lowering 600 doses of fine mortar into the trench, all kinds of labour required for plastering the joints from the inside and outside with thin mortar, including loading, unloading expenses, material and loss, and Contractor’s general expenses and profit (Including the cost of the prefabricated rainwater culvert element, excluding the transportation cost) Measurement: It is the number of steam-cured 500-dose prefabricated rainwater culverts made of C40/50 concrete that conform to the relevant specification and unit price descriptions, the contents of which specify the dimensions. Note: 1) Ditch excavation The site list and special unit price descriptions annexed to the contract shall be used as the basis for the conditions of trench ditch excavation, bottom improvement and levelling, foundation bedding with sand-gravel, and raft foundation construction works. 2) A non-ferrous raft foundation shall be constructed with 10 cm thick C8/10 concrete under the culvert element at the bottom of the trench. | | |
| Civ05 | 15.185.1005 | Making formwork scaffolding from steel pipe (between 0,00- 4,00 m) | m³ |
|  | Technical Description: When deemed necessary by the administration, the erection and dismantling of the steel pipe carrier scaffolding for the building and industrial production, the height of which falls within the scope of this pose, according to its standard and approved project, by taking the necessary safety precautions, all kinds of materials and losses, loading at the construction site, horizontal and vertical transportation, unloading, workmanship, tool and equipment costs, contractor overheads and profit included, 1 m³ price: Measurement: 1) The gap between the formwork face of the building and industrial production within the scope of this measure and the ground to which the scaffold is attached is calculated. If the roof is inclined, the average altitude is taken as a basis. 2) When this pose is applied to tunnels or galleries, the gap between the lower surface of the gallery or tunnel arch and the ground to which the scaffold is attached is calculated. 3) This pose is applied for the water tank construction scaffolds within the scope of this measure. In this case, the gap between the ceiling of the concrete water tank and the floor to which the scaffold is attached is calculated. 4) The required width of the carrier scaffolding for the frame, beam and columns that are not built with the flooring is determined by the administration. | | |
| Civ06 | 43.675.1003 | Making screed (with waterproofing additives, 2.5 cm thick, 500 doses) | m² |
|  | Technical Description: Construction of troweled floor at an appropriate thickness of by mixing 500 kg cement and 18,0 kg water-proof additive with 1 m3 meter cube fine sand supplied, tested and brought on the site by the Contractor in accordance with the project specifications of İller Bankası A.Ş, watering, cleaning and washing the site where the troweled floor is to be constructed, cost of workmanship of all type, materials and material losses, machinery, tools and equipment loading, transporting and unloading on the work-site (excluding the cost for loading the materials onto the vehicles from the point of supply to the site, hauling, unloading from the vehicles) necessary to furnish 1,00 m² (one meter square) waterproof cement grouting of dosage 500 at 2,5 cm thickness with additives including the Contractor’s profit and overheads. Measurement: It is the quantity of the 500-dose water-proof cement grouting using additive at a thickness of 2,5 cm in m2 (square meter) in accordance with the dimensions shown on the project. | | |
| Civ07 | 43.675.1004 | Making screed (Water impermeability added, 1.5 cm thick on wall surfaces, 500 doses) | m² |
|  | Technical Description: Execution of scratch works on the surfaces of the walls at a thickness of approximately 2,0 cm by applying grout made of 1,0 m3 (meter cube) sand and 400 kg cement supplied, tested, and brought on site by the Contractor in accordance with the project specifications of İller Bankası A.Ş. on top of which 500,00 kg cement and 18,0 kg water-proof additive with 1 m3 meter cube fine sand are mixed to construct a troweled floor, watering, cleaning the surfaces of the walls to be plastered, washing, cost of workmanship of all type, materials and material losses, machinery, tools and equipment loading, transporting and unloading on the work-site (excluding the cost for loading the materials onto the vehicles from the point of supply to the site, hauling, unloading from the vehicles) necessary to plaster at a thickness of 1,5 cm. Measurement: It is the quantity of the 500-dose water-proof cement grouting using additive at a thickness of 1,5 cm in m2 (square meter) in accordance with the dimensions shown on the project. | | |
| Civ08 | 43.501.1110 | Welding of steel pipe heads with diameter 100 mm (4" -114.3 mm, wall thickness: 4.0 mm) (Pipe cost excluded) | Pcs |
|  | Technical Description: Description: Supervision of the internal and external surfaces of the Ø65 - Ø3000 mm spiral or longitudinal straight seam pipes with a wall thickness ranging from 3,2 to 14,5 mm and fittings that the contractor company supplied, tested, and checked in accordance with the project specifications of the Bank of Provinces Corporation (İller Bankası A.Ş) bearing TSE certification (checking in view of the damages that may occur during loading, transportation and unloading), repairing the sections with surface damage, if any, cost of welding workmanship of all types as well as material and material losses, making machine equipment available on site, cleaning the edges and correcting the caps with spherical defaults and oblique sections, if pipes need to be cut on site, they must be cut smoothly at a 90° angle, vertical to the pipe's axis, welding the nipples of the pipes in accordance with the project specifications of İller Bankası A.Ş. (Turning the butt areas of the pipe ends at a 30° taper angle to open the welding mouth), placing the pipes fully positioned from end to end, jointing the pipe ends as per the wall thickness by welding, lathing to remove the surplus materials and burrs, and cost of workmanship, materials and material losses to isolate the welded pipes together with the Contractor’s profit and overheads (excluding the costs of pipes and the fittings loading, hauling and unloading of such pipes and fittings from the point of origin to the site). The price includes 1 (one) piece of welding of steel pipe caps and fittings. Measurement: It is the quantity, measured in units, of the welded pipe caps of the pipes and fittings installed in accordance with the project's dimensions, related specifications, and special unit descriptions. Note: Joining the pipe nipples and fittings entirely or partially inside or outside the ditch has no impact on the prices. To weld inside the trench, the excess excavation workmanship performed on the sides and bottom of the pipe nipple included in these prices and no additional cost is offered. | | |
| Civ09 | 43.521.1005 | Laying of 100 mm (4“ -114.3 mm) steel pipe (excluding pipe and head connection fee) | m |
|  | Technical Description: This is the 1.00 (one) meter price of laying steel pipes, which are TSE certified, supplied by the Contractor firm in accordance with the specifications of İller Bankası A.Ş. and its project, with the tests and controls made and brought to the work place, lowered to the ditch; with a diameter of Ø65 - Ø3000 mm, wall thickness: 3.2 - 14.5 mm, checking the inner and outer surface coatings of spiral or longitudinally straight welded steel pipes and fittings (For damages that may occur during loading, transport and unloading), repairing damaged parts on surface coatings, all kinds of labour, material and losses required for connection with welding, preparation of machine tools and equipment on the job, cleaning the pipe ends and correction of curved parts and pipe heads with defective circularity, in accordance with the specifications of the İller Bankası A.Ş. and its project; joining the pipes inside or outside the trench by welding, lowering to the bottom of the ditch, all kinds of labour required for pressure tests after laying, loading, unloading expenses, material and loss, water supply for pressure test, including machinery tools, equipment and Contractor overheads and profits (Excluding the head fastening costs of pipes and fittings and the costs of loading, transporting and unloading from vehicles from the place of supply to the construction site), Measurement: The dimensions in the project are the length in meters of the steel pipeline laid according to the relevant specification and special unit descriptions. Note: In addition to these costs, head connection costs are also paid. | | |
| Civ10 | 43.523.4208 | Laying PE100 inegal Tee with an outer diameter of 75/40 mm, 10 atu, (including PE100 inegal Te cost, excluding head fastening cost) | Pcs |
|  | Technical Description: Supervision of the internal and external surfaces of the Ø50/40- - Ø800/710 mm Inegral TE’s that the contractor company supplied, tested, and checked in accordance with the project specifications of the Bank of Provinces Corporation (İller Bankası A.Ş) bearing TSE certification (checking in view of the damages that may occur during loading, transportation and unloading), damaged poses are not to be used, costs of all types of workmanship for welding work, materials and material losses, cleaning the pipe's end points, correcting the pipe caps with spherical defaults, jointing the Integral TE’s in or outside of the ditch in accordance with the project and the specifications of İller Bankası A.Ş., lifting the pipes down to the ditch with the help of the unskilled workers or excavator in appropriate capacity taking into account the weight and diameter of the pipe, putting them down to the ditch foundation with the help of the unskilled workers or excavators in appropriate capacity based on their weight and diameter along with the pipeline, cost of workmanship, materials and material losses of all types, loading and unloading, material and wastes in order to perform the pressure tests, supply of water for the pressure tests, price for 1 (one) each PE100 inegal TE placement including the cost of machinery, tools and equipment with the Contractor’s profit and overheads (Excluding the costs of cap jointing of PE100 inegal TE’s and loading and unloading to and from the vehicles as well as transporting from the point of supply to the site). Measurement: It is the number of PE100 Inegal T’s installed on the PE100 pipeline in accordance with the relevant specification and unit price descriptions, the contents of which specify the dimensions. Note: In addition to these costs, head connection costs are also paid. | | |
| Civ11 | 43.570.1228 | Placement of 10 -16 atu, PE100 sliding electrofusion welding saddle valve with a diameter of 160 mm, (including valve cost, excluding head connection fee) | Pcs |
|  | Technical Description: This is the price of 1 (one) PE100 gate valves (Electrofusion welding saddle) placement (assembly) which are TSE certified, supplied by the Contractor firm in accordance with the specifications of İller Bankası A.Ş. and its project, with the tests and controls made, brought to the workplace, with a diameter of Ø50 mm - Ø225 mm, all kinds of labour, material and loss required for the placement of PE100 gate valves (Electrofusion welding saddle), preparation of machine tools and equipment on the job, checking the interior and exterior surfaces before placing them in accordance with the specifications of the İller Bankası A.Ş. and its project (For damages that may occur during loading, transport and unloading), not using the damaged ones, cleaning the inner and outer surfaces of the pipes or armatures to which it will be connected with valves, aligning the flanged parts of the pipes or armatures to which the valves will be connected, during their installation (assembly), bringing them end to end, using a non-qualified worker or an excavator of appropriate capacity, depending on the weight and diameter of the valves, so that the connection can be fixed until the work is completed, all kinds of labour required for mounting on pipes or armatures and performing pressure tests, including loading and unloading expenses, material and loss, test and sealing cost and Contractor general expenses and profit (Excluding the cost of valve, head fastening and loading, transportation and unloading from vehicles from the place of supply to the construction site) Measurement: This is the price for 1 piece, of placement (assembly) of PE100 gate valves (Electrofusion welding saddle), according to the dimensions in the project, the relevant specification and special unit descriptions. | | |
| Civ12 | 43.570.1283 | Placement of bushing kits (Telescopic valve handle and sleeve) for PE100 pipes with a diameter of 140 - 225 mm | Pcs |
|  | Technical Description: This is the price of 1 (one) unit for the placement of the bushing sets (with telescopic valve handle and sleeve) for PE100 pipes which are TSE certified, supplied by the Contractor firm in accordance with the specifications of İller Bankası A.Ş. and its project, with the tests and controls made, brought to the workplace, with a diameter of Ø32 mm - Ø225 all kinds of labour, material and loss required for the placement of the bushing sets (with telescopic valve handle and sleeve) for PE100 pipes, preparation of machine tools and equipment on the job, checking the interior and exterior surfaces before placing them in accordance with the specifications of the İller Bankası A.Ş. and its project (For damages that may occur during loading, transport and unloading), not using the damaged ones, attaching telescopic valve arm to the valves installed on the line, dressing the cover part of the arm, ensuring that the arm remains vertical during the completion of the trench fill, placing the valve sleeve (boiler) enclosed in a concrete jacket on the casing piece, aligning its top with the top of the finished filling, all kinds of labour required to take necessary precautions to prevent damage during floor covering (Asphalt, parquet, concrete, etc.), including loading and unloading expenses, material and loss, test and sealing cost and Contractor general expenses and profit (Excluding the cost of loading, transporting and unloading from vehicles, from the place where they are supplied to the construction site, with the price of the bushing set) Measurement: According to the dimensions in the project, the relevant specification and special unit descriptions, this is the number of pieces (with telescopic valve arm and sleeve) of bushing sets placed (assembled) for PE100 pipes. | | |
| Civ13 | 43.570.1304 | Placement of 10-16 atu, gate valve with a diameter of 80 mm (Sphero casting, including valve cost, excluding head connection cost) | Pcs |
|  | Technical Description: This is the price of 1 (one) placement (assembly) of sphero cast gate valves which are TSE certified, supplied by the Contractor firm in accordance with the specifications of İller Bankası A.Ş. and its project, with the tests and controls made, brought to the workplace, with a diameter of Ø40 mm – Ø1000 mm, all kinds of labour, material and loss required for the placement of gate valves with a pressure strength of 10 atu - 25 atu (Sphero casting), preparation of machine tools and equipment on the job, checking the interior and exterior surfaces before placing them in accordance with the specifications of the İller Bankası A.Ş. and its project (For damages that may occur during loading, transport and unloading), not using the damaged ones, cleaning the inner and outer surfaces of the pipes or armatures to which it will be connected with valves, aligning the flanged parts of the pipes or armatures to which the valves will be connected, during their installation (assembly), bringing them end to end, using a non-qualified worker or an excavator of appropriate capacity, depending on the weight and diameter of the valves, so that the connection can be fixed until the work is completed, all kinds of labour required for mounting on pipes or armatures and performing pressure tests, including loading and unloading expenses, material and loss, test and sealing cost and Contractor general expenses and profit (Excluding the cost of gate valve, head fastening and loading, transportation and unloading from vehicles from the place of supply to the construction site) Measurement: This is the price for 1 piece, of placement (assembly) of sphero cast gate valves, according to the dimensions in the project, the relevant specification and special unit descriptions. | | |
| Civ14 | 43.570.1357 | Placement of 25 atu, gate valve with a diameter of 150 mm (Sphero casting, including valve cost, excluding head connection cost) | Pcs |
|  | Technical Description: This is the price per 1 piece, of installing cast iron flat flywheel valve, including purchasing of cast iron flat flywheel valves manufactured in accordance with TS 457.F-1 (DIN 3216), with pressure tested and complete, its inspection, loading on vehicles, transporting to the edge of the ditch or the place where it will be placed, unloading from vehicles, lowering it into the ditch or to the place where it will be placed, placing in place according to the project and specification and applying pressure test after laying, supply of water required for the pressure test, all kinds of materials and workmanship, the cost of performing a pressure test before laying, including tool and equipment expenses and contractor profit and general expenses (excluding head connection fee) | | |
| Civ15 | 43.570.2803 | Placement of 10-16 atu, motor-controlled flange butterfly valve with a diameter of 150 mm (Sphero casting, including valve cost, excluding head connection cost) | Pcs |
|  | Technical Description: This is the price, per 1 (one) piece, of the placement (assembly) of sphero cast motor-controlled flange butterfly valves which are TSE certified, supplied by the Contractor firm in accordance with the specifications of İller Bankası A.Ş. and its project, with the tests and controls made, brought to the workplace, with a diameter of Ø100 mm – Ø2400 mm, all kinds of labour, material and loss required for the placement of motor-controlled flange butterfly valves (sphero cast) with a pressure strength of 10 atu (Sphero casting), preparation of machine tools and equipment on the job, checking the interior and exterior surfaces before placing them in accordance with the specifications of the İller Bankası A.Ş. and its project (For damages that may occur during loading, transport and unloading), not using the damaged ones, cleaning the inner and outer surfaces of the pipes or armatures to which it will be connected with valves, aligning the flanged parts of the pipes or armatures to which the valves will be connected, during their installation (assembly), bringing them end to end, using a non-qualified worker or an excavator of appropriate capacity, depending on the weight and diameter of the valves, so that the connection can be fixed until the work is completed, all kinds of labour required for mounting on pipes or armatures and performing pressure tests, including loading and unloading expenses, material and loss, test and sealing cost and Contractor general expenses and profit (Excluding the cost of butterfly valve, head fastening and loading, transportation and unloading from vehicles from the place of supply to the construction site) Measurement: This is the price for 1 piece, of placement (assembly) of sphero cast motor-controlled flange butterfly valves, according to the dimensions in the project, the relevant specification and special unit descriptions. | | |
| Civ16 | 43.571.1206 | Placement of 10-16 Atu, non-impact dynamic suction cup with a diameter of 150 mm (for pipelines, nodular cast iron, suction cup price included, head clamping price excluded) | Pcs |
|  | Technical Description: This is the price, per 1 (one) piece, for the placement (assembly) of double ball suction cups (Sphero casting) which are TSE certified, supplied by the Contractor firm in accordance with the specifications of İller Bankası A.Ş. and its project, with the tests and controls made, brought to the workplace, with a diameter of Ø50 mm – Ø300 mm, all kinds of labour, material and loss required for the placement of double ball suction cups (Sphero casting) with a pressure strength of 10 atu - 16 atu, preparation of machine tools and equipment on the job, checking the interior and exterior surfaces before placing them in accordance with the specifications of the İller Bankası A.Ş. and its project (For damages that may occur during loading, transport and unloading), not using the damaged ones, cleaning the inner and outer surfaces of the pipes or armatures to which it will be connected with suction cups, aligning the flanged parts of the pipes or armatures to which the suction cups will be connected, during their installation (assembly), bringing them end to end, using a non-qualified worker or an excavator of appropriate capacity, depending on the weight and diameter of the valves, so that the connection can be fixed until the work is completed, all kinds of labour required for mounting on pipes or armatures and performing pressure tests, including loading and unloading expenses, material and loss, test and sealing cost and Contractor general expenses and profit (Excluding the cost of double ball suction cups, head fastening and loading, transportation and unloading from vehicles from the place of supply to the construction site) Measurement: It is the quantity of the double-spherical suction cup assembled, in terms of pieces. | | |
| Civ17 | ALLIGATION-1 (Paçal 1) | Laying Drinking and Potable Water Pipe with a d. of Ø 160 mm. made of Pe 100 Polyethylene with (10) Atmospheric Pressure Resistance (Including supply of all excavation, filling, bedding, jacketing, pipes and fittings, transportation, adding pipes, laying and experiments) | m |
|  | Technical Description: Excavation: Excavation on all kinds of ground; all kinds of materials and costs for excavation with machinery, loading on vehicles, transporting, unloading to warehouse, filling place or embankment, laying, filling the gaps left in the excavation site after the construction, levelling and correcting the bottom and side walls of the excavated place, including losses and labour, equipment and supplies, contractor overheads and profits: | | |
| Bedding and Jacketing: Pouring crushed, sieved, 0 - 11 mm diameter crushed stone, supplied by the Contractor firm in accordance with the specifications of İller Bankası A.Ş. and its project, brought to the workplace, from the quarry stone on the upper edge of the trench or foundation excavation, after the levelling of the trench or foundation base has been completed and the water on the base has dried, taking the trench or foundation excavation from its upper edge by machine and laying it by hand in 20 cm layers for trench and foundation base and pipe top lining, and all kinds of labour, water, material and loss required for compaction by irrigation with a compactor, machinery, equipment, loading, unloading, transportation in the trench or foundation (Excluding the costs of loading, transporting and unloading the crushed stone from the place of supply to the construction site) including the contractor's profit and general expenses, compacting 1.0 m³ crushed stone with a diameter of 0 - 11 mm, sifted from the quarry stone with a Stone crusher, with a compactor, trench and foundation base improvement under the conditions and principles specified in the project, all kinds of materials and losses for the jacketing of the pipe base or the lining of the pipe, labour, tool and equipment expenses, contractor overheads and profits are included | | |
| Piping: Supply of drinking and utility water pipes made of PE 100 polyethylene (TS EN 12201-2+A1) with atmospheric pressure resistance of 10 Atm, supervision of the internal and external surfaces of the ø 32-800 mm PE100 pipes and their connection pieces that the contractor company supplied, tested, and checked in accordance with the project specifications of the Bank of Provinces Corporation (İller Bankası A.Ş) and brought to the site and in the vicinity of the ditch with atmospheric pressure of 10 atü bearing TSE certification (checking in view of the damages that may occur during loading, transportation and unloading), setting aside the damaged pipes, supplying on-site machinery, tools, and necessary equipment for butt welding, labour and material costs with the material losses, If pipes need to be cut on site, they must be cut smoothly at a 90° angle, vertical to the pipe's axis, after cleaning the pipe nipples and correcting caps with spherical defaults. (The nipples must be smoothly cut and cleaned (90°)), placing the pipes fully positioned from end to end on the butt-welding machine to provide welding of the nipples inside or outside the ditch in accordance with the specifications of the İller Bankası A. Ş and the relevant design, workmanship and material with the losses of such materials, machinery, tools and equipment necessary for welding of the nipples in accordance with the instructions to use of the butt welding machine, (the surplus amounts after welding process shall not be used and rolled) as well as the Contractor’s profits and overheads and price for the butt-welding of one each PE100 pipe and connection pieces. | | |
| Test: All kinds of labour required for applying pressure test to laid PE100 pipes which are TSE certified, supplied by the Contractor firm in accordance with the specifications of İller Bankası A.Ş. and its project, with the tests and controls made, brought to the workplace, on-the-job preparation of materials and losses, machinery and equipment, Supplying the necessary amount of water for the pressure test, a pump with the appropriate capacity and a pressure gauge device whose calibration has been tested, preparation of the pipeline to be pressure tested, pressing the water into the pipeline after operating the pump, according to the principles of the relevant technical specification, applying pressure to the pipeline and keeping under pressure for the required time, material and loss required for checking the sealing condition, water supply for pressure test, including machinery tools and equipment, and Contractor's overheads and profits, all kinds of materials and losses for pressure testing after lying in PE100 pipes, labour, tool and equipment expenses, contractor overheads and profits are included, | | |
|  | | |
| Trench and Foundation fill: stacking the soil obtained from the trench or foundation excavation to the upper edges of the trench or foundation excavation for use in backfill, in accordance with the specifications of İller Bankası A.Ş. and its project, cleaning the filling material from roots, grass, clods and stones, taking it by machine and placing in a trench or foundation, laying by hand in 20.0 cm layers, watering and compacting with a compactor, all kinds of labour required for levelling and arrangement of the upper surfaces after the last layer, water, material and loss, machinery and equipment costs, loading, unloading, transportation in trenches or foundations, and Contractor's profit and general expenses included, all kinds of materials and losses for trench and basement fill, labour, tool and equipment expenses, contractor general expenses and profit included, | | |
| Transportation: All kinds of services and expenses for horizontal and vertical transportation in the workplace, including contractor's profit and general expenses, for the transportation of all kinds of loads and materials on all kinds of paved and unpaved roads measured over the carriageway by motor vehicles. | | |
| Supply and transportation of polyethylene pipes in accordance with TS EN 12201-2.2011+A1 to the workplace, supply and transportation of all kinds of assembly materials, making all kinds of excavations for laying pipes, bedding and jacketing, trench backfilling and compaction, butt welding of pipe and fitting heads, laying them in ready channels, making pressure tests all kinds of expenses, materials and losses, tools, equipment, horizontal and vertical transportation and labour costs in the trench, contractor profit and general expenses are included. | | |
| Measurement: It is the price of 1 meter of the laid pipe. | | |
| Civ18 | ALLIGATION-10 (Paçal 10) | Excavation in All Kinds of Classes and Grounds | m3 |
|  | Technical Description: Excavation on all kinds of ground; all kinds of materials and costs for excavation with machinery, loading on vehicles, transporting, unloading to warehouse, filling place or embankment, laying, filling the gaps left in the excavation site after the construction, levelling and correcting the bottom and side walls of the excavated place, including losses and labour, equipment and supplies, contractor overheads and profits: | | |
|  |
| Civ19 | ALLIGATION-2 (Paçal 2) | Laying Drinking and Potable Water Pipe with a d. of Ø 160 mm. made of Pe 100 Polyethylene with (16) Atmospheric Pressure Resistance (Including supply of all excavation, filling, bedding, jacketing, pipes and fittings, transportation, adding pipes, laying and experiments) | m |  |
|  | Technical Description: Excavation: Excavation on all kinds of ground; all kinds of materials and costs for excavation with machinery, loading on vehicles, transporting, unloading to warehouse, filling place or embankment, laying, filling the gaps left in the excavation site after the construction, levelling and correcting the bottom and side walls of the excavated place, including losses and labour, equipment and supplies, contractor overheads and profits: | | |  |
| Bedding and Jacketing: Pouring crushed, sieved, 0 - 11 mm diameter crushed stone, supplied by the Contractor firm in accordance with the specifications of İller Bankası A.Ş. and its project, brought to the workplace, from the quarry stone on the upper edge of the trench or foundation excavation, after the levelling of the trench or foundation base has been completed and the water on the base has dried, taking the trench or foundation excavation from its upper edge by machine and laying it by hand in 20 cm layers for trench and foundation base and pipe top lining, and all kinds of labour, water, material and loss required for compaction by irrigation with a compactor, machinery, equipment, loading, unloading, transportation in the trench or foundation (Excluding the costs of loading, transporting and unloading the crushed stone from the place of supply to the construction site) including the contractor's profit and general expenses, compacting 1.0 m³ crushed stone with a diameter of 0 - 11 mm, sifted from the quarry stone with a Stone crusher, with a compactor, trench and foundation base improvement under the conditions and principles specified in the project, all kinds of materials and losses for the jacketing of the pipe base or the lining of the pipe, labour, tool and equipment expenses, contractor overheads and profits are included | | |  |
| Piping: Supply of drinking and utility water pipes made of PE 100 polyethylene (TS EN 12201-2+A1) with atmospheric pressure resistance of 10 Atm, supervision of the internal and external surfaces of the ø 32-800 mm PE100 pipes and their connection pieces that the contractor company supplied, tested, and checked in accordance with the project specifications of the Bank of Provinces Corporation (İller Bankası A.Ş) and brought to the site and in the vicinity of the ditch with atmospheric pressure of 10 atü bearing TSE certification (checking in view of the damages that may occur during loading, transportation and unloading), setting aside the damaged pipes, supplying on-site machinery, tools, and necessary equipment for butt welding, labour and material costs with the material losses, If pipes need to be cut on site, they must be cut smoothly at a 90° angle, vertical to the pipe's axis, after cleaning the pipe nipples and correcting caps with spherical defaults. (The nipples must be smoothly cut and cleaned (90°)), placing the pipes fully positioned from end to end on the butt-welding machine to provide welding of the nipples inside or outside the ditch in accordance with the specifications of the İller Bankası A. Ş and the relevant design, workmanship and material with the losses of such materials, machinery, tools and equipment necessary for welding of the nipples in accordance with the instructions to use of the butt welding machine, (the surplus amounts after welding process shall not be used and rolled) as well as the Contractor’s profits and overheads and price for the butt-welding of one each PE100 pipe and connection pieces. | | |  |
| Test: All kinds of labour required for applying pressure test to laid PE100 pipes which are TSE certified, supplied by the Contractor firm in accordance with the specifications of İller Bankası A.Ş. and its project, with the tests and controls made, brought to the workplace, on-the-job preparation of materials and losses, machinery and equipment, Supplying the necessary amount of water for the pressure test, a pump with the appropriate capacity and a pressure gauge device whose calibration has been tested, preparation of the pipeline to be pressure tested, pressing the water into the pipeline after operating the pump, according to the principles of the relevant technical specification, applying pressure to the pipeline and keeping under pressure for the required time, material and loss required for checking the sealing condition, water supply for pressure test, including machinery tools and equipment, and Contractor's overheads and profits, all kinds of materials and losses for pressure testing after lying in PE100 pipes, labour, tool and equipment expenses, contractor overheads and profits are included, | | |  |
|  | | |  |
| Trench and Foundation fill: stacking the soil obtained from the trench or foundation excavation to the upper edges of the trench or foundation excavation for use in backfill, in accordance with the specifications of İller Bankası A.Ş. and its project, cleaning the filling material from roots, grass, clods and stones, taking it by machine and placing in a trench or foundation, laying by hand in 20.0 cm layers, watering and compacting with a compactor, all kinds of labour required for levelling and arrangement of the upper surfaces after the last layer, water, material and loss, machinery and equipment costs, loading, unloading, transportation in trenches or foundations, and Contractor's profit and general expenses included, all kinds of materials and losses for trench and basement fill, labour, tool and equipment expenses, contractor general expenses and profit included, | | |  |
| Transportation: All kinds of services and expenses for horizontal and vertical transportation in the workplace, including contractor's profit and general expenses, for the transportation of all kinds of loads and materials on all kinds of paved and unpaved roads measured over the carriageway by motor vehicles. | | |  |
| Supply and transportation of polyethylene pipes in accordance with TS EN 12201-2.2011+A1 to the workplace, supply and transportation of all kinds of assembly materials, making all kinds of excavations for laying pipes, bedding and jacketing, trench backfilling and compaction, butt welding of pipe and fitting heads, laying them in ready channels, making pressure tests all kinds of expenses, materials and losses, tools, equipment, horizontal and vertical transportation and labour costs in the trench, contractor profit and general expenses are included. | | |  |
| Measurement: It is the price of 1 meter of the laid pipe. | | |  |
| Civ20 | ALLIGATION-3 (Paçal 3) | Laying Drinking and Potable Water Pipe with a d. of Ø 160 mm. made of Pe 100 Polyethylene with (25) Atmospheric Pressure Resistance (Including supply of all excavation, filling, bedding, jacketing, pipes and fittings, transportation, adding pipes, laying and experiments) | m |  |
|  | Technical Description: Excavation: Excavation on all kinds of ground; all kinds of materials and costs for excavation with machinery, loading on vehicles, transporting, unloading to warehouse, filling place or embankment, laying, filling the gaps left in the excavation site after the construction, levelling and correcting the bottom and side walls of the excavated place, including losses and labour, equipment and supplies, contractor overheads and profits: | | |  |
| Bedding and Jacketing: Pouring crushed, sieved, 0 - 11 mm diameter crushed stone, supplied by the Contractor firm in accordance with the specifications of İller Bankası A.Ş. and its project, brought to the workplace, from the quarry stone on the upper edge of the trench or foundation excavation, after the levelling of the trench or foundation base has been completed and the water on the base has dried, taking the trench or foundation excavation from its upper edge by machine and laying it by hand in 20 cm layers for trench and foundation base and pipe top lining, and all kinds of labour, water, material and loss required for compaction by irrigation with a compactor, machinery, equipment, loading, unloading, transportation in the trench or foundation (Excluding the costs of loading, transporting and unloading the crushed stone from the place of supply to the construction site) including the contractor's profit and general expenses, compacting 1.0 m³ crushed stone with a diameter of 0 - 11 mm, sifted from the quarry stone with a Stone crusher, with a compactor, trench and foundation base improvement under the conditions and principles specified in the project, all kinds of materials and losses for the jacketing of the pipe base or the lining of the pipe, labour, tool and equipment expenses, contractor overheads and profits are included | | |  |
| Piping: Supply of drinking and utility water pipes made of PE 100 polyethylene (TS EN 12201-2+A1) with atmospheric pressure resistance of 10 Atm, supervision of the internal and external surfaces of the ø 32-800 mm PE100 pipes and their connection pieces that the contractor company supplied, tested, and checked in accordance with the project specifications of the Bank of Provinces Corporation (İller Bankası A.Ş) and brought to the site and in the vicinity of the ditch with atmospheric pressure of 10 atü bearing TSE certification (checking in view of the damages that may occur during loading, transportation and unloading), setting aside the damaged pipes, supplying on-site machinery, tools, and necessary equipment for butt welding, labour and material costs with the material losses, If pipes need to be cut on site, they must be cut smoothly at a 90° angle, vertical to the pipe's axis, after cleaning the pipe nipples and correcting caps with spherical defaults. (The nipples must be smoothly cut and cleaned (90°)), placing the pipes fully positioned from end to end on the butt-welding machine to provide welding of the nipples inside or outside the ditch in accordance with the specifications of the İller Bankası A. Ş and the relevant design, workmanship and material with the losses of such materials, machinery, tools and equipment necessary for welding of the nipples in accordance with the instructions to use of the butt welding machine, (the surplus amounts after welding process shall not be used and rolled) as well as the Contractor’s profits and overheads and price for the butt-welding of one each PE100 pipe and connection pieces. | | |  |
| Test: All kinds of labour required for applying pressure test to laid PE100 pipes which are TSE certified, supplied by the Contractor firm in accordance with the specifications of İller Bankası A.Ş. and its project, with the tests and controls made, brought to the workplace, on-the-job preparation of materials and losses, machinery and equipment, Supplying the necessary amount of water for the pressure test, a pump with the appropriate capacity and a pressure gauge device whose calibration has been tested, preparation of the pipeline to be pressure tested, pressing the water into the pipeline after operating the pump, according to the principles of the relevant technical specification, applying pressure to the pipeline and keeping under pressure for the required time, material and loss required for checking the sealing condition, water supply for pressure test, including machinery tools and equipment, and Contractor's overheads and profits, all kinds of materials and losses for pressure testing after lying in PE100 pipes, labour, tool and equipment expenses, contractor overheads and profits are included, | | |  |
|  | | |  |
| Trench and Foundation fill: stacking the soil obtained from the trench or foundation excavation to the upper edges of the trench or foundation excavation for use in backfill, in accordance with the specifications of İller Bankası A.Ş. and its project, cleaning the filling material from roots, grass, clods and stones, taking it by machine and placing in a trench or foundation, laying by hand in 20.0 cm layers, watering and compacting with a compactor, all kinds of labour required for levelling and arrangement of the upper surfaces after the last layer, water, material and loss, machinery and equipment costs, loading, unloading, transportation in trenches or foundations, and Contractor's profit and general expenses included, all kinds of materials and losses for trench and basement fill, labour, tool and equipment expenses, contractor general expenses and profit included, | | |  |
| Transportation: All kinds of services and expenses for horizontal and vertical transportation in the workplace, including contractor's profit and general expenses, for the transportation of all kinds of loads and materials on all kinds of paved and unpaved roads measured over the carriageway by motor vehicles. | | |  |
| Supply and transportation of polyethylene pipes in accordance with TS EN 12201-2.2011+A1 to the workplace, supply and transportation of all kinds of assembly materials, making all kinds of excavations for laying pipes, bedding and jacketing, trench backfilling and compaction, butt welding of pipe and fitting heads, laying them in ready channels, making pressure tests all kinds of expenses, materials and losses, tools, equipment, horizontal and vertical transportation and labour costs in the trench, contractor profit and general expenses are included. | | |  |
| Measurement: It is the price of 1 meter of the laid pipe. | | |  |
| Civ21 | ALLIGATION-4 (Paçal 4) | Laying Drinking and Potable Water Pipe with a d. of Ø 75 mm. made of Pe 100 Polyethylene with (10) Atmospheric Pressure Resistance (Including supply of all excavation, filling, bedding, jacketing, pipes and fittings, transportation, adding pipes, laying and experiments) | m |  |
|  | Technical Description: Excavation: Excavation on all kinds of ground; all kinds of materials and costs for excavation with machinery, loading on vehicles, transporting, unloading to warehouse, filling place or embankment, laying, filling the gaps left in the excavation site after the construction, levelling and correcting the bottom and side walls of the excavated place, including losses and labour, equipment and supplies, contractor overheads and profits: | | |  |
| Bedding and Jacketing: Pouring crushed, sieved, 0 - 11 mm diameter crushed stone, supplied by the Contractor firm in accordance with the specifications of İller Bankası A.Ş. and its project, brought to the workplace, from the quarry stone on the upper edge of the trench or foundation excavation, after the levelling of the trench or foundation base has been completed and the water on the base has dried, taking the trench or foundation excavation from its upper edge by machine and laying it by hand in 20 cm layers for trench and foundation base and pipe top lining, and all kinds of labour, water, material and loss required for compaction by irrigation with a compactor, machinery, equipment, loading, unloading, transportation in the trench or foundation (Excluding the costs of loading, transporting and unloading the crushed stone from the place of supply to the construction site) including the contractor's profit and general expenses, compacting 1.0 m³ crushed stone with a diameter of 0 - 11 mm, sifted from the quarry stone with a Stone crusher, with a compactor, trench and foundation base improvement under the conditions and principles specified in the project, all kinds of materials and losses for the jacketing of the pipe base or the lining of the pipe, labour, tool and equipment expenses, contractor overheads and profits are included | | |  |
| Piping: Supply of drinking and utility water pipes made of PE 100 polyethylene (TS EN 12201-2+A1) with atmospheric pressure resistance of 10 Atm, supervision of the internal and external surfaces of the ø 32-800 mm PE100 pipes and their connection pieces that the contractor company supplied, tested, and checked in accordance with the project specifications of the Bank of Provinces Corporation (İller Bankası A.Ş) and brought to the site and in the vicinity of the ditch with atmospheric pressure of 10 atü bearing TSE certification (checking in view of the damages that may occur during loading, transportation and unloading), setting aside the damaged pipes, supplying on-site machinery, tools, and necessary equipment for butt welding, labour and material costs with the material losses, If pipes need to be cut on site, they must be cut smoothly at a 90° angle, vertical to the pipe's axis, after cleaning the pipe nipples and correcting caps with spherical defaults. (The nipples must be smoothly cut and cleaned (90°)), placing the pipes fully positioned from end to end on the butt-welding machine to provide welding of the nipples inside or outside the ditch in accordance with the specifications of the İller Bankası A. Ş and the relevant design, workmanship and material with the losses of such materials, machinery, tools and equipment necessary for welding of the nipples in accordance with the instructions to use of the butt welding machine, (the surplus amounts after welding process shall not be used and rolled) as well as the Contractor’s profits and overheads and price for the butt-welding of one each PE100 pipe and connection pieces. | | |  |
| Test: All kinds of labour required for applying pressure test to laid PE100 pipes which are TSE certified, supplied by the Contractor firm in accordance with the specifications of İller Bankası A.Ş. and its project, with the tests and controls made, brought to the workplace, on-the-job preparation of materials and losses, machinery and equipment, Supplying the necessary amount of water for the pressure test, a pump with the appropriate capacity and a pressure gauge device whose calibration has been tested, preparation of the pipeline to be pressure tested, pressing the water into the pipeline after operating the pump, according to the principles of the relevant technical specification, applying pressure to the pipeline and keeping under pressure for the required time, material and loss required for checking the sealing condition, water supply for pressure test, including machinery tools and equipment, and Contractor's overheads and profits, all kinds of materials and losses for pressure testing after lying in PE100 pipes, labour, tool and equipment expenses, contractor overheads and profits are included, | | |  |
|  | | |  |
| Trench and Foundation fill: stacking the soil obtained from the trench or foundation excavation to the upper edges of the trench or foundation excavation for use in backfill, in accordance with the specifications of İller Bankası A.Ş. and its project, cleaning the filling material from roots, grass, clods and stones, taking it by machine and placing in a trench or foundation, laying by hand in 20.0 cm layers, watering and compacting with a compactor, all kinds of labour required for levelling and arrangement of the upper surfaces after the last layer, water, material and loss, machinery and equipment costs, loading, unloading, transportation in trenches or foundations, and Contractor's profit and general expenses included, all kinds of materials and losses for trench and basement fill, labour, tool and equipment expenses, contractor general expenses and profit included, | | |  |
| Transportation: All kinds of services and expenses for horizontal and vertical transportation in the workplace, including contractor's profit and general expenses, for the transportation of all kinds of loads and materials on all kinds of paved and unpaved roads measured over the carriageway by motor vehicles. | | |  |
| Supply and transportation of polyethylene pipes in accordance with TS EN 12201-2.2011+A1 to the workplace, supply and transportation of all kinds of assembly materials, making all kinds of excavations for laying pipes, bedding and jacketing, trench backfilling and compaction, butt welding of pipe and fitting heads, laying them in ready channels, making pressure tests all kinds of expenses, materials and losses, tools, equipment, horizontal and vertical transportation and labour costs in the trench, contractor profit and general expenses are included. | | |  |
| Measurement: It is the price of 1 meter of the laid pipe. | | |  |
| Civ22 | ALLIGATION-5 (Paçal 5) | Laying Drinking and Potable Water Pipe with a d. of Ø 75 mm. made of Pe 100 Polyethylene with (16) Atmospheric Pressure Resistance (Including supply of all excavation, filling, bedding, jacketing, pipes and fittings, transportation, adding pipes, laying and experiments) | m |  |
|  | Technical Description: Excavation: Excavation on all kinds of ground; all kinds of materials and costs for excavation with machinery, loading on vehicles, transporting, unloading to warehouse, filling place or embankment, laying, filling the gaps left in the excavation site after the construction, levelling and correcting the bottom and side walls of the excavated place, including losses and labour, equipment and supplies, contractor overheads and profits: | | |  |
| Bedding and Jacketing: Pouring crushed, sieved, 0 - 11 mm diameter crushed stone, supplied by the Contractor firm in accordance with the specifications of İller Bankası A.Ş. and its project, brought to the workplace, from the quarry stone on the upper edge of the trench or foundation excavation, after the levelling of the trench or foundation base has been completed and the water on the base has dried, taking the trench or foundation excavation from its upper edge by machine and laying it by hand in 20 cm layers for trench and foundation base and pipe top lining, and all kinds of labour, water, material and loss required for compaction by irrigation with a compactor, machinery, equipment, loading, unloading, transportation in the trench or foundation (Excluding the costs of loading, transporting and unloading the crushed stone from the place of supply to the construction site) including the contractor's profit and general expenses, compacting 1.0 m³ crushed stone with a diameter of 0 - 11 mm, sifted from the quarry stone with a Stone crusher, with a compactor, trench and foundation base improvement under the conditions and principles specified in the project, all kinds of materials and losses for the jacketing of the pipe base or the lining of the pipe, labour, tool and equipment expenses, contractor overheads and profits are included | | |  |
| Piping: Supply of drinking and utility water pipes made of PE 100 polyethylene (TS EN 12201-2+A1) with atmospheric pressure resistance of 10 Atm, supervision of the internal and external surfaces of the ø 32-800 mm PE100 pipes and their connection pieces that the contractor company supplied, tested, and checked in accordance with the project specifications of the Bank of Provinces Corporation (İller Bankası A.Ş) and brought to the site and in the vicinity of the ditch with atmospheric pressure of 10 atü bearing TSE certification (checking in view of the damages that may occur during loading, transportation and unloading), setting aside the damaged pipes, supplying on-site machinery, tools, and necessary equipment for butt welding, labour and material costs with the material losses, If pipes need to be cut on site, they must be cut smoothly at a 90° angle, vertical to the pipe's axis, after cleaning the pipe nipples and correcting caps with spherical defaults. (The nipples must be smoothly cut and cleaned (90°)), placing the pipes fully positioned from end to end on the butt-welding machine to provide welding of the nipples inside or outside the ditch in accordance with the specifications of the İller Bankası A. Ş and the relevant design, workmanship and material with the losses of such materials, machinery, tools and equipment necessary for welding of the nipples in accordance with the instructions to use of the butt welding machine, (the surplus amounts after welding process shall not be used and rolled) as well as the Contractor’s profits and overheads and price for the butt-welding of one each PE100 pipe and connection pieces. | | |  |
| Test: All kinds of labour required for applying pressure test to laid PE100 pipes which are TSE certified, supplied by the Contractor firm in accordance with the specifications of İller Bankası A.Ş. and its project, with the tests and controls made, brought to the workplace, on-the-job preparation of materials and losses, machinery and equipment, Supplying the necessary amount of water for the pressure test, a pump with the appropriate capacity and a pressure gauge device whose calibration has been tested, preparation of the pipeline to be pressure tested, pressing the water into the pipeline after operating the pump, according to the principles of the relevant technical specification, applying pressure to the pipeline and keeping under pressure for the required time, material and loss required for checking the sealing condition, water supply for pressure test, including machinery tools and equipment, and Contractor's overheads and profits, all kinds of materials and losses for pressure testing after lying in PE100 pipes, labour, tool and equipment expenses, contractor overheads and profits are included, | | |  |
|  | | |  |
| Trench and Foundation fill: stacking the soil obtained from the trench or foundation excavation to the upper edges of the trench or foundation excavation for use in backfill, in accordance with the specifications of İller Bankası A.Ş. and its project, cleaning the filling material from roots, grass, clods and stones, taking it by machine and placing in a trench or foundation, laying by hand in 20.0 cm layers, watering and compacting with a compactor, all kinds of labour required for levelling and arrangement of the upper surfaces after the last layer, water, material and loss, machinery and equipment costs, loading, unloading, transportation in trenches or foundations, and Contractor's profit and general expenses included, all kinds of materials and losses for trench and basement fill, labour, tool and equipment expenses, contractor general expenses and profit included, | | |  |
| Transportation: All kinds of services and expenses for horizontal and vertical transportation in the workplace, including contractor's profit and general expenses, for the transportation of all kinds of loads and materials on all kinds of paved and unpaved roads measured over the carriageway by motor vehicles. | | |  |
| Supply and transportation of polyethylene pipes in accordance with TS EN 12201-2.2011+A1 to the workplace, supply and transportation of all kinds of assembly materials, making all kinds of excavations for laying pipes, bedding and jacketing, trench backfilling and compaction, butt welding of pipe and fitting heads, laying them in ready channels, making pressure tests all kinds of expenses, materials and losses, tools, equipment, horizontal and vertical transportation and labour costs in the trench, contractor profit and general expenses are included. | | |  |
| Measurement: It is the price of 1 meter of the laid pipe. | | |  |
| Civ23 | ALLIGATION-6 (Paçal 6) | 6" JCB pipe with internal epoxy and flooring E=5.00, welded steel pipe ends | m |  |
|  | Technical Description: Excavation: Excavation on all kinds of ground; all kinds of materials and costs for excavation with machinery, loading on vehicles, transporting, unloading to warehouse, filling place or embankment, laying, filling the gaps left in the excavation site after the construction, levelling and correcting the bottom and side walls of the excavated place, including losses and labour, equipment and supplies, contractor overheads and profits: | | |  |
| Bedding and Jacketing: Pouring crushed, sieved, 0 - 11 mm diameter crushed stone, supplied by the Contractor firm in accordance with the specifications of İller Bankası A.Ş. and its project, brought to the workplace, from the quarry stone on the upper edge of the trench or foundation excavation, after the levelling of the trench or foundation base has been completed and the water on the base has dried, taking the trench or foundation excavation from its upper edge by machine and laying it by hand in 20 cm layers for trench and foundation base and pipe top lining, and all kinds of labour, water, material and loss required for compaction by irrigation with a compactor, machinery, equipment, loading, unloading, transportation in the trench or foundation (Excluding the costs of loading, transporting and unloading the crushed stone from the place of supply to the construction site) including the contractor's profit and general expenses, compacting 1.0 m³ crushed stone with a diameter of 0 - 11 mm, sifted from the quarry stone with a Stone crusher, with a compactor, trench and foundation base improvement under the conditions and principles specified in the project, all kinds of materials and losses for the jacketing of the pipe base or the lining of the pipe, labour, tool and equipment expenses, contractor overheads and profits are included | | |  |
| Piping: Pipes which are TSE certified, supplied by the Contractor firm in accordance with the specifications of İller Bankası A.Ş. and its project, with the tests and controls made, brought to the workplace, unloaded next to the ditch, with a diameter of Ø65 - Ø3000 mm, wall thickness: 3.2 - 14.5 mm, checking the inner and outer surface coatings of spiral or longitudinally straight welded steel pipes and fittings (For damages that may occur during loading, transport and unloading), repairing damaged parts on surface coatings, all kinds of labour, material and losses required for connection with welding, preparation of machine tools and equipment on the job, cleaning the pipe ends and correction of curved parts and pipe heads with defective circularity, in accordance with the specifications of the İller Bankası A.Ş. and its project; joining the pipes inside or outside the trench by welding, lowering to the bottom of the ditch, all kinds of labour required for pressure tests after lying, loading, unloading expenses, material and loss, water supply for pressure test, including machinery tools and equipment, and Contractor's overheads and profits, | | |  |
| Seamless pipes (Patented steel towing) (Conforming to TS EN 10216-1, Material: Fe33) – Straight spiral welded pipes: (With the Material in conformance with Fe.33). (TS EN 10217-1), 305/2011/EU Construction materials regulation and 97/23/AT Pressure equipment regulation, | | |  |
| Supply and Placement of steel pipes Internally Coated with Solvent-Free Epoxy and Polyethylene Externally (Seamless- Straight Spiral Welded) with an External Diameter of (60,3/2,9 – 219,1/4,5) mm, which was launched to the market with CE conformity mark, as in pose İÇS / 60-79. | | |  |
| When pipes need to be cut on site; smooth cutting of pipes perpendicular to the pipe axis (90°), preparing the ends for welding in accordance with the specifications of İller Bankası A.Ş. and its project; (turning the butt areas of the pipe ends by giving a 30° taper angle for opening the weld mouth), bringing the pipe end-to-end to be welded in or out of the trench where it will be laid, joining the steel pipe heads by welding according to the pipe wall thickness, turning to remove burrs and excess after welding and any labour, material and loss required for the insulation of the welded area, including machinery tools and equipment, and Contractor's overheads and profits, welding the heads of steel pipes and fittings, performing the necessary tests. | | |  |
| Trench and Foundation fill: stacking the soil obtained from the trench or foundation excavation to the upper edges of the trench or foundation excavation for use in backfill, in accordance with the specifications of İller Bankası A.Ş. and its project, cleaning the filling material from roots, grass, clods and stones, taking it by machine and placing in a trench or foundation, laying by hand in 20.0 cm layers, watering and compacting with a compactor, all kinds of labour required for levelling and arrangement of the upper surfaces after the last layer, water, material and loss, machinery and equipment costs, loading, unloading, transportation in trenches or foundations, and Contractor's profit and general expenses included, all kinds of materials and losses for trench and basement fill, labour, tool and equipment expenses, contractor general expenses and profit included, | | |  |
| Transportation: All kinds of services and expenses for horizontal and vertical transportation in the workplace, including contractor's profit and general expenses, for the transportation of all kinds of loads and materials on all kinds of paved and unpaved roads measured over the carriageway by motor vehicles. | | |  |
| Supply and transportation of steel pipes with all necessary certificates and features to the workplace, supply and transportation of all kinds of assembly materials, making all kinds of excavations for laying pipes, bedding and jacketing, trench backfilling and compaction, welding and splicing of all types of pipes and fittings, laying them in ready channels, carrying out the necessary tests, all kinds of expenses, materials and losses, tools, equipment, horizontal and vertical transportation and labour expenses in the trench, contractor profit and general expenses included. | | |  |
| Measurement: This is the price, per 1 meter, for the lied steel pipeline in accordance with the dimensions in the project, relevant specifications and special unit descriptions. | | |  |
| Civ24 | ALLIGATION-7 (Paçal 7) | Construction of a caisson well and a Pumping Building (Including All Manufacturing and Transportation) | Pcs |  |
|  | Technical Description: A Caisson well and Lifting building shall be built with the dimensions and features specified in the tender documents, Project and Details, Materials used must have technical requirements, national and international certificates and markings, all fabrications shall comply with technical specifications and technical requirements. Caisson well and Lifting building contains all kinds of materials and losses, labour equipment and equipment expenses, loading at the workplace, horizontal and vertical transportation, unloading, contractor's general expenses and profit, 1 pcs price for all mentioned above: | | |  |
| Civ25 | ALLIGATION-8 (Paçal 8) | Horizontal shaft electro moto-pump with accessories (Hm: 280 - Q: 7 lt / s, 50 ps panel with start/stop indicators) The engine shall be manufactured in the United States. All materials and tool bags required for the engine to start, as well as the check valve and flanged valve). | Pcs |  |
|  | Technical Description: Horizontal shaft electro moto-pump with accessories (Hm: 280 - Q: 7 lt / s, 50 ps panel with start/stop indicators) The engine shall be manufactured in the United States. All materials and tool bags required for the engine to start, as well as the check valve and flanged valve, shall be PN 35). | | |  |
| Civ26 | ALLIGATION-9 (Paçal 9) | Construction of Covered Iron Manhole (including all kinds of metal parts required for the cover) | Pcs |  |
|  | Technical Description: Excavation; | | |  |
| Excavation on soft and hard soil ground; all kinds of materials and costs for excavation with machinery, loading on vehicles, transporting up to 25 meters, unloading to warehouse, filling place or embankment, laying, filling the gaps left in the excavation site after the construction, levelling and correcting the bottom and side walls of the excavated place, including losses and labour, equipment and supplies, contractor overheads and profits: | | |  |
| Prefabricated manhole chimney base element and manhole chimney (steam cured, 500-dose, rubber gasketed, pipe inlets with integrated gasket) (H: 1.00 m, internal dimensions: 0.80x0.80 m, wall thickness: 0.10 m) | | |  |
| Miscellaneous Profile and Sheet Metal Works; | | |  |
| Including the approval of the administration, and including making covers from iron works and supply and assembly of all kinds of metal parts according to its project, all types of materials and material losses, welding and workshop costs, workplace loading, horizontal and vertical transportation, unloading, labour, emery and brush cleaning of iron surfaces, 0.100 kg/m2 1st Coat, 0.100 kg/m2 2nd Coat (each coat in a different colour) antirust application, 0.100 kg/m2 1st Coat in any desired colour, painting with synthetic paint, all materials and losses, labour, including contractor's profit and overheads. | | |  |
| Note: Transportation of all kinds of materials to be used in the construction of the work to the workplace is included in the price. | | |  |
|  | | |  |
| It is the quantity in units calculated by measuring production on the site within the controlling organization's knowledge as long as it complies with the project. | | |  |
| Civ27 | 15.150.1005 | Pouring normal ready-mixed concrete in C 25/30 pressure strength class, grey colour, produced or purchased at the concrete plant and pressed with a concrete pump (including concrete transport) | m³ |  |
|  | Technical Description: The price of 1 m³ of normal ready mixed concrete in grey colour with a compressive strength of C 25/30 and poured in situ: where such ready mixed concrete mortar shall have been produced in a complete concrete facility suitable for concrete production (with a minimum 60m³/h capacity, with four-eyed aggregate hopper, compressor and control cabinet, computer controlled, having a cement silo with a min. capacity of 50 tons, with conveyor belt system, recovery unit, laboratory capable of performing aggregate and concrete tests, generator, enough truck mixers and mobile concrete pumps, at least one loader, additive tank and additive weighing bunker, moisture meter and all kinds of similar teams and equipment, periodically calibrated concrete production facility) in accordance with the standard and project, after being washed, sieved granulometric sand-gravel and/or crushed stone, cement, water and, if necessary, additives and ready mixed concrete mortar produced in C 25/30 class or purchased from a concrete facility with these qualities; concrete quality controls, loading into truck mixers, transporting to the workplace, pressing with a concrete pump to the pouring location, placing, compaction with vibrator, irrigation, protection and maintenance from cold, heat and other external influences, taking samples for the necessary and sufficient number of tests, and carrying out the necessary tests, any labour material and loss required, machinery, equipment and laboratory expenses, all kinds of horizontal and vertical transports in the workplace, loading and unloading, loading the granulometric sand, gravel or crushed stone into the concrete body and the cement from the place where it is procured, produced or purchased, transportation to the concrete plant, unloading from vehicles, stacking, placing in the concrete plant, supply and transport of water used in concrete and for irrigation, supply of concrete plant and all other equipment, with depreciation expenses including any other expenses and contractor overheads and profits. | | |  |
| Measurement: It is calculated over the dimensions in the project. | | |  |
| Note: | | |  |
| 1) The facility where the produced or purchased concrete is produced must have other documents required by the TSE and its legislation and submit these documents to the administration before starting production. Provided that the submitted documents are determined to be appropriate, and it is allowed to be used, it will be possible to use the concrete with a certificate of conformity produced or purchased in this facility and which also meets the market supply conditions according to the current legislation. | | |  |
| 2) In case the concrete is procured by purchasing, a copy of the invoices on which the name of the work is stated must be attached to the payment documents. | | |  |
| 3) The cost of the additive material to be added to the concrete body shall be paid separately. | | |  |
| 4) If the pump is not used, the pump cost is deducted from the analysis. | | |  |
| Civ28 | 15.210.1004 | Bottoming using quarry rock | m³ |  |
|  | Technical Description: After smoothening the surface to be bottomed, bottoming in the desired elevation and dimensions using 1,100 m³ quarry rock (Pose No: 19.100.2015), compacting, materials and material losses of all types, labour, tools and equipment necessary for loading, vertical and horizontal transportation, unloading, loading the rocks up from the quarry, unloading, and stockpiling such rocks, (excluding the transportation costs from the quarry to the site) and one meter square price of the bottoming works including the Contractor’s profit and overheads. | | |  |
| Measurement: It is calculated over the dimensions in its project. | | |  |
| Civ29 | 15.555.1003 | Building fence with 1.50 m height with a diameter of Ø 4.5 mm, with 50 x 150 mm mesh spacing, with min. 3 twisted hot-dip galvanized and electrostatic polyester powder coated panel wires (application on the wall with a pole spacing of 2.5 m) | m |  |
|  | Technical Description: Drilling the places where the fence post will be mounted, with a distance of approx. 2.5 m, on the surfaces that will not scatter when drilled with a drill such as reinforced concrete wall, concrete cork etc., installation of poles with a height of 1.50 m, 50 x 50x 1.5 mm in size, 120 x 120 x 5 mm flanged, hot-dip galvanized, electrostatic polyester powder-painted poles in the same direction, from 4 places, plumb and in the same direction, installing wires in the form of panels between the poles, at a height of 1.50 m, Ø 4.5 mm in diameter, with 50 x 150 mm eye spacing, with min. 3-twisted hot-dip galvanized coating and electrostatic polyester powder painted, at 3 points on each pole with mounting clips, all kinds of materials and losses, loading at the construction site, horizontal and vertical transportation, unloading, labour, tools and equipment expenses, contractor's general expenses and profit, 1 m price for all mentioned above: | | |  |
| Measurement: It is measured over the dimensions in its project. | | |  |
| Civ30 | 15.180.1003 | Making a flat surface reinforced concrete formwork with plywood | m² |  |
|  | Technical Description: According to the project and its specification; The price per 1 m² for building flat-surfaced concrete and reinforced concrete formwork from 21 mm thick plywood (film-covered) artificial boards with oiled inner surface, reinforcing it to withstand the vibration deemed necessary, dismantling the formwork, including all kinds of materials and losses and workmanship, vertical-horizontal transportation at the workplace, loading-unloading, contractor’s overhead expenses and profit: | | |  |
| Measurement: Mould faces shall be calculated based on the project or by measuring in situ. Perimeter moulds of manufacturing holes for which the void volume is not subtracted are not included in the measurement. The hole gap is not removed from the face of the hole on the mould side. | | |  |
| Note: | | |  |
| 1) Formwork scaffolding is paid separately. | | |  |
| 2) The material coming out of the mould belongs to the contractor. | | |  |
| Civ31 | 15.160.1003 | Ø 8- Ø 12 mm ribbed concrete steel bar, cutting, bending and repositioning of bars | Ton |  |
|  | Technical Description: The price of 1 ton, including the preparation of the ribbed concrete steel bar by cutting and bending according to the detail project, including iron, binding wire and all kinds of necessary materials and losses for its fastening, loading at the construction site, horizontal and vertical transportation, unloading, workmanship, contractor general expenses and profit: | | |  |
| Measurement: | | |  |
| 1) According to the reinforced concrete project reinforcement details, the length of the iron is measured with the clasps. | | |  |
| 2) The weights of the steel bars are taken from the table below. | | |  |
| 3) Steel bars and attachments not shown in the project are not taken into account. | | |  |
| 4) The weights in the chart (m) are based on the calculation. No additional payment is made as the tie wire; the steels to be used between the steel bar rows and the loss are taken into account in the analysis. | | |  |
| Diameter (Ø) Unit Weight | | |  |
| mmKg/m | | |  |
| 80,395 | | |  |
| 100,617 | | |  |
| 120,888 | | |  |
| Civ32 | 15.160.1004 | Ø 14- Ø 28 mm ribbed concrete steel bar, cutting, bending and repositioning of bars | Ton |  |
|  | Technical Description: The price of 1 ton, including the preparation of the ribbed concrete steel bar by cutting and bending according to the detail project, including iron, binding wire and all kinds of necessary materials and losses for its fastening, loading at the construction site, horizontal and vertical transportation, unloading, workmanship, contractor general expenses and profit: | | |  |
| Measurement: | | |  |
| 1) According to the reinforced concrete project reinforcement details, the length of the iron is measured with the clasps. | | |  |
| 2) The weights of the steel bars are taken from the table below. | | |  |
| 3) Steel bars and attachments not shown in the project are not taken into account. | | |  |
| 4) The weights in the chart (m) are based on the calculation. No additional payment is made as the tie wire; the steels to be used between the steel bar rows and the loss are taken into account in the analysis. | | |  |
| Diameter (Ø) Unit Weight | | |  |
| mmKg/m | | |  |
| 141,208 | | |  |
| 161,578 | | |  |
| 181,998 | | |  |
| 202,466 | | |  |
| 222,984 | | |  |
| 243,551 | | |  |
| 264,168 | | |  |
| 284,834 | | |  |

**Electrical Works**

|  |
| --- |
| **SINOP KOZUCAĞIZ VILLAGE WATER TRANSMISSION LINE**  **ENERGY TRANSMISSION LINE WORK GROUP** |

|  |  |  |  |
| --- | --- | --- | --- |
| **S.** | **Pose No** | **Type of Manufacture** | **Unit** |
| ENH 1 | 03.1.2-002 | ø8mm Solid Copper Bar (0.45 kg/m) | kg |
|  | Technical Description: a) Material: Electrolytic copper busbars with rectangular or circular cross-sections, hollow or solid, in accordance with the specification and standard in every cross-section. The material cost of the flexible spacer to be used when necessary, shall be paid from the material price of the copper busbar. | | |
|  | b) Installation: Transportation of the busbars, insurance costs required for transportation, cutting and bending, drilling, painting and lacquering of the busbars in accordance with the specifications and installation, placing flexible (elastic) spacers where necessary for installation (material cost shall be paid separately) and the material and installation cost of the materials such as brass bolts, terminal blocks, cables serfil (bar holder) etc. to connect the cable shoe and post insulators are included in the installation unit price. | | |
| ENH 2 | 05.1.II | Painted Welded Iron Post (BAHH) | kg |
|  | Technical Description: a) Material: Profile iron, sheet metal plate and round bars required for the manufacture of railings in accordance with the Standard and Electrical General Technical Specifications. | | |
|  | b) Installation: Production of poles and railings in accordance with the specification and project, cleaning the rust and dirt on the iron surfaces and painting them with one layer of sulyan (or equivalent) and two layers of oil paint (or equivalent), transporting the finished poles to the pit heads, digging pits on all kinds of coatings and floors, dumping the soil and rock to the place indicated by the administration, manufacturing, assembling and erecting the pole, building 200-dose foundation and 300-dose raincoat concrete (with polishing), numbering the poles according to the project, and restoring the deteriorated pavements (In necessary cases, if a special foundation is built, extra shall be paid separately for the excess of the normal foundation.) | | |
| ENH 3 | 05.4.II | Painted Iron Traverse and Console (BAHH) | kg |
|  | Technical Description: a) Material: Profile iron, sheet metal plate and round bars required for the manufacture of railings in accordance with the Standard and Electrical General Technical Specifications. | | |
|  | b) Installation: Production of traverses and consoles in accordance with its specification and project, their transport to the poles and their installation, painting as specified in Pos 5, 1, b. (Material and installation costs of bolts, nuts, hooks and washers required for installation are included in the installation unit price.) | | |
|  | Note: | | |
|  | 1. The installation cost of iron traverses has been determined assuming that they will also be used on iron, concrete and wooden poles. | | |
|  | 2. In the payments, the weights of the profile iron, sheet metal and flat bars that make up the traverses and consoles are based on the project. In cases not shown in the project, the weight calculation is made according to the (standard) metric weight charts used in the project calculations. The scale is not based. The difference in rolling stock has been taken into account in the installation unit prices. | | |
|  | 3. In cases where it is obligatory to use traverses and consoles of different types and sizes that are not in the project due to the situation of the poles, the payment shall be based on the weights to be calculated in accordance with the principles stated above for the type and size of the traverse and console to be given by the employer. | | |
|  | 4. Waste and welding weights shall not be added to the weights, as well as the bolt hole weights shall not be deducted and the weights of clamps, hooks, bolts and nuts are not taken into account. Their materials and installation are included in the installation price. The weights of the traverse backs used in the installation of the traverses and the weights of the boxes used for the insulator installation shall be taken into account in the calculation of the weight of the traverse. | | |
| ENH 4 | 09.3.1-002 | SWALLOW St-Aluminium Conductor (to Concrete Pole) | kg |
|  | Technical Description: a) Material: Quality braided steel-aluminium conductor in accordance with its specification and standard. | | |
| b) Installation: With the conditions in Pos 9.2.b. Suspension and tension sets and the price of the pressed ball head used instead of clamp in tensioning sets is paid separately. | | |
| NOTE: | | |
| 1. When the conductors in Pose 9.1., 9.2., 9.3., 9.4. and 9. are mounted on the SBA concrete pole, the conductor installation cost is increased by 10%. | | |
| 2. For copper conductors, double terminals shall be used at the ends, stoppers and ball heads suitable for their cross-section, and single terminals shall be used for the jumpers. (Excluding the use of hanger and tensioning hardware sets.) | | |
| 3. For Al conductors, one terminal shall be used at each stopper and ball heads in jumps and branches suitable for their cross-section, and a bending joint pipe shall be used in the joints. For St-AI conductors, hanger and tensioner set suitable for their cross-section shall be used. | | |
| 4- In the assembled conductors, the payments for the material and installation are made according to the kilometric weights shown against the sections in the Unit Price Book and the actual distances between the poles measured with a tachometer between the centres of the poles. Kilometric weights include deflection, seam sewing and losses, and calculations are made using the same kilometric weights for the conductor given by the administration. | | |
| 5- The distances between the poles measured with a tachometer between the centres of the poles are taken as a basis for the material and installation payments shown in Pose 9.5. Deflection and loss difference is included in the material and installation unit prices. | | |
| ENH 5 | 11.4-006 | 36 kV VHD-35 HH Normal Post Insulator | Pcs |
|  | Technical Description: a) Material: LV and MV overhead line post insulator in accordance with its specification and standard. LV insulators without ferrule, MV-VHD type insulators with ferrule and VKS type insulators with galvanized base, connecting bolt, nut and washer. Normal types of MV insulators (VHD-VKS type) shall have a leakage distance of 20mm/kV and fog types shall have a leakage distance of 25mm/kV. | | |
| b) Installation: transportation of insulators to the poles, insurance costs required for transportation, fixation of insulator rebars according to the specification, materials required for fixation and installation of insulators attached to irons to traverses. (Insulator iron shall be paid separately for LV insulators and MV VHD type insulators. Insulator iron price is not paid for VKS type insulators.) | | |
| ENH 6 | 11.5-017 | C-35 Iron Traverse (Carrier) Insulator Rebar | Pcs |
|  | Technical Description: a) Material: Insulator rebar with a quality in accordance with the specification, made by blowing, galvanized by hot-dip method in accordance with the standard, screwed or notched part entering the insulator, together with its nut and washer. (Galvanization shall be smooth and the screw part shall not be stripped under any circumstances.) | | |
| b) Installation: Since the transportation of the insulator rebars and the insurance costs and installation costs required for transportation are included in the assembly of the insulator, only the material cost of the irons is paid. | | |
| ENH 7 | 11.6.3-001 | 40kN/11B Composite Silicon Hanger and Tension Insulator | Pcs |
|  | Technical Description: a) Material: Composite silicone suspension and tension insulators manufactured in accordance with its specification and standard. There shall be two types, 40 kN and 100 kN, according to the minimum mechanical breaking load, the minimum nominal leakage path length (900mm) is 25mm/kV and the composite silicone insulators pin ball, socket capillary dimensions shall be in accordance with the dimensions specified in the specification. | | |
| b) Installation: With the conditions in Pos 11.9.b. | | |
| ENH 8 | 11.8-001 | Single Tension Assembly: Swallow-3/0 | Sets |
|  | Technical Description: a) Material: Complete tension assembly, including the stopper and tension clamp for end-of-line insulators, with the conditions of item 11.7.a. If a press ball head is used instead of a tension clamp, the Al clamp price specified in the unit price book is deducted from the set price and the press ball head price in Pos 10.2. is added. | | |
| b) Installation: With the conditions in item 11.9.b. | | |
| ENH 9 | 14.1 | Hanger Wire (Steel Rope) | kg |
|  | Technical Description: a) Material: Supply of the braided wire rope whose cores are arranged as (6x1) and whose outer diameter is 6 mm, to be used for fixing the subscriber cable by hanging it in the air, as well as their fastening and tensioning device. | | |
| b) Installation: Transportation of the material and transportation insurance costs, fixing and tensioning the wire to the cable, pole and wall in a proper way, all kinds of materials and installation costs including bolts, hooks, nuts, tandoori crochet (max 1 in 50 cm), tensioning device, wedge, etc. are included in the installation unit prices. | | |
| ENH 10 | 15.2-010 | 36kV, 10kA ZnO Surge Arrester | Pcs |
|  | Technical Description: a) Material: An LV and MV type external type surge arrester with serial jump spaces, variable resistance, porcelain casing, internal pressure limiting device, or MV external type surge arrester with variable metal oxide resistance, without jump gap, ceramic or polymer casing, in accordance with its specification and standard. In MV surge arresters, the leakage distance of the porcelain or polymer housing shall be 25 mm/kV, (in the types mounted with clamps; the material cost of hot-dip galvanized mounting clamps, connection bolts, nuts and washers are included in the material price of the surge arresters.) | | |
| b) Installation: The transportation of surge arresters, the insurance costs required for transportation, their installation according to technical rules, (The connection between the conductor and the surge arrester shall be made properly with solid copper or aluminium conductor, the overhead line terminals used in the connection of copper to the surge arrester, the cable lug, and two metal (Al -Cu) line terminals used for the connection to the steel-aluminium conductor, the material and assembly costs of the necessary bolts for fastening the surge arrester clamp to the traverse or mounting surge arresters to the stand are included in the assembly unit price.) The iron cost used for the fixation of surge arresters is paid separately in accordance with Pos 5.4.1 or 5.5.2. If the surge arrester is mounted on the pole or panel, the installation costs do not change. | | |
| ENH 11 | 17.10-002 | Grounded Disconnector Control Assembly | Pcs |
|  | Technical Description: a) Material: Complete control mechanism in accordance with its specification, including control pipes and connection parts for controlling all kinds of indoor and outdoor type sections from the ground or outside the cell. | | |
| b) Installation: The transportation of the control device, the costs necessary for transportation, the installation and the material and installation cost of the necessary bolts, nuts, hooks, clamps, guide bearings, flexible cable, etc., are included in the material unit price of the control device, | | |
| ENH 12 | 17.8-007 | 36kV, 400A, 8kA External Type Fused-Grounded-Disconnector | Pcs |
|  | Technical Description: a) Material: Complete external type earthed sectioner with earthing blade and mechanical interlock, with the conditions in item 17,a,. | | |
| b) Installation: With the conditions in Pos 17.b., the material and assembly unit price of the padlock is included in the assembly unit price. | | |
| ENH 13 | 17.9-023 | 36kV, 2-20A MV Fuse Bushing | Pcs |
|  | Technical Description: a) Material: Fuse plug (bushing) for internal and external type sectioners in accordance with the specification and standard. Fuse plugs (bushing) shall be of porcelain and with optical indicators. (Since unit prices are prepared according to the fuse button (bushing) with an optical indicator, payment is made by deducting 30% from the unit price of the material if it is not equipped with an optical indicator.) | | |
| b) Installation: The transportation of the fuse plugs (bushing), the insurance costs required for transportation and their installation are included in the unit price of the sectional assembly. | | |
| ENH 14 | 24.4.1-002 | 100 kVA 3x160 A Auto Switch Indoors Type LV Panel | Pcs |
|  | Technical Description: a) Material: A complete panel, ready to use, with the following devices installed, with the connections between devices installed, with the experiments made, in accordance with the specifications and standards, with qualifications and measurements in accordance with the General Technical Specification for Electricity Distribution Facilities and the principles of the High Current Regulation, minimum 2 mm, made of DKP sheet. Panels shall be painted with polyester type powder paint with electrostatic painting method in colour code (RAL-7032) at a thickness of 65 microns. Small parts that cannot be painted or hot galvanized shall be electro galvanized or made of stainless steel with a thickness of at least 12 microns. It shall be made in accordance with the picture found in the specifications of the enclosure section of the panel. The panels shall contain the measurement and protection materials, whose electrical properties are specified according to their power, single line schemes, and whose names are written below in accordance with the specification and standard. | | |
| Thermal magnetic automatic switch (compact type), | | |
| Switch-disconnector with fuse (complete with fuse). (In the tenders before 1991, sensitive switch can be accepted.), | | |
| Contactor, | | |
| Time switch (with clock or photocell type), | | |
| Active street counter, | | |
| Ammeter, | | |
| Voltmeter, | | |
| Voltmeter commutator, | | |
| Current transformer, | | |
| Copper busbar. (The main busbar shall be suitable for its project or at least 40x30 mm. Neutral busbar shall have the same cross-section as phase busbar. | | |
| Plug-in fuse | | |
| Lampholder and bulb | | |
| LV post insulators | | |
| Single-phase socket | | |
| Three-phase socket | | |
| All kinds of connection cables | | |
| Aluminium record | | |
| Door limit switch, | | |
| Serfil (Bar holder), | | |
| Rail clamp, | | |
| Grounding socket, | | |
| Electrostatic powder paint, | | |
| Rubber gasket, | | |
| Hinge, | | |
| - Lock, | | |
| Key, | | |
| Glass wool, | | |
| Label, | | |
| Flexglass, | | |
| Packaging. Apart from these materials, the materials and assembly costs of the materials to be mounted inside the panel upon the request of the administration shall be paid separately from the relevant poses. Moreover; if the assembly of any of the materials that should be in the complete panel is waived upon the request of the administration, the material and assembly cost of this material in the relevant pose shall be deducted from the panel price. Panels shall be manufactured in two types according to the type of enclosure, | | |
| B- Indoor Types: A complete panel in working condition with a window for the busbar output, with the window part covered with an insulating fibre plate, with holes suitable for the busbar output left on the fibre plate, all electrical connections can be made from the front of the panel, manufactured in accordance with the drawing, without a door on the front and detachable on the back, with a bolted sheet metal cover, (fixed panel on which the devices are mounted on the front), with the cable entry left open at the bottom, with a flat upper part;. | | |
| B- Outdoor Types: Full panel in working condition, manufactured in accordance with the picture, with doors on the front and back, with a fixed panel on the front where the devices are mounted, with the bottom side left open on pole-mounted types, which has a roof inclined towards four directions and protruding 50 mm from the walls of the enclosure so that rain water can flow easily in the upper part, with aluminium fitting holes for inlets and outlets on the side of pole mounted types, where electrical connections can be made from the front or rear. | | |
| Characteristics of the panel and the main materials used in the panel according to their power: | | |
| 50 kVA Indoor and Outdoor Type LV Output Panel: | | |
| 3x80A Automatic Circuit breaker (Compact Type), 3 x 3x160A LV Fuse-Disconnector Circuit breaker (Complete with Fuse). | | |
| 100 kVA Indoor and Outdoor Type LV Output Panel: | | |
| 3x160A Automatic Circuit breaker (Compact Type), 3 x 3x160A LV Fuse-Disconnector Circuit breaker (Complete with Fuse). | | |
| 160 kVA Indoor and Outdoor Type LV Output Panel: | | |
| 3x250A Automatic Circuit breaker (Compact Type), 3 x 3x160A LV Fuse-Disconnector Circuit breaker (Complete with Fuse). | | |
| 250 kVA Indoor and Outdoor Type LV Output Panel: | | |
| 3x400A Automatic Circuit breaker (Compact Type), 4 x 3x250A LV Fuse-Disconnector Circuit breaker (Complete with Fuse). | | |
| 400 kVA Indoor and Outdoor Type LV Output Panel: | | |
| 3x630A Automatic Circuit breaker (Compact Type), 4 x 3x250A LV Fuse-Disconnector Circuit breaker (Complete with Fuse). | | |
| 630 kVA Indoor and Outdoor Type LV Output Panel: | | |
| 3x1000A Automatic Circuit breaker (Compact Type), 6 x 3x400A LV Fuse-Disconnector Circuit breaker (Complete with Fuse). | | |
| 1000 kVA Indoor and Outdoor Type LV Output Panel: | | |
| 3x1600A Automatic Circuit breaker (Compact Type), 6 x 3x400A LV Fuse Circuit breaker (Complete with Fuse). | | |
| 1250 kVA Indoor and Outdoor Type LV Output Panel: | | |
| 3x2000A Automatic Circuit breaker (Compact Type), 6 x 3x400A LV Fuse-Disconnector Circuit breaker (Complete with Fuse). | | |
| b) Installation: Transportation of the panels to the place where they will be installed in packaging, costs required for transportation; | | |
| A- In indoor type panels; fixation with studs, spring washers and bolts through four holes in the lower part of the panel (from the carcass). The material and assembly cost of the bolts, nuts, studs, washers, cement, sand etc. used in the assembly are included in the panel assembly price. | | |
| B- In external type panels; for the panels to be mounted on the pole, constructing a balcony made of profile iron on the pole, (the cost of the iron material related to the balcony is paid separately according to item 5.4.1 or 5.5.2.), fixing the panel on the balcony with 5/8 studs, bolts and spring washers. The material and assembly cost of the bolts, nuts, studs, washers etc. used in the assembly are included in the panel assembly price. In case the panel is mounted on a concrete base; building the concrete base, (the cost of the concrete base shall be paid separately according to the attachment), fixing the panel on the concrete base with 5/8 studs, washers, bolts and nuts, filling the concrete base with sand. | | |
| The material and assembly cost of the Bolts, nuts, studs, washers, cement, sand etc. used in assembly of the panel is included in the panel assembly price. | | |
| ENH 15 | 26.2-002 | Danger Sign (Aluminium-Medium) | Pcs |
|  | Technical Description: a) Material: Enamel or aluminium danger sign in accordance with its specifications and standards, and aluminium danger sign having the specifications defined in the Technical Specification for TEDAŞ Electricity Distribution Network Numbering Works regarding "Electrical Hazard" specified in the Safety and Health Signs Regulation published in the Official Gazette dated 23 December 2003 and numbered 25325 (new specification). | | |
| b) Installation: Transportation of the danger sign, insurance costs required for transportation. Installation of the danger sign on site according to the principles specified in the Technical Specification for TEDAŞ Electricity Distribution Network Numbering Works. The material and installation cost of clamps, flat blades, nails, bolts and nuts required for installation are included in the installation price. The mounting of the danger sign can also be done using rust and corrosion resistant steel clips. | | |
| ENH 16 | 30.2.2 | 50 mm² NYY Cable and Burying it | m |
|  | Technical Description: b) Installation: Installation of each extra meter of strip in soil, duct, wall or pole, if necessary, when extra galvanized grounding strip is used. Including the material and installation cost of all kinds of materials required for assembly. | | |
| ENH 17 | 30.03.2001 | 2 m long galvanized 65x65x7 angle iron and 5 m strip and burying them | Pcs |
|  | Technical Description: b) Installation: With the conditions in Pos 30.1.b. (If more than 5 meters of grounding strip is required, the unit price of material and installation in Item 30.1.1 is paid separately. | | |
| ENH 18 | 31.6.4.3-006 | 33/0.4-0.231kV, 100 kVA Hermetic Transformer to the Pole | Pcs |
|  | Technical Description: a) Material: MV / MV or MV / LV power transformers in accordance with its specification and standard, with three phase, two winding, oil immersed, with natural oil circulation, natural air cooling (ONAN) or forced oil circulation, forced air cooling (ONAF), manufactured as internal and external type. Power transformers shall have the maximum system voltages of 7.2-12-17.5-36 kV, with no-load tap changer up to 10MVA and five stages, after 10MVA with on-load tap changer and thirteen stages, rated frequencies 50Hz, rated powers 50-100 -160-250-400- 630- 1000-1250-1600kV at MV/LV, 0.5-1-2.5-4-5-6.3-10-16MVA at MV/MV, connection groups MV/LV and Dyn 11, MV/MV Dyn 5, losses (up to 630kVA), designed and manufactured at the values stipulated in TSE 1055. All transformers shall be filled with oil in accordance with the specification and shall be delivered with all the equipment specified in the specification. Accordingly, in MV/LV transformers: Oil level indicator in all transformers, alcohol thermometer with 250kVA and higher powers, air dryer and wheels. Double dial thermometer at 630kVA and above, Bucholz relay. In MV/MV transformers: Alcohol thermometer, double dial thermometer (In transformers where ONAF cooling is required, a separately adjustable double contact (start-stop) dial thermometer working with upper oil temperature shall be used for fan control.) Bucholz relay, oil level gauges (with alarm contacts), single contact gas relay for on-load tap-changer, pressure relief valve, control cabinet, wheels. In 12.5MVA and 20MVA powerful transformers with ONAF cooling system, mounted with fans; the complete unit with its motor, fan and all cooling system is included in the price. Transformers shall be fully operational. The material and assembly cost of all the above-mentioned additional equipment is included in the material price of the transformer. | | |
| b) Installation: Transport of transformers to the workplace, insurance costs required for transportation, installation in accordance with the project and specification. (The cost of the profile irons required for assembly shall be paid according to pose 5.4.1. or 5.5.2., the cost of the control cables between the transformer and the panel according to pos. 32., the cost of the concrete foundations of the outdoor transformers shall be paid separately according to the construction unit prices.) | | |
| ENH 19 | 32.15-002 | 1×50s/16 mm², 20.3/35 KV YXC7V ( N2XSY ) CABLE (XLPE INSULATED, PVC OUTER SHEATHED) (Laying on concrete duct, pole and walls) | m |
|  | Technical Description: a) Material: LV and MV cables manufactured in accordance with the specification and standard, | | |
| LV Cables: Y cables conforming to the relevant TSE standard and N cables conforming to the relevant TSE standard (0.6/1 kV). In single core cables; copper conductor, PVC insulator and PVC outer sheath. In multi-core cables; they are manufactured as copper conductor, PVC insulator, common sheath and PVC outer sheath. In addition, in multi-core cables with concentric conductors; concentric conductor and protection tape (in these cables the concentric conductor is used as the neutral conductor), and in multi-core cables with armour, there shall be armour made of galvanized flat steel wires and galvanized steel holding tape. LV cable conductors with a cross-section of 16mm2 and above shall be manufactured as multi-wire and compressed. The insulator material of these cables can be PVC or XLPE (cross-linked polyethylene). | | |
| MV Cables: XLPE (cross-linked polyethylene) insulated single core and three core cables used in voltage levels of 3.5/6 - 5.8/10 - 8.7/15 - 20.3/35 kV manufactured in accordance with the relevant TSE standards and IEC 502. In single core cables; copper conductor, inner semiconductor layer, XLPE (cross-linked polyethylene) insulator, outer semiconductor layer, semiconductor tape, copper shield, shielding tape and outer sheath. In three core cables; copper conductor, inner semiconductor layer, XLPE (cross-linked polyethylene) insulator, outer semiconductor layer, semiconductor tape, copper shield, common sheath, PVC separating sheath, galvanized flat steel wire armour, galvanized steel holding tape and outer sheath shall be available. The conductors of MV cables shall be multi-core and compressed. Cables without Q band shall be made of red colored PVC based material. Cable with XLPE (cross-linked polyethylene) insulation. | | |
| b. Installation: All Cable Tray INSTALLATION Unit Prices LAID UNDERGROUND given in poses 32.1-32.11 (included); it was made by taking into consideration the workmanship of laying the cable in the channel and the production of the Standard Soil Cable Channel (40x60x80cm) in size. Such that; | | |
| - Cable Installation in Standard Ground Duct: The transportation of the cable, the insurance costs required for the transportation, Preparation of 40x60x80cm standard cable duct according to its project, the Electricity Facilities High Current Installation Regulation, the Electricity Distribution Facilities General Technical Specification and TEDAŞ specifications, laying sand at the bottom of the duct, laying the cable in accordance with the specification, laying sand on the cable, placing protective elements such as crosswise brick (12 pieces per meter) or concrete block of 20x50x6cm (2 pieces per meter) on the cable, so that there is no gap in the whole channel, laying of the warning tape with the phrase "MV/LV ENERGY CABLE" written on it with 6 cm black font letters, made of flexible plastic, 20 cm above the Concrete Block or Brick (protective element), along the cable duct, 12 cm wide, at least 0.1 mm thick, compressing the soil etc. coming out of the canal excavation and filling it up to the road level. | | |
| All kinds of materials (excluding the cable material cost), excavation, transportation and workmanship costs for these operations, as well as the disposal of the surplus stone and soil to the place indicated by the administration, are included in the assembly unit price. The cable length shall be taken as the basis for the channel length. In this case, although it is known that the length of the excavated duct shall be less than the length of the cable, the extra length difference fee paid to the cable duct was accepted as the cost of expansion Due to the "S", and additional manhole construction, since no additional cost is paid to the expanded ducts for the bends of the cables to be left extra by making an "S" at the cable joints and at the end, as per the Electrical General Technical Specification. | | |
| - Cable Installation in Standard All-In Cable Tray: The transportation of the cable, the insurance costs required for the transportation, Preparation of 40x60x80cm standard cable duct according to its project, the Electricity Facilities High Current Installation Regulation, the Electricity Distribution Facilities General Technical Specification and TEDAŞ specifications, laying sand at the bottom of the duct, laying the cable in accordance with the specification, laying sand on the cable, placing protective elements such as crosswise brick (12 pieces per meter) or concrete block of 20x50x6cm (2 pieces per meter) on the cable, so that there is no gap in the whole channel, laying of the warning tape with the phrase "MV/LV ENERGY CABLE" written on it with 6cm black font letters, made of flexible plastic, 20cm above the Concrete Block or Brick (protective element), along the cable duct, 12 cm wide, at least 0.1 mm thick. The transportation of all the soil and rubble coming out of the canal to the place indicated by the administration, supply and to-site transportation of the all-in materials to be deemed appropriate by the relevant administration (Municipality or Highways Administration, etc.) based on the unit price definitions of the Ministry of Public Works and Settlement Pos No. 15.140/2, filling in the canal, levelling, ramming, presentation and compaction, including all kinds of workmanship, material and losses, loading at the workplace, horizontal and vertical transportation costs are included in the assembly unit price. | | |
| ENH 20 | 35.105.1332 | Up to 40 A (10 kA), Switched Automatic Fuses (10 kA breaking capacity) | Pcs |
|  | Technical Description: Switched Automatic Fuses (10 kA breaking capacity) (Measurement: Pcs) Supply and installation of an automatic fuse with a short circuit breaking capacity of only 10 kA with the same features as BFT No 35.105.1100, including all kinds of materials and labour. | | |
| ENH 21 | 35.115.1021 | Up to 4x40 A (30 mA), Residual current circuit breakers (TS EN 61008-1/TS EN 61008-2-1) | Pcs |
|  | Technical Description: Residual current protection switches: (Measurement: Pcs) Supply and installation of residual current circuit breaker, built in accordance with the Electrical Indoor Installation Regulations, specifications and standards, which provides the safety of life and property by interrupting the circuit within 1030 ms. by sensing the faulty current occurring on the phases and neutral line when there is any leakage in the electrical installations, operating at 220 V in single-phase circuits and 380 V in three-phase circuits, with differential coil, with test button on it to check whether the system is working or not, that can be mounted on the in-table transport rails, protected against external influences, rated 30 mA for life protection and 300 mA for fire protection, able to operate even with neutral line disconnection, launched to the market with CE conformity mark in accordance with TS EN 61008-1, TS EN 61008-2-1 standards, delivery in working condition, including all kinds of materials and labour. | | |
| ENH 22 | 35.115.1061 | Up to 4x40 A (300 mA), Residual current circuit breakers (TS EN 61008-1/TS EN 61008-2-1) | Pcs |
|  | Technical Description: Residual current protection switches: (Measurement: Pcs) Supply and installation of residual current circuit breaker, built in accordance with the Electrical Indoor Installation Regulations, specifications and standards, which provides the safety of life and property by interrupting the circuit within 1030 ms. by sensing the faulty current occurring on the phases and neutral line when there is any leakage in the electrical installations, operating at 220 V in single-phase circuits and 380 V in three-phase circuits, with differential coil, with test button on it to check whether the system is working or not, that can be mounted on the in-table transport rails, protected against external influences, rated 30 mA for life protection and 300 mA for fire protection, able to operate even with neutral line disconnection, launched to the market with CE conformity mark in accordance with TS EN 61008-1, TS EN 61008-2-1 standards, delivery in working condition, including all kinds of materials and labour. | | |
| ENH 23 | 35.120.1454 | up to 250 V, MARKER LAMPS | Pcs |
|  | Technical Description: MARKER LAMPS: (Measurement: Pcs) The supply of the marker lamp in accordance with the TS 2575 EN 60073 standard, recessed type, in the colours specified in the standard according to the place to be used, its transportation to the workplace, its assembly and connection, delivery in working condition. (Socket and bulb are included in the price.) | | |
| ENH 24 | 35.140.3108 | 1x95 mm², 1 kV underground cables and column and supply line installation YVV (NYY) (TS IEC 60502-1+A1) | m |
|  | Technical Description: Column and supply line installation with YVV (NYY) type 1 kV underground cables: (Measurement: m) Establishment of column and supply line with YVV (NYY) type 1 kV underground cables in accordance with TS IEC 60502-1+A1 standards. On-site supply of underground cable for laying on the plaster inside the building, on the wall, ceiling or in channels over consoles or clasps, and in ducts outside the building, with passage and safety pipes, including all kinds of materials, clasp and workmanship. Measurement: The length of the cable between the terminal box and the headers is measured. More than one cable laid in the same duct shall be kept separately in conduits or pipes of the required diameter and length at the transition points. Terminal box, head, junction box, console, cable duct and manhole shall be paid separately. Iron manufacturing shall be paid from BFT (Unit Price Tariff) No 15.550.1202. No additional fee shall be paid for transition ducts and pipes up to a total of 10 meters. Note: They shall have been manufactured in accordance with TS EN 50575 and TS EN 50575 / A1 standards, 305/2011/EU Construction Materials Regulation, launched to the market with the CE conformity mark, and shall have the Performance Declaration of the manufacturer and the Performance Constancy Certificate obtained from the organizations accredited by the European Union. | | |
| ENH 25 | 35.140.3224 | 4x10 mm², 1 kV underground cables and column and supply line installation YVV (NYY) (TS IEC 60502-1+A1) | m |
|  | Technical Description: Column and supply line installation with YVV (NYY) type 1 kV underground cables: (Measurement: m) Establishment of column and supply line with YVV (NYY) type 1 kV underground cables in accordance with TS IEC 60502-1+A1 standards. On-site supply of underground cable for laying on the plaster inside the building, on the wall, ceiling or in channels over consoles or clasps, and in ducts outside the building, with passage and safety pipes, including all kinds of materials, clasp and workmanship. Measurement: The length of the cable between the terminal box and the headers is measured. More than one cable laid in the same duct shall be kept separately in conduits or pipes of the required diameter and length at the transition points. Terminal box, head, junction box, console, cable duct and manhole shall be paid separately. Iron manufacturing shall be paid from BFT (Unit Price Tariff) No 15.550.1202. No additional fee shall be paid for transition ducts and pipes up to a total of 10 meters. Note: They shall have been manufactured in accordance with TS EN 50575 and TS EN 50575 / A1 standards, 305/2011/EU Construction Materials Regulation, launched to the market with the CE conformity mark, and shall have the Performance Declaration of the manufacturer and the Performance Constancy Certificate obtained from the organizations accredited by the European Union. | | |
| ENH 26 | 35.140.3228 | 4x50 mm², 1 kV underground cables and column and supply line installation YVV (NYY) (TS IEC 60502-1+A1) | m |
|  | Technical Description: Column and supply line installation with YVV (NYY) type 1 kV underground cables: (Measurement: m) Establishment of column and supply line with YVV (NYY) type 1 kV underground cables in accordance with TS IEC 60502-1+A1 standards. On-site supply of underground cable for laying on the plaster inside the building, on the wall, ceiling or in channels over consoles or clasps, and in ducts outside the building, with passage and safety pipes, including all kinds of materials, clasp and workmanship. Measurement: The length of the cable between the terminal box and the headers is measured. More than one cable laid in the same duct shall be kept separately in conduits or pipes of the required diameter and length at the transition points. Terminal box, head, junction box, console, cable duct and manhole shall be paid separately. Iron manufacturing shall be paid from BFT (Unit Price Tariff) No 15.550.1202. No additional fee shall be paid for transition ducts and pipes up to a total of 10 meters. Note: They shall have been manufactured in accordance with TS EN 50575 and TS EN 50575 / A1 standards, 305/2011/EU Construction Materials Regulation, launched to the market with the CE conformity mark, and shall have the Performance Declaration of the manufacturer and the Performance Constancy Certificate obtained from the organizations accredited by the European Union. | | |
| ENH 27 | 35.750.4003 | Conductor protective duct: (Measurement: Pcs: | Pcs |
|  | Technical Description: Conductive protective duct (Measurement: Pcs) Taking the down conductors into 3 m of 20 mm galvanized iron pipe, 0.5 m of which remains in the soil (if more than 3 m of pipes are used, the cost shall be paid separately), insulating the part of the conductor inside the pipe with PVC or a similar insulating material to prevent contact with the pipe, and fixing it as a point-to-pipe conductor to prevent it from working as a transformer in case of lightning strike, inspection terminal made of material that will prevent corrosion, supply and assembly of all materials at the workplace, including all kinds of minor materials and labour. | | |
| ENH 28 | 40.2.1-002 | In all villages, regardless of population | Pcs |
|  | Technical Description: According to the certified survey report, the detailed studies of the networks specified in Clause 40 and the completion of the project and its approval. Only one of the fixed office costs in designing the project according to the nature of the project (Clause 40.1.2.-40.2.1.1.-Clause 40.2.2.-Clause. | | |

# SECTION 5A.2 DESIGN DRAWINGS

Please be informed that designed drawings are uploaded as a separate zip file among tender documents in e-tendering.

|  |  |  |
| --- | --- | --- |
| **DRAWINGS** | | |
| No | Drawing No | Drawing Name |
| 1 | CKIS-ARC-101 | IRRIGATION LINE PLAN |
| 2 | CKIS-ARC-102 | CASION WELL AND TRANSMISSION BUILDING PROJECTS |
| 3 | CKIS-ARC-103 | LINE COORDINATES |
| 4 | CKIS-ARC-104 | CAISION WELL COORDINATES |
| 5 | CKIS-ARC-105 | POOL PLACE COORDINATES |
| 6 | CKIS-ARC-106 | TRENCH TYPE SECTIONS |
| 7 | CKIS-ARC-107 | PANEL FENCE DETAIL |
| 8 | CKIS-ARC-108 | MENHOL COVER DETAIL |
| 9 | CKIS-ARC-109 | MENHOL PLAN AND SECTİON |
| 10 | CKIS-ARC-110 | POOL DRAWINGS |
| 11 | CKIS-ARC-111 | CAISION WELL DRAWINGS |
|  |  |  |
| **ELECTRICAL DRAWINGS** | | |
| No | Drawing No | Drawing Name |
| 1 | CKIS-ELC-101 | ENERGY TRANSMISSION LINE |

# Section 5b: Other Related Requirements

Further to the SECTION 5A: SCHEDULE OF REQUIREMENTS AND TECHNICAL SPECIFICATIONS, Bidders are requested to take note of the following additional requirements, conditions, and related services pertaining to the fulfilment of the requirements:

|  |  |
| --- | --- |
| Commencement of work | The Contractor shall commence work within 7 days from the date on which it is given access to the Site, and it receives the notice to commence from the Engineer |
| Time limit for submission of Programme of Work (Clause 13 of UNDP General Conditions of Contract for Civil Works) | The Contractor shall submit to the Engineer the Programme of Work in 15 days from the contract signature date. |
| Price and Payment Terms | The contract is based on unit price, and the final price of the Contract will be determined on the basis of actual quantities of work and materials utilized in the complete and satisfactory performance of the Works as certified by the Engineer and the unit prices contained in the Contractor's financial proposal. Such unit prices are fixed and are not subject to any variation whatsoever. |
| Currency of the Bid | United States Dollars (USD) |
| Interim Payment / Payment Terms | The Contractor shall submit an invoice for the work performed and materials utilized **every month**.  Advance payment of up to a maximum of 20 % of contract value is allowed following contract signature. However, the Contractor will be required to submit advance payment (bank) guarantee for the amount of advance payment in order to claim for the advance payment. |
| Insurance of work | For all risks stipulated by Clause 21 of UNDP General Conditions of Contract for Civil Works for the 110 % of the total estimated price of the Contract. |
| Minimum amount of liability insurance (Clause 23 of UNDP General Conditions of Contract for Civil Works) | 15% of the total estimated price of the Contract |

# Section 6: Returnable Bidding Forms / Checklist

This form serves as a checklist for preparation of your Bid. Please complete the Returnable Bidding Forms in accordance with the instructions in the forms and return them as part of your Bid submission. No alteration to format of forms shall be permitted and no substitution shall be accepted.

Before submitting your Bid, please ensure compliance with the Bid Submission instructions of the BDS 22.

**Technical Bid:**

|  |  |
| --- | --- |
| **Have you duly completed all the Returnable Bidding Forms?** |  |
| * Form A: Bid Submission Form |  |
| * Form B: Bidder Information Form |  |
| * Form C: Joint Venture/Consortium/ Association Information Form |  |
| * Form D: Qualification Form |  |
| * Form E: Format of Technical Bid |  |
| * From G: Form of Bid Security |  |
| **Have you provided the required documents to establish compliance with the evaluation criteria in Section 4?** |  |

**Price Schedule:**

|  |  |
| --- | --- |
| * Form F: Price Schedule Form/Bill of Quantities |  |

## 

## Form A: Bid Submission Form

|  |  |  |  |
| --- | --- | --- | --- |
| Name of Bidder: | [Insert Name of Bidder] | Date: | Select date |
| ITB reference: | UNDP-TUR-ITB(UR)-2022-143 | | |

We, the undersigned, offer to complete Construction of Pressurized Irrigation System for Kozcuğaz in Center District of Sinop Province in accordance with your Invitation to Bid No. UNDP-TUR-ITB(UR)-2022-143 and our Bid. We hereby submit our Bid, which includes this Technical Bid and Price Schedule.

Our attached Price Schedule is for the sum of [Insert amount in words and figures and indicate currency] for Construction of Pressurized Irrigation System for Kozcuğaz in Center District of Sinop Province

We hereby declare that our firm, its affiliates or subsidiaries or employees, including any JV/Consortium /Association members or subcontractors or suppliers for any part of the contract:

1. is not under procurement prohibition by the United Nations, including but not limited to prohibitions derived from the Compendium of United Nations Security Council Sanctions Lists;
2. have not been suspended, debarred, sanctioned or otherwise identified as ineligible by any UN Organization or the World Bank Group or any other international Organization;
3. have no conflict of interest in accordance with Instruction to Bidders Clause 4;
4. do not employ, or anticipate employing, any person(s) who is, or has been a UN staff member within the last year, if said UN staff member has or had prior professional dealings with our firm in his/her capacity as UN staff member within the last three years of service with the UN (in accordance with UN post-employment restrictions published in ST/SGB/2006/15);
5. have not declared bankruptcy, are not involved in bankruptcy or receivership proceedings, and there is no judgment or pending legal action against them that could impair their operations in the foreseeable future;
6. undertake not to engage in proscribed practices, including but not limited to corruption, fraud, coercion, collusion, obstruction, or any other unethical practice, with the UN or any other party, and to conduct business in a manner that averts any financial, operational, reputational or other undue risk to the UN and weembrace the principles of the United Nations Supplier Code of Conduct and adhere to the principles of the United Nations Global Compact.

We declare that all the information and statements made in this Bid are true and we accept that any misinterpretation or misrepresentation contained in this Bid may lead to our disqualification and/or sanctioning by the UNDP.

We offer to complete works in conformity with the Bidding documents, including the UNDP General Conditions of Contract and in accordance with the Schedule of Requirements and Technical Specifications.

Our Bid shall be valid and remain binding upon us for the period specified in the Bid Data Sheet.

We understand and recognize that you are not bound to accept any Bid you receive.

I, the undersigned, certify that I am duly authorized by [Insert Name of Bidder] to sign this Bid and bind it should UNDP accept this Bid.

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[*Stamp with official stamp of the Bidder*]

## 

## Form B: Bidder Information Form

|  |  |
| --- | --- |
| **Legal name of Bidder** | [Complete] |
| **Legal address** | [Complete] |
| **Year of registration** | [Complete] |
| **Bidder’s Authorized Representative Information** | Name and Title: [Complete]  Telephone numbers: [Complete]  Email: [Complete] |
| **Are you a UNGM registered vendor?** | Yes  No If yes, [insert UGNM vendor number] |
| **Are you a UNDP vendor?** | Yes  No If yes, [insert UNDP vendor number] |
| **Countries of operation** | [Complete] |
| **No. of full-time employees** | [Complete] |
| **Quality Assurance Certification (e.g. ISO 9000 or Equivalent)** *(If yes, provide a Copy of the valid Certificate):* | [Complete] |
| **Does your Company hold any accreditation such as ISO 14001 or ISO 14064 or equivalent related to the environment?** *(If yes, provide a Copy of the valid Certificate):* | [Complete] |
| **Does your Company have a written Statement of its Environmental Policy?** *(If yes, provide a Copy)* | [Complete] |
| **Does your organization demonstrate significant commitment to sustainability through some other means, for example internal company policy documents on women empowerment, renewable energies or membership of trade institutions promoting such issues** | [Complete] |
| **Is your company a member of the UN Global Compact** | [Complete] |
| **Contact person that UNDP may contact for requests for clarifications during Bid evaluation** | Name and Title: [Complete]  Telephone numbers: [Complete]  Email: [Complete] |
| **Please attach the following documents:** | * Company Profile, which should not exceed fifteen (15) pages, * Certificate of Incorporation/ Business Registration * Trade name registration papers, if applicable * Signature Circular/Power of Attorney * Official Letter of Appointment as local representative, if Bidder is submitting a Bid on behalf of an entity located outside the country |

## Form C: Joint Venture/Consortium/Association Information Form

|  |  |  |  |
| --- | --- | --- | --- |
| Name of Bidder: | [Insert Name of Bidder] | Date: | Select date |
| ITB reference: | UNDP-TUR-ITB(UR)-2022-143 | | |

To be completed and returned with your Bid if the Bid is submitted as a Joint Venture / Consortium / Association.

|  |  |  |
| --- | --- | --- |
| **No** | **Name of Partner and contact information** *(address, telephone numbers, fax numbers, e-mail address)* | **Proposed proportion of responsibilities (in %) and type of goods and/or services to be performed** |
| 1 | [Complete] | [Complete] |
| 2 | [Complete] | [Complete] |
| 3 | [Complete] | [Complete] |

|  |  |
| --- | --- |
| **Name of leading partner**  (with authority to bind the JV, Consortium, Association during the ITB process and, in the event a Contract is awarded, during contract execution) | [Complete] |

Proposers shall attach either one of the copies of the below documents signed by every partner, which details the likely legal structure of and the confirmation of joint and severable liability of the members of the said joint venture:

Letter of intent to form a joint venture (JV)

or

JV / consortium / association agreement

We hereby confirm that if the contract is awarded, all parties of the Joint Venture/Consortium/Association shall be jointly and severally liable to UNDP for the fulfillment of the provisions of the Contract.

|  |  |
| --- | --- |
| Name of partner: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Name of partner: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  |  |
| Name of partner: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

## Form D: Eligibility and Qualification Form

|  |  |  |  |
| --- | --- | --- | --- |
| Name of Bidder: | [Insert Name of Bidder] | Date: | Select date |
| ITB reference: | UNDP-TUR-ITB(UR)-2022-143 | | |

If JV/Consortium/Association, to be completed by each partner.

**History of Non- Performing Contracts**

|  |  |  |  |
| --- | --- | --- | --- |
| Non-performing contracts did not occur during the last 3 years. | | | |
| Contract(s) not performed in the last 3 years. | | | |
| **Year** | **Non- performed portion of contract** | **Contract Identification** | **Total Contract Amount** (current value in US$) |
|  |  | Name of Client:  Address of Client:  Reason(s) for non-performance: |  |
|  |  | Name of Client:  Address of Client:  Reason(s) for non-performance: |  |
|  |  | Address of Client:  Address of Client:  Reason(s) for non-performance: |  |

**Litigation History** (including pending litigation)

|  |  |  |  |
| --- | --- | --- | --- |
| No litigation history for the last 3 years. | | | |
| Litigation History as indicated below | | | |
| **Year of dispute** | **Amount in dispute** (in US$) | **Contract Identification** | **Total Contract Amount** (current value in US$) |
|  |  | Name of Client:  Address of Client:  Matter in dispute:  Party who initiated the dispute:  Status of dispute:  Party awarded if resolved: |  |

**Previous Relevant Experience**

Please list only previous similar assignments successfully completed in the last 5 years.

List only those assignments for which the Bidder was legally contracted by the Client as a company or was one of the Consortium/JV partners. Assignments completed by the Bidder’s individual experts working privately or through other firms cannot be claimed as the relevant experience of the Bidder, or that of the Bidder’s partners or sub-consultants, but can be claimed by the Experts themselves in their CVs. The Bidder should be prepared to substantiate the claimed experience by presenting copies of relevant documents and references if so requested by UNDP.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Project name & Country of Assignment** | **Client & Reference Contact Details** | **Contract Value (in USD equivalent\*)** | **Period of activity and status** | **Types of activities undertaken** |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

* Bidders shall convert the currency quoted in the “Certificate of Completion” into USD, in accordance with the prevailing UN operational rate of exchange on the date of completion of claimed reference contract. UN operational rate of exchange are available at the following website: <https://treasury.un.org/operationalrates/OperationalRates.php#E>

*Bidders may also attach their own Project Data Sheets with more details for assignments above.*

*Bidders shall submit* Statements of Satisfactory Performance (i.e. Reference Letters, Work Completion Certificates) along with their bids. Reference letters and/or Completion Certificates shall include the information requested in above table at minimum.

Please refer to SECTION 4. EVALUATION CRITERIA of the ITB for minimum qualification requirements and ensure that claimed experiences meet the qualification criteria in terms of nature and value.

**Financial Standing**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Annual Turnover for the last 3 years (in US$ equivalent[[3]](#footnote-4))** | | Year 2019 USD  Year 2020 USD  Year 2021 USD | | |
| **Latest Credit Rating (if any), indicate the source** | |  | | |
| **Financial information**  (in US$ equivalent**[[4]](#footnote-5)**) | **Historic information for the last 3 years** | | | | |
|  | 2019 | | 2020 | 2021 | |
|  | *Information from Balance Sheet* | | | | |
| Total Assets (TA) |  | |  |  | |
| Total Liabilities (TL) |  | |  |  | |
| Current Assets (CA) |  | |  |  | |
| Current Liabilities (CL) |  | |  |  | |
|  | *Information from Income Statement* | | | | |
| Total / Gross Revenue (TR) |  | |  |  | |
| Profits Before Taxes (PBT) |  | |  |  | |
| Net Profit |  | |  |  | |
| Current Ratio |  | |  |  | |

 Attached are copies of the audited financial statements (balance sheets, including all related notes, and income statements) for the years required above complying with the following condition:

* 1. Must reflect the financial situation of the Bidder or party to a JV, and not sister or parent companies;
  2. Historic financial statements must be audited by a certified public accountant;
  3. Historic financial statements must correspond to accounting periods already completed and audited. No statements for partial periods shall be accepted.
  4. Declaration of Financial Status, which is certified by the bidders’ banks, shall be submitted along with the bids in the below format.

## 

## Form E: Format of Technical Bid

|  |  |  |  |
| --- | --- | --- | --- |
| Name of Bidder: | [Insert Name of Bidder] | Date: | Select date |
| ITB reference: | UNDP-TUR-ITB(UR)-2022-143 | | |

The Bidder’s Bid should be organized to follow this format of the Technical Bid. Where the bidder is presented with a requirement or asked to use a specific approach, the bidder must not only state its acceptance, but also describe how it intends to comply with the requirements. Where a descriptive response is requested, failure to provide the same will be viewed as non-responsive.

**SECTION 1: Bidder’s qualification, capacity and expertise**

* 1. General organizational capability which is likely to affect implementation: management structure, financial stability and project financing capacity, project management controls, extent to which any work would be subcontracted (if so, provide details).
  2. Relevance of specialized knowledge and experience on similar engagements done in the region/country.
  3. Quality assurance procedures and risk mitigation measures.

**SECTION 2: Method Statement**

This section should demonstrate the Bidder’s responsiveness to the specification by identifying the specific components proposed, addressing the requirements, as specified, point by point; providing a detailed description of the essential performance characteristics proposed; and demonstrating how the proposed bid meets or exceeds the requirements/specifications. All important aspects should be addressed in sufficient detail.

* 1. Mobilization plan for the equipment and personnel demonstrating how the bidders will meet the requirements of the Statement of Works.
  2. Implementation plan including a Gantt Chart or Project Schedule indicating the detailed sequence of activities that will be undertaken and their corresponding timing.

**SECTION 3: Management Structure and Key Personnel**

Provide CVs for key personnel using the format below. CVs should demonstrate qualifications requested in the following areas. **Minimum key personel requirements are stated below;**

1. **Project Manager:** Civil engineer who has at least 10 years of experience in the construction of superstructures/buildings. The Project Manager/Construction Manager shall be on site full time from the date the Engineer gives Site Access to the Contractor until the provisional acceptance date.
2. **Electrical Engineer:** Electrical engineer with at least 3 years of experience in the construction of superstructures/buildings.
3. **Survey Engineer / Surveyor:** A Survey Engineer (or equivalent) with at least 3 years of experience in the construction of superstructures/buildings or a Survey Technician with at least 5 years of experience in the construction of superstructures/buildings

**Format for CV of Proposed Key Personnel**

|  |  |
| --- | --- |
| **Name of Personnel** | [Insert] |
| **Position for this assignment** | [Insert] |
| **Nationality** | [Insert] |
| **Language proficiency** | [Insert] |
| **Education/ Qualifications** | *[Summarize college/university and other specialized education of personnel member, giving names of schools, dates attended, and degrees/qualifications obtained.]* |
| [Insert] |
| **Professional certifications** | *[Provide details of professional certifications relevant to the scope of goods and/or services]* |
| * Name of institution: [Insert] * Date of certification: [Insert] |
| **Employment Record/ Experience** | *[List all positions held by personnel (starting with present position, list in reverse order), giving dates, names of employing organization, title of position held and location of employment. For experience in last five years, detail the type of activities performed, degree of responsibilities, location of assignments and any other information or professional experience considered pertinent for this assignment.]* |
| [Insert] |
| **References** | *[Provide names, addresses, phone and email contact information for two (2) references]* |
| Reference 1:  [Insert]  Reference 2:  [Insert] |

I, the undersigned, certify that to the best of my knowledge and belief, the data provided above correctly describes my qualifications, my experiences, and other relevant information about myself.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature of Personnel Date (Day/Month/Year)

## FORM F: Price Schedule Form/Bill of Quantities

|  |  |  |  |
| --- | --- | --- | --- |
| Name of Bidder: | [Insert Name of Bidder] | Date: | Select date |
| ITB reference: | UNDP-TUR-ITB(UR)-2022-143 | | |

This Bill of Quantities is an itemized breakdown of the works to be carried out, indicating a quantity for each item and the corresponding unit price. The quantities set out in this Bill of Quantities are estimated quantities.

The amounts due shall be determined through the measurement of the actual quantities of the works executed and by applying the unit rates to the quantities actually executed for the respective items.

The prices inserted in the Bill of Quantities are to be the full inclusive values of the works described under the items, including all costs and expenses which may be required in and for the construction of the works described together with any temporary works and installations which may be necessary, and all general risks, liabilities and obligations set forth or implied in the documents on which the tender is based. It will be assumed that establishment charges, profit and allowances for all obligations are spread evenly over all the unit rates.

**No specific payment will be made against transportation of materials to the site**.

Unless the technical specifications or the Bill of Quantities specifically and expressly state otherwise, only permanent works are to be measured and paid for by UNDP.

No allowance will be made for loss of materials or volume thereof during installation, transport or compaction.

UN and its subsidiary organs are exempt from all taxes. Therefore, the prices shall exclude Value Added Tax (VAT). The Contractor to be selected shall not be entitled to receive any amount over the prices in relation to VAT, Special Consumption Tax and any other applicable taxes.

In the bill of quantities, rates and prices shall be entered by the Contractor in the appropriate columns in USD. In the Unit Price column in the Bill of Quantities, Unit Rates shall include the overheads. "Overheads" shall be deemed to cover:

1. Profit
2. Head Office charges
3. Site Supervision and Site Staff costs and expenses
4. Transport of labour and travelling allowances
5. Use of protective clothing or equipment
6. Any statutory or incidental charges levied on the employment of labour
7. Overtime, unless specifically ordered or subsequently sanctioned in writing by the Engineer
8. Time lost due to inclement weather
9. Insurances of whatsoever nature
10. Holiday and sickness pay or benefits
11. Use, repair and sharpening of small tools
12. All non-mechanically operated equipment, staging and trestles, protective clothing, artificial lighting, storage facilities and the like that may be in general use on the site
13. All other liabilities and obligations whatsoever

**Price Schedule**

Price Schedule Form is uploaded as separate excel sheets (FORM F: PRICE SCHEDULE FORM IN EXCEL) among solicitation documents in etendering. Bidders shall complete and submit the Price Schedule both in excel version and signed .pdf version.

Bidders shall also complete below table based on the subtotatals of the sections quoted in excel. In case of any discrepancy between Excel Price Schedule and below pricing table, the unit prices quoted in excel shall prevail.

Summary Table

Currency of the Bid: United States Dollar

|  |  |  |
| --- | --- | --- |
| Item # | Description | Total Price (USD) |
| 1 | Civil Works |  |
| 2 | Electrical Works (Energy Transmission Line ENH) |  |
| **Grand Total Price (item 1+item 2) (USD)** | |  |

Name of Bidder: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Authorised signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name of authorised signatory: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Functional Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## FORM G: Form of Bid Security

Bid Security must be issued using the official letterhead of the Issuing Bank.

Except for indicated fields, no changes may be made on this template.

To: UNDP

*[Insert contact information as provided in Data Sheet]*

WHEREAS [Name and address of Bidder] (hereinafter called “the Bidder”) has submitted a Bid to UNDP dated Click here to enter a date. to complete the works stipulated in the ITB with reference UNDP-TUR-ITB(UR)-2022-143 with the title “Construction of Pressurized Irrigation System for Kozcuğaz in Center District of Sinop Province” (hereinafter called “the Bid”):

AND WHEREAS it has been stipulated by you that the Bidder shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security if the Bidder:

1. Fails to sign the Contract after UNDP has awarded it;
2. Withdraws its Bid after the date of the opening of the Bids;
3. Fails to comply with UNDP’s variation of requirement, as per ITB instructions; or
4. Fails to furnish Performance Security, insurances, or other documents that UNDP may require as a condition to rendering the contract effective.

AND WHEREAS we have agreed to give the Bidder such Bank Guarantee:

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Bidder, up to a total of [*amount of guarantee*] [*in words and numbers*], such sum being payable in the types and proportions of currencies in which the Price Bid is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of *[amount of guarantee as aforesaid*] without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

This guarantee shall be valid up to 30 days after the final date of validity of bids,

**SIGNATURE AND SEAL OF THE GUARANTOR BANK**

Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

Name of Bank \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Address \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*[Stamp with official stamp of the Bank]*

1. Non-performance, as decided by UNDP, shall include all contracts where (a) non-performance was not challenged by the contractor, including through referral to the dispute resolution mechanism under the respective contract, and (b) contracts that were so challenged but fully settled against the contractor. Non-performance shall not include contracts where Employers decision was overruled by the dispute resolution mechanism. Non-performance must be based on all information on fully settled disputes or litigation, i.e. dispute or litigation that has been resolved in accordance with the dispute resolution mechanism under the respective contract and where all appeal instances available to the Bidder have been exhausted. [↑](#footnote-ref-2)
2. Official books valid for those specifications are published by;

   Republic of Turkey Ministry of Environment and Urbanization

   Republic of Turkey General Directorate of Highways

   Iller Bank, Turkey

   Republic of Turkey General Directorate of State Hydraulic Works

   Republic of Turkey General Directorate of Railways, Harbors, Airports [↑](#footnote-ref-3)
3. Bidders shall convert the currency into USD by using the UN operational rate of exchange which was effective for 31 December of each corresponding year. UN operational rate of exchange are available at the following website: <https://treasury.un.org/operationalrates/OperationalRates.php#E> [↑](#footnote-ref-4)
4. Bidders shall convert the currency into USD by using the UN operational rate of exchange which was effective for 31 December of each corresponding year. UN operational rate of exchange are available at the following website: <https://treasury.un.org/operationalrates/OperationalRates.php#E> [↑](#footnote-ref-5)